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Determinants of foreign aid in family planning

How relevant is the Mexico City Policy?

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Abstract

The Mexico City Policy (MCP) prohibits the United States Agency for International Development from providing aid to international non-governmental organizations that provide abortion-related services. This paper employs a panel data of 151 developing countries over the period of 1988–2010, to examine the effect of the MCP on the allocation of family planning aid to developing countries. We find that the MCP has a negative and robust effect on family planning aid. We also find that family planning aid to countries in sub-Saharan Africa (SSA) is higher than aid to non-SSA countries, and that high fertility rate countries as well as highly populated countries tend to receive more family planning aid.

Keywords: family planning, foreign aid, Mexico City Policy, sub-Saharan Africa
JEL classification: F23, D72

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> The Millennium Development Goals, particularly the eradication of extreme poverty and hunger, cannot be achieved if questions of population and reproductive health are not squarely addressed. And that means stronger efforts to promote women's rights, and greater investment in education and health, including reproductive health and family planning. (Former UN General-Secretary Kofi Annan, July 2005).[1]

1 Introduction

The above quotation succinctly articulates the importance of family planning in alleviating poverty and the need to increase resources for family planning programmes. Family planning facilitates the prevention of pregnancy-related health risks; reduces infant mortality; mitigates the spread of HIV/AIDS; reduces adolescent pregnancies; and empowers women. Indeed, there is now consensus among academics, development practitioners, policy makers, and the international community that family planning is crucial for poverty alleviation and economic development. In addition, the importance of family planning is emphasized at international conferences/forums and reflected in publications of many international organizations. For example, the World Health Organization (WHO) notes on their website that: 'Meeting the need for family planning is one of the most cost-effective investments to alleviate poverty and improve health.'[2] A target of Goal five of the United Nations (UN) Millennium Development Goals (MDGs) is to 'achieve universal access to reproductive health by 2015.'[3]

Unfortunately, as shown in Table 1, the unmet need for family planning is high. Table 1 also shows that there are significant differences in unmet needs across regions. Sub-Saharan Africa (SSA) has the highest unmet family planning need—with an unmet need more than double that of Asia and Latin America.

One of the reasons for the high unmet need for family planning is insufficient funding for family planning. Developing countries have limited domestic financial resources to devote to family planning programmes and therefore funding for their programmes has to come from external sources, in particular, foreign aid. Hence, it is essential to understand the factors that affect the allocation of family planning aid (FPA). To the best of our knowledge this important issue has not been studied.

This paper analyses the determinants of FPA and examines the extent to which United States (US) foreign policy on family planning affects the allocation of FPA to developing countries. We focus on the US for two reasons. First, as shown in Table 2, the US is the largest contributor of FPA. Indeed, FPA from the US is greater than the total FPA from the remaining 21 Development Assistance Committee (DAC) countries.[4] Second reason for

1 Cited in UNFPA (2013).

2 WHO (2013).

3 Family planning was not specifically part of the MDGs set in 2000. It became a feature of the MDG5 in 2007, subsequent to world leaders' review of progress towards the MDGs at the 2005 World Summit during which they re-affirmed the importance of reproductive health for advancing all eight MDGs, particularly the goal of improving maternal health. Universal access to reproductive health became the second target of the MDG5, the first being reducing maternal mortality. At the same time, contraceptive prevalence rate and unmet need for family planning were specifically included as two of four indicators for monitoring progress towards achieving universal access to reproductive health by 2015 (UNFPA 2013).

focusing on the US is that the country's foreign policy on family planning is controversial and has undergone several changes in the past 20 years. We particularly focus on the Mexico City Policy (MCP), which was enacted by President Reagan in August 1984. The MCP directs the US Agency for International Development (USAID) to withhold funds from international non-governmental organizations (NGOs) that provide abortion-related services. The MCP is contentious, with Republican administrations adopting it and Democratic administrations overturning it.

