Politics, Policies, and Effectiveness of Foreign Aid in Fragile States

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Matthew Kofi Ocran[1]

Abstract

International development cooperation has evolved since the 1960s. The effectiveness of aid is still topical. But studies have not paid adequate attention to the relationship between sectoral aid, politics, institutions and aid effectiveness in fragile states. Using data from 2002 to 2020, we examined the effect of education aid and health aid on education and health outcomes in fragile states. The paper used the Arellano-Bover/Blundell-Bond system-GMM estimator in examining various representation of health aid and aid education on maternal mortality and primary school enrollment. There is evidence of muted effectiveness of health aid and education aid on health and education outcomes in the face of fragile contexts. Policy and institutional factors also matter for aid effectiveness. Donor support for social sectors in fragile states must be accompanied with support for institutions, and policy formulation processes.

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[1] Department of Economics, University of the Western Cape, Belleville, Cape Town. Email: mocran@uwc.ac.za

1. INTRODUCTION

International development cooperation has evolved since the 1960s. After the end of the cold war, the question of aid effectiveness assumed greater importance. In 2003, the first in a series of high-level fora on aid effectiveness between donors and their development partners was held in Rome. The effectiveness of aid is key because aid is a vital source of funding for many poor countries. There is a growing consensus in the literature that aid stimulates economic growth even though there is no unanimity on the estimates of the impact (Mekasha & Tarp, 2019; Gisselquist & Tarp, 2019).

Extreme poverty has been halved in the last 30 years. Six decades ago, donor countries provided 75% of the funds' flow to developing countries by 2016, donor funds accounted for just around 10% of the flows. These outcomes represent major trends and improvements (Chandy et al. 2016). Unfortunately, these trends are not seen in fragile states. The World Bank suggests that by 2030, two out of every three people living in extreme poverty will be in a fragile state. The Development Assistance Committee (DAC) member countries, the largest source of aid, allocated the lion's share of their funding (i.e., 63% of their net allocations) to 57 fragile states in 2018 (Thompson 2020). To ensure that aid to the fragile states generates the desired impact, efforts must be made to understand the effectiveness of aid to this group of countries. Improved development outcomes in fragile states will go a long way in reducing extreme poverty in the world.

Since the 1990s the development literature has emphasised the importance of institutions in enhancing the effectiveness of aid (Acemoglu et al 2005). But over the last decade, it has been found that aid effectiveness is also associated with politics. The literature suggests that the persistence of poor policy choices and weak institutions in developing countries is not necessarily a result of gaps in knowledge or lack of financial resources (Dasandi, Laws, Marquette & Robinson, 2019). Powerful actors who benefit from the status quo impede change (Leftwich, 2000; Carothers & de Gramot 2013). To address the persistence of poor policies and weak institutions which blunts the effectiveness of aid, we must also understand what lies behind the persistent poor policy choices and weak institutions.

The impact of aid is often examined using two broad approaches: the use of growth theories, or the examination of the channels through which aid impacts economic growth (Tsikata 1998). Some of the channel-focused studies investigate the fiscal response of aid, and the impact of aid on social services such as education, health, etc. Many studies have also estimated the impact of aid on governance, and democracy among others. The channel approach in the examination of aid effectiveness is more productive as compared to the use of growth regressions (Mekasha & Tarp, 2019). This is because, as Mekasha and Tarp argue, "promoting economic growth is not the primary objective of foreign aid..". Therefore, the present study will examine how aid influence social outcomes in fragile states. The study considers health and education outcomes as channels of aid effectiveness. The choice of health and education outcomes also ties in with the Sustainable Development Goals (SDGs).

Researchers have paid considerable attention to the relationship between aid effectiveness and politics, aid effectiveness and fragile states, as well as aid effectiveness and institutions. Thus far, there is a paucity of studies that look at aid effectiveness, politics, and policies in the context of fragile states in a unified framework. This is where the proposed study seeks to contribute. The objective of this proposed

paper, therefore, is to ascertain the empirical relationship between the three pertinent phenomena: politics, policies, and aid effectiveness in the context of fragile states.

The rest of the paper is organised as follows: Section II provides an overview of selected stylised facts associated with the economic development experiences of fragile states. The section also discusses some of the conceptual issues related to the study. Section III reviews the proximate literature on aid effectiveness and the role of politics and policies in supporting the economic development agenda of developing countries and fragile states. The empirical approach that underpins the study is discussed in Section IV. The results and discussions of the main findings of the estimations are given in Section V. The last section, Section VI provides the conclusion and the way forward.

2. LITERATURE

The theoretical basis of the role of foreign aid in stimulating economic growth is broadly acknowledged. But the empirical evidence is vast and contested until recently. For example, since 2010 a cogent body of work in the development economics literature has emerged to underscore the effectiveness of foreign aid. Fragile situations have not benefited to the same extent as other recipients of foreign aid. These states are more in need of aid than nonfragile states. This section begins with the theoretical debate of the aid–growth debate. It then provides a brief overview of the literature on the effect of politics, policies on aid effectiveness. The review also assesses the connection between health and education outcomes, and growth. Lastly, we provide highlights of the literature on aid effectiveness in fragile states.

2.1 Aid and growth

The first generation of empirical work drew its theoretical foundations from the Harrod-Domar growth model (Harod 1939 and Domar 1946). In the Harod-Domar model, savings is seen as the key constraint to economic growth. The theoretical basis for aid within the context of this model is that aid has the potential to supplement domestic savings and therefore can facilitate growth. Diwan (2007) describes this as the classical view of foreign aid. Later, Chinnery and Strout (1966) introduced the two-gaps model which suggests the existence of two gaps that need attention to stimulate growth. These are the domestic savings-investment and import-export gaps. In the former, it is assumed that less developed countries' domestic savings mobilization is inadequate to fund the investment needed for economic growth. Foreign aid can assist the development effort by contributing to closing the savings-investment gap. The latter gap implies a negative net export position, a gap between the value of exports and imports. Chinnery and Strout contend that the negative net export position is a drag on economic growth.

