Civic engagement
and the effectiveness of health aid

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Stefan Kruse

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Erstbetreuer und Erstgutachter: Prof. Dr. Christian Welzel

Zweitgutachter: Prof. Dr. Ferdinand Müller-Rommel

Drittgutachter: Prof. Dr. Jörg Faust

CONTENT

FIGURES

TABLES

ABBREVIATIONS

BMGF	Bill and Melinda Gates Foundation
CIVIC	Index of civic activism
CLUBS	Index of associational membership
CONFLICT	Conflict involvement
DAH	Development assistance for health
DECENTRAL	Index of decentralization
DEMO	Index of liberal democracy
DIF-GMM	(Arellano-Bond) Difference-GMM estimator
EXPEND	Government health expenditures
FE	Random effects model
FE-LDV	Dynamic fixed effects model
FERTIL	Fertility rate
FHI	Freedom House index
GAVI	Global Alliance for Vaccines & Immunization
GDP	Gross domestic product per capita
GMM	Generalized method of moments estimator
GOV	Index of bureaucratic governance (state capacity)
HIV	HIV prevalence rate
ICRG	International Country Risk Guide
IMR	infant mortality
ISD	Indices of Social Development
LDV	Lagged dependent variable model
LIFE	Life expectancy
MDG	Millennium Development Goals
MMR	Maternal mortality
ODA	Official Development Assistance
PCSE	Panel corrected standard errors
POP	Population size
PPP	Public private partnerships
PRSP	poverty reduction strategy papers
RCM	Random coefficient model
RE	Fixed effects model
RE-LDV	Dynamic random effects model
SDG	Sustainable Development Goals
SDI	Service Delivery Indicators
SMA	Social Movement Activity
SWAps	Sector-wide approach
SYS-GMM	(Blundell-Bond) System-GMM estimator
TRUST	Index of interpersonal trust
U5M	Under-five mortality
WBGI	World Bank Governance Indicators
WBGI	Worldwide Governance Indicators (World Bank)
WHO	World Health Organization
WVS	World Values Survey

1 Introduction

The Millennium Declaration adopted by the UN in 2000 put global health high on the development agenda and was followed by a major increase in development assistance for health (IHME 2015, 9).[1] Not only the goal to directly eradicate severe poverty worldwide but also the indirect effects of better population health on democratization and the stability of democracies have stimulated renewed thinking about the effectiveness of development interventions (Dyson 2013).[2] Despite the rise in global health funding and global progress towards better population health evidence from different aid recipient countries reveals that health sectors are plagued by high absentee rates among health professionals, a lack of priority drugs and basic medical equipment, as well as poor physical health infrastructure (World Bank 2017; Björkman-Nyqvist, Svensson, and Yanagizawa-Drott 2016; Skolnik 2012, 99; Holmberg and Rothstein 2011).[3] For instance, in Mozambique, which is among the top ten health aid recipients (per capita) in Sub-Saharan Africa, less than half of the list of basic medicines recommended by the World Health Organization (WHO) is available in average public health facilities (Molina and Martin 2016, 28). Likewise, only five percent of health facilities in Tanzania have access to basic infrastructure including electricity, clean water, and improved sanitation although the country receives more health funding in per capita terms than 50 percent of all recipients on the continent (World Bank 2017; Wild et al. 2012, 15). In addition to that, absent service providers often receive public sector salaries while earning extra money from illicit work during clinic hours.[4] For example, in Uganda, which receives similarly high amounts of development assistance for health, evidence suggests that staff is absent from public health facilities about half of the time they should be in attendance (Wane and Martin 2016, 9).

The prominence of health in the Millennium Development Goals (MDG) can be traced back to the visions laid out in the Universal Declaration of Human Rights (Hulme 2009) out-

[1] By the same token, the 2030 Agenda for Sustainable Development acknowledges that health is fundamental to prosperity and development and that threats to health may compromise a country's stability and security. In especially, referring to key functions of health systems SDG3 requests to ensure healthy lives and promote population health for all at all ages through improved health financing and better recruitment and training of the health work force. To measure progress in the achievement of the Sustainable Development Goals (SDGs) global health is defined by 13 specific targets referring to maternal and child health, infectious disease control, prevention and treatment of non-communicable diseases and substance abuse, motor vehicle accidents, sexual and reproductive health care services as well as universal health coverage and pollution. Likewise, SDG3a-d include targets about health research, health financing, tobacco control and early warning systems.

[2] Changes in the age composition of the population resulting from lower levels of infant mortality and followed by a decrease in fertility raises the odds of long-term democratization by increasing the number of people in the main working age willing to voice their claims (Dyson 2013). In particular, women who spend less time on child bearing and are more often formally employed due to declines in fertility increases the demand for civic entitlements including female suffrage. Consequently, effective development assistance for health is also expected to contribute to long-term democratization via demographic changes.

[3] The data is based upon the *Service Delivery Indicators (SDI)* project, which collects nationally representative data on the quality of service delivery in primary schools and at frontline health facilities across countries and over time. The project attempts to provide accurate information on the performance and the use of public resources allowing citizens to exercise demands for accountability (World Bank 2017).

[4] The SDI measures *absenteeism* by the share of a maximum of ten randomly selected providers absent from the facility during an unannounced visit of researchers. For country studies see (Molina and Martin 2016; World Bank 2012; Martin and Pimhidzai 2013; Rockmore 2016; Wane and Martin 2016).

lining that '*everyone has the right to a standard of living adequate for the health and well-being of himself and of his family (Art. 25)'*.[5] Even though the human rights framework is a powerful instrument to improve global health by enabling individuals to assert a legally binding claim, compliance with human rights obligations requires effective accountability mechanisms and oversight arrangements. The fact that formal oversight institutions are weak in many developing countries has led development practitioners to believe that beneficiaries' involvement can improve the performance of public service delivery.[6] In particular, assuming that beneficiaries have the incentives to demand good quality services their participation in the monitoring of public service providers is expected to improve the quality of service delivery (Banerjee et al. 2010, 2). Moreover, an active civil society that engages in peaceful forms of non-institutionalized political action gives rise to democratic entitlements and increases the odds of a political system to transition to democracy and to persist as a democracy (Ackerman and Karatnycky 2005; Tusalem 2007; Chenoweth and Stephan 2011; Bayer, Bethke, and Lambach 2016). From a donors' perspective, this means that strengthening civic engagement may not only contribute to increased aid effectiveness but also raise the odds of democratic transition. Accordingly, donor countries have increased their efforts to strengthen beneficiary participation since the 1990s which moved the concepts of voice and accountability center-stage in the international development discourse (Winters 2010). However, whether citizens' capacity to exercise pressure on service providers and public officials determines the responsiveness of aid recipient countries remains an empirical question. Building upon recent experimental and comparative case study research this study focuses on the health sector and the role of citizens' engagement in the effectiveness of development interventions.

In the past comparative research on the effectiveness of sector-specific aid was constrained by data availability issues especially in the debate on the health impact of external funding (Jongh et al. 2014). Despite recent signs of convergence in the literature regarding the positive effects of health aid on population health, little is known about *what* makes aid more effective at the sector level. The few existing studies in the (health) aid effectiveness literature have focused on the role of formal political institutions and overlooked the im-

[5] The declaration has served as the foundation for two binding human rights treaties: the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR). The ICESCR relates to the right to health by recognizing *'the right of everyone to the enjoyment of the highest attainable standard of physical and mental health (Art 12)'*. Specifically, the right to health includes freedoms and entitlements, such as the right to a system of health protection, which provides equality of opportunity for people to enjoy a variety of facilities, goods, services and conditions necessary for the realization of the highest attainable standard of health (CESCR 2000, 3). For instance, the freedom to control one's own body, including sexual and reproductive freedoms.

[6] Institutions are defined as a '*set of norms that have a significant impact on the behavior of individuals*' (North 1990b). They affect performance by voluntarily following the rules or being motivated by the threat of sanctions (Lauth 2015, 58). Accordingly, institutions create *'a social order in such a way that the behavior of all actors involved in that social order is predictable'* (Lauth 2015, 57). In contrast to formal institutions that are officially codified in written documents and receive legitimacy by actors with rule-making authority, informal institutions are unwritten and usually emerge through social actions without guidance (Lauth 2015, 58). To clarify, informal institutions are defined as '*socially shared rules, usually unwritten, that are created, communicated, and enforced outside of officially sanctioned channels'* (Helmke and Levitsky 2004, 727). They are deeply rooted in social practices and make actors' behavior predictable (Lauth 2015, 57). Equally, the concept of informal institutions overlaps with the concept of social capital. In particular, repeated interaction in networks give rise to a 'generalized norm of reciprocity', which forms the basis for trust (Putnam 1995, 666). As reciprocity is based on mutual expectations that a benefit granted now should be repaid in the future, it directly influences actors' behavior.

portance of civic engagement in recipient countries. However, citizen participation enjoyed a vigorous revival in the development and democracy field (Pateman 2012) and stimulated substantial case-study and experimental research on the links between citizen demand and state responsiveness (Fox 2015; Gaventa and Barrett 2012; Banerjee et al. 2010; Björkman and Svensson 2009; Björkman-Nyqvist, Walque, and Svensson 2014; Bold and Svensson 2013; Olken 2007). Based on this evidence donors have increased their efforts to strengthen citizen voice and accountability to promote demand for better governance in recipient countries and to improve the performance of service delivery (O'Neil, Foresti, and Hudson 2007). However, despite more than two decades of support in international development for greater citizen participation and failures of 'top-down' development approaches the aid effectiveness literature has largely ignored the importance of civic engagement and bottom-up processes of performance oversight. Moreover, as Gaventa and Barrett put it, *'the issue is not simply to ask "what difference does it make?" but to understand further the conditions under which it makes a positive difference'* (2012, 2407). Therefore, this study attempts to close this gap and contribute to a better understanding of the role cultural and political factors have in creating incentives and shaping accountability processes in aid recipient countries.

The primary concern of this work is not to assess whether development assistance for health is effective. Instead, the research focuses on the contextual conditions under which health aid effectively reduces poverty. Political scientists have repeatedly pointed to the links between civic engagement and government responsiveness (Putnam 1993; Almond and Verba 1963; Verba et al. 1995; Ostrom 1990, 1999; Ostrom and Ahn 2009, 22; Warren 2001; Fung 2003; Diamond 1999, 239; Jenkins and Goetz 1999).[7] This work focuses on cultural and political factors that determine communities' capacity to demand accountability from public authorities in aid recipient countries. In the health sector, the capacity to engage in collective action enables communities to monitor service providers' behavior and exercise pressure on public authorities to provide health-promoting public goods such as better health infrastructure. Moreover, cooperation among community members facilitates participation in the planning, operation, maintenance, and evaluation of service delivery projects.[8] Drawing upon evidence from aid recipient countries this study reassesses conventional wisdom on the role of community ties, trust and norms as well as value orientations in restraining opportunism. Based on that, this work examines the influence of civic engagement—as a source of social capital—on the effectiveness of global health funding in different political contexts. Civic engagement includes all non-professional, voluntary activities located in or targeted at the sphere of politics as well as actions aimed at solving collective or community

[7] Moreover, the rise and routinization of the concept of social capital has stimulated a large volume of research across different sectors and disciplines. For instance, epidemiologists have emphasized the role of collective socialization and informal social control, which both imply that community networks shape a sense of responsibility for the well-being of others and the willingness to intervene on behalf of the common good (Kawachi, Subramanian, and Kim 2008, 15-17). Collective socialization refers to the role of community adults (not just one's own parents) in shaping child development, behavior and health outcomes. The closely related concept of informal social control concerns the capacity of a group to regulate the behavior of its members according to collectively desired goals.

[8] Specifically, communities' collective action capacity enables communities to manage physical hazards through the surveillance of drinking water quality, control of diseases and epidemics, implementing vaccines, the construction and use of toilets drained by covered sewers as well as management of waste disposal, sewage treatment and disposition of animals (Novick and Morrow 2008, 5; Kawachi, Kennedy, and Glass 1999).

problems (Van Deth 2016, 8-11). Therefore, this study defines civic engagement as '*any activity, individual or collective, devoted to influencing the collective life of the polity'* (Macedo et al. 2005, 6). This definition takes into consideration not only conventional, institutionalized modes of political participation and non-institutionalized forms of political action ('contentious politics' or 'elite-challenging action') but also the relevance of community activities and voluntary associations.[9] Both contribute to the spread of civic orientations and trust and shape communities' capacity to cooperate in collective endeavors. The key question addressed in this study is whether communities' capacity to engage in collective action conditions the effectiveness of health aid and whether this interaction varies among political contexts. In particular, the focus is on formal political institutions that create incentives for citizen engagement and government responsiveness including the role of state capacity, liberal democracy and the devolution of power to local governments. Thus, drawing upon principal-agent theory, this work argues that effective performance oversight via bottom-up processes of demand from service users, and via formal processes of top-down monitoring and horizontal oversight arrangements are key determinants of accountability in public service provision.

This research contributes to the literature in several aspects. Assessing the role of ordinary people in making aid recipient states respond to citizens' needs complements approaches in the aid effectiveness literature that emphasize the importance of formal institutional arrangements, such as fair elections and a free press. Furthermore, the quantitative approach generalizes existing evidence from qualitative and experimental research that seeks to isolate the impact of citizen participation under country-specific context conditions. As a consequence, the study illustrates the complex interactions of global health funding and citizen participation in different political contexts. Specifically, the analysis identifies systematic patterns of interaction between health aid, citizen demand, and formal political institutions. Hence, the findings obtained provide a more nuanced perspective on the complexity of institutional conditions for health aid effectiveness. Methodologically, the study also contributes to a better understanding of conditional effects testing across alternative model specifications via different visualization techniques. The analysis draws upon newly available data from public opinion research across a broad sample of aid recipient countries as well as new data on global health financing. From a practitioners' point of view, the findings obtained support the claim that civic engagement plays a major role in achieving developmental outcomes and provides insights into which type of civic engagement donors should seek to support under varying (formal) political conditions.

Overview of the study

This study consists of seven chapters within three main parts. Part one (chapter 2 & 3) situates the current study in related literature and derives a set of testable research hypotheses. Specifically, chapter 2 lays out theoretical expectations linking international health financing

[9] Contentious politics is defined as '*collective activity on the part of claimants—or those who claim to represent them—relying at least in part on noninstitutional forms of interaction with elites, opponents, or the state'* (Tarrow 1996b). This work focuses exclusively on peaceful, non-violent forms of non-institutionalized political action. Henceforth, the terms 'contentious politics', 'elite-challenging action' and 'civic activism' are used interchangably for non-violent forms of non-institutionalized political action.

and population health in recipient countries, including a review of the empirical (health) aid effectiveness literature. This chapter introduces the major shifts in international health discourse towards the integration of technical solutions and underlying social, cultural and political causes of ill health. Emphasis is placed on how the wider shift in development theory transformed participatory development into a means of mobilizing communities to monitor donor programs (Brett 2003, 4), and has led development agencies to engage in strengthening local participation and social capital (UNDP 1993; World Bank 1994; World Bank 1999, 18-19). Additionally, the chapter illustrates the mechanisms by which health aid improves the quality of health service delivery in recipient countries via health system strengthening and explains key factors that undermine the effectiveness of external health financing. Based on the macro-comparative evidence, the chapter identifies a gap in the aid effectiveness literature concerning the influence of socio-cultural and political determinants and how these create incentives that shape accountability in the delivery of foreign aid. Chapter 3 establishes the theoretical framework to assess the role of citizen demand for accountability and political context in the study of (health) aid effectiveness. Drawing upon social capital theory and principal-agent theory the chapter discusses conditions under which public officials and service providers are likely to respond to citizens' needs. The chapter illustrates the importance of demand- and supply-side factors and how they shape accountability relationships in aid recipient countries by summarizing the evidence from different strands of the literature. By combining these insights, the chapter develops a model that connects global health funding with improved population health via bottom-up processes of citizen demand as well as formal processes of top-down monitoring and horizontal oversight arrangements. Based on an explanatory model of voice and accountability in aid recipient countries the chapter derives a set of testable research hypotheses.

The second part (chapters 4 and 5) outlines methodological issues in the study of aid effectiveness and summarizes the key results of the empirical analysis. Specifically, chapter 4 discusses methodological challenges in assessing aid effectiveness, lays out pitfalls in testing conditional hypotheses, and outlines issues of endogeneity arising from omitted variables, reverse causality, and measurement error. The data section defines the variables used to operationalize the key concepts and lays out how issues of measurement quality are addressed. For descriptive purposes, this section also provides an overview of the global distribution of population health, health aid, and civic engagement, and how these have evolved since 1990. The methods section outlines the quantitative approach as the instrument to study the effectiveness of health aid and maps the advantages and disadvantages of different static and dynamic panel data estimators. Chapter 5 summarizes the main results of the empirical analysis. Thereby, the lagged dependent variable model with panel-corrected standard errors (LDV) serves as a benchmark for comparison with the preferred generalized method of moments (GMM) estimator and random coefficient (RCM) model. Section 5.1 establishes the link between civic engagement and citizens' demand for accountability using (longitudinal) individual-level data from the World Values Survey (WVS). In particular, this section tests whether structural and cultural social capital is associated with more active and democratic citizens that are able and willing to check the abuse of power in aid recipient countries. Based on this evidence, the second part tests whether community ties, the spread of civic orientations and trust, and non-institutionalized forms of political action condition the effect of health aid on population health. Therefore, the hypothesized interaction between health aid and each component of social capital is tested. The third section proceeds to explore whether the identified joint effects between social capital and health aid vary between bureaucratic and patronage states; democratic and authoritarian countries; and between centralized and decentralized aid recipients.

The third part (chapter 6 and 7) contains the discussion and conclusions of the current study. Chapter 6 elaborates on the key findings and relates them to the existing aid effectiveness literature. The chapter reflects on the generalizability of the results and identifies potential avenues of *future* research. Finally, chapter 7 contains the conclusions and summarizes the implications of the findings.

2 Development assistance for health

This chapter lays out donors' reform efforts to increase ownership and mutual accountability in the delivery of foreign aid and reviews the macro-comparative evidence on the effect of health aid on population health. The first section tracks donor inputs and the specific approaches adopted across different health focus areas and over time. The second part outlines the specific mechanisms how health aid improves the quality of health service delivery in recipient countries and describes key factors that undermine the effectiveness of external health financing. The third part reviews the macro-comparative evidence on the (direct) effect of health aid on population health.

2.1 Paradigms in development theory and health discourse

Development assistance for health (DAH) is defined as the financial and in-kind contribution (including goods as well as use of services and facilities) from governments, official government aid agencies, and intergovernmental organizations to developing countries and to multilateral institutions, which are provided by global health channels to improve health.[10] These contributions include grants as well as concessionary loans, provided with no interest or at a rate significantly lower than the current market rate. The main sub-sectors funded by health aid comprise of health infrastructure, health care and nutrition, infectious

[10] The Development Assistance Committee (DAC) of the OECD defines *Official Development Assistance (ODA)* as those grants or loans to countries and territories (on the DAC List of ODA Recipients) and to multilateral development institutions which are: i) provided by the official sector; ii) administered with the promotion of the economic development and welfare of developing countries as its main objective; iii) concessional in character and - if a loan - conveys a grant element of at least 25 % (DAC 2008).
The here used definition expands the definition of ODA. It includes loans at market rates if these loans are extended by governments or intergovernmental organizations in an effort to foster socioeconomic development, but excludes private flows and military assistance (Tierney et al. 2011).

disease control, public health education, health personnel training and administrative capacity building.[11]

Donors provide development assistance for different purposes. These include diplomatic, developmental, commercial, humanitarian, cultural, conflict mitigating, economic, social or democratic transition promoting purposes or in response to domestic political forces (in the donor country) (Lancaster 2006, 13-21). In the 1960s foreign aid became a sub-field in international politics and specialized bilateral agencies an institutionalized part of the foreign policy apparatus of donor countries (Eggen and Roland 2013, 22).[12] According to the dominant theory of change, foreign aid was mainly spent on industrial and infrastructure projects such as roads and dams, assuming that capital and technology transfer would create growth, which in turn was expected to reduce poverty. Specifically, economic development was explained using simple growth models, such as the Harrod-Domar model. According to this model economic performance depends on a country's labor and capital stock, which in turn depends on investments and savings. Consequently, development cooperation focused on closing the savings gap of developing countries by providing external resources for investment projects.[13] Even though economic development was the primary goal of development cooperation modernization theory also claimed that growth fosters democratization (Lipset 1959), which provided further ground for allocating foreign aid to non-democratic countries (Faust 2009, 340).

The dominant theoretical perspectives on health and illness were based on technological approaches and biomedical models of health care (WHO 2003, 139). According to the biomedical model of health, the human body is conceptualized as a machine that can be manipulated and repaired. Health, or the absence of it, is explained by biological factors and cured by technological 'magic bullets' (Birn et al. 2009, 133). Patients are largely passive followers of their doctor's orders. Non-adherence to therapy prescriptions is explained by personal characteristics of the patient (e.g., sociodemographic background) and target of efforts to improve adherence (WHO 2003, 139). Likewise, most efforts to improve health in developing countries took the form of vertical programs that focus on (selective) disease-specific interventions, as e.g., malaria eradication, instead of comprehensive approaches to health system strengthening. Therefore, development assistance for health (DAH) was mainly spent on curative services based on high technology and cost-intensive medicine.

In the 1970s, Western donors and multilateral organizations started to question the expected trickle-down effects of economic growth. Based on the experiences of China, a con-

[11] Table A 17 summarizes the different health focus areas of health aid based on sector classifications. According to the standard classification interventions directed to reproductive health care, family planning, and HIV/AIDS control are assigned to population policies (and reproductive health). However, due to the importance of each of these focus areas for population health they are analyzed as part of health aid. Likewise, this study also analyzes aid for water supply and sanitation. The definition of health aid applied does not include international humanitarian (emergency) aid and is therefore not discussed.

[12] The institutionalization of foreign aid also gave rise to new multilateral organizations, which together with already existing UN agencies made development an integral part of their mandate and operations (Eggen and Roland 2013, 23; Stokke 2009). For instance, new multilateral organizations included the European Development Fund for Overseas Countries created by the European Economic Co-operation (EEC) in 1957, the World Bank's International Development Association in 1959, and the Development Assistance Group (DAG, later DAC) initiated by the Organization for European Economic Cooperation (OEED, later OECD).

[13] Thus, in the 1960th the World Bank allocated about 75 % of foreign aid to infrastructure projects (Thirlwall 1989).

sensus emerged that economic growth does not necessarily translate into better health and better health care for all, but rather of those who are already better off and hence increase the disparity in health status between the rich and the poor (Hsiao and Liu 2006, 430-431). The importance of redistributive, pro-poor-policies increasingly moved center stage. The focus of foreign aid shifted from fostering economic growth to focusing on basic needs and addressing root causes of poverty.[14] The expanded funding of education and health projects, as well as the intent to increase beneficiaries' participation, also led to an increase in the number of non-governmental organizations (NGOs). Foreign aid activities became much more complex tasks, aiming at improved service delivery and policy reform simultaneously. Project aid, with its focus on specific outputs, was increasingly replaced by broader programs and the provision of technically skilled personnel to government administration by attempts to influence social organizations, institutions, governance and policies (Eggen and Roland 2013, 24).[15] At the same time, there was growing consensus that developing countries should prioritize prevention-oriented, primary health care including immunization and nutrition programs, instead of high-tech and cost-intensive medicine (Tulchinsky and Varavikova 2009, 63). Behavioral learning theories and socio-ecological (political economy) approaches further stimulated the wider shift in understanding health and illness. Specifically, behavioral (learning) models view health primarily as a consequence of individual actions and beliefs, which can be influenced by health education, counseling and setting individual incentives (WHO 2003, 140). By contrast, socio-ecological approaches emphasize the relevance of political, social, cultural and economic factors for population health. The latter is vital to the recognition of political participation, social empowerment and economic redistribution as determinants of population health.

In 1978 the *Alma-Ata Declaration on Primary Health Care* shifted the priorities of international health agencies from a narrow, medicalized approach into a holistic approach, which integrates technical solutions and the underlying social, economic and environmental causes of ill health (Birn et al. 2009, 79). Moreover, the declaration asserted health as a fundamental right to all members of a society and emphasized that citizens have the right and duty to participate in the planning and implementation of their health care (WHO 1978). Knowledge and self-care skills, as well as community action to reduce health risks, were considered similarly important for health care as medical practitioners and institutional care (Tulchinsky and Varavikova 2009, 64).[16]

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[14] The *basic needs approach* was introduced by the International Labour Organization's World Employment Conference in 1976. The definition of basic needs included certain minimum requirements of a family for private consumption (such as adequate food, shelter, clothing, certain household equipment and furniture) and essential services provided by and for the community, such as safe drinking water, sanitation, public transport, as well as health and educational facilities.

[15] In the mid-1970s project aid made up about 50 % of official development assistance (ODA), of which about two-thirds were spent on infrastructure including roads, railways, water and sewerage, ports, airports, power stations and telecommunications (Mosley and Eeckhout 2000, 103).

[16] The main features of primary care services include i) education concerning prevailing health problems and methods of preventing and controlling them; ii) promotion of food supply and proper nutrition; iii) adequate supply of safe water and basic sanitation; iv) maternal and child health care, including family planning; v) immunization against major infectious diseases; vi) prevention of locally endemic diseases; vii) appropriate treatment of common diseases and injuries; and viii) the provision of essential drugs (WHO 1978).

There are many ways in which the community can participate in every stage of primary health care. It must first be involved in the assessment of the situation, the definition of problems and the setting of priorities. Then, it helps to plan primary health care activities and consequently it cooperates fully when these activities are carried out. Such cooperation includes the acceptance by individuals of a high degree of responsibility for their own health care - for example, by adopting a healthy life style, by applying principles of good nutrition and hygiene, or by making use of immunization services. In addition, members of the community can contribute labour as well as financial and other resources to primary health care. (WHO and UNICEF 1978, 51)

Even though empirical evidence suggests that primary health care is associated with a more equitable distribution of health in populations (Starfield et al. 2005, 457) the community-based, comprehensive primary care approach was soon criticized for being unattainable. The main reasons were the high costs and numbers of trained personnel required (Haines et al. 2007, 2121). In their seminal paper, Walsh and Warren (1979) argued, that a *selective* primary health care approach that addresses the few diseases that are responsible for the greatest mortality would be more cost-effective and consequently more appropriate for disease control in developing countries.[17]

Due to the debt crisis in developing countries in the 1980s and the paradigm shift in mainstream economic theory the World Bank as one of the most influential donors not only adopted a selective health care approach but also stressed the importance of reforming health systems to increase their efficiency. The suggested reforms included the introduction of user fees and increased private sector competition, for instance by separating the purchasers from the providers of health care (Bennett 2011, 474). Against this backdrop, many international health agencies adopted policies supporting a reduced role of government and selective interventions directed at medical solutions that de-emphasize the role of social, cultural and political determinants of health. At the same time, the World Bank, together with the International Monetary Fund (IMF), provided structural adjustment loans to countries that were heavily affected by the global economic crisis.[18] The provision of loans was coupled with a set of policy reforms to 'stabilize' the economy, including the reduction of gov-

[17] Walsh and Warren (1979, 972) suggested to provide measles and diphtheria-pertussis-tetanus (DPT) vaccination for children over six months and tetanus vaccination to all women of childbearing age, encouragement of long-term breastfeeding, provision of chloroquine for episodes of fever in children under three years old in areas where malaria is prevalent, and oral rehydration.

[18] Analyzing World Bank data Andrews identifies three common sets of institutional reforms. First, institutional reforms that address *external rules of public sector engagement with outside entities*, i.e., activities to influence the rules of government intervention in a country's economy, as for instance privatizing state enterprises, deregulating sectors, creating laws that liberalize trade, and establishing government entities to promote competitive markets. Second, attempts to reform the *internal rules of government operation*, i.e., efforts to change administrative and civil service systems, public expenditures, financial management and procurement processes, as well as tax policy, administration mechanisms, decentralization and corruption control. Third, efforts to reform both internal rules of government operation and external rules of public engagement with outside entities affect core development agendas like health, education, and rural development. For instance, health system performance is similarly affected by reforming internal rules such as medicine procurement and storage, and external rules like regulating access and use of medicine (Andrews 2013, 5-7). In particular, in the first generation *public financial management reforms* include the introduction of standardized annual budgeting and treasury processes, basic procurement rules and cash-based expenditure controls. Likewise, *civil service reforms* involved initiatives to centrally control and rationalize the wage bill through downsizing and reorganization, formalization of pay and employment systems, and aggressive restructuring of administrative entities to minimize redundancy (Andrews 2013). By contrast, in the second generation *public financial management reforms* comprise steps to adopt multi-year budgeting, IT-based financial management systems, modern internal audit and monitoring and evaluation systems, and even performance management mechanisms. *Civil service reforms* sought to *devolve* accountability and introduce merit-based hiring and compensation mechanisms, performance management and de-concentrated organizational structures (Andrews 2013, 17-18).

ernment spending and consumption, decreased imports, reduced subsidies for state-run businesses, increased private sector competition and privatization of state-owned enterprises. At the same time, decentralization efforts sought to increase incentives of local politicians to be responsive and accountable to their constituents and improve public service delivery. As a result, many health sector reform policies became discredited due to the reduction of public employees delivering social services and the deterioration of health equity due to the introduction of user fees for public health care, water, and education. Moreover, health sector reforms were often associated with a reduced supply of health prevention services, as they are less profitable than curative and medicalized health services (Birn et al. 2009, 80-85).

The large-scale reductions in public expenditure and failures of 'top-down' development approaches opened up new spaces for NGOs in the delivery of health services. Likewise, the end of the Cold War provided legitimate ground for donors to assume that the Western model of state, market, and civil society—based on Western types of institutions and values—is the best available blueprint for planning development in recipient countries. Thus, after focusing on increased private sector competition, donors engaged in deepening democratization processes by targeting state institutions and civil society. Public sector reforms were introduced to increase efficiency and responsiveness of civil servants addressing poor leadership and management as well as the knowledge, values, attitudes and work ethics of public officials (Eggen and Roland 2013, 30). Likewise, aid agencies were also taking advantage of NGO's ability to connect with beneficiaries and in strengthening civil societies to enable citizens to act as a countervailing power against governments (Banks, Hulme, and Edwards 2015, 708). *'Instead of shrinking the state, the emphasis was now on reforming both state and society according to Western models'* (Eggen and Roland 2013, 29).

At the same time, the adverse effects of structural adjustment programs spurred the development of new approaches adopted by the international financial institutions targeting the debt burden of heavily indebted countries and improving donor harmonization, ownership and accountability. The new approaches included debt relief initiatives (HIPC), sector-wide approaches (SWAps) and poverty reduction strategy papers (PRSPs). As a consequence, donors were engaged in large-scale public sector reforms, capacity building exercises for government officials and strengthening civil society at the same time. However, donor's expectations of simultaneously changing state institutions and civil society remained largely unmet. In fact, the situation in many recipient countries was characterized by '*ubiquitous corruption of state officials, large gaps between the law and actual practice in business regulation, workers who do not even show up, doctors that do not doctor, teachers who do not teach*' (Pritchett, Woolcock, and Andrews 2013, 1). The growing skepticism towards the effectiveness of foreign aid led to the first decrease in total official development assistance provided by Western donors in the mid-1990s (DAC 2012, 266).

With the new millennium approaching, an international consensus emerged that poverty reduction requires global commitments leading to the adoption of the MDGs in the year of 2000. After the Millennium Declaration, donors allocated an increasing amount of foreign aid to the health sectors of the world's developing economies in pursuit of the MDGs.[19] Figure 1 shows that the amount of development assistance for health continuously increased in the 1990s with annual growth rates of about five percent.[20] From 1990-2000 total health aid grew by 5.4 percent annually and accelerated to 11.3 percent annually after the international community adopted the UN Millennium Declaration (Dieleman et al. 2015, 2359).[21] Most of the contributions are channeled to bilateral agencies (about 40 percent), and NGOs and foundations (27 percent) (Figure 1).[22]

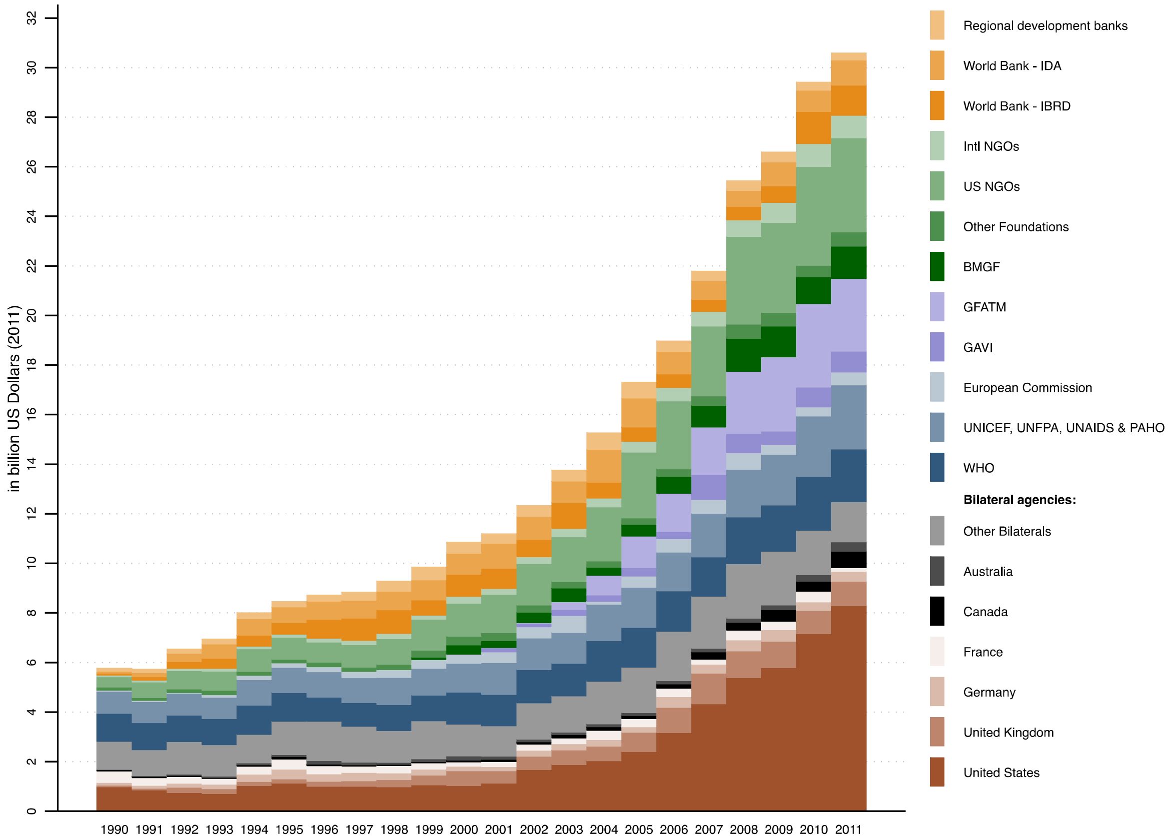
[19] However, the share of total ODA that donors allocate to the health sector is comparatively small (Table A 16). The average share of health aid in percent of total development assistance allocated by DAC member countries and emerging donors between 1990-2011 is about 7.6 % (including HIV/AIDS control). In 2014 the average share among DAC member countries has increased to 12.3 % (DAC 2016a: 11).

[20] The specific actors involved in the major increases in health activities can be classified into sources, channels and implementing institutions (Dieleman et al. 2015). Sources are defined as the origins of funding, which comprise government treasuries, philanthropic contributions and direct contributions from private parties to non-governmental organizations (NGOs). Channels are the intermediary institutions that serve as a financing mechanism directing funds to certain priority regions or health focus areas (including bilateral aid agencies, multilateral organizations, NGOs, public-private partnerships and private foundations). Implementing institutions are entities that realize activities that promote health and prevent and treat diseases in recipient countries. Implementing institutions can be grouped into governmental and non-governmental actors. Governmental institutions include for example national disease control programs or networks of public health facilities run by ministries of health. Non-governmental bodies may involve NGOs, international organizations or others active in health. Hence, health actors can be the source of funding, the channel of funding or the implementing institution, or all at the same time. Many governments are both channels and sources at the same time. For example, the German Treasury (source) provides assistance to German government agencies (channel), which channel health aid to implementing institutions as to the WHO. The WHO uses those funds to deploy health workers to vaccinate children in developing countries. Simultaneously, the WHO also serves as a channel transferring funds to other implementing institutions.

[21] Though, since 2010 donors' disbursements slowed down to 1.4 percent.

[22] 14 % are channeled to UN agencies, 13 % to PPPs including the Global Fund to Fight Aids, Tuberculosis, and Malaria (GFATM) and Global Alliance for Vaccines and Immunization (GAVI), 9 % to development banks and 4 % to the BMGF (IHME 2016b).

Figure 1: Health aid by channel of disbursement (1990-2011)



Source: IHME (2014).

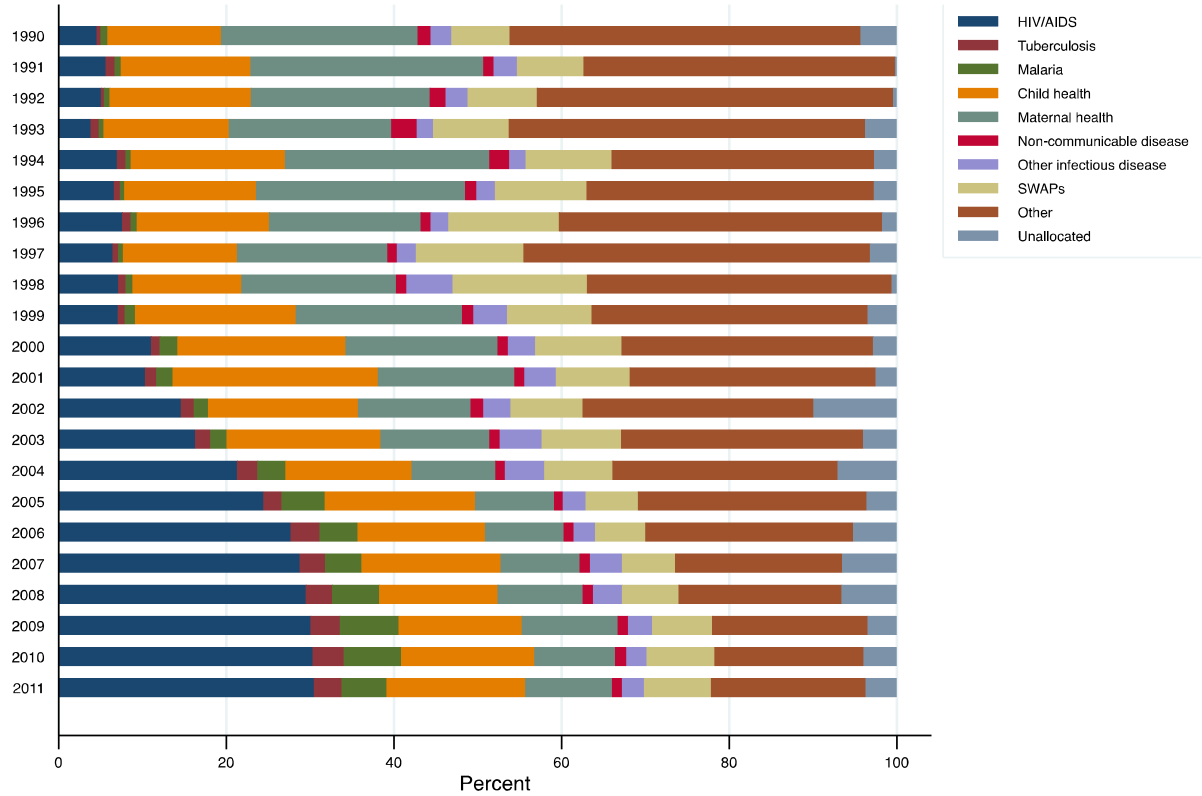
The wider shift in development discourse altered the specific health focus areas and approaches prioritized by donor organizations. Given that the leading causes of child mortality are maternity-related complications (which amount to about 25 percent of deaths in children under the age of five) child health and maternal health (MDG 4 and MDG 5) together received the largest share of health funding (Figure 2).[23] On average, child and maternal health received about one-third of total DAH and increased by nine and five percent between 2000-2010, respectively (Figure 2). Moreover, given that more than one-third of child deaths result from treatable or preventable diseases associated with unsafe water international donors increased funding for better access to safe drinking water and basic sanitation (MDG 7c), and for combating the spread of infectious diseases (MDG 6).[24] In particular, funding for HIV/AIDS control increased by about 23.4 percent annually between 2000-2010, mainly fueled by the creation of the Global Fund and the United States President's Emergency Plan

[23] Activities on infant and maternal health mostly focus on simple, cost-effective interventions including skilled birth attendance and clean birth practices (Darmstadt et al. 2005; Lavender et al. 2013; Wall et al. 2010). Thereby, donors have increasingly relied on trained community health workers in delivering newborn and infant health care interventions (Nair et al. 2010). Table A 1 provides a summary of the main facts about risk factors, transmission, treatment and prevention of the leading causes of child and maternal mortality. Table A 2 lists the primary care model package of essential health service interventions.

[24] Specifically, access to clean water—free from human feces from sewage and latrines—prevents diarrheal infection. Likewise, drainage and covered water tanks reduce mosquito populations and consequently malaria prevalence. Hand washing using clean water avoids the transmission of pathogens and reduces infections with respiratory diseases. Furthermore, clean water and adequate sanitation prevent opportunistic illnesses of people living with HIV/AIDS (WHO 2016b; Prüss-Üstün et al. 2004). Other common water- and sanitation-related diseases include schistosomiasis, trachoma, typhoid and intestinal worms (UNICEF 2003).

for AIDS Relief (PEPFAR).[25] Equally, health aid for malaria and tuberculosis, which together increased their share to about 10 percent of health aid (in 2010), grew by about 26 percent annually.

Figure 2: Focus areas of health aid over time (1990-2011)



Source: IHME (2016a)

Concerning the specific approaches adopted donors often disbursed health aid in the form of vertical, selective (disease-specific) interventions instead of horizontal, comprehensive approaches to health system strengthening due to the limited organizational and decision-making capacities of the recipient countries (Pritchett, Woolcock, and Andrews 2013). Specifically, vertical approaches set up their own separate management, financing, procurement, staffing and reporting. By contrast, horizontal approaches attempt to strengthen the national health system and integrate technical and social aspects of public health to improve overall well-being (Birn et al. 2009, 79). Although vertical approaches may be appropriate in certain contexts to achieve urgent goals and reduce a specific disease burden in the short term duplicating existing health programs may lead to distortions in the allocation of external resources and cause funding gaps in other areas.[26] Specifically, many countries report difficul-

[25] PEPFAR's activities include the provision of condoms and voluntary medical male circumcision, antiretroviral therapy as well as child and family care and strengthening the health workforce through (HIV-specific) training of existing clinicians and other health care workers (PEPFAR 2016).

[26] For example, Birn et al. (2009, 664) report that a vertical polio eradication program in India has led overall immunization coverage to decrease, resulting in an increase in diphtheria cases. Another example is PEPFAR which exemplifies how a focus on (single) disease control measures can worsen a national shortage of human resources by shifting a disproportionate share of the workforce to efforts against HIV/AIDS, with the result that other (even more pressing) health areas are neglected (IOM

ties in attracting sustained funding that can be used to support the health system including staff remuneration and investments in infrastructure and human resource development (see Figure 2). Therefore, a one-disease approach overlooks the potential of strengthening health systems to address several of the most important diseases simultaneously, e.g., diarrhea, pneumonia and preterm birth on levels of child mortality (Gostin 2008). Equally, the focus of vertical programs on biological transmission control fails to acknowledge cultural and political factors of population health and overlooks citizens' entitlements to health care as a fundamental right that they can rightly claim from the state (Devadasan et al. 2007, 638).

In the course of the aid effectiveness agenda, donor and recipient countries agreed upon reforming the existing aid system to make aid more effective through increased efficiency of aid delivery, improved management and use of development cooperation, and better partnerships between donors and recipients. Against this backdrop, the Paris Declaration and the Accra Agenda for Action laid down five fundamental principles to increase the effectiveness of foreign aid including ownership, alignment, harmonization, results and mutual accountability.[27] As a result, many donors have focused their support on program-based approaches (PBAs), which involves support for a locally owned development program based on a partnership between different donors and the recipient government (DAC 2006, 33). Program-based approaches often operate at the entire sector level and are often referred to as sector-wide approaches (SWAps).[28] Usually, a SWAp is supplemented with health sector reforms such as decentralization de-linking the ministry of health from service delivery to enhance service provision–or financing reforms such as health insurance.[29] Likewise, SWAps are often associated with delivering aid as (general) budget support that allows recipient countries to take ownership of development policies and strategies, which are agreed upon and often formulated in poverty reduction strategy papers (PRSP).[30] However, general budget support does not necessarily translate into increased delivery of goods and services. Instead, it may be used to repay debt or to increase currency reserves in search of macroeconomic stability (Antunes, Carrin, and Evans 2008, 5). Therefore, budget support is often earmarked and channeled to specific sectors (e.g., health sector budget support). Even though budget support that is linked to conditionalities has been subject to criticism health aid disbursed via sector-wide approaches and health sector support has increased in abso-

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2007). This view is echoed by the estimated costs of interventions addressing the leading causes of global child mortality, diarrhea, and pneumonia (Figure A 7).

Rudan et al. (2013) estimate the size of funding necessary to achieve such a reduction in cause-specific mortality to about 6.7 billion US$. For comparison Figure A 8 visualizes (global) disease-specific mortality rates. In particular, Rudan et al. (2013) estimate that 95 % of diarrhea deaths and 67 % of pneumonia deaths could be prevented by half the amount of health aid the Global Fund spends on HIV/AIDS control interventions.

[27] Increased ownership involves that developing countries set their own strategies for poverty reduction, improve their institutions and tackle corruption. Based on these objectives donors should align their interventions with country priorities and use their local systems (alignment). Harmonization includes coordination, simplification of procedures and sharing of information to avoid duplication. Managing for results implies that developing countries and donors shift focus to development results and measurement of results. Mutual accountability involves that both donors and partners are accountable to each other for development results.

[28] The key components of SWAps include i) a nationally owned sector policy and strategy, ii) an expenditure framework for linking projects and activities to (public and external) sources of funds, and iii) a sector coordination mechanism for policy dialogue, joint planning, monitoring and evaluation (DAC 2006, 33).

[29] For a critical review of the effectiveness of SWAps see Dijkstra (2013).

[30] General budget support involves the direct transfer of aid flows to a partner country's national treasury without earmarking funds to ensure that the allocation and management of funds are based on national priorities and procedures.

lute terms by about 8.8 percent annually since 2000 and amounts to about 7.8 percent of total health funding (Figure 2).[31] Particularly funding for health policy and administrative management have continuously increased (in relative and absolute terms) (Figure A 4).

Figure 3 visualizes the specific health focus areas and approaches prioritized by source and channel of donor funding. In particular, most bilateral governments concentrated their funding on MDG related focus areas paying less attention to strengthening recipients' health system capacity (Figure 3).[32] International financial institutions including the World Bank and the IMF provide financial and technical assistance to developing countries in the form of sector-specific grants and loans as well as macroeconomic policy advice and conditionalities. These activities directly affect the delivery of health and social services and indirectly influence health through policies related to living conditions including water and sanitation, nutrition and food security, etc. To provide development assistance for health, the World Bank applies different approaches, including debt relief initiatives (HIPC), sector-wide approaches (SWAps) and poverty reduction strategy papers (PRSPs) (Birn et al. 2009, 81). Debt relief initiatives aim at freeing up resources for increased social spending, whereas sector-wide approaches aim at coordinating various actors to avoid duplication of service provision and donor fragmentation. Poverty reduction strategy papers (PRSPs) serve as a mechanism to increase ownership and accountability by providing certainty for donor organizations that recipient countries will utilize aid to pursue development outcomes based on a jointly developed strategy.[33] As shown in Figure 3, the World Bank channeled about 50 percent of its

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[31] In particular, the provision of budget support has been criticized as it is often linked to conditionality, which may be associated with cutting down social sector expenditures (Molenaers et al. 2015, 10). Conditionality refers to the '*specific set of conditions attached to the disbursement of policy-based lending or budget support*' (Koeberle et al. 2005, 6). The two most important types of conditionality include fiduciary conditionality and political conditionality. Fiduciary conditionality relates to the transparency and accountability in the use of financial resources. Political conditionality refers to the '*allocation and use of financial resources to sanction or reward recipients in order to promote democratic governance and human rights*' (Molenaers et al. 2015, 2). Financial resources used for political conditionality involve not only foreign aid, but also financial contributions from other policy domains (Koch 2015). The most controversial conditions attached to donor support have been public sector wage-bill ceilings, which have been considered to prevent governments from hiring more health workers due to externally imposed budget constraints (Antunes, Carrin and Evans 2008, 5-7).

[32] For instance, governments such as the US, Germany, and France prioritized HIV/AIDS control funding, whereas the Netherlands, UK, Norway or Canada favored child and maternal health focus areas. The United States as the largest bilateral donor of development assistance (in absolute terms, although only spending less than 0.2 percent of its gross national income)[32] allocated most of its health aid to The United States President's Emergency Plan for AIDS relief (PEPFAR), which focuses on HIV/AIDS prevention, treatment, and care in 15 selected African countries (Figure 3). In 2014 the US spent about 89 % of their health aid to PEPFAR. In the same year, the US spent 28 % of their total ODA to the health sector including basic health, population and reproductive health, water supply and sanitation, and other social infrastructure and services, which sums up to 7,702 billion US$ (DAC 2016a). The PEPFAR funding in 2014 was 6,833 billion (PEPFAR 2016).

[33] PRSPs were introduced as a requirement for the provision of debt relief under the enhanced HIPC initiative in 1999 and are still a precondition for developing countries to receive development assistance from the World Bank and the IMF. Countries wishing to assess debt relief and concessional lending are required to design a Poverty Reduction Strategy Paper (PRSP), that should go beyond macroeconomic stabilization and address issues of poverty and equitable growth (Dodd et al. 2004, 2). The key components of a PRSP include i) an overview of characteristics of poverty and its leading causes, ii) examination of sector-specific poverty issues, iii) outline of the proposed strategy including macroeconomic and sector-specific objectives, and iv) a budget framework together with a mechanism to monitor progress. Reviewing 21 poverty reduction strategy papers from a public health perspective Dodd et al. (2004) demonstrate that most countries report gaps in health care delivery systems, child and maternal health issues and prevalent communicable diseases. Strategies pursued to address key health problems include communicable disease control, maternal and reproductive health, child health, and improvement of water and sanitation. Other strategies target HIV/AIDS and malnutrition. Additionally, most PRSPs focus on increasing access to health services for the poor and improving the quality of health services in particular by better human resource development for health Dodd et al. (2004, 9).

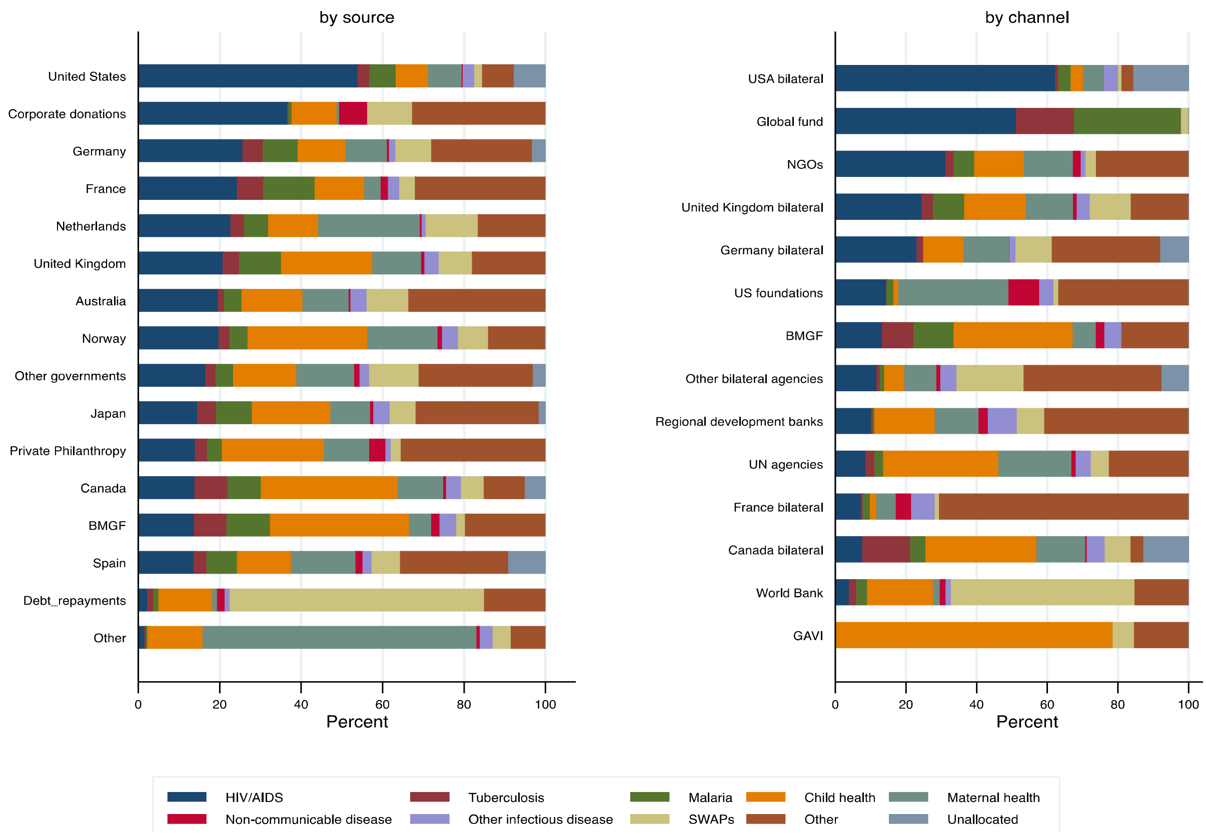
resources to sector-wide approaches and health system support, whereas bilateral donors put much less weight on financing capacity development in the health system.

UN agencies including the WHO, UNICEF, UNAIDS, and the UNDP focus most health interventions on child and maternal health care and smaller shares on the control of HIV/AIDS and other infectious diseases (MDG 4-6) either by financing other organizations or directly implementing activities (McCoy, Chand, and Sridhar 2009). They contribute to policy formulation, standard setting and the promotion of international health agreements. They also provide government assistance in strengthening health services and implement disease-specific campaigns and programs.[34] Likewise, public-private partnerships and private philanthropy that gained increasing influence over the last two decades (Figure 1) mainly adopt a (medico-technical) vertical health approach. In particular, the Bill and Melinda Gates Foundation (BMGF), the Global Fund and GAVI Alliance focused their spending on targeting child and maternal health care, and infectious disease control (MDG 4-6).[35]

[34] More specifically, UN organizations contribute to policy formulation, standard setting and technical assistance in their respective area of expertise. The UN also finances major international conferences relating to health that generate resolutions and declarations, which in turn influence policy formulation and implementation at the national level. The WHO provides central services including promotion of international health agreements, standardization of vaccines and pharmaceuticals, promotion of research on public health and dissemination through expert meetings and technical reports, coordination of international health projects and government assistance in strengthening health services (Birn et al. 2009, 73). The WHO also promotes vertical, disease-specific campaigns as well as immunization programs. However, the WHO has repeatedly stimulated the debate on shifting the focus of international health interventions from a disease-specific to an integrated horizontal approach in order to tackle the underlying economic, social and political causes of disease.

[35] Specifically, the BMGF supports vaccine development against HIV/AIDS, polio and malaria and finances interventions for family planning, nutrition, and maternal health. The GAVI Alliance mainly focuses its funding on child and maternal health allocating about 80 % of its resources to vaccination of children. The Global Fund concentrated its resources on the fight against HIV/AIDS, malaria and other infectious diseases. In 2015 the Global Fund disbursed about 52 % on HIV/AIDS and anti-retroviral therapy, 28 % on malaria prevention and the distribution of insecticide-treated bed nets, and 18 % on tuberculosis treatment. HIV/AIDS related activities funded by the Global Fund include HIV/AIDS treatment (28 %), HIV/AIDS health system support (33 %) and HIV/AIDS prevention (17 percent). In sum, the resources provided by the Global Fund amount to about 45 % of all health financing to combat tuberculosis, 40 % of all malaria control funding and about 15 % of all HIV/AIDS control financing.

Figure 3: Health focus areas by source and channel of DAH (2009-2011)



Notes: 'Unallocated' refers to DAH for which no health focus area information is available. 'Other' refers to DAH which is allocated to health focus areas others than those indicated. Figures show average DAH from 2009-2011 allocated by health focus areas; source: IHME (2016a).

Shifting paradigms in the global development agenda have simultaneously opened up new spaces for NGOs in providing public services and expanding political participation. Accordingly, NGOs are now more numerous and receive larger shares of development assistance than ever before (Figure 1). NGOs receive funding from different sources including self-support and private donations, foundations and corporate interests, bi- and multilateral aid agencies, and governments of developing countries (Figure A 6).[36] They implement a variety of activities to deliver essential public services such as primary education, health care, clean water supply, sanitation, solid waste management and energy supply as well as providing microfinance institutions and delivering humanitarian assistance.[37] Moreover, as

[36] Due to their heterogeneity NGOs are broadly defined as non-profit, voluntary organizations primarily focused on humanitarian objectives operating on a local, national or international level (Kang 2010, 223-224). Local level NGOs are referred to as grassroots organizations or community-based organizations (CBO), whereas (national) Southern NGOs are created and work in the Global South, whereas international NGOs (INGO) are formed in the Global North, but work in developing countries. Based on their closeness to governments NGOs can also be classified into governmental NGOs (GONGO) and quasi-governmental NGOs (QUANGO). Often, local, national and international NGOs cooperate through exchange of funding resources, technical assistance and joint program implementation. For instance INGOs can more efficiently mobilize local communities by relying on CBOs, which are closer to local culture (Kang 2010, 224).

[37] Likewise, NGOs have been claimed to play a major role in mobilizing political participation, empowering marginalized groups and in the provision of resources to membership-based organizations (Boulding 2014, 45; Riddell 2013). At the same time their effectiveness has been questioned on several grounds. On the one hand the narrow focus of NGOs on service delivery (outputs instead of wider impacts) has been criticized because it does not address the deep determinants of power imbalances and inequality and prevents transformative change (Kang 2010, 224). This incapacity has been attributed to NGOs weak

intermediary and implementing institutions, NGOs are also active in training health professionals, providing technical assistance, carrying out research to raise awareness and provoke political response, as well as promoting public health campaigns and advocacy work. Hence, civil society organizations make a wider development impact beyond the direct outputs of projects assisting marginalized groups (such as people with disabilities and those from ethnic minorities) through policy changes that result from advocacy and lobbying work as well as through monitoring of government services (Riddell 2013: 378-381). In summary, donors allocated an increasing amount of total development assistance to the health sectors of developing countries. Child- and maternal health received the largest share of health funding. Despite increased support for (horizontal) health system strengthening programs, many bilateral agencies, as well as public-private partnerships and private philanthropies, apply vertical approaches that pay little attention to the importance of cultural and political factors.

2.2 Linking health systems, health aid, and population health

The Paris Declaration on Aid Effectiveness has moved health system strengthening center-stage and called donors to use national health systems to deliver development assistance and support national health priorities. Hence, health aid helps health systems to achieve their fundamental objectives, that is, improving the health of the population they serve, responding to people's expectations and providing protection against the costs of ill-health (WHO 2000, 8).[38] To achieve these objectives, health aid supports health systems to fulfill their key functions including collecting revenues and purchase health services (*financing*); investing in people, buildings, and equipment to ensure adequate skills of service providers (*training*) and to avoid a lack of drugs and equipment; regulating the health system involving oversight of all other functions (*stewardship*), and *delivering* health services (WHO 2000, 25).[39] To put it differently, health service providers deliver safe and effective health services to address individuals' and communities' needs, while the whole health system ensures that frontline workers are adequately trained and informed, financed and supplied, inspired and led (WHO 2000, 25). Development assistance for health (DAH) aims at increasing health systems' capacity to exercise these functions effectively in especially if

civil society roots and the external pressure from donors to show tangible and measurable short-term results (Riddell 2013, 379). Equally, risk-averseness among donors and the demand for measurable outcomes constrains innovative NGO programs and activities favoring solutions that can be extrapolated from best practices and implemented elsewhere regardless of context (Banks, Hulme, and Edwards 2015, 712). NGOs have also been criticized for increasing fragmentation of health service providers, draining resources and staff away from health systems and being more accountable to donors than to beneficiaries which risks that donor priorities, for example on HIV/AIDS control, oust priorities of local communities.

[38] The WHO defines a health system as '*(i) all the activities whose primary purpose is to promote, restore and/or maintain health; (ii) the people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population they serve, while responding to people's legitimate expectations and protecting them against the cost of ill-health through a variety of activities whose primary intent is to improve health*' (WHO 2016f).

[39] Specifically, health financing aims at raising and allocating funds and establishing adequate approaches to health insurance. Likewise, health financing capacity enables governments to train staff and to provide equitable access to medical products, vaccines and technologies that are safe and of appropriate quality (Skolnik 2012, 89; Schieber et al. 2006). Stewardship links all other functions and aims at ensuring accountability through 'good governance', policy making and rule enforcement, as well as monitoring the quality of services delivered by public and private healthcare providers.

governments' health financing capacity is constrained by low economic performance, incapable tax administration and a lack of reliable data about health investments and expenditures.[40]

The main function of health financing is the purchase of health services delivered through facilities that are owned and operated by the public sector or through purchasing health services from the private for-profit or private not-for-profit (NGO) sector.[41] Besides directly purchasing health services, development assistance for health (DAH) aims at improving the financing capacities of recipient governments by developing administrative capacities, improving data availability, and building management capacities of the ministry of health to reduce inefficient health spending (Skolnik 2012, 102).

Concerning the quality and coverage of health service delivery development assistance for health also targets shortages of skilled health personnel including doctors, nurses, midwives, and health workers.[42] The shortage of health personnel is particularly severe in developing countries such as Liberia, where just 51 physicians served 4.3 million people, or in Nigeria, where about 380 trained nurses care for a population of over 140 million (Turner et al. 2016, 7).[43] Besides quantity, Nolan et al. (2001) describe that more than half of seriously ill children in 21 hospitals across seven countries in Asia and Africa were undertreated or inappropriately treated. Likewise, a recent study of the quality of pediatric care in Ugandan hospitals finds that about 62 percent of cases with suspected anemia and 86 percent of cases with diarrhea received inappropriate treatment (Sears et al. 2015).[44] The lack of skilled health personnel is caused by several factors, including low salaries for health professionals, low investments in health care facilities and absent training opportunities especially in countries with poor economic performance and successive fiscal difficulties. Likewise, the health workforce is also influenced by international migration of skilled health workers from the developing to developed countries (brain drain), which provide higher compensation, better workplace safety, and better career development opportunities (Anyangwe and Mtonga 2007). Moreover, in many countries, health workers are mostly located in urban areas to the detriment of rural areas, while many public sector health workers supplement their incomes by simultaneously treating private paying patients (Anyangwe and Mtonga 2007, 98). To-

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[40] Sources of revenue collection include public sources, private sources and external assistance (DAH) each bringing about different issues. In fact, revenue collection in many low-income countries heavily depends on private, out-of-pocket expenditures and external sources of revenue collection including national treasuries of donor countries, and private philanthropies (Schieber et al. 2006, 229). Private financing through user fees may be an effective way to provide access to health care, but it creates barriers to assessing health care services by the poor if health costs are disproportionately high. In developing countries high out-of-pocket expenditures on health are a leading cause of families falling below the poverty line and selling their assets to pay for medical services (Skolnik 2012, 100).

[41] Contracting out service provision from the public sector to the private-for-profit or NGO sector may improve health service delivery. Even though the evidence is scarce, there is some indication that contracting out increases access to health services (Liu et al. 2008; Chopra et al. 2012).

[42] Quality of health care is defined as '*the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.*' (IOM 1999, 22).

[43] Chen et al. (2004) estimate that the minimum level of health workforce density to achieve the MDGs is at 2.5 health workers per 1,000 people.

[44] Similarly, more than 80 % of cases with suspected malaria and illnesses requiring antibiotics received adequate treatment. Beracochea et al. (1995) demonstrate that health workers' treatment knowledge of common childhood illnesses, such as malaria, malnutrition, diarrhea, and acute respiratory diseases, in rural Papua New Guinea was often incorrect, with inappropriate or insufficient drugs prescribed.

gether these causes amount to an estimated global shortage of more than four million workers, while estimates suggest that Sub-Saharan Africa alone needs about 1 million additional health workers (Chen et al. 2004, 1985).

Consequently, to improve the capacities of the health workforce donors have focused on financing health training, professional oversight and supportive supervision (Wogi et al. 2014; Miller et al. 2016). In particular, human resource development for health amounts to about 50.4 percent of international health funding over the 1990-2010 period.[45] Increasing the amount of human resources for health requires the training of a vast number of health workers with basic clinical skills—including nurses, midwives, and community health workers—instead of focusing on the training of few specialized medical doctors. A common approach for improving health care coverage, which has been experienced all over the world for several decades, is to make more efficient use of the human resources available by *shifting tasks* from professional health personnel to less specialized health workers (WHO 2010; WHO 2008). Community health workers are trained to some extent but do not possess a formal professional certificate while many also live and work in the community.[46] Community health workers can provide a wide range of activities, including health-related counseling as well as preventive and curative health services outside of formal health facilities, which may effectively improve population health (Lewin et al. 2010; Kumar et al. 2014). However, task shifting also implies that donors shift their priorities from funding observable outputs (drugs or services as e.g., maternal deliveries) towards funding human resource development for health including the provision of adequate remuneration for health workers and supportive supervision.[47] Likewise, Haines et al. (2007, 2122) emphasize the role of community involvement since health workers are more responsive to communities of which they are a member or by which they are selected.

Despite relaxing budget constraints, providing technical assistance and reducing shortages of health personnel the literature has identified different causes that undermine the effectiveness of external funding including i) macroeconomic, ii) institutional and iii) technical constraints as well as iv) high transaction costs resulting from donor fragmentation (De Renzio 2005; Klingebiel 2010).[48] i) Specifically, foreign aid may induce adverse macroeconomic effects including 'Dutch disease' effects, higher debt burden, increased inflation and interest rates due to the volatility of aid, as well as labor market pressure by rising demand for skilled labor.[49] ii) Institutional constraints are created by governments' incapacity to gen-

[45] Estimates are based on the authors calculation's using AidData (Tierney et al. 2011). The share of technical cooperation continuously decreased over time to about 39.9 % in 2005-2010.

[46] Community health workers encompass a broad range of health workers, paid and unpaid, professional and lay, experienced and inexperienced, including traditional birth attendants, village health workers, peer supporters, community volunteers and health extension workers (WHO 2008). Surveying community health programs in twenty Eastern and Southern African countries Kumar et al. (2014: v) report that in general community health workers have a minimum level of education (varying from completion of primary school to high school diploma) and are more than 18 years old. They usually resident in and/or are elected by the local community.

[47] Kumar et al. (2014, 16) reports that about half of all community health workers in Eastern and Southern African countries are unpaid, including one-third of full-time community health workers.

[48] In especially recipient countries' capacity to absorb large amounts of external funding has been argued to undermine the effectiveness of aid beyond a certain level of foreign assistance (Chenery and Strout 1966; Rosenstein-Rodan 1961; Chauvet and Guillaumont 2004; Glennie and Sumner 2014).

[49] 'Dutch disease' effects cause an appreciation of the exchange rate and harm the export sector.

erate strategies, policies and public expenditure programs to transform higher foreign aid into development outcomes without increasing wastage or fuelling corruption (De Renzio 2005, 2). Examples include weak and overly centralized systems for planning and management, weak incentive structures to use inputs efficiently and respond to user needs, weak policies and systems for drug supply, or inadequate regulation of pharmaceuticals (Mangham and Hanson 2010, 88). iii) Technical constraints involve limited capacities of health workers, a lack of infrastructure and equipment, inadequate drugs and medical supply, as well as shortages in qualified human capital in related sectors such as management and administration. Against this backdrop, a World Bank report estimated that about half of the funds disbursed for health efforts in Sub-Saharan Africa never reach clinics and hospitals because of severe constraints in the health delivery system, including payments to ghost employees, costs for transport and warehousing, the siphoning off of drugs to the black market, and the sale of counterfeit medicines (Mangham and Hanson 2010: 88; Garrett 2007). iv) Donor-induced transaction costs result mainly from donor fragmentation, low predictability of aid flows and high aid dependency. Specifically, the large number of aid channels causes transaction costs because they impede coordination and alignment of donor interventions with country priorities. For instance, 76 percent of all health projects in the 1990-2010 period had a funding size below 500,000 US$, 21 percent were below 10 million US$, and only three percent had a funding size above 10 million US$.[50] Hence, even though smaller projects are necessary to pilot innovative approaches, many small-scale activities are likely to increase transaction costs for governments. Moreover, the issue of predictability of health funding is particularly important given the significant share of recurrent expenses including staff salaries and long-term drug therapies for chronic diseases. Additionally, the majority of aid agencies continues to commit grants to countries for short-term periods, to support the creation of parallel structures—project implementation units and NGO implementation of projects—and to deliver short-term technical assistance instead of long-term institution building (Lane and Glassman 2007, 941). Therefore, recipient countries depending on single donors are particularly vulnerable to changes in donor behavior including commitments not being disbursed or delays in disbursement of funds to health ministries.

To sum up, development assistance for health (DAH) improves the quality of health service delivery through capacity building for revenue collection, health workforce training, as well as strengthening health sector regulation and law enforcement. However, the effectiveness of external health financing is restricted by macroeconomic, institutional and technical constraints, as well as high transaction costs and donor behavior.[51] To assess the effectiveness of health aid, the next section reviews the empirical evidence from the macro-comparative literature on health aid effectiveness.

[50] Estimates are based on the author's calculations using AidData (Tierney et al. 2011).

[51] The latter has been subject to several reforms of the international aid system. An overall evaluation of the impacts of the Paris Declaration on the effectiveness of foreign aid concludes that country ownership has advanced farthest, with alignment and harmonization progressing more unevenly, and managing for development results and mutual accountability advancing least. As a result, the Declaration has contributed to a better quality of aid, to more transparent and effective partnerships, and to rising volumes of aid (Wood et al. 2011: xv).

2.3 Evidence on health aid effectiveness

This section summarizes the macro-comparative literature on the effects of health aid on population health. Notably, there are far less cross-national studies on the effectiveness of aid to the health sector than on development assistance in general and its contribution to economic development. The lack of comprehensive, robust and reliable data has been recognized as a major problem in the debate on health impact, effectiveness, and efficiency of external funding (Jongh et al. 2014). The results of the relatively few comparative studies are somewhat mixed although most indicate a positive relationship.[52] While some studies describe impacts on single disease domains such as malaria mortality or HIV mortality, the majority of studies analyze the effect of overall health aid on (all-cause) adult mortality, infant- or child mortality and life expectancy. Technically, most studies apply panel estimation methods that account for the endogeneity of foreign aid.[53]

A recent study by Arndt, Jones, and Tarp (2015) provides compelling evidence from a cross-national time-series study of 78 developing countries over the period 1970-2007 that foreign aid has significantly improved population health. The authors demonstrate that an annual average aid inflow of five percent of GDP is expected to raise life expectancy at birth by 2.4 years and reduced infant mortality by 14 deaths per 1,000 live births. Likewise, applying dynamic panel data estimation (GMM) Afridi and Ventelou (2013) demonstrate that–based on evidence from 113 developing countries over the period 1995-2006–health aid significantly reduces adult mortality (per 1000 of the population at midyear). Notably, the results are robust to the inclusion of non-health aid and government health expenditures as additional predictors. Chauvet, Gubert, and Mesplé-Somps (2013) add further evidence to the negative effect of health aid on child and infant mortality based on evidence from 84 developing countries over the period 1992-2004. Remarkably, the finding is robust even after accounting for the overall effects of remittances and non-health aid on population health.[54]

Furthermore, Hsiao and Emdin (2014) report evidence from a dynamic panel data analysis of 120 countries over the period 1990-2010 and find that health aid spent to combat malaria, HIV/AIDS and tuberculosis has significantly reduced malaria- and HIV-related mortality, but not tuberculosis-related mortality. The effectiveness of malaria control interventions is further supported by two studies demonstrating that health aid targeted at malaria indeed increases household coverage with insecticide-treated nets (ITN) and ITN use (Flaxman et al. 2010; Akachi and Atun 2011). Simultaneously, higher ITN coverage is significantly associated with lower child mortality (Akachi and Atun 2011).

Mishra and Newhouse (2009) also find a positive direct effect of health aid on population health for 118 recipient countries over the period 1973-2004. Their results from dynamic

[52] For a comprehensive overview of foreign aid and human development outcomes see (Glennie and Sumner 2014; Alvarez and Acharya 2012; Jongh et al. 2014).

[53] Most authors use either health aid commitments from the Creditor Reporting System (CRS) of the OECD or disbursement data from the Institute of Health Metrics (IHME).

[54] Nevertheless, the effect of health aid becomes insignificant in an intra-country assessment based on quintile data for a smaller sample of 46 developing countries. Though, the authors note, that this may be the result of using weak instruments for health aid disaggregated by quintile (Chauvet, Gubert, and Mesplé-Somps 2013, 814).

panel data estimation suggest that doubling per capita health aid is associated with a two percent reduction in infant mortality. In a more recent study, Bendavid and Bhattacharya (2014) analyzed 140 health aid recipients between 1974 and 2010 and found that development assistance to the health sector is associated with increasing life expectancy and declining under-five mortality. The authors also show that the identified relationships have strengthened over time, being strongest over the last decade.

On the other hand, applying (static) panel data estimation for a global sample over the period 1973-2004 Williamson (2008) finds that health aid is ineffective at improving child mortality and other health-related indicators. Likewise, based on a sample of 84 high-mortality countries between 1975-2005 Wilson (2011) performs a variety of statistical analyses but finds no indication that health aid reduces mortality. However, restricting the set of observations to cases of high mortality—excluding those cases with low mortality rates—represents selection on the dependent variable and risks selection bias (King, Keohane and Verba 1995, 126-129). Therefore, the results should be interpreted with caution. Though, these findings resonate with a more recent study from Kizhakethalackal, Mukherjee, and Alvi (2013), which applies quantile regression and hence sheds further light on the effect of health aid at varying levels of mortality. Their analysis of 100 countries over the 1974-2010 period suggests that health aid reduces infant mortality only at lower quantiles of mortality (below the median), and turns insignificant at higher quantiles. Based on these findings the authors conclude that countries with relatively low or moderate levels of infant mortality benefit from health-aid, whereas high-mortality countries do not.[55] Likewise, Mukherjee and Kizhakethalackal (2013) find that the effect of health aid depends on the level of education (or awareness), but find no significant direct effect of DAH on infant mortality after applying semi-parametric regression to a sample of 110 countries between 1974-2005. Accordingly, the authors interpret their findings as evidence that once education creates sufficient awareness on issues related to health care and nutrition, and empowers those that foreign aid is supposed to serve health aid has a significant negative effect on infant mortality (which increases in strength at higher levels of schooling).

[55] Due to data availability issues, earlier studies on the effects of aid on population health used aggregated aid flows. Likewise, Gomanee et al. (2005) analyze the effect of total aid (in % of GDP) on human development and find that total aid contributes to reducing infant mortality and improving the HDI, in particular in countries with lower levels of human development. Equally, Masud and Yontcheva (2005) analyze the effect of total NGO aid (per capita) and total bilateral aid (per capita) and find a significant negative effect of aid on infant mortality.

Table 1: Overview of the econometric literature on health aid effectiveness

Year	Authors	Countries	Period	Method	Outcome variable	Aid variable	Control variables	Findings
2011	(Wilson 2011)	84 high mortality countries (IMR>=50)	1975-2005 (5-year periods)	OLS; FE; RE; LDV; RCM; GMM	log(IMR); log(U5M); log(LIFE)	log(cumulative DAHpc)	log(water aid pc); log(non-DAHpc); log(GDPpc); log(Population); democracy (polity2); time (trend)	DAH has no (unconditional) effect on mortality, and the effect of health aid is not conditional on the existence of democratic institutions.
2013	(Mukherjee and Kizhakethalackal 2013)	110	1974-2005 (4-year periods)	semi-parametric regression (IV-estimation)	IMR	DAHpc	primary school completion rate; number of physicians; GDPpc; period effects; regional dummies	DAH has no direct effect on IMR. However, health aid reduces IMR if a basic level of education is achieved (and increases at higher levels of schooling).
2013	(Kizhakethalackal, Mukherjee, and Alvi 2013)	100	1974-2005 (4-year periods)	quantile regression (IV-estimation)	IMR	DAHpc	primary school completion rate; number of physicians; GDPpc; regional dummies	DAH reduces IMR only at lower quantiles of mortality (< median); at higher quantiles, DAH turns insignificant
2008	(Williamson 2008)	208	1973-2004 (5-year periods)	FE (IV-estimation)	LIFE; IMR; AM; vaccine coverage (DPT, measles)	DAHpc	number of physicians; GDPpc; economic freedom (Fraser Index); political freedom (FH); population (% urban)	DAH has no effect on population health.
2009	(Mishra and Newhouse 2009)	118	1973-2004 (5-year periods)	LDV; GMM	log (IMR); log(LIFE)	log(DAHpc); DAHpc; log (DAH per GDP)[56]	log(GDPpc); log(population); log(fertility rate); war dummy; HIV/AIDS prevalence; institutional quality (CPIA); period effects	DAH reduces infant mortality.
2011	(Akachi and Atun 2011)	34 (from SSA)	2002-2008	FE; RE; GMM	estimated lives saved from malaria-related deaths due to ITN coverage; U5M	number of ITNs; DAH for malaria	access to improved water; vaccine coverage (DTP3; Measles; Hib; ORS); antiretroviral therapy (ART); ITN/IRS coverage	DAH increases ITN coverage. Moreover, increased ITNs/IRS coverage significantly reduces child mortality.

[56] Authors also report results i) after truncating log(DAH) below 25cents $ to avoid placing too much weight on small changes at low levels of aid; ii) no truncation, or iii) lower truncation thresholds.

Table 1 continued: Overview of the econometric literature on health aid effectiveness

Year	Authors	Countries	Period	Method	Outcome variable	Aid variable	Control variables	Findings
2013	(Afridi and Ventelou 2013)	113	1995-2006 (T=12)	GMM	AM	log DAHpc	government health expenditures; private health expenditures; GDPpc	Health aid reduces adult mortality.
2013	(Chauvet, Gubert, and Mesplé-Somps 2013)	84	1992-2004 (3-year periods)	FE; 2SLS	IMR; U5M	DAHpc	GDPpc; number of physicians; female educational achievement; remittances per capita; medical brain drain (expatriation rate of physicians); non-DAHpc; period effects	Health aid and remittances reduce child mortality. Medical brain drain increases child mortality.
2014	(Bendavid and Bhattacharya 2014)	140	1974-2010	FE	change in U5M; change in LIFE	log(DAH); DAHpc	GDPpc; population (% urban); total fertility rate	DAH is associated with higher life expectancy and a faster decline in the probability of under-five mortality.

2014	(Hsiao and Emdin 2014)	120	1990-2010 (3-year periods)	FE;
				GMM
					log(malaria mortality);
					log(TB mortality);
					log(HIV mortality)
						log(DAH for malaria);
						log(DAH for TB);
						log(DAH for HIV);
							governance index (average of all 6);
							log(population); (rural population);
							log(population density);
							log(GDPpc);
							access to sanitation;
							fertility;
							primary school enrollment;
							natural disasters;
							health expenditures;
							vaccine coverage (DTP, measles)
								DAH spent on malaria and HIV reduces malaria- and HIV mortality.
								
								DAH spent on tuberculosis was not significantly associated with reductions in TB mortality.

2014	(Thomas 2014)	82	1990-2011	FE; 2SLS	annual number of new HIV-infections (adults and children)	log(DAH for HIV)	GDPpc; public health expenditures in % of total; population size; armed conflict-dummy; PolityIV; HIV-prevalence; conflict dummy	DAH decreases the number of new HIV infections of adults, but not of children.
2015	(Arndt, Jones, and Tarp 2015)	75	1970-2006 (T=1)	OLS; LIML; IPWLS	LIFE; IMR; U5M	ODA per GDP; ODApc	GDPpc; trade policy index; geography; oil producer; landlocked; ethnic fractionalization; primary school enrollment rate; coastal population density; malaria/HIV prevalence; civil liberties	Aid significantly increases LIFE expectancy and reduces infant mortality.

Notes: IMR = infant mortality rate (per 1000 live births); U5M = under-5-mortality (per 1000 live births); LIFE = life expectancy at birth; AM = Adult mortality (per 1000 of the population at midyear); LIML = limited information maximum likelihood estimator; IPWLS = inverse probability weighted least squares (IPWLS) estimator; ITN = insecticide-treated nets; IRS = indoor residual spraying; Governance (CC; GE; RL; PS) = corruption control (CC), government effectiveness (GE), rule of law (RL), political stability (PS).

Analyzing the effectiveness of HIV/AIDS control measures Bendavid and Bhattacharya (2009) find evidence that one of the largest development funds–PEPFAR–has been effective in reducing HIV-related deaths between 2004 and 2007 in 12 Sub-Saharan-African countries.[57] Likewise, comparing (all-cause) adult mortality rates Bendavid et al. (2012) provide additional evidence that mortality rates declined more in countries funded by PEPFAR compared to non-treatment countries. Likewise, Thomas (2014) provides cross-national evidence from 82 countries over the period 1990-2011 showing that DAH significantly decreases the number of new HIV infections in adults. By contrast, Duber et al. (2010) analyzed whether disease-specific, vertical funding for HIV/AIDS control via PEPFAR has spill-over effects on population health in general and hence is positively associated with broader, non-HIV-related health outcomes. By comparing countries receiving PEPFAR funding and non-treatment countries before and after the intervention, the authors find no significant difference in the fractional change among 13 of 14 health indicators over the period of study. Correspondingly, these findings also speak to the question whether vertical health funding contributes to health outcomes that are not explicitly targeted.

In conclusion, even though there is some convergence on the positive effect of health aid on population health most studies follow a medico-technical health approach and pay little attention to the underlying incentive structure and accountability relationships between governments, service providers and end users that are likely to influence the effect of health aid on population health. In particular, the empirical studies reviewed in Table 1 model population health mainly as the result of economic development and education, population size and structure, as well as health system outputs such as the number of physicians or government health expenditures. However, only a few number of studies account for institutions of democratic governance that have been identified to be important determinants of population health (Norris 2012, 142-154). In fact, only two studies have tested whether the effect of health aid on population health is conditional on democratic institutions or governments' administrative capacity (Wilson 2011; Mishra and Newhouse 2009). Moreover, none of the studies account for cultural factors which are equally important determinants of population health, in particular, in countries that lack strong administrative capacities (Story 2013; Knowles and Owen 2010; Folland, Rocco, and Scheffler 2014; Folland 2014). Given the emerging consensus in the aid effectiveness debate on the importance of institutions, there is a lack of systematic research on the influence of democratic governance and the impact of cultural determinants on the effectiveness of (health) aid. This study attempts to close this gap and contribute to a better understanding of the role of institutional factors for health aid effectiveness. Therefore, the next chapter outlines how cultural and political factors shape accountability in the delivery of foreign aid.

[57] Though, HIV-prevalence and the number of people living with HIV were not significantly different from non-treatment countries.

3 Accountability, social capital, and aid effectiveness

This chapter establishes the theoretical framework to assess the role of accountability in health aid effectiveness. Therefore, the first section describes and defines the concept of accountability and illustrates the rise of the concept in development discourse. Drawing on principal-agent theory the next section argues that accountability in public service provision is determined by effective performance oversight in the form of bottom-up processes of demand from service users, and formal processes of top-down monitoring and horizontal oversight arrangements (supply). Responding to criticism of not reflecting political realities in many recipient countries the chapter lays out the preconditions for accountability in public service delivery.[58] Against this backdrop, the second part reviews the empirical (aid effectiveness) literature on accountability in service delivery with special focus on the health sector. Based on the existing literature there is strong evidence that citizens exercising pressure on service providers and public officials influence the effectiveness of development interventions. Building upon social capital theory the third part establishes the theoretical foundation linking the pre-conditions of accountability with better performance in public service delivery. Therefore the section outlines the concepts of social capital and civic engagement and contrasts the empirical evidence from the society-centered and institution-centered approach to social capital. Bringing together the evidence from different strands of the literature the fourth part develops a model from which to draw hypotheses that can be empirically tested.

3.1 Accountability for public service delivery

The concept of accountability

Accountability derives its main justification from its contribution to responsiveness of public administration to the needs of those they are supposed to serve. *'A responsive government is one that takes into account the preferences of the citizens and acts according to these preferences*' (Markowski 2011, 2302). Responsiveness ultimately depends on the accountability relationships between policymakers, service providers, and citizens.[59] Generally speaking, accountability serves three different purposes: i) to control the abuse of public resources; ii) to assure that resources are used according to legal procedures, professional standards, and

[58] On the demand side, accountability requires motivated and capable citizens having access to information about service delivery issues and the capacity to overcome collective action problems. On the supply side, states' organizational and decision-making capacities, the legal, institutional framework and the devolution of authority to communities create further incentives that shape citizens' participation in accountability action.

[59] Responsiveness is a multi-dimensional concept, which is closely related to accountability. As Ferejohn (1999) puts it, *'Accountability is (...) a property of institutional structures, whereas responsiveness is a consequence of interaction within such structures. (...) Responsiveness is a measure of how much accountability an institutional infrastructure permits'* (Ferejohn 1999, 131). Markowski (2011, 2302) distinguishes between policy responsiveness, service responsiveness, allocation responsiveness and symbolic responsiveness. Most commonly, responsiveness refers to *policy responsiveness*, which concerns the congruence between the electorate's stance on a policy issue and the policy orientation of the representative and to his or her decision concerning its implementation. While service and allocation responsiveness refer to the public and private goods a representative can secure for the public or specific interests, symbolic responsiveness is concerned with the way a politician behaves, that is, his or her integrity (Markowski 2011, 2303).

societal values; and iii) to improve service delivery through continuous feedback and learning (Aucoin and Heintzman 2000).[60] According to Keohane and Grant (2005) accountability *'implies that some actors have the right to hold other actors to a set of standards, to judge whether they have fulfilled their responsibilities in light of these standards, and to impose sanctions if they determine that these responsibilities have not been met'* (Keohane and Grant 2005, 29). By this definition, two conceptual distinctions can be made. First, accountability is a relationship between two parties, the accountor (*agent*) who answers and is held accountable and the accountee, that is, the account holder (*principal*). Second, accountability involves the obligation to *answer* for the performance of duties (*answerability*) as well as the availability of sanctions for illegal or inappropriate actions (*enforceability*). Answerability implies to provide information about *what* was done and explanations *why* it was done (Brinkerhoff 2001, 1-2). (Strong) Accountability requires not only answerability but also the availability of sanctions. The ability of the account holder to punish the accountable agent for failures may involve legal, political or social sanctions as well as rewards. For instance, sanctions may include indictment (legal), voting out of office (political) or loss of reputation (social), whereas rewards may include monetary incentives (legal), reappointment (political) or increase in reputation (social) (Arugay 2016, 8). In the context of health service delivery accountability is primarily concerned with financial, performance and political accountability (Brinkerhoff 2003, 5-10). *Financial accountability* concerns tracking and reporting on allocation, disbursement, and utilization of financial resources to oversight and control line ministries and other executing agencies including public procurement and contracting. *Performance accountability* refers to achievements in light of agreed-upon performance targets including public sector management reform, performance measurement, and evaluation, and service delivery improvements. *Political accountability* takes into account the political process in particular elections and administrative procedures to implement policies that respond to citizens' demands.

Besides concerns about *who* is accountable *to whom,* accountability relationships can also be classified according to the type of issue they investigate (*for what*) and the procedures, they follow (*how*) (Mulgan 2011). Depending on whether the accountor and the account holder are located *within* or *outside* the state accountability relationships can be classified into *horizontal accountability* and *vertical accountability* (O'Donnell 1998). Horizontal accountability (state-centered accountability) refers to the capacity of actors *within* the state to check abuses by other public agencies and branches of government. O'Donnell (1998, 117) defines horizontal accountability as *'existence of state agencies that are legally empowered—and factually willing and able—to take actions ranging from routine oversight to criminal sanctions or impeachment in relation to possibly unlawful actions or omissions by other agents or agencies of the state.'* State-centered accountability involves a large variety of forms including mutual checks and balances between the executive, judiciary, and legislature as well as independent oversight agencies, such as anti-corruption commissions, audit offices, ombudsmen or electoral com-

[60] To put it differently, while public officials have the duty to be responsive to citizens' demands, they have to be accountable for their actions to their superiors, who in turn account to the legislature, the executive and other oversight institutions (Blair 2000, 27).

missions seeking to monitor government action on behalf of the legislature.[61] For instance, the ministry of health (MOH) is the central actor in holding health service providers accountable by exercising oversight over public and private health-care providers through regulatory monitoring and enforcement, purchasing and contracting entities as well as policy-making and regulation (Brinkerhoff 2003, 12). This broad oversight mandate is usually backed up by the ability to impose sanctions such as the right to award or abrogate contracts.

Vertical accountability refers to overseeing actors located *outside* the state who seek to hold civil servants to account through periodic elections and–in between–through advocacy and lobbying activities by citizens, the media, civil society organizations and the private sector (Goetz and Jenkins 2005, 11). Vertical accountability can be divided into *electoral accountability* and *social accountability* (Peruzzotti 2011, 54). The former refers to the controlling role of the electorate through voting which traditionally has been at the center of democratic theory. The latter has to do with elite-challenging action of civil society demanding explanations, channeling citizen preferences into decision-making and activating mechanisms of legal accountability.[62]

Accountability in development discourse

Accountability has been part of development discourse since the collapse of class-based political movements after 1989 and moved center-stage in the context of public sector management reforms (good governance agenda), and the international aid effectiveness agenda seeking to make recipient governments more accountable to citizens rather than to donors (O'Neil, Foresti and Hudson 2007, 13-14; Brett 2003; O'Neil, Foresti and Hudson 2007, 13-14; Odugbemi and Lee 2011c; Andrews 2013; Goetz and Jenkins 2002, 36; Robinson 2015). The rise of the concept of accountability in service delivery is related to the appearance of the World Development Report 2004 (World Bank 2003) which set a path-breaking global research agenda (Fox 2015) framing service delivery problems as accountability gaps. According to the underlying principal-agent model service providers can be held accountable through citizens exercising demand either *indirectly* via policymakers and public officials through to frontline providers ('long route' of accountability) or *directly* influencing service providers ('short route' of accountability) (World Bank 2003).[63] The concept draws on Alfred

[61] Audit offices ('auditors general' or 'comptrollers general') assess financial compliance as well as the efficiency and effectiveness of government programs and contribute to corruption control and lowers bureaucratic inefficiency. Ombudsmen represent the interest of the public by investigating citizens' complaints of rights violations. The legislature plays a vital role regarding political accountability, which implies that the minister provides answers and explain administrative decisions, provide an accounting of the resources used to finance activities; investigate and remedy deficiencies and problems and if required resign (Brinkerhoff 2003, 12).

[62] Electoral accountability obviously requires that institutions of representative democracy be in place, while social accountability implies some sort of coordinated or collective action by citizens.

[63] A public official is anyone who holds a legislative, administrative, or judicial position, whether appointed or elected. This definition applies to individuals who hold such positions or exercise a public function including for a public agency (as for instance government ministers and civil servants, local government members and officials, the police and other security agencies, the armed forces) or a public enterprise (e.g., a state-owned enterprise) as well as any official or agent of a public international organization (DAC 2006).

Hirschman's model of exit, voice, and loyalty (Hirschman 1970).[64] Specifically, accountability in public service delivery depends on the extent to which service users have access to alternative suppliers of a given public service (*exit*), and the degree to which they can influence the final outcome of a service through some form of participation or articulation of protest (*voice*) (Paul 1992, 1047-48).

In aid recipient countries, citizen *voice* becomes salient to influence public service delivery because development assistance usually responds to an undersupply of goods and services due to market failure, which implies that *exit* options are limited. Citizens' direct participation (*voice*) in development projects involves a variety of tasks including project design and planning, construction as well as operation and maintenance.[65] Moreover, citizens' participation in monitoring of project implementation and project evaluation may provide opportunities for end users to speak directly to implementing agencies or governmental oversight representatives to hold service providers accountable (Winters 2010, 221). However, if aid projects lack institutionalized mechanisms of participation beneficiaries may exercise accountability over implementing agencies *indirectly* through national governments, threatening electoral sanctions to penalize poor health service delivery (Winters 2010, 222).[66]

The Washington Consensus encouraged donors to increase citizens' choice (exit) by minimizing the role of the state and strengthening civil society's capacity to exercise pressure on service providers (voice). Thus, enabling civil society to monitor elites and help social groups to acquire the information, resources, and capacities required to hold governments, private contractors, and NGOs accountable became an integral part of donor activities (Brett 2003, 22).[67] From the mid-1990s onward the withdrawal of structural adjustment programs

[64] Hirschman (1970, 30) defines voice as *„any attempt at all to change, rather than escape from, an objectionable state of affairs, whether through individual or collective petition to the management directly in charge, through appeal to a higher authority with the intention of forcing a change in management, or through various types of actions and protests including those that are meant to mobilize public opinion.'*. Besides exit and voice, service users may also adhere to loyalty norms and enter into dependency relationships with service providers (*loyalty)* and offer tangible incentives in return for public goods. This is most likely in patronage-based states where citizens receive services as a matter of favor, not of right (Goetz and Gaventa 2001, 13). Here, loyalty implies improving one's prospects through attachment to power holders.

[65] For instance, community (non-technical) participation in development projects may range from selecting a project; deciding on community labor and cash contribution; deciding about the community's monetary contribution for project construction, wages to be paid for community labor and compensation for non-labor (community) resources in project construction; deciding on distribution of project benefits; deciding on sanctions for project misuse; deciding on maintenance systems, policies and rules; deciding on monetary contribution in project maintenance; deciding on community labor work in project maintenance; to deciding on sanctions imposed for not participating in project maintenance (Khwaja 2004, 433).

[66] In the case of governmental implementing organizations (sectoral ministries), the incentives to respond to citizens' demand depend on governments' capacity to exercise control over public officials and thus on the quality of the legal and institutional framework. By contrast, in the case of non-governmental organizations (NGOs) the ability of governments to sanction poor performance is restrained (Wenar 2006, 13-17). First, because NGOs have little incentives to provide comprehensive information about implementation and the effectiveness of development programs (answerability) or to engage in evaluation that potentially undermines support for the program (Pritchett 2008). Instead, evaluation procedures stimulate NGOs to behave according to the anticipated reaction of the donor agency, establishing (upward) accountability to donors, not (downward accountability) to beneficiaries (Peruzzotti 2011, 61). Second, even if evaluation reveals that an NGO fails to relieve poverty, there are virtually no mechanisms to enforce sanctions. More generally, this relates to the issue of representativeness and legitimacy of NGOs, in particular, if NGOs deliver services through funds from public agencies and simultaneously engage in advocacy on behalf of service users (Brinkerhoff 2003, 14-15; Ebrahim 2010, 6). In this context, Ebrahim (2010, 6) distinguishes between membership organizations, service-oriented organizations and advocacy organizations, the former being less subject to issues of representativeness and legitimacy.

[67] Implementing agencies–governmental bureaucracies or non-governmental organizations–are the most proximate accountors to end users in carrying out a particular project and providing goods and services to particular groups of beneficiaries (or contracting third-party organizations which supply goods and services). Depending on the type of development assistance the

returned the state's role in development back to center stage, however, this time with an explicit focus on 'good governance' as a condition for and objective of development assistance (Molenaers, Dellepiane, and Faust 2015, 4; Banks, Hulme, and Edwards 2015, 708). Correspondingly, attempts to strengthen citizens' capacity to monitor policymakers and service providers were complemented by efforts of the international community to build state capacity. At the same time, the meaning of participation has expanded from engagement in community projects to participation in the policy-making process and transformed participatory development into a means of mobilizing communities to monitor donor programs (Brett 2003, 4).

Correspondingly, increased opportunities for citizen engagement with the state have led to a new generation of societal accountability action that aims at enhancing the effectiveness of service delivery and improving the quality of democratic governance by bolstering citizen engagement (Brinkerhoff and Wetterberg 2016a; McGee and Gaventa 2011; McGee 2013).[68] Malena and McNeil define social accountability as the *'range of citizen and civil society organization (CSO) actions to hold the state to account, as well as actions on the part of government, media, and other societal actors that promote or facilitate these efforts'* (2010, 1). These new modes of citizen-led accountability action involve different mechanisms including *formal,* institutionalized mechanisms (beyond voting), and *informal*, non-institutionalized mechanisms of participation (O'Neil, Foresti, and Hudson 2007).[69] Both can be exercised to hold service providers and public officials to account and have been increasingly subject to developmental research. *Formal* mechanisms of participation expand civil society's watch-dog function by engaging citizens directly in the distribution of public funds between communities, the design of public policies as well as in monitoring and evaluating government spending alongside public officials and representatives.[70] They comprise a wide range of mechanisms including participatory budgeting, citizen report cards, community score cards, and public expenditure tracking, which blur the traditional distinction between horizontal and vertical accountability (Goetz and Jenkins 2001).[71] Importantly, many of these formal, institutional-

size of the beneficiary group varies ranging from a small number of individuals in the case of project aid to a larger group in the case of program-based aid.

[68] More specifically, i) attempts to increase the effectiveness of service delivery involves changes in service providers' *receptivity* towards citizen needs, changes in service providers' *behavior*, and changes in accountability *relations* between communities and service providers (Lodenstein et al. 2017). Increased *receptivity* refers to changes in providers' attitudes towards citizen groups or increased awareness of service delivery issues, whereas changes in behavior imply concrete action to improve service delivery in line with citizens' concerns. ii) Improving the quality of democratic governance concerns the strengthening of transparency and integrity of public institutions and to reduce corruption. iii) Creating a larger sense of empowerment and agency aims at enabling the disadvantaged and marginalized in society to express voice, claim rights, and to influence power distribution by deepening existing networks and increasing capacities for collective action. While these three instrumental perspectives of social accountability initiatives are interconnected, proponents of social accountability differ regarding the concrete sequencing of these outcomes.

[69] In addition to its instrumental value citizen's voice also has *intrinsic* value–as the ability of people to express their opinions is good in and of itself–as well as *constructive* value as it enables deliberation over societal goals and shapes the standards for evaluating government performance (Sen 1999, 152-153).

[70] Participatory governance mechanisms differ from community-based development initiatives in which community members participate in the planning, implementation, and monitoring of a particular development project *within* their community (Speer 2012, 2379).

[71] *Citizen report cards* are surveys to engage citizens in assessing the quality and performance of public services such as health care, water supply or public transport to raise citizen awareness and ultimately bring about reforms in the public service delivery system. *Community score cards* combine the quantitative surveys used in the citizen report cards with village meetings whereby citizens are empowered to provide immediate feedback to service providers in face-to-face meetings. *Public expendi-*

ized, 'diagonal accountability' mechanisms seek to mobilize already authorized publics to articulate their demands (Lee 2011, 22). They are less likely to transform inertia into public action and activate mute citizens. By contrast, *informal* mechanisms of social accountability are more transformation based and involves confrontational action that contests state policies and actions including protests. Informal mechanisms of citizens' demand for accountability involves monitoring the behavior of public officials and agencies to make sure they abide by the law, exposing cases of governmental wrongdoing, and activating the operation of horizontal oversight agencies (Peruzzotti 2011, 55).[72] Even though social accountability initiatives lack the availability of *formal* sanctions, citizens have the power to impose considerable reputational and political costs to service providers or public officials through public opinion (Odugbemi and Lee 2011b, 7).[73] Consequently, social accountability is an especially relevant approach for societies in which representative government is weak, unresponsive or non-existent (Fox 2015, 246).

Concerning the effectiveness of health service delivery empirical evidence suggests that citizen-led accountability action is either directed towards service providers at the (local) health facility level or public officials and policymakers at the (sub-) national level (Lodenstein et al. 2017). At the health facility level, accountability action is usually initiated by community groups and directly targets health workers and managers. They often use a participatory approach in which data collection occurs through monitoring specific health center services (observations), quality scoring in group discussions or user complaints (interviews) (Lodenstein et al. 2017, 6). Information is then presented to public officials and providers and jointly analyzed to identify problems and find solutions at the community level. By contrast, at the (sub-) national level, social accountability action is commonly initiated by civil society or non-governmental organizations that target politicians, policymakers, and service providers. They often rely on information collected via large-scale surveys or maternal death audits that are presented in public hearings, media reports, demonstrations and protests (Lodenstein et al. 2017).

Conditions for increasing accountability

Despite its popularity in development research, the principal-agent approach came under criticism for not reflecting political realities in many developing countries. Critics argue that

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ture tracking is based on quantitative surveys of service providers that track the flow of public funds (including amounts and timing of released resources) to determine the extent to which resources reach the target groups.
Participatory budgeting refers to citizens' direct participation in the different phases of budget formulation, decision-making, and monitoring of budget execution. *Social auditing* is a process that collects information on the resources of an organization and how they are used for achieving societal goals. (Odugbemi and Lee 2011b, 477-478).

[72] Likewise, Brinkerhoff and Wetterberg (2016a, 12) classify social accountability action into i) transparency-related action based on the collection, analysis and dissemination of information on public policies and services as e.g., social audits and 'watchdog' NGOs; ii) collaborative action including a) coproduction-focused engagement in policy-making and service delivery such as participatory budgeting, and b) compliance-focused monitoring and oversight of public policies and services in cooperation with public officials such as citizen scorecards; and iii) confrontational action that contests state policies and actions including protests.

[73] Public opinion is understood as public discourse that is the result of debate and discussion in the public sphere which is formed by the citizenry in specific contexts regarding a public issue (Odugbemi and Lee 2011b, 7). Public opinion shapes citizens' desire for entitlements to health services that many regimes deny (Welzel 2013, 219). To prevent the emergence of desires for entitlements, authoritarian regimes seek to control access to information and the flow of news.

the preconditions for accountability in public service delivery do not exist due to 'political market imperfections' (Keefer and Khemani 2005, 2; Booth 2012b; Brett 2003; Persson, Rothstein, and Teorell 2013; Fox 2015).[74] Therefore, efforts to build institutions that foster development outcomes as well as attempts to implement public management reforms failed in many recipient countries (Andrews 2013b).[75] Likewise, participatory development programs are often subject to elite-capture since bottom-up monitoring 'lacks bite' (Fox 2015: 348). Conceptually, these findings nourished doubts on the validity of the underlying assumptions of the principal-agent theory. Correspondingly, recent evidence suggests that certain preconditions on both the demand and supply side have to be satisfied to achieve accountability in public service delivery.

i) On the *demand side*, citizen-led accountability action for improved (health) service delivery requires recognizing the complex and heterogeneous nature of civil society (McGee and Gaventa 2011; Brinkerhoff and Wetterberg 2016b). Citizens must be not only able to process and use information gained about service delivery issues but also overcome collective action problems and be mobilized around shared interests to exercise demands on state actors which requires motivated and capable citizens. Collective action is unlikely if citizens lack the capacities and individual resources necessary to engage in political action and are deterred from the high costs of taking positions that conflict with the interest of powerful groups concerning psychological or physical harm. Norms and networks that restrain opportunism and resolve problems of collective action appear to be crucial to enable citizens to engage in issues of public service delivery (Cleary, Molyneux, and Gilson 2013; Putnam 1993).[76] Specifically, where efficient service delivery requires the cooperation of several actors including frontline service providers, end users, state actors and civil society–such as the collective adherence to payment of water tariffs–they have to overcome the problem of collective action (Gibson et al. 2005). For instance, collective action failure may appear in the form of illegal household connections without registration of customers or non-payment by politically or socially powerful users decreasing the raised revenues and deteriorating the quality of water supply (Wild et al. 2012, 17).[77] Moreover, although individual community members have private information based on personal experience with service providers they typically do not have any information on aggregate outcomes concering the quality and

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[74] The main constraints involve citizens' lack of information about the performance of service providers, social fragmentation among voters manifested as identity-based voting, a lack of credibility in the political promises politicians make to citizens, and deficiencies in monitoring of formal oversight institutions (Keefer and Khemani 2005, 2).

[75] The anti-corruption framework prescribed by the international community (often in the form of conditionalities for development assistance) involves a variety of institutional reforms aimed at reducing opportunities and incentives for corruption based on the logic of the principal-agent framework (Persson, Rothstein, and Teorell 2013, 453). In the context of development assistance measures to increase accountability include supporting public oversight institutions, the media and strengthening civil society organizations; supporting the independence of the judiciary and the legislature and their capacity to prosecute illegal behavior; increasing transparency and citizen participation by bringing governments closer to the people through deepening decentralization; reducing power concentration by enhancing political and economic competition; reducing discretion of public officials through privatization, deregulation, and meritocratic recruitment; increasing the opportunity cost of corruption by increasing salaries of public officials.

[76] In reviewing the evidence Cleary, Molyneux, and Gilson (2013) outline key determinants of effective social and horizontal accountability initiatives targeting improved health service delivery. Their findings point to the importance of values, beliefs, and culture to mobilize citizens to engage in health service delivery issues.

[77] Collective action may be undermined by dominant groups, who use their symbolic power (e.g., based on the power of specific ethnic groups) to shape the social preferences of the community (Ishihara and Pascual 2009)

quantity of service provision. As a result of this information problem and because monitoring service providers is a public good that may be subject to free riding few people actively participate in monitoring service delivery (Björkman and Svensson 2009, 739).[78]

Correspondingly, a growing number of researchers has argued that development challenges be best conceptualized as collective action problems (Wild et al. 2012; Persson, Rothstein, and Teorell 2013; Booth 2012a; Tavakoli et al. 2013; Booth and Cammack 2013). This view pays particular attention to the coordination challenges that prevent both governments and civil society from co-operating as principals in development processes and lead to an under-supply of public goods. Specifically, criticism is directed at the assumption that political leaders, as well as citizens, have (relatively) homogenous preferences and the capacity to cooperate to secure an outcome that is likely to benefit society as a whole. The most compelling evidence is provided by a recent study on corruption control and public service delivery by Persson, Rothstein, and Teorell (2013).[79] In particular, the authors criticize that corruption is conceptualized as a principal-agent problem, which implicitly assumes that ordinary citizens and public authorities are willing to act like 'principals' and enforce sanctions against corrupt behavior.[80] However, development processes in thoroughly corrupt countries are rather characterized by a lack of collective action since actors' willingness to monitor officials behavior, impose sanctions and enforce reforms rather depends on how many other individuals in the same society are expected to be corrupt (Persson, Rothstein, and Teorell 2013, 450).[81] The authors conclude that the successful solution of collective action problems requires a combination of both formal institutions of monitoring and sanctioning mechanisms as well as informal institutions of reciprocity and trust (Persson, Rothstein, and Teorell 2013, 457).

Besides their collective action capacity service users may not feel equally empowered or authorized to speak their minds on political matters and lack the capacity to exercise pressure to object and report corrupt officials. In fact, service users, who lack voice and agency, make rarely use of existing formal accountability mechanisms to register complaints and

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[78] Public goods are defined as goods including services that are consumed without reducing the amount available to be consumed by others. Moreover, others that have not contributed to the production cannot be excluded from their consumption, which creates the free-rider problem in which users that have not contributed to the cost of the good continue to consume it. Consequently, the willingness to contribute will be undermined unless institutional arrangements limit free-riding. Correspondingly, collective action problems result in the under- or over-utilization of resources where a lack of institutional arrangements prevents groups from cooperation.

[79] Concretely, the principal-agent model is applied to political corruption at the policy formulation end of politics as well as to petty, bureaucratic corruption which people experience in their daily encounter with public administration and the delivery of services like health care, education, taxing or policing. In the context of *bureaucratic* corruption, rulers are the principals and bureaucrats the agents. By contrast, models of *political* corruption view the ruling elite as agents who need to be controlled by citizens as principals.

[80] Political leaders and citizens seem to at least passively maintain corrupt systems rather than reporting and punishing corrupt behavior. Furthermore, citizens may also take an active part by selling their votes to corrupt politicians.

[81] If corruption is widespread everyone should be expected to act corruptly since in the short term costs of taking a stand against corruption are comparatively high. Consequently, if corruption is the expected behavior monitoring public authorities and service providers will be largely ineffective since there will be no collective effort to hold corrupt officials accountable. Importantly, the incentives do not change even if citizens, politicians or service providers had perfect information and even if there is broad consensus that society would be better off without corruption. The reason ist that *'principals cannot trust that most other actors will refrain from corrupt practices so they have no reason to refrain from paying or demanding bribes'* (Persson, Rothstein and Teorell 2013, 457). Hence, the shared expectations about other actors' behavior undermine the incentives to organize a solution to the collective action problem.

punish maltreatment '*because they are not socialized into the customs, norms, and civic education that habituate and authorize the sphere of political action'* (Lee 2011, 21). This lack of popular pressures to keep elites honest, accountable and responsive to citizens' needs is rooted in the prevalence of shared values that emphasize these freedoms as well as in the individual opportunities of participation and civic, humanistic orientations (Welzel 2013, 215-233). In particular, shared values constitute a central element in people's intentions. Furthermore, the internalized ideals that define the intrinsic preference structure held by a wider segment of society determines communities' capacity to engage in collective action (Inglehart and Welzel 2005; Welzel 2013, 298, 47, 215-233; Welzel and Deutsch 2012). Opportunities to strengthen civic skills—such as social and communicative competences and civic orientations—that can be used for political participation are strongly shaped by individuals' involvement in associational networks (see section 3.3). Accordingly, a lack of material, connective and intellectual resources, as well as a lack of motivation, not only directly undermine service providers' downward accountability towards end users but also causes the poor's underrepresentation in politics (Goetz and Jenkins 2005, 58). Hence, this causes a lack of influence in determining the types of public services delivered.

Likewise, service users often lack information about the role of elected representatives in public service delivery because of information asymmetries and the long time horizons of (health) outcome monitoring. Moreover, service users' ability to obtain and evaluate health service information makes it difficult to attribute specific results to representative's terms in office. In fact, service providers may rather suppress information that enables users of public services to evaluate the quality of service and demand better treatment. Simultaneously, service users may be more susceptible to highly visible and attributable 'targeted spending' including subsidies for food or fertilizers and jobs offered in the public sector or through public work projects like construction (Arugay 2016, 11; Wright 2010). Moreover, users lack of awareness about funds received for service provision at the local level and their entitlements reduces politicians and providers' incentives to deliver services and undermines political accountability (Wild et al. 2012, 6).

ii) On the *supply side,* factors that undermine accountability in public service provision are caused by deficiencies in top-down monitoring and oversight of service providers. They result from a lack of state capacity and disincentives to corrupt behavior, the absence of political and civil rights, and poor devolution of power to local representatives. First, there is consensus among practitioners and development researchers that state capacity plays an essential role in delivering services effectively. Especially governments' capacity to set priorities, to obtain and process information and to cooperate with other providers improves the quality of service provision. However, there is also evidence that public good provision may satisfy citizens' demands despite the absence of a Weberian bureaucracy.

To clarify, the conceptualization of state capacity is rooted in Max Weber's *Theory of social and economic organization* (Weber 1947) and can be defined as *'how far regime authorities can achieve their goals and perform functions essential for collective well-being, including maintaining order and security within the nations' territorial boundaries, improving welfare outcomes for its pop-*

ulation, and expanding prosperity' (Norris 2012, 44). In other words, state capacity refers to the capacity to make collectively binding decisions which are implemented with the appropriate organizational means and normatively legitimized to ensure compliance by the subjects of authority (Genschel and Zangl 2008, 4).[82] It is important to note that the effects of the state on society are distinct from the capacity of the state. In particular, state capacity can be conceptualized as a spectrum ranging from *legal-rational authority* to *traditional authority* (Weber 1947, 328).[83] *Legal-rational* authority refers to a specific type of organizational structure in which bureaucracies exert control by following the principles of impartiality, effectiveness, efficiency, transparency and integrity (Norris 2012, 45). The key characteristics of *bureaucratic governance* include meritocratic recruitment based on competence and experience; long-term rewarding career patterns; hierarchical decision-making authority of the superior over the subordinate official; functional specialization of bureaucrats and organizational subdivisions; standardized procedures based on written documents to allow reviewing decisions and transactions (Weber 1978).[84] By contrast, at the other end of the spectrum (*traditional authority*) states can arrange the policy-making process and achieve compliance by relying on personal networks and corruption. In *traditional* states recruitment of public officials is based on patronage, rather than meritocracy and the delivery of goods and services depends on electoral clientelism. Decision-making is not standardized and rests in the individual rather than the office undermining reliability in government decision-making (Norris 2012, 47). As a result of clientelism and patronage politics, the civil service tends to be poorly skilled and highly politicized, which reduces the quality and quantity of public service delivery.[85] Respectively, state capacity varies along a continuum ranging from *bureaucratic governance* in which bureaucracies exert control by following the principles of impartiality and transparency, to *patronage* states in which states arrange the policy-making process and achieve compliance through the use of personal networks and corruption.[86]

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[82] The capacity of a *state* serves three essential functions: decision-making competence, organizational competence and legitimatory power (Genschel and Zangl 2008, 4). A *state* is defined as an organization specialized in exercising political authority within a given territory and over the people in that territory.

[83] Weber also distinguishes a charismatic type of state capacity resting on *'devotion to the specific and exceptional sanctity, heroism or exemplary character of an individual person, and of the normative patterns or order revealed or ordained by him (charismatic authority).'* (Weber 1947, 328).

[84] *Bureaucratic governance* refers to the state's capacity to make collectively binding decisions that are implemented by an organizational structure in which bureaucracies exert control by following the principles of impartiality and transparency. Bureaucratic governance is conceptually closely related to the concept of '*quality of government*' based on the principle of impartiality. Henceforth, the term '*democratic governance*' refers to the administrative capacity of liberal democracies. Evans and Rauch (1999) provide evidence that the core characteristics of Weberian bureaucracies are associated with higher economic growth.

[85] *Capture* refers to '*shaping the formation of the basic rules of the game (i.e., laws rules, decrees and regulations) through illicit and non-transparent private payments to public officials.*' (Hellman 2000 cited in Varraich 2014, 25). In this sense, the state is captured through policy mechanisms being dictated by and in favor of private actors, such as corporate interests or local elites, at the expense of the public.

[86] To clarify, *corruption* is viewed as an umbrella concept that links together concepts of *patronage, clientelism, patrimonialism,* and *state capture* (Varraich 2014). Specifically, *patronage* is defined as *'the proffering of public resources (most typically, public employment) by office holders in return for electoral support'* whereas *clientelism* can be defined as '*the proffering of material goods in return for electoral support*' (Stokes 2013, 649-650). Even though both are conceptually related they differ to the extent that clientelism implies that the more powerful political actor may or may not hold public office, and therefore may or may not be able to credibly promise to secure public resources (such as subsidies, loans, medicines, food) for the client. Conversely, patronage implies that the patron holds public office and distributes state resources (Stokes 2013, 650-651). The concept of patrimonialism, which has been mainly applied in the context of corruption in African political systems, blends both clientelism and patronage with the difference that the focus is on the 'head' of the organization. Specifically, patrimonialism refers to '*the exchange of resources (jobs, promotions, titles, contracts, licenses, immunity from the law, etc.) between key figures in government and strategically*

From the perspective of the health sector, weak administrative capacity undermines local and central government administration to implement health processes to respond to citizens' needs successfully. Specifically, policy and priority setting capacity enable authorities to set and communicate health system priorities, targets and standards, and to monitor the achievement of policy goals. Likewise, higher levels of technical and managerial capacity enables public officials to obtain, analyze and disseminate information, to mobilize resources and to coordinate and negotiate with other providers improving the quality of service provision (Loewenson 1998, 25-28). Accordingly, in patronage states where public employment is allocated as a way to reward loyalists, public officials tend to be poorly skilled which undermines quality and quantity of public service provision and continuity in policy implementation (Norris 2012, 47).

On the other hand, comparative research on state capacity in developing countries in Africa and Latin America provides evidence that specific forms of neopatrimonialism are associated with relatively well-functioning public good provision (Kelsall and Booth 2010; Cammack 2007; Booth 2012a; Grindle 2013, 2007). As most African states are characterized by both modern bureaucratic and personal forms of authority, they differ concerning the degree of centralization and the length of time-horizon (Kelsall and Booth 2010).[87] The evidence suggests that developmental patrimonialism is not only associated with higher economic performance (Kelsall and Booth 2010) but also influences the level of bureaucratic corruption and hence the quality of public service delivery (Booth 2012b, 40-41). Specifically, certain types of patrimonialism may serve to allocate patronage in ways that increase bureaucratic effectiveness despite the absence of highly skilled bureaucrats, meritocratic recruitment, long-term rewarding remuneration or standardized, impartial procedures. This view resonates with findings from the literature on governance in areas of limited statehood providing ample evidence that effective service provision does not necessarily depend on functioning state institutions (Beisheim et al. 2011b; Schäferhoff 2011; Börzel and Risse 2010; Börzel and Risse 2016). Instead, in areas of limited statehood where the state is dysfunctional, informal institutions may establish an enabling condition for effective and legitimate governance (Börzel and Risse 2016: 151).

Second, effective monitoring and oversight over service providers reside ultimately in the independence of the judiciary and legislature that have the authority to prosecute illegal behavior and can be activated by civil society organizations. By contrast, if politicians that deviate from the rule of law are not punished by the institutional system citizens' incentives to participate in monitoring service providers are lowered. In other words, legal institutions provide an enabling environment for citizen-led accountability action, which is undermined if court officials or legislators subvert official operating procedures in exchange for support

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located individuals: trade union leaders, businessmen, community leaders, and so forth. In return for these resources, the government or heads of state receive economic and political support. The emphasis is on the personal nature of the exchange: virtually all the analyses that have resorted to the term have been informed, either explicitly or implicitly, by the model of the patron-client relationship.' (Theobald 1982, 552 cited in Varraich 2014, 21)

[87] The developmental type of patrimonialism refers to countries, which centralize the management of economic rents–thereby limiting un-coordinated rent-seeking by officials pursuing their own individual interests–and align rent generation to the long term, for instance by using economic enterprises that are owned directly by the ruling parties.

from special interests or if governments maintain an extensive repressive apparatus suppressing political opposition (Goetz and Jenkins 2005, 47-50).

Moreover, democratic freedoms including public access to information, freedom of expression and association are essential for civil society to articulate demands and to provide information about the outcomes of investigations by oversight institutions (Brinkerhoff 2001, 3-4). Accordingly, a competitive multi-party system with well institutionalized and ideologically diverse parties, which may take up civil society's concerns in the legislature, provides fertile ground for citizen-led accountability action (Goetz and Gaventa 2001, 11). Moreover, programmatic political parties with well-established reputations for advocating certain positions on issues of public concern can make credible commitments to provide public goods (Wild et al. 2012, 5-6). Consequently, Schumpeterian democracies that only focus on the provision of competitive elections without guaranteeing a substantial degree of civil liberties may be necessary but insufficient to establish accountability in public service delivery since voters can give only approval or disapproval to an insufficient range of issues (Blair 2011, 42; Svolik 2012; Khan 2001, 21). Furthermore, political accountability is undermined if electoral fraud and corruption prevent voters from punishing politicians at the ballot box for fear of losing access to services (Keefer and Khemani 2005, 9-10).

Within the legal framework, the state has the power to support or impede citizen participation. Depending on the type of citizen-led, social accountability action the extent of state support necessary to make citizen participation work varies. In non-repressive regimes, state support may range from passive assistance–taking no action to support or oppose citizen efforts to exercise accountability–to active encouragement (Blair 2011, 38). At the upper end of the continuum, states provide legislative and institutional support such as decentralization, ombudsman offices, statutory oversight boards or legislative oversight institutions, which are expected to increase prospects of citizen engagement (Brinkerhoff and Wetterberg 2016b, 276). By contrast, civil society advocacy and lobbying, as well as demonstrations and protests, are less dependent on active state support, but merely require that the state passively allows civil society to exercise demands by ensuring basic civil liberties.

The relationship between institutions of democratic governance and citizen participation in aid recipient countries has stimulated rational-choice theorists to formalize the incentives of political leaders to support citizen participation under different institutional arrangements. Bueno de Mesquita et al. provide the most developed theory that predicts whether political leaders support (active or passive) or impede citizen participation in (non-institutionalized) political action (Bueno de Mesquita and Smith 2009; Bueno de Mesquita and Smith 2010).[88] The authors argue that whether political leaders decide to constrain or support citizen participation (that pose a threat to the incumbent regime) depends on the sources of government financing. Political leaders who rely on taxing economic activity to generate revenue are unlikely to reduce public good provision and hence constrain citizen

[88] Selectorate theory is based on the assumption that political leaders attempt to stay in power and provide either private goods to supporters or public goods–such as access to information through the media and freedom of assembly–to all citizens to maintain power. Given that freedom of speech and assembly also facilitate political mobilization directed against the incumbent regime political leaders can either *increase* public good provision thereby improving the welfare of the citizens and diminishing their desire for revolutionary change or *decrease* public good provision to impede political coordination.

participation. By contrast, leaders with access to free resources, such as foreign aid, can suppress democratic rights to reduce the threat of elite-challenging action with little impact on their revenue.[89] Hence, if governments have access to nontax revenues selectorate theory predicts that political leaders in countries with democratic institutions spend the free resources on the provision of public goods, while political leaders in countries with non-democratic institutions are more likely to reduce public good provision and compensate coalition members with private goods (Bueno de Mesquita and Smith 2009; Bueno de Mesquita and Smith 2010).[90] Consequently, even though informal mechanisms of social accountability including protests and demonstrations are less dependent on active state support democratic institutions ultimately determine whether aid recipient countries (passively) allow citizens to demand accountability and exercise pressure on public officials.

Third, besides institutions of democratic governance, the theory of decentralization suggests that the distance between governments and end users influence citizens' participation and governments' responsiveness (Brinkerhoff and Wetterberg 2016b). The theory of decentralization and public accountability originates in debates about the size of political units that serves best the interests of their citizens going back to the works of John Stewart Mill, Jean-Jacques Rousseau, Montesquieu and Alexis de Tocqueville (Faguet 2014: 5).

> *By devolving power and authority from higher to lower levels of government elected by local constituencies, decentralization fundamentally changes the incentives that local authorities face, and thus their behavior. Under centralization, "local" authorities are not elected by local citizens but rather selected by higher-level authorities. Immediate accountability for their performance is thus upward to the center, which has power over their careers, salaries, and broader professional prospects (Riker, 1964). (…) "Local" officials thus face clear, strong incentives to respond to central government priorities and concerns, and weak, muffled incentives to respond to local citizens' needs. Decentralization re-orients these incentives; this is its most important effect. "Local" officials become local officials, whose tenure and career prospects are in the hands of the citizens they serve, who elect them. The effect of decentralization is to dramatically tighten the loop of accountability between those who produce public goods and services and those who consume them. (Faguet 2014: 5)*

Against this backdrop, public sector governance reforms proposed by the new public management approach stressed the importance of decentralization to increase citizens' choice (exit) between service providers (World Bank 2003).[91] Simultaneously, decentralization is posited to foster democracy by strengthening citizens' participation in local governance, instituting regular elections and improving access to information. Specifically, reducing the distance between governments and citizens enables service users to better articulate their needs and preferences to local representatives and to better monitor local health service

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[89] Specifically, since reducing public good provision not only constraints citizens ability to organize politically but also to coordinate economically repressive measures are likely to reduce economic activity, too.

[90] The reason is that as the number of supporters increases the provision of public goods becomes relatively cheaper. At the same time receiving aid increases revolutionary threat particularly in non-democratic, small coalition systems where citizens benefit most of a regime change compared to the status quo.

[91] To clarify, *decentralization* refers to the (re-) allocation of power to elect or denominate policymakers of legislative or administrative competences or of fiscal resources from higher to lower levels in multilevel structures of government or administration (Benz 2011, 545). *Devolution* refers to the transfer of decision-making authority, fiscal and management responsibilities to local authorities and allowing them to take full responsibility without reference back to central government. *Deconcentration* is limited to passing down only administrative discretion to local offices of central government ministries even though few decisions can be taken without reference to the center (UNDP 1993, 66-67).

providers (short route) and local governments (long route).[92] As a result, *local* officials and politicians can be more open to public scrutiny than *national* governments and hence more accountable to the communities and individuals they are supposed to serve (UNDP 1993, 66-67).[93] Thus, public projects, such as schools or health services, become more effective if the communities concerned have a real say in their planning and implementation and are more likely to mobilize against corruption. Equally, in the context of foreign aid better informed local governments are more likely to allocate aid according to the varying local demands of a heterogeneous population increasing the efficiency of public services and thus aid effectiveness (Lessmann and Markwardt 2012, 1724-1725).

On the other hand, the devolution of power creates more opportunities for corruption at local levels, as local officials live closer to citizens and are thus more likely to be subject to the pressing demands of local interest groups (Prud'homme 1995; Bardhan and Mookherjee 2006; Tanzi 1996; Bardhan 2002). For instance, Lessmann and Markwardt (2010) demonstrate that fiscally decentralized countries without effective monitoring institutions such as a free press suffer from higher corruption than non-decentralized countries. Likewise, higher salaries and better career opportunities at the *central* government may negatively affect bureaucratic capacity at the *local* level. Booth also provides evidence in which organizational mandates of elected politicians, chiefs and city authorities are ill-defined and overlapping in ways that produce confused responsibilities and impede coordination and cooperation in the provision of public services (Booth 2012b, 36-39). Specifically, staff in organizations may face conflicting incentives and pressures due to local contexts and informal institutions including the influence of traditional authorities. Accordingly, a strong centralizing authority may show higher coordination capacity and better collaborative problem-solving. Moreover, decentralization may cause policy incoherence and be de-linked or even in direct conflict with the resource planning of line ministries (Olivier de Sardan 2012).[94]

Summarizing, the identified citizen- or *demand-side* factors and state-or *supply-side* factors provide enabling conditions for effective performance oversight and government responsiveness. Citizens that feel empowered and authorized to voice their claims can be mobilized around shared interests and demand accountability from service providers and public officials. Therefore, community involvement plays a vital role in providing access to information about service delivery issues and strengthening communities' capacity to engage in monitoring activities collectively. However, to effectively check service providers and government agencies, overseeing actors inside and outside the state must be autonomous and linked to accountability actors (allies) within the state that can impose sanctions. In particular, effective citizen participation requires linkages to the judiciary or legislative investigation commissions that have the authority to pursue prosecution if needed. Moreover, states' administrative capacity to implement policies, manage resources and monitor the delivery

[92] Moreover, political economists have argued that decentralization improves the efficiency of public policy through increased competition for taxpayers between subnational governments (Weingast 1995).

[93] In health service delivery, decentralization concerns issues such as the (geographical) distribution and financing of different types of health infrastructure (e.g., day centers or general hospitals), regulation of individual access to health care as well as training and pay of health workers (Dafflon and Vaillancourt 2014, 11-13).

[94] For instance, funding for health infrastructure like the purchase of ambulances may be disconnected from other aspects of service provision including the covering of driver's expenses and fuel (Olivier de Sardan 2012).

of public goods plays an essential role as it will feed back into perceptions of social problems and shape subsequent public demands (Norris 2012, 37). Accordingly, service provision is more likely to be faster, better, fairer, more inclusive and sustainable if public officials are held accountable through democratic principles and impartial, standardized administrative procedures—in especially if officials and politicians are more open to public scrutiny due to the devolution of power to subnational levels (Arugay 2016, 7). Against this theoretical backdrop, the next sub-chapter reviews the empirical literature on accountability for service delivery illustrating the importance of both demand- and supply-side factors for effective performance oversight in the delivery of foreign aid.

3.2 Aid effectiveness and accountability

Does foreign aid perform better in environments with more accountability? At the macro level, the aid effectiveness literature examines the effect of top-down monitoring and horizontal oversight arrangements by national, formal institutions of democratic governance and decentralization. The evidence is based on both studies on the effectiveness of foreign aid in the aggregate and of individual (health) aid projects at the community level. At the micro level, the empirical evidence focuses on the effects of bottom-up processes of citizens' demand in the context of social accountability action and community engagement in the provision of health services. The following section summarizes the key findings of the different strands of (aid effectiveness) literature on performance oversight in service delivery with a particular focus on the health sector. Given that foreign aid may also indirectly influence development outcomes via its effect on political institutions, the last section pays attention to the literature that considers supply-side accountability mechanism as endogenous to foreign aid.

Evidence from macro-quantitative research

Despite signs of convergence in the macro-comparative literature concerning the overall effectiveness of aid, the evidence on *what* makes aid more likely to be effective is mostly inconclusive and concerns mainly supply-side accountability mechanisms. The few existing studies that examine the conditioning role of domestic political institutions focus on the role of state capacity, institutions of liberal democracy or levels of decentralization. However, the literature has almost entirely ignored the role of demand-side mechanisms of performance oversight as well as their interaction with horizontal accountability mechanisms.

Concerning the demand for accountability, there are two cross-national comparative studies analyzing whether aid is more likely to work in enabling environments in which bottom-up processes of performance oversight emerge. Specifically, Baliamoune-Lutz and Mavrotas (2009) were the first who provided cross-national evidence that social capital (proxied via ethnic fractionalization) enhances the effect of foreign aid on economic growth. In a follow-up study, Baliamoune-Lutz (2012) replicates previous findings by testing the conditioning role of social cohesion–proxied by ethnic tensions (ICRG sub-index)–regarding the effect of foreign aid on growth for 34 Sub-Saharan African countries over the period 1973-2008. Even though the authors do not spend much time on explaining how social capital and social cohesion conditions the causal process linking foreign aid to growth, both findings support the claim that communities' collective action capacity strengthens the impact of aid on economic development.[95]

On the supply side, there is a consensus among development practitioners and researchers about the importance of domestic political institutions although it is less clear which institutions are likely to enhance the effectiveness of development assistance (Glennie and Sumner 2014: 44). In the late 1990s sound macroeconomic policies moved to the center of the aid effectiveness debate due to the paradigm shift in mainstream economic theory (Easterly 2003).[96] In their seminal paper, Burnside and Dollar (2000) claimed that neoclassical economic policy reform is associated with higher aid effectiveness.[97] This influential study has stimulated a variety of replication analyses, which ultimately suggest that the original findings of Burnside and Dollar do not stand up to closer scrutiny (Dalgaard and Hansen 2001; Dalgaard, Hansen, and Tarp 2004; Rajan and Subramanian 2008).[98] However, despite the large volume of studies testing the conditioning role of macroeconomic policies, there is little sign of convergence (Wright and Winters 2010, 68; Glennie and Sumner 2014: 41-42).

Simultaneously, evidence from comparative public policy demonstrated that the effective implementation of development policies is associated with the professional skills and technical capacities of the public sector (Evans and Rauch 1999; Fukuyama 2004; Levy and Fukuyama 2010). Correspondingly, a number of more recent studies examined whether higher state capacity increases the overall effectiveness of development assistance.[99] Specifically, revisiting the existing evidence Burnside and Dollar (2004) analyzed the interaction of foreign aid and institutions of bureaucratic governance using data from the WBGI dataset for a cross-section of countries over the decade of the 1990s. The authors find a robust positive relationship with economic growth and interpret their findings of their instrumental variable approach as evidence *'that corrupt institutions and weak policies limit the impact of financial assistance for development'* (Burnside and Dollar 2004, 1). Despite this important study,

[95] Likewise, a recent study on the performance of microfinance institutions across 37 countries over the period of 2003-2011 provides further evidence on the importance of socio-cultural factors for the effectiveness of development aid (Burzynska and Berggren 2015). Given that microfinance institutions rely strongly on personalized interactions and communal norms the authors hypothesize that social trust and collectivist norms are associated with higher loan repayment rates, and lower costs and interest rates due to a smaller risk of default. Their findings suggest that trust and norms have a significant negative effect on the operating costs of microfinance instruments and are hence positively associated with aid effectiveness in microfinance. Nevertheless, a comprehensive review of the evidence on the effectiveness of microfinance instruments is beyond the scope of this literature review (see Hermes and Lensink 2015).

[96] 'Stabilization' involved reducing government spending and consumption as well as imports and subsidies to state-run businesses, increasing private sector competition, privatization of state-owned enterprises and decentralization reform.

[97] The results were reported in a World Bank report on Assessing aid (1998) and were also cited in other donor agencies policy papers and program guidelines.

[98] For instance, in testing the original model of Burnside and Dollar for a larger sample, the findings of Easterly, Levine, and Roodman (2004) cast considerable doubt on the conclusion that aid promotes growth in countries with sound economic policies. Likewise, estimating Burnside and Dollar- and Barro-type panel regression models for 32 transitional economies over the period 1990-2012 Askarov and Doucouliagos (2015) demonstrate that aid has a positive impact on growth irrespective of the implementation of sound macroeconomic reforms.

[99] In particular, Evans and Rauch (1999) provide cross-national comparative evidence that governments' performance largely depends on the professional skills and technical capacities of the public sector, which is most clearly exemplified by the rapid economic growth of the East Asian economies including Taiwan, Singapore, China, and South Korea.

there have been very few empirical attempts testing whether institutions of bureaucratic governance (state capacity) influence the effectiveness of aggregate aid flows (Chauvet 2015, 357; Wright and Winters 2010, 68).

By the same token, there is little empirical evidence on the conditioning effect of democratic institutions concerning overall aid effectiveness. Also, the existing studies come to contradictory conclusions. On the one hand, there is evidence that the extent of political rights is not associated with the effects of foreign aid on growth (Boone 1996). Likewise, Wright (2007, 15-25) demonstrates that this finding is robust to differences in sample composition and the use of various measures of liberal democracy. On the other hand, Svensson (1999) finds that the quality of democratic institutions significantly conditions the long-run growth impact of foreign aid. This view is supported by Kosack (2003) who provides evidence from instrumental variable estimation that democratic institutions (Polity IV) make aid improve the quality of life.

More recent studies have analyzed the role of specific formal political institutions separately for democracies and non-democracies to examine variation within regime type (Wright and Winters 2010). For instance, Wright (2008) demonstrates that foreign aid to authoritarian regimes has a positive effect on economic growth if political leaders expect to remain in office for a long period and a negative effect if political leaders face incentives to secure personal wealth in anticipation of regime change. Furthermore, analyzing 61 aid receiving democracies over the period 1961-2001 Wright (2010) sheds light on the political incentives public officials face when spending aid under democratic rule. The author's findings imply that personalist electoral institutions (Carey and Shugart 1995) create incentives to cultivate a personal vote and hence decreases aid effectiveness. By contrast, in countries with low personalism aid increases economic growth and public good provision.

Regarding sector-specific aid, the evidence on the role of domestic political institutions for the effectiveness of external health financing is equally limited and somewhat inconclusive. Specifically, Mishra and Newhouse (2009) find strong support for a positive *direct* effect of health aid on population health for 118 recipient countries over the period 1973-2004. Furthermore, the results from a median-split analysis suggest that health aid has a stronger effect on population health in countries with high institutional quality (CPIA index). Even though dichotomization at the median involves methodological problems (Cohen et al. 2003, 256) the findings suggest a complementary relationship between health aid and institutional quality.

By contrast, challenging conventional wisdom Dietrich (2011) theoretically argues that institutions of bureaucratic governance are less important for the effectiveness of aid allocated to the health sector. Specifically, Dietrich (2011) claims that countries with *low* administrative capacities are more likely to implement health aid effectively to signal compliance to donors and attract additional resources that can be misappropriated for personal gain. Accordingly, the study examines the interaction effect of corruption and health aid on immunization coverage. Based on instrumental variable and GMM estimation the results suggest a negative relationship between the quality of institutions and health aid effectiveness over the period 1990-2004. The author interprets her findings as evidence that corrupt recipient governments have incentives to comply with donor objectives and implement aid effectively in sectors in which compliance is cheap to attract additional aid inflows. According to this view health aid and institutions of bureaucratic governance are substitutes, which implies that health aid has the highest pay off in countries with rampant corruption.

Another study on the effectiveness of health aid tested the role of democratic institutions. In particular, for a sample of 85 high-mortality countries over the period 1975-2005 Wilson (2011) finds no indication that health aid *directly* reduces mortality nor that the effect of health aid depends on the level of democracy. However, by selecting only high-mortality countries, this study explicitly excludes those democratic countries that have experienced substantial improvements in population health.[100] Hence, even though the results imply a neutral relationship between institutions of liberal democracy and health aid this finding should be interpreted with caution.

Another strand of the aid effectiveness literature examines the effect of decentralization on accountability in foreign aid delivery. Specifically, Lessmann and Markwardt (2012) provide evidence from 60 developing countries over the period 1966-2001 finding that while fiscal decentralization in and of itself has a positive effect on economic growth the devolution of authority undermines overall aid effectiveness. That is, foreign aid increases economic growth only in *centralized* economies, but not in *decentralized* countries. This view is confirmed by another study which finds no support for the claim that decentralization makes aid more effective regarding higher economic growth, better child health or lower poverty (Baskaran et al. 2013).

By contrast, Segall (2003, 5) argues that decentralization is especially important for the health sector. As Segall puts it, *'the active participation of communities and community based organizations in the planning and management of local health care activities is essential for service responsiveness and can make important contributions to service quality and efficiency' (*Segall 2003: S19-S20). This view is supported by evidence from several studies analyzing the effect of decentralization on health outcomes at the subnational level in different countries. For instance, Uchimura and Jütting (2009) find that over the period 1995-2001 more decentralized provinces in China had lower infant mortality rates than centralized provinces. Similar findings are reported for Argentina (Habibi et al. 2003), India (Asfaw et al. 2008) or Indonesia (Simatupang 2009). Likewise, analyzing six developing countries over the period 1970-1999 Ebel and Yilmaz (2001) provide further support that decentralization improves health outcomes regarding child immunization rates.

At the project level, there is convergence in the literature in support of the effectiveness of supply-side accountability mechanisms in particular in the health sector. For instance, Isham et al. (1997, 236-237) find that World Bank projects achieve better outcomes–concerning economic rate of return and project success–if civil liberties are guaranteed that allow citizens to engage in protest. Accordingly, the authors conclude that „*the results support a chain of causation that runs from greater civil liberties to higher levels of citizen involvement and political partici-*

[100] The author justifies this decision by arguing that in this study democracy is not a central variable of interest but rather a control variable.

pation (...) to better projects' (Isham et al. 1997, 236-237). Similarly, Dollar and Levin (2005) add further support to the hypothesis that aid effectiveness is conditional on democratic governance. Specifically, the authors find that the share of successful World Bank projects is positively correlated with both state capacity and level of democracy. The beneficial effect of state capacity is also confirmed by evidence from environmental development projects. In particular, government effectiveness is among the strongest predictors of individual project outcome ratings corresponding to reductions in greenhouse gas emissions or biodiversity protection (Buntaine and Parks 2013). By contrast, analyzing the performance ratings of World Bank projects in 55 countries over the period 1980-1999 Guillaumont and Laajaj (2006) do not find a significant effect of bureaucratic governance institutions.

As regards decentralization (at the project level), the devolution of basic health care services to local governments has often been accompanied by considerable budget cuts and health care privatization (Birn et al. 2009, 643). Correspondingly, an early study on the effects of decentralized health service delivery in Botswana, Tanzania, Mozambique, and Zambia finds little evidence of increased accountability of service providers after decentralization reform (Mogedal et al. 1995, 366). The authors argue that these results are caused by a lack of demand for change from clients and local politicians and a lack of political will to delegate real decision-making and spending powers to lower level authorities. Notwithstanding, more recent project-level evidence suggests that the devolution of basic health care services to local governments led to significant improvements in child and maternal health outcomes in many countries (Mansuri and Rao 2013, 207-212). For instance, Brazil's family health program (*Programa Saude da Familia*), which is managed by municipal governments under the supervision of the ministry of health, achieved declines in infant mortality up to 20 percent over an eight-year period (Rocha and Soares 2009).[101] Different program evaluations provide robust evidence that health service delivery improved significantly and led to a substantial reduction in infant and child mortality related to diarrhea, respiratory diseases and complications during pregnancy (Macinko et al. 2007; Rocha and Soares 2009). Likewise, Bhushan et al. (2006) analyze the effects of devolving primary health care provision to NGOs that are contracted by the ministry of health in Cambodia to run public health facilities. Their findings suggest that contracting NGOs had significant positive effects on the delivery of health outputs including health center's working hours, staff absentee rates and the availability of drugs and medical equipment.

Summarizing, the macro-comparative aid effectiveness literature has largely ignored the role of bottom-up processes of performance oversight, which represents an important gap in the aid effectiveness literature. Also, the existing evidence on the role of top-down accountability mechanisms is inconclusive at best. At the project level, the evidence is more consistent with effective top-down oversight mechanisms in especially in health service delivery.

[101] Health services, including home visits and community-based health promotion activities, were delivered free of charge by a team comprising a doctor, a nurse, an assistant nurse, and six community health workers (and in some cases also a dental and a social work professional).

Evidence from the social accountability literature

The large volume of studies about citizen-led accountability action that emerged since the World Development Report 2004 (World Bank 2003) stimulated several systematic reviews and meta-analyses (Gaventa and Barrett 2012; Fox 2015; Joshi 2013; Hickey and King 2016; Mansuri and Rao 2013; Brinkerhoff and Wetterberg 2013; McGee and Gaventa 2011; Lodenstein et al. 2017; Speer 2012; Cleary, Molyneux, and Gilson 2013; Bold and Svensson 2013). The results provide overwhelming (project level) evidence that bottom-up processes of citizen demand for accountability improve the provision of public goods and services. Furthermore, the broader impact of citizens' demand appears to depend on horizontal accountability mechanisms that allow imposing formal sanctions and a supportive legal framework that reduces the fear of reprisal.

Notably, Gaventa and Barrett (2012) classify the outcomes of more than 800 examples of citizen engagement in associations, social movements, and campaigns, or participatory forms of governance based on 100 case studies across 20 countries. The meta-synthesis approach reveals that about 75 percent of the classified outcomes of citizen action were positive regarding their contribution to responsive and accountable states with improved service delivery.[102] More specifically, Gaventa and Barrett (2012, 2402) find numerous evidence in which citizen engagement has contributed to better access to development resources leading to improvements in health, water, food, housing, education and urban services *'through gaining increased government attention and responsiveness to issues that might have been previously ignored.'*[103] The study also supports the claim that citizens increased capacity to demand social, economic, and political rights helped to achieve the protection of rights and the establishment of new rights through changing the legal and constitutional framework.[104]

Despite the abundant evidence of the positive contributions of citizen engagement, the study also recognizes that the outcomes of citizen participation are not necessarily positive. 25 percent of the outcomes of citizen engagement were negatively evaluated. In particular, participatory action can lead to disempowerment and a reduced sense of agency (20 percent) if not underpinned by civic and political skills. Practices of citizen participation have also increased corruption and elite-capture (30 percent). Moreover, in some cases, governments simply refuse to respond to citizens' demands, respond in a tokenistic fashion or even use state repression and violence against those who mobilize (28 percent). Further negative consequences of participation involve greater exclusion of groups based on reinforced old hierarchies along ethnic, gender or social cleavages (30 percent).[105] By looking at the differences between positive and negative outcomes by type of citizen participation Gaventa and Barrett

[102] The authors identify further outcomes including better citizenship, more citizen participation and inclusive and cohesive societies.

[103] The following paragraph is based on Gaventa and Barrett (2012).

[104] More generally, citizen engagement strengthened new forms of state accountability through greater transparency and information provision, new institutionalized mechanisms for participation and changing attitudes about state-society relations. The findings also suggest that civic engagement has contributed to more cohesive societies by fostering a sense of inclusion among previously marginalized groups. For instance, campaigns for women's rights became essential not only for inducing changes in the legal system but also for challenging norms affecting women in the household and society (Gaventa and Barrett 2012, 2403).

[105] The percentages refer to the share of negatively coded outcomes for each of the four categories. For instance, 54 out of 271 cases (= 20 %) that are linked to the outcome category 'construction of citizenship' were negatively evaluated.

(2012, 2403-2404) shed further light on the determinants of successful civic engagement. The authors distinguish between participation in i) local associations, ii) social movements and campaigns, iii) formal participatory governance spaces, and iv) mixed approaches, which employ several of these forms of citizen engagement. More than 90 percent of the outcomes related to participation in associations (N=324) and more than 71 percent related to engagement in social movements (N=233) were positively evaluated. By contrast, 45 percent of the outcomes from participation in formal participatory governance spaces (N=153) were negatively rated. Moreover, comparing the type of citizen participation by outcome reveals that local associations account for the highest percentage of positive outcomes (47 percent), while social movements and participatory governance accounted for the highest share of *negative* outcomes (33 percent each). Against this backdrop Gaventa and Barrett (2012, 2404-2405) conclude that *'local associations are far more important vehicles for gaining development and democratic outcomes than perhaps has been previously understood'*, whereas engaging with the state through participation in social movements and formal spaces of participatory governance may be contentious and face serious reprisals or may be linked to tokenism and empty participation. Notably, by comparing the outcomes of civic engagement in associations, social movements and formal spaces across countries with different political regimes Gaventa and Barrett (2012, 2406) find evidence that in contrast to the institution centered approach voluntary associations can function as 'schools of democracy' even in the least democratic settings. Against this backdrop, the authors challenge the view that civil society associations in fragile settings are weak and have little potential to demand accountability effectively.

Likewise, a number of studies provide evidence for the health sector about the effect of community monitoring on the quality of health service delivery. For instance, Drèze and Sen (1995, 227-239) describe that doctors and nurses in India are less absent at work and delivering better services where their actions are monitored by citizen groups. De Renzio, Azeem, and Ramkumar (2006) report further evidence on the success of community monitoring to identify 'shoddy work' by contractors in the construction of classrooms and health posts as well as regarding the availability of drugs. Many of the identified cases of malpractice, such as stolen drugs and medical equipment, were recovered after investigation, and hence service provision in health centers and hospitals significantly improved (De Renzio, Azeem and Ramkumar 2006, 22). In an attempt to rule out spurious relationships and bias, Björkman and Svensson (2009) conducted a widely cited randomized field experiment in Uganda in which citizen report cards were used to collect information on health providers' performance. The information was disseminated at community meetings and contrasted with other providers' performance and government standards for health service delivery. Communities were then encouraged to identify key problems and ways to monitor the health providers to improve health service delivery. As a result community monitoring significantly reduced staff absenteeism and waiting time while increasing the use of health facilities and greater community satisfaction, which together led to a 33 percent reduction in under-five mortality and an increase in vaccination coverage.[106]

[106] The authors also demonstrate that the community's increased monitoring activities had a stronger effect on improvements in health service delivery than the dissemination of information or the community meeting in and of itself.

By contrast, a randomized field experiment on community monitoring in road construction projects in Indonesia has been widely cited as evidence that levels of corruption are reduced only under hierarchical, top-down performance oversight whereas participatory, community monitoring had little impact (Olken 2007). Others have argued that disseminating information about service delivery outcomes is not enough to activate collective action to demand accountability of service providers (Banerjee et al. 2010; Lieberman and Posner 2014; Keefer and Khemani 2016). Correspondingly, in a follow-up study Björkman-Nyqvist, Walque and Svensson (2014) shed further light on the *long-run* impact of social accountability initiatives and the effectiveness of disseminating information. On the one hand, their study confirms that the improved health outcomes are sustained four years after the community monitoring intervention. However, in an attempt to disentangle the effect of 'disseminating information about the quality of service delivery' from 'citizens' engagement in monitoring activities' the authors designed a new intervention–similar to the initial experiment but without the provision of quantitative information on the performance of service providers. The results suggest that without information the process of stimulating citizen participation had little impact on health workers' performance or the quality of health care. As a result, the authors emphasize the importance of disseminating information of service providers and argue that the mixed results of comparable studies can be attributed to a lack of objective information provision.

Besides participation in monitoring activities, Narayan (1995) provides compelling evidence that citizens' participation in the design, construction as well as operation and management of rural water systems increase the effectiveness of development projects, which in turn produce health-related, economic and environmental benefits.[107] At the same time, the meta-case study demonstrates that beneficiaries' capacity to participate during the project cycle depends among other things on the existence of community organizations, with a shared history of cooperation, trust and conflict resolution, and social cohesion (Narayan 1995, 50-52). Furthermore, Isham and Kähkönen (2002) report village-level evidence on community-based water service projects from Sri Lanka and India, which suggests that associational membership has a positive effect on participation in service design and monitoring of construction leading to improved community health.[108] Likewise, Krishna and Uphoff

[107] In undertaking a rural water supply project, citizens may be involved in a variety of issues including choices of technology and service levels, costs and financing, decisions about design and construction, tariff management, water allocation, operation, and maintenance as well as system expansion and replacement (Narayan 1995, 9). Citizens' participation via beneficiary assessments, market surveys, and other consultation techniques or direct involvement of beneficiaries in project design provides information on the preferences, capacities and social and political organization of recipients and ensures that development projects fit the needs of project clients and ensure the incorporation of local knowledge (Narayan 1995, 42-63). For instance, local knowledge contributes to utilize unplotted water sources; to design pipe distribution accounting for land ownership and potential social conflict; it also refers to knowledge about purification methods, seasonal differences, rainfall patterns and underground water flow (Narayan 1995, 51-52). Citizens may also be involved in the construction of projects by providing free labor and local materials, which may create local ownership. More importantly, citizen participation in decision-making during the construction phase may shift accountability from outside agents to internal community groups, i.e., contractors become accountable not to external governmental or non-governmental agents, but to the communities (Narayan 1995, 38-39).

[108] In community-based water services, users collaborate with government officials and NGO staff in the decision-making and implementation of rules and practices in service *design* (type and level of service based on users' willingness to pay), *construction* (cash or labor contributions of users), and *operation and maintenance*. At the same time, users are involved in *monitoring* of participation and usage and *sanctioning* of noncompliance to provide incentives for community members to contribute the required inputs to the design, construction, and operation and maintenance of water services (Isham and Kähkönen 2002, 672).

(1999) provide additional evidence on how social capital helps farmer groups in India to build consensus on the use of watershed land leading to superior development outcomes and increased collective action capacity. The same set of factors have been identified to enable participation of users in urban sanitation system management as a low-cost alternative to missing public sanitation, which is one of the major causes of ill health (Kähkönen 1999, 21-24). Equally, Pargal et al. (1999) provide evidence from Bangladesh on the positive effect of social capital on voluntary (solid) waste management.[109] More recently, Mansuri (2012) has analyzed the relationship between community engagement and the quality of infrastructure projects across 80 villages in Pakistan. Her findings suggest that compared to projects that were constructed by government line departments those built by the community (with technical support from the National Rural Support Program) appear to be better designed, constructed and maintained. Similarly, Khwaja (2004, 433, 2009) provide additional evidence that community participation in the design and planning of infrastructure projects improves project maintenance.[110]

Reviewing the evidence on the effectiveness of different social accountability mechanisms, Joshi (2013) concludes that these mechanisms have been effective in their immediate goals including information collection and dissemination, exposing corruption, enhancing awareness of entitlements, empowering people to demand accountability as well as increasing the practice of active citizenship. Though, the broader impact of social accountability mechanisms on the quality of public services appears to depend on horizontal accountability mechanisms, which allow imposing formal sanctions (Joshi 2013, 40). In other words, critics have argued that the effectiveness of bottom-up mechanisms of accountability is context dependent and may have little impact on the quality of public service delivery if formal oversight institutions are not in place. According to this view, for citizens to be able to act on information about service delivery provided by social accountability initiatives, an enabling environment needs to reduce fear of reprisal and encourage the voice of those who would usually be excluded due to ethnic, gender or class bias (Fox 2015, 349). Hence, an enabling environment conducive to achieve social accountability objectives includes a supportive legal and institutional framework, state support and administrative capacity (Brinkerhoff and Wetterberg 2016b, 276; Speer 2012). Correspondingly, Fox (2015) suggests distinguishing between social accountability initiatives that focus exclusively on citizens' participation and those that simultaneously strengthen government's capacity. While the former's impact on service delivery is limited, the latter is more likely to achieve improvements in public service provision. As Rocha Menocal and Sharma (2008, 54) noted in an evaluation of over 90 donor programs, increasing citizens' voice without a parallel effort to improve the capacity of state institutions to address growing demands and expectations may prove problemat-

[109] Likewise, social capital may also indirectly contribute to citizens' access to credits and information about new technology, as, e.g., fertilizer or resistant seeds, resulting in increased productivity and higher welfare (Narayan and Pritchett 1999; Grootaert 1999; Grootaert and Bastelaer 2002a). Moreover, Carter and Maluccio (2003) show that households in communities with more social capital are better able to ameliorate negative health effects of individual-specific economic shows. Further evidence on the effects of social capital is summarized in (Durlauf and Fafchamps 2004).

[110] More generally, an abundance of evidence from local governance initiatives confirms that communities with high stocks of social capital can alleviate the negative consequences resulting from an insufficient provision of public goods due to market or state failure (Bowles and Gintis 2002, 421; Finsterbusch and Van Wicklin 1987, 1989).

ic. Responding to the claim for considering institutional context Wetterberg, Brinkerhoff and Hertz (2016) report evidence from a wide range of projects across different sectors which combined demand-side and supply-side interventions to achieve developmental and governance objectives. The six projects evaluated in this volume simultaneously sought to enable citizens to exercise social accountability and express voice, as well as to strengthen government actors' capacity to respond to citizen demands. Regarding service delivery, five of the six projects reported improved outcomes including better access to drinking water, increased availability of doctors, reduced absentee rates of staff and midwives, higher numbers of deliveries attended by skilled professionals and better vaccination coverage.

In another study, Brinkerhoff and Wetterberg (2016b) analyze the effectiveness of four donor-funded social accountability projects aimed at improving service provision in different sectors–mainly health and education. Each project contained technical assistance activities and social accountability interventions. Technical assistance included a variety of activities such as health worker training and direct support for service providers to improve access to and quality of services in maternal and child health or malaria prevention and treatment. Social accountability interventions included the implementation of complaint mechanisms, participatory planning, public hearings and building partnership committees with facility staff and citizens to discuss health service delivery issues. Notably, the authors control for (supply- and demand-side) contextual factors to disentangle the specific contribution of the project intervention. To assess the demand-side context, the authors use the CIVICUS rating which measures the strength and capacity of civil society.[111] The supply-side context is measured by a recipient country's level of liberal democracy (Freedom house index) and the extent of political, administrative and fiscal decentralization. The authors hypothesize that where local governments have more resources, autonomy, and reasons to listen to their constituents and civil society is capable and engaged social accountability interventions are more likely to be successful. All projects demonstrated some contribution of social accountability to improved service delivery and governance outcomes while empowerment effects were generally low. Importantly, their findings suggest, that liberal democracy and decentralization are essential supply-side factors in enabling and sustaining the impacts of social accountability on service delivery and government performance. Simultaneously, civil society's capacity and motivation to occupy the available space appears to be crucial to mobilize community members to volunteer in committees and to engage with public officials (Brinkerhoff and Wetterberg 2016b, 284).

Moreover, based on a systematic review of over 90 social accountability interventions including transparency initiatives, contentious actions, and participatory governance initiatives, Hickey and King (2016, 8) identify three major contextual factors that shape the outcomes of civic engagement: supply-side factors, demand-side factors and state-society relations. On the demand side, the authors identify the availability of credible and capable civil society organizations as central. Specifically, *'what appears to matter most is the capacity and commitment of citizens and CSOs to mobilize and act, both individually and collectively, around*

[111] The CIVICUS index measures the size and resources (structure) of civil society, the legal and political space for civil society organizations, the perceived impact and the underlying values of civil society.

social accountability demands, particularly those involving contentious actions and direct participation.' (Hickey and King 2016, 8). Regarding the supply-side context, the authors emphasize the role of the commitment (political will) and the capacity of bureaucrats and elected officials to respond to accountability demands–both in the Weberian sense of bureaucratic competence and in the form of maintaining synergistic relations with civil society actors. The authors' findings also suggest that the existence of well-institutionalized and programmatic political parties may enhance the effectiveness of citizen engagement activities. Similarly, the review notes that the history of state-society bargaining shapes citizens' expectations about the provision of goods and services and their confidence in political institutions, which in turn affects demand and supply context factors.

Lastly, based on evidence from 37 citizen-led accountability initiatives across 15 countries, Lodenstein et al. (2017) identify further conditions that influence the likelihood that health providers respond to increased citizen demand with improved service delivery. Concretely, service providers' responsiveness depends upon whether the involvement of oversight institutions–such as politicians, health authorities or the media–generates additional pressure via of fear of public or professional reprisals; providers perceive citizens' participation as legitimate based on democratic institutions; as well as whether citizens are perceived as competent to take decisions on health issues, and there is consensus among engaged citizens. Furthermore, providers are more likely to respond to citizens' demands if agreed upon democratic principles in public hearings ensure an environment in which health providers could take a stand against criticism and address their own concerns as well; health providers perceive themselves to be able to change the system in which they operate; as well as if providers self-identify as citizens and identify health service users as citizens entitled to receive services and benefits (Lodenstein et al. 2017, 6-10). As a result, the study's findings suggest that citizen-led social accountability increases providers' responsiveness via 'soft' pressure, and by generating feelings of support among service providers. Simultaneously, this mechanism is strongly influenced by contextual factors, including the legal and historical context, as well as social norms and values.

Evidence of community engagement in the provision of health services

Evidence from the health sector adds further evidence that communities' capacity to engage in collective action and reciprocal interactions enhances the effectiveness of health funding that is directly shifted to community-based organizations. Community-based organizations and community health workers deliver various health services at the local level and are recognized to play vital role in an effective response to HIV/AIDS.[112] Against this backdrop, international donors have increasingly shifted their AIDS funding in Sub-Saharan Africa toward activities and programs implemented at the community level (Riehman et al. 2013: S67). Several studies demonstrate that community health workers contribute to reduc-

[112] In general, CBOs are considered more flexible and adaptable than governmental agencies due to their capability to mobilize community members and reach rural, marginalized populations (Kakietek et al. 2013, 78). Community health workers provide a wide range of services, including preventive counseling, health education, mobilizing communities for vaccinations and other health activities as well as treatment of diseases such as malaria, tuberculosis and HIV/AIDS (Lewin et al. 2010; Kumar et al. 2014).

tions in infant- and child survival by delivering a long list of services. These services comprise behavioral interventions to promote healthy behavior (e.g., hand washing and breastfeeding); preventive interventions (e.g., insecticide-treated nets for malaria and micronutrients); treatment of diseases such as malaria, pneumonia, and neonatal sepsis (Haines et al. 2007, 2123; Kalyango et al. 2012; Perez et al. 2009); delivering newborn and infant health care interventions as well as increasing immunization uptake and breastfeeding (Nair et al. 2010; Lewin et al. 2010; Glenton et al. 2011).[113] Importantly, the evidence suggests that the performance of health workers and thus the quality of health service delivery improves if communities are able to engage (collectively) in monitoring activities. Likewise, norms of reciprocity and generalized trust help to bridge social divides and enhance the support for community health workers. They also facilitate that patients accept and behave in accordance with medical advice (health compliance behavior). Simultaneously, communities with high stocks of social capital have a larger pool from which to draw volunteers willing to engage in the provision of community health services (Haines et al. 2007, 2126).

Likewise, in the course of the AIDS epidemic, community-based organizations have emerged to provide a wide range of essential services in HIV-related prevention, care and treatment.[114] Evidence from Sub-Saharan Africa suggests that community group membership is associated with decreased HIV incidence, reduced stigma and improved access to health services, especially amongst women. Likewise, participation in voluntary associations (including religious associations) provide opportunities for critical dialogue about HIV/AIDS, often facilitating exchange of personal experiences of HIV/AIDS, formulation of positive action plans and solidarity to action them, as well as changes in harmful social norms (Campbell et al. 2013, 114; Dramé et al. 2013). Accordingly, community involvement is essential to successfully connect people who have similar issues and engage them in HIV-related interventions. For instance, Schwartländer et al. provide evidence that community involvement leads to improved uptake and use of many basic program activities including HIV-specific education, HIV/AIDS testing, behavioral changes, access to condoms and antiretroviral therapy (2011, 2033-2034). Likewise, in a study about the effectiveness of community-based organizations in Nigeria, citizens engaged in CBOs were more likely to*: '(1) be aware of any HIV/AIDS-related services, (2) report that prevention and care services were available in their communities, and (3) have used any HIV/AIDS-related services, prevention-related and care-related services than respondents in communities where CBO engagement was weaker.'* (Kakietek et al. 2013: S78). In a related study, Riehman et al. (2013: S67) demonstrate that individuals in communities with higher civic engagement in voluntary associations were significantly

[113] To clarify, community health workers encompass a wide range of health workers–paid and unpaid, professional and lay, experienced and inexperienced–that often live and work in the community (WHO 2008).

[114] These services include community mobilization; pre- and post-test counseling; HIV testing and results analysis; psychosocial support; treating opportunistic infections and providing palliative care; home-based care; information, education and advocacy sessions on antiretroviral therapy and treatment access; financial support and income-generation for purchasing antiretroviral medicines; treatment programs for women and children; antiretroviral bulk-ordering; prescribing antiretroviral drugs; training health care workers; medical follow-up; and treatment compliance clubs *(UNAIDS 2005, 8-9)*.

Community-based organizations may also provide the full range of medical services needed for antiretroviral therapy and medical consultations. Especially, prescribing antiretroviral medicines and drugs against opportunistic infections; ordering pre-treatment tests and follow-up on antiretroviral therapy; therapeutic choice based on laboratory results and stage of HIV infection; monitoring and managing possible adverse effects; and counseling on compliance *(UNAIDS 2005, 8-9)*.

more likely to have reported consistent condom use. Furthermore, David and Li (2010, 946) argue that norms of reciprocity and trust affect HIV infection rates by reducing opportunistic behavior among the vulnerable population due to the higher costs linked to punishment for these behaviors and stronger monitoring and enforcement. In addition to that, Low-Beer and Sempala (2010, 14) emphasize the importance of social networks, community groups and local radio to mobilize local leaders, chiefs, churches, schools, local politicians and ensure that HIV is on their agenda and raised in local meetings, funerals, and discussions.

The effects of foreign aid on accountability

Besides treating domestic political institutions as an exogenous factor that conditions the effects of aid, it may also be viewed as an endogenous factor that is affected by foreign aid. It is important to note that the potential adverse effects of aid on institutions of democratic governance form an indirect channel through which aid may negatively influence development outcomes (Chauvet 2015, 359). Even though this strand of literature has produced substantial cross-national evidence, there is little sign of convergence. The literature that views domestic political institutions as endogenous mainly clusters around aid's impact on state capacity and democratic institutions.

Regarding the influence of aid on state capacity, most authors refer to the standard argument of political economy that aid reduces the need for governments to be accountable to citizens as it undermines the emergence of a taxation system which in turn blocks domestic reforms to improve governance. According to this view, governments are rather accountable to donors to ensure continued aid flows and engage in rent-seeking activities. Additionally, aid is expected to siphon talented bureaucrats from the government away due to higher salaries paid by international development agencies thereby reducing state capacity (Winters 2010). Empirically, the evidence is mixed. Several studies have identified a negative effect of aid on bureaucratic governance (Knack 2001; Bräutigam and Knack 2004; Rajan and Subramanian 2007, Busse and Gröning 2009).[115] Foreign aid may also influence accountability for public service delivery via its indirect effect on civil society. Specifically, besides the direct effect of aid activities aimed at strengthening civil society foreign aid may create perverse incentives and undermine civic engagement and hence communities' collective action capacity. For instance, Bano (2012) provides evidence from Pakistan that funding from international donors has negative effects on associational membership. In particular, the author argues that leaders of self-help organizations are motivated by psycho-social rewards, such as prestige and fame, which is observed by their members and enables groups to overcome collective action problems. When leaders of voluntary associations receive funding from development assistance, their trustworthiness is undermined and as a result, negatively affects membership rates. By contrast, Tavares (2003), who implements an instrumentation strategy that better accounts for endogeneity issues (Chauvet 2015, 359), finds that aid significantly reduces corruption in a cross-section of recipient countries. This finding is confirmed by Charron (2011), who demonstrates that multilateral ODA–in contrast to bilateral

[115] Busse and Gröning (2009) also argue that transaction costs of aid delivery, donor fragmentation and problems of 'poaching' qualified (government) staff members for aid projects are further reason for adverse effects of aid on governance.

ODA–has been effective in curbing the level of corruption in recipient countries since the second half of the 1990s.[116]

Regarding the evidence on the effects of aid on democratic institutions, there is little sign of convergence. Besides studies that find no significant effect of foreign aid on democracy (Knack 2004), most studies identify either a positive or a negative relationship. In particular, Djankov et al. (2008) report a significant negative effect of foreign aid on democracy arguing that aid–similar to other natural resources–provide windfall profits that do not depend on tax revenues raised from citizens and therefore reduce incentives for democratic accountability. This finding is supported by a study of Kalyvitis and Vlachaki (2012) demonstrating that total aid flows negatively affect the probability of observing democracy in a country. By contrast, Wright (2009) argues that the effect of aid on democracy depends on whether political leaders expect to remain in office after democratization and provides compelling evidence that aid fosters democratization where dictators' have large distributional coalitions, for example, in single-party regimes, but deters democratization in military regimes.[117] Likewise, Kalyvitis and Vlachaki (2010) also provide evidence that countries receiving democracy-related aid is positively associated with the likelihood of observing a partly or fully democratic political regime.[118] This result is also confirmed in a recent panel study on the effect of democracy aid on democratic development in Sub-Saharan Africa over the period 1991-2008 (Dietrich and Wright 2013). The findings suggest that democracy aid contributes to strengthening institutions of democratic governance and increases the likelihood of a transition to and survival of multipartyism. Not only the regime type and aid purpose, but also the source of development assistance has been identified as a determinant of democratization as democratic donors are more likely to seek democratization than non-democratic donors (Bermeo 2011). The author demonstrates that aid from democratic donors during the period 1992-2007 is associated with an increase in the likelihood of democratic transition in recipient countries. Against this backdrop, Krasner and Weinstein (2014, 132-133) conclude that in the aggregate the relationship between aid and democratic governance appears to be conditional on several factors including donor motivations and the incentive structure of political authorities due to the use of conditionality.[119]

[116] Charron interprets his findings as support for the effectiveness of the anti-corruption movement established in 1997 by all major international organizations. For a more comprehensive review is provided by Winters (2010, 230-231) and Chauvet (2015, 359).

[117] Wright measures distributional coalition combining Bueno de Mesquita's index of the size of the winning coalition with a measure of regime type. The author argues that single-party regimes tend to have large distributional coalitions because they frequently build large patronage parties, while military regimes typically have small distributional coalitions as they are better able to use force to remain in power (Wright 2009, 557).

[118] Democracy-related aid is a specific type of aid for electoral and technical assistance, capacity development of parliaments, judiciaries and political parties, as well as the strengthening civil society.

[119] In this context democratic governance is defined as political openness, the existence of effective and accountable institutions, the rule of law, and free and fair elections.

3.3 Social capital and accountability

The acknowledgment of the critical role of institutions and communities for government accountability resonates with the ongoing interdisciplinary study of social capital (Woolcock and Narayan 2000, 229; Putnam 1993, 182; Paxton 1999). The concept and theory of social capital have contributed to bridge orthodox divides among disciplines and offers ways to explain the success of development interventions by taking into consideration the nature and extent of social interactions between communities and institutions (Woolcock and Narayan 2000).[120] As Ostrom and Ahn put it, *'social capital reflects a way of conceptualizing how cultural, structural, and institutional aspects of small to large groups in a society interact and affect individual incentives and behavior and resultant economic and political change.'* (Ostrom and Ahn 2008, 73). The World Bank's strategy to reduce poverty put forth in the World Development Report 2000/2001 emphasized social capital as a core element of empowerment (Grootaert and Bastelaer 2002). In this context, the bank initiated the *Social Capital Initiative* which focused on how to measure social capital and its impacts to design better development interventions which can both safeguard existing social capital and promote the creation of new social capital (World Bank 1998, iii; Grootaert and Bastelaer 2002). The new research agenda of development agencies emphasized local participation and social capital as important instruments for increasing the effectiveness and sustainability of poverty-reducing policies and for promoting social change (Brett 2003; UNDP 1993; World Bank 1994; World Bank 1999, 18-19). From a political science perspective, Robert Putnam's study of community life in Italy and changing patterns of civic engagement in the United States stimulated the renewed academic interest in social networks and political culture research (Putnam 1993, 2000).[121] Drawing upon social capital theory this sub-chapter attempts to establish the theoretical framework for linking civic engagement with increased political participation and demand for accountability. Therefore, the first section outlines the different conceptualizations of social capital. The second part reviews the empirical evidence from the society-centered and institution-centered approach to social capital.

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[120] The concept and discourse of social capital provide a common language for social scientists improving communication and cooperation among scholars. For instance, within the (structural-) functionalist tradition of Émile Durkheim and Talcott Parsons norms and values are the most important determinants of individual behavior (Franzen and Freitag 2007). Conversely, the rational choice approach to economic theory ignores the relevance of social context by focusing on utility-maximizing, isolated individuals, whose behavior in pursuit of their own interests is expected to lead to desirable social outcomes through the 'invisible hand of the market.' Correspondingly, the seminal works by James Coleman and Mark Granovetter attempted to integrate the under-socialized rational choice approach to economic theory and the over-socialized approach associated with sociological discourse building on the concept of social capital (Castiglione 2008, 184).

[121] This idea originates in the works of Alexis de Tocqueville, who analyzed associational patterns in the US and France in the 19th century, and claimed that the functioning of democracy depends on a vivid associational life based on citizens' engagement in civil society organizations (Tocqueville 2010). The democratic transition of Eastern European and Latin American countries at the end of the 20th century has renewed academic interest in 'people power' (Stolle and Howard 2008) and shifted the concept of civil society from opposition movements and self-organizing social and civic structures operating beyond the state to Western democracies (Wnuk-Lipinski 2011, 261). At the same time, the social capital discourse has been informed by political theory, third-sector research, and sociology. Normative political theory proposed how the individual relates to the society as a whole and the communities comprising it (Castiglione 2008b, 561). Likewise, research on the role of NGOs as service providers in the context of government or market failure has further stimulated the debate on social capital (Gidron 2010). The rise and routinization of the concept of social capital in the social sciences have also been corroborated by parallel strands of research in natural science which underpin the centrality of social relations to human behavior (Woolcock and Radin 2007; Woolcock 2010).

3.3.1 The concept of social capital

Despite absent consensus about its precise meaning, there are two elements that are included in all social capital conceptualizations to a greater or lesser extent, trust and associational networks (Phillips 2006, 142). Differences exist regarding their relationship with each other and with social capital itself. Moreover, it is essential to distinguish between approaches that conceptualize social capital as a property of individuals (relational capital), which can be found in networks of individual participants, and social capital as a collective good (system capital), which benefits everyone individually, including those that did not invest in it (Inkeles 2000; Esser 2008). The distinction between individual and collective social capital echoes with measures used to describe the structures of *actors'* relations within a network and the structure of entire *networks* (Esser 2008, 25; Lin 2008).

Specifically, individual social capital can be seen as the sum of all resources an actor can employ and use through personal relations with other individual actors who control those resources (e.g., their wealth, power, or reputation) and in which the actor is intentionally investing and which can generate a return for the actor (Esser 2008, 24).[122] In this sense, social capital is similar to other types of capital, such as human capital or economic capital.[123] In contrast to individual social capital, which resides in the social relations of individuals and can be used (to a certain extent) intentionally, *system capital* is a public good, which cannot be possessed by individual actors and does not emerge from intentional individual efforts. In particular, *system capital* refers to the characteristic of the entire relation system between individuals or within a group, organization, community, region, or society (Esser 2008, 24). In this sense, system capital refers to the stock of social capital enjoyed by 'communities', as in the form of reduced crime rates, lower corruption and better governance (Portes 2000, 3).[124]

Different authors focus on either the *individual* or the *collective* aspects of social capital. Examples of the former include studies about individuals obtaining scarce resources such as educational achievement or finding a job because they enjoy larger, more supportive, or otherwise more useful networks (Small 2009; Coleman 1988; Yamamura 2009). Political scientists have mainly focused on the study of social capital as a collective attribute of communi-

[122] Esser further distinguishes three forms of social resources and benefits that together constitute social capital (Esser 2008, 31-34): i) information and sociability based on an actors *position* in a network; ii) the readiness of others to become involved in risky transactions with an actor based on the actor's *trust*worthiness; and iii) the provision of help and solidarity which increases others *obligations* to reciprocate a favor. i) *Position*-based capital refers to the resources and benefits an actor can activate based on the actors' strategic position within a given network structure and goes back to Mark Granovetter's seminal work on 'the strength of weak ties' (1973) (see below) and the concept of structural holes (Burt 1992). ii) *Trust*-based capital refers to the resources and benefits an actor can activate based on his reputation for being trustworthy, that is, the expectation that trusting an actor is justified and one's trust will not be misused (Esser 2008, 34). iii) *Obligation*-based capital involves the resources and benefits an actor can activate based on obligations other actors owe him. The number of obligations as well as the number of relations the obliged actor maintains determine the amount of obligation capital (Esser 2008, 35).

[123] Still, networks and their features are not identical to their resources (Lin 2008, 59).

[124] Esser (2008) distinguishes between three forms of system capital: i) a networks monitoring capacity and attention to public affairs, ii) the willinguishes to cooperate, and iii) norms and values. i) Networks enable the spread of information about opportunistic behavior and one's individual effort to contribute to the public good (Durlauf and Fafchamps 2004, 18). This monitoring capacity (social control) enables networks to solve collective action problems because free-riding can be detected. ii) Generalized trust reflects an abstract preparedness to trust others including people who are not personally known which facilitates cooperation. iii) Appropriate norms and values set positive incentives and provide intrinsic motivations stimulating people to engage in collective action.

ties (Putnam 1993, 2000); Inkeles 2000, Hooghe and Stolle 2003; Newton 2001; Norris 2002). [125] The concept as it is understood in political science has been developed most extensively by Pierre Bourdieu, James Coleman, and Robert Putnam even though its intellectual roots can be traced back to Alexis de Tocqueville and John Stuart Mill (Woolcock 1998; Castiglione 2008c).

Bourdieu defines social capital as *'(…) the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition–or in other words, to membership in a group'* (Bourdieu 1986, 248). In this sense, social capital embedded in social relations becomes an individual asset, which can be used to achieve individual goals.[126] The level of social capital depends, then, on the size of an individual's network and the capital of the network's members (Bourdieu 1983, 192). Bourdieu argues that an individual's level of social capital is strongly determined by the individual stock of economic and cultural capital (reflected by the level of educational achievement), which in sum establish the characteristics of society's class structure and level of inequality (Bourdieu 1983, 188).

By contrast, Coleman defines social capital as *'a variety of different entities, with two elements in common: they all consist of some aspect of social structure, and they facilitate certain actions of actors-whether personal or corporate actors-within the structure.'* (Coleman 1988, 98). Coleman identifies three forms of social capital: i) obligations and expectations, which depend on the trustworthiness of the social environment; ii) information potential; and iii) norms and sanctions (Coleman 1988, 118). In this sense social capital is both an individual resource and a public good: *'as an attribute of the social structure in which a person is embedded, social capital is not the private property of any of the persons who benefit from it'* (Coleman 1990, 315). For example, the establishment of norms and their enforcement is enjoyed by a larger number of actors beyond the networks that bring the norms and sanctions into existence. Specifically, since it is impossible to exclude others from its consumption, it creates incentives to free-riding (Coleman 1990, 316). Even though Coleman acknowledges that social capital is an important resource for individuals and their perceived quality of life and that its public good character reduces incentives to produce it voluntarily, he largely ignores the function of social capital as a means to overcome collective action problems (Coleman 1990, 316-318). His focus on social capital as an individual resource can be attributed to the aim of integrating the over-socialized approach of sociology and the under-socialized approach of economic theory into a unified theory. In particular, Coleman attempts to place individuals' self-

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[125] Kriesi (2007, 34-35) develops an extended Putnam model which links micro-level social capital (relational capital) and macro-level social capital (system capital) with the quality of government and political participation. In particular, at the system level, one can observe a relationship between the quality of government, system capital–including associational networks and social trust–and patterns of political participation. Simultaneously, at the micro level, socioeconomic characteristics, such as education or income, are associated with the likelihood of associational membership (relational capital), which in turn determine individuals' political participation and confidence in political institutions. Both the micro and macro level are mutually dependent. Hence, political institutions establish an enabling environment for individual membership and make civil society organizations more inclusive, which in turn increases incentives for individual civic engagement. Individual civic engagement and social trust (relational capital) aggregate to civil society and generalized trust at the macro level (system capital). In societies with high social trust individuals also have less distrust in political institutions. Both individual political trust and participation accumulate to society's pattern of political trust and participation Kriesi (2007, 34-35).

[126] '*Das Sozialkapital ist die Gesamtheit der aktuellen und potentiellen Ressourcen, die mit dem Besitz eines dauerhaften Netzes von mehr oder weniger institutionalisierten Beziehungen gegenseitigen Kennens oder Anerkennens verbunden sind*' (Bourdieu 1983, 191).

interest as a motivational factor within the social context (Coleman 1988, 96) and to explain the origins and internalization of norms and values as the result of individual rational calculation of either short- or long-term interest (Castiglione 2008, 185).

Robert Putnam transferred the concept of social capital from sociology to political science. In particular, in *Making Democracy Work* Putnam relates differences in the effectiveness of several Italian regional governments and their economic performance to the vibrancy of associational life in each region. Drawing on the main ideas of Tocqueville's study of *Democracy in America* (2010) Putnam's view reflects a neo-Tocquevillian, bottom-up approach of democratization. According to this view, a vibrant voluntary sector increases citizens capacity to overcome collective action problems and to demand accountability from governments (Putnam 1993, 182; Paxton 1999). Communities endowed with norms and dense networks *'can more efficiently restrain opportunism and resolve problems of collective action*' (Putnam 1993, 173) because they require fewer resources to guarantee compliance.

> *(…) citizens in civic communities expect better government and (in part through their own efforts), they get it. They demand more effective public service, and they are prepared to act collectively to achieve their shared goals. (…) On the supply side, the performance of representative government is facilitated by the social infrastructure of civic communities and by the democratic values of both officials and citizens. (Putnam 1993, 182)*

Employing those forms of social capital identified by Coleman, the neo-Tocquevillian approach emphasizes the importance of voluntary associations in their function as repositories for other sources of social capital (such as obligations and expectations, information potential and norms and sanctions) (Anheier and Kendall 2002, 352).[127] In this vein, social capital is defined as the *'(…) features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions'* (Putnam 1993, 167). Putnam argues that voluntary associations improve the trustworthiness of individuals because access to reliable information about past behavior and present interests of potential partners are easily accessible, which increases the costs of opportunistic, non-cooperative behavior (Putnam 1993, 173). For this reason, instead of monitoring others, individuals are able to trust them to act as expected. To clarify, voluntary associations reflect the *structural* aspects of social capital, while it is norms, values, and, in particular, trust among citizens that can be seen as *cultural* aspects of social capital (Van Deth 2008a). Accordingly, the neo-Tocquevillian approach considers social capital as collective social capital or system capital.