This paper examines whether changes in the implementation of the MCP has a causal effect on the total FPA after controlling for other important determinants of FPA, such as fertility rate, country size (measured by population), and aid intensity. We also examine whether countries in SSA, the region with highest unmet need for family planning, receive more FPA than non-SSA countries. Our analysis employs a panel data of 151 less developed countries (LDCs) over the period of 1988–2010. The data are from the World Development Indicators (WDI) and the Organization for Economic Co-operation and Development (OECD). We derive the following results: (i) the MCP has an adverse effect on FPA; all else equal, implementing the MCP reduces total FPA by about 3–6 per cent; (ii) FPA to SSA countries is about 48 per cent higher than aid to countries outside SSA; (iii) high fertility rate countries receive more aid in family planning; (iv) bigger countries, measured by population, receive more aid; and (v) countries that receive more (total) aid tend to receive more aid in family planning.

The paper makes two important contributions to the literature on aid. First, there is a voluminous literature on aid, however, to the best of our knowledge, this is the first paper to empirically examine how the foreign aid policy of a donor country affects aid allocation. Second, this is the first study to focus for aid in reproductive health (we expound on this in Section 3). The paper also has important policy implications. Specifically, by answering the question of how donors' policies affect aid allocation, the paper investigates the potential for donors' policies to either undermine or improve the effectiveness of aid. This is relevant against the background of the international community's rhetoric on the criticality of gender equality and the recognition that family planning is important to the achievement of the MDGs.

The remainder of the paper is organized as follows. Section 2 and Section 3 provide an overview of the MCP and a brief review of the aid literature, respectively. Section 4 presents the estimation procedure, Section 5 describes data and variables, Section 6 reports the estimation procedure, and Section 7 concludes.

2 The Mexico City Policy: A brief overview

The MCP proceeds from the US Foreign Assistance Act (FAA) of 1961 as amended in subsequent legislations. An amendment often mentioned with regard to family planning, is the 1973 Helms Amendment, which was appended to the FAA the same year (Taylor and Kumar 2011). It stipulates that 'no foreign assistance funds may be used to pay for the performance of abortions as a method of family planning, or to motivate or coerce any person to practice abortions (Taylor and Kumar 2011). At the International Conference on Population held in Mexico City in August 1984, the Reagan administration announced a new policy, now known as the MCP that introduced further restrictions in the guidelines governing provision of FPA to NGOs (Cincotta and Crane 2001). The MCP directed USAID

to withhold funds from international NGOs that use non-USAID funds to provide abortion-related services, including providing advice, counselling, or information regarding abortion, or lobbying a foreign government to legalize or make abortion available. The MCP was enacted by Republican President Ronald Reagan in 1984 and was in place over 1984–92 under Presidents Reagan and Bush. It was overturned by Democratic President Bill Clinton in January 1993, was re-instituted in January 2001 by Republican President George W. Bush, and was again rescinded in January 2009, when Democratic President Barack Obama took office (Obama 2009).

It is important to note that the implementation of the MCP should not necessarily affect US FPA and, for that matter, FPA to developing countries. There are at least two reasons for this. First, MCP requires foreign NGOs to refrain from performing or promoting abortion as a method of family planning. As such, aid can be re-allocated to anti-abortion NGOs or to foreign governments. The second reason is that even if FPA from the US decreases as a result of the MCP, the other donors could make up the difference. Ultimately, if the goal of FPA is poverty reduction, and the developed world has pledged to strive for universal access to family planning services, then the foreign policy of one country, even if it is the largest donor, should not necessarily influence the outcome.

3 Related literature

The empirical literature on aid is voluminous. Furthermore, most of the papers focus on aid effectiveness. Specifically, the papers analyse the effect of foreign aid on important economic variables, such as growth (e.g., Hansen and Tarp 2001; Rajan and Subramanian 2008); foreign direct investment (Asiedu et al. 2009); human capital accumulation (Dreher et al. 2008); and institutions (e.g. Knack 2004). However, since the seminal paper by Alesina and Dollar 'Who gives aid to whom' (2000), some more recent papers have focused on the determinants of aid allocation. Our paper falls in the aid allocation category. We note that most of the papers on the determinants of aid allocation analyse the extent to which aid allocation is influenced by donor countries' self-interests (Dreher et al. 2008); the characteristics of the recipient country (Hoeffler and Outram 2011); and institutional quality (Alesina and Weder 2002).[5] To the best of our knowledge, none of the papers include an explanatory variable that reflects the foreign aid policy of a donor country. We are aware of only one paper, Dreher et al. (2012) that comes close to estimating a model that captures the policy environment in the donor country. The authors examine whether the Millennium Challenge Corporation (MCC) has a significant effect on aid to low-income countries.[6]