Hansen and Tarp (2000) characterise the aid-effectiveness empirical literature based on their theoretical underpinning. The authors describe foreign aid and growth studies, with causality running from aid to growth via savings and investments, as the first-generation strand of the literature. Most of the empirical studies associated with this strand of the literature suggest a negative relationship between aid and growth. Hansen and Tarp reviewed over 100 papers in the review of the first-generation literature on aid and growth. The second generation of aid-growth literature is anchored on the theoretical link between investment and growth. This strand assumes that if aid stimulates investment in the aid-recipient country then aid has a positive effect on growth. The notion of capital accumulation is critical

in the assessment. And the Harod-Domar and Solow growth models form the theoretical foundations of the studies.

2.2 Aid effectiveness and policies

As the theoretical growth literature advanced, the neoclassical endogenous growth models became the basis of the growth regressions from the 1990s onwards. These third-generation studies, unlike the earlier generations, explicitly account for the policy environment and other non-economic factors in the modeling effort. Importantly, the studies highlight the role of technology, innovations, and human capital accumulation. The empirical studies control for the policy environment, quality of institutions, and other non-economic factors. Notable papers in this strand of the literature include Hansen and Tarp (1999), Durbarry et al (1998), Burnside and Dollar (1997), and Hadjimichael et al (1995).

Hansen and Tarp provide a succinct summary of the main ideas from the third-generation literature and observe that economic growth is a complex phenomenon. This is because there is an interplay of many economic and non-economic factors that determine growth outcomes. The conclusions of Hansen and Tarp are consistent with that of others who sought to make sense of the myriad of growth determinants. Darluf and Quah (1999) demonstrate the complexity and diversity of these determinants. They identify 87 determinants from cross-country growth regressions. A few years later Darluf and others identified an even bigger number of determinants, 143 variables (Darluf, Kurtellos, and Tan 2005). Tsangarides and Mirestean (2009) present the many determinants into ten broad economic and non-economic categories. Some of the non-economic determinants include the quality of public institutions, ethnic heterogeneity, ethnolinguistic fractionation, the quality of public institutions, conflicts and civil strife, geographic attributes, and many idiosyncratic variables.

The complexity of growth determinants notwithstanding, the aid–growth evidence that began to accumulate in the 1970s can be associated with three broad perspectives. That is if we discount the differences in methodological approaches adopted in the studies. The first stand suggests that foreign aid promotes growth. The second thread of the aid-growth literature suggests the effect of aid on growth is negative. And the last group argues that the effect of aid on growth can be positive under certain conditions. Some of the conditioning influences are the quality of institutions and good policies in the aid-receiving country.

Many have contributed to the convergence of evidence of aid effectiveness in the aid-growth debate. Prominent among these are Hansen & Tarp, 2000; Arndt, Jones & Tarp, 2010; and Makesha & Tarp, 2013 and 2019. Hansen & Tarp (2000) discovers a coherent and positive aid-growth linkage, which is robust even for countries with an uncomplimentary policy environment. Arndt, Jones & Tarp (2010) framed the literature in the context of the Rubin Causal Model at the macroeconomic level. The findings show that over the long run there is a positive and significant causal effect of aid on growth. The Makesh and Tarp papers adopted a meta-analysis approach. The authors analysed the aid and growth literature over the period 1970 to 2004 and later extended the window of observation of sampled studies to 2013. The positive outcome is consistent across the two study periods.

Despite the newfound convergence on the positive linkage between aid and growth, Mekesh & Tarp (2019) suggest that while aid has a positive effect on growth, the primary objective of aid is not to drive growth directly. This perspective is consistent with the strand of the development literature that has often sought to assess the impact of aid on growth through defined channels (Tsikata 1998). From the

empirical evidence on the determinants of growth, aid should impact positively on a range of development outcomes that include growth. The development outcomes that development aid is expected to impact directly include health and education. Health and education are also critical determinants of human capital. Theoretically, human capital is an important factor in the output function of the new growth theories. The two phenomena are therefore veritable channels of long-run growth (See for example Lucas 1988, Jones and Romer 2010, Helpman and Grossman 1994).

2.3 Aid effectiveness and politics

Boone (1996), one of the few third-generation aid-effectiveness papers that suggest that aid has no effect on growth underscores the importance of politics in determining the effectiveness of aid. While in one breath Boone suggests aid has no effective impact on growth, he concedes the nature of politics in the aid recipient country influences health outcomes. The political economy of aid effectiveness is increasingly receiving attention in the development literature. More so following the renewed interest in understanding by aid stakeholders in understanding the drivers of aid effectiveness.

The findings of the study indicate that aid recipient countries that are run by liberal and democratic regimes have 30% lower infant mortalities on average than least free political regimes. Others have looked at politics from the perspective of donors. For example, Bobba and Powel (2007) considered the effectiveness of aid when the recipient country is a political ally. They concluded that aid provided to political allies was ineffective for growth. The findings of the paper are robust even when the estimation approach is varied.

