

DOES FOREIGN AID HELP?

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Recently, Sachs et al. (2004) have argued in favor of a massive increase in foreign aid to Africa in order to escape from a supposed poverty trap. They propose to increase the capital stock in one step, through a large, well-targeted infusion of foreign assistance.¹ In their proposal “the flow of aid is targeted to a particular set of investments, and specifically public sector investments, so that the aid cannot be used for consumption” (pp. 144–45). This large amount of aid should be given in the form of grants rather than loans.

They believe that such a commitment can be enforced through “improved monitoring of budget processes and expenditures, perhaps with the help of local nongovernmental organizations” (p. 145). “Unconstrained aid flows would probably be consumed rather than invested. The strategy needs to be designed to ensure that the aid is properly invested, and there must be a credible mechanism for enforcing the strategy over a relatively long period” (p. 146).

However, the empirical evidence on the effectiveness of foreign aid is discouraging. Recent literature on the topic provides ambiguous results on whether foreign aid helps or hinders developing countries. Foreign aid, however, may affect economic growth through indirect

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¹Kray and Raddatz (2005) find little evidence of the existence of a poverty trap. In fact the usual growth models, including the one used by Sachs et al. (2004) to justify their proposal, need unreasonable parameter values to generate a trap and counterfactual predictions.

channels that cannot be captured by analyzing only the direct effect of aid on growth. Aid may alter the investment share of GDP, which indirectly affects economic growth, or may also affect government consumption, which is known to have a negative effect on economic growth. As Sachs et al. (2004) argued, unconstrained aid may increase public consumption rather than investment. The effect of aid on growth through these indirect channels is not captured in any of the studies on aid effectiveness.

There is a large body of literature that documents the so-called curse of natural resources. Foreign aid can also be understood as a sudden windfall of resources and, therefore, in principle could be subject to the same rent-seeking processes. Therefore, there may be also the “curse of unnatural resources.” However, international donors argue that foreign aid has, in addition to the hypothetical benefit in terms of economic development, a positive impact on the process of democratization of developing countries. For this reason, they resist any attempt to impose conditionality in terms of the level of democracy in developing countries.

In this article we show that foreign aid has a negative impact on the democratic stance of developing countries, and on economic growth by reducing investment and increasing government consumption. Therefore, our empirical findings do not support the democratization effect of foreign aid nor the development effect. Because of these findings we propose and analyze other forms of helping poor countries. For example, the way in which aid is disbursed can also affect the effectiveness of aid. Maybe the mechanism to successfully encourage the government to invest rather than to consume has something to do with the way in which aid is disbursed. This topic has been largely omitted from the academic discussion of the effectiveness of aid, even though it is becoming the central topic in any international debate on aid effectiveness among policymakers. Indeed, a debate has recently emerged as to whether donors should give grants or loans. The G-7 called for an increased use of grants within IDA-13. Sachs et al. (2004) have also argued in favor of providing aid in the form of grants rather than loans. However, there is no empirical evidence that allocating aid in form of grants will improve economic development. We enter into the debate by considering the distinction between grants and loans, and we analyze their differential effect.

Finally, aid recipient countries also receive other resources in addition to foreign aid. Foreign direct investment (FDI) and remittances, for example, reach the private sector and the families of the recipient countries. Those flows of resources may also affect eco-

conomic growth and, therefore, any meaningful analysis of the effectiveness of aid should take them into account.

Measuring Aid and Other External Resources

The measurement of foreign aid could be done in different ways. Traditionally the literature that analyzes the effect of aid on development has used the Official Development Assistance (ODA) measure. ODA flows include grants and concessional loans—that is, loans whose grant element is at least 25 percent. Burnside and Dollar (2000) use as a measure of aid flows the size of the Effective Development Assistance (EDA) initially constructed by Chang, Fernandez-Arias, and Serven (1999). There is one basic difference between ODA and EDA. ODA captures the flow of funds to the recipient country in a particular year minus what the country returns, while EDA reflects the portion of ODA that corresponds with a pure transfer of resources from donors to the recipient country. The subsidized interest rate of ODA is considered EDA. Therefore, EDA is the sum of grants and the grant element of loans. Recent studies (e.g., Collier and Dollar 2002), however, have relied on the traditional ODA measure of aid.

In our analysis we use ODA, but we distinguish between the grant and loan components. Data are in current U.S. dollars. Following Burnside and Dollar (2000), we use the International Monetary Fund's Unit Value Import (UVI) index to transform data into constant dollars and purchasing power parity (PPP). The UVI index is the ratio between the import unit values and import prices. In order to have the data on aid in constant dollars and PPP, we multiply by the 1985 UVI index for the world and divide by the current year UVI index for the world. Finally, we divide the aid value by real GDP in constant 1985 prices from Summers and Heston (1991: Penn World Table 5.6).

Recipient countries also receive resources that do not come from official institutions, and that do not go to governments, but to the private sector and to families. Moreover, they also receive flows from the private sector that go to the government. In our analysis we consider the effect of these other resources flows that we classify as follows: flows from the private sector to the private sector (Privto-Priv), resources from the private sector to the public sector (PrivtoPubl), and remittances. The private to private flows include foreign direct investment, portfolio equity flows, private nonguaranteed (PNG) bonds, and PNG commercial bank loans. Data come from the World Bank's Global Development Finance (GDF) database. The private to public flows include public and publicly guaranteed (PPG) bonds, PPG commercial bank loans, and PPG other pri-

vate creditors. Data also come from the GDF database (see Appendix 1 for definitions of each variable).

Not all countries that receive ODA receive the same proportion of grants versus loans. The type of concessionality of ODA may vary depending on the proportion of loans versus grants the country received. We define the ratio of grants to gross ODA as a measure of concessionality. Table 1 lists the ranking of the 20 largest recipients of ODA. Column 1 reports the average amount of ODA as a percentage of GDP for each period. Column 2 presents the average ratio of grants to gross ODA the country received. Finally, column 3 specifies the country and the period. Cape Verde during 1985–99 and Jordan during 1960–64 received the largest amounts of ODA as a percentage of GDP.

Table 2 lists the smallest ODA recipients. Papua New Guinea during 1960–64, China during 1975–79, the Republic of Korea during 1985–89, and the Bahamas during 1960–64 received the least amounts of ODA as a percentage of GDP. On average the largest recipients of ODA have a ratio of grants to gross ODA of 0.79, and the smallest recipients of ODA have a ratio of grants to gross ODA of 0.83.

Countries that receive ODA could also receive other types of foreign flows. The fact that recipient countries are also recipients of many other flows has been overlooked in most of the studies on aid effectiveness. Tables 3 to 6 show the ranking of the largest recipients of these other flows—PrivtoPriv, FDI (the main component of PrivtoPriv), PrivtoPubl, and remittances—as well as the average amount of ODA as a percentage of GDP.