With regard to the estimation procedures, we note that most of the empirical papers on aid published prior 2001, employ ordinary least square (OLS) and fixed effect (FE) regressions (e.g., Maizels and Nissanke 1984; Burnside and Dollar 2000). However, since the seminal paper by Hansen and Tarp (2001), recent studies have estimated linear dynamic panel-data (DPD) models (e.g., Michaelowa and Weber 2006; Asiedu et al. 2009). These studies employ the difference generalized method of moments (GMM) estimator proposed by Arellano and Bond (1991) and/or the system GMM estimator proposed by Blundell and Bond (1998). As

5 Dreher et al. (2008) analyse whether countries that vote with the US obtain more aid from the US and Alesina and Weder (2002) examine whether corrupt governments obtain more foreign aid.

6 The MCC was introduced by the US in 2005. Aid disbursement from the MCC is based on a country's performance: Only low-income countries with a proven record of good governance are eligible to receive aid.

noted in Hansen and Tarp (2001), OLS and FE regressions do not take into account the potential endogeneity problem resulting from the persistent nature of aid—specifically that previous levels of aid may be correlated with current levels of aid. The difference and system GMM estimators account for unobserved country-specific effects, mitigate any potential endogeneity problems, permit the inclusion of lagged dependent variables as well as endogenous explanatory variables, and also accommodate panel data with short time periods.

4 Estimation procedure

Similar to the previous studies, we employ the difference and system GMM estimators for our analysis. Our preferred estimation method is the system GMM because the difference GMM estimations preclude one from including dummy variables that reflect time-invariant country characteristics. In our case, this implies we cannot test the hypothesis about the SSA countries receiving more FPA than the non-SSA countries.[7]

5 The data and the variables

The data on FPA are from the Creditor Reporting System (CRS) database, compiled by the OECD and the data on fertility rate, population, and total foreign aid are from the WDI database, published by the World Bank (2013). Our analysis utilizes a panel data of 151 LDCs over the period of 1988–2010. The sample comprises 47 upper middle-income countries and 104 low-income and lower middle-income countries (LLMICs). There are 40 SSA countries. As it is standard in the literature, we average the data over three years to smooth out cyclical fluctuations.

5.1 Dependent variable

The dependent variable is derived from the total amount of FPA, $aidfam$, disbursed by the DAC countries to a given country. The data are from the OECD CRS database. The database has comprehensive information on projects in developing countries funded by bi- and multilateral agencies. The data includes information, such as the names of the donor and recipient countries; name of the agency implementing the project (including non-governmental agencies and other agencies, such as the United Nations Children's Fund, European Commission, etc.); a description of the project; starting and ending dates of the project; type of aid (grants or loans); amount committed by donor; year of commitment; and the amount of funds disbursed each year. The CRS purpose code for family planning is '13030' and family planning is defined as 'services including counselling; information, education and communication (IEC) activities; delivery of contraceptives; capacity building and training' (OECD 2013). We computed the total disbursed aid in family planning from all the DAC countries by year for each recipient country. The figures are in constant 2010 US$.[8]

In order to facilitate the interpretation of the results, we transform the FPA data into natural logarithm. Some of the countries in our sample did not receive FPA in some years and

7 See Asiedu and Lien (2011) for a discussiuon about the two procedures

8 The data is the total aid a recipient country receives from all the DAC countries. It does not include FPA from other sources, such as multilateral organizations. Thus, there is no double counting.

therefore $aidfam = 0$ for those observations. We therefore use $ln\,(1 + aidfam)$ as the dependent variable.

