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Can Foreign Aid Buy Growth?

William Easterly

Economic research on foreign aid effectiveness and economic growth frequently becomes a political football. But when a regression result is passed from one source to the next, context is often stripped away so that what the result means in public discussion is different than what the original research actually demonstrated.

Consider the revealing episode of how an academic paper on foreign aid influenced actual foreign aid commitments. The story starts with an academic study by Burnside and Dollar (2000), which circulated widely as a working paper for several years in the late 1990s before publication in the high-profile *American Economic Review*. The authors set out to investigate the relationship between foreign aid, economic policy and growth of per capita GDP using a new database on foreign aid that had just been developed by the World Bank. They run a number of regressions in which the dependent variable of growth rates in developing countries depends on initial per capita national income, an index that measures institutional and policy distortions, foreign aid and then aid interacted with policies. To avoid the problems that aid and growth may be correlated over periods of a few years, but not on a year-to-year basis, they divide their sample into six four-year time periods running from 1970–1973 to 1990–1993. In certain specifications, they also include variables for ethnic fractionalization, whether assassinations occurred, dummy variables for certain regions and even a measure of arms imports. In many of their specifications, they found the interaction term between foreign aid and good policy to be significantly positive, and they summarized (p. 847): "We find

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that aid has a positive impact on growth in developing countries with good fiscal, monetary, and trade policies but has little effect in the presence of poor policies."

I believe the Burnside and Dollar (2000) paper meets high academic standards and is intuitively plausible. Their conclusions are appropriately hedged, and the paper has become a healthy stimulus to further research. However, their paper also was the basis of a policy recommendation to increase foreign aid, if only other policies were good, without further testing of whether this result holds when expanding the dataset or using alternative definitions of "aid," "policies" and "growth." Their general finding was passed on from one media report to another and was cited by international agencies advocating an increase in foreign aid.

International aid agencies soon began to mention the results of Burnside and Dollar (2000). The results from the working paper version were reported in a World Bank (1998) report on *Assessing Aid*. A White Paper from the British Department for International Development (2000) argued, based on the working paper version of the Burnside and Dollar paper, that "development assistance can contribute to poverty reduction in countries pursuing sound policies." The Canadian International Development Agency put out a draft policy paper in June 2001 (later finalized after public discussion in September 2002) that said World Bank researchers "provide compelling evidence that good governance and a sound policy environment are the most important determinants of aid effectiveness."

The issue of the effectiveness of foreign aid heated up in the weeks before a U.N. conference called "Financing for Development" that was held in Monterrey, Mexico, in March 2002. In the run-up to this conference, there was a major debate about whether to increase foreign aid—and in particular about what the United States, with the lowest aid-to-GDP ratio of any rich country, should do. The Burnside and Dollar (2000) paper was often invoked, either explicitly or implicitly, in this debate.

For example, in March 2002, *The Economist* rebuked then-U.S. Treasury Secretary Paul O'Neill for his skepticism about foreign aid, on the grounds that "there is now a strong body of evidence, led by the research of David Dollar, Craig Burnside and Paul Collier, all economists at the World Bank, that aid does boost growth when countries have reasonable economic policies" ("Aid Effectiveness: Help in the Right Places," 2002). An article in the *New Yorker* at about the same time chimed in that "aid can be effective in any country where it is accompanied by sensible economic policies" and explicitly discussed the Dollar and Burnside (2000) study (Cassidy, 2002). *The Financial Times,* in an analysis column by its Washington correspondent Alan Beattie (2002), was quite explicit:

> At present, the centre of gravity of expert opinion seems to settle around a slightly less optimistic thesis propagated by World Bank economists David Dollar, A. Craig Burnside and Paul Collier: aid can help, but it should be concentrated on countries with good macroeconomic policy and governments genuinely committed to improving public services and infrastructure, and stamping out corruption. Estimates by Mr Dollar and Mr Burnside

> suggest that 1 per cent of gross domestic product in aid given to a poor but well-managed country can increase its growth rate by a sustained 0.5 percentage points.

In this same spirit, the president of the World Bank, James Wolfensohn, gave a speech shortly before the Monterrey Conference in which he cited a number of lessons learned by the aid community. Wolfensohn, quoted in World Bank (2002e), argued: "We have learned that corruption, bad policies, and weak governance will make aid ineffective." He went on to argue that corruption, bad policies, and weak governance had improved in poor countries, that donors had become more discriminating in directing aid to "good" countries and that therefore there should be "roughly a doubling of current aid flows."

As the Monterrey conference got underway, President George W. Bush seemed to be reading from this same script. On March 14, 2002, he announced a $5 billion increase in U.S. foreign assistance, about a 50 percent increase.[1] Bush noted in his speech:

> Yet many of the old models of economic development assistance are outdated. Money that is not accompanied by legal and economic reform are oftentimes wasted. . . . Sound economic policies unleash the enterprise and creativity necessary for development. So we will reward nations that have more open markets and sustainable budget policies, nations where people can start and operate a small business without running the gauntlets of bureaucracy and bribery.