Table 3 lists the largest recipients of private to private flows. Angola, Seychelles, Dominica, Lesotho, Chile, and Vanuatu during 1995–99, are on the top of the list. Again, the largest recipients of these flows are not on the list of the largest ODA recipients. However, on average, they received a significant amount of ODA (5 percent of GDP).

Table 4 lists the largest recipients of FDI. The 15 largest recipients of FDI received, on average, ODA corresponding to 5.75 percent of GDP. Table 5 lists the largest recipients of private to public flows. Togo during 1975–79, Gabon 1980–84, Algeria 1975–79, and Panama 1975–79 are on the top of the ranking. The average ODA received by the largest private to public recipients was 2.63 percent of GDP, half of the average ODA received by the largest private to private recipients.

Finally, Table 6 shows the ranking of the largest recipients of remittances. Among them Lesotho, Cape Verde, and Jordan top the

TABLE 1
RANKING OF THE LARGEST ODA RECIPIENTS

ODA/GDP (%)	Grants/Gross ODA	Country and Period
24.88	0.86	Cape Verde, 1990–95
24.76	0.90	Cape Verde, 1985–89
24.46	0.97	Jordan, 1960–64
22.19	0.74	Cape Verde, 1995–99
21.70	0.94	Vanuatu, 1975–79
19.69	0.95	Seychelles, 1970–74
19.69	0.87	Cape Verde, 1975–79
19.67	0.90	Cape Verde, 1980–84
18.33	0.70	Comoros, 1985–89
17.05	0.64	Comoros, 1980–84
16.94	0.82	Comoros, 1990–94
16.05	0.65	Guinea-Bissau, 1990–94
15.69	0.69	Mauritania, 1975–79
15.56	0.87	Vanuatu, 1990–94
14.65	0.98	Vanuatu, 1995–99
14.56	0.81	Jordan, 1985–89
14.32	0.22	Liberia, 1960–64
14.19	0.73	Guinea-Bissau, 1995–99
13.90	0.68	Guinea-Bissau, 1985–89
13.82	0.88	Botswana, 1965–69

SOURCE: OECD DAC International Development Statistics.

ranking. In contrast with previous tables, in the case of remittances, the largest recipients also received large amounts of ODA. The average ODA received by the 16 largest recipients of remittances was around 10.5 percent of GDP.

The Unexpected Consequences of Foreign Aid

Aid and Democracy

Many recent studies have found a negative correlation between economic growth and natural resources in developing countries. The bad economic performance of countries rich in natural resources is usually referred to as the curse of natural resources. However natural resources may not be the only source of the curse. In developing countries the amount of international financial aid is generally very large in terms of government expenditure, and even in terms of GDP.

TABLE 2
RANKING OF THE SMALLEST ODA RECIPIENTS

ODA/GDP (%)	Grants/Gross ODA	Country and Period
0.002	1.00	Papua New Guinea, 1960–64
0.002	1.00	China, 1975–79
0.002	0.30	Korea Rep., 1985–89
0.002	1.00	The Bahamas, 1960–64
0.003	1.00	Mozambique, 1970–74
0.003	1.00	Angola, 1970–74
0.003	0.45	Venezuela, 1975–79
0.005	0.22	Argentina, 1965–69
0.008	0.94	Saudi Arabia, 1965–69
0.009	1.00	Kuwait, 1970–74
0.010	1.00	Kuwait, 1975–79
0.010	0.82	Iran, Islamic Rep., 1980–84
0.010	1.00	United A. Em., 1995–99
0.010	0.54	Iraq, 1980–84
0.011	0.93	United A. Em., 1980–84
0.011	1.00	Hong Kong, 1995–99
0.011	1.00	United A. Em., 1970–74
0.011	0.92	Venezuela, 1980–84
0.011	1.00	Hong Kong, 1975–79
0.012	0.60	Peru, 1960–64

SOURCE: OECD DAC International Development Statistics.

Therefore, the same type of arguments may apply to this “unnatural resource.”

The hypothesis of the curse of natural resources is well documented. Sachs and Warner (2001) show that the finding that resource-rich countries grow more slowly than other developing countries is robust to the inclusion of controls for geographical variables, resources per capita, and mineral versus agricultural resources. The result that countries rich in natural resources experience lower economic growth can be found in different studies, among them Sachs and Warner (1999) and Auty (1990). Collier and Hoeffler (2002) find that primary exports, a proxy for natural resources, has a positive effect on the probability of civil wars. This finding, however, is not robust to the specification of the model (see, for instance, Fearon and Laitin 2003, and Montalvo and Reynal-Querol 2002, 2005) and depends heavily on the imputation criterion of missing data. Some case studies provide a more compelling explanation of the relationship between natural resources and civil wars (Ross 2003).

TABLE 3
RANKING OF THE LARGEST PRIVTOPRIV RECIPIENTS

ODA/GDP (%)	PrivtoPriv/GDP (%)	Country and Period
5.87	14.22	Angola, 1995–99
4.34	11.93	Seychelles, 1995–99
11.56	10.07	Vauatu, 1995–99
8.38	9.45	Dominica, 1995–99
11.56	8.71	Vanuatu, 1990–94
2.77	8.69	Lesotho, 1995–99
0.12	8.58	Chile, 1995–99
0.30	7.90	Panama, 1995–99
7.74	7.67	St. Vinc. and Gren., 1995–99
4.00	7.53	St. Lucia, 1995–99
9.44	7.10	Seychelles, 1985–89
0.17	6.88	Malaysia, 1990–94
3.67	6.71	St. Lucia, 1995–99
0.89	6.46	Jamaica, 1970–74
4.25	5.57	Grenada, 1990–94
5.02	5.55	Dominica, 1990–94
9.78	5.48	Guyana, 1990–94

SOURCE: Global Development Finance (GDF) database, World Bank, and OECD DAC International Development Statistics.