In contrast to Coleman's conceptualization of social capital, Putnam attributes the trust and cooperation enhancing function of associations only to *horizontal* networks, excluding networks, which consist of actors of different status and power. Putnam argues that *vertical* networks are less conducive to trust and cooperation because of less reliable information

[127] It is important to note that Putnam refers to evidence from the development literature to stress the importance of associational networks as a crucial determinant of poverty reduction efforts (Putnam 1993, 90). *'A vigorous network of membership organizations is essential to any serious effort to overcome mass poverty under the conditions that are likely to prevail in most developing countries for the predictable future (...) While other components—infrastructure investments, supportive public policies, appropriate technologies, and bureaucratic and market institutions—are necessary, we cannot visualize any strategy of rural development combining growth in productivity with broad distribution of benefits in which participatory local organizations are not prominent*' (Esmann and Upphoff 1984, 40; cited in Putnam 1993, 90).

sharing mechanisms and limited opportunities to sanction opportunistic behavior of the more powerful (Putnam 1993, 175). Nevertheless, the type of association that scholars include under the concept of structural social capital varies.[128]

Regarding the relationship between structural and cultural social capital, Putnam argues that repeated interaction in networks give rise to a 'generalized norm of reciprocity,' which lowers transaction costs and provides another source of trust (Putnam 1993, 171-172).[129] Moreover, associational networks function as incubators of 'civic virtue', which contribute to the creation of 'civicness' and civic orientations. As Putnam puts it, *'virtuous citizens are helpful, respectful, and trustful towards one another, even when they differ on matters of substance'* (Putnam 1993, 88-89). In his view associations instill in their members habits of cooperation, solidarity, and public-spiritedness as well as civic skills and self-confidence, which together contribute to a sense of shared responsibility and increase communities capacity to cooperate in collective endeavors (Putnam 1993, 90; Fung 2003, 520). From this point of view, voluntary associations become instruments for the formation of social capital. As such, trust is an outcome of networks and reciprocity norms, or as Putnam puts it, '*people who join, are people who trust*' (Putnam 1995, 666). Accordingly, in a later publication, Putnam emphasizes the central role of networks by defining social capital (slightly differently) as *'(…) features of social life–networks, norms and trust–that enable participants to act together more effectively to pursue shared objectives.'* (Putnam 1995, 664-665). However, critics have argued that trusting people be more likely to join associations. As a matter of fact, those who join associations are more likely to have comparatively higher income, education and social class, which encourages trusting and humanistic orientations (Newton 2001, 207). Empirically, evidence about the relationship between associational membership and trust at both the individual and the system level is weak and varies over time and country (Westle, Kunz, and Roßteutscher 2008, 96–97; Newton 2001; Roßteutscher 2008; Anheier and Kendall 2002).[130]

Much less attention has been paid to the empirical relationship between associations on the one hand and norms and values on the other. For instance, Welzel, Inglehart, and Deutsch (2005, 132-133) report a significant positive correlation between community involvement and civic mindedness at the individual level. Equally, Zmerli (2010) finds supportive evidence on the positive relationship between associational involvement and expressed norms of citizenship (including norms of solidarity, participation, autonomy and social order) in European countries between 2001-2003. However, the author also reports a significant negative correlation between social trust and citizens' adherence to norms of social order (importance of paying taxes and obeying the law) for a considerable share of

[128] Even though Putnam *excludes* the Catholic church in his study of Italy and focuses only on *horizontal networks of civic engagement* (Putnam 1993, 173), he *includes* the church in his study on the decline of social capital in the United States (Putnam 2000). Horizontal networks of civic engagement include choral societies, cooperatives, sports clubs, leisure time as well as cultural and scientific associations. Putnam argues that political parties may be either horizontally or vertically organized and therefore are not necessarily subject to the benefits of social capital. However, in his analysis of Italian parties he identified a strong positive relationship between citizens' membership in horizontal networks and mass-based political parties (Putnam 1993, 149).

[129] Gouldner (1960) distinguishes between specific and general reciprocity. A *specific* norm of reciprocity refers to the exchange of identical things. A *generalized* norm of reciprocity is based on mutual expectations that a benefit granted now should be repaid in the future, though the things exchanged may be concretely different but should be equal in value.

[130] By contrast, Anheier and Kendall (2002) find a robust, positive relationship between the number of memberships held by individuals and social trust for 26 out of 30 European countries using data from the European Social Survey in 2001.

countries. Despite supporting Putnam's claim that associations function as incubators of civic norms the latter finding challenges the widely held belief that a community's level of social trust and civic orientation are positively correlated.

Cultural and structural social capital

Neo-Tocquevillians emphasize the importance of generalized trust because it not only facilitates collective action *within* communities but also enables citizens to cooperate for mutual benefit *across* social divides. Correspondingly, some definitions of social capital exclusively draw upon trust as a defining characteristic. For instance, Francis Fukuyama defines social capital as *'a capability that arises from the prevalence of trust in a society or in certain parts of it'* emerging from cultural traditions and historical experiences (Fukuyama 1995, 26).[131] Based on its radius, trust can be either directed to closed in-groups (thick, *particularized trust*) or extended beyond an individual's network constituting a general worldview of other people (thin, *generalized trust*). Generalized trust extends beyond face-to-face interactions and personal experience and incorporates people who are not personally known (Stolle 2002, 397).

Despite the distinction between particularized and generalized trust, there are three different types of trust that are related to the social capital literature including identity-based, moral and rational accounts of trust. They differ concerning what it is, how it can be generated and in the extent to which it expands to include other people that are not personally known (Stolle 2002, 400-404). First, according to social identity theory (Tajfel 1974) identity-based trust emerges because people trust those, to whom they feel close, whom they believe are similar to them, and with whom they are familiar (Stolle 2002, 401). The shared group identity is rooted in shared values or cultural practices from which reputations for reliability can be established as well as in close-knit relations with family, friends and kinship. Second, Uslaner (2002, 21) argues that generalized trust is largely (though not entirely) based on *moralistic trust*, that is, the moral dictates that people ought to trust each other.[132] Moralistic trust is based upon a view *'that the world is a benevolent place with good people, [...] that things are going to get better, and that you are the master of your own fate'* (Uslaner 2002, 23). Accordingly, an optimist with a positive view of human nature treats others as trustworthy irrespective of the context or prior personal experiences. This view contrasts with the rational choice perspective according to which *'you trust someone if you have adequate reason to believe it will be in that person's interest to be trustworthy in the relevant way at the relevant time'* (Hardin 1993, 505). In other words, trust is encapsulated in one's judgment of the other's interest. Thus, if the person is known, trusting depends on previous experiences with that person (*the shadow of the past*). Conversely, if one has no knowledge about the person's interests, one *generalizes* from past encounters with *similar others* (Hardin 1993, 508). Consequently, the *generalized*

[131] Generally speaking, trust reflects the extent to which individuals believe that certain expectations about the behavior of others will materialize (Kotzé and Lee Steenekamp 2011, 2414). There are two major forms of trust: social trust and political trust. Social trust is trust between citizens, whereas political trust is trust between citizens and political leaders or directed at political institutions (Newton 2001, 201; Kleiner 2014, 28).

[132] The concept of moralistic trust is closely related to the concept of generalized trust (Stolle 2002, 403). Uslaner (2002, 21) describes moralistic trust as the 'faith in strangers', which refers to trust for people whom we do not know and who are different from ourselves. Moral trust is rooted in an optimistic view of the world regardless of the context or prior experiences.

level of trust from the viewpoint of rational choice theory is the result of past experiences and is continuously updated by new assessments (Hardin 1993, 508).

From a neo-Tocquevillian point of view, generalized trust is the result of positive in-group experiences with members of different backgrounds which are generalized to unfamiliar others (the '*bridging*' of social capital) (Putnam 2000). Based on this assumption neo-Tocquevillians have argued that associational involvement as a source of social capital plays a major role in development and democratization processes which stimulated much scientific debate. Critics have argued that this view pays too little attention to power imbalances ignoring that social capital may be only good for those inside the network and overlooks the role of *informal* forms of voluntary engagement. Furthermore, the related literature on civil society has repeatedly pointed to the importance of broader segments of civil society that have previously been ignored (Edwards and Foley 2001, 6). As a result, a consensus emerged to distinguish between different types and functions of social capital and to expand the focus of the social capital approach beyond formally organized, horizontal associations. The most critical distinctions include *bridging* versus *bonding* social capital, *thick* versus *thin* social capital, *formal* versus *informal* social capital and *inward-looking* versus *outward-looking* social capital (Putnam and Goss 2002).

The difference between *bonding* social capital and *bridging* social capital (Putnam 2000) goes back to Granovetter's (1973) distinction between weak ties and strong ties. Strong ties represent close and frequent social contacts, which tend to be embedded in tightly-linked regions of a network, while weak ties represent more casual and distinct social contacts, which tend to cross between these regions (Easley and Kleinberg 2010, 9). In other words, strong ties refer to relationships between family members and close friends (thick social capital), whereas weak ties can be found between acquaintances (thin social capital). Granovetter argues that even though strong ties increase trustworthiness between members, they also increase the share of common relationships and as a consequence tend to create closed networks, which are less conducive to information sharing (Coleman 1990, 318-320). Weak ties, however, can bridge the gap between 'closed' communities as exemplified in Granovetter's seminal work on the beneficial effects of intercommunity ties for job search. Correspondingly, bridging of social capital is the result of *intercommunity* ties and creates generalized trust across social divides based on religion, class, ethnicity, gender and socioeconomic status (Woolcock and Narayan 2000, 230). Bonding of social capital is based on *intra-community* ties, which is related to particularized trust and gives families and communities a sense of identity and fosters group cohesion.[133] As such, bonding social capital can provide protection against material hardship and reduce risk and uncertainty (Woolcock and Narayan 2000). However, strong intra-community ties can also become a basis for the pursuit of nar-

[133] Notwithstanding, Stolle (2002, 406) provides another typology by classifying social interactions by '*bridging* interactions between actors with different background' versus '*bonding* interactions between actors with same background' (shared identity) and *weak* versus *strong* ties (strength of interaction). The resulting four ideal forms of social interaction include on the one hand i) diverse associations and neighborhoods, ii) homogenous associations, unions, professional groups, caste; and on the other iii) interracial marriages or friendships, and iv) same group marriages and friendships.

row interests and elite capture (Molenaers 2005; Portes 2000, 3).[134] As Grootaert and Bastelaer put it, social networks *'can be of little use for development if the groups lack external links and influence or if the structures are not complemented with strong cognitive elements, such as common values, norms, and mutual trust'* (Grootaert and Bastelaer 2002, 6). Moreover, Warren (2008, 130-132) provides further evidence how certain forms of social capital may hamper democratization or increase political corruption and exacerbate social division along existing ethnic, religious or gender cleavages (Molenaers 2005; Arnall et al. 2013; Dasgupta and Beard 2007; Platteau 2004). Against this backdrop, Putnam acknowledges the 'dark side' of social capital and notes that '*urban gangs, NIMBY ('not in my backyard') movements, and power elites often exploit social capital to achieve ends that are antisocial from a wider perspective*' (Putnam 2000, 21-22).

Likewise, the focus of social capital research on voluntary face-to-face involvement in associations that are *formally* organized (including regular meetings, membership requirements and dues) ignores the role of modern, *informal* forms of voluntary engagement. Though, both constitute networks in which reciprocity may develop and from which there can be private or public gains (Putnam and Goss 2002, 9-10). For instance, Wuthnow (2002, 96-97) demonstrates how technological innovations increase interaction and make civic engagement not only less durable, more flexible, punctual and more spontaneous, but also enables participation independent of location. In like manner, Krishna (2002, 4-5) demonstrates that informal familiar and communal networks have the most value for citizens in developing countries, in particular in rural areas.

The distinction between *outward-looking* and *inward-looking* forms of social capital reflects the difference between associations, which pursue the material, social, or political interests of their own members and those that are somewhat public good oriented.[135] *Outward-looking* forms of social capital refer to *sociotropic associations*, such as charitable, cultural or recreational association. They have been at the center of the neo-Tocquevillian approach of social capital. By contrast, *inward-looking* forms of social capital refer to *utilitarian associations* such as professional organizations, political parties or labor unions, which use their power to extract resources from society providing advantages to their members to the detriment of the rest of society (Rothstein and Stolle 2008b, 443). This argument is rooted in the theory of new institutional economics according to which special interest groups such as unions often attempt to influence government policy in their favor which ultimately leads to inequality,

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[134] For instance, communities might punish non-conform behavior and constrain individual autonomy, and privacy, or less successful community members may exploit the more successful by claiming assistance, which can constrain entrepreneurship and long-term investment (Woolcock and Narayan 2000, 230).

[135] Lelieveldt, Astudillo, and Stevenson (2007) provide another typology of associations including activities of *organizational* maintenance and *instrumental* activities. Maintenance refers to activities that are targeted to ensure organizational survival, whereas instrumental activities focus on the attainment of organization-specific goals (Lelieveldt, Astudillo, and Stevenson 2007, 82-83). Instrumental activities may be targeted either to the political system (*policy-oriented*) to influence agenda-setting and public service delivery decisions, or directly towards clients and members (*client-oriented*). Moreover, instrumental activities can also be distinguished by the extent to which activities are *delegated to professional staff* versus *undertaken by members* themselves. Based on this typology Lelieveldt, Astudillo, and Stevenson (2007) provide evidence on the differences in associational activities between civil society organizations in six European cities. Their findings suggest that most associations are engaged in instrumental activities. However, associations in the fields of politics, community affairs and economic interests are somewhat policy orientated, whereas organizations in the fields of sports, family, religion and culture are instead client and member oriented (Lelieveldt, Astudillo, and Stevenson 2007, 93-94).

inefficiency and hampers economic development (Olson 1982).[136] Putnam excludes utilitarian associations from his analysis because they encounter less reliable information sharing mechanisms and fewer opportunities to sanction opportunistic behavior of the more powerful, which blocks the emergence of democratic and cooperative values (Putnam 1993, 175).

By contrast, the parallel strand of literature on civil society (Edwards and Foley 2001, 6) has repeatedly pointed to the importance of wider segments of civil society *including* religious organizations, political parties, labor unions as well as social movements and NGOs.[137] Civil society ('non-profit' sector) is broadly understood as '*the sphere of uncoerced human association between the individual and the state, in which people undertake collective action for normative and substantive purposes, relatively independent of government and the market*' (Walzer 1998, 123-124; cited in Edwards 2011, 4).[138] To clarify, the concepts of social capital and civil society refer to broadly similar entities. Civil society is the more encompassing concept, which comprises those organizations that complement states and markets, whereas at a lower unit of analysis social capital refers to the norms and networks of civil society organizations that enable people to cooperate (Woolcock 2011, 197). Though, a consensus emerged to distinguish between consensus-oriented civil society organizations that '*foster patterns of civility in the actions of citizens in a democratic polity*' and rather conflict-oriented associations that are capable of '*energizing resistance to a tyrannical regime*' (Foley and Edwards 1996, 39; Rothstein 2012, 263).

From a contestatory perspective, civil society organizations not only play an important role as agents of change in democratization, peace building, poverty reduction and transformation of power relations (Gaventa 2011; Pearce 2011; Ibrahim and Hulme 2011; Warren 2011) but also as cultivators of social capital (Foley and Edwards 1996, 39). For instance, Minkoff argues that—given the fact that patterns of within-group sociability and solidarity often follow racial and class lines—national social movements can bring together dispersed individuals into some form of collective identity and create social capital (Minkoff 2001, 193). Equally, Smith demonstrates that transnational social movements stimulate the creation of networks, norms and social trust, that facilitate cooperation for mutual benefit (Smith 2001, 196). In the same vein, Diani (2001, 218) argues, that in challenging political elites social movements both rely crucially on previous social capital, but also generate new forms of it. Furthermore, Anheier and Kendall suggest studying social capital within the wider context of civil society because engagement in conflictual associations and participation in non-institutionalized political action creates opportunities for the generation of social capital (Anheier and Kendall 2002, 355).[139]

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[136] In contrast to special interest groups, which lobby for preferential access to resources (rent-seeking) Olson claims that '*the poor and unemployed are almost never organized for collective action*' (1997, 60-61).

[137] A social movement is defined as a group of people with a conflictual orientation towards an opponent, sharing a collective identity and a set of common beliefs and goals, and a repertoire of collective actions (Kriesi 2014, 268).

[138] Specifically, civil society '*contains all associations and networks between the family and the state in which membership and activities are 'voluntary', including NGOs of different kinds, labor unions, political parties, churches and other religious groups, professional and business associations, community and self-help groups, social movements and the independent media*' (Edwards 2014, 20).

[139] To be precise, Anheier and Kendall argue that whether contentious political action creates opportunities depends on the institutional context, i.e., the general confidence in the political system (2002, 355).

Against this backdrop, Welzel, Inglehart, and Deutsch (2005) use a broad conceptualization of community involvement including participation in utilitarian and sociotropic associations, as well as social movements and test the theory of social capital for a sample of no less than 70 countries over the period 1980 to 2000. The authors argue that non-institutionalized political action qualifies as an essential form of community involvement, which indicates the effectiveness of networks in producing collective action (Welzel, Inglehart, and Deutsch 2005, 122-124). The reported evidence suggests, that first, at the individual level participation in elite-challenging action is more closely linked with aspects of civic-mindedness than is membership in utilitarian or sociotropic associations; and second, that at the country level non-institutionalized political action is more strongly linked with any measure of 'good governance' than associational involvement. The contestatory notion of civil society is also supported by recent evidence on the mobilizing effect of civil society organizations–including utilitarian, sociotropic and religious organizations–in Latin America (Boulding 2014, 100).

Summarising, although the concrete conceptualization of social capital differs most authors agree on the function of social capital which is to solve collective action problems (Kunz et al. 2008, 41). Regarding its structural component, the neo-Tocquevillian approach of social capital emphasizes the role of horizontal, leisure-oriented associations that are sources of trust and civic attitudes. Furthermore, as civil society research has substantiated the role of political associations and social movements in democratization and socio-economic development the narrow focus of the social capital approach has expanded beyond formally organized, horizontal associations (Edwards 2011, 9).

3.3.2 Social capital and the demand for accountability

Neo-Tocquevillians claim that social capital improves the stability and effectiveness of democratic governments via increased demand for accountability. Specifically, Putnam argues that civic engagement in organizations of community life enables citizens to hold elected representatives accountable (1993).[140] However, the concrete micro-linkages how social capital improves the responsiveness of public officials remain disputed (Rothstein and Stolle 2008b, 444). Drawing on the central mechanisms identified by Boix and Posner (1998) the first part of this section reviews the empirical evidence on linking social capital with institu-

[140] The performance of governments involves both responsiveness namely *'whether the public manager is doing the right things—i.e., delivering services consistent with citizen preferences*' and efficiency, which refers to '*whether the public manager is doing them right—i.e., providing services of a given quality in the least-cost manner'* (Shah 2005: xi). Tavits (2006, 215-216) notes that there is no single widely accepted definition or measure of government performance. This is also caused by the fact that public organizations are typically required to meet multiple and potentially conflicting organizational goals based on the involvement of a variety of interested stakeholders (Andrews 2012). Referring to the work of Robert Dahl, Putnam argues that the core characteristic of democracy is the responsiveness of the government to the preferences of citizens: *'A good democratic government not only considers the demands of its citizenry (that is, is responsive), but also acts efficaciously upon these demands (that is, is effective)'* (Putnam 1993, 63). To evaluate the performance of local governments Putnam uses different *output* measures, for instance, the promptness of budget approval (delay from the start of the fiscal year), the number of family clinics per person and local health unit expenditures (Putnam 1993, 63). Other studies of government performance use public opinion surveys and expert ratings to assess the 'quality' of bureaucratic governance produced by a given state apparatus–such as the rule of law, (perceived) corruption control or government effectiveness (Kaufmann, Kraay, and Zoido-lobatón 1999)–or draw on *outcome* measures such as infant mortality or illiteracy rate (La Porta et al. 1999).

tional and developmental outcomes from the viewpoint of the society-centered approach. In contrast to the various benefits neo-Tocquevillians have attributed to a flourishing civil society institutionalists have argued that whether social capital leads to increased accountability *depends on* the broader institutional context. Correspondingly, the second part contrasts the society-centered approach of social capital with evidence from the institution-centered approach.

The society-centered approach

The society-centered approach draws upon the finding that members of voluntary associations are better informed, more interested and more likely to discuss public affairs and hence, better able to judge and evaluate government performance than non-members (Almond and Verba 1963, 265). As demonstrated by Verba et al. (1995) voluntary associations provide opportunities to strengthen social and communicative competencies such as presenting an argument to a broader audience. These civic skills enlarge individuals' resources that can be used for political participation. Given that many public services are public goods their supply depends on motivated and capable citizens engaging in collective action to get the government to provide them (Tavits 2006, 212). Research in the tradition of Elinor Ostrom has repeatedly pointed to the importance of communities' organizing capacity to achieve better social outcomes (Ostrom 1990, 1999). In this context, trust is the core link between social capital and collective action (Ostrom and Ahn 2009, 22).[141] In other words, *civic* communities will be able to overcome the collective action problems associated with articulating their interests to the government, such as planning a meeting, organizing an event or train opposition leaders. By the same token, social movement research has shown, that non-institutionalized political action which seeks to claim citizens' rights or challenge policies draws on existing levels of social capital to mobilize citizens for protests, advocacy or lobbying. Additionally, Welzel, Inglehart, and Deutsch (2005) have demonstrated that citizens' increased emancipation from external domination—as indicated by their level of self-expression values (such as tolerance, liberty aspirations and trust)—provide intrinsic motivators that stimulate people to voice their claims through engagement in peaceful protest activities. The importance of emancipative values as a driver of collective action also echoes with evidence from research on effective democratization within the wider framework of human empowerment (Welzel 2013, 215-246; Inglehart, Welzel 2005; Welzel and Inglehart 2008; Inglehart 1999). In the same way, Dalton (2008) provides evidence that changing norms of citizenship influence the level of political participation.[142]

Community involvement enables citizens to voice their preferences to the government and to mobilize *political action* to make their interests a matter of public policy. Hence, social

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[141] Likewise, evidence from natural science and experimental economics also validates the importance of *cooperation* for human-decision-making (Woolcock 2010, 477-482).

[142] In his study about political participation in the US, Dalton distinguishes two forms of norms that Americans link to being a good citizen: citizen-duty and engaged-citizen norms. The author argues that the identified norm shift from duty-based to engaged citizenship has increased citizen's participation in non-institutionalized forms of political action. In particular, *citizen-duty* mainly refers to norms of social order and includes reporting a crime, obeying the law, serving the military, serving on a jury, and voting in elections. *Engaged-citizen* norms reflect liberal norms of citizenship including solidarity (support worse off), political autonomy (form own opinion) and participation in civil society organizations (Dalton 2008, 80-81).

capital not only improves the quality of inputs into the legislation and policy-making process (Warren 2001; Fung 2003), but also increases the pressure on governments to respond to their interests (Roßteutscher 2008, 212; Tavits 2006). To the extent that political elites depend on public approval and can be removed from office citizens' voice as well as citizens' monitoring and organizing capacity shapes incumbents' incentives to deliver public services effectively (Jenkins and Goetz 1999). For this reason, social capital may not only improve public service delivery but also contribute to resistance to illegitimate authoritarian power by *'checking, monitoring, and restraining the exercise of power by formally democratic states and holding them accountable to the law and public expectations of responsible government'* (Diamond 1999, 239). Furthermore, norms of reciprocity and generalized trust make citizens more civic by altering citizens' preferences from particularistic to community interests. In this sense, social capital enhances pro-social thinking and raises citizens' concern for the common good (Durlauf and Fafchamps 2004, 20-22; Bowles and Gintis 2011). Hence, social capital changes the quality of citizens' demands to governments by strengthening their support for public goods which benefit everyone rather than only a small segment of society (Boix and Posner 1996, 691).

Despite the scholarly focus on social capital's effect on the demand side of the accountability relationship Putnam (1993, 182) also refers to the effects of social capital on the behavior of policymakers and bureaucrats, which may improve the performance of representative governments.[143] Specifically, as Boix and Posner (1996, 691-692) point out social capital can foster the ability of bureaucrats to cooperate with one another in the course of carrying out their duties the same way as it helps citizens to cooperate in voicing their demands. This spirit of teamwork, what Judith Tendler refers to as social capital within the government (Tendler 1995), may positively influence the efficiency of public administration. Similarly, social capital may increase the productivity of administrative processes by solving the agency problem between senior managers and subordinate government officials assuming that bureaucrats face incentives to act opportunistically and misuse their power and position for their own benefit (Boix and Posner 1996, 691-692).[144] For this reason, in the absence of high stocks of social capital resources devoted to monitoring bureaucrats' behavior and to implementing rules to prevent them from pursuing private interests reduce administrative efficiency. By contrast, social capital among bureaucrats may reduce monitoring costs by shaping optimistic expectations about the behavior of their principals and fellow bureaucrats (Tavits 2006, 213). Furthermore, norms of reciprocity and generalized trust within the government may alter bureaucrats' concern for serving the members of the public with whom they have direct dealings, rather than responding to their superiors.

Empirically, La Porta et al. (1997), Knack (2002b) as well as Bjørnskov (2010) provide comparative cross-national evidence for a large number of countries indicating a positive association between cultural social capital and different measures of government efficien-

[143] Tusalem (2007) refers to further evidence on the positive effects of civil society on democratic governance and institutional performance in East-Central Europe (Toepler and Salamon, 2003), Latin America (Feinberg et al., 2006), Africa (Gyimah-Boadi, 2004), and Central Asia (Howell and Pearce, 2001) (cited in Tusalem 2007, 366).

[144] Subordinate government officials (agents) may pursue private interests and misuse their power in return for their own benefit instead of performing tasks assigned by the principal, in cases where such behavior is not easily observable.

cy.[145] Likewise, Andrews (2012) summarizes the findings of 48 empirical studies that evaluate the relationship between social capital and some aspect of organizational performance in the public sector and concludes that '*each dimension of social capital [...] is found to have a positive relationship with performance, at least some of the time. This appears to be so across most aspects of performance [...], and in several organizational settings, suggesting that areas high in social capital may be more resilient to economic recession and budgetary cutbacks'* (Andrews 2012, 62). By contrast, Tavits (2006) finds no significant effect of social capital on the efficiency of government organizations across different local governments of the US and Germany (Tavits 2006, 223).[146]

In the same vein, social capital is claimed to reduce governments' costs of monitoring compliance with regulations and of imposing sanctions to avoid free-riding because norms of reciprocity and generalized trust shape citizens' expectations about compliant behavior of other citizens (Boix and Posner 1996, 690-691). The lower transaction costs provide additional resources available for improved public service delivery. Moreover, public organizations serving areas with high levels of social capital may benefit from higher levels of civicness and commitment to the needs and interests of others by volunteers supplementing existing service provision (Putnam 2000). In fact, experimental economics provides numerous evidence that group identity fosters altruistic preferences and reduces opportunistic behavior and free-riding (Woolcock 2010), e.g., the likelihood of community members diverting irrigation water for individual use (Grootaert and Bastelaer 2002a, 8-9; Durlauf and Fafchamps 2004, 21-22). Respectively, public administration research provides further evidence of the potential gains from cooperation between regular producers of services such as health workers, school teacher or street-level bureaucrats, and citizens who receive services especially in developing countries (Ostrom 1996; Whitaker 1980).[147] *'When public officials and the citizens they are supposed to serve work together in diverse sets of open, nested arenas, productivity can be higher and all forms of opportunistic behavior are more likely to be exposed, but never totally eliminated'* (Ostrom 1996, 1083).

Despite the limited amount of cross-national evidence on the effect of social capital on government performance as an intermediate outcome (output) most empirical research focuses on the effect of structural and cultural social capital on (final) development outcomes (Putnam 1993, 152-162). The largest amount of evidence concerns economic growth. Specifically, generalized trust and civic norms have been shown to be positively related to economic performance (Fukuyama 1995; Keefer and Knack 1997; Easterly and Levine 1997; Helliwell and Putnam 2000; Whiteley 2000; Zak and Knack 2001; Beugelsdijk et al. 2004; Beugelsdijk and van Schaik 2005; Berggren et al. 2008; Beugelsdijk and Smulders 2009).[148] Likewise,

[145] Further evidence is summarized in Andrews (2012, 54-61).

[146] However, Tavits (2006) provides evidence that more civic communities tend to be more effective in pressuring their governments to deliver public goods and services.

[147] Coproduction refers to *'the active involvement of the general public and, especially, those who are to be the direct beneficiaries of the service'* (Whitaker 1980, 242). Specifically, citizens coproduce services they receive '*through requests for assistance (completing applications, alerting city officials to problems), provision of assistance (cooperation with service agents, volunteerism), and mutual adjustment with service personnel (joint consideration of a problem, reciprocal modification of expectations and actions as in training, counseling, and welfare programs)*' (Brudney and England 1983, 60).

[148] In contrast to the standard operationalization of social capital using indicators of generalized trust and associational membership Easterly and Levine (1997) operationalize social capital as ethnolinguistic diversity. Moreover, Keefer and Knack (1997)

Bjørnskov (2012) demonstrates that trust determines economic growth among other things through better governance and better education. Reviewing the empirical evidence, Jedinger concludes that the majority of the existing empirical evidence confirms a significant positive relationship between trust and economic growth (2013, 346). In contrast to the massive empirical evidence on the effect of trust on economic growth few studies analyze the effect of voluntary involvement on economic performance. Existing cross-national evidence provides little support for a significant effect of associational involvement on economic growth neither for associations in general nor certain types of associations (Keefer and Knack 1997; Beugelsdijk and van Schaik 2005; Knack 2003). Only Kunz (2000), as well as Beugelsdijk and Smulders (2009), report a positive relationship between involvement in sociotropic associations and economic development.

In sum, the social capital approach emphasizes i) the educative, skill-building, and psychological functions of associations on citizens' capacity to demand effective public service delivery and to hold elected representatives *accountable*; ii) improved cooperation between bureaucrats and higher efficiency of administrative processes; iii) the establishment of shared norms reducing transaction costs of regulation enforcement; and iv) the change of citizens' preferences towards the provision of public goods. Empirically, the most common mechanism analyzed in the literature on effective democratic governance links social capital and governmental performance through '*governments responding to citizens' demands*'. This is also the central reference point in the *social accountability* literature, which provides numerous evidence on the centrality of citizens exerting political pressure to hold governments accountable (Gaventa and Barrett 2012; Odugbemi and Lee 2011a; Brinkerhoff and Wetterberg 2016b; Freedman and Schaaf 2013; Fox 2015; Bold and Svensson 2013; Nair et al. 2010; Lewin et al. 2010).

The institution-centered approach

In contrast to the society-centered view on civil society, critics have pointed to the adverse effects of mass mobilization and powerful interest groups which may exacerbate social cleavages, delegitimize democracy and hinder efficient governance (Huntington 1968; Linz 1978). In fact, institutionalists have argued that whether social capital enhances the effectiveness of democratic governments or undermines democracy *depends on* the broader institutional context. Hence, the *institution-centered approach* emphasizes the formative effect of political institutions of democratic governance on the level of civic engagement.

> *[T]he strength and responsiveness of a democracy may depend upon the character of its civil society, as Putnam argues, reinforcing both the democratic functioning and the strength of the state. But such effects depend on the prior achievement of both democracy and a strong state. [...] Where the state is unresponsive, its institutions are undemocratic, or its democracy is ill designed to recognize and respond to citizen demands, the character of collective action will be decidedly different than under a strong and democratic system.* (Foley and Edwards 1996, 48)

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also measure citizens' adherence to norms of social order, for instance, to abuse government benefits, to cheat on taxes or to avoid a fare in public transport.

Referring to Putnam's *Making Democracy Work* Sidney Tarrow argues that differences in Italian regional governments' performance are neither caused by cultural nor associational but rather political determinants (Tarrow 1996a). According to this argument, the institutional quality of Italian governments in the past explains current differences in both the vibrancy of civil society and regional governments' performance. As Tarrow puts it, *'civic capacity is the by-product of politics, state building, and social structure'* (Tarrow 1996a, 394). Likewise, Paxton (2002, 259) points to the importance of democratic institutions that protect civil rights, such as freedom of association and a free press, as non-democratic regimes often actively oppose the formation of civil society organizations. Correspondingly, Bowles and Gintis (2002, 431) argue that an enabling legal environment including property rights turns members into beneficiaries of community success while shaping incentives that foster community's problem-solving capacities. Likewise, Berman (1997, 569-570) claims that if political institutions are weak and regimes lack legitimacy civil society associations may become a place for dissatisfied citizens, which deepens existing cleavages by strengthening intra-community ties and shaping hostility towards out-groups. In this context, authors have repeatedly pointed to experiences of Weimar Germany and the rise of the NSDAP (Berman 1997) as well as to the Rwandan genocide (Armony 2004).[149] Similarly, Berman emphasizes the function of political parties to channel societal grievances adequately. In the same vein, Krishna (2001, 2002) demonstrates that informal agents, such as village councils or caste groups, may take over the functions of political parties at the local level and translate civil society activity into developmental improvements.

Furthermore, Lowndes and Wilson (2001) argue that neo-Tocquevillians undervalue state agency and associated political factors, most notably the role of the government, as they shape the conditions under which voluntary associations thrive or wither. Specifically, by providing opportunities for participation in local governance, government agencies can influence citizens appetite for, and competence in civic engagement (Lowndes and Wilson 2001, 636). Hence, institutional arrangements make it more or less attractive for groups to engage in a certain activity by providing support and access to funding. Likewise, Skocpol et al. (2000, 542) provide evidence that federal political institutions strongly influenced the emergence of voluntary associations in the US. By the same token, institutionalists have stressed the role of states' administrative capacities arguing that social capital can only make a difference to democratic governance if decision-makers are willing and capable of responding to civil society's preferences (Lowndes and Wilson 2001, 637-638). Furthermore, institutions of bureaucratic governance and impartiality are essential for mediating competing citizens' demands which shape incentives for subsequent civic engagement (Lowndes and Wilson 2001, 639).

[149] The latter example is particularly compelling in as far as donor organizations including the World Bank and USAID had assessed the role of Rwandan civil society *before* the genocide as *pro-democratic*, which was expected to improve institutional performance and democratic politics by promoting civic education, political advocacy and the circulation of information in society (USAID 1992; Uvin 1998, 175, cited in Armony 2004, 201). However, Armony (2004, 201-204) argues that not only were civil society organizations unable to counteract the social and political forces that drove the genocide in Rwanda but were rather directly involved in mass killings.

In the same vein, formal institutions of bureaucratic governance are also linked to the level of social trust. Specifically, Rothstein and Stolle (2003; Rothstein and Stolle 2008a, 286) argue that social trust is created through *impartial* political institutions in particular *order institutions,* such as the legal system, the police, the army as well as public service provision in health and education.[150] According to the *institutional theory of trust* law and order institutions are responsible for detecting and punishing those who breach the law, engage in bribery or any other non-cooperative behavior. If citizens have confidence in the fairness and effectiveness of a country's legal institutions, it is reasonable to believe that illegal behavior will be sanctioned. Under those circumstances, citizens refrain from treacherous behavior and as a result, believe that most others can be trusted (Rothstein and Stolle 2008a, 287). On the other hand, if corruption weakens citizens' trust in the fairness and effectiveness of the judicial system and the police trust in others declines.[151]

Likewise, comparing the effects of different forms of public service delivery Rothstein and Stolle (2003) and Kumlin and Rothstein (2005) provide further evidence that citizen's perception of whether they were treated fairly by political authorities influence citizens' trust in others. Specifically, *universal* welfare programs, such as universal health care, that do not require eligibility testing are more inclusive and encompassing in character compared to selective programs which are subject to bureaucratic discretion and suspicion of cheating and discrimination. Furthermore, universal service delivery produces fewer opportunities for welfare fraud, which makes citizens more likely to believe that most others can be trusted (Rothstein and Stolle 2003). Applying the institutional theory of trust to the implementation of conditional cash transfer programs (CCT) in Peru Camacho (2014) provides confirming evidence on the potential negative effects of selective public service delivery on citizens' trust in others.

However, despite emerging consensus about the relevance of an enabling institutional environment social capital research falls short of empirical evidence on the interaction of social capital and political context. For instance, Knowles and Owen (2010) provides cross-national evidence from 73 developing and developed countries that social capital (measured as aggregated individual level of social trust, agency and tolerance) and formal institutions of bureaucratic governance (WBGI) have a compensatory effect on population health. In other words, while both informal and formal institutions increase average levels of life expectancy the gains from improving social capital are strongest for countries in which formal institutions are weakest and vice versa. These findings are supported by evidence from another cross-sectional study (N=46) which analyzes the interaction effect of social trust and institutional quality (ICRG) on economic growth (Ahlerup, Olsson, and Yanagizawa 2009). Following an instrumental variable approach, the authors find that the marginal effect of social capital decreases with institutional strength. By contrast, Paxton (2002, 259) explores

[150] Impartiality in the exercise of public power is defined according to Rothstein and Teorell: '*When implementing laws and policies, government officials shall not take anything about the citizen or case into consideration that is not beforehand stipulated in the policy or the law*' (2012, 24). Hence, the impartiality principle is at the center of the concept of 'quality of government' (Rothstein and Teorell 2008).

[151] In contrast to the *structural* approach of the institution-centered literature (Rothstein and Stolle 2008a, 279), proponents of an *attitudinal* approach argue that social trust improves political institutions, which leads to better political performance and as a result to higher levels of political trust (Newton and Norris 2000).

the reciprocal relationship between social capital and democratic institutions in further detail and confirms the bi-directional nature of the relationship. In particular, her findings suggest that democracy increases trust and associational involvement while at the same time social capital has a significant impact on the level of democracy.

Likewise, Roßteutscher (2010, 2008) tests whether the relationship between social capital and democratic citizenship varies across democratic and non-democratic sub-samples. Specifically, she analyzes whether social capital has the potential to stimulate democratization in non-democratic settings by increasing political participation and the spread of democratic orientations. Her findings, based on data from the WVS, imply that social capital stabilizes authoritarian rule by generating popular support for authoritarian leadership and suppressing elite-challenging forms of political action. Furthermore, *cultural* (as opposed to structural) social capital is positively associated with non-democratic preferences (Roßteutscher 2010, 752). Besides, Grimes provides compelling evidence that dense associational networks enhance government accountability if formal institutions ensure either political competition, freedom of the press or government transparency (Grimes 2012, 397-398). However, formal accountability mechanisms have no independent effect on good government, which resonates with findings on the limited impact of formal institutions in the absence of a free press (Chang, Golden, and Hill 2010). Hence, neither civil society nor formal institutions alone curb corruption although their joint effect significantly improves the quality of government.

In sum, from the viewpoint of institutionalists neo-Tocquevillians dismiss the importance of effective administrative and legal institutions to create a fertile ground for trust and a flourishing civil society (Rothstein 2012, 258). In particular, the legal and institutional framework including corruption control, the rule of law, administrative capacity and civil liberties are fundamental for the capacity of social groups to act in their collective interest and hold government officials accountable (Woolcock and Narayan 2000, 234; Grootaert and Bastelaer 2002, 6).[152] This view echoes with evidence on citizen-led accountability action and the importance of supply-side conditions that shape citizens incentives for exercising pressure on public officials and service providers.

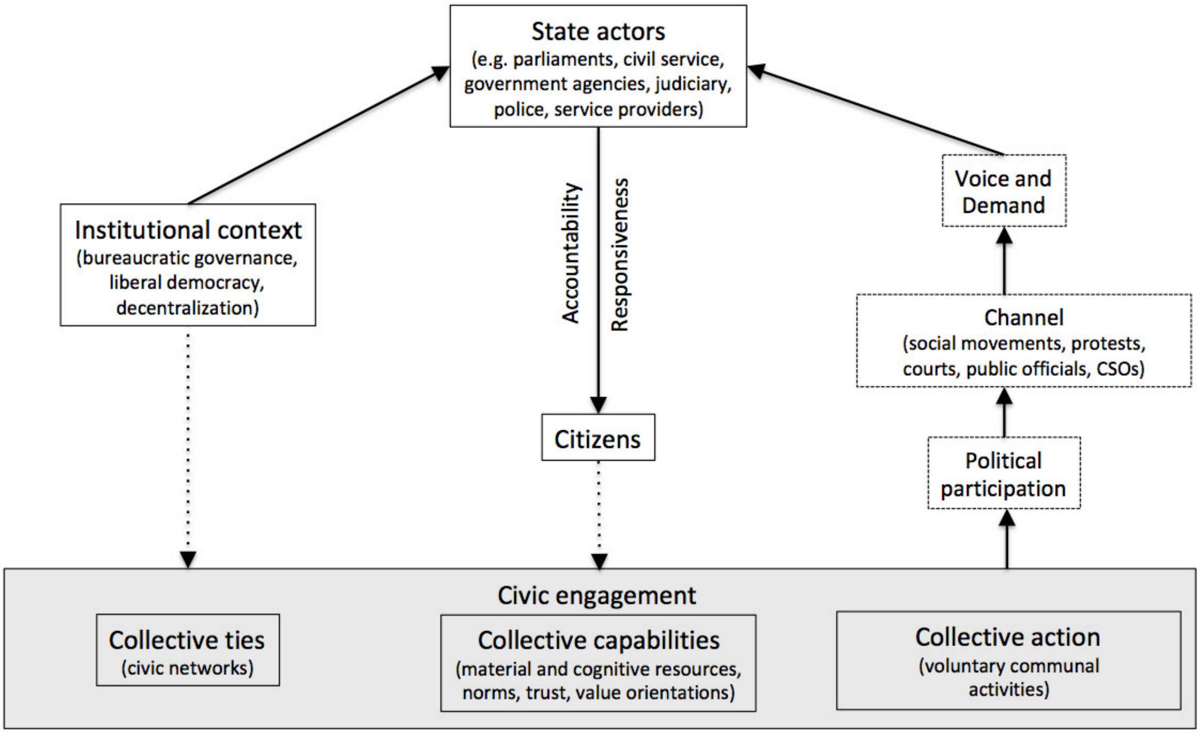
3.4 Explaining health aid effectiveness

Based on the extensive review of the aid effectiveness and social capital literature the evidence suggests that accountability in public service provision is determined by effective performance oversight in the form of i) bottom-up processes of demand from service users, and

[152] Against this backdrop, some researchers in the tradition of new institutional economics (North 1990a; Olson 1982) including the World Bank use a broader conceptualization of social capital, which involves political institutions as macro-level social capital. In fact, Knack defines social capital as *'features of both government and civil society that facilitate collective action for the mutual benefit of a group, where a group may be as small as a household or as large as a country'* (2002, 42-43). Correspondingly, the author distinguishes between government social capital and civic social capital. Government social capital refers to government institutions that influence people's ability to cooperate for mutual benefit, e.g., the enforceability of contracts, the rule of law, and the extent of civil liberties permitted by the state. Civil social capital refers to common values, norms, informal networks, and associational memberships that affect the ability of individuals to work together to achieve common goals (Knack 2002, 42-43).

ii) formal processes of top-down monitoring and horizontal oversight arrangements. Simultaneously, both civic engagement and political institutions depend on each other, which implies a joint effect on population health that is different from the sum of each individual factor. Respectively, the following section builds on the theoretical discussion outlined above combining the key arguments from public administration, social capital and social accountability research to produce a model from which to draw hypotheses that can be empirically tested. The general explanatory model is illustrated in Figure 4.

Figure 4: The explanatory model of voice and accountability



Notes: Own schematic representation based on O'Neil, Foresti, and Hudson (2007) and Welzel, Inglehart, and Deutsch (2005).

i) As a result of the reform efforts to align aid with recipient countries' priorities and their national systems at the community level development aid is mostly perceived as coming from the government or NGOs who deliver in the field, not from donor organizations that are effectively invisible (NORAD 2013, 23). Accordingly, service users can hold providers accountable and exercise demand from the bottom-up either directly or indirectly (World Bank 2003). Citizens' participation in the planning and design of service delivery, construction, operation and maintenance of service infrastructure as well as monitoring and evaluation of service delivery *directly* influences service provision. Citizens exercising demand via policymakers and public officials through to frontline providers indirectly influence service provision.

Yet, participation is a public good and therefore subject to free riding which requires citizens engaging in collective action. Social capital theory suggests that communities' capacity to engage in collective action and restrain opportunism depends on community ties, trust and norms as well as value orientations (Figure 4). Accordingly, community ties and individual capabilities shape the enabling environment for citizens to engage in collective action and demand accountability from state actors and service providers.[153] Specifically, assuming that voluntary associations instill in their members habits of cooperation, solidarity and civic orientation, as well as civic skills and self-confidence, communities with high levels of structural social capital have a higher capacity to engage in collective action (Putnam 1993). In other words, community ties including networks of voluntary associations and psychological ties, such as group identities, establish the basis of communities' capacity to demand accountability in service delivery.

Moreover, individual resources, such as capabilities, skills and knowledge, enlarge citizens' repertoire to engage in political action and to take position against the interests of powerful groups. Likewise, value orientations, which reflect individuals' intrinsic preference structure, shape citizens' motivation to demand accountability and to voice their claims. Thus, motivated and capable citizens that are able to process and use the information gained from monitoring service provision are more likely to be mobilized to articulate their interests and exercise pressure on service providers and public authorities. In fact, evidence suggests that trust enables local communities to exercise pressure and demand accountability from public officials and traditional authorities even in the absence of formal institutions of democratic governance (Hönke and Börzel 2013). Correspondingly, material and cognitive resources, trust as well as norms and value orientations translate community ties into collective action (Welzel, Inglehart, and Deutsch 2005, 140).

From the perspective of the supply side of the accountability relationship service users voicing their claims have the power to impose considerable reputational and political costs to service providers and public officials. This shapes state actors' incentives to respond to citizens' demands. In this regard, social capital serves as an *indirect* mechanism by which civic engagement in local politics influences (health) service delivery by increasing the responsiveness of local governments and service providers to serve citizens' needs.[154]

Likewise, citizen participation not only increases responsiveness via the fear of exposure, public or professional reprisal and reputational costs for public officials and service providers, but also through citizens' direct participation in development projects. Especially in countries with weak formal institutions where organizational capacities of the state are constrained civic participation can make considerable contributions to the *sustainability* of service delivery. In particular, to maintain service delivery beyond the life of development projects–like for instance irrigation systems, wells, schools, hospitals or local pharmacies–donors usually transfer responsibility to the local population. Therefore they either rely on established local organizational structures or encourage the creation of new organizational

[153] Correspondingly, donors have sought to strengthen citizen participation (voice) and accountability relationships by addressing the preconditions for the exercise of citizens' demand and building institutions of democratic governance. For instance, to evaluate the effectiveness of donors' voice and accountability interventions O'Neil, Foresti, and Hudson (2007) review the strategy and policy documents of seven DAC donor organizations. Their findings suggest that those interventions seek to address structural conditions of power relations, socio-cultural norms (including gender relations) and citizens' value orientations (O'Neil, Foresti, and Hudson 2007, 19-20).

[154] This argument is consistent with the findings of a related strand of literature exploring the role of underrepresentation of women in decision-making processes and the allocation of funding to provide public goods (Woolcock 2010, 481). Specifically, the evidence suggests that increased (female) participation increases spending for public goods such as health and education.

structures based on the election of executive committees (Bliss 2009, 24). Accordingly, since traditional local organizations have already established effective mechanisms to sanction 'free-riding' service delivery projects that are based upon citizen participation should be more effective in communities with higher collective action capacity. In other words, social capital reduces the costs of monitoring service user compliance with regulations and of imposing sanctions to avoid freeriding because norms of reciprocity and generalized trust shape citizens' expectations about compliant behavior of other citizens. By contrast, when donors are able to finance the provision of a public good but are not able to address group members' incentives to work collectively to produce it, its sustainability is threatened (Gibson et al. 2005, 37). In other words, in communities that lack social capital once aid is reduced, the same patterns of behavior that led to poor service provision in the first place may persist and undermine past efforts to increase capacity (Gibson et al. 2005, 37). Hence, although health aid may solve a collective action problem by providing health care facilities, such as a hospital, external resources for health service provision are unlikely to improve population health over time if it is not complemented with active participation of citizens ensuring operation and maintenance.

While community ties function as incubators of civic orientations and cooperative behavior, institutionalized mechanisms (for instance, electoral processes or political parties) and non-institutionalized mechanisms (such as civil society organizations, social movements, protests or the media) aggregate and channel citizens' demands for accountability to policymakers and public officials as well as service providers (O'Neil, Foresti, and Hudson 2007, 19-20).[155] Nevertheless, the responsiveness of state institutions at the local and national level not only depends on (the indirect effect of social capital through increasing) the demand for accountability, but also on the direct effect of social capital on the behavior of policymakers, bureaucrats and service providers. Specifically, social capital influences bureaucrats' ability to cooperate with one another in the course of carrying out their duties by strengthening their civic orientations and habits of cooperation (Tendler 1995) thereby increasing the efficiency of public administration. Likewise, increased trust reduces transaction costs resulting from the agency problem between bureaucrats and service providers and their respective principals as they face incentives to misuse their power and position for their own benefit.

Transaction costs are also influenced by better cooperation between implementing agencies and beneficiaries. To clarify, among practitioners there is consensus that in-group and out-group trust are essential prerequisites for development planners, who are not native to a community and want to implement a development project. Specifically, in-group trust ensures that community members are accustomed to cooperation based on a common set of norms and interests. Respectively, out-group trust prevents beneficiaries from being immediately hostile or disinterested if an external aid agency promises to improve population health (Schäferhoff 2011, 132). For instance, Schäferhoff demonstrates that trust within indigenous communities in Somaliland enabled beneficiaries of development assistance for

[155] Even though service providers can be held accountable through citizens exercising demand *indirectly* via policymakers and public officials or *directly* this study does not distinguish between the indirect and direct effect of service users' demands. Instead, this study focuses on the total effect of citizens' demand and therefore summarizes both public officials and service providers as state institutions.

health to exercise collective action in the fight against HIV/AIDS and to accept foreign aid as legitimate despite the absence of state authorities. Moreover, Pomerantz provides case study evidence from Mozambique and Zambia that trust fosters cooperation between donors and recipients leading to better policies and better implementation of those policies (Pomerantz 2004). Likewise, public organizations serving areas with high levels of social capital may benefit from higher levels of civicness and commitment to the needs and interests of others by volunteers supplementing existing service provision (Putnam 2000). Efficiency gains may also result from increased cooperation between regular producers of services, such as health workers, school teacher or street-level bureaucrats, and service users (Ostrom 1996). In especially, communities' increased monitoring activities is likely to reduce staff absenteeism and waiting time while increasing the use of health facilities (Björkman and Svensson 2009).

Hence, communities' collective action capacity, habits of cooperation and civic orientations explains whether service users are willing to hold public authorities accountable thereby relaxing the implausible assumption of the principal-agent approach that principals (citizens as well as political leaders) are 'principled'. Correspondingly, social capital improves the performance and sustainability of service delivery by strengthening civic orientations, trust and norms of reciprocity among beneficiaries and service providers as well as by increasing communities' capacity to engage in collective action and exercise pressure on service providers and public officials.[156] In sum, structural and cultural social capital is expected to provide an enabling environment for participation in non-institutionalized and institutionalized political action increasing the demand for accountability and the capacity and willingness of the government and service providers to respond to citizen's voice. Figure 5 shows the explanatory model of health aid effectiveness based on the hypothesized conditional relationship between health aid and social capital on population health. Correspondingly, the following hypotheses can be deduced.

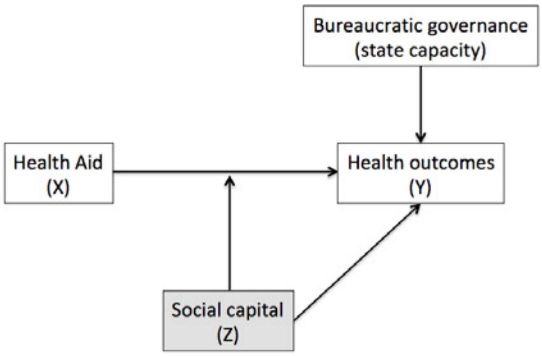
Hypothesis 1a: Development assistance for health (DAH) is more effective in recipient countries with higher levels of structural social capital.

Hypothesis 1b: Development assistance for health (DAH) is more effective in recipient countries with higher levels of cultural social capital.

Hypothesis 1c: Development assistance for health (DAH) is more effective in recipient countries with higher levels of action-oriented social capital.

[156] Participation in (peaceful) non-institutionalized action reflects the effectiveness of social capital in the production of collective action (Welzel, Inglehart, and Deutsch 2005), which is strongly associated with civic orientations and is therefore considered as a direct expression of communities civic mindedness and their capacity to engage in mass based collective action.

Figure 5: The explanatory model of health aid effectiveness and social capital

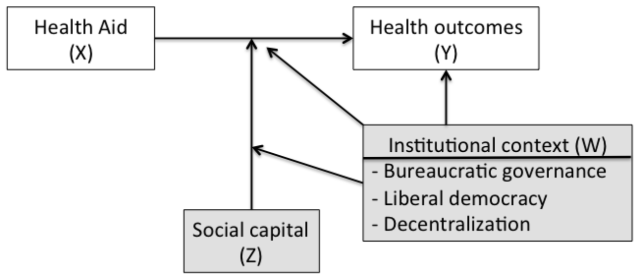


ii) Once demand is expressed, its success depends on the quality of formal institutions. At the same time differences in formal institutions create incentives that shape citizen demand for accountability. In particular institutions of bureaucratic governance and liberal democracy are expected to influence aid effectiveness by reducing the costs of active participation. Moreover, the devolution of power to local communities reduces the distance between public authorities and service users and, hence, shapes citizens' incentives to engage in local political action to demand accountability. Previous studies have focused exclusively on the conditioning role of democratic governance and decentralization on aid effectiveness (Baskaran, Bigsten and Hessami 2013; Ebel and Yilmaz 2002; Lessmann and Markwardt 2010a; Segall 2003; Chauvet 2015; Wright and Winters 2010). However, evidence suggests, that formal political institutions interact with informal institutions and may either substitute or complement each other in the provision of public goods (Knowles and Owen 2010). Generally, formal and informal institutions may compete with each other, reinforce each other, or maintain a neutral relationship (Lauth 2015, 60). Hence, when formal and informal institutions compete with each other, they are compensatory. By contrast, when formal and informal institutions are mutually reinforcing, they are complementary.

In particular, Gaventa and Barrett (2012) provide comprehensive evidence that citizen participation not only increases government responsiveness and improves development outcomes in mature democracies. Instead, civic engagement can make positive differences, even in the least democratic settings.[157] This claim is also supported by recent evidence on the functional equivalence of trust and state institutions in areas of limited statehood (Börzel and Risse 2016, 2010). Therefore, this study analyzes whether the political context affects citizens' demand for accountability in aid recipient countries. In other words, the question is whether the quality of bureaucratic governance, liberal democracy and the level of decentralization influence the joint effect of external health funding and civic engagement on population health. To be precise, in contrast to simultaneously controlling for the level of institutional quality (as in Figure 5) this approach analyzes the joint interaction pattern between health aid and social capital in different institutional contexts that are expected to be conducive to civic engagement.

[157] Likewise, Schäferhoff (2011) provides evidence that international NGOs and transnational organizations can effectively provide basic health services and improve population health even if the state lacks the decision-making and organizational capacities to implement health services.

Figure 6: The explanatory model of health aid effectiveness, social capital and political context



First, bureaucratic governance concerns the state's capacity to make collectively binding decisions that are implemented by an organizational structure in which bureaucracies exert control by following the principles of impartiality and transparency. Decision-making is based on standard operating procedures, hierarchical authority and rests in the office rather than the individual. Together this increases the reliability in government decision-making. Likewise, meritocratic recruitment and long-term rewarding career patterns ensure that public employment is allocated to highly skilled professionals. Correspondingly, higher technical and managerial capacities enable public officials to obtain, analyze and disseminate information, to mobilize resources and to coordinate and negotiate with service providers. This increases states' capacity to set and communicate health system priorities and targets, to successfully implement key health processes to respond to citizens' needs and to monitor the achievement of policy goals (Loewenson 1998). Hence, bureaucratic governance is expected to enhance the effectiveness of health aid because impartiality in the exercise of public authority prevents (health) aid to be targeted towards narrow constituencies.[158] Instead, foreign aid is more likely to be spent on the provision of broader public goods. Respectively, a shortage of skilled bureaucrats decreases the effectiveness and efficiency of public service delivery (Rauch and Evans 2000).

Importantly, bureaucratic governance reduces the costs of active participation and therefore determines aid effectiveness by creating incentives that shape citizens' demand for accountability. By contrast, in patronage states with widespread corruption citizens have little incentives to monitor public officials and voice their claims as long as corruption is the expected behavior in society. This is because the short-term costs of taking a stand against corruption are comparatively high, as this will not change the game. Hence, higher levels of bureaucratic governance are expected to increase the prospects of successful civic engagement and therefore enhance the joint effect of health aid and social capital.[159] Consequently, in patronage states with widespread corruption health aid is expected to be less effective because partial, discriminatory behavior based on personal preferences undermines citizens' demand for accountability. From this, a second set of hypotheses can be derived:

> *Hypothesis 2a: DAH is more effective in recipient countries with higher levels of structural social capital and higher levels of bureaucratic governance.*

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[158] The relationship between health aid (X) and state capacity (W) is reflected by the two-way interaction XW (Figure 6).

[159] The relationship between health aid (X), social capital (Z) and state capacity (W) is reflected by the three-way interaction (XZW).

Hypothesis 2b: DAH is more effective in recipient countries with higher levels of cultural social capital and higher levels of bureaucratic governance.

Hypothesis 2c: DAH is more effective in recipient countries with higher levels of action-oriented social capital and higher levels of bureaucratic governance.

Second, effective monitoring and oversight over service providers ultimately hinge on the independence of the judiciary and legislature that have the authority to prosecute illegal behavior and can be activated by civil society organizations. Concretely, democratic structures and processes, especially free and fair elections and the independence of the media, create incentives for both citizens to demand accountability and politicians to be accountable. Particularly, institutionalized mechanisms of participation mitigate the individual costs of engaging in elite-challenging actions. Moreover, access to information and freedom of expression and association enable civil society organizations to articulate demands and to provide information about the outcomes of investigations by oversight institutions. Even if aid projects lack institutionalized mechanisms of participation, under democratic rule beneficiaries may exercise accountability over implementing agencies *indirectly* through national governments, threatening electoral sanctions to penalize poor (health) service delivery.

From the perspective of political leaders' survival, under democratic rule, the large number of supporters that the incumbent needs to remain in power (coalition size) makes aid more likely to be targeted towards the provision of public goods instead of private goods. By contrast, a lack of democratic institutions creates incentives for political leaders to reduce public good provision and compensate coalition members with private goods as it is relatively cheaper (Bueno de Mesquita and Smith 2010). Consequently, democratic institutions condition the effectiveness of foreign aid via government spending targeted towards public versus private good provision. Moreover, democratic institutions provide institutionalized mechanisms of participation and lower the costs of engaging in non-institutionalized political action. Accordingly, a third set of hypotheses can be derived:

Hypothesis 3a: DAH is more effective in recipient countries with higher levels of structural social capital and higher levels of liberal democracy.

Hypothesis 3b: DAH is more effective in recipient countries with higher levels of cultural social capital and higher levels of liberal democracy.

Hypothesis 3c: DAH is more effective in recipient countries with higher levels of action-oriented social capital and higher levels of liberal democracy.

Third, decentralization is posited to increase citizens' choice (exit) between service providers and strengthen citizens' participation in local governance. Specifically, reducing the distance between governments and citizens enables service users to better articulate their needs and preferences to local representatives and to better monitor local health service providers and local governments. As a result, *local* officials and politicians can be more open to public scrutiny than *national* governments and better respond to the needs of the communities and individuals they are supposed to serve. Hence, better-informed local governments are more likely to allocate aid according to the varying local demands of a heterogeneous population. Consequently, decentralization is expected to allow communities to have a real say in the planning and implementation of local development projects, which increases the demand for accountability. Correspondingly, a fourth set of hypotheses can be deduced.

Hypothesis 4a: DAH *is more effective in recipient countries with higher levels of structural social capital and higher levels of decentralization.*

Hypothesis 4b: DAH *is more effective in recipient countries with higher levels of cultural social capital and higher levels of decentralization.*

Hypothesis 4c: DAH *is more effective in recipient countries with higher levels of action-oriented social capital and higher levels of decentralization.*

Summarizing, against the backdrop of the literature review this chapter established the theoretical framework for analyzing demand- and supply-side factors of accountability in service provision and derived a set of testable hypotheses. The first set of hypotheses (1a-1c) concerns the conditioning effect of civic engagement on health aid effectiveness. The second, third and fourth set of hypotheses additionally account for the importance of political context. The next chapter outlines key methodological problems associated with the assessment of aid effectiveness and how they are addressed to draw valid inference.

4 Methodology

The question of whether aid helps, hinders or has no effect on development outcomes and if so, under what conditions, is a controversial one. Aid debates are polarized between critics and proponents. Even though using the same data scholars often hold divergent views on the effectiveness of aid. In many cases, the arguments are characterized by methodological weaknesses (Stuckler, McKee, and Basu 2013). Therefore, this chapter outlines issues of methodology related to assessing the effectiveness of aid (4.1). Section 4.2 describes the operationalization of the key concepts and discusses issues of measurement quality. Section 4.3 outlines the econometric methods applied to address the methodological challenges and to ensure the robustness of the statistical analysis.

4.1 Methodological issues

The main methodological challenges in the study of aid effectiveness include i) the complexities of attributing outcomes to inputs; ii) pitfalls in testing conditional hypotheses; iii) endogeneity arising from different causes including omitted variables, reverse causality and measurement error; iv) the fungibility of foreign aid; and v) selection bias.

Evaluating effectiveness

Effectiveness is one of the central criteria applied by the Development Assistance Committee (DAC) to assess the performance of development assistance. Effectiveness refers the extent to which the development intervention's objectives were achieved or are expected to be achieved (DAC 2009 26-27).[160] Effectiveness is also used as an aggregate measure of the merit of an activity or the extent to which an intervention has attained, or is expected to attain, its overarching goals such as the MDGs. Since development assistance is (only) one among other sources of international development financing, which do not qualify as Official Development Assistance (ODA), the attribution of development outcomes to aid in isolation from other financial flows or particular donor interventions is difficult in nature (Bourguignon and Sundberg 2007).[161] Correspondingly, effectiveness is less concerned with the role of specific donor activities or outputs such as the number of built hospitals or trained doctors but, instead, focuses on lasting *outcomes* that determine populations' health. That is, evaluating the effectiveness of donor interventions ignores the means for achieving desired goals. Moreover, using output indicators–such as fiscal resources or the density of regulations (Knill, Schulze, and Tosun 2010)–is inadequate for determining the scope of government activity as a whole. Specifically, health care policy is particularly complex with nations exhibiting a variety of approaches regarding the use of resources and implementation of health policies while showing little differences in health outcomes across countries (Dodds 2012, 113-120). Furthermore, practically data on outputs of specific implementing institutions including NGOs as well as regulatory decisions are simply not available.

Moreover, the risk of incorrectly attributing health outcomes to health aid is already accounted for by governments' agreed political goals–embodied in the Millennium Development Goals–which guide government action irrespective of the specific means how to achieve these goals (Roller 2005, 126). Accordingly, the commitment of governments to pursue health-related MDGs already establishes the connection between external sources of health funding and health outcomes. At the same time, this study applies multiple outcome indicators, which cover a broad range of health sector problems that have been identified as important across nations. Examining various indicators of population health including infant, child and maternal mortality as well as life expectancy allows to better judge the success of health interventions than using a single indicator. Furthermore, studying the effectiveness of foreign aid at the macro level allows the impact of development assistance on development outcomes to be estimated, while simultaneously accounting for country-specific conditions using econometric methods.

[160] Effectiveness at the outcome level refers to the congruence between project objectives and all direct effects resulting from the implementation of project-specific activities and the use of goods and services (outputs). At the impact level effectiveness concerns all negative or positive, intended or unintended, direct of indirect effects of aid interventions (Hemmer 2010, 189-192; Oberndörfer, Hanf, and Weiland 2010, 242).

[161] Specifically, private flows include direct investments, bilateral and multilateral portfolio investments as well as export credits, which together amount to about three times the size of total ODA from the DAC donor countries (DAC 2016b). Additionally, remittances from international migration provide another important flow to developing countries. In 2015 remittance flows were more than three times the size of ODA (World Bank 2015). For instance, Chauvet, Gubert, and Mesplé-Somps (2013) provide cross-national evidence from instrumental variable estimation that remittances significantly reduce child mortality accounting for health aid per capita.

Case study evidence also suggests that linking donor interventions to activities and outputs to determine the role of institutions and incentives for service providers may mask actual relationships that are at the center of the study of political economy. For instance, Mularidharan and Sundararaman (2011) and Glewwe et al. (2010) provide evidence from randomized evaluations of teacher incentive programs in primary schools in India and Kenya, showing that teacher performance pay led to significant improvements in student test scores. However, neither teacher attendance nor any other measure of teacher activity was associated with students' performance. Thus, the authors conclude that '*teachers changed the effectiveness of their teaching in response to the incentives in ways that would not be easily captured even by observing the teacher*' (Mularidharan and Sundararaman 2011, 69). Consequently, linking treatment to teachers' activities (output) and activities to students' performance (outcomes) may contribute little to closing the attribution gap. Moreover, the reforms of the international aid system, with its focus on results-based management (DAC 2004), as well as the rise of new aid instruments such as sector-wide approaches and budget support have rendered individual donors' contributions less important than overall progress in development outcomes. These shifts pose a similar challenge to linking foreign aid to policy outputs as to development outcomes. Likewise, the experience gained from comparative public policy research has shown that outputs do not necessarily lead to intended outcomes. As a result, this study focuses on the overall effectiveness of health aid and pays no attention to specific activities implemented by aid agencies to achieve better population health.

Interaction models

Interaction models are commonly applied to test conditional hypotheses as they enrich our understanding of relationships by establishing the conditions under which they apply, or to which extent they apply. Therefore, this work employs multiplicative interaction models to test whether social capital conditions the effectiveness of health aid. However, incorporating interaction effects is challenging and holds many pitfalls, which are frequently ignored. Reviewing the literature on multiplicative interaction models in the top three political science journals Brambor et al. (2006, 63) demonstrate, that *'the execution of these models is often flawed and inferential errors are common.'*[162] Specifically, Fielding and Knowles (2011) illustrate the danger of interpreting multiplicative interaction models in the context of the aid effectiveness literature. Accordingly, this sub-section describes the different types of interaction effects and their interpretation based on marginal effect plots.

Two predictors are said to interact with one another if the effect of each predictor on the outcome variable depends on the value of the other, which implies a joint effect on the dependent variable that is different from the sum of the effects of each individual predictor (Cohen et al. 2003, 255). Empirically a variety of interaction patterns is possible, which depends on the size and the signs of the main effects and the interaction effect.[163] Cohen et al.

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[162] The authors provide a simple checklist of dos and don'ts for using multiplicative interaction models.

[163] In the context of multivariate analysis two-way interaction models include three predictors: the two main effects (X and Z) and the interaction effect (X*Z). According to standard notation β_1 and β_2 refer to the main effects, while the coefficient of the interaction term is β_3. Three-way interaction models include seven predictors: the three main effects (X, Z and W), the two-way

(2003, 255) distinguish three theoretically meaningful patterns in two-way interactions: i) synergistic (enhancing) interactions, ii) antagonistic (interference) interactions, and iii) buffering interactions. This distinction overlaps with the interaction relationships between formal and informal institutions proposed by Helmke and Levitsky (2004) and Lauth (2015).

A synergistic interaction pattern between health aid and social capital implies that both predictors affect population health in the same direction, and together they produce a stronger than additive effect on the outcome.[164] Given the sign of the posited relationship, a *synergistic* relationship is indicated if health aid is more effective in communities with high levels of civic engagement. That is, health aid *complements* social capital and vice versa. An *antagonistic* interaction pattern implies that in countries receiving very high levels of health aid social capital is less important for better health, and vice versa. To put it differently, either high levels of health aid or high levels of social capital improve population health. An antagonistic interaction pattern is indicated if both health aid and social capital work on the outcome variable in the same direction, and the interaction coefficient is of opposite sign.[165] A buffering interaction pattern implies that one predictor weakens the effect of the other predictor on the outcome variable. In other words, as the impact of one predictor increases in value, the impact of the other predictor is diminished. A buffering interaction is indicated if the coefficients of health aid and social capital are of opposite sign.[166] Correspondingly, a buffering interaction implies that social capital buffers the effect of health aid.

Historically, interactions between continuous variables have often been analyzed by breaking the continuous variables into (dichotomous) categories (i.e., at the median) to apply analysis of variance (ANOVA) or for ease of use. However, dichotomization at the median involves several disadvantages: first, it strongly reduces the true association between two continuous variables thereby lowering the power for detecting a true nonzero relationship; second, dichotomization produces spurious main effects, and third, it may also produce spurious interaction effects (Cohen et al. 2003, 256). Instead of using median split analysis, there are two alternative approaches to explore the nature of conditional relationships between two continuous variables: i) probing simple slopes and ii) the Johnson-Neyman technique. Both methods use visualizations as traditional regression tables including the main and interaction coefficients with the respective standard errors tells us little about the marginal effect of the explanatory variable at any observed value of the moderating variable different from zero. Simple slope analysis involves plotting the regression of Y on X at specified values of the moderating variable (Z), typically at low, medium and high values of Z. Even though it is common standard to specify the mean of Z, one standard deviation below the mean of Z and one standard deviation above the mean of Z (Aiken and West 1991) the choice of values should be guided by the distribution of the moderating variable.

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interaction effect (X*Z; X*W; W*Z) and the three-way interaction coefficient (X*Z*W). Main effects are also called first-order coefficients, while second order coefficients refer to two-way effects and so on.

[164] A synergistic interaction pattern is indicated if all three regression coefficients show the same sign (either positive or negative): ($\beta_1 < 0$, $\beta_2 < 0$ and $\beta_3 < 0$) or ($\beta_1 > 0$, $\beta_2 > 0$ and $\beta_3 > 0$).

[165] An antagonistic interaction pattern is indicated if ($\beta_1 < 0$, $\beta_2 < 0$ and $\beta_3 > 0$) or ($\beta_1 > 0$, $\beta_2 > 0$ and $\beta_3 < 0$).

[166] A buffering interaction pattern is indicated if ($\beta_1 < 0$ and $\beta_2 > 0$) or ($\beta_1 > 0$ and $\beta_2 < 0$).

A more general approach is the Johnson-Neyman technique, which displays how the conditional, marginal effect of X changes across the entire range of a continuous moderating variable (Brambor et al. 2006; Bauer and Curran 2005). The resulting marginal effect plot provides more information than simple slope probing. In particular, as it additionally includes the distribution of the moderating variable it allows evaluating whether a substantial share of real-world observations fall within the range (of the modifying variable) for which the marginal effect is statistically significant. In other words, a significant marginal effect across some values of the modifying variable is substantially less important if few observations adopt such values (Brambor et al. 2006, 76).

Each marginal effect plot includes a solid sloping line, two dashed lines, and a histogram. The solid sloping line indicates how the marginal effect of health aid changes as the average level of social capital increases. The dashed lines form the two-tailed 95 percent confidence intervals, meaning that the marginal effect of health aid on population health is significant whenever the upper and lower bounds of the confidence intervals are either above or below the zero line. To guarantee that the marginal effects identified across values of the moderating variable are also substantively significant, i.e., fall within the observed range of the sample data, the overlaid histogram shows the frequency distribution of the moderating variable (Berry, Golder, and Milton 2012).[167] Moreover, to reduce nonessential multicollinearity between the main effect and the interaction term and to allow meaningful interpretation of interaction coefficients the continuous predictors are grand mean-centered ($\mu = 0$) (Cohen et al. 2003, 267). This also allows interpreting the first-order coefficients (main effects) of both regressors–health aid (X) and the moderating variable social capital (Z)–as the effects at the sample means of all other variables in the regression model.

Another aspect that has received little attention in the study of conditional relationships is the symmetry of interactions. Analyzing symmetric interactions constitutes another approach of evaluating a conditional theory using additional predictions about the marginal effect of the moderating variable Z on the outcome variable Y at different levels of X (Berry, Golder, and Milton 2012). This can help provide further evidence, which may be consistent with and reveal additional support for the conditional hypothesis about the effect of X on Y at different levels of the moderating variable Z or not. Specifically, interactions are symmetric, which means, that whenever a hypothesis states that the effect of X on Y is conditional on the value of Z, this implicitly entails that the effect of Z must be conditional on the value of X (Berry, Golder, and Milton 2012, 1). The slope of a marginal effect line given by the coefficient of an interaction term is identical for both the marginal effect of X on Y at different values of Z as well as for the effect of Z on Y at different levels of X. However, the marginal effects of X and Z can differ regarding their intercepts which means that any observed marginal effect of X is *consistent* with a variety of marginal effects of Z. Though, some of the marginal effects of Z may be *inconsistent* with the underlying conditional theory tested. Hence, they provide an additional empirical test about the validity of the estimated marginal effect of X on Y (Berry, Golder, and Milton 2012).

[167] No conclusions about the marginal effect of DAH are drawn beyond the observed range of social capital illustrated by the histogram.

Endogeneity

Endogeneity bias may arise from different causes including omitted variables, reverse causality and measurement error. Omitted variable bias occurs when a model incorrectly leaves out one or more important confounding factors (C), leading to overestimation or underestimation of the magnitude of the true effect of health aid on population health. The possibility that health aid is effective in increasing population health, but we just cannot observe it, because we underestimate the effect size would only occur if aid is positively correlated with the unobserved factor C, which in turn is negatively associated with population health or vice versa. That is, we would underestimate the (positive) effect of health aid on population health whenever the correlation between the unobserved factor C and health aid is of opposite sign than the relationship between health aid and population health (Wooldridge 2013, 90). This will apply if health aid is allocated to countries which are less likely to achieve progress e.g., by poor performance in indicators related to corruption control or state capacity.[168] If we assume that donors want to maximize their 'return on investment' they would allocate aid to countries that are more likely to achieve progress. However, the evidence suggests that in the past donors have allocated a larger share of health aid to fragile, unstable (low- and middle-income) countries (Graves, Haakenstad, and Dieleman 2015: 1). This finding supports the claim that donors seek to bolster health systems in fragile environments to provide long-term stability. Hence, if countries with weak institutions received more health aid and weak institutions are associated with lower population health the resulting omitted variable bias would (on average) induce a downward biased (positive) coefficient of health aid. Consequently, the estimated coefficient of health aid is on average too low, hence, masking the effectiveness of health aid.

To mitigate the problem of omitted variable bias all factors that were identified to be important predictors of population health are included as control variables. Additionally, the role of community organizational life, citizens' engagement in public affairs and social trust–factors that the macro quantitative aid effectiveness literature has largely ignored (Mavrotas 2015; Baliamoune-Lutz and Mavrotas 2009)—are also accounted for. The evidence provided in this study suggests that social capital is an overlooked but important determinant of aid effectiveness. Thus, not accounting for social capital leads to biased estimates.[169]

Endogeneity bias may also arise from simultaneity or reverse causality because not only foreign aid is expected to improve population health, but also the amount of foreign aid al-

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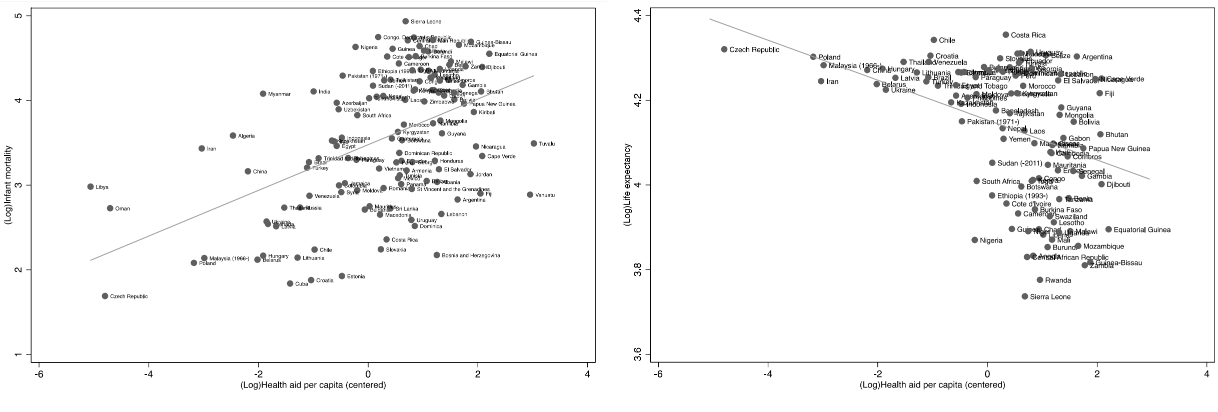
[168] Whether administrative capacity determines the amount of foreign aid received by developing countries remains disputed. Evidence from the aid allocation literature is ambiguous. Those that find no association between the quality of bureaucratic governance and the amount of foreign allocated to recipient countries (Bueno de Mesquita and Smith 2009b; Hoeffler and Outram 2011; Easterly 2007) argue that donors face the problem that those countries most in need typically also lack proper institutions as well as the fact that donors pursue their own interests, including commercial, conflict mitigating and democracy promoting purposes when giving aid. Even though some recent studies provide evidence that recipients with weak state institutions receive *less* aid than their counterparts (Winters and Martinez 2015; Acht, Mahmoud, and Thiele 2014) donors' aid allocation patterns in the health sector appear to differ (Graves, Haakenstad, and Dieleman 2015). In particular, Graves, Haakenstad, and Dieleman (2015) demonstrate that among low- and middle income countries those classified as fragile states received more health aid in per capita terms. Furthermore, although this pattern is changing more recently also within the group of low-income countries those classified as fragile received more per capita health aid than low-income stable countries.

[169] However, controlling for many variables simultaneously does not necessarily improve a model, because irrelevant control variables introduce inefficiency in as much as they are correlated with the main explanatory variables (King, Keohane and Verba 1995, 183; Clarke 2005).

located to recipient countries is likely to depend on the level of community health. Accordingly, the correlation between health aid and population health in the short run is expected to be negative (Roodman 2008; Dalgaard and Hansen 2009; Dalgaard and Hansen 2010, 39).

Figure 7: Scatterplot health aid and population health



Correspondingly, Figure 7 visualizes the relationship between health aid and population health averaged between 1990-2012.[170] Both plots indicate that increased health aid correlates with lower levels of welfare, which is likely to be biased due to reverse causality. This bias is introduced because poorer countries, which have higher mortality rates, are more likely to receive foreign aid. Dalgaard and Hansen (2009) illustrate this so-called 'identification problem' in regard to economic growth. Due to the simultaneity of the allocation process and the effectiveness of foreign aid the slope of the OLS regression line above will always be a mix of both processes. Hence, if the data is the result of reverse causality, then, just observing the data points does not reveal which underlying process we are looking at. Therefore simple OLS regression coefficients cannot be interpreted as reflecting a causal impact of foreign aid on development outcomes. Consequently, this study applies GMM estimation, which can be considered as a special case of instrumental variable estimation, in order to adequately examine the impact of health aid on population health, while accounting for endogeneity issues.

The issue of simultaneity also applies to social capital. On the one hand, citizens may become (politically) engaged in community activities to provide mutual assistance in response to failings of public service providers. On the other, civic engagement enables citizens to overcome collective action problems concerning influencing public service providers and health-related agenda-setting of policymakers. Correspondingly, Figure 8 to Figure 10 display the bivariate relationship between associational involvement, civic activism and trust on the one hand and infant mortality and life expectancy on the other. The figures indicate a negative correlation between increased associational membership and health outcomes (Figure 8). By contrast, civic activism (Figure 9) and social trust (Figure 10) are positively correlated with population health. Hence, not taking into consideration the potential effects of reciprocal causation may underestimate the impact of foreign aid. To mitigate the effects of

[170] If aid were effective in reducing mortality levels we would expect a negative relationship between health aid and infant mortality and a positive correlation with life expectancy.

reverse causality this study uses time lags, which allows to relate the explanatory variables at the previous period with the outcome variable at the current period (Wright and Winters 2010, 66; Rajan and Subramanian 2008). This is also theoretically reasonable, as foreign aid, as well as social capital, need time to unfold their impact through better health infrastructure, better information, or political reform.[171] Using GMM estimation based on instrumental variables further mitigates the problem of reverse causality.

Furthermore, if the allocation of health aid depends on absolute levels of mortality in recipient countries endogeneity is less likely to bias the marginal effect of health aid on changes in population health. Accordingly, regressing *declines* in mortality and *changes* in life expectancy on health aid and levels of social capital provide another way to check the sensitivity of the results.[172] Specifically, the decline in mortality levels is regressed on (lagged) levels of mortality at the beginning of each period assuming that countries with higher mortality levels show larger decline rates (convergence model). Correspondingly, changes in life expectancy are regressed on (lagged) levels of life expectancy at the beginning of each period assuming that countries with lower life expectancy levels show larger growth rates.

Another source of endogeneity is measurement error, which may lead to bias in the estimate of the regression coefficients and their standard errors as well as incorrect significant tests and confidence intervals (Cohen et al. 2003, 119-124). However, even though the slope of a certain predictor measured with error may be too high, too low or just right, the coefficient will most likely be attenuated, i.e., be too close to zero. Moreover, as donors report data on health aid any measurement error in donors' reporting is unlikely to be correlated with characteristics of the recipient country. Therefore, when health aid or any other predictor variable is not perfectly reliable the effect of each measure is likely to be underestimated (Cohen et al. 2003, 119). To mitigate the problem of measurement error, all estimates are replicated using health aid data from different data sources, including the Institute of Health Metrics and Evaluation (IHME) and AidData (Tierney et al. 2011).

Conversely, many countries, particularly those with high mortality, do not have complete information from civil registration and vital statistics systems because the registering of all births and all deaths and the recording of causes of death requires considerable administrative capacity. Therefore, health estimates in the poorest countries are associated with much greater uncertainty levels due to a lack of reliable data (WHO 2014).[173] However, measurement error in indicators of population health does not lead to a bias in the estimated regression slopes but leads to increased variability of the residuals around the regression line. That is, regressing a dependent variable with measurement error on a set of explanatory factors

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[171] Moreover, to test for reverse causality bias of social capital and population health all models are replicated measuring social capital lagged by two periods (T-2), whereas health aid and all other predictors are measured at T-1 (or measuring social capital lagged by one period (T-1), whereas health aid and all other predictors are not lagged) (Welzel 2013: 164).

[172] Examining *changes* in welfare levels rather than *levels* of population health is a common approach in the *deep determinants* literature of poverty, economic welfare and health (Knowles and Owen 2010; Hall and Jones 1999).

[173] Estimates of mortality levels and life expectancy are derived from multiple sources including vital registration systems, household surveys and periodic population censuses. Survey data (including full birth history and summary birth history) are often subject to sampling errors. To adjust for under-reporting of infant deaths and for missing mothers in high HIV prevalence settings statistical modeling and other techniques are applied (UNIGME 2015, 11-17).

on average predicts the true slope, but the increase in uncertainty means that confidence intervals increase in size and the power to reject a false null hypothesis decreases (Cohen et al. 2003, 124).

Figure 8: Associational membership, infant mortality, and life expectancy

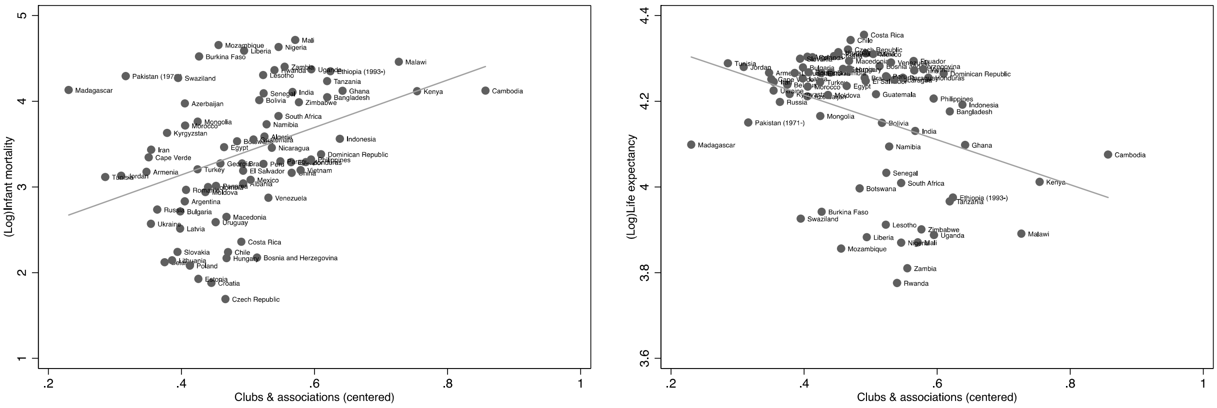


Figure 9: Civic activism, infant mortality, and life expectancy

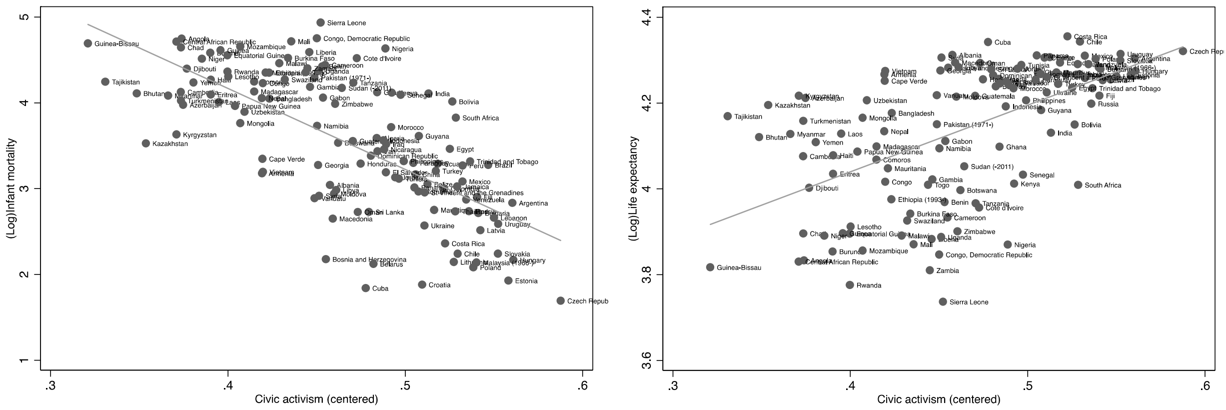
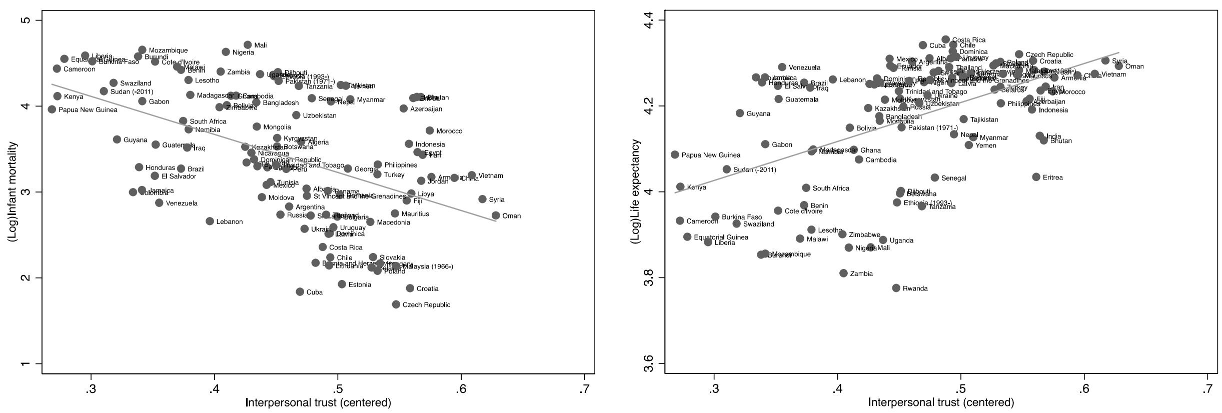


Figure 10: Social trust, infant mortality, and life expectancy



Data on social capital is also likely to be subject to measurement error, even though to a varying degree depending on the source of information. The composite social capital indices from the ISD database combine behavioral and perceptual indicators from nationally representative surveys as well as proxy variables and perceptual expert judgments. The measures of civic engagement and social trust mainly rely on proxy variables of observable outcomes (e.g., access to the media including radio or newspaper) or expert assessments, while the measure of associational membership draws information exclusively from representative public opinion surveys. As there is no reason to assume that expert-perceptual indicators are more reliable than public evaluations this study uses alternative measures of representative public evaluations from the WVS to overcome the problem of measurement error. Similarly, measures of bureaucratic governance are also subject to measurement error due to problems of perceptual biases, adverse selection in sampling, and conceptual conflation with economic policy choices (Norris 2012, 110-113; Sundaram and Chowdhury 2013, 3-9; Thomas 2010). Therefore, measures of bureaucratic governance from different sources, including the International Country Risk Guide (ICRG) and the Worldwide Governance Indicators from the World Bank (WBGI), are used to ensure robustness.

Using alternative measures also accounts for the issue of missing data and potential selection bias. Missing data are more likely in poorer, conflict-affected countries with low levels of state capacity and consequently, are often not randomly distributed (Honaker and King 2010). Therefore the relationships between any of the key indicators, including health aid, social capital, bureaucratic governance, democracy, and decentralization, are tested for robustness using alternative measures with different country coverage.

Fungibility

Another issue in the study of aid effectiveness is the fungibility of foreign aid, that is, the diversion of aid away from its intended purpose. Foreign aid could be used to lower taxes, to finance projects in different sectors, or end up lining the pockets of corrupt officials. In particular, aid in the form of program-based approaches including general budget support has been criticized for being fungible. Though, if donors earmark foreign aid for specific sectors, such as health, governments receiving foreign aid may also choose either to directly divert earmarked aid to other sectors or to reduce their own sector-specific spending (Van de Sijpe 2013, 1746). Therefore, Leiderer (2012) argues that under many circumstances general budget support and project aid are essentially equivalent in terms of fungibility of the provided resources and the associated fiduciary risks. However, foreign aid may not only *decrease* government health expenditures ('crowd-out') by freeing up domestic resources for other purposes, e.g., the military, but also *increase* government health spending ('crowd-in'), as for instance due to aid allocated towards building health infrastructure that requires further government expenditures for additional doctors and nurses. Empirical evidence on the effect of foreign aid on government spending is mixed. Lu et al. (2010, 1382) show that *'for every $1 of DAH given to government, the ministry of finance reduces the amount of government expenditures allocated to the ministry of health and other government agencies that engage in health spending by about $0.43 to $1.14'*. These results are corroborated by Dieleman et al. (2013), who provide evidence based on a larger dataset that health aid channeled to governments is indeed fungible and 'crowds out' government spending. By contrast, Mishra and Newhouse (2009, 870) find a positive relationship between foreign aid allocated to the health sector and government health expenditures, which suggests that health aid 'crowds in' health spending by attracting additional domestic resources allocated towards health. Van de Sijpe (2012) and Van de Sijpe (2013) only find a limited degree of fungibility. Reviewing the existing evidence Morrissey (2015, 98) concludes that the extent to which aid is fungible is over-stated and even where it is fungible this does not appear to make aid less effective.[174]

Case selection

Despite the existing case study evidence supporting the relevance of social capital on the effectiveness of health interventions, the absence of nationally representative data in many developing countries has hampered attempts to test the conditioning role of social capital on aid effectiveness at the country comparative level. Recent advances in the availability of data on social capital allow analyzing larger samples of aid recipient countries over several decades (Table A 18). Against this backdrop, the question arises whether the estimated causal effects are subject to bias due to case selection on the dependent or independent variable or due to a selection rule correlated with the size of the causal effect (King et al. 1995, 115-149). Generally speaking, random selection of observations ensures that all variables are uncorrelated with the criteria applied for case selection, which in turn leads (on average) to unbiased estimates of causal effects. Despite fundamental criticism against the feasibility of random selection in quantitative macro-comparative research (Ebbinghaus 2005), the following section describes the selection of cases analyzed in this study.[175]

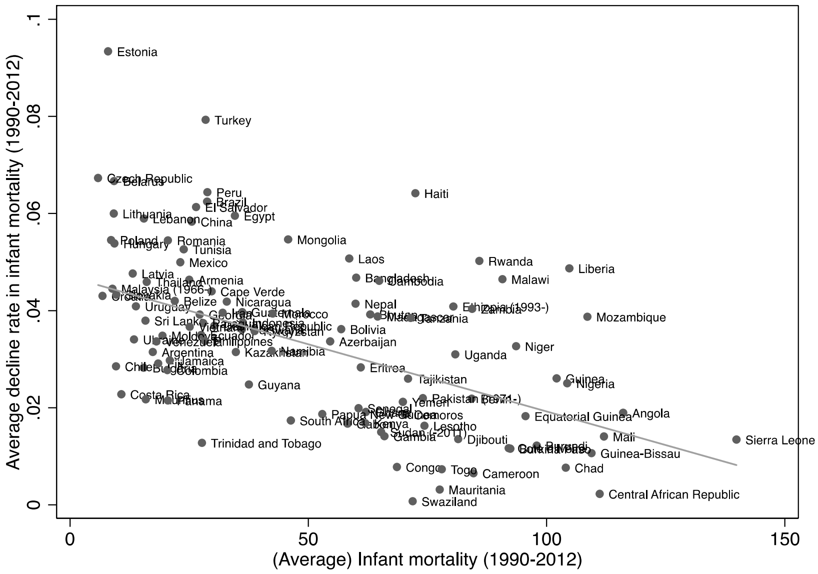
The results obtained are unlikely to be subject to severe selection bias, first, because population health data is largely available even in very poor countries. The observed values of population health in recipient countries cover almost the entire range of observable global differences in population health (including donor countries). By contrast, selecting only high-mortality countries induces biased estimates because these countries are associated with lower progress. This can be visually depicted by the negative correlation between (infant) mortality *levels* and *declines* in (infant) mortality (Figure 11). Consequently, applying a selection rule which is correlated with the size of the potential effect of health aid is likely to underestimate the true effect of health aid.[176]

[174] Empirically, the issue of fungibility of health aid is partly addressed by simultaneously accounting for government health expenditures.

[175] Ebbinghaus (2005) identifies 'contingency' as another source of selection bias in large-N studies. Contingency bias limits the diversity of observable cases due to historical and political contingencies, as e.g., state building processes. Though, this is rather a theoretical issue, which cannot be solved empirically.

[176] In a recent study on health aid effectiveness in high-mortality countries Wilson (2011) finds no effect of health aid on mortality levels. Even though Wilson (2011) tests the robustness of his findings for different levels of infant mortality (IMR>25, IMR>50 and IMR>75), any of these sample selection conditions excludes most Southern & Central American and Eastern European countries and is likely to be biased.

Figure 11: Scatterplot of the level and decline of infant mortality



Second, representative public opinion surveys are less likely to be available for poorer, undemocratic countries with a less healthy population. Poorer countries also have a higher chance of receiving increased development assistance. Hence, both social capital and health aid are likely to be correlated with the dependent variable. Though, accounting for the amount of health aid received and the level of social capital avoids bias due to selection on the explanatory variable (King, Keohane and Verba 1995, 137).

Third, another problem related to case selection in cross-sectional studies is unit heterogeneity. Unit heterogeneity means that the unit of analysis (country-year) differs in ways not explained by the observed independent variables and implies that some important local factors are unobservable to the researcher (Wilson and Butler 2007, 104). Unit heterogeneity contradicts the homogeneity assumption of OLS and has to be considered if present. To account for unit heterogeneity, I apply methods that account for (time-invariant) unit heterogeneity. Likewise, the robustness of the findings was also tested by additionally using dummy variables to account for differences between world regions, which did not alter the reported results. The number of countries used in multivariate analysis varies by type of social capital ranging from 68 to 106 countries (Table A 18). More than half of the sample is drawn from either Sub-Saharan Africa or Latin America. Eastern European countries mount up to about 20 percent, while comparatively few cases belong to the Asian or the MENA region. The number of observations available to test the robustness of the results based on WVS data is smaller and covers only between 52 and 55 countries (Table A 20). Likewise, the sample composition also differs. Countries from Sub-Saharan Africa, Asia and the MENA region were surveyed less frequently than Latin American and Eastern European countries each comprising about 30 percent of the observations.

4.2 Data

This (sub-) section reports details on data collection and measurement quality of the indicators used to assess both the explanatory and explained factors. The range of indicators comprises public and elite evaluations as well as official data sources. Specifically, population health is measured using administrative data from recipient countries' civil registration and vital statistics systems while information about development assistance for health is based on project-level data from donor agencies. To measure social capital, two different approaches to data collection are applied and compared to ensure measurement validity. The first approach uses composite indices of 'social development' that combine behavioral and perceptual indicators from nationally representative surveys as well as proxy variables and perceptual expert judgments for a large cross-section of countries. The second approach draws information on social capital exclusively from representative public opinion surveys for a smaller subset of countries. By contrast, operationalizations of recipient countries' formal political institutions including state capacity, the quality of democracy and the level of decentralization are mainly based on perceptual expert judgments. By looking at the data over time, a picture emerges indicating substantial differences between recipient countries.

Mortality and life expectancy

Population health is measured using infant, child, and maternal mortality, as well as life expectancy (at birth) over each five-year period. The infant mortality rate is one of the most sensitive indicators of the state of population health. High rates reflect inadequate nutrition, low levels of education, poor water, and sanitation supply, exposure to environmental hazards and poor medical and health care. Infant and child mortality refer to the number of infant or child (under-five) deaths per 1,000 live births. Infant and under-five mortality are highly correlated (r=0.98) and follow similar trends.[177] Likewise, women in developing countries have many more pregnancies than women in developed countries. Therefore, they die more often because of complications during and following pregnancy and childbirth. Moreover, women in many societies have limited economic and social power, attain lower levels of education than men, and lack legal autonomy women suffer from gender-specific health problems (Birn et al. 2009, 259). As a result, maternal mortality has come to be recognized as a lead development indicator, which is used as another indicator to measure population health. Maternal mortality refers to the number of women dying of pregnancy-related causes for every 100,000 live births. Data is taken from the World Development Indices. Mortality ratios, as well as life expectancy data, are log-transformed. The transformation reduces skewness and allows for the interpretation of the coefficients as elasticities because the main predictors, including health aid, are log-transformed, too.[178] Applying log-transformation to mortality levels also allows for a given increase in health aid to have a larger impact on mor-

[177] To avoid redundancy Figure 12 displays under-five mortality only.

[178] The logarithm is undefined for numbers less or equal to zero. Accordingly, 13 observations for which the five-year period average of received health aid per capita equals zero are dropped due to the transformation. The 13 observations include mainly Eastern European countries, such as Bulgaria (2010-2012), Latvia (2005-2009), Latvia (2010-2012), Poland (2005-2009), Poland (2010-2012), Russia (2010-2012), Estonia (2005-2009), Lithuania (2005-2009), Slovakia (2005-2009) as well as Libya (1999-2004), Libya (2010-2012), and Mauritius (2010-2012).

tality when the initial mortality ratio is higher (Mishra and Newhouse 2009, 857; Cohen et al. 2003, 235).[179] In addition to the (log) mortality ratios, this study also tests whether a country's progress, that is, its average decline in mortality level is determined by health aid and its interaction with social capital. The average annual rate of decline (AARD) in infant, under-five, and maternal mortality is calculated over the respective five-year periods.[180]

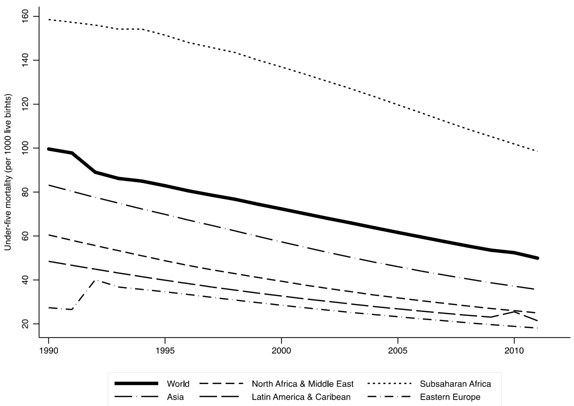
The question is whether mortality levels in recipient countries have declined and whether the pace of decline has accelerated over the period in which international development assistance for health has more than quintupled (Figure 1). Thus, Figure 12 shows how under-five mortality, maternal mortality, and life expectancy evolved globally and by world regions since 1990. Moreover, Figure 13 to Figure 15 visualize the respective pace of progress across recipient countries. Since 1990, the global under-five mortality rate across all recipient countries has halved, from 99.6 deaths per 1,000 live births in 1990 to 49.9 in 2012. Globally, there has been accelerating progress in reducing under-five mortality. The average annual rate of decline increased from three percent in 1990-2000 to 4.3 percent in 2000-2012. Sub-Saharan Africa, the region with the highest mortality levels in the world, has also registered a substantive acceleration. Its annual rate of decline increased from 1.2 percent in the 1990s to 3.5 percent in 2000–2012. Countries such as Brazil, Peru, Mexico, Egypt, Algeria, China, Mongolia, Nepal, Bangladesh, Laos, Thailand, Poland, Hungary, Romania, and Turkey achieved the highest average decline rates (Figure 13). Maternal mortality has decreased from 392 to 263 maternal deaths per 100,000 live births globally. The global annual rate of decline in maternal mortality in the 1990s was 1.6 percent and increased to 3.7 percent between 2000 and 2010. Even though most regions of the world including South-Eastern Asia, Eastern Europe, as well as the MENA region have achieved significant progress, some countries also experienced a step back in maternal health (Figure 14). In Sub-Saharan Africa, the effect of the HIV epidemic and civil conflict on maternal mortality is evident. In the 1990s in particular, maternal mortality in almost any sub-region of the continent increased. However, since 2001, average levels of maternal mortality in Sub-Saharan Africa have decreased.

[179] To test whether the results are robust to the exclusion of low-mortality countries I also use subsamples truncated at infant mortality ratios below 25 or 50 infant deaths per 1,000 live births.

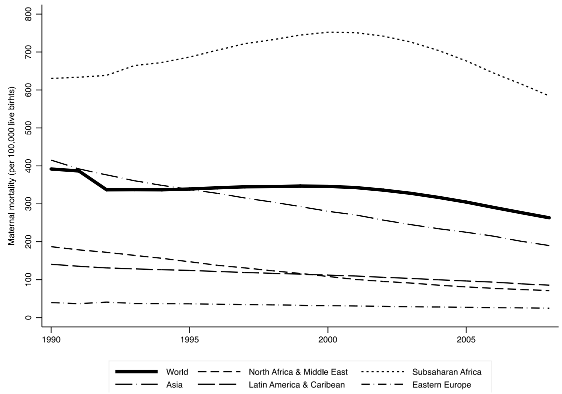
[180] The average annual rate of decline in infant mortality is calculated as $\frac{log(IMR_t)-log(IMR_{t-1})}{T}$, where T equals the number of periods (UNIGME 2015).

Figure 12: Under-five mortality, maternal mortality and life expectancy–globally and by world region (1990-2012)

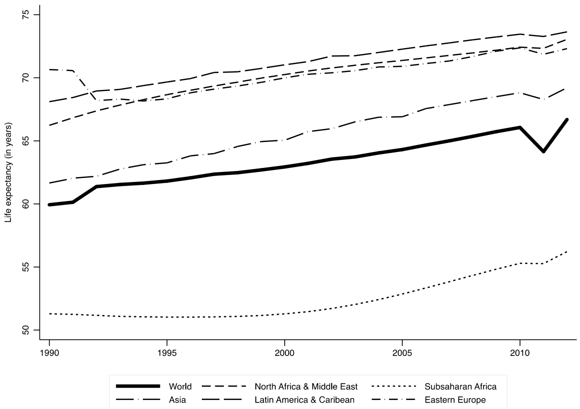
Under-five mortality



Maternal mortality



Life expectancy



Average life expectancy of men and women in recipient countries has increased by more than six years since 1990 from 60 to almost 67 years in 2012. At the national level, 13 recipient countries gained more than ten years in life expectancy (both sexes combined) between 1990 and 2012. Of these countries, seven were in Sub-Saharan Africa, three in Asia and three in the MENA region, including Rwanda, Madagascar, Liberia, Bhutan, Nepal, Niger, Laos, Ethiopia, Egypt, Iran, Turkey, Guinea, and Angola. Despite large differences in levels of life expectancy, Sub-Saharan Africa advances at increasing rate. The average annual change in life expectancy increased from 0.05 percent in the 1990s to 0.84 percent in the 2000s.

Figure 13: Average annual rate of decline in under-five mortality between 1990-2011 (in percent)

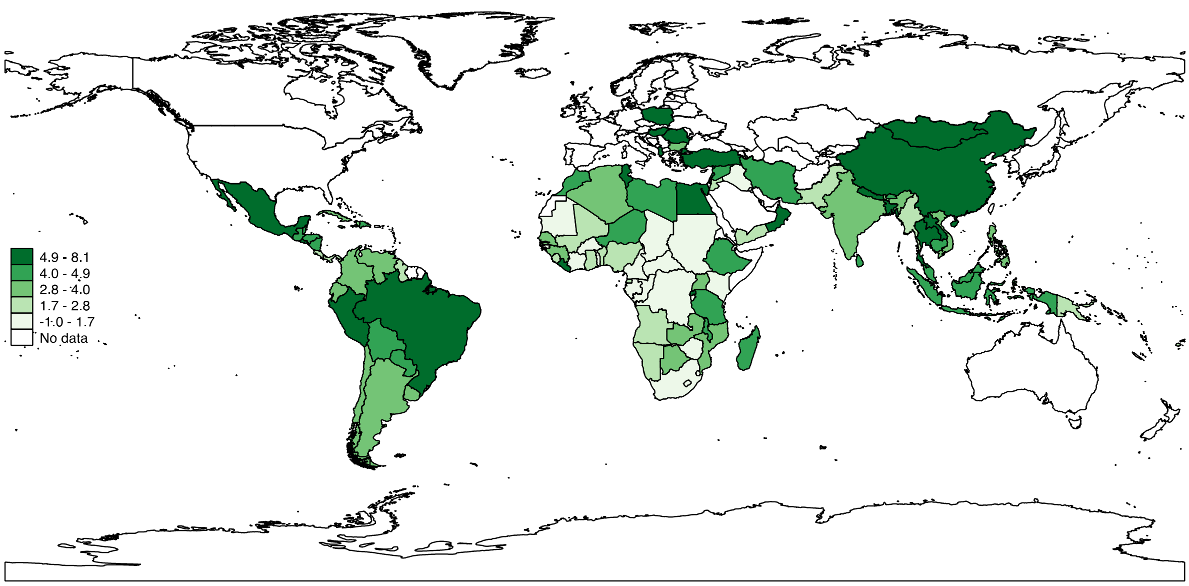


Figure 14: Average annual rate of decline in maternal mortality between 1990-2008 (in percent)

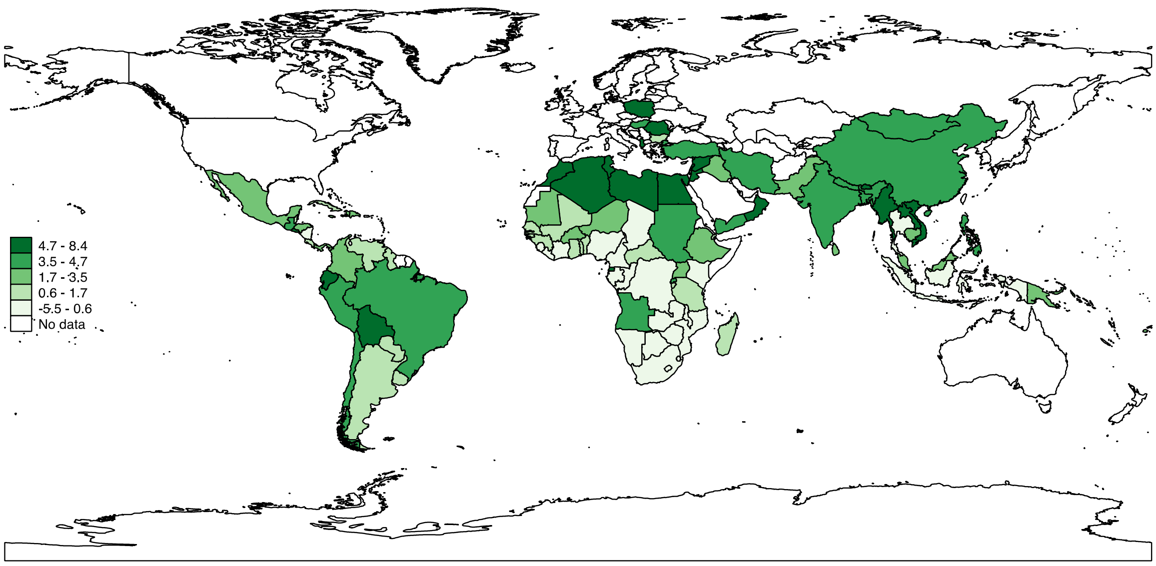
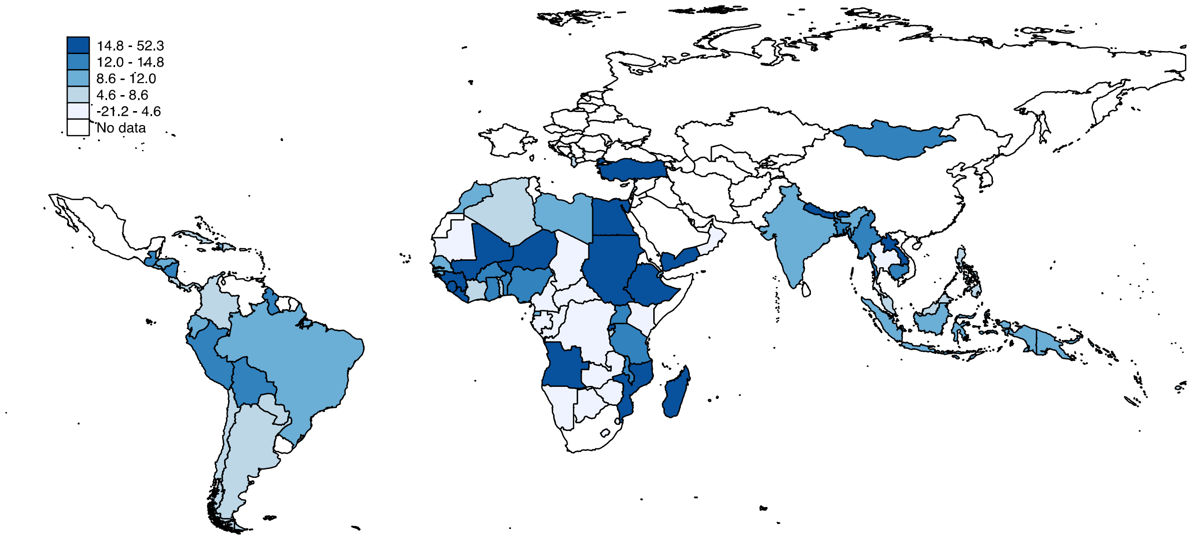


Figure 15: Change in life expectancy between 1990-2010 (in percent)



Health aid

Data on health aid commitments from international donors is taken from AidData[181], which combines Official Development Assistance (ODA) from OECD bilateral donors with development finance of non-OECD bilateral donors and multilateral financial institutions. Multilateral financial institutions include regional development banks, the World Bank and health-related funding from BMGF and GAVI.[182] Health-related projects covered by AidData include either loans or grants in commitment form, which are classified into sub-sectors by purpose of the respective activities. Development assistance spent on health activities are aggregated by recipient country and year. To reduce business cycle fluctuations and account for the size of the recipient country the average of health aid per capita received by a country over a five-year period from 1990-2012 is calculated.[183]

Figure 1 shows that the total amount of development assistance for health allocated by international donors has substantially increased since the 1990s. However, the question arises how much health aid developing countries receive. Thus, Figure 16 illustrates the distribution of health aid per capita by country averaged over the total period 1990-2012. The figure shows that Sub-Saharan African countries especially Equatorial Guinea, Cape Verde, and Djibouti have received the largest amounts of DAH—about 10 US$ per capita. Eastern European countries are among the least health aid dependent recipients. The global mean is about 3.50 US$.

An alternative source of data on health aid used for robustness checks is provided by the Institute of Health Metrics and Evaluation (IHME) which provides access to the IHME DAH Database (IHME 2016b). Despite the differences in absolute size, both indicators of development assistance for health are highly correlated (Pearson r=0.9). The IHME DAH database allows distinguishing between the channel, source, recipient country, and focus area of health aid. Data is provided in disbursement form (in contrast to commitments). The IHME DAH database is the most comprehensive collection of health aid transfers which also includes contributions not covered by AidData such as flows from international and US NGOs as well as and US foundations.[184]

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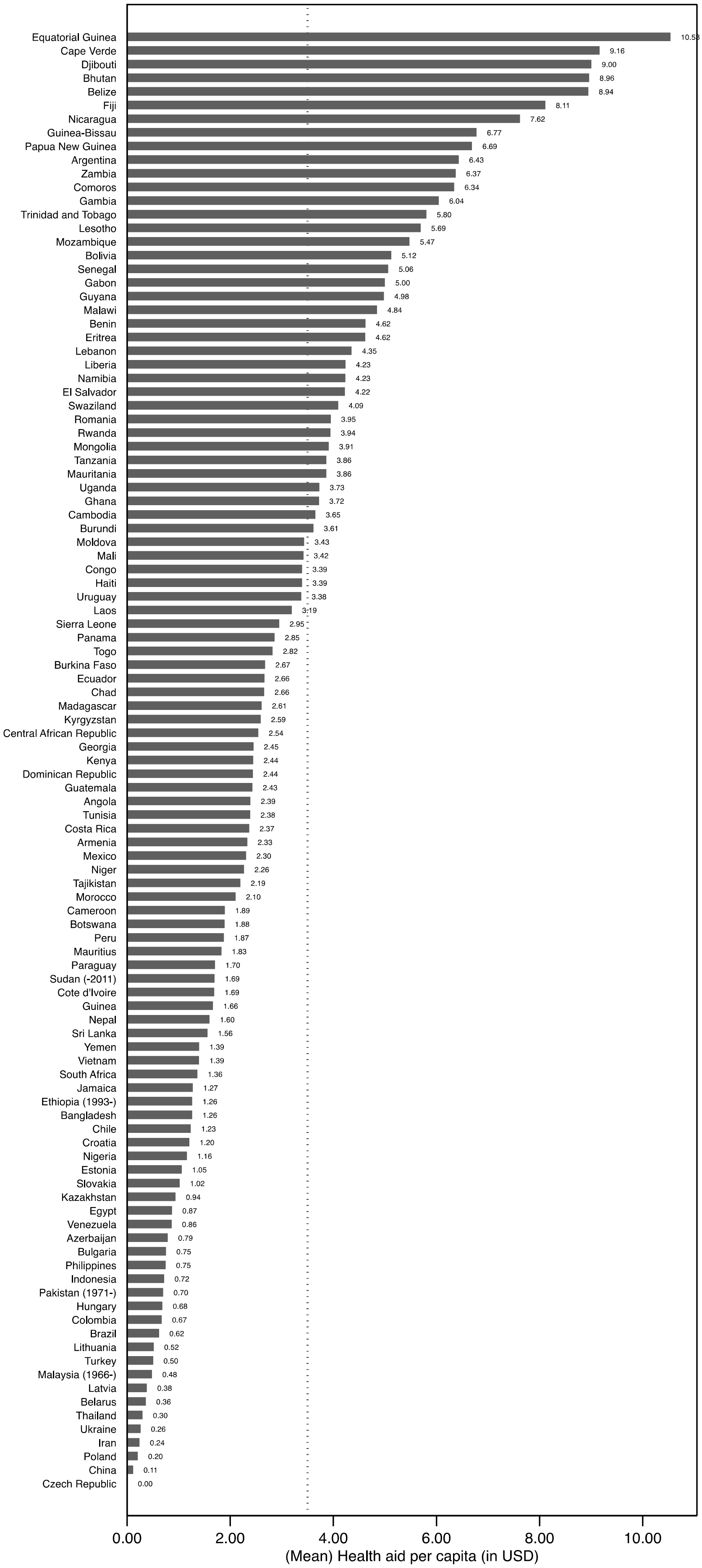
[181] AidData 2.1 is available under http://aiddata.org/aiddata-research-releases (Tierney et al. 2011).

[182] Table A 19 lists all donors tracked by AidData.

[183] The periods include 1990-1994, 1995-1999, 2000-2004, 2005-2009 and 2009-2013.

[184] To prevent double counting the database '*(1) removes transfers between channels that are captured more than once in the database, including transfers from BMGF to other channels, from one UN agency to another, and from GAVI and Global Fund to other channels; (2) calculates total DAH transferred from bilateral agencies to NGOs and US foundations to other channels and removes these transfers after DAH is aggregated'* (IHME 2016a).

Figure 16: Health aid per capita by recipient country (1990-2012)



Notes: average health aid per capita by country in US$. Source: AidData (Tierney et al. 2011). The dotted line shows the global mean.

Social capital and political action

Due to the lack of conceptual clarity, there is a variety of operationalizations of social capital (Castiglione 2008a). However, as Roberts and Roche (2001, 18) conclude, *'a clear orthodoxy has emerged regarding methods of measurement'* of social capital, which involve the distinction between social capital as an *individual* resource or a *collective* property as well as between *structural* and *cultural* social capital. To test the moderating effect of social capital on the effectiveness of health aid the focus of this study is on the *collective* meaning of social capital and the unit of analysis is the nation-state. Therefore, social capital is conceptualized as *system capital* and operationalized using aggregated micro-level data obtained from international representative surveys, such as the WVS, the Afrobarometer, or the Latinobarometer. Besides, section 5.1 additionally analyzes individual-level data to examine to what extent structural and cultural components of social capital are linked. The dominant approach to measure structural and cultural aspects of social capital uses data on membership in voluntary associations and the level of citizens' expressed trust (Van Deth 2008, 157). Besides, participation in *non-institutionalized political action* is used as a proxy for the operation and effectiveness of community ties, that is, action-oriented social capital (Welzel, Inglehart and Deutsch 2005, 124).[185]

Civic engagement is operationalized following two different strategies. On the one hand, this study makes use of the Indices of Social Development (ISD) database, which provides the most comprehensive country-level data on social capital and informal institutions available. On the other hand, structural and cultural social capital, as well as participation in elite-challenging action, is additionally operationalized using standard measures applied in comparative political culture research using data from the WVS. The following sub-section describes both strategies in further detail.

The ISD database compiles a variety of indicators including nationally representative public opinion surveys, as the Afrobarometer or the Latinobarometer, expert assessments and related proxy variables (ISD 2013).[186] It covers more than 190 countries over the period from 1990 to 2010 bringing together more than 200 behavioral and perception-based indicators from several independent sources. Behavioral indicators include either reported behavior from nationally representative surveys, e.g., participation in demonstrations, or proxy variables based on observable outcomes of social institutions, as, e.g., newspaper per capita. Perception-based measures include either public opinion from nationally representative surveys, in which respondents give their opinion, e.g., on their level of trust in fellow citizens or expert assessment, as in the CIVICUS rating of the state of civil society (Foa and Tanner 2012, 23-27). Based on the reflective, dimensional logic of index construction (Dulal et al. 2011, Foa and Tanner 2012) the various behavioral and perception-based indicators are assigned into categories that echo with other taxonomies used to measure different aspects of social capi-

[185] In contrast to operationalization approaches that use a single index to measure 'generic social capital' as a one-dimensional latent construct (Bjørnskov and Svendsen 2003), based on its multi-dimensional conceptualization each element of social capital is operationalized independently (Van Deth 2008, 167). This approach is also confirmed by the findings on the empirical relationship between structural and cultural social capital at both the individual and the country level presented in section 5.1.

[186] Further information on the methodology of index construction is documented in Table C 9, Table B 9 and Table D 16.

tal (Jones and Woolcock 2010).[187] For each category, data is summarized into a composite index of structural social capital (*clubs & associations*), cultural social capital (*interpersonal trust & safety*), and non-institutionalized forms of political action (*civic activism*). This strategy avoids the pitfall of using single indicators to measure latent factors (Van Deth 2003, 88). The aggregation approach applied to combine the information from the different data sources is based on the method of matching percentiles, which has been applied to other popular indices, for example the Worldwide Governance Indicators (Kaufmann, Kraay, and Mastruzzi 2011) or the Corruption Perception Index. Specifically, for each composite index, scores are assigned to countries based on ordinal rankings for all conceptually close variables, which assign equivalent values to countries with equivalent ranks.[188] Percentile matching allows estimating index scores for a maximum number of countries even though data is incomplete and to exploit all available information from several indicators.[189]

Correspondingly, the structural dimension of social capital is measured by the ISD index of *clubs & associations* (CLUBS). The CLUBS index measures a nation's aggregated level of participation in voluntary activities and voluntary time spent on unpaid community work (ISD 2013).[190] A vibrant civil society is considered the key resource for mobilizing political action and strengthening civic attitudes (Fung 2003). CLUBS ranges from 0.1 to 0.9 with a mean value of 0.5.

The cultural dimension of social capital is measured using the composite index of *interpersonal trust & safety* (TRUST,) which combines generalized trust with the trustworthiness of others (ISD 2013).[191] The relationship between trust, trustworthiness, and safety has been highlighted by Glaeser et al. (2000) and Ross et al. (2001). Examples of safety and distrust encompass behavior such as cheating or fraud as well as theft, assault, or other interpersonal

[187] Jones and Woolcock (2010) group social capital into: associational membership, trust and solidarity, collective action and cooperation, access to information sources, social cohesion and inclusion as well as empowerment and political action. The authors suggest to measure 1) associational membership by the density of membership defined as the number of membership per household and the diversity of membership concerning kinship, religion, gender, age, education, income; 2) trust and solidarity by the level of generalized trust and confidence in local and central government officials; 3) collective action and cooperation by citizens' participation in communal activities and their willingness to cooperate; 4) access to and use of information about market conditions and public services; 5) social cohesion by the extent of perceived differences in a community (in wealth, income, race, caste, religion, age, sex) and whether these are perceived problematic or have ever led to conflict, frequency of communal 'come-together' as well as perceived safety at home; and 6) empowerment and political action by capacity to influence political outcomes and satisfaction with influence (number of demands/petitions to government officials) and participation at elections.

[188] The method of percentile matching is based on a recursive process of matching observational ranks over pairs of variables ('master' and 'input' variable). Each pair of variables is ranked across all observations to create a 'match' variable, which assigns the cardinal value of the country in the 'master' variable to the country with the same ordinal rank in the 'input' variable. Once the 'match' values are assigned for each of the input variables, the 'match' variables are averaged to create the index score for each country. The newly created index score is then used as a new master variable. This process iterates recursively until the index reaches convergence by generating 1,000 Monte Carlo simulation trials for each index. A country's final score is its average score across the 1,000 runs. Standard errors are calculated as the average of the standard error across 1000 runs and the matched variable scores for each country. For further details see Foa and Tanner (2012, 16-18).

[189] Incomplete or missing data is an issue because standard methods of data analysis require non-missing data for all predictor and outcome variables, otherwise observations with missing values will be dropped listwise. However, listwise deletion is likely to produce biased estimates as data is not *missing (completely) at random* (Honaker and King 2010). For a more detailed overview of the benefits of percentile matching versus imputation techniques see Foa and Tanner (2012, 19-22).

[190] The index combines 37 variables related to associational membership. Items used for index construction (Table C 9) include perception based variables from public opinion survey (21 %) and behavioral variables (79 %) (Foa and Tanner 2012, 32).

[191] The index combines 39 variables on trust and crime incidence (Table D 16) including proxy variables based on observable outcomes (37 %), perception based variables from public opinion survey (21 %) and expert assessments (22 %) as well as behavioral variables (12 %) (Foa and Tanner 2012, 32).

violence (Foa and Tanner 2012, 14). TRUST has a minimum of 0.2 and a maximum of 0.8, with a mean value of 0.5.

To measure the extent to which citizens participate in public affairs, the composite index of *civic activism* (CIVIC) is used. CIVIC quantifies the ability and willingness of citizens to articulate their interests to influence government priorities and governance processes through contacting public officials and protesting unpopular policies (ISD 2013). It also captures citizens' political awareness and informedness assuming that if citizens follow political affairs, they are (at least to a minimum degree) involved in the process by which decisions are made (Almond and Verba 1963, 53). In other words, the index of civic activism measures the extent of an informed and aware citizenry, and citizens' capacity to exercise demands to advance common interests (ISD 2013). In particular, the informational dimension of the civic activism index is operationalized by various behavioral items of public opinion surveys, which measure the degree of informational connectedness and access to the media.[192] Citizens' capacity to express needs is measured by their participation in contentious politics, including peaceful demonstrations, boycotts, and petitions. Further proxy variables of citizens' engagement are used for index construction including the involvement of global civil society as well as the aggregated expert assessment from CIVICUS.[193] The index of civic activism ranges from 0.1 to 0.7 with a mean value of 0.5.

To ensure the validity of the composite indices Foa and Tanner (2012) empirically test the dimensional structure of the sub-indicators applying hierarchical cluster analysis as well as exploratory and confirmatory factor analysis. Cluster analysis indicates that the subcomponents of associational membership and civic activism are strongly clustered, while indicators used for constructing the index of interpersonal trust and safety are more dispersed (Foa and Tanner 2012, 44-45). This is likely to be determined by the high share of indicators of social dysfunction, for example crime rates, to proxy the absence of trust (Van Deth 2003, 87). However, the results of exploratory factor analysis largely confirm the consistency of the variable groupings into the categories of associational membership, social trust, and civic activism even though some (sub-) indicators are weakly correlated with the identified factors. [194] The problem is less severe regarding the index of associational membership, and interpersonal trust as the respective sub-indicators with low correlations are those with low

[192] The index combines information from 30 different variables. Items used for index construction (Table B 9) include behavioral variables (24 %), proxy variables based on observable outcomes (71 %) and expert assessments (5 %) (Foa and Tanner 2012, 32).
[193] CIVICUS measures the size of civil society (*structure*), the quality of the legal and political environment in which civil society exists (*space*), the values practiced in the civil society arena (*values*) and the contributions of civil society actors in regard to voice, policy-making or service provision (*impact*) (Anheier 2004). The involvement of global civil society is measured by the *number* of international NGOs and the *share* of organizations and individuals being a member of international NGOs. The use of these proxy variables is based on the assumption that NGOs and other actors of global civil society have the capacity to mobilize political action even without face-to-face contact and foster democratic accountability (Smith 2001). This has been validated for a cross-section of developing countries using national representative survey data (Boulding 2014, 45). According to this study, NGOs are more likely to change the dynamic of political participation compared to other voluntary associations. The reason is that NGOs bring more substantial resources than voluntary associations in poor communities and actively target these resources towards populations with scarce resources, while members of voluntary associations are already more likely to be well-organized, have time to organize and are more likely to participate in politics (Boulding 2014, 45). For a critical review of the democracy enhancing effects of NGOs see Banks, Hulme, and Edwards (2015, 711).
[194] Exploratory factor analysis identifies the least number of factors, which can explain the greatest amount of shared variance among all variables.

content validity.[195] However, concerning the index of civic activism one of the sub-indicators, which measures citizens' participation in contentious politics, shows the lowest factor loading among all sub-components (Foa and Tanner 2012, 50). On the other hand, confirmatory factor analysis indicates that the variables assigned to the different composite indices are largely consistent with the nature of the concepts of associational membership, civic activism and (even though to a slightly lower degree) interpersonal trust (Foa and Tanner 2012, 51). Finally, the authors also test the reliability of the composite indices by applying imputation techniques to fill in missing values instead of the method of percentile matching, which mostly confirms the reliability of the measurement instrument.[196]

An alternative approach to assess the quality of a measurement instrument is its criterion validity based on the comparison of a measurement instrument in question and conventional measurement instruments.[197] *Cultural* social capital is usually measured by the percentage of population expressing that '*most people can be trusted'*. However, the cross-national validity of the standard trust question has been challenged on several grounds.[198] Delhey, Newton, and Welzel (2011; 2014) refine the measurement of generalized trust by adjusting a nation's trust level for the radius of trust, i.e., for the notion of what is meant by 'most people.' Therefore, this study applies both the standard measure of generalized trust in the main analysis and the radius adjusted trust index for robustness checks.

Structural social capital is commonly measured by respondents' associational membership and the respective share of members at the country level. In particular, Putnam (1993) emphasizes *active*, face-to-face interactions in leisure-oriented, non-political, horizontal associations in which membership is *not* organized along social divisions and rather egalitarian in structure associations. However, Almond and Verba (1963) demonstrated that even *passive* members display significantly higher levels of civic competences and democratic orientations than non-members across five countries. Furthermore, multiple affiliations are likely to enhance interactions with others increasing individual trust and engagement. Thus, at the country-level higher network density increases the probability that people from different backgrounds will interact (Wollebæk and Selle 2003, 71). Hence, there are good reasons to distinguish between active versus passive membership (intensity) and the scope of involvement (number of memberships). Consequently, to account for differences in the intensity and scope of associational involvement this study measures different aspects of community involvement, including i) the percentage of the population being a (*passive*) member in at least one voluntary association (*belonging*); ii) the percentage of the population being an *active* member in at least one association (*volunteering*); iii) the average number of memberships per citizen; and iv) the average number of *active* memberships per citizen (Westle and

[195] Sexual offense rates, assault rates, as well as the US State Department's crime rate are rarely indicative of the concept of interpersonal trust and safety. Concerning the composite index of associational membership the frequency of socializing in a religious context also shares little variance with the other indicators of clubs and associations.

[196] According to Foa and Tanner (2012, 51) missing data in each (sub-) indicator is imputed based on socioeconomic variables such as GDP per capita, the level of urbanization, literacy rates as well as other indicators from the ISD database.

[197] The number of observations available for each measure based on WVS data is shown in Table A 20.

[198] The exact question is '*Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people*'. For a detailed discussion of measurement issues with the 'generally speaking' question see (Putnam 2000, 137-138; Beugelsdijk 2006, 2008; Uslaner 2008).

Gabriel 2008). Moreover, based on its purpose associations can be further distinguished into utilitarian (inward looking) and sociotropic (outward looking) organizations. *Utilitarian associations* such as labor unions and professional organizations focus on the promotion of their own members' material, social, or political interests. By contrast, *sociotropic associations* including charity, cultural and environmental organizations are rather concerned with public good provision (Welzel, Inglehart, and Deutsch 2005, 126; Patulny 2009, 409).[199]

Putnam's narrow focus on *civic*, horizontal associations has been criticized for ignoring the importance of political associations including political parties and social movements (Foley and Edwards 1996, 39). By the same token Welzel, Inglehart, and Deutsch (2005, 122) argue that non-institutionalized political action qualifies as an essential form of community involvement. The authors demonstrate that participation in political action shows stronger linkages with any measure of 'good governance' than standard measures of associational membership. Against this backdrop, participation in contentious politics is operationalized by an index of social movement activity (SMA) which measures participation in any of the following (non-institutional) activities: signing a petition, joining in boycotts, or attending lawful demonstrations. The index takes into account both respondents' actual behavior and their readiness to act. To translate these data into an index of social movement activity, I follow the methodology suggested by Welzel (2013, 224).[200]

Table 2 demonstrates that the composite index of associational membership is highly correlated (≥ 0.6) with any of the commonly used indicators of associational membership taken from nationally representative public opinion surveys.[201] Moreover, comparing country rankings based on the composite CLUBS index (Figure C 1) with country rankings based on the standard measures of associational membership (Figure C 2) indicates a very high overlap between both measurement approaches. The conceptual overlap can also be detected by comparing the composite CLUBS index and the actual membership rates by country over time (Figure C 3).

[199] Due to the strong correlation between political and non-political membership at the country level and the individual level Welzel, Inglehart, and Deutsch (2005, 131) the results are qualitatively similar across sociotropic, utilitarian or religious organizations and the combined membership variable if not otherwise reported. Correlation (N=109) between combined and utilitarian membership is r=0.79; between combined and sociotropic membership is r=0.88; and between combined and sociotropic membership (including religious organization) is r=0.96. Similarly, Van Deth (2009, 654) demonstrates, that individual membership leads to higher levels of political engagement irrespective of the type of organization, whereas Wollebæk and Selle (2003) show that participation in non-political associations is not more conducive of social capital than political associations.

[200] The SMA index is calculated by recoding respondents' answers about whether they did do the activity, they might do it or they would never do. Respondents who answer 'might do', indicating 'readiness to act', are considered in-between respondents who refuse to participate and those who have participated. Though, to give 'readiness to act' less weight than *action* answers are weighted down. Accordingly, 'would never do it' is coded 0, 'might do it' 0.33 and 'have done it' 1.0. Averaging each respondent's scores over the three activities and calculating each country's population average per wave leads to the SMA index.

[201] As intensity and scope of voluntary involvement are highly correlated (≥ 0.9) the results are qualitatively similar for active/passive memberships (voluntary work), and number of memberships if not otherwise reported (Table 2).

Table 2: Correlations between indicators of associational membership

	ISD-Index of *clubs & associations* (CLUBS)	% of population being *active* in at least one organization (volunteering)	Average number of *active* memberships per person (volunteering)	% of population being a member in at least one organization (belonging)
ISD-Index of *clubs & associations* (CLUBS)	1			
% of population being *active* in at least one association (volunteering)	0.65	1		
Average number of *active* memberships per person (volunteering)	0.68	0.97	1	
% of population being a member in at least one organization (belonging)	0.65	0.91	0.87	1
Average number of memberships per person (belonging)	0.62	0.69	0.73	0.8

Concerning the measurement of cultural social capital, the correlation between TRUST and the WVS indicator of generalized trust is slightly lower (r=0.43). Thus, the country ranking based on the TRUST index (Figure D 1) differs moderately from the country ranking based on the standard indicator of generalized trust (Figure D 2). The correlation between TRUST and the radius-adjusted trust measure based on WVS data is hardly lower (r=0.33). The weakest association is found between the composite index of civic activism (CIVIC) and the social movement activity index (SMA) (r=0.25). Specifically, comparing country rankings according to the CIVIC index (Figure B 1) with country rankings based on the actual participation in non-institutionalized political action, reveals considerable differences between both measurement approaches (Figure B 2).[202] The identified deviations between the composite indices and the WVS indicators can be attributed to several factors: first of all, the composite index of interpersonal trust and safety reflects a much broader concept than the single item based indicator of generalized trust. Similarly, the composite index of civic activism not only quantifies the ability and willingness of citizens to articulate their interests to influence government priorities and governance processes but also citizens' political awareness and informedness. In other words, even though there is considerable conceptual overlap between both indicators, they differ in scope. Second, the aggregation procedure levels out strong variations in single variables leading to rather smoothed time trends, which echoes with findings on value change and cultural evolution (Welzel 2013, 91, 143, 160; Welzel, Inglehart, and Kruse 2016). Third, recently available information from wave six of the WVS is not yet incorporated in the ISD database. Against this backdrop, using the ISD database and the respective indices reflects a pragmatic approach to maximize the number of observations, while simultaneously avoiding the pitfall of using single indicators to measure latent factors (Van Deth 2003, 88). Notwithstanding, to mitigate the issue of content validity and measurement error in indicators of social capital the results of multivariate analysis are replicated using conventional measures of social capital and elite-challenging action.

[202] Figure B 3 shows the development of both indicators over time by country and reveals considerable differences in the case of Armenia, Azerbaijan, Bangladesh, Belarus, Egypt, and Morocco.

Bureaucratic governance

To measure the administrative capacity of the 'Weberian bureaucracy', this study applies two widely used sets of indicators: the *Quality of Government Index* of the International Country Risk Guide (ICRG) and the *Worldwide Governance Indicators* of the World Bank (WBGI) (Kaufmann, Kraay, and Mastruzzi 2011).[203] Respectively, the ICRG index measures levels of corruption, law and order, and bureaucracy quality, which closely mirror the Weberian distinction between legal-rational and traditional authority. The corruption sub-component focuses on corruption in the form of excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business (ICRG 2013, cited in Teorell et al. 2013, 103-104). The law and order sub-component assesses the strength and impartiality of the legal system and popular observance of the law. Bureaucracy quality measures the extent of established mechanisms for meritocratic recruitment and career advancement, the autonomy from political pressure, and the capacity to deliver public services continuously without interruptions.

The WBGI seek to measure government effectiveness, political stability, the rule of law, voice and accountability, regulatory quality and control of corruption (Kaufmann, Kraay, and Mastruzzi 2011). To create an index of bureaucratic governance, I average the (sub-) indicators of corruption control, rule of law and political stability. Corruption control measures the perceptions of the extent to which public power is exercised for private gain as well as 'capture' of the state by elites and private interests. Political stability captures the perception of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means. The rule of law index assesses the perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Conceptually, they measure different things, but practically all three of them are reasonably good measures of bureaucratic governance while, empirically, being highly correlated (>0.7).

Table 3: Correlations between measures of bureaucratic governance

	Control of corruption (WBGI)	Voice & accountability (WBGI)	ICRG quality of government index	Governance index (WBGI)
Control of corruption (WBGI)	1			
Voice & accountability (WBGI)	0.67***	1		
ICRG quality of government index	0.72***	0.51***	1	
Governance index (WBGI)	0.91***	0.73***	0.75***	1

It is important to note that models in section 5.2 specify administrative capacity as an independent (exogenous) predictor, while in section 5.3 administrative capacity is interacted with health aid and social capital to test whether state capacity conditions the joint effect of

[203] As shown in Table 3 both the WBGI measure of 'good governance' and the ICRG index of administrative capacity are strongly correlated (r=0.75). Nevertheless, the ICRG index of bureaucratic governance has a larger time coverage than the WBGI, but a smaller country coverage.

health aid and social capital. As reported in Table 5 the correlation between governance and mortality levels is strongly negative. To examine whether there is something particular about 'corruption control' and 'voice & accountability' compared to the overall quality of bureaucratic governance each measure—taken from the WBGI—is also tested separately. The voice & accountability sub-index measures perceptions of the extent to which citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

Liberal democracy

The concept of liberal democracy is operationalized by two widely used indicators, the Freedom House and the Polity IV index. The Freedom House index (FHI) is based on the annual *Freedom in the World* survey conducted by regional experts who evaluate the real-world rights and freedoms enjoyed by individuals. Data is available for more than 190 countries from 1972 onwards. The researchers draw on multiple information sources to monitor the existence of political rights and civil liberties based on a checklist of questions. The political rights checklist includes ten items to monitor the electoral process, political pluralism and participation, and the functioning of government.[204] The civil liberties checklist includes fifteen questions regarding freedom of expression and belief, freedom of association and organization, the rule of law, and personal autonomy and individual rights. Scores are assigned to each item on a scale from zero to four and converted into a seven-point scale of political rights and a seven-point scale of civil liberties. Averaging both indices yields the aggregated FHI. Hence, the index assesses the presence of institutional checks and balances constraining the executive through the existence of a representative and inclusive legislature, an independent judiciary implementing the rule of law and the existence of political rights and civil liberties, including self-determination and participation by minorities and the presence of free and fair election laws (Norris 2012, 53).

Despite its popularity, the FHI has been subject to considerable criticism due to a lack of transparency, reliability and consistency in coding decisions and issues of concept-measure consistency[205] (Munck and Verkuilen 2002). Likewise, the multiple dimensions included in the FHI not only assess components of minimalist definitions of democracy, but rather of liberal notions of democracy, including the existence of periodic, competitive elections, and a broad range of political rights and civil liberties (Lauth 2004, 273). Moreover, the equal weighting of each item implied by their additive aggregation rule appears inadequate due to certain salient components such as the power exercised by elected representatives (Munck and Verkuilen 2002, 25).

Another measure of democracy, which is widely used for monitoring regime change and studying the effects of regime authority, is provided by the Polity project initiated by a study of Eckstein and Gurr (1975). The latest version, Polity IV, provides annual data from 1800 to 2015. The underlying concept of democracy is based on three elements: the presence of insti-

[204] For traditional monarchies the checklist includes two additional discretionary questions.

[205] Due to the *additive* aggregation rule the FHI fails to ensure correspondence between the theory of the relationship between political rights and civil liberties and the selection of aggregation rule (Goertz 2006, 95-127; Munck and Verkuilen 2002, 8).

tutions and procedures through which citizens can express preferences about alternative policies and leaders; the existence of institutionalized constraints on the power of the executive; and the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation (Marshall, Gurr, and Jaggers 2016, 14-15). Conversely, autocracies are defined as political regimes that restrict or suppress competitive political participation, in which chief executives are selected within the political elite, and once in office, they exercise power with few institutional constraints. Against this backdrop, the Polity project scores countries' level of institutionalized democracy based on two scales, a democracy scale and an autocracy scale, assuming that elements of autocratic and democratic authority may co-exist in any particular regime context (Marshall et al. 2016, 17). The democracy indicator is derived from codings of the i) competitiveness of political participation [+1,+3], ii) the openness [+1] and competitiveness [+1,+2] of executive recruitment, and iii) constraints on the chief executive [+1,+4]).[206] The autocracy indicator is derived from codings of the i) regulation [-1,-2] and competitiveness [-1,-2] of political participation, ii) the openness [-1] and competitiveness [-2] of executive recruitment, and iii) constraints on the chief executive [-1,-3]. Both the democracy and autocracy index are additive eleven-point scales (0-10). The combined Polity score is computed by subtracting the autocracy score from the democracy score and ranges from strongly democratic (+10) to strongly autocratic (-10).[207] The Polity index has also been subject to criticism because of redundancy and conflation, issues of concept-measure consistency due to the selection of an additive aggregation rule (Munck and Verkuilen 2002, 14-26). Moreover, the weighting scheme, which puts different weights on the components of the democracy and autocracy index by using different scales, is not theoretically justified.

Furthermore, to directly measure the extent to which democratic institutions shape politicians' incentives this study applies a measure of open and competitive executive recruitment and political participation, which has been widely used in comparative autocracy research (Bueno de Mesquita and Smith 2010; Bueno de Mesquita et al. 2002). According to selectorate theory politicians' incentives to provide public goods such as freedom of association and freedom of the press depend on the number of supporters a leader needs in order to stay in power (winning coalition) and the size of the pool from which these supporters are

[206] The Polity IV project inspects i) levels of political participation, ii) structural characteristics by which chief executives are recruited, and iii) the extent to which the chief executive is constrained (Marshall et al. 2016). In particular, i) political participation refers to the extent to which the political system enables non-elites to influence political elites in regular ways (a) based on binding rules on when, whether, and how political preferences are expressed by political groups, which compete for political influence, and (b) by the extent of government restriction on political competition, i.e., the extent to which alternative preferences for policy and leadership can be pursued in the political arena. ii) Structural characteristics by which chief executives are recruited include (a) the extent of institutionalization of executive recruitment, i.e., whether there are any established modes at all by which chief executives are selected; (b) the competitiveness of executive selection, i.e., whether chief executives are chosen through competitive elections or determined by hereditary succession, designation, or by a combination of both; and (c) the openness of executive recruitment, i.e., whether the politically active population has an opportunity (in principle) to attain the position through a regularized process. iii) The extent to which the chief executive is constrained and must take into account the preferences of others when making decisions, as for example the power of the elected legislature or an independent judiciary (Marshall, Gurr, and Jaggers 2016).

[207] To apply the index to panel data analysis a modified version of the POLITY variable is used. The modified POLITY indicator converts periods of foreign 'interruption', 'interregnum' (anarchy) or 'transition' to conventional polity scores according to the following rules: cases of foreign 'interruption' are treated as missing values, cases of 'interregnum' (or anarchy) are converted to a 'neutral' score of 0; cases of 'transition' are prorated across the span of the transition (Marshall, Gurr, and Jaggers 2014, 17).

drawn (selectorate size) (Bueno de Mesquita and Smith 2010, 937). The number of supporters is measured by the size of the winning coalition, which is a function of political regime. Specifically, the more open and competitive the process of executive recruitment and the more competitive the party system of a country the larger is the size of the winning coalition. Coalition size is an additive index which increases by one unit for each of the following conditions: i) if the regime is non-military, ii) if executive recruitment is competitive, iii) if executive recruitment is open, and iv) if participation is competitive. Higher values in coalition size reflect more open and competitive executive recruitment and political participation (Bueno De Mesquita et al. 2002b).[208]

The support of the winning coalition not only depends on the mix of public and private goods a political leader provides but also on the strength of loyalty norms of coalition members. The strength of loyalty norms is determined by the size of the pool from which supporters can be drawn, that is, the size of the selectorate (Bueno de Mesquita and Smith 2010, 937-938). The selectorate size depends on whether the recruitment of political supporters is restricted to a small group or is inclusive of a broad range of the population. Therefore, the selectorate index measures the presence of a legislature and the extent to which it can be drawn from the general public rather than a narrow segment of society (Bueno de Mesquita and Smith 2010, 940). Selectorate size is coded zero if no legislature exists, one if the legislature is selected by assignment, and two if the legislature is elected. To combine the number of supporters and the strength of loyalty norms this study uses the ratio of coalition size and selectorate size as another indicator of democratic institutions.[209]

Table 4 shows the correlations between the different measures of democracy indicating that the conceptually broad democracy measure of Freedom House is highly correlated with the Polity index (r=0.89). Moreover, the conceptual proximity of the Polity index and the coalition size indices is reflected by a high correlation of 0.77, while there is only a moderate correlation between the combined index of political rights and civil liberties on the one hand and coalition size and coalition size ratio on the other.

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[208] Both indices are constructed using variables contained within the Polity IV data (Marshall, Gurr, and Jaggers 2014) and cross-national time-series data archive (Banks 2015). A detailed description of index construction can be found in (Bueno de Mesquita and Smith 2010).

[209] To standardize the ratio of coalition size (W) and selectorate size (S) the coalition size ratio (W/S) is calculated as $\frac{W}{\frac{1}{3}[\log((S+1)*10)]}$ (Bueno de Mesquita and Smith 2010).

Table 4: Correlations between measures of democracy

	Freedom House index	Polity score	Coalition size	Coalition size ratio
Freedom House index	1			
Polity Score	0.89***	1		
Coalition size	0.52***	0.77***	1	
Coalition size ratio	0.55***	0.77***	0.99***	1

Decentralization

Decentralization is a multidimensional process of transferring power, responsibilities, and resources from central to local authorities. Decentralization involves political, administrative and fiscal aspects and may vary in its degree of autonomy granted to the sub-national units. The strongest degree of autonomy is often referred to as devolution, which implies that local governments i) are autonomous and perceived as separate levels of government over which central authorities exercise little or no direct control; ii) have legally recognized geographical boundaries within which they exercise authority and perform public functions; iii) have the power to secure resources to perform their functions; iv) are perceived by local citizens as organizations providing public services that satisfy their needs and as governmental units over which they have some influence (UNDP 1997, 6-7).

Political decentralization refers to the transfer of legislative and executive power, while administrative decentralization concerns the transfer of decision-making and administrative authority and responsibility to sub-national levels. Fiscal decentralization refers to subnational autonomy over expenditures and revenues. Macro comparative data on fiscal decentralization in most developing countries is practically unavailable or falls short in providing a full picture of the extent of fiscal decentralization (Ebel and Yilmaz 2002).[210] Therefore, this study concentrates on available measures of administrative and political decentralization taken from the Database of Political Institutions (Beck et al. 2001). The (dichotomous) indicator of administrative decentralization captures whether sub-national governments have extensive taxing, spending or regulatory authority. Political decentralization is measured by three different (dichotomous) variables: i) whether state or provincial governments (or both) are locally elected, ii) whether a country has autonomous regions, and iii) whether a country is a federation. The measure of 'locally elected officials' is dichotomized by coding countries as 1, in which either the legislature or the executive or both are locally elected and 0 otherwise. The indicator of autonomous regions refers to regions that are *constitutionally* designated as 'independent', 'autonomous' or 'special', which is not identical with states or provinces in general.[211] In federal systems, the devolution of power is constitutionally guaranteed and cannot be withdrawn by the central government without the agreement of the subnational entities. Each measure of political decentralization is significantly correlated with the

[210] The most comprehensive source of fiscal decentralization data is the International Monetary Fund's GFS database, though the country and time coverage does not allow panel data analyses.
[211] Conceptually, federally organized states and states with autonomous regions are distinct which is also indicated by a statistical insignificant relationship.

measure of administrative decentralization. Moreover, among the indicators of political decentralization 'locally elected officials' is significantly correlated with federalism and autonomous regions.

Control variables

The literature review identified several potential confounding factors of population health which have to be specified to avoid omitted variable bias. The most relevant explanatory variables include a country's i) level of socio-economic development, ii) fertility rate, iii) population size, iv) the prevalence of HIV/AIDS, v) conflict involvement, and vi) government health expenditures. All control variables are averaged over 5-year periods.

i) To account for the fact that poorer countries receive more foreign aid (Winters and Martinez 2015, 523; Lane and Glassman 2007, 939) and have higher levels of mortality I measure a country's level of socio-economic development using GDP per capita in constant international US$. As reported in Table 5 GDP per capita is negatively correlated with mortality levels (r=-0.7).

ii) Population health is also strongly determined by fertility (Dyson 2013; Murtin 2013). For instance, reductions in fertility are likely to decrease infant mortality levels by enabling parents to devote more time and resources to their children. Simultaneously, the level of infant mortality is a key determinant of fertility because it reduces the demand for children to attain a desired number of surviving offspring in general, as insurance for old age support or to enhance reproduction of lineage.[212] Fertility is measured as a country' s average in total births per women, which is strongly associated with higher levels of mortality (r>=0.8) (Table 5).

iii) Population size is another important control variable as countries with larger population size are more likely to receive more foreign aid (Winters and Martinez 2015, 523; Acht, Mahmoud and Thiele 2014, 25) because of the mere number of people in need. On the other hand, if donors assume economies of scale in providing health aid they would rather allocate aid to countries with smaller population size, where health aid per capita has a larger effect on population health due to the increasing marginal utility and lower fix costs (Wilson 2011, 2039). Moreover, assuming that some donors use health aid to ensure international political support, smaller recipients are more likely to receive health aid because–regardless of size–all countries have one vote in the UN General Assembly (Fielding 2011, 761).[213]

iv) The prevalence of HIV/AIDS in percent of the population aged 15-49 is included as control variable to account for the fact that countries with high HIV/AIDS prevalence receive more health aid (Lane and Glassman 2007, 939) and that HIV/AIDS is associated with stronger infant mortality (Mishra and Newhouse 2009, 862). The bivariate correlation between HIV/AIDS prevalence and mortality levels is significantly positive (r>=0.5) (Table 5).

[212] For a recent review of the empirical evidence on the causal relationship between infant mortality and fertility see Roodman (2014).
[213] The bivariate correlation with population health is not significantly different from zero (Table 5).

v) A dichotomous variable on conflict involvement is included to account for declines in population health due to the experience of war, which increases the number of deaths related to weapons as well as infectious diseases (such as measles, poliomyelitis, tetanus, and malaria) and non-communicable diseases (Krug et al. 2002, 222). The binary variable measures whether the country is involved in intrastate or interstate conflicts with more than 1000 battle-related deaths using data from the UCDP.[214] Applying one-way ANOVA and (independent sample) t-test indicates that population health significantly differs between countries involved in conflicts and those not involved.

vi) Government health expenditures are a central determinant of population health in developing countries (Farag et al. 2013).[215] Nevertheless, as government spending is endogenous to foreign aid studies estimating the effect of foreign aid normally do not include government spending as control variable due to reasons of 'over-controlling' (Wilson 2011, 2042).[216] However, as donors deliver foreign aid through NGOs and multilateral organizations to bypass recipient governments with weak state institutions (Acht, Mahmoud, and Thiele 2015) public health expenditures are increasingly decoupled from health aid. Therefore, this study also tests whether the effect of health aid is robust against the inclusion of public health expenditures in percent of general government expenditures as an additional control. As reported in Table 5 the correlation between public health expenditures and mortality rates is negative but comparatively small (r=-0.2).

Additional control variables used for robustness checks include female education and the number of physicians. Female educational attainment has been shown to significantly reduce child mortality through increased use of health services including prenatal and postnatal care, improved maternal and child nutrition, better access to information as well as through empowerment and economic independence of women (Gakidou et al. 2010). Education increases the likelihood of better-paid and safer jobs and the ability to advocate for protective health measures. Equally, female education and an emphasis on increasing women’s participation in civil and political life have been shown to improve gender equity and population health in general (Östlin, George, and Sen 2001). To account for the (initial) quality of health infrastructure and the health workforce, the number of physicians per capita is added as an additional explanatory variable.[217] As shown in Table 5 female education and health workforce are strongly associated with lower levels of mortality (r>=-0.8).

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[214] Source: Uppsala Conflict Data Program UCDP Database (www.ucdp.uu.se/database); date of retrieval: 2015/07/22.

[215] Farag et al. (2013) find a strong negative effect of total government expenditures on mortality levels. However, the authors do not explicitly account for the share of health aid included in total health expenditures. In other words, their results actually show a significant negative effect of the 'sum of public and private health expenditures' (which includes the share of health aid channeled to the government and excludes the share of health aid not channeled to the government) on infant and child mortality.

[216] Based on the classification scheme for National Health Accounts (NHA) of the WHO *public health expenditures* include tax-funded health expenditures, social security on health and external resources (including loans and grants) for medical care and medical goods channeled through the Ministry of Health or other public agencies (on-budget health aid). Grants to NGOs, which are not channeled to the government (off-budget health aid), are accounted as private health expenditures (Poullier et al. 2002, 5-6). Private health expenditures also integrate health insurance, mandated enterprise health expenditure and out-of-pocket expenditures in health goods. Public and private health expenditures sum up to a country's total health expenditures.

[217] Accounting for HIV/AIDS prevalence and health infrastructure reduces the likelihood of reporting a significant effect of DAH as it partials out the indirect effect of DAH on population health via health infrastructure and health personnel as well as HIV prevention interventions.

Table 5: Correlation table

Variable	IMR	U5M	MMR	LIFE
Development Assistance for Health (DAH)				
Health aid per capita (AidData)	0.2***	0.1**	0.2**	-0.2***
(log) Health aid per capita (AidData)	0.4***	0.3***	0.3***	-0.4***
Social capital				
CLUBS (ISD index of clubs & association)	0.3***	0.3***	0.4***	-0.3***
TRUST (ISD index of interpersonal trust and safety)	-0.3***	-0.3***	-0.3***	0.3***
CIVIC (ISD index of civic activism)	-0.7***	-0.6***	-0.6***	0.6***
Institutional context				
Quality of government index (ICRG)	-0.5***	-0.5***	-0.5***	0.4***
Governance-index	-0.5***	-0.5***	-0.4***	0.4***
Freedom House index (FHI)	-0.4***	-0.4***	-0.4***	0.4***
Revised (combined) Polity score	-0.4***	-0.4***	-0.3***	0.4***
Coalition size	-0.4***	-0.4***	-0.4***	0.4***
Coalition size/selectorate size ratio	-0.4***	-0.4***	-0.4***	0.4***
Control variables				
Public health expenditure (% of government expenditure)	-0.2***	-0.2***	-0.2**	0.2***
(log) Fertility rate (births per women)	0.9***	0.9***	0.8***	-0.8***
(log) Population size	-0.1	-0.1	-0.1	0.1*
(log) GDP per capita	-0.7***	-0.7***	-0.7***	0.7***
(log) HIV prevalence (% of population aged 15-49)	0.5***	0.5***	0.6***	-0.7***
(log) Physicians (per 1000)	-0.8***	-0.8***	-0.8***	0.8***
Average years of female education	-0.8***	-0.8***	-0.7***	0.7***
N	398	398	398	398

Notes: * p<0.05 ** p<0.01 *** p<0.001. Table shows bivariate correlations between different measures of population health and main predictors.

Finally, against this backdrop, it is worthwhile looking at the data to make an educated judgment whether the effectiveness of health aid is indeed conditional on high levels of social capital. To visualize the interaction between health aid, social capital and population health Figure A 1 to Figure A 3 show the amount of health aid and the level of infant mortality over time for each recipient country. As changes in social capital from one period to another are relatively small, each country's average level of social capital is superimposed to compare the co-evolution of health aid and infant mortality over time across different levels of social capital. Country graphs in each figure are sorted from the lowest to the highest level of social capital. If aid works an increase in health aid should go hand in hand with a decrease in the level of infant mortality and if this relationship depends on the existence of high levels of social capital this negative association should be more pronounced in countries with high levels of social capital.

Concerning the role of community ties Figure A 1 reveals a visible negative relationship between health aid and infant mortality in countries with strong associational involvement for instance in Cambodia, Ethiopia, Tanzania, Vietnam or Ruanda. Though, there are also several countries with low levels of community involvement such as Armenia, Cape Verde, Belarus, Mongolia and Moldova that have received increasing amounts of health aid from 1990-2012 and at the same time achieved significant reductions in infant mortality. Regarding citizens' participation in elite-challenging action, Figure A 2 indicates a negative co-evolution of health aid and infant mortality in countries with high levels of civic activism including in Argentina, Brazil, South Africa, China, Mexico, and Belarus. However, an even larger number of countries with very low average levels of civic activism such as Tajikistan, Myanmar, Cambodia, Laos, Ruanda or Uzbekistan also show a negative correlation between development assistance for health and mortality levels. Lastly, examining the role of trust suggests that in some high-trust countries such as Vietnam, Armenia, Belarus, Myanmar or Tajikistan higher levels of health aid are associated with lower levels of infant mortality (Figure A 3). However, a visible negative relationship is also apparent in some low-trust countries as Liberia and Sudan. In sum, eyeballing the relationship between health aid and infant mortality conditional on the level of social capital by country provides (at least) suggestive evidence but remains inconclusive. Even though there appear to be substantial differences between recipient countries issues of endogeneity are likely to obscure the true interaction patterns. Accordingly, the next section outlines the key methodological issues and how they are addressed to further substantiate the posited relationships.

4.3 Models and estimation methods

Time-series-cross-section (TSCS) data can be analyzed employing a variety of alternative models and estimation methods.[218] Applying different estimation techniques allows accounting for different methodological challenges and thus ensures the robustness of the results. The following section describes which statistical models and methods are used to estimate the joint effect of health aid and social capital on population health, and outlines the basic implications of each alternative.

First, as a baseline model, this study estimates multivariate OLS with the complete set of control variables, including period dummies. Second, to account for unobserved heterogeneity, two-way error component models, including fixed effects models and random effects models, are estimated. Third, to adequately capture the dynamic of the model and to account for simultaneity bias different dynamic panel data models are applied including the lagged dependent variable model (LDV) (Beck and Katz 1995), lagged error component models and the generalized method of moments (GMM) estimator (Arellano and Bond 1991). Fourth, a random coefficient model (RCM) is estimated to cover unit-heterogeneity and to allow for varying slopes in country-specific time trends. Moreover, each estimation strategy is not only applied to estimate the determinants of *levels* of population health but also to *changes* in population health, i.e., the dependent variable is replaced by declines in mortality levels or changes in life expectancy respectively to test the robustness of the find-

[218] It is important to note, that alternative models and estimation methods may lead to drastically different conclusions (Wilson and Butler 2007).

ings. Each of the models—except for RCM—can be estimated as a special case of the general linear model formulated below.

The general linear model is provided by equation (1). y_{it} measures the logarithm of population health or the change in population health, where countries are indexed by i and time periods by t. Indicators of population health include levels of infant, child or maternal mortality and life expectancy as well as their respective change rates. DAH covers development assistance for the health sector (health aid). *SC* measures the different forms of social capital including organizational life (CLUBS), civic activism (CIVIC), and social trust (TRUST), which are expected to influence the effectiveness of health aid. The interaction term DAH**SC* captures the marginal effect of health aid at varying levels of social capital. X'_{it} covers a set of further control variables, including the quality of government, public health expenditures, population size, fertility, economic development, HIV prevalence, conflict involvement, female education and the number of physicians (Eq. (1)).

$$y_{it} = \beta_0 + \beta_1 DAH_{it} + \beta_2 SC_{it} + \beta_3 DAH_{it} * SC_{it} + \beta_4 X'_{it} + \beta_5 y_{it-1} + \alpha_t + \mu_i + \varepsilon_{it} \qquad \textit{Eq. (1)}$$

High HIV prevalence, as well as a high fertility rate, are expected to negatively influence population health, whereas GDP per capita, public health expenditures, administrative capacity as well as female education, number of physicians and population size are expected to have a health-improving effect. μ_i are country-specific and α_t are period-specific fixed effects. ε_i is an idiosyncratic error process.

i) In multivariate OLS ($\beta_5 = 0, \mu_\mathrm{i} = 0$) regressing y_{it} on x_{it} yields consistent estimates of β_i only if the country-specific effects are uncorrelated with the regressors. Since the error term in time-series-cross-sectional models is likely to be correlated within countries the pooled OLS estimator requires the use of cluster-robust standard errors that cluster on countries, while assuming that errors are independent across countries.

ii) The fixed effects approach ($\beta_5 = 0$) accounts for differences between countries that are stable over time and are not covered by other regressors in the model, including (unobserved) economic, political, or cultural determinants of population health. These country-specific (fixed) effects are captured by the term μ_i, which is allowed to be correlated with the regressors x'_{it}, while the idiosyncratic, time-varying error ε_{it} is assumed to be uncorrelated with x'_{it}.[219] The fixed effects approach removes such time-invariant causes, whether those causes are measured or not, and alleviates omitted variable bias in a less-than-fully-specified model.[220] By including period fixed effects α_t, which is common practice for short panels (with small T and high N) (Cameron and Trivedi 2009, 232), the model also accounts for time-specific effects, that are not captured by other regressors x'_{it}. However, even though the fixed effects estimator accounts for unobserved, time-invariant heterogeneity it does not remove the bias of time-varying confounders, as for example initial access to health facilities

[219] The term μ_i varies across units but is constant for each unit over time. As a result, the within estimator '*replaces the typically unrealistic assumption that the measured and unmeasured causes are uncorrelated with the less restrictive assumption that the unmeasured causes are constant, and their effects are stable*' (Firebaugh, Warner, and Massoglia 2013, 116).

[220] To remove the unit-specific, time-invariant component μ_i the within transformation must be applied. The within transformation removes the fixed effects μ_i by mean-differencing and applies OLS to the mean-differenced data
$(y_{it} - \bar{y}_i) = (x_{it} - \bar{x}_i{}')\beta + (\varepsilon_{it} - \varepsilon_i)$.

and clean water. If these time-varying, country-specific factors were correlated with health aid, the estimated coefficient of health aid would be biased. Moreover, as the fixed effects estimator uses only variation within countries, it is not able to estimate the coefficients of time-constant regressors and is relatively imprecise for regressors that vary little over time (Welzel, Inglehart, and Kruse 2016). By contrast, the random effects estimator uses both within and between variations as a source of information. The random effects estimator assumes that the country-specific effects μ_i and the idiosyncratic errors ε_i are purely random (and hence independent and identically distributed). That means, while the fixed effects estimator allows the country-specific effects μ_i to be correlated with other regressors x'_{it}, the random effects model assumes that μ_i is uncorrelated with the regressors.[221]

iii) (Static) error component models are typically applied to account for time-constant unobserved factors, however they do not solve the problem of time-varying omitted variables (Welzel, Inglehart, and Kruse 2016). Dynamic panel models use a lagged dependent variable to account for (time-varying and time-constant) historical factors that cause current differences in the dependent variable that are difficult to account for in other ways (Wooldridge 2013, 120-121, 313). Moreover, in contrast to static panel data models, which assume that the effect of aid on mortality is felt only immediately and completely within one period, dynamic panel models allow that the effects of regressors can vary over time. For instance, an initial effect may increase to some limit over time, which is likely given the nature of health aid projects (Beck and Katz 2011). Therefore, different dynamic panel data models are estimated and compared including the a) lagged dependent variable model (LDV), b) dynamic fixed effects and random effects models and c) the Difference-GMM (Arellano and Bond 1991) and System-GMM estimator.

a) The LDV model ($\mu_{\mathrm{i}} = 0$) is the most common model applied in political science (Beck and Katz 1995). It does not directly account for unit-heterogeneity but it uses levels of the dependent variable from previous years, which captures all the accumulated, unobserved factors that have contributed to population health until the current observation. This is also reasonable if population health is a sticky, path dependent phenomenon. Previous improvements in population health are expected to strengthen future changes in population health. By contrast, it might be reasonable to expect, that countries with higher mortality levels show larger decline rates and 'catch up' or converge. Therefore, I also regress declines in mortality ratios on (lagged) levels of mortality at the beginning of each period to prove the robustness of my finding.[222] The LDV model employs panel corrected standard errors to account for the issue of serial correlation arising from repeated measurements of the same countries (Beck and Katz 1995).

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[221] Two-way random effect models assume that each component of the error $\alpha_i + \mu_t + \varepsilon_{it}$ is identical and independently distributed (i.i.d.), so that the covariance structure is non-nested, because i is not nested in t and t is not nested in i (Cameron and Trivedi 2009, 304).

[222] Applying dynamic panel models raises the question whether to specify the LDV in levels or differences. The standard approach to estimate the determinants of a stock variable using dynamic panel modeling is to include the lagged *level* of the dependent variable. Similarly estimating the determinants of changes in a dependent variable leads to the inclusion of lagged *changes* of the dependent variable: $\Delta \mathrm{y}_{it} = \alpha + \beta \Delta \mathrm{y}_{\mathrm{it-1}} + \mathrm{X'}_{it}\gamma + u_{it}$. However, specifying a (conditional) convergence model (Barro 2000) allows to predict the effect of previous *levels* on current *changes* (progress): $\Delta \mathrm{y}_{it} = \alpha + \beta \mathrm{y}_{\mathrm{it-1}} + \mathrm{X'}_{it}\gamma + u_{it}$.

b) Including a lagged dependent variable (LDV) in a fixed effects model, particularly in 'small T, large N' contexts, leads to a large-sample bias in the estimate of the LDV, because of the correlation of the LDV and the error term (Nickell bias). If the other regressors are to some extent correlated with the LDV their estimates are biased as well (Baltagi 2005, 135). However, the bias mainly affects the parameter estimate of the lagged dependent variable (β_5), which is of minor interest in this study.

c) In the aid effectiveness literature the most common approach to account for the endogeneity of many of the variables in the model, including health aid, are GMM-type estimators, including the Arellano-Bond estimator and the Blundell-Bond-System-GMM estimator (Baltagi 2005, 136-148). Both estimators can solve the problem of endogeneity of one or more explanatory variables. The Arellano-Bond estimator will be called Difference-GMM (DIF-GMM) and the Blundell-Bond estimator will be called System-GMM (SYS-GMM)-estimator. The DIF-GMM applies a first difference transformation to account for country-specific (time-constant) heterogeneity and uses lagged levels of the endogenous explanatory variable as instruments for the differenced endogenous variables.[223] The weakness of this instrumentation strategy is that the levels of the endogenous regressors are often weak instruments for the first-differenced variables, especially if the variables are close to a random walk. Therefore, Blundell and Bond (1998) modified the DIF-GMM and included lagged levels and lagged differences into a System-GMM (SYS-GMM) estimator. Exploiting these additional moment conditions in the levels equations improves the accuracy and the efficiency of the estimates and makes SYS-GMM the preferred estimator compared to the DIF-GMM (Baltagi 2005, 148). In other words, the SYS-GMM estimates the effect of health aid on future population health by comparing two observably similar countries using the portion of health aid attributable to their aid histories (Mishra and Newhouse 2009, 858). For both the DIF-GMM and the SYS-GMM two different IV-estimators can be obtained: i) the 2SLS estimator (two-stage-least-square), called the one-step estimator, and ii) the two-step estimator, which is more efficient by using optimal generalized method of moments. To obtain the optimal weighting matrix used at the second step the first-step estimation is needed beforehand (Cameron and Trivedi 2009, 289). The standard errors reported are robust standard errors that permit the underlying error ε_{it} to be heteroskedastic. Since the two-step estimator shows standard errors that tend to be biased downward Windmeijer bias-corrected robust standard errors are used. The DIF-GMM as well as the SYS-GMM estimator is designed for datasets with many panels and few periods. Therefore, the cost of reducing endogeneity bias by applying GMM estimation (or instrumental variable regression in general) is much higher standard errors.

To evaluate the suitability of the IV-model the instruments need to be correlated with the endogenous or predetermined regressors and satisfy the required orthogonality conditions,

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[223] OLS on the first-differenced data produces inconsistent parameter estimates because in first-differences the regressor $\Delta\, y_{it-1}$ is correlated with the error $\Delta\, \varepsilon_{it}$ (Baltagi 2005, 140). However, $\Delta\, \varepsilon_{it}$ is uncorrelated with previous levels of the differenced LDV y_{it-2} for $k \geq 2$. This permits to use lagged levels of the LDV as instruments for the differenced LDV. The DIF-GMM estimator begins with specifying the model as a system of equations, one per period, and allows the instruments applicable to each equation to differ, as for instance in later periods more lagged values of the instruments are available (Baum 2006, 234). That is, in contrast to standard panel-instrumental variable-approaches GMM estimators exploit all the information available in the sample achieving estimates that are more efficient.

i.e., zero correlation with the error term. Additionally, both estimators require that there be no autocorrelation in the error term.[224] Although the assumption of zero correlation with the error term cannot directly be tested the Sargan and Hansen test permits to test the exogeneity of the instruments used as long as the number of instruments is higher than the number of endogenous and predetermined regressors (overidentification) and the error regarding the instruments being homoskedastic (Auer and Rottmann 2011, 569).[225] However, if heteroskedastic (non-spherical) errors are suspected as in the case of robust one-step GMM the chi-squared statistics of the Sargan test are inconsistent, and the Hansen test from a two-step estimate is theoretically superior (Roodman 2009, 97-98). Therefore, a Hansen's-J test of overidentification and a second-order serial correlation test were run to address the validity of the estimations.[226] A significant result (<10 percent) of the Hansen's-J test is ground to reject the joint null hypothesis that the instruments are valid, meaning they are uncorrelated with the estimated error terms. Hansen's-J tests calculated from the GMM estimates are passed comfortably, supporting the validity of the generated instruments. Moreover, the results of the test of serial correlation indicate the absence of second-order serial correlation, which means that the estimated coefficients are not rendered inconsistent.

To apply the DIF-GMM or SYS-GMM estimator one has to distinguish between different types of regressors–exogenous, predetermined and endogenous regressors–and specify each variable accordingly. Strictly exogenous regressors are uncorrelated with the error term and are used as instruments for themselves as in standard IV-estimation, for instance HIV prevalence and population size. Predetermined regressors are correlated with past errors, but are uncorrelated with future errors meaning that, if the error term at time t has some feedback on subsequent realizations of x_{it}, x_{it} is a predetermined variable.[227] In other words, unforecastable errors today might affect future changes as in public health expenditures so that this variable is rather predetermined than strictly exogenous.[228] Therefore, public health expenditures and the lagged dependent variable are specified as predetermined regressors. Endogenous variables are correlated with the contemporary errors, that is x_{it} and ε_{it} are correlated at time t, which is likely to be the case for health aid, bureaucratic governance, GDP, fertility

[224] More specifically, if the idiosyncratic errors are independent and identically distributed (i.i.d.), the first-differenced errors are first-order serially correlated, however serial correlation in the first-differenced errors at an order higher than one implies that the moment conditions used are not valid.

[225] The Sargan test statistic has the null hypothesis that the instruments are not correlated with the error term and are therefore validly excluded from 2SLS estimation. If the null is not rejected the instruments are assumed to be valid. A rejection of the null hypothesis that the instruments are exogenous may be either because the instruments are not strictly exogenous or they are being incorrectly excluded from the regression (Baum 2006, 201).

[226] Whether to rely on the Hansen's J or Sargan's test of overidentifying restrictions depends on whether nonsphericity in the errors (e.g., in the case of heteroskedastic errors) is suspected. Sargan's statistic is a special case of Hansen's J under the assumption of homoscedasticity. Therefore, for robust GMM the Sargan test statistic is inconsistent. Nonetheless, as both tests have low power if the number of excluded instruments is high, the 'Difference-in-Sargan tests of exogeneity of instrument subsets' is used as additional evidence on the validity of the instruments.

[227] $E(x_{it}\varepsilon_{is}) \neq 0$ for $s < t$ and $E(x_{it}\varepsilon_{is}) = 0$ for $s \geq t$.

[228] To account for the absent exogeneity, a predetermined variable x_{it} is instrumented by $x_{it-1}, x_{it-2}, \ldots$ etc. Similarly, the lagged dependent variable y_{t-1}, is also a predetermined variable and consequently is instrumented with $y_{t-2}, y_{t-3}, \ldots$. In a dynamic panel with five periods for the LDV at t=5 there are three available instruments y_{i3}, y_{i2} and y_{i1}. At t=4 there are two available instruments y_{i2} and y_{i1}. At t=3 there is one available instrument y_{i1}. So the number instruments used for the LDV regressor is 3+2+1=6. The total number of instruments is the sum of the used instruments over all predetermined and endogenous regressors.

and social capital.[229] For contemporaneously endogenous variables realizations lagged by two or more periods can serve as instruments (Cameron and Trivedi 2009, 289). That is, an endogenous variable x_{it} is instrumented by $x_{it-2}, x_{it-3}, \ldots$ Hence, including all valid lags for endogenous variables means lags two and up.[230] The explanatory variables that are specified as endogenous variables include health aid, GDP per capita, and fertility. Additionally, social capital is specified as an endogenous explanatory variable because of the potential impact of health aid—in particular, participatory approaches in development assistance—on civil society and community empowerment as well as through improved health as a precondition of participation.[231] Likewise, Bano (2012) provides evidence that development assistance may have negative effects on associational membership. To account for the potential effect of foreign aid on political institutions the indicators of bureaucratic governance, liberal democracy and decentralization (respectively) are specified as endogenous predictors, too (Chauvet 2015; Wright and Winters 2010).[232, 233]

iv) The random coefficient model is a special case of mixed linear models, which allow slope parameters to vary over countries or time (Rabe-Hesketh and Skrondal 2012, 343). To model country-specific trajectories in population health over time the RCM includes a time trend (t) instead of period dummies (α_t) and allows the slope parameter $\beta_{5\mathrm{i}}$ of the trend variable (t) to vary across countries (Eq. 2). The application of RCM as an alternative estimation model is justified as countries follow different health trajectories as some improve faster than others.

$$y_{it} = \beta_0 + \beta_1 DAH_{it} + \beta_2 SC_{it} + \beta_3 DAH_{it} * SC_{it} + \beta_4 X'_{it} + \beta_{5i} t + \mu_i + \varepsilon_{it} \qquad \textit{Eq. (2)}$$

At the same time the country-specific effects μ_i allow for variation in intercepts, which together characterize the highly flexible functional form of RCM. In contrast to *dynamic* panel data estimation, the RCM approach does not include previous levels of the dependent variable as an additional explanatory factor. Even though the RCM is subject to endogeneity issues its highly flexible functional form makes it less prone to be biased because the error

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[229] $E(x_{it}\varepsilon_{is}) \neq 0$ for $s \leq t$ and $E(x_{it}\varepsilon_{is}) = 0$ for $s > t$.

[230] However, the number of instruments increases with the number of available periods. Too many instruments may negatively influence the robustness of the Sargan/Hansen-test statistic as well as the asymptotic properties of the estimator. Therefore, different model specifications are tested, whereby either the lag ranges used in generating the instrument sets are limited or instruments are collapsed (Roodman 2009, 107).

[231] It is important to note that the increased funding opportunities for NGOs do not determine individuals' membership in voluntary associations. To clarify, while donors have channeled more official aid to (and through) NGOs they may have increased the number of CSOs that deliver social services. Thereby, respondents in countries that receive large amounts of aid may be more likely to be a member in these CSOs and therefore create a positive correlation between CSO and health aid, which would induce multicollinearity between the index of associational membership and health aid. However, health aid in per capita terms is uncorrelated with associational membership in both the ISD and WVS dataset. The fact that associational membership is positively correlated with health aid (0.28) in USD may merely reflect that larger countries have more CSOs to deliver social services. Whether social capital is specified as an endogenous or exogenous predictor in the GMM estimation does not alter the results obtained.

[232] Djankov et al. (2008), Kalyvitis and Vlachaki (2012), Wright (2009), Bermeo (2011), Kalyvitis and Vlachaki (2010) provide recent empirical evidence on the effects of foreign aid on political institutions and regime change, while Bräutigam and Knack (2004); Rajan and Subramanian (2007), Busse and Gröning (2009) as well as Tavares (2003) and Charron (2011) demonstrate significant relationships between foreign aid and bureaucratic governance and state capacity.

[233] Theoretically, political institutions can be treated as endogenous or exogenous to aid (Wright and Winters 2010). The results are tested for robustness by specifying administrative capacity, liberal democracy and decentralization as exogenous and not influenced by aid in the same period.

structure parcels out some of the correlation between observable variables and the explanatory variables among random coefficients (Wilson 2011, 2035).[234] On the other hand, RCM relies on large sample properties of maximum likelihood estimation and is not necessarily unbiased in small samples. In conclusion, assessing the effectiveness of health aid is associated with different methodological challenges. This section has outlined the main methodological issues and how they are addressed using different panel estimation techniques to test the sensitivity to alternative specifications and to improve confidence in the conclusions.

5 Results

Donors have put much effort in supporting voluntary associations in aid recipient countries. Based on a communitarian view structural social capital has been endorsed to shape civic attitudes and democratic orientations, and mobilize political action. Correspondingly, social capital is hypothesized to increase communities' collective action capacity, which enables citizens to better monitor public officials and to demand accountability from officeholders and service providers. The argument is presented in three steps. Section 5.1 analyzes whether social capital fosters political participation and civic orientations in recipient countries based longitudinal survey data from the WVS over the period 1995-2014. Therefore the first sub-section outlines the global distribution of structural and cultural social capital. The second part examines the empirical relationship between associational involvement and trust across the globe. The third part inspects the prevalence of civic activism and democratic orientations in recipient countries and tests whether they are associated with stocks of cultural and structural social capital. To account for potential interactions with formal institutions, the relationships are inspected for autocracies and democracies separately (Lauth 2015, 63). The results strengthen the assumption that social capital increases participation in political action. Accordingly, section 5.2 explores whether social capital conditions the effect of health aid on mortality levels and life expectancy. After testing the moderating effect of associational involvement, civic activism and social trust section 5.3 further explores the institutional context conditions under which social capital unfolds its moderating capacity.[235] Both sub-chapters are structured by type of social capital analyzing the moderating effect of associational involvement, trust and civic activism. The lagged dependent variable model with panel corrected standard errors (LDV) (Beck and Katz 1995) serves as a benchmark for comparison with other panel model specifications including the preferred GMM estimators which allow accounting for issues of endogeneity.[236] To facilitate interpretation,

[234] In contrast to the standard RCM specification, allowing for random slopes in the trend variable, attempts to allow the slope of the trend variable and the intercept to vary failed numerically for most equations.

[235] Notably, the results presented in section 5.2 are qualitatively similar to the inclusion of formal institutions of democratic governance or decentralization as additional controls. All variables involved in two-way or three-way interactions are global mean-centered to facilitate meaningful interpretation.

[236] Results from fixed effects, random effects, lagged fixed effects and lagged random effects estimation, as well as random coefficient models (growth curve models), are documented in the appendix. It should be noted that the cost of reducing endogeneity bias by applying GMM estimation is much higher standard errors and larger confidence intervals compared to standard panel estimators.

the results of each sub-section are also visualized using marginal effect plots, which display how the effect of health aid changes across the entire range of the moderating variable.

5.1 Social capital and civic engagement

Stocks of social capital in recipient countries

The first question that arises is how social capital is distributed across recipient countries and whether there is a difference between democratic and non-democratic recipients. Thus, Table 6 shows the global distribution of structural and cultural social capital. The global view reveals large differences between and within world regions as well as between autocratic and democratic regimes.[237] Specifically, while autocracies achieve higher levels of social trust democracies show larger levels of associational membership (belonging) and voluntary work (volunteering). To facilitate comparison Figure C 2 and Figure D 2 visualize the distribution of voluntary involvement and social trust across the globe. In Sub-Saharan Africa, which is the region with the highest levels of voluntary engagement, about 90 percent of the population report to be a member in religious, sociotropic or utilitarian organizations (Table 6). This is far above levels of associational activity of Western donors. Nevertheless, vast differences exist between Northern African countries such as Tunisia, Algeria or Morocco, and Sub-Saharan Africa, in which associational involvement is more than four times larger. Asia and Latin America rank in between, while Eastern European countries and the MENA region maintain low stocks of associational membership. The highest levels of *cultural* social capital are found in Asia, whereas trust levels in Sub-Saharan Africa and Latin America are the lowest worldwide. Eastern European countries, as well as the MENA region, only achieve average levels of cultural social capital. Specifically, in the Asian region, social trust is exceptionally high in China, Indonesia, and Vietnam, with levels as high as trust levels of Western donors.[238] However, there is as much variation within regions. For example, within Sub-Saharan Africa countries such as South Africa or Nigeria report trust levels that are more than two times larger than those of Ghana or Zimbabwe. Equally, trust levels in China or Vietnam are more than five times larger than stocks of cultural social capital in Malaysia or the Philippines.

[237] Regime classification is based on the Democracy and Dictatorship index introduced by Cheibub, Gandhi, and Vreeland (2010). According to this index a regime is considered a democracy if the executive and the legislature is directly or indirectly elected by popular vote, multiple parties are allowed, there is de facto existence of multiple parties outside of regime front, there are multiple parties within the legislature, and there has been no consolidation of incumbent advantage (e.g., unconstitutional closing of the lower house or extension of incumbent's term by postponing of subsequent elections).