The White House followed up on November 26, 2002, with the creation of a Millennium Challenge Corporation to administer the $5 billion dollar increment in foreign aid. Arguing that aid is only effective in sound policy and institutional settings, the administration announced 16 indicators of country performance that would be used to guide the selection of countries eligible for MCC aid, three of which were versions of the Burnside and Dollar policy measures (most of the rest were measures of quality of institutions). The White House said on its website that the new aid was motivated by the idea that "economic development assistance can be successful only if it is linked to sound policies in developing countries."[2]

Hence, we have an unusually clear link running from a growth regression in an economic study to a policy outcome. However, for professional economists this process has some disquieting signs. A regression result was passed from one source

[1] Another factor in the administration decision was the personal lobbying by the rock star Bono, who seems to be the most influential figure in the aid policy community.

[2] For the full text of Bush's speech of March 14, 2002, see ⟨http://www.whitehouse.gov/news/releases/2002/03/20020314-7.html⟩. For the announcement of the Millennium Challenge Corporation on November 26, 2002, see ⟨http://www.whitehouse.gov/news/releases/2002/11/20021126-8.html#3⟩. For the quoted passage on the motivation behind this new aid, see ⟨http://www.whitehouse.gov/infocus/developingnations/⟩.

to the next without questions about the robustness or broader applicability of the results. In this paper, I put the results of Burnside and Dollar (2000) in a broader context. The next section considers recent empirical work on the connections between aid and economic growth, including what happens when such work uses alternative definitions of "aid," "good policy" and "growth." The following section investigates the theoretical connections from aid to economic growth.

Empirical Evidence on the Links from Aid to Economic Growth

There was a long and inconclusive literature on aid and economic growth in the 1960s, 1970s and 1980s, which was hampered by the limited data availability and considerable debate about the specification and the mechanisms by which aid would affect growth. For example, if greater aid was given in response to slower growth, then interpreting how aid flows affect growth could be difficult. Hansen and Tarp (2000) offer an extensive review of this earlier literature. The literature got new life with a paper by Boone (1996), which found that aid financed consumption rather than investment. (Financing consumption of a few poor people is not so bad, but the proponents of aid hoped for the kind of society-wide transformation that would come from aid financing investment and growth.) This paper was notable for introducing political determinants of aid as instruments to address problems of reverse causality.[3] The Burnside and Dollar (2000) paper gained prominence because it addressed the skepticism implied by Boone and by the lack of consensus from the earlier literature.

Since the Burnside and Dollar (2000) paper, many papers have reacted to their results, including Hansen and Tarp (2001), Dalgaard and Hansen (2001), Guillamont and Chauvet (2001), Collier and Dehn (2001), Lensink and White (2001) and Collier and Dollar (2002). These papers conduct variations on the Burnside and Dollar specification (some of which had already figured in the earlier literature), introducing variables such as aid squared, terms of trade shocks, variability of agricultural output and exports and even such complicated terms as an interactive term combining aid with terms of trade shocks. Some of these papers confirm the message of Burnside and Dollar that aid only works in a good policy environment, while others find that when particular variables are added, the coefficient on the interaction between aid and policy becomes near-zero and/or statistically insignificant. This literature has limitations: *how* to choose the appropriate specification without guidance from theory, which often means there are more plausible right-hand side variables than there are data points in the sample.

Rather than trying to discuss and summarize all of these studies of aid and

[3] Some proponents have argued that aid could also buy time for reformers to implement painful but necessary changes in economic policies. This conjecture seems plausible but has not been systematically tested. Also, one could alter the incentives to consume aid by tying transfers to purchases of investment goods, as in Bruce and Waldman (1991).

growth, I will illustrate the issues that arise in this literature by offering some extensions built explicitly on the Burnside and Dollar (2000) approach. I will first discuss expanding their dataset to include more recent evidence and then explore how their results are affected even within the original dataset by different definitions of "aid," "good policy" and "growth."

Easterly, Levine and Roodman (2003) use the exact same specification as Burnside and Dollar (2000), but simply added more data that had become available since their study was performed, as well as hunting for more data in their original sample period of 1970–1993. (We were able to find more data even over their sample period by going to the original sources—for example, on institutional quality—rather than secondary sources.) Using a sample covering 1970–1997, we carried out their same regression with four-year averages with the same control variables including terms for aid/GDP, their policy index (a weighted average of budget deficits/GDP, inflation and an index of openness to trade) and the interaction between aid/GDP and the policy index. We found that the coefficient on the crucial interaction term between aid and policy was insignificant in the expanded sample including new data, indicating no support for the conclusion that "aid works in a good policy environment."