One may also wonder whether there is a relationship between foreign aid and institutions. In many developing countries foreign aid is a very important source of revenue. If the discovery of natural resources produces a large revenue flow, that “windfall” may generate corruption, rent-seeking activities, and civil wars. A large flow of foreign aid may have the same consequences. For instance, one of the largest projects of the World Bank in recent years (\$180 million) has been the Chad-Cameroon oil pipeline. The World Bank applied a novel scheme to this project in order to avoid corruption: the revenue was supposed to go into an offshore account and the government of Chad was suppose to spend the money only on education, health, and infrastructure. However, once oil revenues began to reach the government’s accounts in 2004 the program ran into trouble. The first \$4.5 million received as a signing bonus from the oil companies was used to buy weapons—and it is estimated that as much as \$12 million may be diverted to buy arms. Recently, Chad weakened the regulation that required most of its oil revenue to go toward poverty reduction programs and reneged on its deal with the World Bank,

TABLE 4
RANKING OF THE LARGEST FDI RECIPIENTS

ODA/GDP (%)	FDI/GDP (%)	Country and Period
5.87	14.22	Angola, 1995–99
4.34	11.93	Seychelles, 1995–99
11.15	10.07	Vanuatu, 1995–99
8.38	9.45	Dominica, 1995–99
15.56	8.71	Vanuatu, 1990–94
2.77	8.69	Lesotho, 1995–99
2.99	7.94	St. Lucia, 1980–84
7.74	7.67	St. Vinc. and Gren., 1995–99
4.00	7.53	St. Lucia, 1995–99
9.44	7.10	Seychelles, 1985–89
0.30	6.90	Panama, 1995–99
3.67	6.71	St. Lucia, 1990–94
0.89	6.01	Jamaica, 1970–74
4.25	5.57	Grenada, 1990–94
5.02	5.55	Dominica, 1990–94

SOURCE: Global Development Finance (GDF) database, World Bank, and OECD DAC International Development Statistics.

which has now suspended all its loans to Chad. Maren (1997) provides evidence that Somalia's civil war was caused by the desire of different factions to control the large food aid that the country was receiving.

The general view of the relationship between foreign aid and democracy, supported by most of the international institutions, proclaims that economic assistance is needed in order to help in the democratization process of developing countries. A reflection of this viewpoint can be found in the words of Boutros Ghali, the sixth secretary-general of the United Nations between 1992 and 1997: "We must help states to change certain mentalities and persuade them to embark on a process of structural reform. The United Nations must be able to provide them with technical assistance enabling them to adapt institutions as necessary, to educate their citizens, to train officials and to elaborate regulatory systems designed to uphold democracy and the respect for human rights."²

Existing studies have documented several mechanisms that can explain why sudden windfalls of resources in developing countries have led to a decline in their growth rate. Although the specific

²www.unesco.org/opi2/human-rights/Pages/English/BoutrosGhaliE.html.

TABLE 5
RANKING OF THE LARGEST PRIVTOPUBL RECIPIENTS

ODA/GDP (%)	PrivtoPubl/GDP (%)	Country and Period
5.81	7.36	Togo, 1975–79
3.38	6.88	Gabon, 1970–74
4.64	6.43	Algeria, 1970–79
0.92	6.25	Panama, 1970–79
2.13	5.95	Congo, Rep., 1980–84
5.18	5.95	Angola, 1990–95
1.57	5.38	Gabon, 1975–79
2.06	4.54	Angola, 1985–89
4.42	3.92	Jordan, 1985–89
1.15	3.60	Algeria, 1970–74
2.57	3.49	Gabon, 1985–89
1.61	3.37	Morocco, 1975–79
1.09	3.35	Cote d'Ivoire, 1975–79
1.45	3.32	Zambia, 1970–74
1.50	3.26	Panama, 1970–74
2.24	2.90	Congo, Dem. Rep., 1970–74

SOURCE: Global Development Finance (GDF) database, World Bank, and OECD DAC International Development Statistics.

description of the model is different, the basic elements are common: individuals engage in rent-seeking activities to appropriate part of the resources windfall and, by so doing, reduce the growth rate of the economy. In addition most of the theoretical arguments rely on the so-called tragedy of the commons. Lane and Tornell (1996) describe a growth model that incorporates “common access” to the aggregate capital stock as a reduced form of a situation where other groups can appropriate part of the returns of a group of individuals. They document the existence of the voracity effect: if powerful interest groups exist and the intertemporal elasticity of substitution is not too low, then the growth rate of the economy will decline when there is a windfall of resources.

Tornell and Lane (1999) present a similar model where there are two sectors in the economy: the formal sector, where productivity is high and firms pay taxes, and the shadow sector, where productivity is low but production is not taxable. As some groups have power to extract transfers from the government, the capital stock of the formal sector becomes “common access.” To avoid the increase in taxation needed to finance the more than proportional increase in redistribu-

TABLE 6
RANKING OF THE LARGEST REMITTANCES RECIPIENTS

ODA/GDP (%)	Remittances/GDP (%)	Country and Period
5.81	19.36	Lesotho, 1975–95
23.54	15.72	Cape Verde, 1990–99
2.77	12.06	Lesotho, 1995–99
12.36	10.99	Jordan, 1975–85
0.64	10.40	Jamaica, 1999–95
8.11	10.31	Samoa, 1995–99
8.33	10.18	Samoa, 1985–89
2.97	9.75	Jordan, 1995–99
13.27	9.74	Samoa, 1990–95
24.76	9.57	Cape Verde, 1985–89
10.34	8.88	Tonga, 1985–95
4.42	8.71	Jordan, 1985–89
11.64	8.50	Tonga, 1995–99
19.67	8.44	Cape Verde, 1980–84

SOURCE: Global Development Finance (GDF) database, World Bank, and OECD DAC International Development Statistics.

tive transfers, some firms move to the shadow sector reducing the growth rate of the economy as a whole. This will happen if there are no institutional barriers to discretionary redistribution. In Tornell and Lane (1999), the original revenue windfall can be interpreted as a shock to the terms of trade, an increase in productivity, or foreign-aid transfers.

Svensson (2000) is concerned specifically with the effect of foreign aid in the context of economies with powerful social groups. In Svensson (2000) the different groups of the economy have common access to the government's budget constraint. The utility function of the individuals is the sum of their private consumption plus the part of the public good that corresponds to their locality. Individuals can increase their consumption by performing rent-seeking activities to appropriate the revenue of the government. However, by doing that, they reduce the amount of local public goods provided. Svensson (2000) shows that the provision of public goods does not need to increase with government income. In fact the symmetric Nash equilibrium implies that all the groups appropriate the full government revenue and, therefore, the provision of the public local good is reduced to zero. This means that large inflows of aid do not necessarily increase welfare since there is an increase in rent-seeking activities that is costly in aggregate terms.

One reason that could justify the null effect of foreign aid on growth is the generation of many rent-seeking activities. There is a large body of evidence on the rent-seeking activities generated by foreign aid. Reinikka and Svensson (2004) use panel data from a unique survey of primary schools in Uganda to analyze the extent to which grants actually reached the schools. They find that during the period 1991–95 schools on average received only 13 percent of the grants. Moreover, they show that surveys in other African countries confirm that Uganda is not a special case.