5.2 Explanatory variables

Mexico City Policy variable

The MCP is coded as a dummy variable, mcp, that takes on value 1 during the periods the policy was in effect and equals 0 otherwise. Note that taking three-year averages from 1988–2010 gives us eight periods. Period 1 is the average of 1988–90; Period 2 is the average of 1991–93, etc. The MCP was in effect from 1985–93 and 2001–08. Thus, for our analysis this implies mcp takes on value 1 in Periods 1, 2, 5, 6, 7 and it is equal to 0 in Periods 3, 4, and 8.

Other explanatory variables

We considered a number of possible determinants of FPA, including gross domestic product (GDP) per capita; female life expectancy; maternal mortality ratio; and infant mortality rate. However, only three variables have a wide coverage and also display a significant and a robust effect on FPA: fertility rate (number of children per mother), $fert$; total population, $popt$; and aggregate aid, $aidtot$. We discuss these variables below.

Fertility aid ($fert$): Several studies have shown that lower fertility boosts economic growth (Barro 1991; Galor and Weil 1993). It is therefore natural to expect high-fertility rate countries to receive more foreign aid. One of the main objectives of FPA is to reduce fertility rate. Thus, aid effectiveness in this context implies that FPA has a causal effect on fertility rate. This suggests that the relationship between FPA and fertility can be bi-directional, and this introduces a potential endogenity problem. To address this problem, we treat fertility rate as an endogenous variable in our regressions. We also note that the relationship between $aidfam$ and $fert$ could be non-linear. Specifically, there could be diminishing marginal returns. To test this conjecture, we include the square of fertility rate, $fert^2$, in our regressions.

Total Population ($popt$): Note that the dependent variable, $aidfam$, does not take into account the country size. Following Dreher et al. (2012) and Moss et al. (2005), we include total population as an explanatory variable to control for country size. All else equal, we expect large countries to receive more aid.

Aggregate aid ($aidtot$): We note that countries that receive more aid may also receive more aid in family planning. We test this hypothesis by including aggregate aid as an explanatory variable in our regressions. This also permits us to test whether the MCP has a significant impact on FPA after controlling for aid intensity.

Dummy variable for SSA: When it comes to foreign aid, the perception is that countries in SSA receive more aid than non-SSA countries. Also, as noted earlier, SSA has the highest unmet need for family planning. We include a dummy variable for SSA in our regressions to test whether overall countries in SSA receive more FPA than non-SSA countries.

The list of countries included in the regressions is reported in Table 3. Tables 4a, 4b, 4c, and 4d show the summary statistics for the full sample, LLMIC sample, SSA countries and non-SSA countries, respectively.

6 Empirical results

We estimate the equation:

$$\ln(aidf)_{it} = ln(1 + aidfam_{it}) = \rho\, lnaidf_{i,t-1} + \beta\, mcp_{it} + \eta\, lnpopt_{it} + \gamma\, fert_{it} + \varphi\, fert_{it}^2 + \psi\, lnaidtot_{it} + \alpha\, SSA + \theta_i + \varepsilon_{it} \quad (1)$$

where i refers to countries, t to time, θ_i is the country-specific effect, $aidfam$ is FPA, mcp is a dummy variable that takes on value 1 when the Mexico City Policy was in place and 0 otherwise, and SSA is a dummy variable that takes on value 1 if a country is located in SSA and it is equal to 0 for countries located outside the SSA.

In presenting our results we proceed in two steps. We start with our benchmark regressions where we examine whether the MCP has a significant impact on FPA. Here we run regressions for the full sample and employ the system GMM estimator. In step two, we examine whether our result is robust. Specifically, we examine whether the result holds for sub-samples, when we control for time fixed effects and when we consider alternative estimation procedures, specifically, the difference estimator.

6.1 Benchmark regressions

We first report the regressions where mcp is the only explanatory variable. We then add the control variables one at a time. This permits us to test whether the estimated effect of the MCP on FPA remains unchanged after controlling for other important determinants of FPA. The results are reported in Table 5. Note that the parameter of interest is the estimated coefficient of mcp, $\hat{\beta}$. Also note that $\hat{\beta}$ is negative and significant at the 1 per cent level in all the regressions. Furthermore, $\hat{\beta}$ is fairly stable across specifications, suggesting that the MCP has a negative and robust effect on FPA. In order to facilitate the interpretation of our results, we also report the percentage effect of a change in the MCP on FPA. The results show that all else equal, implementing the MCP (i.e., a switch of mcp from 0 to 1) reduces FPA by about 3–6 per cent (see Table 5, columns 1 and 5).[9]