[238] The high levels of generalized trust in China have been attributed to culturally induced response bias and a strong linkage to institutional confidence (Steinhardt 2012). Empirically, Delhey, Newton, and Welzel (2011, 2014) demonstrated that adjusting the standard measure of generalized trust by the radius of trust, i.e., accounting for the notion of what is meant by 'most people' indicates much lower levels of generalized trust.

Table 6: Stocks of social capital by country

Region	Country	Trust (%)	Belonging (%)	Belonging (average no.)	Volunteering (%)	Volunteering (average no.)
Eastern Europe (EEU)	EEU	23.0	41.6	0.94	18.0	0.26
	Albania	25.7	68.1	1.05	27.5	0.35
	Armenia	17.4	58.4	4.60	11.9	0.17
	Azerbaijan	18.6	35.3	0.51	10.4	0.14
	Belarus	28.2	55.9	0.80	13.0	0.18
	Bosnia & Herzegovina	15.8				
	Bulgaria	25.3	21.1	0.32	9.4	0.13
	Croatia	25.1	80.1	1.67	39.4	0.59
	Czech Republic	29.4	58.7	1.06	29.8	0.39
	Estonia	30.5	44.4	0.74	19.5	0.28
	Georgia	15.2	18.4	0.22	7.6	0.09
	Hungary	25.6	36.3	0.57	24.8	0.34
	Kazakhstan	38.8	28.9	0.78	13.3	0.26
	Kyrgyzstan	27.4	55.3	1.97	36.7	0.82
	Latvia	24.7	45.8	0.70	16.5	0.23
	Lithuania	21.9	32.2	0.48	11.6	0.14
	Macedonia	11.0	48.5	1.50	24.5	0.38
	Moldova	18.2	62.1	1.11	29.1	0.41
	Poland	20.0	31.2	0.71	19.3	0.30
	Romania	15.4	36.6	0.72	22.3	0.33
	Russia	29.3	36.1	0.61	13.0	0.18
	Slovakia	25.0	62.3	1.11	27.6	0.35
	Ukraine	28.1	41.1	0.65	13.4	0.18
	Uzbekistan	14.1	23.7	0.40	13.5	0.21
North Africa & the Middle East (MENA)	MENA	22.1	25.0	0.60	15.3	0.26
	Algeria	14.6	23.3	0.51	11.7	0.21
	Egypt	25.6	9.3	0.15	3.7	0.06
	Iran	38.0	60.5	1.51	42.1	0.70
	Iraq	40.1	24.4	0.45	16.3	0.24
	Jordan	24.1	16.3	0.42	11.7	0.16
	Lebanon	10.9	56.9	1.97	37.6	0.77
	Libya	11.6	36.0	1.22	24.3	0.57
	Morocco	16.0	23.7	0.43	14.7	0.22
	Tunisia	16.0	10.0	0.19	4.9	0.07
	Turkey	10.4	19.6	0.34	11.5	0.18
	Yemen	40.4	31.6	0.72	13.4	0.23
Sub-Saharan Africa (SSA)	SSA	14.5	90.8	3.12	71.2	1.43
	Burkina Faso	14.7	59.9	1.27	35.7	0.58
	Ghana	6.7	96.4	2.99	80.4	1.58
	Mali	17.5	79.7	3.04	59.8	1.50
	Nigeria	20.2	96.4	3.37	85.5	1.79
	Rwanda	10.8	93.5	3.34	67.2	1.33
	South Africa	20.4	91.2	3.53	69.0	1.36
	Tanzania	8.1				
	Uganda	7.8				
	Zambia	11.5	97.1	3.18	75.7	1.52
	Zimbabwe	9.2	97.3	3.15	81.5	1.46
Asia	ASIA	33.4	57.1	1.99	38.0	0.84
	Bangladesh	22.2	62.6	1.53	50.8	1.04
	China	56.8	36.5	0.79	15.9	0.28
	India	34.3	74.2	4.18	53.0	1.32
	Indonesia	47.1	82.1	2.47	58.5	1.26
	Malaysia	8.7	50.0	1.49	26.8	0.57
	Pakistan	24.5	30.5	0.70	17.5	0.27
	Philippines	5.7	60.1	1.92	43.2	0.99
	Thailand	37.0	60.1	2.06	42.1	1.02

	Vietnam	46.6	66.8	1.33	51.2	0.92
Latin America & Caribbean (LACAR)	LACAR	15.3	67.5	1.72	47.8	0.86
	Argentina	19.4	53.4	1.32	33.0	0.53
	Brazil	7.4	83.9	1.66	64.3	1.10
	Chile	18.5	65.0	1.92	48.0	0.78
	Colombia	9.8	66.7	1.40	49.6	0.84
	Dominican Republic	26.4	92.3	3.27	71.5	1.49
	Ecuador	7.2	47.7	0.96	23.8	0.48
	El Salvador	14.6	68.7	1.13	55.3	0.84
	Guatemala	15.7				
	Mexico	22.9	82.7	2.54	62.1	1.34
	Peru	7.6	66.6	1.53	45.4	0.79
	Trinidad and Tobago	3.5	82.3	2.53	56.7	1.08
	Uruguay	21.8	49.5	1.03	31.2	0.50
	Venezuela	14.8	63.1	1.87	43.5	0.84
Autocracies		25.7	48.7	1.37	30.6	0.58
Democracies		19.0	56.4	1.56	36.0	0.65

Notes: Table reports country means over the period 1995-2014 based on WVS waves 1995-98, 2005-2009 and 2010-2014.

The high levels of associational membership in Africa, above all in Eastern African countries as, e.g., in Kenya, Malawi, Ethiopia, Uganda, and Tanzania, can be mainly attributed to the vital role of religion in Africa. On average around 70 percent of the population in African countries belong to faith-based organizations. Still, civil society in Africa is quite heterogeneous, as many respondents in nations surveyed by the Afrobarometer or the WVS also report to be a member of a sports club (42 percent), development organization (28 percent), union (15 percent) or business organization (15 percent). Historically the roots of civil society organizations in Africa date back to pre-colonial times based on African traditions of communalism and voluntarism. In Eastern African countries such as Tanzania, Kenya or Uganda, self-help groups including women and youth groups, have always played an important role in promoting local welfare and protecting group interests (Kanyinga 2010, 248). Membership was mainly organized along family, clan or neighborhood lines. In Kenya and Uganda self-help groups also provided the basis for mobilizing political support for the new governments after the countries' independence (Kanyinga 2010, 248). However, civil society organizations not only spurred democratic transition in Eastern Africa but also complemented governments in the delivery of public services, in particular after the adoption of structural adjustment programs (SAP). Besides, associational life in Central and Southern Africa was historically shaped through liberation movements fighting colonial oppression in postcolonial times and by the conflict-ridden process of democratic consolidation. Therefore, civil society organizations have been closely linked to oppositional, political parties supporting democratic transition, as in Zambia, Zimbabwe or South Africa (Yachkaschi 2010, 230). Moreover, women and human rights organizations played a crucial role in peace-building and humanitarian relief in particular in the Central African Republic, Democratic Republic of Congo, Ruanda or Burundi. However, civil society organizations are subject to repressive legislation, which undermines their autonomy, and co-option into the government through vertical relations and bonds of patronage (Kew and Oshikoya 2014, 17). In particular, human rights-based and democracy-promoting organizations, which are actively protesting against governments, must fear state repression, in contrast to associations that are engaged in service delivery, often being sub-contracted by the government (Yachkaschi 2010, 233).

In the Middle East and Northern Africa, associational activity is comparatively low and mostly characterized as ineffective, undemocratic, elitist and dominated by patronage relations (Saber 2010, 310). They tend to be family or close-knit group centered. Even though the number of associations has increased over the last decade, only a minor share of the officially registered voluntary associations are active (Liverani 2010, 269). Moreover, the freedom of voluntary associations in countries such as Tunisia, Jordan, Algeria or Morocco is strongly curtailed by the state either directly through legal and administrative rules or indirectly by the provision of government funds as a mean to monitor activities and control the development of associations. Furthermore, the state also directly engages in the creation of religious associations (Liverani 2010, 272). The low levels of associational involvement observed in Eastern European countries is considered one of the enduring legacies of post-communist rule (Howard 2003). This is illustrated by the low fraction of population that has done voluntary work or is member of a voluntary association in Bulgaria, Hungary, Poland or Russia.[239] Similarly, in Russia civil society has been historically strongly shaped by the country's ruling political regime, which has eliminated and replaced independent associations by state-oriented organizations (Gilbert 2010). Even though under *glasnost* and *perestroika* the number of associations independent of state control gradually increased since the end of the 1980s citizens' participation in voluntary associations is low by international standards. According to the New Russia Barometer in 2007 95 percent of respondents reported not being a member of either sports, arts, community or charitable associations (Gilbert 2010, 275). The WVS only reports slightly larger numbers: on average only about 12 percent of the Russian population is a member of sociotropic associations.

By international standards, Asia maintains moderate stocks of structural social capital. Associational involvement is highest in Southern and South-Eastern Asia and dominated by religious associations. Specifically, in countries such as India, Bangladesh or the Philippines about one-third of the population is a member of a religious organization. Similarly, (on average) more than 50 percent of the Asian population report to regularly spend time once or more a week at a church, mosque or temple to socialize (Weiss 2010, 296). Besides, India has many politically oriented organizations rooted in its long history of nationalist movements, while development oriented, educational and humanitarian organizations have also expanded in the whole region (Blomkvist and Uba 2010, 292). Moreover, in countries such as Indonesia or the Philippines, where governments exercise less control over civil society, trade unions and NGOs play an important role in the public life (Weiss 2010, 298, Alagappa 2004). Even in more repressive environments, as in Vietnam, community welfare organizations and business associations provide an important resource for mobilizing political action (Weiss 2010, 297). Latin America and the Caribbean have the second largest stock of structural social capital and a long tradition of faith-based organizations complementing governments in the delivery of public services (Roitter 2010). On average, about half of the Latin American population (according to WVS data) are a member of a religious organization.

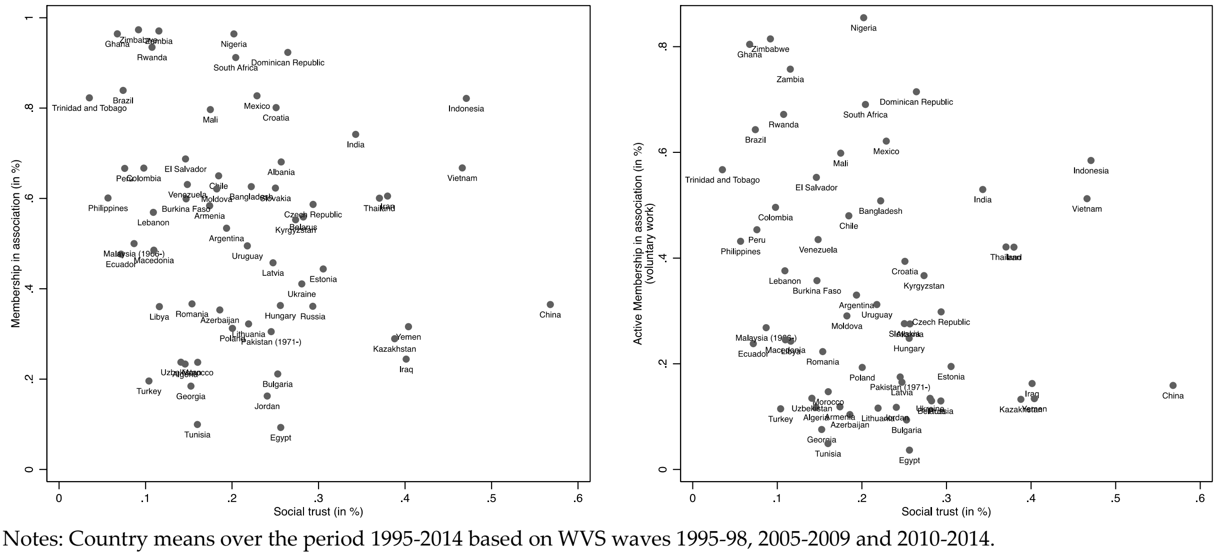
[239] By contrast, using data of international NGO density and social movement activity Foa and Ekiert (2016) argue, that civil societies in Central and Eastern European countries are not as feeble as commonly assumed, since many post-communist countries maintain an active civil society sector strongly connected to transnational civic networks and able to shape domestic policies.

After the transition towards consolidated democracies in the mid-1990s emerging advocacy and empowerment-based organizations complemented the existing elite-oriented educational and religious associations. Since then the number of voluntary associations and their contribution to the provision of public services has increased. Civil society in Central America was politicized under military dictatorships at the end of the 20th century, as in Guatemala, El Salvador or Nicaragua. Civil society organizations played a crucial role in the process of democratic transition in particular by monitoring elections and promoting citizen participation (Natal et al. 2010, 264). Civil society organizations in Latin America continuously touch on issues related to redistribution, environmental problems, and indigenous rights.

Linking structural and cultural social capital

To examine whether people '*who join are people who trust*' Table 7 reports the bivariate correlations between structural and cultural social capital on the individual and the country level.[240] Furthermore, the table addresses the question whether the relationship depends on the type of organization or the level of democracy. In short, the evidence suggests that at the country level there is no systematic relationship between community involvement and social trust. Specifically, social trust is neither associated with (passive) associational membership nor with (active) voluntary work. This can also be depicted from Figure 17. However, the distinction between different forms of associational involvement uncovers that sociotropic and utilitarian associations differ from religious organizations. In particular, involvement in sociotropic or utilitarian organizations is not associated with social trust. The relationship between religious membership and levels of trust is significantly negative.

Figure 17: The relationship between social trust and (active) associational involvement



Notes: Country means over the period 1995-2014 based on WVS waves 1995-98, 2005-2009 and 2010-2014.

At the individual level, members of voluntary associations are (on average) more trusting (Table 7). On the other hand, the individual-level correlations suggest that the relationship

[240] Data reported covers WVS wave 1995-1998, 1999-2004 and 2010-2014. Data from wave four (2005-2009) are not comparable due to changes in survey items and therefore not included.

between membership and trust is conditioned by institutional context. In democracies, members of sociotropic and utilitarian associations are *more* trusting, and citizens engaged in religious organizations are *less* trusting than non-members. By contrast, in autocracies, the positive correlation between membership in non-religious associations and trust dissolves while the negative relation between trust and religious organizations remains statistically significant.[241] These findings are also confirmed within world regions: in more democratic regions, that is, South America and Eastern Europe, citizens who are engaged in horizontal organizations are more likely to report higher levels of trust. Respondents from less democratic regions including Sub-Saharan Africa, Asia, and the MENA region are *not*.

Table 7: Correlation between social trust and indicators of structural social capital

Social trust	Eastern Europe	North Africa & the Middle East	Sub-Saharan Africa	Asia	Latin America & Caribbean	Autocracies	Democracies	Total sample
MACRO LEVEL								
Belonging (%)	0.28	-0.20	-0.30	-0.2	-0.15	-0.2	-0.06	-0.16
Belonging (avg. number)	0.11	-0.22	0.47	-0.2	0.11	-0.22	0.06	-0.07
Volunteering (%)	0.19	-0.25	-0.27	-0.2	-0.11	-0.24	-0.20	-0.24*
Volunteering (avg. number)	0.24	-0.25	0.03	-0.23	-0.02	-0.21	-0.16	-0.19*
Belonging utilitarian group (%)	0.26	-0.14	0.00	-0.09	0.25	-0.11	0.22	0.06
Belonging sociotropic group (%)	0.2	-0.27	0.27	-0.21	0.21	-0.26	0.07	-0.11
Belonging religious group (%)	-0.00	-0.13	-0.41	-0.36	-0.23	-0.33*	-0.25*	-0.32***
N	48	25	20	26	36	65	90	155
INDIVIDUAL LEVEL								
Belonging (%)	0.05***	ns	ns	-0.03***	0.04***	-0.03***	0.03***	0.07***
Belonging (avg. number)	0.05***	-0.07***	-0.03***	-0.04***	ns	-0.06***	0.02***	0.05***
Volunteering (%)	0.03***	ns	0.02**	ns	0.03***	-0.02**	-0.02***	0.03***
Volunteering (avg. number)	0.05***	-0.05***	-0.02***	-0.03***	0.01**	-0.05***	ns	0.04***
Belonging utilitarian group (%)	0.04***	ns	0.02***	-0.02**	0.07***	ns	0.06***	0.07***
Belonging sociotropic group (%)	0.05***	ns	0.04***	-0.04***	0.07***	-0.02***	0.06***	0.09***
Belonging religious group (%)	0.02***	ns	ns	-0.06***	ns	-0.07***	-0.01**	ns
N	64,089	43,580	37,331	39,218	48,226	109,625	122,819	324,743

Notes: Country-level correlations report Pearsons-r. Individual-level entries are Spearman correlations (rho). Correlations are replicated by using the tetrachoric correlation coefficient. * p<0.05, ** p<0.01, *** p<0.001.

241 In other words, in autocracies members of sociotropic and religious associations are less trusting while trust levels do not significantly differ between members and non-members of utilitarian associations—including professional organizations, political parties, and labor unions.

Linking social capital and political action

Democratic theorists endorse an active citizenry because it stimulates public debate and presses government for action on matters of public interest. An active citizenry ultimately resides in a vibrant voluntary sector as members of voluntary associations are better informed, more politically interested and more politically active, in sum, better democratic citizens (Almond and Verba 1963, 265). Empirically, Welzel, Inglehart, and Deutsch (2005, 134) provide evidence that both voluntary involvement and participation in non-institutionalized political action are indeed positively linked to civic attitudes such as tolerance, liberty aspirations, self-expressive values and support for democracy. As noted by Roßteutscher (2008, 224-225), in non-democratic contexts the democratizing effects of trust and voluntary involvement may also be associated with *less* political participation. In particular, citizens may intentionally withdraw support of *non-democratic* political leaders by '*not taking part in controlled elections, state-sponsored marches, or the state-run party system,'* but at the same time express *'high interest in politics and a strong support of democratic ideals'* (Roßteutscher 2008, 225). Donors have embraced the posited effects of social capital on political participation and civic attitudes as a way to check the abuse of power under corrupt conditions (Jenkins and Goetz 1999; Diamond 1999, 243).

To revisit the evidence on the link between social capital and political participation for a selection of aid recipient countries Table 9 to Table 13 report individual and country-level correlations between social capital on the one hand and participation in elite-challenging action, political interest and democratic orientations on the other. Society's level of (non-institutionalized) political action is measured by the index of social movement activity. Respondents' interest in politics is measured using two different items: political interest and importance of politics.[242] Democratic preferences are measured using an index that balances preferences for democracy against conflicting preferences for authoritarian alternatives of democracy (Welzel 2013).[243]

The first question is whether there are differences across countries and regions. Thus, Table 8 reports country-level differences in (non-institutionalized) political action, interest in politics and support for democracy.[244] Correspondingly, the most politically active region is Latin America & the Caribbean where on average about 30 percent of the respondents have participated in elite-challenging actions. Numerous social movements exist demanding citi-

[242] Political interest is measured by using two different indices. i) Political interest (index) is a four-point scale from 0 to 1 (with scores in .33-units) based on the WVS item '*How interested would you say are you in politics? Very interested, somewhat interested, not very interested, not at all interested*'. ii) The second index–importance of politics–is a four-point scale from 0 to 1 (with scores in .33-units between 0 and 1) based on the WVS item '*For each of the following, indicate how important it is in your life: Politics. Would you say it is very important, rather important, not very important, not at all important'*. Due to diverging results at the country level, both indices are reported. At the individual level, both indices lead to qualitatively similar results.

[243] The index of *democratic preferences* is the average of three sub-indices each coded on a four-point scale from 0 to 1 (with scores in .33-units between 0 and 1). The sub-indices are based on the following three items: '*I'm going to describe various types of political systems and ask what you think about each as a way of governing this country. For each one, would you say it is a very good, fairly good, fairly bad or very bad way of governing this country? 1) Having a strong leader who does not have to bother with parliament and elections; 2) Having the army rule; 3) Having a democratic political system'*. Negative answers for the first two sub-indices are coded as support for democracy. The averaged index of democratic preferences ranges from 0 to 1 with a neutral point at .50, indicating equal endorsement/rejection of democracy and its authoritarian alternatives (Welzel 2013, 238-239).

[244] The regional patterns (described below) are also corroborated by recent evidence on global protest events indicating that high-income countries show a higher prevalence of protests (Ortiz et al. 2013).

zens rights and monitoring state activities (Roitter 2010). In Central American countries, such as Guatemala, El Salvador, Mexico and Nicaragua, social movements emerged primarily in conflict with authoritarian governments and the process of democratization in the mid of the 20th century. Likewise, protest activity also became salient in the context of labor and migrated peasants movements (Natal et al. 2010, 265). Support for democratic ideals is moderate, while political interest is comparatively low. The lowest levels of protest activity are found in Asia and the MENA region. Asia also ranks lowest regarding democratic preferences, even though citizens' interest in politics is exceptionally strong. In particular, China, Malaysia, and Vietnam report the lowest levels of elite-challenging action worldwide. Nevertheless, some countries have experienced civil societal movements, which have been salient to regime transitions, for instance, the Philippines in 1986 and Indonesia in 1998 (Weiss 2010, 297). In Central Asia, Kyrgyzstan provides another example where social movement activities in 2006 were followed by the ouster of the Kyrgyzstan president (Toogood-Luehrs 2010, 238). Moreover, even in non-democratic settings social movements, as in Vietnam, have gained momentum due to the increasing influence of business and industrial interests of civil society (Weiss 2010, 297).

Table 8: Distribution of non-institutionalized political action and civic orientations by region

Region	Country	Non-institutionalized political action (in %)	Importance of politics (index)	Political interest (index)	Democratic preference (index)
Eastern Europe (EEU)	EEU	23.6	0.38	0.46	0.67
	Albania	28.8	0.32	0.41	0.69
	Armenia	24.9	0.43	0.43	0.64
	Azerbaijan	15.4	0.39	0.39	0.75
	Belarus	20.7	0.43	0.48	0.66
	Bosnia and Herzegovina	25.2	0.39	0.41	0.73
	Bulgaria	14.8	0.32	0.43	0.63
	Croatia	44.6	0.33	0.43	0.81
	Czech Republic	26.3	0.37	0.71	0.82
	Estonia	25.5	0.37	0.45	0.75
	Georgia	24.9	0.48	0.45	0.68
	Hungary	22.9	0.32	0.44	0.81
	Kazakhstan	8.4	0.47	0.46	0.64
	Kyrgyzstan	17.3	0.51	0.54	0.53
	Latvia	39.1	0.34	0.50	0.70
	Lithuania	34.3	0.37	0.45	0.64
	Macedonia	27	0.39	0.42	0.64
	Moldova	23.2	0.37	0.44	0.63
	Poland	29.3	0.37	0.41	0.69
	Romania	18.5	0.31	0.38	0.64
	Russia	27.9	0.38	0.43	0.59
	Slovakia	26.8	0.37	0.68	0.81
	Ukraine	20.8	0.37	0.44	0.62
	Uzbekistan		0.46	0.45	0.65
North Africa & the Middle East (MENA)	MENA	16.6	0.45	0.43	0.68
	Algeria	26	0.46	0.37	0.73
	Egypt	19	0.47	0.45	0.71
	Iran		0.48	0.48	0.56
	Iraq	16.9	0.53	0.50	0.74
	Jordan	8.5	0.45	0.40	0.65
	Lebanon	23.1	0.49	0.51	0.55
	Libya	34.5	0.57	0.55	0.64

	Morocco	18	0.30	0.27	0.81
	Tunisia	14.4	0.43	0.40	0.65
	Turkey	16.7	0.43	0.44	0.64
	Yemen	19.7	0.44	0.44	0.72
Sub-Saharan Africa (SSA)	SSA	25.4	0.50	0.49	0.73
	Burkina Faso	24	0.49	0.54	0.69
	Ghana	10	0.49	0.47	0.83
	Mali	29.5	0.52	0.60	0.60
	Nigeria	32.3	0.48	0.46	0.71
	Rwanda	14.5	0.58	0.53	0.68
	South Africa	30.6	0.47	0.48	0.67
	Tanzania	35.6	0.66	0.63	0.87
	Uganda	30.5	0.55	0.54	0.72
	Zambia	27.3	0.53	0.52	0.74
	Zimbabwe	15	0.44	0.39	0.78
Asia	ASIA	15.7	0.50	0.51	0.61
	Bangladesh	24.4	0.51	0.47	0.86
	China	2.9	0.57	0.58	0.65
	India	33.9	0.43	0.45	0.58
	Indonesia	15.6	0.46	0.43	0.57
	Malaysia	6.7	0.50	0.43	0.60
	Pakistan	14.5	0.29	0.43	0.60
	Philippines	16.6	0.53	0.50	0.55
	Thailand	11.7	0.67	0.66	0.63
	Vietnam	7	0.68	0.70	0.55
Latin America & Caribbean (LACAR)	LACAR	30.9	0.39	0.34	0.68
	Argentina	30.2	0.34	0.31	0.74
	Brazil	54.8	0.45	0.40	0.58
	Chile	29.4	0.31	0.29	0.70
	Colombia	28.4	0.34	0.29	0.63
	Dominican Republic	32.9	0.46	0.48	0.83
	Ecuador	15.2	0.48	0.37	0.62
	El Salvador	20.5	0.39	0.21	0.58
	Guatemala	14.1	0.43	0.30	0.60
	Mexico	30.6	0.47	0.39	0.59
	Peru	30	0.42	0.36	0.68
	Trinidad and Tobago	29	0.39	0.39	0.78
	Uruguay	34.4	0.37	0.36	0.74
	Venezuela	24	0.33	0.24	0.69
Autocracies		18.6	0.48	0.47	0.67
Democracies		26.3	0.40	0.42	0.67

Notes: Table reports country means over the period 1995-2014 based on WVS waves 1995-98, 2005-2009 and 2010-2014. Participation in non-institutionalized political action is measured by the index of social movement activity (SMA).

Likewise, Sub-Saharan Africa ranks high concerning elite-challenging action while democracy receives broad support and interest in politics is widespread. Intraregional differences between countries such as Tanzania and Ghana or Zimbabwe are large though. In African countries, social movements have emerged around various issues since the late 1990s. For instance, social movements have been advocating for an alternative development agenda, food security, debt relief, environmental issues, land rights, women's rights, access to antiretroviral drugs, rights of gays and lesbians as well as against the privatization of public goods (Yachkaschi 2010, 233). Protests are also closely linked with the importance of trade unions, which have long experiences in mobilizing political action due to their orientation toward wages and basic need concerns which is of fundamental interest of the poor majority across the continent (Kew and Oshikoya 2014, 17). At the same time, African protesters are not only challenging national elites and their policies but also international financial institutions, such as the World Bank and their prescribed reforms, which recipient countries are supposed to implement in return for funding (Yachkaschi 2010, 234). Specifically, citizens' resistance against structural adjustment policies has been most prominent in Zimbabwe, South Africa or Zambia, where trade unions mobilized large protests against the International Monetary Fund in 2004.

Table 9: Correlations of generalized trust with elite-challenging action and civic attitudes

Generalized trust	Eastern Europe	North Africa & the Middle East	Sub-Saharan Africa	Asia	Latin America & Caribbean	Autocracies	Democracies	Total sample
MACRO LEVEL								
SMA	0.01	0	0.38	0.06	-0.13	0.40**	0.26*	-0.07
Political interest	0.29*	0.24	0.05	0.36	0.15	0.40**	0.26*	0.36***
Importance of politics	0.10	0.25	-0.13	0.25	-0.01	0.28*	-0.06	0.22**
Democratic preference	0.03	0.02	-0.73**	0.09	0.17	-0.24	-0.02	-0.12
N	48	25	20	26	36	65	90	155
INDIVIDUAL LEVEL								
SMA	0.02***	ns	0.03***	0.02***	0.05***	ns	0.04***	0.11***
Political interest	0.03***	0.04***	0.05***	0.04***	0.08***	0.06***	0.06***	0.09***
Democratic preference	0.02***	0.02**	-0.10***	0.01	0.04***	-0.04***	0.01**	0.07***
N	64,089	43,580	37,331	39,218	48,226	109,625	122,819	324,743

Notes: Country-level correlations report Pearsons-r. Individual-level entries are Spearman correlations (rho). Correlations are replicated by using the tetrachoric correlation coefficient or point-biserial correlation coefficient. * p<0.05, ** p<0.01, *** p<0.001.

To shed light on whether those societies with higher levels of cultural and structural social capital are those with more active and democratic citizens–as donors are willing to believe–Table 9 and Table 13 provide simple bivariate correlations at both the individual and country level. Thus, the first question is whether trust fosters participation in contentious politics and civic orientations in recipient countries? At the individual level trust increases political interest in both autocracies and democracies (Table 9). The effect of trust on non-institutionalized political action and support of democratic ideas appears to differ between democracies and autocracies. In democracies trusting citizens are more likely to participate in contentious politics and to express democratic ideas. By contrast, in autocracies, the relationship between trust and elite-challenging action turns insignificant. Moreover, citizens under authoritarian rule report significantly less support for democracy in particular in Sub-Saharan Africa.

At the country level, political interest and social movement activity are positively associated with social trust in both democracies and autocracies (Table 9). However, the positive correlation turns insignificant once the radius of trust is taken into consideration (Table D 15).[245] Likewise, the spread of democratic ideals is not associated with society's level of trust. In sum, in democracies trusting citizens are largely politically interested, engaged in elite-challenging action and hold democratic ideals. However, in autocracies trusting citizens are politically interested, but less likely to express democratic orientations.

[245] Radius-adjusted trust measures the level of generalized trust adjusted for the radius of trust, i.e., for the notion of what is meant by 'most people' following the methodology suggested by Delhey, Newton, and Welzel (2011, 2014). Figure D 2 compares country rankings of both measures of trust.

Table 10: Correlations of associational involvement with elite-challenging action and civic attitudes

	MACRO LEVEL							
Membership in any voluntary association	Eastern Europe	North Africa & the Middle East	Sub-Saharan Africa	Asia	Latin America & Caribbean	Autocracies	Democracies	Total sample
SMA	0.59***	0.63*	-0.69**	0.36	0.57**	0.57***	0.41***	0.49***
Political interest	0.353*	0.16	-0.46	0.07	0.398*	0.27	0.05	0.10
Importance of politics	-0.02	0.13	0.00	0.11	0.432*	0.336*	0.290*	0.223*
Democratic preference	0.14	-0.45	0.40	-0.12	-0.25	0.17	0.01	0.07
N	48	25	20	26	36	65	90	155
	INDIVIDUAL LEVEL							
SMA	0.22***	0.31***	0.03***	0.25***	0.16***	0.25***	0.20***	0.28***
Political interest	0.12***	0.16***	0.04***	0.13***	0.12***	0.12***	0.11***	0.14***
Democratic preference	0.03***	ns	0.02***	-0.04***	ns	0.03***	0.01**	0.08***
N	64,089	43,580	37,331	39,218	48,226	109,625	122,819	324,743

Notes: * p<0.05, ** p<0.01, *** p<0.001. Country-level correlations report Pearsons-r. Individual-level entries are Spearman correlations (rho). Correlations are replicated by using point-biserial correlation coefficient. SMA=Social movement activity index.

Table 11: Correlations of membership in sociotropic associations with elite-challenging action and civic attitudes

	MACRO LEVEL							
Membership in sociotropic association	Eastern Europe	North Africa & the Middle East	Sub-Saharan Africa	Asia	Latin America & Caribbean	Autocracies	Democracies	Total sample
SMA	0.43**	0.56*	-0.25	0.51	0.29	0.55***	0.35**	0.43***
Political interest	0.43**	0.19	0.04	-0.14	0.37	0.23	0.16	0.15
Importance of politics	0.26	0.17	0.27	-0.15	0.19	0.37*	0.39**	0.30**
Democratic preference	0.05	-0.54*	-0.10	-0.37	0.10	0.05	-0.07	-0.03
N	48	25	20	26	36	65	90	155
	INDIVIDUAL LEVEL							
SMA	0.18***	0.25***	0.16***	0.28***	0.17***	0.23***	0.19***	0.28***
Political interest	0.10***	0.12***	0.13***	0.08***	0.13***	0.12***	0.11***	0.14***
Democratic preference	ns	-0.03***	-0.08***	-0.11***	0.01*	-0.02***	-0.02***	0.06***
N	64,089	43,580	37,331	39,218	48,226	109,625	122,819	324,743

Notes: Country-level correlations report Pearsons-r. Individual-level entries are Spearman correlations (rho). Correlations are replicated by using point-biserial correlation coefficient. * p<0.05, ** p<0.01, *** p<0.001.

The second question is whether involvement in voluntary associations fosters participation in non-institutionalized forms of political action and civic orientations in recipient countries? The evidence suggests that associational membership is positively correlated with elite-challenging action and interest in politics (Table 10). Specifically, at the individual level members of voluntary associations of any type–*sociotropic, utilitarian* or *religious*–are more politically active and more interested in politics regardless of political regime (Table 11-Table 13).[246] However, members of associations are not necessarily more democratic. That is, while engagement in *utilitarian* associations is positively associated with democratic prefer-

[246] The only exception to this pattern is the negative correlation between members of religious organizations and social movement activity in Sub-Saharan Africa.

ences in most regions of the world (except Asia and Sub-Saharan Africa) members of *socio-tropic* and *religious* organizations express *less* support for democratic ideas even in democracies. Equally, at the country level, a vibrant voluntary sector is positively related to political activism in both autocracies and democracies. Furthermore, the relationships are much stronger than at the individual level. Likewise, in democracies, membership rates in sociotropic, utilitarian, and religious associations are positively correlated with political interest and the importance of politics. However, a country's level of associational involvement is unrelated with the extent of democratic orientations regardless of political context and type of organization.

Table 12: Correlations of membership in utilitarian associations with elite-challenging action and civic attitudes

MACRO LEVEL								
Membership in utilitarian association	Eastern Europe	North Africa & the Middle East	Sub-Saharan Africa	Asia	Latin America & Caribbean	Autocracies	Democracies	Total sample
SMA	0.36*	0.54*	-0.52	0.54*	0.39	0.47**	0.32**	0.34***
Political interest	0.31	0.23	-0.01	-0.07	0.59**	0.23	0.43***	0.33***
Importance of politics	0.14	0.13	0.27	-0.11	0.38	0.22	0.37**	0.27**
Democratic preference	-0.08	-0.36	0.12	-0.29	0.16	0.10	-0.08	-0.03
N	48	25	20	26	36	65	90	155
INDIVIDUAL LEVEL								
SMA	0.20***	0.24***	0.20***	0.30***	0.21***	0.24***	0.22***	0.25***
Political interest	0.14***	0.17***	0.25***	0.15***	0.21***	0.17***	0.21***	0.20***
Democratic preference	0.01**	0.02**	ns	-0.08***	0.03***	0.01***	ns	0.06***
N	64,089	43,580	37,331	39,218	48,226	109,625	122,819	324,743

Notes: Country-level correlations report Pearsons-r. Individual-level entries are Spearman correlations (rho). Correlations are replicated by using point-biserial correlation coefficient. * p<0.05, ** p<0.01, *** p<0.001.

Table 13: Correlations of membership in religious associations with elite-challenging action and civic attitudes

MACRO LEVEL								
Membership in religious association	Eastern Europe	North Africa & the Middle East	Sub-Saharan Africa	Asia	Latin America & Caribbean	Autocracies	Democracies	Total sample
SMA	0.48**	0.35	-0.61*	0.32	0.59**	0.54***	0.29*	0.41***
Political interest	0.20	0.16	-0.62*	-0.24	0.39	0.16	-0.05	-0.00
Importance of politics	0.07	0.18	-0.20	-0.13	0.45*	0.30	0.35**	0.24*
Democratic preference	0.13	-0.53*	0.48	-0.36	-0.28	0.15	0.03	0.07
N	48	25	20	26	36	65	90	155
INDIVIDUAL LEVEL								
SMA	0.10***	0.11***	-0.02***	0.19***	0.05***	0.18***	0.07***	0.11***
Political interest	0.03***	0.07***	ns	0.02***	0.05***	0.05***	0.02***	0.04***
Democratic preference	-0.01*	-0.10***	ns	-0.12***	-0.06***	ns	-0.02***	ns
N	64,089	43,580	37,331	39,218	48,226	109,625	122,819	324,743

Notes: Country-level correlations report Pearsons-r. Individual-level entries are Spearman correlations (rho). Correlations are replicated by using point-biserial correlation coefficient. * p<0.05, ** p<0.01, *** p<0.001.

Summarizing, there are two major findings. First, the relation between structural and cultural components of social capital varies across type of organization and institutional context (Table 14). In particular, while membership in utilitarian and sociotropic associations and individual trust are positively related in democratic contexts, the relationship turns negative or insignificant under authoritarian rule. However, regardless of political context members of religious associations are significantly less trusting. Likewise, at the societal level social trust is undermined by larger shares of religious membership whereas a vibrant voluntary sector of sociotropic and utilitarian organizations is not associated with higher levels of generalized trust.

Second, there is a clear positive correlation between social capital and participation in elite-challenging action at both the individual and country level. Specifically, people who join are more interested in politics and more engaged in elite-challenging action in both democracies and autocracies. Resting on a much broader data basis this finding contradicts recent claims that associational involvement increases the stability of non-democratic leadership by suppressing regime-threatening forms of protest activity (Roßteutscher 2008; Roßteutscher 2010; Jamal 2009). Instead, associational involvement in health aid recipient countries appears to foster participation in elite-challenging action regardless of political context. Likewise, at the country level, cultural social capital is associated with higher levels of elite-challenging action (Table 9), although at the individual level trust only fosters elite-challenging action in democracies. However, social capital fails to strengthen democratic orientations. In fact, the evidence suggests that members of voluntary associations often tend to express undemocratic preferences. Although trusting citizens are more politically interested whether they hold democratic orientations depends on the political context. In democracies trusting citizens are more democratically oriented, but under authoritarian rule, those who trust are less likely to hold democratic ideals.

Table 14: Correlations between civic engagement, importance of politics and democratic orientations

			Social movement activity	Importance of politics	Democratic preference	Social trust
Belonging (%)	Sociotropic associations	Autocracies	+ (+)	+ (+)	–	–
		Democracies	+ (+)	+ (+)	–	+
	Utilitarian associations	Autocracies	+ (+)	+	+	
		Democracies	+ (+)	+ (+)		+
	Religious associations	Autocracies	+ (+)	+		– (–)
		Democracies	+ (+)	+ (+)	–	– (–)
Social trust		Autocracies	(+)	+ (+)	–	
		Democracies	+ (+)	+	+	

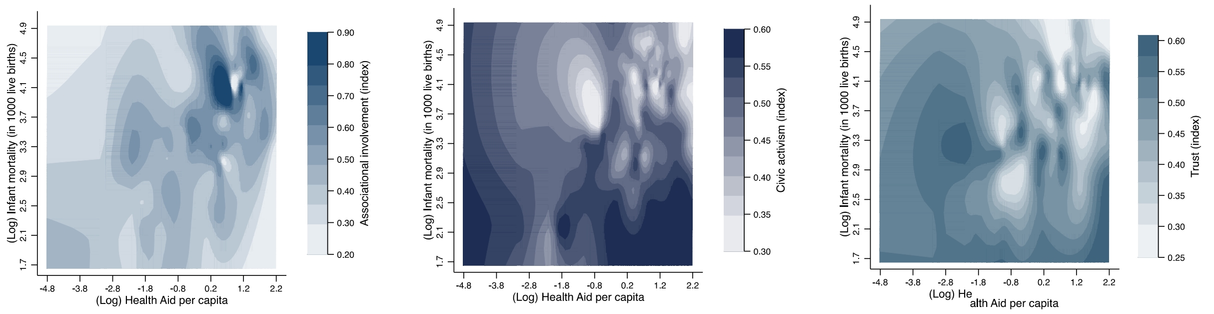
Notes: This table summarizes the results of Table 7 and Table 9 to Table 13. + indicates a significant positive and - a significant negative correlation at the individual level. (+) indicates a significant positive and (–) a significant negative correlation at the country level. Level of significance p<0.05.

Hence, these findings—based on evidence from 66 aid recipient countries across the globe over the period 1995 to 2014—support the assumption of Western donors that social capital fosters participation in elite-challenging action. According to this view strengthening social capital has instrumental value to empower citizens to check the abuse of power and to resist to illegitimate authoritarian rule.[247] However, there is little evidence that voluntary associations function as incubators of democratic ideas unless institutions of democratic governance are installed.

5.2 Social capital and health aid effectiveness

Is health aid more effective in countries with high levels of social capital? For descriptive purposes, the first part visualizes the three-dimensional interaction pattern between each measure of social capital, health aid and population health using contour plots (Figure 18).[248] The contours represent a country's level of associational involvement, trust, and civic activism, respectively. Darker regions indicate higher values of social capital. The horizontal axis shows the level of (log) health aid. The vertical axis shows the level of (log) infant mortality.[249]

Figure 18: Contour plot–trivariate relationship between DAH, social capital, and IMR



Notes: Data on associational membership, civic activism, and social trust are taken from ISD database. To form a regular grid with observations for each pair of DAH and IMR missing values are interpolated.

The left plot in Figure 18 displays the trivariate relationship between health aid, associational involvement, and infant mortality. In particular, the majority of countries achieve low and medium levels of associational involvement as indicated by the large fraction of light contours. However, in the upper right part of the plot levels of associational involvement are extremely high. These observations represent countries that report exceptionally high levels of associational membership but are highly aid-dependent and show high mortality levels—

[247] This is also indicated by regressing a country's level of 'voice and accountability' on elite-challenging action. The results suggest that social movement activity has a much stronger effect on voice and accountability than social trust or associational involvement (Figure A 9).

[248] The simple bivariate relationship between health aid and population health is shown in Figure 7. Figure 8-Figure 10 display the association between each measure of social capital and population health.

[249] As shown in Figure 7 the relationship between health aid and infant mortality is positive which is likely to reflect the endogeneity of foreign aid.

mainly countries in Sub-Saharan Africa. In other words, a substantial share of countries with high infant mortality that receive large amounts of health aid shows darker contours than less aid-dependent countries.[250]

The plot in the center of Figure 18 displays the trivariate relationship between health aid, civic activism and infant mortality. The comparatively dark contour plot with few white spots indicates that citizens in most recipient countries in the lower half of the map are active and engaged. The white spots in the upper right part largely represent countries, such as Swaziland or Burkina Faso, which show comparatively low levels of civic activism but receive large amounts of health aid to fight the high infant mortality rates.[251] Furthermore, a similar picture emerges by plotting contours for different levels of trust (right). The light areas mainly represent Sub-Saharan African countries that are highly aid-dependent with high mortality levels and low stocks of social trust. However, countries with similar levels of social trust cluster less than recipients with similar levels of associational involvement or participation in contentious politics.

In sum, mere eye-balling suggests that recipients characterized by high aid dependency and poor population health show the largest stocks of structural social capital. Simultaneously, they show low levels of citizen participation and social trust. To examine these complex interaction relationships in further detail, the following sub-sections test whether social capital conditions the effect of health aid by accounting for endogeneity problems.

5.2.1 Associational membership and the effectiveness of DAH

Does associational involvement enhance health aid effectiveness? To answer this question Table 15 reports the parameter estimates of regressing population health on associational involvement, health aid, and their multiplicative interaction term. Based on the theoretical considerations health aid is hypothesized to improve population health especially in recipient countries with strong community ties and high levels of voluntary engagement. Results are compared across different measures of population health including infant, child and maternal mortality (Models A-C) as well as life expectancy (Model D).

Specifically, the sign of the coefficient of health aid (DAH) indicates a negative effect on infant mortality and a positive effect on life expectancy. Still, at mean levels of associational membership, the effect of health aid fails to be statistically significant except for Models B2 and D1. However, as indicated by the significant interaction coefficient (except Models C2 and D2) the effect of increased health aid on infant and child mortality differs across varying levels of associational membership.[252] In particular, as both health aid and the interaction coefficient have the same (negative) sign this indicates a synergistic interaction relationship

[250] These patterns are the result of the positive relationship between infant mortality and associational involvement (as shown in Figure 8) and the negative relationship of infant mortality with civic activism and trust (as shown in Figure 9 and Figure 10).

[251] Likewise, Figure A 1 to Figure A 3 visualize the interaction relationship between health aid, population health, and each measure of social capital over time.

[252] The evidence also suggests that health aid has an *unconditional* effect on population health as different model specifications including LDV and GMM estimation confirm a significant negative (positive) effect of DAH on infant and child mortality (life expectancy) (Table A 5-Table A 6). Moreover, the effects remain unchanged if social capital is excluded from the model.

between membership and health aid. Furthermore, the GMM model for infant and child mortality (Models A2 and B2) validate this finding.[253] Likewise, the LDV estimates for life expectancy (Model D1) add further evidence in favor of a synergistic interaction pattern as both the main and interaction coefficients are of equal sign and statistically significant. The GMM model shows similar signs but fails to achieve conventional levels of statistical significance. Altogether, the results presented in Table 15 suggest a synergistic interaction between associational membership and health aid in which both predictors affect population health in the same direction. Together they produce a stronger than additive effect on infant and child mortality, and life expectancy.

The effect of health aid on maternal mortality is statistically insignificant (at mean levels of community involvement) in the GMM model, but is significantly negative in the fixed effects (FE), random effects (RE) and the FE-LDV model (Figure C 4) pointing to a similar interaction pattern. Among the control variables administrative capacity, population size, and HIV/AIDS prevalence are significant predictors of population health. On the one hand, larger countries with strong institutions of bureaucratic governance show significantly lower mortality ratios than smaller ones. On the other, higher HIV/AIDS prevalence is associated with higher mortality levels and lower life expectancy. Government health expenditures only show a statistically significant effect on life expectancy (Models D1-D2) but are insignificant regarding mortality levels. Fertility, economic development and involvement in interstate conflict have no substantial explanatory power after accounting for a country's initial health level–as the lagged dependent variable and period dummies are likely to absorb most of the time-series variance in the data.

[253] The validity of the instruments used in the SYS-GMM estimation is confirmed by Hansen's-J tests and suggest that the endogeneity of aid is properly addressed.

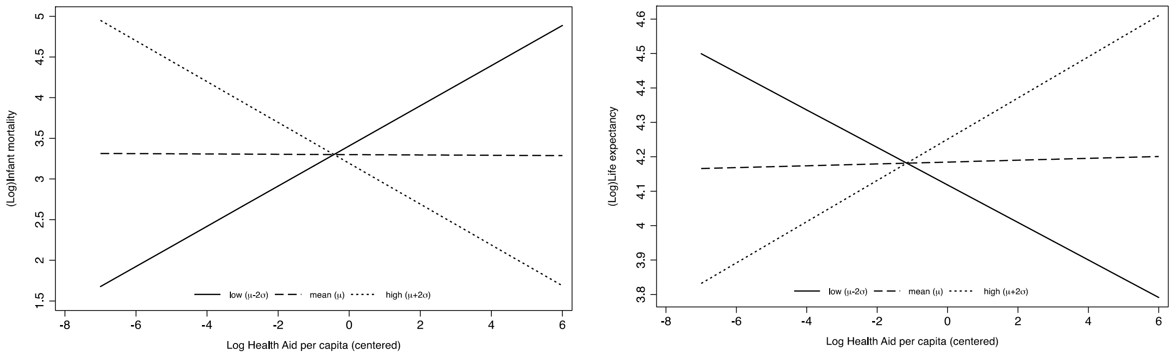
Table 15: Associational membership and the effectiveness of DAH

	Infant mortality		Under-five mortality		Maternal mortality		Life expectancy	
	A1	A2	B1	B2	C1	C2	D1	D2
	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2
log DAH	-0.002	-0.018*	-0.004	-0.02**	-0.001	-0.02	0.003***	0.002
	(0.005)	(0.01)	(0.005)	(0.01)	(0.01)	(0.05)	(0.001)	(0.003)
CLUBS	-0.05	-0.21	-0.09	-0.28	-0.06	0.12	0.03***	0.05*
	(0.06)	(0.18)	(0.06)	(0.21)	(0.17)	(0.41)	(0.01)	(0.03)
log DAH#CLUBS	-0.12***	-0.18*	-0.12***	-0.24**	-0.22*	-0.02	0.03**	0.032
	(0.03)	(0.09)	(0.05)	(0.10)	(0.12)	(0.28)	(0.01)	(0.03)
GOV	-0.04***	-0.087**	-0.05***	-0.098*	-0.09***	-0.20*	0.01	0.001
	(0.02)	(0.04)	(0.02)	(0.057)	(0.03)	(0.10)	(0.004)	(0.011)
CONFLICT	-0.02	-0.05	-0.02	-0.077	-0.07	-0.21	-0.0002	0.003
	(0.04)	(0.082)	(0.04)	(0.09)	(0.07)	(0.23)	(0.007)	(0.014)
EXPEND	-0.002	-0.001	-0.003	-0.001	-0.004	-0.009	0.001***	0.002*
	(0.002)	(0.006)	(0.003)	(0.005)	(0.004)	(0.014)	(0.0005)	(0.001)
log FERTIL	0.04	0.05	0.04	0.05	-0.02	0.02	0.01	0.004
	(0.03)	(0.11)	(0.04)	(0.104)	(0.07)	(0.21)	(0.01)	(0.012)
log POP	-0.01*	-0.024**	-0.01	-0.022**	-0.02	-0.06**	0.003*	0.001
	(0.005)	(0.01)	(0.01)	(0.011)	(0.01)	(0.028)	(0.002)	(0.003)
log GDP	-0.01	0.034	-0.02	0.032	0.004	0.11	0.002	0.002
	(0.01)	(0.03)	(0.02)	(0.04)	(0.03)	(0.10)	(0.004)	(0.008)
log HIV	0.02***	0.014	0.01***	0.03**	0.08***	0.041*	-0.01***	-0.02***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.002)	(0.005)
LDV	-0.002	1.05***	0.94***	1.01***	0.96***	1.06***	0.87***	0.84***
	(0.004)	(0.058)	(0.03)	(0.07)	(0.03)	(0.09)	(0.04)	(0.064)
Constant	0.25	-0.29	0.37*	-0.199	0.57	-0.35	0.45***	0.63***
	(0.18)	(0.37)	(0.2)	(0.51)	(0.37)	(1.37)	(0.13)	(0.233)
Observations	221	221	221	221	162	162	221	221
R-squared	0.987		0.987		0.983		0.977	
Countries	68	68	68	68	64	64	68	68
Instruments		74		74		42		74
Hansen's J		0.620		0.508		0.0806		0.713
AR2		0.177		0.165				0.448

Notes: All models include period fixed effects. Lagged dependent variable models (LDV) use panel corrected standard errors. In GMM models DAH, GOV, GDP, social capital and fertility are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

The most intuitive approach to analyze interaction patterns in further detail is to graph simple regression lines for specified levels of the moderating variable. Figure 19 visualizes the effect of health aid on infant mortality (left) and life expectancy (right) for low, medium and high levels of associational membership. Solid lines show the simple slope of health aid at *low* levels of membership, while the short-dashed lines show the simple slope of health aid at *high* levels of membership. The figure suggests that in countries with high levels of associational membership (short-dashed line) health aid and infant mortality (life expectancy) are negatively (positively) correlated, while the opposite applies in countries with low levels of membership. Hence simple post-hoc probing suggests that organizational structures and health aid are complements in the provision of public goods.

Figure 19: Simple slopes at low, mean and high levels of associational membership



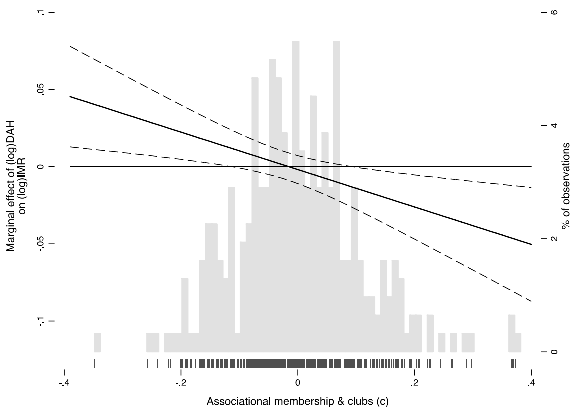
Notes: Graphs show simple slopes according to model A1 (left) and model D1 (right). Low and high values refer to two standard deviations below and above the mean of associational membership.

More specifically, Figure 20 visualizes the interaction of health aid on population health across the entire range of observed values of associational membership. The plots reveal that although the marginal effect of health aid is insignificant at *mean* levels of associational membership (Z=0) the effect of health aid on infant mortality, child mortality and life expectancy becomes statistically significant at higher levels. Accordingly, even though at medium levels the marginal effect of health aid is insignificant the effect on infant and child mortality turns significantly negative at high levels of associational membership. This finding is also confirmed across different model specifications including GMM estimation (Figure C 4-Figure C 5). In the preferred two-step SYS-GMM model the marginal effect of health aid on infant and child mortality (at high levels of associational involvement) is statistically significant at the 95 percent level.

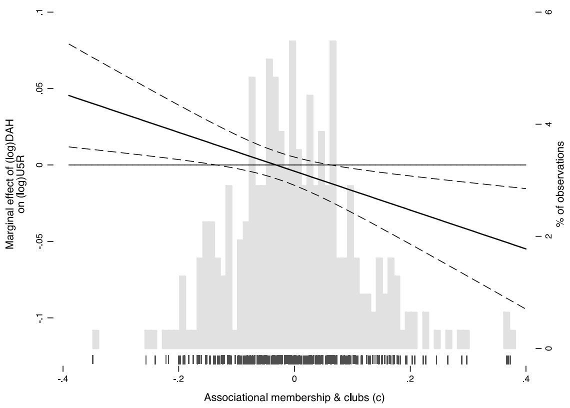
The parameter estimates of infant mortality suggest that health aid does not reduce infant mortality at low levels of associational membership. Instead, voluntary involvement below one standard deviation (<-0.12) implies that the marginal effect of health aid on infant mortality is significantly positive. However, this result is substantially insignificant as the percentage of observations that fall within the region of statistical significance is comparatively small (about 12 percent). At levels of associational involvement greater than about one standard deviation above the mean (>0.095) the marginal effect of increased health aid on infant mortality turns significantly negative. This threshold is comparable to the level of associational membership in India, Zambia or China at the late 2000s for which a one percent increase in health aid per capita reduces infant mortality by 0.013 percent according to the LDV estimates. Hence, doubling health aid in those countries would reduce infant mortality by about one percent.

Figure 20: Associational membership and the marginal effect of DAH

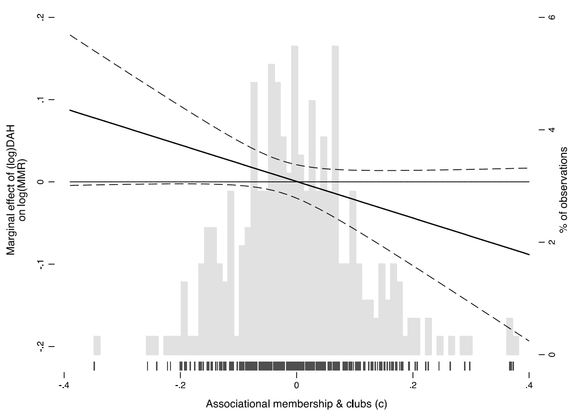
Dependent variable: infant mortality (A1)



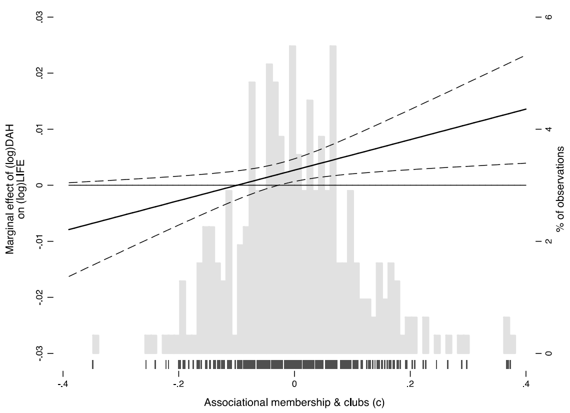
Dependent variable: child mortality (B1)



Dependent variable: maternal mortality (C1)



Dependent variable: life expectancy (D1)



Notes: Figures show marginal effects of health aid at different values of associational memberhsip based on dynamic panel estimation (LDV).

For child mortality, even lower membership rates seem to enhance the effectiveness of health aid. In particular, at membership levels greater than 0.065, which is about half a standard deviation above the mean, the marginal effect of increased health aid on child mortality is significantly negative. Moreover, as the level of associational membership increases the negative effect of health aid increases in strength. Nonetheless, at levels of associational membership below -0.15, which is about 1.5 standard deviations below the mean, the marginal effect of health aid is positive. The percentage of observations that fall within the region of statistical significance is tiny (about seven percent). By contrast, about 24 percent of the observations show values for voluntary involvement at which health aid significantly reduces child mortality. For example, at levels of associational membership two standard deviations above the mean a one percent increase in health aid per capita reduces child mortality between 0.03 percent—according to the LDV estimates—and 0.05 percent—according to GMM estimation (Model B2). In other words, doubling health aid in these countries would reduce child mortality by three to five percent. [254]

Likewise, life expectancy is positively correlated with health aid at mean levels of associational membership while this effect increases at higher values of associations. The minimum level of associations for which health aid significantly increases life expectancy is -0.025, which is the 43rd percentile. In other words, more than half of the observations have a level of community involvement at which health aid significantly increases life expectancy. In particular, at values of associational membership two standard deviations above the mean doubling health aid increases life expectancy by 0.8 percent, which means that in countries as Uganda in the latest period, doubling health aid would increase life expectancy from 68.9 years to 69.5.

Contrasting these results with estimates of other dynamic panel data estimators supports the finding that health aid is more effective at higher levels of associational membership. Specifically, the marginal effect plots (Figure C 4 to Figure C 7) show a negative (positive) marginal effect line across all *dynamic* panel estimates of infant and child mortality (life expectancy) with larger confidence intervals in the case of GMM estimation. The identified synergistic interaction pattern demonstrates that in recipient countries with high levels of associational membership health aid leads to *better* population health *than* the sum of associational membership and health aid would predict. Moreover, looking at differences in changes of welfare levels, that is, regressing declines in mortality levels and change in life expectancy (instead of levels) on the same predictors confirms the complementary interaction effects of associational membership and health aid. Accordingly, Table C 1 reports the parameter estimates of the LDV and SYS-GMM model for each health indicator. They are visualized in Figure C 8 to Figure C 11. The LDV estimates (Table C 1) add further evidence that the marginal effect of health aid on infant and child mortality depends on citizens' engagement in voluntary associations. The positive sign of the interaction coefficient together with the positive coefficient of health aid implies a positive marginal effect of health aid on declines in infant and child mortality, which increases at higher levels of associational membership. The complementary interaction effects of associational membership and health aid on declines in infant mortality (child mortality) are confirmed across different estimators including the preferred random coefficient model (RCM) and the SYS-GMM model (Figure C 8-Figure C 9). By contrast, the conditional effect of health aid on changes in life expectancy and maternal mortality is less conclusive. The LDV and RCM model suggest that health aid leads to larger gains in life expectancy at higher levels of associational involvement whereas the interaction coefficient changes sign in the GMM estimation (Figure C 10-Figure C 11).

Analyzing symmetric interactions provides another approach to evaluating a conditional theory. Therefore, Figure 21 visualizes the (symmetric) marginal effect of associational membership on population health at different levels of health aid. The figure suggests that voluntary involvement does not reduce mortality levels (or increase life expectancy) unless

[254] The interpretation based on the LDV model, which shows similar results as the GMM model but smaller regression coefficients, can be considered a less optimistic view.

recipient countries receive a considerable amount of health aid.[255] This is displayed by the significant negative marginal effect of associational membership on infant and child mortality levels at high levels of health aid as well as the positive effect on life expectancy.[256] Specifically, for the upper 45 percent of the distribution, which receives more than 1.63 US$ per capita health aid, the effect of associational membership on infant mortality is significantly negative.[257] The negative marginal effect of associational membership on child mortality turns significant at values greater than 1.24 US$ per capita health aid, which applies to 56 percent of the observations in the sample. Furthermore, associational membership significantly increases life expectancy at values of health aid greater than 0.78 US$ per capita.[258] Consequently, the marginal effect of associational membership is larger at higher values of health aid. Conversely, at low levels of health aid, voluntary involvement is *positively* correlated with mortality ratios. However, this relationship is substantially insignificant as only about four percent of the observations fall within the region of significance. By contrast, the marginal effect of health aid on maternal mortality is statistically insignificant across the entire range of the moderating variable.

Summarizing, associational membership contributes to lower infant and child mortality, and higher life expectancy if countries receive a considerable amount of health aid. The more health aid a country receives, the more does associational membership improve population health. This pattern supports the complementary interaction relationship between associational membership and health aid.

[255] Hence, the marginal effect of increased voluntary involvement at mean levels of health aid is insignificant. This result is also confirmed by the insignificant direct effect of associational membership on population health of LDV estimation (Model 3, Table A 5) and GMM estimation (Model 5, Table A 6).

[256] The marginal effect of associational membership on maternal mortality barely fails to achieve statistical significance.

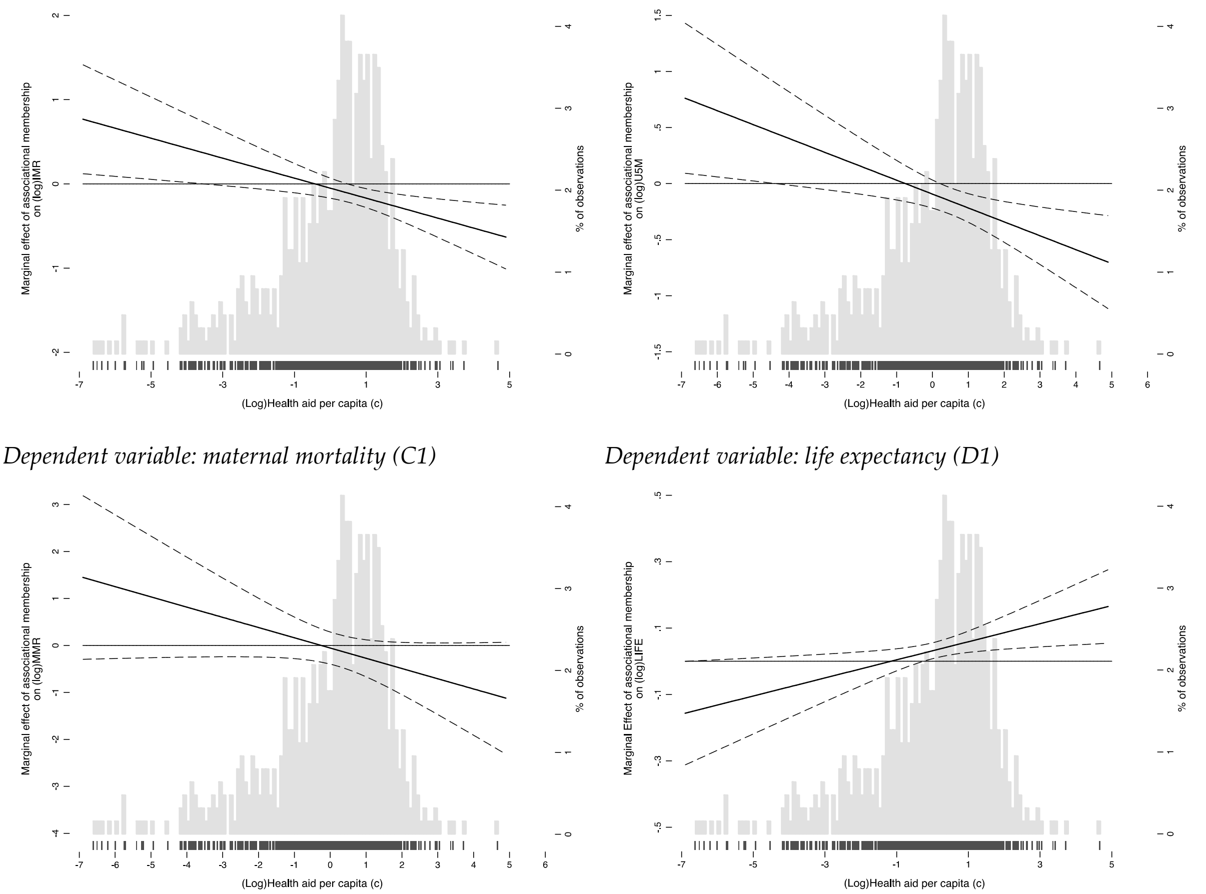
[257] $e^{0.49} = 1.63$.

[258] The percentage of observations that fall within this range of values for health aid is about 65 percent.

Figure 21: DAH *and the marginal effect of associational membership*

Dependent variable: infant mortality (A1) *Dependent variable: child mortality (B1)*

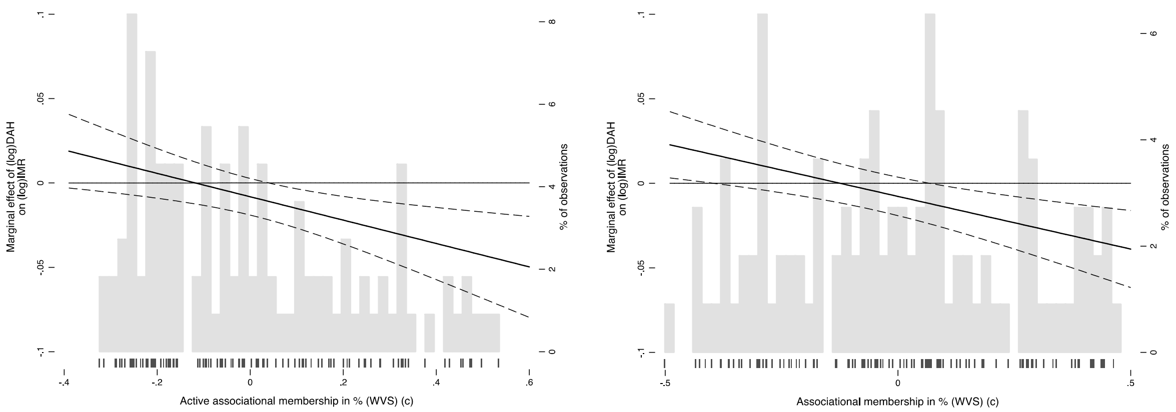
Dependent variable: maternal mortality (C1) *Dependent variable: life expectancy (D1)*



Notes: Figures show marginal effects of associational membership at different values of health aid based on dynamic panel estimation (LDV).

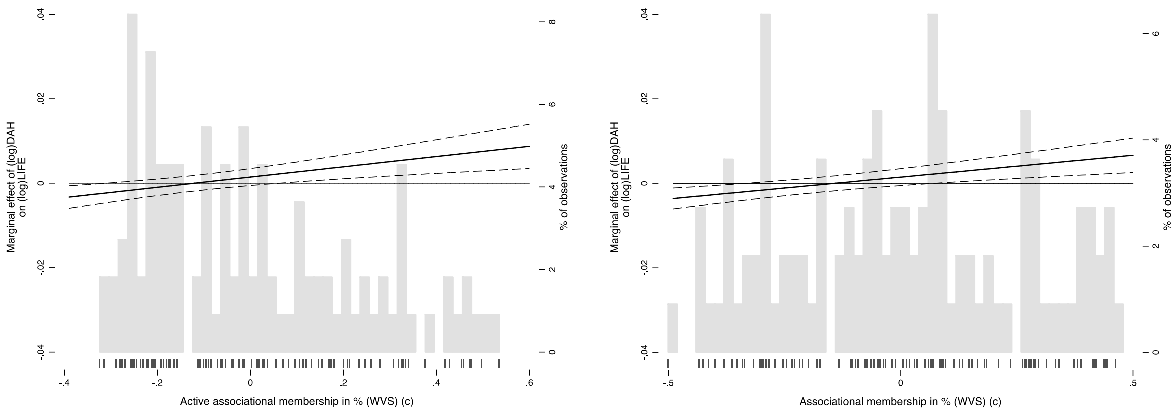
To test the reliability of the composite membership indicator all models were replicated using data from the WVS. In short, replacing the composite index of clubs & associations (from the ISD database) with WVS data on membership in voluntary associations replicates the findings presented above (for the smaller subsample WVS countries). Table C 2 shows a highly significant interaction relationship between *active* membership (volunteering) and health aid as well as between membership (belonging) and health aid across different model specifications. The sign of the coefficients confirms the synergistic interaction pattern identified before. According to both LDV and RCM estimation, the marginal effect of increased health aid on infant mortality (life expectancy) is significantly negative (positive) at mean values of membership and active membership. The GMM model confirms the significant synergistic interaction pattern for *active* membership (volunteering) but barely fails to achieve conventional levels of statistical significance for membership (belonging). This can be visually inspected in Figure C 12-Figure C 15. Moreover, Figure 22 and Figure 23 visualize the enhancing effects of associational membership and health aid on infant mortality and life expectancy according to LDV estimation. Both figures show that health aid significantly improves population health in countries with high levels of local associations while the effect of health aid turns insignificant at low levels of voluntary associations. Specifically, about 35 percent of the observations have membership rates at which health aid significantly improves life expectancy.

Figure 22: Associational membership and the marginal effect of DAH *on* IMR



Notes: The figure compares the moderating effect of active (left) and non-active (right) associational membership. The dependent variable is infant mortality. Data: WVS.

Figure 23: Associational membership and the marginal effect of DAH *on* LIFE



Notes: The figure compares the moderating effect of active (left) and non-active (right) associational membership. The dependent variable is life expectancy. Data: WVS.

Summarizing, where citizens join voluntary associations and attend community meetings health aid is associated with lower infant and child mortality and higher life expectancy. Accordingly, the higher the level of associational involvement the larger is the health improving-effect of development assistance for health. Both the LDV and the preferred GMM estimator, which accounts for endogeneity, confirm this finding. Moreover, testing different measures of associational involvement lead to qualitatively similar results. Specifically, there is no significant difference between sociotropic and utilitarian associations.[259] Similarly, as-

[259] Replicating the analysis using either utilitarian or sociotropic instead of the combined membership variable does lead to qualitatively similar results. This is also theoretically plausible since regardless of type civil society organizations stimulate interaction between citizens, build capacities in resolving conflicts and collective action problems, and mobilize citizens to participate in politics. As Edwards and Foley put it *'civil society gives identity and voice to the distinct interests and diverse points of view characteristic of modern society; it stimulates public debate and presses government for action on a thousand and one matters of public*

sociational involvement also enhances the effect of health aid on the pace of progress in recipient countries. Thus, the relationship between community involvement and health aid is characterized by a synergistic interaction pattern. In other words, development assistance for health is more effective in recipient countries with higher levels of structural social capital.

5.2.2 Social trust and the effectiveness of DAH

Against the theoretical backdrop, trust is hypothesized to facilitate collective action and hence strengthen the effect of development assistance on population health. Table 16 reports the results of regressing different measures of population health on trust, health aid and their joint effect to test the proposition that trust enhances the effect of health aid on population health. Specifically, the coefficient of health aid shows the expected sign but fails to achieve conventional levels of statistical significance. Accordingly, at mean levels of trust health aid does not significantly improve population health. Only the effect of health aid on infant mortality (Model A2) is significant at the ten percent level. The (main) effect of social trust is also insignificant, and even changes sign in GMM estimation.[260] Although both main effects are not significantly different from zero (at mean value of the other) the significant interaction coefficients in Models A1, B1, and C1 suggest that social trust significantly influences the effect of health aid on infant, child or maternal mortality (Table 16).[261] Conversely, the joint effect of trust and health aid on life expectancy is insignificant. Given the sign of the main effects and the interaction term, the results imply a compensatory relationship between trust and health aid in the LDV model (Models A1 and B1). However, this pattern is not supported by GMM estimation.

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interest' (Edwards and Foley 2001, 6). This view is also confirmed by recent evidence on the mobilizing effect of civil society organizations including utilitarian, sociotropic and religious organizations in Latin America (Boulding 2014, 100).

260 These findings are also confirmed by GMM estimation after testing the additive (unconditional) effects of trust and health aid on population health (Model 7, Table A 5).

261 Among the control variables the quality of government is the strongest predictor of population health. HIV/AIDS prevalence is inversely related to population health whereas larger countries show significantly lower mortality ratios than smaller ones (after controlling for initial health levels). Against the background of the strong explanatory power of the lagged dependent variable, GDP per capita, conflicts, government expenditures, and fertility rate fail to achieve statistical significance.

Table 16: Social trust and the effectiveness of DAH

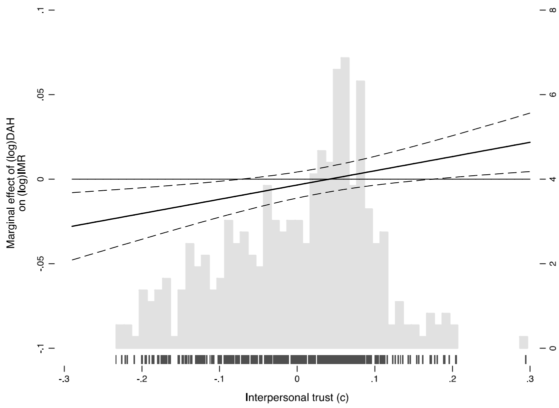
	Infant mortality		Under-five mortality		Maternal mortality		Life expectancy	
	A1	A2	B1	B2	C1	C2	D1	D2
	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2
log DAH	-0.004	-0.02*	-0.004	-0.01	-0.002	-0.008	0.0003	0.001
	(0.004)	(0.01)	(0.004)	(0.01)	(0.01)	(0.04)	(0.001)	(0.002)
TRUST	-0.07	-0.02	-0.09	0.004	0.08	0.39	0.01	-0.04
	(0.08)	(0.14)	(0.09)	(0.20)	(0.18)	(0.46)	(0.016)	(0.04)
log DAH#TRUST	0.09***	0.03	0.07**	-0.02	0.21**	0.42	-0.002	-0.0004
	(0.03)	(0.07)	(0.03)	(0.08)	(0.09)	(0.28)	(0.009)	(0.02)
GOV	-0.03**	-0.11***	-0.01***	-0.13***	-0.07***	-0.15	0.004	0.02**
	(0.01)	(0.04)	(0.015)	(0.04)	(0.03)	(0.14)	(0.003)	(0.01)
CONFLICT	-0.005	0.01	-0.003	-0.00	-0.06	-0.35	0.001	0.007
	(0.02)	(0.06)	(0.02)	(0.05)	(0.04)	(0.26)	(0.005)	(0.010)
EXPEND	-0.003*	-0.001	-0.004*	-0.004	-0.001	0.001	0.001***	0.001
	(0.002)	(0.004)	(0.002)	(0.004)	(0.004)	(0.01)	(0.000)	(0.001)
log FERTIL	0.04*	0.10	0.04	0.11	-0.02	-0.06	0.01	0.01
	(0.02)	(0.07)	(0.03)	(0.08)	(0.06)	(0.21)	(0.006)	(0.01)
log POP	-0.017***	-0.03***	-0.02***	-0.04***	-0.01	-0.01	0.002	0.002
	(0.004)	(0.009)	(0.004)	(0.01)	(0.01)	(0.03)	(0.001)	(0.002)
log GDP	-0.004	0.05	-0.004	0.05	-0.01	-0.05	-0.002	-0.01**
	(0.008)	(0.03)	(0.01)	(0.03)	(0.03)	(0.15)	(0.003)	(0.005)
log HIV	0.015**	0.01	0.02***	0.02	0.07***	0.09*	-0.01***	-0.012***
	(0.009)	(0.01)	(0.01)	(0.01)	(0.01)	(0.05)	(0.002)	(0.004)
LDV	0.99***	1.01***	0.96***	0.97***	0.95***	0.92***	0.90***	0.90***
	(0.02)	(0.05)	(0.02)	(0.06)	(0.03)	(0.14)	(0.03)	(0.06)
Constant	0.22	-0.17	0.32**	-0.01	0.50	0.95	0.38***	0.49**
	(0.14)	(0.38)	(0.15)	(0.42)	(0.31)	(1.86)	(0.12)	(0.21)
Observations	266	266	266	266	190	190	266	266
R-squared	0.988		0.988		0.984		0.975	
Countries	92	92	92	92	90	90	92	92
Instruments		65		65		37		65
Hansen's J		0.496		0.513		0.171		0.718
AR2		0.151		0.155				0.329

Notes: All models include period fixed effects. Lagged dependent variable models (LDV) use panel corrected standard errors. In GMM models DAH, GOV, GDP, social capital and fertility are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

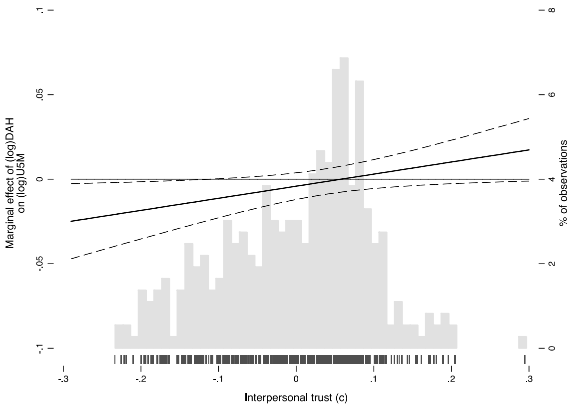
To examine the interaction patterns in further detai Figure 24 visualizes the joint effect of trust and health aid on population health. The LDV estimates of Models A1 and B1 imply that the marginal effect of health aid on infant and child mortality is significantly negative at (very) low levels of trust and decreases at higher levels of trust. The percentage of observations that fall within the region of significance is about 20 percent. However, as shown in Figure D 4 to Figure D 7 neither GMM nor RCM estimation supports the indicated interaction pattern of the LDV model as the standard errors are far too large to achieve conventional levels of statistical significance. Likewise, the effect of health aid on life expectancy and maternal mortality is insignificant across the entire range of trust levels in both LDV and GMM estimation. Consequently, based on the composite trust index there is no evidence that the effectiveness of health aid is enhanced through higher levels of trust. In fact, there is no indication that trust and health aid produce any significant (interaction) effect on population health that is different from the sum of their individual effects.

Figure 24: Social trust and the marginal effect of DAH

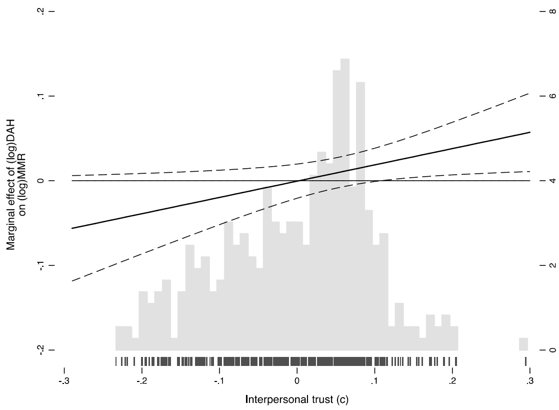
Dependent variable: infant mortality (A1)



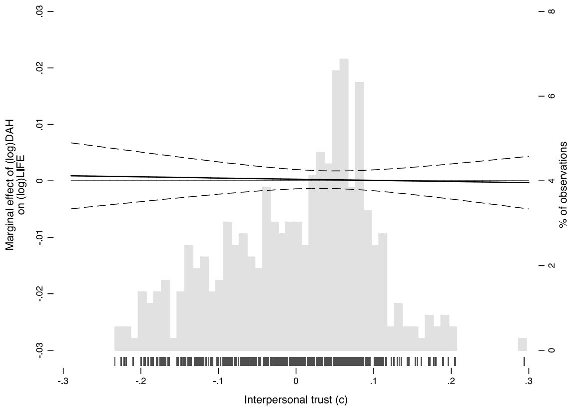
Dependent variable: child mortality (B1)



Dependent variable: maternal mortality (C1)



Dependent variable: life expectancy (D1)

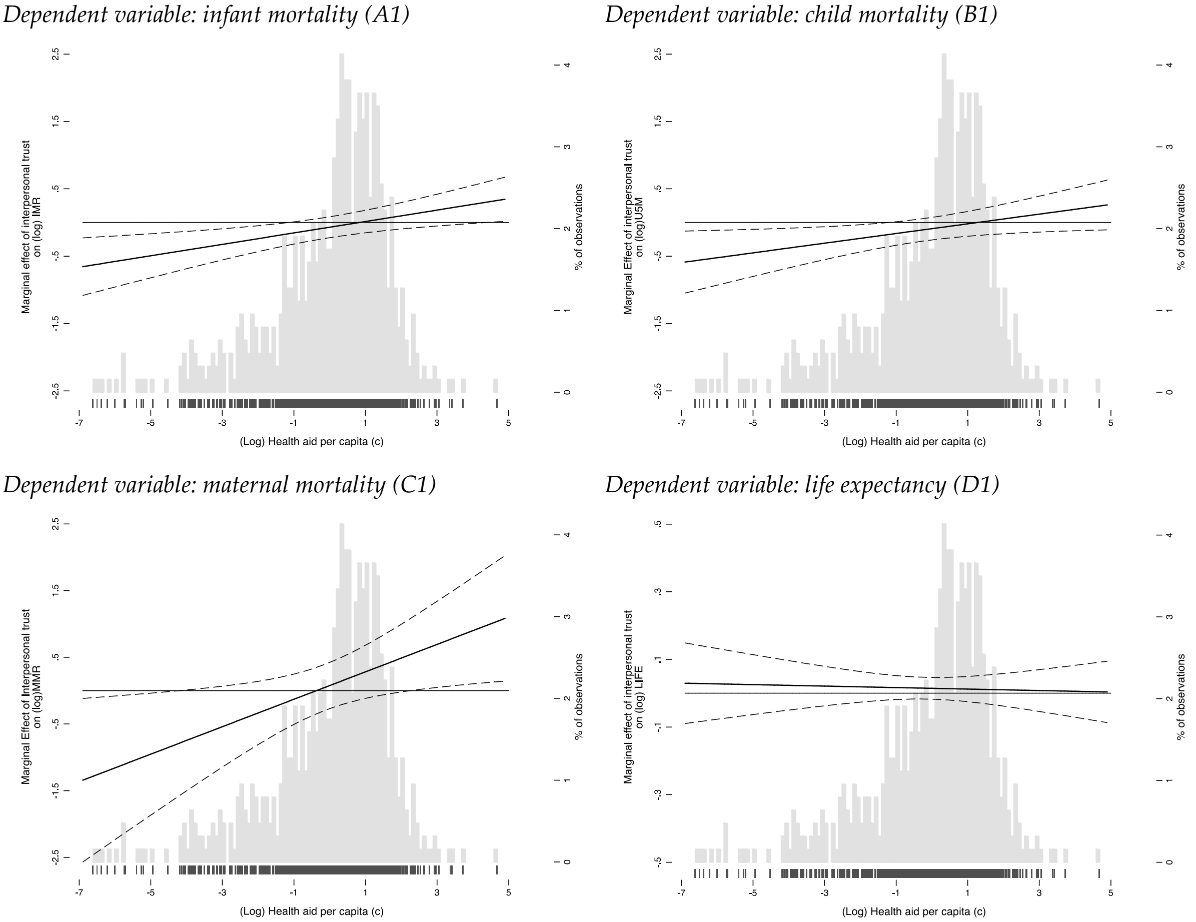


Notes: Figures show marginal effects of health aid at different values of trust based on dynamic panel estimation (LDV).

To test the robustness of this (null-) finding Figure 25 displays the (symmetric) marginal effect of *social trust* at varying levels of health aid for different indicators of population health. The plots are based on the LDV estimates presented in Table 16. Due to the value of the intercept and the location of the marginal effect line the interpretation of the marginal effect of trust is similar to the interpretation of the marginal effect of health aid. Specifically, in less aid-dependent countries the effect of trust on infant and child mortality is significantly negative but weakens as health aid increases. However, the robustness of this finding is weak and not supported by RCM or GMM estimation. Furthermore, testing the joint effect of trust and health aid on the pace of progress in population health provides no evidence of a significant joint effect of trust and health aid (Figure D 8-Figure D 11). Even though the LDV estimates suggest that health aid in low-trust countries is associated with positive declines in infant and child mortality this finding is not robust to different model specifications.[262]

[262] Regarding life expectancy, only the RCM model supports the finding that low-trust countries experience higher changes in life expectancy.

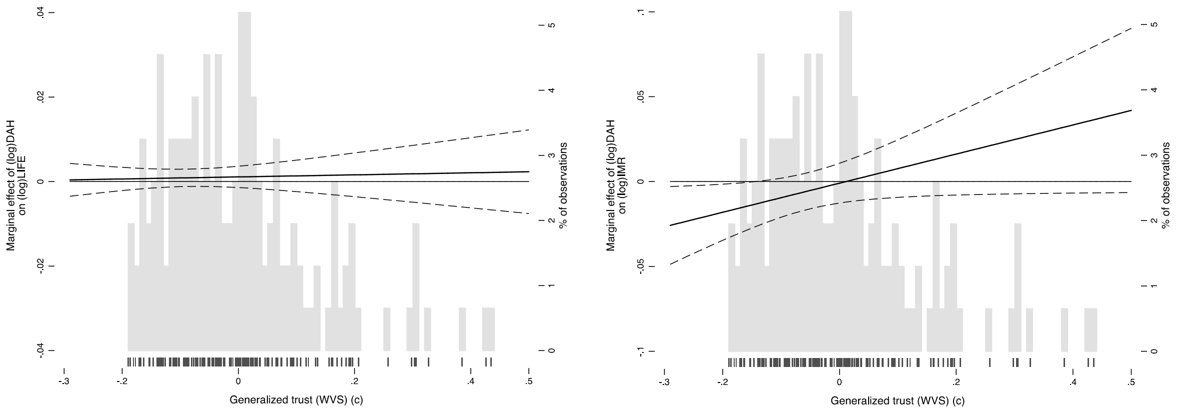
Figure 25: DAH and the marginal effect of social trust



Notes: Figures show marginal effects of trust at different values of health aid based on dynamic panel estimation (LDV).

Lastly, replicating all models using data from the WVS and replacing the composite index of trust with the percentage of respondents reporting that *'most people can be trusted'* adds further evidence to the (null-) finding reported above (Table D 8). Even though the LDV and the GMM estimates for infant mortality show a significant positive interaction coefficient Figure D 18 reveals that the effect of health aid on population health is insignificant across most levels of social trust. Only at *very* low levels of trust, the effect of health aid is significantly different from zero. This (null-) finding is robust across different model specifications (Figure D 18). Furthermore, adjusting the trust measure for the radius of trust, i.e., for the notion of what is meant by 'most people' (Delhey, Newton, and Welzel 2011, 2014) the marginal effect of health aid on population health remains insignificant across the entire range of trust levels. In other words, although the effectiveness of health aid appears to differ between high and low levels of trust the share of observations for which the effect of health aid on infant mortality is statistically significant is negligible. Additionally, the effect on life expectancy is statistically insignificant across the entire range of generalized trust (Figure D 19). Hence, the evidence suggests that there is no significant interaction between social trust and health aid.

Figure 26: Social trust and the marginal effect of DAH II



Notes: The graphs show the marginal effect of health aid on infant mortality (left) and life expectancy (right). Data: WVS.

Summarizing, the evidence suggests that social trust is not significantly associated with higher health aid effectiveness. Even though the LDV model provides minor indication of a conditioning effect of trust this finding is not robust to different model specifications. In particular, the preferred GMM and RCM models show no significant interaction effect between trust and development assistance for health. Testing different measures of trust leads to qualitatively similar results. Likewise, this (null-) finding is confirmed regarding the pace of progress of population health in recipient countries. Consequently, there is no evidence that social trust enhances the effectiveness of health aid.

5.2.3 Civic activism and the effectiveness of health aid

In the light of the theoretical discussion, health aid is expected to reduce mortality levels and increase life expectancy especially if many citizens are engaged in elite-challenging action and demand accountability. To examine whether participation in elite-challenging action enhances health aid effectiveness Table 17 reports the results of regressing population health on elite-challenging action, health aid and their interaction effect. Models A to D compare the parameter estimates across different measures of population health including infant, child, and maternal mortality, as well as life expectancy.

Specifically, the main effect of health aid on infant mortality is significantly negative in Models A1-A2 and B1. Likewise, the coefficient of civic activism changes sign across different model specifications.[263] Moreover, the significant interaction coefficients in Table 17 suggest that the marginal effect of increased health aid differs at varying levels of civic activism. Specifically, given the main effects of civic activism and health aid, the results of the LDV model suggest an antagonistic interaction pattern. However, the preferred GMM estimates of Model A2 and B2 imply a buffering interaction pattern. Accordingly, civic activism ap-

[263] The coefficient is significantly negative in Models B1, C1, and C2, but turns positive in Models A2 and B2. However, Hansen's-J-test raises doubts on the validity of the instruments in Model C2. Moreover, Models D1 and D2 fail to achieve conventional levels of statistical significance.

pears to weaken the effect of health aid on levels of mortality. In other words, the *negative* marginal effect of health aid on infant and child mortality decreases as civic activism rises. Thus, elite-challenging action works as a buffer between health aid and population health.

Among the control variables, bureaucratic governance is significantly associated with higher population health. Likewise, government health expenditures show the expected sign but fail to be statistically significant except for Model B1 and D1. Fertility is inversely associated with population health, while more populous countries show significantly lower mortality ratios than smaller ones—after controlling for initial health levels. GDP per capita indicates no significant effect on population health. The conflict dummy is mostly insignificant, and HIV/AIDS prevalence contributes significantly to higher mortality levels and lower life expectancy. Testing the validity of the instruments used in the SYS-GMM estimation using Hansen's-J tests suggests that the endogeneity of aid is properly addressed.

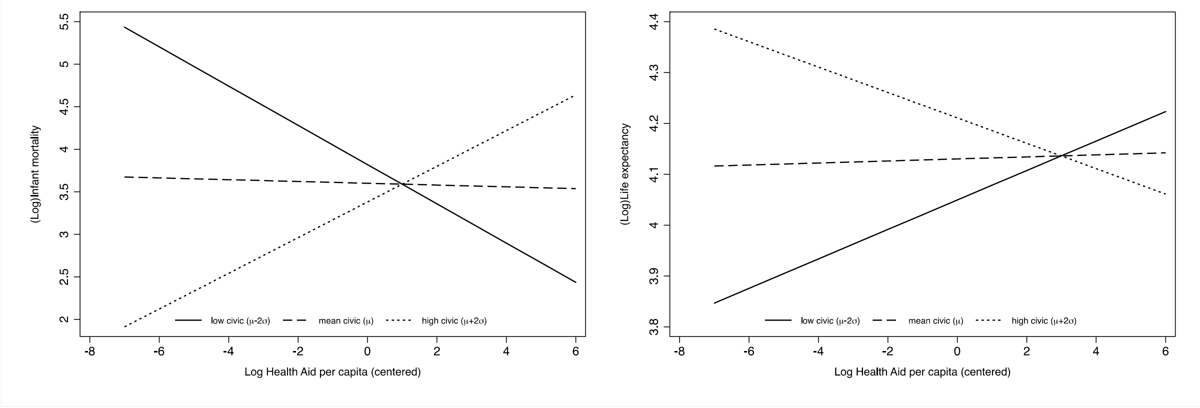
Table 17: Civic activism and the effectiveness of DAH

	Infant mortality		Under-five mortality		Maternal mortality		Life expectancy	
	A1	A2	B1	B2	C1	C2	D1	D2
	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2
log DAH	-0.01***	-0.03**	-0.01***	-0.02	-0.007	-0.021	0.002	0.004
	(0.004)	(0.012)	(0.004)	(0.02)	(0.009)	(0.0451)	(0.001)	(0.0029)
CIVIC	-0.157	0.212	-0.21**	0.04	-0.410**	-1.095**	0.058*	0.216**
	(0.097)	(0.205)	(0.11)	(0.217)	(0.181)	(0.448)	(0.03)	(0.087)
log DAH#CIVIC	0.16***	0.36*	0.14***	0.280	0.248**	1.02***	-0.019	-0.085*
	(0.044)	(0.207)	(0.051)	(0.218)	(0.099)	(0.395)	(0.017)	(0.04)
GOV	-0.03***	-0.07**	-0.04***	-0.07**	-0.05***	-0.053	0.008**	0.004
	(0.010)	(0.036)	(0.01)	(0.03)	(0.019)	(0.075)	(0.0031)	(0.01)
CONFLICT	-0.015	-0.032	-0.019	-0.08	-0.059**	-0.0159	0.017**	0.09***
	(0.018)	(0.079)	(0.021)	(0.08)	(0.029)	(0.262)	(0.007)	(0.036)
EXPEND	-0.002*	-0.0015	-0.003**	-0.006	-0.002	-0.0039	0.0011**	0.002
	(0.0013)	(0.004)	(0.002)	(0.005)	(0.003)	(0.01)	(0.0005)	(0.001)
log FERTIL	0.06***	0.109*	0.05**	0.071	-0.001	-0.058	-0.002	-0.01
	(0.017)	(0.06)	(0.02)	(0.0671)	(0.041)	(0.128)	(0.007)	(0.013)
log POP	-0.02***	-0.04***	-0.02***	-0.03***	-0.002	-0.007	0.002*	0.001
	(0.003)	(0.008)	(0.004)	(0.0075)	(0.007)	(0.027)	(0.001)	(0.002)
log GDP	0.005	0.05*	0.005	0.046	-0.024	0.011	-0.0018	-0.002
	(0.007)	(0.028)	(0.009)	(0.034)	(0.017)	(0.076)	(0.003)	(0.007)
log HIV	0.02***	0.006	0.03***	0.011	0.08***	0.09***	-0.014***	-0.02***
	(0.004)	(0.009)	(0.005)	(0.0099)	(0.009)	(0.021)	(0.0017)	(0.005)
LDV	0.98***	1.05***	-0.01***	1.03***	0.93***	0.94***	0.84***	0.77***
	(0.015)	(0.054)	(0.004)	(0.061)	(0.019)	(0.08)	(0.034)	(0.091)
Constant	0.130	-0.231	0.226*	-0.165	0.59***	0.469	0.647***	0.94***
	(0.116)	(0.418)	(0.131)	(0.490)	(0.219)	(0.99)	(0.137)	(0.34)
Observations	392	392	392	392	303	303	392	392
R-squared	0.990		0.990		0.988		0.973	
Countries	107	107	107	107	106	106	107	107
Instruments		65		65		37		65
Hansen's J		0.159		0.214		0.00581		0.405
AR2		0.0563		0.0262				0.102

Notes: All models include period fixed effects. Lagged dependent variable models (LDV) use panel corrected standard errors. In GMM models DAH, GOV, GDP, social capital, and fertility are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

A more intuitive approach to understanding the joint effect of civic activism and health aid is to graph simple regression lines for low, mean and high values of the moderating variable as shown in Figure 27. Low and high values refer to values two standard deviations below and above the mean of the moderating variable. Specifically, the left graph suggests that in countries with low levels of civic activism (solid line) health aid and infant mortality are negatively correlated while the opposite applies in countries with high levels of citizen engagement (short-dashed line). Conversely, health aid is positively associated with life expectancy (right graph) in countries with a less active citizenry (solid line) while life expectancy is negatively associated health aid in countries with high levels of civic activism. Likewise, using different welfare indicators shows qualitatively the same pattern regarding the buffering interaction between civic activism and health aid, which is also supported by GMM estimation.

Figure 27: Simple slopes at low, mean and high levels of civic activism



Notes: Graphs show simple slopes according to model A1 (left) and model D1 (right). Low and high values refer to two standard deviations below and above the mean of associational membership.

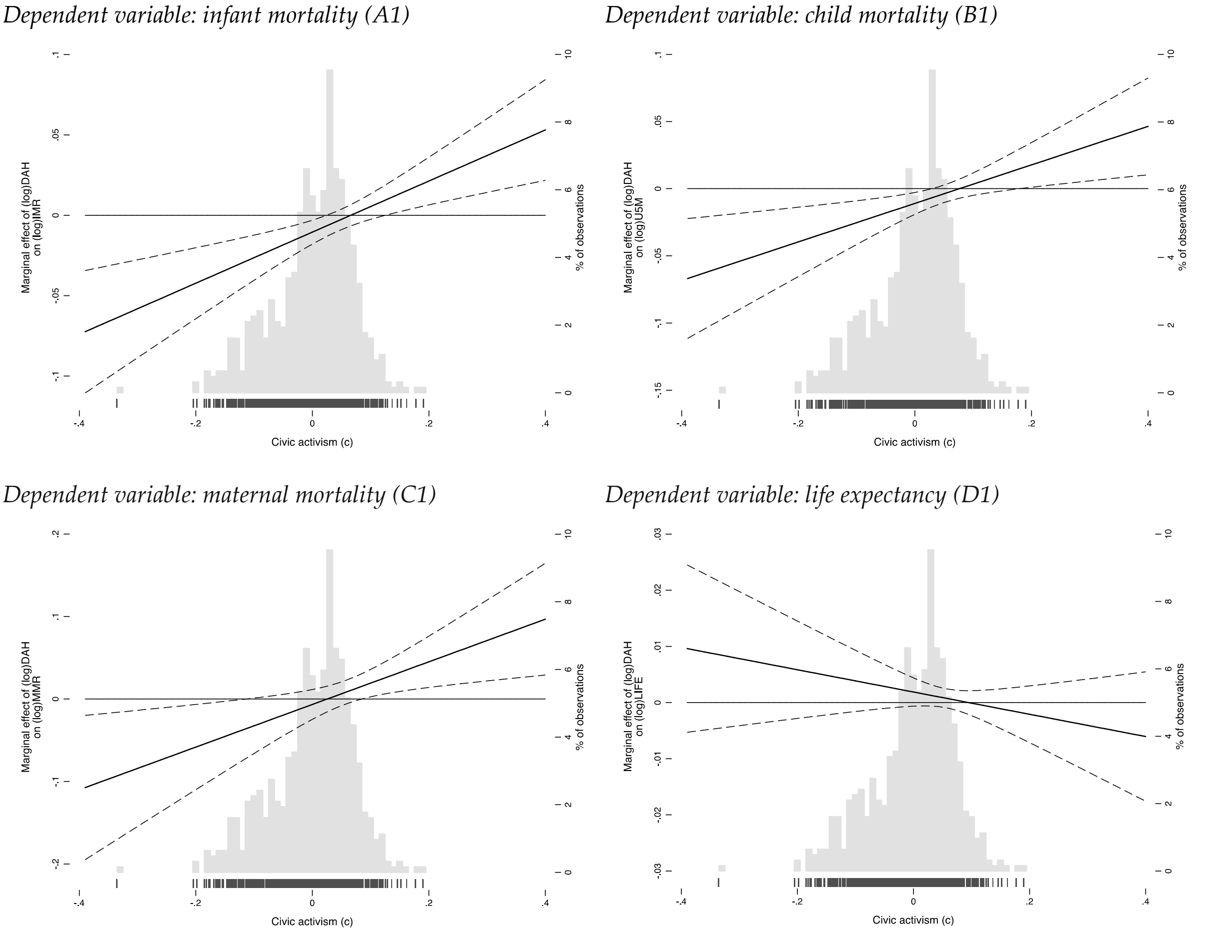
To further investigate the statistical significance across the entire range of observed levels of civic activism Figure 28 visualizes the interaction of citizen engagement and health aid as average marginal effect plot. The figure shows that the marginal effect of health aid on *infant mortality* is significantly negative at low levels of civic activism but decreases as citizens' participation in contentious politics increases. In particular, two standard deviations below the mean of civic activism (CIVIC=-0.137) a one percent increase in health aid per capita reduces infant mortality by 0.03 percent according to the LDV model and up to 0.08 percent according to the SYS-GMM model. This level is similar to the extent of civic activism in Burundi, Angola or Vietnam in the late nineties.[264] As citizens' engagement increases, the marginal effect of health aid on infant mortality decreases. At mean levels of civic activism, for example in the Dominican Republic in the early nineties or Lesotho in the latest period, doubling the amount of health aid reduces infant mortality by one percent according to the LDV model and up to three percent according to the SYS-GMM model. In countries with levels above the mean of civic activism (CIVIC>0.024), the marginal effect of health aid on infant mortality becomes statistically insignificant.[265] Accordingly, about 57 percent of observations fall within the range of values for civic activism for which health aid significantly reduces infant mortality. By contrast, only one percent of the observations fall within the range of high civic activism where health aid and infant mortality are positively correlated and statistically significant. [266]

[264] As infant and child mortality is measured in deaths per 1,000 live births doubling Burundi's health aid from 2.09 US$ to 4.18 US$ per capita would reduce infant mortality by 3 %, i.e., reduce the number of deaths per 1,000 live births from 104.26 to 101.13 (and to 96 according to the GMM estimates).

[265] The intersection of the marginal effect plot with the y-line equals $\frac{-0.0105}{0.157} * (-1) = 0.07$.

[266] Since the share of extreme observations for which the estimated marginal effect of health aid is inconsistent with the underlying theory is relatively small, they are considered less relevant than more central values (Berry, Golder, and Milton 2012, 6).

Figure 28: Civic activism and the marginal effect of DAH



Notes: Figures show marginal effects of health aid at different values of civic activism based on dynamic panel estimation (LDV).

Comparing the effects of health aid on infant mortality with *child mortality* there is qualitatively no difference. Regressing *maternal mortality* on civic activism and health aid also shows a positive interaction coefficient, but results differ slightly concerning the effect size and significance. Two standard deviations below the mean of civic activism (CIVIC=-0.137) a one percent increase in health aid per capita reduces maternal mortality by 0.04 percent according to the LDV-model and up to 0.16 percent according to the SYS-GMM model.[267] As civic activism increases the marginal effect of health aid on maternal mortality decreases in strength and becomes insignificant at levels higher than 1.8 standard deviations below the mean (CIVIC>-0.13), which is similar to the level of civic activism in Mozambique in the early nineties or Nepal at the late nineties. Hence, only about five percent of observations fall within the range of values for which the marginal effect of health aid on maternal mortality is significantly negative. Conversely, at very high levels of civic activism (larger than 1.3 standard deviations above the mean) the marginal effect of health aid on maternal mortality turns positive. However, the percentage of observations that fall within the region of signifi-

[267] As maternal mortality is measured in deaths per 100,000 live births doubling Burundi's health aid from 2.09 US$ to 4.18 US$ per capita would lead to 4 % (GMM: 16 %) decrease in maternal mortality, i.e., reduce the number of deaths per 100,000 live births from 828 to 795 (GMM: 696).

cance is equally small with about six percent. Thus, the interaction effects on maternal mortality are substantially insignificant. Conversely, the joint effect of civic activism and health aid on life expectancy is statistically and substantially significant. In particular, the marginal effect plots of both the LDV and the GMM specification (Models D1-D2) reveal that health aid significantly improves life expectancy at low levels of civic activism (Figure B 7). However, the positive effect of health aid on life expectancy decreases in strength at higher levels of civic activism. In other words, civic activism buffers or weakens the positive effect of health aid on life expectancy.

Likewise, inspecting the marginal effect plots across different model specifications supports the identified buffering effect of civic activism for most dynamic panel estimators but fails to be confirmed by static panel estimators (Figure B 4 to Figure B 7). In other words, the marginal effect plots including the preferred GMM estimation indicate a significant negative marginal effect of increased health aid at low levels of civic activism, which weakens as participation in elite-challenging action increases. Likewise, lagging all predictors by one period, which is another way to account for the endogeneity of foreign aid, leads to qualitatively similar results compared to the contemporary models across all estimators (Rajan and Subramanian 2008).[268] Again, these results support the robustness of the finding that civic activism compensates or buffers the effect of health aid on the provision of public goods. In fact, at very high levels civic activism completely offsets the positive effect of health aid on population health.

Another way to analyze the sensitivity of the identified interaction pattern is to examine *changes* instead of *levels* of population health, which is a common approach in the *deep determinants* literature on poverty, economic welfare, and health (Knowles and Owen 2010; Hall and Jones 1999). In particular, examining decline (growth) rates provides information about the effect of development assistance on the pace of progress in population health. Accordingly, Table B 1 reports the estimated marginal effects of increased health aid on *declines* in mortality and *changes* in life expectancy, which are visualized in Figure B 8 to Figure B 11. A positive coefficient of DAH means that higher levels of health aid are associated with higher declines in mortality indicating the effectiveness of health aid. Likewise, Figure B 32 summarizes the interaction effects of the LDV estimates (Model A1-D1). The results demonstrate that the effect of health aid on changes in population health is positive at mean values of civic activism and statistically significant for infant and child mortality. The interaction coefficient is significantly negative in all LDV models except Model D1.[269] The negative coefficient of the interaction term suggests that civic activism buffers the marginal effect of increased health aid on declines in mortality and increases in life expectancy. Furthermore, at high levels of civic activism, the beneficial effect of health aid is completely offset and turns insignificant. Even though the two-step GMM estimates are statistically insignificant, the

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[268] In the LDV and RE-LDV models lagging all explanatory variables by one period raises the coefficient of health aid and reduces standard errors, while the interaction term remains significantly positive. Likewise, the lagged RCM and GMM model are qualitatively similar to the respective contemporary model.

[269] According to the LDV model, the percentage of observations having values of civic activism at which health aid significantly increases declines in mortality levels varies between 16 % (maternal mortality), 78 % (child mortality) and 85 % (infant mortality).

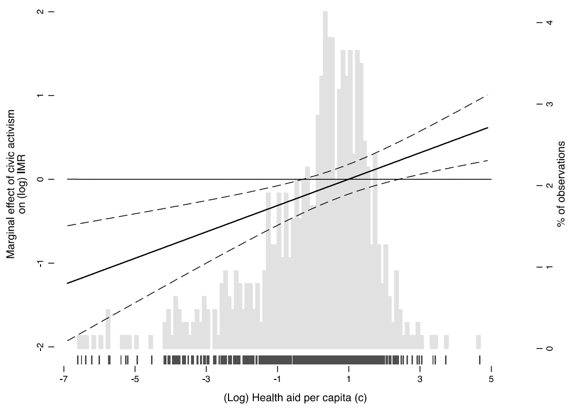
interaction terms show the same sign as in the LDV models. Likewise, lagging all explanatory variables by one period leads to qualitatively similar results across all health indicators.[270] In sum, testing the effect of health aid on the pace of progress in population health confirms the finding that civic activism buffers the effectiveness of health aid according to the preferred GMM estimation. Consequently, inspecting differences instead of levels adds further evidence that the effectiveness of development assistance for health is weakened by an informed and aware citizenry, which participates in contentious politics.

To test whether the observed relationship is consistent with the (reverse) marginal effect of civic activism on population health at different levels of health aid it is worth inspecting the symmetry of the interaction relationship (Berry, Golder, and Milton 2012). Accordingly, based on the regression results of Table 17, Figure 29 visualizes the (symmetric) marginal effect of civic activism on population health across varying levels of health aid. Specifically, the plots suggest that in less aid-dependent countries increases in civic activism are significantly associated with reductions in mortality levels. However, as countries receive higher levels of development assistance the health-improving effect of civic activism is undermined. In other words, health aid weakens the positive effect of civic activism on population health. Specifically, in countries receiving less than 0.74 US$ per capita increased civic activism significantly reduces infant mortality. The percentage of observations showing levels of health aid at which the marginal effect of civic activism is significantly negative is about 32 percent. Conversely, in highly aid-dependent countries—which comprise about four percent of the observations—foreign aid completely offsets the negative marginal effect of civic activism on infant mortality. By contrast, the marginal effect of civic activism on life expectancy fails to achieve statistical significance. In sum, health aid appears to buffer the negative effect of civic activism on infant, child and maternal mortality, which is consistent with the finding that civic activism compensates or buffers the effect of health aid on population health.

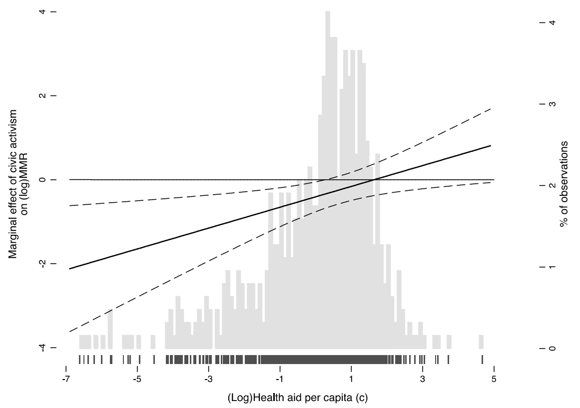
[270] Regarding infant and child mortality, the results of the *convergence models* are qualitatively similar to dynamic panel models that regress decline rates on (lagged) decline rates at the beginning of each period. Minor differences between both models exist only in some of the GMM specifications estimating the determinants of maternal mortality and life expectancy, while all other estimators qualitatively confirm the compensatory effects of health aid and civic participation.

Figure 29: DAH and the marginal effect of civic activism

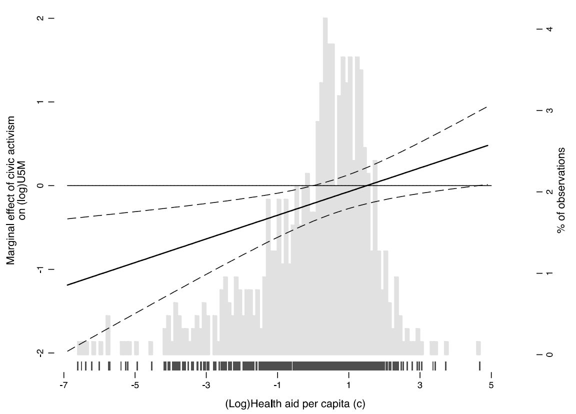
Dependent variable: infant mortality (A1)



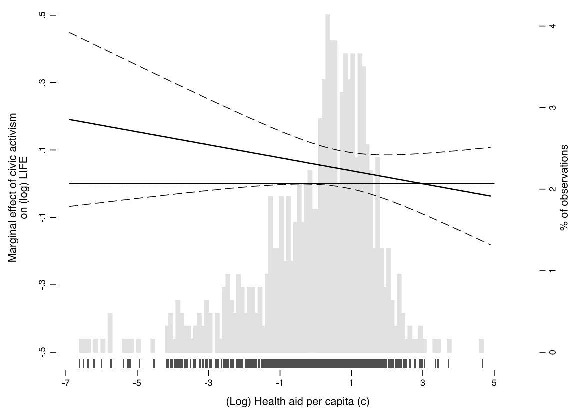
Dependent variable: maternal mortality (C1)



Dependent variable: child mortality (B1)



Dependent variable: life expectancy (D1)



Notes: Figures show marginal effects of civic activism at different values of health aid based on dynamic panel estimation (LDV).

To test the validity of the composite measure of civic activism I replicate all models using data on citizens' participation in contentious politics from the WVS. It is important to note that the WVS sample has a smaller time and country coverage than the ISD database. Table 18 reports the results of regressing infant mortality and life expectancy on participation in elite-challenging action. Accordingly, the evidence suggests that there is no significant interaction relationship between social movement activity and health aid. Likewise, the marginal effect plots displayed in Figure 30 reveal that neither the LDV models nor the RCM or GMM estimates indicate a significant interaction pattern. This (null-) finding is replicated across different estimation techniques (Figure B 18-Figure B 19) and casts doubts on the identified interaction pattern between participation in non-institutionalized political action and health aid. In other words, citizens' participation in contentious politics does not significantly influence the effect of health aid on population health in the 53 recipient countries surveyed by the WVS. However, it is important to note that the quality of democratic institutions among those 53 countries is significantly higher than across the set of countries included in the original analysis using the composite index of civic activism. In particular, the mean Freedom House democracy score among the countries included in WVS sample is 0.3 standard deviations *above* the average democracy score across the total sample of recipient countries included in the original analysis.[271]

[271] Likewise, the mean Polity score of the WVS sample is 0.4 standard deviations above the mean.

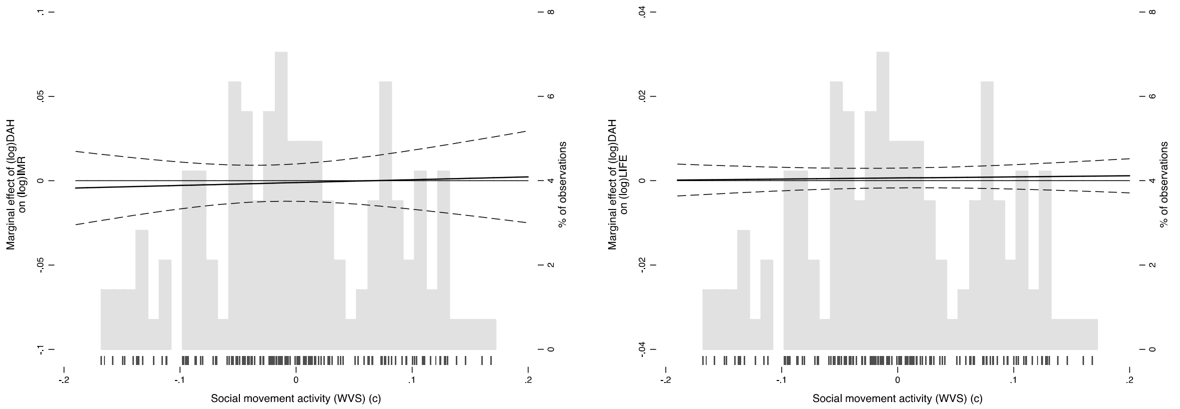
Table 18: Civic activism and the marginal effect of DAH *on* IMR *and* LIFE *II*

	Infant mortality			Life expectancy		
	A1	A2	A3	B1	B2	B3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.001	-0.02**	-0.013	0.001	0.002	0.002
	(0.006)	(0.0095)	(0.009)	(0.001)	(0.002)	(0.002)
SMA	0.041	0.18	0.27	0.03	-0.06	0.01
	(0.15)	(0.19)	(0.28)	(0.02)	(0.04)	(0.04)
log DAH#SMA	0.017	-0.09	-0.02	0.003	-0.007	-0.004
	(0.06)	(0.10)	(0.07)	(0.008)	(0.02)	(0.017)
GOV	-0.037*	-0.099*	-0.02	0.004	-0.01	0.008
	(0.02)	(0.06)	(0.05)	(0.003)	(0.01)	(0.005)
CONFLICT	-0.025	0.00	-0.04	0.007	-0.01	0.003
	(0.04)	(0.04)	(0.08)	(0.006)	(0.009)	(0.02)
EXPEND	-0.007**	-0.006	-0.007	0.001*	-0.001	0.001
	(0.003)	(0.005)	(0.005)	(0.0004)	(0.001)	(0.001)
log FERTIL	0.024	0.82***	0.05	0.02**	-0.06***	0.02**
	(0.04)	(0.11)	(0.07)	(0.01)	(0.02)	(0.01)
log POP	-0.013**	0.012	-0.02**	-0.001	0.003	-0.0002
	(0.006)	(0.034)	(0.009)	(0.001)	(0.006)	(0.001)
log GDP	-0.016	-0.28***	-0.01	-0.002	0.06***	-0.002
	(0.016)	(0.06)	(0.02)	(0.003)	(0.01)	(0.006)
log HIV	0.03***	0.04	0.02	-0.01***	-0.04***	-0.01*
	(0.01)	(0.03)	(0.014)	(0.003)	(0.01)	(0.006)
TREND		-0.11***			0.008**	
		(0.02)			(0.003)	
LDV	0.95***		0.99***	0.93***		0.91***
	(0.031)		(0.05)	(0.04)		(0.06)
Constant	0.46**	5.030***	0.35	0.32**	3.66***	0.38
	(0.21)	(0.753)	(0.30)	(0.14)	(0.14)	(0.23)
Observations	107	107	107	107	107	107
R-squared	0.986			0.984		
Countries	53	53	53	53		53
Instruments			62			62
Hansen-Test			0.987			0.979
AR2			-			-

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP, GOV, social capital and fertility is specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Civic activism is measured by the SMA index. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Figure 30: Civic activism and the marginal effect of DAH *II*

Dependent variable: infant mortality *Dependent variable: life expectancy*



Notes: The graphs show the marginal effect of health aid on infant mortality (left) and life expectancy (right). Civic activism is measured by the SMA index. Data: WVS.

Summarizing, based on the composite measure of civic activism there is no evidence that the effectiveness of health aid is enhanced through increased participation in elite-challenging action. Instead, the evidence suggests that civic activism works as a buffer between health aid and population health.[272] In countries with an uninformed and unaware citizenry that puts little pressure on public authorities health aid significantly reduces infant, child, and maternal mortality. By contrast, at higher levels of elite-challenging action health aid contributes little to improve population health. In other words, civic activism buffers the effect of health aid on the provision of public goods. This finding is robust to a variety of different model specifications including controlling for democratic institutions. The buffering interaction effect is also confirmed regarding the pace of progress of population health in recipient countries. However, testing citizens' direct participation in contentious politics using data from the WVS fails to provide additional support for the identified interaction pattern. However, it is important to note that aid recipient countries surveyed by the WVS are more democratic than those countries included in the original sample. Correspondingly, to account for (contextual) confounding factors section 5.3 inspects whether the joint effect of civic activism and health aid on population health vary across different institutional contexts.

5.3 Institutional context and the joint effects of health aid and social capital

The analysis of the conditional effects of social capital and development assistance for health revealed that associational membership and health aid are complements regarding the provision of public goods. Moreover, citizens' participation in elite-challenging action

[272] To explore which sub-components of the civic activism index drives the identified buffering effects of civic engagement and health aid I also tested the interaction between health and i) extent of informational connectedness and access to the media, ii) the number of international NGOs and iii) the share of organizations and individuals being a member of international NGOs. Using WVS data for each sub-dimension of the compositive index of civic activism provides minor evidence that informational connectedness and access to the media account for the buffering interaction effect between civic activism and health aid.

appears to buffer the effect of external health financing. By contrast, there is no indication that social trust conditions the effectiveness of health aid. The second major question to be answered deals with the various identified relationships between social capital and health aid in different political contexts. In particular, Gaventa and Barrett (2012) provide comprehensive review of case study evidence that different types of citizen participation, including membership in local associations and social movement activity, increase governments' responsiveness, but that this effect is not limited to mature democracies. In fact, civic engagement can make positive differences, even in the least democratic settings. Thus, the question arises whether the institutional context conditions the joint effect of social capital and health aid. Correspondingly, the following section examines different conditions under which civic engagement is supposed to make a positive difference concerning population health including the quality of bureaucratic governance, liberal democracy, and the extent of decentralization. In contrast to the two-way interaction effects analyzed in previous chapters—which simultaneously accounted for the level of bureaucratic governance—this section analyzes three-way interaction patterns allowing the joint effect of civic engagement and health aid to vary across different types and levels of political institutions.

To keep track of the numerous interaction relationships between health aid, social capital and political institutions this section is structured by type of social capital and stepwise inspects the influence of formal political institutions on the joint effects of health aid and i) structural social capital, ii) civic activism and iii) social trust. Accordingly, the influence of state capacity, liberal democracy and decentralization is analyzed separately for each social capital component. To facilitate interpretation, the results of each sub-section are presented in tables *and* visualized as marginal effect plots.[273]

Technically, testing conditional relationships requires the inclusion of lower-order interaction terms and the constitutive first order coefficients. Therefore, exploring the pattern of three-way interaction relationships (X*Z*W) between health aid (X), social capital (Z) and institutional context (W) requires the inclusion of the joint effects of X*Z, X*W, and W*Z as well as each main effect. Accordingly, the interpretation of the regression estimates begins with the explanation of the main effects (first-order coefficients), which indicates whether the respective variable significantly determines population health at mean levels of the other predictors, and continues with the meaning of the two-way and three-way interaction terms. To test whether the results are robust to different model specifications and data sources the results of the preferred GMM and RCM estimation are compared with the baseline LDV model (Models 1 to 3) and replicated across different measures of institutional context (Models A to D). Lastly, the estimates based on the composite indices of social capital are compared to conventional measures of social capital using data from the WVS.

The visualization of the interaction patterns between health aid, social capital and institutional context is more complicated and combines post-hoc probing with the Johnson-Neyman technique. In particular, the marginal effect plots display one marginal effect line for each specified level of institutional context and indicate whether the conditional effect of

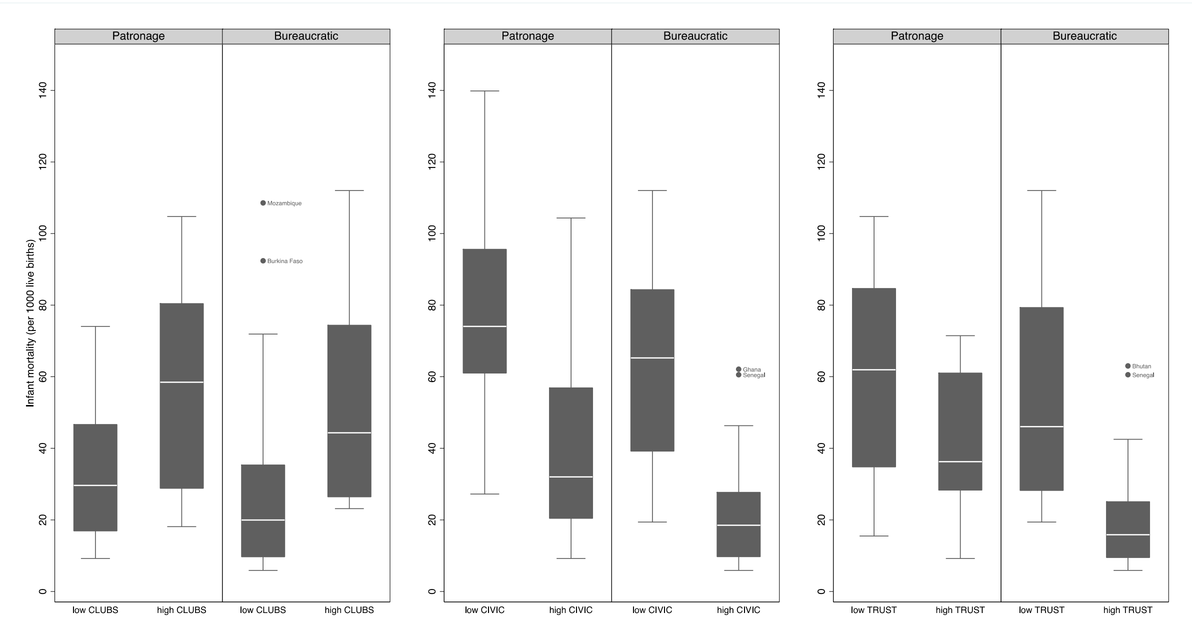
[273] The three-way marginal effect plots shown in this section display the LDV estimates whereas the respective plots based on GMM estimation are shown in the appendix.

health aid is significantly different from zero. Instead of drawing confidence intervals for each marginal effect line, which would be confusing and difficult to read, the range of the moderating (social capital) variable for which the marginal effect of health aid is statistically significant carries a 'shadow'-line (consisting of little stars)[274]. That is, only the 'shadowed' marginal effect lines indicate a significant joint effect of social capital and health aid on population health at specified levels of formal institutions. The levels of formal institutions for which the joint effect of health aid and social capital are displayed include the minimum, the median (50th percentile), one standard deviation above the mean ($\mu + \sigma$) and the maximum value of each measure of democratic governance. For administrative and political decentralization, which is measured using binary variables, only two levels are specified.

Population health by social capital and institutional context

To visually explore the role of institutional context Figure 31 to Figure 33 display the distribution of health outcomes by social capital *and* institutional context using box-plots. The question is whether the summary statistics indicate differences in the conditioning effect of social capital between bureaucratic and patronage states (Figure 31), democracies and autocracies (Figure 32), as well as between centralized and decentralized countries (Figure 33). Therefore, based on a median split, countries are classified into groups with high and low levels of social capital as well as high and low levels of democratic governance and decentralization.

Figure 31: Infant mortality by social capital and state capacity

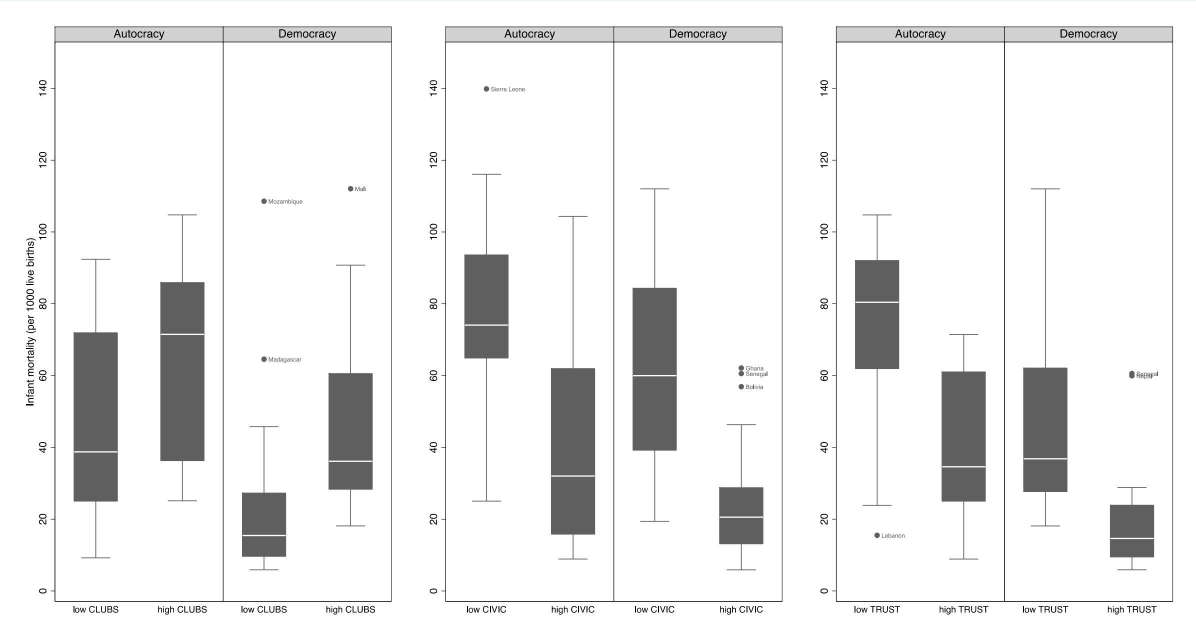


Notes: Figure shows country averages. Countries are classified as patronage or bureaucratic societies based on median split of the WBGI composite governance index. Using the ICRG index of bureaucratic governance leads to qualitatively similar patterns.

[274] This way of visualizing three-way marginal effect plots using Stata goes back to Matt Golder, who thankfully published the respective commands using Stata: Matt Golder, http://mattgolder.com/files/interactions/interaction1.pdf (accessed July 8, 2016).

Figure 31 indicates that there are substantial differences in population health between low and high levels of social capital and between bureaucratic and patronage states. Specifically, larger stocks of *structural* social capital are associated with increased infant mortality whereas countries with high levels of civic activism and social trust show lower mortality rates. Simultaneously, within groups of comparable social capital levels of infant mortality are considerably lower in bureaucratic states than in patronage states.

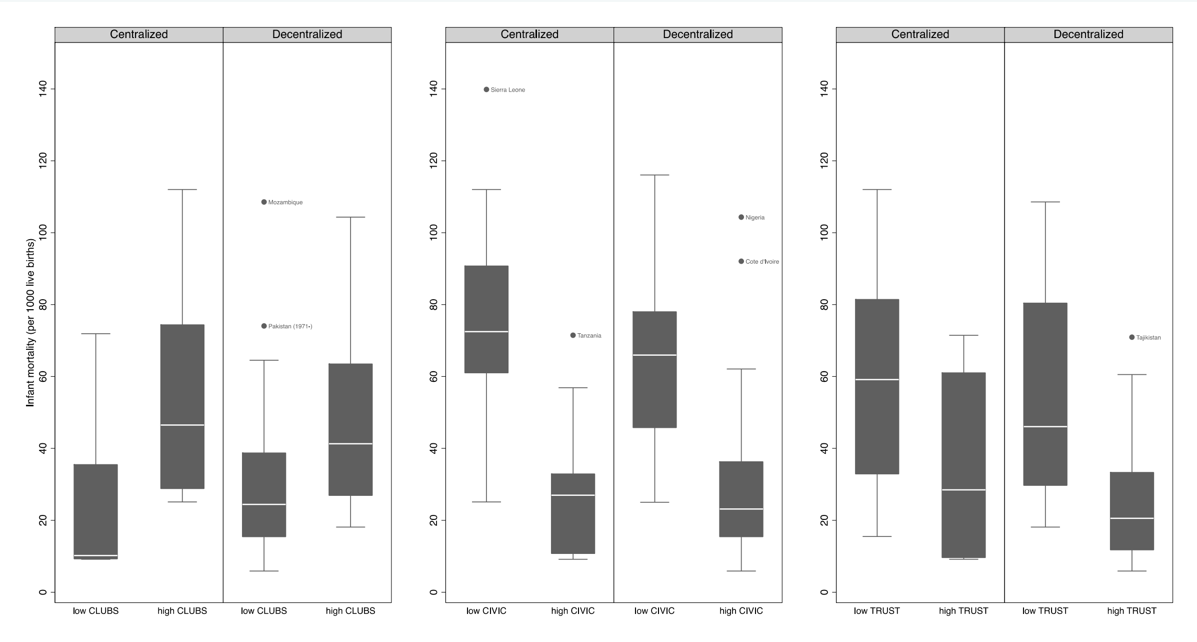
Figure 32: Infant mortality by social capital and democracy



Notes: Countries are classified as autocracy or democracy according to median split of the Freedom House index. Using the Polity index leads to qualitatively similar patterns.

Likewise, comparing population health between democratic and non-democratic states reveals that mortality levels are substantially higher in autocratic societies (Figure 32). Correspondingly, within countries of similar endowments of social capital infant mortality is lower where civil and political rights are guaranteed. Fewer differences are observed between politically (or administratively) centralized and decentralized countries (Figure 33). Specifically, Figure 33 shows that at similar levels of social capital countries in which state or provincial governments are locally elected do not substantially differ from their centralized counterparts.

Figure 33: Infant mortality by social capital and locally elected governments



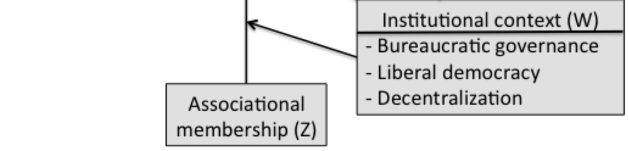
Notes: Countries are classified as decentralized if state or provincial governments are locally elected.

In sum, looking closely at the data indicates substantial variation in health outcomes across different institutional contexts. In particular, after accounting for differences in social capital institutions of bureaucratic governance and liberal democracy appear to be associated with better population health. To further explore the complex interaction patterns between health aid, social capital and each dimension of institutional context the chapter proceeds to estimate three-way interaction effects using different panel data techniques.

5.3.1 Associational membership in political context

The identified complementary interaction pattern between associational membership and health aid implies that community involvement enhances the effectiveness of health aid. To answer the question whether their joint effect on population health is influenced by political context this sub-section explores the role of supply-side factors including bureaucratic governance, liberal democracy, and decentralization (Figure 34).

Figure 34: Explanatory model of health aid effectiveness and associational involvement in political contexts



Bureaucratic governance and community ties

The capacity of a state to make collectively binding decisions, which are implemented with the appropriate organizational means and normatively legitimized, enables states to better respond to citizens' demands. Consequently, state capacity is expected to be associated with increased success of citizen-led accountability action, enabled by high levels of structural social capital. In other words, while community ties facilitate increased citizen demand for accountability and public good provision high state capacity allows recipient countries to respond to increased citizen demand and to better organize and implement the provision of public goods. Accordingly, development assistance is hypothesized to improve population health especially in recipient countries with strong community ties *and* high state capacity. To test the posited relationship Table 19 reports the results of regressing population health on bureaucratic governance, structural social capital, and health aid (and their various joint effects).

The main effect of DAH on infant mortality is insignificant across different model specifications, which indicates that health aid does not reduce infant mortality at mean levels of voluntary involvement and bureaucratic governance. The main effect of voluntary associations is also insignificant except for the RCM models (A2 and D2), indicating a negative effect of structural social capital on infant mortality (at mean levels of state capacity and health aid). Likewise, administrative capacity—all else being equal—shows no robust effect on infant mortality except for Model A1. Among the control variables, government health expenditures and GDP per capita are positively associated with population health while higher HIV prevalence and higher fertility increase levels of mortality and reduce life expectancy. Larger countries show significantly lower mortality ratios than smaller ones. Moreover, the RCM model indicates a significant time trend towards improved health.

The interaction coefficient of associations and health aid (DAH#CLUBS) is significantly negative in all LDV models, which replicates the identified enhancing effects of local associations and health aid at mean levels of governance. Both GMM and RCM estimation confirm the sign of the coefficient but fail to achieve statistical significance except for Model A1. This pattern is displayed by the long-dashed (50th percentile) marginal effect line in each plot of Figure 35.[275] The positive interaction coefficient of local associations and administrative capacity (CLUBS#GOV) in Table 19 implies that both are *substitutes* (at mean levels of health aid) regarding their effect on population health. This finding is supported by RCM (Models A2-D2) and GMM estimation (Models A3 and D3). In other words, in the absence of strong formal institutions, local associations seem to be associated with lower infant mortality levels.

The joint effect of aid and institutions of economic governance including control of corruption and the rule of law have received particular attention in the aid effectiveness literature (Chauvet 2015). Correspondingly, the results presented in Table 19 also speak to the question whether state capacity directly conditions the effectiveness of health aid. Specifical-

[275] A 'shadow' along the marginal effect line indicates the range of associational membership for which the marginal effect of health aid on population health is statistically significant.

ly, given the main effects of health aid and bureaucratic governance, the positive interaction coefficient (DAH#GOV) implies that health aid and administrative capacity are substitutes rather than complements in the provision of public goods (Models B1-B2; Models A1-A3, and Model D1). However, the joint effect on life expectancy is statistically insignificant across all models (Table 20). Consequently, there is minor indication that after accounting for associational involvement health aid is more effective when formal institutions are weak. These results corroborate the findings of Dietrich (2011), who argues that corrupt recipient governments have incentives to comply with donor objectives and implement aid effectively in sectors (such as health) in which compliance is cheap to attract further external funding.[276] Accordingly, the negative effect of health aid on infant mortality does not appear to depend on strong institutions of bureaucratic governance.[277] Hence, either high state capacity or high levels of development assistance for health lead to lower levels of infant and child mortality in recipient countries.

Regardless of this finding, the main question is whether the identified complementary relationship between associational membership and health aid varies between bureaucratic and patronage states. Based on the estimates presented in Table 19 the three-way interaction term (DAH#CLUBS#GOV) does not indicate any significant differences.[278] To further explore the role of institutional context the marginal effect of health aid on infant mortality (Figure 35) and life expectancy (Figure 36) is plotted across different levels of voluntary associations and bureaucratic governance. Correspondingly, the insignificant three-way interaction coefficient is reflected by the small differences in slope and magnitude of the marginal effect lines in each of the plots. Even though the marginal effect plots consistently suggest that lower levels of bureaucratic governance are associated with steeper slopes the differences between varying levels of administrative capacity are not statistically significant. Only Model C1 provides minor indication of a moderating effect, which is significant at the 90 percent level. As displayed in Model D1 (Figure 35) the negative effect of health aid at high levels of associational membership is significant only if the quality of institutions is below the median (solid and long-dashed lines).[279] Even though the general interaction pattern is supported by GMM estimation, the marginal effect of health aid fails to be statistically significant (Figure C 16). In fact, only at mean levels of bureaucratic governance, the identified synergistic interaction pattern is replicated.

Overall, the same patterns are replicated concerning *life expectancy* (Table 20 and Figure 36). Here, the *synergistic* effects of health aid and community ties are confirmed in all LDV models. The RCM and GMM estimates imply a similar pattern but fail to achieve conventional levels of statistical significance. Likewise, community ties and state capacity

[276] The argument builds on the assumption that compliance costs are smaller in health than in other sectors because the implementation of health aid requires less state capacity and at the same time provides fewer possibilities of corruption.
[277] This result contradicts Mishra and Newhouse (2009, 865) who find a significant interaction pattern between administrative capacity and health aid. However, Mishra and Newhouse use the World Bank's CPIA index to measure the quality of bureaucratic governance.
[278] According to the composite WBGI index at minimum levels of bureaucratic governance, the marginal effect of health aid is significant at values of local associations between 0.065 and 0.19.
[279] The GMM estimates of Model C3 indicate a similar pattern at low levels of voice and accountability (Figure C 16).

(CLUBS#GOV) appear to be substitutes as both main effects are positive while the interaction coefficient is negative.

Similarly, the three-way interaction term (DAH#CLUBS#GOV) does not indicate that administrative capacity matters regarding the influence of voluntary associations on health aid effectiveness. The only indication is given in Model B1 using the ICRG measure of state capacity in which the coefficient is statistically significant at the 90 percent level.[280] However, the results are not robust to different model specifications. In particular, Figure C 19 demonstrates that according to the GMM model there is no significant variation between low, medium and high levels of administrative governance. Hence, based on the composite index of clubs and associations there is little evidence that the enhancing effect of associational involvement on health aid effectiveness depends on the level of administrative capacity. In other words, there seem to be little differences between patronage and bureaucratic states regarding the identified synergistic effects of associational involvement and health aid.

[280] The positive sign of the interaction term implies that health aid has the strongest impact on life expectancy in countries with high administrative capacity and high levels of associational membership (Figure 36).

Table 19: Associational membership and the marginal effect of DAH *on* IMR *in the context of bureaucratic governance*

	Dependent variable: infant mortality ratio											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Voice & accountability (WBGI)			Control of corruption (WBGI)		
log DAH	-0.00349	0.00203	-0.0109	-0.00478	-0.00126	0.00763	-0.00691	0.00284	-0.0107	-0.00168	0.00251	-0.00165
	(0.00513)	(0.00525)	(0.0106)	(0.00550)	(0.00540)	(0.00980)	(0.00554)	(0.00549)	(0.0139)	(0.00499)	(0.00506)	(0.0132)
GOV	-0.0312**	-0.0153	-0.0498	-0.0668	-0.132	-0.0798	0.0192	-0.0530*	0.0454	-0.0248	-0.000236	-0.0306
	(0.0148)	(0.0356)	(0.0393)	(0.0721)	(0.132)	(0.140)	(0.0145)	(0.0296)	(0.0399)	(0.0160)	(0.0302)	(0.0343)
log DAH#GOV	0.00676	-0.000215	0.000278	0.0441**	0.0406	-0.00600	0.0146**	-0.000715	0.0181	0.00468	-0.00308	-0.00217
	(0.00610)	(0.00792)	(0.0114)	(0.0219)	(0.0380)	(0.0670)	(0.00595)	(0.00732)	(0.0112)	(0.00729)	(0.00772)	(0.0131)
CLUBS	0.0248	-0.277**	-0.0516	0.000118	-0.224*	0.0986	0.0143	-0.210*	0.0645	0.00182	-0.286**	-0.0659
	(0.0611)	(0.119)	(0.179)	(0.0646)	(0.124)	(0.144)	(0.0585)	(0.115)	(0.155)	(0.0641)	(0.122)	(0.119)
log DAH#CLUBS	-0.131***	-0.00578	-0.190**	-0.101**	-0.0224	0.0717	-0.117***	0.00667	-0.164	-0.124***	-0.00830	-0.154
	(0.0434)	(0.0494)	(0.0930)	(0.0500)	(0.0502)	(0.150)	(0.0439)	(0.0459)	(0.123)	(0.0444)	(0.0470)	(0.109)
CLUBS#GOV	0.292***	0.356**	0.633*	-0.523	0.533	-0.684	0.287***	0.307*	1.078***	0.240*	0.305*	0.476*
	(0.110)	(0.174)	(0.347)	(0.626)	(1.009)	(1.829)	(0.0980)	(0.159)	(0.336)	(0.129)	(0.160)	(0.276)
log DAH#CLUBS#GOV	0.0419	0.0403	0.0670	-0.249	-0.0299	-0.293	0.110*	0.0196	0.111	0.0731	0.0328	0.153
	(0.0803)	(0.0904)	(0.163)	(0.620)	(0.543)	(0.593)	(0.0668)	(0.0652)	(0.123)	(0.0899)	(0.0826)	(0.149)
EXPEND	-0.00297	0.00227	-0.00660	-0.000630	0.00165	0.000117	-0.00276	0.00344	-0.00278	-0.00290	0.00174	-0.00656
	(0.00216)	(0.00307)	(0.00494)	(0.00199)	(0.00321)	(0.00517)	(0.00201)	(0.00308)	(0.00564)	(0.00219)	(0.00309)	(0.00536)
log FERTIL	0.0365	0.417***	0.0499	0.0340	0.482***	0.0144	0.0249	0.457***	-0.0280	0.0447	0.416***	0.0528
	(0.0277)	(0.0746)	(0.0791)	(0.0305)	(0.0803)	(0.0688)	(0.0275)	(0.0756)	(0.0790)	(0.0274)	(0.0747)	(0.102)
log POP	-0.0111**	0.0644**	-0.0249***	-0.00396	0.0855***	-0.00736	-0.00607	0.0520*	-0.0114	-0.00821	0.0670**	-0.0229**
	(0.00497)	(0.0289)	(0.00886)	(0.00617)	(0.0306)	(0.0146)	(0.00562)	(0.0285)	(0.0125)	(0.00499)	(0.0288)	(0.0106)
log GDP	-0.0163	-0.372***	0.0103	-0.0289**	-0.351***	-0.0125	-0.0305**	-0.361***	0.0114	-0.0150	-0.378***	0.0378
	(0.0125)	(0.0423)	(0.0363)	(0.0137)	(0.0434)	(0.0482)	(0.0135)	(0.0399)	(0.0551)	(0.0126)	(0.0416)	(0.0541)
log HIV	0.0190***	0.0706***	0.0148	0.0129*	0.0591***	-0.00410	0.0157**	0.0624***	0.00658	0.0184***	0.0696***	0.00579
	(0.00593)	(0.0208)	(0.0118)	(0.00702)	(0.0227)	(0.0121)	(0.00618)	(0.0208)	(0.0147)	(0.00601)	(0.0209)	(0.0122)
LDV	0.957***		1.014***	0.962***		1.019***	0.967***		1.074***	0.960***		1.065***
	(0.0249)		(0.0686)	(0.0272)		(0.0650)	(0.0252)		(0.0982)	(0.0249)		(0.105)
TREND		-0.132***			-0.139***			-0.131***			-0.132***	
		(0.0125)			(0.0136)			(0.0125)			(0.0125)	
Constant	0.338*	5.407***	0.165	0.281	4.809***	-0.0163	0.332*	5.460***	-0.266	0.260	5.407***	-0.274
	(0.180)	(0.595)	(0.455)	(0.205)	(0.652)	(0.786)	(0.186)	(0.583)	(0.726)	(0.177)	(0.600)	(0.718)
Observations	221	221	221	200	200	200	221	221	221	221	221	221
R-squared	0.987			0.988			0.987			0.987		
Countries	68	68	68	61	61	61	68	68	68	68	68	68
Instruments			74			69			65			65
Hansen-Test			0.627			0.710			0.214			0.292

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

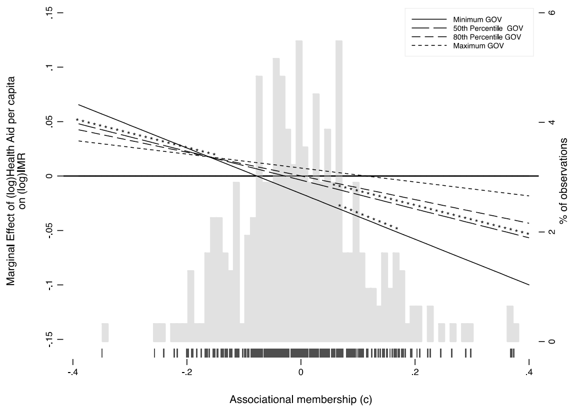
Table 20: Associational membership and the marginal effect of DAH on LIFE in the context of bureaucratic governance

	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Voice & accountability (WBGI)			Control of corruption (WBGI)		
log DAH	0.00291**	-0.000481	0.00140	0.00337***	0.00102	0.000693	0.00335***	-0.000552	-0.000480	0.00273**	-0.000423	0.00119
	(0.00118)	(0.00147)	(0.00381)	(0.00109)	(0.00144)	(0.00306)	(0.00124)	(0.00154)	(0.00161)	(0.00111)	(0.00143)	(0.00359)
GOV	0.00423	0.00708	-0.00791	0.0230	0.0324	0.0137	0.000994	0.0122*	0.00333	0.00316	0.00700	-0.00354
	(0.00388)	(0.00904)	(0.0160)	(0.0148)	(0.0328)	(0.0319)	(0.00392)	(0.00741)	(0.00551)	(0.00398)	(0.00781)	(0.0148)
log DAH#GOV	-0.00128	-0.000594	-0.00414	-0.00312	-0.0139	0.000945	-0.00182	-0.000852	-0.000293	-0.000962	-0.000550	-0.00196
	(0.00133)	(0.00218)	(0.00395)	(0.00450)	(0.00972)	(0.0124)	(0.00123)	(0.00200)	(0.00237)	(0.00149)	(0.00216)	(0.00510)
CLUBS	0.0161	0.0376	0.0232	0.0323**	0.0325	0.0414	0.0154	0.0221	0.0104	0.0195	0.0439	0.0370
	(0.0148)	(0.0308)	(0.0450)	(0.0132)	(0.0310)	(0.0367)	(0.0141)	(0.0304)	(0.0352)	(0.0154)	(0.0315)	(0.0377)
log DAH#CLUBS	0.0303***	0.00541	0.0111	0.0360***	0.00813	0.00871	0.0284**	0.00242	0.00989	0.0279**	0.00403	0.0243
	(0.0109)	(0.0137)	(0.0386)	(0.0100)	(0.0133)	(0.0378)	(0.0114)	(0.0129)	(0.0189)	(0.0112)	(0.0132)	(0.0269)
CLUBS#GOV	-0.0651**	-0.0359	-0.118	-0.0733	0.187	-0.351	-0.0633***	-0.00360	-0.106*	-0.0645**	-0.0407	-0.135
	(0.0264)	(0.0450)	(0.0913)	(0.137)	(0.256)	(0.335)	(0.0244)	(0.0408)	(0.0555)	(0.0296)	(0.0428)	(0.0920)
log DAH#CLUBS#GOV	-0.0134	-0.0199	-0.0374	0.180*	0.00591	0.116	-0.00896	-0.0169	-0.0139	-0.0120	-0.0162	-0.0386
	(0.0203)	(0.0243)	(0.0444)	(0.109)	(0.142)	(0.252)	(0.0154)	(0.0178)	(0.0307)	(0.0216)	(0.0227)	(0.0425)
EXPEND	0.00149***	-0.000431	0.00374**	0.000958**	-0.000440	0.00127**	0.00133***	-0.000411	0.00224***	0.00151***	-0.000388	0.00328**
	(0.000453)	(0.000808)	(0.00148)	(0.000454)	(0.000813)	(0.000567)	(0.000430)	(0.000804)	(0.000865)	(0.000460)	(0.000814)	(0.00163)
log FERTIL	0.00734	-0.0452**	-0.00523	0.00673	-0.0587***	-0.00521	0.00900	-0.0454**	0.00556	0.00504	-0.0458**	-0.00320
	(0.00684)	(0.0184)	(0.0151)	(0.00543)	(0.0191)	(0.0146)	(0.00696)	(0.0184)	(0.00939)	(0.00667)	(0.0184)	(0.0140)
log POP	0.00311**	-0.00138	0.00237	0.00140	-0.00269	0.000239	0.00264*	-8.58e-05	0.00262	0.00273*	-0.00188	0.00235
	(0.00151)	(0.00581)	(0.00288)	(0.00150)	(0.00595)	(0.00208)	(0.00155)	(0.00574)	(0.00255)	(0.00143)	(0.00564)	(0.00286)
log GDP	0.00115	0.0438***	-0.000728	-0.000254	0.0421***	-0.00540	0.00290	0.0427***	-0.00104	0.00162	0.0444***	0.000222
	(0.00386)	(0.00960)	(0.00808)	(0.00374)	(0.00964)	(0.00786)	(0.00408)	(0.00926)	(0.00541)	(0.00381)	(0.00940)	(0.00846)
log HIV	-0.0134***	-0.0465***	-0.0158***	-0.0113***	-0.0418***	-0.0128**	-0.0136***	-0.0454***	-0.0140***	-0.0136***	-0.0468***	-0.0140***
	(0.00219)	(0.00479)	(0.00532)	(0.00219)	(0.00497)	(0.00507)	(0.00224)	(0.00477)	(0.00423)	(0.00220)	(0.00476)	(0.00536)
LDV	0.881***		0.809***	0.899***		0.842***	0.876***		0.832***	0.873***		0.849***
	(0.0345)		(0.0896)	(0.0330)		(0.0524)	(0.0335)		(0.0605)	(0.0341)		(0.0673)
TREND		0.0172***			0.0182***			0.0170***			0.0170***	
		(0.00260)			(0.00280)			(0.00251)			(0.00256)	
Constant	0.410***	3.795***	0.738**	0.380***	3.847***	0.690***	0.422***	3.783***	0.647***	0.446***	3.800***	0.564**
	(0.132)	(0.126)	(0.335)	(0.117)	(0.138)	(0.183)	(0.127)	(0.126)	(0.223)	(0.130)	(0.126)	(0.241)
Observations	221	221	221	200	200	200	221	221	221	221	221	221
R-squared	0.977			0.983			0.977			0.977		
Countries	68	68	68	61	61	61	68	68	68	68	68	68
Instruments			65			69			65			65
Hansen-Test			0.668			0.748			0.879			0.429

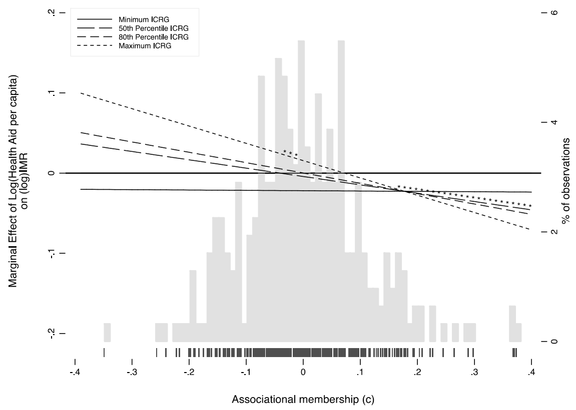
Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Figure 35: Associational membership and the marginal effect of DAH on IMR in the context of bureaucratic governance

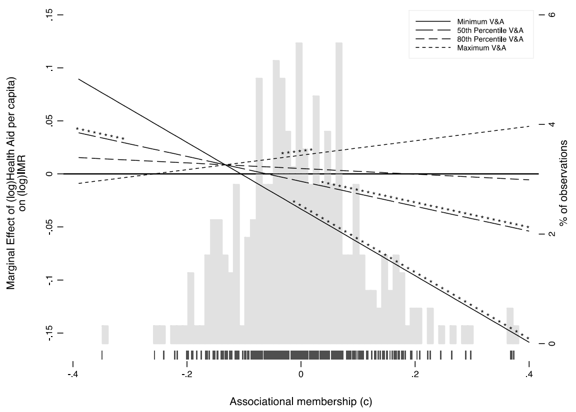
Governance indicator (A1)



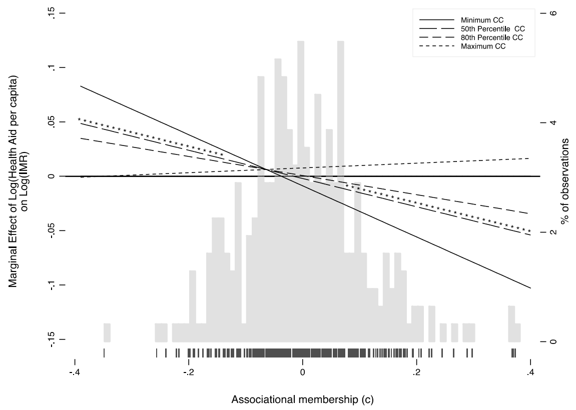
Quality of government indicator (B1)



Voice & accountability (C1)



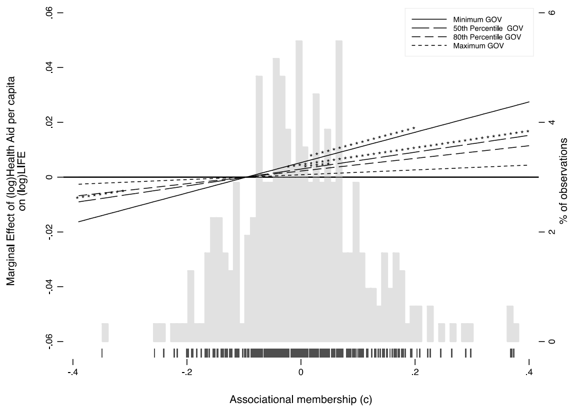
Corruption control (D1)



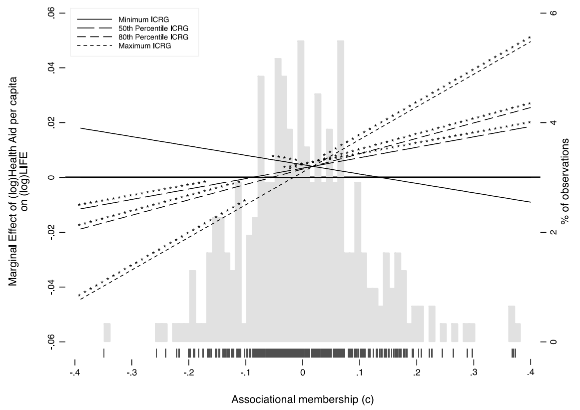
Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

Figure 36: Associational membership and the marginal effect of DAH *on* LIFE *in the context of bureaucratic governance*

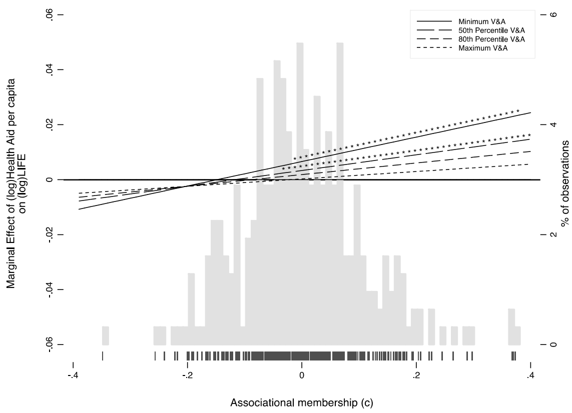
Governance indicator (A1)



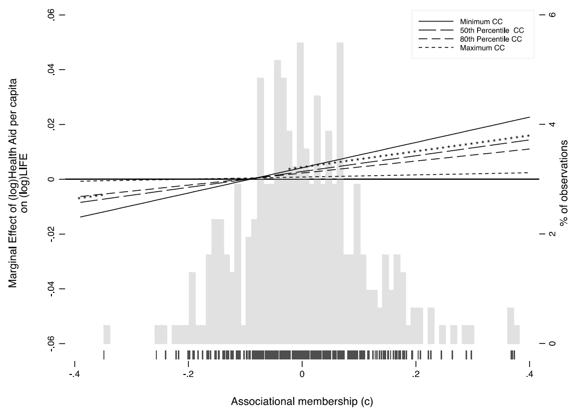
Quality of government indicator (B1)



Voice & accountability (C1)



Corruption control (D1)

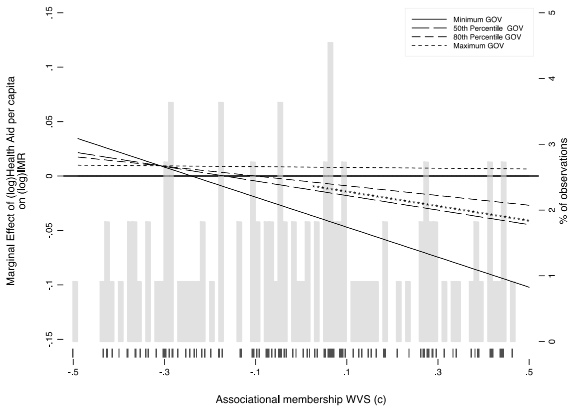


Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

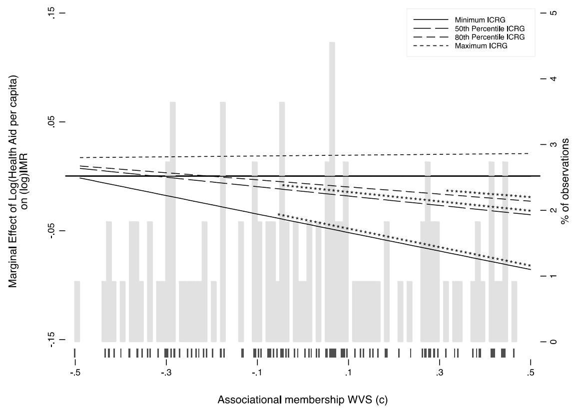
The above findings emphasize the importance of strong community ties for the effective provision of public goods and services regardless of state capacity. To proof the robustness of this finding the estimates are replicated using data from the WVS. As described in section 5.2, WVS data on membership in voluntary associations confirm the identified synergistic relationship between associations and health aid even for a smaller sub-sample of recipient countries. Nonetheless, the question is whether the enhancing effect of membership in voluntary associations on aid effectiveness differs between countries with weak and strong state capacity. Correspondingly, Table C 3 and Table C 4 report the results for different model specifications. In short, the results confirm the significant negative (main) effect of health aid (at mean levels of associational membership and governance) and the synergistic interaction pattern between associational involvement and health aid. Likewise, the three-way interaction term is insignificant except for Models C3 and D1. However, both models imply different interpretations. In particular, the GMM estimates for corruption control (Model C3) suggest that the joint effect of associational involvement and health aid reduces infant mortality most effectively at *high* levels of bureaucratic governance (Figure C 22).

Figure 37: Associational membership and the marginal effect of DAH *on* IMR *in the context of bureaucratic governance*

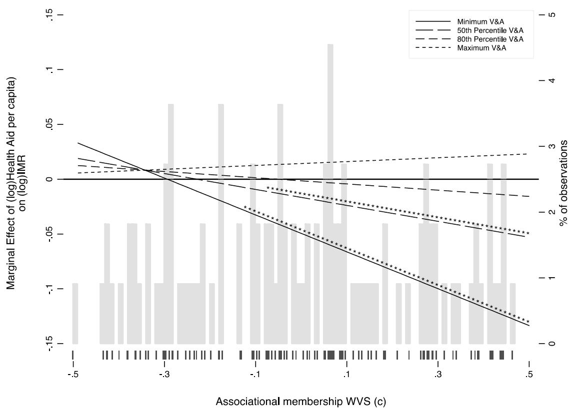
Governance indicator (A1)



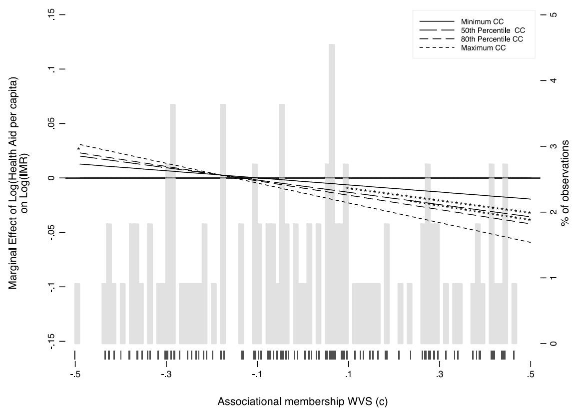
Quality of government indicator (B1)



Voice & accountability (C1)



Corruption control (D1)



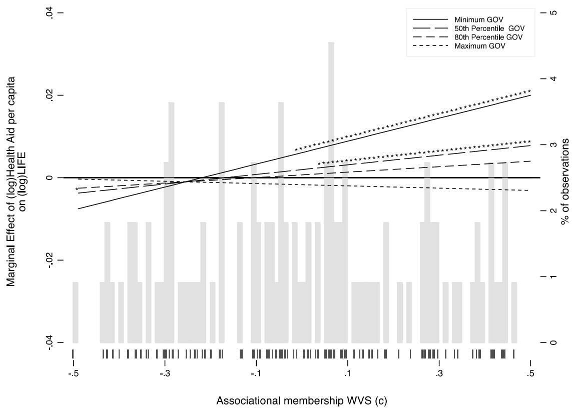
Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Data: WVS.

Conversely, the LDV estimates for voice & accountability (Model D1) indicate that the joint effect of health aid and voluntary engagement reduces infant mortality most effectively at *low* levels of bureaucratic governance (Figure 37). Still, none of these results are replicated using life expectancy as dependent variable.[281] In sum, although the role of bureaucratic governance is not unambiguous the joint effect of voluntary associations and health aid on population health seems to be independent of the administrative capacities of the bureaucracy. Specifically, there is little evidence that the synergistic effects of voluntary associations and health aid are heavily constrained in patronage states. Instead, voluntary associations are likely to complement health aid in the provision of public goods and increase the effectiveness of health aid regardless of governments' administrative capacities.

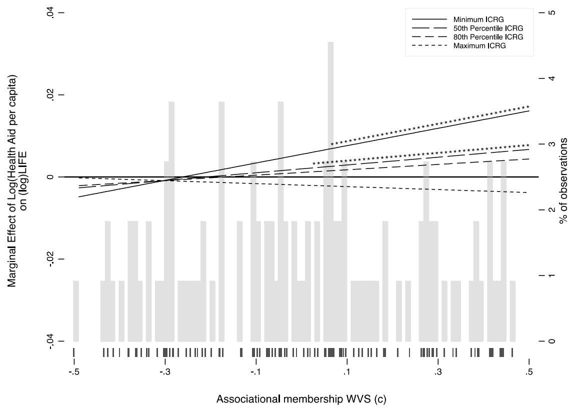
[281] In particular, even though Figure 38 indicates that lower levels of institutional quality are associated with stronger positive effects of increased health aid on life expectancy this finding is not robust to GMM estimation (Table C 4).

Figure 38: Associational membership and the marginal effect of DAH *on* LIFE *in the context of bureaucratic governance*

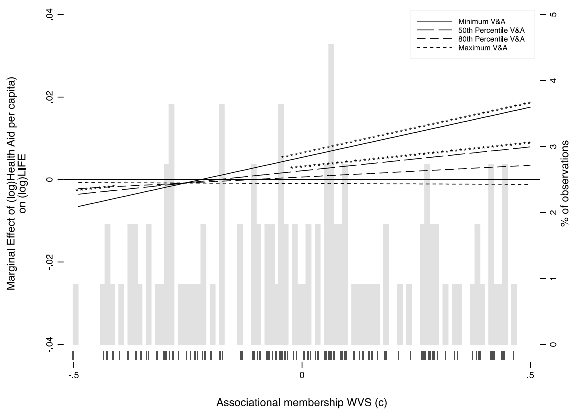
Governance indicator (A1)



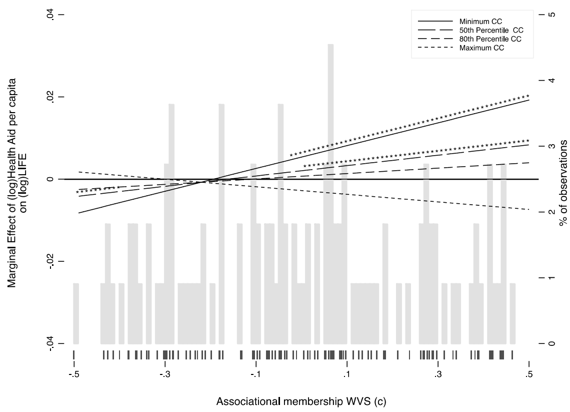
Quality of government indicator (B1)



Voice & accountability (C1)



Corruption control (D1)



Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Data: WVS.

Liberal democracy and community ties

Political and civil rights as well as the independence of the judiciary and legislature shape citizens' incentives to articulate demands and participate in monitoring of service providers and politicians. Thus, against the theoretical backdrop, democratic institutions are expected to strengthen the joint effect of associational involvement and health aid. In other words, health aid is hypothesized to improve population health especially in recipient countries with strong community ties *and* strong democratic institutions. Correspondingly, this subsection examines whether the identified synergistic interaction pattern between community ties and health aid is conditioned by the quality of democratic institutions.

Focusing on the first-order coefficients the estimates presented in Table 21 suggest that the direct effects of health aid, democracy and associational membership on infant mortality are statistically insignificant at mean levels of each other. Regarding life expectancy (Table 22) the LDV estimates indicate that the main effect of health aid is significantly positive. Likewise, democratic institutions appear to have a significant direct effect on life expectancy only if measured as coalition size and coalition size ratio (Models C1 and D1). This finding is also supported at the 90 percent significance level for the GMM estimates (Models C3 and D3). Moreover, the coefficient of associational membership (at mean levels of democracy and health aid) shows a positive effect on life expectancy but fails to be statistically significant except for Model B1.

Examining the interaction patterns replicates the identified *synergistic* interaction effects of associational involvement and health aid (DAH#CLUBS) on population health across different measures of democratic institutions. This can be visually detected by the significant long-dashed (50th percentile) sloping lines in each of the marginal effect plots in Figure 39 and Figure 40. Accordingly, at high levels of associational membership, the marginal effect of health aid on infant mortality (life expectancy) is negative (positive) and increases at higher levels of associational membership (see section 5.2). Likewise, the joint effect of voluntary engagement and democracy (CLUBS#DEMO) on population health is highly significant in both the LDV and GMM model. The signs of the main effects and the interaction term indicate an antagonistic interaction pattern between community ties and liberal democracy. Nevertheless, the exact pattern varies across different model specifications.

The joint effect of democratic institutions and foreign aid has received particular attention in the aid effectiveness literature. For instance, Svensson (1999) provides evidence that political rights and civil liberties enhance the effects of aggregate aid on economic growth arguing that democratic governments be more accountable for the way foreign aid is spent. The estimates presented in Table 21 and Table 22 can be considered as a special case of the former strand of literature although they focus on the question whether liberal democracy influences the effectiveness of foreign aid *conditional* on the strength of community ties. Svensson (1999) observed a synergistic relationship between health aid and democracy claiming that democratic institutions enhance the effectiveness of foreign aid. By contrast, based on the evidence presented in Table 21 and Table 22 the interaction relationship between liberal democracy and health aid does not support this claim. Instead, there is no robust evidence of a significant interaction pattern between democratic institutions and health aid.[282]

[282] To test the robustness of the relationship irrespective of the role of voluntary associations Figure E 9 to Figure E 14 visualize the marginal effects of increased health aid at varying levels of democracy. The results replicate the estimates of Table 21 and Table 22. Correspondingly, there is no evidence that liberal democracy significantly conditions the effect of health aid on population health.

Table 21: Associational membership and the marginal effect of DAH on IMR in the context of liberal democracy

	Dependent variable: infant mortality ratio											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	-0.00621	0.00281	-0.0145	-0.00617	0.00281	-0.0187	-0.00631	0.00476	-0.0193	-0.00573	0.00503	-0.0196
	(0.00573)	(0.00600)	(0.0143)	(0.00598)	(0.00650)	(0.0209)	(0.00522)	(0.00630)	(0.0148)	(0.00513)	(0.00615)	(0.0165)
DEMO	0.0512	-0.163**	0.0873	0.00155	-0.00412	0.000630	-0.0281	-0.0754	-0.0201	-0.0295	-0.0762	-0.0329
	(0.0373)	(0.0690)	(0.103)	(0.00153)	(0.00299)	(0.00463)	(0.0380)	(0.0509)	(0.121)	(0.0381)	(0.0505)	(0.162)
log DAH# DEMO	0.0336*	0.00255	0.0524	0.00158*	-0.000152	0.00276	0.0361**	0.00549	0.0632	0.0349**	0.00489	0.0783
	(0.0178)	(0.0217)	(0.0351)	(0.000934)	(0.00108)	(0.00318)	(0.0169)	(0.0226)	(0.0419)	(0.0170)	(0.0223)	(0.0483)
CLUBS	-0.0155	-0.198*	-0.0601	-0.0675	-0.217*	-0.0643	0.0186	-0.147	-0.0976	0.0236	-0.152	-0.0620
	(0.0619)	(0.117)	(0.176)	(0.0674)	(0.118)	(0.146)	(0.0613)	(0.126)	(0.178)	(0.0608)	(0.124)	(0.166)
log DAH#CLUBS	-0.107**	0.00500	-0.174	-0.141***	0.0122	-0.243**	-0.117***	0.00548	-0.235*	-0.119***	0.00934	-0.231*
	(0.0469)	(0.0475)	(0.119)	(0.0501)	(0.0502)	(0.117)	(0.0454)	(0.0528)	(0.131)	(0.0450)	(0.0519)	(0.131)
CLUBS# DEMO	0.527**	0.433	2.084**	0.0271**	0.0204	0.0951**	0.700***	-0.451	2.016**	0.700***	-0.464	1.812*
	(0.229)	(0.368)	(1.036)	(0.0122)	(0.0174)	(0.0412)	(0.259)	(0.394)	(0.912)	(0.260)	(0.390)	(0.948)
log DAH#CLUBS# DEMO	0.206	0.0716	0.195	0.0136	0.00198	0.0284	0.0561	0.165	0.117	0.0500	0.157	0.352
	(0.170)	(0.169)	(0.300)	(0.00934)	(0.00853)	(0.0196)	(0.194)	(0.212)	(0.392)	(0.195)	(0.209)	(0.403)
EXPEND	-0.00278	0.00298	-0.00324	-0.00286	0.00301	-0.00797	-0.00210	0.00174	-0.00764	-0.00211	0.00181	-0.00699
	(0.00207)	(0.00309)	(0.00591)	(0.00214)	(0.00311)	(0.00635)	(0.00214)	(0.00305)	(0.00488)	(0.00215)	(0.00305)	(0.00522)
log FERTIL	0.0266	0.430***	-0.0169	0.0329	0.426***	0.0211	0.0176	0.382***	0.00444	0.0182	0.381***	-0.0140
	(0.0278)	(0.0754)	(0.0905)	(0.0275)	(0.0757)	(0.0951)	(0.0279)	(0.0766)	(0.0600)	(0.0278)	(0.0767)	(0.0603)
log POP	-0.00537	0.0544*	-0.0154	-0.00338	0.0614**	-0.0157	-0.00852	0.0700**	-0.0194	-0.00847	0.0702**	-0.0211*
	(0.00580)	(0.0285)	(0.0117)	(0.00557)	(0.0287)	(0.0109)	(0.00560)	(0.0290)	(0.0128)	(0.00558)	(0.0290)	(0.0126)
log GDP	-0.0277**	-0.361***	0.0161	-0.0290**	-0.369***	-0.0259	-0.0224*	-0.370***	-0.0191	-0.0226*	-0.370***	-0.00884
	(0.0138)	(0.0394)	(0.0594)	(0.0136)	(0.0397)	(0.0480)	(0.0131)	(0.0395)	(0.0380)	(0.0130)	(0.0395)	(0.0405)
log HIV	0.0156**	0.0688***	0.00479	0.0187***	0.0669***	0.0145	0.0171***	0.0726***	0.0198	0.0171***	0.0727***	0.0164
	(0.00628)	(0.0207)	(0.0125)	(0.00629)	(0.0208)	(0.0134)	(0.00621)	(0.0208)	(0.0127)	(0.00621)	(0.0208)	(0.0125)
(lagged) IMR	0.971***		1.087***	0.960***		1.000***	0.968***		0.993***	0.967***		1.024***
	(0.0252)		(0.114)	(0.0254)		(0.105)	(0.0242)		(0.0738)	(0.0242)		(0.0661)
TREND		-0.130***			-0.131***			-0.138***			-0.138***	
		(0.0123)			(0.0124)			(0.0126)			(0.0126)	
Constant	0.280	5.458***	-0.290	0.299	5.407***	0.373	0.312*	5.355***	0.435	0.314*	5.353***	0.288
	(0.185)	(0.585)	(0.802)	(0.186)	(0.592)	(0.738)	(0.184)	(0.597)	(0.515)	(0.185)	(0.598)	(0.541)
Observations	221	221	221	221	221	221	221	221	221	221	221	221
R-squared	0.987			0.987			0.987			0.987		
Countries	68	68	68	68	68	68	68	68	68	68	68	68
Instruments			69			69			69			69
Hansen-Test			0.597			0.381			0.286			0.295

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table 22: Associational membership and the marginal effect of DAH on LIFE in the context of liberal democracy

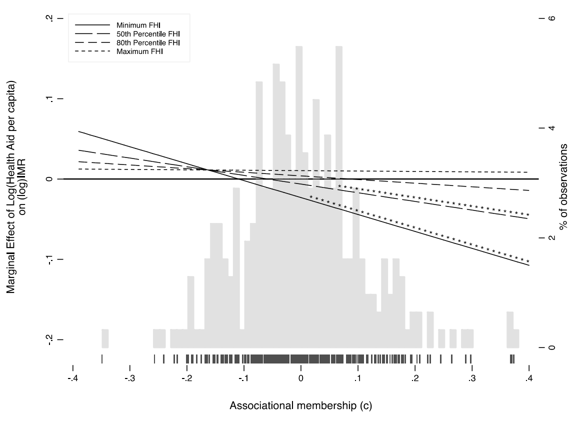
	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			COALITION/SELECTORATE SIZE		
log DAH	0.00333***	-0.000222	-0.000306	0.00395***	-0.000309	0.00110	0.00332***	0.000297	0.00366	0.00323***	0.000126	0.00202
	(0.00128)	(0.00167)	(0.00233)	(0.00126)	(0.00177)	(0.00275)	(0.00117)	(0.00171)	(0.00306)	(0.00116)	(0.00168)	(0.00249)
DEMO	0.00316	0.0235	0.0127	-0.000126	0.00101	0.000456	0.0241**	0.00195	0.0397*	0.0244**	0.00337	0.0327*
	(0.0104)	(0.0176)	(0.0177)	(0.000448)	(0.000762)	(0.000853)	(0.0114)	(0.0141)	(0.0219)	(0.0115)	(0.0140)	(0.0188)
log DAH#DEMO	-0.00468	-0.00286	-0.00208	-0.000376**	-2.44e-05	-0.000123	-0.00464	-0.00560	-0.00575	-0.00433	-0.00492	-0.00833
	(0.00378)	(0.00590)	(0.00718)	(0.000188)	(0.000294)	(0.000436)	(0.00356)	(0.00629)	(0.00820)	(0.00359)	(0.00623)	(0.00744)
CLUBS	0.0224	0.0227	0.0294	0.0347**	0.0235	0.0331	0.0135	0.0288	0.0270	0.0134	0.0286	0.0381
	(0.0147)	(0.0309)	(0.0362)	(0.0139)	(0.0312)	(0.0318)	(0.0140)	(0.0324)	(0.0381)	(0.0138)	(0.0320)	(0.0342)
log DAH#CLUBS	0.0262**	0.00493	0.000632	0.0315***	0.00429	0.0251	0.0325***	0.0124	0.0328	0.0326***	0.0108	0.0162
	(0.0118)	(0.0133)	(0.0187)	(0.0116)	(0.0140)	(0.0198)	(0.0112)	(0.0145)	(0.0379)	(0.0112)	(0.0143)	(0.0305)
CLUBS# DEMO	-0.104*	-0.0242	-0.321**	-0.00640**	-0.00146	-0.0124**	-0.0801	-0.0139	-0.161	-0.0796	-0.0101	-0.136
	(0.0565)	(0.0973)	(0.151)	(0.00303)	(0.00451)	(0.00616)	(0.0650)	(0.103)	(0.114)	(0.0648)	(0.103)	(0.110)
log DAH#CLUBS# DEMO	-0.00806	-0.0468	-0.0292	-0.00181	-0.00227	-0.00327	-0.0231	-0.105*	-0.140**	-0.0217	-0.0996*	-0.157*
	(0.0413)	(0.0465)	(0.0878)	(0.00204)	(0.00234)	(0.00415)	(0.0488)	(0.0575)	(0.0629)	(0.0492)	(0.0569)	(0.0886)
EXPEND	0.00135***	-0.000418	0.00226***	0.00133***	-0.000423	0.00217***	0.00121***	-0.000215	0.00213**	0.00120***	-0.000195	0.00188**
	(0.000434)	(0.000805)	(0.000850)	(0.000446)	(0.000806)	(0.000824)	(0.000434)	(0.000798)	(0.000968)	(0.000434)	(0.000799)	(0.000829)
log FERTIL	0.00762	-0.0448**	0.00882	0.00823	-0.0444**	0.0112	0.00911	-0.0437**	0.00578	0.00900	-0.0435**	0.0120
	(0.00703)	(0.0185)	(0.00982)	(0.00701)	(0.0184)	(0.00956)	(0.00725)	(0.0187)	(0.0133)	(0.00723)	(0.0187)	(0.0134)
log POP	0.00250	-0.000724	0.00270	0.00185	-0.00113	0.00169	0.00299*	-0.00197	0.00341	0.00298*	-0.00199	0.00207
	(0.00159)	(0.00568)	(0.00265)	(0.00150)	(0.00564)	(0.00231)	(0.00157)	(0.00563)	(0.00312)	(0.00157)	(0.00562)	(0.00272)
log GDP	0.00273	0.0438***	0.00422	0.00396	0.0462***	0.00562	0.00239	0.0470***	0.00456	0.00251	0.0471***	0.00435
	(0.00412)	(0.00922)	(0.00655)	(0.00392)	(0.00908)	(0.00680)	(0.00373)	(0.00905)	(0.00746)	(0.00371)	(0.00904)	(0.00752)
log HIV	-0.0137***	-0.0459***	-0.0177***	-0.0142***	-0.0455***	-0.0163***	-0.0139***	-0.0459***	-0.0182***	-0.0139***	-0.0459***	-0.0165***
	(0.00229)	(0.00475)	(0.00476)	(0.00228)	(0.00473)	(0.00484)	(0.00233)	(0.00473)	(0.00525)	(0.00233)	(0.00473)	(0.00607)
(lagged) LIFE	0.875***		0.787***	0.871***		0.815***	0.869***		0.782***	0.868***		0.803***
	(0.0341)		(0.0694)	(0.0333)		(0.0687)	(0.0345)		(0.0567)	(0.0345)		(0.0665)
TREND		0.0166***			0.0164***			0.0168***			0.0168***	
		(0.00252)			(0.00253)			(0.00259)			(0.00259)	
Constant	0.434***	3.786***	0.782***	0.449***	3.773***	0.671***	0.449***	3.778***	0.796***	0.453***	3.777***	0.729***
	(0.130)	(0.126)	(0.248)	(0.126)	(0.125)	(0.237)	(0.133)	(0.126)	(0.217)	(0.133)	(0.126)	(0.255)
Observations	221	221	221	221	221	221	221	221	221	221	221	221
R-squared	0.977			0.977			0.977			0.977		
Countries	68	68	68	68	68	68	68	68	68	68	68	68
Instruments			69			69			69			69
Hansen-Test			0.864			0.692			0.466			0.704

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

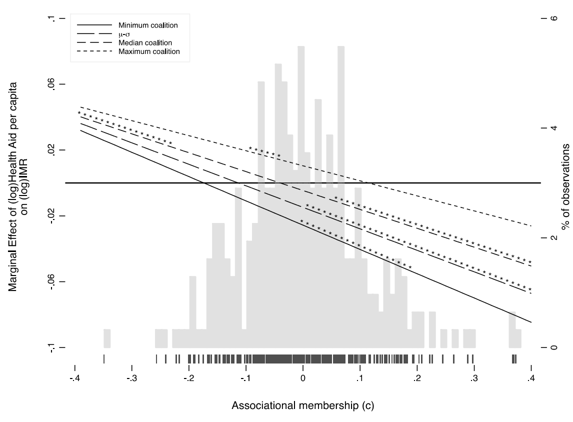
Despite these findings, the central question is whether the enhancing effect of associational membership on (health) aid effectiveness differs between levels of democracy. The insignificant three-way interaction terms in Table 21 and Table 22 provide little evidence that democratic institutions condition the *joint* effect of associational involvement *and* foreign aid. Visually this is indicated by the small differences in size and magnitude of the marginal effect lines at low, medium and high levels of democracy, particularly in Figure 40. However, the LDV estimates of the joint effect of associational membership and health aid on infant mortality (Figure 39) suggest that the enhancing effects of community ties are strongest in non-democratic contexts. By contrast, in consolidated democracies, the joint effect on infant mortality fails to be significantly different from zero. The GMM and RCM estimates of the joint effect on life expectancy support this finding (at the 90 percent level) (Table 22, Models C2-C3 and D2-D3). Specifically, Figure C 20 indicates that associational involvement significantly enhances the effectiveness of health aid if democratic institutions are weak. In other words, there is some evidence that the synergistic effects of community ties and health aid unfold particularly in non-democratic countries.