The 2005 Paris conference on aid effectiveness is momentous in the aid effectiveness - politics debate. Since then, concerted efforts have been made to interrogate the relationship between politics and aid effectiveness. Dasandi, Laws, Marquette & Robinson (2019) undertakes a critical survey of the literature on thinking and working politically, TWP, a political economy approach to development practice. The TWP approach is premised on the fact that development is a political process. However, Dasandi and others conclude that thus far the literature on TWP is practitioner-based, case-study centered, and lacks academic rigour. Nonetheless, the assertion development is a political process is consistent with the strand of the development literature that explains aid effectiveness in the context of non-economic factors such as the quality of institutions, political regimes in place, etc. Some of the studies that highlight the importance of political commitment in aid effectiveness include Hughes and Hutchison (2012). Hugh and Hutchison drawing on case studies of Cambodia and the Philippines argue development is not public good but centre of interest for contestation by forces in society. In an earlier paper, Alesina and Perroti (1994) reviewed the political economy of growth, particularly in the context of the new growth models. The study assessed the relationship between growth, political instability, political freedom, democratic institutions, and income inequality. The intersection between the economy and politics has a very long tradition. Huttington (1968) and Hibbs (1973) are cited by Alessina and Peroti (1994) as examples of studies that empirically examine the relationship between politics and economics. In sum, the place of politics in determining growth outcomes is one that is grounded in theory and evidence.

2.4 Aid effectiveness and education aid

The estimate of the effect of foreign aid devoted to education on economic growth is often based on the endogenous growth theories and the Solow growth models. Some of the studies are Asiedu (2014), Keller (2006), and MacMahanon (1998). Asiedu examined the relationship between education aid

aimed at the primary school sector and economic growth in Sub-Saharan Africa. The used data covered 38 sub-Saharan African countries for the period 1990 to 2004. The findings suggest that the outcome of aid on primary school education outcomes was positive. Post-secondary school outcomes were either negative or insignificant. The study also suggests that aid rises as the share of the primary school education budget increases. The only non-economic variable that the study controlled for was institutional quality. And the estimations were carried out with the aid of systems GMM.

Nsanja, et. al (2021) also examined the education aid – economic growth for 32 sub-Saharan countries. The window of observation was from 2005 to 2017. The findings provide evidence that the effect of education aid depends on the income group of the recipient country. For instance, while primary school education aid and aggregate education are supportive of economic growth in lower-income countries, higher education aid is growth-enhancing than foreign aid to the primary and secondary education sectors. The estimation technique adopted, was like Asiedu's, systems GMM approach. The authors controlled for a limited number of variables (inflation, consumption, investment, and trade openness). In addition to the selection of macroeconomic variables it controlled for the nature of governance: autocracies, and democracies.

2.5 Aid effectiveness and the health

At the outset, it is important to underscore that health outcomes, like education outcomes, have a bearing on human capital formation. Health is a component of human capital. And as has been discussed earlier, human capital is a critical factor in the context of the new growth theories. The effect of favourable health outcomes on growth is demonstrably positive (Ridgwan et al 2022). The meta-analysis of 719 estimates from 64 studies provides evidence that health has a positive effect on growth. But the empirical assessment of the effect of health-related aid is fraught with estimation challenges. The outcomes are also contested. Woode, Mortimer, and Sweeney (2021) suggest that the earlier literature failed to control for fragmentation, ill-targeted, and aid disbursement consistent with aid effectiveness principles. Woode et al (ibid) sought to find out whether the much-touted Sectoral Wide Aid Programme (SWAp) approach based on the aid effectiveness principles has led to improvements in aid effectiveness and child mortality. They find health-related SWAp leads to a 6% to 8% reduction in infant mortality as compared to non-SWAp countries. And conclude that health aid has had a positive effect on aid effectiveness in the context of the SWAp framework. The positive health aid outcome and aid effectiveness are robust for countries that implement the SWAp framework poorly (Woode 2014).

Doucouliagos et al (2021) examined the impact of health aid on child mortality conditional on the quality of governance. The authors used an instrumental variable estimation approach. The instrument for health aid was the interaction between the probability of allocating health aid to a recipient country and donor government fractionalization. The authors used panel data from 96 aid-recipient countries for the years, 2002 to 2015. The study suggests that the effectiveness of health aid in reducing child mortality is conditional on the existence of good governance. The effect of health aid on maternal mortality is also positive, according to (Banchini and Swiss 2019).

Odokonyero et al (2017) assessed the effect of health aid on a broad range of health outcomes in Uganda. They found that health aid reduces the burden of disease but is less effective in reducing disease prevalence. The study provides evidence that the population that lives closer to funded health projects benefits more. The results also suggest that aid health aid was not necessarily targeted at

communities in most need. Odokonyero and his collaborators used a difference-in-differences approach based on household panel data and geographically referenced subnational foreign aid data.

Even though recent literature provides evidence of a positive effect of health aid on health outcomes, there are studies in the past that suggested a negative effect. Bradshaw, Noonan, Gas, and Sershen, 1993; and Sell and Kunitz, 1986).

2.5 Fragile situations and aid effectiveness

There is unanimity in the literature that aid effectiveness in fragile states is much lower than in other states (Ishihara 2012). Chandy,L., Seidal, B., and Yang, C. (2016) show that aid practices in fragile states are inferior to those in stable states. They identify considerable variations in aid practices among donor countries in fragile states. Among the conclusions reached by the authors is the suggestion that poorly performing bilateral donors should outsource the delivery of aid to larger multilateral organisations that have better performance. The role of donor behaviour in explaining aid effectiveness in fragile states is also highlighted in Brown (2007). Brown points out how bilateral donors supported economic mismanagement in Zambia and the donor complicity in the collapse of the Rwandan state, which culminated in the 1994 Genocide.

