

Figuring Out Aid: The Determinants of Foreign Aid to Sub-Saharan Africa in the Post-Cold War Era

Soala Ekine^a

Abstract:

I investigate the determinants of foreign aid to Sub – Sahara African countries. I look at the post – Cold War era following Bandyopadhyay and Wall (2007). The independent variables of interest are GDP per capita, infant mortality, population, civil and political rights and also government effectiveness. I control for fixed effects to allow for political, strategic and other reasons donors have and use data from the World Bank from 1995. My results show that in the post-Cold War era, government effectiveness and population are statistically significant in explaining net official and development aid and assistance. A population bias is confirmed as aid per capita falls as population increases. In addition, more effective governments attract more aid, increasing government effectiveness by 1 standard deviation (e.g a bad score of -0.5 to a not great score of about 0.1) increases official aid by around \$70 million.

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^a Department of Economics, Bryant University, 1150 Douglas Pike, Smithfield, RI 02917. Email: sekine@bryant.edu

1.0 INTRODUCTION

In October 2018, the US Senate passed the Better Utilization of Investment Leading to Development, otherwise known as the BUILD Act. It has been called “the biggest change in U.S development policy in 15 years” regarding Africa (Saldinger 2018). Only two months later, the Trump administration unveiled its New Africa Strategy at an event hosted at the Heritage Foundation. The US National Security Advisor, John Bolton, gave a speech letting the world know that American aid will focus on American interests. In addition, “The United States will no longer provide indiscriminate assistance across the entire continent, without focus or prioritization... From now on, the United States will not tolerate this longstanding pattern of aid without effect, assistance without accountability, and relief without reform” (Levinson 2018). However, Bolton’s speech made it clear that rather than efficiency, the driving focus of the administration’s New Africa strategy is to hold in check the influence of China and Russia on the African continent. This begs the question, what informs foreign aid allocation?

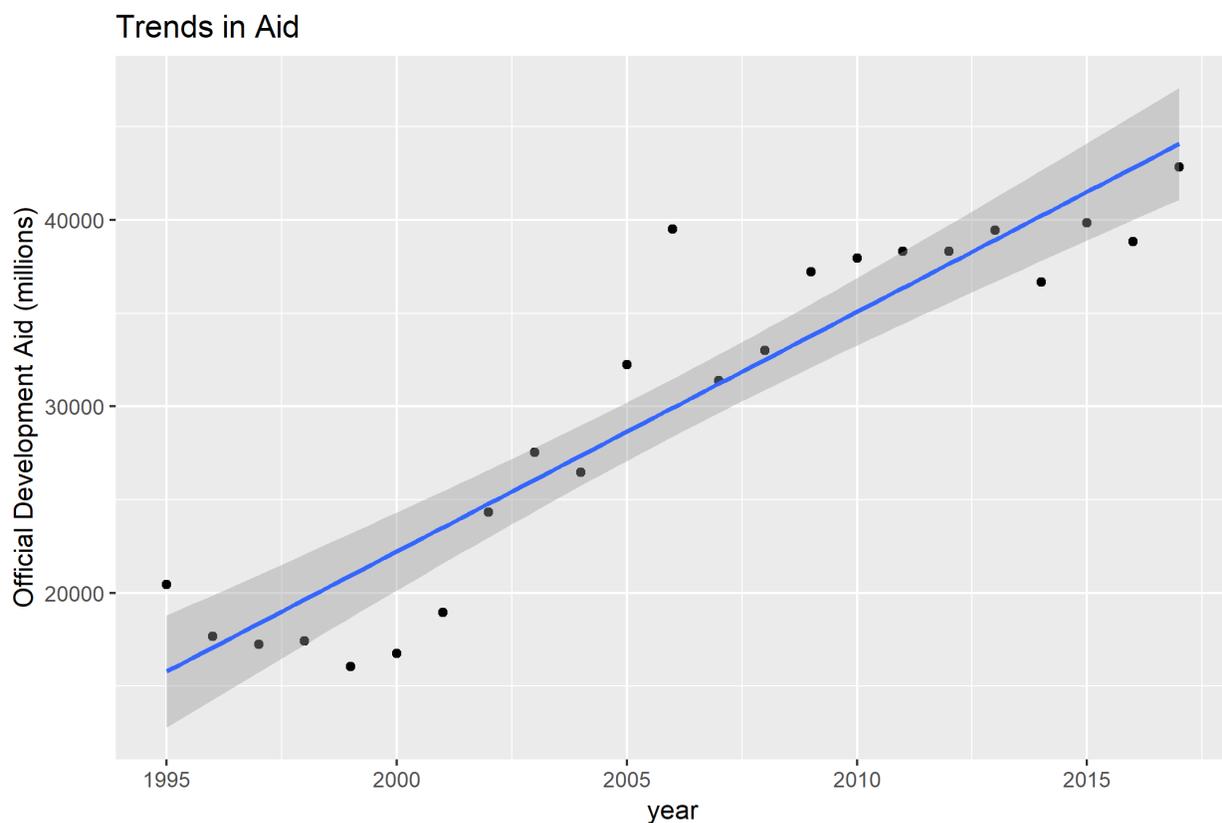
This paper investigates the determinants of aid or official development assistance towards Sub-Saharan countries in a post-Cold War world. Replicating the Bandyopadhyay & Wall (2007) paper, “The Determinants of Aid in the Post-Cold War Era”, I examine the relationship between aid and measures of government effectiveness, civil/political rights, and the physical and economic needs of the recipient countries. Aid is an incredibly political conversation with its proponents and supporters, however, even its staunchest supporters will admit that valid criticisms exist. Aid is often bureaucratic with little accountability. Oppressive regimes are often reinforced with military aid and overall trillions of dollars in aid hasn’t changed Africa’s economic outlook. (McBride 2018). It is therefore useful to care about how aid is allocated and if it’s going to those who need it or who take advantage of it best.