Djankov, Montalvo and Reynal-Querol (2005a) provide empirical evidence that a sudden windfall of resources—in the form of foreign aid and rents from oil—damage the political institutions of the receiving country by reducing checks and balances in government and democratic rules.³ The idea is that parties in power will engage in rent-seeking activities in order to appropriate these resources, and they will try to exclude others from engaging in the government decisionmaking process. By doing so political institutions are damaged because they became less democratic and less consensual. Because most foreign aid is not contingent on the level of democracy in recipient countries, there is no incentive for governments to keep a good level of checks and balances. We find that if a country receives foreign aid that reaches the 75th percentile of the sample over a 5-year period, then a 10-point index of democracy is reduced between 0.6 and 1.0. Moreover, we compare the effect of foreign aid with the effect of rents from oil. The idea is that these natural resources induce rent-seeking behavior and corruption by parties in government. Resources that are relatively easy to extract motivate parties in power to try to concentrate decisions on how to redistribute those resources to themselves while excluding others—thus, increasing the benefits from rent seeking.

Aid and Growth

The study of the effectiveness of international aid has generated a fast-growing literature. Most of the articles provide a negative answer: international aid is ineffective in fostering economic growth. The literature is large so we are going to concentrate only on what Hansen and Tarp (2001) call the “third generation.” Boone (1996) represents the beginning of this new generation of models on the effectiveness

³Recently several papers have used instrumental variables techniques to analyze the effect of openness on democracy (Lopez-Cordoba and Meissner 2005) and the effect of democracy on growth (Papaioannou and Siourounis 2004).

of aid. He finds that aid neither significantly increases investment nor any human development indicator, but it does increase the size of government.

Burnside and Dollar (2000) concentrate on the differential effect of policies, instead of political institutions, on the effectiveness of aid. They find that aid works in “good policy environments”—notably, good fiscal, monetary, and trade policies. The results in Burnside and Dollar (2000) imply that increasing the conditionality of aid on policies would improve the effectiveness of aid. Several other studies have found the cross product of aid by policies to be statistically significant when including additional explanatory variables (Collier and Dehn 2001) or replacing the constructed policy variable by the World Bank’s Country Policy and Institutional Assessment (Collier and Dollar 2002). Hansen and Tarp (2001) examine the relationship between foreign aid and growth in real GDP per capita as it emerges from simple augmentations of popular cross-country growth specifications. They show that aid increases the growth rate, and this result is not conditional on “good” policy. They also find that there are decreasing returns to aid, and the estimated effectiveness of aid is highly sensitive to the choice of the estimator and the set of control variables.

However, Easterly, Levine, and Roodman (2004) find that the results of Burnside and Dollar (2000) are fragile if one changes the sample period (e.g., by extending the sample up to 1997) or if one fills in the missing data for 1970–93 (see also Brumm 2003, Vásquez 2003). The results in Barro and Lee (2002) are even more negative. They analyze the effectiveness of IMF aid and conclude that loan-participation rates reduce economic growth and investment, although they increase openness.⁴

The way to disburse a given amount of aid is another important issue with respect to its effectiveness. The economic literature is less developed with respect to the effectiveness of different types of aid. The theoretical model in Boone (1996) suggests that nonfungible aid is more effective than fungible aid although there is no empirical counterpart for this claim. More recently Cordella and Dell’Ariccia (2003) argue that the relationship between aid, policies, and growth depends on whether the aid is delivered in budget support or project financing. They find no effect of aid by itself or coupled with policies.

⁴Przeworski and Vreeland also find that program participation lowers the growth rate of countries while they receive aid. However, after they leave the program, the growth is faster than if they had remained in the program but still not as fast as if they had not participated at all.

However, they explain this result as the effect of pooling together aid delivered in form of budget support and project financing. When the product of aid by policy is broken into two different variables (budget support by policies and project aid by policies), Cordella and Dell’Ariccia find statistically significant results.⁵

A deeper analysis of how foreign aid and other resource flows affect development should consider the indirect channels through which these resources affect economic growth—either positively or negatively. If the government spends money with no investment purposes, then this may have a negative effect on economic growth through an increase in government consumption. However, if aid induces public and private investment, this may have positive consequences for economic growth through increasing the investment ratio. Moreover, depending on the way in which ODA is disbursed (grants or loans) the incentive to invest or consume may be different. Sachs et al. (2004) argue that unconstrained aid may induce public consumption rather than investment. We consider that loans may provide an enforceable mechanism that grants do not have. If this is the case, then we should observe that the effect of ODA on growth through its effect on investment and public consumption may depend on the proportion of loans versus grants in which ODA is disbursed.⁶

The purpose of this section is to analyze the direct and indirect effect of resource flows on economic growth in developing countries—depending on the way ODA is disbursed. For all the empirical exercises we consider a sample of recipient countries and data from 1960 to 1999 organized in 5-year intervals. To analyze the direct effect of resources on growth, we adopt the standard specification (Barro 1991):

$$(1) \quad GROWTH_t = \beta_1 y_{it} + \beta_2 X_{it} + \beta_3 cw_{it} + \beta_4 aid_{it} + \mu_{it}$$

where *GROWTH* is the growth rate of GDP per capita and y_{it} is the log of gross domestic product per capita in the initial year of each subperiod. The set of *X*s includes the ratio of real government consumption to real GDP (*GOV*), the absolute deviation of the PPP value of the investment deflator from the sample mean (*PPDEV*), the ratio

⁵The level of significance for this result and the test of equality of the coefficients of both variables is 10 percent instead of the usual 5 percent.

⁶Some authors argue that the reason why grants may be less effective in promoting growth is because they are mostly used for public consumption purposes. This is not true. Many grants finance the construction of schools, hospitals, and other projects that are considered investment. On average, 70 percent of ODA is in the form of grants. However, the percentage of ODA that is allocated to public consumption is much lower.

of real domestic investment to GDP (INV), secondary-school enrollment rate (SEC), and primary-school enrollment (PRI). CW is the incidence of civil war at t , and aid is the average amount of aid as a percentage of GDP received during the subperiod.

We also consider two indirect channels: the effect of resource flows on investment and government consumption. In order to avoid “variables fishing,” we adopt the most common specifications in the literature for each of these variables. This was also the reason for choosing Barro’s specification for the growth regression. The investment equation is specified as in Barro (1991), including civil wars (CW) for the political instability variables. The specification for government consumption follows Persson and Tabellini (1999) and includes the log of GDP per capita and ethnic diversity variables. The regression could also include the proportion of population over 65, openness, or some measures related to the electoral system (Milesi-Ferretti, Perrotti, and Rostagno 2002). Since these variables are only available for a limited set of countries we decided to avoid a large reduction in the sample size and use the level of democracy (DEMP3).⁷

As aid may flow to countries whose growth rate is getting worse, we need an instrument for foreign aid. We follow Burnside and Dollar (2000) and Easterly, Levine, and Roodman (2004). The aid equation

$$(2) \quad aid_{it} = \gamma_y y_{it} + \phi_p p_{it} + z'_{it} \gamma_z + \zeta_{it}$$

includes the logarithm of initial income (y_{it}), the logarithm of population (p_{it}) and a group of variables that captures donors “strategic interests” (z'_{it}). For these we use dummy variables for sub-Saharan Africa, Franc Zone, Egypt, and Central American countries.