2.6 Conclusions

Thus far, studies on aid effectiveness in countries in fragile situations have not paid adequate attention to the interplay of politics, policies, and the standard determinants of aid effectiveness in a unified framework. The present study contributes to the aid effectiveness literature in this area by focusing on how aid impact human capital outcomes. Fragile states are falling behind as far as the major trends that are associated with aid in low-income countries are concerned. Therefore, studies such as the present will provide insights to help turn around the situation.

3. EMPIRICAL ANALYSIS

The theoretical basis of the estimation is that foreign aid drives economic growth through defined channels (Tshikata 1999; Mekasha & Tarp, 2019). These channels include education and health care. The empirical model, therefore, investigates the effect of health aid and education aid on health and education outcomes. Dummy variables are used to ascertain the effect of the sectoral aid on the defined sectoral outcomes in fragile states.

3.1 Estimation approach

Dynamic panels estimators are often used to investigate causal relationships. These estimators are designed to deal with situations where: (1) we have limited time periods of observations, small T, and a large of number of subjects in a sample, large N panels; (2) a linear relationship; (3) one dependent and dynamic variable, which depends on its past realizations; (4) non-strictly exogenous independent variables; (5) fixed individual effects; and (6) heteroskedasticity and autocorrelation within individual observations but not across (Roodman 2009).

Arellano and Bond (1991) proposed the difference generalized method-of-moments (difference-GMM). The Arellano-Bond estimator first transforms all the regressors by differencing before applying a generalized method of moments. Arellano and Bover (1995), and Blundell and Bond (1998) improves on the difference-GMM with the additional assumption that first differences of instruments variables are not correlated with the fixed effects. The Arrelano-Bover/Blundell-Bond estimator, system-GMM, permits the introduction of many instruments, which in turn enhances efficiency. The system-GMM builds a system of two equations. These are the original equation, and the transformed equation. The nature of the panel data for the paper, many countries (N), and small number of years (T), makes the system-GMM apt for the estimations.

Following the literature, we estimate the equation:

$$Y_{it} = \alpha + \beta A_{it} + \gamma E_{it} + \lambda NE_{it} + \delta fragility_{it} + \varepsilon_{it} \,, \quad (1)$$

where Y_{it} is the health, and education outcomes of the relevant sectoral aid. A_{it} is the sectoral aid (health aid and education aid). Health aid is measured as disbursed aid from the DAC countries to the health sector in per capita terms. Similarly, education aid is given as disbursed education aid per capita. Gross intake ratio in first grade of primary education as a percentage of the relevant age group, and adjusted net enrollment rate as a percentage of primary school age children are used alternatively as education aid outcomes. Mortality rate for under 5s per 1,000 live births is the health outcome. There are two sets of controls: economic E_{it} and non-economic NE_{it}. The controls are drawn from the growth literature. The economic controls are key macroeconomic variables, while the non-economic variables represent country performance on indicators of politics and quality of relevant institutions. Countries in fragile situations are represented in the model with a dummy variable,$fragility_{it}$ and ε_{it} stands for the error term.

3.2 Source of data and description of variables

Data on disbursement of aid from the Development Assistance Committee (DAC) countries to low, lower middle income and upper middle income countries was obtained from the OECDs development aid database. The data covers the period 2002 to 2020 in constant 2020 United States dollars. We

obtained the following series: total bilateral aid to all sectors; total aid to education; total aid to health; and aid for population policies and reproductive health care.

Sectoral outcomes

Gross intake ratio, and enrolment rates were considered education outcomes. Gross intake ratio in first grade of primary education is defined as the number of new entrants in the first grade of primary education regardless of age. And this is a expressed as a percentage of the population of the official primary entrance age. Adjusted net enrolment rate in primary school is given as a percentage of primary school age children. The education outcome variables are from the World Bank's World Development Indicators (WDI).

The health outcomes are maternal mortality ratio per 100, 000 live births and under 5 mortality per 1,000 live births. These are all from the WDI. The WDI was also the source of information for investment (gross fixed capital formation as a percentage of GDP), consumption (Government consumption expenditure as a percentage of GDP), and trade (value of trade- exports plus imports as a percentage of GDP).

Policies

Institutional Policy and Institutional Assessment (CPAI) is a tool used by the World Bank to assess the quality of policy and institutions. The CPIA is constructed with 16 criteria which are categorised into four equally weighted clusters. The four clusters are Economic Management, Structural Policies, Policies for Social Inclusion and Equity, and Public Sector Management and Institutions. Countries are rated on a scale of 1 (low) to 6 (high) on the 16 criteria. The next section presents summary statistics of the variables used in the estimation.

Politics

Following the work of Alessina et al (2003) we measure politics with three representations of fractionalisation in societies. Ethnic, linguistic and religious fractionalisation have been found to explain policy choices, and the performance of intuitions. The degree of heterogeneity in ethnicity, language and religion determine the level and extent of political contestations. The contestations then impact influence political choices relating to policies and institutions. The For example, La Porta et al (1999) shows that ethnic fractionalisation is a determinant of the quality of government. The study uses three components of ethnolinguistic fractionalisation developed by Alessina et al (2003). This is an improvement on the other measures of fractionalisation that are used in the economic literature because the measures used in the generation of the indices are more comprehensive. See Appendix Table A1 for a detail description of all the variables used in the estimation and the sources of the data.

4. MAIN FINDINGS

Before the econometric estimations we examined the a number of descriptive statistics associated with the key variables of interest.

4.1 Descriptive statistics

The means and standard deviation statistics of the series used in the analysis are provided in Table 1. The figures represent the average values for all 126 countries represented in the sample. The proportion of foreign aid that goes into health care is on the average just about 7 percent of total aid. See Table for further details.