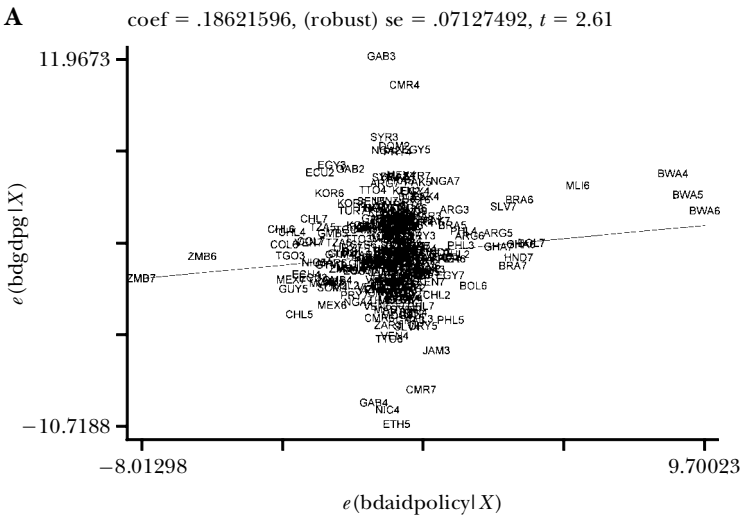
Figure 1 compares the partial scatter underlying the Burnside and Dollar (2000) result on growth and the interactive term between aid and policy with the partial scatter using the same specification but more data. The codes for the data points give the World Bank 3-letter abbreviation for the country name, while the numbers indicate successive 4-year average periods. The partial scatter shows the unexplained portion of economic growth against the unexplained portion of the interaction term between aid and policy (that is, unexplained by the other Burnside-Dollar right-hand side variables listed above). Because the explained part of the growth and aid-policy terms changes with the new dataset, the two diagrams do not show the overlapping points in the same location. A data point where growth controlling for other factors is high and the aid-policy term is high (because aid is high and policy is good) supports the Burnside-Dollar hypothesis. A point where unexplained growth is high but aid-policy is low (either because aid is low or policy is bad) is evidence against the Burnside-Dollar finding. The prevalence of such points in the second diagram indicates little support for the Burnside-Dollar results.

But even in the original Burnside and Dollar (2000), the significance of the interactive variable between aid and public policy was not robust to other, equally plausible, definitions of "aid," "policies" and "growth."[4]

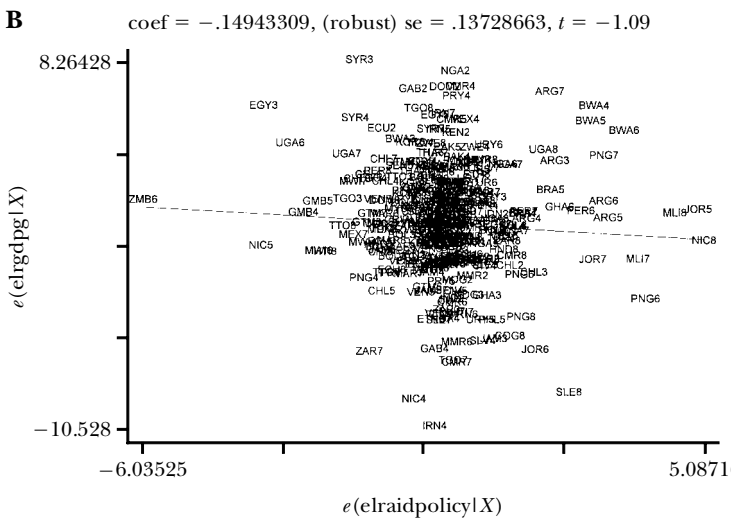
Let us first try varying the definition of "aid," while sticking to the original time period and country sample in the Burnside and Dollar (2000) paper. Their definition of aid is the grant element of aid, excluding the loan component of "concessional" loans, which are made at extremely low interest rates, a measure of

[4] These extensions arose out of joint work with Levine and Roodman when working on Easterly, Levine and Roodman (2003), which are mentioned but not reported in that paper. David Roodman assisted me in producing the exact findings shown here.

Figure 1
Partial Scatters of Growth against Interactive Aid and Policy Term



Source: Burnside and Dollar (2000).