The F-test for excluded instruments is very large ($F=19.49$) and above usual thresholds, which implies that the instruments are not weak. The Durbin test, however, cannot reject the null hypothesis that foreign aid is exogenous and, therefore, OLS estimation is recommended. This result is similar to the findings in Burnside and Dollar (2000) who find foreign aid also to be exogenous in their setup. Finally, Sargan’s test of overidentification shows that the chosen instruments seem to be appropriate.

In Table 7 we analyze the effect of ODA on growth, investment, and government consumption using the standard specification in the literature. The results show that ODA has a negative, direct effect on economic growth. Moreover, ODA does not increase investment, but has a positive and significant effect on government consumption. The

⁷See Appendix 1 for a definition of this variable and the source.

rest of the variables have the expected sign. Investment has a significant and positive effect on economic growth, while government consumption has a significant negative effect.

The interesting question is why foreign aid increases government

TABLE 7
THE EFFECT OF ODA ON GROWTH, INVESTMENT, AND
GOVERNMENT CONSUMPTION

	GROWTH	INV	GOV
	OLS (Cluster)	OLS (Cluster)	OLS (Cluster)
LNGD0	-0.06 (-4.06)	0.03 (3.24)	-0.02 (-2.54)
INV	0.47 (3.55)		
SEC	-0.00 (-0.21)		
PRI	0.00 (0.33)	0.001 (4.11)	
GOV	-0.35 (-2.87)	-0.13 (-1.64)	
CW	-0.06 (-4.12)	-0.01 (-1.13)	0.02 (1.64)
INFLmean	-2.93e-06 (-0.66)		
INFL		-6.99e-06 (-3.18)	
SAFRICA	-0.06 (-2.52)		
LAAM	-0.03 (-1.54)		
ASIAE	0.05 (1.97)		
ETHFRAG			0.01 (0.27)
DemocPIV			-0.01 (-1.05)
ODA	-0.01 (-2.57)	0.001 (1.01)	0.01 (5.93)
Constant	0.59 (5.18)	0.12 (-2.01)	0.30 (5.39)
R-squared	0.2091	0.3375	0.1843
N	440	465	643

consumption but does not induce investment. One hypothesis is that easy resources from foreign aid may induce rent-seeking activities among parties in power. This, of course, would imply the nonproductive use of these resources that are finally devoted to rent seeking, and as a consequence investment is negatively affected. Moreover, the government could decide to spend resources favoring one group to the detriment of others as a result of rent-seeking behavior, which would imply an increase of government consumption that may not follow the efficiency criteria.

Can Aid Work?

The previous section showed that aid can have unexpected consequences on the countries that receive it. Is it possible to design or allocate aid in a way that could increase its effectiveness?

Grants versus Loans

One of the questions that emerge from the previous results is whether there is any way to reduce the negative effect of rent-seeking activities on the level of democracy and growth. Why do so many rent-seeking activities take place around aid? As Sachs et al. (2004) argue, we should look for mechanisms that enforce public investment rather than consumption.⁸ Unconstrained aid will likely increase public consumption rather than investment. One hypothesis is that loans, instead of grants, could provide a mechanism to enforce investment.⁹ It is reasonable to think that these rent-seeking effects are exacerbated when resources are given for free. Whether resources have to be returned, either in part or in full, may have an effect on how resources are used. We think that if ODA is basically disbursed in the form of grants, one should expect the money to be used less efficiently than when part of the resources have to be returned. If this is true, the idea that grants are more humanitarian than loans has to be compared with the fact that resources do not reach the final purpose,

⁸Conditional aid is not as easy to implement as it sounds. There have been many attempts to provide conditional aid based on the macroeconomic management of the economy by the recipient countries. Unfortunately, most of those attempts have not been successful because of the difficulty of observing the use of the funds and the opposition of many governments to provide the required information to evaluate the effect of the funds. In addition, the view shared by many international organizations that the population should not be punished by what their governments do means that conditionality cannot be seen as a credible condition.

⁹Obviously, if from time to time there is a default on sovereign debt, the loan mechanism will not be credible.

and are lost with rent-seeking activities. If aid comes in the form of loans, then there is a certain incentive to use the resources efficiently. A recipient country needs to obtain a good return on the investment to honor at least the repayments—increasing investment rather than public consumption.

In columns 1, 2, and 3 of Table 8 we analyze the effect of ODA and the proportion of grants to ODA on growth, investment, and government consumption. The ratio $GODA$ is the average ratio of the grant component to gross ODA received during the subperiod.¹⁰ Results indicate that ODA has no effect on investment, but it has a positive and significant effect on government consumption, and this effect increases the larger is the ratio of grants to ODA that the country receives. The negative direct effect of ODA on economic growth does not depend on the ratio of grants to ODA.

These results suggest that if ODA has any positive effect on economic growth, it would be through increasing investment when the proportion of grants is low. However, the results are not statistically significant. One possible reason might be that loans include very high concessional loans that behave as grants. ODA includes loans whose grant element is at least 25 percent. Among them there are IDA loans. It is well known that IDA loans are highly concessional and that they could be treated as grants. For this reason we construct a new ratio—grants as a proportion of gross ODA, where IDA loans are considered as grants.

Results are presented in columns 4 to 6 of Table 8, and show that ODA has a positive effect on investment if the ratio of grants to ODA is small enough. These results suggest that if ODA is given in the form of loans, investment increases. However, if the ratio of grants to ODA is large enough, then ODA will have a negative impact on investment.

An important question in the debate of the effectiveness of international aid is whether the shift from loans to grants improves economic development. Results from Table 8 suggest that this is not the case. Even though grants look more humanitarian, they are not, because the resources go to governments that have no incentive to use them for productive activities, unless part of the resources has to be returned. Loans, therefore appear to provide more of an enforcement mechanism for governments in recipient countries to use ODA to invest rather than to consume.

¹⁰We do the same tests as we did for ODA, and the results indicate that the ratio of grants to ODA is exogenous with respect to growth.