Figure 39: Associational membership and the marginal effect of DAH on IMR in the context of democracy

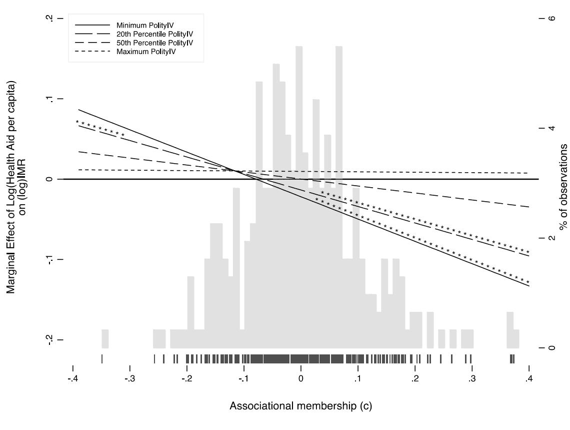
Freedom House index (A1)



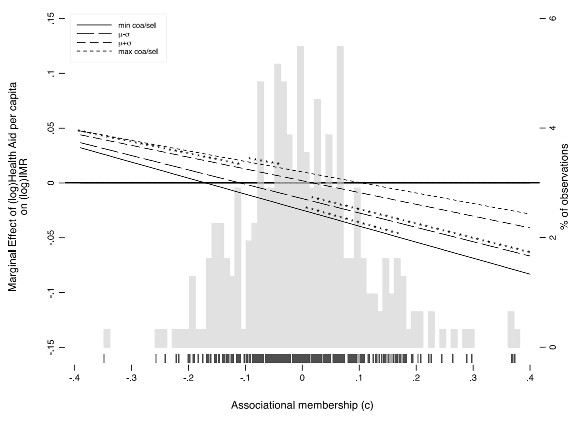
Coalition size (C1)



Polity IV index (B1)



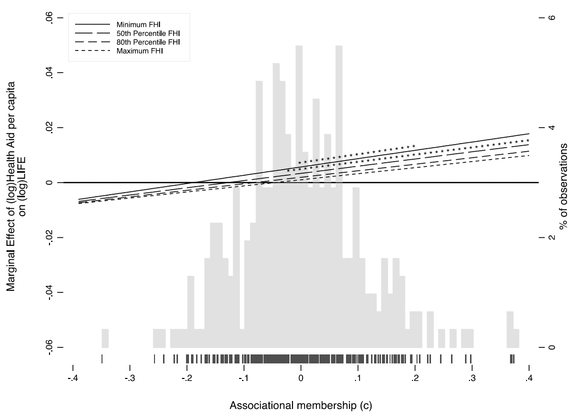
Coalition size/Selectorate size (D1)



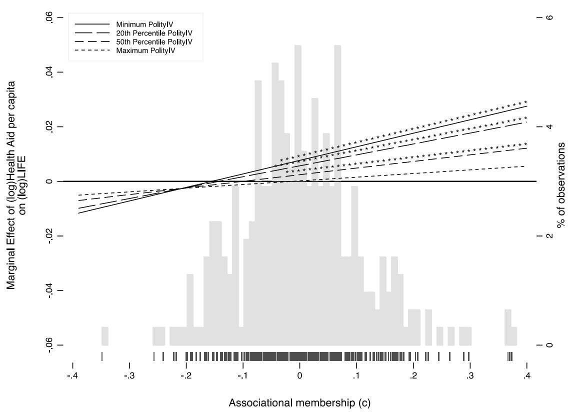
Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

Figure 40: Associational membership and the marginal effect of DAH *on* LIFE *in the context of democracy*

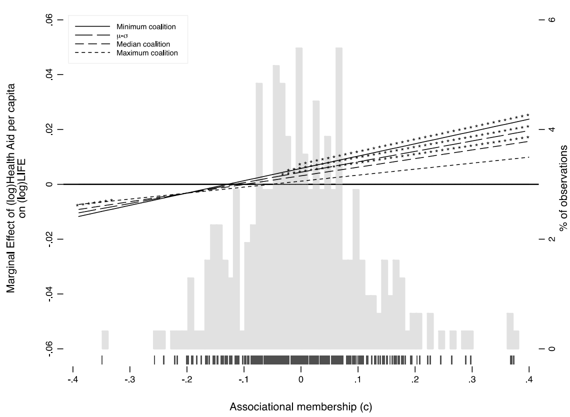
Freedom House index (A1)



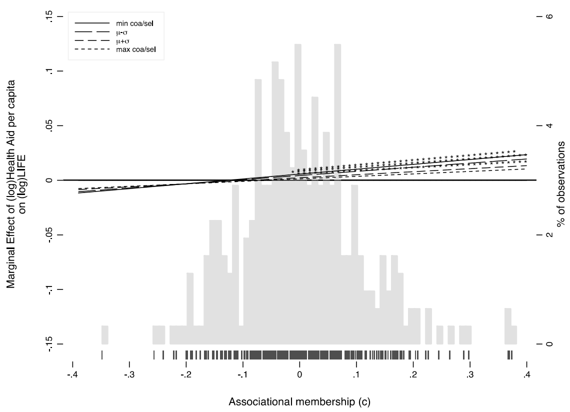
PolityIV index (B1)



Coalition size (C1)



Coalition size/Selectorate size (D1)

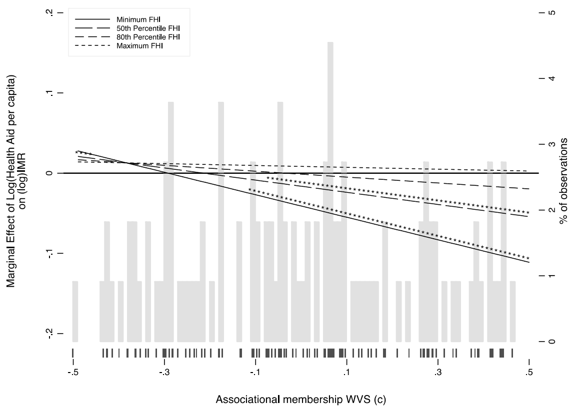


Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

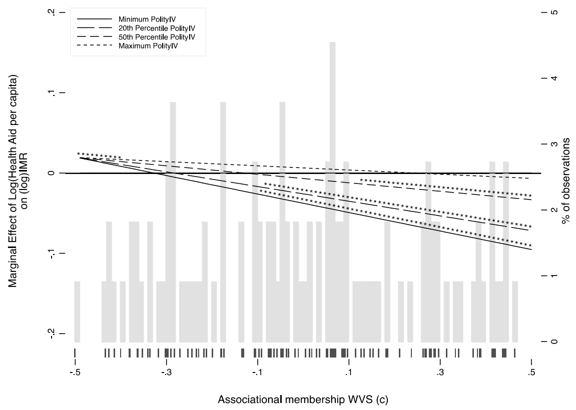
Testing the robustness of these findings with data from the WVS for a smaller subsample of recipient countries adds further evidence to the results obtained. Specifically, the main effect of health aid, as well as its joint effect with voluntary membership (DAH#CLUBS) on infant mortality, is significantly negative confirming that voluntary associations enhance the effectiveness of health aid (Table C 5). Notably, the three-way interaction coefficient is highly significant and robust to the choice of democracy measure and supported by both GMM and LDV estimation. Likewise, the LDV estimates also confirm the synergistic joint effect on life expectancy (Table C 6). Together the results provide unambiguous evidence that the enhancing effects of voluntary associations and health aid on reductions in infant mortality significantly differ between democratic and non-democratic countries. This is visually demonstrated by the considerable differences in magnitude and size of the sloping lines of the LDV models in Figure 41-Figure 42 and also supported by the GMM estimates displayed in Figure C 23. Correspondingly, across all democracy indicators, the marginal effect plots indicate that the synergistic interaction between voluntary membership and health aid is strongest *in the least democratic* settings (solid lines). By contrast, in consolidated democracies, the enhancing interaction effect turns insignificant.

Figure 41: Associational membership and the marginal effect of DAH *on* IMR *in the context of democracy*

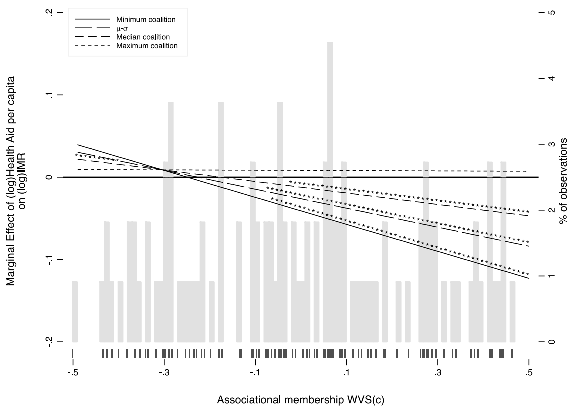
Freedom House index (A1)



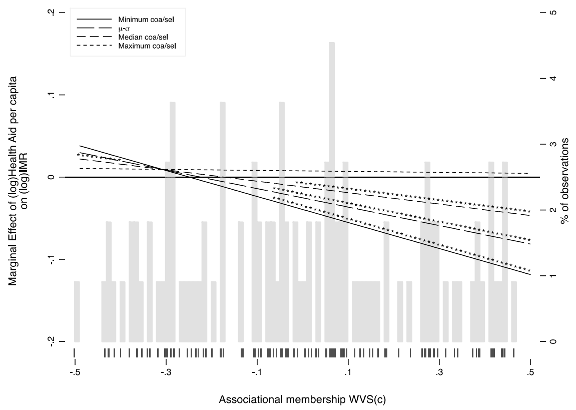
Polity IV index (B1)



Coalition size (C1)



Coalition size/Selectorate size (D1)



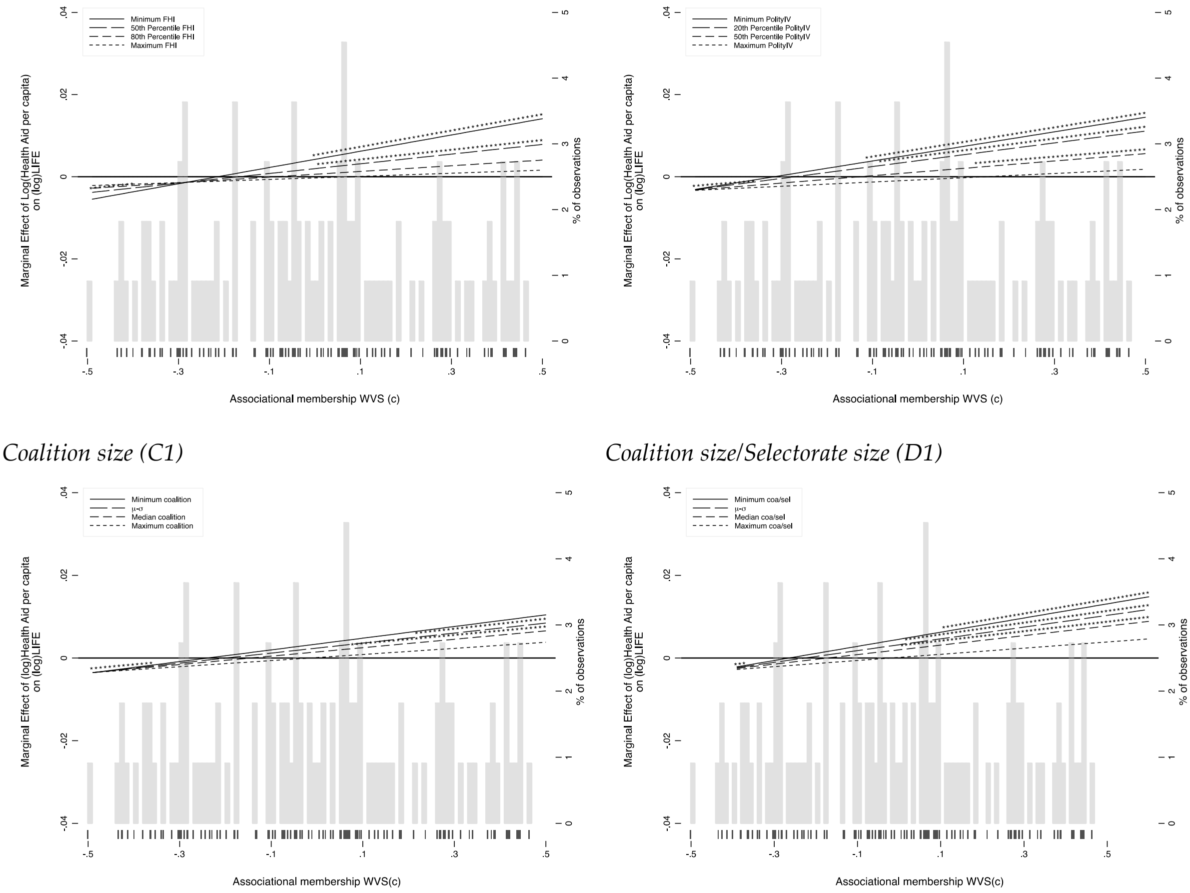
Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Data: WVS.

Summarizing, testing different measures of voluntary involvement and democracy provides evidence that the joint effects of voluntary associations and health aid significantly differ between democracies and autocracies. Specifically, associational involvement enhances the effectiveness of health aid especially in non-democratic countries. The stronger the democratic institutions, the lower the enhancing effect of community ties. In consolidated democracies, the synergistic effect of community involvement is completely undermined.

Figure 42: Associational membership and the marginal effect of DAH *on* LIFE *in the context of democracy*

Freedom House index (A1) *PolityIV index (B1)*

Coalition size (C1) *Coalition size/Selectorate size (D1)*



Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Data: WVS.

Decentralization and community ties

Reducing the distance between governments and citizens through decentralization enables service users to better articulate their needs and preferences to local representatives. Likewise, decentralization allows better monitoring of local health service providers and local governments. Thus, local officials and politicians can be more open to public scrutiny than national governments and hence more responsive to citizen-led accountability action. Accordingly, development assistance is hypothesized to improve population health especially in *decentralized* recipient countries with strong community ties. To test the hypothesized relationship Table 23 and Table 24 show the results of regressing population health on health aid at varying levels of associational membership and decentralization.

Specifically, the main effect of health aid on infant mortality is insignificant except for Model D3 (Table 23). By contrast, the significant positive main effect of health aid on life expectancy in Models B1 and D1 (Table 24) suggests that health aid in non-decentralized countries is associated with increased life expectancy (at mean levels of local associations). Likewise, the coefficient of decentralization indicates whether administrative or political decentralization is associated with population health (at mean levels of voluntary associations and health aid). Correspondingly, the evidence presented in Table 23 (Model C1) indicates that countries with autonomous regions have significantly higher levels of infant mortality (at mean levels of local associations and health aid), but do not differ regarding life expectancy. In other respects, decentralized countries do not show significant differences in levels of population health compared to their centralized counterparts.

The significant negative interaction coefficient DAH#CLUBS replicates the identified synergistic effects of associational membership and health aid in centralized countries (Table 23), which can also be visually detected by the negative (solid) sloping lines in Figure 43.[283] Hence, associational membership enhances the negative marginal effect of health aid in centralized countries.[284] This raises the question whether the identified joint effect of associational involvement, and health aid significantly *differs* between decentralized and non-decentralized countries. The LDV and GMM estimates reported in Table 23 provide evidence that the joint effect significantly differs between countries with and without *locally elected provincial or state governments* (Models A1 and A3). This can be visually detected by the (solid) negatively sloped, marginal effect line of *centralized* countries and the (dashed) positively sloped, marginal effect line of *decentralized* countries (Figure 43, Model A1; Figure C 18, Model A3). Accordingly, the figures show that only in *centralized* countries voluntary associations significantly enhance the effectiveness of health aid. By contrast, in politically *decentralized* countries in which state or provincial governments are locally elected, the synergistic interaction effects of associational involvement and health aid dissolve. Checking the robustness of the results Figure 44 and Figure C 19 display the marginal effect of increased health aid on *life expectancy.* Correspondingly, the direction of the identified relationship is replicated–as indicated by the (solid) positively sloped marginal effect line for decentralized countries–but the difference between decentralized and centralized countries fails to be statistically significant. This is indicated by the small differences in slope and the insignificant three-way interaction coefficient in Table 24.

The evidence suggests that political decentralization matters whereas administrative decentralization does not appear to influence the joint effects of structural social capital and health aid. In particular, in contrast to the hypothesized beneficial effect of decentralization, voluntary associations appear to enhance the effectiveness of health aid only in politically *centralized* countries in which state or provincial governments are *not* locally elected. However, federalism or the existence of regions that are constitutionally designated as autonomous show no significant influence on the joint effect of associational involvement and health aid. Likewise, administrative decentralization in the form of extensive taxing, spending or regulatory authority of subnational governments plays no vital role.

[283] If decentralization equals zero (W=0), the coefficient reflects the slope of the marginal effect line.

[284] At low levels of associational involvement the marginal effect of health aid reverses, although this effect is statistically significant only for a negligible share of observations that have deficient levels of structural social capital.

Table 23: Associational membership and the marginal effect of DAH on IMR in the context of decentralization

	Dependent variable: infant mortality ratio											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	-0.00471	-0.00398	0.0131	-0.00434	1.03e-05	-0.0130	-0.000495	0.00283	-0.0116	-0.00511	0.00166	-0.0190**
	(0.00865)	(0.00996)	(0.0240)	(0.00891)	(0.00858)	(0.0162)	(0.00498)	(0.00534)	(0.0116)	(0.00608)	(0.00543)	(0.00946)
DECENTRAL	0.0200	0.00292	0.0643	0.0276	-0.0202	0.155	0.0539***	-0.00173	0.111**	0.0324*	0.141	0.139
	(0.0144)	(0.0396)	(0.0447)	(0.0264)	(0.133)	(0.149)	(0.0101)	(0.0663)	(0.0524)	(0.0185)	(0.155)	(0.111)
log DAH# DECENTRAL	0.00937	-0.00517	-0.00941	0.0191*	0.0203	-0.00604	-0.00591	-0.0169	0.0106	0.00963	0.0112	0.0379
	(0.00973)	(0.0125)	(0.0212)	(0.00992)	(0.0219)	(0.0259)	(0.00859)	(0.0154)	(0.0182)	(0.00957)	(0.0216)	(0.0543)
CLUBS	0.122	-0.158	-0.0149	0.274**	-0.278	0.141	0.0558	-0.109	-0.0244	0.0248	-0.184	0.0287
	(0.133)	(0.196)	(0.463)	(0.126)	(0.223)	(0.313)	(0.0718)	(0.124)	(0.241)	(0.0617)	(0.118)	(0.153)
log DAH#CLUBS	-0.321***	0.0565	-0.600**	-0.0984	-0.0797	-0.0693	-0.148**	0.0155	-0.158	-0.139***	0.00915	-0.218
	(0.119)	(0.112)	(0.277)	(0.142)	(0.118)	(0.184)	(0.0596)	(0.0529)	(0.118)	(0.0525)	(0.0489)	(0.146)
CLUBS# DECENTRAL	-0.0635	-0.00124	0.501	-0.404	1.126*	-0.417	-0.309***	-0.823**	-0.401	-0.439***	-0.729	-1.074
	(0.137)	(0.240)	(0.512)	(0.317)	(0.577)	(1.110)	(0.115)	(0.324)	(0.367)	(0.124)	(0.791)	(1.019)
log DAH#CLUBS# DECENTRAL	0.386***	-0.115	0.741**	-0.160	-0.526	0.291	-0.0106	-0.128	0.0571	0.0168	-0.218	-0.114
	(0.130)	(0.132)	(0.319)	(0.222)	(0.427)	(0.596)	(0.104)	(0.124)	(0.190)	(0.130)	(0.325)	(0.975)
EXPEND	-0.00334	0.00182	-0.000811	3.63e-05	0.000799	0.00826	-0.00215	0.00134	-0.00423	-0.00265	0.00211	-0.00846
	(0.00239)	(0.00334)	(0.00449)	(0.00259)	(0.00500)	(0.00650)	(0.00221)	(0.00304)	(0.00622)	(0.00229)	(0.00308)	(0.00766)
log FERTIL	0.0520	0.421***	0.0155	0.0759	0.453***	-0.0102	0.0602**	0.449***	0.0918	0.0316	0.399***	0.0166
	(0.0330)	(0.0943)	(0.0934)	(0.0468)	(0.126)	(0.155)	(0.0280)	(0.0753)	(0.143)	(0.0282)	(0.0760)	(0.0851)
log POP	-0.0123**	0.0693**	-0.0256*	-0.0102	0.107**	-0.0264	-0.00605	0.0655**	-0.0161	-0.00959	0.0601*	-0.0305**
	(0.00621)	(0.0335)	(0.0151)	(0.0129)	(0.0536)	(0.0556)	(0.00522)	(0.0281)	(0.00991)	(0.00663)	(0.0318)	(0.0137)
log GDP	-0.0203	-0.366***	-0.0454	-0.0482**	-0.445***	-0.196	-0.00883	-0.380***	0.0302	-0.0228	-0.390***	-0.0379
	(0.0157)	(0.0463)	(0.0561)	(0.0238)	(0.0677)	(0.120)	(0.0135)	(0.0400)	(0.0397)	(0.0150)	(0.0413)	(0.0568)
log HIV	0.0150**	0.0752***	0.00396	0.00243	0.0292	0.00757	0.0169***	0.0680***	0.00772	0.0175***	0.0632***	0.0170
	(0.00756)	(0.0269)	(0.0195)	(0.0119)	(0.0379)	(0.0430)	(0.00626)	(0.0209)	(0.0111)	(0.00675)	(0.0212)	(0.0158)
(lagged) IMR	0.964***		0.983***	0.931***		0.854***	0.966***		1.042***	0.973***		0.992***
	(0.0267)		(0.0766)	(0.0572)		(0.147)	(0.0243)		(0.0843)	(0.0250)		(0.0844)
TREND		-0.133***			-0.128***			-0.130***			-0.130***	
		(0.0141)			(0.0193)			(0.0124)			(0.0125)	
Constant	0.332	5.272***	0.670	0.574*	5.147***	2.298	0.108	5.414***	-0.348	0.300	5.604***	0.764
	(0.204)	(0.698)	(0.617)	(0.304)	(1.158)	(1.886)	(0.184)	(0.586)	(0.558)	(0.214)	(0.660)	(0.874)
Observations	183	183	183	100	100	100	219	219	219	218	218	218
R-squared	0.987			0.989			0.987			0.987		
Countries	55	55	55	28	28	28	68	68	68	67	67	67
Instruments			67			64			68			63
Hansen-Test			0.838			1			0.350			0.459

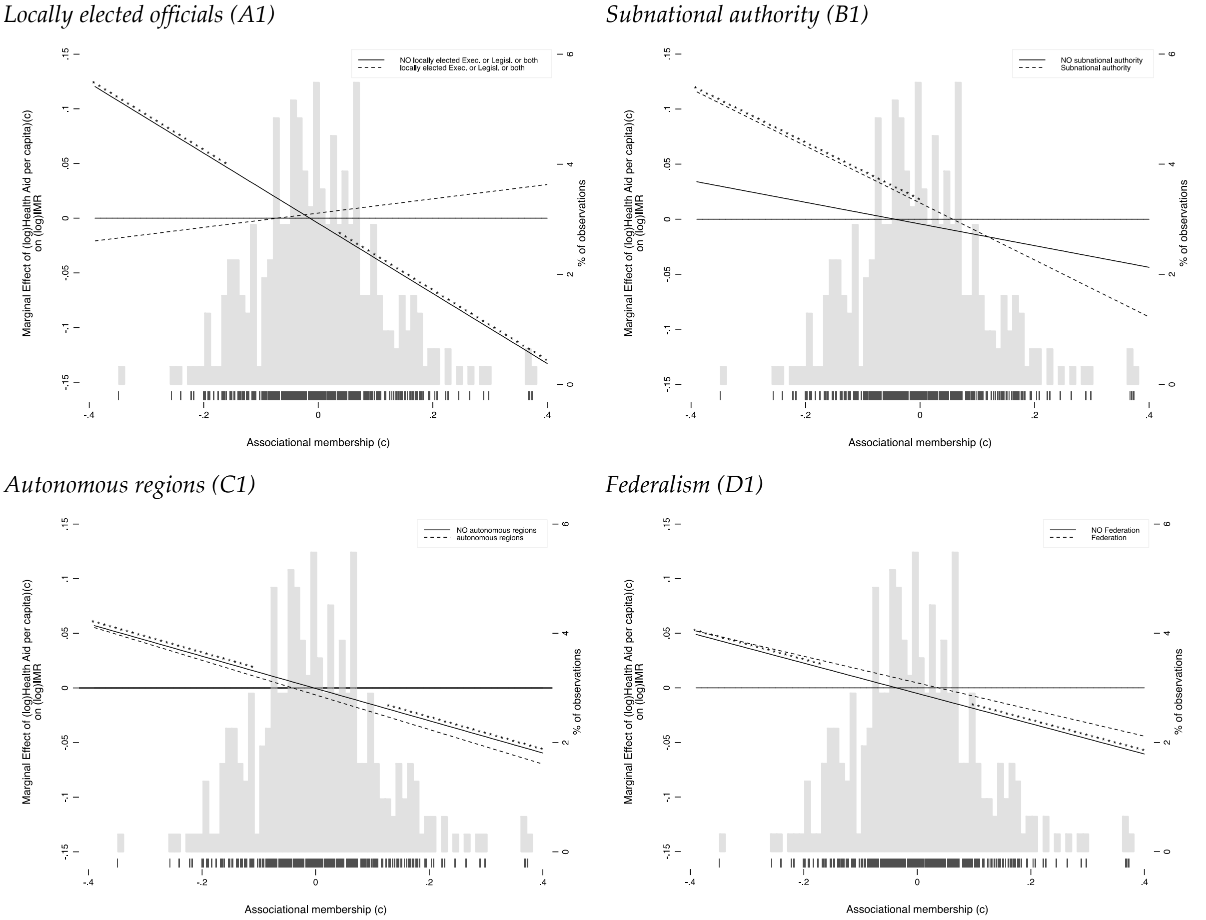
Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table 24: Associational membership and the marginal effect of DAH on LIFE in the context of decentralization

	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	0.00247	-0.00118	0.000482	0.00380**	-0.000471	-0.000250	0.00191*	-0.00104	-0.000715	0.00343***	-0.000900	0.00355
	(0.00214)	(0.00269)	(0.00582)	(0.00158)	(0.00214)	(0.00281)	(0.00104)	(0.00150)	(0.00219)	(0.00129)	(0.00151)	(0.00229)
DECENTRAL	-0.000468	0.00222	-0.00659	-0.0108*	-0.0165	-0.0124	-0.00316	-0.00104	0.00613	-0.00196	0.00600	-0.000575
	(0.00426)	(0.00982)	(0.0128)	(0.00589)	(0.0282)	(0.0248)	(0.00366)	(0.0157)	(0.0128)	(0.00501)	(0.0307)	(0.0128)
log DAH# DECENTRAL	-0.000251	0.00278	0.00229	-0.00553***	-0.000334	-0.00255	0.00306	0.00467	0.00527	-0.00243	0.00143	-0.00526
	(0.00242)	(0.00336)	(0.00638)	(0.00198)	(0.00520)	(0.00902)	(0.00224)	(0.00420)	(0.00664)	(0.00251)	(0.00589)	(0.00771)
CLUBS	0.0588*	0.0822*	0.0930	0.000948	0.0433	0.0387	0.0349**	0.0232	0.0887**	0.0195	0.0250	0.0368
	(0.0327)	(0.0498)	(0.0835)	(0.0238)	(0.0525)	(0.129)	(0.0160)	(0.0330)	(0.0451)	(0.0124)	(0.0308)	(0.0295)
log DAH#CLUBS	0.0441	0.0190	-0.0311	0.0376*	0.0194	0.0176	0.0228	0.00293	-0.00150	0.0336**	-0.000164	0.0301
	(0.0309)	(0.0298)	(0.0605)	(0.0206)	(0.0298)	(0.0373)	(0.0148)	(0.0149)	(0.0259)	(0.0132)	(0.0136)	(0.0307)
CLUBS# DECENTRAL	-0.0457	-0.0794	-0.122	-0.0619	-0.171	0.0491	-0.0283	0.0433	-0.141	0.0920**	0.139	0.210
	(0.0353)	(0.0603)	(0.120)	(0.0876)	(0.131)	(0.209)	(0.0375)	(0.0819)	(0.0863)	(0.0378)	(0.170)	(0.171)
log DAH#CLUBS# DECENTRAL	-0.0377	-0.0169	0.0247	0.00380	0.0300	-0.0505	-0.00133	0.0121	-0.00766	-0.0192	0.0390	-0.0169
	(0.0337)	(0.0350)	(0.0611)	(0.0518)	(0.0979)	(0.251)	(0.0230)	(0.0338)	(0.0845)	(0.0390)	(0.0918)	(0.192)
EXPEND	0.00161***	-8.18e-05	0.00264**	0.00113**	-0.00124	0.000827	0.00150***	-0.000242	0.00242**	0.00158***	-0.000391	0.00273***
	(0.000485)	(0.000863)	(0.00115)	(0.000518)	(0.00121)	(0.00290)	(0.000454)	(0.000798)	(0.000957)	(0.000464)	(0.000801)	(0.00105)
log FERTIL	0.0111	-0.0270	0.0282	0.0139**	-0.0224	0.00970	0.00376	-0.0453**	0.0106	0.00462	-0.0451**	0.000948
	(0.00964)	(0.0215)	(0.0231)	(0.00641)	(0.0267)	(0.0309)	(0.00690)	(0.0188)	(0.0159)	(0.00689)	(0.0187)	(0.0106)
log POP	0.00273	-0.00187	0.00271	0.00506**	0.00585	0.0138	0.00218	-0.00177	0.000376	0.00280	-0.00218	0.00313
	(0.00170)	(0.00638)	(0.00493)	(0.00248)	(0.0115)	(0.0160)	(0.00154)	(0.00566)	(0.00308)	(0.00185)	(0.00619)	(0.00345)
log GDP	0.00526	0.0425***	0.0224*	0.00706	0.0597***	0.0188	0.00151	0.0458***	0.00626	0.00251	0.0449***	0.00138
	(0.00486)	(0.0103)	(0.0136)	(0.00527)	(0.0144)	(0.0390)	(0.00441)	(0.00926)	(0.00782)	(0.00425)	(0.00948)	(0.00581)
log HIV	-0.0154***	-0.0521***	-0.0230***	-0.0129***	-0.0389***	-0.0105	-0.0137***	-0.0462***	-0.0193***	-0.0146***	-0.0465***	-0.0173***
	(0.00280)	(0.00571)	(0.00727)	(0.00398)	(0.00807)	(0.0162)	(0.00242)	(0.00478)	(0.00459)	(0.00246)	(0.00484)	(0.00348)
(lagged) LIFE	0.868***		0.718***	0.869***		0.816***	0.873***		0.780***	0.870***		0.836***
	(0.0377)		(0.0892)	(0.0537)		(0.191)	(0.0366)		(0.0645)	(0.0354)		(0.0515)
TREND		0.0157***			0.0119***			0.0169***			0.0167***	
		(0.00272)			(0.00367)			(0.00257)			(0.00257)	
Constant	0.430***	3.795***	0.877***	0.381*	3.574***	0.372	0.459***	3.787***	0.816***	0.451***	3.802***	0.586***
	(0.140)	(0.145)	(0.294)	(0.203)	(0.251)	(0.639)	(0.133)	(0.127)	(0.220)	(0.133)	(0.139)	(0.185)
Observations	183	183	183	100	100	100	219	219	219	218	218	218
R-squared	0.975			0.982			0.977			0.977		
Countries	55	55	55	28	28	28	68	68	68	67	67	67
Instruments			67			64			68			63
Hansen-Test			0.825			1			0.534			0.592

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

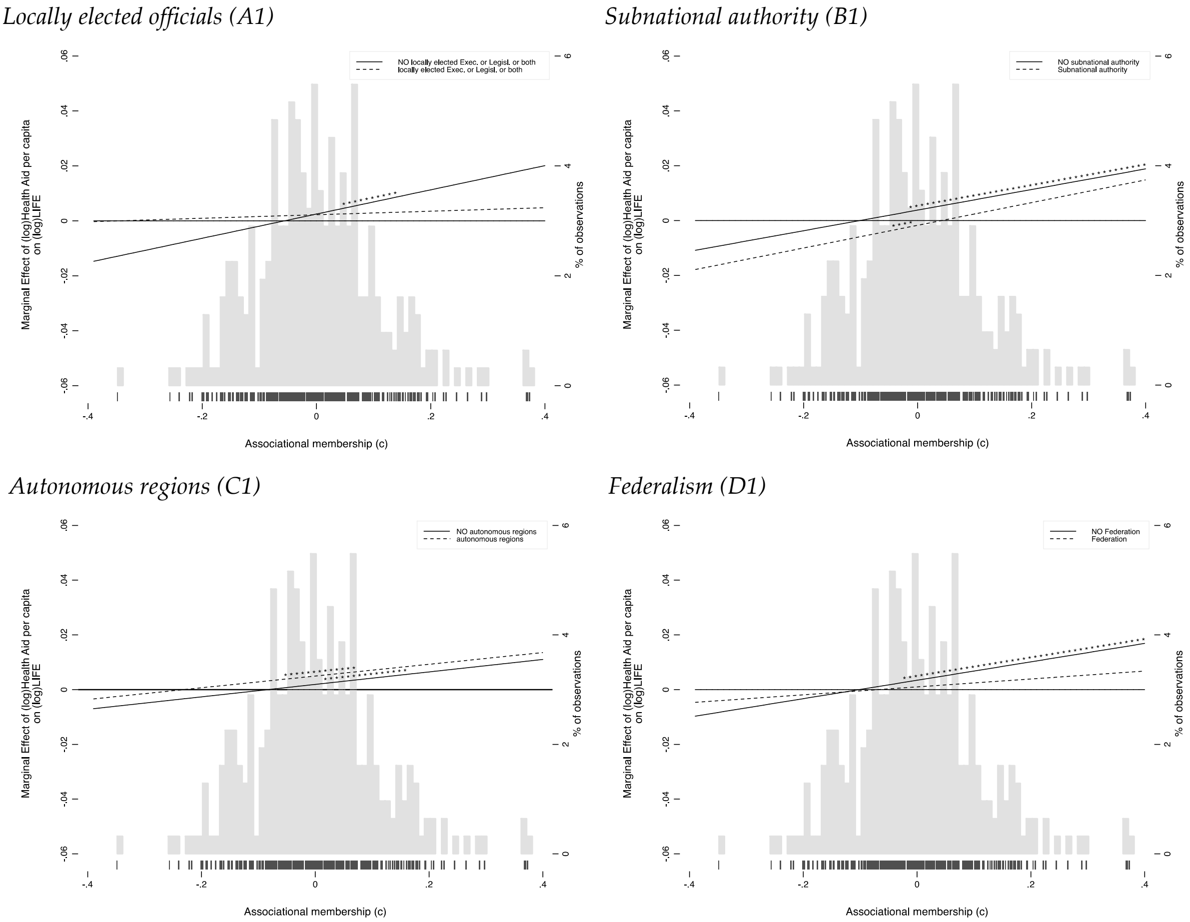
Figure 43: Associational membership and the marginal effect of DAH *on* IMR *in the context of decentralization*



Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

Testing an alternative measure of associational membership from the WVS produces qualitatively similar and even less ambiguous results for a smaller subsample of recipient countries (Table C 7 and Table C 8). The main effect of health aid in centralized countries is significantly negative at *mean* levels of membership in voluntary associations while decentralization - all else being equal - is associated with lower levels of population health (Table C 7). The identified joint effect of voluntary involvement and health aid is confirmed in the RCM and LDV estimation. Accordingly, both Figure 45 and Figure 46 show that the effectiveness of health aid increases at higher levels of associational involvement. At the same time, there is also evidence that the joint effect differs significantly between decentralized and centralized countries as indicated by the three-way interaction coefficient, which is statistically significant at the 90 percent level or higher (Models A1, B2, and D1).

Figure 44: Associational membership and the marginal effect of DAH *on* LIFE *in the context of decentralization*



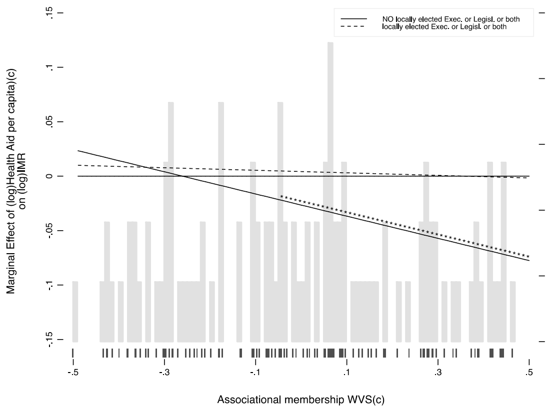
Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

This can also be visually detected by the diverging (solid) marginal effect lines of *centralized* countries, which are significantly different from zero at mean and high levels of membership, in contrast to the (dashed) sloping lines of decentralized countries that are somewhat flat and statistically insignificant (Figure 45).[285] Likewise, the RCM estimates (Model B2) cast further doubts that extensive taxing, spending or regulatory authority of subnational governments provide fertile ground for community participation and improved public service delivery. Specifically, the joint effect of associational involvement and health aid is positively associated with life expectancy only in *centralized* countries (Table C 8). In other words, compared to sub-national governments with extensive authority health aid is more effective in *centralized* countries.

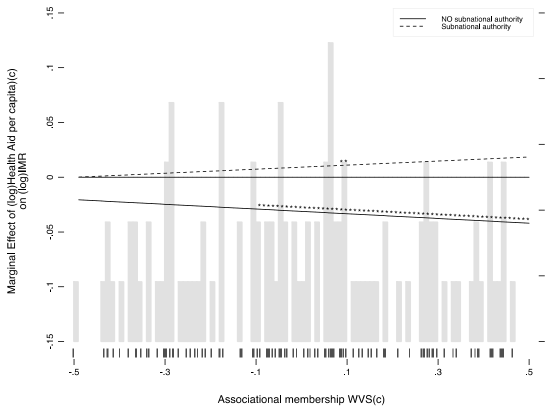
[285] Furthermore, according to Model D1, the estimate suggest that the (in)effectiveness of health aid in federal states does not differ across varying levels of associational involvement.

Figure 45: Associational membership and the marginal effect of DAH *on* IMR *in the context of decentralization II*

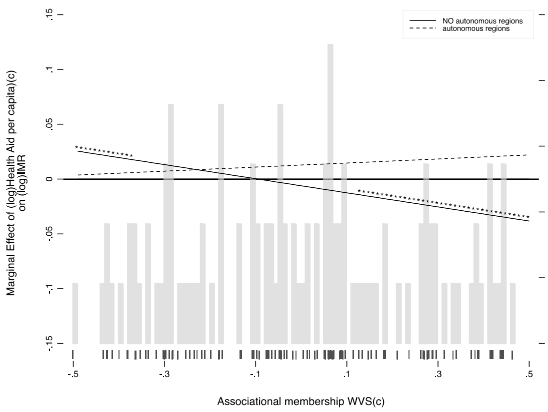
Locally elected officials (A1)



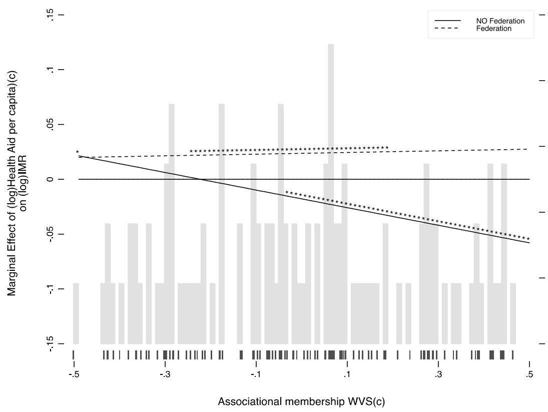
Subnational authority (B1)



Autonomous regions (C1)



Federalism (D1)

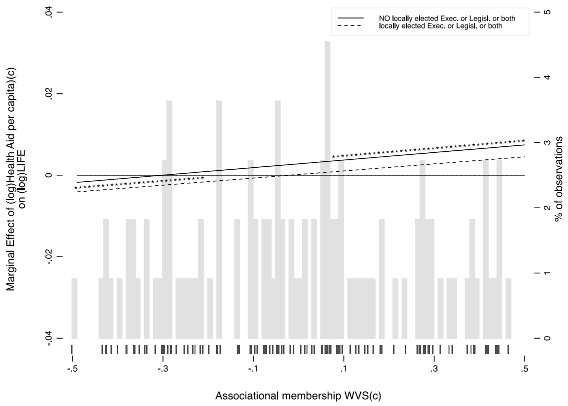


Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Data: WVS.

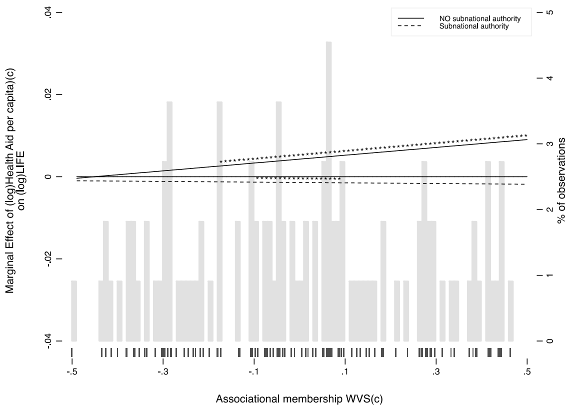
In sum, there is no evidence that political and administrative decentralization increase the effectiveness of health aid. Instead, decentralization undermines the synergistic interaction between community ties and health aid. In particular, state or provincial governments that are locally elected are likely to impede the enhancing effects of associational involvement. Thus, the joint effects of participation in voluntary associations and health aid on population health are larger in *centralized* countries.

Figure 46: Associational membership and the marginal effect of DAH *on* LIFE *in the context of decentralization II*

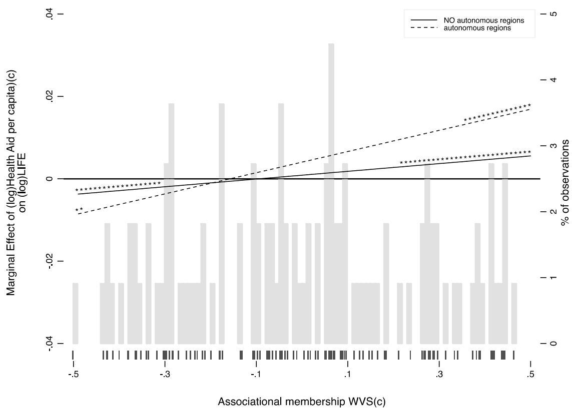
Locally elected officials (A1)



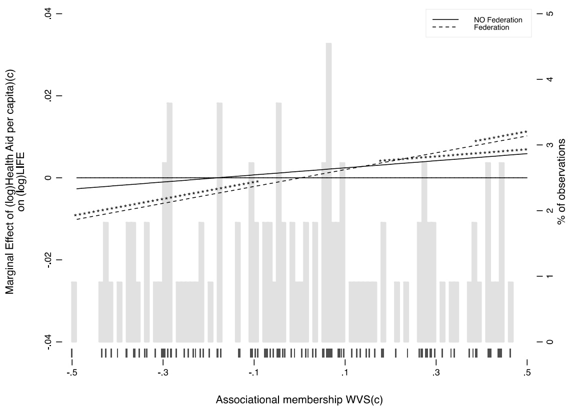
Subnational authority (B1)



Autonomous regions (C1)



Federalism (D1)



Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Data: WVS.

Summarizing, this sub-chapter analyzed whether formal institutions of democratic governance and decentralization influence the enhancing effects of associational involvement and health aid on population health. The results of the LDV model are to be interpreted with caution as only the GMM model adequately accounts for potential endogeneity issues. However, the GMM model produces higher standard errors as the result of applying instrumental variable regression. Nevertheless, both estimators mostly imply similar interaction patterns. Specifically, the analysis brought about the following findings. First, there is little evidence that the enhancing effect of voluntary associations is systematically influenced by the quality of bureaucratic governance. In other words, the enhancing effect of voluntary associations does not significantly differ between patronage and bureaucratic states. Instead, citizens' associational involvement is likely to complement health aid in the provision of public goods regardless of state capacity. This can be deduced from the finding that voluntary associations unfold their synergistic effects even in countries in which public authorities lack accountability to citizens. Hence, strong civil society appears to enhance the effectiveness of health aid in both patronage and bureaucratic states.

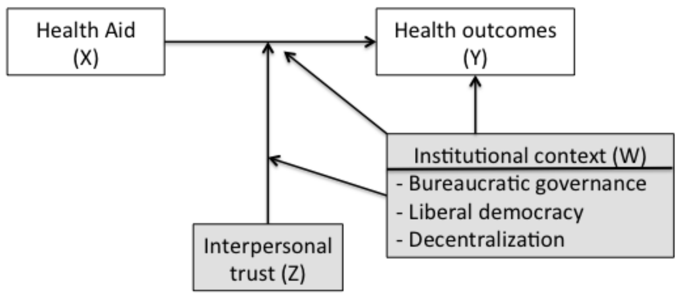
Second, there is indication that the enhancing effects of associational involvement and health aid are particularly strong in non-democratic countries. More specifically, health aid improves population health most effectively if community ties are strong and democratic institutions are weak. In other words, voluntary associations appear to compensate a lack of democratic institutions and contribute to the effectiveness of health aid when civil and political rights are not guaranteed. By contrast, in consolidated democracies, the joint effect of community ties and health aid turns insignificant.

Third, decentralization—especially political decentralization in the form of locally elected state or provincial governments—undermines the enhancing effects of associational involvement and health aid. Hence, reducing the distance between citizens and public officials weakens the synergistic interaction relationship between community ties and health aid. In other words, the effectiveness of health aid is larger in *centralized* countries with strong community ties.

5.3.2 Social trust in political context

Testing the proposition that social trust enhances the effectiveness of health aid provided little evidence of a significant interaction relationship. However, in light of the theoretical considerations, formal institutions are expected to influence the effect of trust. Hence, to analyze whether political context conditions the joint effect of social trust and health aid on population health the next sub-section inspects the role of governments' administrative capacities, the quality of democracy and the degree of decentralization (Figure 47).

Figure 47: Explanatory model of health aid effectiveness and social trust in political contexts



Bureaucratic governance and social trust

States' capacity to make collectively binding decisions that are legitimized and administered accordingly, is expected to increase the responsiveness of public officials and thus to enhance the joint effect of social trust—which enables citizens to engage in collective action—and health aid. Subsequently, development assistance is hypothesized to improve population health especially in recipient countries with high stocks of social trust *and* high state capacity. To test the posited interaction pattern Table 25 and Table 26 report the parameter estimates of regressing population health on bureaucratic governance, social trust and health aid (and their respective joint effects).

Specifically, the main effect of health aid is insignificant, which indicates that health aid does not influence population health at mean levels of cultural social capital and bureaucratic governance except for Model A3. The main effect of state capacity on population health (at mean levels of trust and health aid) is significant and confirmed by both GMM and RCM estimation (Models A1, A3, B2, C2, and D3). Conversely, the first order coefficient of TRUST fails to be statistically significant. Again, the control variables show the expected signs: government health expenditures and GDP per capita are positively associated with population health, while higher HIV prevalence and higher fertility increase levels of mortality and reduce life expectancy. Moreover, larger countries show significantly lower mortality ratios than smaller ones.

The joint effect of trust and health aid (DAH#TRUST) on infant mortality (at mean levels of institutional context) appears to be significantly positive in the LDV models (B1, C1, and D1) indicating an antagonistic interaction pattern. The effect on life expectancy is statistically insignificant. Likewise, the insignificant DAH#GOV coefficient suggests that at mean levels of trust the joint effect of health aid and administrative capacity is not significantly different from zero. Furthermore, the results presented in Table 25 and Table 26 provide little evidence that trust and bureaucratic governance interact (TRUST#GOV) EXCEPT for Model C1 (Table 25) and Models A2 and D2 (Table 26). Moreover, the LDV estimates imply a significant three-way interaction term (DAH#TRUST#GOV) in Models A1-D1 indicating that the joint effect of trust and health aid on infant mortality differs between bureaucratic and patronage states (Table 25). This finding is also partly supported by GMM estimation (Models A3 and B3), which is significant at the 90 percent level.

Table 25: Trust and the marginal effect of DAH on IMR in the context of bureaucratic governance

	Dependent variable: infant mortality ratio											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Voice & accountability (WBGI)			Control of corruption (WBGI)		
log DAH	-0.00974*	0.000621	-0.0219**	-0.00687	0.000648	-0.00879	-0.00589	4.81e-05	-0.0213	-0.00943*	-0.000131	-0.0219*
	(0.00516)	(0.00502)	(0.00956)	(0.00527)	(0.00508)	(0.00869)	(0.00444)	(0.00492)	(0.0139)	(0.00502)	(0.00478)	(0.0126)
GOV	-0.0278**	-0.0420	-0.0787**	-0.0904	-0.249**	-0.158	0.00826	-0.0863***	0.0113	-0.0217*	-0.0343	-0.0541**
	(0.0131)	(0.0339)	(0.0392)	(0.0691)	(0.124)	(0.229)	(0.0110)	(0.0297)	(0.0308)	(0.0122)	(0.0293)	(0.0265)
log DAH#GOV	-0.00117	-0.00978	-0.00542	-0.0284	-0.0119	-0.0924	0.000742	-0.00753	0.00401	-0.00269	-0.0126*	0.00174
	(0.00611)	(0.00763)	(0.0103)	(0.0319)	(0.0420)	(0.0765)	(0.00482)	(0.00621)	(0.0155)	(0.00632)	(0.00724)	(0.0173)
TRUST	-0.0871	-0.0630	0.0459	-0.0276	0.0329	-0.137	-0.130*	-0.0199	-0.274	-0.104	-0.0356	-0.0799
	(0.0847)	(0.0889)	(0.212)	(0.0820)	(0.0953)	(0.236)	(0.0764)	(0.0907)	(0.212)	(0.0784)	(0.0875)	(0.191)
log DAH#TRUST	0.0662*	0.0600	0.0408	0.127***	0.105**	0.159*	0.0908***	0.0177	0.100	0.0831**	0.0541	0.0544
	(0.0370)	(0.0481)	(0.0541)	(0.0478)	(0.0534)	(0.0967)	(0.0287)	(0.0452)	(0.0915)	(0.0374)	(0.0471)	(0.108)
TRUST#GOV	0.129	-0.183	0.462*	0.923	0.204	0.763	0.180**	-0.0285	0.380*	0.0427	-0.223	0.418
	(0.0929)	(0.138)	(0.268)	(0.569)	(0.894)	(1.393)	(0.0821)	(0.129)	(0.200)	(0.108)	(0.151)	(0.273)
log DAH#TRUST#GOV	0.199***	0.0154	0.227*	0.860***	-0.215	0.895*	0.124***	0.0938	0.174	0.202***	0.0419	0.188
	(0.0473)	(0.0732)	(0.124)	(0.239)	(0.385)	(0.536)	(0.0400)	(0.0621)	(0.183)	(0.0527)	(0.0742)	(0.197)
EXPEND	-0.00294*	0.00318	-0.00265	-0.00207	0.00449	-0.000721	-0.00400**	0.00268	-0.00472	-0.00304*	0.00308	-0.00295
	(0.00174)	(0.00300)	(0.00311)	(0.00150)	(0.00320)	(0.00485)	(0.00179)	(0.00300)	(0.00466)	(0.00172)	(0.00296)	(0.00388)
log FERTIL	0.0394*	0.428***	0.0879*	0.0358	0.462***	0.0505	0.0348*	0.437***	0.0779	0.0435**	0.420***	0.0886*
	(0.0208)	(0.0683)	(0.0488)	(0.0228)	(0.0738)	(0.0657)	(0.0210)	(0.0678)	(0.0730)	(0.0206)	(0.0678)	(0.0520)
log POP	-0.0168***	0.00372	-0.0312***	-0.00974*	0.0500	-0.00840	-0.0121***	-0.000504	-0.0200**	-0.0146***	0.00681	-0.0256***
	(0.00398)	(0.0274)	(0.00813)	(0.00503)	(0.0312)	(0.0103)	(0.00402)	(0.0260)	(0.00865)	(0.00395)	(0.0272)	(0.00812)
log GDP	-0.00835	-0.324***	0.00658	-0.0135	-0.323***	0.0400	-0.0199**	-0.324***	0.0222	-0.0121	-0.327***	-0.00359
	(0.00833)	(0.0377)	(0.0262)	(0.0113)	(0.0402)	(0.0390)	(0.00976)	(0.0354)	(0.0322)	(0.00882)	(0.0370)	(0.0403)
log HIV	0.0151***	0.0572***	0.00552	0.00960	0.0532**	-0.00563	0.00973*	0.0556***	-0.0106	0.0140***	0.0585***	-0.00120
	(0.00564)	(0.0195)	(0.0136)	(0.00632)	(0.0224)	(0.00887)	(0.00585)	(0.0192)	(0.00911)	(0.00539)	(0.0194)	(0.0109)
(lagged) IMR	0.980***		0.992***	0.984***		1.067***	0.986***		1.063***	0.977***		0.999***
	(0.0164)		(0.0497)	(0.0187)		(0.0514)	(0.0160)		(0.0644)	(0.0171)		(0.0521)
TREND		-0.120***			-0.126***			-0.118***			-0.119***	
		(0.0111)			(0.0126)			(0.0110)			(0.0111)	
Constant	0.286**	5.980***	0.264	0.184	5.132***	-0.629	0.283*	6.044***	-0.266	0.290**	5.961***	0.229
	(0.144)	(0.563)	(0.373)	(0.178)	(0.650)	(0.552)	(0.146)	(0.540)	(0.463)	(0.144)	(0.562)	(0.463)
Observations	266	266	266	227	227	227	266	266	266	266	266	266
R-squared	0.989			0.989			0.988			0.988		
Countries	92	92	92	75	75	75	92	92	92	92	92	92
Instruments			65			69			65			65
Hansen-Test			0.749			0.315			0.138			0.257

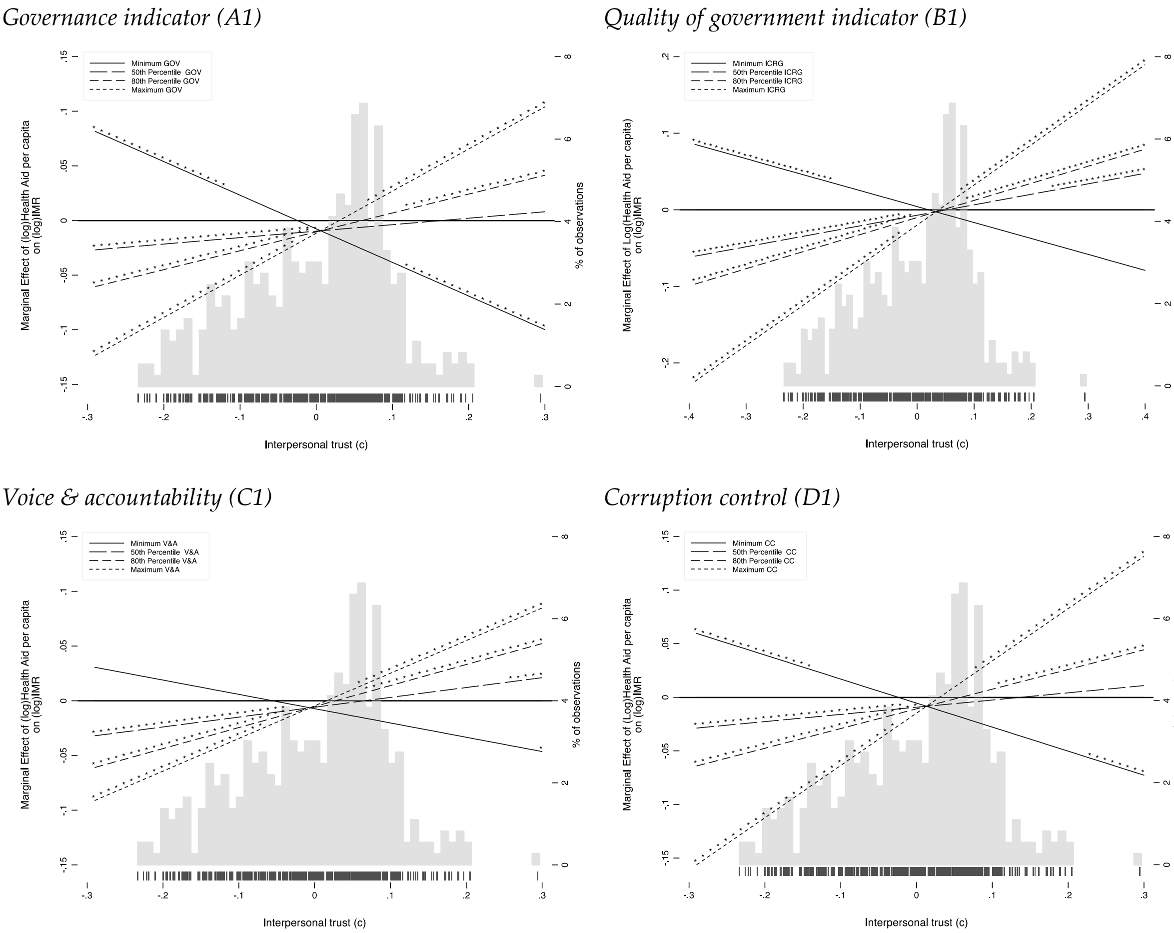
Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table 26: Trust and the marginal effect of DAH on LIFE in the context of bureaucratic governance

	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	S1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Voice & accountability (WBGI)			Control of corruption (WBGI)		
log DAH	0.00175*	-0.00110	0.000820	0.000988	0.000195	-0.000563	0.000858	-0.00121	-0.00104	0.00149	-0.000979	-4.91e-05
	(0.00103)	(0.00132)	(0.00202)	(0.000910)	(0.00131)	(0.00193)	(0.000929)	(0.00129)	(0.00257)	(0.00102)	(0.00125)	(0.00272)
GOV	0.00250	0.0130*	0.00847	0.0226	0.0696**	0.0808**	0.00249	0.0166**	0.000637	0.00135	0.0137**	0.00802
	(0.00298)	(0.00771)	(0.00694)	(0.0147)	(0.0305)	(0.0350)	(0.00277)	(0.00646)	(0.00460)	(0.00300)	(0.00674)	(0.00683)
log DAH#GOV	-0.00140	0.000382	0.000720	0.00165	0.00278	0.0194*	-0.00110	0.00132	-5.81e-05	-0.00109	0.000613	0.00252
	(0.00136)	(0.00194)	(0.00317)	(0.00635)	(0.0102)	(0.0113)	(0.00109)	(0.00158)	(0.00237)	(0.00139)	(0.00187)	(0.00280)
TRUST	0.0245	0.0342	-0.00179	-0.00365	0.000107	-0.0181	0.0255	0.0173	0.0128	0.0255	0.0228	0.00584
	(0.0174)	(0.0233)	(0.0440)	(0.0171)	(0.0251)	(0.0434)	(0.0170)	(0.0235)	(0.0312)	(0.0175)	(0.0228)	(0.0335)
log DAH#TRUST	0.00543	-0.00286	0.00177	-0.00518	-0.0132	-0.00617	-0.000773	0.000501	0.00441	0.00524	-0.000891	-0.00249
	(0.0104)	(0.0123)	(0.0202)	(0.00917)	(0.0136)	(0.0170)	(0.00844)	(0.0117)	(0.0159)	(0.0103)	(0.0120)	(0.0179)
TRUST#GOV	0.0261	0.0976***	0.0415	-0.0432	0.0893	0.355	-0.0129	0.0521*	-0.00166	0.0447	0.117***	0.0685
	(0.0259)	(0.0341)	(0.0470)	(0.123)	(0.221)	(0.255)	(0.0244)	(0.0314)	(0.0421)	(0.0310)	(0.0369)	(0.0606)
log DAH#TRUST#GOV	-0.0190	0.00543	-0.0215	-0.0998**	-0.0335	-0.0557	-0.00742	-0.0119	-0.0189	-0.0185	0.00186	-0.0159
	(0.0132)	(0.0187)	(0.0279)	(0.0499)	(0.0963)	(0.0951)	(0.0104)	(0.0157)	(0.0212)	(0.0141)	(0.0190)	(0.0310)
EXPEND	0.00113***	-0.000741	0.00117*	0.000807**	-0.000868	0.000843	0.00109***	-0.000656	0.00135***	0.00121***	-0.000776	0.00141**
	(0.000389)	(0.000738)	(0.000615)	(0.000355)	(0.000795)	(0.000959)	(0.000383)	(0.000742)	(0.000498)	(0.000395)	(0.000734)	(0.000708)
log FERTIL	0.00777	-0.0681***	0.0135	0.00946**	-0.0643***	0.00731	0.0101*	-0.0646***	0.0141	0.00594	-0.0703***	0.00783
	(0.00600)	(0.0154)	(0.0117)	(0.00479)	(0.0167)	(0.0103)	(0.00611)	(0.0154)	(0.00970)	(0.00551)	(0.0154)	(0.00987)
log POP	0.00214*	0.00399	0.00153	4.67e-05	-0.00339	-0.000447	0.00163	0.00417	-0.000481	0.00204*	0.00400	0.00160
	(0.00118)	(0.00490)	(0.00246)	(0.00123)	(0.00535)	(0.00182)	(0.00108)	(0.00481)	(0.00185)	(0.00117)	(0.00482)	(0.00213)
log GDP	-0.00130	0.0322***	-0.00548	-0.00378	0.0376***	-0.00842*	-0.000504	0.0350***	-0.00373	-0.00141	0.0317***	-0.00355
	(0.00274)	(0.00774)	(0.00631)	(0.00330)	(0.00840)	(0.00498)	(0.00307)	(0.00742)	(0.00531)	(0.00291)	(0.00751)	(0.00519)
log HIV	-0.0100***	-0.0409***	-0.0110***	-0.00856***	-0.0385***	-0.0101***	-0.0104***	-0.0406***	-0.0101**	-0.00978***	-0.0411***	-0.0111***
	(0.00201)	(0.00426)	(0.00364)	(0.00200)	(0.00463)	(0.00360)	(0.00215)	(0.00421)	(0.00403)	(0.00199)	(0.00422)	(0.00413)
(lagged) LIFE	0.898***		0.889***	0.916***		0.885***	0.896***		0.886***	0.897***		0.872***
	(0.0295)		(0.0512)	(0.0305)		(0.0447)	(0.0322)		(0.0634)	(0.0316)		(0.0593)
TREND		0.0172***			0.0172***			0.0166***			0.0170***	
		(0.00226)			(0.00254)			(0.00222)			(0.00222)	
Constant	0.379***	3.830***	0.471**	0.364***	3.913***	0.555***	0.390***	3.803***	0.502**	0.388***	3.837***	0.528**
	(0.115)	(0.109)	(0.205)	(0.109)	(0.126)	(0.165)	(0.124)	(0.108)	(0.236)	(0.123)	(0.109)	(0.223)
Observations	266	266	266	227	227	227	266	266	266	266	266	266
R-squared	0.975			0.981			0.975			0.975		
Countries	92	92	92	75	75	75	92	92	92	92	92	92
Instruments			65			69			65			65
Hansen-Test			0.701			0.600			0.723			0.698

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Figure 48: Social rust and the marginal effect of DAH *on* IMR *in the context of bureaucratic governance*



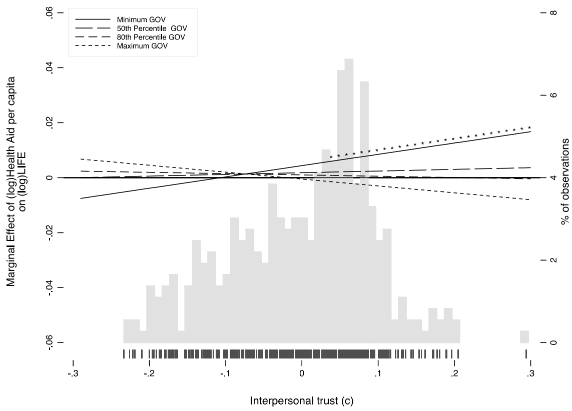
Notes: Dependent variable is infant mortality.

Correspondingly, plotting the results of the LDV models reveals considerable variation between patronage and bureaucratic states (Table 25). In particular, in bureaucratic states, the (dashed) marginal effect lines have a positive slope while in patronage states the marginal effect appears to be negative (Figure 48). Accordingly, in bureaucratic states the negative marginal effect of health aid on infant mortality is largest if missing norms of reciprocity impede collective action. Nonetheless, at higher levels of trust, the marginal effect of health aid on infant mortality weakens and even turns sign at very high levels of trust.

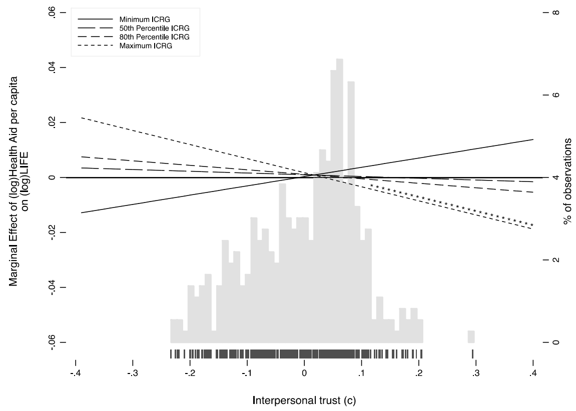
This pattern is also indicated by GMM estimation (Figure D 12). Consequently, in bureaucratic states trust and health aid appear to be substitutes, which implies that either social trust or health aid lead to lower levels of infant mortality. By contrast, in patronage states, the slope of the marginal effect line is negative but fails to be significantly different from zero except for Model A1 (Figure 48). However, the findings are not replicated using life expectancy as dependent variable (Table 26) as illustrated by the barely varying sloping lines in both LDV (Figure 49) and GMM estimation (Figure D 15).

Figure 49: Social trust and the marginal effect of DAH *on* LIFE *in the context of bureaucratic governance*

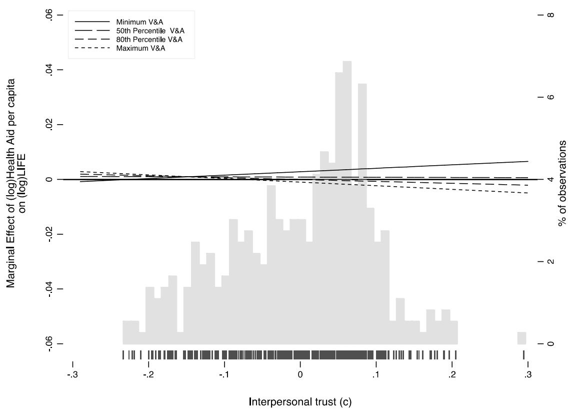
Governance indicator (A1)



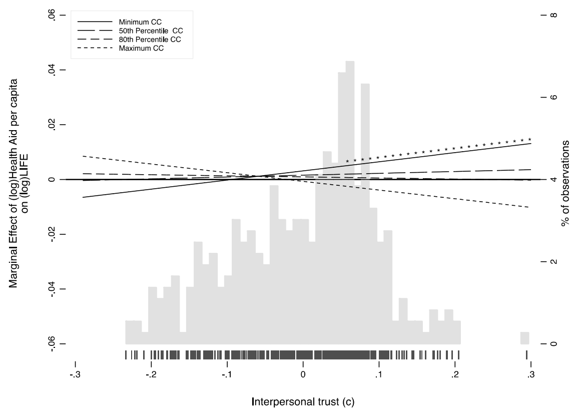
Quality of government indicator (B1)



Voice & accountability (C1)



Corruption control (D1)



Notes: Dependent variable is life expectancy.

In other words, there is no evidence that high levels of bureaucratic governance together with high trust enhance the effectiveness of health aid. Instead, high state capacity appears to be associated with an antagonistic interaction relationship between trust and health aid. Testing the indicator of generalized trust from the WVS supports the finding that state capacity and trust do *not* enhance the effectiveness of health aid. Neither the LDV nor the GMM estimates indicate a clear interaction pattern. [286] Only Model B3 supports the identified antagonistic interaction relationship between trust and health aid in bureaucratic states.

In sum, the results suggest that the joint effect of trust and health aid significantly differ between bureaucratic and patronage states. While the joint effect of health aid and trust is statistically significant in bureaucratic states, it turns insignificant in patronage states. However, there is no evidence that bureaucratic governance enhances the joint effect of trust and health aid. Instead, the results indicate that in bureaucratic states social trust and health aid are characterized by an antagonistic interaction pattern. This implies that health aid makes

[286] The parameter estimates are documented in Table D 2 and Table D 5. Figure D 22 and Figure D 23 show the marginal effect plots of the LDV model for infant mortality and life expectancy. Correspondingly, Figure D 24 and Figure D 27 display the GMM estimates.

the largest contribution to population health in bureaucratic countries with low levels of social trust. Likewise, in bureaucratic countries with high levels of generalized trust health aid only makes a minor contribution to population health. Accordingly, either trust or health aid reduces infant mortality in bureaucratic states. By contrast, in patronage states, the joint effect of trust and health aid is not statistically significant. This finding is robust to different model specifications and also confirmed using data from the WVS. Thus, high trust *and* high state capacity do not enhance the effectiveness of health aid in recipient countries.

Liberal democracy and social trust

Democratic institutions that guarantee political and civil rights and ensure the independence of the judiciary and legislature provide an enabling environment for political and social trust, which is a prerequisite for collective action. Accordingly, democratic institutions are hypothesized to enhance the joint effect of social trust and health aid. To test the posited interaction relationship Table 27 and Table 28 report the estimates of regressing population health on health aid at varying levels of social trust and democratic institutions (and their respective interactions).

The results presented in Table 27 suggest that social trust significantly reduces infant mortality (at mean levels of health aid and liberal democracy). This finding is supported by both LDV and GMM estimation, but not replicated when using life expectancy as dependent variable (Table 28). The first order coefficient of health aid (DAH) is statistically insignificant except for Models C3 and D3. Likewise, the RCM and GMM estimates indicate a significant negative (positive) effect of democratic institutions on infant mortality (life expectancy) at mean levels of trust and health aid. Moreover, the significant interaction term DAH#TRUST in the LDV model suggests an antagonistic interaction pattern between trust and health aid. By contrast, democratic institutions and health aid (DAH#DEMO) are significantly correlated. Moreover, the LDV and GMM estimates imply that the joint effect of trust and democracy (TRUST#DEMO) is significantly positive, which suggests that social trust and democratic institutions are substitutes.

To explore the interaction patterns in further detail Figure 50 (LDV) and Figure D 13 (GMM) visualize the marginal effects of health aid on infant mortality. According to the LDV model, the sloping lines vary substantially across different levels of liberal democracy (Figure 50). In particular, in democracies, the (dashed) marginal effect lines have a positive slope. By contrast in autocracies, the slope of the (solid) marginal effect lines are negative but fail to be statistically significant. Hence, the results are similar to those of state capacity. Accordingly, in democracies, the negative marginal effect of health aid on infant mortality is largest if missing norms of reciprocity impede collective action. However, as the level of trust raises the negative marginal effect of health aid on infant mortality weakens and even turns sign at very high levels of trust. Consequently, in democracies, the relationship between trust and health aid appears to be antagonistic, which implies that either trust or health aid reduce infant mortality. By contrast, under authoritarian rule, there is no significant interaction between social trust and health aid. However, this finding is not robust to different model specifications. The GMM estimates visualized in Figure D 13 indicate a similar pattern but fail to achieve conventional levels of statistical significance.

Table 27: Trust and the marginal effect of DAH on IMR in the context of liberal democracy

	Dependent variable: infant mortality ratio											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	-0.00523	0.000809	-0.0170	-0.00309	-0.000885	-0.0115	-0.00708	-0.000225	-0.0242**	-0.00573	-0.000455	-0.0263**
	(0.00447)	(0.00527)	(0.0112)	(0.00476)	(0.00542)	(0.0127)	(0.00457)	(0.00541)	(0.0106)	(0.00467)	(0.00536)	(0.0111)
DEMO	0.0311	-0.239***	0.0614	-0.000153	-0.00695**	-0.00155	-0.0272	-0.0914*	-0.162**	-0.0193	-0.0875*	-0.109
	(0.0284)	(0.0660)	(0.0797)	(0.00123)	(0.00292)	(0.00289)	(0.0351)	(0.0502)	(0.0778)	(0.0341)	(0.0515)	(0.0679)
log DAH # DEMO	0.00454	-0.0161	0.0355	-5.10e-05	-0.000619	0.00114	0.0145	-0.00299	0.0408	0.00754	-0.00239	0.0324
	(0.0135)	(0.0176)	(0.0328)	(0.000685)	(0.000846)	(0.00197)	(0.0172)	(0.0196)	(0.0281)	(0.0166)	(0.0202)	(0.0306)
TRUST	-0.129*	-0.0817	-0.234	-0.174**	-0.105	-0.408*	-0.182**	-0.161	-0.432**	-0.173**	-0.159	-0.414***
	(0.0751)	(0.0931)	(0.198)	(0.0769)	(0.0962)	(0.232)	(0.0788)	(0.115)	(0.193)	(0.0781)	(0.114)	(0.149)
log DAH #TRUST	0.0901***	0.0201	0.123*	0.0805***	0.0147	0.112	0.0619**	0.0448	0.0693	0.0581*	0.0486	0.0705
	(0.0269)	(0.0459)	(0.0692)	(0.0277)	(0.0488)	(0.0878)	(0.0316)	(0.0514)	(0.0884)	(0.0322)	(0.0510)	(0.100)
TRUST# DEMO	0.559***	0.0888	1.274***	0.0204**	0.0185	0.0669***	0.301	0.195	0.944**	0.242	0.238	0.889*
	(0.212)	(0.328)	(0.464)	(0.00894)	(0.0138)	(0.0214)	(0.270)	(0.339)	(0.425)	(0.260)	(0.346)	(0.456)
log DAH #TRUST# DEMO	0.305***	0.281*	0.247	0.0150***	0.00866	0.00804	0.328**	0.0140	0.200	0.380***	-0.0207	0.368
	(0.118)	(0.170)	(0.339)	(0.00560)	(0.00784)	(0.0188)	(0.147)	(0.188)	(0.444)	(0.141)	(0.195)	(0.444)
EXPEND	-0.00395**	0.00252	-0.00570	-0.00396**	0.00289	-0.00571	-0.00363**	0.00281	-0.00599	-0.00369**	0.00275	-0.00619
	(0.00179)	(0.00301)	(0.00505)	(0.00179)	(0.00304)	(0.00520)	(0.00178)	(0.00301)	(0.00416)	(0.00178)	(0.00300)	(0.00402)
log FERTIL	0.0324	0.425***	0.0658	0.0362*	0.424***	0.0646	0.0385*	0.404***	0.0900	0.0394*	0.406***	0.0694
	(0.0210)	(0.0679)	(0.0760)	(0.0209)	(0.0689)	(0.0737)	(0.0211)	(0.0699)	(0.0585)	(0.0212)	(0.0701)	(0.0504)
log POP	-0.0121***	0.00110	-0.0163*	-0.0121***	0.00935	-0.0162*	-0.0139***	0.0121	-0.0262***	-0.0135***	0.0119	-0.0276***
	(0.00402)	(0.0262)	(0.00864)	(0.00401)	(0.0265)	(0.00836)	(0.00396)	(0.0273)	(0.00683)	(0.00404)	(0.0273)	(0.00612)
log GDP	-0.0187*	-0.333***	0.0188	-0.0178*	-0.338***	0.0174	-0.0147	-0.334***	-0.000299	-0.0156	-0.338***	-0.00381
	(0.00966)	(0.0349)	(0.0306)	(0.00962)	(0.0352)	(0.0270)	(0.00933)	(0.0356)	(0.0262)	(0.00954)	(0.0357)	(0.0258)
log HIV	0.00946	0.0600***	-0.00923	0.00947	0.0618***	-0.00860	0.00950	0.0605***	-0.00411	0.00935	0.0601***	-0.00487
	(0.00591)	(0.0193)	(0.00876)	(0.00585)	(0.0195)	(0.00865)	(0.00593)	(0.0197)	(0.00863)	(0.00597)	(0.0198)	(0.00819)
(lagged) IMR	0.990***		1.065***	0.981***		1.042***	0.982***		0.994***	0.981***		1.011***
	(0.0158)		(0.0712)	(0.0167)		(0.0563)	(0.0157)		(0.0505)	(0.0159)		(0.0408)
TREND		-0.117***			-0.116***			-0.127***			-0.126***	
		(0.0108)			(0.0111)			(0.0119)			(0.0119)	
Constant	0.260*	6.112***	-0.277	0.288*	6.006***	-0.184	0.289**	5.985***	0.248	0.292**	6.015***	0.268
	(0.144)	(0.543)	(0.473)	(0.150)	(0.549)	(0.413)	(0.146)	(0.563)	(0.356)	(0.147)	(0.565)	(0.348)
Observations	266	266	266	266	266	266	266	266	266	265	265	265
R-squared	0.988			0.988			0.988			0.988		
Countries	92	92	92	92	92	92	92	92	92	92	92	92
Instruments			69			69			69			69
Hansen-Test			0.209			0.210			0.249			0.294

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

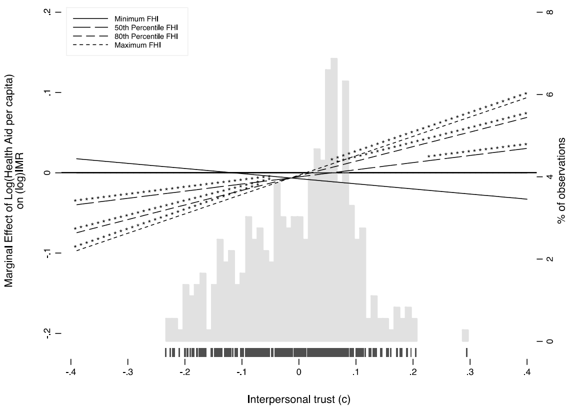
Table 28: Trust and the marginal effect of DAH on LIFE in the context of liberal democracy

	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			COALITION/SELECTORATE SIZE		
log DAH	0.000704	-0.00163	-0.00216	0.00105	-0.00131	-0.000786	0.000593	-0.00136	-0.00122	0.000958	-0.00132	9.13e-05
	(0.000955)	(0.00139)	(0.00235)	(0.00103)	(0.00142)	(0.00274)	(0.000996)	(0.00140)	(0.00248)	(0.00101)	(0.00140)	(0.00222)
DEMO	0.00556	0.0355**	0.00291	0.000461	0.00149**	0.000870	0.0286***	0.0133	0.0424**	0.0304***	0.0120	0.0409**
	(0.00718)	(0.0154)	(0.0137)	(0.000381)	(0.000689)	(0.000645)	(0.0102)	(0.0132)	(0.0211)	(0.00975)	(0.0135)	(0.0196)
log DAH # DEMO	-0.00282	0.00517	0.00263	-0.000254	0.000269	-0.000259	-0.00288	0.00321	0.00474	-0.00373	0.00336	0.000599
	(0.00323)	(0.00455)	(0.00615)	(0.000176)	(0.000220)	(0.000488)	(0.00454)	(0.00518)	(0.00572)	(0.00422)	(0.00524)	(0.00546)
TRUST	0.0255	0.0211	0.0239	0.0333*	0.0309	0.0634	0.0281	0.0291	0.0178	0.0300*	0.0282	0.0139
	(0.0170)	(0.0241)	(0.0319)	(0.0195)	(0.0252)	(0.0418)	(0.0188)	(0.0290)	(0.0362)	(0.0182)	(0.0288)	(0.0354)
log DAH #TRUST	-0.00246	0.000237	-0.00205	-0.00344	0.00156	-0.00109	-0.00298	-0.00467	0.000707	-0.00658	-0.00409	-0.00747
	(0.00841)	(0.0119)	(0.0116)	(0.00914)	(0.0125)	(0.0209)	(0.00919)	(0.0132)	(0.0162)	(0.00952)	(0.0131)	(0.0151)
TRUST# DEMO	-0.0367	0.0830	-0.0216	-0.00378	-0.00259	-0.00836	0.0559	0.0213	0.109	0.0517	0.0203	0.0999
	(0.0630)	(0.0819)	(0.115)	(0.00338)	(0.00360)	(0.00856)	(0.0845)	(0.0866)	(0.108)	(0.0800)	(0.0879)	(0.122)
log DAH #TRUST# DEMO	-0.0150	-0.0366	-0.0694	-0.000102	-0.000902	0.00168	0.0216	0.0174	-0.0251	0.0327	0.0141	-0.0264
	(0.0328)	(0.0442)	(0.0639)	(0.00186)	(0.00202)	(0.00583)	(0.0471)	(0.0496)	(0.0597)	(0.0444)	(0.0513)	(0.0679)
EXPEND	0.00110***	-0.000563	0.00157***	0.00108***	-0.000594	0.00124**	0.000933***	-0.000537	0.000984*	0.000946***	-0.000525	0.00105**
	(0.000380)	(0.000749)	(0.000554)	(0.000367)	(0.000758)	(0.000617)	(0.000359)	(0.000752)	(0.000532)	(0.000356)	(0.000753)	(0.000499)
log FERTIL	0.00992*	-0.0645***	0.0202*	0.00978	-0.0654***	0.00979	0.0108*	-0.0676***	0.0189	0.0108*	-0.0679***	0.0179
	(0.00601)	(0.0156)	(0.0114)	(0.00604)	(0.0156)	(0.00999)	(0.00617)	(0.0159)	(0.0115)	(0.00617)	(0.0160)	(0.0118)
log POP	0.00154	0.00323	-0.000992	0.00140	0.00251	0.000322	0.00174	0.00249	-0.000541	0.00202*	0.00253	0.000149
	(0.00109)	(0.00473)	(0.00215)	(0.00107)	(0.00468)	(0.00157)	(0.00106)	(0.00477)	(0.00189)	(0.00109)	(0.00478)	(0.00172)
log GDP	-0.000486	0.0360***	-0.00175	-0.000253	0.0373***	-0.00491	-0.00127	0.0360***	-0.00316	-0.00148	0.0362***	-0.00347
	(0.00297)	(0.00737)	(0.00580)	(0.00289)	(0.00733)	(0.00563)	(0.00274)	(0.00741)	(0.00545)	(0.00278)	(0.00742)	(0.00556)
log HIV	-0.0103***	-0.0414***	-0.0103**	-0.0105***	-0.0422***	-0.00885**	-0.0107***	-0.0415***	-0.0109***	-0.0108***	-0.0415***	-0.0111**
	(0.00215)	(0.00421)	(0.00414)	(0.00214)	(0.00420)	(0.00365)	(0.00217)	(0.00427)	(0.00418)	(0.00217)	(0.00428)	(0.00465)
(lagged) LIFE	0.896***		0.885***	0.891***		0.892***	0.891***		0.885***	0.892***		0.885***
	(0.0327)		(0.0582)	(0.0328)		(0.0506)	(0.0310)		(0.0516)	(0.0311)		(0.0590)
TREND		0.0162***			0.0159***			0.0172***			0.0171***	
		(0.00225)			(0.00227)			(0.00255)			(0.00255)	
Constant	0.391***	3.810***	0.485**	0.413***	3.812***	0.478***	0.412***	3.821***	0.503***	0.404***	3.820***	0.491**
	(0.128)	(0.107)	(0.213)	(0.128)	(0.107)	(0.186)	(0.120)	(0.109)	(0.185)	(0.121)	(0.110)	(0.218)
Observations	266	266	266	266	266	266	266	266	266	265	265	265
R-squared	0.975			0.975			0.976			0.976		
Countries	92	92	92	92	92	92	92	92	92	92	92	92
Instruments			69			69			69			69
Hansen-Test			0.827			0.585			0.698			0.652

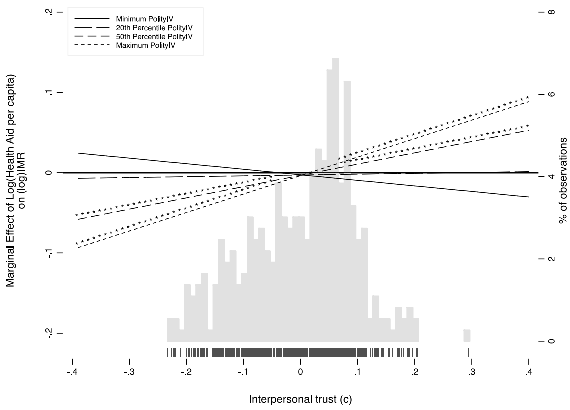
Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Figure 50: Trust and the marginal effect of DAH on IMR in the context of democracy

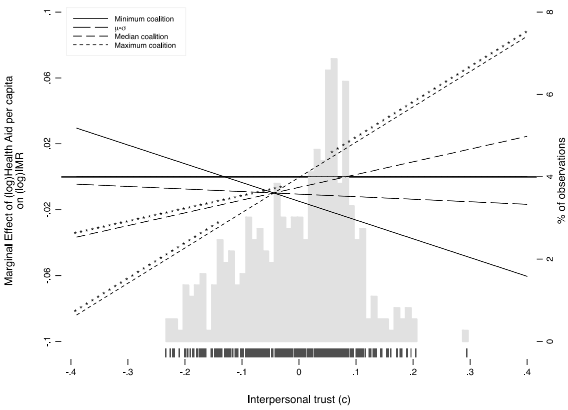
Freedom House index (A1)



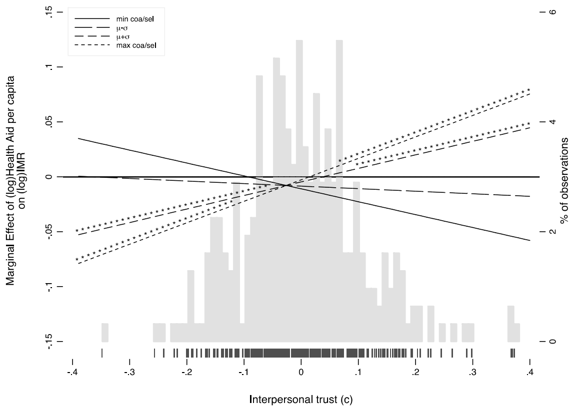
Polity IV index (B1)



Coalition size (C1)



Coalition size/Selectorate size (D1)



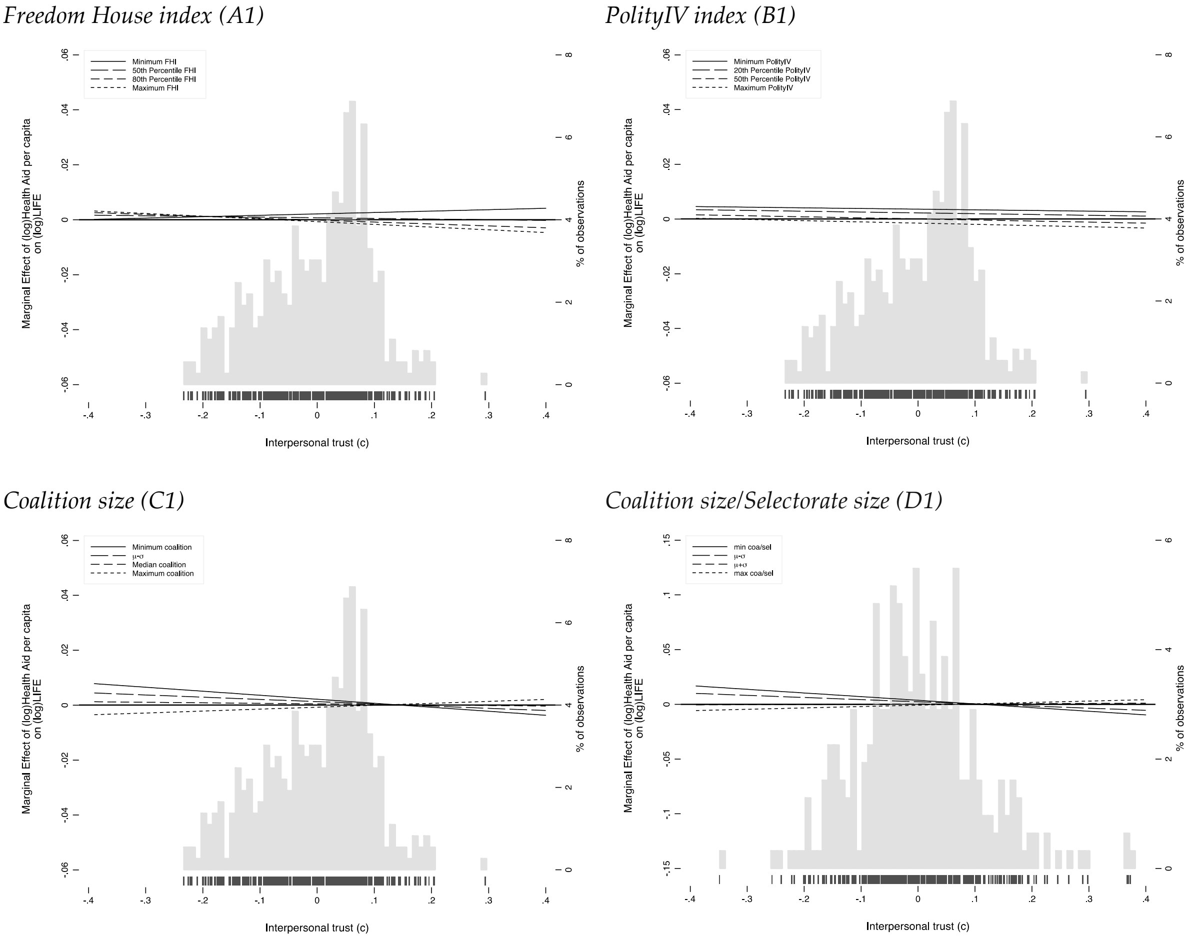
Notes: Dependent variable is infant mortality.

Testing an alternative indicator of generalized trust using data from the WVS implies no significant differences in the joint effect of trust and health aid between democratic and undemocratic countries (Table D 3-Table D 6). Neither the LDV estimates (Figure D 20-Figure D 21) nor the GMM estimates (Figure D 25 and Figure D 28) indicate a significant interaction pattern. This can be visually detected by the almost parallel marginal effect lines for both infant mortality and life expectancy.

In sum, there is little indication that democratic institutions influence the joint effect of social trust and health aid significantly. Even though under democratic rule the LDV estimates suggest an antagonistic interaction pattern between social trust and health aid this finding is not confirmed by GMM or RCM estimation.[287] Likewise, testing different measures of generalized trust adds further support to this (null-) finding. Consequently, democratic institutions do not enhance the joint effect of trust and health aid on population health.

[287] Notwithstanding, the antagonistic interaction relationship implies that in democracies either trust or health aid reduces infant mortality. Accordingly, health aid has the strongest negative effect on infant mortality in democratic countries with low levels of social trust. By contrast, under authoritarian rule, the joint effect of trust and health aid is not statistically significant.

Figure 51: Trust and the marginal effect of DAH *on* LIFE *in the context of democracy*



Notes: Dependent variable is life expectancy.

Decentralization and social trust

In decentralized states, local officials and politicians are hypothesized to be more responsive to citizens' demands because service users can better articulate their preferences to local representatives and can better monitor local service providers and local governments. To test the proposed interaction relationship Table 29 and Table 30 report the parameter estimates of regressing population health on health aid, trust and decentralization. In particular, the main effect of health aid on infant mortality (in centralized countries at mean levels of trust) is insignificant except for Models A1 and C3 (Table 29). This is indicated by the negative first order coefficient in both LDV and GMM estimation (Models A1 and A3 as well as Models D1 and D3). Likewise, in centralized states (and at mean levels of health aid) social trust is associated with significant reductions in infant mortality. Moreover, the main effect of decentralization (at mean levels of trust and health aid) appears to be statistically insignificant except for Models C1 and C3. Accordingly, countries with autonomous regions–all else being equal–are associated with *increased* levels of infant mortality. Moreover, the LDV estimates in Table 30 support this finding indicating that administrative decentralization (at mean levels of trust and health aid) is also associated with lower life expectancy (Model B1).

Table 29: Trust and the marginal effect of DAH on IMR in the context of decentralization

	Dependent variable: infant mortality ratio											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	-0.0170**	-0.00544	-0.0222	-0.0101	-0.00139	-0.0165	-0.00209	2.54e-05	-0.0190**	-0.00888*	-0.00354	-0.0178
	(0.00831)	(0.00982)	(0.0148)	(0.00962)	(0.00884)	(0.0108)	(0.00406)	(0.00490)	(0.00751)	(0.00455)	(0.00454)	(0.0112)
DECENTRAL	0.0213*	0.0326	0.0411	0.0240	-0.0396	-0.00856	0.0444***	0.0135	0.101**	0.0195	-0.0196	0.110
	(0.0110)	(0.0480)	(0.0321)	(0.0172)	(0.163)	(0.0548)	(0.00950)	(0.0741)	(0.0409)	(0.0185)	(0.169)	(0.104)
log DAH # DECENTRAL	0.0164*	-0.000623	0.0119	0.0137	-0.00569	0.0124	-0.00521	-0.00308	0.0212	0.0219***	0.0109	0.00596
	(0.00869)	(0.0117)	(0.0159)	(0.00995)	(0.0153)	(0.0164)	(0.00741)	(0.0104)	(0.0224)	(0.00807)	(0.0155)	(0.0319)
TRUST	-0.394***	-0.00316	-0.765**	-0.178	0.0480	-0.203	-0.144*	0.000688	-0.204	-0.225***	-0.112	-0.468***
	(0.129)	(0.158)	(0.306)	(0.149)	(0.156)	(0.353)	(0.0820)	(0.0967)	(0.181)	(0.0795)	(0.0937)	(0.173)
log DAH #TRUST	0.185**	0.00185	0.312	0.104	0.0153	0.0485	0.112***	0.0424	0.106*	0.158***	0.0642	0.136
	(0.0875)	(0.0808)	(0.199)	(0.0706)	(0.0698)	(0.0820)	(0.0289)	(0.0454)	(0.0609)	(0.0366)	(0.0484)	(0.0922)
TRUST# DECENTRAL	0.394***	-0.0865	0.663***	0.174	-0.0249	-0.0414	-0.0325	-0.301	-0.0218	0.256	0.352	0.0209
	(0.130)	(0.198)	(0.234)	(0.170)	(0.261)	(0.278)	(0.100)	(0.214)	(0.388)	(0.203)	(0.330)	(0.293)
log DAH #TRUST# DECENTRAL	-0.0626	0.0821	-0.295	0.00988	0.0209	0.0351	-0.280***	-0.00440	0.149	-0.124*	0.0211	-0.403
	(0.0971)	(0.106)	(0.237)	(0.0883)	(0.128)	(0.224)	(0.106)	(0.130)	(0.352)	(0.0727)	(0.134)	(0.428)
EXPEND	-0.00305	0.00258	-0.00418	0.000479	0.00412	0.00103	-0.00360**	0.00299	-0.00333	-0.00453**	0.00268	-0.00764*
	(0.00198)	(0.00335)	(0.00548)	(0.00161)	(0.00487)	(0.00369)	(0.00168)	(0.00299)	(0.00408)	(0.00187)	(0.00302)	(0.00441)
log FERTIL	0.0311	0.480***	0.0803	0.0900**	0.486***	0.206**	0.0545***	0.444***	0.118	0.0395*	0.416***	0.0500
	(0.0265)	(0.0917)	(0.104)	(0.0361)	(0.123)	(0.0956)	(0.0209)	(0.0699)	(0.0723)	(0.0232)	(0.0706)	(0.0685)
log POP	-0.0133***	0.0118	-0.0204**	-0.0227***	-0.0287	-0.0264	-0.0145***	0.0122	-0.0254***	-0.0151***	0.0121	-0.0343*
	(0.00442)	(0.0302)	(0.00913)	(0.00596)	(0.0562)	(0.0168)	(0.00385)	(0.0277)	(0.00868)	(0.00454)	(0.0305)	(0.0181)
log GDP	-0.0172	-0.359***	0.0142	-0.00513	-0.335***	0.00493	-0.00114	-0.337***	0.0217	-0.0113	-0.342***	0.00280
	(0.0123)	(0.0422)	(0.0303)	(0.0117)	(0.0636)	(0.0402)	(0.00878)	(0.0360)	(0.0231)	(0.00984)	(0.0369)	(0.0224)
log HIV	0.0133*	0.0582**	-0.00680	-0.00866	0.0231	-0.0189	0.0119*	0.0563***	-0.00687	0.00941	0.0520***	-0.00917
	(0.00718)	(0.0251)	(0.0119)	(0.0137)	(0.0363)	(0.0200)	(0.00614)	(0.0202)	(0.0101)	(0.00611)	(0.0201)	(0.0112)
(lagged) IMR	0.993***		1.055***	0.999***		0.972***	0.987***		1.049***	0.990***		1.045***
	(0.0168)		(0.0592)	(0.0238)		(0.0336)	(0.0152)		(0.0520)	(0.0168)		(0.0378)
TREND		-0.115***			-0.111***			-0.117***			-0.117***	
		(0.0125)			(0.0189)			(0.0111)			(0.0113)	
Constant	0.249	6.052***	-0.180	0.155	6.458***	0.0999	0.139	5.919***	-0.194	0.254	5.996***	0.260
	(0.160)	(0.629)	(0.425)	(0.214)	(1.190)	(0.542)	(0.133)	(0.572)	(0.295)	(0.156)	(0.629)	(0.402)
Observations	213	213	213	118	118	118	264	264	264	263	263	263
R-squared	0.988			0.990			0.988			0.988		
Countries	73	73	73	38	38	38	92	92	92	91	91	91
Instruments			68			64			69			63
Hansen-Test			0.395			1			0			0.408

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table 30: Trust and the marginal effect of DAH on LIFE in the context of decentralization

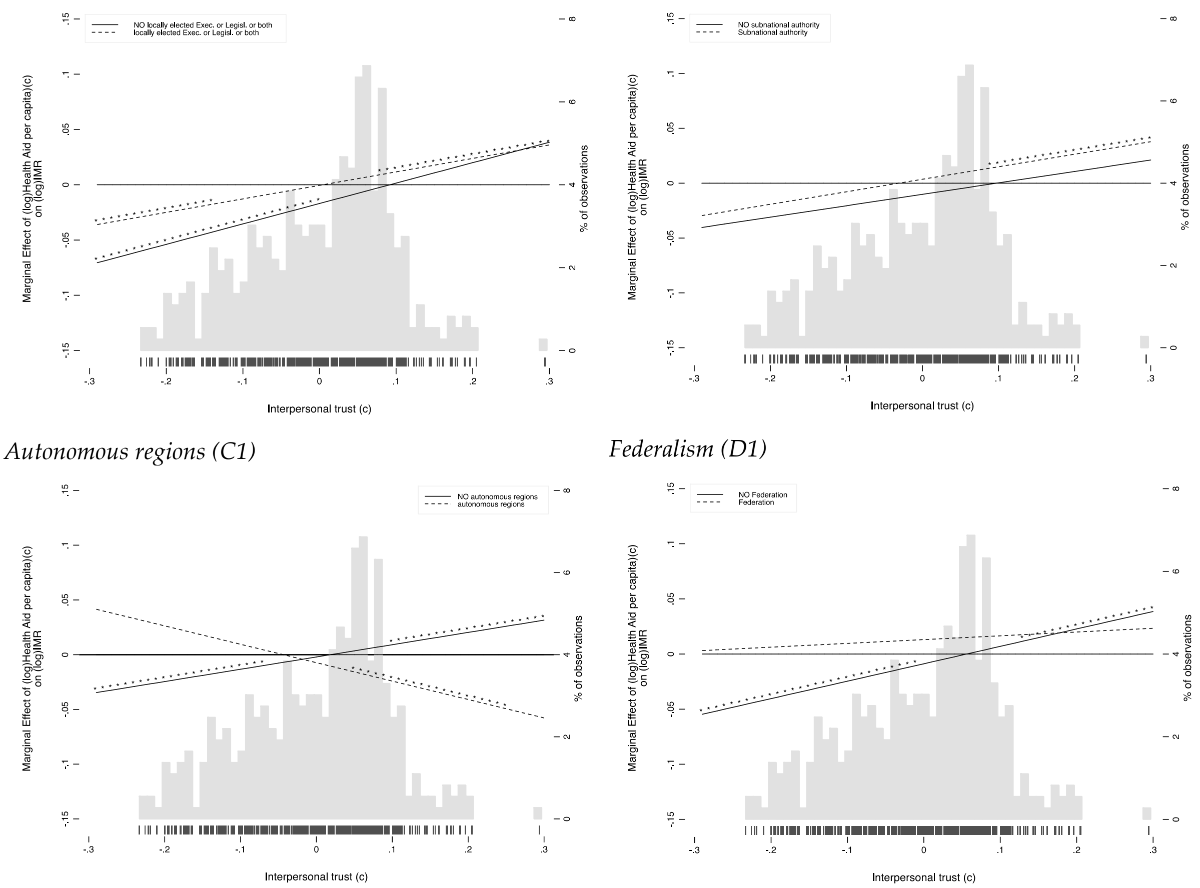
	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	0.00229	-0.00178	0.0101*	0.000854	-0.00311	-0.000907	-0.000179	-0.00137	-0.00189	0.000777	-0.000756	-0.000666
	(0.00216)	(0.00244)	(0.00610)	(0.00125)	(0.00213)	(0.00296)	(0.000891)	(0.00128)	(0.00228)	(0.00115)	(0.00121)	(0.00273)
DECENTRAL	-0.00326	-0.0146	-0.00159	-0.0105**	-0.0122	-0.00125	-0.00218	0.00201	0.00538	0.00346	0.00922	0.00561
	(0.00286)	(0.0101)	(0.0164)	(0.00447)	(0.0249)	(0.00889)	(0.00271)	(0.0147)	(0.0101)	(0.00512)	(0.0302)	(0.0444)
log DAH # DECENTRAL	-0.00245	0.00245	-0.00835	-0.00338**	0.00494	-0.00144	0.00308*	0.00334	-0.00188	-0.00217	7.26e-05	0.00625
	(0.00235)	(0.00292)	(0.00703)	(0.00172)	(0.00346)	(0.00360)	(0.00158)	(0.00279)	(0.00383)	(0.00154)	(0.00404)	(0.0135)
TRUST	0.0841***	-0.0248	0.140*	0.00948	-0.0502	0.0385	0.0185	0.0248	-0.000170	0.0283	0.0280	0.0386
	(0.0284)	(0.0394)	(0.0725)	(0.0280)	(0.0379)	(0.0579)	(0.0181)	(0.0255)	(0.0454)	(0.0186)	(0.0252)	(0.0529)
log DAH #TRUST	-0.0196	0.00455	-0.0710*	0.0216	0.00162	0.00296	-0.00691	-0.00395	-0.0121	-0.00739	0.000923	-0.0344
	(0.0296)	(0.0210)	(0.0373)	(0.0142)	(0.0182)	(0.0199)	(0.00883)	(0.0120)	(0.0201)	(0.0117)	(0.0131)	(0.0242)
TRUST# DECENTRAL	-0.0700**	0.0891*	-0.121*	-0.0374	0.111*	-0.0420	0.0247	-0.00441	0.0452	0.0264	-0.0143	-0.0127
	(0.0343)	(0.0457)	(0.0677)	(0.0364)	(0.0585)	(0.0560)	(0.0277)	(0.0498)	(0.0605)	(0.0477)	(0.0771)	(0.0980)
log DAH #TRUST# DECENTRAL	0.0127	0.00855	0.0419	-0.0214	0.0130	-0.00406	0.0597***	0.0176	0.0925	0.0181	-0.0162	0.111
	(0.0323)	(0.0274)	(0.0513)	(0.0188)	(0.0314)	(0.0345)	(0.0221)	(0.0350)	(0.0611)	(0.0173)	(0.0347)	(0.126)
EXPEND	0.00152***	-0.000537	0.00272**	0.000886**	-0.00131	0.00106	0.00120***	-0.000552	0.00178***	0.00131***	-0.000658	0.00168*
	(0.000433)	(0.000813)	(0.00112)	(0.000360)	(0.00112)	(0.00104)	(0.000361)	(0.000746)	(0.000616)	(0.000389)	(0.000755)	(0.000863)
log FERTIL	0.0177*	-0.0371*	0.0344*	0.0131*	-0.0579**	0.00831	0.00741	-0.0706***	0.0112	0.00760	-0.0706***	0.0228*
	(0.00911)	(0.0192)	(0.0184)	(0.00733)	(0.0226)	(0.0165)	(0.00637)	(0.0159)	(0.0116)	(0.00681)	(0.0160)	(0.0131)
log POP	0.00167	0.00232	0.00203	0.00264**	0.0177**	-0.000365	0.00159	0.00263	-0.000645	0.00144	0.00244	-0.000869
	(0.00128)	(0.00537)	(0.00271)	(0.00110)	(0.00880)	(0.00293)	(0.00110)	(0.00479)	(0.00203)	(0.00139)	(0.00519)	(0.00452)
log GDP	0.000662	0.0410***	0.00784	0.00265	0.0419***	-0.00808	-0.00215	0.0352***	-0.00835	-0.00116	0.0348***	-0.00510
	(0.00409)	(0.00872)	(0.0124)	(0.00313)	(0.0111)	(0.00815)	(0.00292)	(0.00748)	(0.00537)	(0.00296)	(0.00768)	(0.00496)
log HIV	-0.0123***	-0.0495***	-0.0181***	-0.0110***	-0.0396***	-0.00706	-0.0102***	-0.0417***	-0.00963***	-0.0103***	-0.0417***	-0.00912**
	(0.00256)	(0.00507)	(0.00548)	(0.00425)	(0.00683)	(0.00671)	(0.00215)	(0.00431)	(0.00346)	(0.00226)	(0.00431)	(0.00434)
(lagged) LIFE	0.901***		0.834***	0.878***		0.929***	0.902***		0.911***	0.897***		0.931***
	(0.0342)		(0.0754)	(0.0404)		(0.0770)	(0.0299)		(0.0518)	(0.0305)		(0.0575)
TREND		0.0156***			0.0109***			0.0164***			0.0164***	
		(0.00246)			(0.00325)			(0.00232)			(0.00235)	
Constant	0.344***	3.763***	0.520**	0.429***	3.558***	0.367	0.385***	3.833***	0.434**	0.392***	3.840***	0.307
	(0.132)	(0.124)	(0.235)	(0.146)	(0.197)	(0.282)	(0.115)	(0.110)	(0.201)	(0.123)	(0.118)	(0.265)
Observations	213	213	213	118	118	118	264	264	264	263	263	263
R-squared	0.974			0.983			0.976			0.976		
Countries	73	73	73	38	38	38	92	92	92	91	91	91
Instruments			68			60			69			63
Hansen-Test			0.253			0.999			0.616			0.426

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Figure 52: Trust and the marginal effect of DAH *on* IMR *in the context of decentralization*

Locally elected officials (A1) *Subnational authority (B1)*

Autonomous regions (C1) *Federalism (D1)*

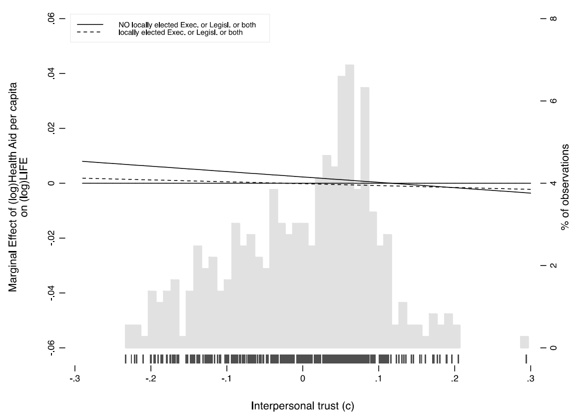


Notes: The dependent variable is infant mortality.

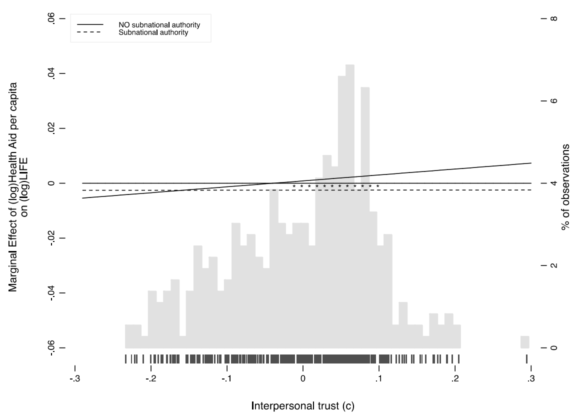
Regarding the joint effect of health aid and decentralization on infant mortality (life expectancy), the DAH#DECENTRAL coefficient provides little evidence of a significant interaction relationship except for Model D1 (Model B1). Specifically, the LDV model suggests that decentralization is detrimental to health aid effectiveness. Moreover, replicating previous findings the joint effect of trust and health aid (DAH#TRUST) on population health appears to be insignificant except for Models A1 and C1. In particular, Models A1 and C1 imply an antagonistic interaction pattern between trust and health aid in centralized countries, which is visualized by the positively sloped (solid) marginal effect lines in Figure 52. However, this finding is not confirmed by GMM and RCM estimation. Consequently, the evidence suggests that the joint effect of trust and health aid does not significantly differ between centralized and decentralized countries. This can be visually detected by the barely varying sloping lines in Figure 52 and Figure D 14. Moreover, using life expectancy as dependent variable leads to qualitatively similar results (Figure 53; Figure D 17).

Figure 53: Social trust and the marginal effect of DAH *on* LIFE *in the context of decentralization*

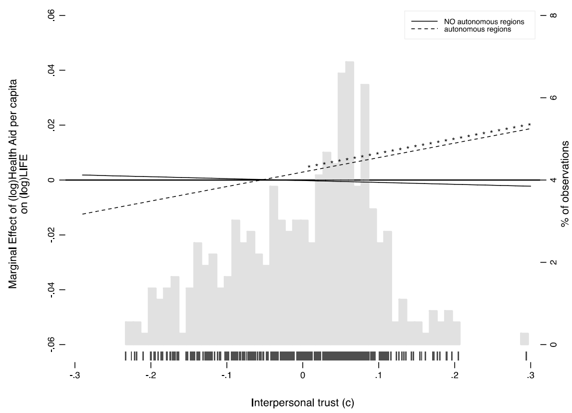
Locally elected officials (A1)



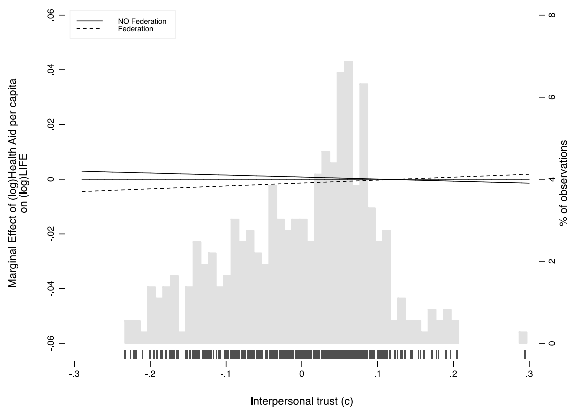
Subnational authority (B1)



Autonomous regions (C1)



Federalism (D1)



Notes: The dependent variable is life expectancy.

Testing the robustness of this (null-) finding with data from the WVS replicates the insignificant interaction patterns. In particular, the results provide no evidence that the joint effect of trust and health aid differs between centralized and decentralized countries except for Models B1 and B3 (Table D 7).[288] As displayed in Figure D 29, in centralized states in which subnational governments have authority over taxing, spending, and regulation the marginal effect of health aid on life expectancy appears to be significantly negative at medium and high levels of generalized trust. Though, this finding is not confirmed using infant mortality as dependent variable. Against this backdrop, the evidence on the moderating role of decentralization appears to be weak, at best and fails to show a systematic interaction relationship with social trust. Hence, there is little indication that political or administrative decentralization has a major impact on the joint effect of cultural social capital and health aid on population health. Consequently, bringing governments closer to the people does not enhance the joint effect of trust and health aid on population health.

Summarizing, this sub-chapter analyzed whether formal institutions of democratic governance and decentralization account for the non-existent joint effect of social trust and

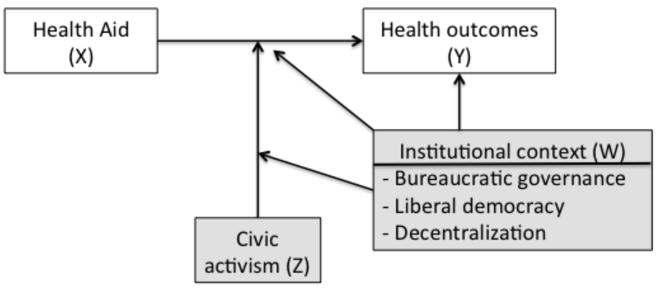
[288] Parameter estimates are reported in Table D 4 and Table D 7 and visualized in Figure D 26 and Figure D 29.

health aid on population health. Correspondingly, the moderating role of governments' administrative capacities, a country's level of liberal democracy and the degree of political and administrative decentralization were analyzed using different measurements and subsamples. The analysis brought about the following findings. First, even though the joint effect of trust and health aid significantly differs between bureaucratic and patronage states, there is no evidence that bureaucratic governance enhances the joint effect of trust and health aid. In fact, the results indicate that health aid makes the largest contribution to population health in bureaucratic countries with low levels of social trust. By contrast, in patronage states, there is no significant joint effect of trust and health aid. Second, there is no evidence that the joint effect of trust and health aid on population health significantly varies across different levels of democracy. Accordingly, there is no indication that democratic institutions enhance the joint effect of social trust and health aid. Third, there is little indication that political or administrative decentralization has a major impact on the joint effect of social trust and health aid on population health. Specifically, bringing governments closer to the people does not enhance the joint effect of trust and health aid on population health.

5.3.3 Civic activism in political context

The identified buffering effect of civic activism implies that an informed and aware citizenry, which participates in elite-challenging action, weakens the effect of external health funding. Against the theoretical backdrop, the effect of elite-challenging action is expected to vary across different institutional contexts. Accordingly, this sub-section answers the question whether formal institutions including governments' administrative capacities, the quality of democracy and the degree of decentralization condition the joint effect of civic activism and health aid on population health (Figure 54).

Figure 54: Explanatory model of health aid effectiveness and civic activism in political contexts



Bureaucratic governance and elite-challenging action

Development assistance for health is hypothesized to improve health outcomes especially in recipient countries with an active citizenry *and* strong state capacity. In particular, state capacity enables recipient countries to respond to increased citizen demands and to administer the delivery of public goods. To test whether the success of citizen-led accountability action depends on the state's decision-making capacity, organizational competence and legitimatory power Table 31 and Table 32 report the parameter estimates of regressing population health on bureaucratic governance, civic activism, and health aid (and their various joint effects).

Specifically, the negative coefficient of DAH indicates that health aid significantly reduces infant mortality at mean levels of civic activism and administrative capacity (Table 31). This result is confirmed by LDV and GMM estimation. Though, the effect is statistically insignificant in the RCM model. Likewise, bureaucratic governance–at mean levels of civic activism and health aid–appears to reduce infant mortality and is statistically significant in the LDV and GMM model (Models A1 and A3). This result is also confirmed using the voice & accountability index (Model C2). Correspondingly, bureaucratic governance is positively correlated with life expectancy (Table 32).[289] Likewise, civic activism shows no direct effect on infant mortality but is significantly associated with higher levels of life expectancy (at mean levels of state capacity and health aid). By contrast, the main effect of health aid on life expectancy fails to be statistically significant. The control variables have the expected sign: government health expenditures correlate negatively with infant mortality and positively with life expectancy while higher HIV prevalence and higher fertility increase levels of mortality and reduce life expectancy. GDP per capita is statistically significant only in the RCM model. Larger countries show significantly lower mortality ratios than smaller ones. Likewise, the parameter estimates of the RCM model suggest a significant time trend towards improved health.

The joint effect of civic activism and health aid (DAH#CIVIC) on infant mortality is significantly positive which suggests that the effect of increased health aid is negative at low levels of participation (and mean levels of bureaucratic governance) and weakens as citizens' participation increases. This result replicates the identified buffering effect of civic activism in both LDV and GMM estimation and can be visually inspected by the (long-dashed) 50th percentile marginal effect line in Figure 55. Accordingly, civic activism weakens the effect of health aid at mean levels of bureaucratic governance. Using life expectancy as dependent variable replicates the general pattern of the interaction relationship but fails to achieve conventional levels of statistical significance. Likewise, the joint effect of health aid and administrative capacity (DAH#GOV) is statistically insignificant regarding both measures of population health. This implies that–after controlling for civic activism there is no indication that higher administrative capacity spurs health aid effectiveness. Moreover, there is little evidence of a significant joint effect of civic activism and bureaucratic governance except for Model B1.

Notwithstanding, the main question deals with the moderating role of states' administrative capacities, which requires the analysis of the three-way interaction relationship. Accordingly, the DAH#CIVIC#GOV coefficient fails to achieve conventional levels of statistical significance regarding both infant mortality (Table 31) and life expectancy (Table 32). Even though the interaction term is statistically significant at the 90 percent level in the LDV model, it turns sign in the GMM model for both composite indices of bureaucratic governance and corruption control.

[289] Even though across all governance indicators and estimation techniques the sign of the respective coefficient implies a positive effect of governance on life expectancy this effect is statistically significant only in the RCM models.

Table 31: Civic activism and the marginal effect of DAH on IMR in the context of bureaucratic governance

	Dependent variable: infant mortality											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Voice & accountability (WBGI)			Control of corruption (WBGI)		
log DAH	-0.0115***	0.00350	-0.0327**	-0.00752	0.000884	-0.0104	-0.0139***	0.00310	-0.0322*	-0.0121***	0.00391	-0.0331***
	(0.00398)	(0.00382)	(0.0130)	(0.00473)	(0.00478)	(0.0125)	(0.00415)	(0.00403)	(0.0165)	(0.00397)	(0.00380)	(0.0102)
GOV	-0.0275***	-0.0335*	-0.105**	-0.0702	-0.150*	-0.131	0.00198	-0.0455***	-0.00464	-0.0181	-0.0342*	-0.0628
	(0.0105)	(0.0201)	(0.0480)	(0.0525)	(0.0810)	(0.208)	(0.00987)	(0.0165)	(0.0373)	(0.0118)	(0.0189)	(0.0417)
log DAH#GOV	-0.00636	-0.00821	0.00653	-0.00503	0.0458	-0.0699	-0.00720	-0.00814	-0.00520	-0.00851	-0.0110*	-0.00843
	(0.00516)	(0.00640)	(0.0261)	(0.0235)	(0.0286)	(0.0841)	(0.00536)	(0.00551)	(0.0231)	(0.00617)	(0.00661)	(0.0225)
CIVIC	-0.150	-0.0978	0.130	-0.0602	-0.0340	0.134	-0.179*	-0.0785	0.241	-0.178*	-0.140	0.0615
	(0.101)	(0.124)	(0.269)	(0.118)	(0.155)	(0.178)	(0.107)	(0.124)	(0.316)	(0.0985)	(0.123)	(0.198)
log DAH#CIVIC	0.146***	-0.0523	0.553***	0.101	-0.0407	0.230	0.207***	-0.0438	0.529**	0.161***	-0.0449	0.516***
	(0.0535)	(0.0684)	(0.183)	(0.0739)	(0.0894)	(0.223)	(0.0498)	(0.0659)	(0.232)	(0.0534)	(0.0686)	(0.184)
CIVIC#GOV	-0.118	-0.00334	-0.273	-0.239	0.742	-1.043	-0.0129	-0.127	0.379	-0.152	0.0132	-0.344
	(0.106)	(0.160)	(0.438)	(0.672)	(0.843)	(2.087)	(0.110)	(0.142)	(0.518)	(0.106)	(0.165)	(0.474)
log DAH#CIVIC#GOV	0.0940*	0.0904	-0.478	0.304	-0.0196	-0.0250	0.105*	0.0975	0.124	0.110*	0.0914	-0.238
	(0.0494)	(0.0858)	(0.356)	(0.250)	(0.397)	(1.355)	(0.0536)	(0.0813)	(0.359)	(0.0576)	(0.0910)	(0.466)
EXPEND	-0.00242*	-0.000866	0.000505	-0.00267**	0.000552	-0.00305	-0.00299**	-0.000994	-0.00341	-0.00246*	-0.000789	-0.000963
	(0.00127)	(0.00201)	(0.00448)	(0.00126)	(0.00231)	(0.00476)	(0.00139)	(0.00198)	(0.00354)	(0.00126)	(0.00201)	(0.00376)
log FERTIL	0.0526***	0.435***	0.114	0.0545***	0.495***	0.0933*	0.0545***	0.443***	0.135*	0.0548***	0.440***	0.105
	(0.0166)	(0.0533)	(0.0717)	(0.0190)	(0.0598)	(0.0553)	(0.0174)	(0.0529)	(0.0754)	(0.0165)	(0.0534)	(0.0670)
log POP	-0.0181***	0.0248	-0.0390***	-0.0127***	0.0341	-0.0177*	-0.0151***	0.0220	-0.0270***	-0.0163***	0.0259	-0.0324***
	(0.00332)	(0.0222)	(0.00935)	(0.00387)	(0.0278)	(0.00946)	(0.00323)	(0.0218)	(0.00894)	(0.00323)	(0.0222)	(0.00737)
log GDP	0.00498	-0.270***	0.0493*	-0.000245	-0.271***	0.0646	0.000660	-0.274***	0.0543*	0.00417	-0.269***	0.0421
	(0.00756)	(0.0283)	(0.0285)	(0.00929)	(0.0326)	(0.0464)	(0.00799)	(0.0275)	(0.0282)	(0.00745)	(0.0281)	(0.0306)
log HIV	0.0166***	0.0448***	0.0102	0.0122**	0.0518***	-0.000791	0.0151***	0.0455***	-0.000791	0.0159***	0.0450***	0.00565
	(0.00405)	(0.0138)	(0.00870)	(0.00529)	(0.0168)	(0.00954)	(0.00426)	(0.0137)	(0.00807)	(0.00407)	(0.0138)	(0.00977)
(lagged) IMR	0.988***		1.033***	0.989***		1.072***	0.995***		1.070***	0.990***		1.050***
	(0.0148)		(0.0557)	(0.0171)		(0.0625)	(0.0143)		(0.0482)	(0.0153)		(0.0524)
TREND		-0.107***			-0.122***			-0.107***			-0.107***	
		(0.00998)			(0.0112)			(0.00997)			(0.00989)	
Constant	0.145	5.225***	-0.148	0.0879	5.000***	-0.703	0.103	5.292***	-0.527	0.111	5.191***	-0.233
	(0.119)	(0.440)	(0.444)	(0.146)	(0.548)	(0.616)	(0.111)	(0.431)	(0.411)	(0.116)	(0.441)	(0.441)
Observations	392	392	392	310	310	310	392	392	392	392	392	392
R-squared	0.990			0.991			0.990			0.990		
Countries	107	107	107	84	84	84	107	107	107	107	107	107
Instruments			65			69			65			65
Hansen's J			0.334			0.0782			0.116			0.0748

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table 32: Civic activism and the marginal effect of DAH on LIFE in the context of bureaucratic governance

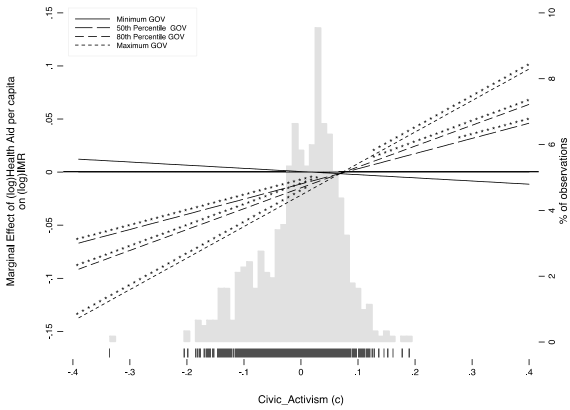
	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Voice & accountability (WBGI)			Control of corruption (WBGI)		
log DAH	0.00197	-0.00152	0.00257	-9.68e-05	0.00114	0.000927	0.00134	-0.000948	0.000623	0.00187	-0.00152	0.00358
	(0.00132)	(0.00168)	(0.00296)	(0.00103)	(0.00154)	(0.00260)	(0.00134)	(0.00180)	(0.00309)	(0.00131)	(0.00170)	(0.00362)
GOV	0.00482	0.0263***	0.00355	0.0182	0.0995***	0.0501	0.00374	0.0171***	0.00380	0.00555*	0.0218***	0.00248
	(0.00298)	(0.00756)	(0.00989)	(0.0127)	(0.0253)	(0.0306)	(0.00312)	(0.00615)	(0.00712)	(0.00334)	(0.00732)	(0.00950)
log DAH#GOV	0.00200	-0.000460	-0.000201	-0.00826	-0.0131	0.0116	0.000830	0.00161	-0.00538	0.00187	0.000963	0.000709
	(0.00193)	(0.00276)	(0.00473)	(0.00593)	(0.00897)	(0.0140)	(0.00163)	(0.00236)	(0.00619)	(0.00200)	(0.00294)	(0.00411)
CIVIC	0.0609*	0.0895*	0.156***	0.0439	0.0606	0.173***	0.0698**	0.0816	0.143*	0.0575*	0.113**	0.170**
	(0.0326)	(0.0509)	(0.0556)	(0.0297)	(0.0490)	(0.0448)	(0.0324)	(0.0525)	(0.0863)	(0.0317)	(0.0515)	(0.0679)
log DAH#CIVIC	-0.0251	0.0475	-0.0817	0.00823	0.00959	-0.0251	-0.0329*	0.0399	-0.0500	-0.0173	0.0459	-0.0863
	(0.0215)	(0.0289)	(0.0505)	(0.0193)	(0.0283)	(0.0497)	(0.0197)	(0.0282)	(0.0447)	(0.0211)	(0.0294)	(0.0594)
CIVIC#GOV	0.0393	-0.135**	-0.0269	0.308**	-0.169	0.445	0.0681*	-0.0676	-0.0329	-0.00476	-0.0558	-0.0425
	(0.0403)	(0.0639)	(0.141)	(0.153)	(0.271)	(0.410)	(0.0351)	(0.0577)	(0.185)	(0.0380)	(0.0683)	(0.136)
log DAH#CIVIC#GOV	-0.0106	-0.0180	0.0206	0.0923	0.0257	0.125	0.0220	-0.0404	0.0784	-0.0226	-0.0274	0.00739
	(0.0179)	(0.0340)	(0.0548)	(0.0738)	(0.122)	(0.220)	(0.0172)	(0.0327)	(0.0856)	(0.0179)	(0.0372)	(0.0668)
EXPEND	0.00109**	0.000383	0.00140	0.000837***	0.000232	0.000601	0.00103*	0.000632	0.00108	0.00107**	0.000344	0.00162*
	(0.000482)	(0.000790)	(0.000924)	(0.000308)	(0.000694)	(0.000676)	(0.000536)	(0.000790)	(0.000729)	(0.000468)	(0.000801)	(0.000960)
log FERTIL	-0.00165	-0.0901***	-0.00418	0.00804*	-0.0930***	0.00803	-0.00194	-0.0882***	-0.0139	-0.00227	-0.0900***	-0.00438
	(0.00652)	(0.0165)	(0.0117)	(0.00448)	(0.0165)	(0.00798)	(0.00654)	(0.0165)	(0.0128)	(0.00648)	(0.0167)	(0.0119)
log POP	0.00221*	0.00624	0.00211	-3.36e-05	0.00508	0.000238	0.00176*	0.00449	0.00136	0.00194*	0.00473	0.00228
	(0.00113)	(0.00470)	(0.00250)	(0.00102)	(0.00545)	(0.00155)	(0.00107)	(0.00459)	(0.00268)	(0.00110)	(0.00459)	(0.00240)
log GDP	-0.00168	0.0388***	-0.00693	-0.00555*	0.0368***	-0.0115***	-0.00260	0.0419***	-0.0103	-0.00124	0.0387***	-0.00310
	(0.00280)	(0.00789)	(0.00563)	(0.00285)	(0.00826)	(0.00399)	(0.00286)	(0.00778)	(0.00695)	(0.00281)	(0.00779)	(0.00516)
log HIV	-0.0143***	-0.0372***	-0.0141***	-0.0101***	-0.0289***	-0.0105***	-0.0141***	-0.0386***	-0.0136***	-0.0143***	-0.0384***	-0.0147***
	(0.00175)	(0.00423)	(0.00343)	(0.00154)	(0.00443)	(0.00247)	(0.00176)	(0.00419)	(0.00358)	(0.00182)	(0.00424)	(0.00448)
(lagged) LIFE	0.834***		0.810***	0.912***		0.890***	0.838***		0.805***	0.830***		0.783***
	(0.0355)		(0.0567)	(0.0250)		(0.0393)	(0.0353)		(0.0642)	(0.0371)		(0.0762)
TREND		0.0140***			0.0187***			0.0140***			0.0147***	
		(0.00240)			(0.00248)			(0.00242)			(0.00243)	
Constant	0.655***	3.762***	0.803***	0.391***	3.786***	0.546***	0.651***	3.758***	0.879***	0.674***	3.783***	0.874***
	(0.141)	(0.109)	(0.222)	(0.0947)	(0.124)	(0.154)	(0.141)	(0.108)	(0.266)	(0.147)	(0.108)	(0.297)
Observations	392	392	392	310	310	310	392	392	392	392	392	392
R-squared	0.972			0.984			0.972			0.972		
Countries	107	107	107	84	84	84	107	107	107	107	107	107
Instruments			65			69			65			65
Hansen's J			0.627			0.549			0.586			0.720

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

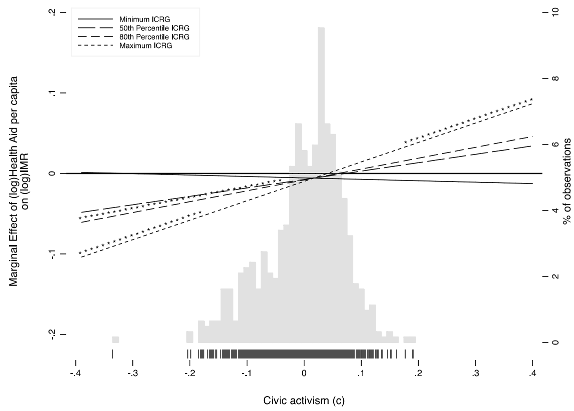
To further explore the joint effects of civic activism and health aid in the context of state capacity Figure 55 and Figure 56 visualize the marginal effect of health aid on infant mortality and life expectancy across different levels of elite-challenging action and bureaucratic governance. Specifically, the LDV estimates suggest that in patronage states (solid line) health aid has no significant effect on infant mortality irrespective of the level of civic activism (Figure 55). Though, in more bureaucratic states participation in contentious politics appears to buffer the effects of health aid. Thus, the higher the level of bureaucratic governance the stronger the buffering effect of civic activism, which is displayed by steeper sloping lines. Simultaneously, the LDV estimates suggest that at any level of civic activism the marginal effect of increased health aid is larger in countries with higher administrative capacity. However, the differences in the joint effect of civic activism and health aid are not statistically significant, which can be visually inspected by the barely varying sloping lines at low, medium, and high levels of administrative capacity (Figure 55). Moreover, the marginal effect lines change order in the GMM model as visualized in Figure B 12, which casts doubts on the moderating role of state capacity. Specifically, while the joint effect of civic activism and health aid on infant mortality are statistically significant only at medium levels of bureaucratic governance, their joint effect appears to be larger in *patronage* states. Furthermore, both LDV and GMM estimation demonstrate that the joint effect of civic activism and health aid on life expectancy is not statistically significant at any level of bureaucratic governance (Figure 56; Figure B 15). Hence, the results are inconsistent and provide little evidence that state capacity significantly determines the joint effect of elite-challenging action and health aid in recipient countries.

Figure 55: Civic activism and the marginal effect of DAH on IMR in the context of bureaucratic governance

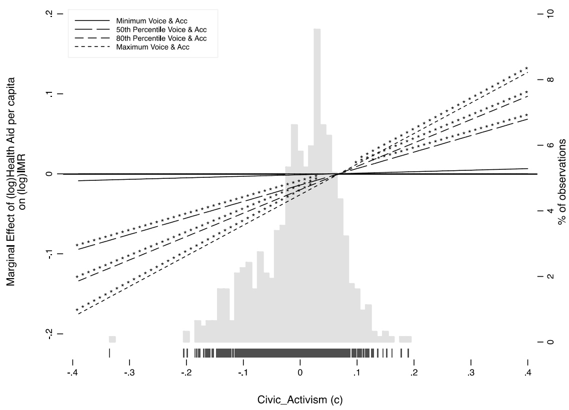
Governance indicator (A1)



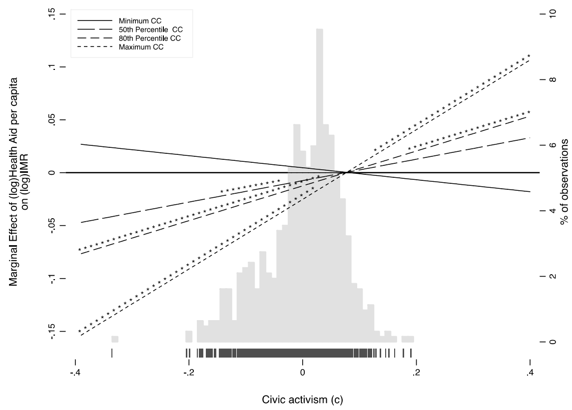
Quality of government indicator (B1)



Voice & accountability (C1)



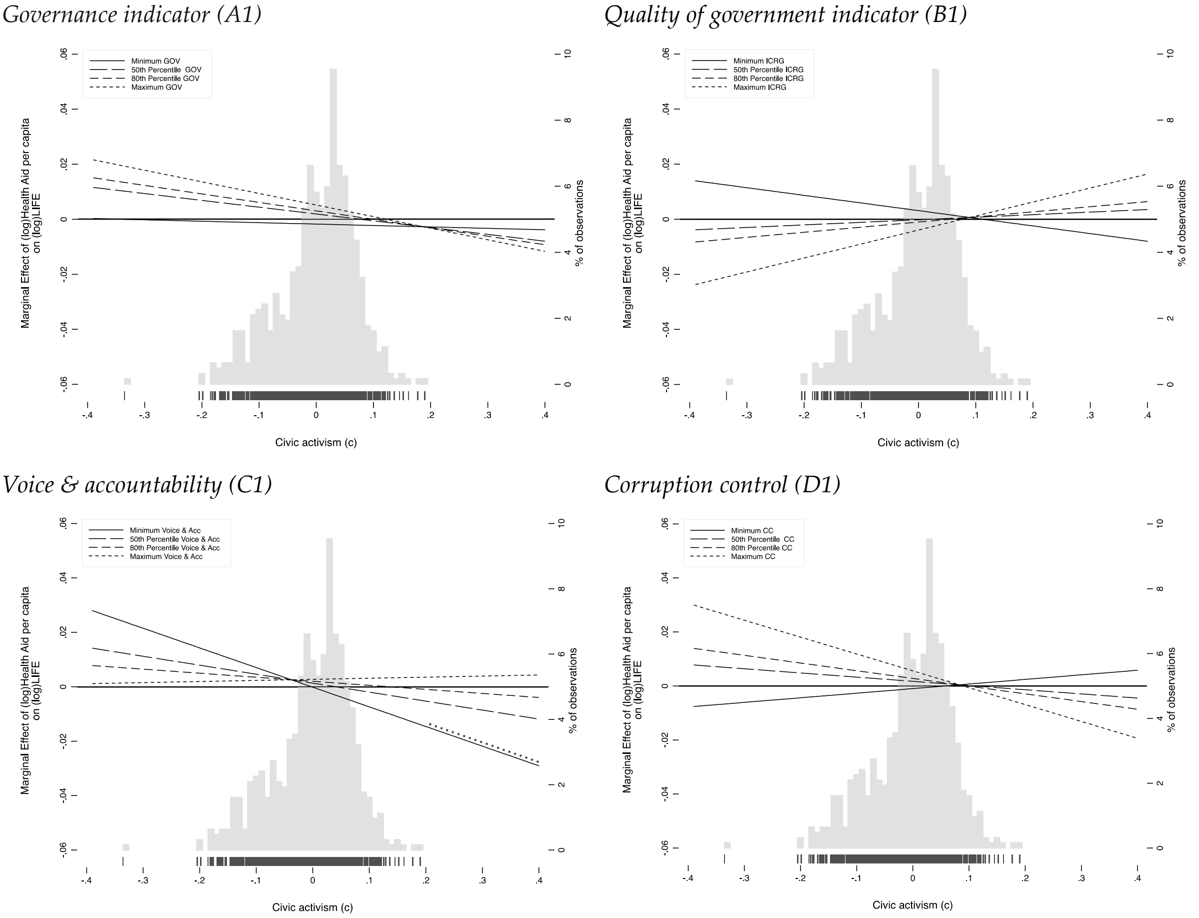
Corruption control (D1)



Notes: Dependent variable is infant mortality. The range of civic activism where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

To proof the robustness of this (null-) finding, the analysis is replicated using data from the WVS. The earlier analysis of the joint effect of health aid and social movement activity on population health indicated no significant interaction effect for the sample of countries surveyed by the WVS. To account for the possibility that differences in governments' administrative capacity obscure the effect of citizen demand on aid effectiveness the joint effect of social movement activity and health aid is tested in different institutional settings. Correspondingly, Table B 3 to Table B 4 report the estimated effects of increased health aid across varying levels of elite-challenging action and bureaucratic governance.

Figure 56: Civic activism and the marginal effect of DAH *on* LIFE *in the context of bureaucratic governance*



Notes: Dependent variable is life expectancy. The range of civic activism where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

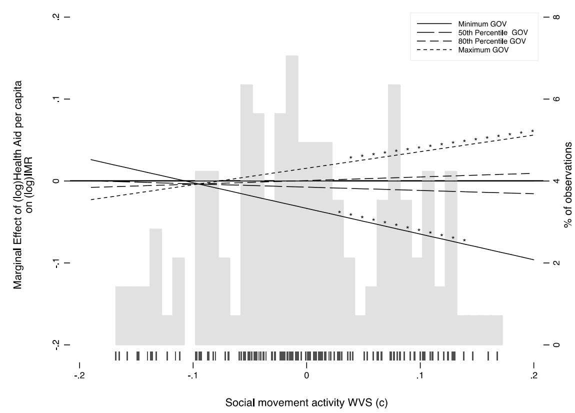
In short, the results are mixed and provide little evidence that state capacity consistently influences the joint effect of civic activism and health aid on population health. In particular, neither the two-way interaction tern (DAH#SMA) nor the three-way interaction coefficient (DAH#SMA#GOV) achieves conventional levels of statistical significance except for Model C2 (Table B 4). Visualizing the LDV estimates for infant mortality (Figure 57) indicates that in patronage states citizens' participation in contentious politics may enhance health aid effectiveness but weaken the implementation of health aid in more bureaucratic states (Model A1). The same pattern is replicated for the sub-indices of corruption control (Model D1) and voice & accountability (Model C1) although only the latter achieves statistical and substantial significance. Likewise, analyzing the joint effects on life expectancy (Figure 58) confirms the synergistic effects of health aid and social movement activity in patronage states. However, these results are not robust to the choice of governance indicator or estimation model.[290] In particular, using the ICRG quality of government index shows either no significant joint effect (Figure 57) or indicates a compensatory or buffering effect of civic activism in

[290] Testing the effect of civic activism for the smaller WVS sample suggests that differences in the results between the composite index of civic activism (CIVIC) and protest activity (SMA) are not determined by sample composition.

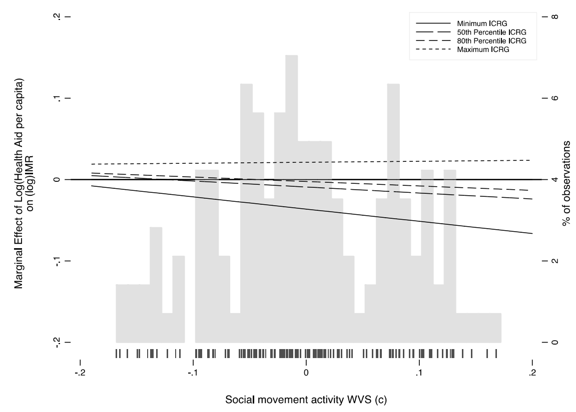
patronage states (Figure 58). Moreover, the synergistic effects of protest activity and health aid on infant mortality are not confirmed by GMM estimation except for medium levels of voice and accountability (Figure B 26). Likewise, using life expectancy as a dependent variable provides no support for a significant interaction relationship (Figure B 29). Hence, testing another measure of civic activism implies that—based on the results from (the preferred) GMM and RCM estimation for the sample of countries survey by the WVS—state capacity has no significant influence on the joint effect of citizens' participation in contentious politics and health aid.

Figure 57: Civic activism and the marginal effect of DAH on IMR in the context of bureaucratic governance II

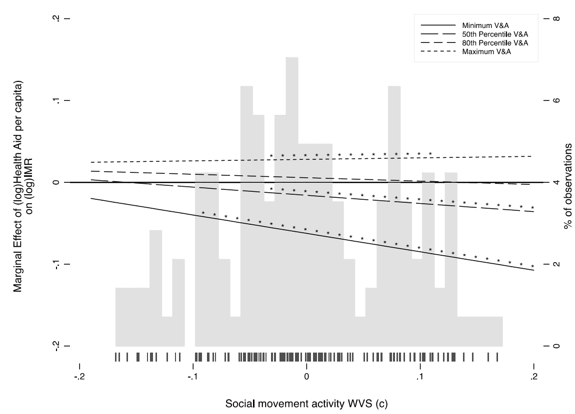
Governance indicator (A1)



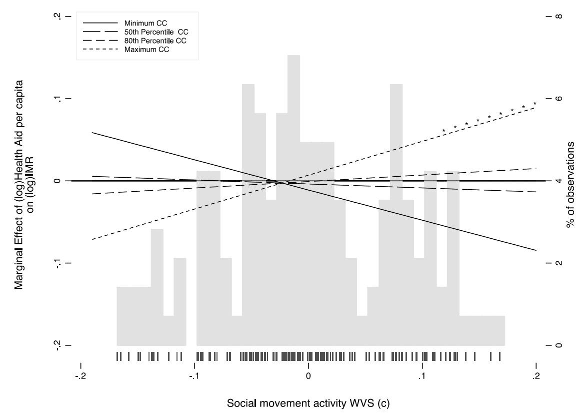
Quality of government indicator (B1)



Voice & accountability (C1)



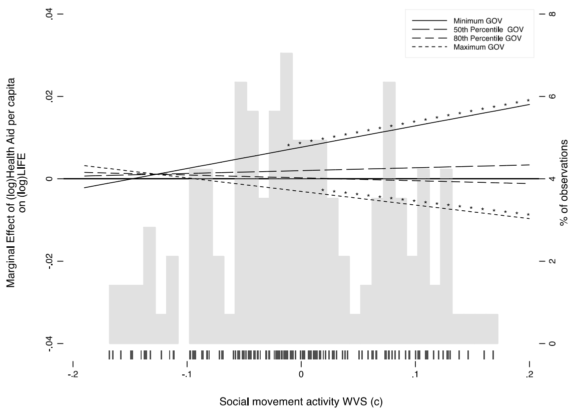
Corruption control (D1)



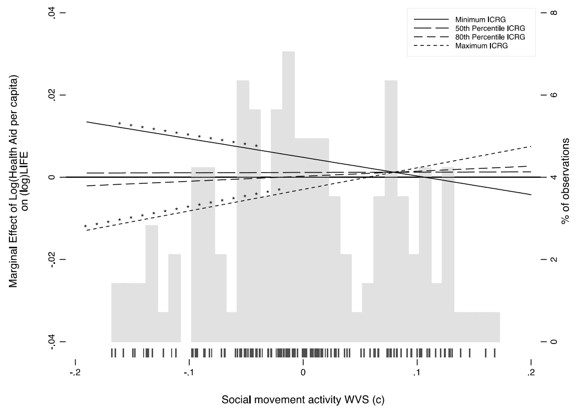
Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Civic activism is measured by the SMA index. Data: WVS.

Figure 58: Civic activism and the marginal effect of DAH *on* LIFE *in the context of bureaucratic governance II*

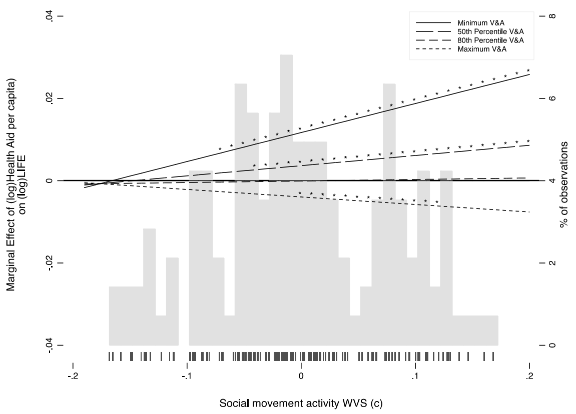
Governance indicator (A1)



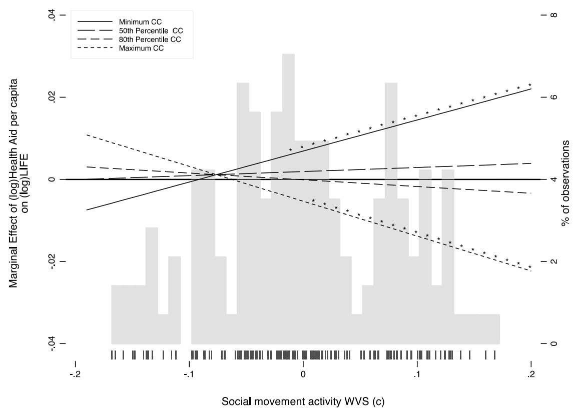
Quality of government indicator (B1)



Voice & accountability (C1)



Corruption control (D1)



Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Civic activism is measured by the SMA index. Data: WVS.

In sum, testing different measures of elite-challenging action the identified buffering interaction pattern between civic activism and health aid does not significantly differ between patronage and bureaucratic states. Even though there is some indication that the identified interaction pattern turns into a synergistic relationship in countries that are characterized by clientelism and patronage politics the robustness of this finding is weak. Altogether, an aware and informed citizenry that engages in contentious politics appears to buffer the effect of foreign aid to the health sector regardless of state capacity. Hence, the results obtained in this sub-chapter do not support the hypothesized difference between patronage and bureaucratic states.

Liberal democracy and elite-challenging action

The independence of the judiciary and legislature, which have the authority to prosecute illegal behavior and can be activated by civic engagement, ultimately determines the effectiveness of monitoring and oversight of service providers. Accordingly, democratic institutions not only shape citizens' incentives to articulate demands and participate in monitoring of service providers and politicians but also influence the success of citizen-led accountability action. Thus, against the theoretical backdrop, democratic institutions are hypothesized to strengthen the joint effect of civic activism and health aid. To put it differently, health aid is hypothesized to improve population health especially in recipient countries with high levels of elite-challenging action *and* strong democratic institutions. To test the posited interaction relationship Table 33 and Table 34 report the results of regressing population health on liberal democracy, civic activism, and health aid (and their respective joint effects).

Specifically, the main effect of health aid on infant mortality at mean levels of civic activism and democracy is significantly negative, which is supported by LDV (Models A1-D1) and GMM estimation (Models C3 and D3). The main effect of civic activism on infant mortality (at mean levels of democracy) is significantly negative in Models C1 and D1 (Table 33), which is consistent with the positive effect of civic activism on life expectancy in Table 34. Likewise, liberal democracy also appears to improve population health at mean levels of civic activism and health aid (Models A2 and D2). Examining the joint effects on infant mortality reveals that the two-way interaction coefficient of DAH#CIVIC is significantly positive (Table 33). Given the coefficient of health aid, this result replicates the identified buffering effect of civic activism described earlier (Models A3 and B3). By contrast, the joint effect of health aid and liberal democracy on infant mortality is statistically insignificant. Still, the DAH#DEMO coefficient turns significant in Models C3 and D3 (Table 34). Accordingly, the GMM estimates imply a significant compensatory interaction relationship between democratic institutions and health aid.

Despite these findings, the central question concerns the impact of civil and political rights on the identified compensatory effects of civic activism and health aid. The results presented in Table 33 provide little evidence that democratic institutions influence the joint effect of civic activism and health aid on *infant mortality*. This can also be visually inspected in Figure 59 and Figure B 13 as the sloping lines at different levels of democracy are almost parallel. However, democratic institutions significantly influence the joint effect of civic activism and health aid on *life expectancy*. This is indicated by a significant three-way interaction coefficient and confirmed by both LDV and GMM estimation (Table 34, Models C and D).

Table 33: Civic activism and the marginal effect of DAH on IMR in the context of liberal democracy

	Dependent variable: infant mortality											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	-0.0136***	0.00408	-0.0265*	-0.0113***	0.00438	-0.0155	-0.0116***	0.00522	-0.0352***	-0.0108***	0.00507	-0.0338**
	(0.00417)	(0.00407)	(0.0150)	(0.00414)	(0.00405)	(0.0116)	(0.00399)	(0.00389)	(0.0135)	(0.00404)	(0.00387)	(0.0139)
DEMO	0.00668	-0.118***	0.0136	-0.000606	-0.00182	-0.00165	-0.0333	-0.0511*	-0.00221	-0.0308	-0.0540**	0.0245
	(0.0241)	(0.0424)	(0.0675)	(0.00107)	(0.00166)	(0.00296)	(0.0250)	(0.0267)	(0.0862)	(0.0248)	(0.0272)	(0.0745)
log DAH# DEMO	-0.0158	-0.0176	-0.0197	-0.000643	-0.000633	-0.000468	0.0126	-0.0202	0.0532	0.00883	-0.0189	0.0343
	(0.0129)	(0.0136)	(0.0471)	(0.000699)	(0.000650)	(0.00227)	(0.0153)	(0.0147)	(0.0711)	(0.0151)	(0.0149)	(0.0727)
CIVIC	-0.186*	-0.101	0.205	-0.125	-0.126	0.190	-0.199**	-0.0400	-0.138	-0.200**	-0.0363	-0.127
	(0.102)	(0.124)	(0.281)	(0.0968)	(0.130)	(0.266)	(0.100)	(0.123)	(0.332)	(0.0995)	(0.123)	(0.326)
log DAH#CIVIC	0.218***	-0.0270	0.546**	0.238***	-0.0294	0.459**	0.201***	-0.0464	0.551**	0.209***	-0.0492	0.535**
	(0.0484)	(0.0630)	(0.213)	(0.0470)	(0.0674)	(0.223)	(0.0512)	(0.0652)	(0.237)	(0.0504)	(0.0645)	(0.250)
CIVIC# DEMO	0.0914	-0.527	1.118	0.0118	-0.0157	0.0541	0.763**	-0.322	1.805	0.803**	-0.341	1.501
	(0.297)	(0.374)	(1.260)	(0.0133)	(0.0173)	(0.0602)	(0.365)	(0.374)	(1.374)	(0.369)	(0.383)	(1.453)
log DAH#CIVIC# DEMO	0.201	0.147	0.374	0.000353	-0.000415	-0.0166	-0.0885	0.159	-0.580	-0.0967	0.202	-0.276
	(0.130)	(0.224)	(0.681)	(0.00543)	(0.00995)	(0.0361)	(0.150)	(0.239)	(1.238)	(0.151)	(0.244)	(1.304)
EXPEND	-0.00312**	-0.00122	-0.00503	-0.00324**	-0.00141	-0.00538	-0.00279**	-0.00124	-0.00242	-0.00283**	-0.00127	-0.00195
	(0.00138)	(0.00198)	(0.00397)	(0.00140)	(0.00200)	(0.00336)	(0.00134)	(0.00196)	(0.00481)	(0.00134)	(0.00196)	(0.00464)
log FERTIL	0.0558***	0.427***	0.0880	0.0599***	0.422***	0.106	0.0500***	0.400***	0.115	0.0512***	0.401***	0.108
	(0.0173)	(0.0532)	(0.0621)	(0.0168)	(0.0545)	(0.0660)	(0.0177)	(0.0546)	(0.0738)	(0.0177)	(0.0546)	(0.0717)
log POP	-0.0149***	0.0230	-0.0225***	-0.0168***	0.0218	-0.0225***	-0.0147***	0.0296	-0.0281***	-0.0143***	0.0299	-0.0271***
	(0.00323)	(0.0220)	(0.00685)	(0.00316)	(0.0232)	(0.00667)	(0.00321)	(0.0227)	(0.00739)	(0.00324)	(0.0226)	(0.00813)
log GDP	0.000513	-0.279***	0.0388	-5.61e-05	-0.280***	0.0448	-0.000469	-0.277***	0.0418	-0.00114	-0.281***	0.0515
	(0.00813)	(0.0272)	(0.0299)	(0.00817)	(0.0278)	(0.0284)	(0.00827)	(0.0275)	(0.0357)	(0.00835)	(0.0276)	(0.0389)
log HIV	0.0151***	0.0494***	0.00315	0.0151***	0.0477***	0.00503	0.0153***	0.0509***	-4.33e-05	0.0152***	0.0507***	-0.00116
	(0.00429)	(0.0137)	(0.00848)	(0.00431)	(0.0140)	(0.00835)	(0.00429)	(0.0138)	(0.0109)	(0.00429)	(0.0138)	(0.0108)
(lagged) IMR	0.995***		1.073***	0.991***		1.055***	0.994***		1.068***	0.993***		1.086***
	(0.0142)		(0.0471)	(0.0141)		(0.0467)	(0.0143)		(0.0528)	(0.0143)		(0.0574)
TREND		-0.106***			-0.105***			-0.111***			-0.111***	
		(0.00986)			(0.00998)			(0.0101)			(0.0102)	
Constant	0.100	5.338***	-0.410	0.147	5.373***	-0.384	0.109	5.270***	-0.393	0.111	5.291***	-0.501
	(0.112)	(0.435)	(0.415)	(0.112)	(0.451)	(0.408)	(0.114)	(0.445)	(0.513)	(0.114)	(0.443)	(0.536)
Observations	392	392	392	388	388	388	392	392	392	391	391	391
R-squared	0.990			0.990			0.990			0.990		
Countries	107	107	107	106	106	106	107	107	107	107	107	107
Instruments			69			69			69			69
Hansen's J			0.124			0.150			0.122			0.134

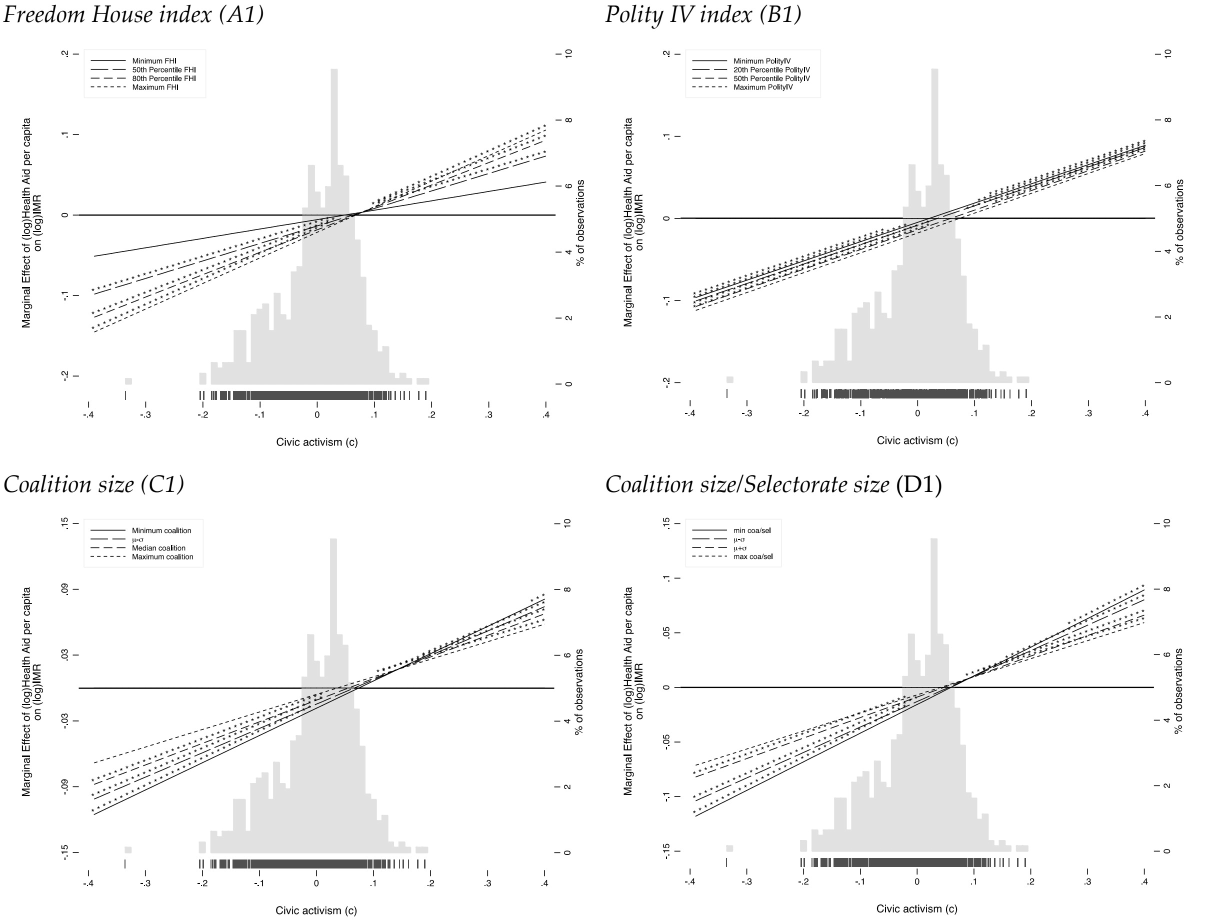
Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table 34: Civic activism and the marginal effect of DAH on LIFE in the context of liberal democracy

	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			COALITION/SELECTORATE SIZE		
log DAH	0.00133	-0.00174	0.000423	0.00120	-0.00155	-0.00226	0.00127	-0.00129	0.00308	0.00144	-0.00129	0.00456*
	(0.00141)	(0.00185)	(0.00300)	(0.00144)	(0.00185)	(0.00295)	(0.00132)	(0.00176)	(0.00264)	(0.00134)	(0.00175)	(0.00277)
DEMO	0.00620	0.0408**	0.00156	0.000295	0.00126*	0.000705	0.0157*	0.0185	0.0378*	0.0165*	0.0197	0.0402**
	(0.00789)	(0.0164)	(0.0178)	(0.000378)	(0.000675)	(0.000734)	(0.00905)	(0.0123)	(0.0217)	(0.00894)	(0.0124)	(0.0198)
log DAH# DEMO	0.00485	0.00106	-0.0176	-0.000119	-0.000157	-0.00157*	-0.00192	0.00261	-0.0326**	-0.00244	0.00282	-0.0355**
	(0.00422)	(0.00598)	(0.0144)	(0.000230)	(0.000290)	(0.000810)	(0.00568)	(0.00678)	(0.0141)	(0.00561)	(0.00678)	(0.0143)
CIVIC	0.0864***	0.0865	0.192**	0.0717**	0.0979*	0.251***	0.0729**	0.0964*	0.207***	0.0722**	0.0928*	0.188***
	(0.0324)	(0.0528)	(0.0753)	(0.0314)	(0.0553)	(0.0878)	(0.0328)	(0.0528)	(0.0735)	(0.0324)	(0.0528)	(0.0681)
log DAH#CIVIC	-0.0360*	0.0308	-0.0415	-0.0177	0.0272	-0.00561	-0.0347*	0.0288	-0.122**	-0.0315*	0.0289	-0.121***
	(0.0193)	(0.0276)	(0.0548)	(0.0200)	(0.0284)	(0.0555)	(0.0193)	(0.0281)	(0.0508)	(0.0189)	(0.0277)	(0.0452)
CIVIC# DEMO	0.264***	-0.222	0.0198	0.00829	-0.00669	-0.00639	0.143	-0.277*	-0.481	0.138	-0.280*	-0.507
	(0.0985)	(0.155)	(0.343)	(0.00507)	(0.00720)	(0.0187)	(0.148)	(0.165)	(0.392)	(0.150)	(0.168)	(0.376)
log DAH#CIVIC# DEMO	0.0581	-0.0124	0.330	0.00371*	0.00293	0.0325**	0.132***	-0.0425	0.627**	0.125***	-0.0476	0.613**
	(0.0421)	(0.0916)	(0.248)	(0.00196)	(0.00417)	(0.0163)	(0.0475)	(0.105)	(0.278)	(0.0470)	(0.107)	(0.269)
EXPEND	0.00101*	0.000833	0.00127*	0.00111**	0.000946	0.000758	0.000965*	0.000829	0.000946	0.000969*	0.000835	0.000767
	(0.000526)	(0.000788)	(0.000669)	(0.000540)	(0.000793)	(0.000617)	(0.000521)	(0.000786)	(0.000834)	(0.000522)	(0.000787)	(0.000781)
log FERTIL	-0.00249	-0.0868***	-0.0111	-0.00528	-0.0937***	-0.0273*	-0.00198	-0.0891***	-0.0122	-0.00178	-0.0888***	-0.0129
	(0.00649)	(0.0168)	(0.0140)	(0.00667)	(0.0168)	(0.0141)	(0.00698)	(0.0170)	(0.0129)	(0.00697)	(0.0171)	(0.0134)
log POP	0.00161	0.00395	0.00107	0.00193*	0.00649	-6.12e-05	0.00131	0.00345	0.000631	0.00144	0.00347	0.00146
	(0.00105)	(0.00458)	(0.00283)	(0.00108)	(0.00457)	(0.00211)	(0.00108)	(0.00463)	(0.00212)	(0.00111)	(0.00463)	(0.00201)
log GDP	-0.00286	0.0409***	-0.00696	-0.00246	0.0405***	-0.0136*	-0.00221	0.0445***	-0.0114**	-0.00216	0.0446***	-0.0113**
	(0.00279)	(0.00770)	(0.00621)	(0.00277)	(0.00769)	(0.00694)	(0.00277)	(0.00774)	(0.00570)	(0.00278)	(0.00775)	(0.00548)
log HIV	-0.0139***	-0.0397***	-0.0141***	-0.0140***	-0.0391***	-0.0132***	-0.0140***	-0.0384***	-0.0130***	-0.0141***	-0.0384***	-0.0127***
	(0.00174)	(0.00422)	(0.00367)	(0.00176)	(0.00418)	(0.00435)	(0.00175)	(0.00426)	(0.00392)	(0.00176)	(0.00427)	(0.00381)
(lagged) LIFE	0.837***		0.787***	0.828***		0.773***	0.834***		0.815***	0.834***		0.822***
	(0.0350)		(0.0671)	(0.0362)		(0.0786)	(0.0341)		(0.0762)	(0.0342)		(0.0696)
TREND		0.0137***			0.0133***			0.0139***			0.0139***	
		(0.00241)			(0.00243)			(0.00251)			(0.00252)	
Constant	0.661***	3.771***	0.924***	0.690***	3.738***	1.090***	0.672***	3.752***	0.857***	0.669***	3.751***	0.825***
	(0.141)	(0.108)	(0.277)	(0.145)	(0.108)	(0.325)	(0.139)	(0.109)	(0.310)	(0.139)	(0.110)	(0.288)
Observations	392	392	392	388	388	388	392	392	392	391	391	391
R-squared	0.973			0.973			0.972			0.972		
Countries	107	107	107	106	106	106	107	107	107	107	107	107
Instruments			69			69			69			69
Hansen's J			0.665			0.608			0.737			0.766

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

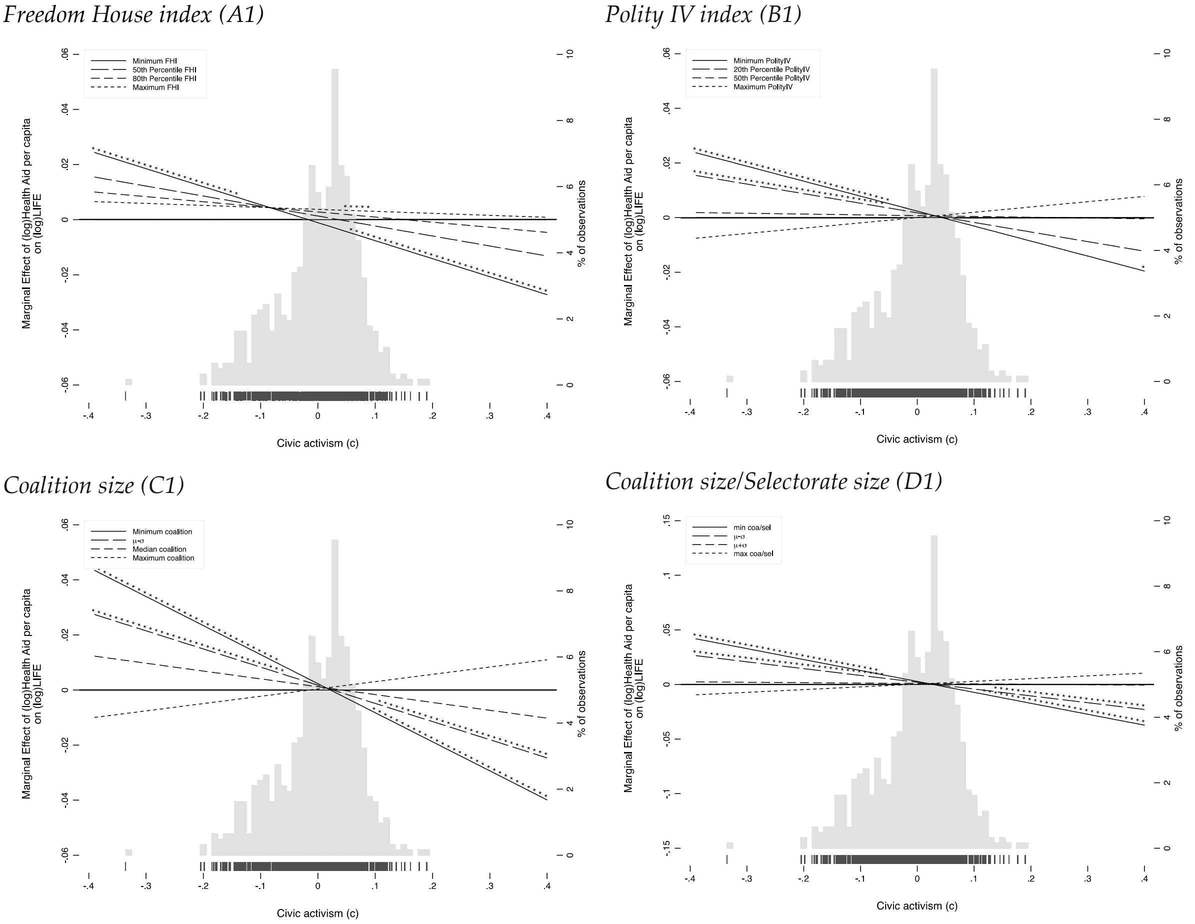
Figure 59: Civic activism and the marginal effect of DAH on IMR in the context of democracy



Notes: The dependent variable is infant mortality. The range of civic activism where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

To explore the nature of the interaction relationship in further detail Figure 60 and Figure 61 visualize the joint effect of civic activism and health aid on life expectancy for different levels of democracy. Explicitly, the negatively sloped (solid) marginal effect lines indicate a compensatory or buffering effect of civic activism under authoritarian rule (Figure 60). Consequently, in countries in which civil and political rights are constrained health aid produces the largest gains if citizens are passive and disengaged recipients. In fact, under authoritarian rule increased citizen engagement buffers the positive effect of health aid on life expectancy and even becomes detrimental to population health. By contrast, in consolidated democracies (dotted lines) the sloping lines of the LDV models fail to be significantly different from zero (Figure 60).

Figure 60: Civic activism and the marginal effect of DAH *on* LIFE *in the context of democracy*



Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

Likewise, GMM estimation adds further evidence that the joint effect of civic activism and health aid on life expectancy differs between democratic and non-democratic countries. In particular, the GMM estimates for each democracy measure show a negative sloping line at low levels and a positive sloping line at high levels of democracy (Figure 61). [291] In other words, under democratic rule the joint effect of elite-challenging action and health aid is synergistic but turns into a compensatory or buffering relationship under authoritarian rule. Concretely, the results of Model B3 imply that in countries with a high Polity score participation in contentious politics significantly enhances the effect of health aid on life expectancy. Nevertheless, the effect of health aid turns insignificant if citizens fail to engage in collective action. By contrast, under authoritarian rule elite-challenging action undermines or weakens the effectiveness of health aid indicated by a negative marginal effect of health aid on life expectancy. Likewise, health aid shows a significant positive effect on life expectancy if citizens are not engaged in elite-challenging action.

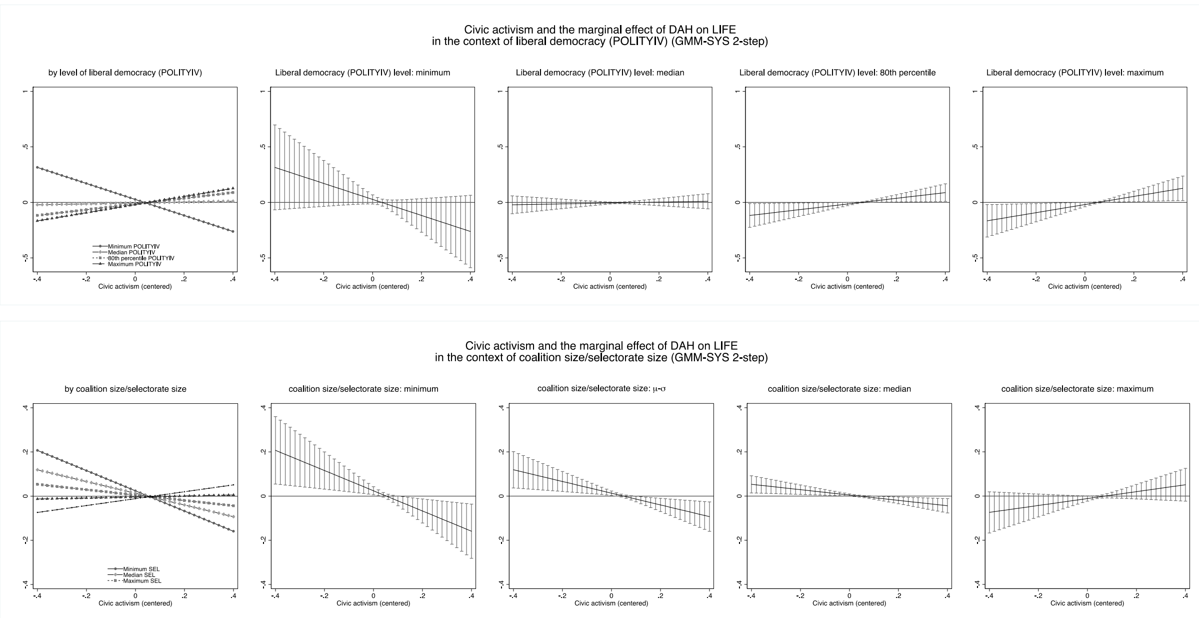
All GMM estimates imply a similar interaction pattern (Figure 61), even though the standard errors of Models A3, C3, and D3 are slightly too large to achieve conventional lev-

[291] The GMM estimates for each model are shown in Figure B 16. Figure 61 shows a summary of Figure B 16.

els of statistical significance. However, as the percentage of observations that falls within the range of statistical significance is not very large, the results have to be interpreted with caution.

In sum, while civic activism in *democratic* countries appears to complement health aid in the provision of public goods elite-challenging action in *undemocratic* countries tends to buffer the effect of health aid. To put it differently, authoritarian rulers, which are threatened by non-institutionalized political action, are likely to divert health aid away from its intended purposes reducing the effectiveness of health aid. Without the threat of elite-challenging actions, health aid contributes to substantial gains in population health even in the least democratic country. Thus, the effect of citizen-led accountability action on the provision of public goods financed by health aid heavily depends on the existence of democratic institutions.

Figure 61: Civic activism and the marginal effect of DAH *on* LIFE *in the context of liberal democracy (GMM)*

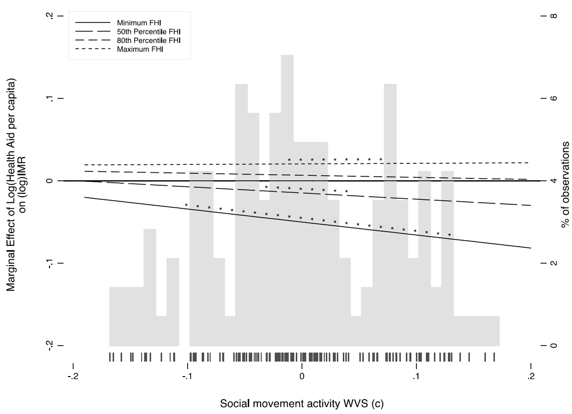


Notes: The dependent variable is life expectancy. The marginal effect plots are based on SYS-GMM estimation. The figure visualizes Model B3 (first row) and Model D3 (second row). The left marginal effect plot displays the sloping lines for low, mean and high values of democracy without showing the confidence intervals. To evaluate the statistical significance each marginal effect line is displayed in ascending order from left to right together with the respective confidence intervals.

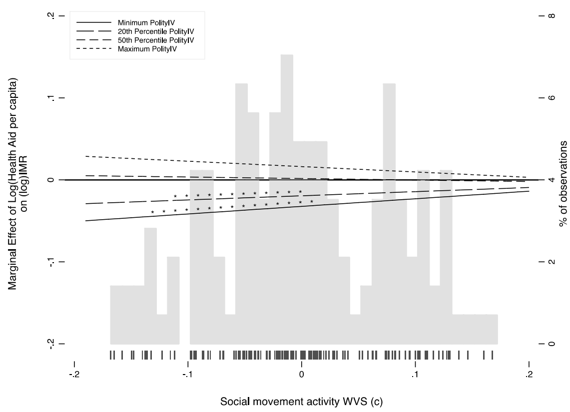
To test whether the identified interaction pattern between civic activism, health aid, and democracy is robust to the choice of alternative measures of civic activism I replicate the above analysis using data on social movement activity (SMA) from the WVS. Table B 5 and Table B 6 report the parameter estimates of increased health aid across varying levels of SMA and democracy. Again, the central question is whether participation in contentious politics has a different impact on the effectiveness of health aid in democracies compared to autocracies. Plotting the LDV models reveals inconsistencies across different model specifications. Models B1 to D1 indicate that *un*democratic institutions (solid lines) are associated with a compensatory relationship between civic activism and health aid (Figure 62). Likewise, under democratic rule the marginal effect of health aid turns statistically insignificant or changes sign. By contrast, Model A1 suggests that *un*democratic institutions (solid lines) are associated with a synergistic interaction pattern regarding both infant mortality (Figure 62) and life expectancy (Figure 63). Thus, the results obtained from LDV estimation are inconsistent.

Figure 62: Civic activism and the marginal effect of DAH on IMR in the context of liberal democracy II

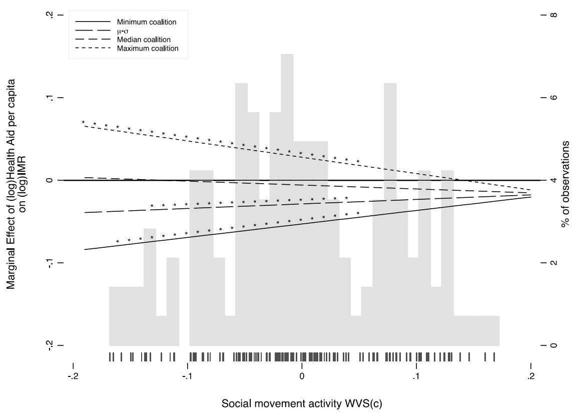
Freedom House index (A1)



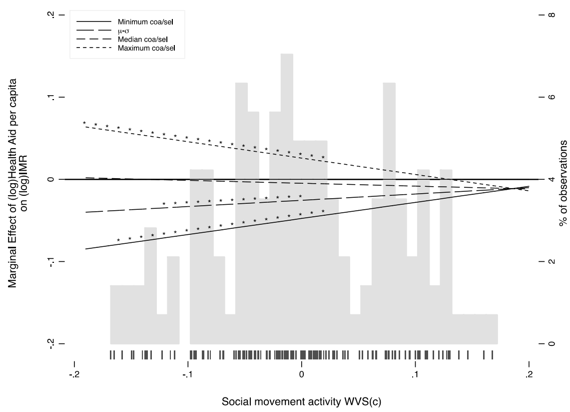
Polity IV index (B1)



Coalition size (C1)



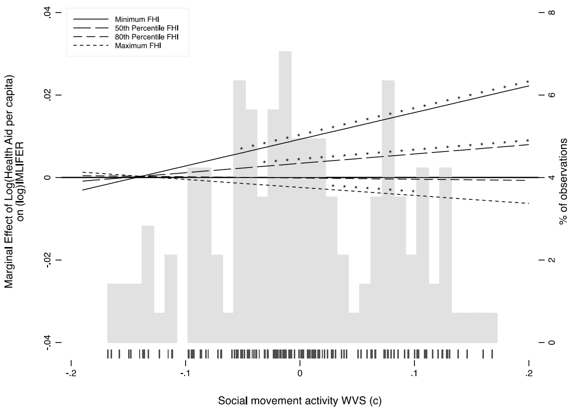
Coalition size/Selectorate size (D1)



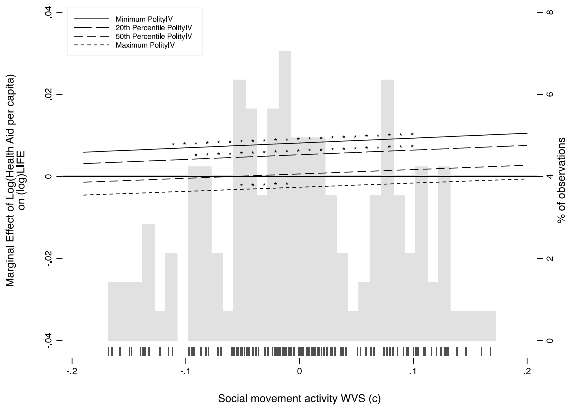
Notes: The dependent variable is infant mortality. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Civic activism is measured by the SMA index. Data: WVS.

Figure 63: Civic activism and the marginal effect of DAH *on* LIFE *in the context of liberal democracy II*

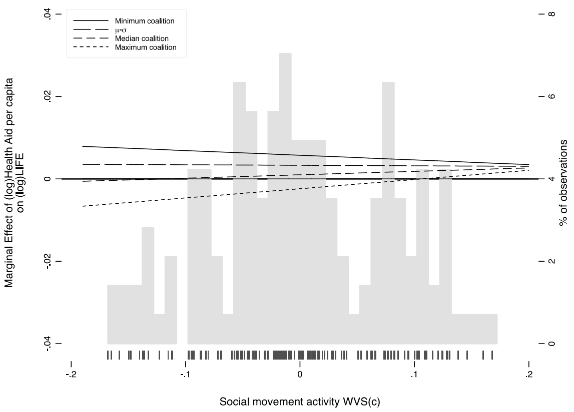
Freedom House index (A1)



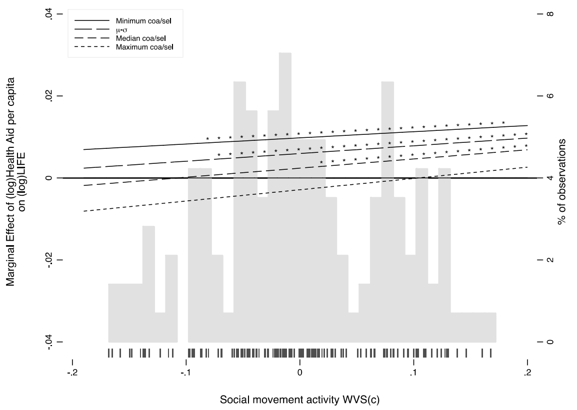
PolityIV index (B1)



Coalition size (C1)



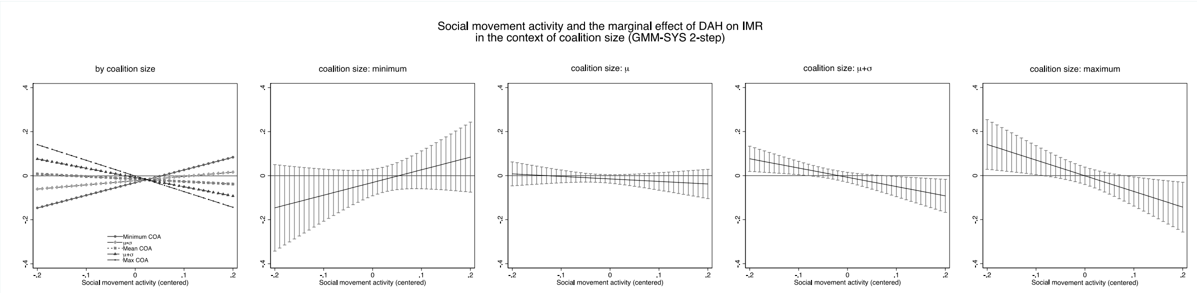
Coalition size/Selectorate size (D1)



Notes: The dependent variable is life expectancy. The range of social capital where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line. Civic activism is measured by the SMA index. Data: WVS.