This paper contributes to the literature by following up on the Bandyopadhyay & Wall (2007) paper on the determinants aid of foreign aid in the post-Cold War era with a few changes. I focus my study on Sub Saharan African countries. The original paper used data from 1995, 2000, 2003. I use data from the period of 1995 to 2015.

The rest of the paper is organized as follows: Section 2 gives the overall trends. Section 3 surveys the literature. Section 4 outlines the empirical model and discusses the data. Section 5 presents and outlines the empirical results. There is a brief conclusion in section 6.

2.0 TRENDS

Figure 1: Trends in Official Aid to Sub Saharan African Countries

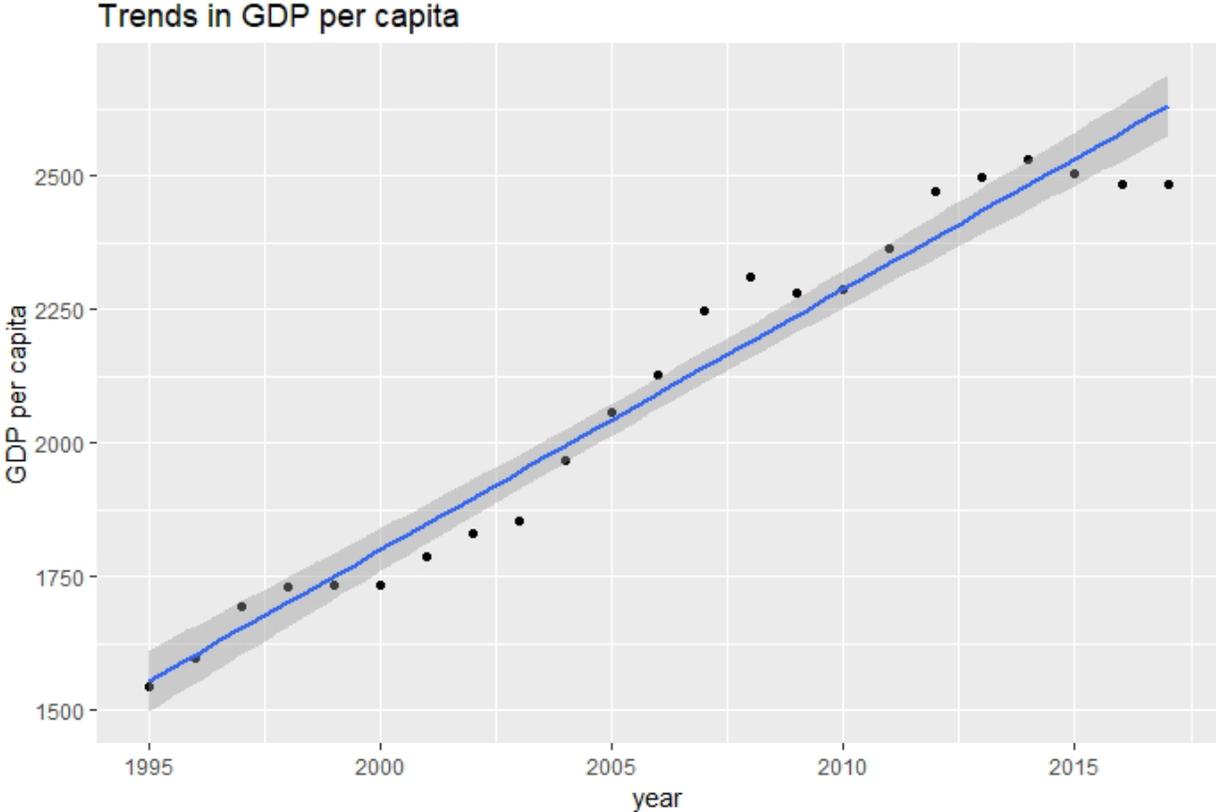


Source: World Bank Development Indicators

As shown in Figure 1, official development aid to the Sub Sahara Africa region has significantly increased over the past couple of decades. The mean amount of aid given to a single

country was \$631.6 million but the median was \$686 million. But for the whole region, the mean aid was \$27.5 billion and the median was \$31.4 billion with a max amount of \$42.8 billion.

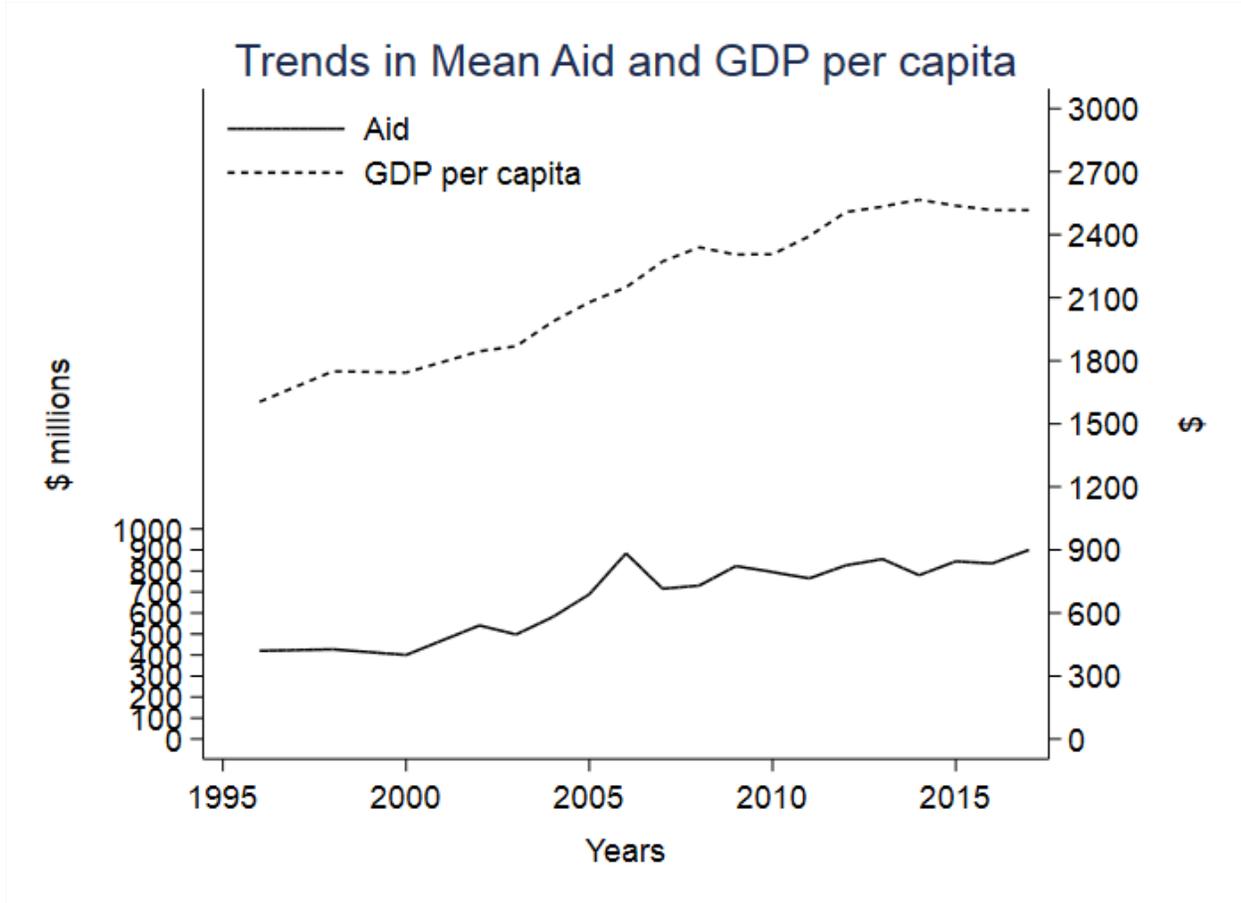
Figure 2: Trends in GDP per capita in Sub-Saharan Africa