The amount of aid disbursed on average to the 127 countries in the sample of aid receiving countries is US$110 in constant 2020 US$. The amounts received by the countries vary across regions (See Appendix Figures 3, 4 and 5).

Table 1. Summary Statistics, 2002 - 2019

	Mean	Standard Deviation
Aid variables		
Total aid per capita (Constant 2020 US$)	109.46	179.27
Health aid per capita (Constant 2020 US$)	6.85	16.43
Reproductive health aid per capita (Constant 2020 US$)	3.3	6.69
Education aid per capita(Constant 2020 US$)	11.1	26.79
Outcomes		
Maternal mortality (per 100,000 live births)	294.27	325.96
Primary school completion rate (% of relevant age group)	55.31	43.22
Economic controls		
Real interest rate (%)	7.41	8.16
Inflation, consumer prices (annual %)	7.22	11.60
Trade (% GDP)	76.77	35.74
Real GDP per capita	3,269.54	2,801.87
Politics controls		
Language fractionalisation	0.47	0.30
Ethnic fractionalisation	0.53	0.24
Religion fractionalisation	0.43	0.24
Institutions		
Structural policies cluster av. (1= low, 6 = high)	3.30	0.52
Economic policy management cluster av. (1= low, 6 = high)	3.40	0.67
Public sector mgt. and institutions cluster av. (1= low, 6 = high)	3.07	0.48
Policies for social inclusion/equity cluster av. (1= low, 6 = high)	3.27	0.50
Other controls		
Domestic government health expenditure (% GDP)	82.99	20.82
Government expenditure per student, primary (% GDP per capita)	2.39	1.65

There is a significant linear relationship between aid effectiveness (measured by the sectoral outcomes -maternal mortality and primary school completion rate) and politics. All the measures politics: ethnic, fractionalisation, language fractionalisation and religion fractionalisation are worsen maternal mortality. Fractionalisation also reduces primary school completion rates. As expected, the quality of institutions and policies reduce maternal mortality and increase primary school completion rates. See Table 2.

Table 2. Correlation between aid effectiveness, politics and institutions.

	Maternal mortality	Primary school completion rate
Language fractionalisation	0.4711*** (0.0000)	-0.4426*** (0.0000)
Religion fractionalisation	0.1866*** (0.0000)	-0.1658*** (0.0004)
Ethnic fractionalisation	0.4926*** (0.0000)	-0.4545*** (0.0000)
Structural policies	-0.4318*** (0.0000)	0.3478*** (0.0000)
Economic policy management	-0.2766*** (0.0000)	0.1659 (0.0131)
Public sector management and institutions	-0.4519*** (0.0000)	0.4220*** (0.0000)
Policies for social inclusion/equity	-0.2766*** (0.0000)	0.4691*** (0.0000)

Note: *** denote 1% level of significance.

4.2 Regression results

We conducted system dynamic panel-data estimations for six models representing the relationship between health outcomes, maternal mortality, and aid. The model controlled for fragile contexts at two levels: extremely fragile state, and fragile state.

Reproductive health aid and maternal mortality

The aid controls used in the models vary. Model 1 through to model 3 have reproductive health aid as the proxy for aid. The control for politics used here are ethnic fractionalization, religious fractionalization and language fractionalization. The estimations suggest that reproduction health aid reduces maternal mortality. There is also evidence that politics and policies, as well as the extent of fragile context matter for maternal mortality. See Table 3. The results is consistent with the literature.

Table 3. System dynamic panel-data estimation: Maternal mortality and reproductive health aid

	Model 1		Model 2		Model 3	
	Coeff.	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Maternal mortality_lag_1	0.943***	0.003	0.945***	0.003	0.943***	0.003
Aid						
Reproductive health aid	-0.001	0.002	-0.012**	0.007	-.006***	0.001
Domestic health expend.	0.137***	0.016	0.017	0.021	0.177	-0.016
Fragile context						
Fragile states dummy	-3.029	3.691	17.138***	5.802	10.967***	3.503
Extremely fragile dummy	-42.843***	6.712	-13.286	9.109	-29.275***	6.495
Macroeconomic stability						
GDP per capita	-0.005***	0.000	-0.004***	0.000	-0.004***	0.001
Inflation	0.224***	0.016	0.160***	0.028	0.174***	0.018
Interest rates	0.096***	0.010	0.038***	0.005	0.100***	0.009
Trade openness	-0.035***	0.010	-0.043***	0.008	-0.016***	0.007
Politics						
Ethnic fractionalisation	27.092***	5.829				
Lang. fractionalisation			-27.714***	9.861		
Rel. fractionalisation					-29.650***	6.103
Policies & Institutional Qual.						
Structural policies	9.626***	1.251	7.194***	2.124	5.483***	1.109
Economic policy mgt.	0.683	0.693	1.025	1.515	-0.124***	0.344
Public sector & inst.	-10.587***	1.745	-7.755***	2.419	-10.007***	1.685
Policies for soc. inclusion	6.181***	1.700	8.732***	2.408	5.482***	1.109
Constant	-28.604***	5.980	-14.613***	5.987	-10.525***	8.423
No. Observations	373		355		376	
No. of groups	46		45		47	
Wald chi^2(14)	3.40e+7***		3.122+06		5.81e+06***	
Sargan test , Chi^2	34.56		31.03		32.573	
AR (1)	-1.3389		-0.963		-1317	

Note: *** denote 5% level of significance.

Health aid and maternal mortality

When total health aid is used instead of reproductive health aid, the results of the estimations remain unchanged. Significantly, domestic health expenditure by the individual countries is important for reducing maternal mortality. As expected fragile contexts are worsen maternal mortality outcomes with extremely fragility having a more negative impact. Ethnic and language fractionalisation, proxies for politics, matter for maternal mortality outcomes.