Source: Easterly, Levine and Roodman (2003).

aid that is called "Effective Development Assistance" in this literature (Serven et al., 1996). This concept makes some sense.[5] However, the standard definition of aid according to the Development Assistance Committee of the OECD is grants and

[5] There is some question about where their 1970–1974 data came from, as the exercise of calculating the grant element of foreign aid (Effective Development Assistance, or EDA) began in 1975 (Serven et al. 1996). It apparently used an earlier version of this exercise. We performed a regression of ODA on EDA

concessional loans net of repayment of previous aid loans—a measure that treats forgiveness of past loans as current aid. This measure of aid is called net Official Development Assistance (ODA), and it may be a reasonable measure of the actual transfer to liquidity-constrained governments. The correlation between the two measures is high (.933). But using this alternative definition, the interactive terms with aid and policy is no longer statistically significant, not even at a 10 percent level in the Burnside-Dollar policy specification and country sample (as shown in the Appendix).

Next, consider a different measure of what is meant by good policy. Burnside and Dollar (2000) construct an index number for what is meant by good policy that includes the budget surplus, the inflation rate and a measure of the openness of an economy developed by Sachs and Warner (1995). The weights of these three terms in the policy index were determined by a regression where these terms were used as independent variables to predict growth, without including any terms for foreign aid or other variables. To reconsider the role of policy, consider first an alternative measure of openness. The Sachs-Warner measure of openness is a dummy variable with a value of either zero or one, where an economy is treated as closed if it has high tariff barriers *or* high nontariff barriers *or* a socialist economic system *or* a state monopoly of key exports *or* a high black market premium. This measure has been criticized both for being subjective—for example, in how it classifies "socialist" economies—and for being opaque, because a closed economy may mean many different things (Rodrik and Rodriguez, 2000). As an alternative to measure openness and trade distortions, consider a regression using the black market premium, which is ubiquitous in growth regressions. Add also financial depth (the ratio of M2 to GDP) as a variable in the policy index, since it has been the subject of an extensive literature (Levine, 1997). Lastly, experiment with the change in the trade-to-GDP ratio in the policy index, which has been used as a measure of integration with global trade (Dollar and Kraay, 2001).[6]

Following the approach of Burnside and Dollar (2000), let us try several policy indexes using combinations of these variables, where the variables were weighted according to their power in explaining growth in a regression that left out all aid variables. Rerun the Burnside and Dollar regressions with these alternative measures of policy. Each variant of the policy index is still significantly correlated with economic growth, which suggests that the alternative measures of policy are capturing some real effect. But the interactive term of aid and good policy was no longer statistically significant in any of the alternative definitions of the policy index. (Again, a regression table showing specific results appears in the Appendix.)

Finally, consider redefining what is meant by "growth." As noted earlier, Burnside and Dollar (2000) defined growth as real per capita GDP growth over four

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and found them to be highly correlated. We also used this regression to fill in the missing observations on EDA for 1970–1974 and 1994–1997.

[6] The Dollar and Kraay (2001) specification was actually the change in growth regressed on the change in trade share. To be consistent with this specification, we add the lagged growth rate in the regression that uses the change in trade share.

years. However, a four-year period may capture business-cycle fluctuations and may not be long enough a period of "good policy" to set up beneficial effects of aid. Much of the growth literature considers decades or longer. Thus, let us consider periods of eight, 12 and 24 years, respectively, for averages of "aid," "policies" and "growth"—where 24 years is a pure cross-section regression that covers their entire sample from 1970 to 1993. In the 12-year and 24-year specifications, the policy variable remains positively and significantly correlated with economic growth. However, the coefficient on the interaction term between aid and policy no longer enters significantly for periods of 12 years and for the pure cross-section of 24 years. The coefficient remains significant when using an eight-year period if the sample includes all developing countries, but not when the sample is restricted to low-income countries (where aid should presumably be more important). Obviously, lengthening the sample period decreases sample size and thus decreases statistical power. Nonetheless, these tests are important because it is more intuitive that aid would affect long-run growth over long periods of good policy than over short ones.

Thus, the result that aid boosts growth in good policy environments is fragile to defining growth, aid and policy over a sufficiently short period. Alternative period lengths from one to 12 years and for the whole period length of 24 years, using the extended dataset of Easterly, Levine and Roodman (2003), all yielded insignificant results on the interactive term between aid and policy.

Clearly, the empirical links from aid to economic growth are far more fragile than the drumbeat of media and development agency references to the Burnside and Dollar (2000) paper suggested. When considering or carrying out an empirical study on this subject, it is crucial to consider what is meant by seemingly common-sensical terms like "aid," "good policy" and even "growth."

The Theory of Aid and Economic Growth

The empirical literature on the connections between aid and economic growth has been hampered by the lack of a clear theoretical model by which aid would influence growth and which could pin down the empirical specification of the aid-growth relationship. For many years, the standard model used to justify aid was the "two-gap" model of Chenery and Strout (1966). In this model, the first gap is between the amount of investment necessary to attain a certain rate of growth and the available domestic saving, while the second gap is the one between import requirements for a given level of production and foreign exchange earnings. At any moment in time, one gap is binding and foreign aid fills that gap. I concentrate here on the investment-saving gap, both for simplicity of exposition and because of the influence of this particular gap over subsequent literature and policy analysis. Chenery and Strout built on earlier work by many other development economists, such as Arthur Lewis (1954) and Walt Rostow (1960). The latter left an indelible mark on development thinking by promising that an aid-financed increase in investment would launch a "takeoff into self-sustained growth."