We now briefly discuss the effect of the control variables on FPA. The estimated coefficient of lagged $aidf$, $\hat{\rho}$, is significant at the 1 per cent level in all the regressions, an indication that FPA is persistent. Indeed, this result underscores the importance of employing a dynamic panel estimator instead of a fixed effects or OLS estimator (Hansen and Tarp 2001). Similar to Dreher et al. (2012) and Moss et al. (2005), we find that bigger countries, measured by population, receive more aid. For example the regressions reported in Table 5, column 4, show that a 1 per cent increase in population will increase FPA by about 8.7 per cent. We also find that fertility has a positive but diminishing effect on FPA. For the average country in our sample, a one unit increase in fertility rate (i.e., an additional child per woman) will increase FPA by about 2.1 per cent (Table 5, column 4). With regard to aid intensity, we find that all else equal, countries that receive more (total) aid tend to receive more aid in family planning—a 10 per cent increase in aggregate aid is associated with a 3.5 per cent increase in

9 If mcp changes from 0 to 1, the percentage impact on $aidf$ is given by $100[\exp(\hat{\beta} - 0.5v(\hat{\beta})\text{-}1)]$, where $v(\hat{\beta})$ is the estimated variance of $\hat{\beta}$.

FPA. Finally, we find that FPA is significantly higher for countries in SSA. All else equal, FPA to SSA countries is about 48 per cent higher than aid to countries outside SSA (Table 5, column 5).

6.2 Robustness regressions

We now examine whether the adverse effect of the MCP on FPA is robust. Specifically, we anlayze whether the results hold for sub-samples, when we include time-fixed effects and when we employ the difference GMM estimator. Table 6 shows the results for the LLMIC sample, Table 7 shows the results where we include time fixed effects, and Table 8 shows the results for the difference GMM regressions. In order to keep the discussion focused and also ease the comparison between the different estimation results, we report the benchmark and robustness regressions for the specification that includes all the explanatory variables in Table 9. An important observation from Table 9 is that $\hat{\beta}$ is negative and significant at the 1 per cent level in all the specifications, suggesting that the adverse effect of the MCP on FPA is robust.

7 Conclusion and policy implications

This paper has examined the effect of the MCP on the allocation of family planning to developing countries. We find that the MCP has an adverse effect on FPA. This finding has important policy implications. As noted in the introduction, family planning is an important ingredient of women's empowerment as well as well-being and a contributor to socio-economic development. Furthermore, the objective of the MCP is to restrict US aid to international NGOs that offer abortion-related services—the idea is not to reduce aid for family planning. Thus, the reduction in FPA may be viewed as an unintended consequence of the MCP. This begs the question of what can be done to address this unintended consequence and to ensure that when the MCP is in effect the population-related development efforts do not suffer a setback.

A couple of remedial actions can be considered. First, the US could re-allocate aid for family planning to governments (e.g. health ministries) to allow them to increase allocations for family planning in their budgets. Second, the US could re-allocate FPA from international NGOs that do not comply with MCP requirements to NGOs that do. Third, other donor countries can scale-up their aid to compensate for MCP-related possible curtailments of the US aid. These actions will ensure that when the MCP is in force, the stated international development agenda on population, gender equality, and poverty reduction is not derailed or undermined.

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Table 1: Regional averages for unmet need for family planning

Regions	Unmet need for family planning (%)		
	2000	2005	2009
WORLD	11.5	10.9	11.2
Developing Countries	11.7	11.1	11.4
AFRICA	22.1	22.3	22.7
Sub-Saharan Africa	24.0	24.4	24.9
Northern Africa (excluding Sudan)	11.3	10.4	9.6
Eastern Africa	27.5	27.5	27.6
Middle Africa	21.7	22.5	22.6
Northern Africa	14.8	14.0	13.5
Southern Africa	16.1	15.5	15.5
Western Africa	22.3	23.0	24.2
ASIA	10	9.1	9.3
Central Asia	11.7	11.7	11.8
Eastern Asia	2.4	2.3	2.3
Southern Asia	17.2	14.7	14.6
South-Eastern Asia	10.9	10.4	11.0
Western Asia	13.8	12.9	13.5
LATIN AMERICA AND THE CARIBBEAN	10.3	9.8	9.9
Caribbean	20.4	20.0	20.3
Central America	12.2	12.6	13.2
South America	8.6	7.7	7.5

Notes: The unmet need for family planning is the number of women with unmet need for family planning expressed as a percentage of women of reproductive age who are married or in a union.
Source: UN DESA, Population Division (2011).