Source: World Bank Development Indicators

Figure 2 shows that GDP per capita has also been on the increase in recent years. Both foreign aid and GDP per capita have increased, which indicates a positive relationship. Initially, this can be used to bolster the argument that increased aid as led to economic growth.

Figure 3: Trends in mean aid and GDP per capita in Sub-Saharan Africa



Source: World Bank Development Indicators

As a representation of economic performance, the corresponding increase in official foreign aid means that aid is not completely dependent on economic wellbeing. But it could also mean that aid is effective because as more aid is delivered, GDP per capita is increasing.

3.0 LITERATURE REVIEW

The aid allocation literature focused on models based on the McKinlay and Little (1979) dichotomy: recipient needs versus donor interests. In the recipient needs model, “aid is given to compensate for the shortfalls in domestic resources” and in the donor interests model, aid is as a result of donors’ “political/security, investment, and trade interests” (Maizels and Nissanke 1984). The authors also find that different forms of aid followed the two different models.

Bilateral trade seemed to follow the donor-interests model while the recipient needs model explained multilateral aid more (Bandyopadhyay and Wall, 2007).

As the literature developed, significant contributions have been added to the study of aid allocation. Apart from the two categories covered by the previously mentioned models, two others have been explored by researchers: institutions of the recipient countries; and civil and political rights in recipient countries. Regarding the latter, Eric Neumayer in a series of publications examined the relationship between civil rights and aid. Succinctly summarized by Bandyopadhyay and Wall (2007), “In Neumayer (2003a), UN agencies were found to respond to economic and possibly civil/political-development needs, but not necessarily to political freedom and corruption. There is some evidence in Neumayer (2003b) that high levels of rights or improvements in rights mean higher bilateral aid, but Neumayer concluded that the role of rights is limited and did not increase after the end of the Cold War. Finally, Neumayer (2003c) found that although respect for rights tends to play a role at the selection stage, there is significant inconsistency in the application of rights to the determination of the levels of bilateral aid.” Similarly, Carleton & Stohl (1987), Poe & Sirirangsi (1994) and Poe et al (1994) all examine the impact of human rights on US aid allocation.

According to Svensson (1999), for the large donors, their political and strategic interests direct their aid allocation. Alesina and Dollar (2000) agree but conclude that aid is related to democracy and per capita income. Alesina and Weder (2002) focuses on the institutions of the recipient countries in their paper. They conclude that there is no evidence that less corrupt countries get more foreign aid. They also find that while the US favors democracies over dictatorships, aid from the US is positively correlated with corruption, which they explain by theorizing that the US perhaps pays little attention to corruption. Dollar and Levin (2004) finds

that aid donors are beginning to pay attention to governance when allocating aid as compared to a period of time when aid was allocated indiscriminately. However, some of the biggest aid agencies (including the US) are not as selective as others.

This paper replicates Bandyopadhyay and Wall (2007)'s study, which in turn follows Trumbull and Wall in using fixed effects. This allows the study to capture the donor country's political and strategic interests without picking variables to represent them, as leaving out certain variables would lead to the omitted variable bias. In addition, this also takes care of heterogeneity bias.