The model is straightforward. Economic growth depends on investment as a share of GDP, adjusted by a factor that reveals whether investment is of high or poor quality. The amount of investment will be the sum of domestic savings and foreign aid. The model can be spelled out in this way:

$$g = (I/Y)/\mu$$

$$I/Y = A/Y + S/Y,$$

where I is required investment, Y is output, g is target GDP growth, A is aid, and S is domestic saving.

The parameter μ was known as the incremental capital-output ratio (ICOR), usually thought to range between about 2 and 5, where a high incremental capital-output ratio was often taken as a measure of poor "quality of investment." The ICOR gives how many units of additional capital are required to yield a unit of additional output. When both the units of additional capital and units of additional output are divided by initial output, we have the investment ratio to GDP and the growth rate, respectively. So the ICOR is the ratio of the investment ratio to the growth rate. For example, if the investment rate is 24 percent and the ICOR is 4, then the economy will grow at 6 percent. However, if the economy makes a more efficient use of capital and has an ICOR of 3, then it takes only an 18 percent rate of investment to achieve 6 percent growth.

The model of the "financing gap" approach thus makes two key assumptions. First, it assumes the above stable linear relationship between investment and growth over the short to medium run. This assumption grows out of a Leontief-style production function with fixed requirements for capital and labor per unit of output. Most economists since Solow (1957) have felt uncomfortable with a Leontief-style production function that does not allow the substitution of labor for capital. In labor-abundant Ethiopia, roads are built with labor crews breaking up rocks with picks. In labor-scarce New York, roads are built with many fewer laborers driving heavy equipment.

On theoretical grounds, there are sound reasons to doubt whether the incremental capital-output ratio is a constant and thus whether the relationship from investment to growth is linear. There are also sound reasons to doubt that variations in the ICOR necessarily represent the quality of capital investment.

First, consider a Solow-style neoclassical model, in which an exogenous increase in investment will raise growth temporarily during the transition from one steady state to another. However, in such a model there is no permanent causal relationship between investment and growth. Moreover, the incremental capital-output ratio in such a model means much more than quality of investment. During a transition to a new steady state, the measured ICOR during the transition is higher, the higher is the initial level of the investment rate and the lower is the change in the investment rate. Also, the ICOR is also higher in steady state the

lower is the population growth rate. None of these factors reflect "quality of investment."

The main alternative to neoclassical growth models, endogenous growth models, stress a multitude of inputs besides physical capital, such as technology, human capital, intermediate new goods, organizational capital, social capital and institutional design. The incremental capital-output ratio would change with these other inputs, and so there would not be a stable linear relationship between investment and growth, nor would the ICOR measure "investment quality" in this case either.[7]

A second key assumption of the model in which aid fills a financing gap and allows greater investment is that aid will actually finance investment rather than consumption. This assumption will hold true only if investment is liquidity-constrained and incentives to invest were favorable. If the cause of low investment is that the incentives to invest are poor, then aid will not increase investment. Aid could actually *worsen* incentives to invest if the recipient believes that future poverty will call forth future aid (the classic "Samaritan's dilemma"). Aid in either case would finance consumption rather than investment, which is what Boone (1996) found in a cross-section sample. Similarly, the Burnside and Dollar (2000) finding that aid only affects growth in the presence of good public policies can be interpreted as an argument that aid will not necessarily raise investment.

In Easterly (2001), I tested the "financing gap" model in which aid improves investment and growth, using time series data. There are two steps in the argument. First, foreign aid needs to increase investment. Next, investment needs to increase economic growth. How many of these countries show a significant and positive effect of foreign aid on investment, with a coefficient greater than or equal to one? There are 88 aid recipient countries on which we have data spanning the period 1965–1995.

First, consider a regression done for each country where the dependent variable here is investment/GDP and the independent variable is the ratio of Overseas Development Assistance to the economy: ODA/GDP. If aid increases investment, then the coefficient on this regression should be positive and greater than or equal to one. Just six of the 88 countries pass this test. The magic six include two economies with trivial amounts of aid: Hong Kong (which got an average of .07 percent of GDP in aid 1965–1995) and China (average of 0.2 percent of GDP). The other four countries are Tunisia, Morocco, Malta and Sri Lanka.