Table 2: Family planning aid disbursement to developing countries from DAC countries, 2005–10

Year	Total Aid (DAC and Multilateral)	DAC Countries	United States	Other DAC Countries (Excluding US)	US share of DAC (%)
2005	288.21	278.40	202.60	75.80	72.77
2006	221.81	218.48	169.57	48.91	77.61
2007	261.74	261.74	234.32	27.42	89.52
2008	388.83	384.76	343.07	41.69	89.16
2009	525.52	512.40	483.17	29.22	94.30
2010	491.79	490.31	429.61	60.71	87.62

Notes: Constant 2010 US$, millions. There are 22 DAC countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and the US.
Source: Authors' calculations and OECD (2013).

Table 3: List of countries (151)

SSA countries		Non-SSA countries		
Angola	Senegal	Afghanistan	Honduras	Pakistan
Benin	Seychelles	Albania	India	Palau
Botswana	Sierra Leone	Algeria	Indonesia	Panama
Burkina Faso	Somalia	Antigua and Barbuda	Iran	Papua New Guinea
Burundi	South Africa	Argentina	Iraq	Paraguay
Cameroon	Sudan	Armenia	Israel	Peru
Cape Verde	Swaziland	Azerbaijan	Jamaica	Philippines
Central African Rep.	Tanzania	Bangladesh	Jordan	Samoa
Chad	Togo	Barbados	Kazakhstan	Saudi Arabia
Comoros	Uganda	Belarus	Kiribati	Serbia
Congo, Dem. Rep.	Zambia	Belize	Korea	Singapore
Congo, Rep.	Zimbabwe	Bhutan	Korea, Dem. Rep.	Slovenia
Cote d'Ivoire		Bolivia	Kosovo	Solomon Islands
Equatorial Guinea		Bosnia-Herzegovina	Kyrgyz Republic	Sri Lanka
Eritrea		Brazil	Laos	St. Kitts-Nevis
Ethiopia		Brunei	Lebanon	St. Lucia
Gabon		Cambodia	Libya	St.Vincent & Grenadines
Gambia		Chile	Macao	States Ex-Yugoslavia
Ghana		China	Macedonia, FYR	Suriname
Guinea		Colombia	Malaysia	Syria
Guinea-Bissau		Costa Rica	Maldives	Tajikistan
Kenya		Croatia	Malta	Thailand
Lesotho		Cuba	Marshall Islands	Timor-Leste
Liberia		Djibouti	Mexico	Tonga
Madagascar		Dominica	Micronesia, Fed. States	Trinidad and Tobago
Malawi		Dominican Republic	Moldova	Tunisia
Mali		Ecuador	Mongolia	Turkey
Mauritania		Egypt	Montenegro	Turkmenistan
Mauritius		El Salvador	Morocco	Ukraine
Mozambique		Fiji	Myanmar	Uruguay
Namibia		Georgia	Nepal	Uzbekistan
Niger		Grenada	New Caledonia	Vanuatu
Nigeria		Guatemala	Nicaragua	Venezuela
Rwanda		Guyana	Oman	Vietnam
Sao Tome & Principe		Haiti		Yemen

Source: World Bank (2013).

Table 4a: Summary statistics for the full sample (151 countries)

Variables	Mean	Standard Deviation	Min.	Max.
Aid in family planning disbursement (aidfam)	0.728	2.656	0	32.123
Ln (1+aidfam)	0.237	0.582	0	3.500
MCP	0.621	0.485	0	1
Fertility rate	3.859	1.686	0.865	8.792
Ln (Total Population)	15.503	1.988	9.756	21.012
Ln (Total Aid)	19.141	1.617	9.903	23.123

Source: Authors' calculations.