TABLE 8
THE DIFFERENTIAL EFFECTS OF GRANTS AND LOANS

	GROWTH		INV		GOV		GROWTH		INV		GOV	
	OLS (Cluster)	(Cluster)	OLS (Cluster)	(Cluster)	OLS (Cluster)	(Cluster)	OLS (Cluster)	(Cluster)	OLS (Cluster)	(Cluster)	OLS (Cluster)	(Cluster)
LNGD0	-0.06 (-4.04)	0.03 (3.45)	-0.015 (-2.18)		-0.04 (-1.88)	0.03 (2.76)	0.01 (1.40)					
INV	0.52 (3.93)				0.72 (5.76)							
SEC	0.00 (0.28)				0.00 (0.83)							
PRI	-0.00 (-0.15)	0.00 (3.83)			-0.00 (-0.96)	0.0005 (1.96)						
GOV	-0.36 (-2.80)	-0.09 (-1.13)			-0.22 (-1.85)	-0.056 (-0.57)						
CW	-0.06 (-4.17)	-0.007 (-0.98)	0.02 (1.73)		-0.06 (-3.27)	-0.004 (-0.49)	0.02 (1.67)					
INFLmean	-1.86e-06 (-0.41)				-3.76e-06 (-1.37)							
INFL		-6.76e-06 (-2.93)										
SAFRICA	-0.056 (-2.19)				-0.05 (-2.10)							

LAAM	-0.045 (-2.05)			-0.07 (-2.79)	
ASIAE	0.03 (1.21)			-0.01 (-0.32)	
ETHFRAG		0.002 (0.10)			0.04 (.145)
DemocPIV		-0.01 (-1.08)			-0.02 (-1.61)
ODA	-0.005 (-2.32)	0.002 (1.87)	0.006 (5.40)	-0.01 (-2.89)	0.003 (2.04)
ratioGODAgross	-0.06 (-1.28)	-0.04 (-1.63)	0.06 (2.56)		0.006 (4.62)
ratioGIDAODAgross				-0.03 (-0.80)	0.09 (3.18)
Constant	0.60 (5.52)	-0.11 (-2.06)	0.26 (4.23)	0.47 (2.91)	-0.007 (-2.57)
R-squared	0.2165	0.3330	0.1882	0.2518	0.3512
N	428	452	623	300	314
					467

The Role of Other Agents: Private Sector and Families

Recipient countries not only receive foreign aid. They also receive other flows of resources that directly reach the private sector (PrivtoPriv) and families (remittances). Moreover, governments also receive resources from private agents (PrivtoPubl). One of the questions we analyze in this section is whether these flows of resources, in which the private sector is involved, improve the level of development of recipient countries more than ODA.

Table 9 analyzes the direct effect of the ratio of PrivtoPriv flows, PrivtoPubl flows, and remittances to GDP on economic growth, investment, and government consumption. The results indicate that the larger the ratio PrivtoPriv, the larger is the positive direct effect on economic growth. PrivtoPubl flows and remittances have no direct effect on economic growth. However, PrivtoPriv, PrivtoPubl, and remittances have a significant and positive effect on investment, without having any effect on government consumption. These results indicate that flows that reach the government from the private sector induce investment rather than public consumption. This may be capturing the fact that these flows have also some enforceable mechanism similar to loans rather than grants. These results support the idea that any enforceable mechanism involved in lending rather than grants (free money), induce investment rather than public consumption.

Our results also indicate that private flows may be a better instrument for development than foreign aid. Flows of resources to governments may damage economic growth if directed to public consumption rather than investment. If ODA is disbursed in the form of grants, it is more probable that recipient governments may decide to spend them on public consumption rather than on investment, and therefore negatively affect economic growth. If instead, ODA is disbursed in the form of loans, these negative effects can be diminished. This idea is also present on the effect of flows that do not come from the official sector, but that go to governments (PrivtoPubl). These flows have an enforcement mechanism similar to loans, and they increase investment rather than public consumption. Finally, resources flowing to the private sector appear to provide the best incentive mechanism for development, together with money that goes to families. These results suggest that we should think not only about how to induce governments to use the resources they receive more efficiently, but also why nongovernment agents may use these resources more efficiently than governments.

TABLE 9
THE DIRECT EFFECT OF OTHER FLOWS OF RESOURCES ON
GROWTH, INVESTMENT, AND GOVERNMENT CONSUMPTION

	GROWTH	INV	GOV
	OLS (Cluster)	OLS (Cluster)	OLS (Cluster)
LNGD0	-0.05 (-2.40)	0.02 (2.60)	-0.03 (-4.68)
INV	0.33 (2.14)		
SEC	0.00 (0.39)		
PRI	-0.00 (-0.37)	0.0005 (2.22)	
GOV	-0.35 (-3.06)	-0.09 (-1.48)	
CW	-0.05 (-2.85)	0.0006 (0.08)	0.005 (0.50)
INFLmean	-2.85e-06 (-0.69)		
INFL		-3.86e-06 (-2.00)	
SAFRICA	-0.08 (-2.98)		
LAAM	-0.06 (-2.92)		
ASIAE	0.01 (0.36)		
ETHFRAG			-0.005 (-0.21)
DemocPIV			-0.012 (-1.08)
PrivtoPriv	0.02 (4.23)	0.01 (3.88)	0.005 (1.54)
PrivtoPub	0.004 (0.52)	0.016 (5.54)	0.007 (1.62)
Remittances	0.002 (1.38)	0.004 (4.23)	0.005 (1.51)
Constant	0.52 (3.39)	-0.08 (-1.42)	0.47 (7.58)
R-squared	0.1919	0.4464	0.1557
N	349	369	469

Donors Heterogeneity and Conflicting Goals

We can think of foreign aid and donors in terms of a market (Klein and Harford 2005). Donors compete to provide funds in the international aid market. Under this interpretation it may seem plausible to argue that more competition is better, which in the world of foreign aid would mean that aid is more effective. However, this simple advice may not work when we deal with a very special market like aid.

It is well-known that the research on the determinants of aid effectiveness do not provide robust evidence on the “magic” factors that make aid effective. Most of the studies have focused on the determinants of aid effectiveness that depend on the characteristics of recipient countries, like good policies or good institutions. However, the evidence shows that having good policies or institutions is not enough. For instance, the results on the importance of having good policies have been challenged as being the consequence of choosing a particular time period.

More recently some authors have argued that the effectiveness of foreign aid may depend on the way in which aid is disbursed. The results are, again, fragile and depend on the definition of the categories of aid, the sample size, and the countries included in the sample.

A third explanation, much less explored, is that the effectiveness of the foreign aid may depend on the characteristics of the donors. Instead of focusing on the identity of the donors, we focus on the structure of the market understood in its classical definition: the level of concentration of the supply. If the level of fragmentation of the donors is very high then the coordination problems may render aid ineffective and explain why it is so difficult to find a positive effect of foreign aid on economic development. The coordination problems among donors, generated by the well-known problems of collective action, are significant. The fragmentation of the donors turns out to be an important obstacle for aid effectiveness, even when the way in which aid is disbursed and the institutional environment of recipient countries are considered.