Nonetheless, the preferred GMM estimates provide some evidence that democratic institutions significantly influence the joint effect of citizens' participation in contentious politics and health aid (Table B 5). Specifically, Model C3 indicates a synergistic interplay between civic activism and democratic institutions measured by coalition size. Accordingly, the results imply that in *democratic* countries social movement activity appears to enhance the negative effect of health aid on infant mortality. By contrast, in *non-democracies* the results indicate a *buffering* relationship. This pattern is visualized by the negative slope of the marginal effect line in democratic countries (with a large coalition size) and the positive slope of the marginal effect line in authoritarian states (with small a coalition size) in Figure 64. Thus, the results obtained based on the index of social movement activity suggest that participation in elite-challenging action may enhance aid effectiveness if democratic institutions are in place. However, the results have to be interpreted with caution as the evidence is not robust to the choice of democracy measure (Figure B 27) and varies in strength across different measures of population health (Figure B 30).

Figure 64: Civic activism and the marginal effect of DAH *on* IMR *in the context of liberal democracy (GMM) II*



Notes: The dependent variable is infant mortality. The marginal effect plots are based on SYS-GMM estimation. The figure visualizes Model C3. The left marginal effect plot displays the sloping lines for low, mean and high values of democracy without showing the confidence intervals. To evaluate the statistical significance each marginal effect line is displayed in ascending order from the left to the right together with the respective confidence intervals. Civic activism is measured by the SMA index. Data: WVS.

Summarizing, there is evidence that an aware and informed citizenry, which is engaged in accountability action, enhances the effectiveness of health aid *if* democratic institutions guarantee civil and political rights. Likewise, a lack of demand for accountability is associated with lower effectiveness of development assistance for health. Thus, in more democratic recipient countries citizen-led accountability action is an essential determinant of increased health aid effectiveness. By contrast, under authoritarian rule increased citizen participation is associated with decreasing marginal returns of health aid. This finding is (partially) confirmed using different measures of participation in elite-challenging action. Assuming that mass mobilization poses a threat to the stability of authoritarian regimes political leaders face incentives to prevent collective action and protest from occurring. Hence, the observed *in*effectiveness of health aid in non-democracies with highly engaged citizens suggests that under authoritarian rule aid is diverted away from its intended purposes to reduce the threat of political instability. Likewise, in non-democracies with a disengaged citizenry, the results imply that health aid is effectively allocated to the provision of public goods improving population health. However, the evidence is somewhat weak and has to be interpreted with caution.

Decentralization and elite-challenging action

Decentralization is expected to facilitate better monitoring of local health service providers and local governments that ensures openness to public scrutiny and higher responsiveness to citizen-led accountability action. Accordingly, health aid is hypothesized to improve population health especially in *decentralized* recipient countries with an active and engaged citizenry. To test the proposed relationship that decentralization strengthens the demand for accountability and the responsiveness of public officials Table 35 reports the parameter estimates of regressing population health on decentralization, civic activism, and health aid (and their respective joint effects).

The coefficient of DAH suggests that the main effect of health aid on infant mortality is significantly negative in centralized countries (at mean levels of civic activism), which is confirmed by both LDV and GMM estimation. Using life expectancy as a measure of population health (Table 36) confirms this finding for administratively centralized countries in which sub-national governments have no authority over taxing, spending, and regulation (Models B1 and B3). Decentralization by itself is not associated with better health outcomes. Quite the contrary, decentralized countries with autonomous regions or federal states (at mean levels of civic activism and health aid) show higher levels of infant mortality (Table 35) than their centralized counterparts (Models C1, C3, and D1). The adverse effects of decentralization—measured as federalism—are also confirmed for life expectancy (Table 36, Model D1).

Table 35: Civic activism and the marginal effect of DAH on IMR in the context of decentralization

	Dependent variable: infant mortality ratio											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	-0.0214***	-0.000196	-0.0373*	-0.0246***	-0.00622	-0.0276*	-0.0128***	0.00504	-0.0429***	-0.0137***	0.00311	-0.0400**
	(0.00710)	(0.00641)	(0.0219)	(0.00925)	(0.00725)	(0.0158)	(0.00412)	(0.00406)	(0.0128)	(0.00411)	(0.00377)	(0.0158)
DECENTRAL	0.0147	-0.000535	0.0112	-0.00535	-0.0850	-0.0120	0.0382***	-0.00588	0.105***	0.0395***	-0.0415	0.263
	(0.00963)	(0.0317)	(0.0482)	(0.0188)	(0.142)	(0.0579)	(0.00948)	(0.0423)	(0.0349)	(0.0131)	(0.138)	(0.179)
log DAH# DECENTRAL	0.00964	0.00705	0.0335	0.0147	0.00236	0.00160	0.00761	0.00511	0.0182	0.000831	0.00318	0.0687
	(0.00776)	(0.00853)	(0.0362)	(0.0117)	(0.0139)	(0.0356)	(0.00862)	(0.0150)	(0.0273)	(0.00801)	(0.0162)	(0.0621)
CIVIC	-0.374***	-0.00953	-0.756*	-0.242	-0.256	-0.232	-0.224**	-0.0569	0.0557	-0.199**	-0.112	0.0686
	(0.122)	(0.170)	(0.396)	(0.186)	(0.223)	(0.671)	(0.101)	(0.129)	(0.212)	(0.0949)	(0.121)	(0.321)
log DAH#CIVIC	0.119*	-0.0571	0.602**	0.263***	0.0497	0.393	0.201***	-0.0403	0.486***	0.179***	-0.0691	0.447**
	(0.0613)	(0.0939)	(0.277)	(0.0788)	(0.109)	(0.266)	(0.0453)	(0.0576)	(0.174)	(0.0450)	(0.0573)	(0.218)
CIVIC# DECENTRAL	0.520***	0.0991	1.326**	0.633**	0.0694	0.550	0.312	-0.495	0.628	-0.381	0.122	-0.788
	(0.141)	(0.240)	(0.523)	(0.271)	(0.386)	(0.934)	(0.216)	(0.475)	(0.830)	(0.256)	(0.508)	(2.917)
log DAH#CIVIC# DECENTRAL	0.129*	-0.0848	-0.730	-0.0792	-0.0548	-0.0812	-0.266	-0.381	0.857	0.221*	0.0723	-0.244
	(0.0767)	(0.129)	(0.607)	(0.121)	(0.163)	(0.518)	(0.237)	(0.335)	(0.808)	(0.128)	(0.206)	(1.180)
EXPEND	-0.00215	-0.000482	-0.00151	0.00117	0.00215	0.00571*	-0.00272**	-0.00155	-0.00362	-0.00313**	-0.00106	-0.00562
	(0.00142)	(0.00224)	(0.00469)	(0.00147)	(0.00315)	(0.00335)	(0.00129)	(0.00199)	(0.00383)	(0.00134)	(0.00194)	(0.00405)
log FERTIL	0.0751***	0.452***	0.169**	0.0906***	0.432***	0.113	0.0659***	0.446***	0.128**	0.0571***	0.424***	0.0314
	(0.0202)	(0.0656)	(0.0787)	(0.0339)	(0.0892)	(0.0914)	(0.0171)	(0.0543)	(0.0526)	(0.0179)	(0.0542)	(0.0763)
log POP	-0.0170***	0.0194	-0.0235**	-0.0217***	0.0287	-0.0276**	-0.0160***	0.0255	-0.0299***	-0.0163***	0.0279	-0.0365***
	(0.00339)	(0.0260)	(0.00990)	(0.00499)	(0.0424)	(0.0108)	(0.00319)	(0.0224)	(0.00654)	(0.00358)	(0.0241)	(0.0127)
log GDP	-0.00542	-0.330***	0.0510	-0.00177	-0.222***	-0.00309	0.00563	-0.280***	0.0503**	0.000496	-0.271***	0.0216
	(0.00871)	(0.0348)	(0.0428)	(0.00860)	(0.0448)	(0.0207)	(0.00758)	(0.0277)	(0.0211)	(0.00823)	(0.0280)	(0.0311)
log HIV	0.0138***	0.0418**	-0.00440	0.000778	-0.00464	-0.00459	0.0152***	0.0481***	0.00536	0.0165***	0.0398***	0.0161
	(0.00533)	(0.0169)	(0.0120)	(0.0105)	(0.0236)	(0.0155)	(0.00428)	(0.0140)	(0.00732)	(0.00461)	(0.0139)	(0.0119)
(lagged) IMR	0.994***		1.051***	1.012***		1.019***	0.996***		1.075***	0.991***		1.077***
	(0.0153)		(0.0502)	(0.0213)		(0.0469)	(0.0141)		(0.0397)	(0.0150)		(0.0474)
TREND		-0.100***			-0.114***			-0.106***			-0.107***	
		(0.0108)			(0.0168)			(0.00994)			(0.0101)	
Constant	0.136	5.731***	-0.525	0.0668	4.696***	0.0920	0.0533	5.282***	-0.426	0.134	5.198***	0.0361
	(0.119)	(0.534)	(0.503)	(0.150)	(0.809)	(0.295)	(0.108)	(0.444)	(0.295)	(0.121)	(0.472)	(0.473)
Observations	312	312	312	160	160	160	389	389	389	388	388	388
R-squared	0.991			0.992			0.990			0.990		
Countries	84	84	84	44	44	44	107	107	107	106	106	106
Instruments			68			64			69			63
Hansen's J			0.302			0.995			0.155			0.0972

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

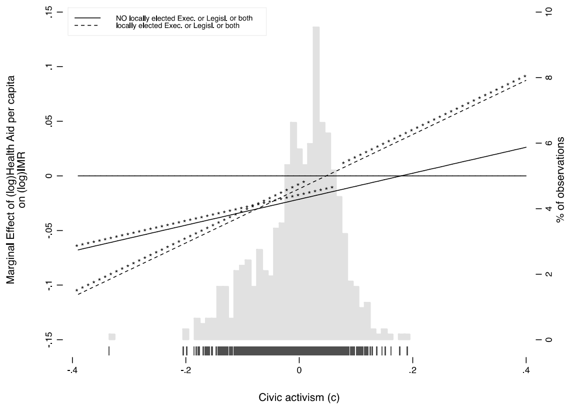
Table 36: Civic activism and the marginal effect of DAH on LIFE in the context of decentralization

	Dependent variable: life expectancy											
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	0.00513**	-0.000906	0.00419	0.00801***	0.00111	0.00913***	0.00195	-0.00157	0.00337	0.00226	-0.00163	0.00540*
	(0.00248)	(0.00292)	(0.00447)	(0.00150)	(0.00238)	(0.00323)	(0.00146)	(0.00183)	(0.00232)	(0.00139)	(0.00175)	(0.00301)
DECENTRAL	-0.000780	-0.00633	-0.0230*	0.00171	0.000217	0.0224	-0.00160	0.00677	-0.00243	-0.0144***	0.00688	-0.0557
	(0.00311)	(0.0112)	(0.0129)	(0.00529)	(0.0257)	(0.0174)	(0.00303)	(0.0144)	(0.00800)	(0.00449)	(0.0287)	(0.0561)
log DAH# DECENTRAL	-0.00400	0.00121	0.00117	-0.0135***	0.00862*	-0.0139**	0.00117	0.00260	-0.00546	-0.00137	0.00471	-0.00318
	(0.00284)	(0.00384)	(0.00676)	(0.00272)	(0.00440)	(0.00662)	(0.00245)	(0.00596)	(0.00338)	(0.00274)	(0.00728)	(0.0266)
CIVIC	0.0754	0.130*	0.222*	0.156***	0.110*	0.277***	0.0640*	0.127**	0.191***	0.0644**	0.119**	0.148**
	(0.0509)	(0.0716)	(0.119)	(0.0405)	(0.0665)	(0.0924)	(0.0333)	(0.0546)	(0.0499)	(0.0298)	(0.0525)	(0.0678)
log DAH#CIVIC	-0.0412	0.0724*	-0.0479	-0.0760***	-0.0196	-0.117***	-0.0283	0.0273	-0.0835**	-0.0242	0.0385	-0.0541
	(0.0256)	(0.0413)	(0.0580)	(0.0220)	(0.0324)	(0.0395)	(0.0182)	(0.0255)	(0.0327)	(0.0167)	(0.0255)	(0.0345)
CIVIC# DECENTRAL	-0.0462	-0.0641	-0.146	-0.146*	0.00338	-0.271	-0.0200	-0.0852	0.103	0.273***	0.0115	0.307
	(0.0577)	(0.0997)	(0.179)	(0.0814)	(0.118)	(0.190)	(0.0708)	(0.191)	(0.143)	(0.0703)	(0.237)	(0.775)
log DAH#CIVIC# DECENTRAL	0.0303	-0.0499	-0.0225	0.128***	-0.0622	0.163	0.0438	0.0296	0.137	-0.0221	-0.0788	-0.114
	(0.0297)	(0.0568)	(0.0895)	(0.0310)	(0.0528)	(0.106)	(0.0718)	(0.137)	(0.112)	(0.0400)	(0.101)	(0.538)
EXPEND	0.00135**	0.000492	0.00138	0.000421	-0.00116	-0.000564	0.00118**	0.000978	0.00106	0.00117**	0.000884	0.00194**
	(0.000542)	(0.000906)	(0.000896)	(0.000338)	(0.000971)	(0.00124)	(0.000481)	(0.000794)	(0.000680)	(0.000501)	(0.000793)	(0.000754)
log FERTIL	-0.00183	-0.0768***	-0.00823	0.00724	-0.0941***	0.00651	-0.00421	-0.0917***	-0.00614	-0.00256	-0.0944***	-0.00863
	(0.00867)	(0.0209)	(0.0214)	(0.00796)	(0.0211)	(0.0127)	(0.00665)	(0.0169)	(0.0131)	(0.00689)	(0.0171)	(0.0168)
log POP	0.00226*	0.00210	0.00337	0.00234**	0.00854	0.000989	0.00174	0.00341	0.000695	0.00148	0.00365	0.00652
	(0.00129)	(0.00536)	(0.00346)	(0.00109)	(0.00789)	(0.00386)	(0.00108)	(0.00465)	(0.00212)	(0.00120)	(0.00484)	(0.00436)
log GDP	-0.000285	0.0496***	0.000477	-0.00248	0.0354***	0.000683	-0.00128	0.0431***	-0.00629	-0.00146	0.0416***	-0.00488
	(0.00343)	(0.00973)	(0.00860)	(0.00310)	(0.00935)	(0.00724)	(0.00294)	(0.00780)	(0.00460)	(0.00293)	(0.00792)	(0.00687)
log HIV	-0.0147***	-0.0408***	-0.0200***	-0.0112***	-0.0291***	-0.0110**	-0.0138***	-0.0383***	-0.0137***	-0.0150***	-0.0381***	-0.0147***
	(0.00216)	(0.00511)	(0.00578)	(0.00299)	(0.00602)	(0.00458)	(0.00180)	(0.00429)	(0.00333)	(0.00190)	(0.00436)	(0.00390)
(lagged) LIFE	0.837***		0.705***	0.917***		0.883***	0.837***		0.808***	0.832***		0.794***
	(0.0417)		(0.108)	(0.0337)		(0.0833)	(0.0373)		(0.0589)	(0.0375)		(0.0800)
TREND		0.0124***			0.0112***			0.0139***			0.0137***	
		(0.00277)			(0.00262)			(0.00245)			(0.00245)	
Constant	0.632***	3.733***	1.181***	0.315**	3.794***	0.460	0.650***	3.764***	0.846***	0.673***	3.777***	0.790**
	(0.170)	(0.132)	(0.451)	(0.138)	(0.163)	(0.393)	(0.147)	(0.110)	(0.242)	(0.151)	(0.115)	(0.316)
Observations	312	312	312	160	160	160	389	389	389	388	388	388
R-squared	0.970			0.985			0.972			0.973		
Countries	84	84	84	44	44	44	107	107	107	106	106	106
Instruments			68			64			69			63
Hansen's J			0.737			0.998			0.984			0.727

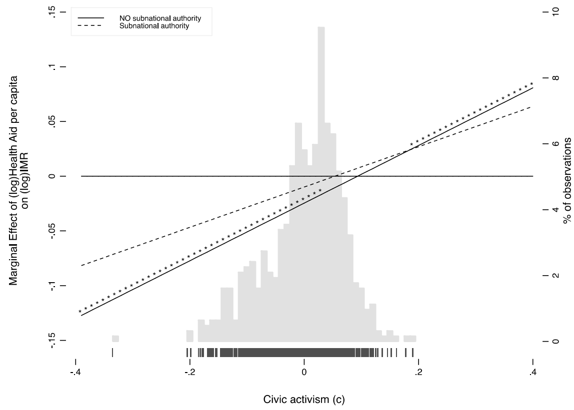
Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Figure 65: Civic activism and the marginal effect of DAH *on* IMR *in the context of decentralization*

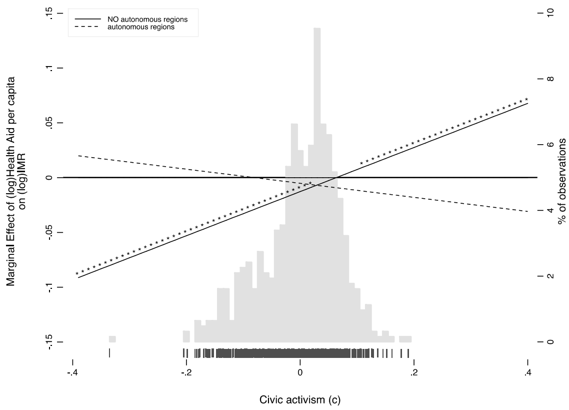
Locally elected officials (A1)



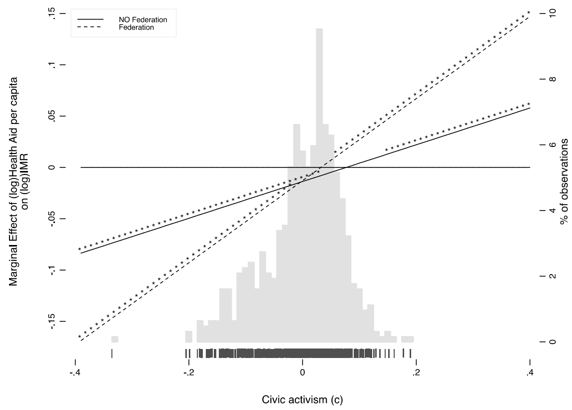
Subnational authority (B1)



Autonomous regions (C1)



Federalism (D1)

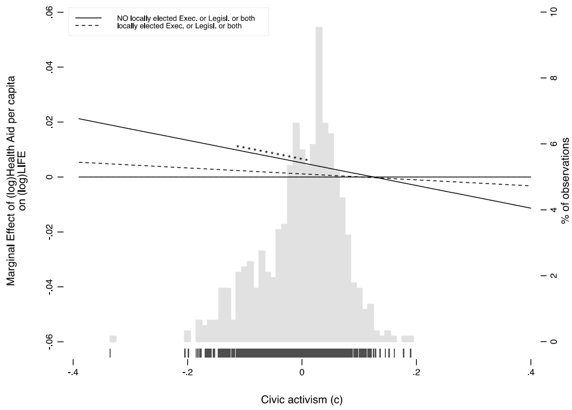


Notes: The dependent variable is infant mortality. The range of civic activism where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

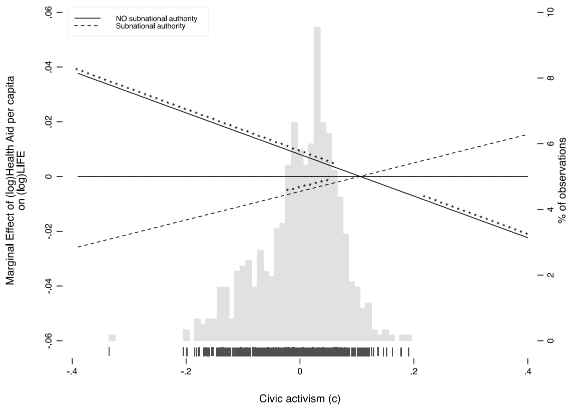
The significant (first-order) coefficient of CIVIC indicates that elite-challenging action has a beneficial effect on population health in *centralized* countries and at mean levels of foreign aid, which is confirmed for both infant mortality and life expectancy (Table 35 and Table 36). Against this backdrop, the question is whether the joint effect of decentralization, civic activism and health aid differs from the sum of their main effects. The joint effect of contentious politics and health aid is reflected by their two-way interaction coefficient, which is significantly positive and confirms the identified compensatory or buffering interaction pattern (in centralized countries). However, this joint effect of civic activism and health aid does not significantly differ between centralized and decentralized countries, as the three-way interaction coefficient is insignificant except for Model B1. This can also be visually detected by the small differences in magnitude and sign of the sloping lines in Figure 65 and Figure 66.

Figure 66: Civic activism and the marginal effect of DAH on LIFE in the context of decentralization

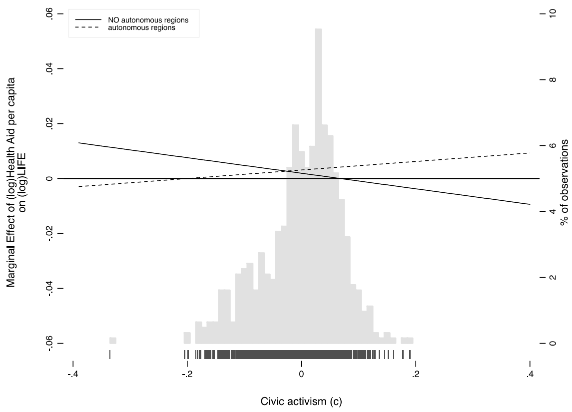
Locally elected officials (A1)



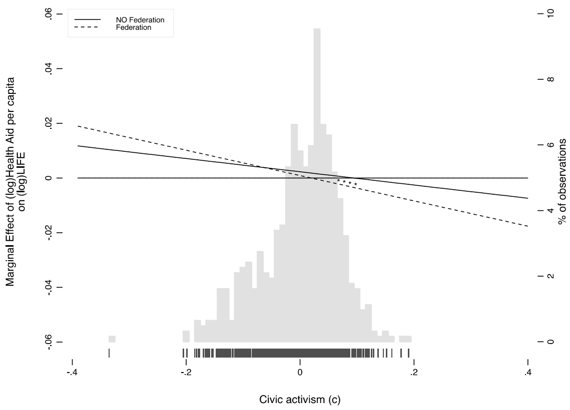
Subnational authority (B1)



Autonomous regions (C1)



Federalism (D1)



Notes: The dependent variable is life expectancy. The range of civic activism where the marginal effect of health aid is statistically significant is indicated by a 'shadow' along each marginal effect line.

In particular, Figure 65 visualizes the marginal effect of increased health aid on infant mortality (across different levels of citizens' participation) in *decentralized* (dashed lines) and *centralized* (solid lines) countries. The significant two-way interaction of civic activism and health aid is displayed by the positively sloped, solid marginal effect line. Again, the positive slope implies that in *centralized* states participation in elite-challenging action buffers the effectiveness of health aid. In other words, health aid significantly reduces infant mortality at low levels of participation while this effect weakens as participation in contentious politics increases. On the other hand, in *decentralized* countries the marginal effect of health aid on infant mortality largely fails to be significantly different from zero in both LDV (Figure 65 and Figure 66) and GMM estimation (Figure B 14 and Figure B 17).[292]

Using life expectancy instead of infant mortality does not alter the results. Precisely, the GMM estimator consistently replicates the compensatory or buffering effect of civic activism in centralized countries (Figure B 14 and Figure B 17). Likewise, in decentralized countries the marginal effect of health aid is statistically insignificant across the entire range of elite-

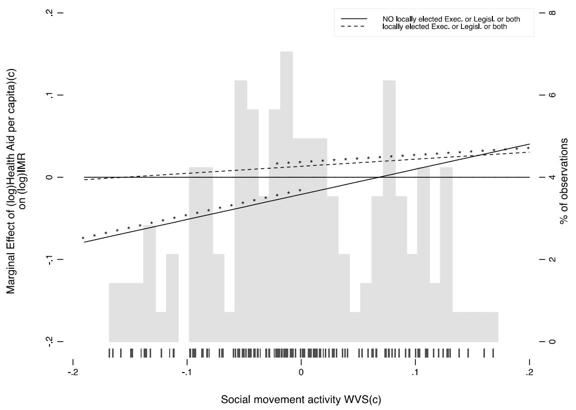
[292] For example, in centralized countries *without* locally elected officials, the marginal effect of increased health aid on life expectancy is significantly positive only across levels of civic activism from -0.15 to 0.016, which applies to about 50 % of the observations. In decentralized countries *with* locally elected officials health aid does not significantly increase life expectancy.

challenging action. Hence, even though the differences between *centralized* and *decentralized* countries are modest the findings suggest that political or administrative decentralization is not associated with higher health aid effectiveness.

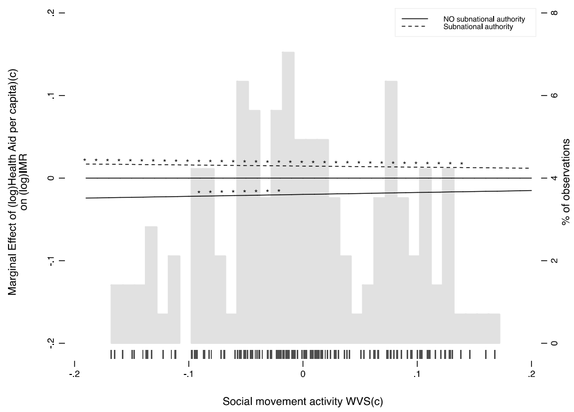
Replicating all models using data from the WVS supports these findings. In particular, as indicated by the results presented in Table B 7 and Table B 8 political and administrative decentralization appear to be negatively associated with population health (at mean levels of health aid and social movement activity) (Models A1-A3, B1, and D1). Furthermore, there is little indication that the joint effect of social movement activity and health aid significantly differs between centralized and decentralized countries except for Models D1, D3, and C2. In particular, visualizing the LDV estimates replicates the identified buffering effect of civic activism for *centralized* countries without local elections (Model A1). By contrast, Models B1 and D1 indicate that in decentralized countries the marginal effect of health aid on infant mortality appears to be associated with decreased levels of population health.

Figure 67: Civic activism and the marginal effect of DAH *on* IMR *in the context of decentralization II*

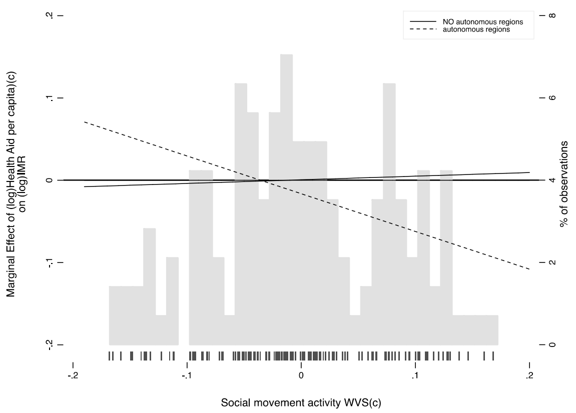
Locally elected officials (A1)



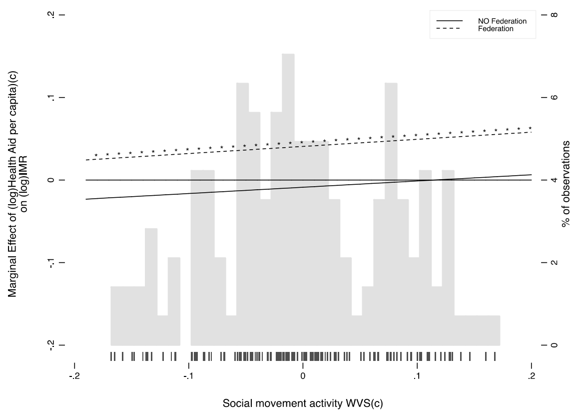
Subnational authority (B1)



Autonomous regions (C1)



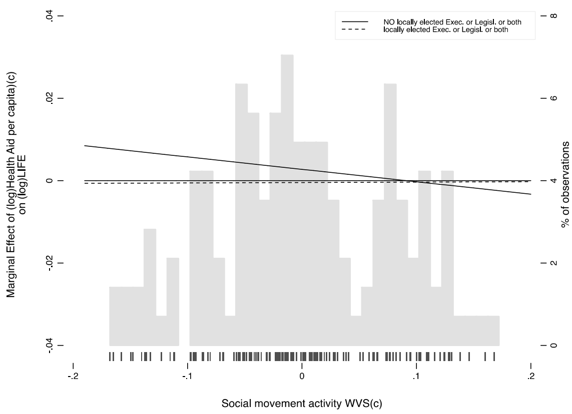
Federalism (D1)



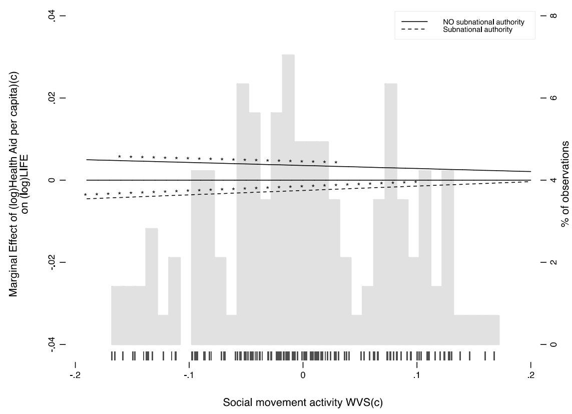
Notes: The dependent variable is infant mortality. Civic activism is measured by the SMA index. Data: WVS.

Figure 68: Civic activism and the marginal effect of DAH *on* LIFE *in the context of decentralization II*

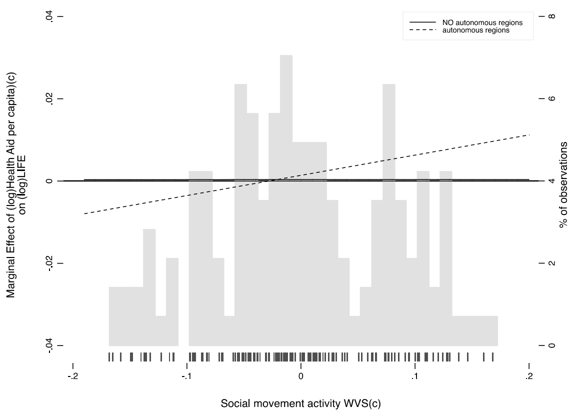
Locally elected officials (A1)



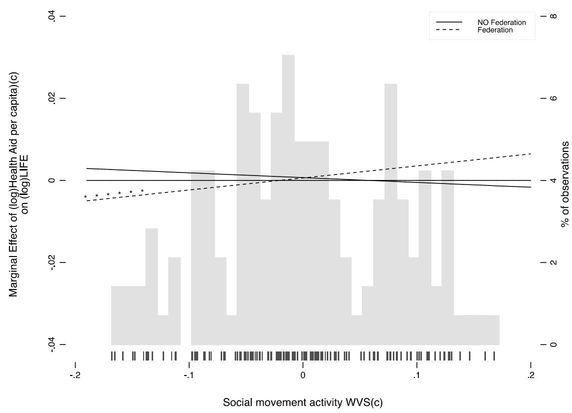
Subnational authority (B1)



Autonomous regions (C1)



Federalism (D1)



Notes: The dependent variable is infant mortality. Civic activism is measured by the SMA index. Data: WVS.

To compare the LDV with the GMM model Figure B 28 and Figure B 31 visualize the GMM estimates of the marginal effect of health aid across different levels of civic participation in contentious politics and decentralization. In short, as standard errors are too large to achieve statistical significance the joint effect of health aid and SMA significantly differs between federal and unitary states only in Model D3. Correspondingly, in centralized countries the marginal effect on infant mortality appears to be significantly negative (Figure B 28)–although being almost constant across different levels of SMA–while Figure B 31 replicates the identified compensatory interaction pattern for centralized, unitary states. By contrast, the marginal effect of health aid on population health in decentralized countries fails to be statistically significant.

In sum, there is no indication that political or administrative *decentralization* contributes to health aid effectiveness neither directly nor indirectly through creating an environment in which participation flourishes. Hence, in decentralized countries the marginal effect of health aid on population health fails to be statistically significant. In fact, decentralization in and of itself is correlated with lower population health. By contrast, in centralized countries civic activism appears to buffer the effects of health aid. That is, in centrally organized states increased participation in contentious politics weakens the effectiveness of health aid. Consequently, there is no evidence that bringing governments 'closer' to the people is associated with a synergistic interaction relationship between elite-challenging action and health aid.

Summarizing, this sub-chapter analyzed whether formal institutions of democratic governance and decentralization influence the joint effect of elite-challenging action and health aid on population health. Correspondingly, the effect of governments' administrative capacities, a country's level of liberal democracy and the degree of political and administrative decentralization were analyzed using different measurements and sub-samples. In the light of the results reported in this sub-section, there are three key findings. First, bureaucratic governance is not indicated to significantly influence the joint effect of civic activism and health aid on population health. Accordingly, the interaction between elite-challenging action and development assistance for health does not significantly differ between patronage and bureaucratic states. The identified buffering effect of elite-challenging action is found at different levels of bureaucratic governance. Hence, variations in the joint effect of elite-challenging action and health aid in recipient countries are not consistently associated with the level of state capacity and thus provide no indication of an enhancing interaction effect of bureaucratic governance.

Second, democratic institutions that guarantee civil and political rights influence the joint effect of (non-institutionalized) political action and health aid. In particular, the evidence suggests that an aware and informed citizenry that is engaged in elite-challenging action enhances the effectiveness of health aid *if* supported by democratic institutions. By contrast, in autocracies increased civic activism is associated with decreasing marginal returns of health aid. In other words, under authoritarian rule elite-challenging action weakens the effectiveness of health aid. This finding is also (partially) confirmed testing different measures of participation in contentious politics. Although the results have to be interpreted with caution the evidence indicates that democratic institutions change the buffering effect of civic activism into an enhancing effect that increases the effectiveness of health aid.

Third, decentralization does not significantly influence the joint effect of civic activism and health aid. Specifically, there is no indication that political or administrative *decentralization* significantly influence the joint effect of participation in contentious politics and health aid. In particular, while in decentralized countries the joint effect fails to be statistically significant civic activism appears to buffer the effects of health aid in centralized countries. Altogether, the evidence suggests that bringing governments 'closer' to the people does not enhance the joint effect of civic activism and health aid.

6 Discussion

Although the positive relation between civic engagement and political action is a well-established finding in political culture research (Almond and Verba 1963) the implications for the effectiveness of development assistance have not been tested on a comparative basis. Instead, the literature has focused on the role of formal institutions and examined whether 'good governance' determines the effectiveness of foreign aid (Chauvet 2015; Wright and Winters 2010). By addressing the question whether citizens' capacity to put pressure on public authorities influences the quality of health service provision in different contexts the evidence presented demonstrates the complexity of institutional conditions of health aid effectiveness. This study has argued that the capacity of civil society to engage in collective action is associated with higher state responsiveness and thus better population health via increased demand for accountability in public service delivery. Drawing upon social capital theory, the study further argues that a community's stock of social capital determines whether service users are willing to hold public authorities accountable.

The theoretical propositions are tested in three steps. The first part of the empirical analysis tests the widely believed notion that social capital fosters democratic and civic orientations and increases citizens' participation in political action on a broader empirical basis. The identified positive relationship between social capital and citizens' demand for accountability supports conventional wisdom in political culture and complements research on democratization in aid recipient countries. In particular, the positive correlation between associational involvement on the one hand and political interest and civic activism on the other supports the claim that people who join are more politically interested and more engaged in elite-challenging action in both democratic and authoritarian recipient countries. Consequently, these findings contradict recent claims that associational involvement strengthens the stability of authoritarian regimes by suppressing non-institutionalized forms of political action (Roßteutscher 2008; Roßteutscher 2010; Jamal 2009). However, the fact that members of voluntary associations often tend to express undemocratic preferences casts doubts on the function of voluntary associations as incubators of democratic ideas. On the other hand, the finding that *trusting* citizens are more democratically oriented in democratic countries, but are less likely to hold democratic ideals under authoritarian rule adds further evidence to the regime stabilizing effects of social trust and to the importance of formal institutions of democratic governance (Roßteutscher 2010). Notwithstanding, the fact that community ties are positively associated with communities' collective action capacity supports the assumption of Western donors that strengthening civic engagement has instrumental value to empower citizens to demand accountability from public officials and to monitor donor programs.

Based on the link between civic engagement and citizen demand for accountability the second part of the empirical analysis addressed the central question of whether health aid is more effective in countries with popular demand for accountability. The results obtained indicate that both community ties and participation in non-institutionalized political action are important determinants of health aid effectiveness. Table 37 summarizes the key findings corresponding to the hypothesized interaction patterns. In particular, the observed enhancing interaction relationship with community involvement implies that health aid significantly improves population health in countries where many citizens engage in community organizations. This result lends support for hypothesis 1a claiming a synergistic interaction pattern between *structural* social capital and health aid. Consequently, this finding adds further evidence to the existing case studies on the democratic and developmental outcomes of civic engagement in voluntary associations. According to this evidence, civic engagement is associated with higher civic and political knowledge, a greater sense of agency, increased capacities for collective action and more responsive and accountable states that provide better access to services and resources (Gaventa and Barrett 2012). Furthermore, this finding supports evidence from community-based organizations in the provision of health services including HIV-related prevention, care and treatment by health workers (Nair et al. 2010; Lewin et al. 2010; Glenton et al. 2011; Kakietek et al. 2013; Riehman et al. 2013; Schwartländer et al. 2011; Campbell et al. 2013, 114; Dramé et al. 2013; Low-Beer and Sempala 2010; David and Li 2010). By contrast, there is little indication that *cultural* social capital conditions the effect of development assistance on population health since social trust is not significantly associated with higher health aid effectiveness. This finding provides evidence opposing the hypothesized enhancing interaction between cultural social capital and health aid formulated in hypothesis 1b.

Table 37: Summary table: the role of political context

	Institutional context		
	2) Bureaucratic governance	3) Liberal democracy	4) Decentralization
a) Structural social capital	Community ties increase the positive effect of health aid on population health. → Support for hypothesis 1a.		
	Bureaucratic governance does not strengthen the joint effect of structural social capital and health aid on population health. → No support for hypothesis 2a.	Democratic institutions do not enhance the joint effect of structural social capital and health aid on population health. → No support for hypothesis 3a.	Decentralization does not enhance the joint effect of structural social capital and health aid on population health. → No support for hypothesis 4a.
b) Cultural social capital	Social trust does not condition the effect of health aid on population health. → No support for hypothesis 1b.		
	Bureaucratic governance does not strengthen the joint effect of cultural social capital and health aid on population health. → No support for hypothesis 2b.	Democratic institutions do not enhance the joint effect of cultural social capital and health aid on population health. → No support for hypothesis 3b.	Decentralization does not enhance the joint effect of cultural social capital and health aid on population health. → No support for hypothesis 4b.
c) Elite-challenging action	Elite-challenging action buffers the effect of health aid on population health. → No support for hypothesis 1c.		
	Bureaucratic governance does not strengthen the joint effect of civic activism and health aid on population health. → No support for hypothesis 2c.	Democratic institutions strengthen the joint effect of elite-challenging action and health aid on population health. Specifically, in democracies, citizens' participation in contentious politics is associated with higher health aid effectiveness. By contrast, under authoritarian rule civic activism buffers the effect of health aid on population health. → Support for hypothesis 3c.	Decentralization does not enhance the joint effect of elite-challenging action and health aid on population health. → No support for hypothesis 4c.

Likewise, there is no evidence that participation in elite-challenging action unconditionally enhances the effectiveness of health aid in recipient countries. Instead, the results obtained point at the importance of an enabling political environment. Without effective formal political institutions, which create incentives for public authorities to respond to citizen demands, civic activism seems to work as a buffer between health aid and population health. Thus, even though development assistance for health plays a major role in reducing mortality levels in countries with weak civil society increased citizen participation in contentious politics weakens the positive effect of health aid on population health (if additional institutional conditions are absent). Consequently, the hypothesized synergistic interaction relationship is not supported as articulated in hypothesis 1c. This result is backed up by qualitative evidence on the negative outcomes of elite-challenging action including the denial of state services and resources as well as violent and coercive state response (Gaventa and Barrett 2012).[293] Hence, even though civil society organizations are found to enhance the effectiveness and sustainability of health aid regime-threatening forms of protest activity fail to increase the responsiveness of service providers and public officials if an enabling political environment is absent. These findings echo with selectorate theory claiming that contentious politics pose a risk for incumbent governments to remain in office and hence creates incentives for political leaders with access to foreign aid to reduce the provision of public goods. Accordingly, institutions of democratic governance are expected to determine whether health aid is targeted to increase or decrease public good provision and thus influence the outcomes of development assistance for health. In the same vein, the institutional view of social capital claims that democratic institutions and the willingness of public officials to respond to increased demands create incentives that shape citizens' engagement with public officials and hence the character of collective action (Foley and Edwards 1996, 48). Furthermore, formal institutions that cultivate the principles of impartiality and transparency in the exercise of public authority as well as institutional arrangements that lower the distance between governments and citizens are hypothesized to enhance citizens' motivation to demand accountability.

Against this backdrop, the third part re-examines the results obtained in part two by analyzing interaction patterns between civic engagement and health aid within the context of formal political institutions. This section provides a more nuanced perspective on the complex interactions between demand- and supply-side conditions of health aid effectiveness. In particular, the study tested whether the effect of communities' capacity to demand accountability on health aid effectiveness varies between bureaucratic and patronage states (hypotheses 2a-c); democratic and authoritarian countries (hypotheses 3a-c); and between centralized and decentralized states (hypotheses 4a-c) (Table 37).

State capacity and the quality of bureaucratic governance

Based on the results obtained there is no evidence that the identified enhancing effect of structural social capital is conditioned by the quality of bureaucratic governance. Thus, the capacity of a state to make collectively binding decisions, and to implement them with the appropriate organizational means has little influence on the impact of community involvement on health aid effectiveness. In fact, community ties complement health aid in the provision of public goods irrespective of a country's administrative capacity. Voluntary involvement enhances the effectiveness of health aid even in patronage recipient countries. The hypothesized synergistic relationship between state capacity and the joint effect of associational membership and health aid—formulated in hypothesis 2a—is therefore not supported (Table 37). These results resonate with evidence from comparative research on state capacity in Africa and Latin America demonstrating that certain forms of neopatrimonialism

[293] To clarify, the majority of case studies on social movements summarized by Gaventa and Barrett (2012) report positive outcomes of citizen engagement in social movements.

are not incompatible with low levels of bureaucratic corruption and good performance in public service delivery (Kelsall and Booth 2010; Cammack 2007; Booth 2012a; Grindle 2013, 2007, Börzel and Risse 2016, 2010).

Likewise, there is no evidence that high stocks of cultural social capital and high levels of state capacity together enhance the effectiveness of health aid. Although the joint effects of social trust and health aid differ between patronage and bureaucratic states, there is no indication that state capacity strengthens the joint effect of trust and health aid. Instead, the antagonistic interaction pattern between social trust and health aid implies that both may function as substitutes under bureaucratic governance. By contrast, patronage politics appears to undermine the relationship between trust and health aid effectiveness. Consequently, the results oppose hypothesis 2b stating that health aid is more effective in recipient countries with higher levels of cultural social capital *and* higher levels of bureaucratic governance. This finding implies that trust fails to function as an equivalent to state institutions in aid recipient countries as suggested by recent evidence from governance in areas of limited statehood (Börzel and Risse 2016; Börzel and Risse 2010).

Concerning citizens' participation in contentious politics, there is no evidence that states' administrative capacities change the role of civic activism in the effectiveness of health aid. In particular, whether states have the decision-making and organizational capacity to respond to increased citizen demands does not determine the joint effect of citizen-led accountability action and health funding on population health. In other words, whether recipient countries respond to citizens exercising pressure on public officials and health service providers by means of protests and social movements does not primarily depend on states' capacities. Therefore, the hypothesis that bureaucratic governance enhances the joint effect of citizens' participation and health aid—hypothesis 2c—is not supported.

Institutions of liberal democracy

Democratic institutions were expected to strengthen the joint effect of civic engagement and health aid on population health. Specifically, political and civil rights, as well as the independence of the judiciary and legislature, create incentives that shape governments' responsiveness and citizens' willingness to articulate demands and participate in monitoring of service providers and politicians. The findings suggest that democratic institutions are a critical determinant of the relationship between elite-challenging action and health aid effectiveness but have little impact on the (moderating) effects of structural and cultural social capital. Thus, democratic institutions are neither a necessary nor sufficient condition for a synergistic interaction relationship between community involvement and social trust on the one hand and health aid on the other. Instead, there is minor indication that community involvement enhances the effectiveness of health aid, particularly in the least democratic settings. Hence, the results lend no support for hypothesis 3a claiming that liberal democracy provides an enabling environment in which structural social capital enhances the effectiveness of health aid. This finding challenges conventional wisdom of the institution-centered approach, which claims that only mature democracies provide an enabling environment in which civil society participation flourishes. Instead, it adds evidence to the view that involvement in local associations enables citizens to hold government officials accountable even in non-democratic countries (Gaventa and Barrett 2012). Furthermore, there is no evidence that the joint effect of trust and health aid on population health significantly varies across different levels of liberal democracy. Accordingly, these results oppose the hypothesized synergistic interaction relationship between democratic institutions, social trust and health aid as formulated in hypothesis 3b.

However, despite interpreting the results with caution, there is evidence that democratic institutions change the nature of the interaction between citizens' participation in elite-challenging action and health aid. Specifically, civic activism increases the effectiveness of health aid under democratic governance but buffers the positive effect of health aid on population health under authoritarian rule. Namely, democratic institutions determine whether citizens' participation in contentious politics enhances or weakens the effect of health aid on population health. These findings echo with the propositions of selectorate theory (Bueno de Mesquita and Smith 2009; Bueno de Mesquita and Smith 2010). Specifically, the observed ineffectiveness of health aid in non-democratic countries where many citizens participate in regime-threating forms of protest activity resonates with the view that political leaders misuse foreign aid to reduce the threat of a regime change through decreased public good provision. [294] Thus, undemocratic institutions undermine the enhancing effect of elite-challenging action on health aid effectiveness. Democratic institutions are therefore a necessary condition for effective citizen demand and responsive governments. Subsequently, the results lend support for hypothesis 3c claiming that liberal democracy provides an enabling environment in which citizen-led accountability action enhances the effectiveness of health aid.

Decentralization and the devolution of power

There is no evidence that decentralization strengthens the joint effect of social capital and health aid. Specifically, political and administrative decentralization is not found to foster the accountability relationship between citizens and public officials in recipient countries. In fact, the adverse effects of political decentralization undermine the synergistic interaction relationship between associational involvement and health aid. Therefore, reducing the distance between citizens and public officials weakens the enhancing effect of community ties and health aid on population health. These results directly oppose hypothesis 4a, which states that decentralization strengthens the enhancing interaction relationship between community ties and health aid. This finding resonates with the view that under decentralization local officials are more likely to be subject to the pressing demands of local interest groups and face conflicting incentives due to local contexts and informal institutions (Prud'homme 1995; Bardhan and Mookherjee 2006; Tanzi 1996; Bardhan 2002; Booth 2012b,

[294] Specifically, if democratic governments that have access to foreign aid spend the free resources on public goods health aid effectively improves population health. By contrast, if authoritarian leaders spend free resources on private goods and reduce the provision of public goods health aid contributes little to improvements in population health. Therefore, assuming that receiving aid increases 'revolutionary threat' particularly in authoritarian systems where citizens benefit most of a regime change compared to the status quo, and assuming that (peaceful) mass protests are perceived as a threat, then, political leaders that are not constrained by democratic institutions reduce public good provision and use foreign aid to finance repressive measures to reduce revolutionary threat.

36-39). Furthermore, there is little indication that political or administrative decentralization has a major impact on the joint effect of social trust and health aid on population health. Hence, bringing governments closer to the people does not enhance the joint effect of trust and health aid on population health, which lends no support for hypothesis 4b.

Likewise, there is no indication that political or administrative decentralization significantly enhances the joint effect of participation in contentious politics and health aid. In particular, the joint effect of civic activism and health aid fails to be statistically significant in decentralized countries. By contrast, in centralized countries increased civic activism weakens the effects of health aid on population health. Hence, the evidence provides no support for hypothesis 4c, which claims that bringing governments 'closer' to the people strengthens the joint effect of elite-challenging action and health aid. On the one hand, these findings differ from those obtained in several case studies showing that the devolution of basic health care services to local governments has led to improvements in population health (Mansuri and Rao 2013; Uchimura and Jütting 2009; Asfaw et al. 2008; Simatupang 2009). On the other hand, the results resemble with the identified adverse effects of decentralization on the effectiveness of economic aid (Lessmann and Markwardt 2012; Baskaran et al. 2013).

Limitations of the study

Assessing the effectiveness of foreign aid according to the extent to which it improved health outcomes presents a series of challenges. Data availability and measurement validity constrain the generalizability of results while confounding factors, measurement reliability, and selection bias limit causal inference (Bortz and Döring 2006: 502-504). Despite the fact that measurement inaccuracy is inherent to data collection measuring social capital is particularly complex (Grootaert and Bastelaer 2002b). The combination of indicators from public opinion surveys with proxy variables and expert judgments reflects a pragmatic approach to maximize the number of observations. However, the reliability of the composite ISD-indices has to be interpreted with caution. Specifically, although there is little reason for concern about measurement error in the composite index of associational involvement the indices of civic activism and interpersonal trust & safety mainly rely on proxy variables and expert assessments that are only moderately correlated with the identified factors. Likewise, it is widely acknowledged that indicators of generalized trust suffer from different measurement problems that impede cross-cultural comparisons including the radius of trust problem (Delhey, Newton, and Welzel 2011; Wilson, Rick, and Eckel 2017, 136). To mitigate the issues of criterion validity and measurement error in indicators of social capital this study replicated the results of multivariate analysis using exclusively perceptual and behavioral indicators from public opinion surveys, and a radius-adjusted measure of generalized trust (Table D 17). Although corroborating the key findings limitations of public opinion data from aid recipient countries undermine the validity of generalized inferences. Therefore, the availability of data on whether reported trust levels refer to closed in-groups or extend beyond an individual's network will allow future research to better account for cross-cultural differences in survey response patterns and to distinguish the effects of particularized trust and generalized trust. Furthermore, social movement activity data on purpose, intensity, and duration of protests will enable future researchers to better understand the dynamics of citizen-led accountability action and service delivery.

Likewise, drawing causal inferences on aid effectiveness requires reliable measurements of international development assistance. In particular, tracking aid flows from government treasuries or philanthropic donors to intermediary institutions and finally to governmental and non-governmental implementing institutions is complex.[295] Furthermore, donors' aid commitments and actual aid disbursements may differ due to delayed disbursements or commitments that are never fully implemented (Hudson 2013: 2). One way to mitigate the problem of measurement reliability is to test whether the results are robust to changes in the composition of the health aid variable (Table A 7) and the use of disbursement instead of commitment data (Table A 8).[296] The evidence indicates that variations in what counts as health aid and using data on health aid disbursements (IHME 2016b) leads to qualitatively similar results and adds further support to the identified interaction patterns. Likewise, regarding the operationalization of population health, it is widely known that health estimates in the poorest countries are associated with high uncertainty levels. Therefore, although comparing the results across different indicators of population health (infant, child, and maternal mortality, as well as life expectancy), the reliability is weakened by ineffective vital registration systems and sampling errors in household surveys. Nevertheless, measurement error in the dependent variable only reduces the power to reject a false null hypothesis but does not lead to biased estimates. This gives further confidence in the identified conditional effects of civic engagement and health aid.

Methodologically, the biggest challenge is to adequately model the potential interactions between individual determinants of population health and also accounting for endogeneity bias arising from reverse causality and omitted variables (Faust and Leiderer 2010, 170). Technically, this study accounts for endogeneity bias arising from unobserved (time-invariant) heterogeneity by applying different panel estimation techniques including error component models and GMM estimation. The GMM estimator also accounts for bias induced by endogenous explanatory factors using instrumental variables. However, the cost of reducing endogeneity bias by applying GMM estimation is much higher standard errors and larger confidence intervals compared to standard panel estimators. Moreover, using too many instruments negatively influences the robustness of the Sargan/Hansen-test statistic to detect invalid instruments (Roodman 2009, 107). Likewise, as both the Difference- and System GMM estimators are designed for 'small T, large N'-panels the comparatively small sample of recipient countries weakens the reliability of the cluster-robust standard errors and the autocorrelation test statistics. As a result, larger panels and longer time-series that increase the availability of instruments will enable future research to specify different dy-

[295] For instance, the DAC CRS codes activities cutting across several sectors either as multi-sector aid or uses the code corresponding to the largest component of the activity (to avoid double counting). Accordingly, subordinate activity purposes may be systematically underreported.

[296] Irrespective of whether a narrow or a broader definition of health aid is used (in-/excluding projects related to family planning, reproductive health care and HIV and STD control (Wilson 2011)) the results are qualitatively similar to the key findings reported.

namics and strengthen the general reliability of GMM estimation based on its large sample properties.

Omitted variables provide another source of endogeneity bias that affects the extent to which inferences about the relationship between civic engagement, health aid, and health outcomes are warranted. Therefore, deriving the direction of the potential bias addresses the possibility of over-estimating the effect of health aid by omitting an important explanatory variable. In particular, omitted variables would only lead to an overestimation of the effect of development assistance if donors allocate *less* foreign aid to countries that are widely recognized as a danger to both the well-being of their citizens and international security. However, if donors seek to reduce the spread of instability across borders, and to eliminate the causes of terrorism by improving access to basic health care services they would allocate aid to states characterized by dysfunctional institutions and fragility. In fact, the evidence suggests that in the past donors have allocated more health aid in per capita terms to fragile than to stable (low- and middle-income) countries (Graves, Haakenstad, and Dieleman 2015: 1). Hence, it is reasonable to assume that donors indeed seek to bolster health systems in fragile environments to provide long-term stability. Consequently, the estimated negative effect of health aid on mortality levels is likely to be biased towards zero and thus (on average) underestimates rather than exaggerates the effectiveness of health aid.

Likewise, health aid is only one among different types of health-related development funding that may affect population health. For instance, international efforts to increase access to clean water and sanitation services that are not counted as health aid may induce omitted variable bias.[297] Therefore, to reduce the risk of incorrectly attributing health outcomes to health aid, it is important to account for the variation in health outcomes explained by non-health aid, which is allocated to health-related purposes such as water supply, and waste management. The results presented in this study suggest that accounting for additional health-related control variables leads to qualitatively similar results (Table A 9). Still, future research will benefit from improved (geo-referenced) data that allows researchers to better track the (spatial) impacts of specific aid projects (as well as foreign direct investments) and to attribute outcomes to individual interventions and as a result strengthen internal validity.

Moreover, future research on the role of civic engagement and the health effects of development assistance in general and non-health aid in particular will shed light on whether there is something specific about health aid as opposed to overall aid and other sector-specific donor funding. Theoretically, any type of foreign aid may relax government budget constraints due to the fungibility of aid and ultimately influence health outcomes. Nonetheless, development assistance given for health purposes should have a stronger effect on population health than foreign aid in general as health aid is more likely to be spent on health-related projects. Although this question deserves a detailed investigation, from a bird's-eye view, the evidence suggests that non-health financing differs from health aid as it

[297] Moreover, if donors allocate less health aid to developing countries that receive large flows to sectors that are considered as substitutes for health funding, such as aid for water supply and waste management, the estimated coefficient of health aid would be downward biased.

fails to show a significant *unconditional effect* on population health.[298] Likewise, even though civic engagement seems to interact with non-health aid, the patterns are less clear than in the health sector.[299]

Although this study provides strong evidence of a positive relationship between health aid and health outcomes if citizens' are able and willing to exercise demands for better service delivery the complexity of the causality chain in macro-comparative analyses constrains the validity of causal inference. Specifically, the absence of a counterfactual makes it practically impossible to attribute changes in health outcomes to the implementation of specific health aid activities, increases of government health expenditures or to improvements in health care delivery (Neubert 2010, 147-48; Bourguignon and Sundberg 2007, 317).[300] One way to narrow the attribution gap in before-and-after evaluation designs is to use subnationally (geocoded) data on development projects and domestic public expenditures especially in combination with geo-referenced surveys. Against the backdrop of recent improvements in data availability, future comparative research will shed further light on the (spatial) dynamics of civic engagement and accountability *within* recipient countries and increase the validity of causal inference.[301] Another way of mitigating the attribution problem in macro-comparative studies is by assessing the effectiveness of donor interventions using policy output data on the density and scope of policy reforms (Knill, Schulze, and Tosun 2010). Therefore, increasing available data on the extent of recipient governments' regulation activities and the strength and rigidity of policy reforms will also contribute to narrowing the attribution gap. This will also stimulate further comparative research on the effectiveness of sector-specific development assistance, such as aid for environmental protection.

[298] For instance, funding for education, environmental protection, information and communication, industry and general budget support fails to significantly reduce infant mortality (Table A 14-Table A 15). Sector-specific aid is classified according to AidData's Sector Coding Scheme (AidData 2013). In particular, the reported estimates for civil society and infrastructure aid replicate the identified synergistic interaction pattern between community involvement and aid but fail to achieve conventional levels of statistical significance except for the RCM model (Model A2). Likewise, trust appears to significantly condition the effect of civil society and infrastructure aid while the results for civic activism are ambiguous. Specifically, the reported coefficients for trust suggest an antagonistic interaction relationship, which implies that civil society aid and infrastructure aid have the strongest effect on reductions in infant mortality if communities lack norms of reciprocity and cooperation. On the one hand, the evidence suggests that elite-challenging action significantly buffers the mortality reducing effect of civil society and infrastructure aid. However, the positive sign of the interaction coefficient for civil society aid turns negative for infrastructure aid. Hence, high participation in elite-challenging action weakens the negative effect of civil society aid on infant mortality but strengthens the effect of infrastructure aid. Furthermore, testing whether the joint effect of civic activism and non-health aid is conditioned by the quality of democratic institutions provides no support for a significant (three-way) interaction effect.

[299] This is replicated by the estimates reported in Table A 12-Table A 13. Specifically, the LDV estimates provide little evidence of a significant effect of non-health aid on infant mortality except for communication aid. However, the results for communication aid are not replicated by GMM or RCM estimation. Instead, the GMM estimates indicate that transport aid and general budget support have a significant negative effect on infant mortality. However, in both models either the Hansen's test of overidentifying restrictions fails, or the hypothesis of no second-order correlation in residuals is rejected which raises serious doubts about the validity of the reported results.

[300] Technically, the random coefficient model (RCM) indirectly addresses this issue by including country-specific time trends that account for individual trajectories. However, if the model includes too many parameters to be fitted given the information available in the data (over-identification) the RCM estimator often fails to converge (leading to no solution).

[301] Even though applying statistical weighting methods is constrained by data availability and validity concerns this study also tested whether the results are robust to differences *within* countries via adjusting the levels of social capital by the extent of economic disparities and gender inequality. Although most estimates lead to qualitatively similar results, they largely fail to achieve conventional levels of statistical significance (Table A 10-Table A 11).

7 Conclusion

Exploring the cultural and political conditions under which development assistance is more likely to reduce poverty offers fresh insights into how context determines accountability in public service provision. This view pays particular attention to the coordination challenges that prevent governments and civil society in aid recipient countries from cooperating in development processes and lead to an under-supply of public goods.

The primary concern of this research was assessing the role of factors that determine communities' capacity to demand accountability from public authorities and to what extent these factors condition the effectiveness of health service delivery. Based on the findings obtained the capacity and motivation of civil society to engage with public officials and mobilize political action are important determinants of health aid effectiveness whose impact goes beyond the direct outputs of projects assisting marginalized groups. Specifically, civic engagement in voluntary associations produces more politically interested, better informed, and more capable citizens that can claim their rights and demand accountability in the provision of public services. Higher community capacity facilitates effective monitoring and performance oversight from service users, better provision of health services via community-based organizations, easier exchange of information as well as advocacy work seeking to influence health-related policies. Moreover, it fosters citizen participation in the planning and design of service delivery, construction, operation and maintenance of service infrastructure. In fact, even in recipient countries characterized by widespread corruption, authoritarian rule or centralized national governments civic engagement can enhance the effectiveness of international health funding. As a result, local associations can play a significant role in building responsive states that provide better access to services and translate civil society activity into developmental improvements despite weak institutional capacity.

These findings have important implications for donors and policy-makers seeking to make aid more effective. Donors can strengthen civic engagement through local associations and social movements that empower citizens to articulate their interests to the governments and exercise pressure on public officials and service providers. These non-institutionalized mechanisms of civic engagement facilitate civil society to monitor elites and help social groups to acquire the information, resources, and capacities required to hold governments, private contractors, and NGOs accountable. Likewise, strengthening formal processes of participatory governance can expand civil society's watch-dog function by engaging citizens directly in the distribution of public funds between communities, the design of public policies as well as in monitoring and evaluating government spending.

Even though civic engagement can improve health aid effectiveness in weak state contexts, there are also risks especially when citizens engage in regime-threatening forms of political action. In particular, under authoritarian rule health aid is likely to be diverted away from its intended purposes to lower the threat of regime collapse if a significant share of the citizenry is engaged in elite-challenging action. Hence, citizens' participation in contentious politics can lead to a decrease in public good provision if democratic institutions are absent. However, if the judiciary and legislature are independent and have the authority to prosecute illegal behavior, citizens' demand for accountability via protests is likely to increase the effect of health aid on population health. This finding points to the importance of broader segments of civil society in developing countries and the need to expand the focus beyond formally organized, horizontal associations while accounting for political context.

Against this backdrop, donors can protect spaces for citizens to voice their claims, monitor state reprisals against increased citizen voice, and seek to promote the enabling conditions that help citizen-led accountability action to emerge. In so doing donors not only strengthen the supply-side conditions that enable citizens to channel their preferences into decision-making or activate mechanisms of legal accountability but also constitute a bulwark against repressive governments that suppress political opposition. Similarly, as social movements that form coalitions and mobilize collective action increase the odds of democratic transition donor efforts to strengthen civic participation indirectly create the institutional conditions under which elite-challenging action makes health aid work better. Thus, on the one hand, strengthening civic engagement can improve the effects of health aid on population health via higher demand for accountability in service delivery. On the other hand, effective health aid indirectly creates an enabling political environment through demographic changes that provide the legal and political space for civil society to flourish.

By contrast, donors' efforts to strengthen citizen participation in local governance through the devolution of power to local representatives have not proven to increase health service delivery in aid recipient countries. In fact, in decentralized countries citizen participation is less likely to make health aid work as long as local agencies with weak bureaucratic capacities are subject to the pressing demands of local interest groups and overlapping organizational mandates impede coordination and cooperation in the provision of public services.

Likewise, even though the capacity of the state plays a role in making collectively binding decisions and implementing them with the appropriate organizational means, there is little indication that citizens' demand for accountability is linked to better aid effectiveness in recipient countries with higher levels of bureaucratic governance. In fact, community ties function as incubators of citizen-led accountability action that enhances the effectiveness of health aid even in patronage recipient countries.

These findings draw attention to the importance of recognizing that recipients' health systems are social institutions shaped by community relations, trust, norms and value orientations that are embedded in different political contexts. Donor efforts to improve the provision of health-promoting public goods and to increase the responsiveness of health service providers need to acknowledge the complex nature of relationships between cultural and political factors. For researchers, these findings point to the need to account for civic engagement as an essential determinant of aid effectiveness. However, this influence is often hidden in complex interactions and requires a creative handling of the data to unmask it.

8 Literature

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9 Appendix

FIGURES (APPENDIX)

TABLES (APPENDIX)

Figure A 1: Evolution of associational involvement, health aid and infant mortality

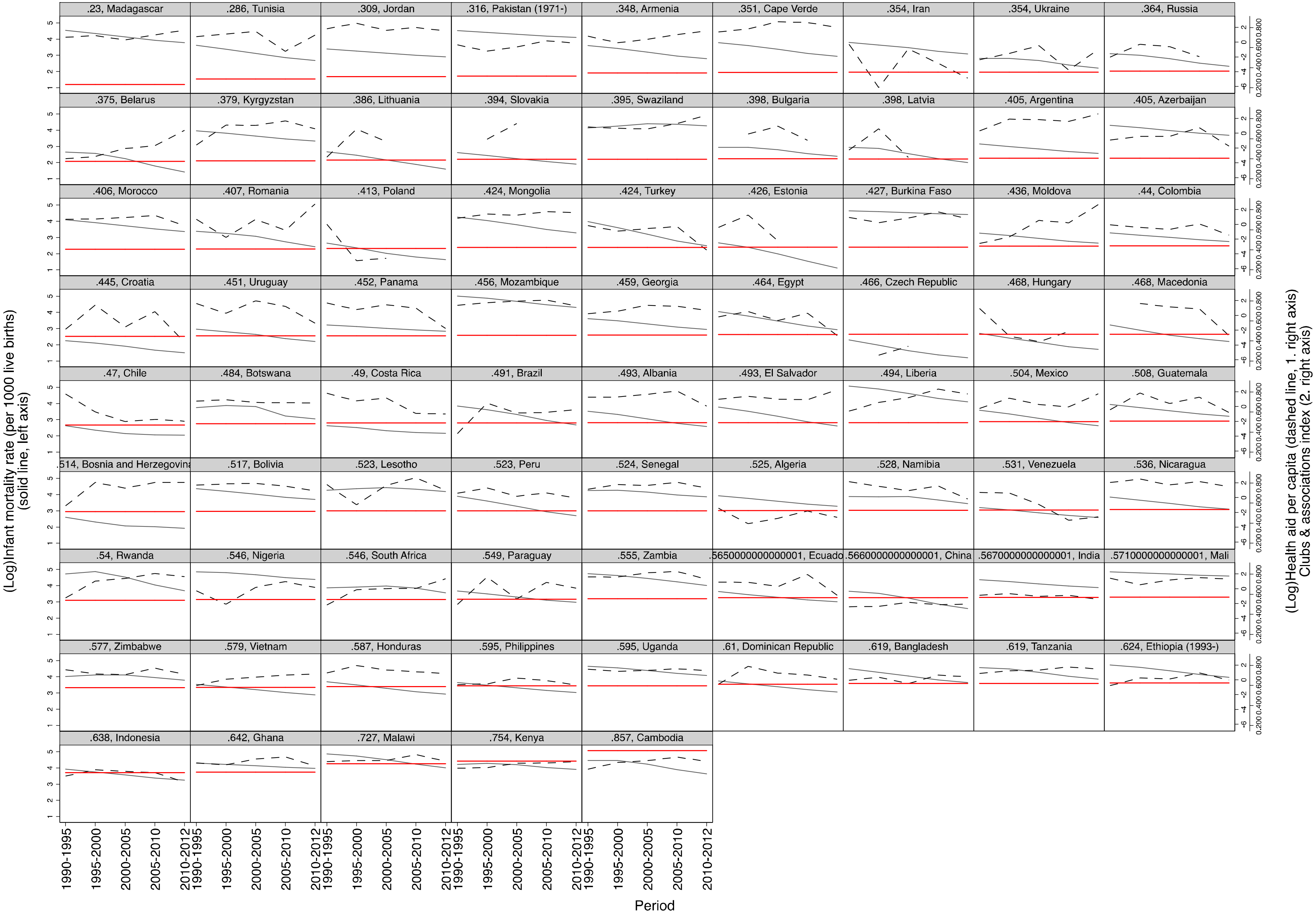


Figure A 2: Evolution of civic activism, health aid and infant mortality

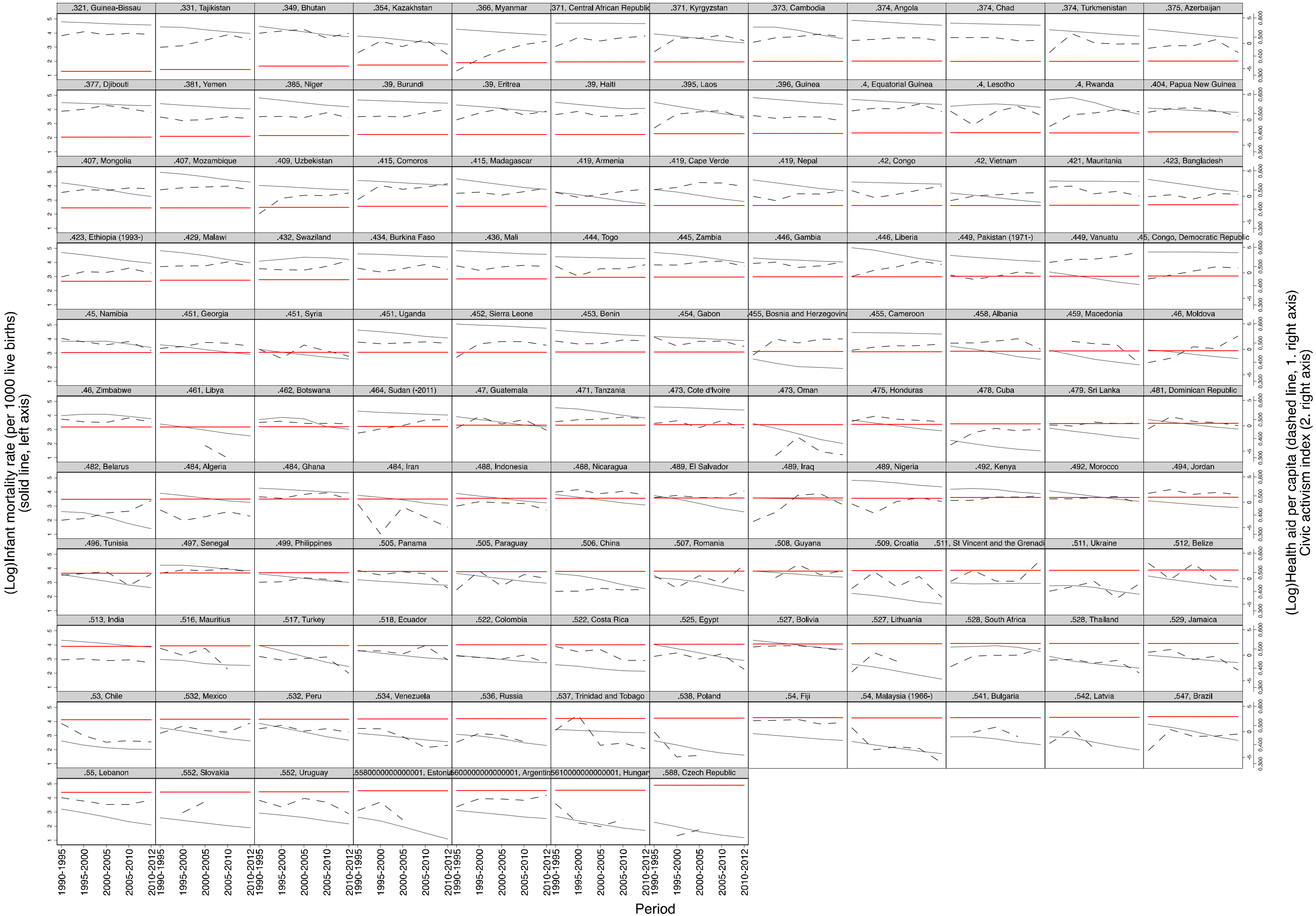


Figure A 3: Evolution of social trust, health aid and infant mortality

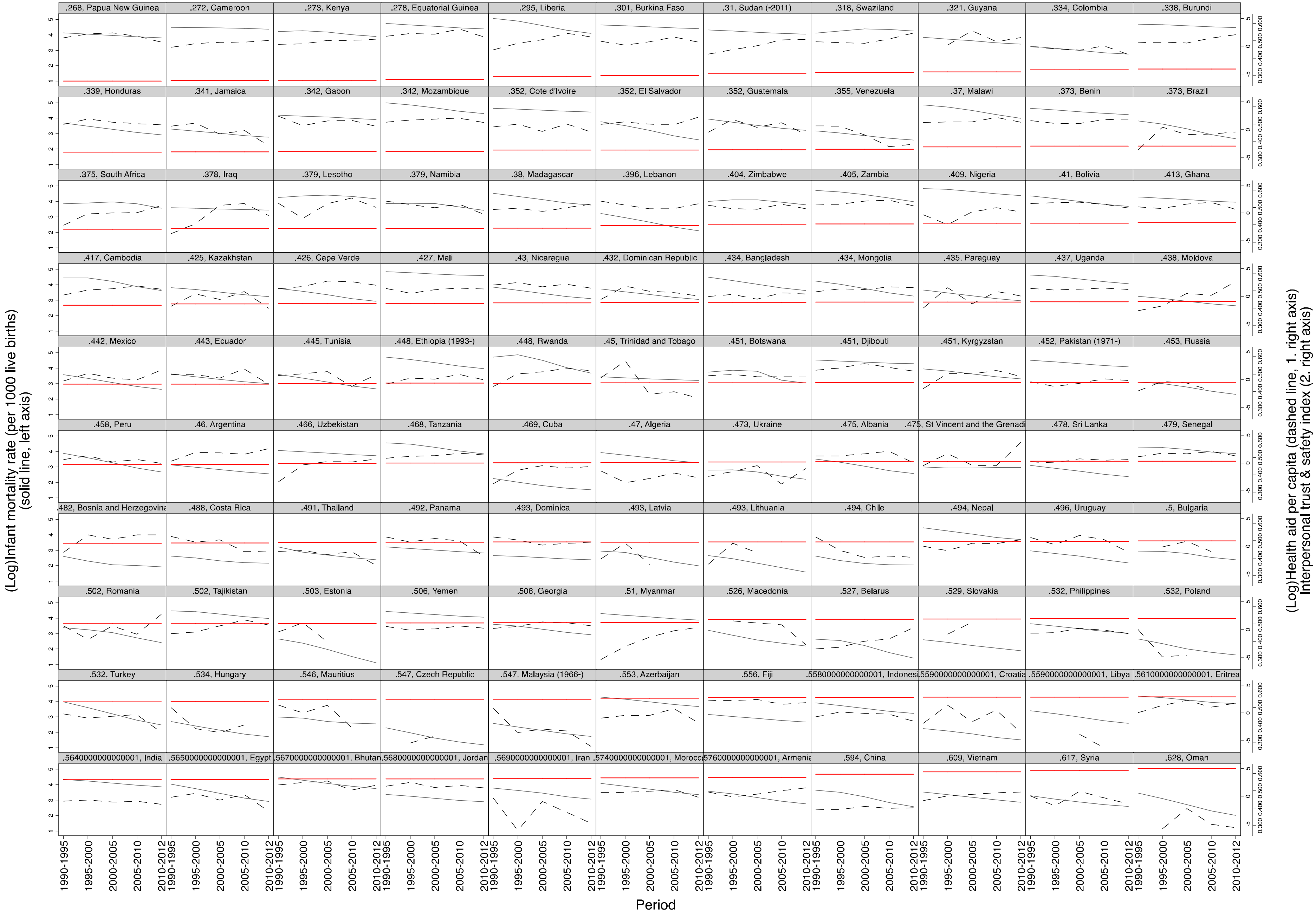
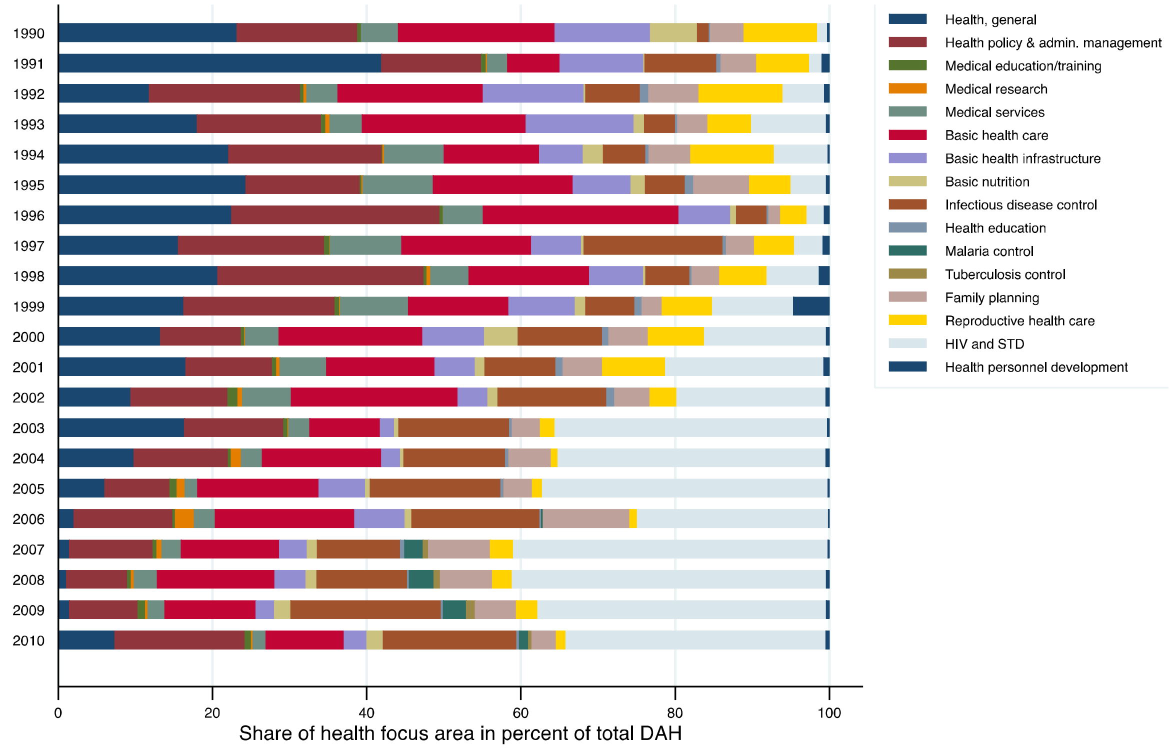
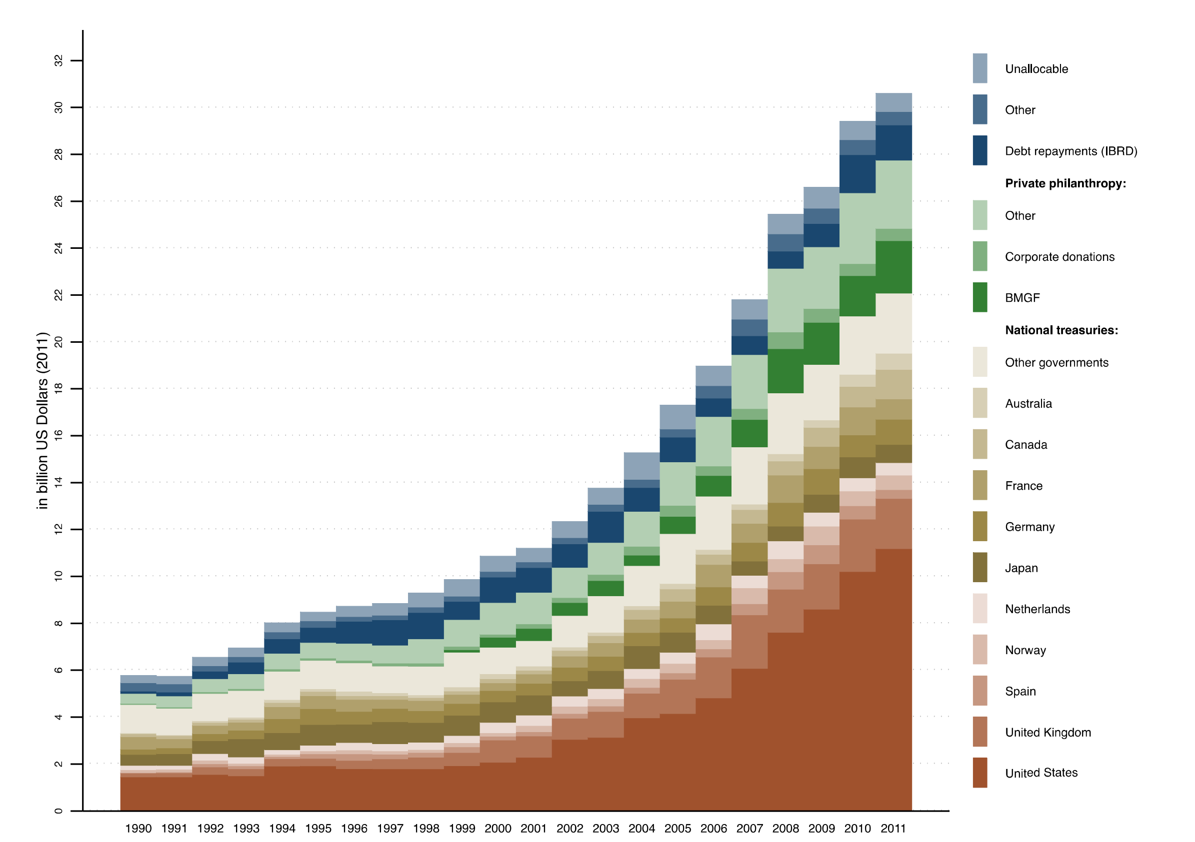


Figure A 4: Composition of health aid by health focus area (1990-2010)



Notes: Source: AidData (2013); Tierney et al. (2011).

Figure A 5: Health aid by source of funding (1990-2011)

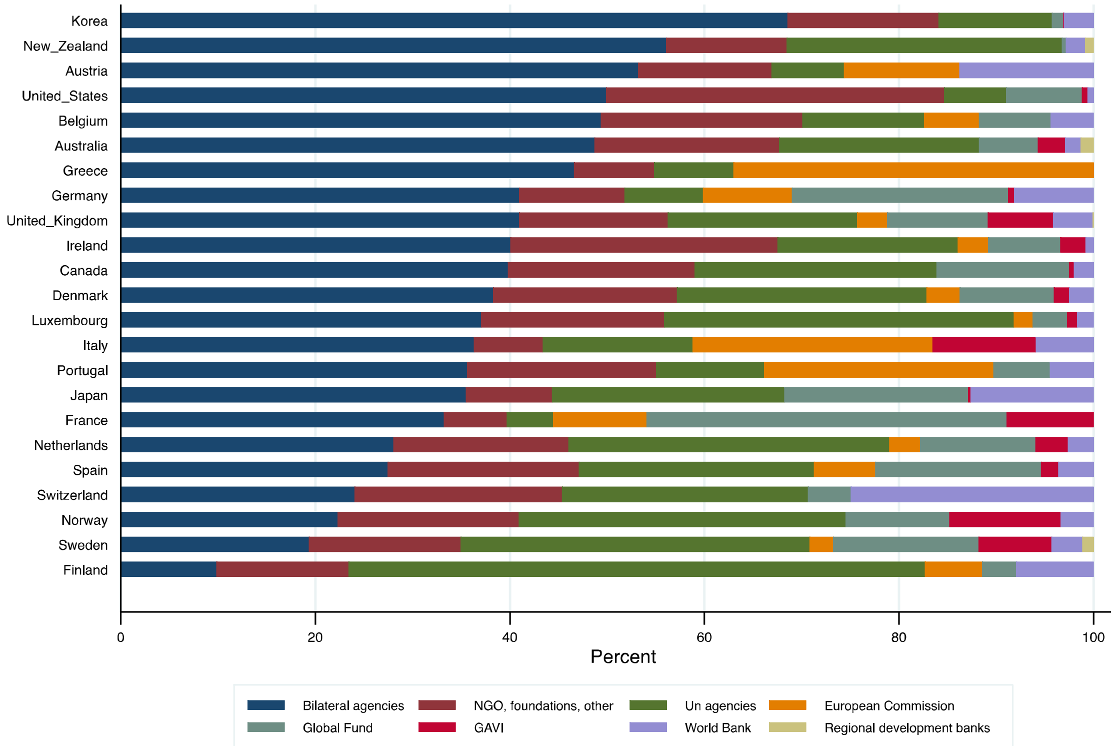


Notes: Source: IHME (2014).

Government treasuries of the DAC donor countries provide the largest source of DAH, above all the US, which provides about 35 percent of total development assistance for health in 2011. The share of private contributions has grown substantially over the last two decades. Private philanthropy including corporate donations (public-private partnerships) and private contributions to NGOs & foundations contribute about 10 percent of total DAH. The Bill & Melinda Gates foundation (BMGF) as the largest single philanthropic donor provides about seven percent of total DAH. Equally, the joint involvement of private and business interests (public-private partnerships) further expanded funding opportunities for health interventions, in particular the Global Fund and the GAVI.[302]

[302] However, PPPs are also subject to criticism as they aggravate issues like donor harmonization and impede the implementation of integrated approaches by focusing on narrowly-targeted, vertical programs. Moreover, they allow private interests to influence public health agenda providing legitimacy to corporations' activities through association with UN agencies and may even duplicate existing efforts reducing cost-effectiveness (Birn et al. 2009, 105-107). On the other hand, Gómez and Atun (2013, 6) argue that public private partnerships, such as the Global Fund or GAVI are more responsive to civil societal needs than multilateral institutions, because of the diversity of their stakeholders involved, which - according to their argument - allows greater flexibility in policy experimentation and adaptation. By contrast, the responsiveness of multilateral institutions, such as the World Bank and the Asian Development Bank, are subject to path dependency problems because they were shaped by the interests of political elites from industrialized countries, that superseded competing interests, which sought to develop more accountable institutions (Gómez and Atun 2013, 14). Their analysis suggests, that recently created, diverse health agencies are more responsive to activists and NGOs, which raise attention to drug or funding shortages, than to established, multilateral institutions.

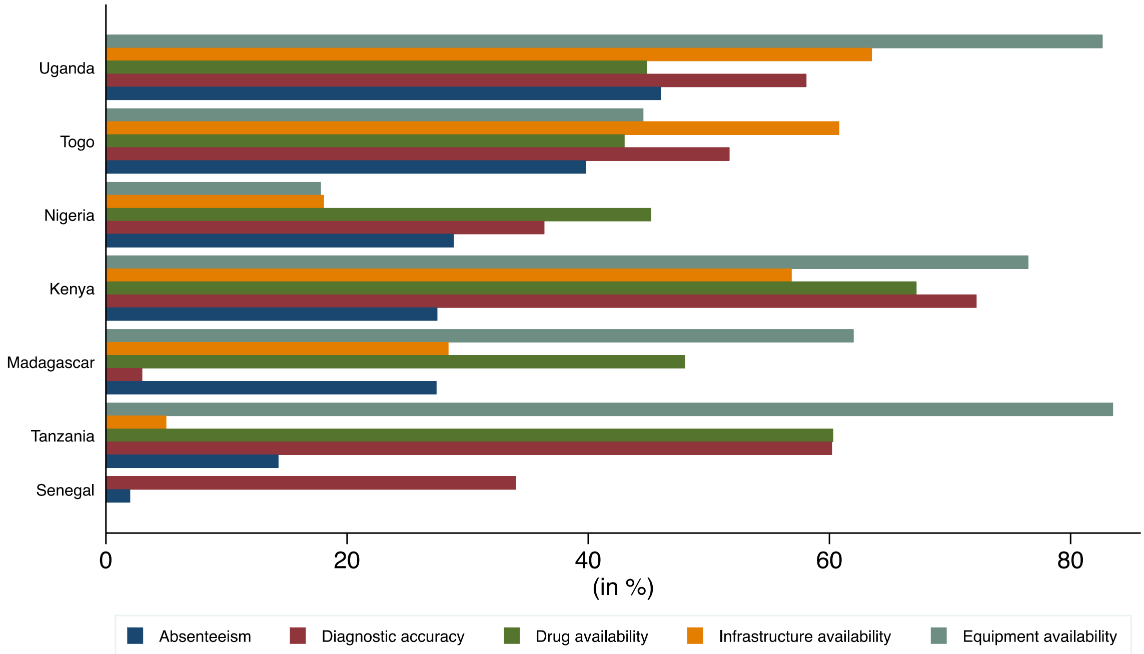
Figure A 6: Governmental sources of DAH by channel of assistance (2009-2011)



Notes: Source: IHME (2014).

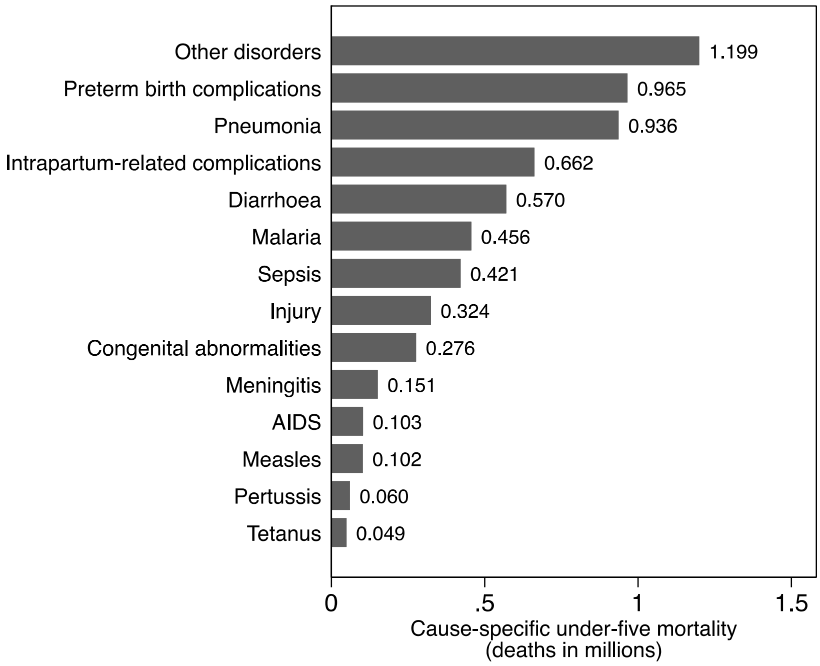
Figure A 6 shows the share of governmental DAH by channel of assistance through which channels governments allocate their health funding. The transfers of funds from sources to channels vary substantially across governments (IHME 2015, 20). At the end of the 2000s governments such as South Korea, New Zealand, Austria and the US directed the largest share of health aid to their own bilateral agencies, whereas for instance the Scandinavian countries, Switzerland, Spain and the Netherlands favored UN agencies including the WHO, UNICEF, UNAIDS and UNFPA (United Nations Population Fund). Substantial shares of health aid are also channeled to non-governmental organizations above all by the US and Ireland.

Figure A 7: Service Delivery Indicators



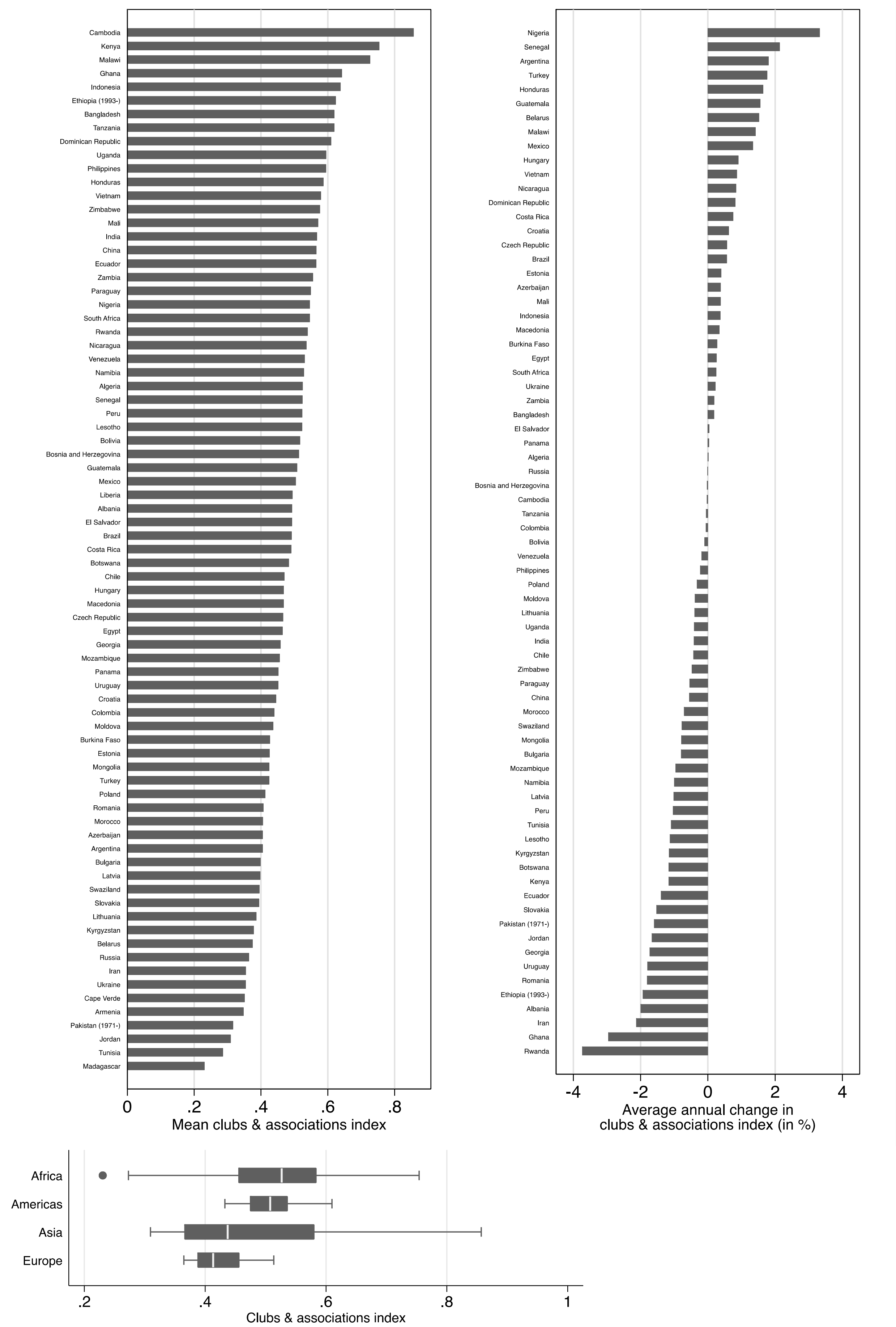
Notes: Source: World Bank (2017). *Absence from health facility (in %)*: average share of staff not in the facilities as observed during one unannounced visit. *Diagnostic Accuracy (in %)*: average share of correct diagnoses provided in the five case studies. *Drug availability (all; in %)*: share of basic drugs, which at the time of the survey were available at the district hospitals. *Health facilities with minimum infrastructure (in %):* share of facilities with electricity, clean water and improved sanitation. *Minimum equipment (in %)*: share of facilities with thermometer, stethoscope and weighing scale refrigerator and sterilization equipment.

Figure A 8: (Global) disease-specific under-five mortality in 2013 (in millions)



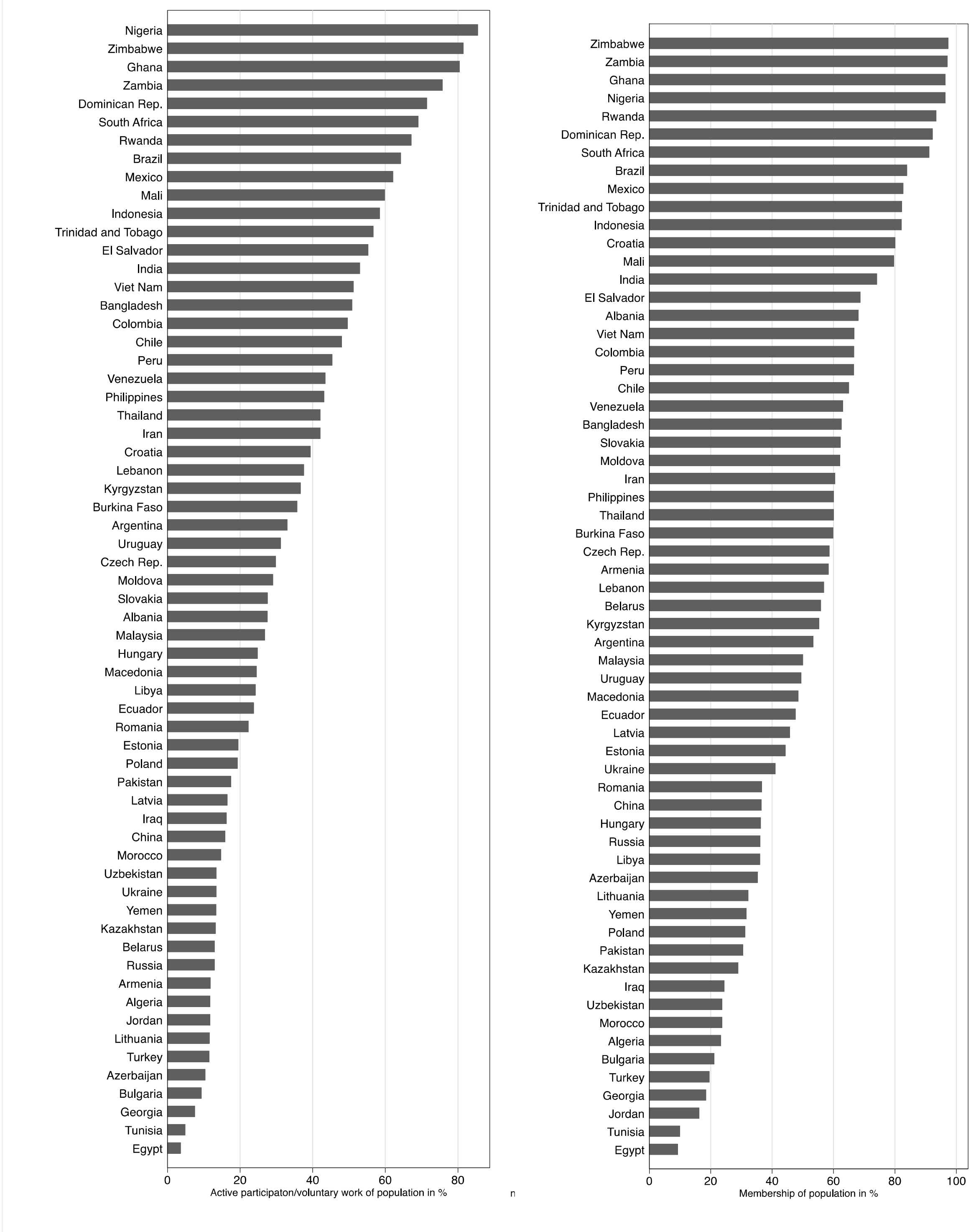
Notes: Source: Liu et al. (2015). Estimations are based on data across 166 WHO member states.

Figure C 1: Country levels and changes in associational membership (CLUBS) over time (1990-2012)



Notes: Source: ISD database (ISD 2013).

Figure C 2: Country levels of associational membership (volunteering and belonging)



Notes: Source: WVS data waves 3-6.

Figure C 3: Comparing changes in associational membership (WVS) and CLUBS *over time (1990-2012)*

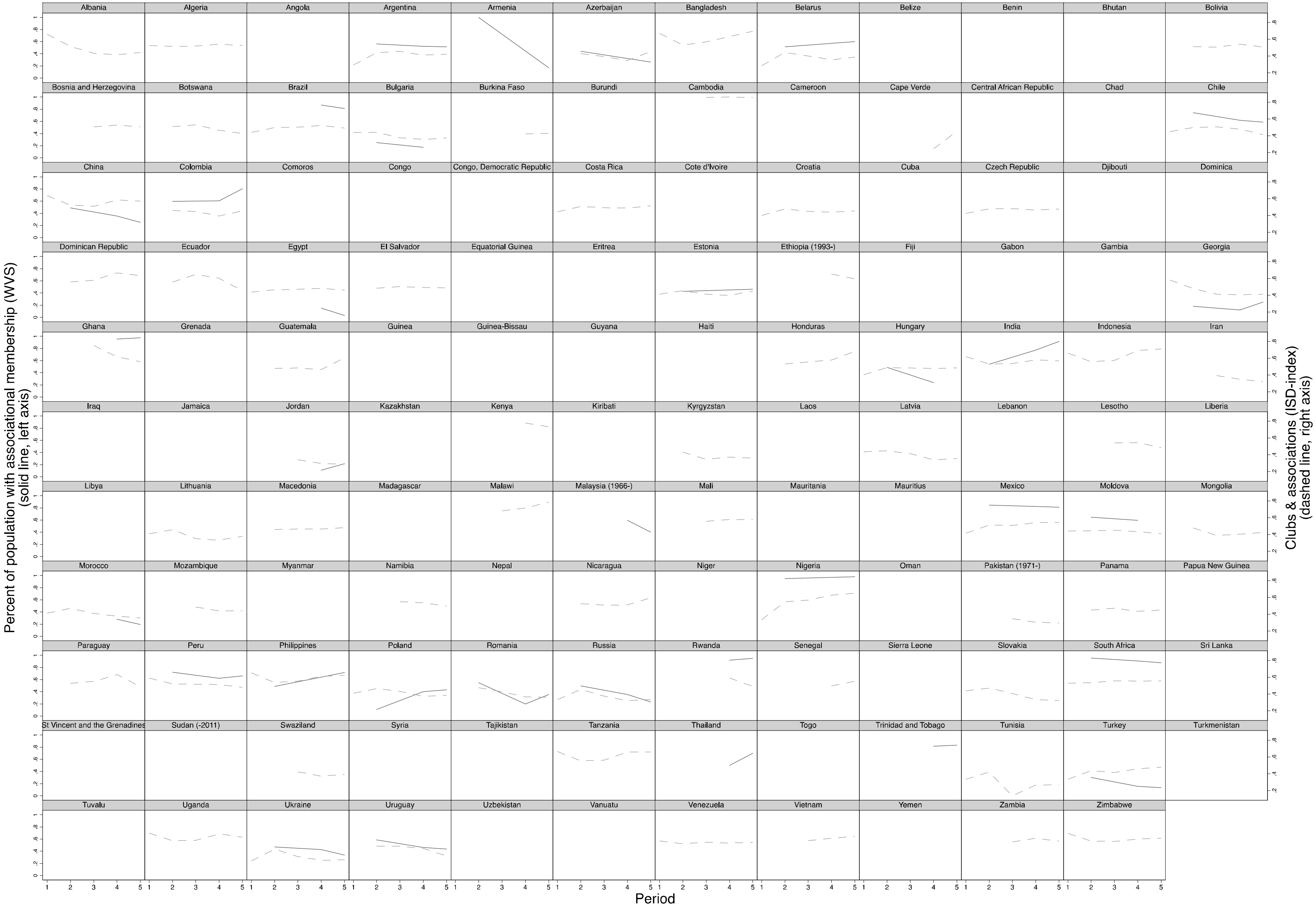
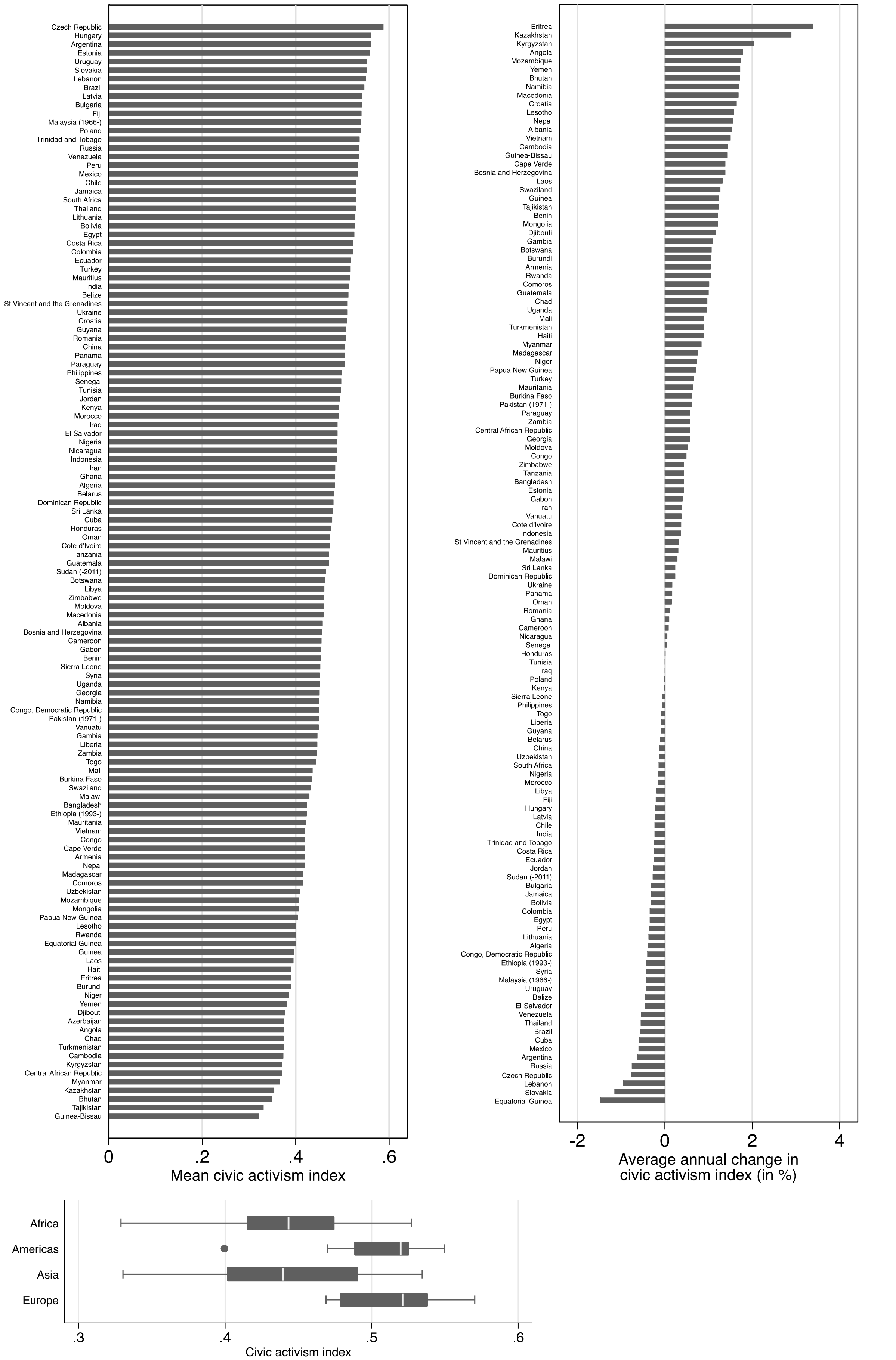
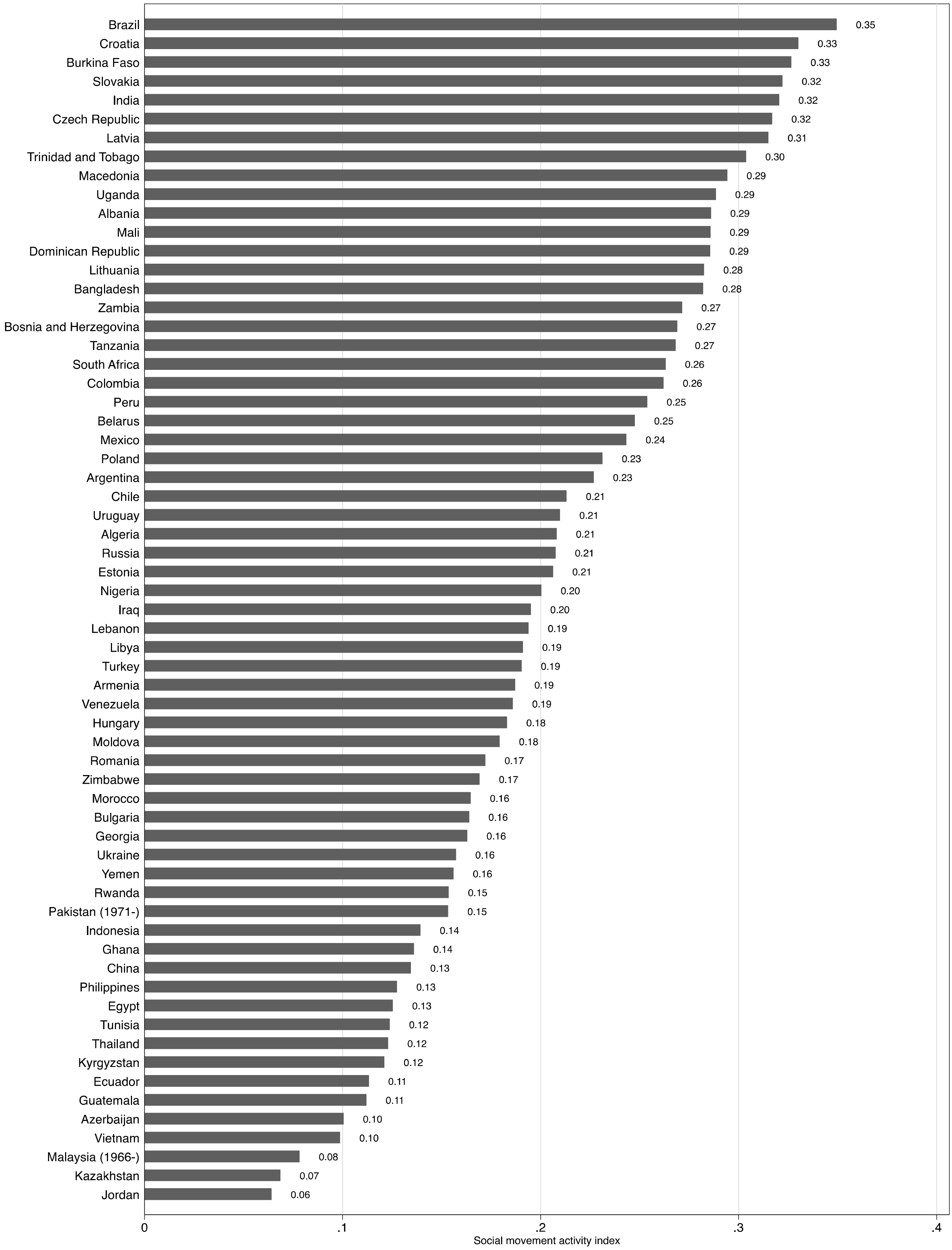


Figure B 1: Country levels and changes in civic activism (CIVIC) over time (1990-2012)



Notes: Source: ISD database (ISD 2013).

Figure B 2: Country levels of social movement activity (SMA)



Notes: Source: WVS data waves 3-6.

Figure B 3: Comparing changes in social movement activity (SMA) and CIVIC over time (1990-2012)

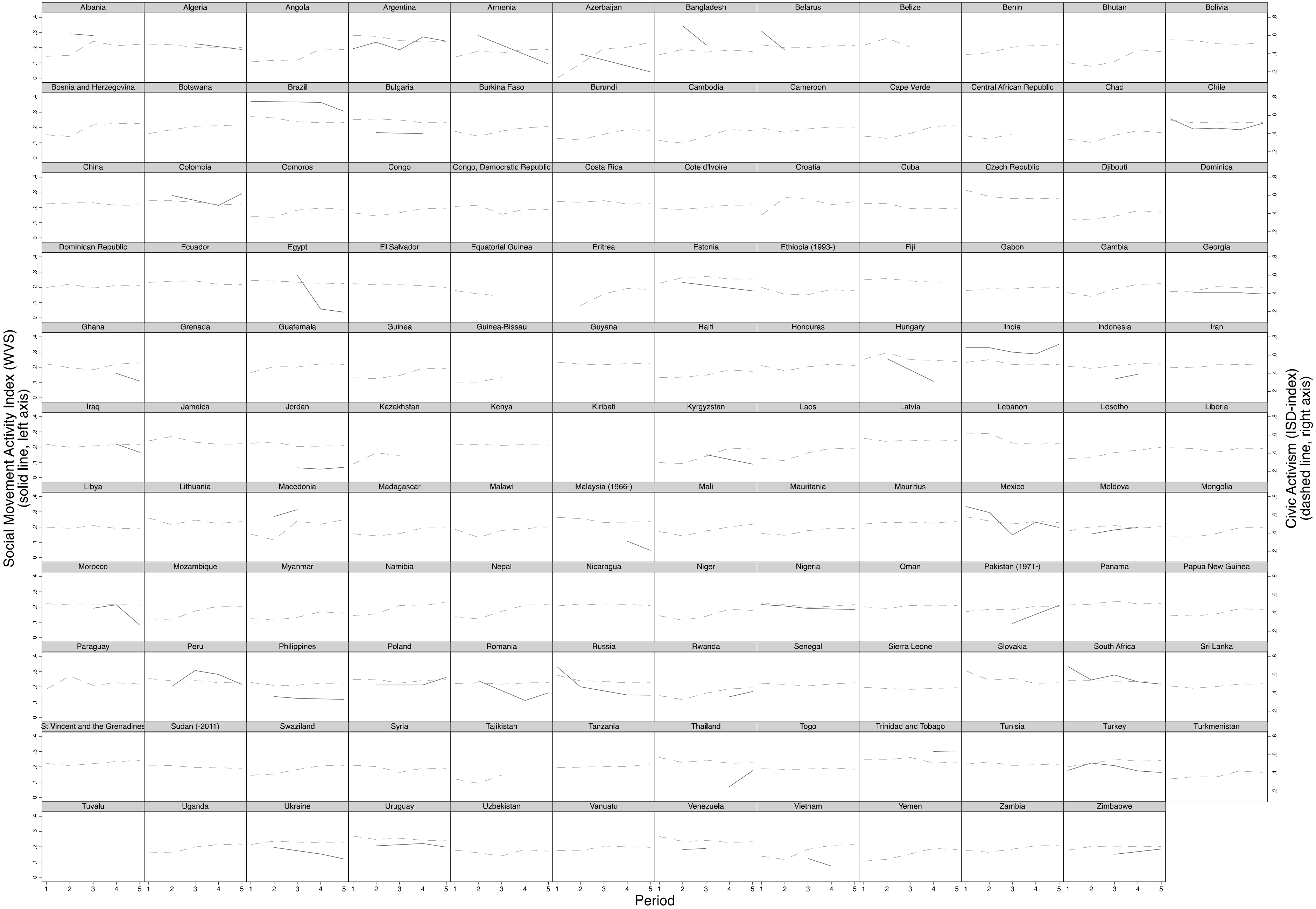
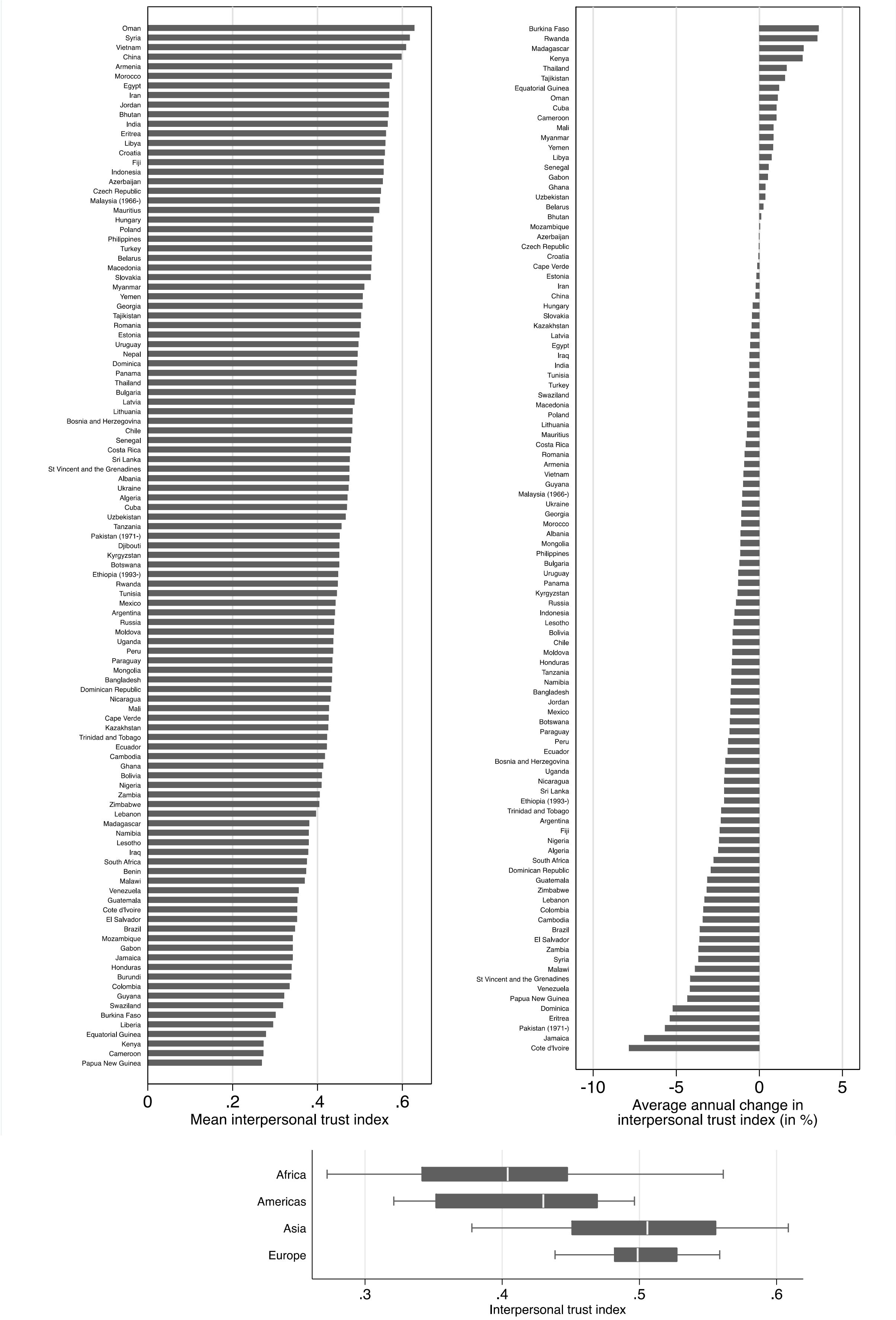
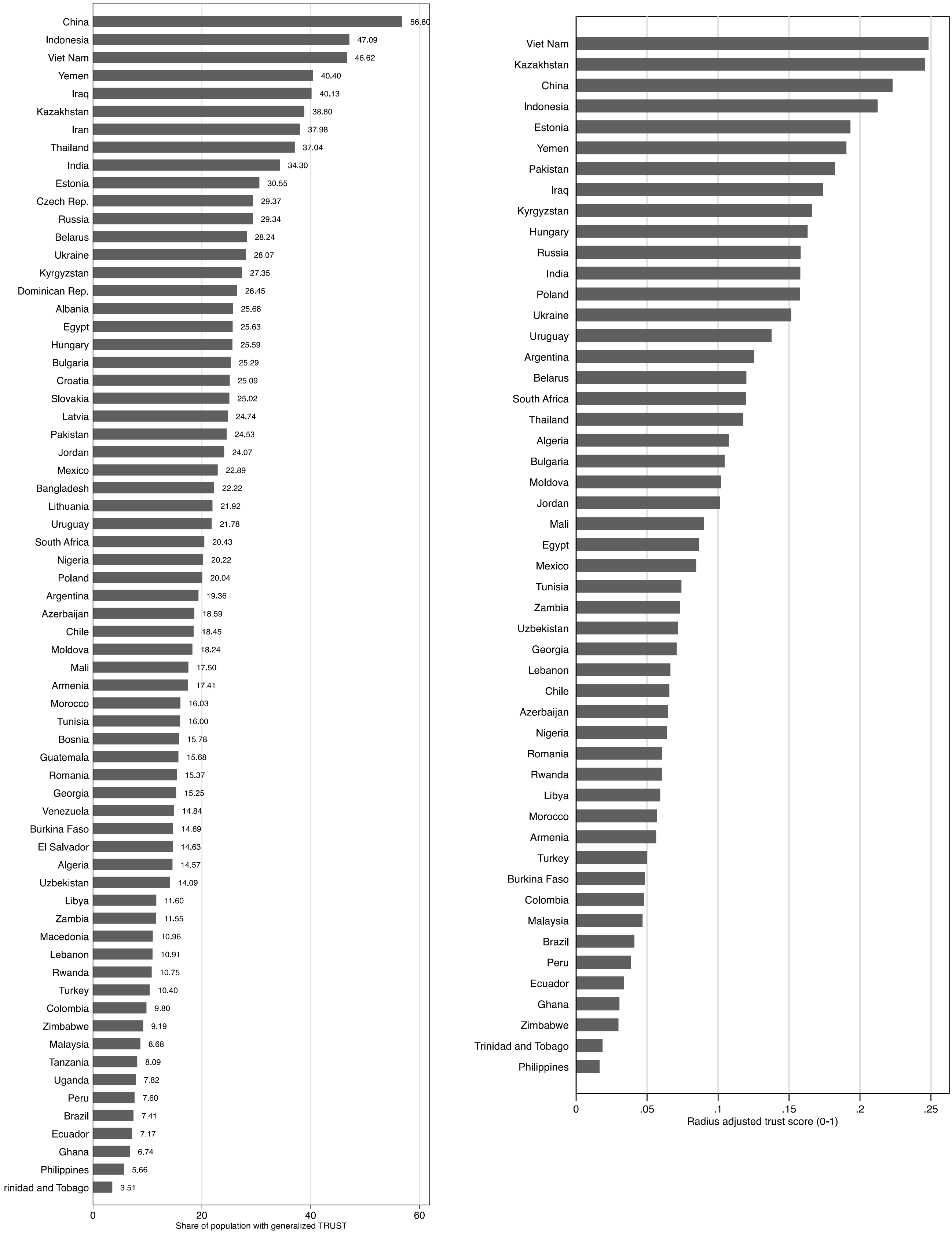


Figure D 1: Country levels and changes in social trust & safety (TRUST) over time (1990-2012)



Notes: Source: ISD database (ISD 2013).

Figure D 2: Country levels of generalized trust and radius-adjusted trust



Notes: WVS data waves 3-6. Radius-adjusted trust levels (right) measures the level of generalized trust adjusted for the radius of trust, i.e., for the notion of what is meant by 'most people' following the methodology suggested by (Delhey, Newton, and Welzel 2011, 2014). The smaller sample size results from the limited availability of auxiliary variables needed for variable construction.

Figure D 3: Comparing changes in generalized trust (WVS) and TRUST over time (1990-2012)

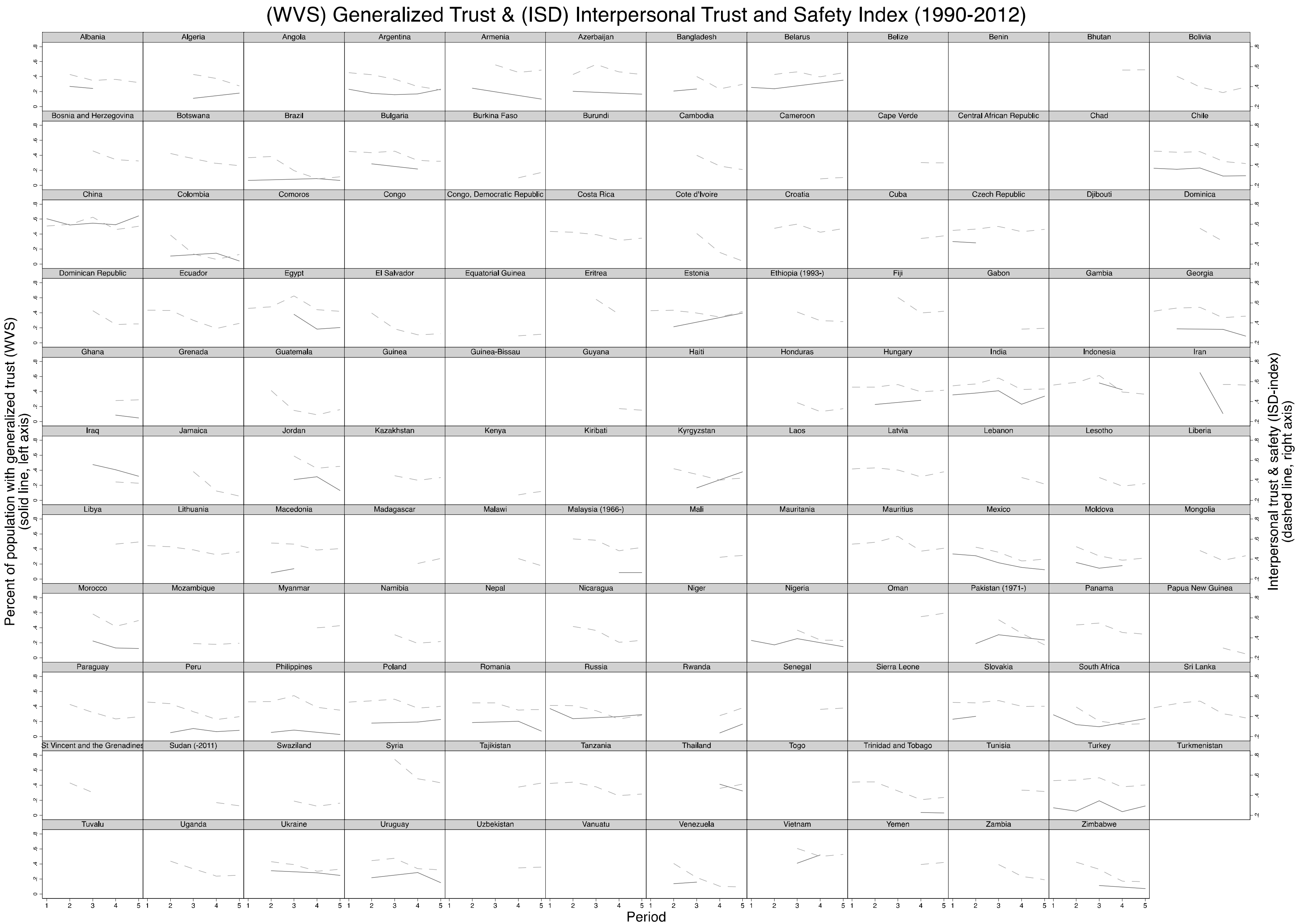


Figure B 4: Marginal effect plots: civic activism and the marginal effect of DAH on IMR

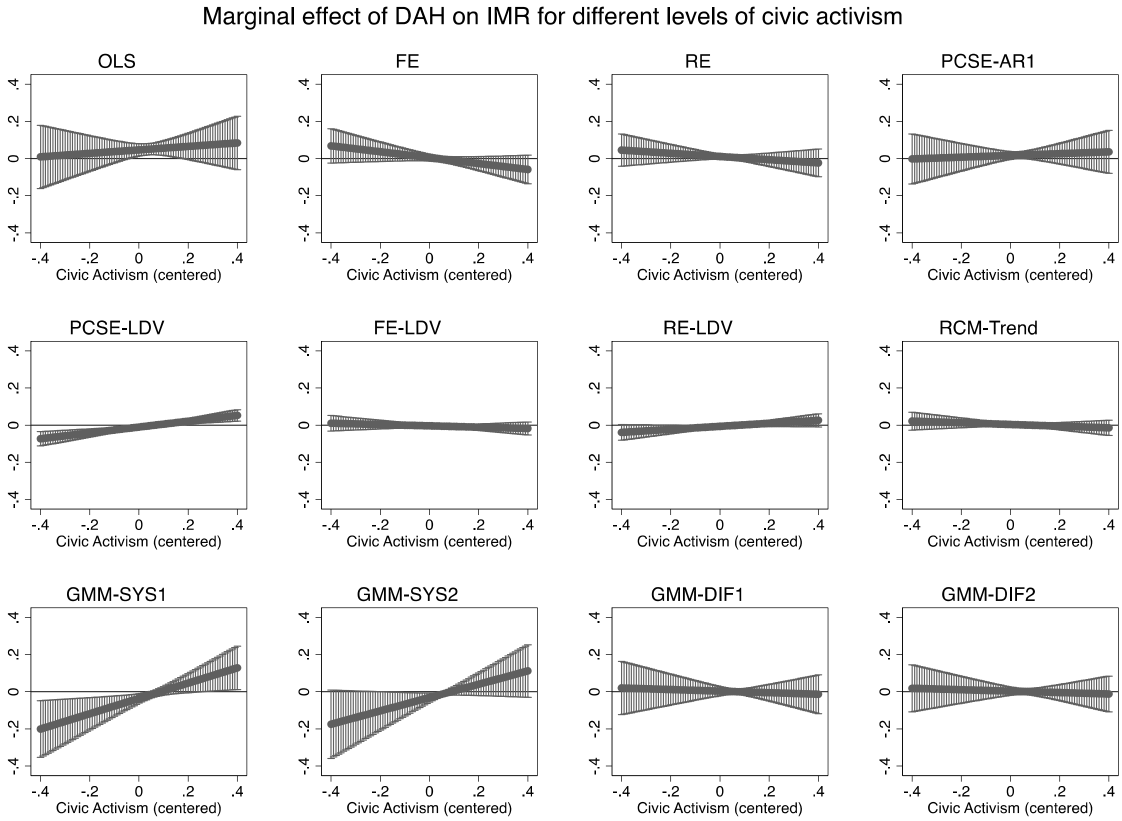


Figure B 5: Marginal effect plots: civic activism and the marginal effect of DAH on U5M

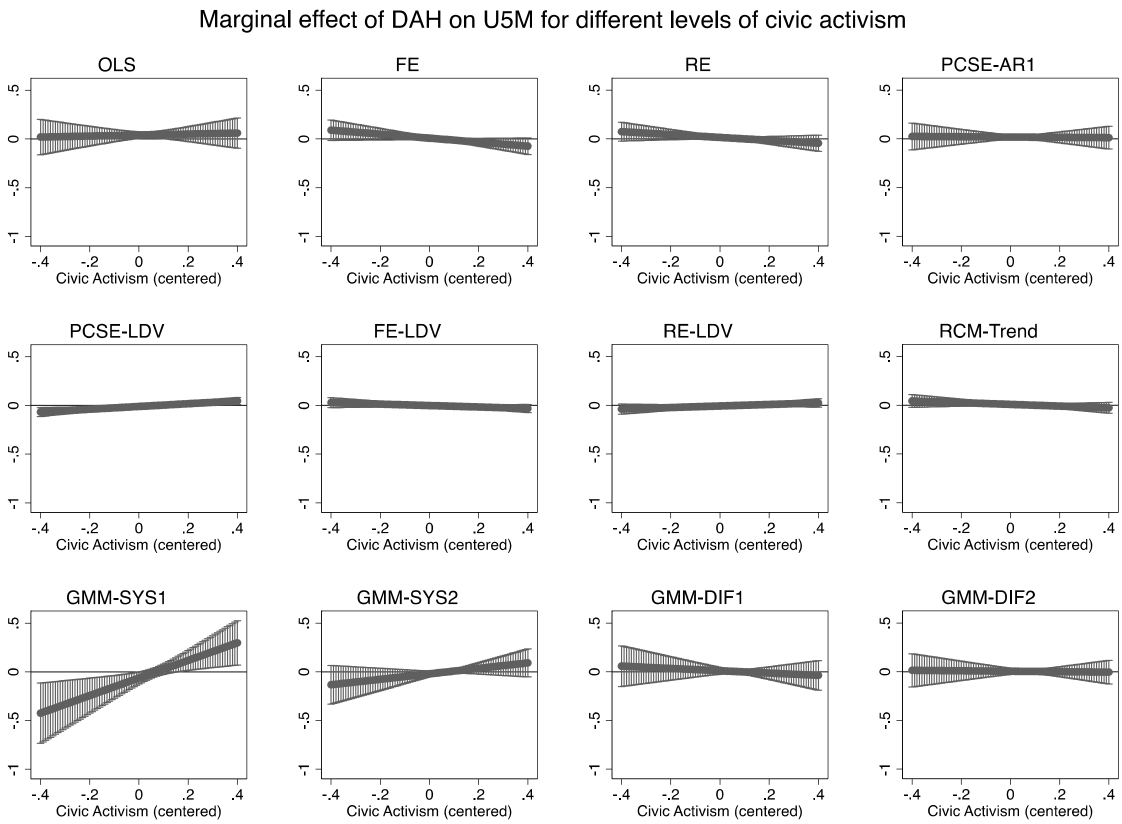


Figure B 6: Marginal effect plots: civic activism and the marginal effect of DAH *on* MMR

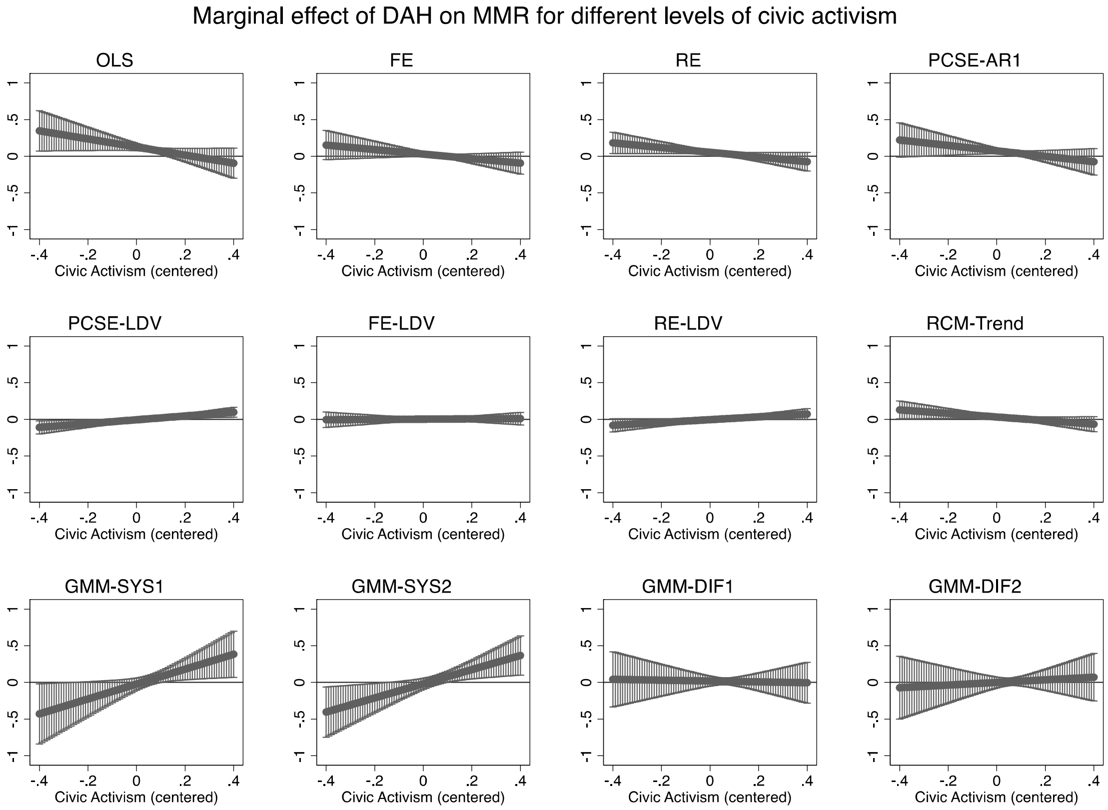


Figure B 7: Marginal effect plots: civic activism and the marginal effect of DAH *on* LIFE

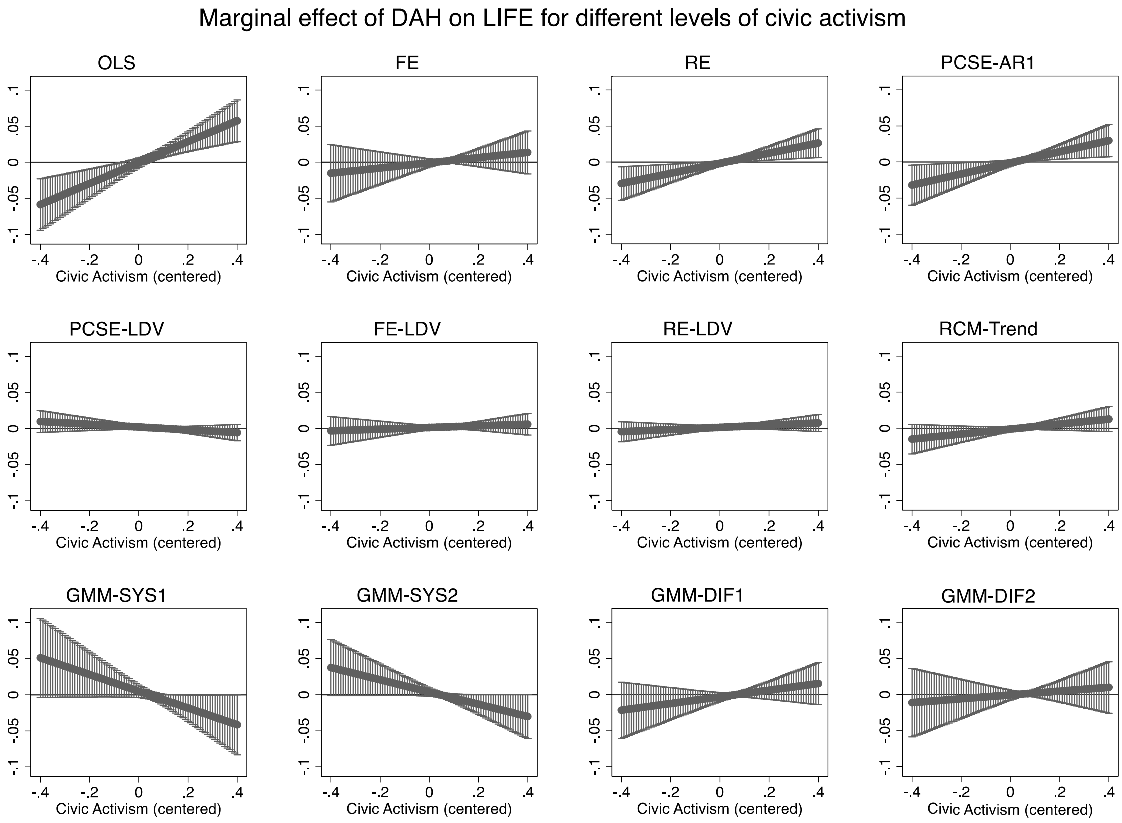


Figure B 8: Marginal effect plots: civic activism and the marginal effect of DAH on declines in IMR

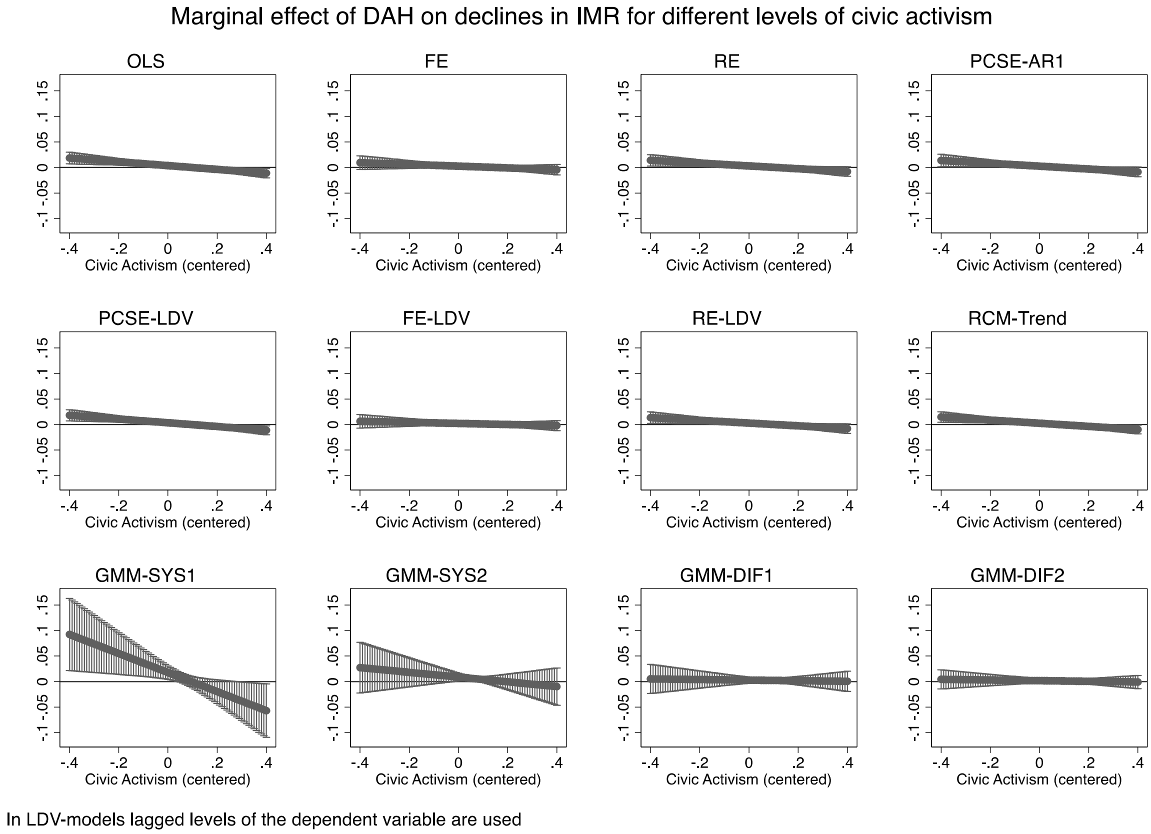


Figure B 9: Marginal effect plots: civic activism and the marginal effect of DAH on declines in U5M

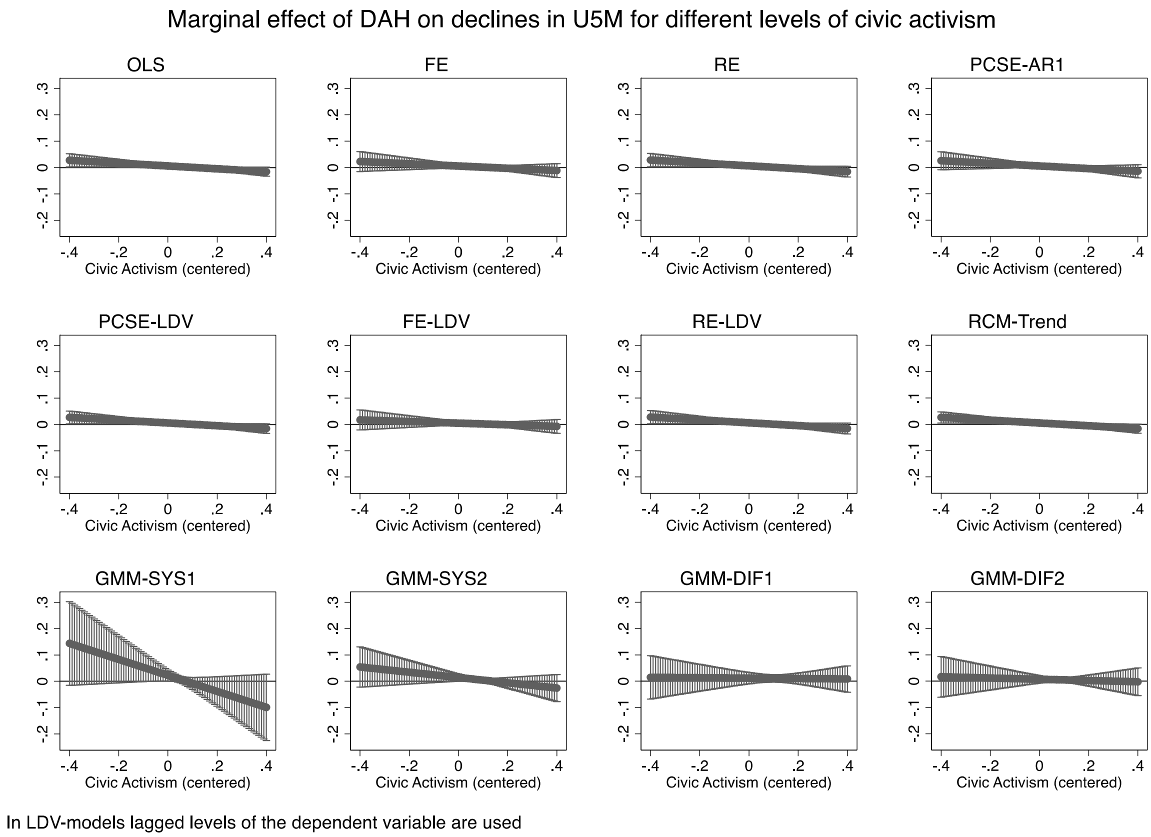


Figure B 10: Marginal effect plots: civic activism and the marginal effect of DAH *on declines in* MMR

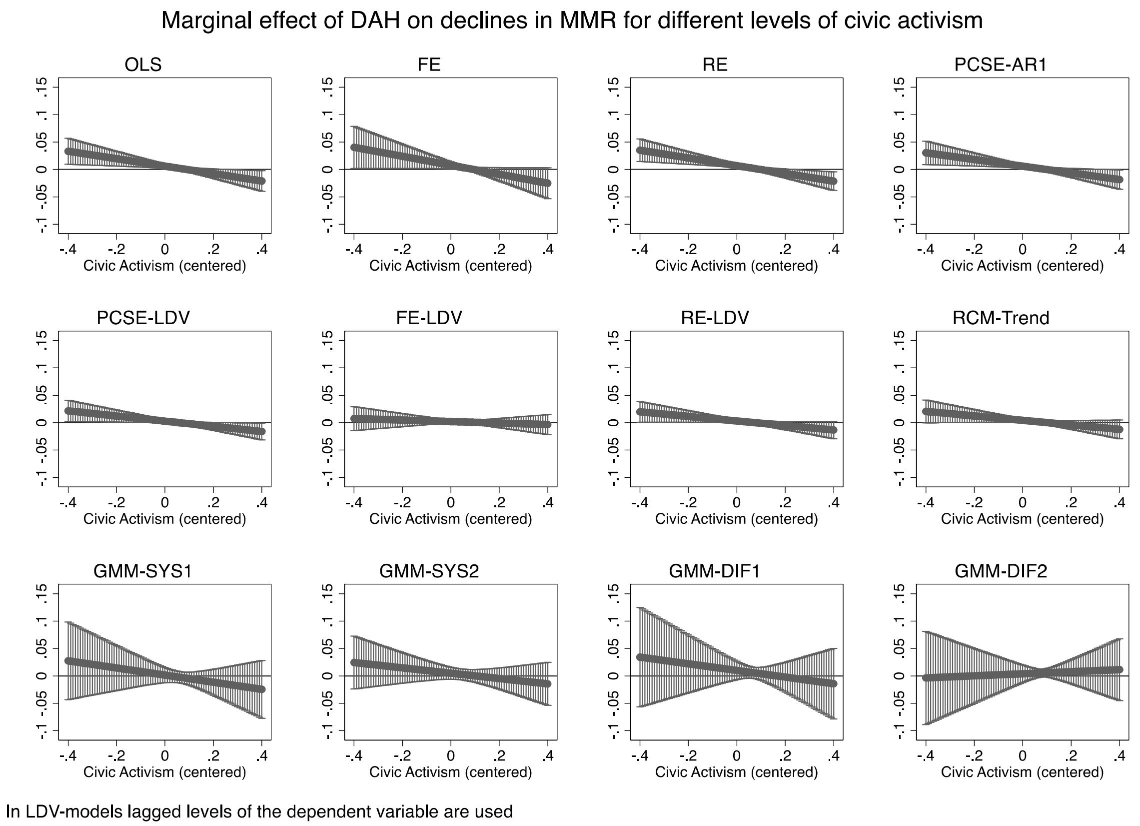


Figure B 11: Marginal effect plots: civic activism and the marginal effect of DAH *on changes in* LIFE

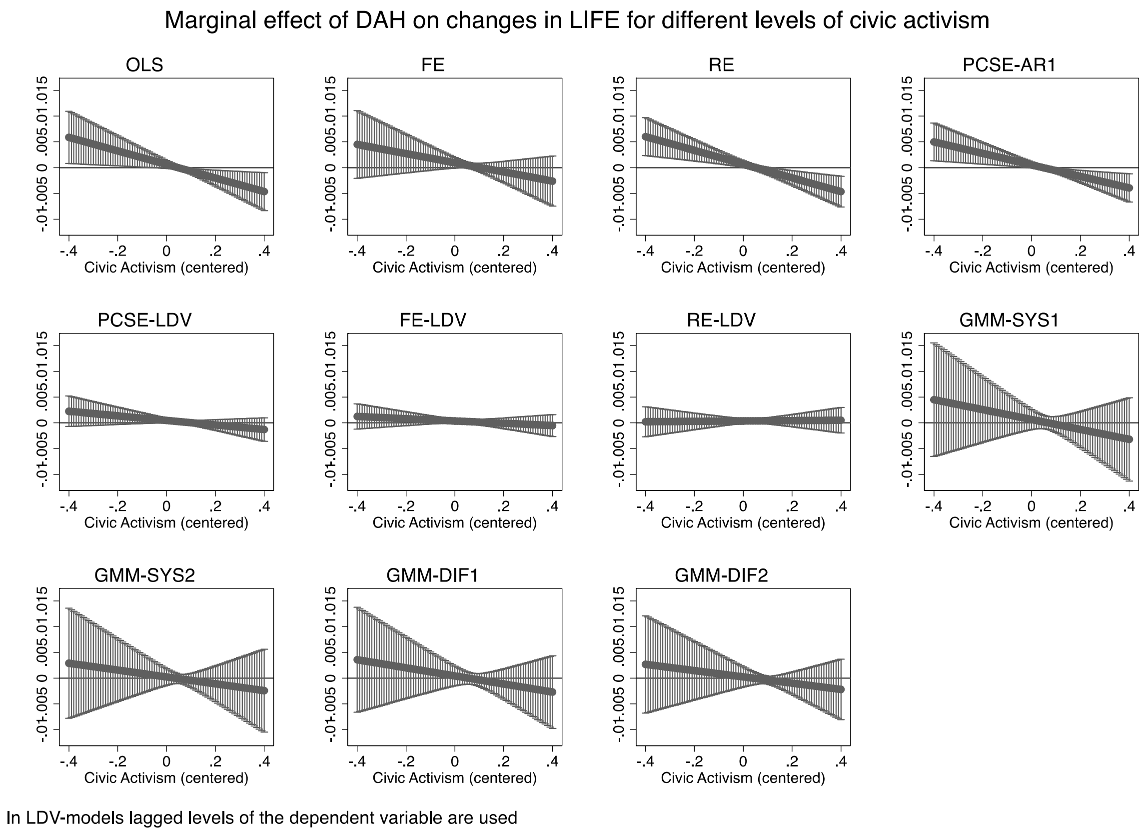
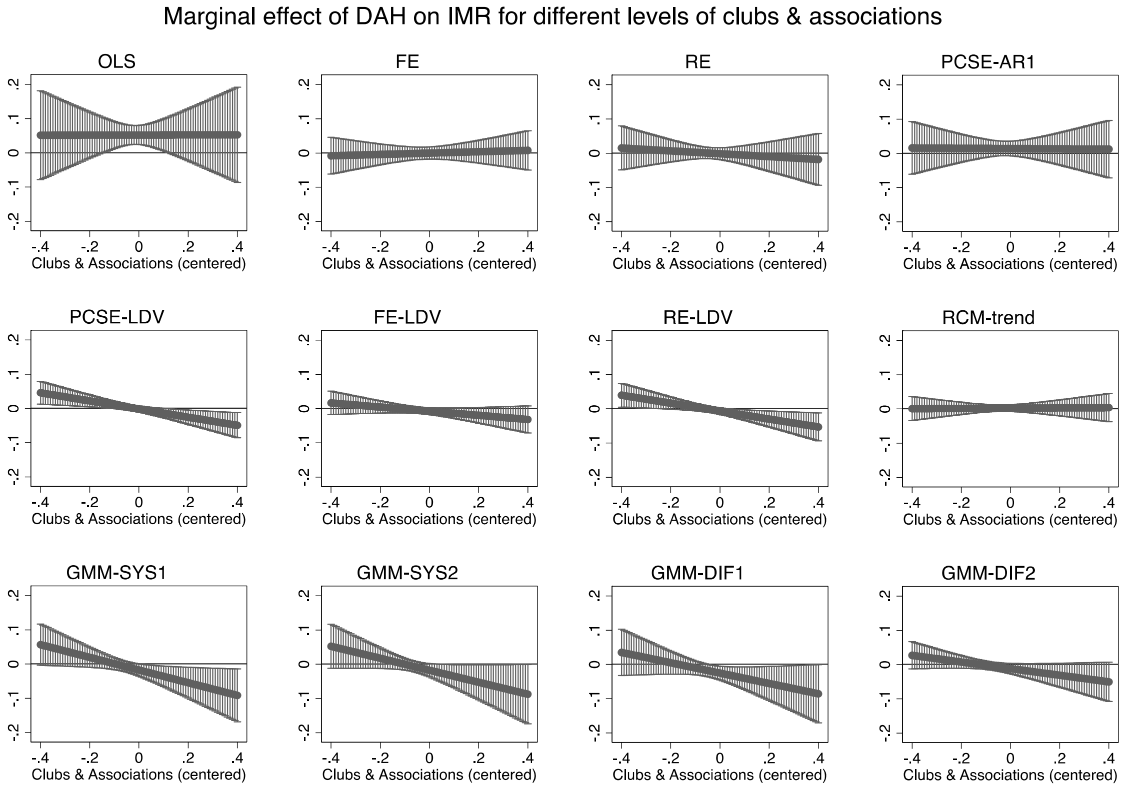
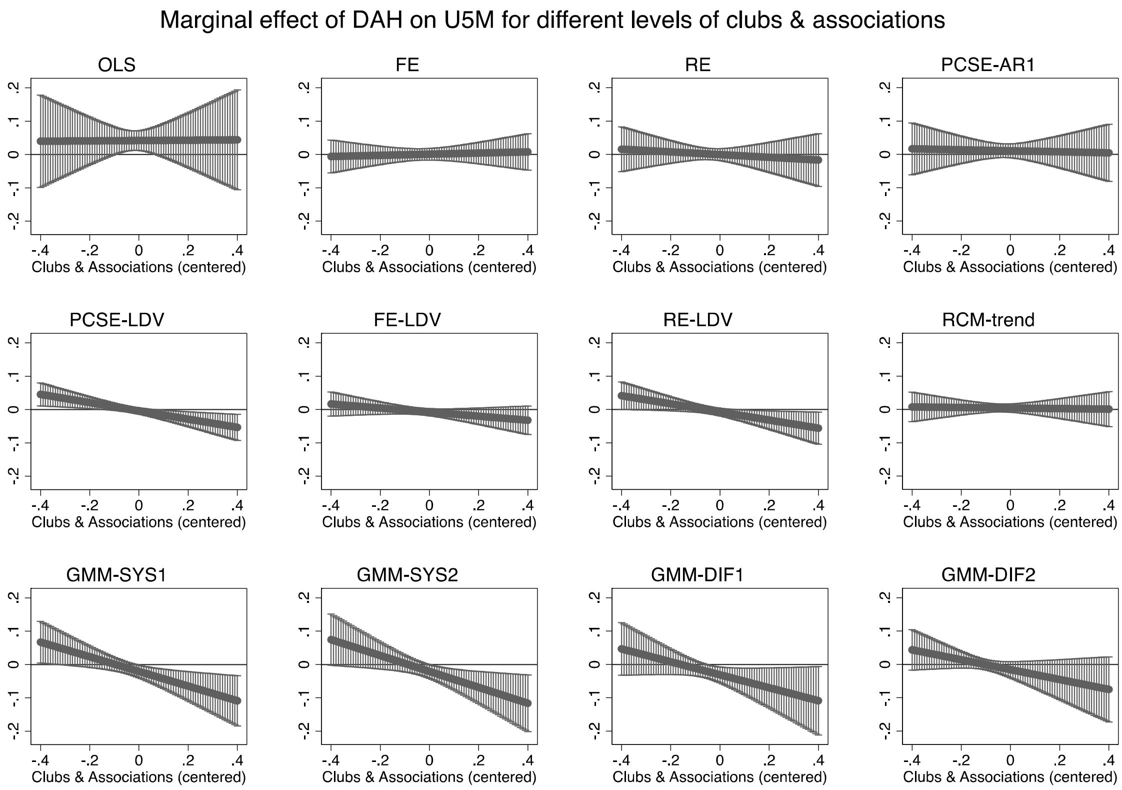


Figure C 4: Marginal effect plots: associational membership and the marginal effect of DAH on IMR



Interaction term specified as endogenous

Figure C 5: Marginal effect plots: associational membership and the marginal effect of DAH on U5M



Interaction term specified as endogenous

Figure C 6: Marginal effect plots: associational membership and the marginal effect of DAH on MMR

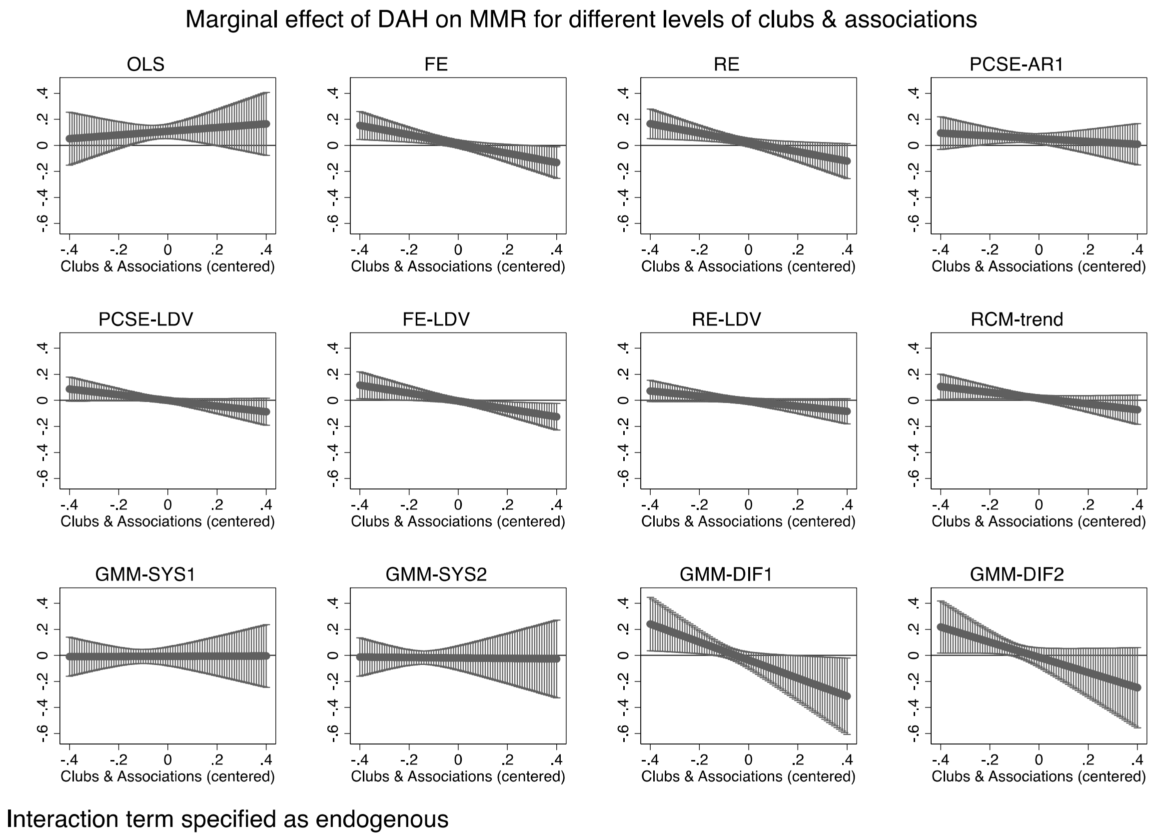


Figure C 7: Marginal effect plots: associational membership and the marginal effect of DAH on LIFE

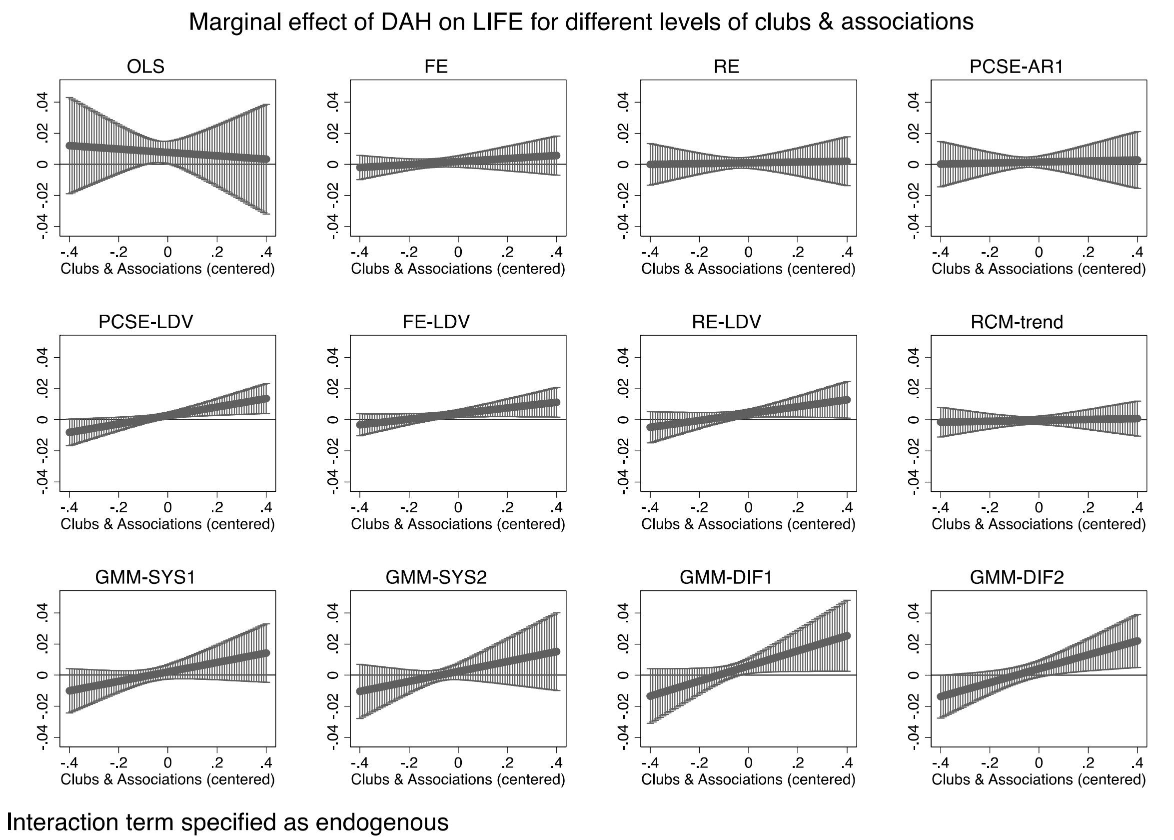
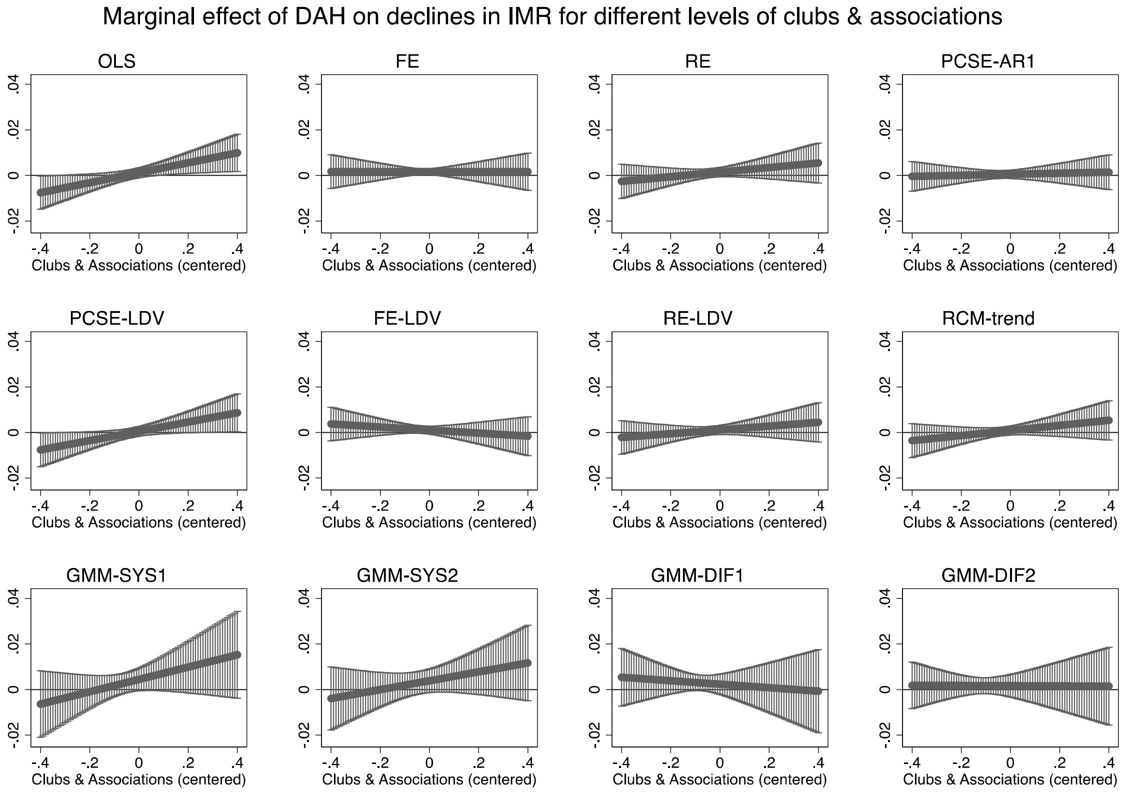
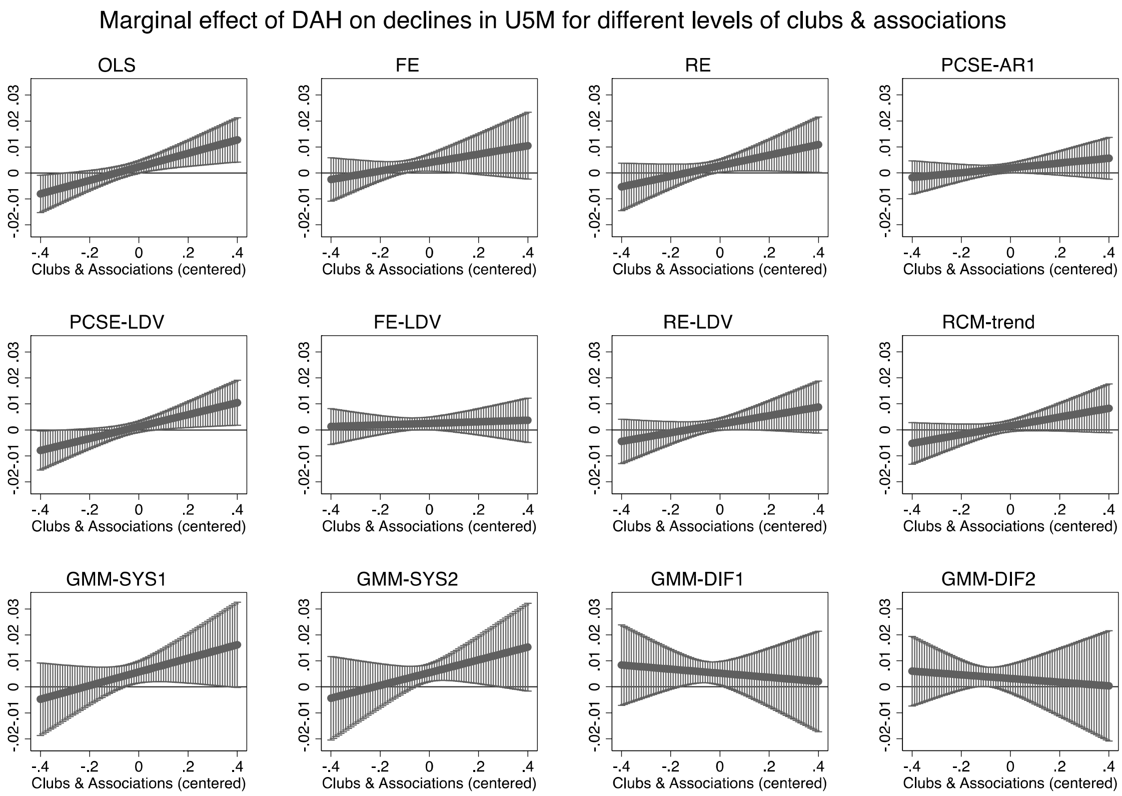


Figure C 8: Marginal effect plots: associational membership and the marginal effect of DAH on declines in IMR



In LDV-models lagged levels of the dependent variable are used

Figure C 9: Marginal effect plots: associational membership and the marginal effect of DAH on declines in U5M



In LDV-models lagged levels of the dependent variable are used

Figure C 10: Marginal effect plots: associational membership and the marginal effect of DAH on declines in MMR

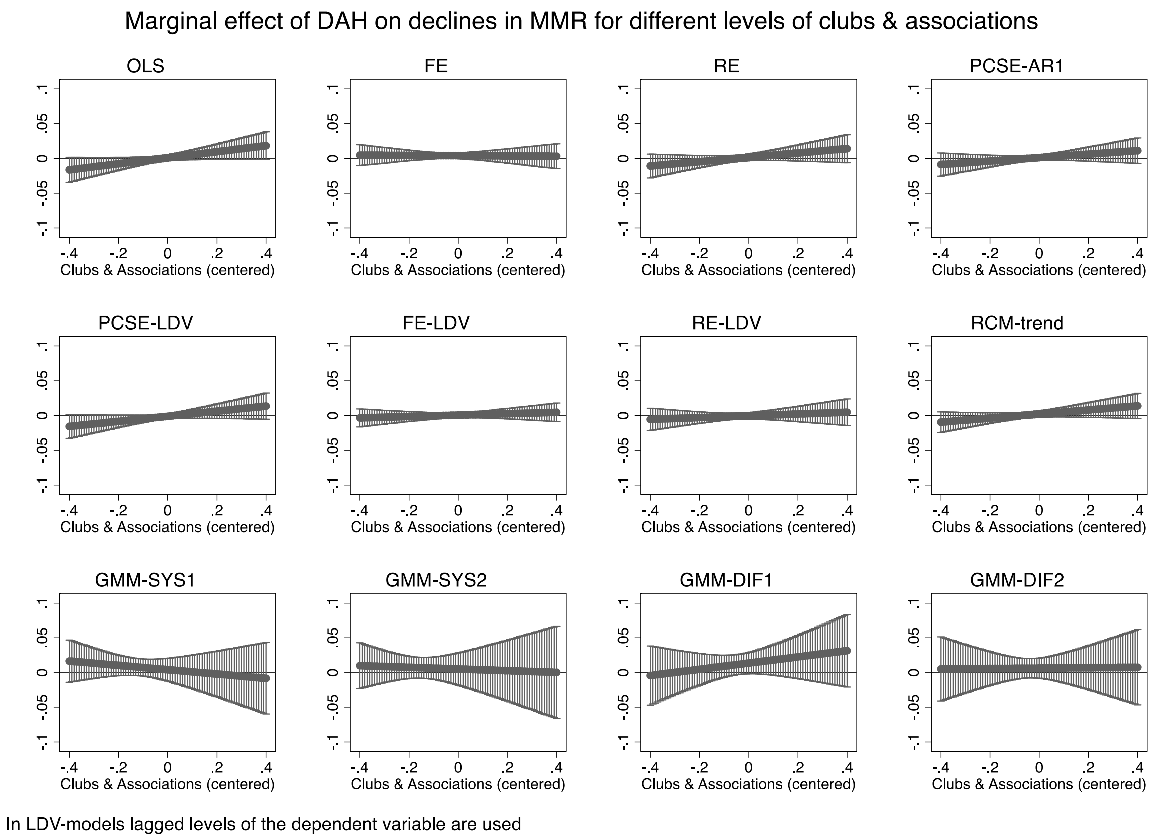


Figure C 11: Marginal effect plots: associational membership and the marginal effect of DAH on changes in LIFE

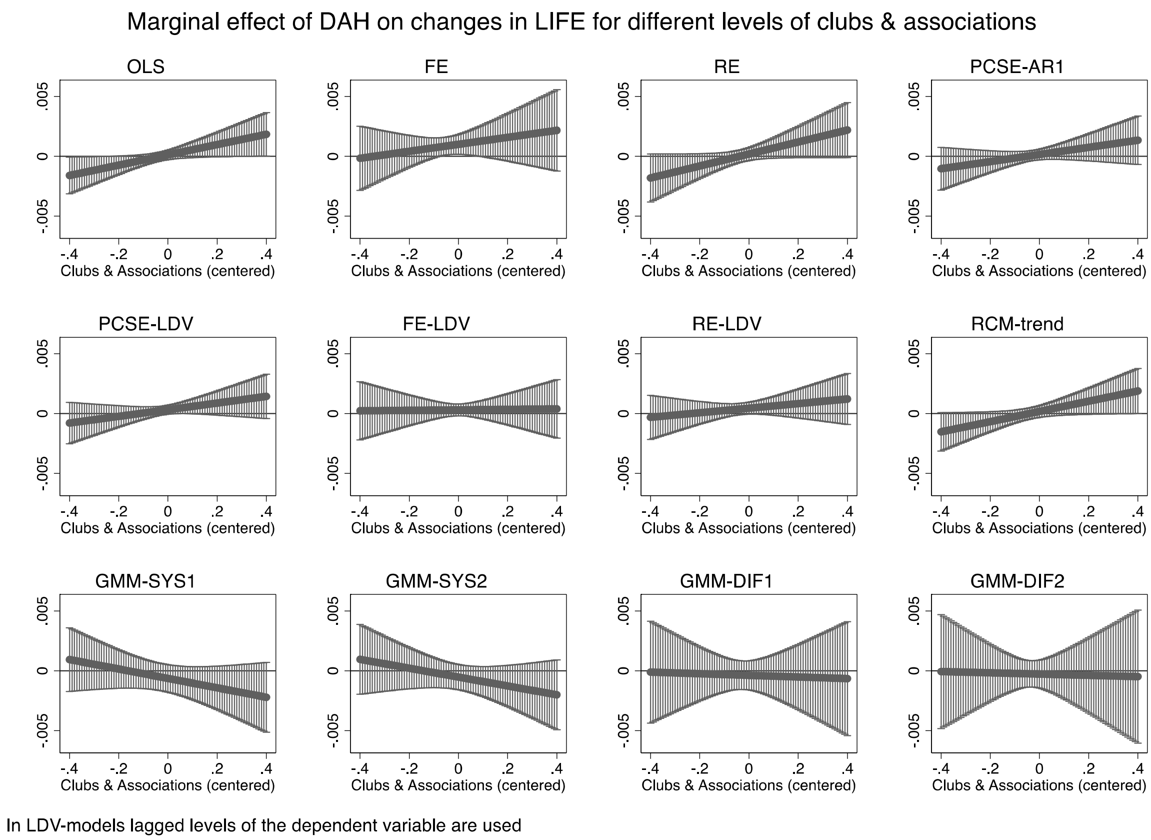


Figure C 12: Active membership and the marginal effect of DAH on IMR

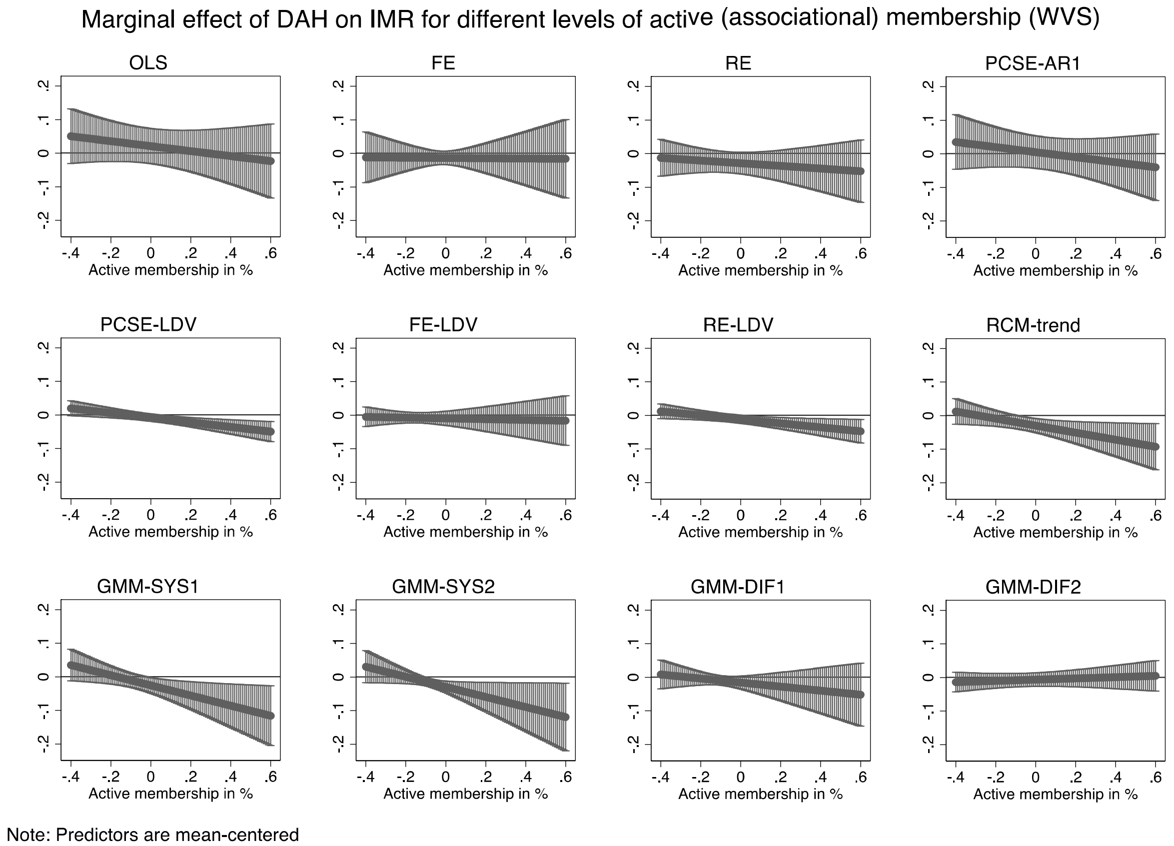


Figure C 13: Active membership and the marginal effect of DAH on LIFE

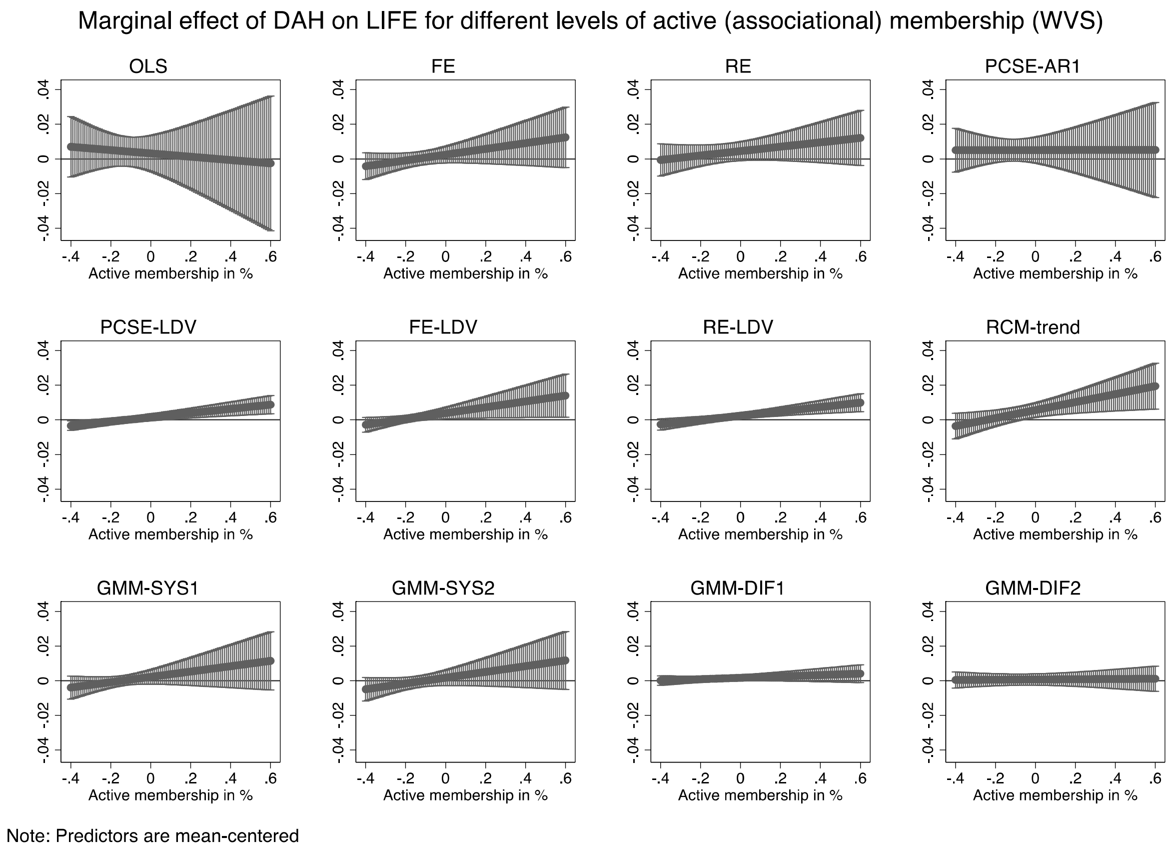


Figure C 14: Membership and the marginal effect of DAH on IMR

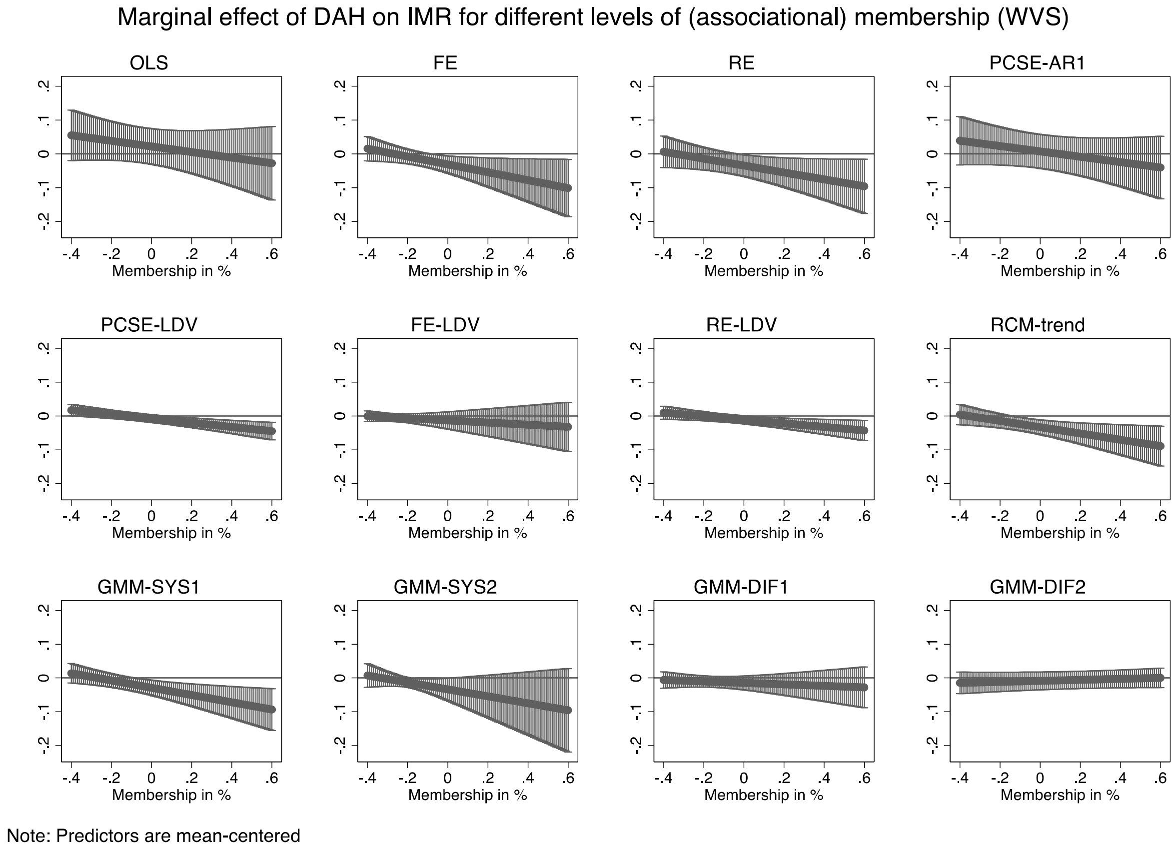


Figure C 15: Membership and the marginal effect of DAH on LIFE

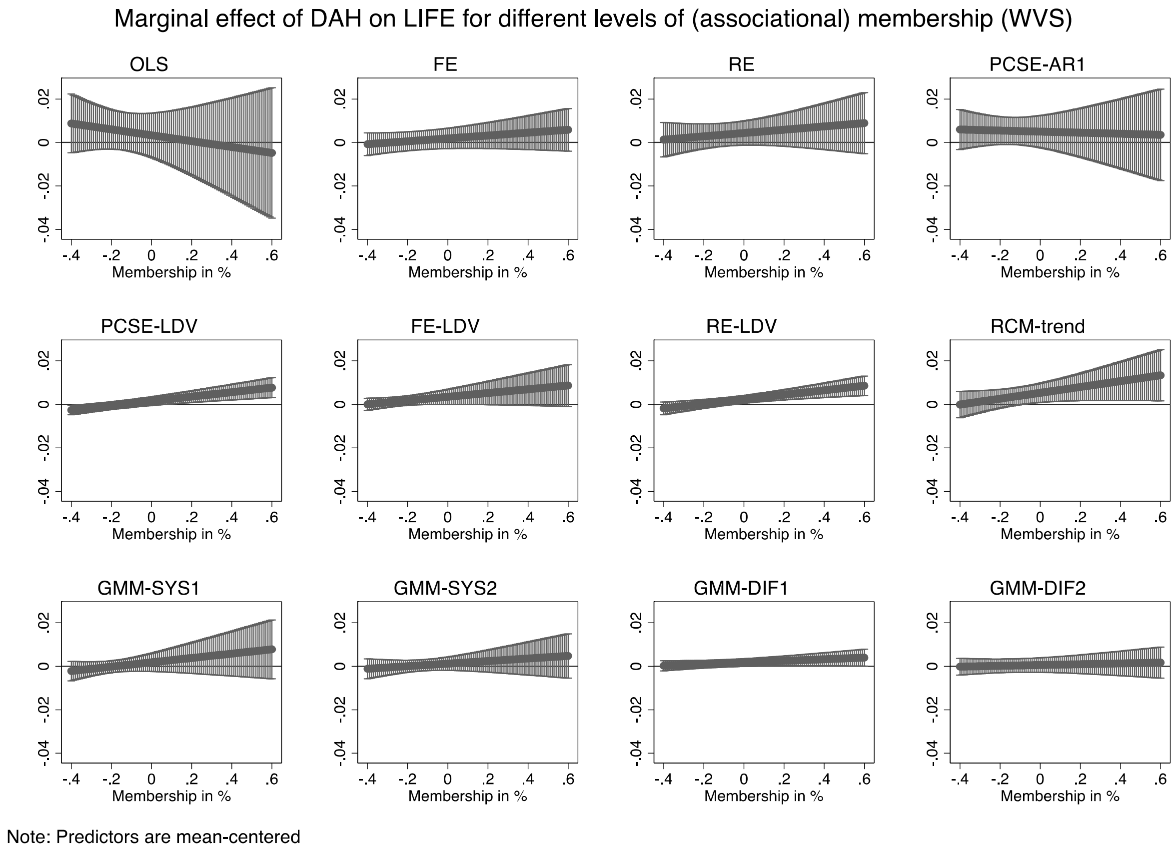


Figure D 4: Marginal effect plots: social trust and the effect of health aid on infant mortality