Table 4b: Summary statistics for lower-income and lower middle-income Countries (LIMIC) sample (104 countries)

Variables	Mean	Standard. Deviation.	Min.	Max.
Aid in Family Planning disbursement (aidfam)	0.991	3.104	0	32.123
Ln (1+aidf)	0.315	0.663	0	3.500
MCP	0.622	0.485	0	1
Fertility rate	4.355	1.671	0.865	8.792
Ln (Total Population)	15.493	1.905	10.622	20.919
Ln (Total Aid)	19.333	1.670	9.903	23.123

Source: Authors' calculations.

Table 4c: Summary statistics for SSA

Variables	Mean	Standard Deviation	Min.	Max.
Aid in Family Planning disbursement (aidfam)	0.760	1.993	0	18.033
Ln (1+aidfam)	0.305	0.589	0	2.946
MCP	0.625	0.485	0	1
Fertility rate	5.355	1.230	1.485	7.816
Ln (Total Population)	15.535	1.533	11.180	18.868
Ln (Total Aid)	19.634	1.175	15.450	22.372

Source: Authors' calculations.

Table 4d: Summary statistics for countries outside SSA

Variable	Mean	Standard Deviation	Min.	Max.
Aid in Family Planning disbursement (aidfam)	0.712	2.933	0	32.123
Ln (1+aidfam)	0.203	0.576	0	3.500
MCP	0.620	0.486	0	1
Fertility rate	3.109	1.350	0.865	8.792
Ln (Total Population)	15.487	2.182	9.756	21.012
Ln (Total Aid)	18.893	1.748	9.903	23.123

Source: Authors' calculations.

Table 5: Benchmark regressions

VARIABLES	(1)	(2)	(3)	(4)	(5)
Lagged ln (1+FPA)	0.974***	0.828***	0.981***	0.961***	0.887***
	(0.002)	(0.004)	(0.000)	(0.000)	(0.001)
MCP	-0.063***	-0.058***	-0.052***	-0.046***	-0.030***
	(0.003)	(0.003)	(0.000)	(0.000)	(0.000)
Ln (Total population)		0.196***	0.087***	0.052***	0.085***
		(0.010)	(0.000)	(0.001)	(0.001)
Fertility rate, fert			0.251***	0.238***	0.171***
			(0.001)	(0.002)	(0.001)
fert*fert			-0.029***	-0.028***	-0.028***
			(0.000)	(0.000)	(0.000)
Ln (Total Aid)				0.055***	0.035***
				(0.000)	(0.000)
SSA					0.480***
					(0.004)
Constant	0.110***	-2.890***	-1.701***	-2.162***	-2.208***
	(0.002)	(0.168)	(0.007)	(0.016)	(0.016)
Effect of MCP on FPA (%)	-6.11	-5.64	-5.07	-4.50	-3.00
Hansen J test (p-value)	0.0003	0.0007	0.7138	0.7613	0.7600
Observations	1,117	1,117	1,117	1,117	1,117
Number of countries	151	151	151	151	151

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculations.

Table 6: Sub-sample (Low income and low middle income countries)

VARIABLES	(1)	(2)	(3)	(4)	(5)
Lagged ln (1+FPA)	0.940***	0.791***	0.882***	0.873***	0.805***
	(0.003)	(0.005)	(0.002)	(0.003)	(0.004)
MCP	-0.068***	-0.065***	-0.056***	-0.046***	-0.031***
	(0.004)	(0.009)	(0.001)	(0.002)	(0.001)
Ln (Total population)		0.211***	0.138***	0.083***	0.113***
		(0.011)	(0.002)	(0.002)	(0.003)
Fertility rate, fert			0.235***	0.225***	0.113***
			(0.007)	(0.005)	(0.004)
fert*fert			-0.029***	-0.029***	-0.024***
			(0.001)	(0.001)	(0.001)
Ln (Total Aid)				0.069***	0.055***
				(0.001)	(0.001)
SSA					0.457***
					(0.016)
Constant	0.150***	-3.067***	-2.379***	-2.804***	-2.823***
	(0.002)	(0.187)	(0.030)	(0.052)	(0.045)
Hansen J test (p-value)	0.0001	0.0141	1.0000	1.0000	1.0000
Observations	776	776	776	776	776
Number of countries	104	104	104	104	104

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculations.