The next step is to run a regression for each country where the dependent variable is the growth rate and the independent variable is the rate of investment. The coefficient from this regression can then be checked to see whether it falls into

[7] Some early endogenous growth models like Romer (1987) featured a linear relationship between output and physical capital, but these were discarded later in the literature—including by Romer (1993) himself. Empirically, many cross-section regressions featured a statistically significant linear relationship between investment and growth, but this relationship did not hold at shorter time intervals (Easterly, 1999). The longer-term relationship may reflect reverse causality from growth to investment (Blomstrom et al., 1995).

the plausible range for the incremental capital-output ratio of between 2 and 5. Using annual data, four countries out of 88 pass the tests of a positive and significant relationship between growth and investment, a constant not significantly different than zero, and an ICOR between 2 and 5. The four economies that pass the tests are an unusual assortment: Israel, Liberia, Reunion (a French colony) and Tunisia.

Thus, there is one country that passes both tests and where the "financing gap" approach seemed to hold empirically: Tunisia. Of course, one success out of 88 countries is more likely due to chance than to any Tunisian proclivity for financing gaps. To dramatize the gap between the predictions of the financing gap model and the actual outcome, I simulate growth outcomes that would have occurred if aid always caused investment to rise and investment always caused growth. One of the more extreme cases of the 87 out of 88 countries that did not fit the model was Zambia. If Zambia had converted all the aid it received since 1960 to investment and all of that investment to growth, it would have had a per capita GDP of about $20,000 by the early 1990s. Instead, Zambia's per capita GDP in the early 1990s was lower than it had been in 1960, hovering under $500.

The "financing gap" model in which aid increases investment and then that investment increases economic growth has dubious theoretical foundations and numerous empirical failings. Yet no other model of aid and growth has arisen to take its place. The financing gap model continues to be used today in the World Bank and other institutions making aid policy. For example, the International Monetary Fund and the International Development Association (2002) did a debt sustainability analysis for Uganda in August 2002 in which growth is a linear function of investment, assuming "the efficiency of investment to remain constant (ICOR equal to 3.7)." A check of the World Bank's website in January 2003 on the official projection model, known as the "Revised Minimum Standard Model—Extended" (RMSM-X), found it to still be based on the two-gap model.[8] The British Department for International Development (2002) noted that aid is necessary because "*finance* [bold in original] itself is vital for countries with very low resources of their own." When the World Bank (2002a) calculated the aid requirements of meeting the "Millennium Development Goal" of cutting world poverty in half, it explicitly acknowledged using the "two-gap model" to come up with an estimate of $40–60 billion in additional aid (roughly a doubling of current levels) required to meet the implied growth targets. They note their estimates are sensitive to the incremental capital-output ratio used, where "reducing ICORs is generally associated with improving . . . economic policies." Easterly (1999, 2001) offers numerous other examples of use of the financing gap model in recent aid agency work.

[8] The website is ⟨http://www.worldbank.org/data/rmsm⟩. In fairness, the date of text at the website is given as 1999.

Aid Institutions: Moving the Money

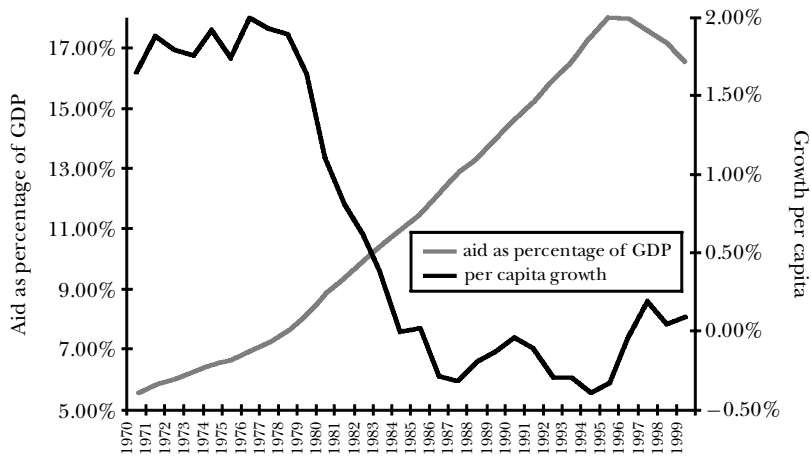
No doubt many economists in the institutions making aid policy feel uncomfortable with the financing gap model that aid has a high likelihood of raising investment, which in turn has a high likelihood of raising economic growth. Yet the idea that "aid buys growth" is an integral part of the founding myth and ongoing mission of the aid bureaucracies. The aid bureaucracies define their final objective as "poverty reduction" (today's more politically correct name for "growth") and their immediate output as aid money disbursed. Sometimes they stress the immediate output of aid dispersed more than the final objective of poverty reduction or growth achieved. Judith Tendler's (1975) observation remains true today:

> A donor organization's sense of mission, then, relates not necessarily to economic development but to the commitment of resources, the moving of money. . . . The estimates of total capital needs for development assistance in relation to supply seem to have been the implicit standard by which donor organizations have guided their behavior and judged their performance . . . the quantitative measure has gained its supremacy by default. Other definitions of success and failure of development assistance efforts have been hard to come by.