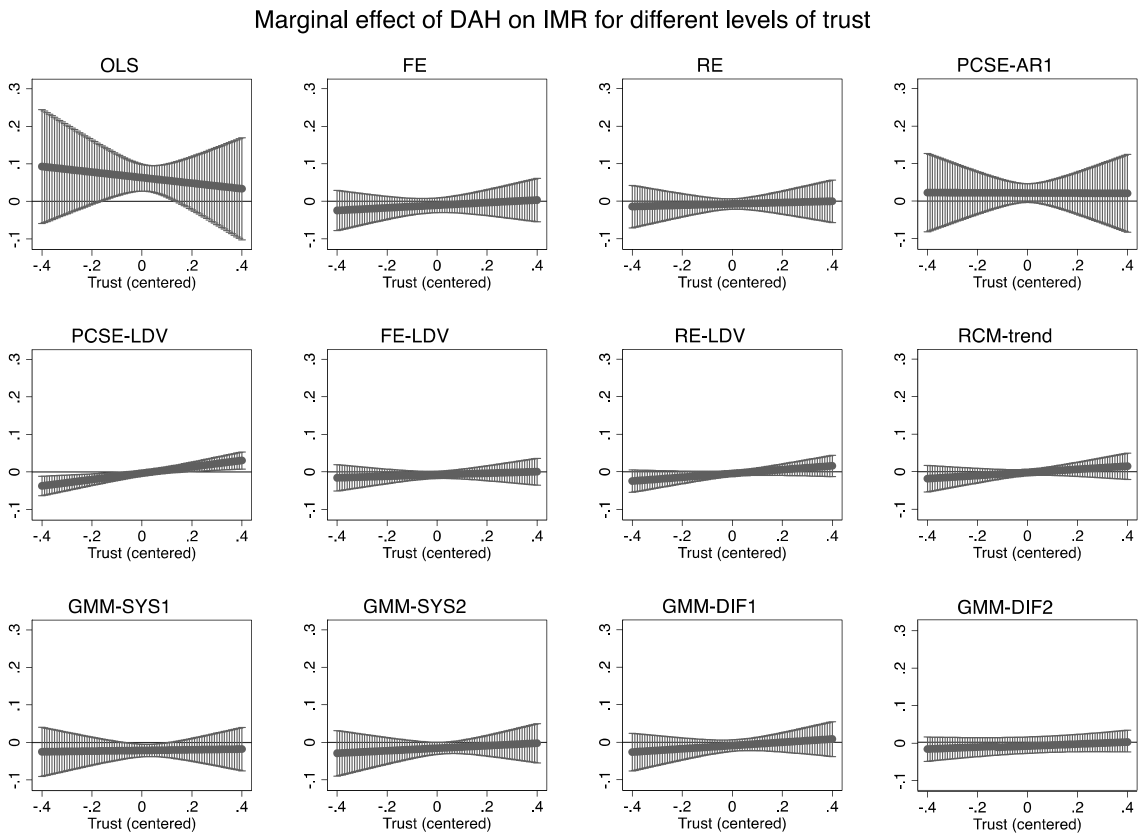


Figure D 5: Marginal effect plots: social trust and the marginal effect of DAH on U5M

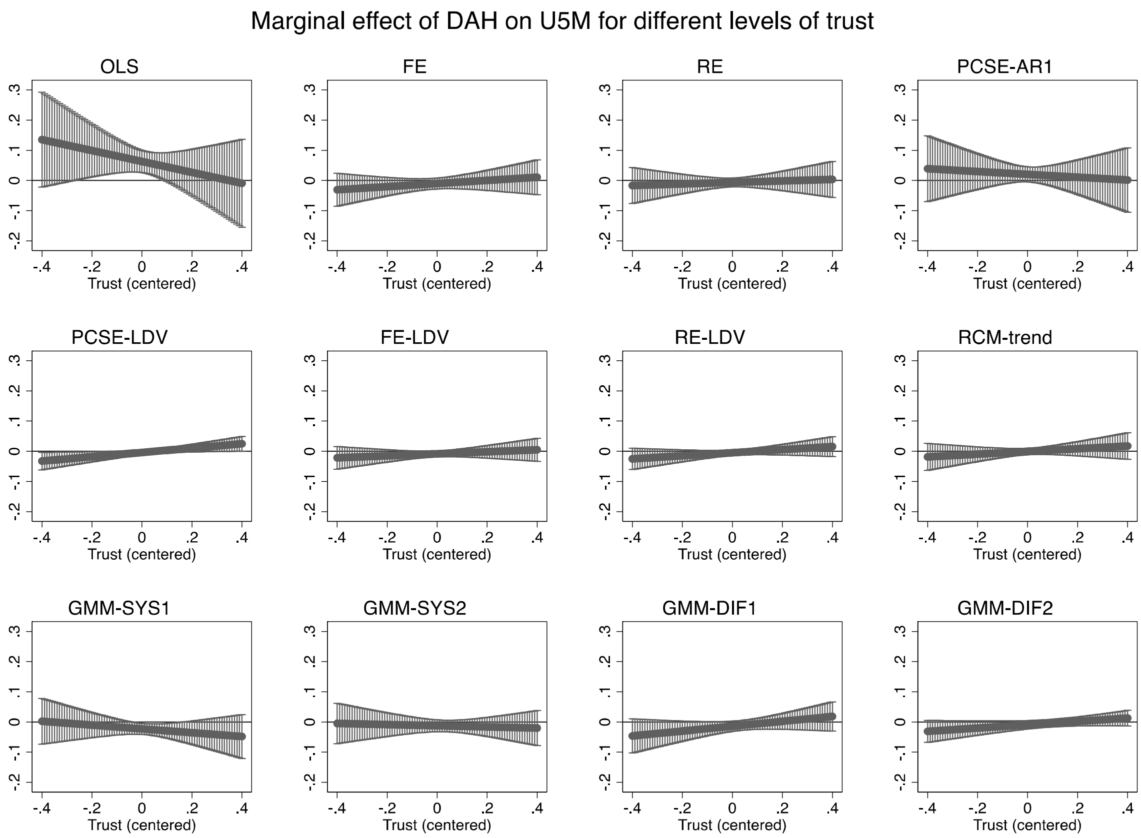


Figure D 6: Marginal effect plots: social trust and the marginal effect of DAH on MMR

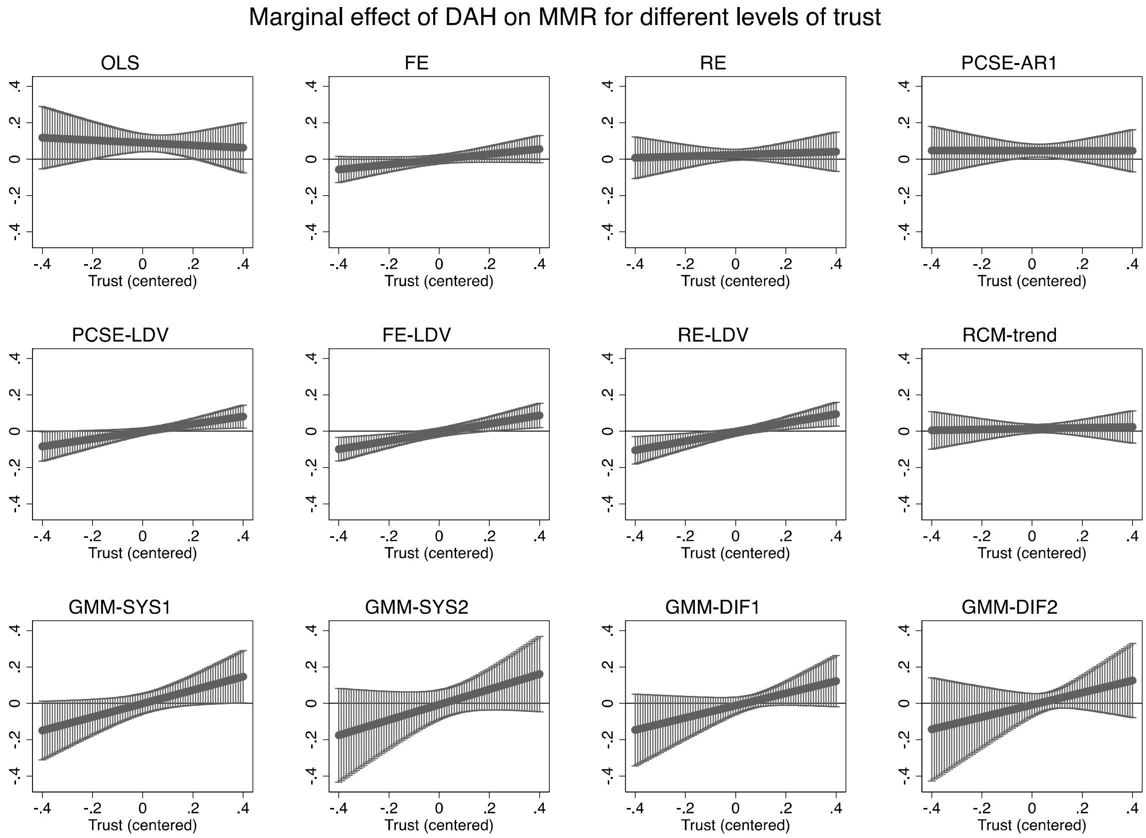


Figure D 7: Marginal effect plots: social trust and the marginal effect of DAH on LIFE

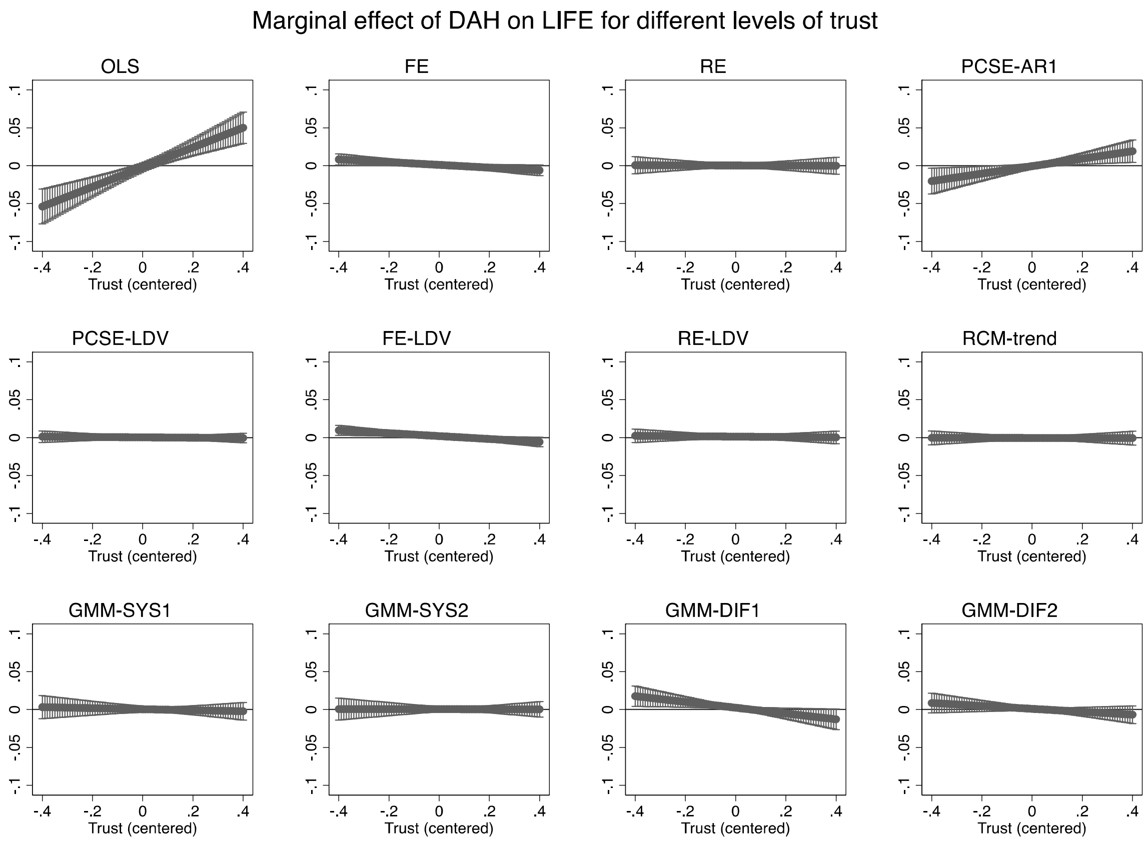


Figure D 8: Marginal effect plots: social trust and the marginal effect of DAH on declines in IMR

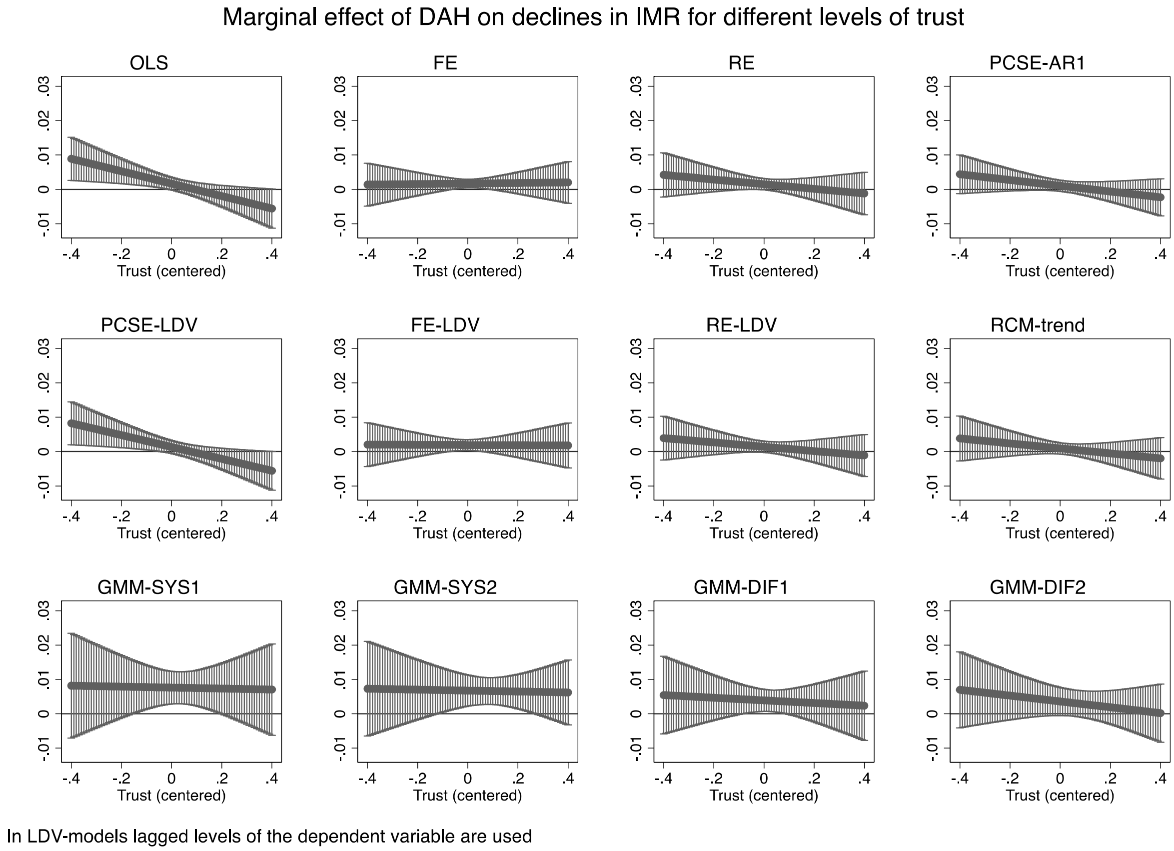


Figure D 9: Marginal effect plots: social trust and the marginal effect of DAH on declines in U5M

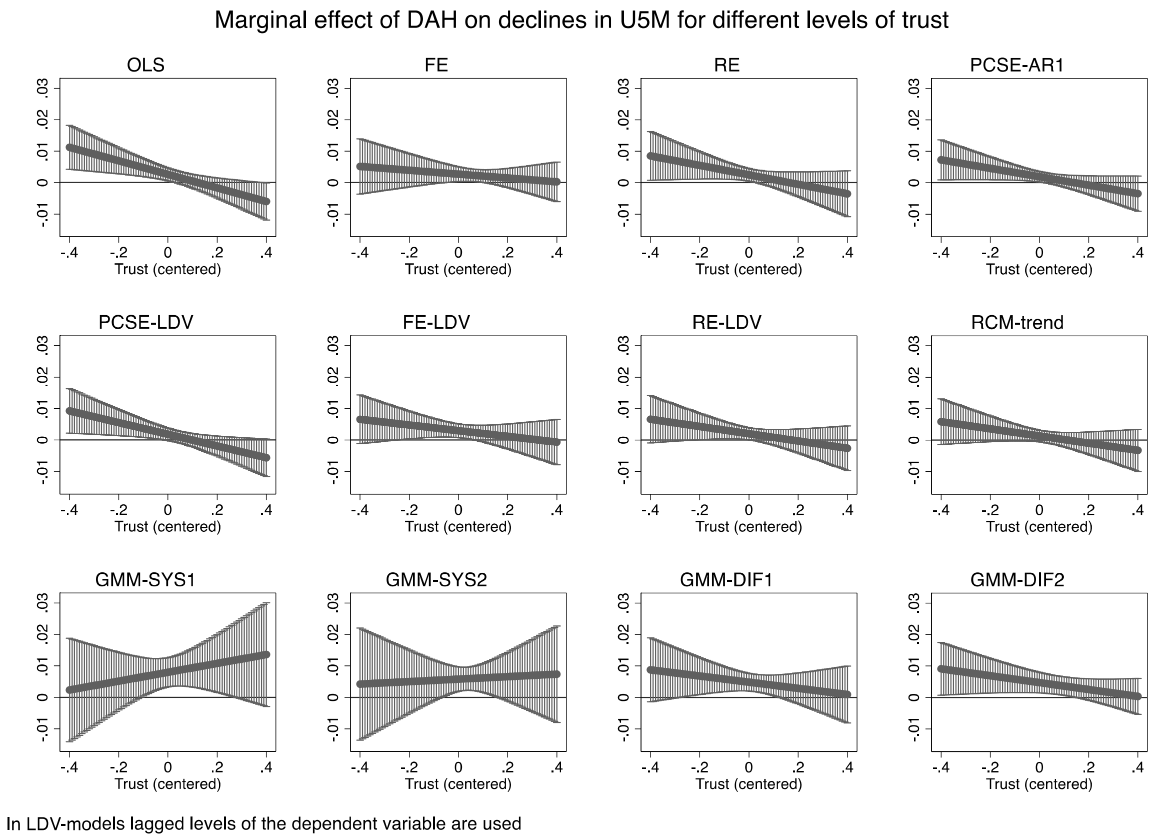
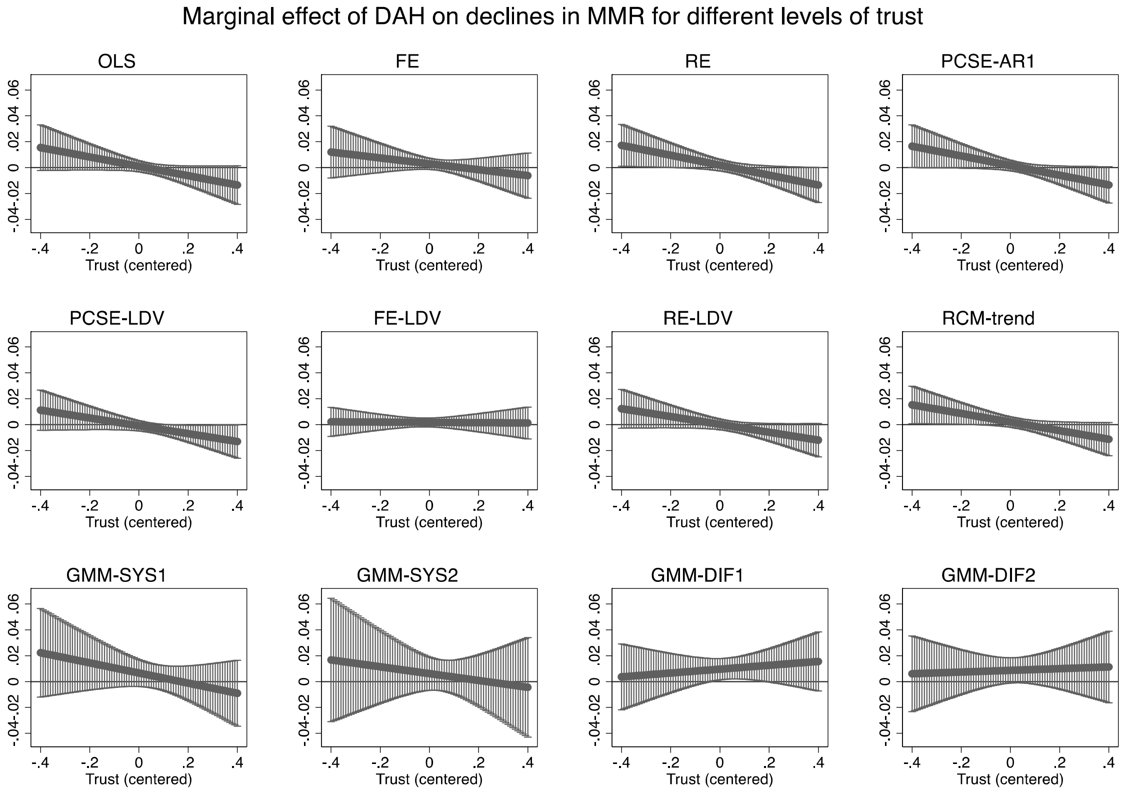
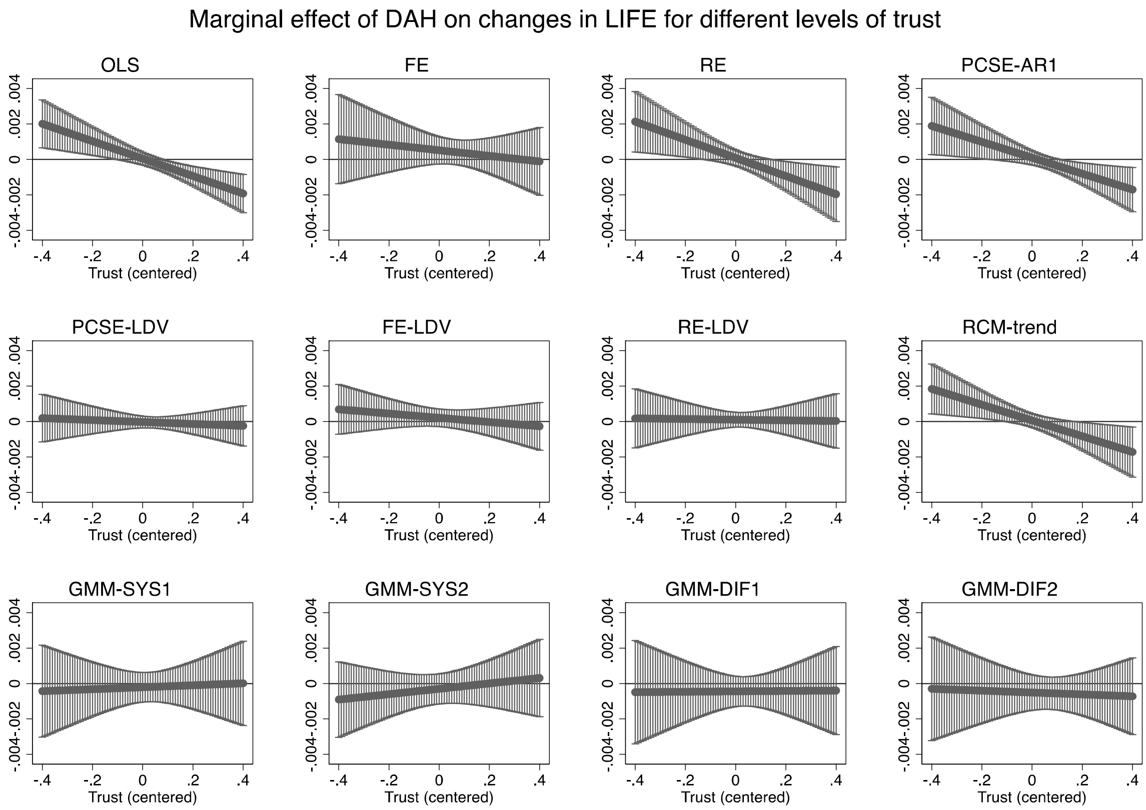


Figure D 10: Marginal effect plots: trust and the effect of health aid on declines in maternal mortality



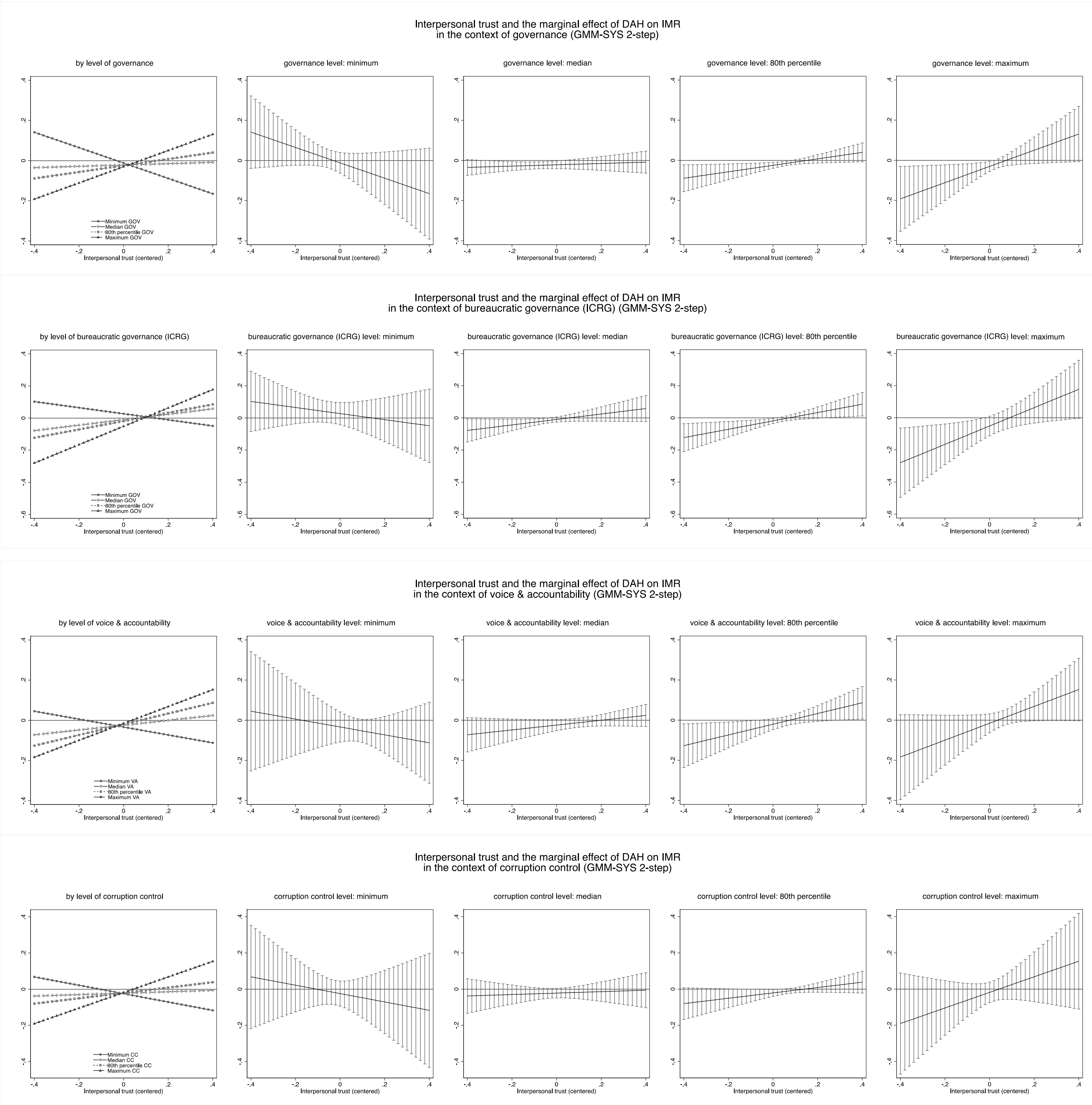
In LDV-models lagged levels of the dependent variable are used

Figure D 11: Marginal effect plots: social trust and the marginal effect of DAH *on changes in* LIFE



In LDV-models lagged levels of the dependent variable are used

Figure D 12: Social trust and the marginal effect of DAH on IMR in the context of bureaucratic governance

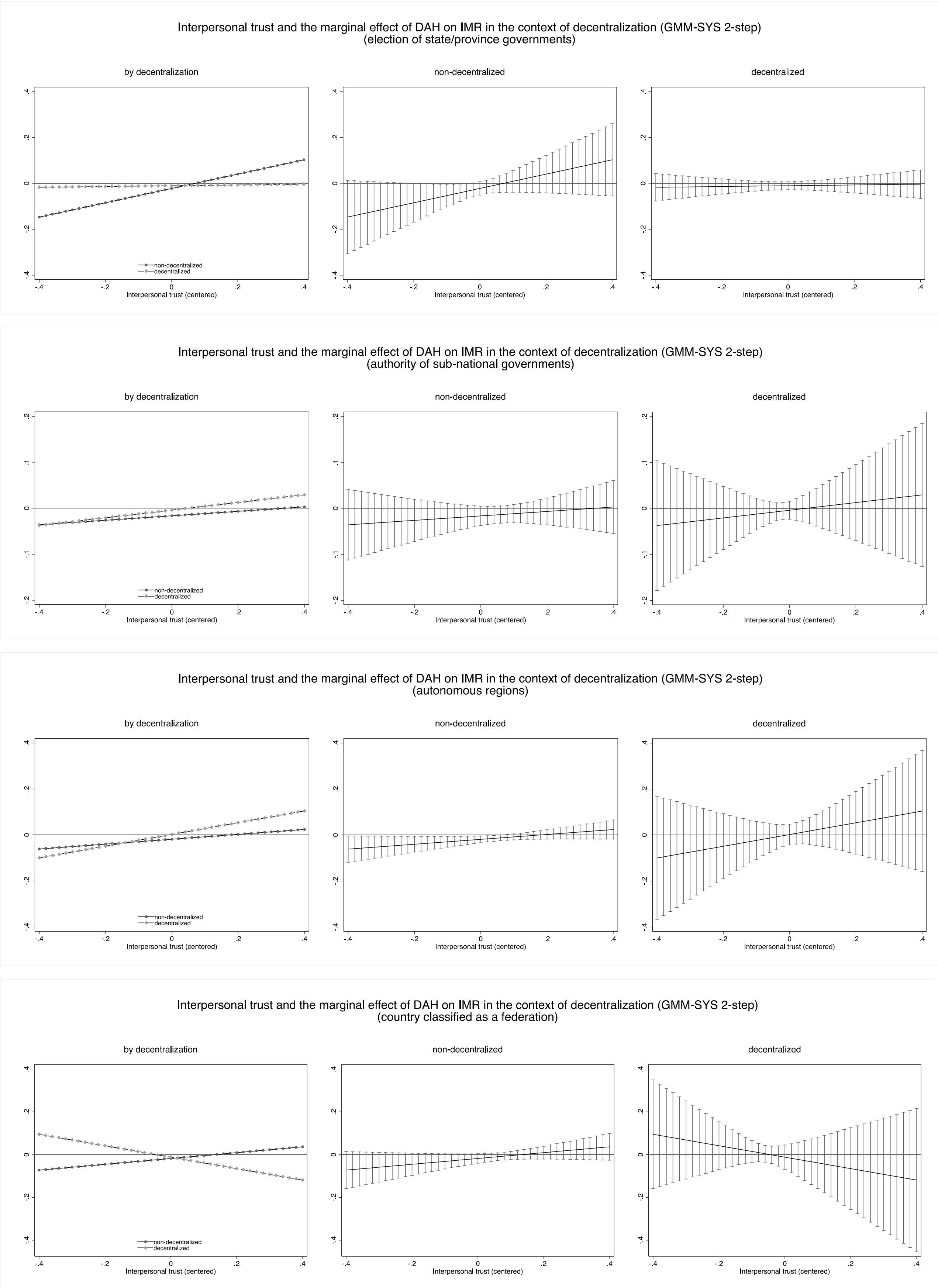


Notes: The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of bureaucratic governance. The marginal effect lines range from low to high levels of bureaucratic governance. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of bureaucratic governance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure D 13: Social trust and the marginal effect of DAH on IMR in the context of liberal democracy

Notes: The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of liberal democracy. The marginal effect lines range from low to high levels of liberal democracy. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of liberal democracy. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure D 14: Social trust and the marginal effect of DAH on IMR in the context of decentralization

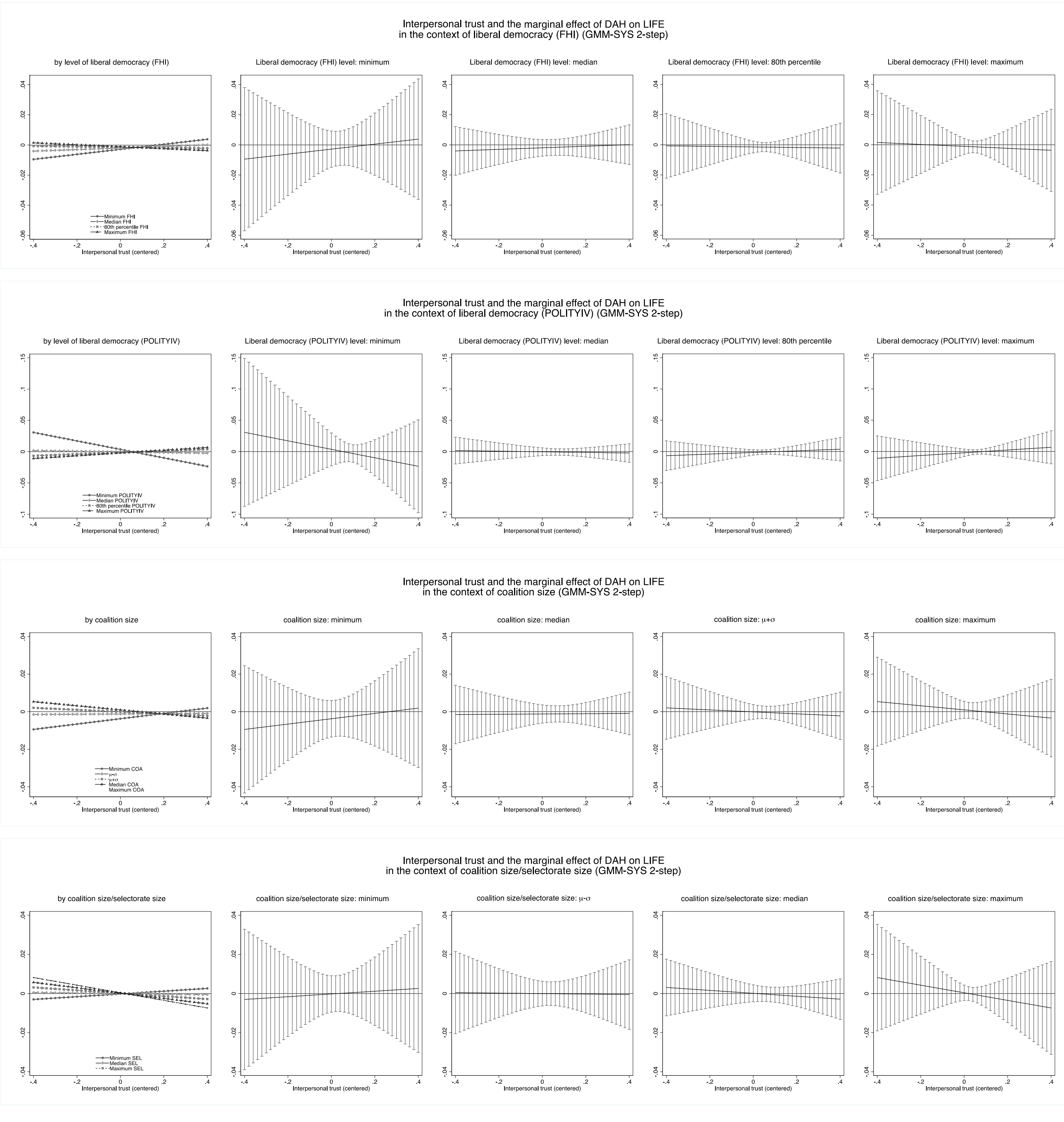


Notes: The left column shows the marginal effect of health aid across varying levels of social capital for decentralized and non-decentralized countries (without confidence intervals). The graphs at the center and to the right plot each of these marginal effect lines with its respective confidence intervals, which allow to evaluate the statistical significance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure D 15: Social trust and the marginal effect of DAH on LIFE in the context of bureaucratic governance

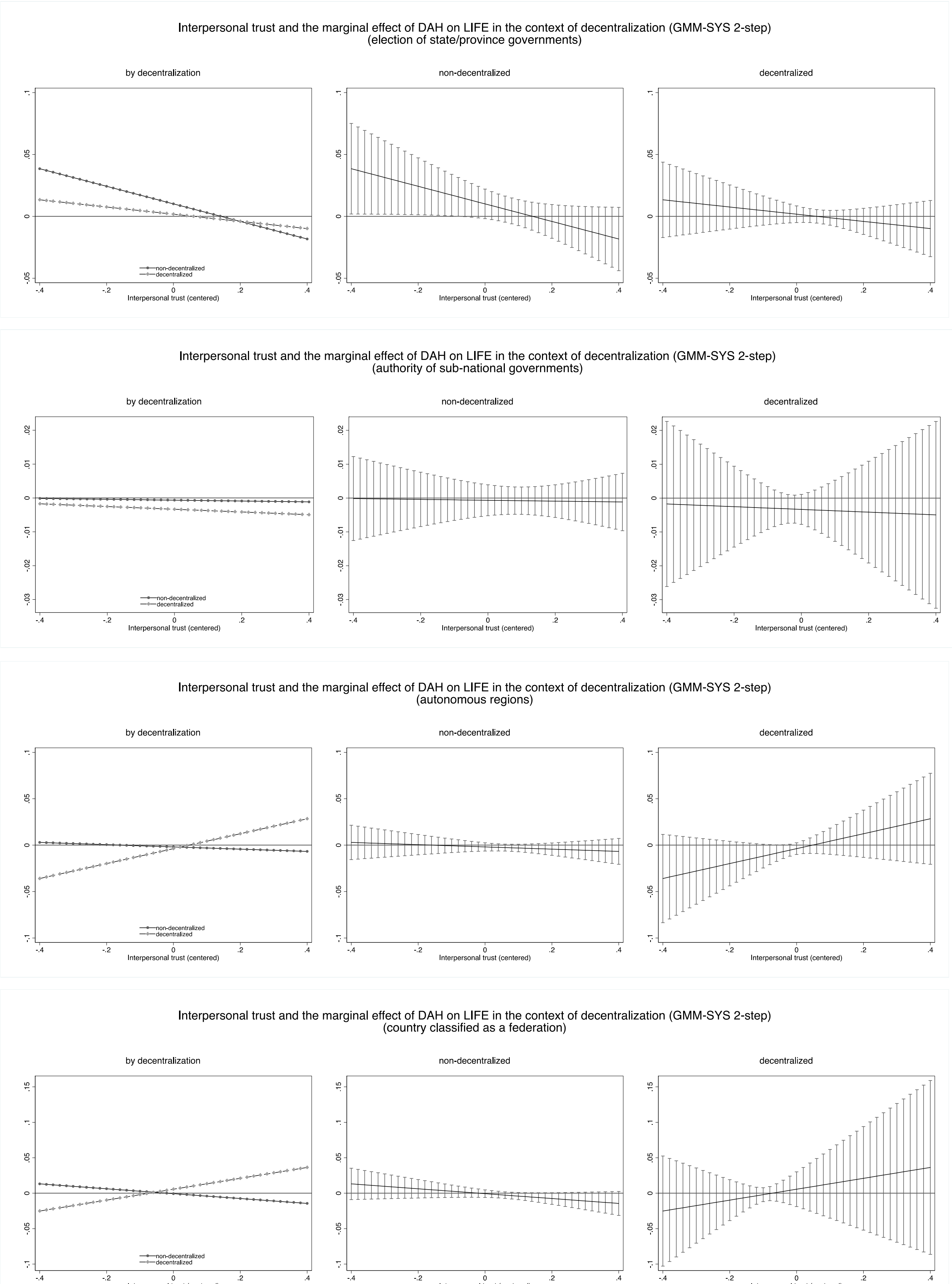
Notes: The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of bureaucratic governance. The marginal effect lines range from low to high levels of bureaucratic governance. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of bureaucratic governance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure D 16: Social trust and the marginal effect of DAH *on* LIFE *in the context of liberal democracy*



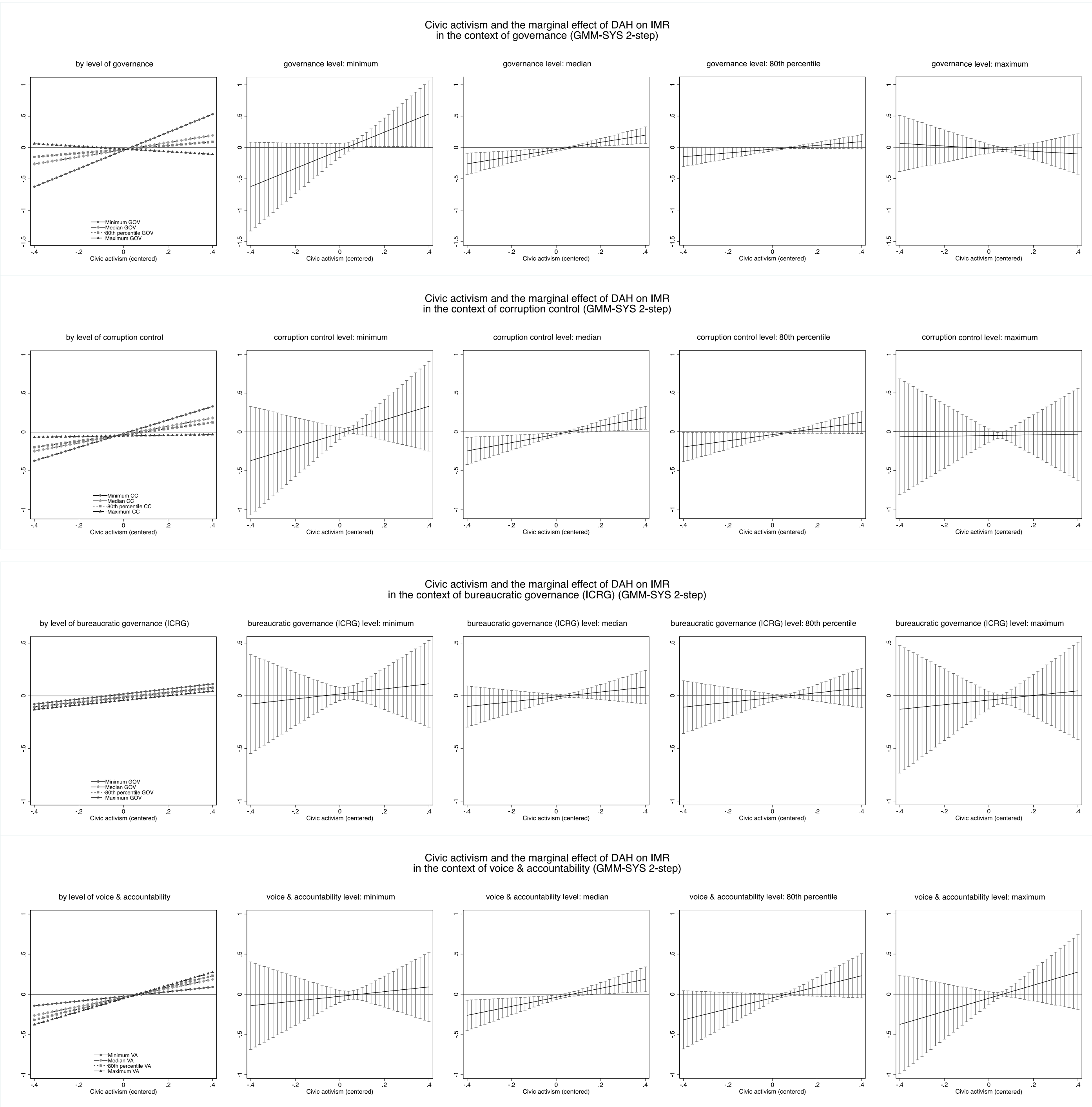
Notes: The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of liberal democracy. The marginal effect lines range from low to high levels of liberal democracy. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of liberal democracy. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure D 17: Social trust and the marginal effect of DAH *on* LIFE *in the context of decentralization*



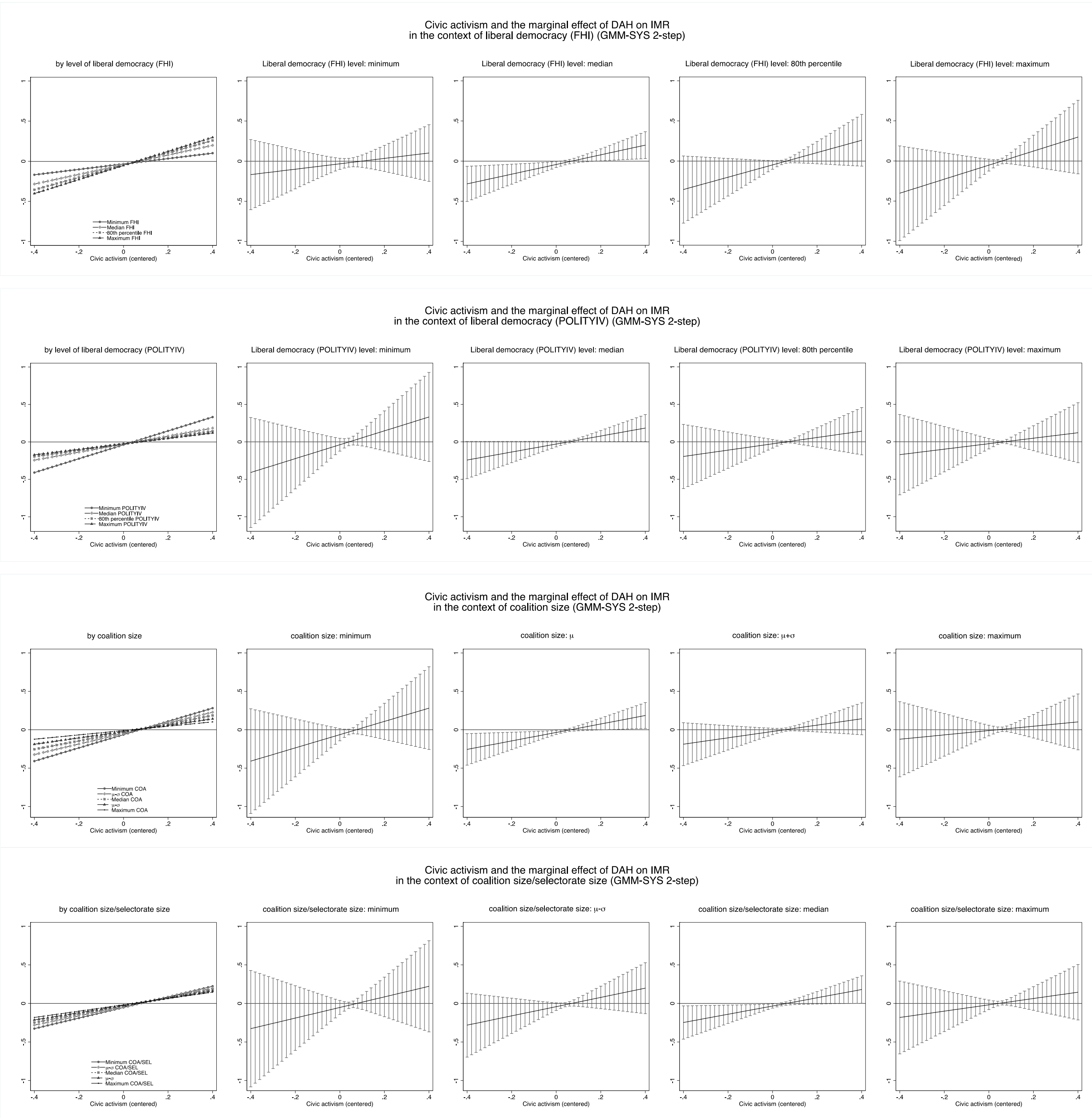
Notes: The left column shows the marginal effect of health aid across varying levels of social capital for decentralized and non-decentralized countries (without confidence intervals). The graphs at the center and to the right plot each of these marginal effect lines with its respective confidence intervals, which allow to evaluate the statistical significance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure B 12: Civic activism and the marginal effect of DAH on IMR in the context of bureaucratic governance



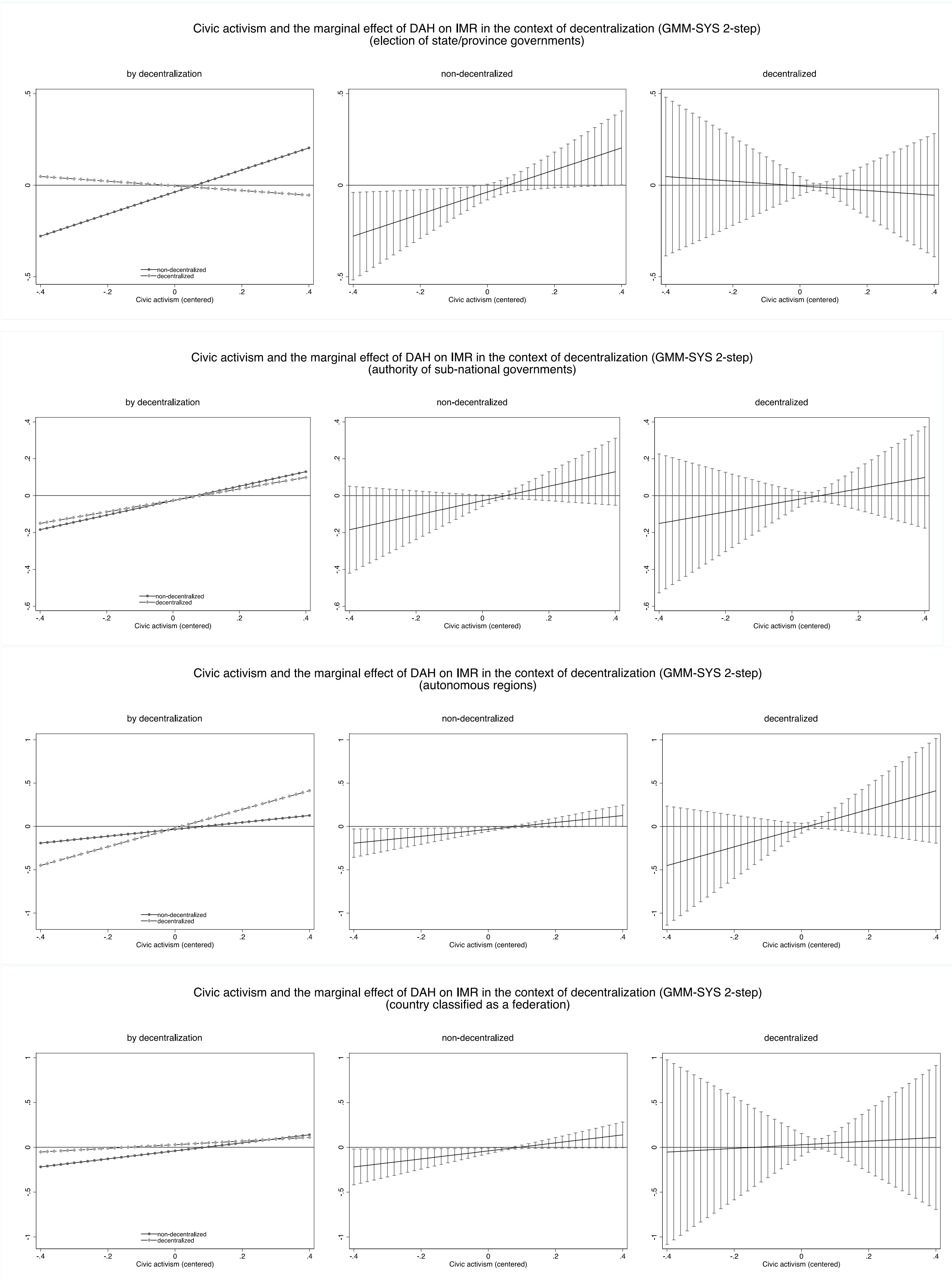
Notes: The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of bureaucratic governance. The marginal effect lines range from low to high levels of bureaucratic governance. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of bureaucratic governance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure B 13: Civic activism and the marginal effect of DAH *on* IMR *in the context of liberal democracy*



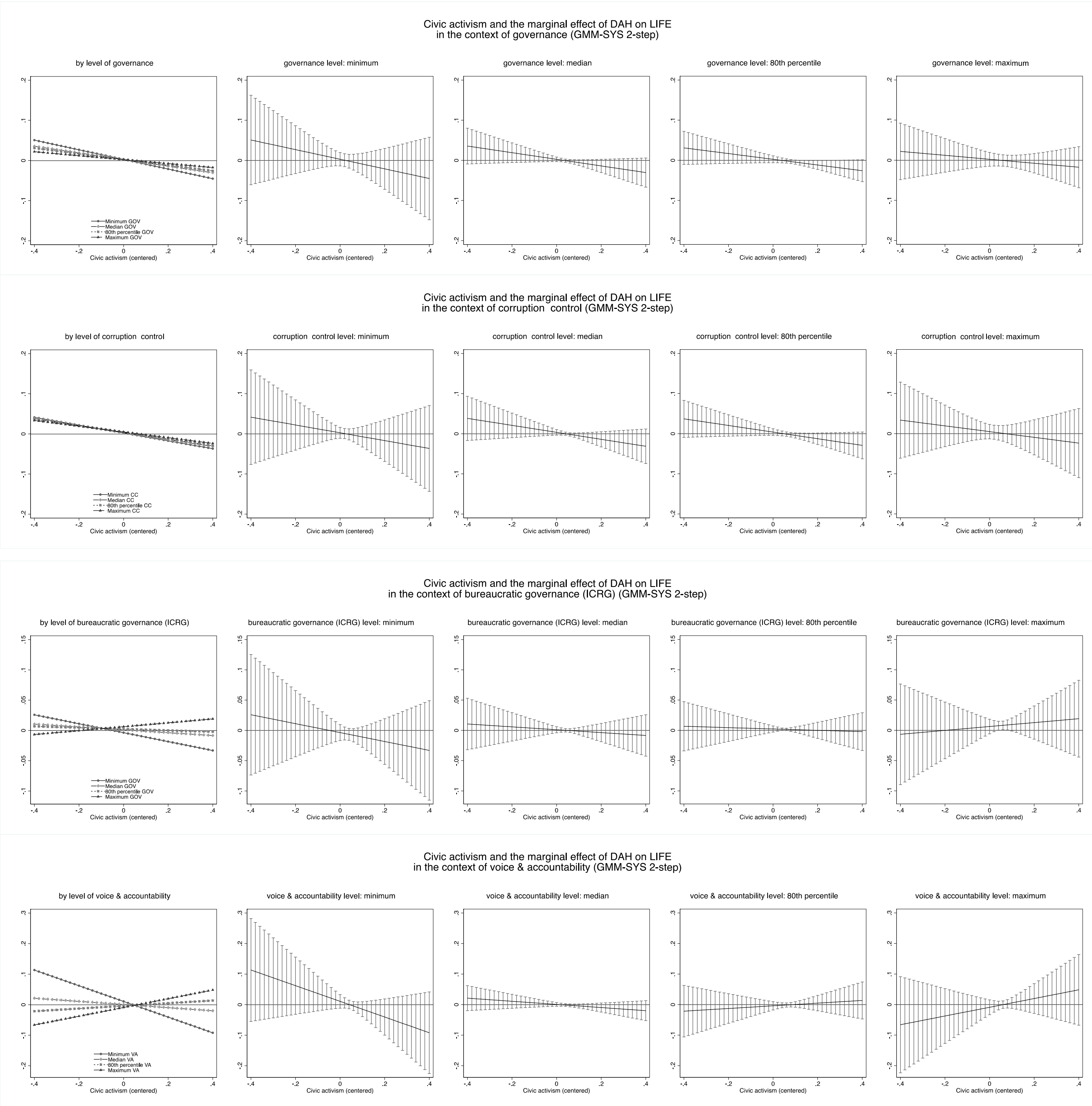
Notes: Following Norris (2012, 178) either liberal democracy or bureaucratic governance are simultaneously controlled for. The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of liberal democracy. The marginal effect lines range from low to high levels of liberal democracy. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of liberal democracy. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure B 14: Civic activism and the marginal effect of DAH on IMR in the context of decentralization



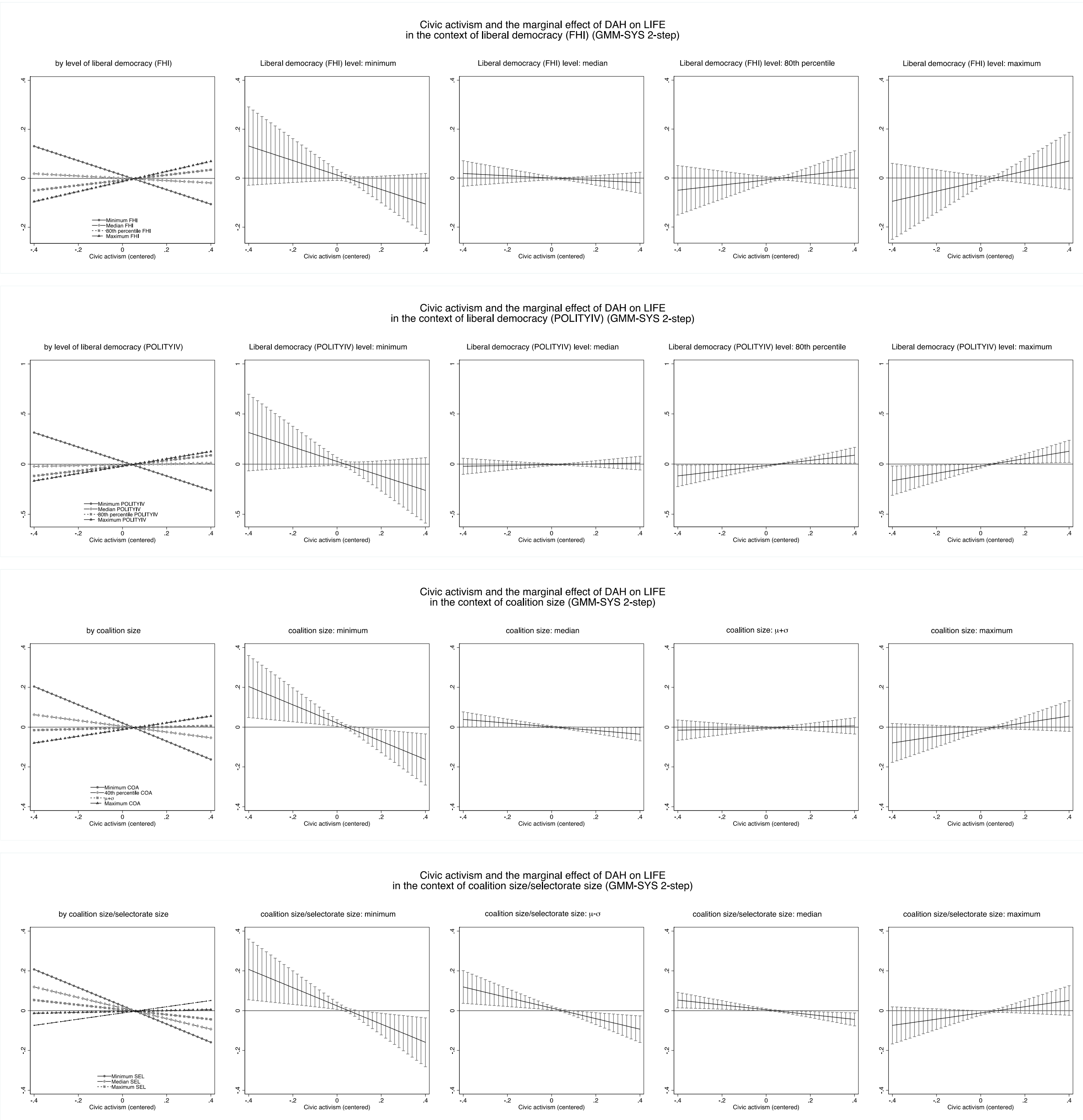
Notes: The left column shows the marginal effect of health aid across varying levels of social capital for decentralized and non-decentralized countries (without confidence intervals). The graphs at the center and to the right plot each of these marginal effect lines with its respective confidence intervals, which allow to evaluate the statistical significance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure B 15: Civic activism and the marginal effect of DAH on LIFE in the context of bureaucratic governance



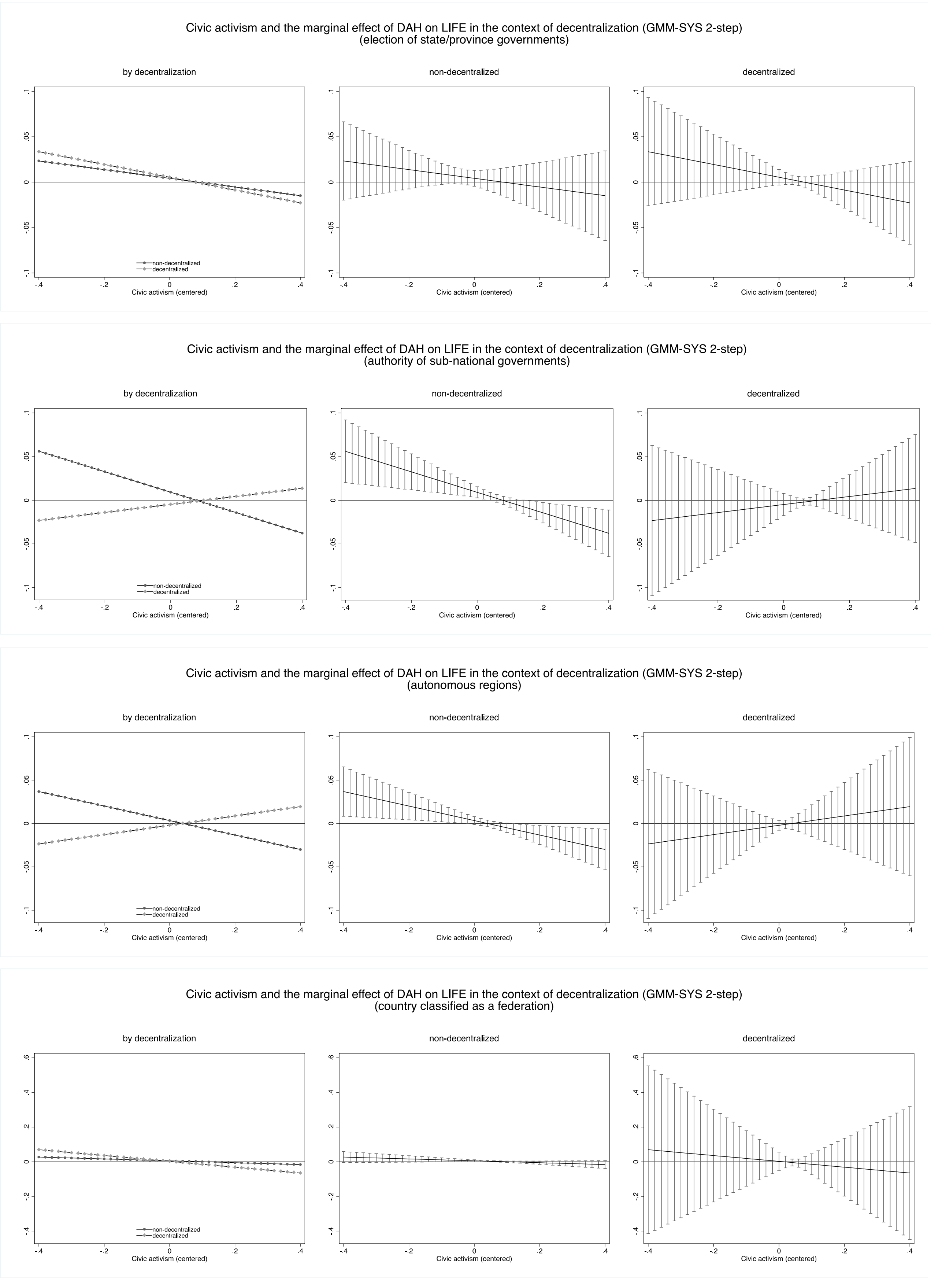
Notes: The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of bureaucratic governance. The marginal effect lines range from low to high levels of bureaucratic governance. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of bureaucratic governance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure B 16: Civic activism and the marginal effect of DAH on LIFE in the context of liberal democracy



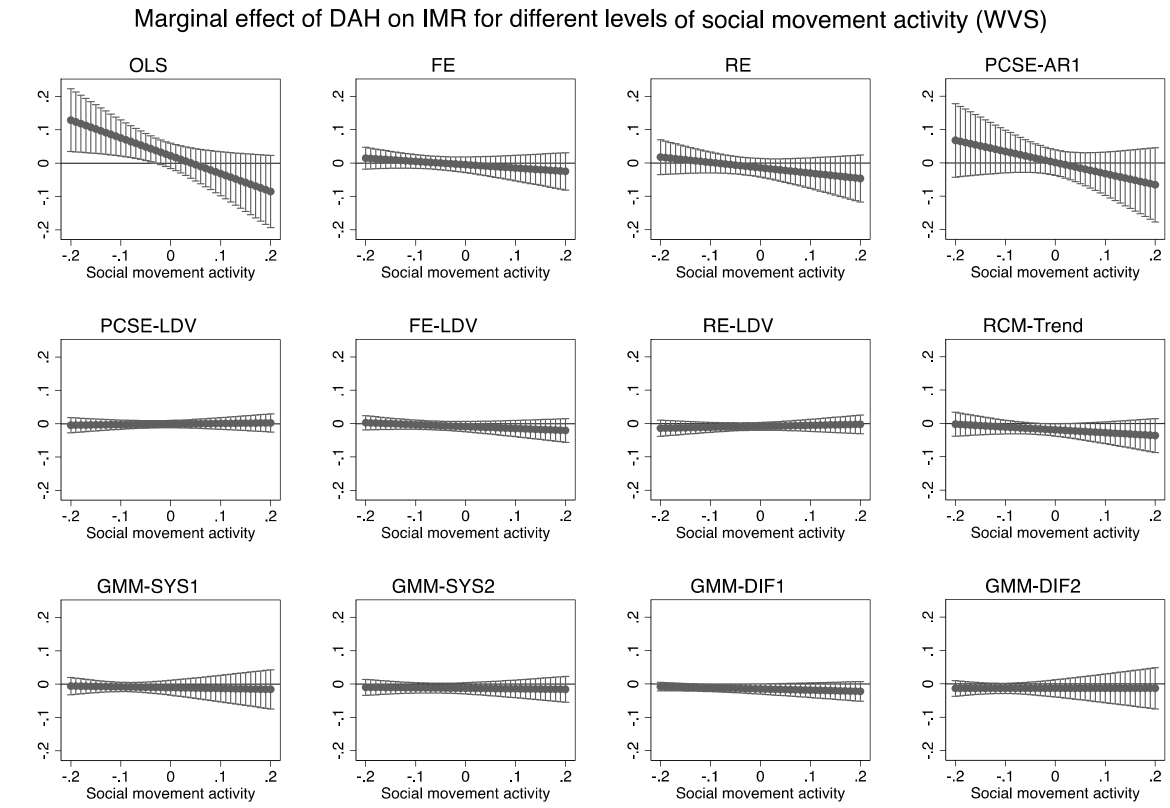
Notes: Following Norris (2012, 178) either liberal democracy or bureaucratic governance are simultaneously controlled for. The left column shows the marginal effect of health aid across varying levels of social capital at specified levels of liberal democracy. The marginal effect lines range from low to high levels of liberal democracy. From left to right each of these marginal effect lines is plotted with its respective confidence intervals, which allow to evaluate the statistical significance of the marginal effect of increased health aid at the specified level of liberal democracy. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure B 17: Civic activism and the marginal effect of DAH *on* LIFE *in the context of decentralization*



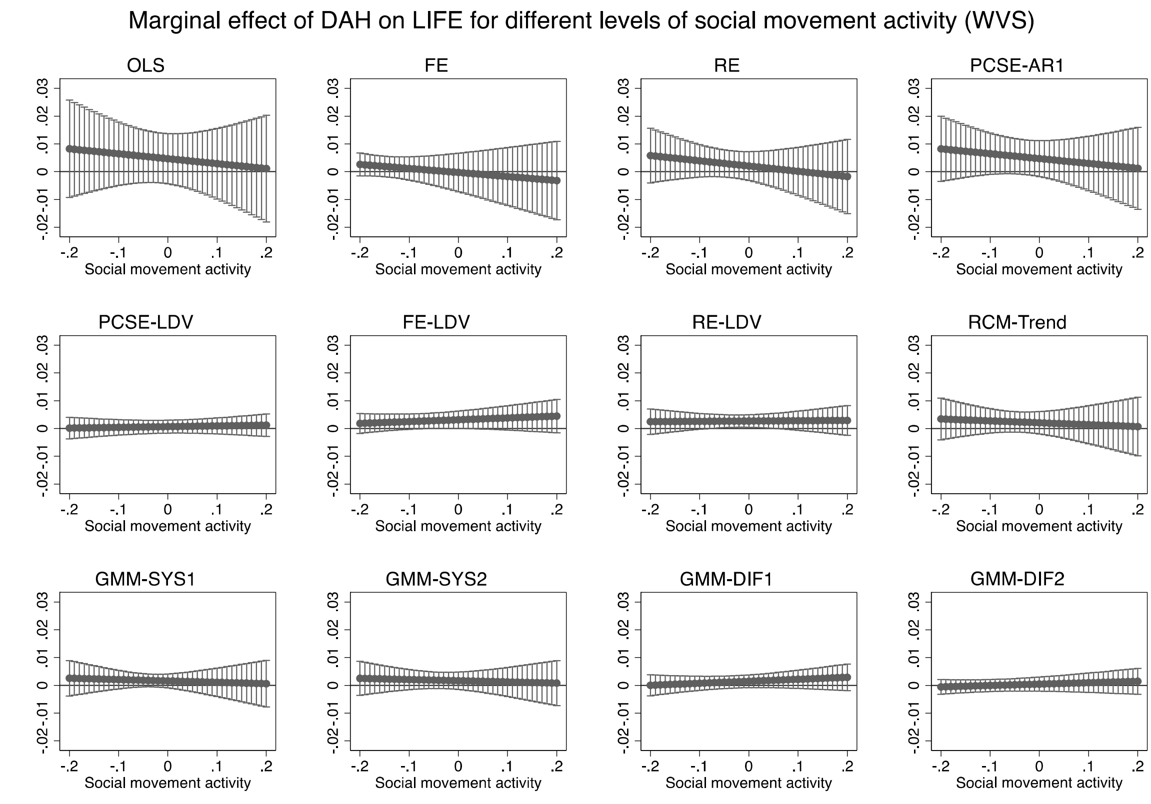
Notes: The left column shows the marginal effect of health aid across varying levels of social capital for decentralized and non-decentralized countries (without confidence intervals). The graphs at the center and to the right plot each of these marginal effect lines with its respective confidence intervals, which allow evaluating the statistical significance. The first row visualizes Model A3. The second row visualizes Model B3 and so on.

Figure B 18: Civic activism and the marginal effect of DAH on IMR



Note: Predictors are mean-centered

Figure B 19: Civic activism and the marginal effect of DAH on LIFE



Note: Predictors are mean-centered

Figure B 20: Informational connectedness and the marginal effect of DAH *on* IMR

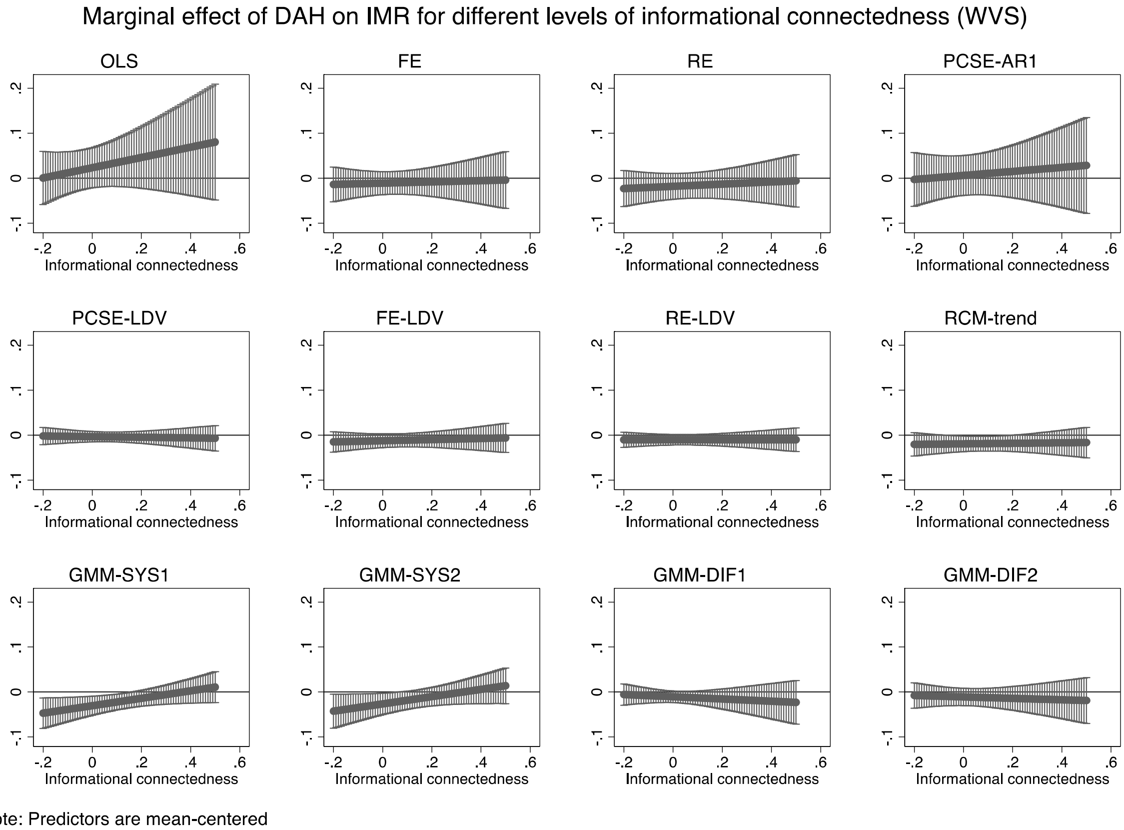


Figure B 21: Informational connectedness and the marginal effect of DAH *on* LIFE

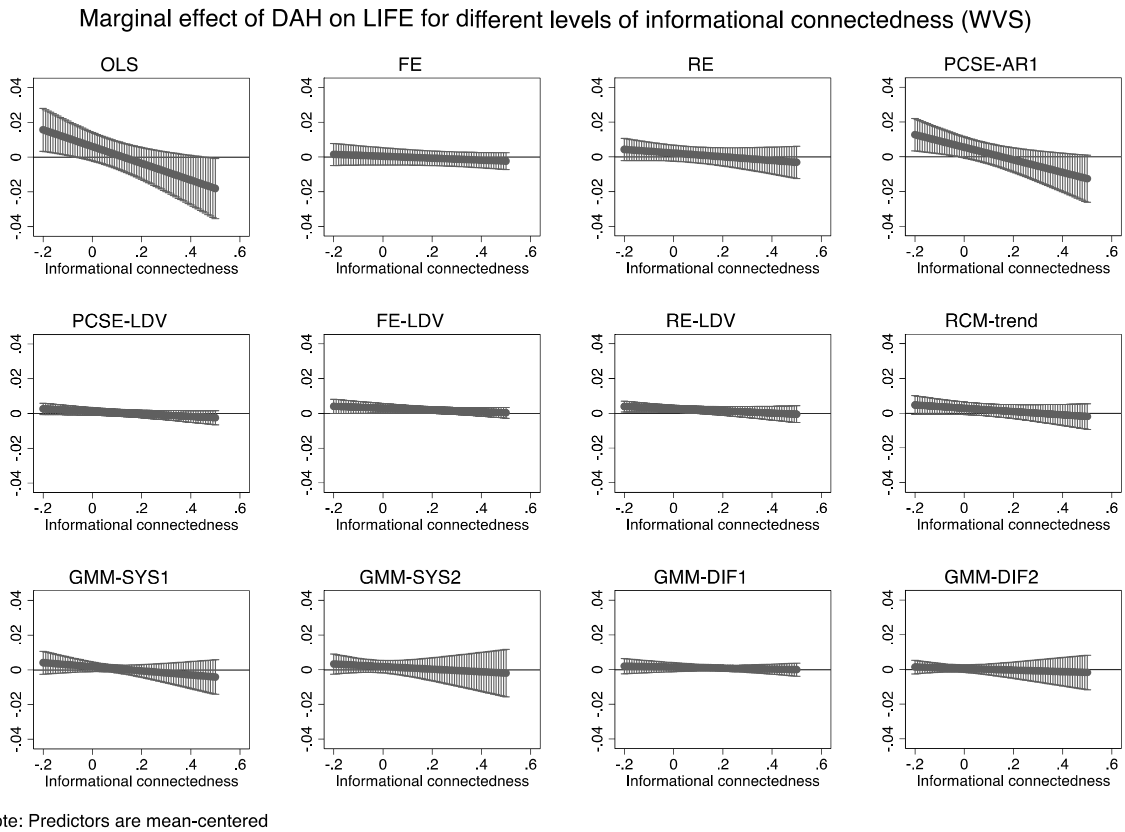


Figure B 22: Number of international NGOs and the marginal effect of DAH on IMR

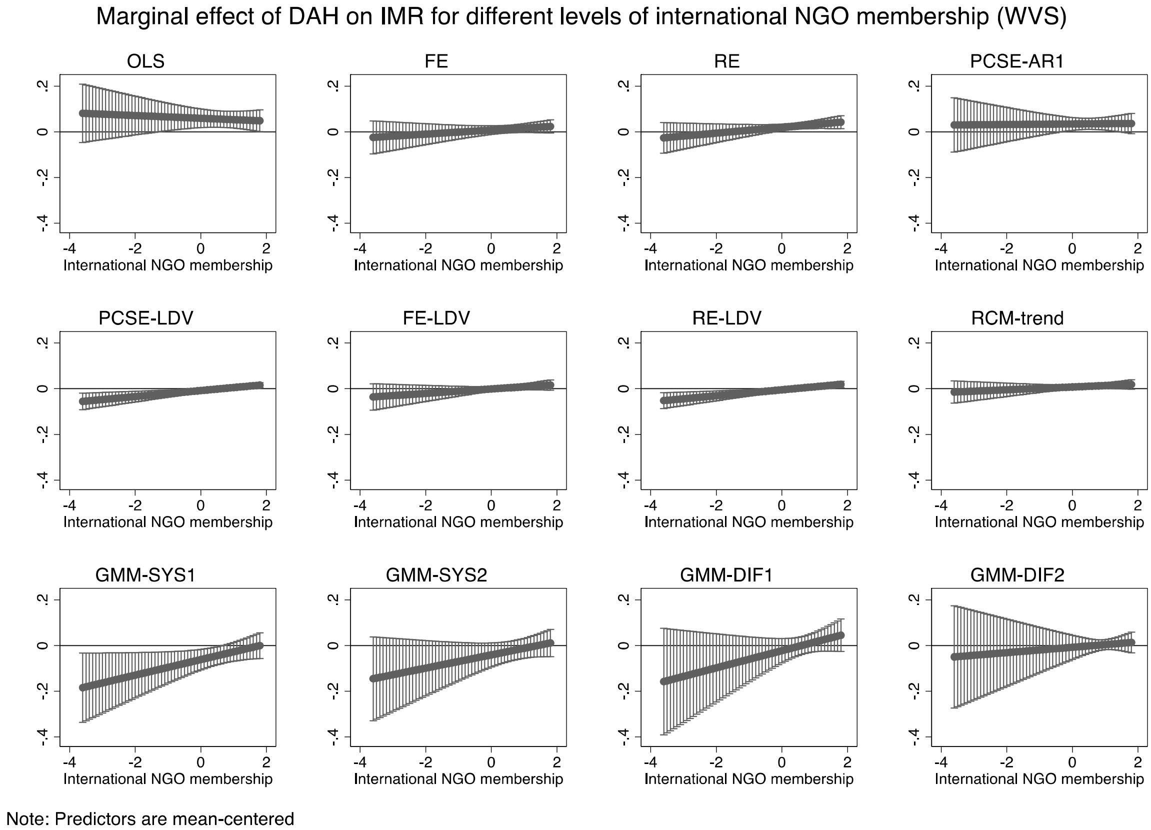


Figure B 23: Number of international NGOs and the marginal effect of DAH on LIFE

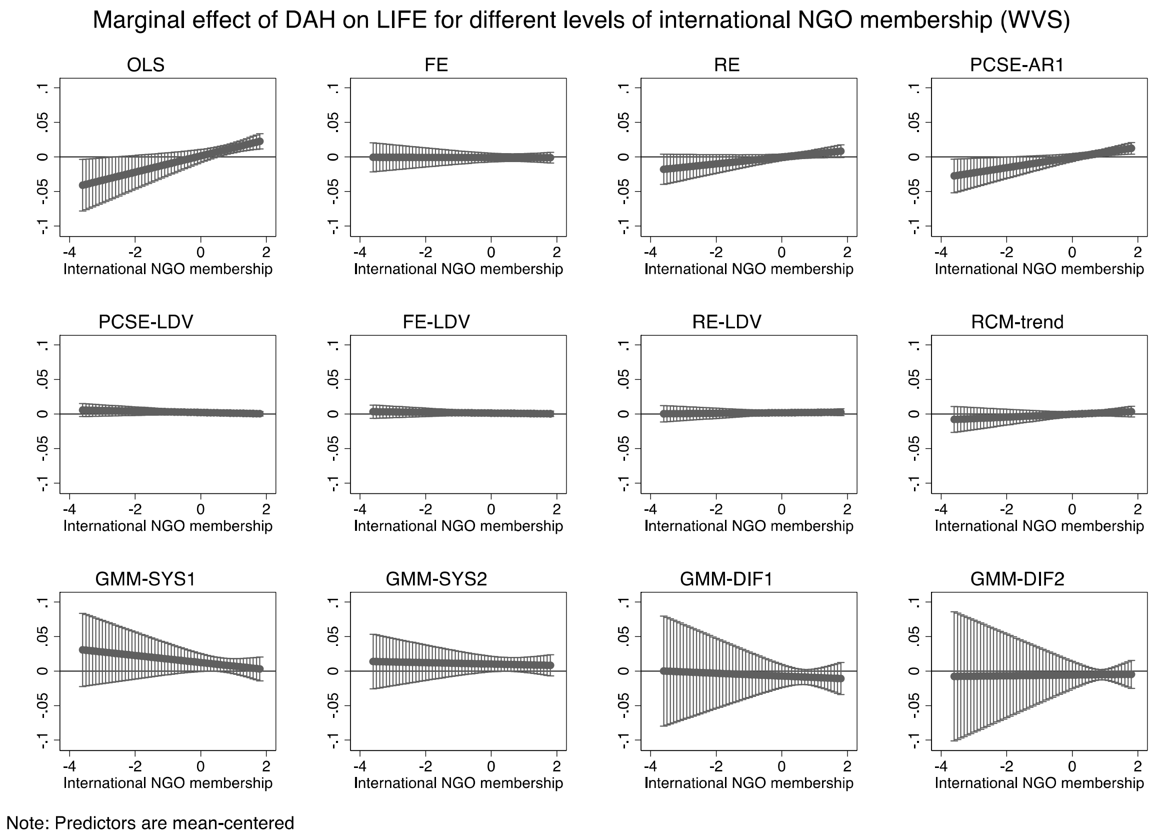


Figure B 24: Density of international NGOs and the marginal effect of DAH *on* IMR

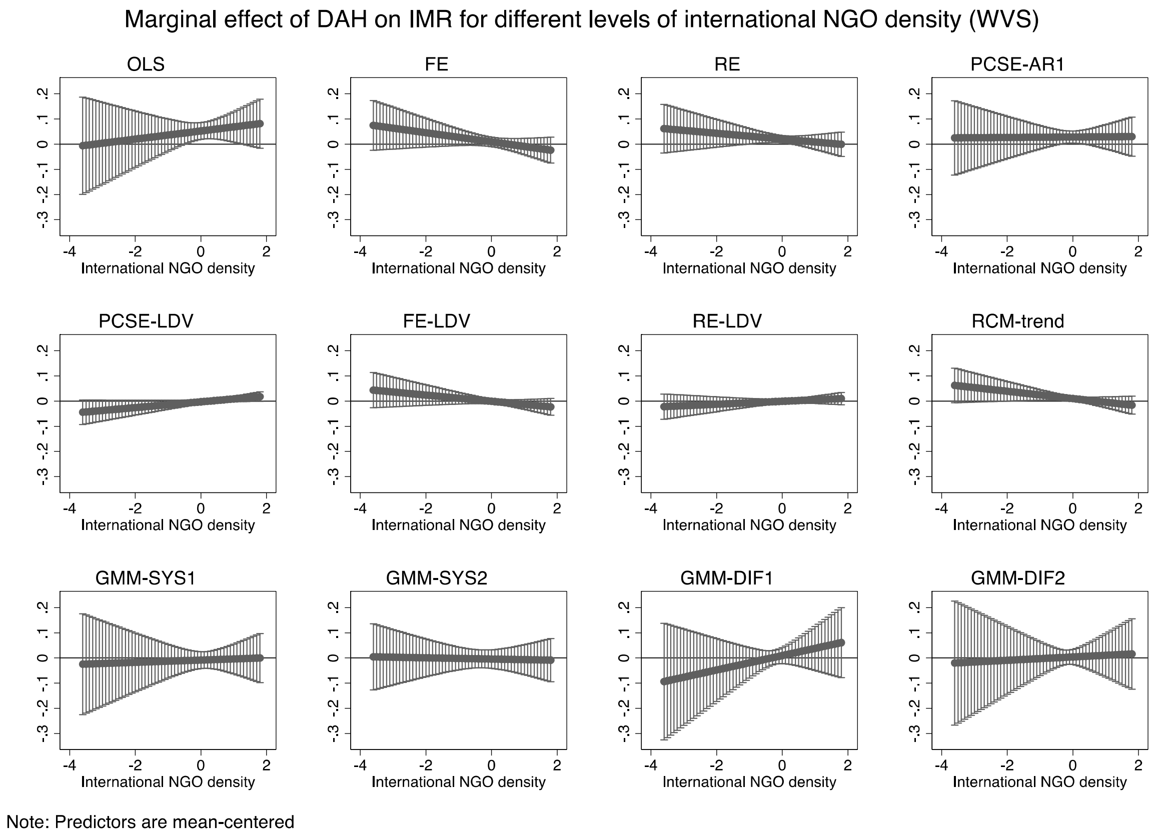


Figure B 25: Density of international NGOs and the marginal effect of DAH *on* LIFE

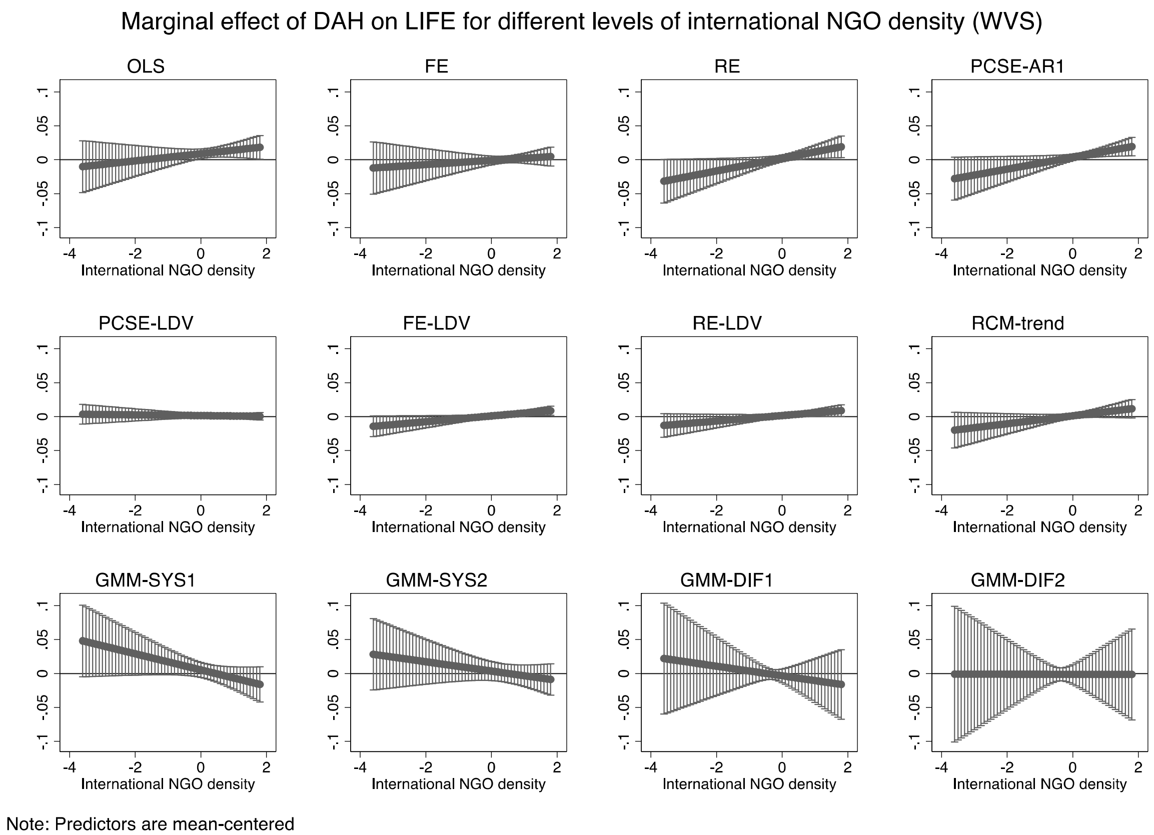
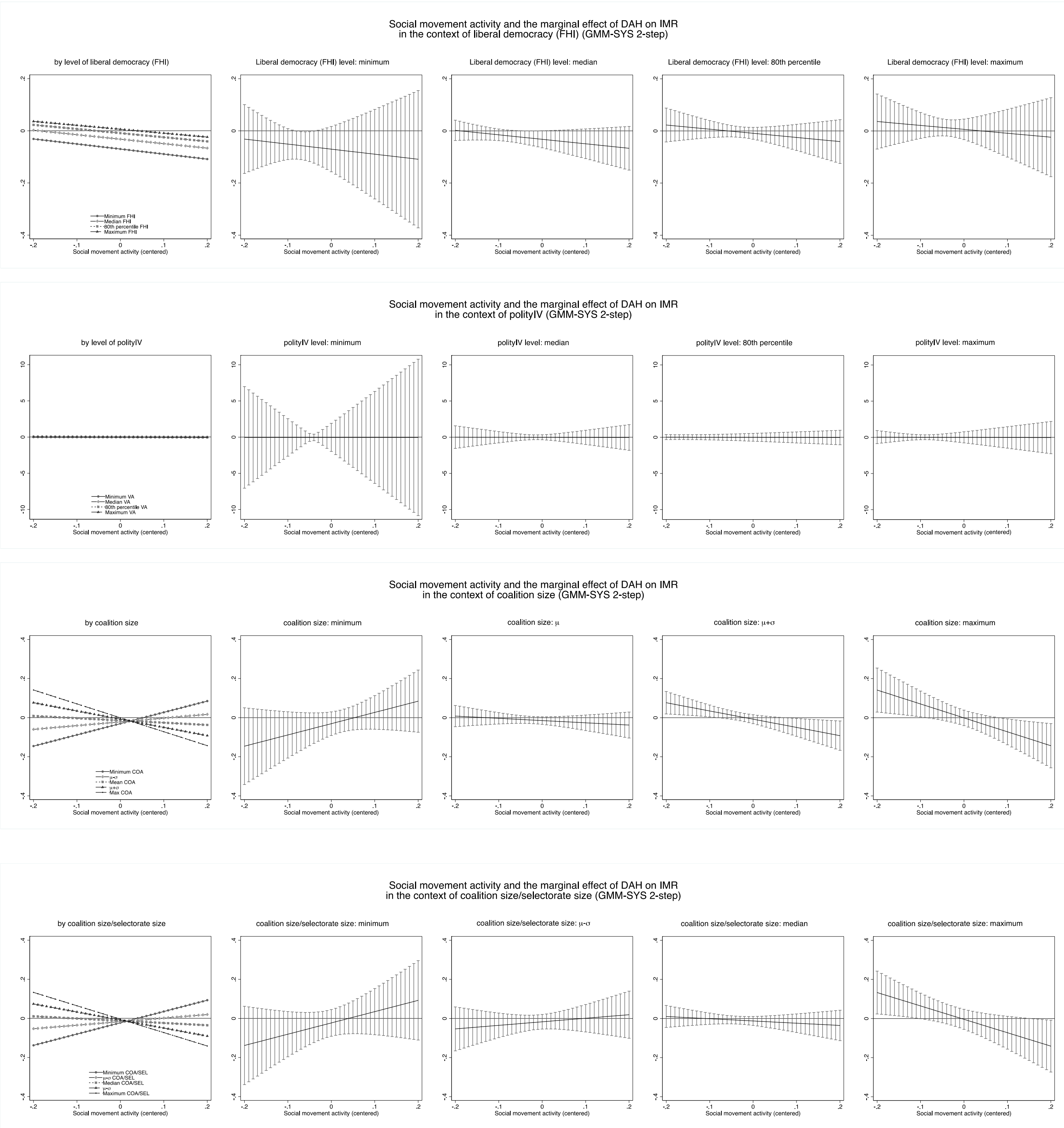


Figure B 26: Civic activism and the marginal effect of DAH on IMR in the context of bureaucratic governance II

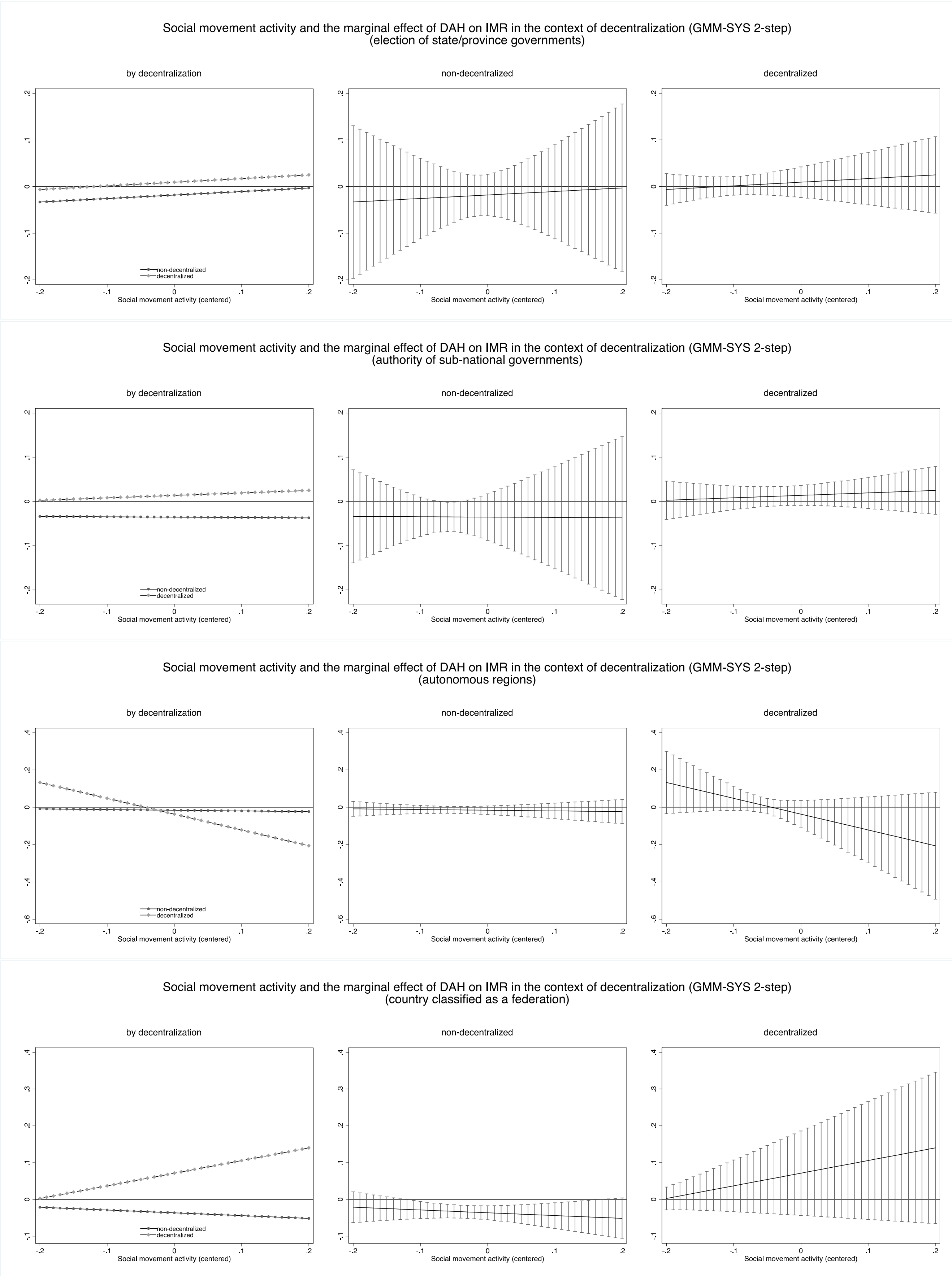
Notes: The marginal effect plots visualize the interaction of civic activism, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Civic activism is measured by the SMA index. Data: WVS.

Figure B 27: Civic activism and the marginal effect of DAH on IMR in the context of democracy II



Notes: The marginal effect plots visualize the interaction of civic activism, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Civic activism is measured by the SMA index. Data: WVS.

Figure B 28: Civic activism and the marginal effect of DAH on IMR in the context of decentralization II

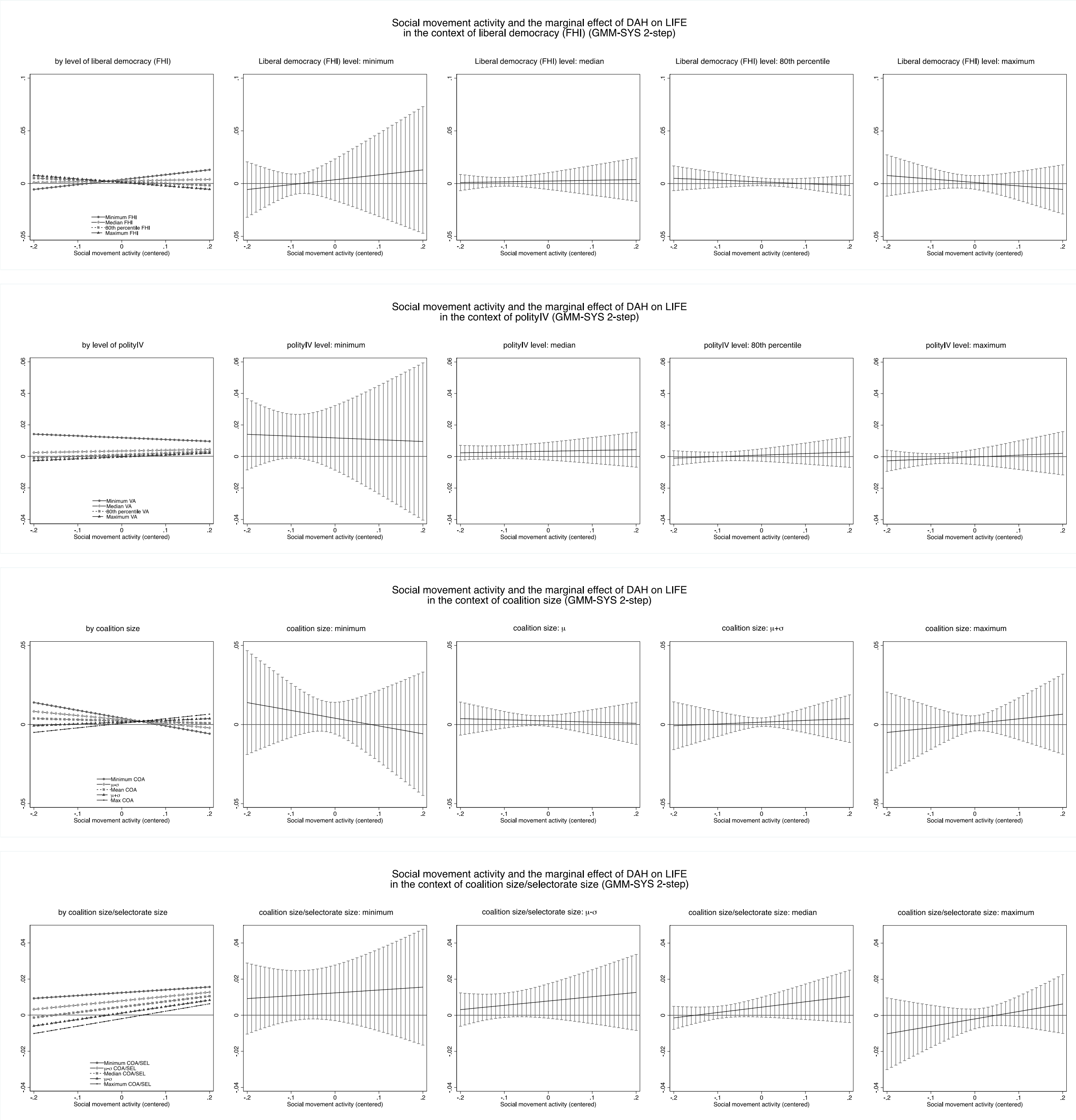


Notes: The marginal effect plots visualize the interaction of civic activism, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Civic activism is measured by the SMA index. Data: WVS.

Figure B 29: Civic activism and the marginal effect of DAH on LIFE in the context of bureaucratic governance II

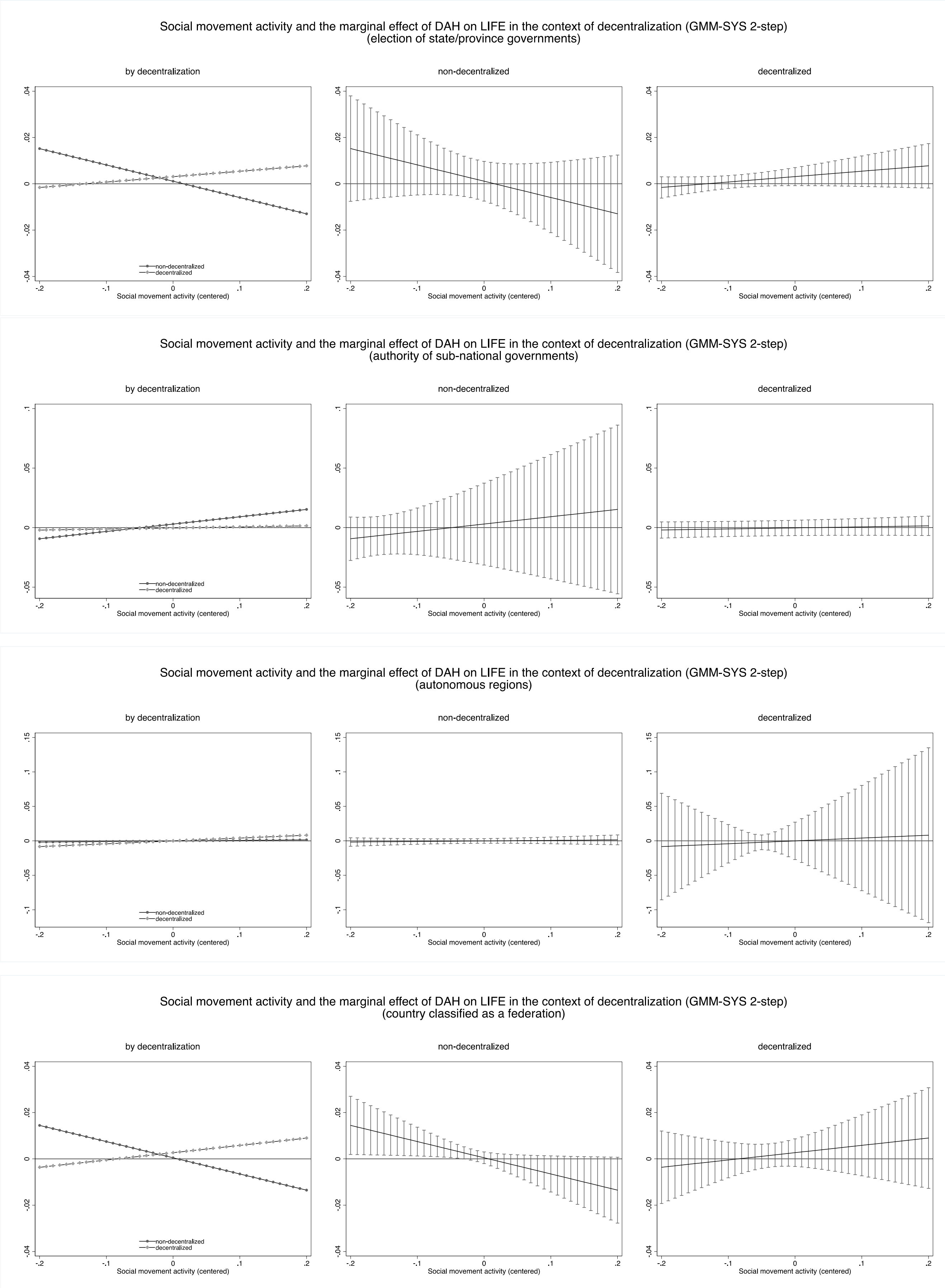
Notes: The marginal effect plots visualize the interaction of civic activism, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Civic activism is measured by the SMA index. Data: WVS.

Figure B 30: Civic activism and the marginal effect of DAH *on* LIFE *in the context of democracy II*



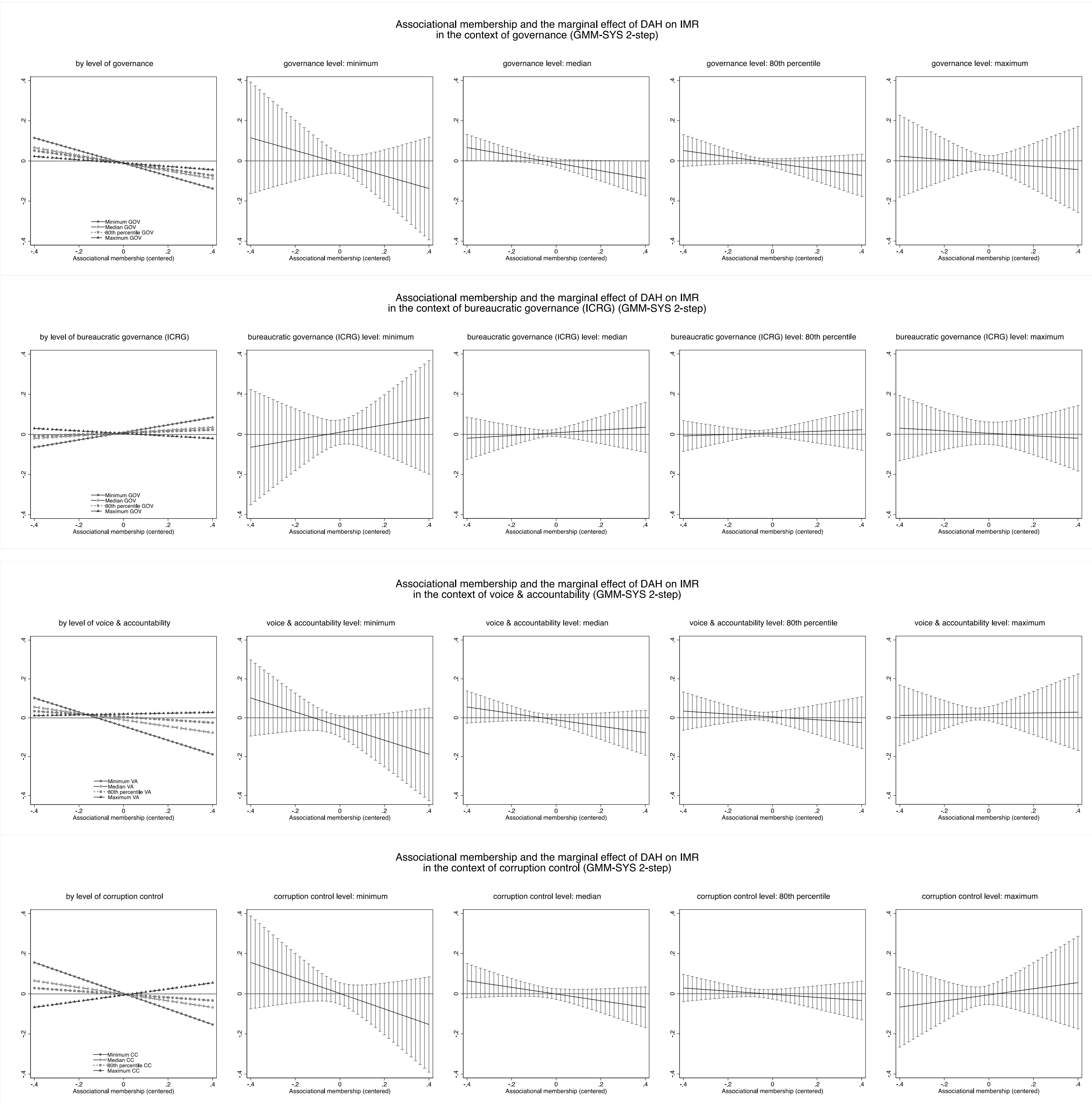
Notes: The marginal effect plots visualize the interaction of civic activism, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Civic activism is measured by the SMA index. Data: WVS.

Figure B 31: Civic activism and the marginal effect of DAH *on* LIFE *in the context of decentralization II*



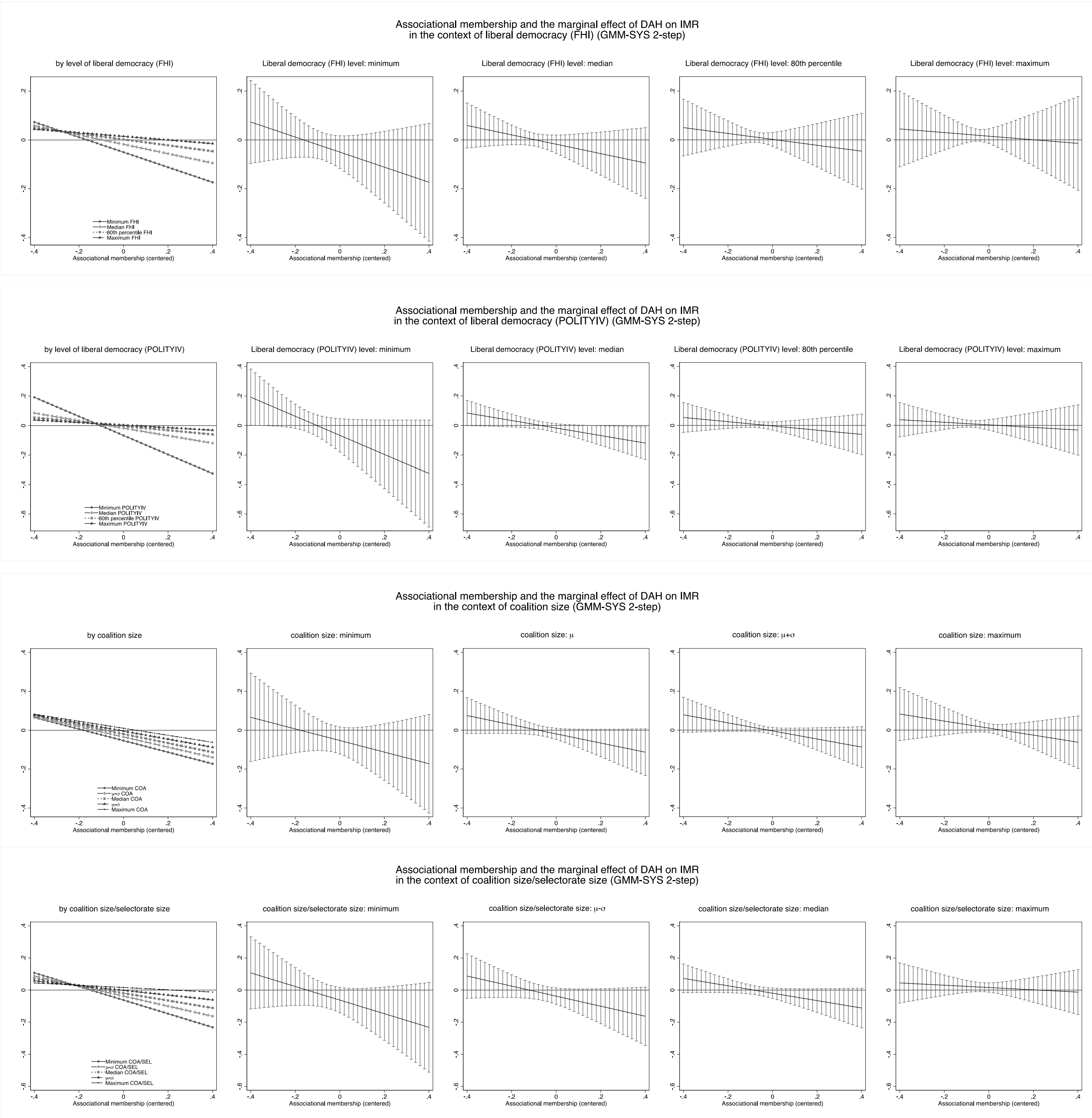
Notes: The marginal effect plots visualize the interaction of civic activism, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Civic activism is measured by the SMA index. Data: WVS.

Figure C 16: Membership and the marginal effect of DAH on IMR in the context of bureaucratic governance II



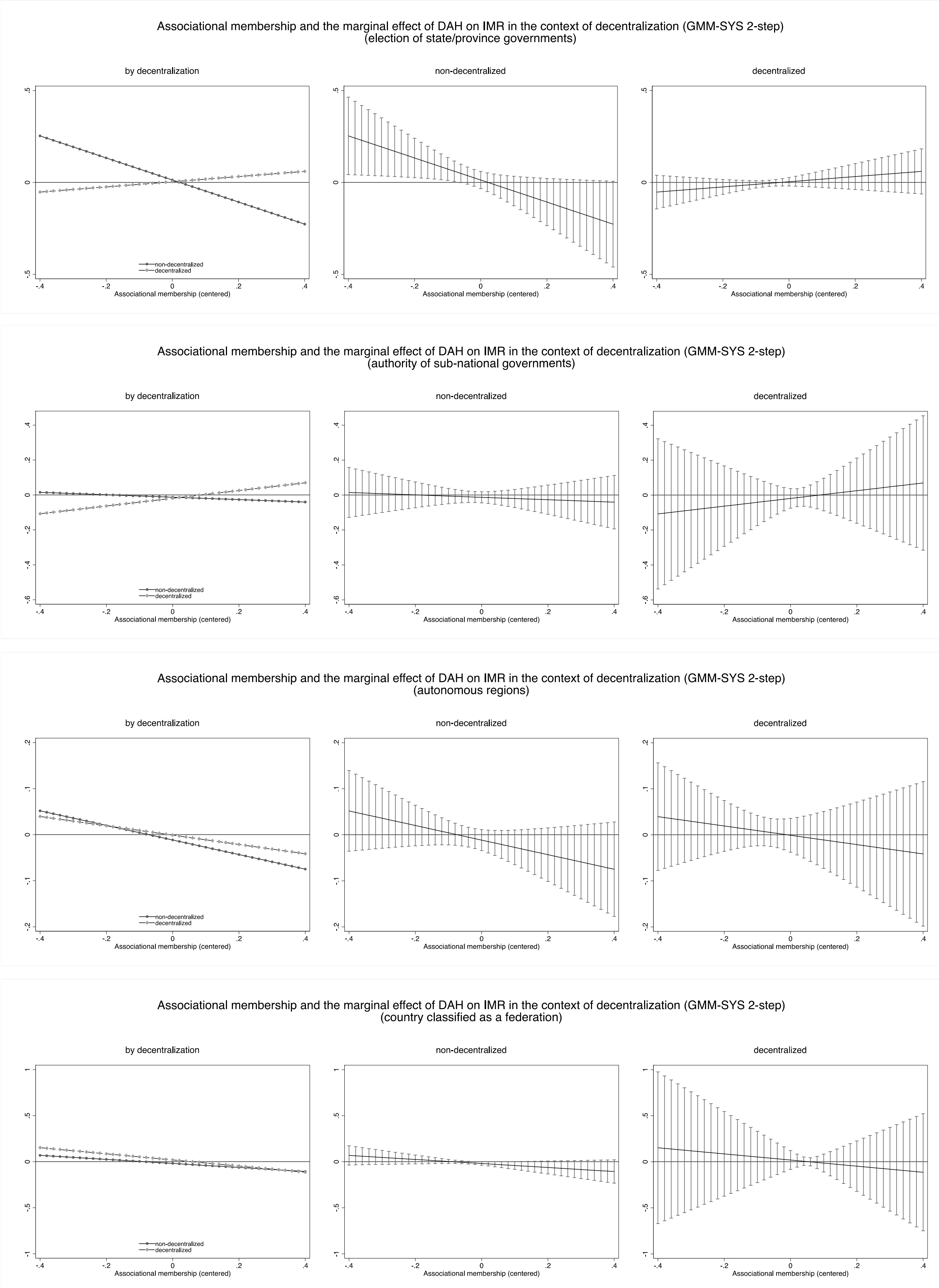
Notes: the marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 17: Membership and the marginal effect of DAH on IMR in the context of liberal democracy II



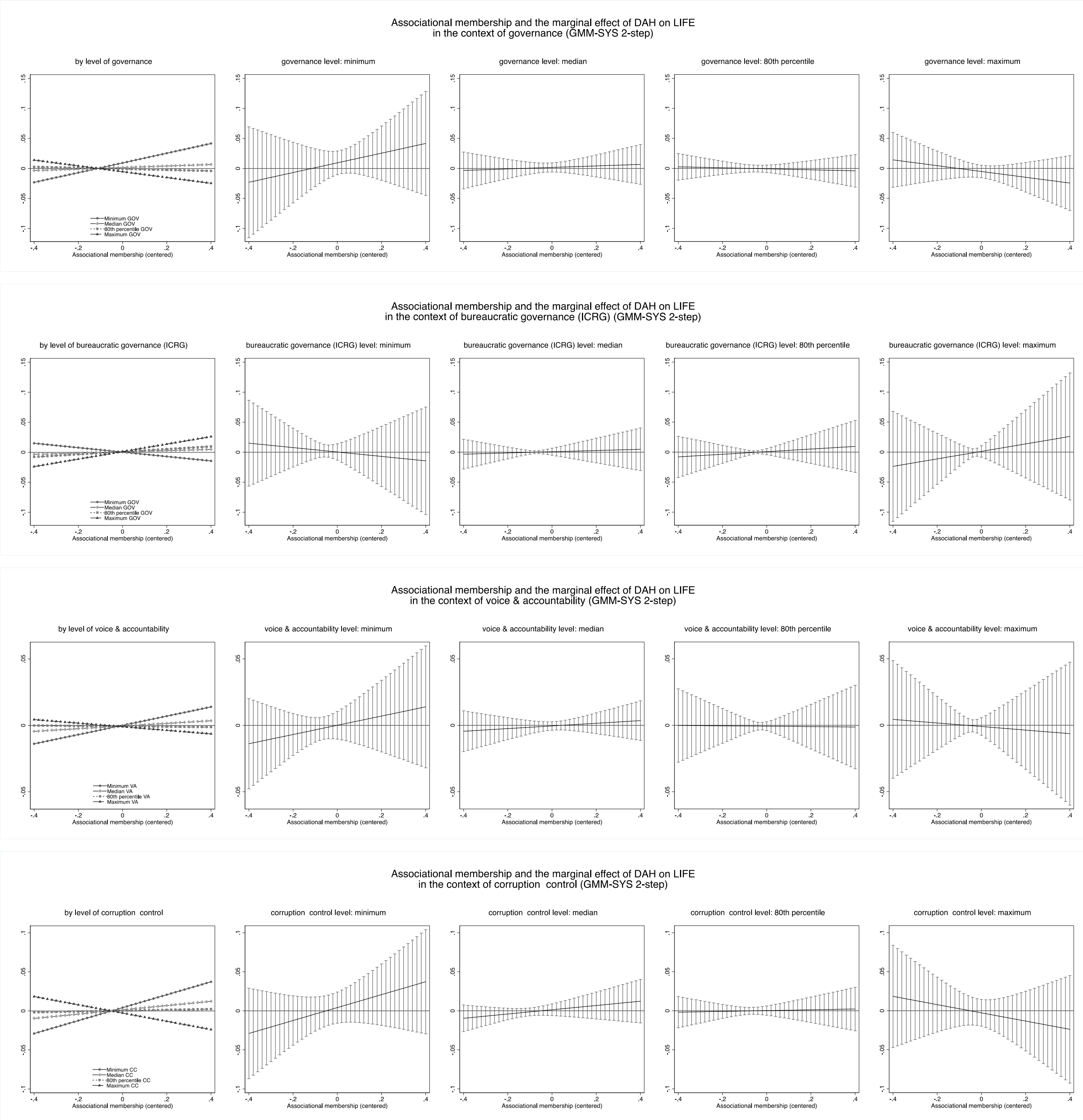
Notes: Following Norris 2012, 178) either liberal democracy or bureaucratic governance are simultaneously controlled for. The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 18: Membership and the marginal effect of DAH on IMR in the context of decentralization II



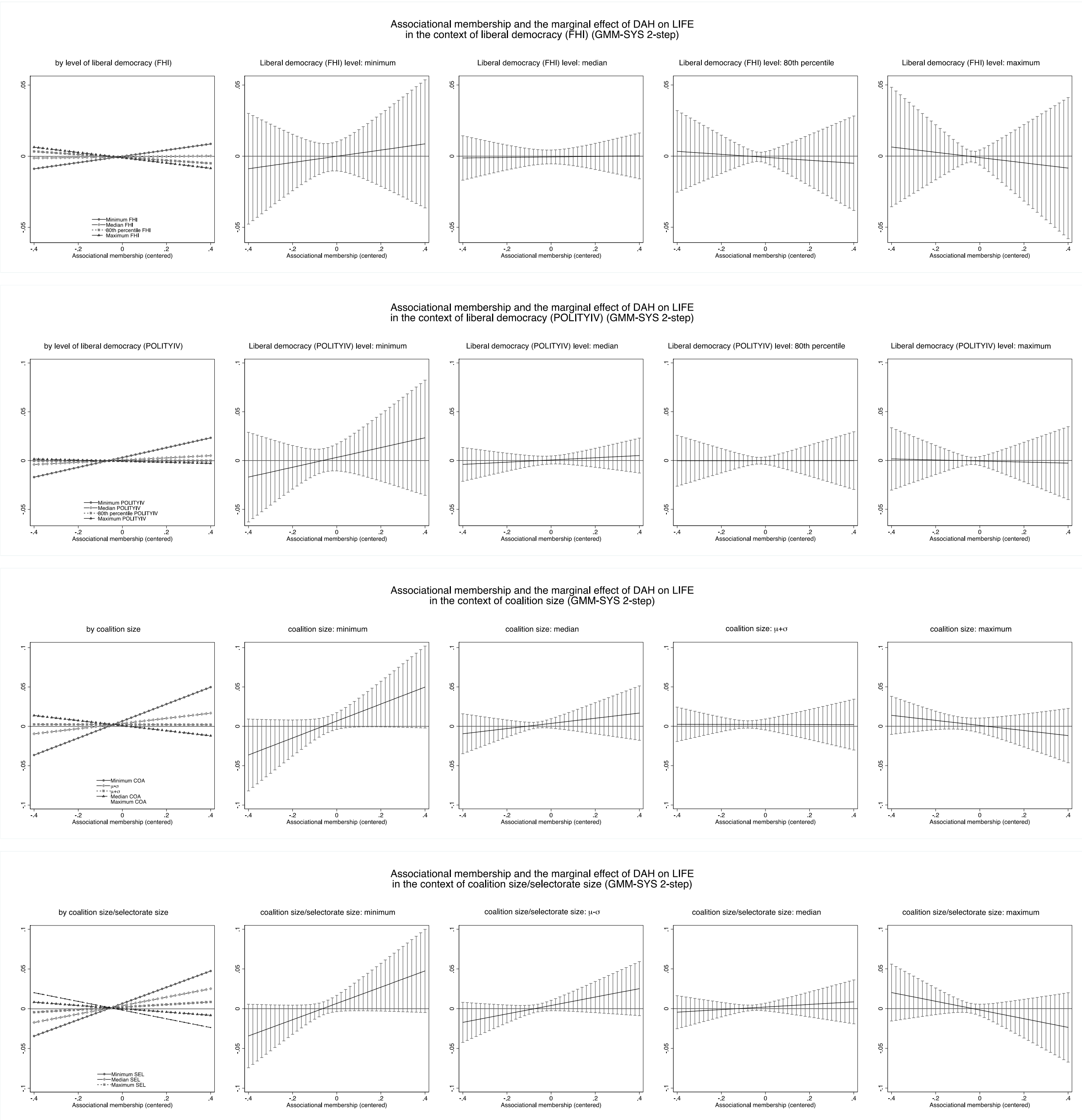
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 19: Membership and the marginal effect of DAH on LIFE in the context of bureaucratic governance II



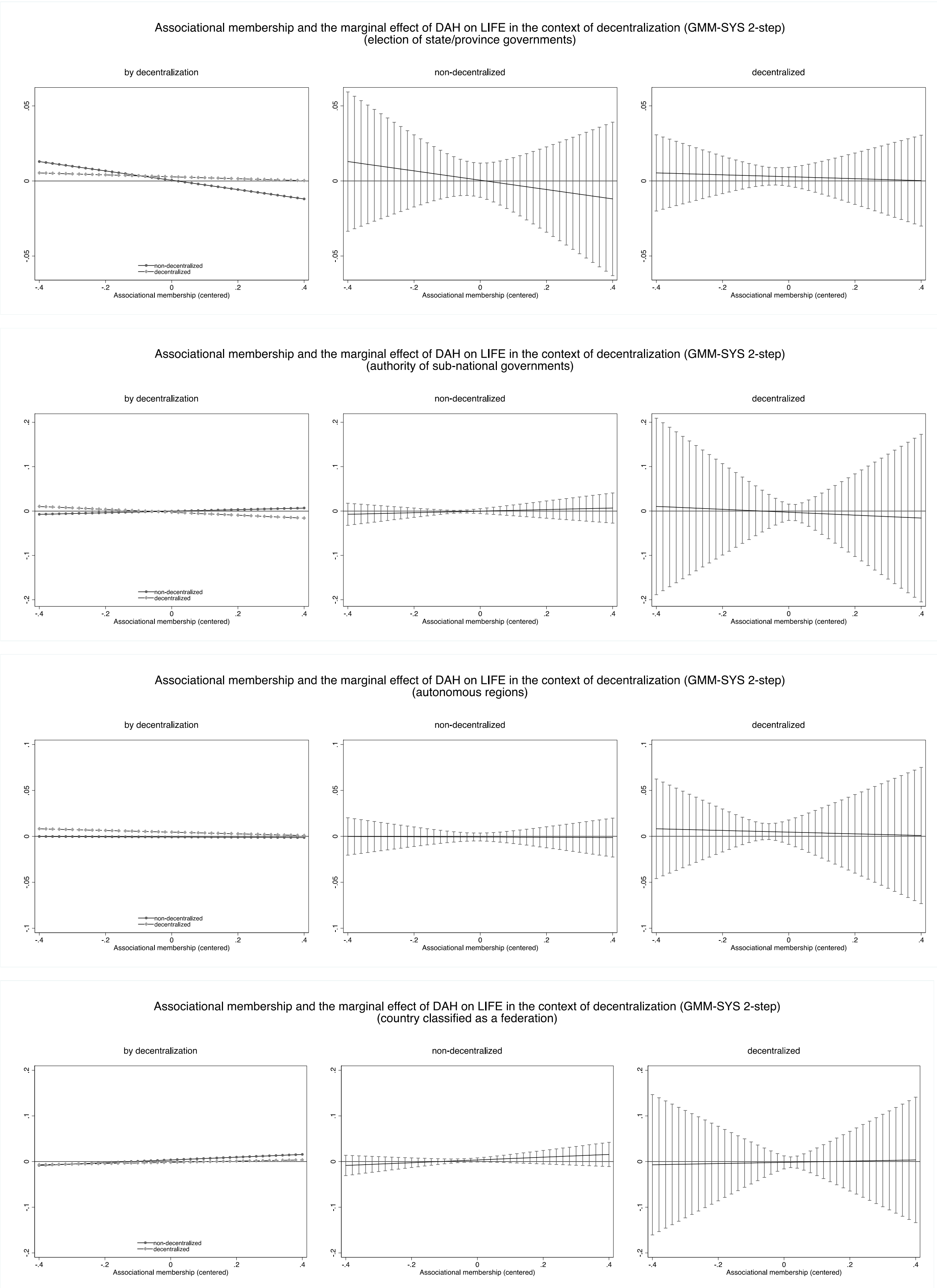
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 20: Membership and the marginal effect of DAH on LIFE in the context of liberal democracy II



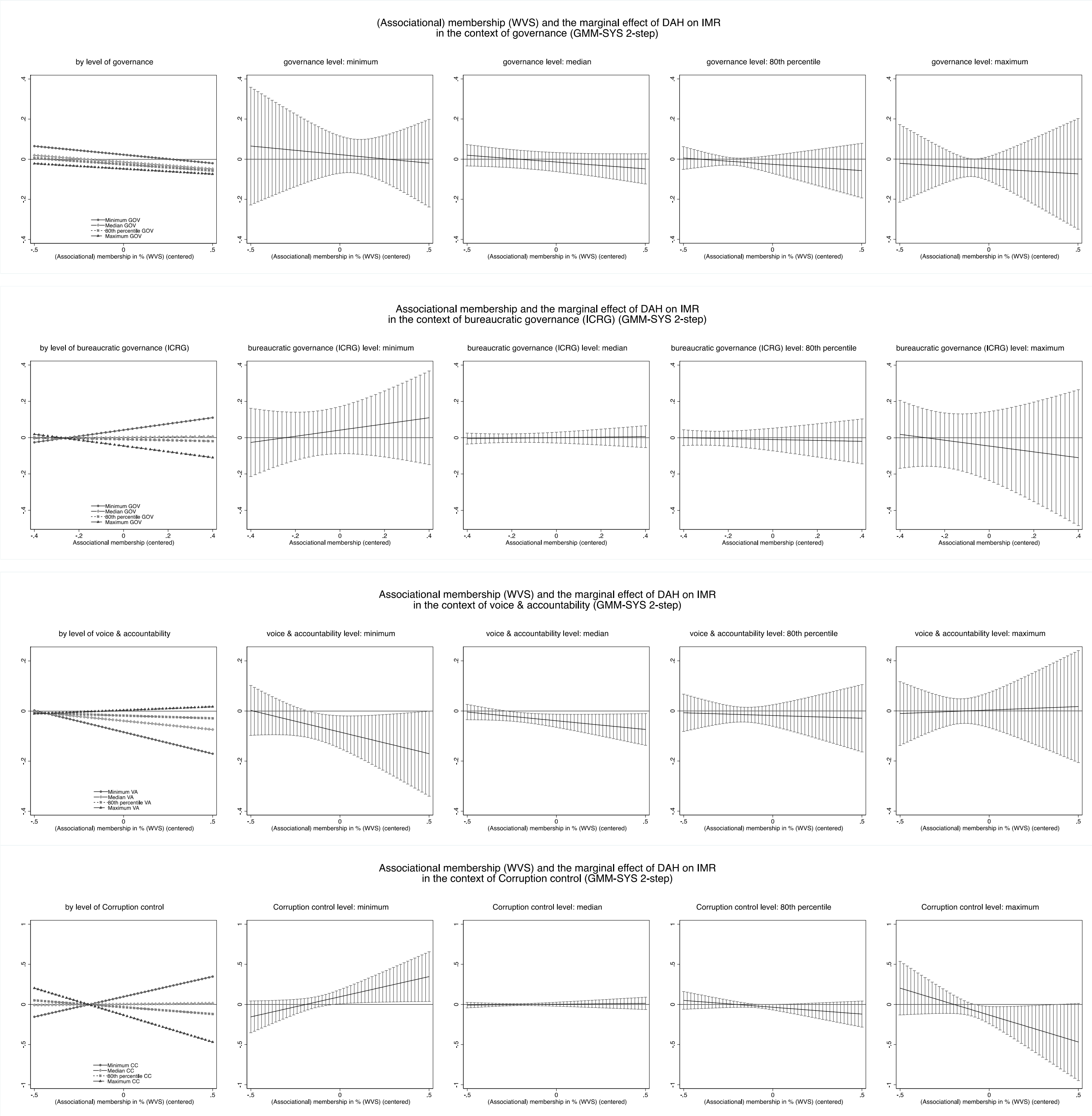
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 21: Membership and the marginal effect of DAH on LIFE in the context of decentralization II



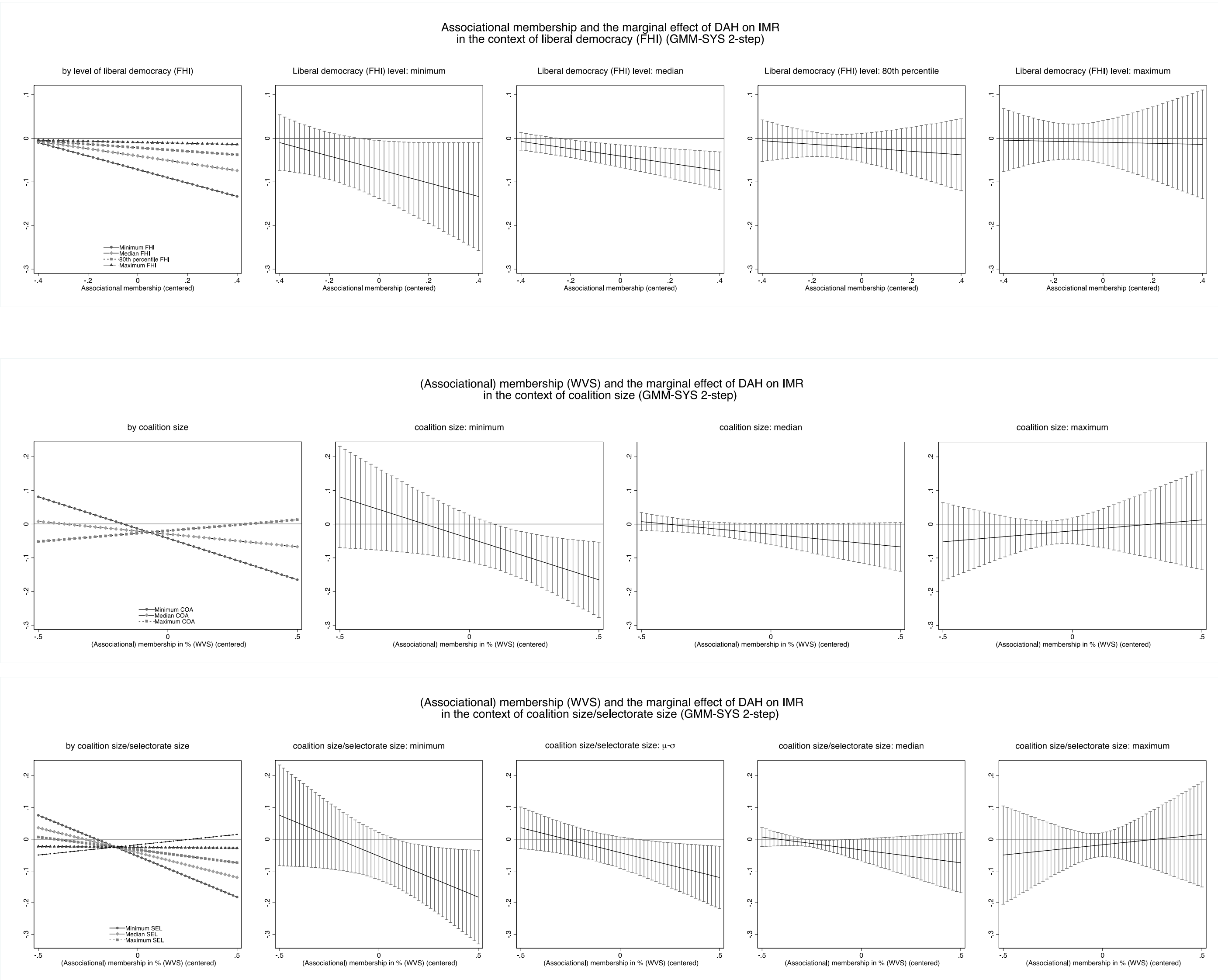
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 22: Membership and the marginal effect of DAH *on* IMR *in the context of bureaucratic governance II*



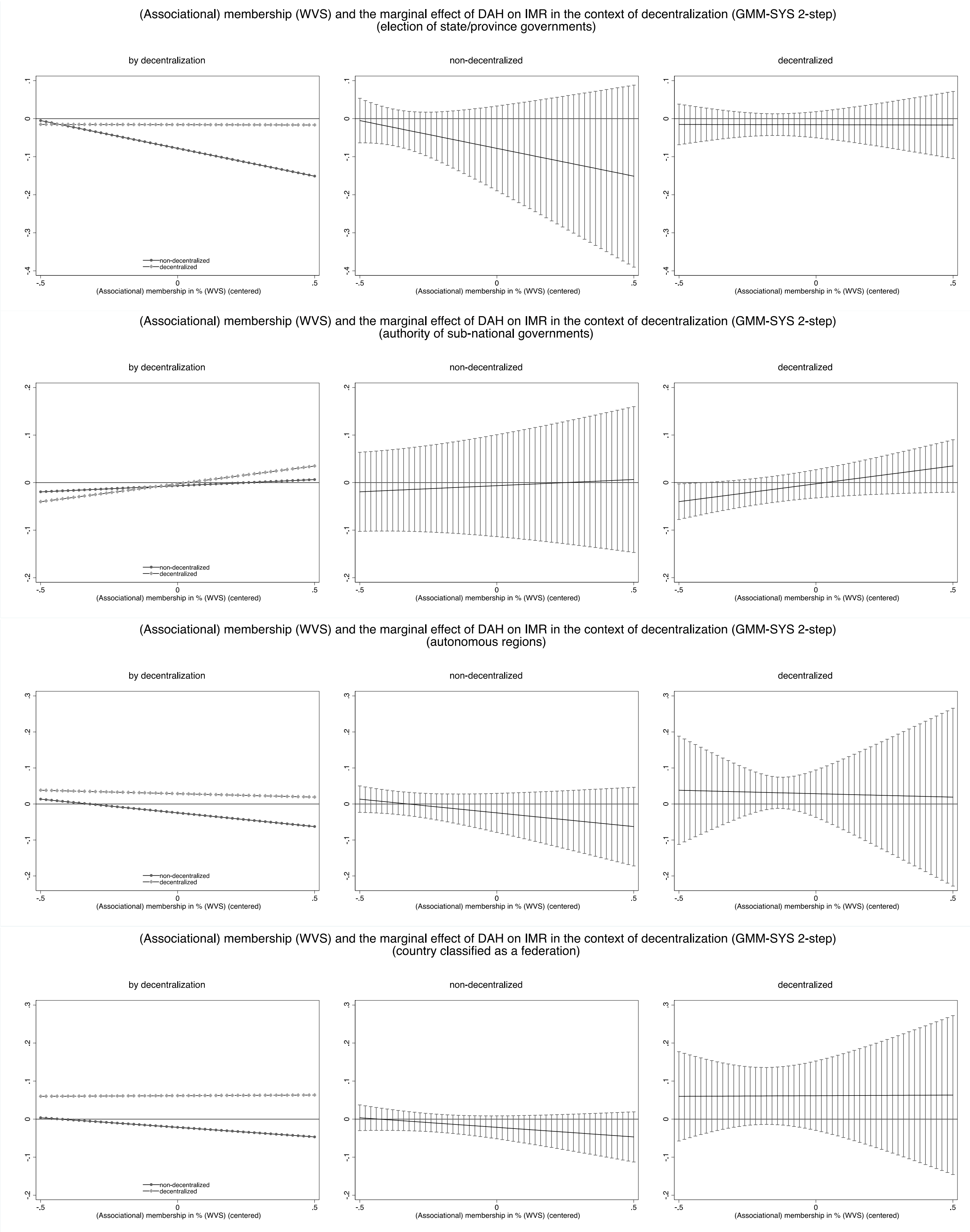
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 23: Membership and the marginal effect of DAH *on* IMR *in the context of liberal democracy II*



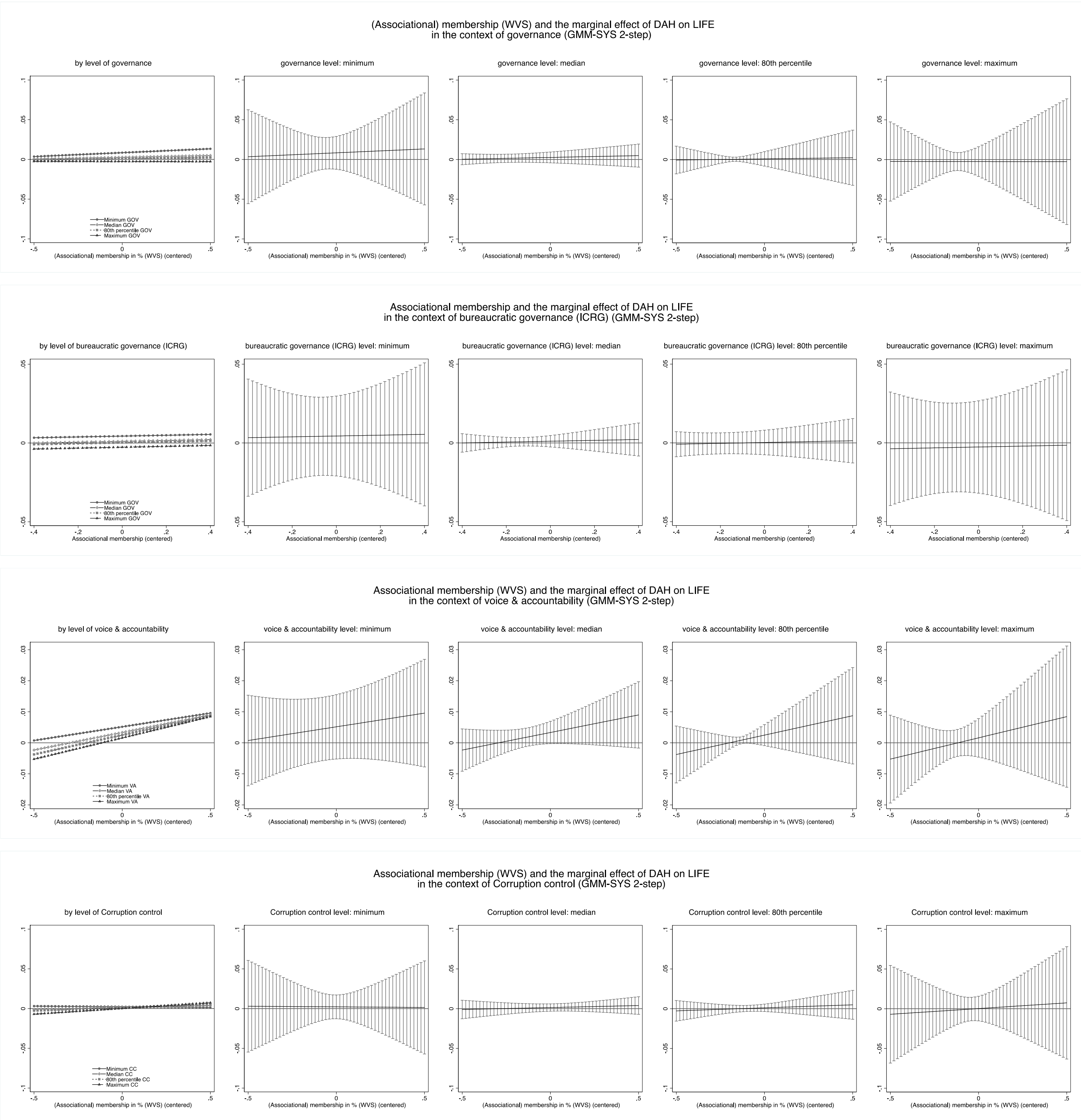
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 24: Membership and the marginal effect of DAH on IMR in the context of decentralization II



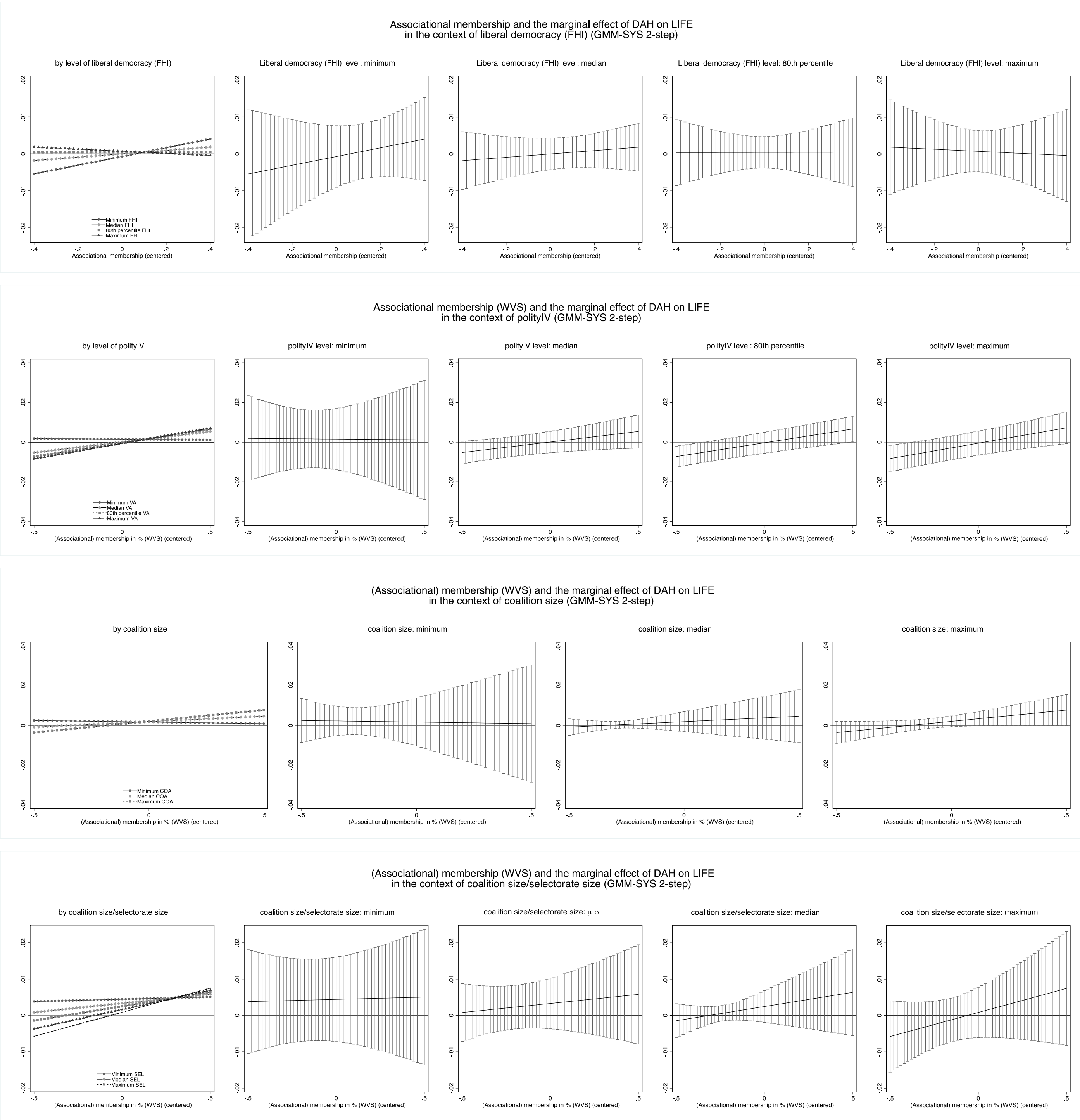
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 25: Membership and the marginal effect of DAH on LIFE in the context of bureaucratic governance II



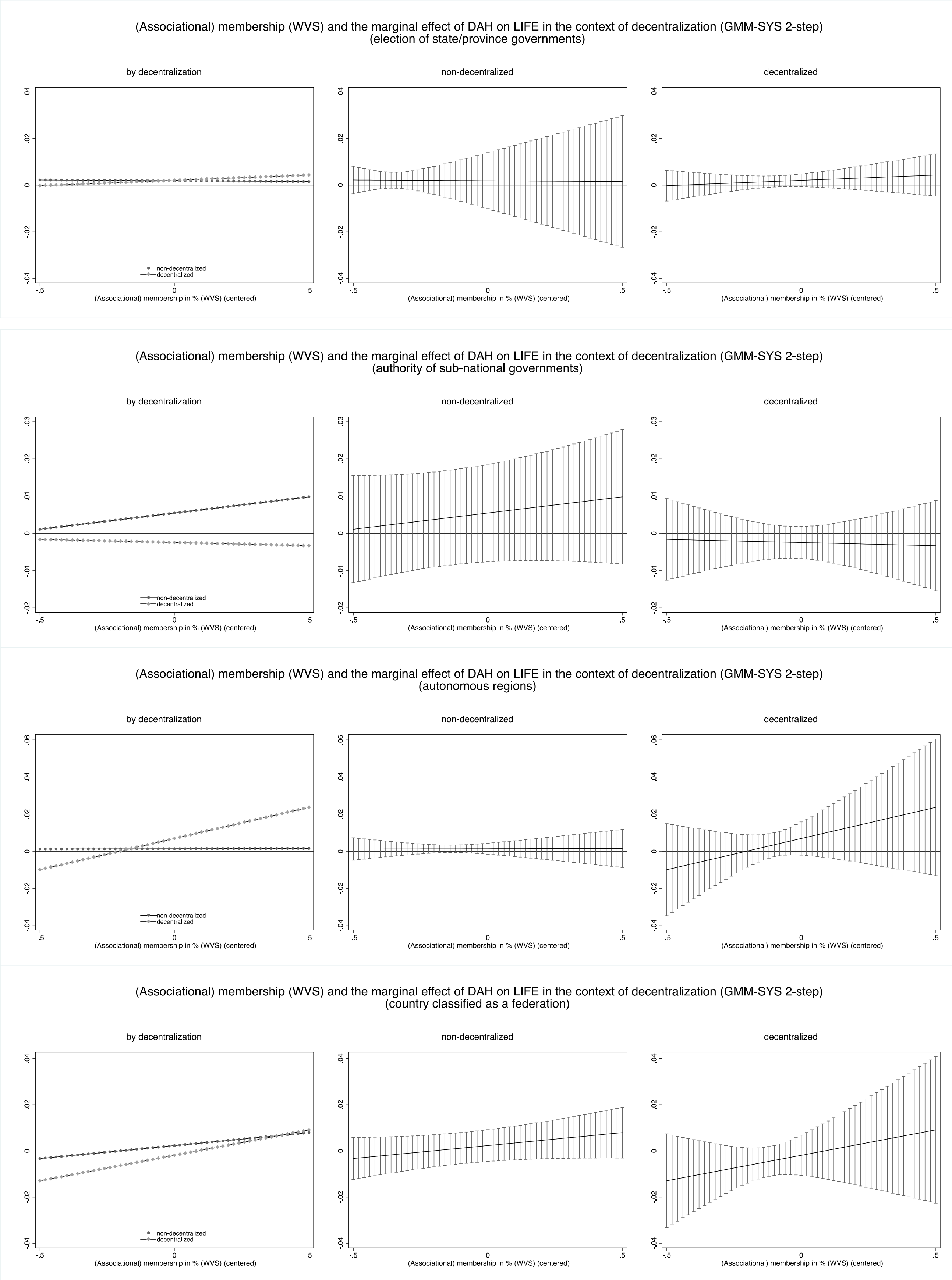
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 26: Membership and the marginal effect of DAH *on* LIFE *in the context of liberal democracy II*



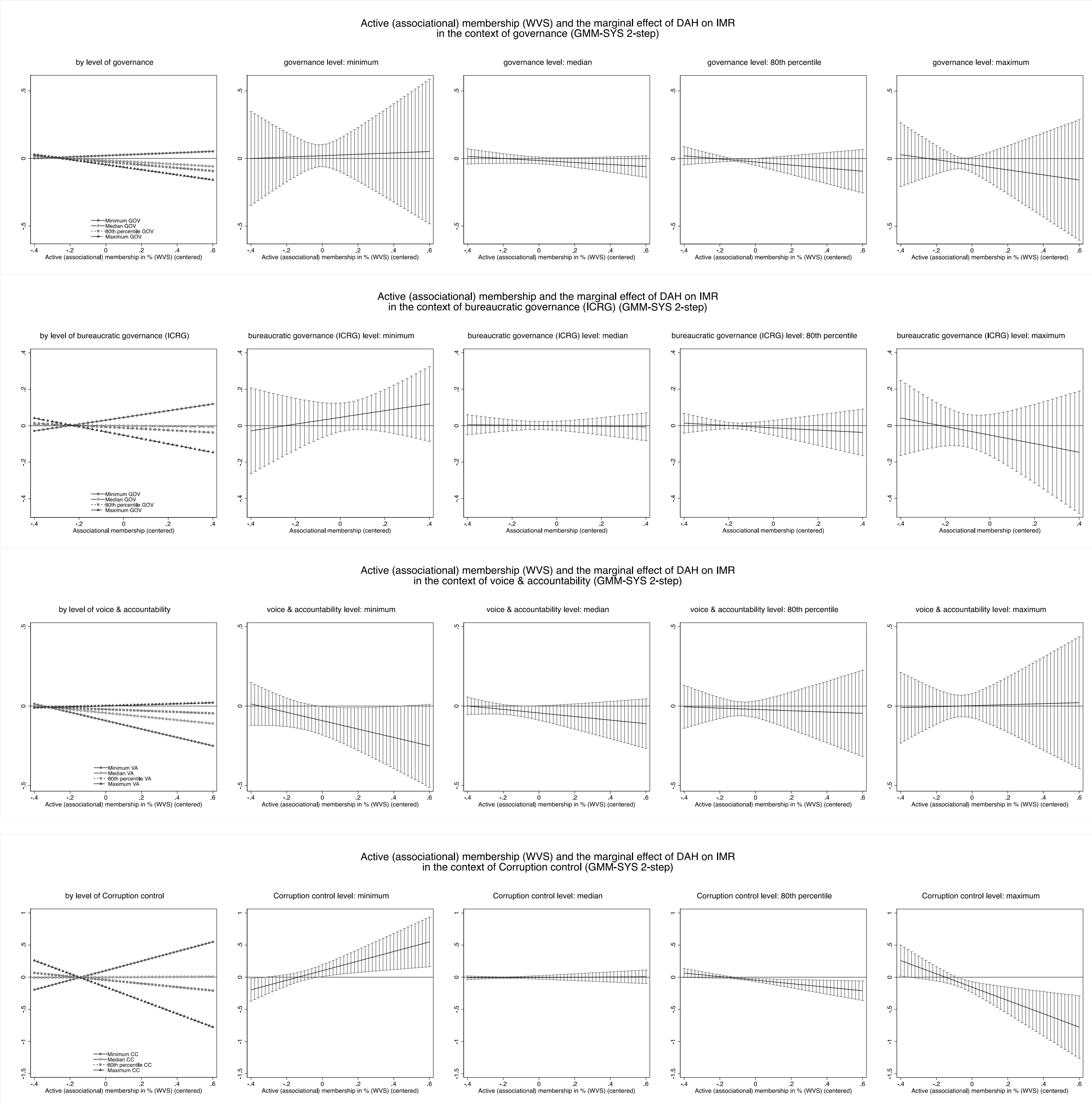
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 27: Membership and the marginal effect of DAH on LIFE in the context of decentralization II



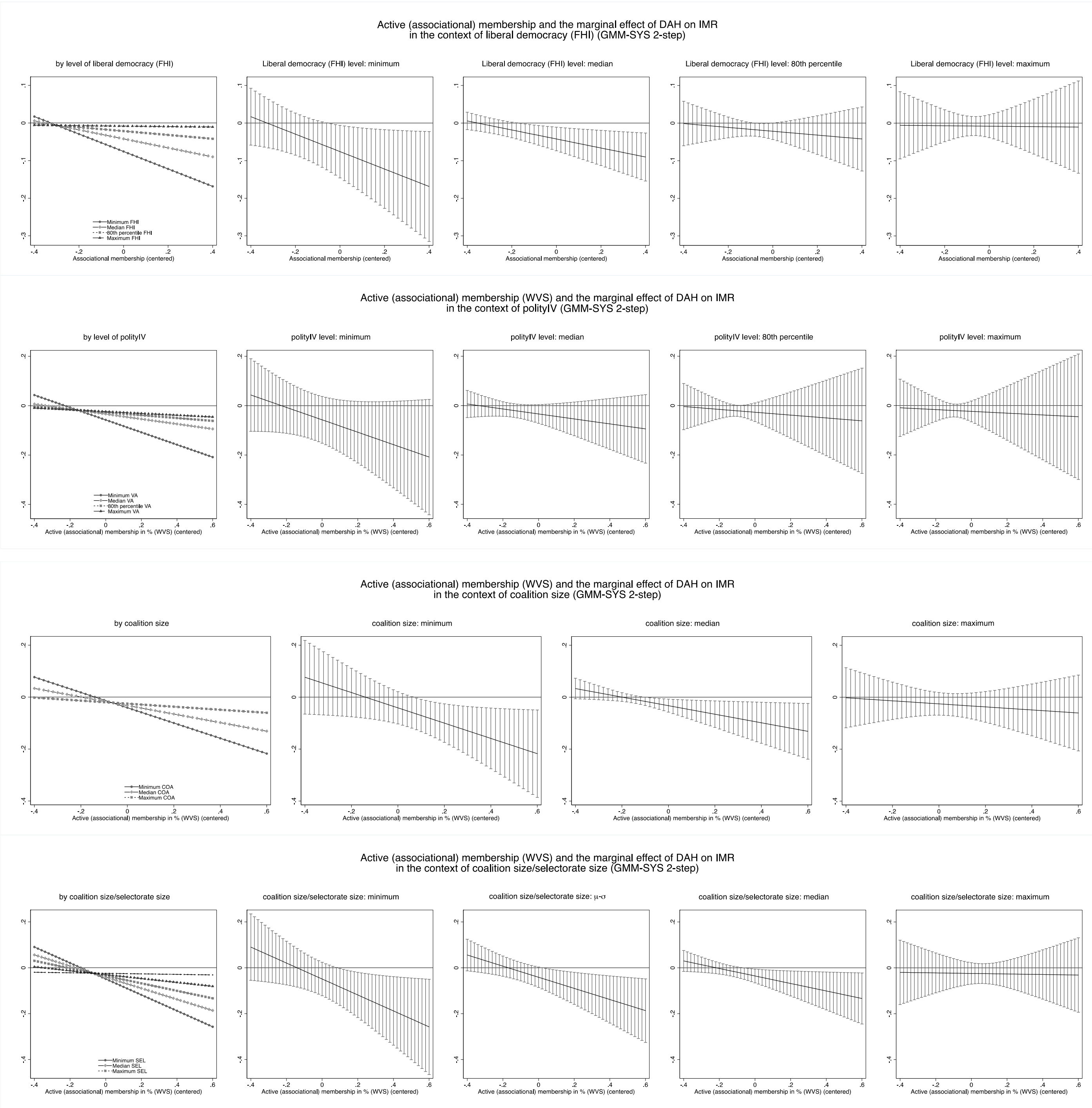
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 28: Active membership and the effect of DAH on IMR in the context of bureaucratic governance II



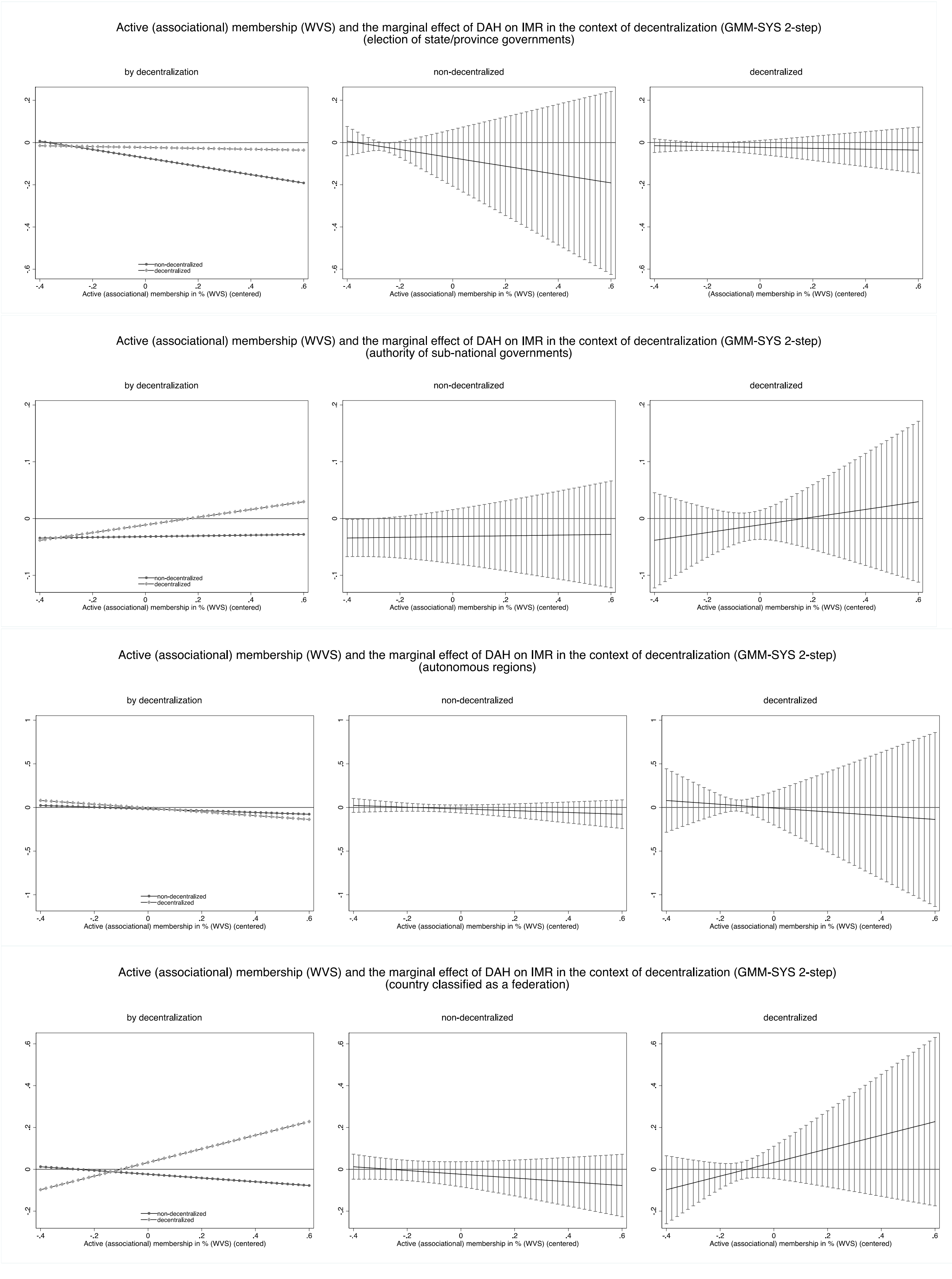
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 29: Active membership and the effect of DAH on IMR in the context of liberal democracy II



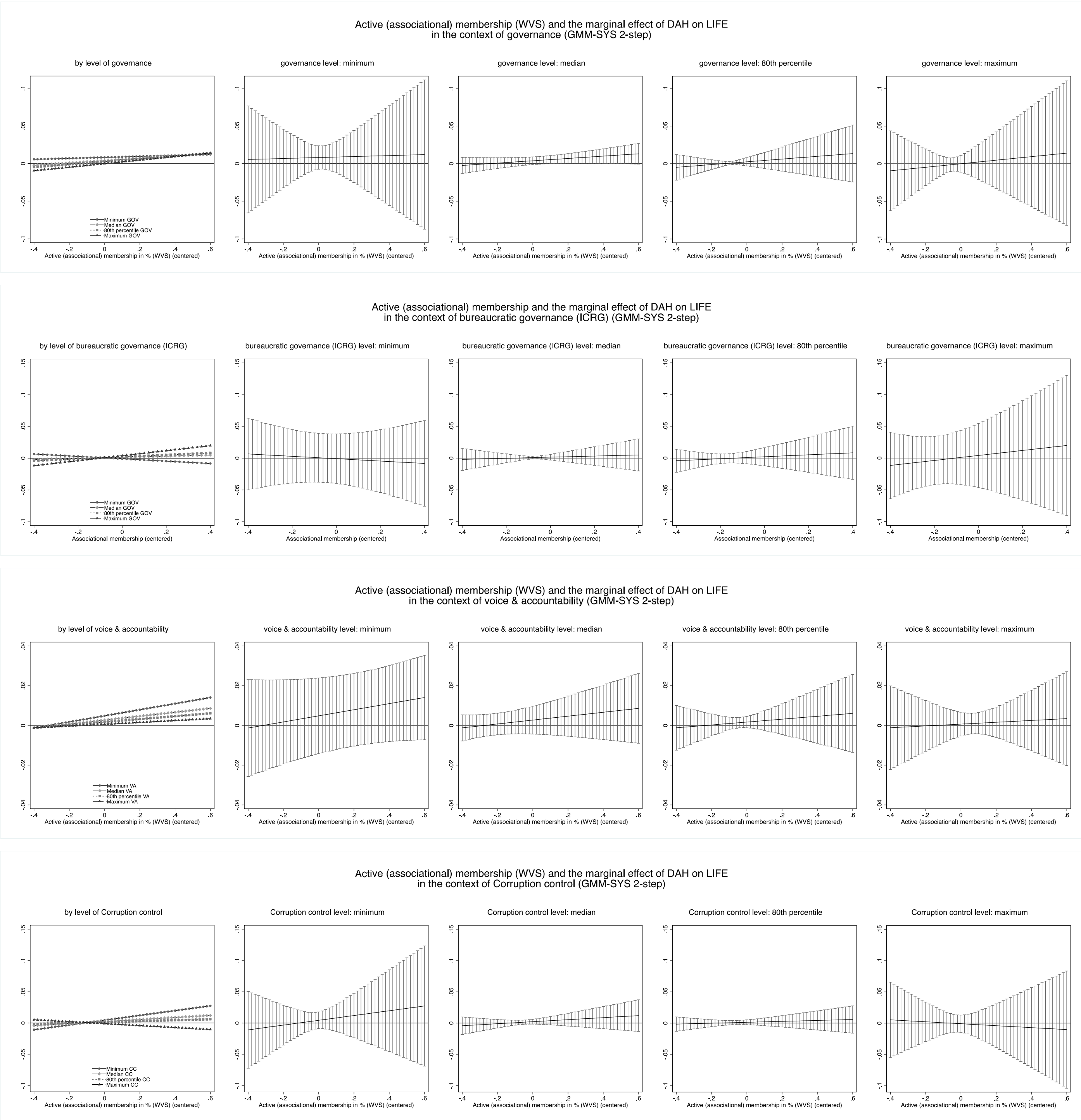
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 30: Active membership and the effect of DAH on IMR in the context of decentralization II



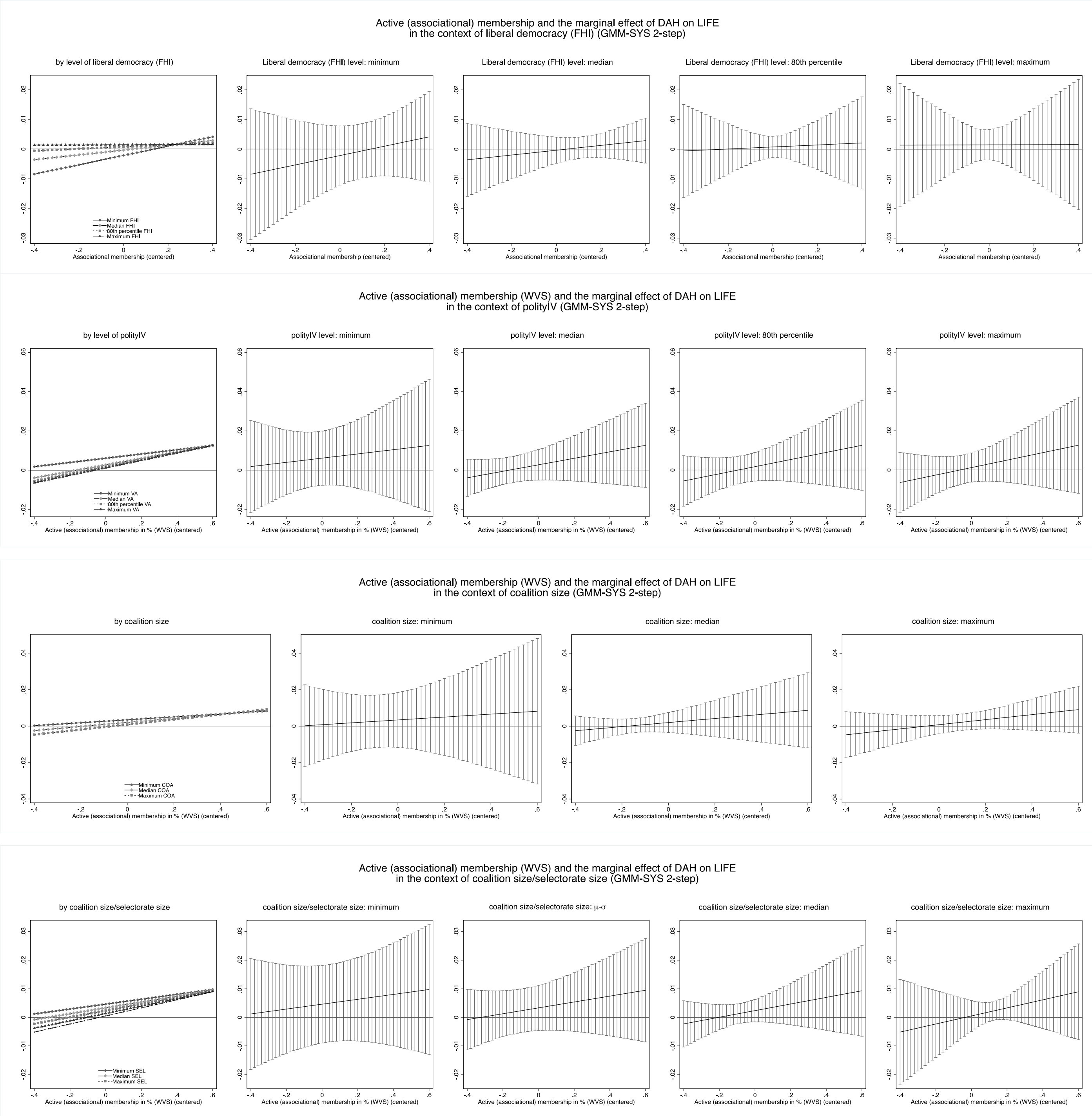
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 31: Active membership and the effect of DAH on LIFE in the context of bureaucratic governance II



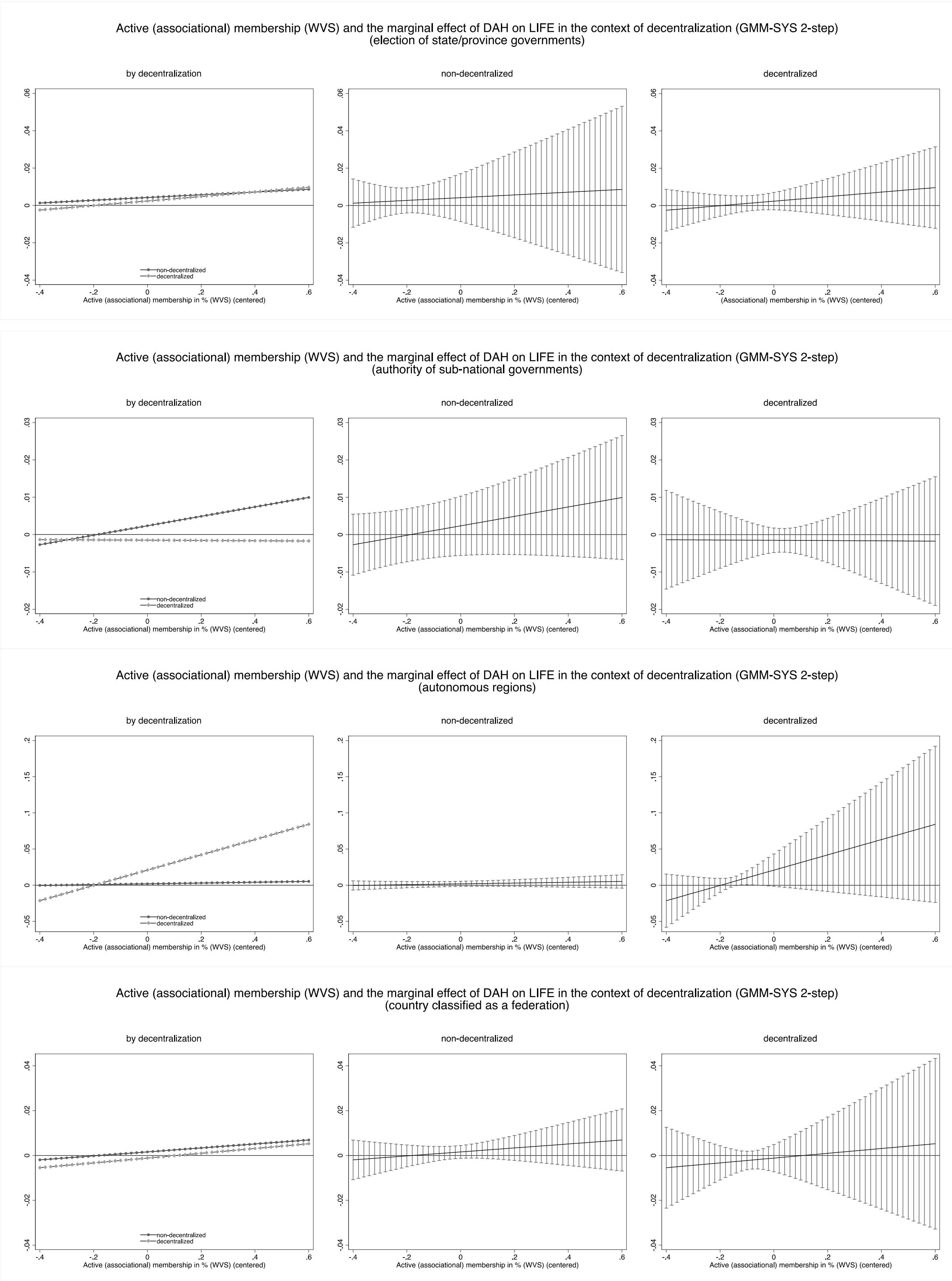
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 32: Active membership and the effect of DAH on LIFE in the context of liberal democracy II



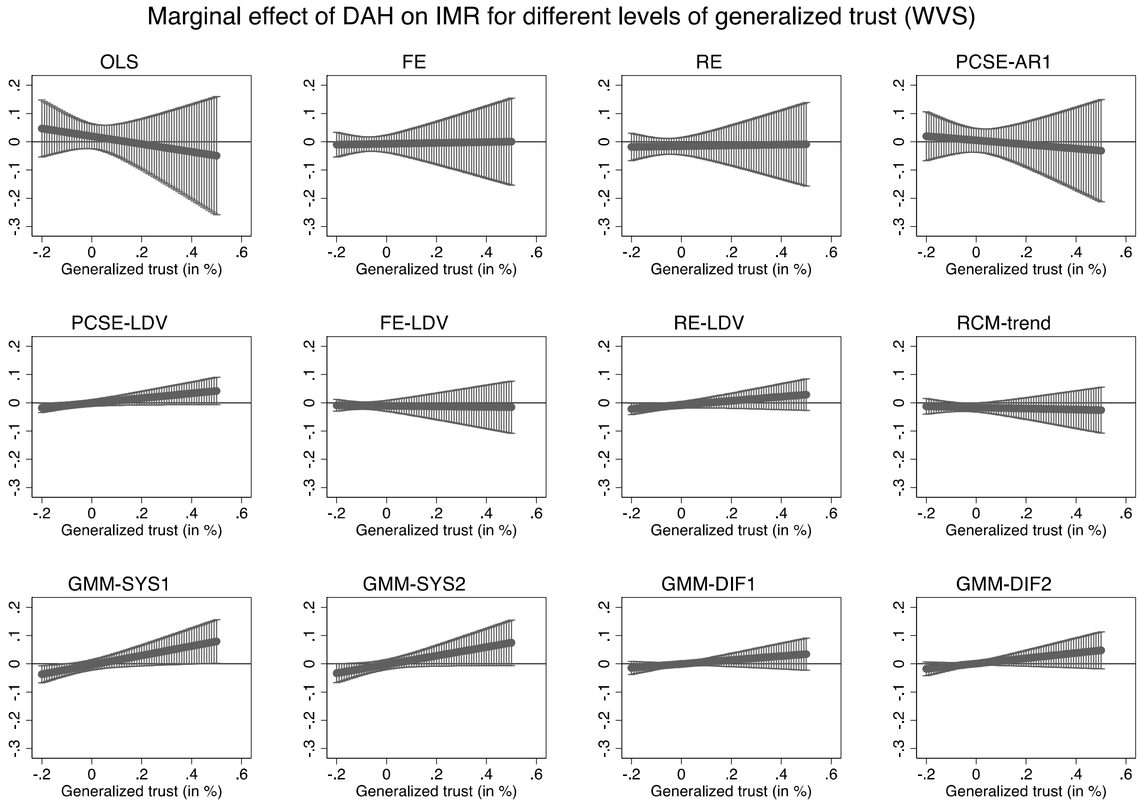
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure C 33: Active membership and the effect of DAH *on* LIFE *in the context of decentralization II*



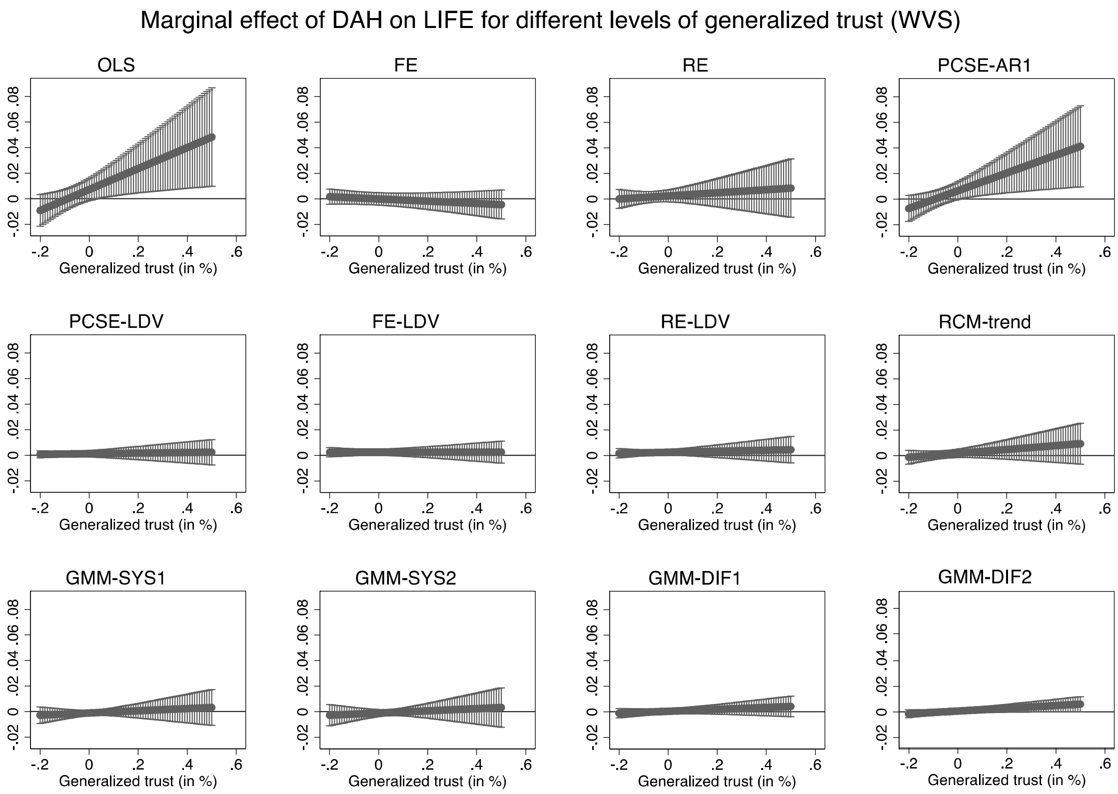
Notes: The marginal effect plots visualize the interaction of associational membership, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, associational membership, trust, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy, and decentralization respectively are specified as endogenous variables. Data: WVS.