4.0 DATA AND EMPIRICAL METHODOLOGY

4.1 Data

I gather data on 44 Sub-Saharan African countries from 1997 – 2017. My dependent variable is net official and development aid from the World Bank Development Indicators. My independent variables of interest are GDP per capita, infant mortality, civil and political rights, government effectiveness along with population. Aid, GDP per capita, infant mortality and population data are from the World Bank's Development indicators databank and the government effectiveness variable is from the World Bank's Governance indicators databank (Kaufmann, Kraay, and Mastruzzi, 2006). The Civil and Political Rights variable is from Freedom House. Following the steps of Bandyopadhyay & Wall (2007), I also add up the individual civil and political rights variables to make one variable and recode it so that as the index increases, so do the level of rights. Originally in the Freedom House database, the index scores countries from 1 to 7, where 1 signifies the most free and 7 is the most oppressive. A brief description of the variables and summary statistics are reported in Tables 1 and 2 below.

Table 1: Data Description

Variable	Description	Source
Aid	Net official development assistance received	WDI
GDP per capita	GDP per capita in constant US dollars	WDI
Infant Mortality	Infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year.	WDI
Civil/Politics	The combined civil and political rights scores on a scale of 1 to 16, with 1 being the least free and 16 being the most free.	Freedom House
Population	Total population	WDI
Government Effectiveness	Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	WGI

Table 2: Summary Statistics

	Mean	Standard Deviation	Minimum	Maximum
Aid	701.6477	821.1614	-16.78	11278.06
Gdp Per Capita	2202.295	3300.067	186.6614	20333.94
Gdp Per Capita (sqrd)	1.57e+07	4.56e+07	34842.48	4.13e+08
Infant Mortality	64.97839	25.81069	11.6	150.6
Infant Mortality (sqrd)	4887.515	3668.396	134.56	22680.36
Population	1.84e+07	2.72e+07	76417	1.91e+08
Population (sqrd)	1.08e+15	3.93e+15	5.84e+09	3.64e+16
Civil/Political Rights	7.652344	3.149507	2	14
Government Effectiveness	-.7119696	.5994483	-1.848333	1.049441
Observations	768			

4.2 Empirical Model

Following Bandyopadhyay & Wall (2007), my dependent variable, Aid_{it} , is real net official development assistance for a country i in time t . I estimate a reduced-form regression, where i represents the recipient country and t represents the year:

$$Aid_{it} = \beta_0 + \beta_1 GDP_{percapita_{it}} + \beta_2 GDP_{percapita_{it}}^2 + \beta_3 InfantMortality_{it} + \beta_4 InfantMortality_{it}^2 + \beta_5 Civil/PoliticalRights_{it} + \beta_6 GovernmentEffectiveness_{it} + \beta_7 Population_{it} + \beta_8 Population_{it}^2 + \varepsilon_{it} + u_{it} \text{ for } t = 1, \dots, T \text{ and } i = 1, \dots, N$$

I control for time and fixed effects. GDP per capita, infant mortality, civil and political rights, government effectiveness and population are my independent explanatory variables. I include the squared values of GDP per capita, infant mortality and population to provide a richer analysis of the functional relationship between aid and the variables of interest (Bandyopadhyay & Wall, 2007).

5.0 EMPIRICAL RESULTS

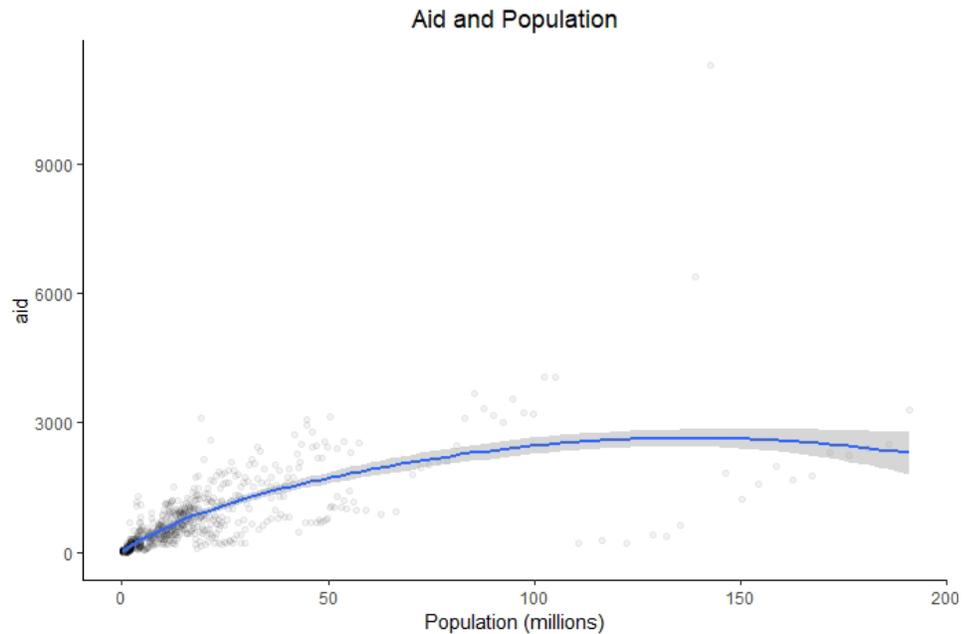
My empirical estimated results are included in Table 3 below. I run two regression models with two specifications each. I run models with and without fixed effects, again following Bandyopadhyay & Wall (2007), and so this for OLS and GLS regression models.