Table 7: Include time fixed effects

VARIABLES	(1)	(2)	(3)	(4)	(5)
Lagged ln (1+FPA)	0.940***	0.784***	0.784***	0.784***	0.783***
	(0.004)	(0.008)	(0.001)	(0.002)	(0.001)
MCP	-0.256***	0.004	-0.014***	-0.012***	-0.026***
	(0.015)	(0.002)	(0.000)	(0.000)	(0.000)
Ln (Total population)		0.152***	0.131***	0.122***	0.121***
		(0.009)	(0.002)	(0.002)	(0.002)
Fertility rate, fert			0.299***	0.290***	0.309***
			(0.003)	(0.003)	(0.004)
fert*fert			-0.031***	-0.030***	-0.030***
			(0.000)	(0.000)	(0.000)
Ln (Total Aid)				0.013***	0.013***
				(0.000)	(0.000)
SSA					-0.108***
					(0.007)
Constant	0.257***	-2.217***	-2.639***	-2.718***	-2.736***
	(0.015)	(0.151)	(0.026)	(0.026)	(0.027)
Hansen J test (p-value)	0.0110	0.0000	0.7455	0.7733	0.7542
Observations	1,117	1,117	1,117	1,117	1,117
Number of countries	151	151	151	151	151

Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculations.

Table 8: Difference GMM estimations

VARIABLES	(1)	(2)	(3)	(4)
Lagged ln (1+FPA)	0.549***	0.469***	0.641***	0.643***
	(0.007)	(0.007)	(0.001)	(0.001)
MCP	-0.040***	-0.029***	-0.023***	-0.024***
	(0.006)	(0.006)	(0.000)	(0.000)
Ln (Total population)		0.812***	0.695***	0.696***
		(0.058)	(0.005)	(0.005)
Fertility rate, fert			0.151***	0.151***
			(0.004)	(0.004)
fert*fert			-0.018***	-0.018***
			(0.001)	(0.001)
Ln (Total Aid)				0.022***
				(0.000)
Constant	0.121***	-12.271***	-10.847***	-11.304***
	(0.013)	(0.919)	(0.087)	(0.099)
Hansen J test (p-value)	0.4509	0.2080	0.3222	0.2883
Observations	1,117	1,117	1,104	1,075
Number of countries	151	151	150	149

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculations.

Table 9: Summary results

VARIABLES	(1) Benchmark	(2) Sub-Sample (LLMIC)	(3) Time fixed effects	(4) Difference GMM
Lagged ln (1+FPA)	0.887***	0.805***	0.783***	0.643***
	(0.001)	(0.004)	(0.001)	(0.001)
Fertility rate, fert	0.171***	0.113***	0.309***	0.151***
	(0.001)	(0.004)	(0.004)	(0.004)
fert*fert	-0.028***	-0.024***	-0.030***	-0.018***
	(0.000)	(0.001)	(0.000)	(0.001)
MCP	-0.030***	-0.031***	-0.026***	-0.024***
	(0.000)	(0.001)	(0.000)	(0.000)
Ln (Total population)	0.085***	0.113***	0.121***	0.696***
	(0.001)	(0.003)	(0.002)	(0.005)
Ln (Total Aid)	0.035***	0.055***	0.013***	0.022***
	(0.000)	(0.001)	(0.000)	(0.000)
SSA	0.480***	0.457***	-0.108***	
	(0.004)	(0.016)	(0.007)	
Constant	-2.208***	-2.823***	-2.736***	-11.304***
	(0.016)	(0.045)	(0.027)	(0.099)
Effect of MCP on FPA (%)	-3.00	-3.05	-2.57	-2.34
Hansen J test (p-value)	0.7600	1.0000	0.7542	0.2883
Observations	1,117	776	1,117	1,075
Number of countries	151	104	151	149

Note: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.
Source: Authors' calculations.