Figure D 18: Social trust and the marginal effect of DAH on IMR II



Note: Predictors are mean-centered

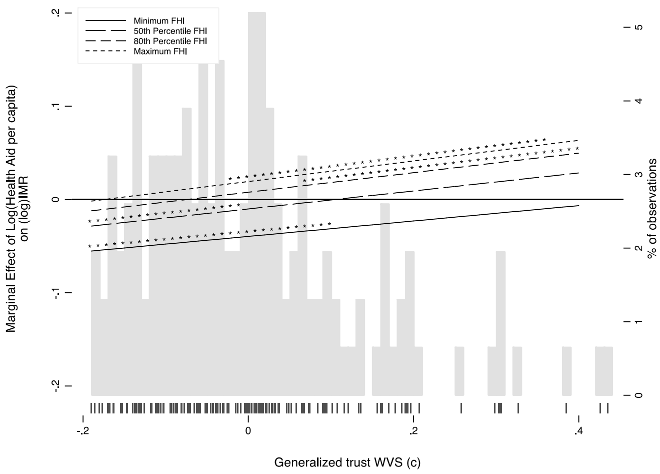
Figure D 19: Social trust and the marginal effect of DAH on LIFE II



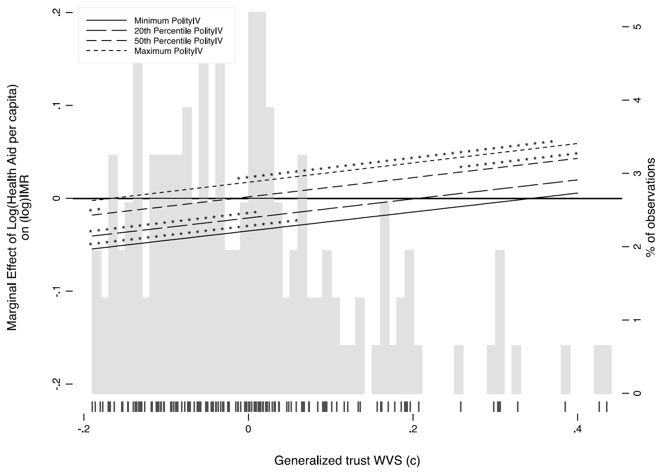
Note: Predictors are mean-centered

Figure D 20: Social trust and the marginal effect of DAH *on* IMR *in the context of liberal democracy (LDV) II*

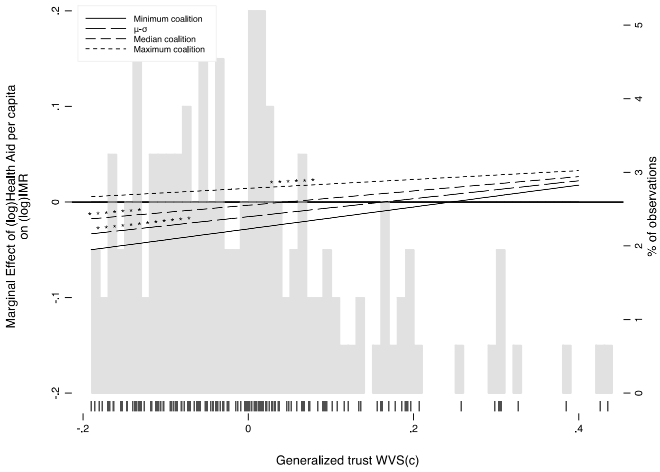
Freedom House index



Polity IV index



Coalition size



Coalition size/Selectorate size

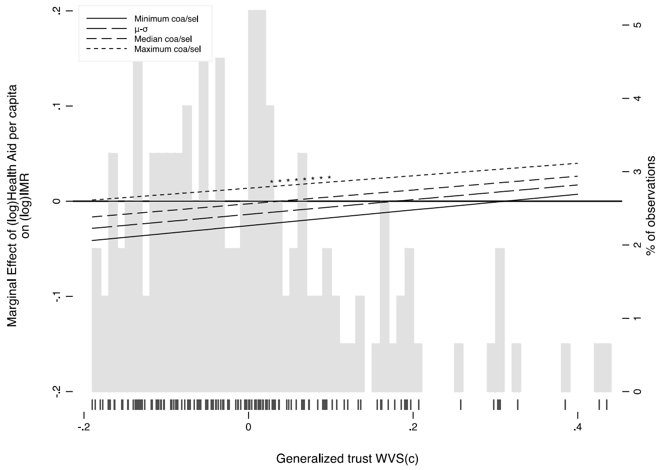
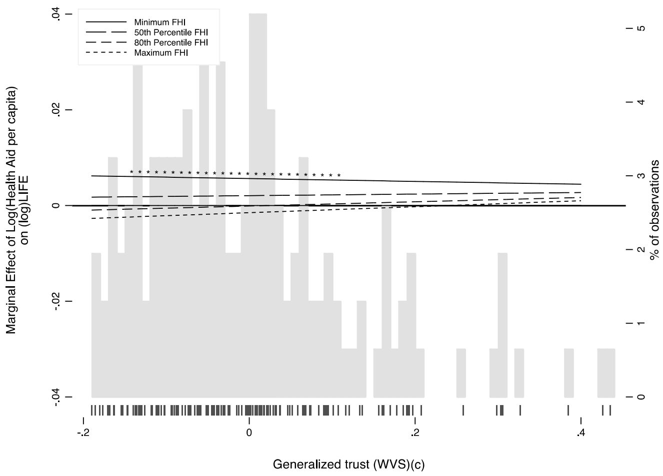
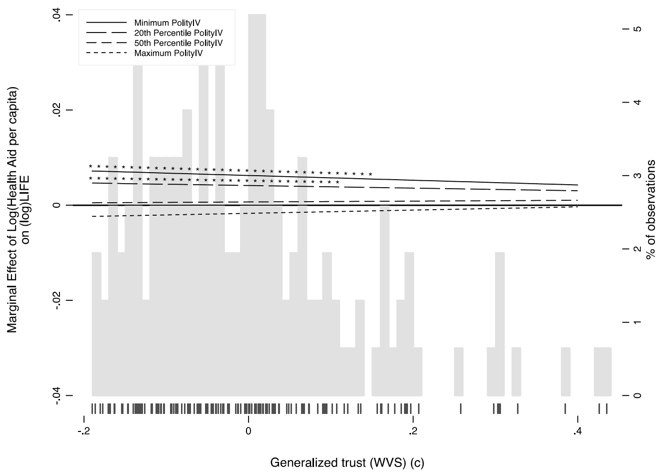


Figure D 21: Social trust and the marginal effect of DAH *on* LIFE *in the context of liberal democracy (LDV) II*

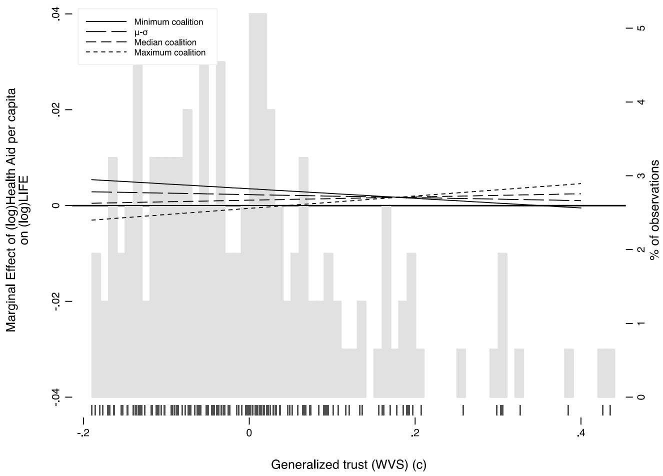
Freedom House index



PolityIV index



Coalition size



Coalition size/Selectorate size

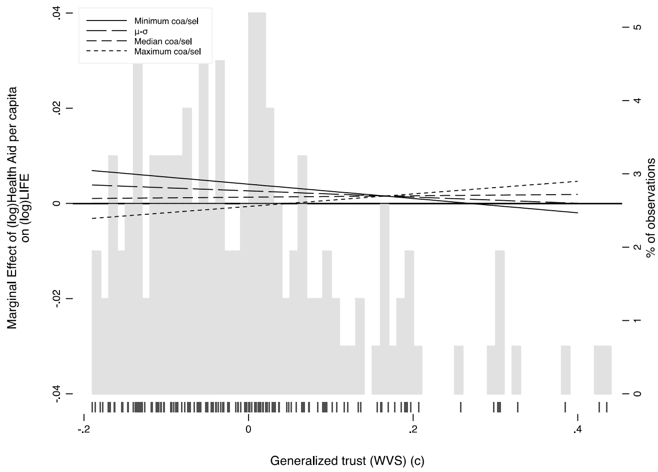
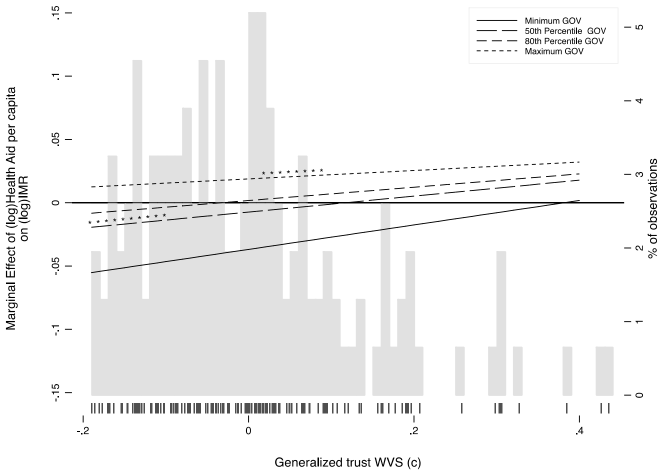
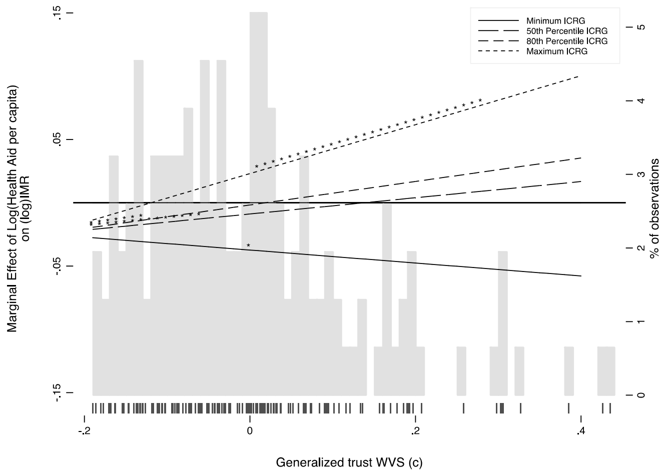


Figure D 22: Social trust and the marginal effect of DAH on IMR in the context of bureaucratic governance (LDV) II

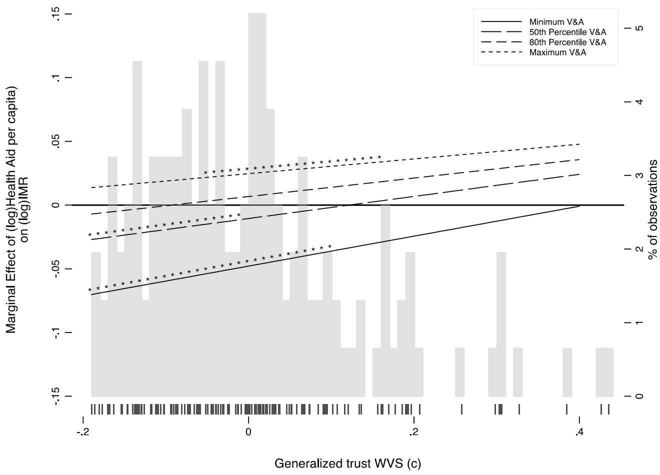
Governance indicator (A1)



Quality of government indicator (B1)



Voice & accountability (C1)



Corruption control (D1)

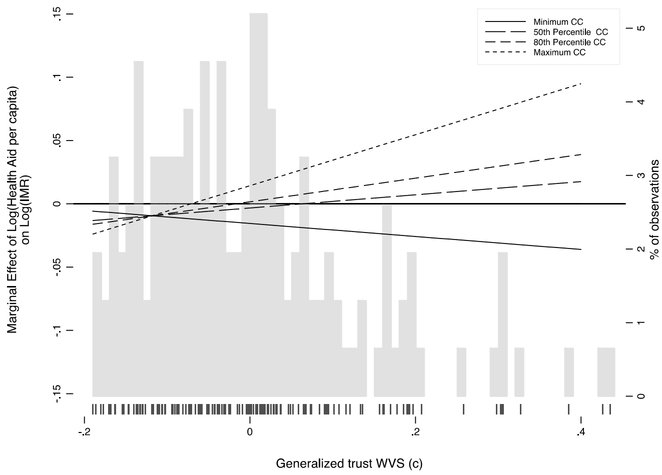
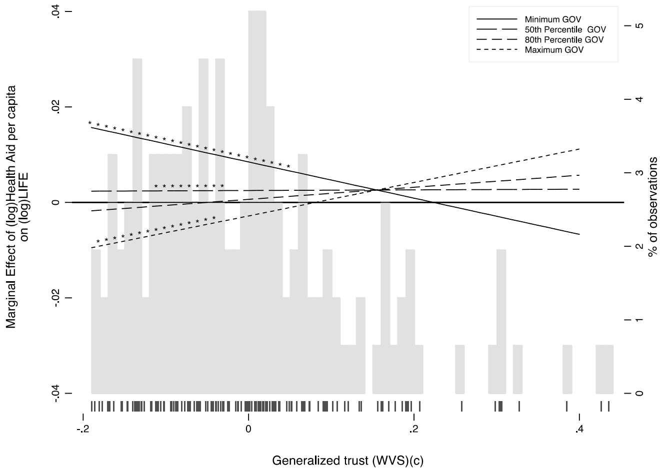
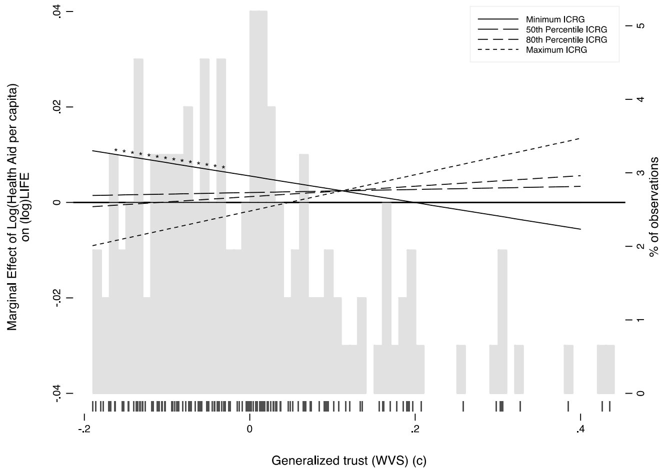


Figure D 23: Social trust and the marginal effect of DAH on LIFE in the context of bureaucratic governance (LDV) II

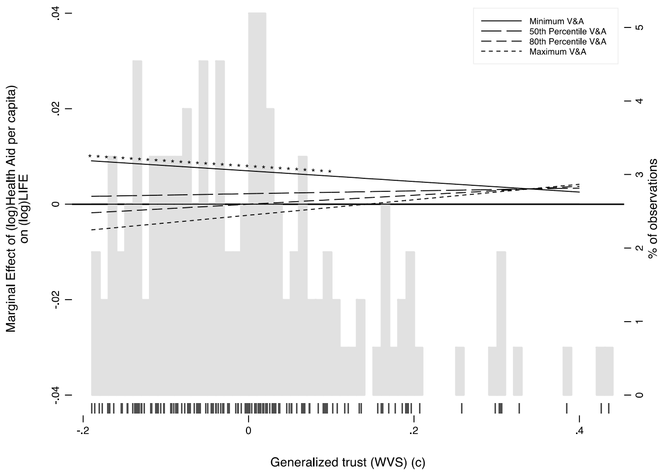
Governance indicator (A1)



Quality of government indicator (B1)



Voice & accountability (C1)



Corruption control (D1)

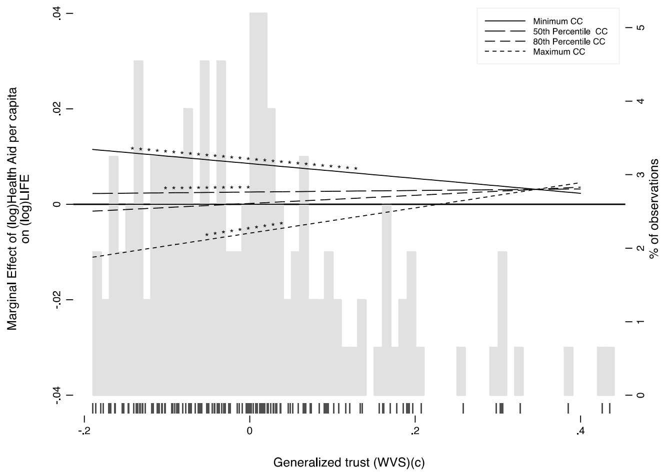
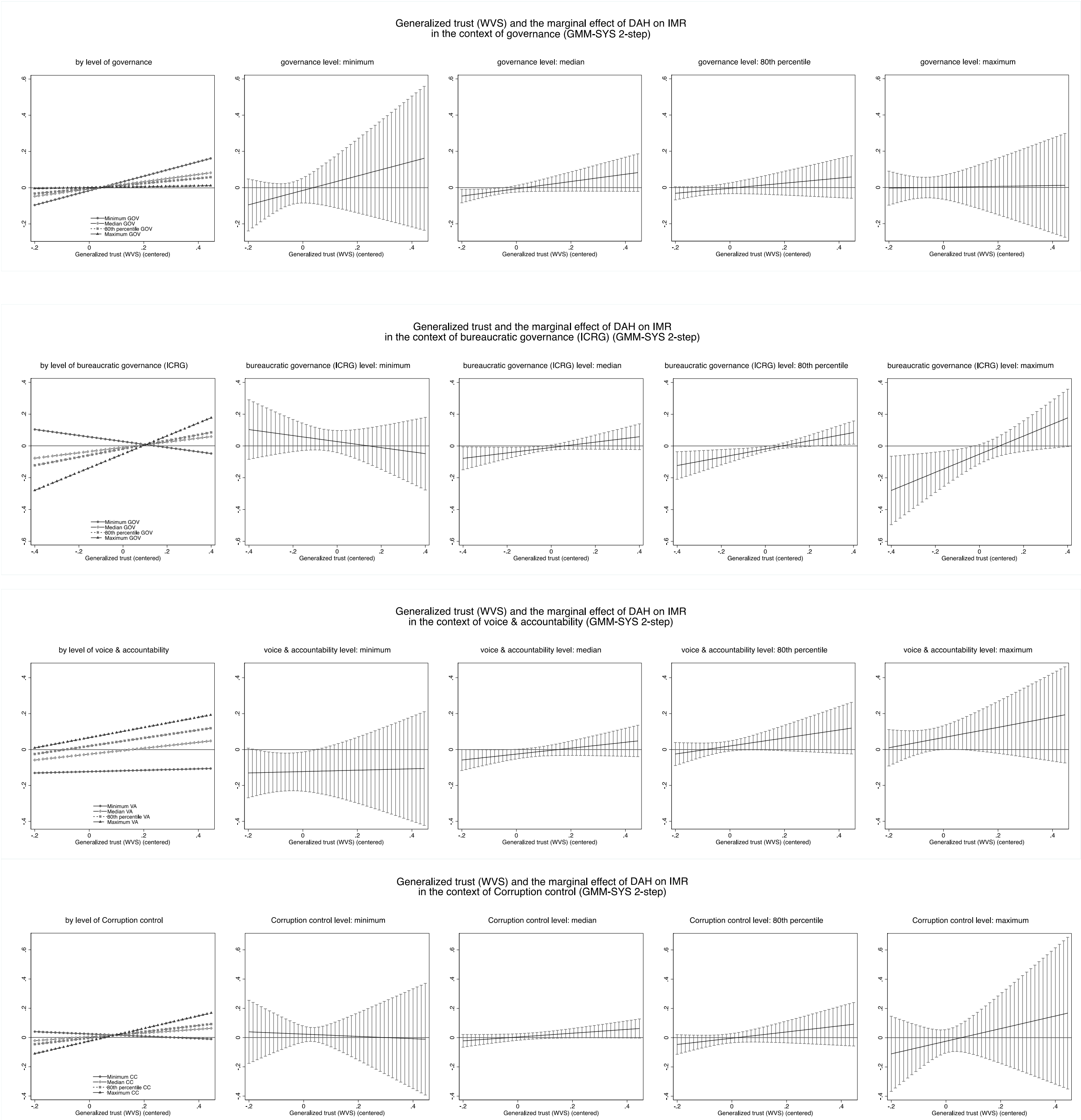
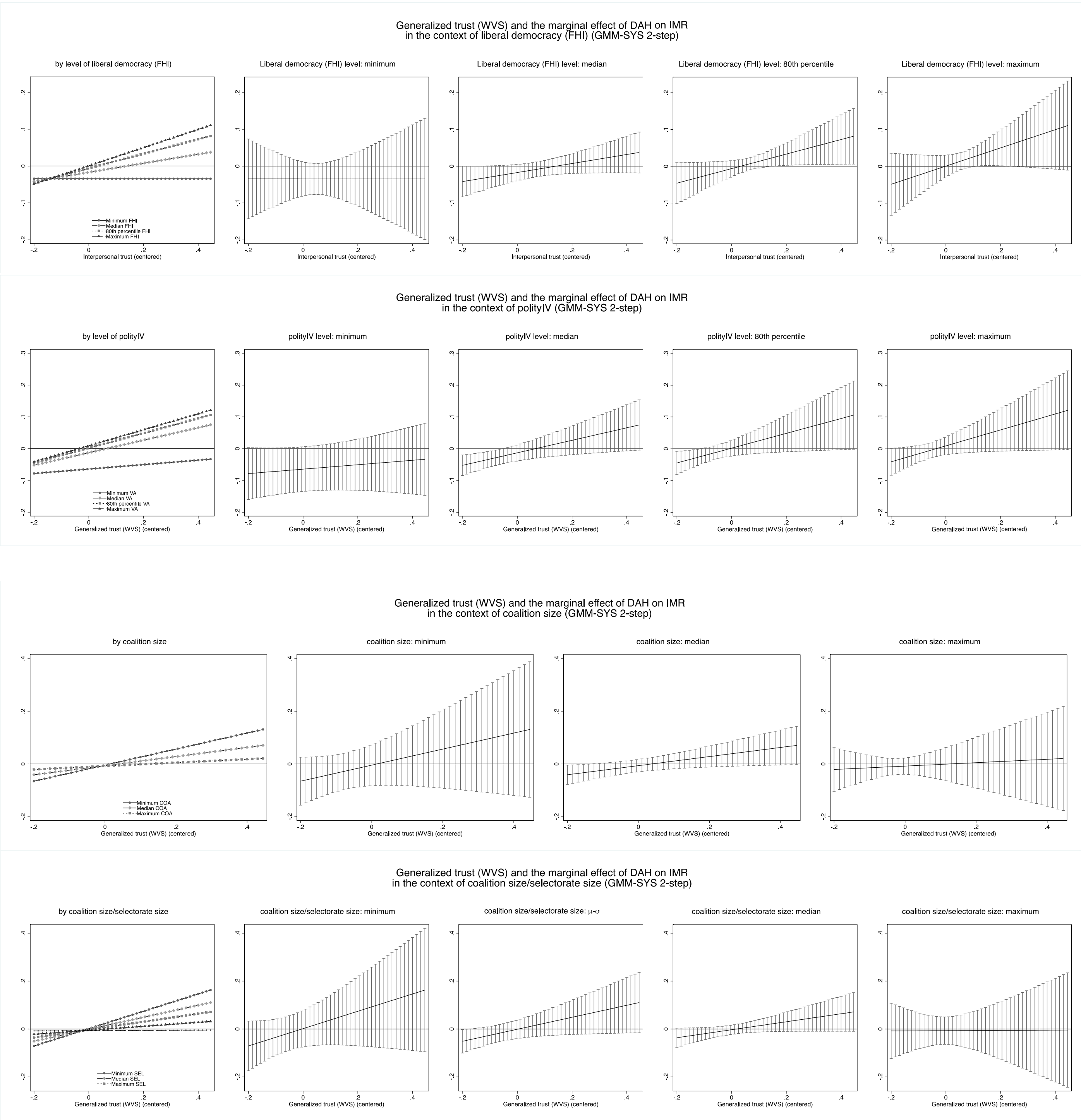


Figure D 24: Social trust and the marginal effect of DAH *on* IMR *in the context of bureaucratic governance (GMM) II*



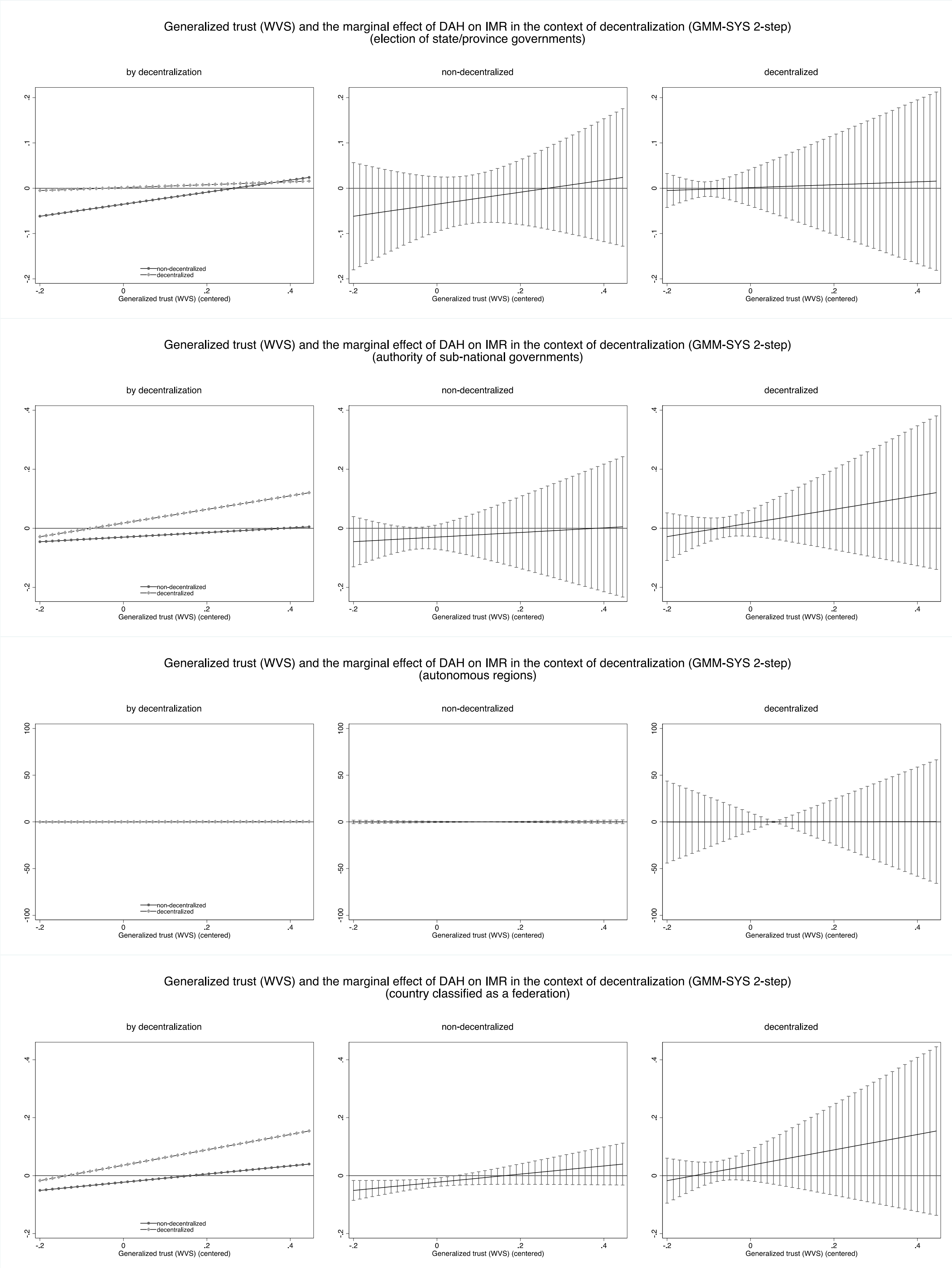
Notes: The marginal effect plots visualize the interaction of social trust, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, social trust and fertility rate as well as the indices of bureaucratic governance, liberal democracy, decentralization respectively are specified as endogenous variables. Data: WVS.

Figure D 25: Social trust and the marginal effect of DAH on IMR in the context of liberal democracy (GMM) II



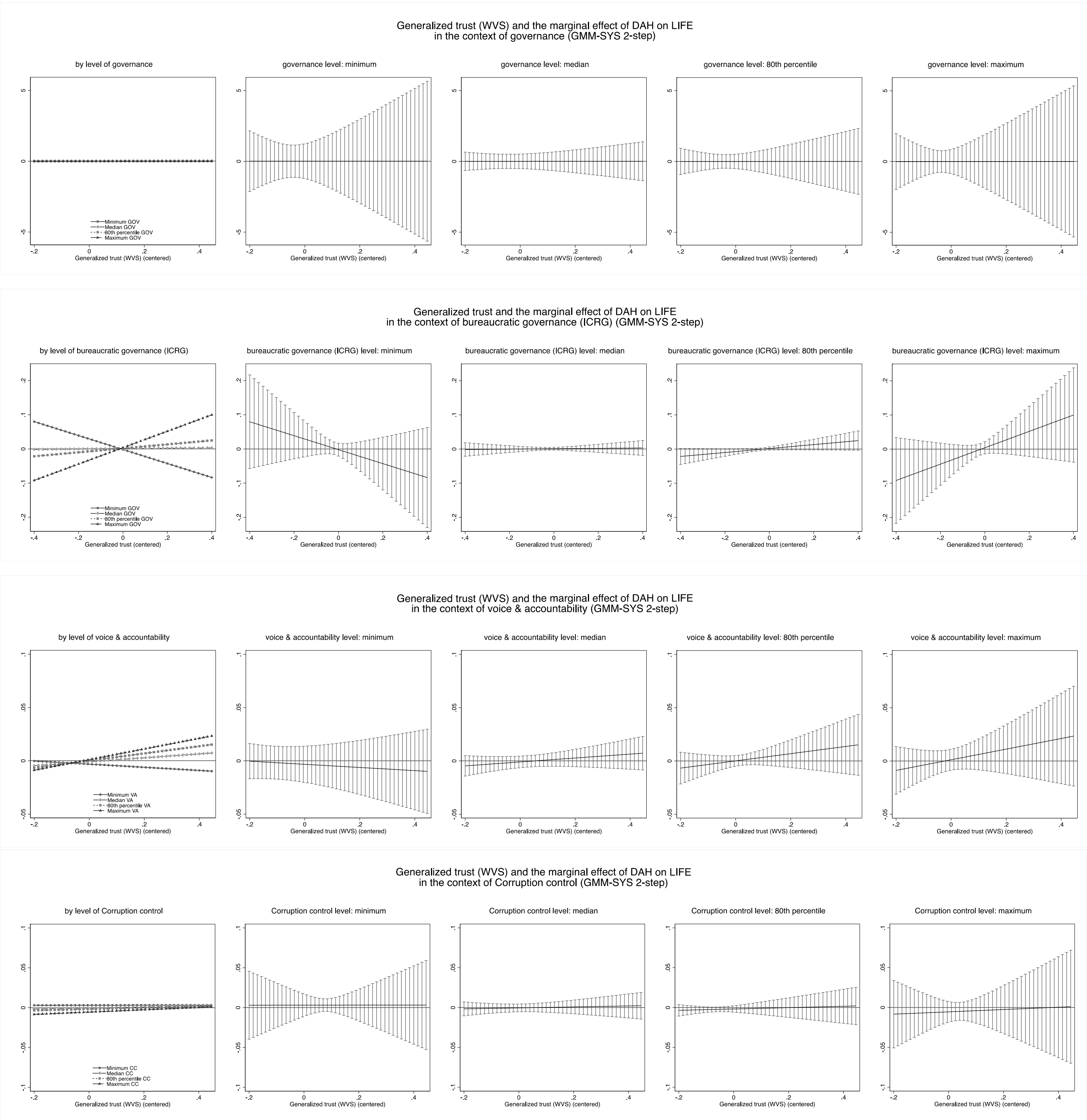
Notes: The marginal effect plots visualize the interaction of social trust, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, social trust and fertility rate as well as the indices of bureaucratic governance, liberal democracy, decentralization respectively are specified as endogenous variables. Data: WVS.

Figure D 26: Social trust and the marginal effect of DAH on IMR in the context of decentralization (GMM) II



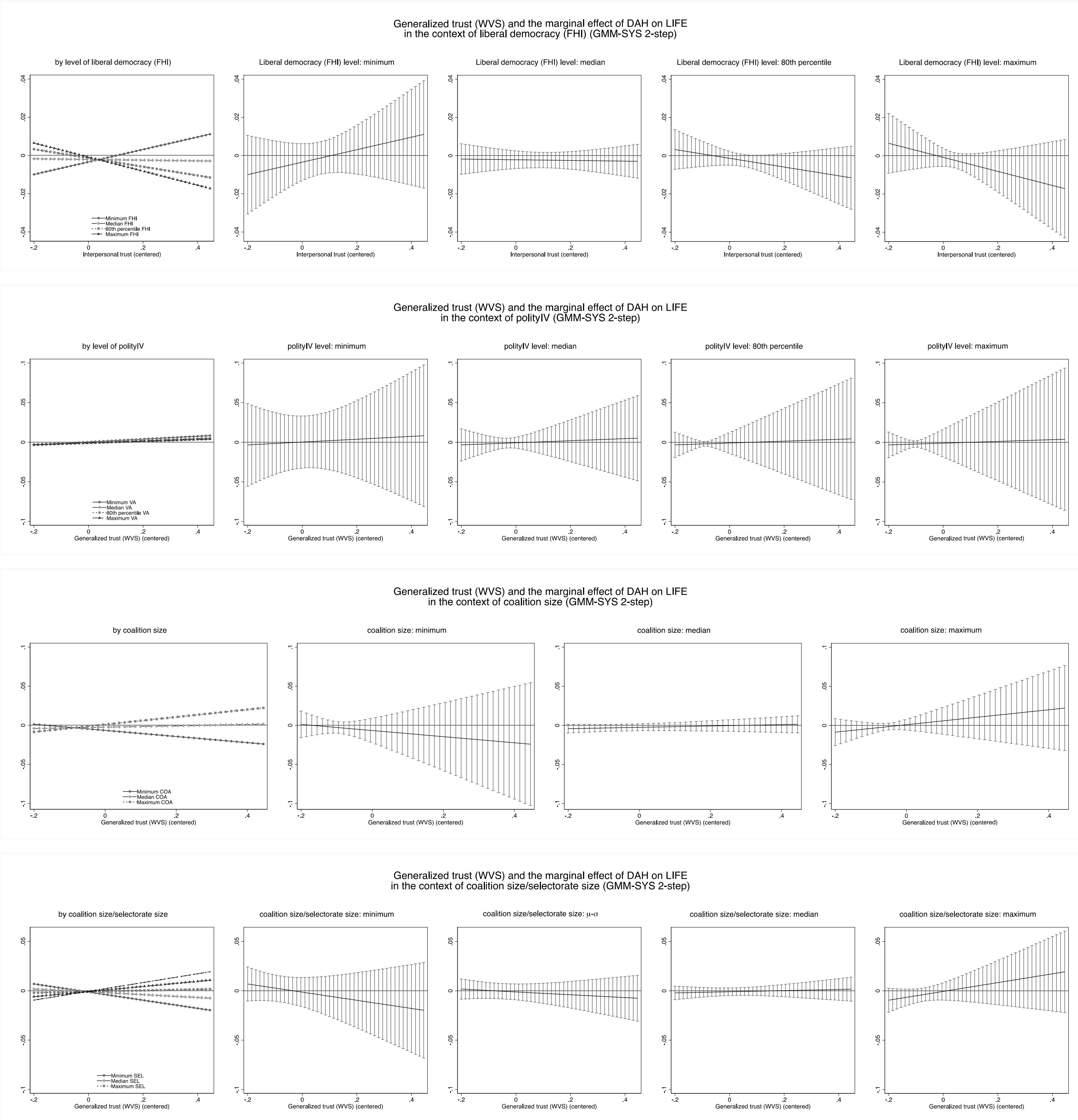
Notes: The marginal effect plots visualize the interaction of social trust, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, social trust and fertility rate as well as the indices of bureaucratic governance, liberal democracy, decentralization respectively are specified as endogenous variables. Data: WVS.

Figure D 27: Social trust and the marginal effect of DAH on LIFE in the context of bureaucratic governance (GMM) II



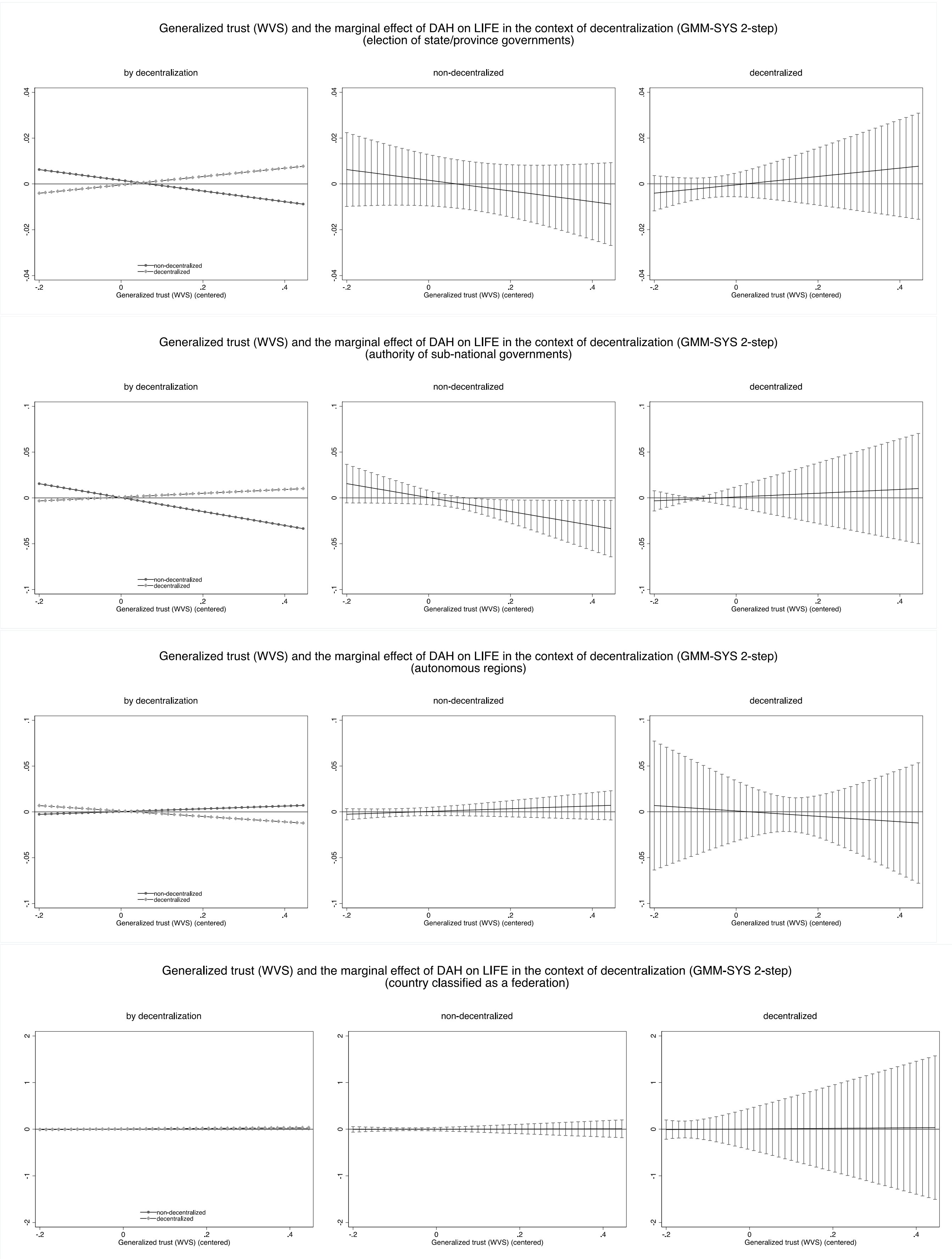
Notes: The marginal effect plots visualize the interaction of social trust, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, social trust and fertility rate as well as the indices of bureaucratic governance, liberal democracy, decentralization respectively are specified as endogenous variables. Data: WVS.

Figure D 28: Social trust and the marginal effect of DAH on LIFE in the context of liberal democracy (GMM) II



Notes: The marginal effect plots visualize the interaction of generalized trust, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, generalized trust and fertility rate as well as the indices of bureaucratic governance, liberal democracy, decentralization respectively are specified as endogenous variables. Data: WVS.

Figure D 29: Social trust and the marginal effect of DAH *on* LIFE *in the context of decentralization (GMM) II*



Notes: The marginal effect plots visualize the interaction of generalized trust, health aid and institutional context of two-step SYS-GMM estimation. All models include period fixed effects. In all GMM models DAH, GDP per capita, generalized trust and fertility rate as well as the indices of bureaucratic governance, liberal democracy, decentralization respectively are specified as endogenous variables. Data: WVS.

Figure E 1: Bureaucratic governance and the marginal effect of DAH on IMR (WBGI)

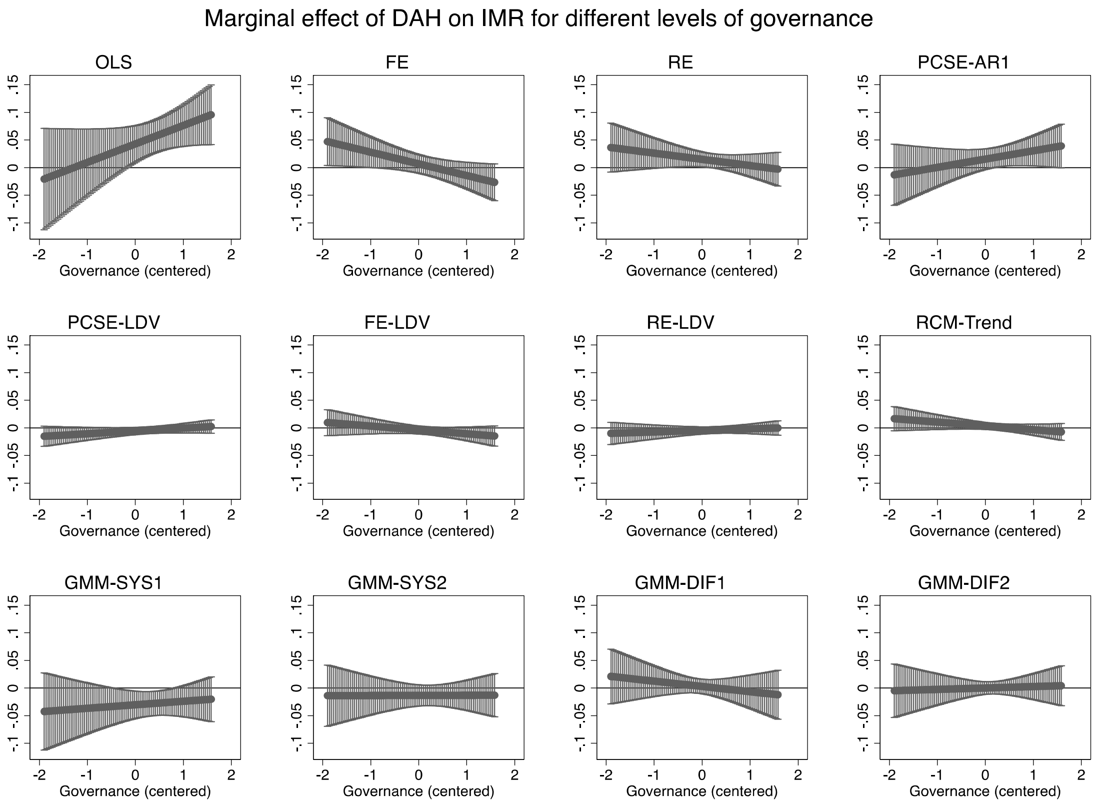


Figure E 2: Bureaucratic governance and the marginal effect of DAH on LIFE (WBGI)

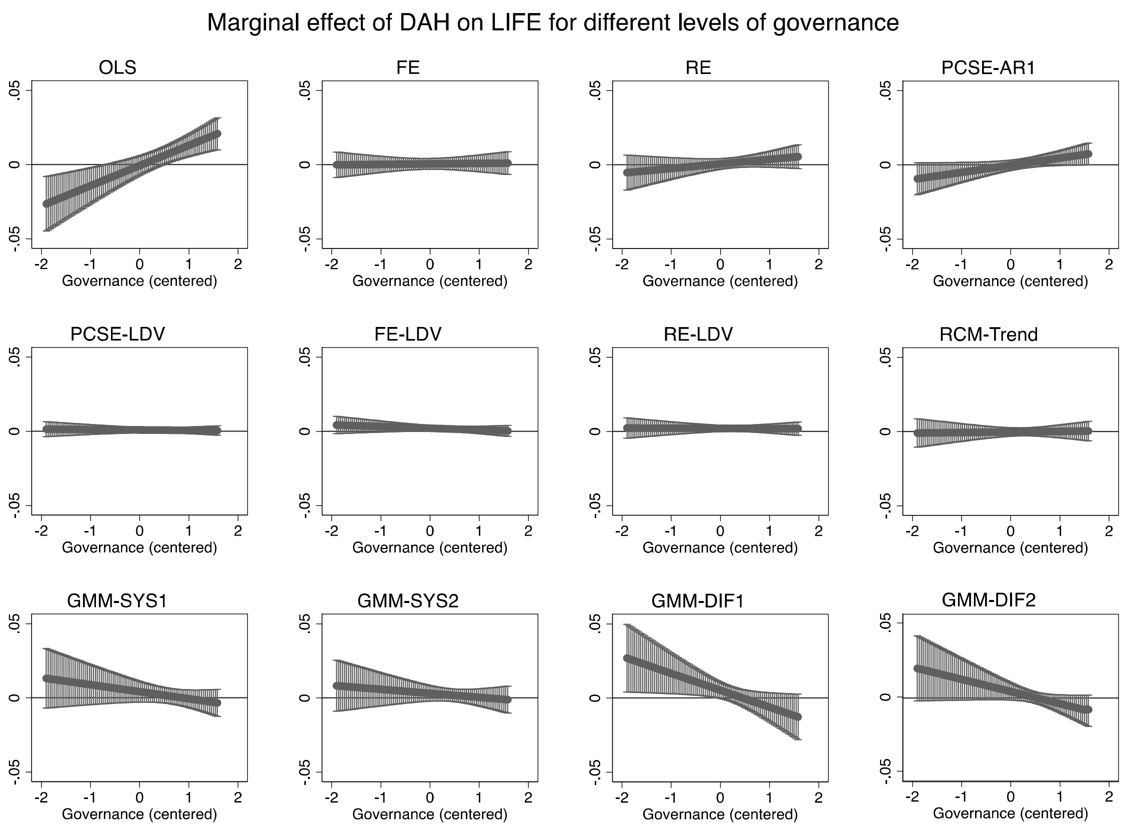


Figure E 3: Bureaucratic governance and the marginal effect of DAH on IMR (ICRG)

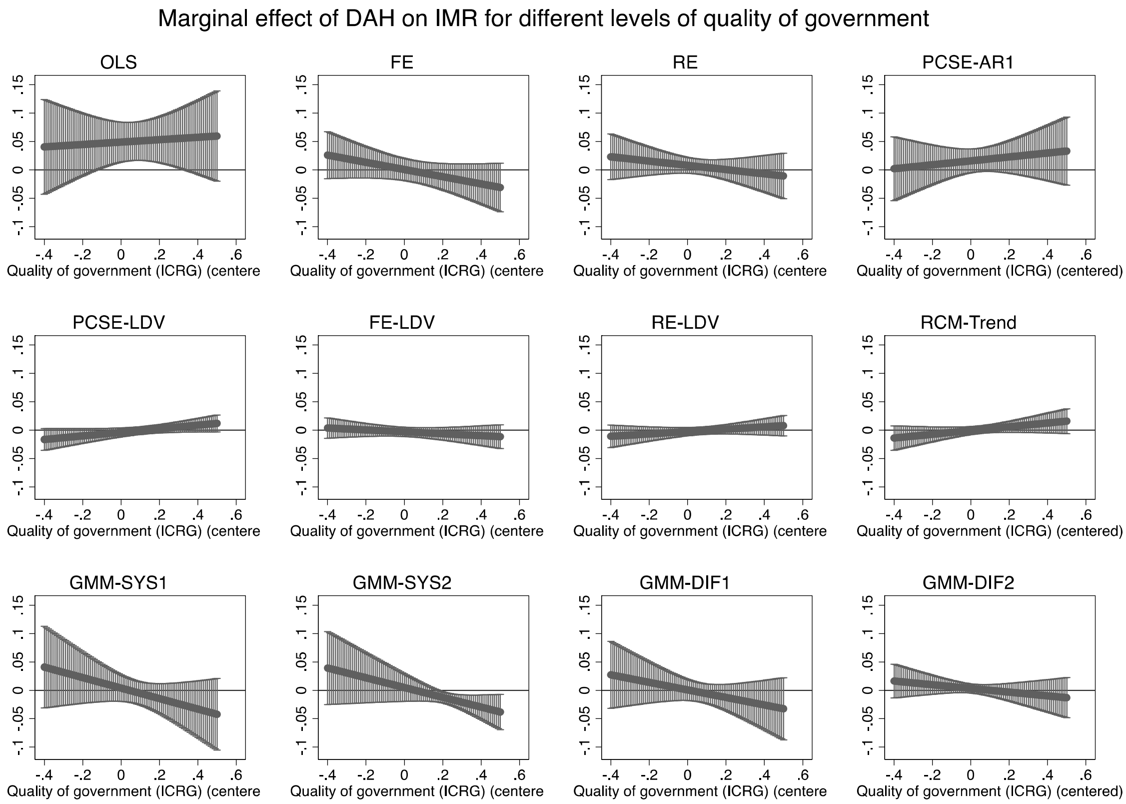


Figure E 4: Bureaucratic governance and the marginal effect of DAH on LIFE (ICRG)

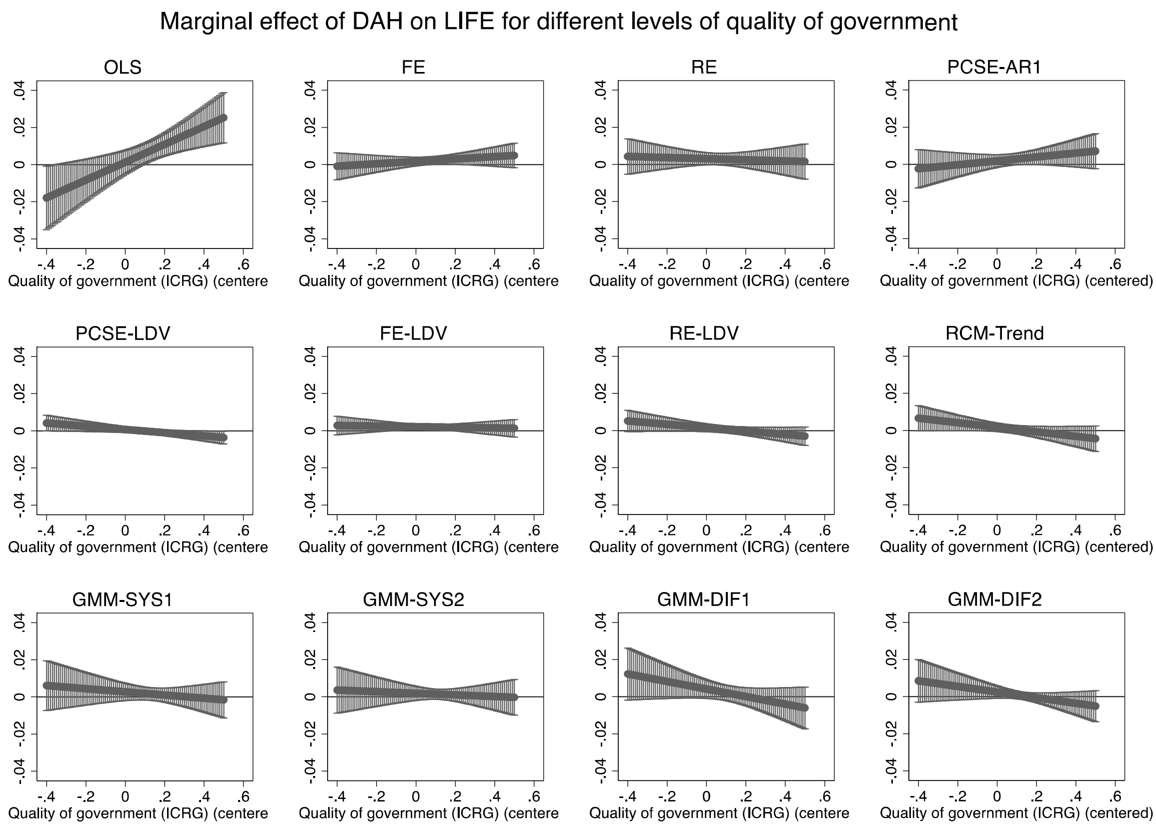


Figure E 5: Corruption control and the marginal effect of DAH on IMR

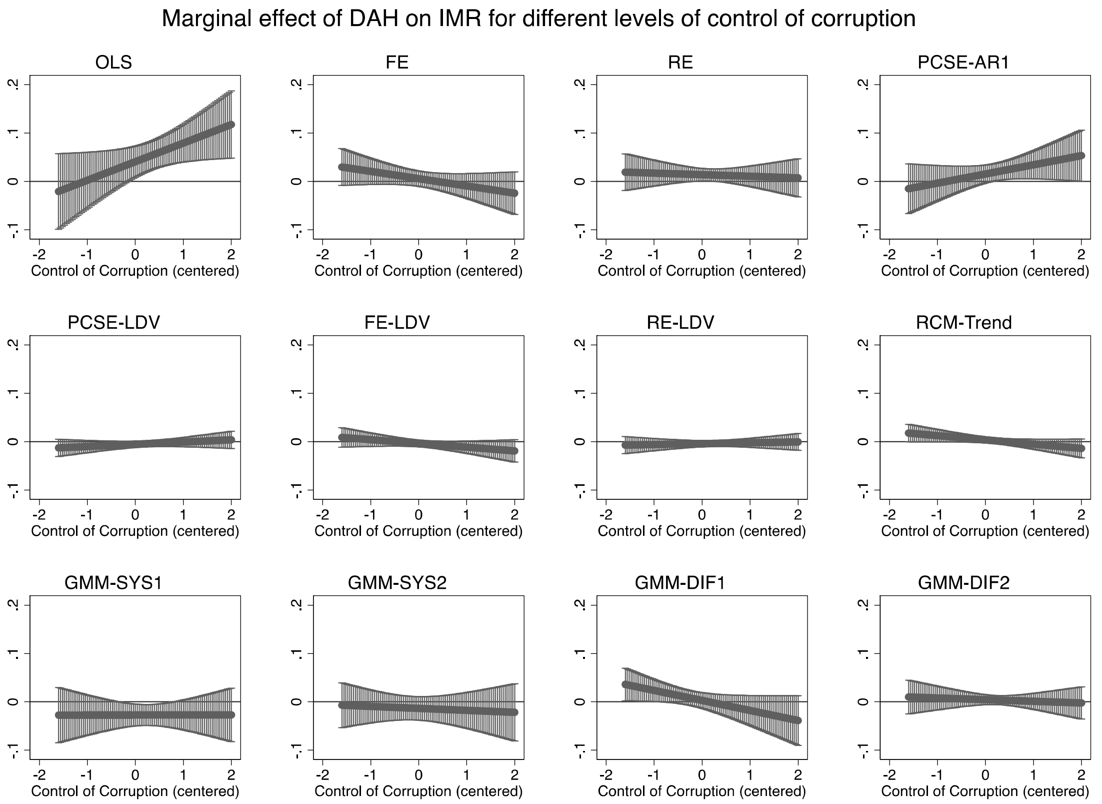


Figure E 6: Corruption control and the marginal effect of DAH on LIFE

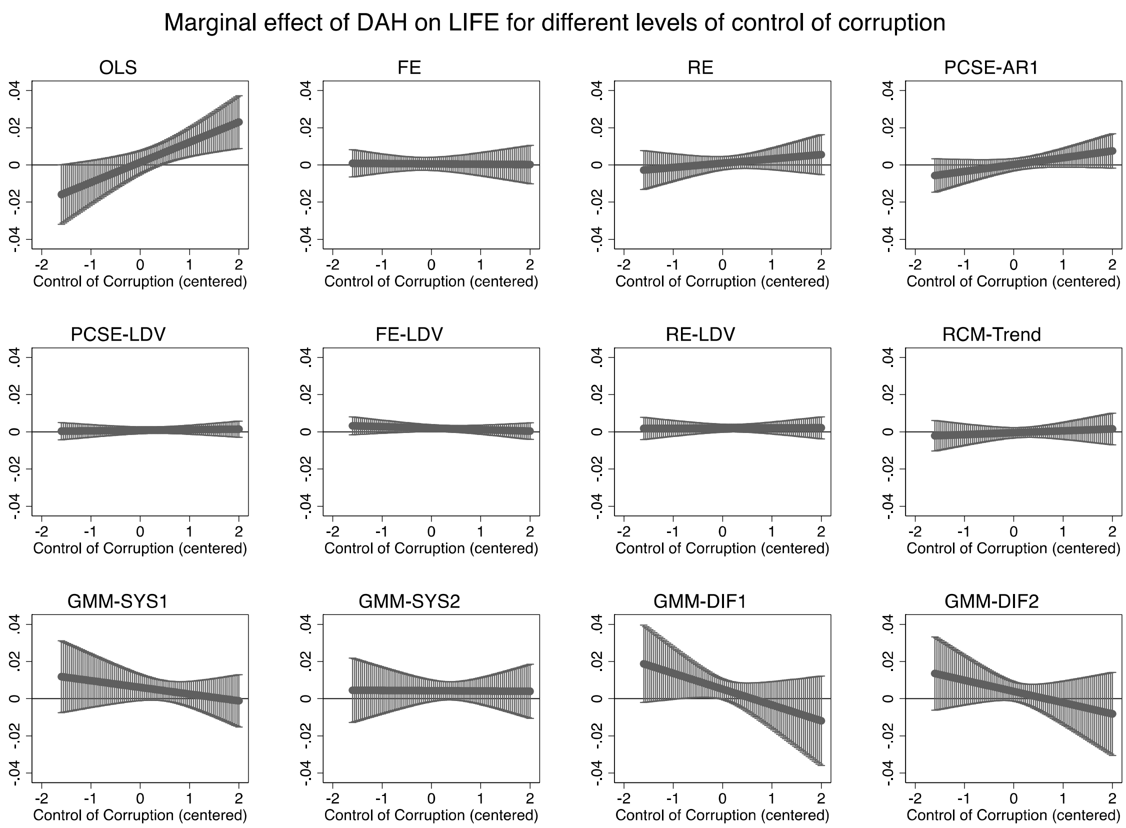


Figure E 7: Voice & accountability and the marginal effect of DAH *on* IMR

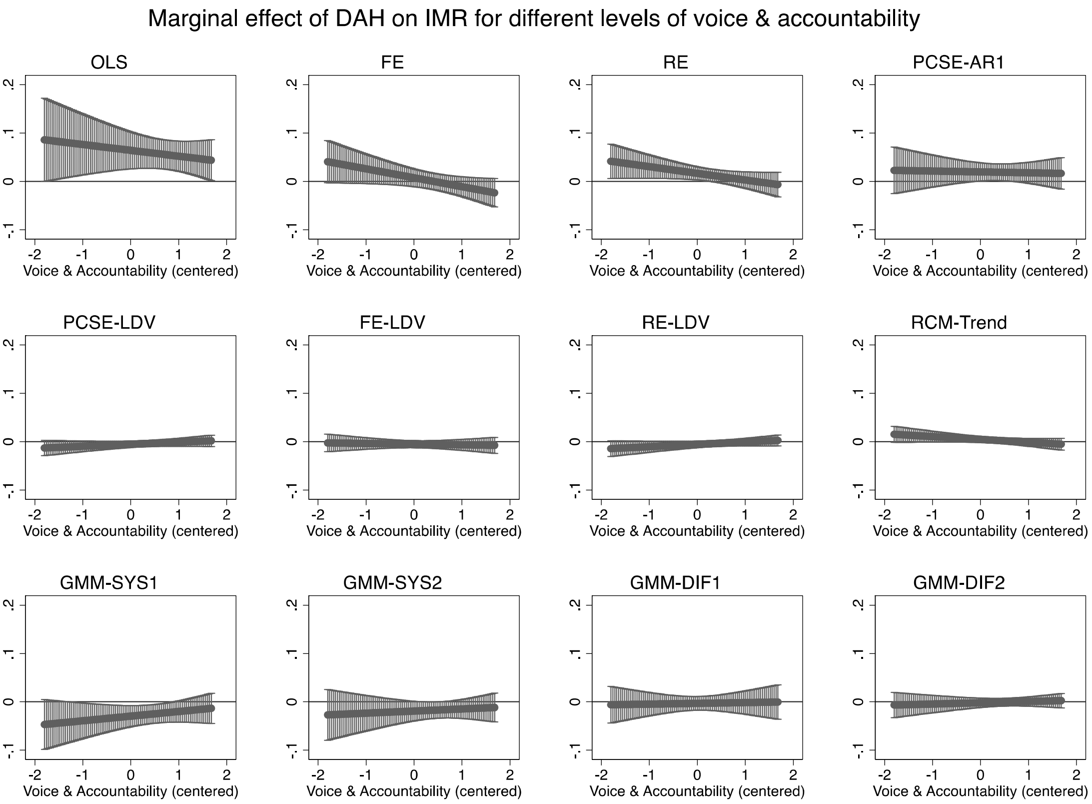


Figure E 8: Voice & accountability and the marginal effect of DAH *on* LIFE

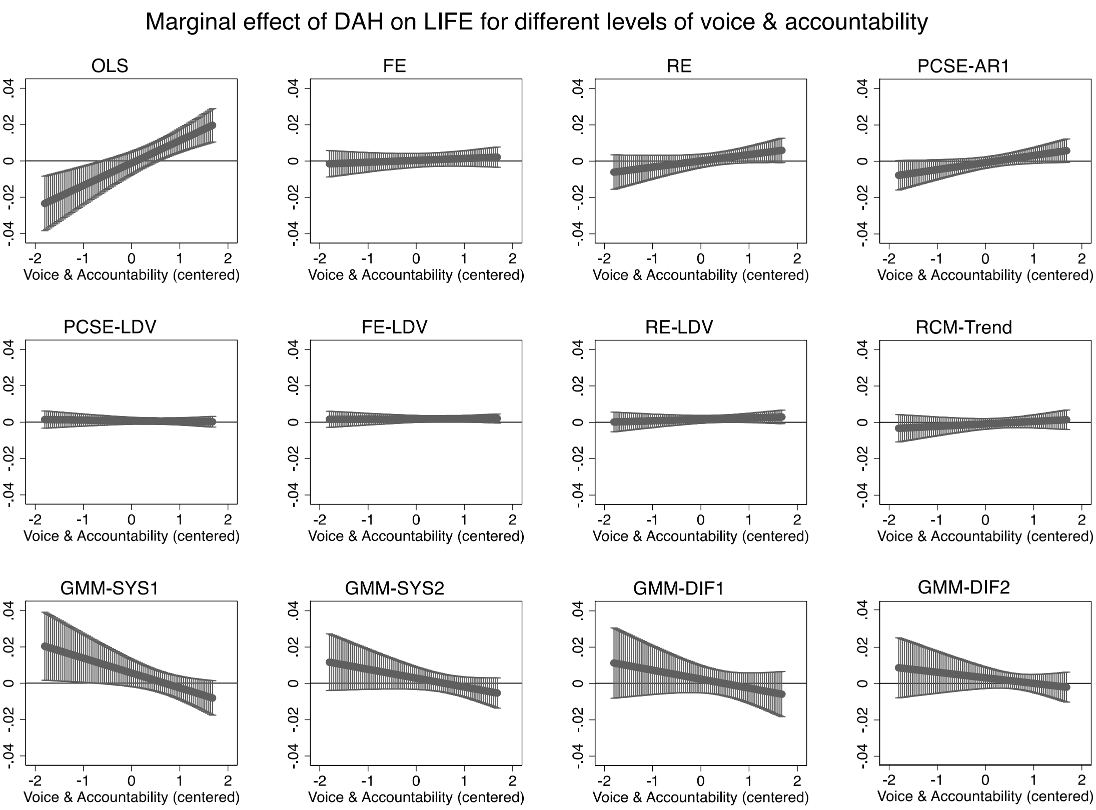


Figure E 9: Liberal democracy and the marginal effect of DAH on IMR (FHI)

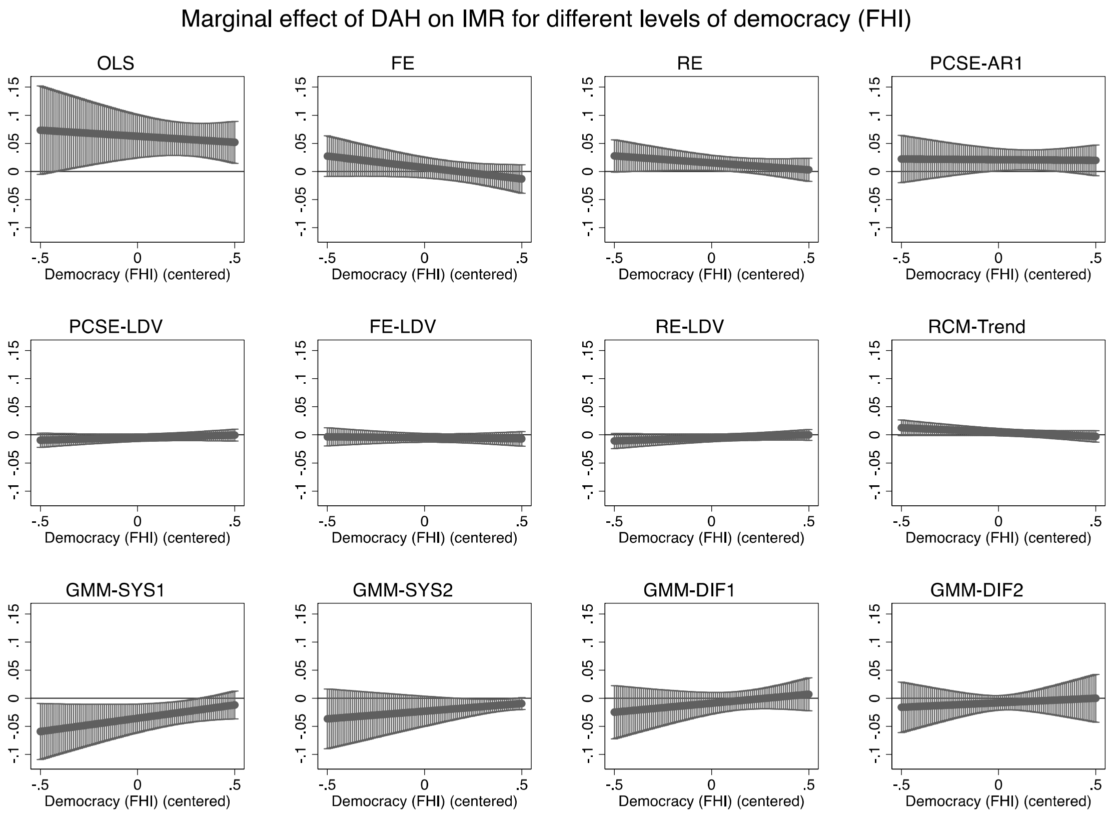


Figure E 10: Liberal democracy and the marginal effect of DAH on LIFE (FHI)

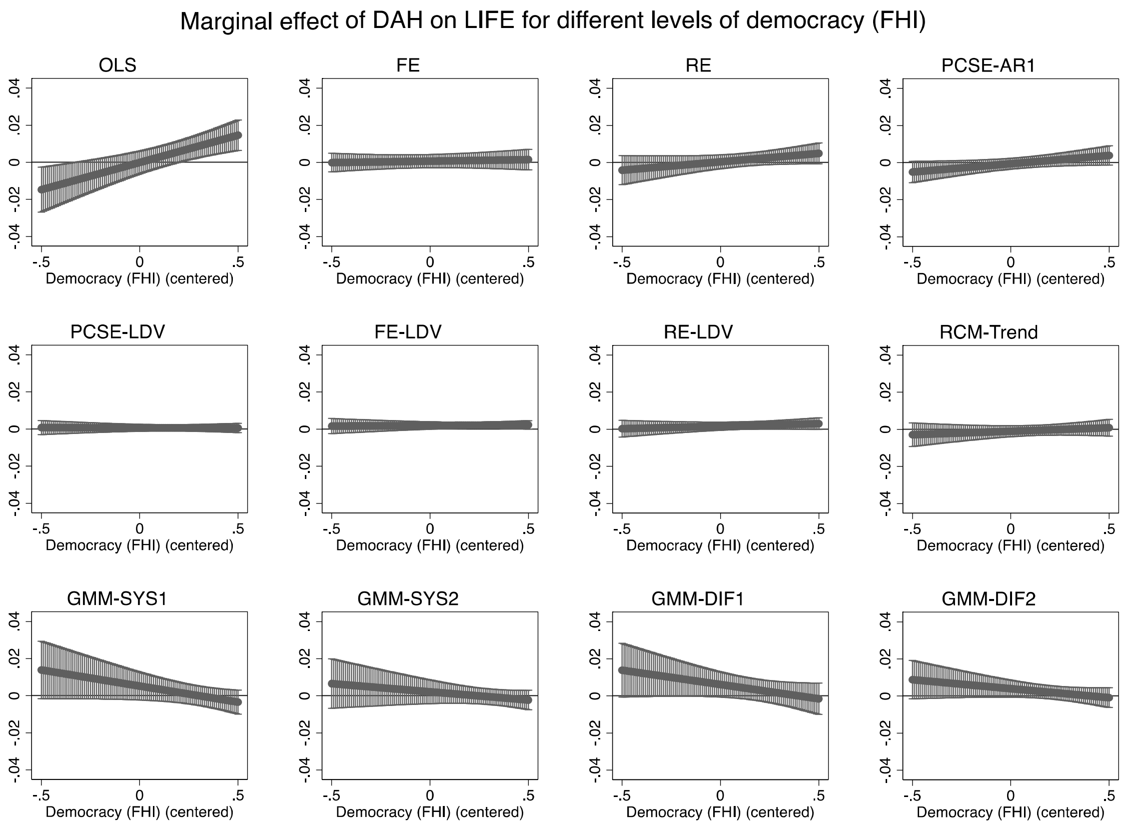


Figure E 11: Liberal democracy and the marginal effect of DAH on IMR (POLITY IV)

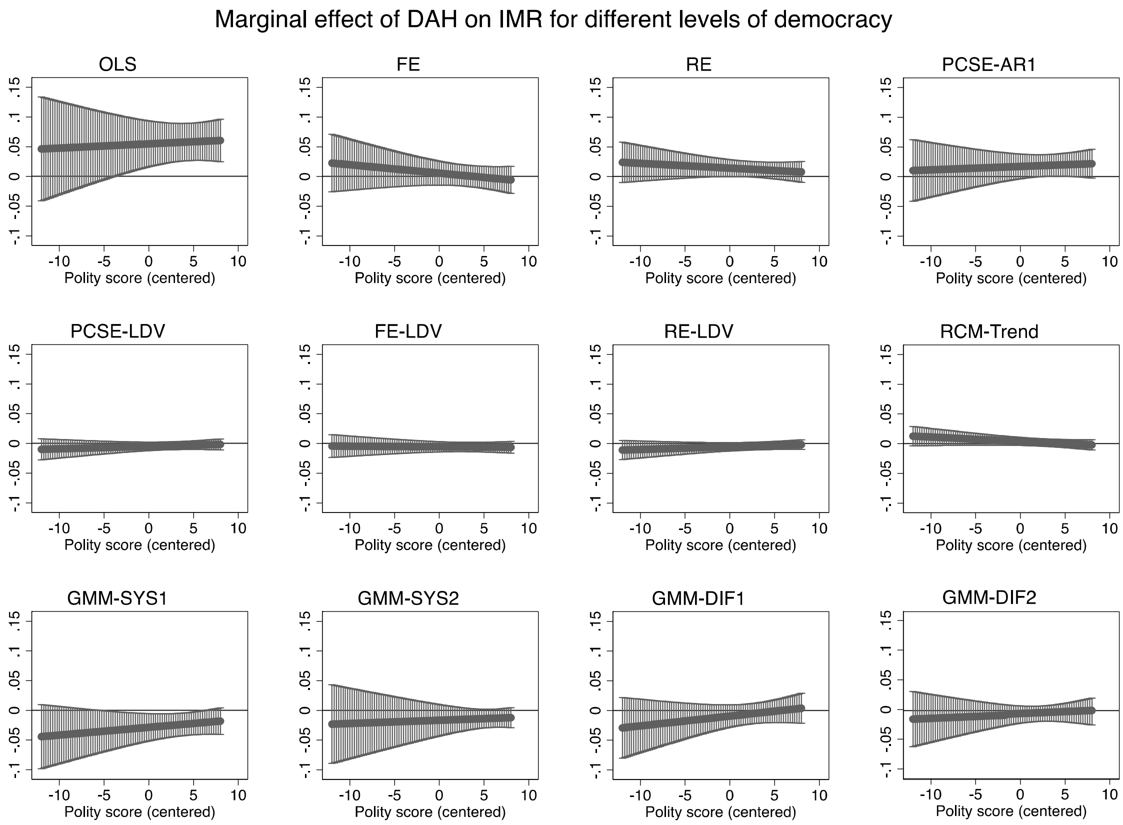


Figure E 12: Liberal democracy and the marginal effect of DAH on LIFE (POLITY IV)

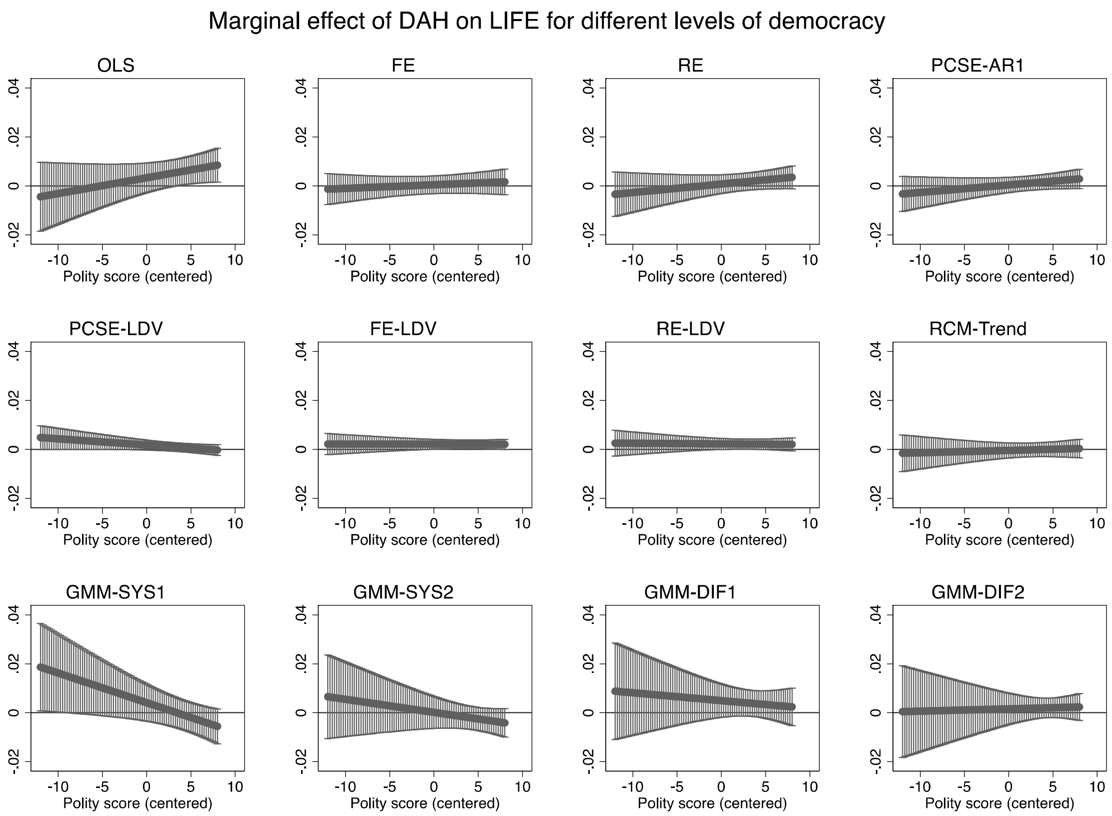


Figure E 13: Liberal democracy and the marginal effect of DAH *on* IMR *(coalition size)*

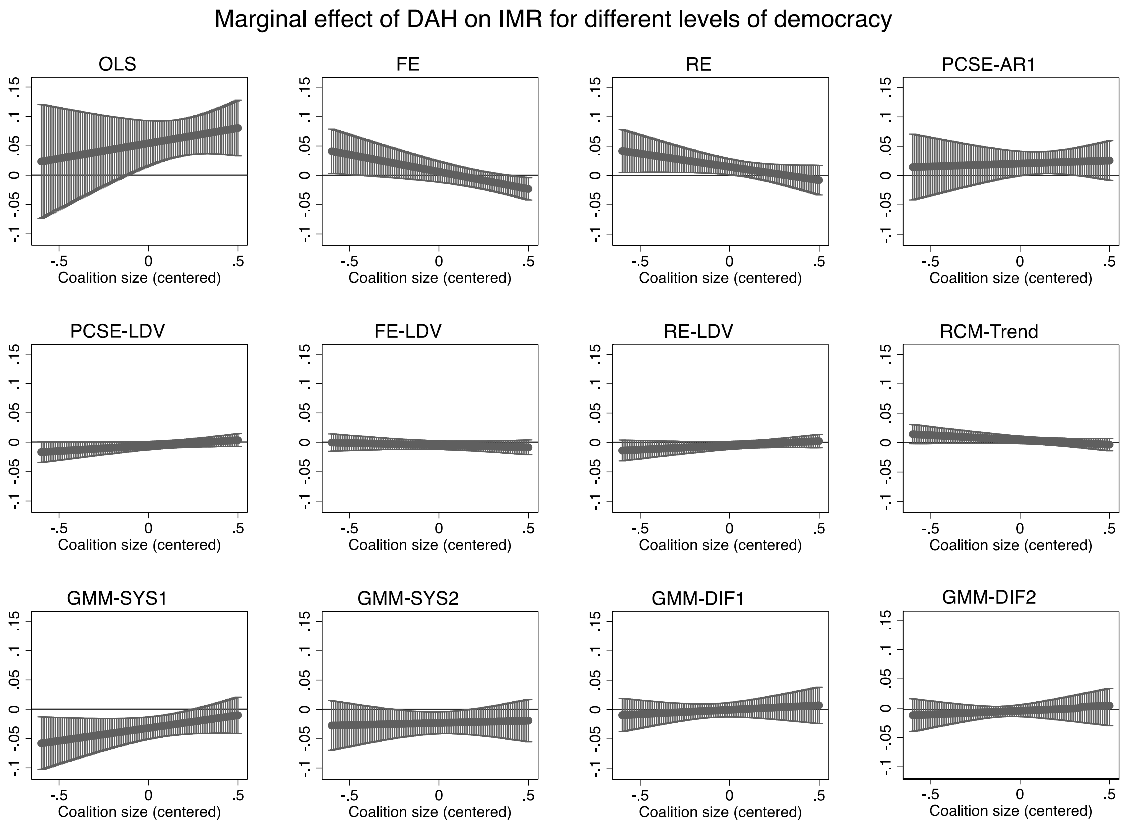


Figure E 14: Liberal democracy and the marginal effect of DAH *on* LIFE *(coalition size)*

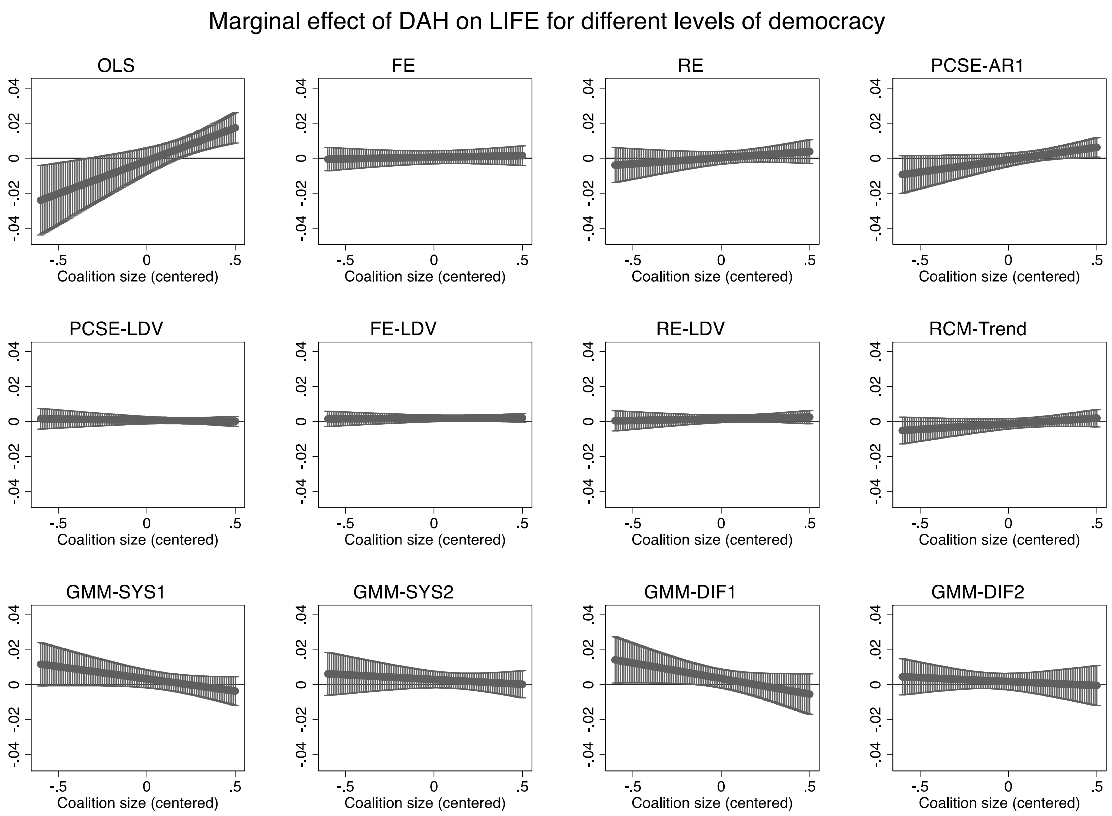


Figure E 15: Decentralization and the marginal effect of DAH on IMR (locally elected officials)

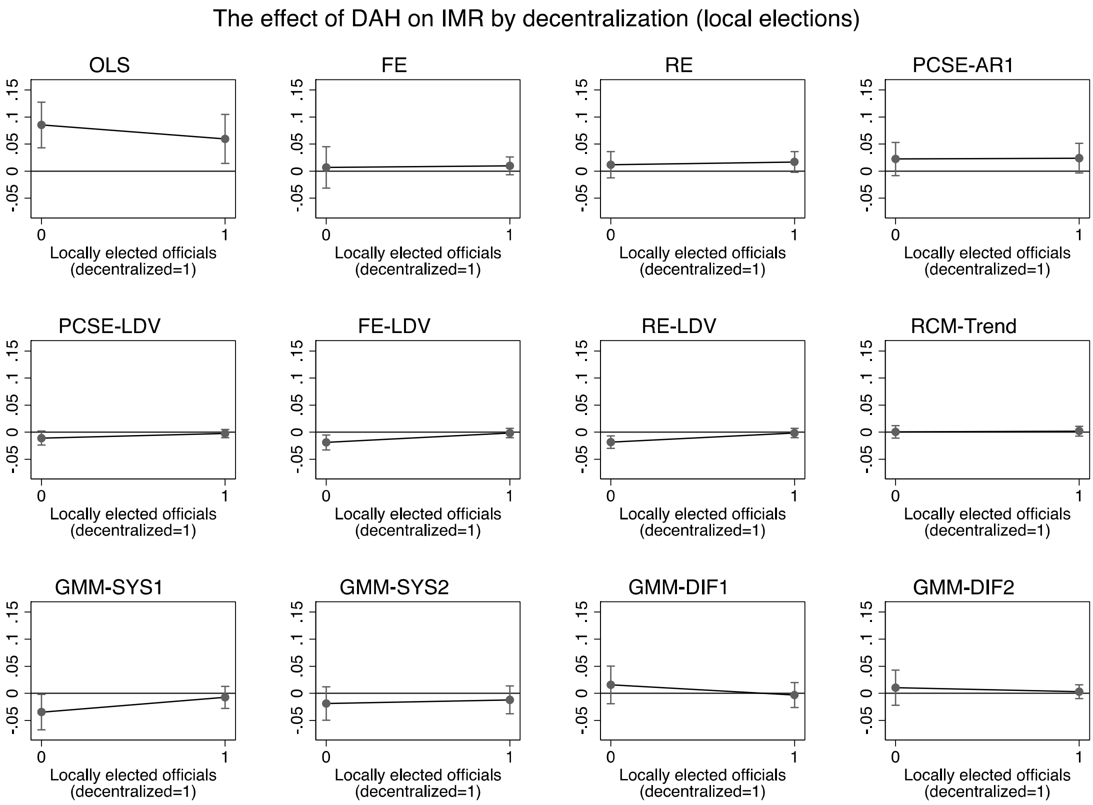


Figure E 16: Decentralization and the marginal effect of DAH on LIFE (locally elected officials)

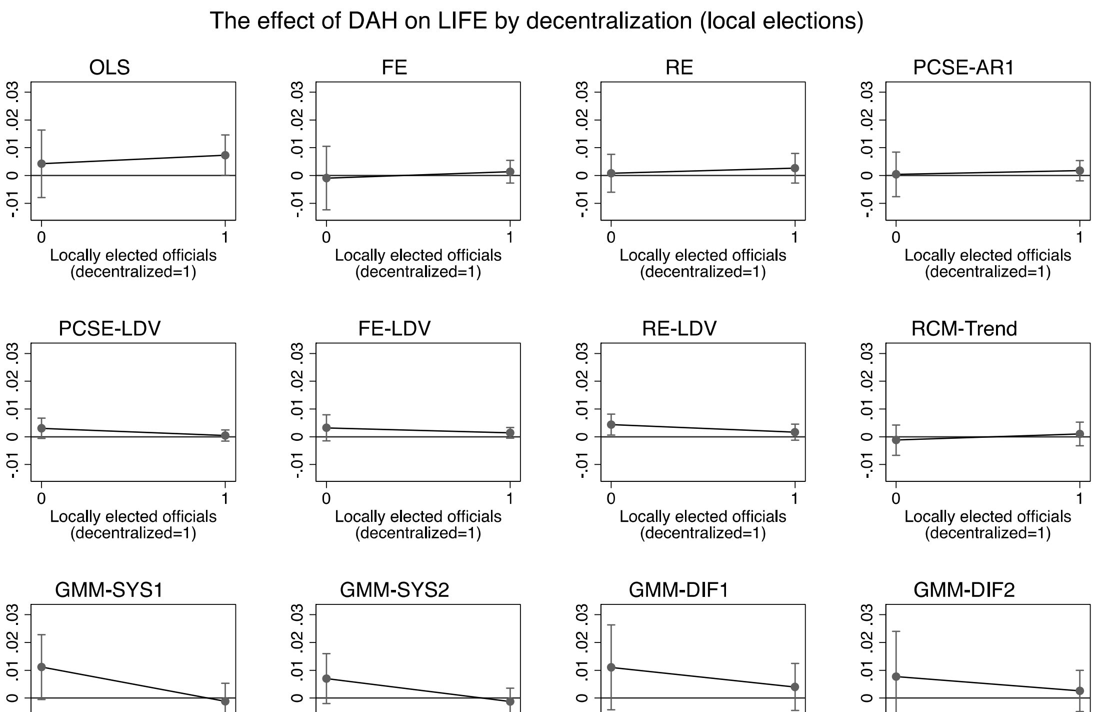


Figure E 17: Decentralization and the marginal effect of DAH on IMR (subnational authority)

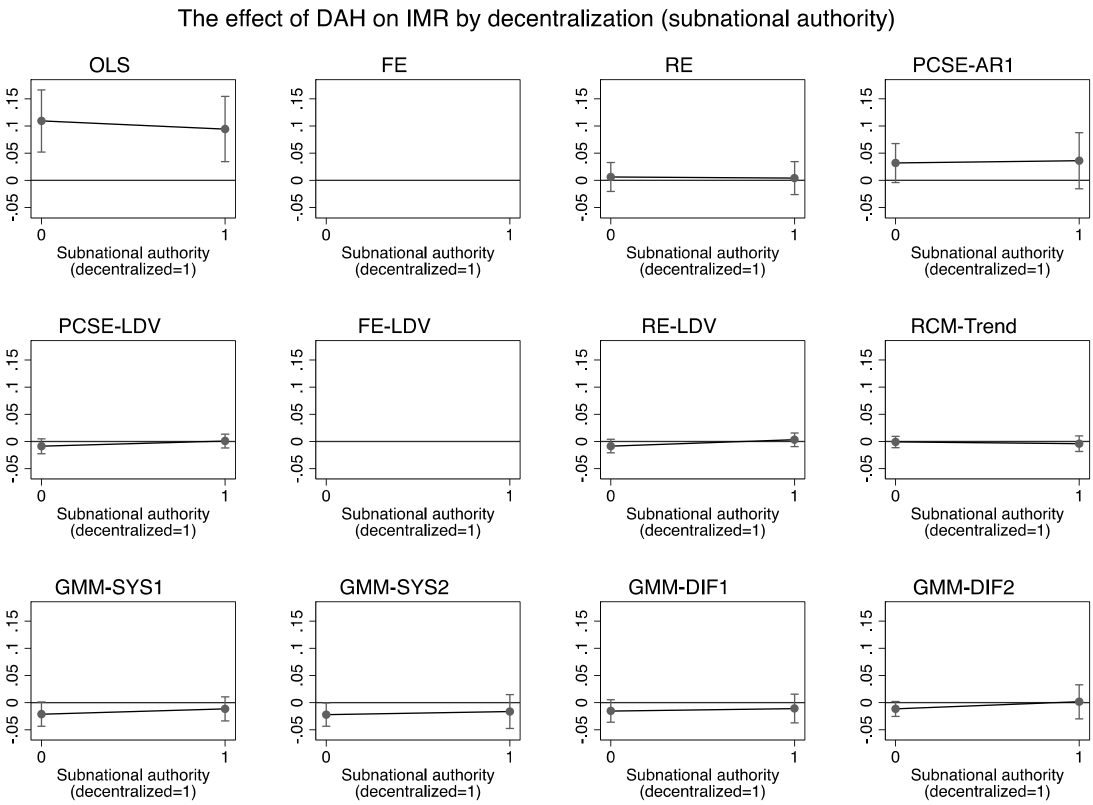


Figure E 18: Decentralization and the marginal effect of DAH on LIFE (subnational authority)

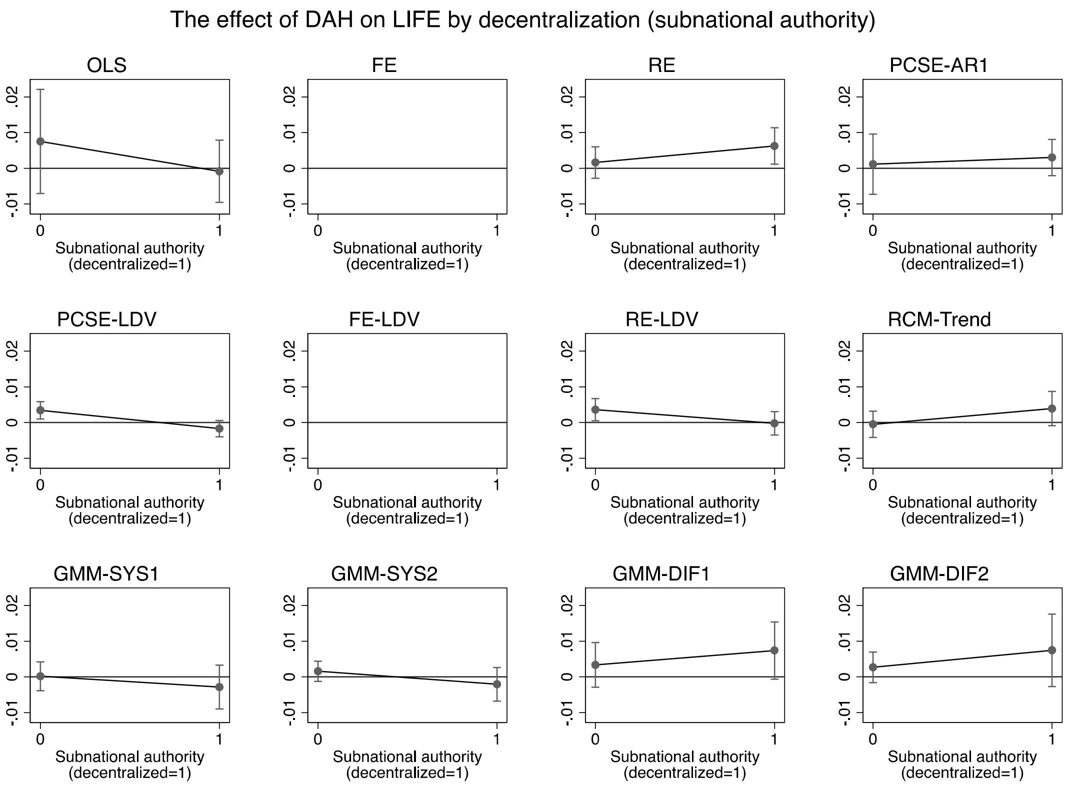


Figure E 19: Decentralization and the marginal effect of DAH on IMR (autonomous regions)

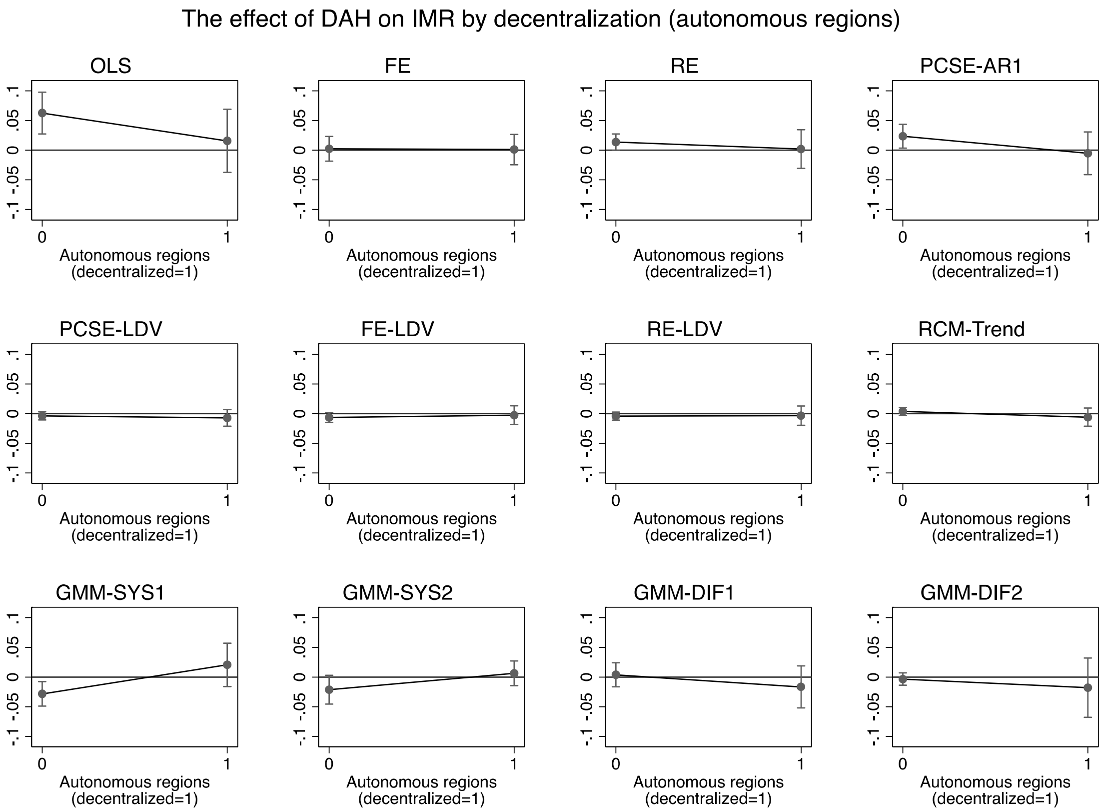


Figure E 20: Decentralization and the marginal effect of DAH on LIFE (autonomous regions)

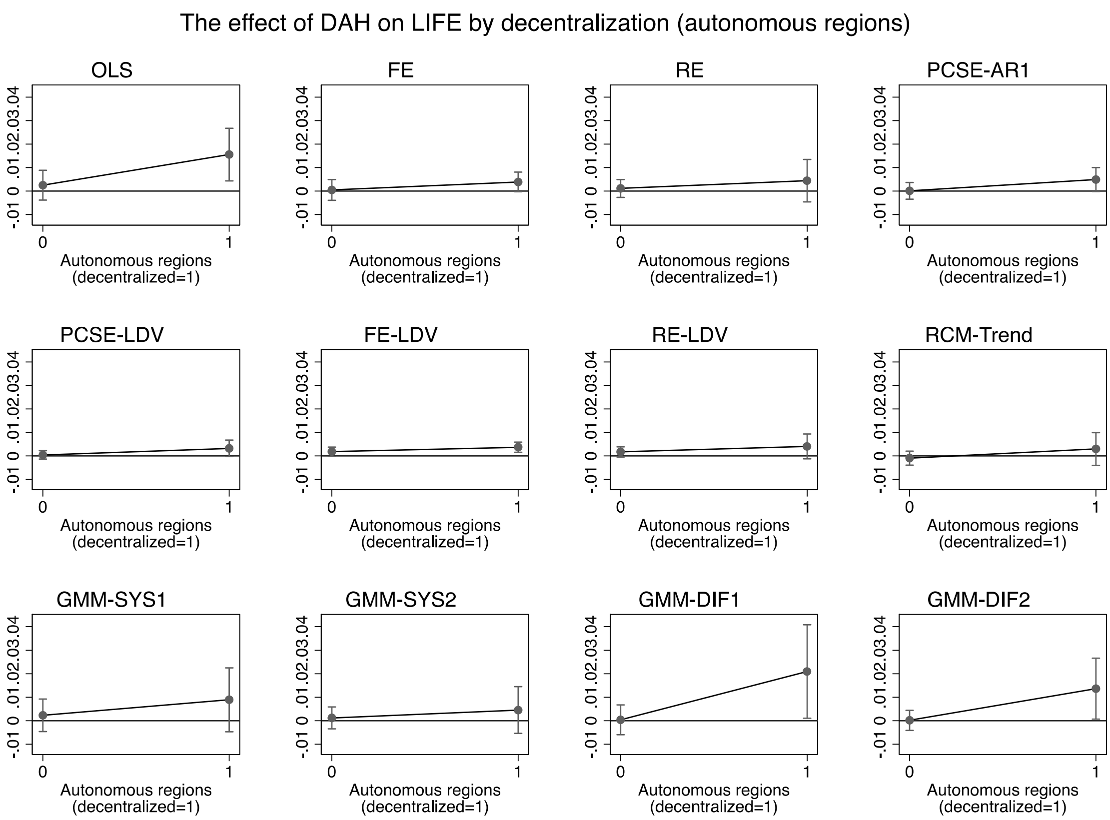


Figure E 21: Decentralization and the marginal effect of DAH on IMR (federalism)

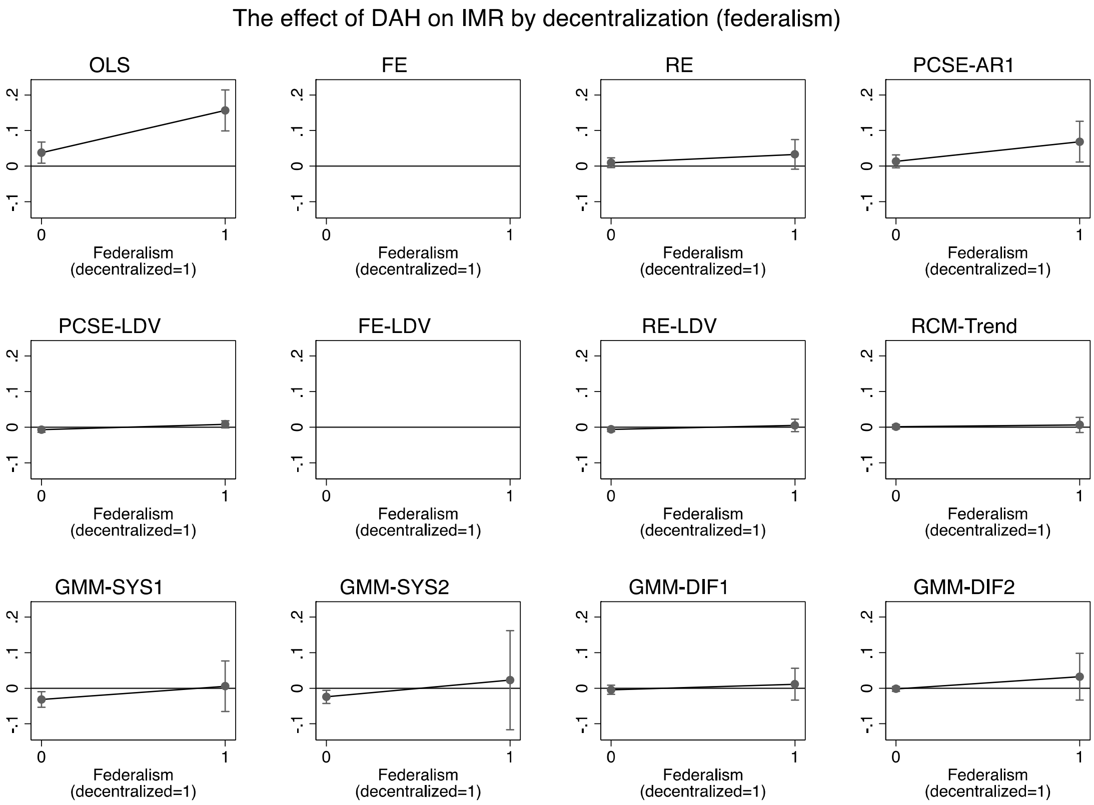


Figure E 22: Decentralization and the marginal effect of DAH on LIFE (federalism)

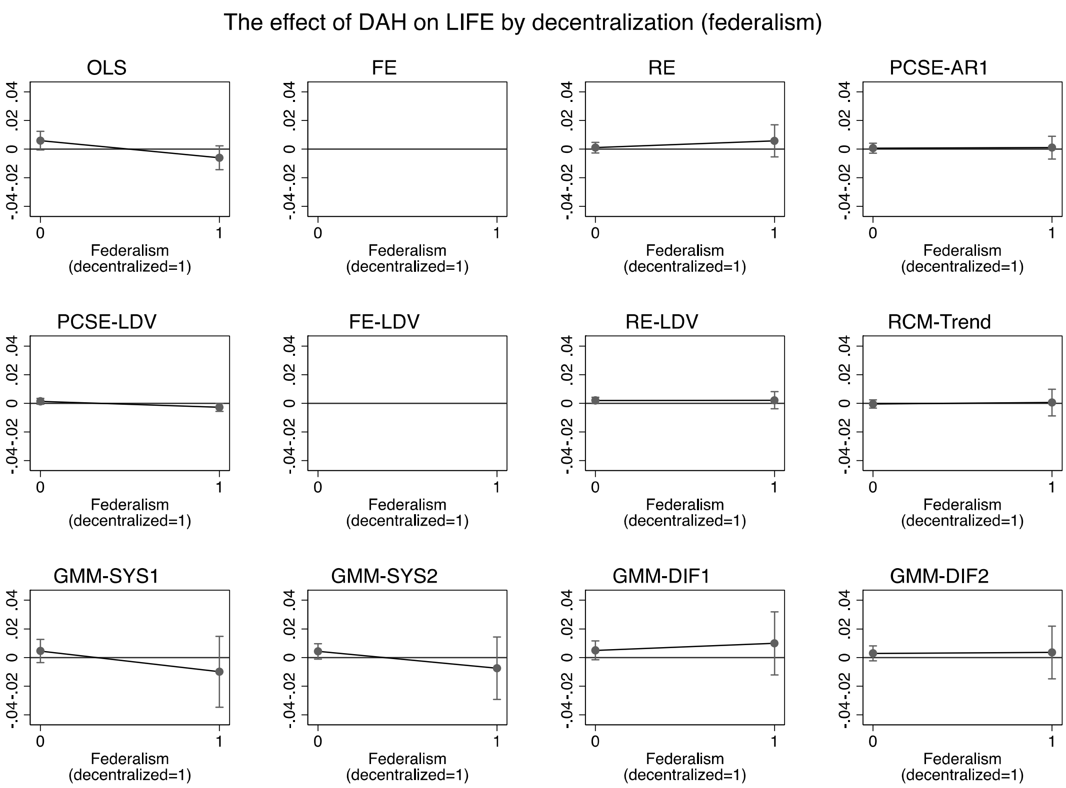
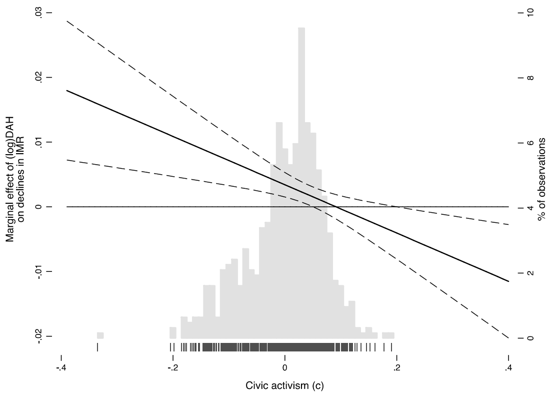
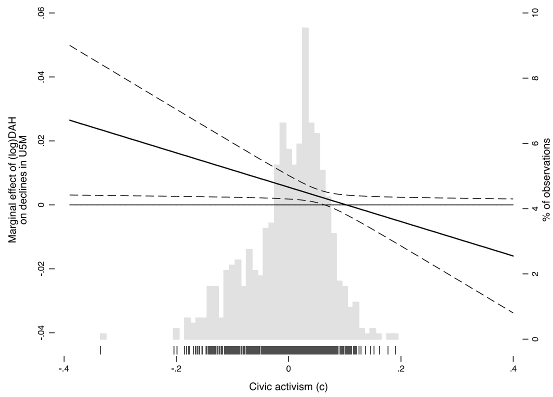


Figure B 32: Civic activism and the marginal effect of DAH on changes in population health

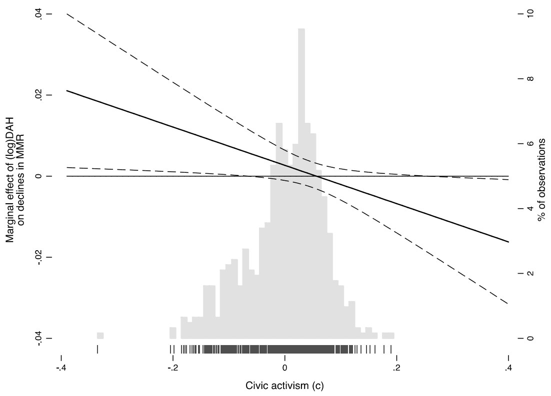
Dependent variable: declines in infant mortality



Dependent variable: declines in child mortality



Dependent variable: declines in maternal mortality



Dependent variable: changes in life expectancy

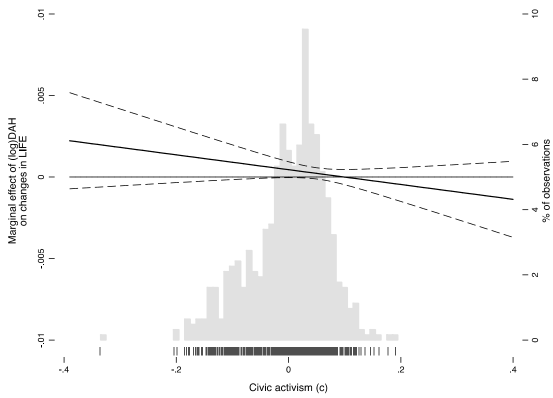
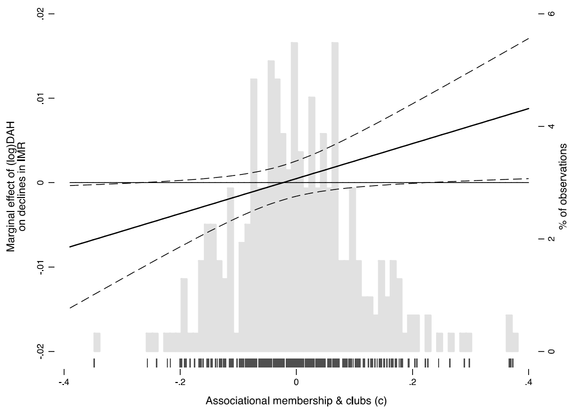
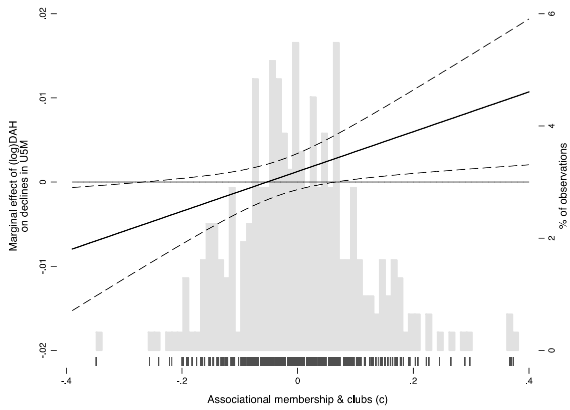


Figure C 34: Membership and the marginal effect of DAH *on changes in population health*

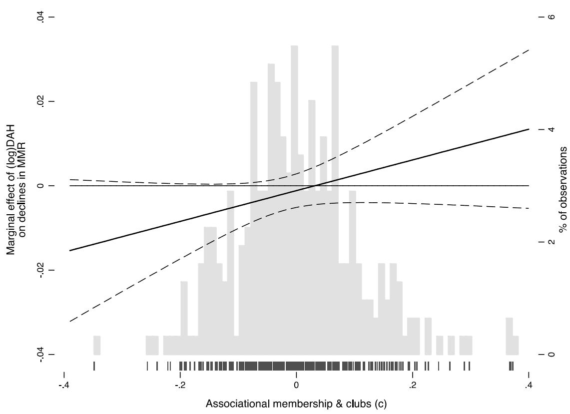
Dependent variable: declines in infant mortality



Dependent variable: declines in child mortality



Dependent variable: declines in maternal mortality



Dependent variable: changes in life expectancy

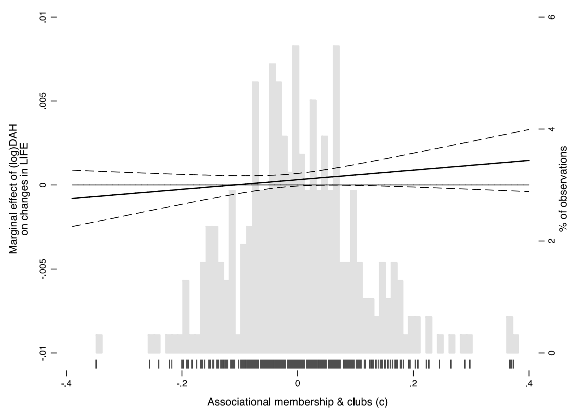
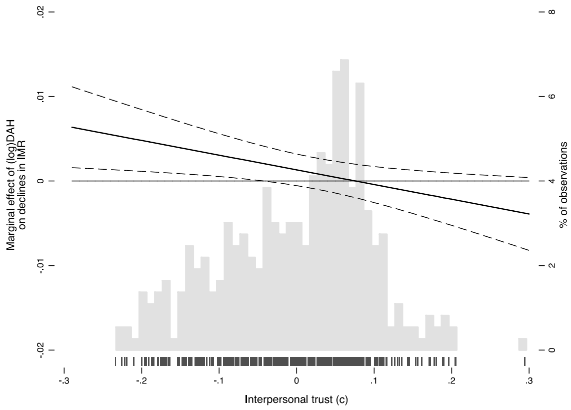
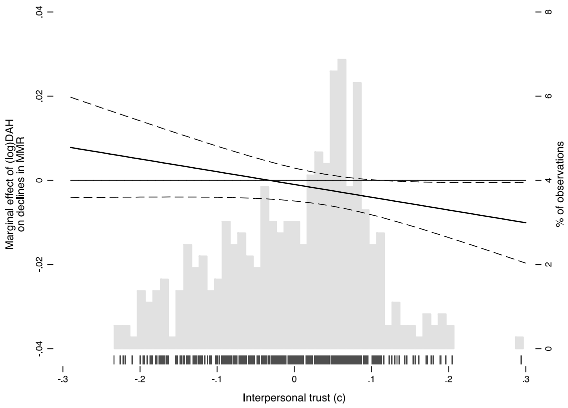


Figure D 30: Social trust and the marginal effect of DAH on changes in population health

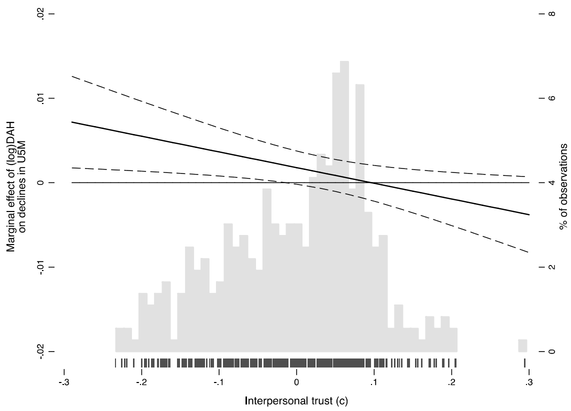
Dependent variable: declines in infant mortality



Dependent variable: declines in maternal mortality



Dependent variable: declines in child mortality



Dependent variable: changes in life expectancy

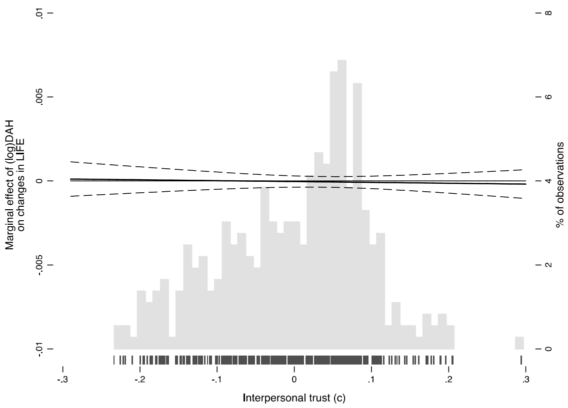


Table A 1: Preventable diseases essential health services interventions

Disease	Description and
Maternity related complications	Maternity related complications can be distinguished into preterm birth and intrapartum (during childbirth) related complications. Preterm birth complications amount to about 1 million deaths in children under the age of five (Figure A 8). Preterm birth refers to babies born alive before 37 weeks of pregnancy are completed caused by a variety of reasons including multiple pregnancies, infections, early induction of labor or caesarean birth (whether for medical or non-medical reasons) leading to about 1 million deaths of children under five annually (WHO 2015b). Intrapartum related complications account to about 10 % of deaths of children under five resulting in stillbirth or a non-breathing newborn (Figure A 8). Interventions to prevent maternity related complications include prenatal care, treatment of complications during pregnancy, skilled birth attendants, emergency obstetric care, postpartum care (including family planning), feeding and breastfeeding counseling
Pneumonia	Pneumonia is an acute respiratory infection, which leads to about one million deaths of children under five years old annually. Pneumonia is caused by the spread of certain viruses and bacteria via airborne droplets (from a cough or sneeze) or through blood (WHO 2016d). Indoor air-pollution is among the major risk factors for respiratory infections, resulting mainly from indoor cooking without appropriate ventilation. Interventions to prevent pneumonia include improving children's natural defenses through promoting exclusive breastfeeding and adequate nutrition, vaccinations, hand washing with soap and good hygiene, reducing household air pollution (WHO 2016d). People infected with pneumonia can be treated with antibiotics administered by trained community health workers.
Diarrhea	Diarrhea causes about nine percent of child deaths under the age of five and is directly linked to malnutrition. The diarrheal disease is usually a symptom of an infection in the intestinal tract caused by bacterial, viral or parasitic organisms, which are spread by water contaminated with human feces for example from sewage, septic tanks and latrines (WHO 2013). Other transmissions of diarrheal disease include food prepared or stored in unhygienic conditions or contaminated through irrigation or polluted sea water. Interventions to treat diarrhea include access to safe drinking-water and improved sanitation; hand washing with soap; exclusive breastfeeding for the first six months of life; good personal and food hygiene; health education about how infections spread; and rotavirus vaccination (WHO 2013).
Cholera	Cholera is an acute diarrheal infection caused by ingestion of contaminated food or water leading to severe dehydration and even to death if untreated. Interventions include the provision of universal access to safe drinking water and adequate sanitation; the development of piped water systems with water treatment facilities (chlorination); interventions at the household level (water filtration, water chemical or solar disinfection, safe water storage containers); and construction of systems for sewage disposal and latrines (WHO 2015a). Most cholera infections can be successfully treated through administration of oral rehydration salts (ORS). Further interventions include health education campaigns, adapted to local culture and beliefs, promoting the adoption of appropriate hygiene practices such as hand-washing with soap, safe preparation and storage of food and breastfeeding (WHO 2015a).
Malaria	Malaria is a disease caused by parasites that are transmitted through bites of infected mosquitoes leading to about half a million malaria related child deaths annually. Malaria transmission can be reduced by eliminating standing water caused by poor drainage and uncovered water tanks in order to reduce mosquito population in households and communities (WHO 2016c). The use of insecticide-treated mosquito nets and indoor residual spraying are also effective ways to prevent malaria transmission.
HIV/AIDS	HIV/AIDS account for about two percent of child deaths under the age of five. The human immunodeficiency virus (HIV) is a virus that infects cells of the immune system and destroys their function, which results in progressive deterioration of the immune system and ultimately leads to the occurrence of opportunistic infections or HIV-related cancers (Acquired immunodeficiency syndrome, AIDS) (WHO 2016b). Unsafe sex is the most important risk factor for HIV/AIDS transmission, though whether individuals have control over whether or not to use a condom depends on many factors including cultural determinants. People living with HIV/AIDS are more susceptible to water-related diseases and become sicker from these infections than healthy individuals. Consequently, clean water and adequate sanitation are key factors in preventing infections associated with HIV/AIDS and to safeguard the health of people living with HIV/AIDS (WHO 2016b). Treatment of HIV infected people includes antiretroviral therapy (ART), which slows down (but does not cure) the disease progression by preventing the virus replication.
Measles	Measles is caused by a virus, which can be passed through direct contact and through the air (e.g., coughing and sneezing), and leads to about a hundred thousand child deaths annually. Measles can be effectively prevented by an inexpensive vaccine (WHO 2016a).
Tuberculosis	Tuberculosis (TB) is caused by bacteria that most often affect the lungs and is spread from person to person through the air. TB is treated with a standard six month course of four antimicrobial drugs. Tuberculosis can be prevented by an inexpensive and safe vaccine (WHO 2016e).

Table A 2: Primary care model package of essential health services interventions

Type	Prevention	Treatment of illnesses
Maternity-related	Prenatal care Treatment of complications during pregnancy Skilled birth attendants Emergency obstetric care Postpartum care (including family planning) Feeding and breastfeeding counseling	
Childhood disease-related (immunization)	Vaccinations/ immunization Diphtheria-pertussis-tetanus/DPT Measles Hepatitis B Haemophilus influenza type B TB vaccination Vitamin A supplementation Iodine supplementation Anthelmintic treatment School health programs	Acute respiratory infections Diarrhoea Causes of fever Malnutrition Anemia
Malaria	Insecticide-treated nets Residual indoor spraying	Malaria treatment
Tuberculosis		Directly Observed Therapy, Short Course (DOTS)
HIV/AIDS	Youth-focused interventions Interventions with sex workers and clients Condom social marketing and distribution Workplace intervention Strengthening of blood transfusion systems Voluntary counseling and testing Prevention of mother-to-child transmission Mass media campaigns Treatment for sexually transmitted infections	Palliative care Clinical management of opportunistic illnesses Prevention of opportunistic illnesses home-based care Highly active anti-retroviral therapy (HAART) provision

Notes: DOTS is the name of the tuberculosis control strategy recommended by the WHO. DOTS includes political/financial commitment; diagnosis of TB by sputum-smear microscopy; standardized anti-TB treatment given under direct observation; uninterrupted supply of anti-TB drugs; standardized reporting and monitoring. Source: adapted from Tollman et al. (2006: 1195; 1206-1207) and Skolnik (2012: 104).

Table A 3: Descriptive statistics

Variable	N	Mean	SD	Min	Max
Population Health					
Infant mortality	398	48.0	31.9	4.1	149.7
Infant mortality decline rate	398	0.0	0.0	0.0	0.2
(log) Infant mortality	398	3.6	0.8	1.4	5.0
Child mortality	398	71.0	55.7	5.2	249.6
Child mortality decline rate	398	0.0	0.0	-0.1	0.8
(log) Child mortality	398	3.9	0.9	1.6	5.5
Maternal mortality	306	357.6	368.9	7.2	2074.0
Maternal mortality decline rate	306	0.0	0.0	-0.2	0.1
(log) Maternal mortality	306	5.1	1.4	2.0	7.6
Life expectancy	398	63.0	9.8	37.5	79.0
Life expectancy change rate	398	0.0	0.0	0.0	0.1
(log) Life expectancy	398	4.1	0.2	3.6	4.4
Development Assistance for Health (DAH)					
Health aid per capita (AidData)	398	3.3	3.6	0.0	27.4
(log) Health aid per capita (AidData)	398	0.5	1.5	-6.2	3.3
Health aid per capita (IHME)	388	5.3	7.5	0.0	63.2
(log) Health aid per capita (IHME)	388	1.0	1.2	-3.4	4.1
Social capital					
CLUBS (ISD index of clubs & association)	221	0.5	0.1	0.1	0.9
Membership any group (%) (WVS)	108	0.5	0.3	0	1
Membership sociotropic group (%) (WVS)	108	0.3	0.2	0	1
Membership religious group (%) (WVS)	108	1	0	1	1
Membership utilitarian group (%) (WVS)	108	0.3	0.2	0	1
Membership any group (av. number) (WVS)	108	1.5	1.3	0	8.9
Membership sociotropic group (av. number) (WVS)	108	0.6	0.6	0	4
Membership religious group (av. number) (WVS)	108	0.3	0.3	0	1
Membership utilitarian group (av. number) (WVS)	108	0.6	0.6	0	4
TRUST (ISD index of interpersonal trust and safety)	266	0.5	0.1	0.2	0.7
Social/ Generalized trust (WVS)	154	0.2	0.1	0	0.7
Elite-challenging action					
CIVIC (ISD index of civic activism)	392	0.5	0.1	0.3	0.6
Social movement activity (SMA) index (WVS)	142	0.2	0.1	0	0.4
Non-institutionalized political action (WVS)	142	0.2	0.1	0	0.6
Institutional context					
Quality of government index (ICRG)	312	0.5	0.1	0.1	0.9
Governance-index	398	-0.5	0.6	-2.0	1.2
Freedom House index (FHI)	398	0.5	0.3	0.0	1.0
Revised (combined) Polity score	394	3.0	5.6	-10.0	10.0
Coalition size	398	0.6	0.2	0.0	1.0
Coalition size/selectorate size ratio	397	0.6	0.2	0.0	1.0
Subnational authority (decentralization)	162	0.4	0.5	0.0	1.0
Autonomous regions (decentralization)	395	0.1	0.3	0.0	1.0
Local elections (decentralization)	316	0.5	0.5	0.0	1.0
Federation (decentralization)	394	0.1	0.3	0.0	1.0
Control variables					
Public health expenditure (% of government expendi-	398	10.4	4.0	2.6	28.2
(log) Fertility rate (births per women)	398	1.2	0.5	0.1	2.0
(log) Population size	398	16.1	1.5	12.3	21.0
(log) GDP per capita	398	8.0	1.0	5.2	10.3
Conflict dummy	398	0.1	0.3	0.0	1.0
(log) HIV prevalence (% of population aged 15-49)	398	-0.4	1.6	-2.3	3.3
(log) Physicians (per 1000)	346	-0.9	1.6	-4.8	1.6
Average years of female education	303	5.3	3.5	0.3	12.7

Table A 4: Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	(log) Infant mortality	1												
2	(log) Health aid per capita	0.4 ***	1											
3	CIVIC	-0.6 ***	-0.3 ***	1										
4	CLUBS	0.4 ***	0.1 ***	-0.2 ***	1									
5	TRUST	-0.3 ***	-0.3 ***	0.1	-0.2 ***	1								
6	Governance-index	-0.6 ***	-0.1 ***	0.4 ***	-0.3 ***	0.2 ***	1							
7	Conflict dummy	0.2 ***	0	-0.1 ***	0	0.1	-0.3 ***	1						
8	Public health expenditure (% of government expenditure)	-0.2 ***	0.2 ***	0.2 ***	0	-0.2 ***	0.3 ***	-0.2 ***	1					
9	(log) Fertility rate (births per women)	0.8 ***	0.4 ***	-0.5 ***	0.5 ***	-0.3 ***	-0.4 ***	0.2 ***	-0.1 ***	1				
10	(log) Population size	0.1	-0.3 ***	0.1 ***	0.3 ***	0.1	-0.4 ***	0.2 ***	-0.1 ***	0	1			
11	(log) GDP per capita	-0.8 ***	-0.4 ***	0.6 ***	-0.4 ***	0.1 ***	0.5 ***	-0.2 ***	0.1 ***	-0.7 ***	-0.1 ***	1		
12	(log) HIV prevalence (% of population aged 15-49)	0.5 ***	0.3 ***	-0.2 ***	0.4 ***	-0.5 ***	-0.1 ***	0 ***	0	0.6 ***	-0.2 ***	-0.3 ***	1	
13	(log) Physicians (per 1000)	-0.7 ***	-0.4 ***	0.4 ***	-0.5 ***	0.3 ***	0.2 ***	-0.1 ***	0	-0.8 ***	0	0.8 ***	-0.6 ***	1
14	Average years of female education	-0.8 ***	-0.3 ***	0.5 ***	-0.4 ***	0.1	0.4 ***	-0.2 ***	0.2 ***	-0.8 ***	-0.1	0.7 ***	-0.4 ***	0.8 ***

Notes: Table shows bivariate correlations. = * p<0.05 ** p<0.01 *** p<0.001.

Table A 5: Determinants of infant mortality (SYS-GMM)

	Dependent variable: infant mortality ratio											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
log DAH	-0.02**	-0.01	-0.02**	-0.02**	-0.01	-0.02**	-0.01**	-0.00	-0.00	-0.03*	-0.01	-0.03**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
GOV	-0.09***	-0.11***	-0.14***	-0.16***	-0.04	-0.13***	-0.12***	-0.05	-0.04	-0.13***	-0.11***	-0.02
	(0.03)	(0.04)	(0.04)	(0.04)	(0.06)	(0.04)	(0.03)	(0.07)	(0.06)	(0.03)	(0.03)	(0.07)
EXPEND	-0.00		0.00		-0.00	0.00	-0.00	-0.01	-0.00	0.00	-0.00	-0.01
	(0.00)		(0.00)		(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)
log FERTIL	0.09*	0.09**	0.02	0.01	0.11	0.05	0.11*	0.07	0.11	0.06	0.11	0.09
	(0.05)	(0.05)	(0.08)	(0.12)	(0.08)	(0.06)	(0.06)	(0.10)	(0.09)	(0.06)	(0.08)	(0.09)
log POP	-0.03***	-0.03***	-0.04***	-0.04***	-0.02	-0.03***	-0.04***	-0.01	-0.02	-0.04***	-0.04***	-0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
log GDP	0.03	0.04	0.07*	0.08*	0.03	0.09***	0.08**	0.03	0.03	0.08**	0.08**	-0.02
	(0.02)	(0.04)	(0.04)	(0.05)	(0.04)	(0.03)	(0.03)	(0.05)	(0.04)	(0.03)	(0.03)	(0.06)
log HIV		-0.00	-0.01	-0.00	0.01	-0.01	0.00	0.01	0.01	-0.00	0.00	0.01
		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
log PHYSICIANS			-0.04*	-0.04	0.03	-0.03	-0.01	0.00	0.03	-0.02	-0.01	0.01
			(0.02)	(0.04)	(0.05)	(0.02)	(0.02)	(0.04)	(0.05)	(0.02)	(0.02)	(0.04)
CLUBS					-0.17			-0.14	-0.17			-0.13
					(0.19)			(0.15)	(0.17)			(0.13)
CIVIC						-0.03		-0.08		0.01		0.06
						(0.21)		(0.25)		(0.15)		(0.29)
TRUST							-0.04	-0.21			-0.05	-0.18
							(0.16)	(0.21)			(0.16)	(0.22)
log DAH# CLUBS									0.00			-0.03
									(0.08)			(0.09)
log DAH#CIVIC										0.19		0.54**
										(0.16)		(0.23)
log DAH#TRUST											-0.02	-0.05
											(0.13)	(0.09)
LDV	1.04***	1.04***	1.04***	1.04***	1.09***	1.05***	1.04***	1.02***	1.09***	1.06***	1.05***	1.00***
	(0.03)	(0.04)	(0.05)	(0.06)	(0.06)	(0.05)	(0.06)	(0.07)	(0.07)	(0.05)	(0.07)	(0.06)
Constant	-0.14	-0.26	-0.47	-0.52	-0.52	-0.69*	-0.48	-0.24	-0.52	-0.55	-0.54	0.20
	(0.26)	(0.35)	(0.44)	(0.59)	(0.42)	(0.36)	(0.45)	(0.46)	(0.41)	(0.41)	(0.50)	(0.43)
Observations	405	405	352	352	195	342	230	185	195	342	230	185
Countries	107	107	107	107	68	107	88	68	68	107	88	68
Instruments	56	47	56	47	65	65	65	83	65	65	65	83
Hansen-Test	0.234	0.120	0.601	0.370	0.410	0.797	0.328	0.880	0.374	0.601	0.309	0.743

Notes: Table shows two-step SYS-GMM estimates. All models include period fixed effects. DAH, GDP per capita, social capital, fertility and bureaucratic governance are specified as endogenous variables. In parentheses Windmeijer bias-corrected robust standard errors. *** p<0.01, ** p<0.05, * p<0.1.

Table A 6: Determinants of infant mortality (LDV)

	Dependent variable: infant mortality ratio								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
log DAH	-0.00	-0.01*	0.00	-0.00	-0.01	-0.01***	-0.00	-0.01	-0.02**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
GOV	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***	-0.03***	-0.04***	-0.04***	-0.03
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
EXPEND	-0.00*								
	(0.00)								
log FERTIL	0.05***	0.04***	0.03	0.02	0.05***	0.05***	0.03	0.03	0.01
	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
log POP	-0.02***	-0.02***	-0.01	-0.01*	-0.02***	-0.02***	-0.02***	-0.02***	-0.01**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
log GDP	0.00	0.00	-0.01	-0.01	0.01	0.01	0.00	-0.00	-0.02
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
log HIV	0.02***	0.02***	0.02***	0.02***	0.02***	0.02***	0.01**	0.01**	0.02***
	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
CLUBS			-0.09	-0.03					-0.01
			(0.05)	(0.06)					(0.06)
CIVIC					-0.08	-0.17*			-0.07
					(0.09)	(0.10)			(0.19)
TRUST							-0.02	-0.02	-0.02
							(0.07)	(0.07)	(0.09)
log DAH# CLUBS				-0.13***					-0.14***
				(0.04)					(0.04)
log DAH#CIVIC						0.16***			0.29***
						(0.04)			(0.11)
log DAH#TRUST								0.09***	0.05
								(0.03)	(0.04)
LDV	0.99***	1.00***	0.97***	0.97***	0.99***	0.99***	0.99***	1.00***	0.98***
	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
Constant	0.11	0.05	0.12	0.18	0.03	0.07	0.13	0.13	0.30
	(0.11)	(0.11)	(0.18)	(0.17)	(0.12)	(0.11)	(0.13)	(0.13)	(0.19)
Observations	405	405	221	221	392	392	266	266	210
R2	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Countries	107	107	68	68	107	107	92	92	68

Notes: Panel corrected and heteroskedasticity robust standard errors in parentheses. All models include period fixed effects. *** p<0.01, ** p<0.05, * p<0.1.

Table A 7: Testing different compositions of the health aid variable

	Dependent variable: infant mortality ratio								
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.01*	0.00	-0.03***	-0.01**	-0.00	-0.02**	-0.02***	0.01*	-0.05***
	(0.006)	(0.005)	(0.011)	(0.005)	(0.005)	(0.009)	(0.004)	(0.004)	(0.017)
GOV	-0.04***	-0.02	-0.10**	-0.03***	-0.06*	-0.09***	-0.03***	-0.04**	-0.07**
	(0.014)	(0.036)	(0.039)	(0.013)	(0.034)	(0.034)	(0.010)	(0.020)	(0.035)
EXPEND	-0.00	0.00	0.00	-0.00	0.00	-0.00	-0.00	-0.00	0.00
	(0.002)	(0.003)	(0.005)	(0.002)	(0.003)	(0.004)	(0.001)	(0.002)	(0.004)
log FERTIL	0.04	0.42***	0.04	0.03	0.45***	0.07	0.05***	0.45***	0.11*
	(0.027)	(0.075)	(0.077)	(0.020)	(0.070)	(0.048)	(0.017)	(0.054)	(0.058)
log POP	-0.01**	0.06**	-0.04***	-0.02***	0.00	-0.04***	-0.02***	0.02	-0.04***
	(0.005)	(0.029)	(0.009)	(0.004)	(0.027)	(0.010)	(0.003)	(0.022)	(0.007)
log GDP	-0.01	-0.37***	0.03	-0.00	-0.32***	0.03	0.00	-0.27***	0.07**
	(0.013)	(0.042)	(0.033)	(0.008)	(0.038)	(0.028)	(0.007)	(0.028)	(0.027)
log HIV	0.02***	0.07***	0.02	0.02***	0.05***	0.00	0.02***	0.04***	0.00
	(0.006)	(0.021)	(0.012)	(0.005)	(0.020)	(0.013)	(0.004)	(0.014)	(0.009)
CLUBS	-0.02	-0.24**	-0.01						
	(0.057)	(0.119)	(0.133)						
TRUST				-0.07	-0.05	-0.17			
				(0.079)	(0.093)	(0.144)			
CIVIC							-0.13	-0.08	0.34
							(0.095)	(0.121)	(0.211)
log DAH# CLUBS	-0.12***	0.05	-0.14						
	(0.042)	(0.054)	(0.104)						
log DAH#TRUST				0.09***	0.01	0.05			
				(0.032)	(0.049)	(0.067)			
log DAH#CIVIC							0.19***	-0.14**	0.56**
							(0.043)	(0.060)	(0.238)
LDV	0.97***		1.07***	1.00***		1.03***	0.99***		1.10***
	(0.025)		(0.059)	(0.016)		(0.044)	(0.014)		(0.050)
TREND		-0.13***			-0.12***			-0.11***	
		(0.012)			(0.011)			(0.010)	
Constant	0.26	5.34***	-0.13	0.26*	5.94***	0.01	0.15	5.19***	-0.58*
	(0.182)	(0.597)	(0.410)	(0.136)	(0.567)	(0.357)	(0.117)	(0.443)	(0.326)
Observations	221	221	221	267	267	267	393	393	393
R2	0.987			0.988			0.990		
Countries	68	68	68	92	92	92	107	107	107
Instruments			65			56			56
Hansen-Test			0.526			0.380			0.434
AR2			0.111			0.0944			0.0396

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Table A 8: Testing health aid disbursements instead of commitments

	Dependent variable: infant mortality ratio								
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.03***	-0.01	-0.06***	-0.02***	0.00	-0.04*	-0.03***	-0.00	-0.05***
	(0.008)	(0.009)	(0.023)	(0.007)	(0.009)	(0.023)	(0.006)	(0.007)	(0.016)
GOV	-0.03**	-0.01	-0.08	-0.03**	-0.05	-0.10**	-0.03***	-0.03*	-0.08**
	(0.014)	(0.034)	(0.050)	(0.013)	(0.034)	(0.040)	(0.009)	(0.020)	(0.035)
EXPEND	-0.00	0.00	0.00	-0.00	0.00	0.00	-0.00	-0.00	0.00
	(0.002)	(0.003)	(0.004)	(0.002)	(0.003)	(0.004)	(0.001)	(0.002)	(0.003)
log FERTIL	0.04	0.45***	0.01	0.04*	0.45***	0.08	0.05***	0.46***	0.07
	(0.027)	(0.072)	(0.084)	(0.019)	(0.071)	(0.080)	(0.017)	(0.054)	(0.062)
log POP	-0.02***	0.06**	-0.06***	-0.02***	0.00	-0.04***	-0.02***	0.02	-0.04***
	(0.006)	(0.028)	(0.018)	(0.005)	(0.027)	(0.013)	(0.004)	(0.022)	(0.010)
log GDP	-0.01	-0.35***	0.05	-0.00	-0.32***	0.04	0.00	-0.28***	0.04*
	(0.013)	(0.040)	(0.045)	(0.009)	(0.038)	(0.040)	(0.008)	(0.028)	(0.025)
log HIV	0.02***	0.06***	0.00	0.02***	0.05**	-0.00	0.02***	0.03**	0.01
	(0.005)	(0.021)	(0.012)	(0.005)	(0.020)	(0.011)	(0.004)	(0.014)	(0.007)
CLUBS	0.05	-0.29**	0.21						
	(0.058)	(0.114)	(0.160)						
TRUST				-0.09	-0.03	-0.24			
				(0.082)	(0.088)	(0.212)			
CIVIC							-0.03	-0.04	0.60**
							(0.099)	(0.120)	(0.240)
log DAH# CLUBS	-0.13***	0.23***	-0.22**						
	(0.041)	(0.080)	(0.092)						
log DAH#TRUST				0.07	0.03	0.00			
				(0.044)	(0.062)	(0.153)			
log DAH#CIVIC							0.15**	-0.15*	0.45*
							(0.066)	(0.086)	(0.262)
LDV	1.00***		1.17***	1.01***		1.08***	1.01***		1.11***
	(0.024)		(0.065)	(0.016)		(0.061)	(0.015)		(0.052)
TREND		-0.13***			-0.12***			-0.10***	
		(0.013)			(0.012)			(0.010)	
Constant	0.20	5.30***	-0.18	0.20	5.89***	-0.16	0.10	5.29***	-0.40
	(0.196)	(0.572)	(0.503)	(0.144)	(0.558)	(0.581)	(0.124)	(0.433)	(0.351)
Observations	218	218	218	262	262	262	389	389	389
R2	0.987			0.988			0.990		
Countries	67	67	67	91	91	91	106	106	106
Instruments			65			56			56
Hansen-Test			0.563			0.256			0.128
AR2			0.260			0.166			0.100

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Table A 9: Accounting for water aid

	Dependent variable: infant mortality ratio								
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.00	0.00	-0.02*	-0.00	-0.00	-0.01	-0.01**	0.00	-0.04**
	(0.005)	(0.005)	(0.009)	(0.004)	(0.005)	(0.009)	(0.004)	(0.004)	(0.016)
GOV	-0.04**	-0.02	-0.08**	-0.03**	-0.06*	-0.09***	-0.03***	-0.04*	-0.08**
	(0.016)	(0.036)	(0.040)	(0.014)	(0.034)	(0.033)	(0.011)	(0.020)	(0.038)
EXPEND	-0.00	0.00	-0.00	-0.00*	0.00	-0.00	-0.00*	-0.00	0.00
	(0.002)	(0.003)	(0.006)	(0.002)	(0.003)	(0.004)	(0.001)	(0.002)	(0.005)
log FERTIL	0.03	0.43***	0.03	0.04*	0.46***	0.08	0.05***	0.44***	0.11*
	(0.028)	(0.075)	(0.113)	(0.021)	(0.070)	(0.057)	(0.017)	(0.053)	(0.062)
log POP	-0.01	0.06**	-0.03***	-0.02***	0.00	-0.03***	-0.02***	0.02	-0.04***
	(0.005)	(0.029)	(0.011)	(0.004)	(0.027)	(0.009)	(0.003)	(0.022)	(0.009)
log GDP	-0.01	-0.37***	0.03	-0.00	-0.32***	0.05	0.01	-0.27***	0.05**
	(0.013)	(0.043)	(0.038)	(0.009)	(0.038)	(0.031)	(0.008)	(0.028)	(0.025)
log HIV	0.02***	0.07***	0.01	0.01**	0.06***	-0.00	0.02***	0.05***	0.00
	(0.006)	(0.021)	(0.014)	(0.006)	(0.020)	(0.012)	(0.004)	(0.014)	(0.009)
log WATER	-0.00	0.00	-0.00	-0.00	0.00	-0.01	-0.00	-0.00	-0.00
	(0.006)	(0.004)	(0.009)	(0.004)	(0.004)	(0.006)	(0.003)	(0.003)	(0.009)
CLUBS	-0.04	-0.17	-0.10						
	(0.057)	(0.119)	(0.193)						
TRUST				-0.07	-0.04	-0.11			
				(0.080)	(0.095)	(0.141)			
CIVIC							-0.15	-0.09	0.43*
							(0.097)	(0.121)	(0.240)
log DAH# CLUBS	-0.13***	-0.02	-0.18*						
	(0.044)	(0.049)	(0.094)						
log DAH#TRUST				0.08***	0.03	-0.02			
				(0.031)	(0.045)	(0.060)			
log DAH#CIVIC							0.16***	-0.04	0.52**
							(0.043)	(0.056)	(0.258)
LDV	0.96***		1.05***	0.98***		1.03***	0.99***		1.05***
	(0.025)		(0.073)	(0.016)		(0.057)	(0.015)		(0.046)
TREND		-0.13***			-0.12***			-0.11***	
		(0.013)			(0.012)			(0.010)	
Constant	0.24	5.36***	-0.20	0.21	5.92***	-0.19	0.12	5.23***	-0.29
	(0.186)	(0.594)	(0.426)	(0.140)	(0.558)	(0.460)	(0.117)	(0.438)	(0.320)
Observations	218	218	218	262	262	262	389	389	389
R2	0.987			0.988			0.990		
Countries	68	68	68	92	92	92	107	107	107
Instruments			65			56			56
Hansen-Test			0.412			0.348			0.229
AR2			0.226			0.146			0.0796

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Table A 10: Adjusting social capital by economic inequality

	Dependent variable: infant mortality ratio								
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	0.01	0.01**	0.01	0.00	0.01**	0.01	-0.04***	-0.02	-0.05
	(0.005)	(0.005)	(0.012)	(0.004)	(0.005)	(0.008)	(0.011)	(0.014)	(0.050)
GOV	-0.03**	0.00	-0.05*	-0.04**	-0.02	-0.09**	-0.04***	-0.03	-0.02
	(0.015)	(0.035)	(0.031)	(0.015)	(0.036)	(0.039)	(0.011)	(0.026)	(0.043)
EXPEND	-0.00*	0.00	-0.01	-0.00*	0.00	-0.01	-0.00*	-0.00	-0.01**
	(0.002)	(0.003)	(0.007)	(0.002)	(0.003)	(0.007)	(0.002)	(0.003)	(0.005)
log FERTIL	0.00	0.45***	0.03	0.01	0.52***	0.04	0.04*	0.55***	0.14**
	(0.030)	(0.072)	(0.082)	(0.025)	(0.071)	(0.064)	(0.022)	(0.059)	(0.060)
log POP	-0.01	0.07**	-0.02	-0.01***	0.03	-0.03**	-0.02***	0.01	-0.02**
	(0.007)	(0.032)	(0.015)	(0.005)	(0.032)	(0.012)	(0.005)	(0.023)	(0.011)
log GDP	-0.02	-0.40***	-0.03	-0.00	-0.37***	-0.03	0.01	-0.39***	0.05
	(0.016)	(0.041)	(0.069)	(0.012)	(0.041)	(0.043)	(0.010)	(0.034)	(0.044)
log HIV	0.03***	0.05**	0.03**	0.03***	0.05**	0.04**	0.02***	0.04***	0.01
	(0.007)	(0.022)	(0.013)	(0.006)	(0.022)	(0.018)	(0.005)	(0.016)	(0.012)
CLUBS_adj	-0.11	-0.13	0.09						
	(0.079)	(0.164)	(0.196)						
TRUST_adj				0.03	0.29**	0.30*			
				(0.074)	(0.133)	(0.170)			
CIVIC_adj							0.09	0.34**	0.71***
							(0.077)	(0.148)	(0.254)
log DAH# CLUBS_adj	0.04	0.00	0.02						
	(0.047)	(0.062)	(0.109)						
log DAH#TRUST_adj				0.08***	0.05	0.08			
				(0.030)	(0.037)	(0.081)			
log DAH#CIVIC_adj							0.12***	0.09**	0.21
							(0.032)	(0.042)	(0.152)
LDV	0.96***		0.90***	0.98***		0.90***	0.99***		1.03***
	(0.026)		(0.107)	(0.019)		(0.064)	(0.017)		(0.069)
TREND		-0.12***			-0.10***			-0.10***	
		(0.014)			(0.013)			(0.011)	
Constant	0.31	5.36***	0.81	0.20	5.81***	1.01*	0.07	6.10***	-0.47
	(0.208)	(0.640)	(0.878)	(0.169)	(0.629)	(0.550)	(0.160)	(0.461)	(0.636)
Observations	163	163	163	178	178	178	243	243	243
R2	0.988			0.989			0.990		
Countries	63	63	63	76	76	76	99	99	99
Instruments			57			52			52
Hansen-Test			0.596			0.489			0.444
AR2			0.645			0.585			0.687

Notes: Social capital indicators are adjusted for economic inequality using the (reversed and normalized) Gini index to down weight a country's stock of social capital that is characterized by high levels of inequality. All models include period fixed effects (except the RCM model, which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Table A 11: Adjusting social capital by gender inequality

	Dependent variable: infant mortality ratio								
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	0.00	-0.00	0.00	-0.01	-0.01	-0.01	-0.03***	0.03*	-0.02
	(0.005)	(0.006)	(0.010)	(0.005)	(0.006)	(0.011)	(0.010)	(0.015)	(0.036)
GOV	-0.04***	-0.07	-0.10*	-0.04***	-0.07	-0.15***	-0.04***	-0.06*	-0.09**
	(0.016)	(0.045)	(0.052)	(0.016)	(0.043)	(0.056)	(0.013)	(0.028)	(0.043)
EXPEND	-0.00	-0.00	-0.00	-0.00*	0.00	-0.00	-0.00**	-0.00	-0.01
	(0.002)	(0.004)	(0.005)	(0.002)	(0.004)	(0.005)	(0.002)	(0.003)	(0.004)
log FERTIL	0.04	0.56***	0.02	0.05*	0.59***	0.17**	0.05**	0.48***	0.12
	(0.034)	(0.094)	(0.062)	(0.026)	(0.082)	(0.078)	(0.021)	(0.066)	(0.075)
log POP	-0.01*	0.04	-0.02**	-0.02***	0.00	-0.04***	-0.02***	0.02	-0.03***
	(0.006)	(0.028)	(0.009)	(0.004)	(0.026)	(0.010)	(0.004)	(0.021)	(0.009)
log GDP	-0.02	-0.34***	-0.02	-0.01	-0.32***	0.02	-0.00	-0.27***	0.03
	(0.015)	(0.046)	(0.039)	(0.011)	(0.041)	(0.041)	(0.010)	(0.036)	(0.039)
log HIV	0.02***	0.06***	0.03**	0.02***	0.05**	0.01	0.02***	0.06***	0.01
	(0.007)	(0.023)	(0.012)	(0.006)	(0.022)	(0.018)	(0.005)	(0.016)	(0.009)
CLUBS_adj	-0.26**	-0.65**	-0.53						
	(0.120)	(0.255)	(0.369)						
TRUST_adj				-0.03	-0.60***	0.25			
				(0.115)	(0.226)	(0.305)			
CIVIC_adj							-0.26*	-1.07***	-0.32
							(0.149)	(0.238)	(0.391)
log DAH# CLUBS_adj	0.04	0.07	-0.22						
	(0.058)	(0.100)	(0.146)						
log DAH#TRUST_adj				0.11***	0.05	0.02			
				(0.032)	(0.058)	(0.057)			
log DAH#CIVIC_adj							0.09***	-0.08	0.02
							(0.029)	(0.051)	(0.102)
LDV	0.92***		0.92***	0.96***		0.95***	0.94***		0.96***
	(0.028)		(0.055)	(0.020)		(0.066)	(0.020)		(0.063)
TREND		-0.12***			-0.11***			-0.09***	
		(0.013)			(0.011)			(0.010)	
Constant	0.48**	5.41***	0.54	0.40**	5.74***	0.31	0.39**	5.39***	0.21
	(0.213)	(0.613)	(0.451)	(0.169)	(0.567)	(0.553)	(0.159)	(0.464)	(0.580)
Observations	178	178	178	213	213	213	290	290	290
R2	0.986			0.987			0.989		
Countries	63	63	63	84	84	84	95	95	95
Instruments			61			56			56
Hansen-Test			0.279			0.474			0.251
AR2			0.199			0.190			0.0525

Notes: Social capital indicators are adjusted for gender inequality using the (reversed) UNDP Gender Inequality Index to down weight a country's stock of social capital that is characterized by high levels of inequality. All models include period fixed effects (except the RCM model, which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Table B 1: Convergence models: civic activism and aid effectiveness

	Dependent variable							
	A1	A2	B1	B2	C1	C2	D1	D2
	IMR decline LDV	IMR decline SYS-GMM2	U5M decline LDV	U5M decline SYS-GMM2	MMR decline LDV	MMR decline SYS-GMM2	LIFE change LDV	LIFE change SYS-GMM2
log DAH	0.00341***	0.00875**	0.00551***	0.0141**	0.00266	0.00484	0.000475*	0.000223
	(0.000967)	(0.00386)	(0.00188)	(0.00692)	(0.00191)	(0.00565)	(0.000246)	(0.000820)
CIVIC	0.0269	-0.0428	0.0352	-0.0565	0.103**	0.236***	0.0196***	0.0302**
	(0.0234)	(0.0456)	(0.0417)	(0.0506)	(0.0406)	(0.0852)	(0.00586)	(0.0148)
log DAH#CIVIC	-0.0369***	-0.0464	-0.0533**	-0.100	-0.0472**	-0.0487	-0.00444	-0.00665
	(0.0124)	(0.0546)	(0.0269)	(0.0814)	(0.0218)	(0.0543)	(0.00332)	(0.0119)
GOV	0.00462	0.0211**	0.00494	0.0301**	0.00386	0.00909	0.000838	-0.000629
	(0.00319)	(0.00883)	(0.00876)	(0.0132)	(0.00431)	(0.0171)	(0.000642)	(0.00212)
CONFLICT	0.00386	-0.00469	0.00412	-0.0127	0.0203***	-0.00717	0.00330**	0.00472
	(0.00442)	(0.0147)	(0.00845)	(0.0218)	(0.00717)	(0.0465)	(0.00157)	(0.00296)
EXPEND	0.000322	-0.00149	6.09e-05	-0.00215	0.000412	0.000566	0.000136	0.000134
	(0.000375)	(0.00126)	(0.000994)	(0.00168)	(0.000538)	(0.00182)	(9.84e-05)	(0.000180)
log FERTIL	-0.0247***	-0.0218	-0.0361***	-0.0252	-0.0223**	-0.0556***	-0.00304**	-0.00390
	(0.00457)	(0.0135)	(0.0101)	(0.0191)	(0.00875)	(0.0215)	(0.00141)	(0.00240)
log POP	*0.00384****	*0.00867****	0.00464***	0.0126***	-0.000127	0.00145	0.000307	-0.000150
	(0.000765)	(0.00236)	(0.00110)	(0.00379)	(0.00159)	(0.00397)	(0.000215)	(0.000591)
log GDP	-0.00351*	-0.0117**	-0.00596	-0.00807	0.00522	0.00775	-0.000343	-0.000975
	(0.00182)	(0.00572)	(0.00366)	(0.00895)	(0.00388)	(0.0124)	(0.000580)	(0.00171)
log HIV	-0.00138	0.000639	-0.000745	-0.000165	-0.0143***	-0.0176***	-0.00246***	-0.00182**
	(0.000998)	(0.00158)	(0.00207)	(0.00239)	(0.00187)	(0.00483)	(0.000340)	(0.000921)
LDV (level)	0.00410	-0.0183	0.00895**	-0.00731	0.0234***	0.0467***	-0.0445***	-0.0424**
	(0.00352)	(0.0128)	(0.00403)	(0.0154)	(0.00429)	(0.0127)	(0.00728)	(0.0165)
Constant	0.00855	0.108	0.0123	-0.00919	-0.135***	-0.258	0.185***	0.190***
	(0.0283)	(0.0852)	(0.0531)	(0.129)	(0.0489)	(0.164)	(0.0287)	(0.0590)
Observations	392	392	392	392	303	303	392	392
R-squared	0.245		0.089		0.361		0.437	
Countries	107	107	107	107	106	106	107	107
Instruments		65		65		37		65
Hansen's J		0.542		0.917		0.0247		0.157
AR2		0.304		0.668		-		0.369

Notes: Convergence models regress declines in mortality ratios (changes in life expectancy) on lagged levels of mortality ratios (life expectancy) at the beginning of each period assuming that countries with higher mortality levels (lower life expectancy) show larger decline rates (smaller increases). All models include period fixed effects (except the RC model, which includes a trend variable). Linear regression models with panel corrected standard errors (PCSE AR1) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels. Lagged dependent variable models (LDV) use panel corrected standard errors. Fixed effects models use cluster-robust standard errors. In Difference and System-GMM models DAH, governance, GDP per capita, social capital and fertility rate are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Convergence (decline rate) models regress declines in mortality ratios on (lagged) levels of mortality ratios at the beginning of each period assuming that countries with higher mortality levels show larger decline rates. *** p<0.01, ** p<0.05, * p<0.1.

Table C 1: Convergence models: associational membership and aid effectiveness

	Dependent variable							
	IMR decline	IMR decline	U5M decline	U5M decline	MMR decline	MMR decline	LIFE change	LIFE change
	A1	A2	B1	B2	C1	C2	D1	D2
	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2	LDV	SYS-GMM2
log DAH	0.000493	0.00384	0.00128	0.00544***	-0.0189*	0.00501	0.000318*	-0.000534
	(0.00106)	(0.00263)	(0.00110)	(0.00175)	(0.0107)	(0.0118)	(0.000191)	(0.000538)
CLUBS	0.0170	0.0302	0.0272**	0.0624	0.0417	-0.0119	0.0103***	0.0126*
	(0.0136)	(0.0298)	(0.0137)	(0.0459)	(0.0314)	(0.0764)	(0.00280)	(0.00736)
log DAH#CLUBS	0.0203**	0.0195	0.0230**	0.0245	0.0364	-0.0120	0.00278	-0.00370
	(0.00969)	(0.0184)	(0.00995)	(0.0206)	(0.0224)	(0.0599)	(0.00223)	(0.00347)
GOV	0.00555*	0.00821	0.00788**	0.0147*	0.0118**	0.0163	0.000904	0.000384
	(0.00327)	(0.00696)	(0.00331)	(0.00860)	(0.00568)	(0.0197)	(0.000621)	(0.00226)
CONFLICT	0.00306	0.00217	0.00511	0.0114	0.0296**	0.0459	0.000620	-0.000424
	(0.00772)	(0.0182)	(0.00786)	(0.0193)	(0.0124)	(0.0498)	(0.00110)	(0.00245)
EXPEND	0.000380	0.000165	0.000665	0.000463	0.000139	0.00173	0.000178*	0.000177
	(0.000463)	(0.00112)	(0.000526)	(0.00114)	(0.000849)	(0.00219)	(9.21e-05)	(0.000188)
log FERTIL	-0.0210***	-0.0195	-0.0292***	-0.0340*	-0.0144	-0.0640**	-0.000577	0.000702
	(0.00657)	(0.0180)	(0.00794)	(0.0206)	(0.0124)	(0.0277)	(0.00129)	(0.00224)
log POP	0.00111	0.00452**	0.00132	0.00478	-0.00138	0.00874	0.000170	-0.000307
	(0.00120)	(0.00188)	(0.00136)	(0.00292)	(0.00268)	(0.00619)	(0.000296)	(0.000555)
log GDP	0.00253	-0.00913	0.00563*	-0.00204	-0.000422	-0.00507	0.000181	0.000899
	(0.00280)	(0.00968)	(0.00321)	(0.0154)	(0.00630)	(0.0214)	(0.000741)	(0.00177)
log HIV	-0.00190	0.00120	-0.00267*	-0.000979	-0.0131***	-0.00548	-0.00227***	-0.00269***
	(0.00137)	(0.00342)	(0.00159)	(0.00315)	(0.00277)	(0.00612)	(0.000458)	(0.000930)
LDV (level)	0.0120**	-0.0153	0.0219***	0.00768	0.0182***	0.0189	-0.0349***	-0.0456***
	(0.00572)	(0.0122)	(0.00585)	(0.0199)	(0.00650)	(0.0165)	(0.00614)	(0.0116)
Constant	-0.0277	0.122	-0.0919**	-0.00261	-0.0550	-0.106	0.141***	0.188***
	(0.0415)	(0.115)	(0.0448)	(0.156)	(0.0708)	(0.286)	(0.0223)	(0.0431)
Observations	221	221	221	221	162	162	221	221
R-squared	0.146		0.187		0.285		0.432	
Countries	68	68	68	68	64	64	68	68
Instruments		65		65		37		65
Hansen's J		0.475		0.264		0.191		0.276
AR2		0.179		0.363				0.777

Notes: Convergence models regress declines in mortality ratios (changes in life expectancy) on lagged levels of mortality ratios (life expectancy) at the beginning of each period assuming that countries with higher mortality levels (lower life expectancy) show larger decline rates (smaller increases). All models include period fixed effects (except the RCM model, which includes a trend variable). Linear regression models with panel corrected standard errors (PCSE AR1) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels. Lagged dependent variable models (LDV) use panel corrected standard errors. Fixed effects models use cluster-robust standard errors. In Difference and System-GMM models DAH, governance, GDP per capita, social capital and fertility rate are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Convergence (decline rate) models regress declines in mortality ratios on (lagged) levels of mortality ratios at the beginning of each period assuming that countries with higher mortality levels show larger decline rates. *** p<0.01, ** p<0.05, * p<0.1.

Table D 1: Convergence models: social trust and aid effectiveness

	Dependent variable							
	IMR decline LDV	IMR decline SYS-GMM2	U5M decline LDV	U5M decline SYS-GMM2	MMR decline LDV	MMR decline SYS-GMM2	LIFE change LDV	LIFE change SYS-GMM2
log DAH	0.00132	0.00674***	0.00179*	0.00579***	-0.000991	0.00658	-3.21e-05	-0.000303
	(0.000953)	(0.00231)	(0.00101)	(0.00198)	(0.00200)	(0.00531)	(0.000171)	(0.000434)
TRUST	0.0141	-0.0243	0.0160	-0.0404	-0.0238	-0.126	-0.00103	-0.0129
	(0.0182)	(0.0329)	(0.0191)	(0.0546)	(0.0336)	(0.0800)	(0.00309)	(0.00852)
log DAH#TRUST	-0.0173**	-0.00137	-0.0186**	0.00394	-0.0303*	-0.0391	-0.000545	0.00152
	(0.00721)	(0.0139)	(0.00795)	(0.0206)	(0.0175)	(0.0362)	(0.00153)	(0.00254)
GOV	0.00531*	0.0237***	0.00800**	0.0288***	0.00667	0.0228	0.000717	0.00232*
	(0.00323)	(0.00758)	(0.00325)	(0.00946)	(0.00532)	(0.0164)	(0.000576)	(0.00132)
CONFLICT	-0.000835	-0.00394	0.000269	-0.00372	0.0205**	0.0826**	0.000253	0.00194
	(0.00472)	(0.0118)	(0.00504)	(0.0131)	(0.00809)	(0.0335)	(0.000752)	(0.00214)
EXPEND	0.000567	-7.02e-05	0.000751*	0.000375	3.09e-05	-0.000661	0.000115*	-1.57e-05
	(0.000381)	(0.000854)	(0.000434)	(0.000762)	(0.000621)	(0.00162)	(6.82e-05)	(0.000140)
log FERTIL	-0.0189***	-0.0309***	-0.0231***	-0.0377***	-0.0186*	-0.0634***	6.84e-05	0.000259
	(0.00485)	(0.00963)	(0.00577)	(0.0126)	(0.0108)	(0.0201)	(0.00118)	(0.00158)
log POP	0.00342***	0.00803***	0.00413***	0.00969***	-0.000929	0.00258	0.000262	0.000145
	(0.000941)	(0.00193)	(0.00107)	(0.00222)	(0.00203)	(0.00449)	(0.000224)	(0.000338)
log GDP	-0.000941	-0.00881	0.000325	-0.0115	0.00111	0.0144	-0.000388	-0.00122
	(0.00186)	(0.00536)	(0.00205)	(0.00716)	(0.00521)	(0.0125)	(0.000509)	(0.000775)
log HIV	-0.000852	-0.000221	-0.00102	-0.000300	-0.0111***	-0.0135**	-0.00160***	-0.00167**
	(0.00131)	(0.00221)	(0.00151)	(0.00310)	(0.00266)	(0.00656)	(0.000415)	(0.000784)
LDV (level)	0.00499	-0.000984	0.0118***	0.00507	0.0203***	0.0378***	-0.0298***	-0.0290***
	(0.00377)	(0.0122)	(0.00386)	(0.0140)	(0.00584)	(0.0131)	(0.00533)	(0.00802)
Constant	-0.0158	0.0309	-0.0613*	0.0133	-0.0531	-0.247	0.124***	0.133***
	(0.0314)	(0.0754)	(0.0331)	(0.107)	(0.0616)	(0.159)	(0.0202)	(0.0341)
Observations	266	266	266	266	190	190	266	266
R-squared	0.176		0.173		0.252		0.378	
Countries	92	92	92	92	90	90	92	92
Instruments		65		65		37		65
Hansen's J		0.685		0.542		0.0887		0.304
AR2		0.184		0.327		-		0.643

Notes: Convergence models regress declines in mortality ratios (changes in life expectancy) on lagged levels of mortality ratios (life expectancy) at the beginning of each period assuming that countries with higher mortality levels (lower life expectancy) show larger decline rates (smaller increases). All models include period fixed effects (except the RCM model which includes a trend variable). Linear regression models with panel corrected standard errors (PCSE AR1) are adjusted for panel-specific (AR1) autocorrelation and heteroskedastic panels. Lagged dependent variable models (LDV) use panel corrected standard errors. Fixed effects models use cluster-robust standard errors. In Difference and System-GMM models DAH, governance, GDP per capita, social capital and fertility rate are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Convergence (decline rate) models regress declines in mortality ratios on (lagged) levels of mortality ratios at the beginning of each period assuming that countries with higher mortality levels show larger decline rates. *** p<0.01, ** p<0.05, * p<0.1.