Table 3. System dynamic panel-data estimation: Maternal mortality and health aid

	Model 1		Model 2		Model 3	
	Coeff.	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Maternal mortality_lag_1	0.949***	0.002	0.948***	0.002	0.948***	0.002
Aid						
Health aid	-0.017***	0.001	-0.022***	0.002	-0.020***	0.001
Domestic health expend.	0.143***	0.016	0.048***	0.016	0.156***	0.014
Fragile context						
Fragile states dummy	9.879***	3.619	3.120	4.150	5.839**	2.770
Extremely fragile dummy	47.604***	5.389	26.138***	6.782	28.555***	8.186
Macroeconomic stability						
GDP per capita	-0.004***	0.001	-0.003***	0.000	-0.003***	0.000
Inflation	0.205***	0.011	0.158***	0.019	0.173***	0.008
Interest rates	0.091***	0.011	0.039***	0.008	0.083***	0.006
Trade openness	-0.026***	0.009	-0.019***	0.012	-0.001	0.006
Politics						
Ethnic fractionalisation	26.872***	5.149				
Lang. fractionalisation			1.564	9.705		
Rel. fractionalisation					-24.545***	4.501
Policies & Institutional Qual.						
Structural policies	7.305***	1.394			8.496***	1.501
Economic policy mgt.	1.237**	0.536	-1.034	0.934	0.516	0.477
Public sector & inst.	-9.633***	1.051	-5.327***	1.564	-8.513***	1.271
Policies for soc. inclusion	4.318***	1.201	4.932***	0.853	4.740***	1,215
Constant	-20.72***	6.000	-5.919	4.679	-12.228**	5.571
No. Observations	379		361		382	
No. of groups	47		46		48	
Wald chi^2(14)	3.770e+7***		1.1e+07***		4.1e+06***	
Sargan test , Chi^2	31.72		31.442		33.952	
AR (1)	-1.3606		-0.9799		-1317	

Primary education completion and education aid

The effect of education aid on primary school completion rate is positive for model 3, the outcome is not significant for the two other models.

Table 4. System dynamic panel-data estimation: Primary school completion rate and education aid

	Model 1		Model 2		Model 3	
	Coeff.	**Std. Error**	**Coeff.**	**Std. Error**	**Coeff.**	**Std. Error**
Primary Sch. Completion_lag_1	0.706***	0.009	0.934***	0.001	0.663***	0.009
Aid						
Education aid	-0.160	0.102	0.002***	0.008***	0.008	0.002
Dom. Expend. on Primary Education	0.013***	0.002	0.070*	0.000	0.270	0.469
Fragile context						
Fragile states dummy	-7.501***	2.923	4.756***	0.426	7.594	5.909
Extremely fragile dummy	-51.392***	3.052	2.238	1.433	-49.965***	3.359
Macroeconomic stability						
GDP per capita	0.009***	0.000	0.000***	0.000	-0.008***	0.001
Inflation	0.0234	0.007	0.005***	0.000	0.038***	0.005
Interest rates	-0.011**	0.004	-0.013***	0.000	-0.011***	0.004
Trade openness	-0.028***	0.002	-0.032***	0.002	-0.042***	0.007
Politics						
Ethnic fractionalisation	-16.154**	6.478				
Lang. fractionalisation			-0.540**	0.296		
Rel. fractionalisation					-171.029***	59.250
Policies & Institutional Qual.						
Structural policies	-0.172	0.709	0.579**	0.296	-1.067***	0.321
Economic policy mgt.	4.309***	0.503	-0.295***	0.062	2.519***	0.677
Public sector & inst.	3.648***	1.129	-0.227	0.235	6.320***	1.780
Policies for soc. inclusion	10.069***	0.967	0.754***	0.261	11.450***	0.937
Constant						
No. Observations	616		561		618	
No. of groups	52		48		52	
Wald $chi^2(14)$	1.03+6***		2.8e+07		5.81e+06***	
Sargan test , Chi^2	38.713		31.785		32.573	
AR (1)	-1.012		-1.658		-1.017	

5. CONCLUSIONS AND THE WAY FORWARD

Donors have to pay attention to the non-economic factors of politics, institutions and policies for improved health and education outcomes in fragile contexts. A greater understanding of the political economy of countries in fragile contexts is imperative in order to improve the sectoral outcomes such as maternal mortality and primary school completion rate.

The aid has to be complemented with support for institutions and policy development

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Figure 1. Education aid and enrolment, 2002 to 2019