Acharya, Fuzzo de Lima, and Moore (2004: 2) argue that the “immediate consequence of this proliferation of aid donor organizations is a very large increase in the transactions costs incurred by agencies of recipient governments in their engagements with aid donors.” Also Morss (1984: 465) argues, “This donor and project build-up, which continues into the 1980s, is having a negative impact on the major government institutions of developing nations. Instead of working to establish comprehensive and consistent development objectives and policies, government officials are forced to focus on pleasing donors

by approving projects that mirror the current development enthusiasm of each donor.” He goes on to note that “efforts to implement a large number of discrete, donor-financed projects, each with its own specific objectives and reporting requirements, use up far more time and effort than is appropriate. Project consolidation is needed, but this is unlikely to occur on a significant scale because of the competitive nature of donor interactions.”

The literature has emphasized that having many donors generates high transaction costs within each recipient nation, and therefore reduces the value of aid. Acharya, Fuzzo de Lima, and Moore (2004) summarize the different kinds of transaction costs that are generated for recipient governments, based on the existing literature and personal experiences in the aid business. They classify them as direct and indirect transaction costs. One of the direct costs is related to the fact that aid comes from a variety of donors, which means that the energies and attentions of senior government personnel are absorbed, to an inefficient degree, in establishing and maintaining relationships with a multiplicity of donor agencies, and adjusting to their differing procedural requirements, languages and forms of expression, policy idioms, and financial periods.

Acharya, Fuzzo de Lima, and Moore (2004: 8) also describe five indirect costs. One of the most important is that

where there are many aid donors, they are frequently in clear, and sometimes visible, competition with one another—for attractive projects, for the time and attention of senior policymakers, for the assistance of good public servants, or for influence over the policies of the recipient government. This competition can spill over into their relationship with one another, and lead, for example, to the “hoarding” of information, and for less than wholehearted engagement in the processes normally labeled “donor coordination.” [Moreover] a multiplicity of donors in one recipient country can contribute to a lack of a sense of responsibility for the outcomes of aid. The more donors there are, the easier it is to assume or assert that the lack of development progress is someone else’s fault; and the greater are the temptations for individual donor agencies to focus efforts on obtaining good results from their own projects, even if this impinges adversely on overall aid performance.

Therefore, competition may not be the ideal situation in the market for aid, because there could be negative externalities that may reverse the effect of aid on development. Two-thirds of aid comes in the form of grants, which is free money. This makes the market for aid very different from any other market, in which competition lowers prices, and consumers choose the product they like most. Since aid has mostly a zero cost, recipient countries take it all.

The empirical evidence on the effect of donors multiplicity is very limited. Knack and Rahman (2004) find that aid undermines the quality of government's bureaucracy more severely in recipient countries the more fragmented the donors are. These results can be interpreted as the political consequence of the transaction costs derived from a high degree of donor fragmentation. Djankov, Montalvo, and Reynal-Querol (2005b) analyze the effectiveness of foreign aid depending on the level of fragmentation of the donors the country is facing. We argue that the higher is the level of fragmentation of the donors the lower is the positive impact of aid on economic performance.

Conclusion

Recently Sachs et al. (2004) have proposed a very large increase in foreign aid to overcome an assumed "poverty trap" that affects developing countries. However, this position is weakened by several facts. First, based on the same models that Sachs et al. (2004) use to justify their position, recent research has found that the values of parameters used are unreasonable. Second, the large literature on the effectiveness of foreign aid has found very little evidence that aid has any effect on economic development. There is also another unexpected outcome of foreign aid: it reduces the level of democracy of the recipient countries.

Making aid effective is difficult. The conditionality principle does not seem to work because of the lack of credibility of the punishment. Empirical studies show that loans may help to induce some discipline and a more effective use of the funds, since they have to be returned. In addition, other sources of foreign funds, like remittances and private to private assistance, have proved to be quite effective in fostering growth and investment. Finally, the increasing access to the aid market of new participants and the potential conflict of the goals of donors contribute to the ineffectiveness of aid. Therefore, increasing the responsibility of recipient countries (by providing loans instead of grants in a credible policy environment), reducing the cost of remittances to developing countries, and improving the coordination of donors seem to be reasonable goals to improve the effectiveness of foreign aid.

References

- Acharya, A.; Fuzzo de Lima, A.; and Moore, M. (2004) "Aid Proliferation: How Responsible Are the Donors?" IDF Working Paper 214.

- Auty, R. M. (1990) *Resource-Based Industrializations: Sowing the Oil in Eight Developing Countries*. New York: Oxford University Press.
- Barro, R. (1991) "Economic Growth in a Cross Section of Countries." *Quarterly Journal of Economics* 106: 407–43.
- Barro, R., and Lee, J. W. (2002) "IMF Programs: Who Is Chosen and What Are the Effects?" NBER Working Paper No. 8951.
- Boone, P. (1996) "Politics and the Effectiveness of Foreign Aid." *European Economic Review* 40 (2): 289–329.
- Brumm, H. J. (2003) "Aid, Policies, and Growth: Bauer Was Right." *Cato Journal* 23 (2): 167–74.
- Burnside C., and Dollar, D. (2000) "Aid, Policies, and Growth." *American Economic Review* 90 (4): 847–88.
- Chang, C.; Fernandez-Arias, E.; and Serven, L. (1999) "Measuring Aid Flows: A New Approach." World Bank Working Paper No. 2050.
- Collier, P., and Dehn, J. (2001) "Aid, Shocks, and Growth." Working Paper, World Bank No. 2688.
- Collier, P., and Dollar, D. (2002) "Aid Allocation and Poverty Reduction." *European Economic Review* 46 (8): 1475–1500.
- Collier, P., and Hoeffler, A. (2002) "Greed and Grievances in Civil Wars." Center for the Study of African Economies, Working Paper No. P2002–01.
- Cordella, T., and Dell’Ariccia, G. (2003) "Budget Support versus Project Aid." IMF Working Paper No. 88/03.
- Djankov, S.; Montalvo, J. G.; and Reynal-Querol, M. (2005a) "The Curse of Aid." Universitat Pompeu Fabra Working Paper.
- _____ (2005b) "Aid with Multiple Personalities." Mimeo, Universitat Pompeu Fabra.
- Easterly W.; Levine R.; and Roodman, D. (2004) "New Data, New Doubts: A Comment on Burnside and Dollar’s ‘Aid, Policies, and Growth’." *American Economic Review* 94 (3): 774–80.
- Fearon J., and Laitin, D. (2003) "Ethnicity, Insurgency, and Civil War." *American Political Science Review* 97 (1): 75–90.
- Hansen, H., and Tarp, F. (2001) "Aid and Growth Regressions." *Journal of Development Economics* 64: 547–70.
- Klein, M., and Harford, T. (2005) *The Market for Aid*. Washington: IFC (World Bank).
- Knack, A., and Rahman, A. (2004) "Donor Fragmentation and Bureaucratic Quality in Aid Recipients." World Bank Working Paper No. 3286.
- Kray, A., and Raddatz, C. (2005) "Poverty Traps, Aid, and Growth." World Bank Working Paper No. 3631.
- Lane, P., and Tornell, A. (1996) "Power, Growth, and the Voracity Effect." *Journal of Economic Growth* 1: 213–41.
- Lopez-Cordoba, E., and Meissner, C. (2005) "The Globalization Effect of Trade and Democracy, 1870–2000." NBER Working Paper No. 11117.
- Maren, M. (1997) *The Road to Hell: The Ravaging Effect of Foreign Aid and International Charity*. New York, The Free Press.
- Milesi-Ferretti, G. M.; Perotti, R.; and Rostagno, M. (2002) "Electoral Systems and Public Spending." *Quarterly Journal of Economics* 117 (2): 609–57.