Table B 2: Civic activism and the marginal effect of DAH

	Dependent variable: infant mortality ratio			Dependent variable: life expectancy		
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.000954	-0.0166**	-0.00259	0.00110	0.00165	-0.00104
	(0.00598)	(0.00816)	(0.00881)	(0.00129)	(0.00167)	(0.00141)
SMA	0.154**	-0.0158	0.335*	0.00390	0.00444	0.0124
	(0.0744)	(0.120)	(0.189)	(0.0139)	(0.0233)	(0.0281)
log DAH# SMA	0.0857**	-0.0190	0.154**	0.00243	0.0152	0.00869
	(0.0435)	(0.0752)	(0.0785)	(0.00839)	(0.0147)	(0.0169)
GOV	-0.0247	-0.0846	-0.000644	0.00422	-0.00860	0.00880**
	(0.0209)	(0.0541)	(0.0449)	(0.00277)	(0.0100)	(0.00433)
CONFLICT	-0.0190	-0.0162	-0.105	0.00726	-0.00943	0.0120
	(0.0393)	(0.0358)	(0.0640)	(0.00524)	(0.00753)	(0.0128)
EXPEND	-0.00508*	-0.00153	-0.00881*	0.000872*	-0.00132	0.000409
	(0.00271)	(0.00486)	(0.00453)	(0.000453)	(0.000984)	(0.000473)
log FERTIL	0.0146	0.770***	0.0717	0.0124	-0.0609***	0.0264***
	(0.0407)	(0.112)	(0.0693)	(0.00776)	(0.0200)	(0.00905)
log POP	-0.0118*	0.0252	-0.0191**	-0.000731	0.00272	-0.00170
	(0.00700)	(0.0348)	(0.00854)	(0.00147)	(0.00628)	(0.00235)
log GDP	-0.0153	-0.307***	-0.00269	-0.000234	0.0576***	-0.00896
	(0.0159)	(0.0570)	(0.0221)	(0.00305)	(0.0103)	(0.00605)
log HIV	0.0280***	0.0235	0.0218*	-0.00893***	-0.0358***	-0.00707
	(0.0107)	(0.0298)	(0.0131)	(0.00333)	(0.00564)	(0.00492)
TREND		-0.124***			0.00896***	
		(0.0173)			(0.00280)	
(lagged) IMR	0.977***		1.011***	0.911***		0.975***
	(0.0302)		(0.0465)	(0.0382)		(0.0723)
Constant	0.315	5.091***	0.217	0.371***	3.672***	0.197
	(0.215)	(0.748)	(0.301)	(0.141)	(0.140)	(0.277)
Observations	111	111	111	111	111	111
R-squared	0.986			0.984		
Countries	55	55	55	55	55	55
Instruments			61			61
Sargan-Test			0			0
Hansen-Test			0.984			0.828
AR2			0.343			0.527

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Table B 3: Civic activism and the marginal effect of DAH on IMR in the context of bureaucratic governance

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	-0.00710	-0.0233**	-0.0118	-0.00994	-0.0210**	-0.0157**	-0.00335	-0.0245**	-0.00504	-0.0157**	-0.00808	-0.0265**
	(0.00625)	(0.0100)	(0.0125)	(0.00723)	(0.00846)	(0.00692)	(0.00635)	(0.0102)	(0.00915)	(0.00702)	(0.0105)	(0.0122)
GOV	-0.0151	-0.0869*	0.0278	0.0476	-0.419**	0.155	-0.0197	-0.142***	-0.0299	0.0411**	-0.146***	0.131***
	(0.0210)	(0.0517)	(0.0585)	(0.108)	(0.167)	(0.222)	(0.0231)	(0.0526)	(0.0473)	(0.0193)	(0.0501)	(0.0343)
log DAH#GOV	0.0141	0.0118	-0.0202	0.0676*	0.159**	-0.0945	0.00512	0.0188	-0.0388***	0.0261***	-0.0245*	0.0273
	(0.00863)	(0.0151)	(0.0171)	(0.0354)	(0.0720)	(0.103)	(0.0103)	(0.0144)	(0.0123)	(0.00773)	(0.0138)	(0.0241)
SMA	0.0273	0.151	-0.0299	-0.116	0.130	-0.136	0.0267	0.118	0.187	-0.0454	0.313*	-0.194
	(0.155)	(0.190)	(0.276)	(0.131)	(0.172)	(0.205)	(0.153)	(0.193)	(0.299)	(0.152)	(0.185)	(0.282)
log DAH#SMA	-0.0351	-0.120	-0.0434	-0.0758	-0.0743	-0.0540	-0.0310	-0.0389	0.0699	-0.0993	0.00951	-0.123*
	(0.0750)	(0.126)	(0.0992)	(0.0727)	(0.119)	(0.0893)	(0.0639)	(0.120)	(0.153)	(0.0672)	(0.103)	(0.0636)
SMA#GOV	0.509*	0.706	2.168*	-0.174	-0.633	1.138	0.742**	0.236	1.659	0.108	-0.104	0.652*
	(0.300)	(0.624)	(1.216)	(1.267)	(2.272)	(1.720)	(0.365)	(0.628)	(1.303)	(0.221)	(0.305)	(0.374)
log DAH#SMA#GOV	0.148	0.195	0.146	0.190	-0.408	-0.941	0.221*	-0.181	-0.0485	0.0701	-0.0644	-0.0178
	(0.105)	(0.248)	(0.221)	(0.444)	(0.993)	(1.242)	(0.116)	(0.264)	(0.412)	(0.0872)	(0.145)	(0.179)
EXPEND	-0.00666**	-0.00318	-0.0107**	-0.00296	-0.00255	-0.00329	-0.00590**	-0.00295	-0.00802*	-0.00741***	-0.00682	-0.00885***
	(0.00295)	(0.00539)	(0.00451)	(0.00208)	(0.00437)	(0.00430)	(0.00271)	(0.00531)	(0.00481)	(0.00259)	(0.00484)	(0.00303)
log FERTIL	0.0344	0.808***	0.0464	0.0333	0.820***	0.0293	0.0392	0.856***	0.0694	0.0357	0.773***	0.0674
	(0.0368)	(0.112)	(0.0785)	(0.0387)	(0.113)	(0.0563)	(0.0356)	(0.112)	(0.0751)	(0.0377)	(0.112)	(0.0539)
log POP	-0.0121*	0.0148	-0.00802	-0.0155**	0.0214	-0.0196**	-0.0117*	0.00900	-0.0138	-0.0139**	0.0105	-0.0163
	(0.00650)	(0.0331)	(0.00939)	(0.00625)	(0.0342)	(0.00995)	(0.00634)	(0.0317)	(0.0106)	(0.00662)	(0.0349)	(0.0121)
log GDP	-0.0214	-0.278***	-0.0511	-0.0364**	-0.269***	-0.0353	-0.0229	-0.255***	-0.0270	-0.0349**	-0.269***	-0.0721***
	(0.0162)	(0.0568)	(0.0384)	(0.0163)	(0.0579)	(0.0240)	(0.0164)	(0.0576)	(0.0319)	(0.0155)	(0.0556)	(0.0276)
log HIV	0.0314***	0.0397	0.0350***	0.0298***	0.0375	0.0374**	0.0305***	0.0387	0.0250**	0.0267***	0.0495	0.0126
	(0.00945)	(0.0306)	(0.00979)	(0.0105)	(0.0307)	(0.0151)	(0.00910)	(0.0299)	(0.0124)	(0.00942)	(0.0317)	(0.00996)
(lagged) IMR	0.939***		0.939***	0.965***		1.003***	0.942***		0.948***	0.957***		0.971***
	(0.0313)		(0.0829)	(0.0309)		(0.0568)	(0.0315)		(0.0539)	(0.0304)		(0.0444)
TREND		-0.114***			-0.117***			-0.115***			-0.114***	
		(0.0170)			(0.0189)			(0.0163)			(0.0161)	
Constant	0.515**	5.014***	0.692	0.573**	4.837***	0.512	0.497**	4.878***	0.504	0.583***	5.117***	0.847**
	(0.216)	(0.738)	(0.555)	(0.232)	(0.797)	(0.414)	(0.216)	(0.737)	(0.409)	(0.210)	(0.760)	(0.380)
Observations	107	107	107	100	100	100	107	107	107	107	107	107
R-squared	0.986			0.988			0.986			0.987		
Countries	53		53	50		50	53		53	53		53
Instruments			62			62			62			62
Hansen-Test			0.981			0.988			0.888			0.997

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table B 4: Civic activism and the marginal effect of DAH *on* LIFE *in the context of bureaucratic governance*

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	0.00187	0.00240	0.000693	0.00126	0.00152	0.00259*	0.00163	0.00208	0.00160	0.00360**	0.00106	0.00428
	(0.00137)	(0.00222)	(0.00242)	(0.00159)	(0.00209)	(0.00154)	(0.00130)	(0.00233)	(0.00296)	(0.00144)	(0.00249)	(0.00457)
GOV	-0.00151	-0.00670	0.00264	0.00795	0.103**	0.00845	-0.00583	0.0174	-0.00691	-0.00812**	0.0189*	-0.0143
	(0.00319)	(0.0107)	(0.00880)	(0.0208)	(0.0413)	(0.0372)	(0.00425)	(0.0108)	(0.0106)	(0.00390)	(0.0110)	(0.0117)
log DAH#GOV	-0.00309**	-0.000596	0.00123	-0.00914	0.00591	-0.00552	-0.00348**	-0.00137	-0.000890	-0.00451***	0.00164	-0.00448
	(0.00129)	(0.00333)	(0.00513)	(0.00593)	(0.0161)	(0.0318)	(0.00152)	(0.00333)	(0.00448)	(0.00138)	(0.00322)	(0.00565)
SMA	0.0279	-0.0515	-0.000663	0.0307	-0.0608	0.0126	0.0262	-0.0664	0.000685	0.0452*	-0.0721*	0.0483
	(0.0248)	(0.0419)	(0.0461)	(0.0236)	(0.0421)	(0.0478)	(0.0251)	(0.0437)	(0.0427)	(0.0272)	(0.0434)	(0.0744)
log DAH#SMA	0.00607	-0.00522	-0.0230	-0.000580	-0.0192	-0.0106	0.00627	-0.0229	-0.00611	0.0247**	-0.0105	0.00821
	(0.0120)	(0.0267)	(0.0248)	(0.0119)	(0.0271)	(0.0222)	(0.0113)	(0.0258)	(0.0322)	(0.0114)	(0.0231)	(0.0338)
SMA#GOV	-0.129**	-0.133	-0.156	0.364	0.368	0.0930	-0.206***	0.1000	-0.398	-0.0553	0.0439	-0.107
	(0.0514)	(0.127)	(0.282)	(0.306)	(0.502)	(0.363)	(0.0731)	(0.133)	(0.321)	(0.0453)	(0.0705)	(0.139)
log DAH#SMA#GOV	-0.0244	-0.0144	0.0297	0.115	0.243	0.172	-0.0456**	0.0736	-0.0615	-0.0256	0.0175	-0.0455
	(0.0149)	(0.0505)	(0.0498)	(0.0838)	(0.207)	(0.232)	(0.0206)	(0.0556)	(0.0944)	(0.0161)	(0.0324)	(0.0656)
EXPEND	0.000768*	-0.000790	0.000617	0.000769*	-0.00120	0.000875	0.000733*	-0.00107	0.00113	0.000895**	-0.000765	0.00118*
	(0.000434)	(0.00117)	(0.000816)	(0.000441)	(0.00110)	(0.000701)	(0.000410)	(0.00120)	(0.000791)	(0.000408)	(0.00112)	(0.000615)
log FERTIL	0.0151**	-0.0634***	0.0253***	0.0163**	-0.0607***	0.0196**	0.0156**	-0.0648***	0.0181**	0.0127*	-0.0601***	0.0182**
	(0.00750)	(0.0217)	(0.00889)	(0.00794)	(0.0225)	(0.00878)	(0.00725)	(0.0216)	(0.00781)	(0.00720)	(0.0217)	(0.00901)
log POP	-0.00132	0.00288	-0.00192	-0.00123	0.00535	-0.00116	-0.00130	0.00447	-0.00173	-0.000785	0.00531	-0.00112
	(0.00137)	(0.00639)	(0.00235)	(0.00129)	(0.00669)	(0.00171)	(0.00127)	(0.00620)	(0.00232)	(0.00124)	(0.00650)	(0.00252)
log GDP	-0.00148	0.0568***	0.00738	-0.00398	0.0496***	0.00214	-0.000606	0.0488***	0.00451	0.000615	0.0473***	0.00835
	(0.00329)	(0.0109)	(0.0102)	(0.00401)	(0.0116)	(0.00689)	(0.00313)	(0.0110)	(0.00923)	(0.00348)	(0.0108)	(0.00704)
log HIV	-0.00965***	-0.0384***	-0.0124*	-0.00935***	-0.0380***	-0.0116**	-0.00834***	-0.0392***	-0.00932*	-0.00861***	-0.0407***	-0.0101*
	(0.00292)	(0.00618)	(0.00695)	(0.00319)	(0.00648)	(0.00577)	(0.00241)	(0.00614)	(0.00503)	(0.00274)	(0.00639)	(0.00569)
(lagged) LIFE	0.924***		0.861***	0.944***		0.892***	0.938***		0.912***	0.933***		0.897***
	(0.0366)		(0.0954)	(0.0395)		(0.0650)	(0.0353)		(0.0728)	(0.0356)		(0.0781)
TREND		0.00831***			0.0111***			0.00953***			0.00967***	
		(0.00315)			(0.00329)			(0.00298)			(0.00302)	
Constant	0.336**	3.675***	0.535	0.267*	3.682***	0.437*	0.269**	3.712***	0.340	0.276**	3.698***	0.365
	(0.134)	(0.143)	(0.333)	(0.144)	(0.160)	(0.230)	(0.128)	(0.144)	(0.249)	(0.130)	(0.145)	(0.290)
Observations	107	107	107	100	100	100	107	107	107	107	107	107
R-squared	0.985			0.984			0.985			0.985		
Countries	53		53	50		50	53		53	53		53
Instruments			62			62			62			62
Hansen-Test			0.983			0.988			0.915			0.959

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table B 5: Civic activism and the marginal effect of DAH on IMR in the context of liberal democracy

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	-0.0145**	-0.00742	-0.0320*	-0.00804	-0.00503	-0.0137	-0.00962	-0.0176*	-0.0149	-0.00734	-0.0169	-0.0127
	(0.00700)	(0.0114)	(0.0165)	(0.00649)	(0.0127)	(0.0199)	(0.00691)	(0.0107)	(0.00992)	(0.00737)	(0.0112)	(0.0117)
DEMO	0.115**	-0.258**	0.319***	0.00279	-0.00859	0.00665	0.00866	-0.00982	0.0797	0.0202	-0.00446	0.0919
	(0.0479)	(0.114)	(0.105)	(0.00186)	(0.00522)	(0.00472)	(0.0535)	(0.104)	(0.147)	(0.0530)	(0.105)	(0.169)
log DAH# DEMO	0.0705***	-0.0633	0.0763	0.00242**	-0.00313	0.000739	0.0807***	-0.00782	0.0298	0.0733**	-0.0150	0.0188
	(0.0223)	(0.0405)	(0.0604)	(0.00100)	(0.00207)	(0.00320)	(0.0277)	(0.0453)	(0.0475)	(0.0289)	(0.0503)	(0.0562)
SMA	-0.0403	0.296	-0.363	0.0506	0.235	0.0602	0.0900	0.231	0.0430	0.0677	0.215	0.00138
	(0.157)	(0.192)	(0.399)	(0.155)	(0.184)	(0.387)	(0.152)	(0.205)	(0.253)	(0.154)	(0.203)	(0.282)
log DAH#SMA	-0.0749	-0.0147	-0.172	0.0134	-0.00949	0.00676	-0.0303	-0.0583	-0.114	-0.0209	-0.0549	-0.115
	(0.0712)	(0.106)	(0.142)	(0.0722)	(0.125)	(0.163)	(0.0631)	(0.108)	(0.147)	(0.0649)	(0.114)	(0.163)
SMA# DEMO	0.253	-0.0553	1.971	-0.00161	0.00916	0.0198	-1.236*	-0.667	-1.523	-1.107	-0.571	-1.453
	(0.585)	(0.785)	(1.245)	(0.0228)	(0.0311)	(0.0485)	(0.750)	(1.031)	(1.087)	(0.759)	(1.059)	(1.380)
log DAH#SMA# DEMO	0.164	-0.0994	0.0431	-0.00790	-0.00841	-0.0239	-0.361	-0.164	-1.288**	-0.394	-0.225	-1.260*
	(0.274)	(0.440)	(0.766)	(0.0128)	(0.0219)	(0.0321)	(0.299)	(0.460)	(0.643)	(0.314)	(0.486)	(0.703)
EXPEND	-0.00766***	-0.00756	-0.0107***	-0.00758***	-0.00655	-0.0116***	-0.00664***	-0.00832	-0.00731	-0.00675***	-0.00832	-0.00807
	(0.00261)	(0.00498)	(0.00416)	(0.00266)	(0.00495)	(0.00428)	(0.00238)	(0.00575)	(0.00529)	(0.00245)	(0.00581)	(0.00563)
log FERTIL	0.0292	0.756***	0.0892	0.0230	0.775***	0.0915	0.0115	0.812***	0.0576	0.0107	0.818***	0.0466
	(0.0378)	(0.114)	(0.0592)	(0.0398)	(0.115)	(0.0835)	(0.0385)	(0.118)	(0.0716)	(0.0381)	(0.119)	(0.0593)
log POP	-0.0141**	0.0203	-0.0189*	-0.0121*	0.0229	-0.0169	-0.0116*	0.0205	-0.0165	-0.0118*	0.0201	-0.0138
	(0.00651)	(0.0347)	(0.0107)	(0.00658)	(0.0345)	(0.0111)	(0.00635)	(0.0344)	(0.0112)	(0.00679)	(0.0344)	(0.0134)
log GDP	-0.0329**	-0.299***	-0.0593**	-0.0314*	-0.301***	-0.0527	-0.0256*	-0.306***	-0.0355	-0.0252	-0.307***	-0.0331
	(0.0154)	(0.0543)	(0.0297)	(0.0165)	(0.0547)	(0.0370)	(0.0156)	(0.0564)	(0.0337)	(0.0170)	(0.0568)	(0.0304)
log HIV	0.0271***	0.0482	0.0191	0.0307***	0.0450	0.0265*	0.0299***	0.0415	0.0298*	0.0301***	0.0399	0.0335*
	(0.00948)	(0.0326)	(0.0144)	(0.00995)	(0.0317)	(0.0160)	(0.0104)	(0.0333)	(0.0171)	(0.0104)	(0.0335)	(0.0172)
(lagged) IMR	0.960***		0.952***	0.952***		0.919***	0.956***		0.945***	0.958***		0.941***
	(0.0303)		(0.0596)	(0.0330)		(0.0808)	(0.0310)		(0.0550)	(0.0318)		(0.0576)
TREND		-0.107***			-0.105***			-0.109***			-0.108***	
		(0.0161)			(0.0166)			(0.0176)			(0.0178)	
Constant	0.566***	5.197***	0.830*	0.563**	5.130***	0.888*	0.507**	5.194***	0.663	0.497**	5.199***	0.614
	(0.207)	(0.760)	(0.443)	(0.219)	(0.763)	(0.525)	(0.217)	(0.769)	(0.411)	(0.216)	(0.772)	(0.426)
Observations	107	107	107	107	107	107	107	107	107	106	106	106
R-squared	0.987			0.986			0.986			0.986		
Countries	53		53	53		53	53		53	53		53
Instruments			64			64			64			63
Hansen-Test			0.992			0.910			0.953			0.858

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table B 6: Civic activism and the marginal effect of DAH on LIFE in the context of liberal democracy

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	0.00339**	0.00145	0.00240	0.00275**	0.000360	0.00274	0.00139	0.00168	0.00225	0.00285**	0.00248	0.00451
	(0.00149)	(0.00265)	(0.00403)	(0.00132)	(0.00288)	(0.00284)	(0.00150)	(0.00239)	(0.00176)	(0.00139)	(0.00255)	(0.00282)
DEMO	-0.0215**	0.0436*	-0.0310*	-0.000389	0.00176	-0.000652	0.00435	0.0153	-0.00591	0.00876	0.0172	0.0227
	(0.00982)	(0.0251)	(0.0170)	(0.000353)	(0.00107)	(0.000797)	(0.00958)	(0.0227)	(0.0297)	(0.00944)	(0.0228)	(0.0333)
log DAH# DEMO	-0.0117***	0.00271	-0.00249	-0.000538***	0.000379	-0.000303	-0.00813*	0.000676	-0.00324	-0.0126***	-0.00296	-0.0143
	(0.00409)	(0.00916)	(0.0127)	(0.000163)	(0.000461)	(0.000484)	(0.00473)	(0.00997)	(0.00704)	(0.00462)	(0.0111)	(0.00990)
SMA	0.0464*	-0.0697	0.0647	0.0179	-0.0703*	-0.0287	0.0221	-0.0808*	-0.00322	0.0124	-0.0789*	-0.0122
	(0.0274)	(0.0435)	(0.0466)	(0.0251)	(0.0421)	(0.0419)	(0.0244)	(0.0451)	(0.0610)	(0.0247)	(0.0447)	(0.0406)
log DAH#SMA	0.0223*	-0.00858	0.00680	0.0110	-0.0169	-0.00386	0.00670	-0.0126	-0.00737	0.0219**	-0.00393	0.0297
	(0.0122)	(0.0233)	(0.0334)	(0.0120)	(0.0259)	(0.0222)	(0.0101)	(0.0230)	(0.0292)	(0.00974)	(0.0247)	(0.0249)
SMA# DEMO	-0.162	0.0743	-0.301	0.00175	0.00478	0.00369	0.0696	0.331	0.0760	0.111	0.361	0.220
	(0.122)	(0.182)	(0.223)	(0.00424)	(0.00714)	(0.00930)	(0.118)	(0.224)	(0.253)	(0.116)	(0.229)	(0.205)
log DAH#SMA# DEMO	-0.0841*	0.0312	-0.0794	-8.70e-05	0.00402	0.00438	0.0337	0.109	0.0782	0.0125	0.0901	0.0253
	(0.0471)	(0.0962)	(0.154)	(0.00201)	(0.00451)	(0.00486)	(0.0411)	(0.0993)	(0.141)	(0.0420)	(0.103)	(0.0859)
EXPEND	0.000965**	-0.000652	0.00107*	0.000983**	-0.000710	0.00103	0.000843**	-1.87e-05	0.000733	0.000996**	0.000103	0.00117*
	(0.000410)	(0.00112)	(0.000553)	(0.000398)	(0.00111)	(0.000746)	(0.000422)	(0.00123)	(0.000631)	(0.000411)	(0.00125)	(0.000631)
log FERTIL	0.0134*	-0.0574***	0.0218**	0.0151**	-0.0589***	0.0206**	0.0179**	-0.0634***	0.0194**	0.0162**	-0.0632***	0.0229**
	(0.00723)	(0.0217)	(0.00892)	(0.00739)	(0.0217)	(0.0103)	(0.00783)	(0.0220)	(0.00884)	(0.00764)	(0.0220)	(0.0115)
log POP	-0.000739	0.00452	-0.00139	-0.000825	0.00360	-0.00111	-0.00127	0.00381	-0.00115	-0.000112	0.00432	-0.000503
	(0.00118)	(0.00638)	(0.00236)	(0.00117)	(0.00630)	(0.00186)	(0.00128)	(0.00623)	(0.00188)	(0.00115)	(0.00626)	(0.00186)
log GDP	-9.76e-05	0.0500***	0.00517	-0.000418	0.0511***	0.0118	-0.00167	0.0507***	0.00420	-0.00297	0.0507***	0.000403
	(0.00350)	(0.0104)	(0.00639)	(0.00355)	(0.0104)	(0.00789)	(0.00350)	(0.0104)	(0.0110)	(0.00354)	(0.0104)	(0.00789)
log HIV	-0.00856***	-0.0414***	-0.00884	-0.00985***	-0.0410***	-0.0138*	-0.00971***	-0.0415***	-0.01000	-0.01000***	-0.0417***	-0.0106
	(0.00276)	(0.00642)	(0.00601)	(0.00302)	(0.00628)	(0.00785)	(0.00326)	(0.00643)	(0.00676)	(0.00321)	(0.00647)	(0.00731)
(lagged) LIFE	0.936***		0.921***	0.924***		0.828***	0.930***		0.891***	0.930***		0.899***
	(0.0360)		(0.0728)	(0.0378)		(0.106)	(0.0377)		(0.0990)	(0.0368)		(0.0961)
TREND		0.00878***			0.00849***			0.00997***			0.00971***	
		(0.00299)			(0.00306)			(0.00319)			(0.00321)	
Constant	0.266**	3.687***	0.296	0.315**	3.699***	0.611	0.305**	3.690***	0.425	0.297**	3.680***	0.397
	(0.131)	(0.143)	(0.257)	(0.139)	(0.142)	(0.394)	(0.140)	(0.141)	(0.340)	(0.137)	(0.141)	(0.354)
Observations	107	107	107	107	107	107	107	107	107	106	106	106
R-squared	0.985			0.984			0.984			0.984		
Countries	53		53	53		53	53		53	53		53
Instruments			64			64			64			63
Hansen-Test			0.984			0.960			0.997			0.996

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table B 7: Civic activism and the marginal effect of DAH on IMR in the context of decentralization

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	-0.0209**	-0.00357	-0.0181	-0.0198*	-0.00849	-0.0355	0.000482	-0.0185*	-0.0160	-0.00875	-0.0260**	-0.0364***
	(0.00858)	(0.0166)	(0.0227)	(0.0106)	(0.0169)	(0.0268)	(0.00578)	(0.00970)	(0.0117)	(0.00693)	(0.0106)	(0.00970)
DECENTRAL	0.0817***	0.0176	0.102***	0.0857***	0.130	0.0743	0.0309	0.286*	0.00767	0.0471**	-0.0651	0.0354
	(0.0181)	(0.0701)	(0.0318)	(0.0234)	(0.103)	(0.105)	(0.0429)	(0.147)	(0.0916)	(0.0234)	(0.148)	(0.0631)
log DAH# DECENTRAL	0.0342***	-0.0170	0.0274	0.0343***	0.0130	0.0491*	-0.0169	0.122**	-0.0210	0.0494***	0.0324	0.108*
	(0.00941)	(0.0211)	(0.0338)	(0.0104)	(0.0236)	(0.0289)	(0.0338)	(0.0596)	(0.0410)	(0.0130)	(0.0226)	(0.0572)
SMA	0.0794	0.00366	0.101	0.0136	0.166	0.541	0.0807	0.122	0.261	0.153	0.115	0.261
	(0.210)	(0.325)	(0.340)	(0.188)	(0.273)	(0.765)	(0.156)	(0.186)	(0.342)	(0.155)	(0.223)	(0.250)
log DAH#SMA	0.306	-0.512*	0.0753	0.0233	-0.245*	-0.00836	0.0442	-0.139	-0.0369	0.0757	-0.140	-0.0758
	(0.193)	(0.292)	(0.424)	(0.0960)	(0.142)	(0.359)	(0.0608)	(0.0976)	(0.124)	(0.0809)	(0.133)	(0.116)
SMA# DECENTRAL	-0.0332	0.128	0.0546	-0.410*	0.565	-0.681	-0.568	3.128**	-1.795	-0.657**	0.0490	-0.533
	(0.252)	(0.405)	(0.401)	(0.236)	(0.422)	(0.891)	(0.808)	(1.422)	(1.231)	(0.269)	(0.434)	(0.591)
log DAH#SMA# DECENTRAL	-0.220	0.501	0.00279	-0.0364	0.0930	0.0642	-0.503	2.596**	-0.811	0.0105	0.167	0.420*
	(0.196)	(0.314)	(0.424)	(0.100)	(0.169)	(0.346)	(0.500)	(1.087)	(0.604)	(0.112)	(0.202)	(0.214)
EXPEND	-0.00587**	-0.00331	-0.00696	0.00176	-0.00414	0.000995	-0.00683**	-0.00758	-0.00693	-0.00952***	-0.00849	-0.00807
	(0.00260)	(0.00556)	(0.00425)	(0.00184)	(0.00683)	(0.00696)	(0.00304)	(0.00501)	(0.00676)	(0.00313)	(0.00523)	(0.00608)
log FERTIL	0.00702	0.771***	0.0736	-0.0356	0.881***	0.0653	0.0221	0.894***	0.0686	0.00877	0.825***	0.0538
	(0.0423)	(0.136)	(0.108)	(0.0739)	(0.136)	(0.113)	(0.0408)	(0.119)	(0.0954)	(0.0394)	(0.117)	(0.0750)
log POP	-0.0115*	0.0574	-0.00703	-0.0367***	-0.0856**	-0.0494***	-0.0119*	0.0117	-0.0232**	-0.0143**	0.0252	-0.0223**
	(0.00634)	(0.0389)	(0.0125)	(0.0109)	(0.0387)	(0.0179)	(0.00669)	(0.0332)	(0.0102)	(0.00678)	(0.0367)	(0.00995)
log GDP	-0.0481***	-0.366***	-0.120***	-0.0660***	-0.504***	-0.0295	-0.00738	-0.291***	-0.0159	-0.0350**	-0.309***	-0.0471
	(0.0171)	(0.0622)	(0.0405)	(0.0207)	(0.0747)	(0.0927)	(0.0184)	(0.0597)	(0.0469)	(0.0173)	(0.0589)	(0.0343)
log HIV	0.0313***	0.0340	0.0395**	0.0431***	0.0792**	0.0176	0.0324***	0.0414	0.0290	0.0336***	0.0367	0.0243
	(0.0110)	(0.0390)	(0.0155)	(0.0121)	(0.0397)	(0.0285)	(0.0103)	(0.0322)	(0.0211)	(0.0103)	(0.0313)	(0.0165)
(lagged) IMR	0.950***		0.824***	0.994***		1.029***	0.971***		0.971***	0.958***		0.970***
	(0.0303)		(0.0782)	(0.0400)		(0.0838)	(0.0327)		(0.0692)	(0.0293)		(0.0646)
TREND		-0.105***			-0.0508***			-0.111***			-0.108***	
		(0.0186)			(0.0176)			(0.0166)			(0.0168)	
Constant	0.657***	5.014***	1.534***	1.068***	8.372***	0.714	0.285	5.114***	0.492	0.644***	5.127***	0.777*
	(0.217)	(0.891)	(0.483)	(0.329)	(1.081)	(1.174)	(0.234)	(0.767)	(0.547)	(0.240)	(0.859)	(0.449)
Observations	90	90	90	54	54	54	106	106	106	107	107	107
R-squared	0.988			0.994			0.986			0.987		
Countries	43		43	25		25	53		53	53		53
Instruments			58			47			63			61
Hansen-Test			0.997			1			0.987			0.977

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table B 8: Civic activism and the marginal effect of DAH *on* LIFE *in the context of decentralization*

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	0.00274	0.00192	0.00111	0.00357**	-0.00228***	0.00296	0.000348	0.00203	-0.000178	0.000674	0.00130	0.000481
	(0.00192)	(0.00382)	(0.00438)	(0.00140)	(0.000812)	(0.0176)	(0.00106)	(0.00220)	(0.00175)	(0.00143)	(0.00235)	(0.00129)
DECENTRAL	-0.0114***	0.00924	-0.0168	-0.0158***	-0.0297**	0.0299	-0.0118*	-0.0142	-0.0268	-0.00307	0.0104	0.00216
	(0.00325)	(0.0150)	(0.0104)	(0.00311)	(0.0134)	(0.0345)	(0.00718)	(0.0291)	(0.0180)	(0.00593)	(0.0274)	(0.0173)
log DAH# DECENTRAL	-0.00320*	0.00220	0.00197	-0.00607***	0.00171	-0.00325	0.00103	-0.00731	4.51e-05	-8.42e-05	0.00235	0.00219
	(0.00192)	(0.00480)	(0.00519)	(0.00144)	(0.00106)	(0.0154)	(0.00534)	(0.0127)	(0.0146)	(0.00230)	(0.00534)	(0.00344)
SMA	-0.0311	-0.0850	-0.0768	0.0342	-0.0491***	0.0785	0.0142	-0.0622	0.0361	0.0118	-0.0839*	-0.0665
	(0.0318)	(0.0745)	(0.0712)	(0.0230)	(0.0120)	(0.0696)	(0.0237)	(0.0436)	(0.0419)	(0.0260)	(0.0509)	(0.0711)
log DAH#SMA	-0.0301	0.0383	-0.0704	-0.00737	-0.0140**	0.0616	5.95e-05	-0.00386	0.00787	-0.0117	-0.0169	-0.0699**
	(0.0260)	(0.0602)	(0.0575)	(0.0144)	(0.00688)	(0.0985)	(0.00858)	(0.0212)	(0.0147)	(0.0102)	(0.0281)	(0.0336)
SMA# DECENTRAL	0.0459	0.0799	0.123	0.0580**	0.0194	-0.0380	0.0452	0.0114	-0.107	0.0721	0.0810	0.00439
	(0.0384)	(0.0930)	(0.109)	(0.0293)	(0.0183)	(0.0647)	(0.130)	(0.299)	(0.414)	(0.0480)	(0.102)	(0.0958)
log DAH#SMA# DECENTRAL	0.0311	-0.0316	0.0937	0.0181	0.00583	-0.0528	0.0491	-0.125	0.0334	0.0410**	0.0258	0.101**
	(0.0271)	(0.0650)	(0.0617)	(0.0146)	(0.00823)	(0.101)	(0.0744)	(0.226)	(0.257)	(0.0187)	(0.0438)	(0.0488)
EXPEND	0.00107**	-9.04e-05	0.00109	0.000560**	-0.00106***	-0.000891	0.000891**	-0.000859	0.00102**	0.00104**	-0.000482	0.00103*
	(0.000448)	(0.00128)	(0.000783)	(0.000277)	(0.000357)	(0.00378)	(0.000417)	(0.00115)	(0.000514)	(0.000482)	(0.00116)	(0.000549)
log FERTIL	0.0180**	-0.0524**	0.00971	0.0224***	-0.0845***	0.0308	0.0118	-0.0628***	0.00996	0.0165**	-0.0649***	0.0203**
	(0.00915)	(0.0266)	(0.0127)	(0.00586)	(0.00965)	(0.0240)	(0.00785)	(0.0233)	(0.0103)	(0.00735)	(0.0222)	(0.00902)
log POP	0.000232	-0.000330	0.00121	0.000922	0.0143***	-0.00832	-0.00120	0.00387	-0.000523	-0.00114	0.00223	-0.00195
	(0.00104)	(0.00761)	(0.00213)	(0.00108)	(0.00466)	(0.0100)	(0.00137)	(0.00644)	(0.00168)	(0.00167)	(0.00676)	(0.00270)
log GDP	-0.00203	0.0544***	0.00821	0.00238	0.0403***	-0.0241	-0.00459	0.0528***	-0.0114*	-0.000910	0.0511***	0.00884
	(0.00363)	(0.0120)	(0.0116)	(0.00322)	(0.00729)	(0.0237)	(0.00368)	(0.0116)	(0.00684)	(0.00403)	(0.0110)	(0.00596)
log HIV	-0.0100***	-0.0364***	-0.0136**	-0.00390**	0.00657**	0.000618	-0.0102***	-0.0417***	-0.00808*	-0.0101***	-0.0394***	-0.0133**
	(0.00317)	(0.00779)	(0.00677)	(0.00187)	(0.00307)	(0.0122)	(0.00312)	(0.00656)	(0.00449)	(0.00318)	(0.00620)	(0.00623)
(lagged) LIFE	0.956***		0.827***	0.993***		1.084***	0.929***		0.969***	0.921***		0.817***
	(0.0390)		(0.0988)	(0.0268)		(0.158)	(0.0375)		(0.0441)	(0.0377)		(0.0852)
TREND		0.00850**			0.00734***			0.00942***			0.00898***	
		(0.00351)			(0.00201)			(0.00317)			(0.00310)	
Constant	0.178	3.734***	0.632*	-0.0165	3.733***	-0.0185	0.341**	3.686***	0.231	0.334**	3.726***	0.702**
	(0.146)	(0.173)	(0.351)	(0.0995)	(0.124)	(0.567)	(0.138)	(0.148)	(0.157)	(0.142)	(0.160)	(0.346)
Observations	90	90	90	54	54	54	106	106	106	107	107	107
R-squared	0.984			0.996			0.984			0.984		
Countries	43		43	25		25	53		53	53		53
Instruments			58			47			63			60
Hansen-Test			1			1			0.993			0.996

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table C 2: Membership and the marginal effect of DAH

	Active associational membership						Associational membership					
	Dependent variable: infant mortality ratio			Dependent variable: life expectancy			Dependent variable: infant mortality ratio			Dependent variable: life expectancy		
	A1	A2	A3	B1	B2	B3	C1	C2	C3	D1	D2	D3
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.00815	-0.0299***	-0.0297***	0.00145	0.00559***	0.00171	-0.00775	-0.0333***	-0.0339**	0.00147	0.00528**	0.0012
	(0.00553)	(0.0107)	(0.00868)	(0.00102)	(0.00213)	(0.00228)	(0.00580)	(0.0111)	(0.0169)	(0.00102)	(0.00225)	(0.0016)
MEM	-0.0347	-0.0582	-0.0644	0.0263***	0.0412	0.0576	-0.0526	-0.148	0.0313	0.0199***	0.0189	0.0355
	(0.0689)	(0.191)	(0.153)	(0.00808)	(0.0377)	(0.0441)	(0.0490)	(0.144)	(0.241)	(0.00604)	(0.0273)	(0.0295)
log DAH#MEM	-0.069***	-0.105**	-0.150**	0.012***	0.023**	0.0167	-0.062***	-0.093**	-0.103	0.010***	0.0135*	0.0059
	(0.0241)	(0.0500)	(0.0748)	(0.00353)	(0.00964)	(0.0114)	(0.0185)	(0.0399)	(0.0790)	(0.00279)	(0.00793)	(0.007)
GOV	-0.0263	-0.175**	0.0805*	0.00346	-0.00970	0.00751	-0.0256	-0.189***	0.0721	0.00380	-0.00870	0.007
	(0.0232)	(0.0722)	(0.0426)	(0.00248)	(0.0134)	(0.00936)	(0.0236)	(0.0715)	(0.0873)	(0.00243)	(0.0135)	(0.0102)
CONFLICT	-0.0331	0.0416	0.0233	0.0149***	-0.0183	0.00903	-0.0351	0.0280	-0.00146	0.0145**	-0.0173	0.0036
	(0.0533)	(0.0711)	(0.106)	(0.00553)	(0.0139)	(0.0129)	(0.0520)	(0.0668)	(0.113)	(0.00568)	(0.0135)	(0.0068)
EXPEND	-0.00475*	-0.00763	-0.00792	0.000377	-0.0007	-1.85e-05	-0.00464*	-0.00777	-0.00711	0.000352	-0.000528	0.00017
	(0.00277)	(0.00629)	(0.00605)	(0.000392)	(0.0013)	(0.000461)	(0.00277)	(0.0063)	(0.0064)	(0.000390)	(0.00130)	(0.0005)
log FERTIL	0.0350	0.747***	0.116	0.00802	-0.0530**	0.00733	0.0457	0.771***	0.0937	0.00965	-0.0529**	0.0119
	(0.0398)	(0.130)	(0.138)	(0.00604)	(0.0240)	(0.0227)	(0.0391)	(0.126)	(0.185)	(0.00631)	(0.0236)	(0.0179)
log POP	-0.0113	0.0145	-0.0220	-0.00196	0.0024	-0.00258	-0.0105	0.0107	-0.0258	-0.00161	0.00351	-0.0007
	(0.00693)	(0.0330)	(0.0172)	(0.00132)	(0.0063)	(0.00235)	(0.00668)	(0.0329)	(0.0157)	(0.00126)	(0.00635)	(0.0016)
log GDP	-0.0262	-0.336***	-0.0206	-8.34e-05	0.065***	-0.00342	-0.0230	-0.332***	-0.00611	-0.000230	0.0630***	-0.0045
	(0.0173)	(0.0594)	(0.0584)	(0.00289)	(0.0109)	(0.0106)	(0.0167)	(0.0592)	(0.0791)	(0.00282)	(0.0111)	(0.0088)
log HIV	0.0268**	0.0664*	0.00622	-0.00864***	-0.043***	-0.0103	0.0284**	0.0762*	-0.00623	-0.00809***	-0.0421***	-0.0102
	(0.0119)	(0.0402)	(0.0290)	(0.00309)	(0.008)	(0.00674)	(0.0112)	(0.0391)	(0.0346)	(0.00308)	(0.00762)	(0.0064)
TREND		-0.117***			0.007**			-0.119***			0.00710**	
		(0.0184)			(0.003)			(0.0184)			(0.00331)	
LDV	0.966***		1.046***	0.933***		0.947***	0.965***		1.070***	0.937***		0.930***
	(0.0290)		(0.0690)	(0.0285)		(0.0850)	(0.0290)		(0.122)	(0.0293)		(0.0950)
Constant	0.418*	5.620***	0.198	0.303***	3.600***	0.301	0.372*	5.640***	0.0404	0.282**	3.597***	0.346
	(0.238)	(0.742)	(0.828)	(0.107)	(0.141)	(0.309)	(0.223)	(0.743)	(0.975)	(0.110)	(0.142)	(0.340)
Observations	90	90	90	90	90	90	90	90	90	90	90	90
R-squared	0.986			0.989			0.986			0.988		
Countries	52	52	52	52	52	52	52	52	52	52	52	52
Instruments			36			35			35			35
Hansen-Test			0.281			0.492			0.348			0.701
AR2			-			-			-			-

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 2: Social trust and the marginal effect of DAH on IMR in the context of bureaucratic governance (WBGI)

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	-0.00681	-0.0208**	-0.00533	-0.00969	-0.0140***	-0.00446	-0.00264	-0.0236***	0.00291	-0.0104*	-0.0169**	-0.0195
	(0.00665)	(0.00808)	(0.0123)	(0.00710)	(0.00502)	(0.0116)	(0.00658)	(0.00829)	(0.0117)	(0.00577)	(0.00772)	(0.0122)
GOV	-0.0131	-0.0587	-0.0119	0.124	-0.542***	0.167	-0.0158	-0.105**	-0.0452	0.0506***	-0.0649	0.128***
	(0.0198)	(0.0467)	(0.0393)	(0.110)	(0.118)	(0.165)	(0.0217)	(0.0482)	(0.0388)	(0.0173)	(0.0395)	(0.0383)
log DAH#GOV	0.0160**	0.0216	0.000303	0.0710**	0.204***	-0.111	0.00849	0.0268**	-0.0135	0.0209***	0.00148	0.0497**
	(0.00793)	(0.0133)	(0.0203)	(0.0342)	(0.0535)	(0.123)	(0.00985)	(0.0133)	(0.0183)	(0.00620)	(0.0105)	(0.0223)
TRUST	0.0910	-0.0609	0.367**	0.152*	-0.113	0.374**	0.119	0.0368	0.367**	0.155**	-0.146	0.266**
	(0.0852)	(0.119)	(0.169)	(0.0811)	(0.0834)	(0.183)	(0.0840)	(0.123)	(0.184)	(0.0775)	(0.119)	(0.119)
log DAH#TRUST	0.0624	-0.0394	0.204*	0.0608	0.0372	0.0824	0.0577	-0.0374	0.142*	0.0867**	-0.0161	0.168
	(0.0467)	(0.0726)	(0.110)	(0.0504)	(0.0510)	(0.120)	(0.0455)	(0.0788)	(0.0734)	(0.0411)	(0.0719)	(0.125)
TRUST#GOV	-0.351**	-0.157	-1.062**	0.275	0.304	-2.004	-0.282	-0.313	-0.330	-0.203*	0.0160	-0.374
	(0.144)	(0.234)	(0.494)	(0.826)	(0.933)	(1.865)	(0.211)	(0.263)	(0.515)	(0.107)	(0.164)	(0.250)
log DAH#TRUST#GOV	-0.0182	0.256	-0.139	0.287	0.783	-0.626	0.0719	0.115	0.145	-0.0172	0.252**	0.0278
	(0.0786)	(0.167)	(0.205)	(0.358)	(0.622)	(1.409)	(0.0965)	(0.191)	(0.300)	(0.0491)	(0.101)	(0.170)
EXPEND	-0.00556**	-0.000668	-0.00984**	-0.00133	0.00102	-0.00111	-0.00546*	-0.00108	-0.00692**	-0.00535**	-0.00346	-0.00906**
	(0.00283)	(0.00492)	(0.00479)	(0.00214)	(0.00301)	(0.00392)	(0.00282)	(0.00510)	(0.00342)	(0.00233)	(0.00467)	(0.00442)
log FERTIL	0.0269	0.738***	0.0815	0.0205	0.754***	-0.0166	0.0210	0.786***	0.0387	0.0178	0.691***	0.0181
	(0.0386)	(0.106)	(0.0717)	(0.0396)	(0.1000)	(0.0989)	(0.0389)	(0.107)	(0.0854)	(0.0375)	(0.106)	(0.0708)
log POP	-0.0142**	0.0255	-0.0258**	-0.0155**	0.0394	-0.0269**	-0.0140**	0.0179	-0.0227*	-0.0159**	0.0229	-0.0288*
	(0.00693)	(0.0346)	(0.0118)	(0.00704)	(0.0356)	(0.0113)	(0.00670)	(0.0338)	(0.0125)	(0.00720)	(0.0356)	(0.0162)
log GDP	-0.0152	-0.310***	-0.0120	-0.0341**	-0.282***	-0.0122	-0.0115	-0.292***	0.0249	-0.0358***	-0.318***	-0.0526**
	(0.0152)	(0.0538)	(0.0180)	(0.0155)	(0.0497)	(0.0312)	(0.0159)	(0.0545)	(0.0433)	(0.0138)	(0.0510)	(0.0261)
log HIV	0.0277***	0.0322	0.0279*	0.0248**	0.0191	0.0283	0.0268***	0.0258	0.0211**	0.0214**	0.0477	0.0127
	(0.0101)	(0.0289)	(0.0151)	(0.0116)	(0.0252)	(0.0176)	(0.0101)	(0.0285)	(0.0106)	(0.00997)	(0.0294)	(0.0134)
(lagged) IMR	0.963***		0.973***	0.996***		1.092***	0.977***		1.034***	0.989***		1.033***
	(0.0320)		(0.0849)	(0.0301)		(0.0736)	(0.0320)		(0.0726)	(0.0265)		(0.0495)
TREND		-0.128***			-0.143***			-0.127***			-0.127***	
		(0.0168)			(0.0199)			(0.0165)			(0.0162)	
Constant	0.411*	5.184***	0.516	0.423*	4.749***	0.0895	0.328	5.115***	-0.0477	0.499**	5.377***	0.748*
	(0.226)	(0.732)	(0.344)	(0.232)	(0.766)	(0.588)	(0.231)	(0.734)	(0.623)	(0.203)	(0.736)	(0.433)
Observations	111	111	111	104	104	104	111	111	111	111	111	111
R-squared	0.987			0.988			0.987			0.988		
Countries	55		55	52		52	55		55	55		55
Instruments			61			61			61			61
Hansen-Test			0.972			0.971			0.938			0.953

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 3: Social trust and the marginal effect of DAH on IMR in the context of liberal democracy

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	-0.0100*	-0.0163*	-0.0141	-0.00885	-0.0134	-0.0188	-0.00539	-0.0178*	-0.00656	-0.00413	-0.0185**	-0.00319
	(0.00568)	(0.00837)	(0.0172)	(0.00642)	(0.00876)	(0.0119)	(0.00671)	(0.00941)	(0.0104)	(0.00650)	(0.00925)	(0.00987)
DEMO	0.147***	-0.127	0.249***	0.00443**	-0.00215	0.00771***	0.0314	-0.0268	0.0162	0.0368	-0.0170	0.00467
	(0.0427)	(0.0965)	(0.0902)	(0.00184)	(0.00349)	(0.00294)	(0.0516)	(0.0773)	(0.129)	(0.0518)	(0.0787)	(0.120)
log DAH# DEMO	0.0589***	-0.00259	0.103	0.00262***	0.000228	0.00342*	0.0424*	0.00361	-0.00396	0.0392*	0.00428	-0.00847
	(0.0184)	(0.0295)	(0.0663)	(0.000979)	(0.00152)	(0.00180)	(0.0223)	(0.0430)	(0.0588)	(0.0219)	(0.0432)	(0.0652)
TRUST	0.191**	-0.196	0.271	0.190***	-0.160	0.492***	0.157**	-0.0671	0.345**	0.151*	-0.0822	0.351**
	(0.0759)	(0.123)	(0.227)	(0.0732)	(0.120)	(0.117)	(0.0788)	(0.122)	(0.142)	(0.0785)	(0.123)	(0.156)
log DAH#TRUST	0.0966**	-0.0468	0.179*	0.103***	-0.0786	0.179***	0.0780*	-0.0168	0.163**	0.0731	-0.0147	0.167*
	(0.0410)	(0.0769)	(0.0960)	(0.0396)	(0.0757)	(0.0639)	(0.0465)	(0.0819)	(0.0797)	(0.0488)	(0.0814)	(0.0897)
TRUST# DEMO	-0.389	0.219	-0.844	-0.00568	0.00703	0.00507	-0.447	0.211	-1.091*	-0.479	0.185	-1.095
	(0.247)	(0.442)	(0.798)	(0.0116)	(0.0212)	(0.0245)	(0.446)	(0.568)	(0.636)	(0.448)	(0.571)	(0.746)
log DAH#TRUST# DEMO	0.0278	0.687**	0.130	0.000115	0.0344**	0.00711	-0.0683	0.503	-0.263	-0.0168	0.647	-0.356
	(0.138)	(0.278)	(0.512)	(0.00577)	(0.0136)	(0.00870)	(0.247)	(0.365)	(0.474)	(0.247)	(0.401)	(0.488)
EXPEND	-0.00580**	-0.00354	-0.0113***	-0.00568**	-0.00316	-0.00912*	-0.00518**	-0.00313	-0.00608**	-0.00517**	-0.00315	-0.00727*
	(0.00240)	(0.00473)	(0.00406)	(0.00247)	(0.00462)	(0.00469)	(0.00246)	(0.00539)	(0.00302)	(0.00249)	(0.00543)	(0.00427)
log FERTIL	0.0159	0.662***	0.0526	0.0141	0.701***	0.0777	0.00405	0.730***	0.0351	0.00470	0.728***	0.0603
	(0.0376)	(0.108)	(0.120)	(0.0389)	(0.108)	(0.114)	(0.0392)	(0.110)	(0.0483)	(0.0398)	(0.110)	(0.0429)
log POP	-0.0154**	0.0322	-0.0256	-0.0136**	0.0314	-0.0263**	-0.0114*	0.0360	-0.0180**	-0.0103	0.0359	-0.0178**
	(0.00714)	(0.0357)	(0.0161)	(0.00681)	(0.0356)	(0.0109)	(0.00688)	(0.0352)	(0.00882)	(0.00689)	(0.0351)	(0.00850)
log GDP	-0.0354**	-0.332***	-0.0385	-0.0303**	-0.327***	-0.0264	-0.0241	-0.340***	-0.00554	-0.0265*	-0.339***	-0.00292
	(0.0140)	(0.0513)	(0.0294)	(0.0148)	(0.0510)	(0.0185)	(0.0148)	(0.0531)	(0.0201)	(0.0159)	(0.0536)	(0.0189)
log HIV	0.0217**	0.0529*	0.0141	0.0260**	0.0425	0.0229*	0.0266**	0.0298	0.0195*	0.0261**	0.0317	0.0206
	(0.0102)	(0.0308)	(0.0170)	(0.0109)	(0.0295)	(0.0129)	(0.0109)	(0.0303)	(0.0116)	(0.0111)	(0.0306)	(0.0143)
(lagged) IMR	0.987***		1.014***	0.981***		0.995***	0.982***		1.030***	0.980***		1.011***
	(0.0263)		(0.0857)	(0.0280)		(0.0843)	(0.0291)		(0.0513)	(0.0303)		(0.0599)
TREND		-0.124***			-0.122***			-0.120***			-0.120***	
		(0.0161)			(0.0162)			(0.0174)			(0.0174)	
Constant	0.499**	5.363***	0.616	0.459**	5.269***	0.570	0.378*	5.260***	0.150	0.386*	5.258***	0.184
	(0.202)	(0.745)	(0.578)	(0.204)	(0.743)	(0.429)	(0.216)	(0.753)	(0.311)	(0.219)	(0.756)	(0.347)
Observations	111	111	111	111	111	111	111	111	111	110	110	110
R-squared	0.988			0.987			0.987			0.987		
Countries	55		55	55		55	55		55	55		55
Instruments			63			63			63			62
Hansen-Test			0.942			0.983			0.999			0.998

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 4: Social trust and the marginal effect of DAH on IMR in the context of decentralization

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	-0.0254**	-0.00587	-0.0312	-0.0242**	-0.00597	-0.0323	0.000369	-0.0122	-0.00349	-0.00776	-0.0224**	-0.0194*
	(0.00999)	(0.0164)	(0.0279)	(0.0111)	(0.00791)	(0.0205)	(0.00640)	(0.00952)	(0.0101)	(0.00798)	(0.00879)	(0.0104)
DECENTRAL	0.0767***	0.0393	0.123***	0.0959***	0.0661	0.0306	0.0588***	0.0674	0.0387	0.0597***	-0.0764	0.128
	(0.0184)	(0.0641)	(0.0474)	(0.0343)	(0.187)	(0.132)	(0.0200)	(0.143)	(0.0522)	(0.0232)	(0.151)	(0.0876)
log DAH# DECENTRAL	0.0332***	-0.00710	0.0353*	0.0425***	0.0294	0.0419	0.00435	-0.0114	-0.0356	0.0196	0.0265	0.0565*
	(0.0110)	(0.0206)	(0.0201)	(0.0111)	(0.0180)	(0.0291)	(0.0170)	(0.0190)	(0.0494)	(0.0180)	(0.0252)	(0.0337)
TRUST	0.211	-0.389*	0.323	-0.289	0.0595	-0.306	0.194**	-0.0264	0.298	0.143*	-0.139	0.234
	(0.135)	(0.231)	(0.423)	(0.203)	(0.153)	(0.263)	(0.0860)	(0.125)	(0.209)	(0.0796)	(0.127)	(0.166)
log DAH#TRUST	0.136	0.0504	0.287	0.254**	0.0795	-0.00668	0.0827	0.0138	0.0811	0.109**	-0.0343	0.127
	(0.102)	(0.146)	(0.202)	(0.127)	(0.128)	(0.178)	(0.0505)	(0.0840)	(0.130)	(0.0528)	(0.0750)	(0.101)
TRUST# DECENTRAL	-0.162	0.499*	-0.339	0.298	0.0613	-0.139	-0.00810	0.244	-0.0780	0.337	0.459	0.165
	(0.151)	(0.281)	(0.303)	(0.184)	(0.344)	(0.439)	(0.120)	(0.404)	(0.322)	(0.247)	(0.374)	(0.549)
log DAH#TRUST# DECENTRAL	-0.110	0.0136	-0.271	-0.125	0.286*	0.120	0.0646	0.0586	0.327	-0.102	0.201	0.0959
	(0.110)	(0.180)	(0.246)	(0.129)	(0.174)	(0.166)	(0.0665)	(0.247)	(0.519)	(0.142)	(0.247)	(0.288)
EXPEND	-0.00495*	0.000513	-0.00784	0.00166	-0.00607	0.00368	-0.00480*	-0.00335	-0.00532	-0.00710**	-0.00564	-0.00868**
	(0.00258)	(0.00498)	(0.00645)	(0.00170)	(0.00489)	(0.00652)	(0.00283)	(0.00468)	(0.00400)	(0.00309)	(0.00481)	(0.00405)
log FERTIL	0.0275	0.690***	0.0618	-0.0297	0.909***	-0.0285	0.0233	0.772***	-0.0128	0.0130	0.781***	0.0206
	(0.0519)	(0.131)	(0.105)	(0.0620)	(0.156)	(0.0940)	(0.0383)	(0.115)	(0.121)	(0.0403)	(0.113)	(0.0673)
log POP	-0.0150**	0.0757*	-0.0193	-0.0351**	-0.0115	-0.0236	-0.00971	0.0288	-0.00887	-0.0141*	0.0410	-0.0332***
	(0.00732)	(0.0389)	(0.0144)	(0.0141)	(0.0682)	(0.0398)	(0.00696)	(0.0364)	(0.0191)	(0.00837)	(0.0376)	(0.0106)
log GDP	-0.0329*	-0.411***	-0.0537	-0.0795***	-0.353***	-0.0682	-0.00311	-0.325***	0.0117	-0.0341*	-0.333***	-0.0265
	(0.0198)	(0.0591)	(0.0625)	(0.0230)	(0.0730)	(0.0503)	(0.0180)	(0.0568)	(0.0293)	(0.0182)	(0.0552)	(0.0306)
log HIV	0.0267**	0.0168	0.0361**	0.0277**	-0.139***	0.0273	0.0306***	0.0350	0.0269**	0.0303***	0.0130	0.0244*
	(0.0126)	(0.0362)	(0.0182)	(0.0116)	(0.0379)	(0.0199)	(0.0114)	(0.0338)	(0.0115)	(0.0113)	(0.0302)	(0.0143)
(lagged) IMR	0.975***		0.936***	0.990***		1.001***	0.987***		1.036***	0.965***		1.018***
	(0.0284)		(0.0761)	(0.0239)		(0.107)	(0.0277)		(0.0757)	(0.0307)		(0.0607)
TREND		-0.116***			-0.0980***			-0.118***			-0.119***	
		(0.0184)			(0.0220)			(0.0174)			(0.0169)	
Constant	0.471**	5.121***	0.833	1.134***	5.690***	0.795	0.135	5.208***	-0.148	0.575**	5.093***	0.647
	(0.235)	(0.865)	(0.744)	(0.372)	(1.377)	(0.879)	(0.234)	(0.774)	(0.434)	(0.254)	(0.833)	(0.465)
Observations	94	94	94	56	56	56	110	110	110	111	111	111
R-squared	0.989			0.994			0.986			0.987		
Countries	45		45	26		26	55		55	55		55
Instruments			57			47			62			60
Hansen-Test			0.990			1			0.985			0.973

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 5: Social trust and the marginal effect of DAH on LIFE in the context of bureaucratic governance

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	0.00237*	0.00234	-0.000682	0.00217	0.00137	0.000673	0.00223*	0.00237	-0.000623	0.00218*	0.00208	-0.000410
	(0.00134)	(0.00172)	(0.00194)	(0.00147)	(0.00146)	(0.00214)	(0.00125)	(0.00174)	(0.00230)	(0.00123)	(0.00166)	(0.00182)
GOV	-0.000154	-0.00435	0.00875	0.00509	0.0952***	0.0188	-0.00315	0.0103	0.00135	-0.00447	0.00886	-0.00221
	(0.00333)	(0.00908)	(0.00953)	(0.0193)	(0.0322)	(0.0476)	(0.00401)	(0.00906)	(0.00817)	(0.00305)	(0.00797)	(0.00553)
log DAH#GOV	-0.00326***	-0.00279	0.000463	-0.00864	0.00116	0.00689	-0.00415***	-0.00234	-0.00243	-0.00268***	-0.00131	0.000121
	(0.00114)	(0.00286)	(0.00312)	(0.00563)	(0.0138)	(0.0215)	(0.00139)	(0.00277)	(0.00378)	(0.000971)	(0.00228)	(0.00220)
TRUST	0.00850	0.0152	0.00113	0.0115	0.0212	0.0367	0.00616	0.00985	0.00824	0.00231	0.0185	0.00758
	(0.0167)	(0.0238)	(0.0240)	(0.0151)	(0.0233)	(0.0276)	(0.0158)	(0.0238)	(0.0244)	(0.0157)	(0.0247)	(0.0385)
log DAH#TRUST	0.00144	0.0215	0.00177	0.00233	0.0123	-0.000578	0.00257	0.0273*	0.00643	0.00298	0.0219	0.00918
	(0.00926)	(0.0147)	(0.0121)	(0.00998)	(0.0144)	(0.0291)	(0.00896)	(0.0154)	(0.0168)	(0.00833)	(0.0145)	(0.0129)
TRUST#GOV	0.0516	0.0237	0.0904	0.0396	-0.146	0.308	0.0535	-0.0119	0.0859	0.0193	-0.0209	0.00934
	(0.0336)	(0.0478)	(0.0892)	(0.154)	(0.237)	(0.278)	(0.0447)	(0.0520)	(0.118)	(0.0242)	(0.0348)	(0.0495)
log DAH#TRUST#GOV	0.0210	-0.0275	0.0474	0.0775	-0.0329	0.522	0.0120	-0.0364	0.00403	0.00788	-0.0331*	0.00964
	(0.0135)	(0.0325)	(0.0635)	(0.0661)	(0.165)	(0.404)	(0.0156)	(0.0362)	(0.0459)	(0.00842)	(0.0196)	(0.0157)
EXPEND	0.000989**	-0.00129	0.000973	0.000849*	-0.00183**	5.07e-05	0.00109**	-0.00193*	0.00134	0.000970**	-0.00163*	0.000962
	(0.000446)	(0.00102)	(0.000727)	(0.000458)	(0.000859)	(0.000926)	(0.000498)	(0.00106)	(0.00115)	(0.000406)	(0.000978)	(0.000680)
log FERTIL	0.0123*	-0.0649***	0.0240***	0.0135*	-0.0703***	0.0222***	0.0119	-0.0698***	0.0230***	0.0121*	-0.0626***	0.0201**
	(0.00725)	(0.0197)	(0.00801)	(0.00776)	(0.0204)	(0.00848)	(0.00749)	(0.0198)	(0.00688)	(0.00726)	(0.0196)	(0.00940)
log POP	-0.000377	0.00377	-0.00133	-0.00125	0.00479	-0.00291	-0.000352	0.00484	-0.00136	-0.000301	0.00532	-0.00195
	(0.00147)	(0.00630)	(0.00240)	(0.00154)	(0.00659)	(0.00250)	(0.00142)	(0.00624)	(0.00167)	(0.00129)	(0.00635)	(0.00273)
log GDP	-0.000410	0.0543***	-0.00656	-0.000381	0.0490***	-0.00239	-0.000694	0.0486***	-0.00721	0.00163	0.0501***	-0.00470
	(0.00306)	(0.0101)	(0.00991)	(0.00329)	(0.0106)	(0.00623)	(0.00307)	(0.0101)	(0.00697)	(0.00302)	(0.00964)	(0.00792)
log HIV	-0.00921***	-0.0361***	-0.0107	-0.00868**	-0.0337***	-0.00792**	-0.00855***	-0.0359***	-0.00850	-0.00831***	-0.0378***	-0.00885**
	(0.00330)	(0.00565)	(0.00785)	(0.00349)	(0.00578)	(0.00372)	(0.00294)	(0.00561)	(0.00536)	(0.00311)	(0.00571)	(0.00429)
(lagged) LIFE	0.906***		0.926***	0.920***		0.934***	0.913***		0.952***	0.916***		0.932***
	(0.0368)		(0.0953)	(0.0385)		(0.0587)	(0.0357)		(0.0688)	(0.0355)		(0.0662)
TREND		0.00987***			0.0128***			0.0104***			0.0104***	
		(0.00281)			(0.00312)			(0.00274)			(0.00274)	
Constant	0.384***	3.685***	0.367	0.341**	3.711***	0.334	0.358***	3.725***	0.262	0.330**	3.692***	0.342
	(0.136)	(0.139)	(0.321)	(0.143)	(0.154)	(0.242)	(0.131)	(0.140)	(0.232)	(0.131)	(0.139)	(0.227)
Observations	111	111	111	104	104	104	111	111	111	111	111	111
R-squared	0.985			0.984			0.985			0.984		
Countries	55		55	52		52	55		55	55		55
Instruments			61			61			61			61
Hansen-Test			0.588			0.997			0.894			0.857

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 6: Social trust and the marginal effect of DAH on LIFE in the context of liberal democracy

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	0.00205*	0.00224	-0.000331	0.00227*	0.00121	0.000590	0.00131	0.00230	-0.000769	0.00149	0.00229	-0.000935
	(0.00123)	(0.00176)	(0.00204)	(0.00118)	(0.00183)	(0.00194)	(0.00143)	(0.00191)	(0.00184)	(0.00136)	(0.00188)	(0.00198)
DEMO	-0.0130*	0.0270	-0.0169	-0.000395	0.000655	-0.000482	0.00546	0.00509	0.00517	0.00653	0.00486	0.0118
	(0.00787)	(0.0199)	(0.0153)	(0.000299)	(0.000731)	(0.000676)	(0.00824)	(0.0165)	(0.0186)	(0.00835)	(0.0168)	(0.0217)
log DAH# DEMO	-0.00715**	-0.00333	-0.00158	-0.0004***	2.23e-05	-0.000148	-0.00410	-0.00387	-0.00329	-0.00469	-0.00382	0.000796
	(0.00288)	(0.00628)	(0.00625)	(0.000134)	(0.000304)	(0.000379)	(0.00343)	(0.00881)	(0.00788)	(0.00328)	(0.00885)	(0.0115)
TRUST	-0.00217	0.0252	0.0139	-0.000249	0.0273	0.0160	0.00310	0.0138	0.0211	0.00302	0.0132	0.00850
	(0.0149)	(0.0252)	(0.0446)	(0.0142)	(0.0243)	(0.0354)	(0.0158)	(0.0235)	(0.0307)	(0.0155)	(0.0240)	(0.0254)
log DAH#TRUST	0.00166	0.0275*	0.0106	-0.000787	0.0292**	0.0121	0.00227	0.0253	0.0135	0.000430	0.0244	0.00577
	(0.00824)	(0.0151)	(0.0132)	(0.00816)	(0.0147)	(0.0142)	(0.00936)	(0.0158)	(0.0175)	(0.00948)	(0.0158)	(0.0136)
TRUST# DEMO	0.0184	-0.0818	0.0315	-0.000241	-0.00410	-0.000166	0.0624	-0.114	0.178	0.0611	-0.111	0.142
	(0.0564)	(0.0931)	(0.0997)	(0.00242)	(0.00435)	(0.00678)	(0.0744)	(0.119)	(0.114)	(0.0730)	(0.119)	(0.116)
log DAH#TRUST# DEMO	0.00922	-0.0931*	-0.0130	0.000419	-0.00499*	-3.47e-06	0.0229	-0.0819	0.0534	0.0282	-0.0869	0.0856
	(0.0224)	(0.0540)	(0.0701)	(0.000962)	(0.00259)	(0.00319)	(0.0368)	(0.0726)	(0.0633)	(0.0349)	(0.0796)	(0.0811)
EXPEND	0.00103**	-0.00155	0.00114**	0.000964**	-0.00149	0.000985	0.000939**	-0.00159	0.000375	0.00100**	-0.00158	0.000667
	(0.000415)	(0.000973)	(0.000565)	(0.000413)	(0.000962)	(0.000639)	(0.000425)	(0.00107)	(0.000629)	(0.000424)	(0.00108)	(0.000736)
log FERTIL	0.0125*	-0.0593***	0.0231**	0.0130*	-0.0634***	0.0233**	0.0148*	-0.0641***	0.0244***	0.0145*	-0.0640***	0.0224***
	(0.00739)	(0.0195)	(0.00944)	(0.00759)	(0.0197)	(0.0101)	(0.00786)	(0.0197)	(0.00859)	(0.00774)	(0.0199)	(0.00850)
log POP	-0.000469	0.00479	-0.000964	-0.000621	0.00420	-0.000944	-0.000912	0.00361	-0.00230	-0.000425	0.00357	-0.00205
	(0.00128)	(0.00623)	(0.00305)	(0.00125)	(0.00619)	(0.00260)	(0.00138)	(0.00619)	(0.00268)	(0.00126)	(0.00621)	(0.00288)
log GDP	0.00157	0.0507***	-0.000654	0.00136	0.0509***	-0.00284	0.000358	0.0519***	-0.00462	-0.000301	0.0520***	-0.00851
	(0.00309)	(0.00952)	(0.00960)	(0.00303)	(0.00955)	(0.00909)	(0.00319)	(0.00969)	(0.00562)	(0.00330)	(0.00974)	(0.00708)
log HIV	-0.00838***	-0.0391***	-0.00902*	-0.00889***	-0.0378***	-0.00813*	-0.00892***	-0.0372***	-0.00748	-0.00919***	-0.0373***	-0.00691*
	(0.00318)	(0.00581)	(0.00488)	(0.00331)	(0.00561)	(0.00474)	(0.00345)	(0.00573)	(0.00519)	(0.00347)	(0.00576)	(0.00368)
(lagged) LIFE	0.915***		0.916***	0.912***		0.940***	0.914***		0.953***	0.915***		0.975***
	(0.0364)		(0.0738)	(0.0377)		(0.0723)	(0.0395)		(0.0638)	(0.0393)		(0.0520)
TREND		0.00991***			0.00972***			0.0103***			0.0103***	
		(0.00271)			(0.00273)			(0.00285)			(0.00288)	
Constant	0.336**	3.691***	0.352	0.352**	3.706***	0.274	0.354**	3.707***	0.262	0.345**	3.707***	0.195
	(0.135)	(0.137)	(0.271)	(0.141)	(0.138)	(0.261)	(0.147)	(0.139)	(0.252)	(0.147)	(0.139)	(0.195)
Observations	111	111	111	111	111	111	111	111	111	110	110	110
R-squared	0.984			0.984			0.984			0.984		
Countries	55		55	55		55	55		55	55		55
Instruments			63			63			63			62
Hansen-Test			0.883			0.967			0.993			0.984

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 7: Social trust and the marginal effect of DAH on LIFE in the context of decentralization

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	0.00274	0.00148	0.00270	0.00362***	-0.00269***	0.000351	0.000622	0.00256	1.60e-05	0.000690	0.00159	0.000292
	(0.00173)	(0.00321)	(0.00371)	(0.00127)	(0.000898)	(0.00393)	(0.00119)	(0.00192)	(0.00200)	(0.00161)	(0.00186)	(0.00173)
DECENTRAL	-0.0100***	0.00161	-0.0177**	-0.0135***	-0.0142	-0.0134	-0.0128***	-0.0246	-0.0232*	-0.00593	0.00203	-0.0235
	(0.00346)	(0.0130)	(0.00861)	(0.00363)	(0.0153)	(0.0165)	(0.00389)	(0.0249)	(0.0140)	(0.00542)	(0.0273)	(0.0179)
log DAH# DECEN-TRAL	-0.00276	0.00153	-0.00338	-0.00570***	0.00191	0.000551	-0.000388	-0.000620	0.00359	0.00604*	0.00233	0.00174
	(0.00173)	(0.00412)	(0.00596)	(0.00141)	(0.00191)	(0.00855)	(0.00253)	(0.00410)	(0.0118)	(0.00321)	(0.00564)	(0.00938)
TRUST	-0.000103	0.0934**	0.0344	0.0111	-0.0609***	0.0478	-0.00868	0.0149	-0.0104	0.00286	0.0144	0.0386
	(0.0243)	(0.0475)	(0.0616)	(0.0278)	(0.0179)	(0.0466)	(0.0165)	(0.0243)	(0.0243)	(0.0155)	(0.0252)	(0.0508)
log DAH#TRUST	-0.0166	0.00128	-0.0488	-0.0525***	-0.0133	-0.0760*	0.00118	0.0287*	0.00683	-0.00157	0.0232	0.0176
	(0.0165)	(0.0295)	(0.0667)	(0.0156)	(0.0137)	(0.0398)	(0.00904)	(0.0161)	(0.0220)	(0.00973)	(0.0155)	(0.0195)
TRUST# DECENTRAL	0.00943	-0.104*	0.00458	0.00764	0.0668**	-0.0721	0.0247	-0.166*	0.0488	-0.0580	-0.0562	-0.179**
	(0.0272)	(0.0573)	(0.0551)	(0.0272)	(0.0301)	(0.0741)	(0.0227)	(0.0847)	(0.0696)	(0.0372)	(0.0782)	(0.0779)
log DAH#TRUST# DECENTRAL	0.0225	0.0176	0.0704	0.0552***	0.00529	0.0968***	-0.00191	-0.0828	-0.0602	0.0622***	-0.0101	0.0184
	(0.0190)	(0.0367)	(0.0838)	(0.0160)	(0.0186)	(0.0332)	(0.0111)	(0.0512)	(0.114)	(0.0236)	(0.0521)	(0.112)
EXPEND	0.00109**	-0.000961	0.00101	0.000374	-0.00116**	-0.000106	0.000841**	-0.00114	0.000639	0.000933*	-0.00130	0.000933*
	(0.000450)	(0.00105)	(0.00110)	(0.000256)	(0.000506)	(0.00105)	(0.000419)	(0.000939)	(0.000699)	(0.000494)	(0.000990)	(0.000565)
log FERTIL	0.0150	-0.0483**	0.0345**	0.0145**	-0.0946***	0.0141	0.00946	-0.0706***	0.0144	0.0158**	-0.0664***	0.0261***
	(0.0104)	(0.0238)	(0.0156)	(0.00575)	(0.0125)	(0.0149)	(0.00728)	(0.0206)	(0.0121)	(0.00755)	(0.0201)	(0.00770)
log POP	0.000660	-0.00120	0.000154	0.00288**	0.0115**	0.00171	-0.00112	0.00524	-0.00158	-0.00105	0.00330	-0.00163
	(0.00112)	(0.00729)	(0.00473)	(0.00143)	(0.00553)	(0.00471)	(0.00147)	(0.00634)	(0.00222)	(0.00194)	(0.00668)	(0.00380)
log GDP	-0.000909	0.0549***	0.000547	0.00116	0.0293***	-0.00713	-0.00327	0.0469***	-0.00690	0.000938	0.0529***	1.97e-05
	(0.00353)	(0.0109)	(0.0111)	(0.00364)	(0.00814)	(0.0105)	(0.00368)	(0.0101)	(0.00763)	(0.00390)	(0.00996)	(0.00540)
log HIV	-0.00936**	-0.0342***	-0.0115*	0.000781	0.00298	0.00450	-0.00948***	-0.0425***	-0.00917*	-0.00942***	-0.0358***	-0.0101**
	(0.00376)	(0.00696)	(0.00632)	(0.00166)	(0.00357)	(0.00349)	(0.00344)	(0.00611)	(0.00513)	(0.00358)	(0.00569)	(0.00437)
(lagged) LIFE	0.946***		0.958***	1.015***		1.077***	0.917***		0.936***	0.906***		0.894***
	(0.0414)		(0.0625)	(0.0251)		(0.0517)	(0.0384)		(0.0533)	(0.0374)		(0.0641)
TREND		0.00966***			0.00836***			0.0103***			0.00965***	
		(0.00304)			(0.00231)			(0.00281)			(0.00278)	
Constant	0.204	3.755***	0.135	-0.117	3.873***	-0.273	0.381***	3.723***	0.343*	0.385***	3.707***	0.450*
	(0.155)	(0.165)	(0.204)	(0.0949)	(0.141)	(0.190)	(0.139)	(0.141)	(0.202)	(0.142)	(0.152)	(0.233)
Observations	94	94	94	56	56	56	110	110	110	111	111	111
R-squared	0.983			0.995			0.985			0.984		
Countries	45		45	26		26	55		55	55		55
Instruments			57			47			62			60
Hansen-Test			0.875			1			0.962			0.945

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table C 3: Membership and the marginal effect of DAH on IMR in the context of bureaucratic governance

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	-0.0108*	-0.0342***	-0.0262*	-0.0148**	-0.0198***	-0.0136	-0.00769	-0.0372***	-0.00947	-0.0165***	-0.0299**	-0.0489***
	(0.00629)	(0.0121)	(0.0148)	(0.00621)	(0.00332)	(0.0196)	(0.00623)	(0.0118)	(0.0117)	(0.00546)	(0.0127)	(0.0158)
GOV	-0.0109	-0.194***	0.0528	0.205	-1.011***	0.496	-0.0306	-0.207***	0.0682	0.0360**	-0.0915	0.0708**
	(0.0221)	(0.0693)	(0.0453)	(0.132)	(0.214)	(0.548)	(0.0220)	(0.0624)	(0.0622)	(0.0160)	(0.0617)	(0.0276)
log DAH#GOV	0.0119	-0.000347	-0.00847	0.0733*	0.0848	-0.144	-0.00304	0.00761	-0.0640***	0.0184***	-0.00629	0.0240*
	(0.0110)	(0.0212)	(0.0217)	(0.0416)	(0.0557)	(0.213)	(0.0141)	(0.0203)	(0.0205)	(0.00626)	(0.0171)	(0.0133)
CLUBS	-0.0356	-0.173	-0.242*	-0.0120	0.134*	-0.142	-0.0542	-0.184	-0.249	-0.0540	-0.202	-0.191
	(0.0476)	(0.146)	(0.142)	(0.0422)	(0.0716)	(0.173)	(0.0474)	(0.142)	(0.173)	(0.0448)	(0.150)	(0.147)
log DAH#CLUBS	-0.0654***	-0.0861**	-0.106***	-0.0443**	-0.0104	-0.0247	-0.0577***	-0.0638	-0.0351	-0.0723***	-0.0644	-0.0985**
	(0.0219)	(0.0406)	(0.0411)	(0.0205)	(0.0191)	(0.0658)	(0.0187)	(0.0413)	(0.0377)	(0.0169)	(0.0398)	(0.0420)
CLUBS#GOV	0.113	0.00507	0.341	0.454	-2.309***	-0.366	0.0552	0.123	0.122	0.170***	0.362*	0.324**
	(0.0869)	(0.226)	(0.234)	(0.383)	(0.636)	(1.422)	(0.100)	(0.186)	(0.189)	(0.0525)	(0.205)	(0.158)
log DAH#CLUBS#GOV	0.0387	-0.0383	0.0147	0.104	0.106	-0.533	-0.0166	-0.0684	-0.281***	0.0536***	0.0150	0.0552
	(0.0386)	(0.0903)	(0.100)	(0.118)	(0.370)	(0.696)	(0.0485)	(0.0877)	(0.102)	(0.0194)	(0.0639)	(0.0482)
EXPEND	-0.00539*	-0.00756	-0.00608	-0.00114	0.000474	-0.000218	-0.00458	-0.00756	-0.00778	-0.00302	-0.0100*	-0.00118
	(0.00283)	(0.00653)	(0.00606)	(0.00210)	(0.00213)	(0.00643)	(0.00291)	(0.00659)	(0.00634)	(0.00217)	(0.00608)	(0.00693)
log FERTIL	0.0581	0.785***	0.0803	0.0295	1.124***	0.0767	0.0519	0.808***	-0.00109	0.0374	0.769***	0.221**
	(0.0403)	(0.125)	(0.120)	(0.0354)	(0.113)	(0.149)	(0.0397)	(0.122)	(0.136)	(0.0385)	(0.129)	(0.0893)
log POP	-0.0119*	0.0109	-0.00748	-0.0169**	0.00963	-0.0223	-0.0102	0.0201	9.13e-05	-0.0153**	0.00599	-0.0330**
	(0.00683)	(0.0329)	(0.0135)	(0.00661)	(0.0367)	(0.0143)	(0.00674)	(0.0323)	(0.0143)	(0.00721)	(0.0347)	(0.0130)
log GDP	-0.0209	-0.332***	-0.000192	-0.0540***	-0.155**	0.0376	-0.0224	-0.319***	-0.0313	-0.0490***	-0.371***	-0.0391
	(0.0165)	(0.0600)	(0.0583)	(0.0164)	(0.0618)	(0.0622)	(0.0157)	(0.0597)	(0.0574)	(0.0150)	(0.0604)	(0.0439)
log HIV	0.0233**	0.0768*	0.0320	0.0216*	0.00280	0.0282	0.0284**	0.0772**	0.0402	0.0173	0.0720*	0.00506
	(0.0117)	(0.0392)	(0.0234)	(0.0114)	(0.0312)	(0.0285)	(0.0116)	(0.0390)	(0.0303)	(0.0111)	(0.0396)	(0.0195)
(lagged) IMR	0.953***		1.048***	0.991***		1.149***	0.960***		1.087***	0.967***		0.983***
	(0.0310)		(0.0900)	(0.0254)		(0.117)	(0.0320)		(0.105)	(0.0274)		(0.0733)
TREND		-0.120***			-0.146***			-0.121***			-0.118***	
		(0.0181)			(0.0241)			(0.0172)			(0.0184)	
Constant	0.418*	5.715***	-0.232	0.609***	3.857***	-0.701	0.382*	5.431***	-0.142	0.627***	6.147***	0.532
	(0.233)	(0.745)	(0.817)	(0.225)	(0.866)	(0.906)	(0.232)	(0.748)	(0.838)	(0.198)	(0.785)	(0.624)
Observations	90	90	90	84	84	84	90	90	90	90	90	90
R-squared	0.986			0.989			0.986			0.988		
Countries	52		52	49		49	52		52	52		52
Instruments			35			34			35			35
Hansen-Test			0.563			0.909			0.365			0.657

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table C 4: Membership and the marginal effect of DAH on LIFE in the context of bureaucratic governance

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	0.00189*	0.00547**	0.00247	0.00208*	0.00409***	0.00117	0.00186*	0.00707***	0.00135	0.00211**	0.00697***	0.00332*
	(0.00114)	(0.00257)	(0.00348)	(0.00114)	(0.00158)	(0.00184)	(0.00104)	(0.00237)	(0.00222)	(0.000966)	(0.00233)	(0.00183)
GOV	-0.000695	-0.00267	0.0106	-0.0108	0.249***	0.0311	-0.000403	0.0236**	-0.00885	-0.00191	0.0117	-0.00268
	(0.00264)	(0.0130)	(0.0123)	(0.0197)	(0.0628)	(0.143)	(0.00278)	(0.0112)	(0.0146)	(0.00230)	(0.0113)	(0.00496)
log DAH#GOV	-0.00224*	-0.00306	-0.00313	-0.00882	0.0220	-0.00828	-0.00232*	-0.00559	-0.000575	-0.00183*	-0.00360	-0.00102
	(0.00115)	(0.00431)	(0.00543)	(0.00576)	(0.0185)	(0.0325)	(0.00121)	(0.00391)	(0.00426)	(0.000937)	(0.00304)	(0.00226)
CLUBS	0.0142**	0.0204	0.0136	0.0149**	-0.0126	0.0125	0.0157**	0.0199	0.0544	0.0162**	0.0137	0.0470
	(0.00669)	(0.0275)	(0.0317)	(0.00686)	(0.0236)	(0.0345)	(0.00691)	(0.0240)	(0.0371)	(0.00721)	(0.0253)	(0.0348)
log DAH#CLUBS	0.0113***	0.0144*	0.00443	0.00980***	0.0105*	0.00271	0.0118***	0.0209***	0.00535	0.0115***	0.0165**	0.0113
	(0.00330)	(0.00840)	(0.00998)	(0.00371)	(0.00638)	(0.0102)	(0.00319)	(0.00794)	(0.00904)	(0.00310)	(0.00753)	(0.00839)
CLUBS#GOV	-0.0149	0.0160	-0.0214	-0.108	0.482***	-0.129	-0.0245	0.0648*	-0.0645	-0.0161	0.0640*	0.000454
	(0.0140)	(0.0431)	(0.0435)	(0.0830)	(0.163)	(0.280)	(0.0169)	(0.0332)	(0.0565)	(0.0120)	(0.0371)	(0.0214)
log DAH#CLUBS#GOV	-0.00880*	-0.0169	-0.00289	-0.0291	0.0157	0.000181	-0.0105*	-0.0169	0.00452	-0.00714*	-0.00535	0.00140
	(0.00498)	(0.0175)	(0.0365)	(0.0200)	(0.0735)	(0.0927)	(0.00592)	(0.0163)	(0.0347)	(0.00403)	(0.0120)	(0.00767)
EXPEND	0.000569	-0.000277	-0.000386	0.000355	-0.00138	-0.000246	0.000581	-0.00122	0.000697	0.000318	-0.000341	0.000238
	(0.000361)	(0.00139)	(0.00101)	(0.000344)	(0.000891)	(0.00130)	(0.000386)	(0.00138)	(0.00135)	(0.000272)	(0.00128)	(0.000601)
log FERTIL	0.0109*	-0.0572**	0.0249	0.0125**	-0.0683***	0.0189	0.0103*	-0.0625***	0.00421	0.0132**	-0.0525**	-0.00285
	(0.00622)	(0.0229)	(0.0214)	(0.00614)	(0.0258)	(0.0249)	(0.00609)	(0.0213)	(0.0299)	(0.00643)	(0.0219)	(0.0136)
log POP	-0.00133	0.00457	-0.000138	-0.00155	0.00663	-0.00148	-0.00123	0.00485	-0.00166	-0.000937	0.00474	-0.000803
	(0.00130)	(0.00624)	(0.00211)	(0.00127)	(0.00638)	(0.00236)	(0.00126)	(0.00619)	(0.00243)	(0.00109)	(0.00653)	(0.00261)
log GDP	-0.000707	0.0595***	-0.00482	0.000192	0.0435***	0.00187	-0.00120	0.0476***	-0.00912	0.00145	0.0540***	-0.00593
	(0.00339)	(0.0110)	(0.0105)	(0.00302)	(0.0127)	(0.0127)	(0.00310)	(0.0103)	(0.0152)	(0.00298)	(0.00997)	(0.0132)
log HIV	-0.00712**	-0.0427***	-0.00753	-0.00633**	-0.0320***	-0.00844	-0.00668***	-0.0439***	-0.00756	-0.00681**	-0.0436***	-0.00823
	(0.00291)	(0.00761)	(0.00572)	(0.00282)	(0.00698)	(0.00644)	(0.00255)	(0.00733)	(0.0102)	(0.00270)	(0.00734)	(0.00862)
(lagged) LIFE	0.935***		0.953***	0.962***		0.890***	0.937***		0.984***	0.944***		0.951***
	(0.0316)		(0.111)	(0.0335)		(0.119)	(0.0288)		(0.155)	(0.0311)		(0.0967)
TREND		0.00853***			0.0149***			0.00995***			0.00853***	
		(0.00325)			(0.00368)			(0.00283)			(0.00294)	
Constant	0.288**	3.606***	0.239	0.174	3.712***	0.457	0.283***	3.708***	0.182	0.231**	3.642***	0.286
	(0.114)	(0.140)	(0.396)	(0.132)	(0.164)	(0.432)	(0.106)	(0.137)	(0.557)	(0.116)	(0.138)	(0.320)
Observations	90	90	90	84	84	84	90	90	90	90	90	90
R-squared	0.988			0.988			0.989			0.989		
Countries	52		52	49		49	52		52	52		52
Instruments			35			34			35			35
Hansen-Test			0.541			0.688			0.317			0.620

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table C 5: Membership and the marginal effect of DAH on IMR in the context of liberal democracy

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	-0.0161***	-0.0283**	-0.0446***	-0.0155**	-0.0349**	-0.0453***	-0.0146**	-0.0285**	-0.0321***	-0.0136**	-0.0305**	-0.0361***
	(0.00550)	(0.0130)	(0.0144)	(0.00663)	(0.0155)	(0.0159)	(0.00583)	(0.0117)	(0.0106)	(0.00586)	(0.0122)	(0.0131)
DEMO	-0.0720	-0.197	-0.134	-0.0711	-0.286*	-0.0986	-0.0763	-0.278	-0.102	-0.0725	-0.279	-0.120
	(0.0476)	(0.146)	(0.158)	(0.0517)	(0.160)	(0.179)	(0.0513)	(0.172)	(0.112)	(0.0518)	(0.172)	(0.115)
log DAH# DEMO	0.0991**	-0.306**	0.185***	0.00370*	-0.00724	0.00311	0.0645	-0.197	0.114	0.0706	-0.200	0.131
	(0.0443)	(0.146)	(0.0604)	(0.00213)	(0.00715)	(0.00360)	(0.0631)	(0.142)	(0.140)	(0.0630)	(0.144)	(0.140)
CLUBS	0.0494**	-0.0295	0.0695*	0.00219**	0.000677	0.00276	0.0492**	-0.0189	0.0306	0.0468**	-0.00962	0.0361
	(0.0193)	(0.0455)	(0.0363)	(0.000960)	(0.00253)	(0.00192)	(0.0218)	(0.0504)	(0.0395)	(0.0220)	(0.0544)	(0.0437)
log DAH#CLUBS	-0.0754***	-0.0624	-0.102***	-0.0706***	-0.0787*	-0.0963***	-0.0772***	-0.0946**	-0.0895***	-0.0748***	-0.0992**	-0.0953**
	(0.0173)	(0.0391)	(0.0300)	(0.0186)	(0.0457)	(0.0338)	(0.0173)	(0.0430)	(0.0339)	(0.0172)	(0.0441)	(0.0388)
CLUBS# DEMO	0.423***	0.770	0.770*	0.0202***	0.0665**	0.0506**	0.566***	0.534	1.158***	0.575***	0.550	1.164***
	(0.147)	(0.517)	(0.411)	(0.00677)	(0.0270)	(0.0223)	(0.156)	(0.475)	(0.339)	(0.156)	(0.477)	(0.355)
log DAH#CLUBS# DEMO	0.129**	-0.0249	0.147	0.00445	0.00665	0.0127**	0.162**	0.0786	0.354***	0.152**	0.106	0.354***
	(0.0604)	(0.170)	(0.114)	(0.00326)	(0.00859)	(0.00542)	(0.0727)	(0.190)	(0.120)	(0.0737)	(0.202)	(0.119)
EXPEND	-0.00339	-0.0103*	-0.00260	-0.00387*	-0.0115*	-0.00105	-0.00258	-0.0138**	-0.000251	-0.00259	-0.0137**	0.000565
	(0.00217)	(0.00585)	(0.00565)	(0.00224)	(0.00619)	(0.00651)	(0.00207)	(0.00646)	(0.00653)	(0.00208)	(0.00650)	(0.00669)
log FERTIL	0.0337	0.748***	0.169	0.0343	0.797***	0.195	0.0189	0.800***	0.140	0.0194	0.796***	0.158
	(0.0379)	(0.129)	(0.106)	(0.0383)	(0.128)	(0.120)	(0.0367)	(0.132)	(0.0888)	(0.0368)	(0.132)	(0.0993)
log POP	-0.0141**	0.0102	-0.0309**	-0.0143**	0.00601	-0.0422***	-0.0122*	0.0206	-0.0327***	-0.0117	0.0190	-0.0363**
	(0.00705)	(0.0348)	(0.0121)	(0.00681)	(0.0339)	(0.0145)	(0.00660)	(0.0337)	(0.0118)	(0.00714)	(0.0338)	(0.0155)
log GDP	-0.0443***	-0.372***	-0.0382	-0.0466***	-0.379***	-0.0208	-0.0438***	-0.365***	-0.00696	-0.0447***	-0.368***	-0.00216
	(0.0151)	(0.0591)	(0.0454)	(0.0152)	(0.0596)	(0.0643)	(0.0153)	(0.0610)	(0.0580)	(0.0164)	(0.0609)	(0.0613)
log HIV	0.0195*	0.0768*	0.00235	0.0223**	0.0700*	-0.00833	0.0232**	0.0842**	-0.00397	0.0234**	0.0848**	-0.00331
	(0.0111)	(0.0401)	(0.0181)	(0.0110)	(0.0397)	(0.0254)	(0.0108)	(0.0426)	(0.0253)	(0.0108)	(0.0428)	(0.0252)
(lagged) IMR	0.968***		0.986***	0.959***		0.997***	0.970***		1.043***	0.970***		1.055***
	(0.0274)		(0.0603)	(0.0282)		(0.0848)	(0.0275)		(0.0706)	(0.0285)		(0.0789)
TREND		-0.116***			-0.116***			-0.127***			-0.125***	
		(0.0178)			(0.0180)			(0.0214)			(0.0217)	
Constant	0.575***	6.112***	0.530	0.642***	6.185***	0.496	0.546**	5.918***	0.107	0.546**	5.968***	0.0648
	(0.199)	(0.785)	(0.563)	(0.202)	(0.780)	(0.779)	(0.213)	(0.786)	(0.648)	(0.214)	(0.783)	(0.647)
Observations	90	90	90	90	90	90	90	90	90	89	89	89
R-squared	0.988			0.988			0.988			0.988		
Countries	52		52	52		52	52		52	52		52
Instruments			36			36			36			35
Hansen-Test			0.527			0.556			0.441			0.537

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table C 6: Membership and the marginal effect of DAH on LIFE in the context of liberal democracy

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	0.00195*	0.00774***	-5.80e-06	0.00242**	0.00812***	0.00132	0.00163	0.00504**	0.00192	0.00213*	0.00687***	0.00245
	(0.00103)	(0.00237)	(0.00217)	(0.00109)	(0.00267)	(0.00257)	(0.00111)	(0.00254)	(0.00232)	(0.00109)	(0.00246)	(0.00222)
DEMO	0.0171**	0.0136	0.0276	0.0157**	0.00645	0.0184	0.0166**	0.0106	0.0324	0.0140**	0.0101	0.0390
	(0.00774)	(0.0249)	(0.0266)	(0.00756)	(0.0280)	(0.0296)	(0.00748)	(0.0298)	(0.0215)	(0.00710)	(0.0281)	(0.0287)
log DAH# DEMO	-0.00427	0.0505*	0.00257	-0.000195	0.000817	-0.000879	0.00268	0.0432	-0.00984	0.00464	0.0534*	-0.0104
	(0.00635)	(0.0285)	(0.0177)	(0.000271)	(0.00135)	(0.000797)	(0.00930)	(0.0306)	(0.0368)	(0.00918)	(0.0299)	(0.0303)
CLUBS	-0.00452*	-0.0114	0.00145	-0.000319**	-0.000555	-0.000266	-0.00326	0.00491	0.000392	-0.00439	-0.00179	-0.00357
	(0.00274)	(0.00824)	(0.00579)	(0.000136)	(0.000431)	(0.000302)	(0.00327)	(0.0105)	(0.00757)	(0.00330)	(0.0105)	(0.00845)
log DAH#CLUBS	0.0117***	0.0183**	0.00450	0.0115***	0.0199**	0.00653	0.0105***	0.00884	0.00602	0.0118***	0.0139	0.00781
	(0.00323)	(0.00746)	(0.00737)	(0.00313)	(0.00838)	(0.00597)	(0.00303)	(0.00904)	(0.00799)	(0.00291)	(0.00876)	(0.00810)
CLUBS# DEMO	-0.0277	0.146	-0.0228	-0.000744	0.00751	0.00286	-0.0192	0.128	0.0139	-0.0159	0.145	0.0187
	(0.0326)	(0.0955)	(0.0519)	(0.00127)	(0.00499)	(0.00390)	(0.0373)	(0.103)	(0.0366)	(0.0354)	(0.101)	(0.0626)
log DAH#CLUBS# DEMO	-0.0160	-0.0236	-0.0146	-0.000628	-0.00144	0.000663	-0.00675	-0.0120	0.0142	-0.00965	-0.0335	0.0120
	(0.0122)	(0.0330)	(0.0261)	(0.000563)	(0.00162)	(0.00138)	(0.0142)	(0.0403)	(0.0235)	(0.0133)	(0.0403)	(0.0169)
EXPEND	0.000436	-0.000250	0.000552	0.000480	-0.000225	0.000738	0.000470	0.000458	0.000367	0.000563	0.000574	0.000509
	(0.000285)	(0.00127)	(0.000456)	(0.000298)	(0.00130)	(0.000568)	(0.000359)	(0.00143)	(0.000583)	(0.000354)	(0.00139)	(0.000398)
log FERTIL	0.0129**	-0.0491**	0.0130	0.0126*	-0.0575***	0.0149	0.0138**	-0.0538**	0.0167	0.0127**	-0.0508**	0.00994
	(0.00659)	(0.0217)	(0.0121)	(0.00666)	(0.0220)	(0.0203)	(0.00656)	(0.0223)	(0.0122)	(0.00647)	(0.0211)	(0.0113)
log POP	-0.00121	0.00513	-0.00168	-0.00106	0.00456	-0.00234	-0.00154	0.00439	-0.00262	-0.000687	0.00524	-0.00180
	(0.00112)	(0.00648)	(0.00287)	(0.00111)	(0.00627)	(0.00325)	(0.00124)	(0.00604)	(0.00284)	(0.00114)	(0.00597)	(0.00201)
log GDP	0.000917	0.0544***	0.00153	0.00117	0.0562***	0.00173	0.000692	0.0558***	-0.00316	-0.000399	0.0551***	-0.00245
	(0.00310)	(0.00974)	(0.0110)	(0.00289)	(0.00992)	(0.0102)	(0.00304)	(0.00984)	(0.0157)	(0.00297)	(0.00920)	(0.0112)
log HIV	-0.00729**	-0.0455***	-0.0109	-0.00780***	-0.0430***	-0.0101	-0.00782**	-0.0448***	-0.00759	-0.00792**	-0.0439***	-0.00910*
	(0.00285)	(0.00738)	(0.00733)	(0.00297)	(0.00739)	(0.00684)	(0.00317)	(0.00759)	(0.00772)	(0.00316)	(0.00729)	(0.00508)
(lagged) LIFE	0.941***		0.894***	0.935***		0.907***	0.938***		0.982***	0.939***		0.955***
	(0.0316)		(0.106)	(0.0314)		(0.0957)	(0.0341)		(0.0938)	(0.0333)		(0.0479)
TREND		0.00770***			0.00670**			0.0103***			0.00948***	
		(0.00287)			(0.00303)			(0.00353)			(0.00341)	
Constant	0.249**	3.627***	0.455	0.270**	3.637***	0.411	0.265**	3.617***	0.148	0.258**	3.608***	0.245
	(0.117)	(0.137)	(0.395)	(0.121)	(0.135)	(0.358)	(0.132)	(0.133)	(0.322)	(0.129)	(0.127)	(0.176)
Observations	90	90	90	90	90	90	90	90	90	89	89	89
R-squared	0.988			0.988			0.988			0.988		
Countries	52		52	52		52	52		52	52		52
Instruments			36			36			36			35
Hansen-Test			0.362			0.431			0.923			0.740

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table C 7: Membership and the marginal effect of DAH on IMR in the context of decentralization

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	-0.0265**	-0.0188	-0.0781	-0.0312**	-0.0328*	-0.00647	-0.00609	-0.0307***	-0.0248	-0.0179**	-0.0540***	-0.0216
	(0.0105)	(0.0230)	(0.0569)	(0.0143)	(0.0187)	(0.0547)	(0.00632)	(0.0117)	(0.0276)	(0.00768)	(0.0112)	(0.0154)
DECENTRAL	0.0638***	0.122	0.133	0.107***	0.113	0.0537	0.0560*	0.0143	0.0336	0.0603***	-0.00577	0.0481
	(0.0191)	(0.0997)	(0.0908)	(0.0347)	(0.175)	(0.219)	(0.0304)	(0.151)	(0.110)	(0.0212)	(0.166)	(0.257)
log DAH# DECENTRAL	0.0308***	-0.0135	0.0622	0.0404***	0.0271	0.00384	0.0189	-0.00160	0.0532	0.0416***	0.0820***	0.0832*
	(0.0115)	(0.0264)	(0.0507)	(0.0142)	(0.0233)	(0.0433)	(0.0261)	(0.0332)	(0.0512)	(0.0105)	(0.0283)	(0.0459)
CLUBS	-0.102	-0.0968	-0.232	-0.0763	-0.162	0.200	-0.0531	-0.0656	-0.259	-0.0395	-0.227*	-0.0677
	(0.0951)	(0.297)	(0.511)	(0.0753)	(0.219)	(0.429)	(0.0535)	(0.154)	(0.215)	(0.0482)	(0.138)	(0.191)
log DAH#CLUBS	-0.102**	-0.0455	-0.146	-0.0216	-0.134***	0.0258	-0.0644***	-0.0658*	-0.0762	-0.0801***	-0.137***	-0.0504
	(0.0438)	(0.0717)	(0.137)	(0.0212)	(0.0483)	(0.0624)	(0.0187)	(0.0395)	(0.0621)	(0.0212)	(0.0392)	(0.0436)
CLUBS# DECENTRAL	0.106	-0.0689	0.288	0.0203	0.907**	0.0585	0.128	-0.492	0.378	-0.182**	-0.265	-0.980*
	(0.0937)	(0.314)	(0.445)	(0.110)	(0.361)	(0.458)	(0.0822)	(0.395)	(0.302)	(0.0725)	(0.579)	(0.589)
log DAH#CLUBS# DECENTRAL	0.0902*	-0.0265	0.145	0.0401	0.259***	0.0493	0.0829	0.120	0.0572	0.0878*	0.140	0.0537
	(0.0502)	(0.0870)	(0.146)	(0.0366)	(0.0805)	(0.0645)	(0.0813)	(0.209)	(0.230)	(0.0481)	(0.0988)	(0.149)
EXPEND	-0.00393	-0.00644	-0.00566	0.00297	-0.00116	0.00269	-0.00528*	-0.0104*	-0.00249	-0.00860***	-0.0136***	-0.0140***
	(0.00259)	(0.00642)	(0.00791)	(0.00227)	(0.00607)	(0.0138)	(0.00294)	(0.00589)	(0.0105)	(0.00308)	(0.00521)	(0.00507)
log FERTIL	0.0517	0.761***	0.0491	0.0210	0.648***	0.446	0.0459	0.841***	-0.0777	0.0668	0.927***	0.0978
	(0.0458)	(0.167)	(0.254)	(0.0791)	(0.180)	(0.551)	(0.0413)	(0.137)	(0.254)	(0.0432)	(0.134)	(0.242)
log POP	-0.0164**	0.0533	-0.0296	-0.0449***	-0.0458	-0.100	-0.0100	0.0180	-0.0127	-0.0108	0.0258	-0.000963
	(0.00747)	(0.0409)	(0.0291)	(0.0133)	(0.0655)	(0.114)	(0.00660)	(0.0350)	(0.0212)	(0.00680)	(0.0354)	(0.0222)
log GDP	-0.0405**	-0.457***	-0.141	-0.0787**	-0.571***	0.0304	-0.0203	-0.371***	0.0523	-0.0422**	-0.361***	-0.0113
	(0.0201)	(0.0756)	(0.133)	(0.0311)	(0.0926)	(0.104)	(0.0188)	(0.0665)	(0.0955)	(0.0169)	(0.0651)	(0.0991)
log HIV	0.0208	0.0512	0.0506	0.0415*	-0.00640	-0.0778	0.0294**	0.0570	0.0451	0.0343***	0.0760**	0.0662
	(0.0138)	(0.0478)	(0.0539)	(0.0232)	(0.0571)	(0.181)	(0.0115)	(0.0417)	(0.0307)	(0.0106)	(0.0377)	(0.0448)
(lagged) IMR	0.965***		0.870***	0.988***		0.958***	0.970***		1.200***	0.950***		0.947***
	(0.0268)		(0.121)	(0.0493)		(0.0740)	(0.0294)		(0.163)	(0.0308)		(0.0866)
TREND		-0.114***			-0.0718***			-0.114***			-0.125***	
		(0.0202)			(0.0236)			(0.0190)			(0.0184)	
Constant	0.560**	5.923***	1.912	1.254***	8.373***	0.812	0.335	5.840***	-0.966	0.624***	5.665***	0.222
	(0.228)	(1.023)	(1.240)	(0.425)	(1.475)	(1.530)	(0.251)	(0.810)	(1.365)	(0.227)	(0.888)	(1.207)
Observations	75	75	75	46	46	46	90	90	90	90	90	90
R-squared	0.988			0.992			0.986			0.988		
Countries	43		43	25		25	52		52	52		52
Instruments			32			26			34			32
Hansen-Test			0.623			0.959			0.619			0.606

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table C 8: Membership and the marginal effect of DAH on LIFE in the context of decentralization

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	0.00280	0.00868**	0.00187	0.00428***	NA	0.00543	0.000877	0.00544**	0.00139	0.00157	0.00389	0.00231
	(0.00171)	(0.00394)	(0.00616)	(0.00138)	NA	(0.00667)	(0.000987)	(0.00242)	(0.00151)	(0.00124)	(0.00272)	(0.00351)
DECENTRAL	-0.00747***	0.0168	-0.0117	-0.00915***	NA	-0.0114	-0.00516	0.00205	-0.0142	-0.00325	0.00570	-0.0104
	(0.00284)	(0.0161)	(0.0137)	(0.00318)	NA	(0.0198)	(0.00439)	(0.0281)	(0.0177)	(0.00384)	(0.0309)	(0.0427)
log DAH # DECENTRAL	-0.00263	-0.00232	0.000188	-0.00568***	NA	-0.00791	0.00317	-0.00200	0.00550	-0.00163	0.00672	-0.00422
	(0.00178)	(0.00489)	(0.00625)	(0.00142)	NA	(0.00820)	(0.00323)	(0.00722)	(0.00499)	(0.00136)	(0.00673)	(0.00728)
CLUBS	0.0116	-0.0235	-0.00894	0.0121	NA	-0.0152	0.0174**	0.0200	0.0193	0.0143**	0.0217	0.0583
	(0.0146)	(0.0513)	(0.0529)	(0.00776)	NA	(0.0377)	(0.00728)	(0.0291)	(0.0303)	(0.00612)	(0.0279)	(0.0469)
log DAH #CLUBS	0.00928	0.0406***	-0.000677	0.00951***	NA	0.00867	0.00936***	0.0115	0.000325	0.00864***	0.00601	0.0112
	(0.00654)	(0.0144)	(0.0168)	(0.00324)	NA	(0.00992)	(0.00314)	(0.00805)	(0.00801)	(0.00317)	(0.00937)	(0.00753)
CLUBS# DECENTRAL	0.00497	0.0622	0.0304	-0.000413	NA	0.0253	-0.00919	0.0339	0.0124	0.0134	-0.0476	0.0563
	(0.0134)	(0.0533)	(0.0446)	(0.0138)	NA	(0.0768)	(0.0120)	(0.0776)	(0.0303)	(0.0150)	(0.112)	(0.0787)
log DAH #CLUBS# DECENTRAL	-0.000587	-0.0330*	0.00525	-0.0104*	NA	-0.0104	0.0163	0.00127	0.0333	0.0119	0.0234	0.0108
	(0.00777)	(0.0178)	(0.0164)	(0.00572)	NA	(0.0172)	(0.0121)	(0.0430)	(0.0305)	(0.00900)	(0.0229)	(0.0256)
EXPEND	0.000921**	0.000278	0.00111	0.000286	NA	0.000277	0.000646*	-0.000468	0.000347	0.000721	-0.000724	0.000789
	(0.000374)	(0.00146)	(0.000870)	(0.000236)	NA	(0.00119)	(0.000373)	(0.00128)	(0.000398)	(0.000442)	(0.00139)	(0.000527)
log FERTIL	0.0118	-0.0432*	0.0230	0.0123**	NA	-0.0224	0.00958	-0.0570**	-0.00372	0.0121*	-0.0510**	-0.000132
	(0.00756)	(0.0257)	(0.0170)	(0.00527)	NA	(0.0355)	(0.00640)	(0.0243)	(0.0186)	(0.00615)	(0.0232)	(0.0236)
log POP	0.000193	-0.00101	-0.000907	0.00138	NA	0.00733	-0.00159	0.00389	0.000156	-0.00145	0.00449	-0.00124
	(0.00102)	(0.00757)	(0.00240)	(0.00136)	NA	(0.00991)	(0.00126)	(0.00646)	(0.00218)	(0.00158)	(0.00658)	(0.00463)
log GDP	-0.00209	0.0628***	0.00686	0.000980	NA	-0.00752	-0.00168	0.0600***	-0.00323	0.000954	0.0614***	0.000522
	(0.00318)	(0.0112)	(0.0202)	(0.00317)	NA	(0.0130)	(0.00328)	(0.0117)	(0.00982)	(0.00370)	(0.0107)	(0.0175)
log HIV	-0.00826**	-0.0355***	-0.0138*	-0.00259	NA	0.00853	-0.00842***	-0.0434***	-0.00981	-0.00832***	-0.0406***	-0.0139
	(0.00356)	(0.00837)	(0.00829)	(0.00259)	NA	(0.0128)	(0.00323)	(0.00780)	(0.00924)	(0.00302)	(0.00778)	(0.00962)
(lagged) LIFE	0.963***		0.854***	0.990***	NA	0.985***	0.937***		0.877***	0.930***		0.909***
	(0.0333)		(0.140)	(0.0267)	NA	(0.104)	(0.0308)		(0.128)	(0.0309)		(0.0941)
TREND		0.00582*			NA			0.00849**			0.00712**	
		(0.00314)			NA			(0.00332)			(0.00314)	
Constant	0.154	3.668***	0.554	0.0110	NA	0.0536	0.294***	3.614***	0.558	0.293**	3.599***	0.398
	(0.127)	(0.164)	(0.492)	(0.102)	NA	(0.410)	(0.113)	(0.146)	(0.477)	(0.115)	(0.153)	(0.367)
					NA							
Observations	75	75	75	46	NA	46	90	90	90	90	90	90
R-squared	0.988			0.995	NA		0.988			0.988		
Countries	43		43	25	NA	25	52		52	52		52
Instruments			32		NA	26			34			32
Hansen-Test			0.444		NA	0.685			0.911			0.818

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. NA refers to non-convergence of the random coefficient model. *** p<0.01, ** p<0.05, * p<0.1.

Table D 8: Social trust and the marginal effect of DAH

	Dependent variable: infant mortality ratio			Dependent variable: life expectancy		
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.000954	-0.0166**	-0.00259	0.00110	0.00165	-0.00104
	(0.00598)	(0.00816)	(0.00881)	(0.00129)	(0.00167)	(0.00141)
TRUST	0.154**	-0.0158	0.335*	0.00390	0.00444	0.0124
	(0.0744)	(0.120)	(0.189)	(0.0139)	(0.0233)	(0.0281)
log DAH# TRUST	0.0857**	-0.0190	0.154**	0.00243	0.0152	0.00869
	(0.0435)	(0.0752)	(0.0785)	(0.00839)	(0.0147)	(0.0169)
GOV	-0.0247	-0.0846	-0.000644	0.00422	-0.00860	0.00880**
	(0.0209)	(0.0541)	(0.0449)	(0.00277)	(0.0100)	(0.00433)
CONFLICT	-0.0190	-0.0162	-0.105	0.00726	-0.00943	0.0120
	(0.0393)	(0.0358)	(0.0640)	(0.00524)	(0.00753)	(0.0128)
EXPEND	-0.00508*	-0.00153	-0.00881*	0.000872*	-0.00132	0.000409
	(0.00271)	(0.00486)	(0.00453)	(0.000453)	(0.000984)	(0.000473)
log FERTIL	0.0146	0.770***	0.0717	0.0124	-0.0609***	0.0264***
	(0.0407)	(0.112)	(0.0693)	(0.00776)	(0.0200)	(0.00905)
log POP	-0.0118*	0.0252	-0.0191**	-0.000731	0.00272	-0.00170
	(0.00700)	(0.0348)	(0.00854)	(0.00147)	(0.00628)	(0.00235)
log GDP	-0.0153	-0.307***	-0.00269	-0.000234	0.0576***	-0.00896
	(0.0159)	(0.0570)	(0.0221)	(0.00305)	(0.0103)	(0.00605)
log HIV	0.0280***	0.0235	0.0218*	-0.00893***	-0.0358***	-0.00707
	(0.0107)	(0.0298)	(0.0131)	(0.00333)	(0.00564)	(0.00492)
TREND		-0.124***			0.00896***	
		(0.0173)			(0.00280)	
LDV	0.977***		1.011***	0.911***		0.975***
	(0.0302)		(0.0465)	(0.0382)		(0.0723)
Constant	0.315	5.091***	0.217	0.371***	3.672***	0.197
	(0.215)	(0.748)	(0.301)	(0.141)	(0.140)	(0.277)
Observations	111	111	111	111	111	111
R-squared	0.986			0.984		
Countries	55	55	55	55	55	55
Instruments			61			61
Sargan-Test			0			0
Hansen-Test			0.984			0.828
AR2			0.343			0.527

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 9: Social trust and the marginal effect of DAH on IMR in the context of bureaucratic governance

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	-0.00681	-0.0208**	-0.00533	-0.00969	-0.0140***	-0.00446	-0.00264	-0.0236***	0.00291	-0.0104*	-0.0169**	-0.0195
	(0.00665)	(0.00808)	(0.0123)	(0.00710)	(0.00502)	(0.0116)	(0.00658)	(0.00829)	(0.0117)	(0.00577)	(0.00772)	(0.0122)
GOV	-0.0131	-0.0587	-0.0119	0.124	-0.542***	0.167	-0.0158	-0.105**	-0.0452	0.0506***	-0.0649	0.128***
	(0.0198)	(0.0467)	(0.0393)	(0.110)	(0.118)	(0.165)	(0.0217)	(0.0482)	(0.0388)	(0.0173)	(0.0395)	(0.0383)
log DAH#GOV	0.0160**	0.0216	0.000303	0.0710**	0.204***	-0.111	0.00849	0.0268**	-0.0135	0.0209***	0.00148	0.0497**
	(0.00793)	(0.0133)	(0.0203)	(0.0342)	(0.0535)	(0.123)	(0.00985)	(0.0133)	(0.0183)	(0.00620)	(0.0105)	(0.0223)
TRUST	0.0910	-0.0609	0.367**	0.152*	-0.113	0.374**	0.119	0.0368	0.367**	0.155**	-0.146	0.266**
	(0.0852)	(0.119)	(0.169)	(0.0811)	(0.0834)	(0.183)	(0.0840)	(0.123)	(0.184)	(0.0775)	(0.119)	(0.119)
log DAH#TRUST	0.0624	-0.0394	0.204*	0.0608	0.0372	0.0824	0.0577	-0.0374	0.142*	0.0867**	-0.0161	0.168
	(0.0467)	(0.0726)	(0.110)	(0.0504)	(0.0510)	(0.120)	(0.0455)	(0.0788)	(0.0734)	(0.0411)	(0.0719)	(0.125)
TRUST#GOV	-0.351**	-0.157	-1.062**	0.275	0.304	-2.004	-0.282	-0.313	-0.330	-0.203*	0.0160	-0.374
	(0.144)	(0.234)	(0.494)	(0.826)	(0.933)	(1.865)	(0.211)	(0.263)	(0.515)	(0.107)	(0.164)	(0.250)
log DAH#TRUST#GOV	-0.0182	0.256	-0.139	0.287	0.783	-0.626	0.0719	0.115	0.145	-0.0172	0.252**	0.0278
	(0.0786)	(0.167)	(0.205)	(0.358)	(0.622)	(1.409)	(0.0965)	(0.191)	(0.300)	(0.0491)	(0.101)	(0.170)
EXPEND	-0.00556**	-0.000668	-0.00984**	-0.00133	0.00102	-0.00111	-0.00546*	-0.00108	-0.00692**	-0.00535**	-0.00346	-0.00906**
	(0.00283)	(0.00492)	(0.00479)	(0.00214)	(0.00301)	(0.00392)	(0.00282)	(0.00510)	(0.00342)	(0.00233)	(0.00467)	(0.00442)
log FERTIL	0.0269	0.738***	0.0815	0.0205	0.754***	-0.0166	0.0210	0.786***	0.0387	0.0178	0.691***	0.0181
	(0.0386)	(0.106)	(0.0717)	(0.0396)	(0.1000)	(0.0989)	(0.0389)	(0.107)	(0.0854)	(0.0375)	(0.106)	(0.0708)
log POP	-0.0142**	0.0255	-0.0258**	-0.0155**	0.0394	-0.0269**	-0.0140**	0.0179	-0.0227*	-0.0159**	0.0229	-0.0288*
	(0.00693)	(0.0346)	(0.0118)	(0.00704)	(0.0356)	(0.0113)	(0.00670)	(0.0338)	(0.0125)	(0.00720)	(0.0356)	(0.0162)
log GDP	-0.0152	-0.310***	-0.0120	-0.0341**	-0.282***	-0.0122	-0.0115	-0.292***	0.0249	-0.0358***	-0.318***	-0.0526**
	(0.0152)	(0.0538)	(0.0180)	(0.0155)	(0.0497)	(0.0312)	(0.0159)	(0.0545)	(0.0433)	(0.0138)	(0.0510)	(0.0261)
log HIV	0.0277***	0.0322	0.0279*	0.0248**	0.0191	0.0283	0.0268***	0.0258	0.0211**	0.0214**	0.0477	0.0127
	(0.0101)	(0.0289)	(0.0151)	(0.0116)	(0.0252)	(0.0176)	(0.0101)	(0.0285)	(0.0106)	(0.00997)	(0.0294)	(0.0134)
(lagged) IMR	0.963***		0.973***	0.996***		1.092***	0.977***		1.034***	0.989***		1.033***
	(0.0320)		(0.0849)	(0.0301)		(0.0736)	(0.0320)		(0.0726)	(0.0265)		(0.0495)
TREND		-0.128***			-0.143***			-0.127***			-0.127***	
		(0.0168)			(0.0199)			(0.0165)			(0.0162)	
Constant	0.411*	5.184***	0.516	0.423*	4.749***	0.0895	0.328	5.115***	-0.0477	0.499**	5.377***	0.748*
	(0.226)	(0.732)	(0.344)	(0.232)	(0.766)	(0.588)	(0.231)	(0.734)	(0.623)	(0.203)	(0.736)	(0.433)
Observations	111	111	111	104	104	104	111	111	111	111	111	111
R-squared	0.987			0.988			0.987			0.988		
Countries	55		55	52		52	55		55	55		55
Instruments			61			61			61			61
Hansen-Test			0.972			0.971			0.938			0.953

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 10: Social trust and the marginal effect of DAH on IMR in the context of liberal democracy

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	-0.0100*	-0.0163*	-0.0141	-0.00885	-0.0134	-0.0188	-0.00539	-0.0178*	-0.00656	-0.00413	-0.0185**	-0.00319
	(0.00568)	(0.00837)	(0.0172)	(0.00642)	(0.00876)	(0.0119)	(0.00671)	(0.00941)	(0.0104)	(0.00650)	(0.00925)	(0.00987)
DEMO	0.147***	-0.127	0.249***	0.00443**	-0.00215	0.00771***	0.0314	-0.0268	0.0162	0.0368	-0.0170	0.00467
	(0.0427)	(0.0965)	(0.0902)	(0.00184)	(0.00349)	(0.00294)	(0.0516)	(0.0773)	(0.129)	(0.0518)	(0.0787)	(0.120)
log DAH# DEMO	0.0589***	-0.00259	0.103	0.00262***	0.000228	0.00342*	0.0424*	0.00361	-0.00396	0.0392*	0.00428	-0.00847
	(0.0184)	(0.0295)	(0.0663)	(0.000979)	(0.00152)	(0.00180)	(0.0223)	(0.0430)	(0.0588)	(0.0219)	(0.0432)	(0.0652)
TRUST	0.191**	-0.196	0.271	0.190***	-0.160	0.492***	0.157**	-0.0671	0.345**	0.151*	-0.0822	0.351**
	(0.0759)	(0.123)	(0.227)	(0.0732)	(0.120)	(0.117)	(0.0788)	(0.122)	(0.142)	(0.0785)	(0.123)	(0.156)
log DAH#TRUST	0.0966**	-0.0468	0.179*	0.103***	-0.0786	0.179***	0.0780*	-0.0168	0.163**	0.0731	-0.0147	0.167*
	(0.0410)	(0.0769)	(0.0960)	(0.0396)	(0.0757)	(0.0639)	(0.0465)	(0.0819)	(0.0797)	(0.0488)	(0.0814)	(0.0897)
TRUST# DEMO	-0.389	0.219	-0.844	-0.00568	0.00703	0.00507	-0.447	0.211	-1.091*	-0.479	0.185	-1.095
	(0.247)	(0.442)	(0.798)	(0.0116)	(0.0212)	(0.0245)	(0.446)	(0.568)	(0.636)	(0.448)	(0.571)	(0.746)
log DAH#TRUST# DEMO	0.0278	0.687**	0.130	0.000115	0.0344**	0.00711	-0.0683	0.503	-0.263	-0.0168	0.647	-0.356
	(0.138)	(0.278)	(0.512)	(0.00577)	(0.0136)	(0.00870)	(0.247)	(0.365)	(0.474)	(0.247)	(0.401)	(0.488)
EXPEND	-0.00580**	-0.00354	-0.0113***	-0.00568**	-0.00316	-0.00912*	-0.00518**	-0.00313	-0.00608**	-0.00517**	-0.00315	-0.00727*
	(0.00240)	(0.00473)	(0.00406)	(0.00247)	(0.00462)	(0.00469)	(0.00246)	(0.00539)	(0.00302)	(0.00249)	(0.00543)	(0.00427)
log FERTIL	0.0159	0.662***	0.0526	0.0141	0.701***	0.0777	0.00405	0.730***	0.0351	0.00470	0.728***	0.0603
	(0.0376)	(0.108)	(0.120)	(0.0389)	(0.108)	(0.114)	(0.0392)	(0.110)	(0.0483)	(0.0398)	(0.110)	(0.0429)
log POP	-0.0154**	0.0322	-0.0256	-0.0136**	0.0314	-0.0263**	-0.0114*	0.0360	-0.0180**	-0.0103	0.0359	-0.0178**
	(0.00714)	(0.0357)	(0.0161)	(0.00681)	(0.0356)	(0.0109)	(0.00688)	(0.0352)	(0.00882)	(0.00689)	(0.0351)	(0.00850)
log GDP	-0.0354**	-0.332***	-0.0385	-0.0303**	-0.327***	-0.0264	-0.0241	-0.340***	-0.00554	-0.0265*	-0.339***	-0.00292
	(0.0140)	(0.0513)	(0.0294)	(0.0148)	(0.0510)	(0.0185)	(0.0148)	(0.0531)	(0.0201)	(0.0159)	(0.0536)	(0.0189)
log HIV	0.0217**	0.0529*	0.0141	0.0260**	0.0425	0.0229*	0.0266**	0.0298	0.0195*	0.0261**	0.0317	0.0206
	(0.0102)	(0.0308)	(0.0170)	(0.0109)	(0.0295)	(0.0129)	(0.0109)	(0.0303)	(0.0116)	(0.0111)	(0.0306)	(0.0143)
(lagged) IMR	0.987***		1.014***	0.981***		0.995***	0.982***		1.030***	0.980***		1.011***
	(0.0263)		(0.0857)	(0.0280)		(0.0843)	(0.0291)		(0.0513)	(0.0303)		(0.0599)
TREND		-0.124***			-0.122***			-0.120***			-0.120***	
		(0.0161)			(0.0162)			(0.0174)			(0.0174)	
Constant	0.499**	5.363***	0.616	0.459**	5.269***	0.570	0.378*	5.260***	0.150	0.386*	5.258***	0.184
	(0.202)	(0.745)	(0.578)	(0.204)	(0.743)	(0.429)	(0.216)	(0.753)	(0.311)	(0.219)	(0.756)	(0.347)
Observations	111	111	111	111	111	111	111	111	111	110	110	110
R-squared	0.988			0.987			0.987			0.987		
Countries	55		55	55		55	55		55	55		55
Instruments			63			63			63			62
Hansen-Test			0.942			0.983			0.999			0.998

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 11: Social trust and the marginal effect of DAH *on* IMR *in the context of decentralization*

	Dependent variable: infant mortality ratio											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	-0.0254**	-0.00587	-0.0312	-0.0242**	-0.00597	-0.0323	0.000369	-0.0122	-0.00349	-0.00776	-0.0224**	-0.0194*
	(0.00999)	(0.0164)	(0.0279)	(0.0111)	(0.00791)	(0.0205)	(0.00640)	(0.00952)	(0.0101)	(0.00798)	(0.00879)	(0.0104)
DECENTRAL	0.0767***	0.0393	0.123***	0.0959***	0.0661	0.0306	0.0588***	0.0674	0.0387	0.0597***	-0.0764	0.128
	(0.0184)	(0.0641)	(0.0474)	(0.0343)	(0.187)	(0.132)	(0.0200)	(0.143)	(0.0522)	(0.0232)	(0.151)	(0.0876)
log DAH# DECENTRAL	0.0332***	-0.00710	0.0353*	0.0425***	0.0294	0.0419	0.00435	-0.0114	-0.0356	0.0196	0.0265	0.0565*
	(0.0110)	(0.0206)	(0.0201)	(0.0111)	(0.0180)	(0.0291)	(0.0170)	(0.0190)	(0.0494)	(0.0180)	(0.0252)	(0.0337)
TRUST	0.211	-0.389*	0.323	-0.289	0.0595	-0.306	0.194**	-0.0264	0.298	0.143*	-0.139	0.234
	(0.135)	(0.231)	(0.423)	(0.203)	(0.153)	(0.263)	(0.0860)	(0.125)	(0.209)	(0.0796)	(0.127)	(0.166)
log DAH#TRUST	0.136	0.0504	0.287	0.254**	0.0795	-0.00668	0.0827	0.0138	0.0811	0.109**	-0.0343	0.127
	(0.102)	(0.146)	(0.202)	(0.127)	(0.128)	(0.178)	(0.0505)	(0.0840)	(0.130)	(0.0528)	(0.0750)	(0.101)
TRUST# DECENTRAL	-0.162	0.499*	-0.339	0.298	0.0613	-0.139	-0.00810	0.244	-0.0780	0.337	0.459	0.165
	(0.151)	(0.281)	(0.303)	(0.184)	(0.344)	(0.439)	(0.120)	(0.404)	(0.322)	(0.247)	(0.374)	(0.549)
log DAH#TRUST# DECENTRAL	-0.110	0.0136	-0.271	-0.125	0.286*	0.120	0.0646	0.0586	0.327	-0.102	0.201	0.0959
	(0.110)	(0.180)	(0.246)	(0.129)	(0.174)	(0.166)	(0.0665)	(0.247)	(0.519)	(0.142)	(0.247)	(0.288)
EXPEND	-0.00495*	0.000513	-0.00784	0.00166	-0.00607	0.00368	-0.00480*	-0.00335	-0.00532	-0.00710**	-0.00564	-0.00868**
	(0.00258)	(0.00498)	(0.00645)	(0.00170)	(0.00489)	(0.00652)	(0.00283)	(0.00468)	(0.00400)	(0.00309)	(0.00481)	(0.00405)
log FERTIL	0.0275	0.690***	0.0618	-0.0297	0.909***	-0.0285	0.0233	0.772***	-0.0128	0.0130	0.781***	0.0206
	(0.0519)	(0.131)	(0.105)	(0.0620)	(0.156)	(0.0940)	(0.0383)	(0.115)	(0.121)	(0.0403)	(0.113)	(0.0673)
log POP	-0.0150**	0.0757*	-0.0193	-0.0351**	-0.0115	-0.0236	-0.00971	0.0288	-0.00887	-0.0141*	0.0410	-0.0332***
	(0.00732)	(0.0389)	(0.0144)	(0.0141)	(0.0682)	(0.0398)	(0.00696)	(0.0364)	(0.0191)	(0.00837)	(0.0376)	(0.0106)
log GDP	-0.0329*	-0.411***	-0.0537	-0.0795***	-0.353***	-0.0682	-0.00311	-0.325***	0.0117	-0.0341*	-0.333***	-0.0265
	(0.0198)	(0.0591)	(0.0625)	(0.0230)	(0.0730)	(0.0503)	(0.0180)	(0.0568)	(0.0293)	(0.0182)	(0.0552)	(0.0306)
log HIV	0.0267**	0.0168	0.0361**	0.0277**	-0.139***	0.0273	0.0306***	0.0350	0.0269**	0.0303***	0.0130	0.0244*
	(0.0126)	(0.0362)	(0.0182)	(0.0116)	(0.0379)	(0.0199)	(0.0114)	(0.0338)	(0.0115)	(0.0113)	(0.0302)	(0.0143)
(lagged) IMR	0.975***		0.936***	0.990***		1.001***	0.987***		1.036***	0.965***		1.018***
	(0.0284)		(0.0761)	(0.0239)		(0.107)	(0.0277)		(0.0757)	(0.0307)		(0.0607)
TREND		-0.116***			-0.0980***			-0.118***			-0.119***	
		(0.0184)			(0.0220)			(0.0174)			(0.0169)	
Constant	0.471**	5.121***	0.833	1.134***	5.690***	0.795	0.135	5.208***	-0.148	0.575**	5.093***	0.647
	(0.235)	(0.865)	(0.744)	(0.372)	(1.377)	(0.879)	(0.234)	(0.774)	(0.434)	(0.254)	(0.833)	(0.465)
Observations	94	94	94	56	56	56	110	110	110	111	111	111
R-squared	0.989			0.994			0.986			0.987		
Countries	45		45	26		26	55		55	55		55
Instruments			57			47			62			60
Hansen-Test			0.990			1			0.985			0.973

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 12: Social trust and the marginal effect of DAH on LIFE in the context of bureaucratic governance

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Bureaucratic governance (WBGI)			Bureaucratic governance (ICRG)			Control of corruption (WBGI)			Voice & accountability (WBGI)		
log DAH	0.00237*	0.00234	-0.000682	0.00217	0.00137	0.000673	0.00223*	0.00237	-0.000623	0.00218*	0.00208	-0.000410
	(0.00134)	(0.00172)	(0.00194)	(0.00147)	(0.00146)	(0.00214)	(0.00125)	(0.00174)	(0.00230)	(0.00123)	(0.00166)	(0.00182)
GOV	-0.000154	-0.00435	0.00875	0.00509	0.0952***	0.0188	-0.00315	0.0103	0.00135	-0.00447	0.00886	-0.00221
	(0.00333)	(0.00908)	(0.00953)	(0.0193)	(0.0322)	(0.0476)	(0.00401)	(0.00906)	(0.00817)	(0.00305)	(0.00797)	(0.00553)
log DAH#GOV	-0.00326***	-0.00279	0.000463	-0.00864	0.00116	0.00689	-0.00415***	-0.00234	-0.00243	-0.00268***	-0.00131	0.000121
	(0.00114)	(0.00286)	(0.00312)	(0.00563)	(0.0138)	(0.0215)	(0.00139)	(0.00277)	(0.00378)	(0.000971)	(0.00228)	(0.00220)
TRUST	0.00850	0.0152	0.00113	0.0115	0.0212	0.0367	0.00616	0.00985	0.00824	0.00231	0.0185	0.00758
	(0.0167)	(0.0238)	(0.0240)	(0.0151)	(0.0233)	(0.0276)	(0.0158)	(0.0238)	(0.0244)	(0.0157)	(0.0247)	(0.0385)
log DAH#TRUST	0.00144	0.0215	0.00177	0.00233	0.0123	-0.000578	0.00257	0.0273*	0.00643	0.00298	0.0219	0.00918
	(0.00926)	(0.0147)	(0.0121)	(0.00998)	(0.0144)	(0.0291)	(0.00896)	(0.0154)	(0.0168)	(0.00833)	(0.0145)	(0.0129)
TRUST#GOV	0.0516	0.0237	0.0904	0.0396	-0.146	0.308	0.0535	-0.0119	0.0859	0.0193	-0.0209	0.00934
	(0.0336)	(0.0478)	(0.0892)	(0.154)	(0.237)	(0.278)	(0.0447)	(0.0520)	(0.118)	(0.0242)	(0.0348)	(0.0495)
log DAH#TRUST#GOV	0.0210	-0.0275	0.0474	0.0775	-0.0329	0.522	0.0120	-0.0364	0.00403	0.00788	-0.0331*	0.00964
	(0.0135)	(0.0325)	(0.0635)	(0.0661)	(0.165)	(0.404)	(0.0156)	(0.0362)	(0.0459)	(0.00842)	(0.0196)	(0.0157)
EXPEND	0.000989**	-0.00129	0.000973	0.000849*	-0.00183**	5.07e-05	0.00109**	-0.00193*	0.00134	0.000970**	-0.00163*	0.000962
	(0.000446)	(0.00102)	(0.000727)	(0.000458)	(0.000859)	(0.000926)	(0.000498)	(0.00106)	(0.00115)	(0.000406)	(0.000978)	(0.000680)
log FERTIL	0.0123*	-0.0649***	0.0240***	0.0135*	-0.0703***	0.0222***	0.0119	-0.0698***	0.0230***	0.0121*	-0.0626***	0.0201**
	(0.00725)	(0.0197)	(0.00801)	(0.00776)	(0.0204)	(0.00848)	(0.00749)	(0.0198)	(0.00688)	(0.00726)	(0.0196)	(0.00940)
log POP	-0.000377	0.00377	-0.00133	-0.00125	0.00479	-0.00291	-0.000352	0.00484	-0.00136	-0.000301	0.00532	-0.00195
	(0.00147)	(0.00630)	(0.00240)	(0.00154)	(0.00659)	(0.00250)	(0.00142)	(0.00624)	(0.00167)	(0.00129)	(0.00635)	(0.00273)
log GDP	-0.000410	0.0543***	-0.00656	-0.000381	0.0490***	-0.00239	-0.000694	0.0486***	-0.00721	0.00163	0.0501***	-0.00470
	(0.00306)	(0.0101)	(0.00991)	(0.00329)	(0.0106)	(0.00623)	(0.00307)	(0.0101)	(0.00697)	(0.00302)	(0.00964)	(0.00792)
log HIV	-0.00921***	-0.0361***	-0.0107	-0.00868**	-0.0337***	-0.00792**	-0.00855***	-0.0359***	-0.00850	-0.00831***	-0.0378***	-0.00885**
	(0.00330)	(0.00565)	(0.00785)	(0.00349)	(0.00578)	(0.00372)	(0.00294)	(0.00561)	(0.00536)	(0.00311)	(0.00571)	(0.00429)
(lagged) LIFE	0.906***		0.926***	0.920***		0.934***	0.913***		0.952***	0.916***		0.932***
	(0.0368)		(0.0953)	(0.0385)		(0.0587)	(0.0357)		(0.0688)	(0.0355)		(0.0662)
TREND		0.00987***			0.0128***			0.0104***			0.0104***	
		(0.00281)			(0.00312)			(0.00274)			(0.00274)	
Constant	0.384***	3.685***	0.367	0.341**	3.711***	0.334	0.358***	3.725***	0.262	0.330**	3.692***	0.342
	(0.136)	(0.139)	(0.321)	(0.143)	(0.154)	(0.242)	(0.131)	(0.140)	(0.232)	(0.131)	(0.139)	(0.227)
Observations	111	111	111	104	104	104	111	111	111	111	111	111
R-squared	0.985			0.984			0.985			0.984		
Countries	55		55	52		52	55		55	55		55
Instruments			61			61			61			61
Hansen-Test			0.588			0.997			0.894			0.857

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 13: Social trust and the marginal effect of DAH on LIFE in the context of liberal democracy

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Liberal democracy (FHI)			Liberal democracy (POLITYIV)			Coalition size			Coalition size/selectorate size		
log DAH	0.00205*	0.00224	-0.000331	0.00227*	0.00121	0.000590	0.00131	0.00230	-0.000769	0.00149	0.00229	-0.000935
	(0.00123)	(0.00176)	(0.00204)	(0.00118)	(0.00183)	(0.00194)	(0.00143)	(0.00191)	(0.00184)	(0.00136)	(0.00188)	(0.00198)
DEMO	-0.0130*	0.0270	-0.0169	-0.000395	0.000655	-0.000482	0.00546	0.00509	0.00517	0.00653	0.00486	0.0118
	(0.00787)	(0.0199)	(0.0153)	(0.000299)	(0.000731)	(0.000676)	(0.00824)	(0.0165)	(0.0186)	(0.00835)	(0.0168)	(0.0217)
log DAH# DEMO	-0.00715**	-0.00333	-0.00158	-0.000398***	2.23e-05	-0.000148	-0.00410	-0.00387	-0.00329	-0.00469	-0.00382	0.000796
	(0.00288)	(0.00628)	(0.00625)	(0.000134)	(0.000304)	(0.000379)	(0.00343)	(0.00881)	(0.00788)	(0.00328)	(0.00885)	(0.0115)
TRUST	-0.00217	0.0252	0.0139	-0.000249	0.0273	0.0160	0.00310	0.0138	0.0211	0.00302	0.0132	0.00850
	(0.0149)	(0.0252)	(0.0446)	(0.0142)	(0.0243)	(0.0354)	(0.0158)	(0.0235)	(0.0307)	(0.0155)	(0.0240)	(0.0254)
log DAH#TRUST	0.00166	0.0275*	0.0106	-0.000787	0.0292**	0.0121	0.00227	0.0253	0.0135	0.000430	0.0244	0.00577
	(0.00824)	(0.0151)	(0.0132)	(0.00816)	(0.0147)	(0.0142)	(0.00936)	(0.0158)	(0.0175)	(0.00948)	(0.0158)	(0.0136)
TRUST# DEMO	0.0184	-0.0818	0.0315	-0.000241	-0.00410	-0.000166	0.0624	-0.114	0.178	0.0611	-0.111	0.142
	(0.0564)	(0.0931)	(0.0997)	(0.00242)	(0.00435)	(0.00678)	(0.0744)	(0.119)	(0.114)	(0.0730)	(0.119)	(0.116)
log DAH#TRUST# DEMO	0.00922	-0.0931*	-0.0130	0.000419	-0.00499*	-3.47e-06	0.0229	-0.0819	0.0534	0.0282	-0.0869	0.0856
	(0.0224)	(0.0540)	(0.0701)	(0.000962)	(0.00259)	(0.00319)	(0.0368)	(0.0726)	(0.0633)	(0.0349)	(0.0796)	(0.0811)
EXPEND	0.00103**	-0.00155	0.00114**	0.000964**	-0.00149	0.000985	0.000939**	-0.00159	0.000375	0.00100**	-0.00158	0.000667
	(0.000415)	(0.000973)	(0.000565)	(0.000413)	(0.000962)	(0.000639)	(0.000425)	(0.00107)	(0.000629)	(0.000424)	(0.00108)	(0.000736)
log FERTIL	0.0125*	-0.0593***	0.0231**	0.0130*	-0.0634***	0.0233**	0.0148*	-0.0641***	0.0244***	0.0145*	-0.0640***	0.0224***
	(0.00739)	(0.0195)	(0.00944)	(0.00759)	(0.0197)	(0.0101)	(0.00786)	(0.0197)	(0.00859)	(0.00774)	(0.0199)	(0.00850)
log POP	-0.000469	0.00479	-0.000964	-0.000621	0.00420	-0.000944	-0.000912	0.00361	-0.00230	-0.000425	0.00357	-0.00205
	(0.00128)	(0.00623)	(0.00305)	(0.00125)	(0.00619)	(0.00260)	(0.00138)	(0.00619)	(0.00268)	(0.00126)	(0.00621)	(0.00288)
log GDP	0.00157	0.0507***	-0.000654	0.00136	0.0509***	-0.00284	0.000358	0.0519***	-0.00462	-0.000301	0.0520***	-0.00851
	(0.00309)	(0.00952)	(0.00960)	(0.00303)	(0.00955)	(0.00909)	(0.00319)	(0.00969)	(0.00562)	(0.00330)	(0.00974)	(0.00708)
log HIV	-0.00838***	-0.0391***	-0.00902*	-0.00889***	-0.0378***	-0.00813*	-0.00892***	-0.0372***	-0.00748	-0.00919***	-0.0373***	-0.00691*
	(0.00318)	(0.00581)	(0.00488)	(0.00331)	(0.00561)	(0.00474)	(0.00345)	(0.00573)	(0.00519)	(0.00347)	(0.00576)	(0.00368)
(lagged) LIFE	0.915***		0.916***	0.912***		0.940***	0.914***		0.953***	0.915***		0.975***
	(0.0364)		(0.0738)	(0.0377)		(0.0723)	(0.0395)		(0.0638)	(0.0393)		(0.0520)
TREND		0.00991***			0.00972***			0.0103***			0.0103***	
		(0.00271)			(0.00273)			(0.00285)			(0.00288)	
Constant	0.336**	3.691***	0.352	0.352**	3.706***	0.274	0.354**	3.707***	0.262	0.345**	3.707***	0.195
	(0.135)	(0.137)	(0.271)	(0.141)	(0.138)	(0.261)	(0.147)	(0.139)	(0.252)	(0.147)	(0.139)	(0.195)
Observations	111	111	111	111	111	111	111	111	111	110	110	110
R-squared	0.984			0.984			0.984			0.984		
Countries	55		55	55		55	55		55	55		55
Instruments			63			63			63			62
Hansen-Test			0.883			0.967			0.993			0.984

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 14: Social trust and the marginal effect of DAH on LIFE in the context of decentralization

	Dependent variable: life expectancy											
	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2	LDV-PCSE	RCM	SYS-GMM2
	Locally elected officials			Subnational authority			Autonomous regions			Federalism		
log DAH	0.00274	0.00148	0.00270	0.00362***	-0.00269***	0.000351	0.000622	0.00256	1.60e-05	0.000690	0.00159	0.000292
	(0.00173)	(0.00321)	(0.00371)	(0.00127)	(0.000898)	(0.00393)	(0.00119)	(0.00192)	(0.00200)	(0.00161)	(0.00186)	(0.00173)
DECENTRAL	-0.0100***	0.00161	-0.0177**	-0.0135***	-0.0142	-0.0134	-0.0128***	-0.0246	-0.0232*	-0.00593	0.00203	-0.0235
	(0.00346)	(0.0130)	(0.00861)	(0.00363)	(0.0153)	(0.0165)	(0.00389)	(0.0249)	(0.0140)	(0.00542)	(0.0273)	(0.0179)
log DAH# DECENTRAL	-0.00276	0.00153	-0.00338	-0.00570***	0.00191	0.000551	-0.000388	-0.000620	0.00359	0.00604*	0.00233	0.00174
	(0.00173)	(0.00412)	(0.00596)	(0.00141)	(0.00191)	(0.00855)	(0.00253)	(0.00410)	(0.0118)	(0.00321)	(0.00564)	(0.00938)
TRUST	-0.000103	0.0934**	0.0344	0.0111	-0.0609***	0.0478	-0.00868	0.0149	-0.0104	0.00286	0.0144	0.0386
	(0.0243)	(0.0475)	(0.0616)	(0.0278)	(0.0179)	(0.0466)	(0.0165)	(0.0243)	(0.0243)	(0.0155)	(0.0252)	(0.0508)
log DAH#TRUST	-0.0166	0.00128	-0.0488	-0.0525***	-0.0133	-0.0760*	0.00118	0.0287*	0.00683	-0.00157	0.0232	0.0176
	(0.0165)	(0.0295)	(0.0667)	(0.0156)	(0.0137)	(0.0398)	(0.00904)	(0.0161)	(0.0220)	(0.00973)	(0.0155)	(0.0195)
TRUST# DECENTRAL	0.00943	-0.104*	0.00458	0.00764	0.0668**	-0.0721	0.0247	-0.166*	0.0488	-0.0580	-0.0562	-0.179**
	(0.0272)	(0.0573)	(0.0551)	(0.0272)	(0.0301)	(0.0741)	(0.0227)	(0.0847)	(0.0696)	(0.0372)	(0.0782)	(0.0779)
log DAH#TRUST# DECENTRAL	0.0225	0.0176	0.0704	0.0552***	0.00529	0.0968***	-0.00191	-0.0828	-0.0602	0.0622***	-0.0101	0.0184
	(0.0190)	(0.0367)	(0.0838)	(0.0160)	(0.0186)	(0.0332)	(0.0111)	(0.0512)	(0.114)	(0.0236)	(0.0521)	(0.112)
EXPEND	0.00109**	-0.000961	0.00101	0.000374	-0.00116**	-0.000106	0.000841**	-0.00114	0.000639	0.000933*	-0.00130	0.000933*
	(0.000450)	(0.00105)	(0.00110)	(0.000256)	(0.000506)	(0.00105)	(0.000419)	(0.000939)	(0.000699)	(0.000494)	(0.000990)	(0.000565)
log FERTIL	0.0150	-0.0483**	0.0345**	0.0145**	-0.0946***	0.0141	0.00946	-0.0706***	0.0144	0.0158**	-0.0664***	0.0261***
	(0.0104)	(0.0238)	(0.0156)	(0.00575)	(0.0125)	(0.0149)	(0.00728)	(0.0206)	(0.0121)	(0.00755)	(0.0201)	(0.00770)
log POP	0.000660	-0.00120	0.000154	0.00288**	0.0115**	0.00171	-0.00112	0.00524	-0.00158	-0.00105	0.00330	-0.00163
	(0.00112)	(0.00729)	(0.00473)	(0.00143)	(0.00553)	(0.00471)	(0.00147)	(0.00634)	(0.00222)	(0.00194)	(0.00668)	(0.00380)
log GDP	-0.000909	0.0549***	0.000547	0.00116	0.0293***	-0.00713	-0.00327	0.0469***	-0.00690	0.000938	0.0529***	1.97e-05
	(0.00353)	(0.0109)	(0.0111)	(0.00364)	(0.00814)	(0.0105)	(0.00368)	(0.0101)	(0.00763)	(0.00390)	(0.00996)	(0.00540)
log HIV	-0.00936**	-0.0342***	-0.0115*	0.000781	0.00298	0.00450	-0.00948***	-0.0425***	-0.00917*	-0.00942***	-0.0358***	-0.0101**
	(0.00376)	(0.00696)	(0.00632)	(0.00166)	(0.00357)	(0.00349)	(0.00344)	(0.00611)	(0.00513)	(0.00358)	(0.00569)	(0.00437)
(lagged) LIFE	0.946***		0.958***	1.015***		1.077***	0.917***		0.936***	0.906***		0.894***
	(0.0414)		(0.0625)	(0.0251)		(0.0517)	(0.0384)		(0.0533)	(0.0374)		(0.0641)
TREND		0.00966***			0.00836***			0.0103***			0.00965***	
		(0.00304)			(0.00231)			(0.00281)			(0.00278)	
Constant	0.204	3.755***	0.135	-0.117	3.873***	-0.273	0.381***	3.723***	0.343*	0.385***	3.707***	0.450*
	(0.155)	(0.165)	(0.204)	(0.0949)	(0.141)	(0.190)	(0.139)	(0.141)	(0.202)	(0.142)	(0.152)	(0.233)
Observations	94	94	94	56	56	56	110	110	110	111	111	111
R-squared	0.983			0.995			0.985			0.984		
Countries	45		45	26		26	55		55	55		55
Instruments			57			47			62			60
Hansen-Test			0.875			1			0.962			0.945

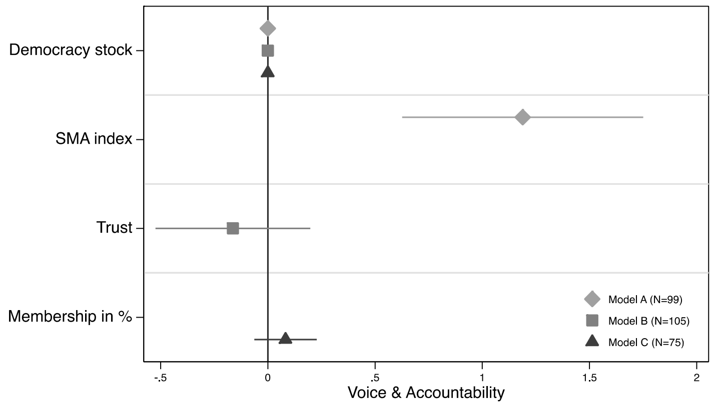
Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV-PCSE) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and decentralization respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. *** p<0.01, ** p<0.05, * p<0.1.

Table D 15: Correlations of radius-adjusted trust with elite-challenging action and democratic preferences

MACRO LEVEL								
Radius adjusted trust	Eastern Europe	North Africa & the Middle East	Sub-Saharan Africa	Asia	Latin America & Caribbean	Autocracies	Democracies	Total sample
SMA	0.06	-0.13	0.42	0.28	-0.29	-0.14	-0.07	-0.16
Political Interest	0.44	0.05	0.5	0.17	0.03	0.21	0.28	0.28*
Importance of politics	0.21	0.03	0.1	-0.11	-0.15	0.05	-0.05	0.06
Democratic preference	0.02	0.25	-0.9**	0.28	0.24	-0.07	-0.15	-0.11
N	48	25	20	26	36	65	90	155

Notes: Country-level correlations report Pearsons-r. Individual-level entries are Spearman correlations (rho). Correlations are replicated by using the tetrachoric correlation coefficient or point-biserial correlation coefficient. * p<0.05, ** p<0.01, *** p<0.001.

Figure A 9: Regressing voice & accountability on social capital



Notes: Figure shows LDV models with panel-corrected standard errors (including period fixed effects) for associational membership, trust and civic activism, respectively. LDV not shown. Membership = Membership in any voluntary association.

Table A 12: Regressing infant mortality on non-health aid I

	Dependent variable: infant mortality rate							
	Total Aid		Education aid		Environmental aid		Gov+Civil Society Aid	
	LDV	GMM	LDV	GMM	LDV	GMM	LDV	GMM
log AID	-0.00719	-0.0327	-0.00563	-0.0151	-0.00107	-0.0117	-0.00550	-0.0184
	(0.00622)	(0.0219)	(0.00444)	(0.0263)	(0.00277)	(0.0102)	(0.00345)	(0.0128)
GOV	-0.0378***	-0.150***	-0.0355***	-0.0867	-0.0417***	-0.108**	-0.0383***	-0.128***
	(0.0101)	(0.0530)	(0.0105)	(0.0576)	(0.0102)	(0.0465)	(0.0100)	(0.0375)
EXPEND	-0.00239*	0.000882	-0.00280**	-0.00282	-0.00266**	0.000162	-0.00248*	5.90e-05
	(0.00127)	(0.00559)	(0.00127)	(0.00527)	(0.00130)	(0.00523)	(0.00130)	(0.00544)
log FERTIL	0.0430**	0.0809	0.0495***	0.0697	0.0433**	0.0641	0.0456***	0.0738
	(0.0168)	(0.0890)	(0.0172)	(0.0679)	(0.0169)	(0.0715)	(0.0170)	(0.0701)
log POP	-0.0160***	-0.0329***	-0.0169***	-0.0231*	-0.0150***	-0.0217***	-0.0166***	-0.0269***
	(0.00333)	(0.0104)	(0.00328)	(0.0136)	(0.00281)	(0.00725)	(0.00303)	(0.00805)
log GDP	0.00366	0.0487	0.00311	0.0446	0.00107	0.0355	0.00154	0.0227
	(0.00632)	(0.0474)	(0.00629)	(0.0414)	(0.00622)	(0.0379)	(0.00630)	(0.0289)
CONFLICT	-0.0150	-0.225**	-0.0156	-0.130	-0.0192	-0.111	-0.0129	-0.0914
	(0.0180)	(0.105)	(0.0180)	(0.0814)	(0.0182)	(0.133)	(0.0180)	(0.0904)
log HIV	0.0159***	0.00386	0.0163***	0.00656	0.0168***	0.00450	0.0170***	0.00937
	(0.00378)	(0.00995)	(0.00384)	(0.00738)	(0.00388)	(0.00959)	(0.00386)	(0.00949)
LDV	0.992***	1.031***	0.988***	1.042***	0.988***	1.025***	0.987***	0.995***
	(0.0133)	(0.0500)	(0.0137)	(0.0519)	(0.0138)	(0.0436)	(0.0137)	(0.0478)
Constant	0.0927	-0.287	0.124	-0.357	0.117	-0.284	0.138	-0.00224
	(0.111)	(0.613)	(0.110)	(0.645)	(0.109)	(0.463)	(0.110)	(0.399)
Observations	415	415	404	404	410	410	406	406
Countries	107	107	107	107	107	107	107	107
Instruments		56		56		56		56
Hansen-Test		0.107		0.133		0.117		0.118
AR2		0.0394		0.0488		0.0375		0.0502

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A 13: Regressing infant mortality on non-health aid II

Dependent variable: infant mortality rate

	Transport Aid		Communication aid		Industry aid		General Budget support	
	LDV	GMM	LDV	GMM	LDV	GMM	LDV	GMM
log AID	-0.00454*	-0.0139**	-0.00562***	-0.00755	0.000243	-0.000969	-0.00163	-0.00901**
	(0.00234)	(0.00560)	(0.00214)	(0.00711)	(0.00225)	(0.00707)	(0.00188)	(0.00431)
GOV	-0.0393***	-0.0900*	-0.0331***	-0.0911**	-0.0384***	-0.0963**	-0.0469***	-0.0317
	(0.0102)	(0.0471)	(0.0105)	(0.0464)	(0.0103)	(0.0376)	(0.0114)	(0.0332)
EXPEND	-0.00282**	-0.00568	-0.00275**	-0.00174	-0.00287**	-0.00257	-0.00256*	-0.00350
	(0.00128)	(0.00427)	(0.00129)	(0.00486)	(0.00129)	(0.00515)	(0.00141)	(0.00443)
log FERTIL	0.0463***	0.0477	0.0406**	0.0221	0.0457***	0.0499	0.0445**	0.0203
	(0.0172)	(0.0633)	(0.0175)	(0.0590)	(0.0173)	(0.0799)	(0.0197)	(0.0581)
log POP	-0.0164***	-0.0319***	-0.0155***	-0.0226***	-0.0151***	-0.0189**	-0.0147***	-0.0192**
	(0.00287)	(0.00787)	(0.00286)	(0.00676)	(0.00277)	(0.00745)	(0.00314)	(0.00773)
log GDP	0.00154	0.0150	0.00446	0.0478	0.00203	0.0297	-0.000944	0.00632
	(0.00760)	(0.0405)	(0.00709)	(0.0444)	(0.00705)	(0.0435)	(0.00802)	(0.0423)
CONFLICT	-0.0177	-0.0978	-0.0146	-0.0606	-0.0143	-0.0892	-0.0249	-0.0881
	(0.0179)	(0.0782)	(0.0177)	(0.0582)	(0.0180)	(0.113)	(0.0194)	(0.0610)
log HIV	0.0169***	0.00329	0.0169***	0.00412	0.0170***	0.00393	0.0179***	-5.97e-05
	(0.00393)	(0.0114)	(0.00391)	(0.00767)	(0.00390)	(0.00772)	(0.00434)	(0.0110)
LDV	0.983***	1.027***	0.992***	1.071***	0.986***	1.035***	0.978***	1.086***
	(0.0143)	(0.0570)	(0.0145)	(0.0396)	(0.0141)	(0.0423)	(0.0177)	(0.0632)
Constant	0.154	0.127	0.0911	-0.468	0.118	-0.276	0.160	-0.214
	(0.119)	(0.514)	(0.117)	(0.524)	(0.115)	(0.514)	(0.132)	(0.556)
Observations	392	392	393	393	400	400	343	343
Countries	107	107	107	107	107	107	107	107
Instruments		56		56		56		56
Hansen-Test		0.115		0.0653		0.0993		0.0233
AR2		0.0116		0.0436		0.0461		0.586

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A 14: The conditional effects of civil society aid on infant mortality

	Dependent variable: infant mortality rate								
	Civil Society Aid								
	LDV	RCM	GMM	LDV	RCM	GMM	LDV	RCM	GMM
AID	-0.00521	-0.00405	-0.00749	-0.00417	-0.000951	-0.0156	-0.00809**	-0.00166	-0.0213**
	(0.00549)	(0.00475)	(0.0112)	(0.00419)	(0.00381)	(0.0109)	(0.00349)	(0.00332)	(0.0101)
CLUBS	-0.0946	-0.142	-0.173						
	(0.0586)	(0.118)	(0.156)						
AID#CLUBS	-0.0370	-0.0506	-0.0803						
	(0.0382)	(0.0482)	(0.0989)						
TRUST				-0.116	-0.0935	-0.0460			
				(0.0821)	(0.0918)	(0.168)			
AID#TRUST				0.111***	0.111**	0.199***			
				(0.0363)	(0.0455)	(0.0729)			
CIVIC							-0.114	-0.0518	0.199
							(0.0918)	(0.121)	(0.253)
AID#CIVIC							0.104**	0.00345	0.400**
							(0.0496)	(0.0643)	(0.178)
GOV	-0.0376**	-0.0122	-0.0493	-0.0318**	-0.0445	-0.110***	-0.0357***	-0.0366*	-0.0737*
	(0.0146)	(0.0367)	(0.0399)	(0.0136)	(0.0339)	(0.0401)	(0.0101)	(0.0211)	(0.0405)
EXPEND	-0.00217	0.00156	-0.00331	-0.00324*	0.00307	-0.00196	-0.00258**	-0.00132	-0.00182
	(0.00208)	(0.00308)	(0.00492)	(0.00172)	(0.00306)	(0.00422)	(0.00130)	(0.00205)	(0.00488)
log FERTIL	0.0504*	0.426***	0.0870	0.0374*	0.462***	0.0576	0.0486***	0.450***	0.0751
	(0.0293)	(0.0746)	(0.101)	(0.0211)	(0.0686)	(0.0601)	(0.0173)	(0.0536)	(0.0675)
log POP	-0.00995*	0.0613**	-0.0180	-0.0169***	0.00269	-0.0315***	-0.0170***	0.0197	-0.0290***
	(0.00581)	(0.0292)	(0.0126)	(0.00395)	(0.0273)	(0.00898)	(0.00331)	(0.0221)	(0.00698)
log GDP	-0.0108	-0.371***	0.0242	-0.00350	-0.328***	0.0178	0.00455	-0.278***	0.0381
	(0.0131)	(0.0419)	(0.0391)	(0.00804)	(0.0374)	(0.0261)	(0.00733)	(0.0287)	(0.0318)
CONFLICT	-0.0241	0.00965	-0.0222	0.00161	0.0102	0.0213	-0.0113	-0.00795	-0.0223
	(0.0360)	(0.0309)	(0.0814)	(0.0225)	(0.0257)	(0.0574)	(0.0178)	(0.0160)	(0.0457)
log HIV	0.0186***	0.0639***	0.00880	0.0141**	0.0466**	0.0147	0.0178***	0.0441***	0.00954
	(0.00626)	(0.0206)	(0.0126)	(0.00573)	(0.0196)	(0.0114)	(0.00399)	(0.0140)	(0.00928)
TREND		-0.129***			-0.117***			-0.103***	
		(0.0122)			(0.0109)			(0.00982)	
LDV	0.961***		1.015***	0.979***		0.982***	0.982***		1.023***
	(0.0245)		(0.0601)	(0.0158)		(0.0478)	(0.0150)		(0.0514)
Constant	0.217	5.421***	-0.177	0.241*	5.963***	0.205	0.135	5.325***	-0.157
	(0.188)	(0.594)	(0.481)	(0.136)	(0.562)	(0.377)	(0.117)	(0.442)	(0.428)
Observations	221	221	221	267	267	267	393	393	393
R-squared	0.987			0.988			0.990		
Countries	68	68	68	92	92	92	107	107	107
Instruments			65			65			65
Hansen-Test			0.213			0.136			0.145
AR2			0.174			0.178			0.0541

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A 15: The conditional effects of infrastructure aid on infant mortality

	Dependent variable: infant mortality rate								
	Infrastructure Aid								
	LDV	RCM	GMM	LDV	RCM	GMM	LDV	RCM	GMM
AID	-0.00691	-0.0103***	-0.0150	-0.00601*	-0.0112***	-0.0171**	-0.00268	-0.0068***	-0.00500
	(0.00435)	(0.00367)	(0.00991)	(0.00319)	(0.00332)	(0.00815)	(0.00246)	(0.00226)	(0.00402)
CLUBS	-0.117**	-0.0499	-0.126						
	(0.0562)	(0.120)	(0.134)						
AID#CLUBS	-0.0255	-0.0853**	-0.0578						
	(0.0251)	(0.0376)	(0.0494)						
TRUST				-0.0584	-0.110	-0.0823			
				(0.0787)	(0.0881)	(0.168)			
AID#TRUST				0.0576*	0.0777**	0.0733			
				(0.0321)	(0.0377)	(0.0692)			
CIVIC							-0.0223	0.0412	0.226*
							(0.0899)	(0.125)	(0.137)
AID#CIVIC							-0.123***	-0.0404	-0.176**
							(0.0335)	(0.0381)	(0.0798)
GOV	-0.0404***	-0.0159	-0.0822**	-0.0407***	-0.0243	-0.112***	-0.0428***	-0.0380*	-0.0912***
	(0.0148)	(0.0362)	(0.0418)	(0.0133)	(0.0352)	(0.0297)	(0.0101)	(0.0216)	(0.0317)
EXPEND	-0.00312	0.00246	-0.00336	-0.00338**	0.00348	-0.00371	-0.00309**	-0.00121	-0.00226
	(0.00207)	(0.00298)	(0.00337)	(0.00171)	(0.00305)	(0.00425)	(0.00129)	(0.00206)	(0.00346)
log FERTIL	0.0503*	0.370***	0.0852	0.0342	0.401***	0.0917	0.0531***	0.430***	0.0126
	(0.0282)	(0.0719)	(0.0896)	(0.0215)	(0.0674)	(0.0829)	(0.0176)	(0.0539)	(0.0549)
log POP	-0.0117**	0.0631**	-0.0269**	-0.0190***	0.0160	-0.0402***	-0.0164***	0.0185	-0.0265***
	(0.00560)	(0.0295)	(0.0132)	(0.00377)	(0.0272)	(0.00894)	(0.00305)	(0.0224)	(0.00666)
log GDP	-0.0127	-0.361***	0.0143	-0.00102	-0.348***	0.0388	0.00378	-0.273***	0.0304
	(0.0131)	(0.0410)	(0.0423)	(0.0106)	(0.0381)	(0.0316)	(0.00784)	(0.0289)	(0.0295)
CONFLICT	-0.0241	0.0140	0.00247	-0.00221	0.0121	-0.00316	-0.00847	-0.0104	-0.0126
	(0.0353)	(0.0290)	(0.106)	(0.0219)	(0.0249)	(0.0409)	(0.0178)	(0.0157)	(0.0399)
log HIV	0.0195***	0.0708***	0.0105	0.0153***	0.0578***	0.00314	0.0175***	0.0495***	0.0116
	(0.00609)	(0.0209)	(0.0128)	(0.00567)	(0.0194)	(0.0116)	(0.00395)	(0.0139)	(0.00765)
TREND		-0.138***			-0.127***			-0.111***	
		(0.0123)			(0.0112)			(0.00989)	
LDV	0.953***		0.986***	0.978***		1.007***	0.976***		1.041***
	(0.0238)		(0.0570)	(0.0172)		(0.0552)	(0.0153)		(0.0523)
Constant	0.299	5.381***	0.130	0.252*	6.002***	0.0595	0.155	5.357***	-0.131
	(0.187)	(0.595)	(0.405)	(0.143)	(0.548)	(0.390)	(0.120)	(0.447)	(0.435)
Observations	220	220	220	259	259	259	382	382	382
R-squared	0.987			0.988			0.991		
Countries	68	68	68	91	91	91	107	107	107
Instruments			65			65			65
Hansen-Test			0.351			0.241			0.219
AR2			0.183			0.459			0.103

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table C 9: Methodology of ISD index of clubs & associations: survey questions and data description

CLUBS (ISD index)		Data source
'What do you normally do in your free time?'	*Work in a voluntary organization, % mentioned*	*LATINO*
'How frequently do you do each of the following things?'	*Work for something affecting oneself or the community, % 'very frequently' or 'fairly frequently'*	*LATINO*
'In which of the following organizations do you take part in, or don't you take part in any of them?'	*Youth centers, % mentioned*	*LATINO*
	Mother's center, % mentioned	*LATINO*
	Sports club, % mentioned	*LATINO*
	Church organizations, % mentioned	*LATINO*
	[Labor] unions, % mentioned	*LATINO*
	Voluntary associations, % mentioned	*LATINO*
	Political party, % mentioned	*LATINO*
	Cultural center, % mentioned	*LATINO*
'How frequently do you work for an issue that affects you or your community?'	*% 'very frequently' or 'frequently'*	*LATINO*
'Now I am going to read out a list of groups that people join or attend. For each one, could you tell me whether you are an active member, an inactive member, or not a member.'	*% who are active or inactive member of a 'business group'*	*AFRO*
% of respondents who trust their neighbors 'not at all' or 'just somewhat'		*AFRO*
Has attended community meeting (1999 formulation)		*AFRO*
% of respondents saying that people generally help one another in their neighborhood		*ICVS*
'Now I am going to read off a list of voluntary organizations; for each one, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?'	*Church or religious organization, % mentioned*	*WVS*
	Sports or recreational organization, % mentioned	*WVS*
	Any other voluntary organizations, % mentioned	*WVS*
'Which, if any, of the following do you belong to?'	*Youth work (e.g., Scouts, guides, youth clubs, etc.), % mentioned*	*WVS*
	Sports or recreation, % mentioned	*WVS*
'Do you currently do any unpaid voluntary work for any of these?'	*Voluntary organizations concerned with health, % mentioned*	*WVS*
'Which, if any, of the following do you belong to?'	*Conservation, environmental, or animal rights groups, % mentioned*	*WVS*
	Women's groups, % mentioned	*WVS*
	Peace movement, % mentioned	*WVS*
'Now I am going to read off a list of voluntary organizations; for each one, could you tell me whether you are an active member, an inactive member or not a member of that type of organization?'	*Arts, music or educational organizations, % mentioned*	*WVS*
	Labor unions, % mentioned	*WVS*
	Environmental organizations, % mentioned	*WVS*
	Professional organizations, % mentioned	*WVS*
	Human rights organizations, % mentioned	*WVS*
I'm going to ask how of often you do various things. For each activity, would you say you do them every week or nearly every week; once or twice a month; only a few times a year; or not at all?	*Spend time with parents or other relatives, % 'every week' or 'once/twice a month'*	*WVS*
	Spent time socializing with people at local church/temple/mosque, % 'every week' or 'once/twice a month'	*WVS*
	Spent time socializing with friends, % 'every week' or 'once/twice a month'	*WVS*
	Spent time socializing with other members of arts or cultural associations, % 'every week' or 'once/twice a month'	*WVS*
% who visit their brother or sister at least once a year, of all respondents with family not at home		*ISSP*
% Member of church or religious organization		*ISSP*
% Member of neighborhood group		*ISSP*
% who have helped somebody find a job in the last year		*ISSP*

Notes: LATINO=Latinobarometer; AFRO=Afrobarometer; ICVS=International Crime Victim Survey; WVS=World Values Survey; ISSP=International Social Survey Project; ASIAN=Asian Barometer; EIU=Economist Intelligence Unit; ICVS=International Crime Victim Survey; WHO=World Health Organization; US=US State Department; UNCJIN=United Nations Criminal Justice Information Network; WDI=World Development Indicators; CIRI=Cingranelli-Richards ; ILO=International Labour Organisation; CIVICUS=Civicus; ITO=International Telecommunications Union; JHCNSP=Johns Hopkins Comparative Nonprofit Sector Project; UNESCO=UNESCO; LSE=London School of Economics Annual Civil Society Yearbook.

Table D 16: Methodology of ISD index of interpersonal trust & safety: survey questions and data description

INTERPERSONAL TRUST AND SAFETY (ISD-INDEX)		Data source
Percentage of respondents		
stating that 'most people can be trusted'		AFRO
felt unsafe in home, % saying 'never'		AFRO
had stuff stolen from home, % saying 'never'		AFRO
been attacked, % saying 'never'		AFRO
Generally speaking, would you say that most people can be trusted or that your can't be too careful in dealing with people? % replying that 'in general, most people can be trusted'		ASIAN
Percentage of respondents who say that most people try to be fair, rather than take advantage of you when given the chance		ASIAN
Economist Intelligence Unit rating on social distrust		EIU
Percentage of respondents that		
feel 'very safe' or 'fairly safe' walking alone in their area after dark		ICVS
feel 'very safe' or 'fairly safe' while at home after dark		ICVS
who avoid places when they go out		ICVS
who take company with them when they go out		ICVS
Over the past five years have you or other members of your household had any of their cars/vans/trucks stolen? Vehicle owners only. % 'yes'.		ICVS
Over the past five years have you or have members of your household been the victim of a theft of a car radio, or something else, which was left in your car, or theft of a part of, the car, such as a car mirror or wheel? Vehicle owners only. % 'yes		ICVS
Apart from thefts, have parts of any of the cars/vans/trucks belonging to your household been deliberately damaged (vandalized) over the past five years? Vehicle owners only. % 'yes'.		ICVS
Over the past five years have you or other members of your household had any of their mopeds/scooters/motorcycles stolen? Vehicle owners only. % 'yes'.		ICVS
Over the past five years, did anyone actually get into your house or flat without permission and steal or try to steal something? I am not including here thefts from garages, sheds or lock-ups.		ICVS
Over the past five years, do you have any evidence that someone tried to get into your house or flat unsuccessfully. For example, damage to locks, doors or windows, or scratches around the		ICVS
Percentage of garage thefts in last 5 years		ICVS
Over the past five years has anyone taken something from you, by using force, or threatening you? Or did anyone try do to so? % 'yes'.		ICVS
Apart from theft involving force, there are many other types of theft of personal property, such as pickpocketing or the theft of a purse, wallet, clothing, jewelry, sports equipment at one's work, at school, in a pub, on public transport, on the beach		ICVS
People sometimes grab, touch or assault others for sexual reasons in a really offensive way. This can happen either at home or elsewhere, for instance in a pub, the street, at school, on public transport, in cinemas, on the beach or at one's workplace.		ICVS
Apart from the incidents just covered, have you over the past five years been personally attacked or threatened by someone in a way that really frightened you either at home or elsewhere, such as in a pub, in the street, at school, on public transport, on		ICVS
WHO homicide rate		WHO
Have you, or someone in your family, been assaulted, attacked, or been the victim of crime in the last 12 months? % mentioned		LATINO
How do you feel in the neighborhood in which you live? % of respondents who feel 'secure'		LATINO
Have you been the victim of a crime?'	% replying 'street robbery'	LATINO
	% replying 'burglary'	LATINO
	% replying [attempted] 'homicides or murders'	LATINO
	% replying 'kidnapping or disappearances'	LATINO
Generally speaking, would you say that most people can be trusted or that your can't be too careful in dealing with people? % replying that 'in general, most people can be trusted'		LATINO
State Department crime advisories, coded 1-5		US
UNCJIN homicide rate		UNCJIN
Percentage of managers surveyed for whom crime is a major business constraint		WDI
Generally speaking, would you say that most people can be trusted or that your can't be too careful in dealing with people? % replying that 'in general, most people can be trusted'		WVS
Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?	% of respondents who say that most people would try to be fair	WVS
	Average score on scale from 1-10	WVS
I now want to ask you how much you trust various groups of people. Using the responses on this card, could you tell me how much you trust ...	your neighborhood?', % who trust 'not very much' or 'not at all'	WVS
	people you know personally?' % who trust 'not very much' or 'not at all'	WVS
	people you meet for the first time?' % who trust 'not very much' or 'not at all'	WVS
Notes: LATINO=Latinobarometer; AFRO=Afrobarometer; ICVS=International Crime Victim Survey; WVS=World Values Survey; ISSP=International Social Survey Project; ASIAN=Asian Barometer; EIU=Economist Intelligence Unit; ICVS=International Crime Victim Survey; WHO=World Health Organisation; US=US State Department; UNCJIN=United Nations Criminal Justice Information Network; WDI=World Development Indicators; CIRI=Cingranelli-Richards ; ILO=International Labour Organisation; CIVICUS=Civicus; ITO=International Telecommunications Union; JHCNSP=Johns Hopkins Comparative Nonprofit Sector Project; UNESCO=UNESCO; LSE=London School of Economics Annual Civil Society Yearbook.		

Table B 9: Methodology of ISD index of civic activism: survey questions and data description

CIVIC ACTIVISM (ISD-INDEX)		*Data source*
'For each of these, please tell me whether you, personally, have done any of these things during the past year. Attended a demonstration or protest march'. All respondents 'Yes' or 'Would do.		*AFRO*
'How often do you get news from the following sources?' % who have listened to radio news 'in the last day' or 'several times in the last week'		*AFRO*
'How often do you get news from the following sources?' % who have watched TV news 'in the last day' or 'several times in the last week'		*AFRO*
'How often do you get news from the following sources?' % who have read newspaper news 'in the last day' or 'several times in the last week'		*AFRO*
Civicus civil society ratings, average of 4 assessments – Structure, Values, Environment, Impact		*CIVICUS*
Radios per capita		*ITO*
'I am going to read out a political activity. I would like you to tell me, if you have ever done it, if you would ever do it, or if you would never do it.	*Taking part in authorized demonstrations. % 'have done' or 'would do'.*	*LATINO*
	Signing a petition. % 'have done' or 'would do'.	*LATINO*
'How do you inform yourself about political affairs?'	*The radio. % mentioned*	*LATINO*
	The newspaper. % mentioned	*LATINO*
	Television. % mentioned	*LATINO*
'How much attention did you pay to the political news on television?'	*% saying a lot or quite a lot*	*LATINO*
'How much attention did you pay to the political news in the newspaper?'	*% saying a lot or quite a lot*	*LATINO*
'How much attention did you pay to the political news on the radio?'	*% saying a lot or quite a lot*	*LATINO*
'How many days during the last week did you ...	*...watch the news on television?' Average number of days in country sample*	*LATINO*
	...read news in newspapers?' Average number of days in country sample	*LATINO*
	...listen to news on the radio?' Average number of days in country sample	*LATINO*
Nonprofit sector workers as a % of the economically active population		*JHCNSP*
Newspapers per capita		*UNESCO*
'I'm going to read out some different forms of political action that people can take, and I'd like you to tell me, for each one, whether you have actually done any of these things, whether you would do it, might do it, or would never, under any circumstances.	*% Have Signed Petition*	*WVS*
	Global, % Joined Boycott	*WVS*
	Global, % Joined Protest	*WVS*
'People use different sources to learn what is going on in their country and the world. For each of the following sources, please indicate whether you used it last week or did not use it last week to obtain information'.	*Daily newspaper, % mentioned*	*WVS*
	News broadcasts on radio or TV, % mentioned	*WVS*
	Printed magazines, % mentioned	*WVS*
	In depth reports on radio or TV, % mentioned	*WVS*
	Books, % mentioned	*WVS*
	Internet, email, % mentioned	*WVS*
Extent to which organizations and individuals in each country are members of international NGOs, logarithm of number of international NGOs with members in that country, per log population		*LSE*
Logarithm of total number of international organization secretariats of international NGOs in given country, per log population		*LSE*

Notes: LATINO=Latinobarometer; AFRO=Afrobarometer; ICVS=International Crime Victim Survey; WVS=World Values Survey; ISSP=International Social Survey Project; ASIAN=Asian Barometer; EIU=Economist Intelligence Unit; ICVS=International Crime Victim Survey; WHO=World Health Organisation; US=US State Department; UNCJIN=United Nations Criminal Justice Information Network; WDI=World Development Indicators; CIRI=Cingranelli-Richards ; ILO=International Labour Organisation; CIVICUS=Civicus; ITO=International Telecommunications Union; JHCNSP=Johns Hopkins Comparative Nonprofit Sector Project; UNESCO=UNESCO; LSE=London School of Economics Annual Civil Society Yearbook.

Table D 17: Radius-adjusted trust and the marginal effect of DAH

	Dependent variable: infant mortality ratio			Dependent variable: life expectancy		
	LDV	RCM	SYS-GMM2	LDV	RCM	SYS-GMM2
log DAH	-0.01	-0.02	-0.01	0.00	-0.00	-0.01
	(0.007)	(0.013)	(0.010)	(0.001)	(0.000)	(0.007)
$TRUST_{adj}$	0.33	-0.16	0.57	-0.05***	-0.04***	-0.17
	(0.210)	(0.496)	(0.659)	(0.017)	(0.013)	(0.306)
log DAH# $TRUST_{adj}$	0.14	0.09	0.07	-0.01	-0.01**	0.04
	(0.107)	(0.234)	(0.239)	(0.010)	(0.006)	(0.159)
GOV	-0.00	-0.19*	0.09	0.00***	-0.00	0.01
	(0.031)	(0.109)	(0.091)	(0.001)	(0.004)	(0.095)
CONFLICT	-0.02	-0.05	-0.11	0.01*	0.00	-0.01
	(0.074)	(0.082)	(0.071)	(0.006)	(0.002)	(0.049)
EXPEND	-0.00	-0.01	-0.02***	0.00	-0.00**	-0.00
	(0.004)	(0.008)	(0.006)	(0.000)	(0.000)	(0.005)
log FERTIL	0.09*	0.94***	0.28	0.00	0.04***	0.06
	(0.053)	(0.198)	(0.174)	(0.004)	(0.015)	(0.087)
log POP	-0.02***	-0.01	-0.03**	0.00***	0.01***	0.00
	(0.007)	(0.041)	(0.015)	(0.000)	(0.003)	(0.012)
log GDP	-0.00	-0.27***	-0.01	-0.00	0.04***	0.03
	(0.023)	(0.096)	(0.078)	(0.002)	(0.008)	(0.047)
log HIV	0.01	0.01	-0.01	-0.00	-0.01**	-0.04***
	(0.012)	(0.045)	(0.040)	(0.001)	(0.003)	(0.016)
TREND		-0.13***			0.02***	
		(0.028)			(0.003)	
(lagged) IMR	0.99***		0.97***	0.91***		-0.10
	(0.043)		(0.094)	(0.017)		(0.071)
Constant	0.15	5.28***	0.50	0.37***	3.51***	4.21***
	(0.281)	(1.091)	(0.985)	(0.072)	(0.104)	(0.515)
Observations	58	58	58	58	58	58
R-squared	0.986			0.997		
Countries	40		40	40		40
Instruments			33			33
Hansen-Test			0.413			0.630
AR2						

Notes: All models include period fixed effects (except the RCM model which includes a trend variable). In lagged dependent variable models (LDV) standard errors are adjusted for heteroskedastic panels. In GMM models DAH, GDP per capita, civic activism and fertility rate as well as the indices of bureaucratic governance, liberal democracy and power-sharing respectively are specified as endogenous variables. In two-step GMM Windmeijer bias-corrected robust standard errors are used. Data: WVS. *** p<0.01, ** p<0.05, * p<0.1.

Table A 16: Share of health aid in percent of total aid allocated by donor countries

Donor countries	Health aid in % of total aid (inclusive HIV)	Health aid in % of total aid (exclusive HIV)
United States	9.8	3.3
Japan	1.7	1.7
United Kingdom	9.1	5.2
Netherlands	6.1	4.8
France	1.8	2.1
Germany	2.1	1.3
Spain	8.2	7.5
Denmark	9.5	8.3
Sweden	7.2	5.3
Italy	3.7	3.6
Canada	4.4	3.4
Norway	8.6	5.9
Australia	5.8	4.3
Belgium	6.1	5.7
Switzerland	5.4	5.2
Saudi Arabia	5.3	5.2
Finland	7.2	6.6
Ireland	19.3	14
Korea	4.8	4.6
Austria	2.5	2.4
Luxembourg	21.4	17.5
United Arab Emirates	2.2	2.2
Kuwait	0.7	0.7
Portugal	1.5	1.6
India	2.4	2.4
New Zealand	8.2	6.5
Greece	4.6	4.3
Brazil	17.9	15.5
Czech Republic	10.8	8.8
Taiwan	4.0	4.0
Iceland	18	17.8
Thailand	24.6	24.7
Monaco	28.4	23.8
Hungary	12.1	10.3
Cyprus	26.5	8.9
Liechtenstein	4.6	3.8
Estonia	8.8	8.8
Chile	8.9	8.9
Lithuania	4.9	4.7
Slovenia	1.8	1.6
Colombia	0.1	0.1

Notes: Table shows (cumulative) health aid as a share of (cumulative) total development assistance between 1990-2011 allocated by donor countries.
Source: AidData (2013), Tierney et al. (2011).

Table A 17: List of AidData purpose codes of health aid

Health sub-sectors	**Description of activities**
Health, general	Health sector, combinations of activities
Health policy & administrative management	Health sector policy, planning and programs; aid to health ministries, public health administration; institutional capacity building and advice; medical insurance programs.
Medical education/training	Medical education and training activities.
Medical research	General medical research activities.
Medical services	Laboratories, specialized clinics and hospitals; specialized medical equipment and supplies; ambulances; dental services; mental health care; control of noninfectious diseases; drug and substance abuse control and counseling.
Basic health care	Basic and primary health care programs; paramedical and nursing care programs; supply of drugs, medicines and vaccines related to basic health care.
Basic health infrastructure	Basic hospitals, clinics and dispensaries and related medical equipment.
Basic nutrition	Direct feeding programs; monitoring of nutritional status, provision of nutrients (vitamin A, iodine, iron etc.); monitoring of nutritional status; nutrition and food hygiene education; household food security.
Infectious disease control	Immunization; prevention and control of infectious and parasite diseases (malaria control, tuberculosis control, helminthiasis, polio, acute respiratory infections).
Health education	Information, education and training; public health and awareness campaigns.
Health personnel development	Training of health staff for basic health care services.
Reproductive health care	Promotion of reproductive health; prenatal and postnatal care including delivery; prevention and management of consequences of abortion; safe motherhood activities
Family planning	Family planning services; information, education and communication activities; delivery of contraceptives
STD control including HIV/AIDS	Testing; prevention; treatment and care; information, education and communication; personnel development for population and reproductive health care services

Source: AidData (2013).

Table A 18: Country sample composition in regression models based on ISD database

Recipient country	CIVIC N=106	CLUBS N=68	TRUST N=91	Recipient country	CIVIC N=106	CLUBS N=68	TRUST N=91
Angola	3			Kenya	3	2	2
Argentina	3	3	3	Kyrgyzstan	3	3	3
Armenia	3	1	3	Laos	3		
Azerbaijan	3	3	3	Latvia	1	1	1
Bangladesh	3	3	3	Lebanon	3		2
Belarus	3	3	3	Lesotho	3	3	3
Belize	1			Liberia	3	1	1
Benin	3		1	Lithuania	1	1	1
Bhutan	3		2	Madagascar	3	1	2
Bolivia	3	3	3	Malawi	3	3	2
Botswana	3	3	3	Malaysia	3		3
Brazil	3	3	3	Mali	3	3	2
Bulgaria	2	2	2	Mauritania	3		
Burkina Faso	3	2	2	Mauritius	2		2
Burundi	3		1	Mexico	3	3	3
Cambodia	3	3	3	Moldova	3	3	3
Cameroon	3		2	Mongolia	3	3	3
Cape Verde	3	2	2	Morocco	3	3	3
Central African Rep	1			Mozambique	3	3	3
Chad	3			Namibia	3	3	3
Chile	3	3	3	Nepal	3		1
China	1	1	1	Nicaragua	3	3	3
Colombia	3	3	3	Niger	3		
Comoros	3			Nigeria	3	3	3
Congo	3			Pakistan	3	3	3
Costa Rica	3	3	3	Panama	3	3	3
Cote d'Ivoire	3		3	Papua New Guinea	3		2
Croatia	3	3	3	Paraguay	3	3	3
Czech Republic	1	1	1	Peru	3	3	3
Djibouti	2		1	Philippines	3	3	3
Dominican Rep	3	3	3	Poland	1	1	1
Ecuador	3	3	3	Romania	3	3	3
Egypt	3	3	3	Rwanda	3	2	2
El Salvador	3	3	3	Senegal	3	2	2
Equatorial Guinea	1		2	Sierra Leone	2		
Eritrea	3		2	Slovakia	1	1	1
Estonia	1	1	1	South Africa	3	3	3
Ethiopia	3	2	3	Sri Lanka	3		3
Fiji	3		3	Swaziland	3	3	3
Gabon	3		2	Tajikistan	1		2
Gambia	3			Tanzania	3	3	3
Georgia	3	3	3	Thailand	3		2
Ghana	3	3	2	Togo	3		
Guatemala	3	3	3	Trinidad and Tobago	3		2
Guinea	3			Tunisia	3	3	2
Guinea-Bissau	1			Turkey	3	3	3
Guyana	3		2	Uganda	3	3	3
Haiti	3			Ukraine	3	3	3
Hungary	2	2	2	Uruguay	3	3	3
Indonesia	3	3	3	Venezuela	3	3	3
Iran	2	2	1	Vietnam	3	3	3
Jamaica	1		1	Yemen	3		2
Kazakhstan	1		3	Zambia	3	3	3

Notes: Table indicates the number of observations for different regression models.

Table A 19: List of donors included in health aid data from AidData (2013)

African Capacity Building Foundation	Lithuania
African Development Bank (AFDB)	Luxembourg
African Development Fund (AFDF)	Monaco
Andean Development Corporation (CAF)	Multilateral Fund for the Implementation of the Montreal Prot.
Arab Bank for Economic Development	Netherlands
Arab Fund for Economic & Social Development	New Zealand
Asian Development Bank (ASDB)	Nigerian Trust Fund (NTF)
Asian Development Fund (ASDF)	Nordic Development Fund (NDF)
Australia	North American Development Bank (NADB)
Austria	Norway
Belgium	OPEC Fund for International Development
Bill & Melinda Gates Foundation (BMGF)	OSCE
Brazil	Portugal
Canada	Qatar
Caribbean Development Bank (CDB)	Romania
Chile	Saudi Arabia
Colombia	Slovak Republic
Congo Basin Forest Fund (CBFF)	Slovenia
Cyprus	South Africa
Czech Republic	Spain
Denmark	Sweden
Estonia	Switzerland
European Bank for Reconstruction & Development	Taiwan
European Communities (EC)	Thailand
Fast Track Initiative Catalytic Fund	United Arab Emirates
Finland	United Kingdom
France	United Nations Children s Fund (UNICEF)
Germany	United Nations Democracy Fund (UNDEF)
Global Alliance for Vaccines & Immunization (GAVI)	United Nations Development Programme
Global Environment Facility (GEF)	United Nations Economic Commission for Africa
Global Fund to Fight Aids, Tuberculosis and Malar-	United Nations Economic and Social Council
Greece	United Nations Economic and Social Council
Hungary	United Nations Peace building Fund
Iceland	United Nations Population Fund (UNFPA)
India	United Nations Relief and Works Agency
Inter-American Development Bank (IADB)	United States
International Fund for Agricultural Development	WFP
International Monetary Fund (IMF)	WHO
Ireland	World Bank - Carbon Finance Unit
Islamic Development Bank (ISDB)	World Bank - Debt Reduction Facility
Italy	World Bank - International Bank for Reconstruction
Japan	World Bank - International Development Association
Joint United Nations Programme on HIV/AIDS	World Bank - International Finance Corporation
Korea	World Bank - Managed Trust Funds
Kuwait	World Trade Organization (WTO)
Latvia	World Trade Organization (WTO)
Liechtenstein	

Table A 20: Country sample composition in regression models based on WVS data

Recipient country	SMA N=53	MEMBER N=52	TRUST N=55
Argentina	4	3	4
Armenia	2	2	2
Azerbaijan	2	2	2
Bangladesh	2	1	2
Belarus	1	2	2
Brazil	2	2	2
Bulgaria	2	2	2
Burkina Faso	1	1	1
Chile	4	3	4
China	1	1	1
Colombia	3	3	3
Croatia	1	1	1
Czech Republic	1	1	1
Dominican Republic	1	1	1
Ecuador	1	1	1
Egypt	3	2	3
El Salvador		1	1
Estonia	1	1	1
Georgia	3	3	3
Ghana	2	2	2
Guatemala	1		1
Hungary	2	2	2
Indonesia	2	1	2
Iran		1	2
Kazakhstan	1	1	1
Kyrgyzstan	2	1	2
Latvia	1	1	1
Lebanon	1	1	1
Lithuania	1	1	1
Malaysia	2	2	2
Mali	1	1	1
Mexico	4	3	4
Moldova	3	2	3
Morocco	3	2	3
Nigeria	3	2	3
Pakistan	2	1	3
Peru	4	3	4
Philippines	3	2	3
Poland	1	1	1
Romania	3	3	3
Rwanda	2	2	2
Slovakia	1	1	1
South Africa	4	3	3
Tanzania	1		1
Thailand	2	2	2
Trinidad & Tobago	2	2	2
Tunisia	1	1	1
Turkey	4	3	4
Uganda	1		1
Ukraine	3	3	3
Uruguay	3	3	3
Venezuela	2	1	2
Vietnam	2	1	2
Yemen	1	1	1
Zambia	1	1	1

Notes: Table indicates the number of observations for (replication) regression analysis using WVS data. SMA = social movement activity index; MEMBER = associational membership in % of population; TRUST = generalized trust. Source: WVS.