	OLS (No Fixed Effects)	OLS (Fixed Effects)	GLS (No Fixed Effects)	GLS (Fixed Effects)
<hr/> <i>Dependent Variable = Aid</i> <hr/>				
GDP per capita	-0.016*** [0.0219]	-0.013 [0.0737]	0.1486*** [0.033]	-0.078 [0.0894]
GDP per capita (squared)	8.55x10 ⁻⁶ *** [1.44x10 ⁻⁶]	5.126x10 ⁻⁶ [3.28x10 ⁻⁶]	0.000*** [0.0000]	0.000 [0.0000]
Infant Mortality	-2.787 [3.741]	6.149 [8.18]	-1.7693 [5.727]	4.379 [11.019]
Infant Mortality (squared)	0.18 [0.0242]	-0.005 [0.04]	0.011 [0.0356]	-0.003 [0.005]
Civil/Political Rights	-10.06 [8.520]	2.673 [16.32]	-6.016 [12.652]	9.91 [19.406]
Population	35.47*** [2.006]	82.86*** [12.36]	31.853*** [3.182]	80.573*** [16.625]
Population (squared)	-0.1232*** [0.0137]	-0.1885*** [0.0438]	-0.1049*** [0.0218]	-0.157*** [0.0594]

Government	$2.751 \times 10^{2***}$	$3.634 \times 10^{2***}$	$2.531 \times 10^{2***}$	$2.668 \times 10^{2**}$
Effectiveness				
	0.597×10^2	$[0.981 \times 10^2]$	$[0.845 \times 10^2]$	$[1.149 \times 10^2]$
Observations	768	768	768	768
Adjusted R ²	0.5758	0.6603		
Log Likelihood			-5750.979	-5447.779

Initially, it appears that GDP per capita is statistically significant, however once we control for fixed effects, that significance disappears. Theoretically, this means that the country specific impact was passed on to the GDP per capita variables. However, both government effectiveness and population were statistically significant. An increase in the government effectiveness estimate variable positively impacts the aid the country receives. For example, increasing government effectiveness by 1 standard deviation which could mean moving from a bad score of -0.5 to a not great score of about 0.1 increases official aid by around \$160 million. Results also confirm a population bias. While an increase in population positively impacts, the negative estimated coefficient of the squared population variable show that large increases in population negatively impact aid, therefore, real aid per capita reduces as population increases. This population bias is illustrated in Figure 4.

Figure 4: Aid and Population



Source: World Bank Development Indicators

6.0 CONCLUSION

This paper examined the determinants of foreign aid to Sub – Sahara African countries in the post – Cold War era following Bandyopadhyay and Wall (2007). To do this, I use data from the World Bank and Freedom House over the time period of 1997 – 2017. The independent variables of interest are GDP per capita, infant mortality, population, civil and political rights and also government effectiveness. I control for fixed effects to allow for political, strategic and other reasons donors have. Results show that in the post-Cold War era, government effectiveness and population are statistically significant in explaining net official and development aid and assistance. A population bias is confirmed as aid per capita falls as population increases. In addition, more effective governments attract more aid, an improvement on the government effectiveness scale by 1 will increase official aid by about \$270 million. This is good news as it means that donors are rewarding good governments.

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