Although voices have been raised throughout the years against "pushing loans" and "moving money," and change may actually have occurred, the continuity of stressing aid volume is more noticeable than the changes. The World Bank (1998) noted in its report *Assessing Aid* that a stress on disbursing aid had continued: "Disbursements (of loans and grants) were easily calculated and tended to become a critical output measure for development institutions. Agencies saw themselves as being primarily in the business of dishing out money." The World Bank's International Development Agency (IDA) continued to define itself in terms of volume in 2001: "IDA, as the largest source of concessional assistance to the world's poorest countries, plays a critical role in their efforts to achieve growth and poverty reduction." A World Bank (2001a) publication, "Ten Things You Never Knew About the World Bank," advertised ten accomplishments of the organization—and all ten involved volumes of assistance for different purposes.

The stress on aid disbursements is understandable given the peculiar nature of the aid mechanism. The beneficiaries are supposed to be the poor of the world, who have little voice in their own governments, much less in the high-income country governments who control the aid agencies. One has little or no feedback from the intended beneficiaries whether aid is in fact raising productive capacity. Moreover, the high-income country governments may have many different objectives for their aid besides poverty reduction, such as rewarding allies, promoting donor country exports or fighting drug trafficking. Multiple objectives often work against each other and weaken each other, so that aid may end up serving none of its multiple goals especially well.

Figure 2
Aid and Growth in Africa
(10-year moving averages)



The governments of the poor countries, through which the aid is directed, often have little incentive to raise the productive potential of the poor, especially when doing so might engender political activism that threatens the current political elite. The aid agencies themselves in this difficult environment do not have much incentive to achieve results, since the results are mostly unobservable. One can hardly monitor growth itself for a given country for a given year, since growth in any given year or even over a few years reflects too many other factors besides aid. In these circumstances, it is understandable the aid agencies prefer to emphasize an observable indicator of effort—namely, aid disbursements.

Even when economic performance is clearly deteriorating despite important and rising aid, as in the case of Africa illustrated in Figure 2, the aid bureaucracies try to finesse the issue by promising that better times are "just around the corner." The World Bank, for example, has been singing this refrain about Africa for over two decades. From a 1981 World Bank report, *Accelerated Development in Sub-Saharan Africa* (p. 133): "Policy action and foreign assistance . . . will surely work together to build a continent that shows real gains in both development and income in the near future." From a 1984 World Bank report, *Toward Sustained Development in Sub-Saharan Africa* (p. 2): "This optimism can be justified by recent experience in Africa . . . some countries are introducing policy and institutional reforms." From a 1986 World Bank report, *Financing Growth with Adjustment in Sub-Saharan Africa* (p. 15): "Progress is clearly under way. Especially in the past two years, more countries have started to act, and the changes they are making go deeper than before." From a 1989 World Bank report, *Sub-Saharan Africa: From Crisis to Sustainable Growth* (p. 35): "Since the mid-1980s Africa has seen important changes in policies and in economic performance." From a 1994 World Bank report, *Adjust-*

ment in Africa (p. 3): "African countries have made great strides in improving policies and restoring growth." From a 2000 World Bank report, *Can Africa Claim the 21st Century?:* "Since the mid-1990s, there have been signs that better economic management has started to pay off." From a 2002 World Bank press release on *African Development Indicators*, "Africa's leaders . . . have recognized the need to improve their policies, spelled out in the New Partnership for African Development (NEPAD)."

In this dicey policy environment, the aid agencies derived great comfort from research results like those of Burnside and Dollar (2000) that appeared to show aid disbursements achieving growth, after controlling for policies and other factors. Aid agency management interpreted this study as vindicating the emphasis on aid money disbursed, if only under the right conditions (World Bank, 2002c). Of course, the Burnside and Dollar study offers no broad brush endorsement for a strategy of moving aid money.

Selectivity in Foreign Aid

The new theme in foreign aid, inspired in part by the work of Burnside and Dollar (2000), is greater selectivity. Aid should be directed to where it can do good.

Indeed, in some cases foreign aid has been strikingly successful. For example, the World Bank's $70 million loan to the Ceara state government in the Brazilian northeast concluded in June 2001. The loan facilitated innovative government-led initiatives in land reform, rural electrification and water supply and a fall in infant mortality. There are countrywide success stories like Uganda, with heavy involvement by the World Bank and other aid agencies. Earlier success stories associated with aid included South Korea and Taiwan. There are also sectoral success stories, like the elimination of smallpox, the near elimination of river blindness, family planning and the general rise in life expectancy and fall in infant mortality, in which foreign assistance played some role.