- Montalvo, J. G., and Reynal-Querol, M. (2005) "Ethnic Polarization, Potential Conflict, and Civil Wars." *American Economic Review* 95 (3): 796–816.
- _____. (2002) "Why Ethnic Fractionalization? Polarization, Ethnic Conflict and Growth." Universitat Pompeu Fabra Working Paper No. 660.
- Morss, E. R. (1984) "Institutional Destruction Resulting from Donor and Project Proliferation in Sub-Saharan African Countries." *World Development* 12 (4): 465–70.
- Papaioannou, E., and Siourounis, G. (2004) "Democratization and Growth." Mimeo, www.iies.su.se/ESWM2004/papers/Papaioannou_paper.pdf.
- Persson, T., and Tabellini, G. (1999) "The Size and Scope of Government: Comparative Politics with Rational Politicians." *European Economic Review* 43: 699–735.
- Przeworski, A., and Vreeland, J. R. (2000) "The Effect of IMF Programs on Economic Growth." *Journal of Development Economics* 62: 385–421.
- Reinikka, R., and Svensson, J. (2004) "Local Capture: Evidence from a Government Transfer Program in Uganda." *Quarterly Journal of Economics* 119 (12): 679–705.
- Roodman, D. (2003) "The Anarchy of Numbers: Aid, Development, and Cross-Country Empirics." Working Paper, Center for Global Development.
- Ross, M. (2002) "The Natural Resource Curse: How Wealth Can Make You Poor." In I. Bannon and P. Collier (eds.) *Natural Resources and Violent Conflict: Options and Actions*, 17–42. Washington: World Bank.
- Sachs, J.; McArthur, J. W.; Schmidt-Traub, G.; Kruk, M.; Bahadur, C.; Faye, M.; and McCord, G. (2004) "Ending Africa's Poverty Trap." *Brookings Papers on Economic Activity*, No. 1: 117–240.
- Sachs, J., and Warner, A. (1999) "The Big Push, Natural Resource Booms and Growth." *Journal of Development Economics* 59: 43–76.
- _____. (2001) "The Curse of Natural Resources." *European Economic Review* 45: 827–38.
- Summers, R., and Heston, A. (1991) "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950–1988." *Quarterly Journal of Economics* 106 (2): 327–68.
- Svensson, J. (2000) "Foreign Aid and Rent Seeking." *Journal of International Economics* 51: 437–61.
- Tornell, A., and Lane, P. (1999) "The Voracity Effect." *American Economic Review* 89: 22–46.
- Vásquez, I. (2003) "The New Approach to Foreign Aid: Is the Enthusiasm Warranted?" Cato Institute Foreign Policy Briefing No. 79 (17 September).

Appendix 1: Definition of Variables

Foreign direct investment (FDI) is the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the bal-

ance of payments. This series shows net inflows in the reporting economy.

Portfolio investment flows are net and include nondebt creating portfolio equity flows (the sum of country funds, depository receipts, and direct purchases of shares by foreign investors). Data are in current U.S. dollars.

PNG bonds are nonguaranteed long-term debt from bonds that are privately placed. Net flows (or net lending or net disbursements) are disbursements minus principal repayments. Long-term external debt is defined as debt that has an original or extended maturity of more than one year and that is owed to nonresidents and repayable in foreign currency, goods, or services.

PNG commercial bank loans are nonguaranteed long-term commercial bank loans from private banks and other private financial institutions. Net flows (or net lending or net disbursements) are disbursements minus principal repayments. Long-term external debt is defined as debt that has an original or extended maturity of more than one year and that is owed to nonresidents and repayable in foreign currency, goods, or services.

PPG private bonds are public and publicly guaranteed debt from bonds that are either publicly issued or privately placed. Net flows (or net lending or net disbursements) are disbursements minus principal repayments.

PPG private commercial bank loans are public and publicly guaranteed commercial bank loans from private banks and other private financial institutions. Net flows (or net lending or net disbursements) are disbursements minus principal repayments.

PPG suppliers' credits and other private creditors are public and publicly guaranteed other private credits from manufacturers, exporters, and other suppliers of goods, and bank credits covered by a guarantee of an export credit agency. Net flows (or net lending or net disbursements) are disbursements minus principal repayments.

Workers' remittances are current transfers by migrants who are employed or intend to remain employed for more than a year in another economy in which they are considered residents. Some developing countries classify workers' remittances as a factor income receipt (and thus as a component of GNI). The World Bank adheres to international guidelines in defining GNI, and its classification of workers' remittances may therefore differ from national practices. Data are in current U.S. dollars. Data come from GDF.

Appendix 2: Variables Used in the Empirical Analysis

Variables

GROWTH: growth rate of real GDP per capita of the period. Source: World Bank, Global Development Network Growth Database (GDNGD).

INV: Average of the ratio of real domestic investment for the period (private plus public) to real GDP. Source: GDNGD.

LNGD0: Log of real GDP per capita of the initial period (1985 international prices). Source: GDNGD.

SEC: Percentage of secondary school attained in the total population. Taken at the beginning of the period. Source: Barro and Lee (2003).

PRI: Percentage of “Primary school attained” in the total population. Taken at the beginning of the period. Source: Barro and Lee (2003).

GOV: Average period of the ratio of real government “consumption” expenditure to real GDP. Source: GDNGD.

INFL: consumer prices at the beginning of the period. Source: GDNGD.

INFLmean: Magnitude of the absolute deviation of INFL from the sample mean.

DemocPIV: Democracy score: general openness of the political institutions (0=low, 10=high). Source: Polity IV (www.colorado.edu/IBS/GAD/spacetime/data/Polity.html). We transform the dataset score in a dummy variable that takes a value of 1 if the score is greater than or equal to 4. This variable is very correlated with the variable “Freedom” of the Freedom House.

CW: A dummy that takes a value of 1 if there is a civil war during the period and a value of zero otherwise. The data come from PRIO.

ETHFRAG: Ethnolinguistic fragmentation. Source: Montalvo and Reynal-Querol (2005).

Regional Dummies

SAFRICA: Dummy for Sub-Saharan African countries.

LAAM: Dummy for Latin American countries.

ASIAE: Dummy for East Asian countries.