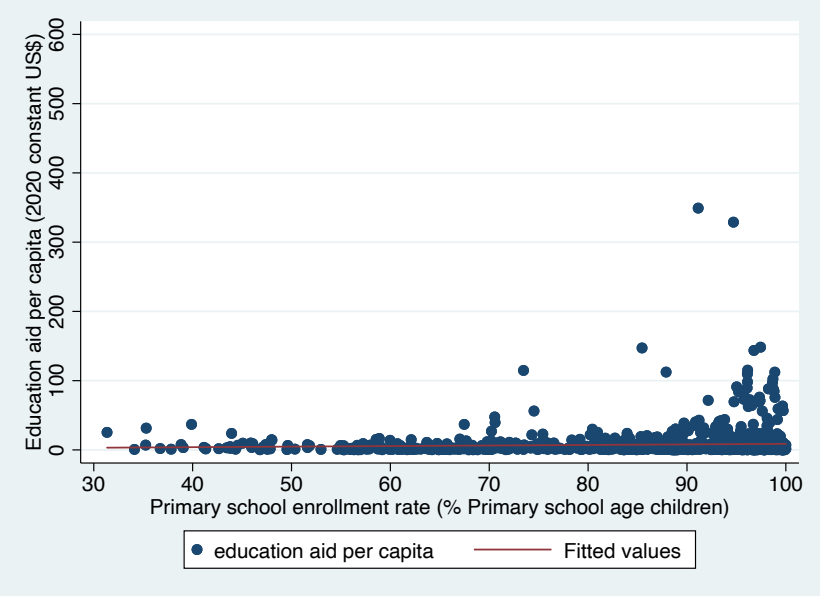

Figure 2. Health aid and maternal mortality, 2002 to 2019

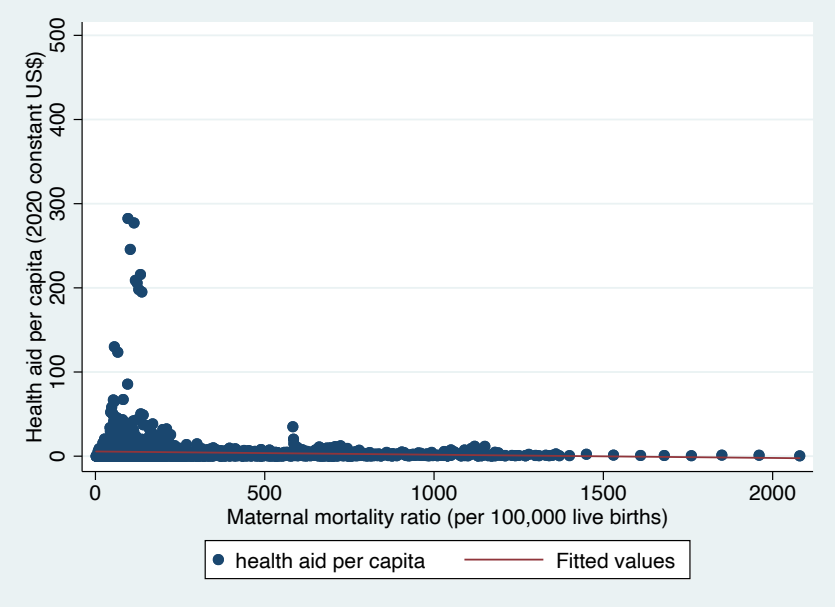

Figure 3. Maternal mortality ratio by region, 2002 to 2019

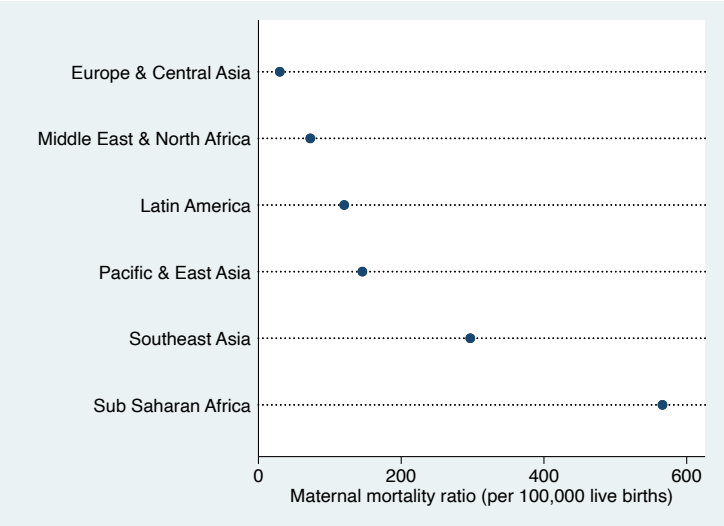

Figure 4. Average aid (per capita) per year by region, 2002 - 2019

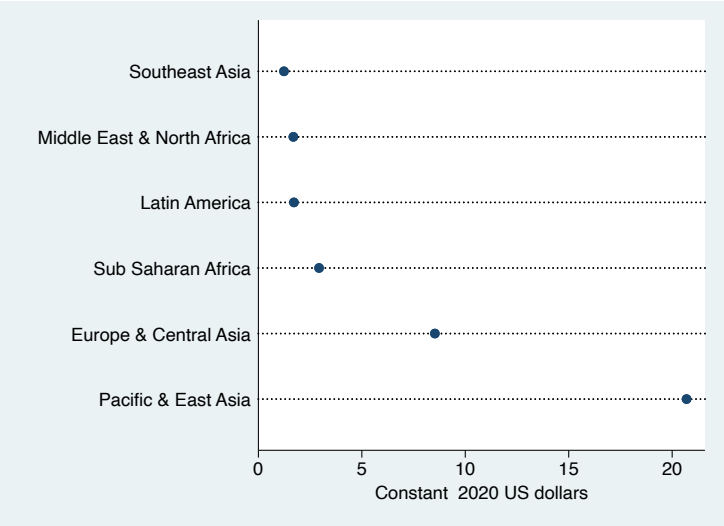

Figure 5. Education aid per person, 2002 to 2019

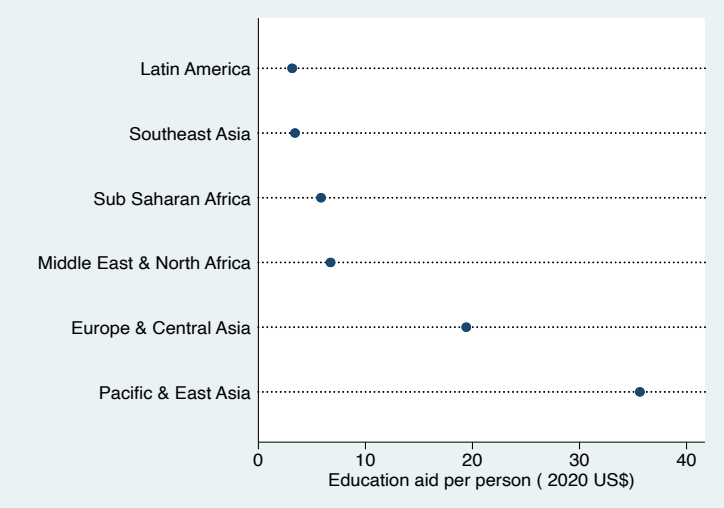

Table A1. Description of variables and sources of data.

	Description of variable	Source of data
1	Total aid per capita (Constant 2020 US$)	OECD Data base, 2022.
2	Health aid per capita (Constant 2020 US$)	OECD Data base, 2022.
3	Reproductive aid per capita (Constant 2020 US$)	OECD Data base, 2022.
4	Education aid per capita(Constant 2020 US$)	OECD Data base, 2022.
5	Maternal mortality (per 100,000 live births)	World Development Indicators, The World Bank.
6	Primary school completion rate (% of relevant age group)	World Development Indicators, The World Bank.
7	Real interest rate (%)	World Development Indicators, The World Bank.
8	Inflation, consumer prices (annual %)	World Development Indicators, The World Bank.
9	Trade (% GDP)	World Development Indicators, The World Bank.
10	Real GDP per capita	World Development Indicators, The World Bank.
11	Language fractionalisation	Alessina et al, 2003.
12	Ethnic fractionalisation	Alessina et al, 2003.
13	Religion fractionalisation	Alessina et al, 2003.
14	Structural policies cluster av. (1= low, 6 = high)	World Development Indicators, The World Bank.
15	Economic policy management cluster av. (1= low, 6 = high)	World Development Indicators, The World Bank.
16	Public sector mgt. and institutions cluster av. (1= low, 6 = high)	World Development Indicators, The World Bank.
17	Policies for social inclusion/equity cluster av. (1= low, 6 = high)	World Development Indicators, The World Bank.
18	Domestic government health expenditure (% GDP)	World Development Indicators, The World Bank.
19	Government expenditure per student, primary (% GDP per capita)	World Development Indicators, The World Bank.
20	Population	World Development Indicators, The World Bank.
21	Fragile and extremely fragile states	OECD,2020

Table A2. List of countries in the sample used in the estimations

	Country	Extremely fragile	Fragile
1	Afghanistan	X	
2	Albania		
3	Algeria		
4	Angola		X
5	Argentina		
6	Armenia		
7	Azerbaijan		
8	Bangladesh		X
9	Belarus		
10	Belize		
11	Benin		
12	Bhutan		
13	Bolivia		
14	Bosnia and Herzegovina		
15	Botswana		
16	Brazil		
17	Burkina Faso		X
18	Burundi	X	
19	Cabo Verde		
20	Cambodia		X
21	Cameroon		X
22	Central African Republic	X	
23	Chad	X	
24	Colombia		
25	Comoros		
26	Congo. Dem. Rep.	X	
27	Congo. Rep.	X	
28	Costa Rica		
29	Cote d'Ivoire		X
30	Cuba		
31	Djibouti		X
32	Dominica		
33	Dominican Republic		
34	Ecuador		
35	Egypt. Arab Rep.		
36	El Salvador		
37	Equatorial Guinea		X
38	Eritrea		X
39	Eswatini		X

	Country	Extremely fragile	Fragile
40	Ethiopia		X
41	Fiji		
42	Gabon		
43	Gambia		X
44	Georgia		
45	Ghana		
46	Grenada		
47	Guatemala		X
48	Guinea		X
49	Guinea-Bissau		X
50	Guyana		
51	Haiti	X	
52	Honduras		X
53	India		
54	Indonesia		
55	Iran. Islamic Rep.		X
56	Iraq	X	
57	Jamaica		
58	Jordan		
59	Kazakhstan		
60	Kenya		X
61	Kiribati		
62	Kosovo		
63	Kyrgyz Republic		
64	Lao PDR		X
65	Lebanon		
66	Lesotho		X
67	Liberia		X
68	Libya		
69	Madagascar		X
70	Malawi		
71	Malaysia		
72	Maldives		
73	Mali		X
74	Marshall Islands		
75	Mauritania		X
76	Mauritius		
77	Mexico		
78	Micronesia		
79	Moldova		

	Country	Extremely fragile	Fragile
80	Mongolia		
81	Montenegro		
82	Morocco		
83	Mozambique		X
84	Myanmar		X
85	Namibia		
86	Nepal		
87	Nicaragua		X
88	Niger		X
89	Nigeria		X
90	North Macedonia		
91	Pakistan		X
92	Papua New Guinea		X
93	Paraguay		
94	Peru		
95	Philippines		
96	Rwanda		
97	Samoa		
98	Sao Tome and Principe		
99	Senegal		
100	Serbia		
101	Sierra Leone		X
102	Solomon Islands		X
103	Somalia	X	
104	South Africa		
105	South Sudan	X	
106	Sri Lanka		
107	Sudan	X	
108	Suriname		
109	Syria Arab Republic		
110	Tajikistan		X
111	Tanzania		X
112	Thailand		
113	Timor-Leste		
114	Togo		X
115	Tonga		
116	Tunisia		
117	Turkey		
118	Turkmenistan		
119	Uganda		X

	Country	Extremely fragile	Fragile
120	Ukraine		
121	Uzbekistan		
122	Vietnam		
123	West Bank Gaza		X
124	Yemen. Rep.	X	
125	Zambia		X
126	Zimbabwe		X