However, there are also numerous examples of aid failing. Ferguson (1994) describes a Canadian aid project to help farmers in the mountains of Lesotho gain access to markets and develop modern methods of livestock management and grain production. The problem was that the beneficiaries mainly depended on migration to jobs in South Africa, and they already had access to markets where they had long since learned that grain production was not competitive given the region's poor agricultural conditions. The main long-run effect of the project seemed to be the building of roads that brought grain from South Africa *into* the region—driving the few existing local farmers out of business. An even more dispiriting example is the $45 million World Bank Roads Rehabilitation and Maintenance Project in Sierra Leone, disbursed in the middle of brutal civil war during 1998–2001. About 33 percent of the credit went to compensate contractors for lost time and destruction of their civil works. The rationality of financing infrastructure that was simultaneously being destroyed by rampaging armies is not immediately apparent.

How can scarce aid resources be directed away from less successful projects

and toward those more likely to succeed? Aid agencies have two broad sets of tools for this task: imposing conditions on loans before they are granted and evaluating the effect of loans after they are completed. Virtually all observers of aid agencies agree that they allocate too little effort either to insuring that loan conditions were actually observed or to later evaluation of loan effectiveness.

Conditionality

Aid agencies often place conditions on loans and aid (the distinction between aid loans and aid grants is not very meaningful for low-income countries because the loans are heavily subsidized, so I will use "loans" and "aid" interchangeably here). These conditions typically include macroeconomic stability (low-budget deficits and inflation), noninterference with market pricing, privatization of state-owned enterprises and openness to international trade. However, the agencies then often provide additional future loans with little regard for the performance on previous loans. This problem arises for both the World Bank and the International Monetary Fund. The IMF likes to stress that it is not an aid agency. However, in low-income countries, especially in Africa, the IMF has delivered concessional loans on a sustained basis, part of which loans were later forgiven, which is observationally equivalent to delivering "aid" to these nations.

There was no progress on economic reform indicators from one adjustment loan to the next in the same country (Easterly, 2002; Van de Walle, 2001). A common reason for aid to be given even after conditions are violated is that with high political instability, a new government took power and was given a clean slate by the aid agencies. But there are a number of cases where aid was given repeatedly even to the same government in the same country. For example, World Bank reports on Kenya repeated a recommendation for increased funding for road maintenance in 1979, 1983, 1989, 1994, 1996 and 2000. A World Bank (1998) report noted that in Kenya, "the World Bank provided aid to support identical agricultural policy reforms five separate times." Yet the IMF and World Bank gave Kenya 21 adjustment loans during 1980–2000, all under the same regime of President Daniel Arap Moi. President Moi of Kenya got one conditional aid loan each from the World Bank and IMF in the year 2000, despite his poor track record and the new emphasis on selectivity.

Indeed, aid agencies have been repeatedly promising to be more selective for quite a while. Four decades ago, President John F. Kennedy (Message to Congress, April 2, 1963) described: "objective No. 1: To apply stricter standards of selectivity . . . in aiding developing countries." The attempt to foster "structural adjustment," including "structural" reforms such as removing price controls and macroeconomic "adjustments" such as reducing budget deficits, in the developing countries in the 1980s and 1990s was about directing aid money selectively to countries that met conditions of having good policies. The new selectivity is supposed to be about rewarding countries that reform on their own, in contrast to structural adjustment that is now alleged to have imposed reforms on countries. In

both cases, aid and concessional loans are selectively available to countries that meet conditions, so if any practical difference exists, it is extremely subtle.

But the fundamental problem remains that both the success of past aid to follow conditions and the failure of past aid to follow conditions are both taken as justifications for future aid. For example, in 2002, a World Bank task force made recommendations on how to direct aid to states convulsed by predatory autocrats and corruption (the World Bank euphemism was "low income countries under stress"). In other words, a nation will selectively receive aid if it is a "good performer"—unless it is a bad performer, in which case it will receive aid from the "bad performer" fund. In these circumstances, the imposition of conditions is no more than a wistful hope, rather than a policy with consequences.

Evaluation

Despite the potential benefits of learning from past experience, aid agencies seem reluctant to promote honest evaluations that could lead to publicity about failures. Aid agencies typically give low priority to evaluating projects after completion. The World Bank reviews only 5 percent of its loans after three to ten years following the last disbursement for development impact (Meltzer Commission, 2000). Even these evaluations are based in part on self-evaluations by the staff in charge of the original projects and their implementing agencies, are done on a paltry budget, and are often sanitized as they are reviewed by management. The World Bank has done surveys of borrowing governments since the mid-1990s on how the bank has performed from the governments' point of view, but the bank has declined to make these surveys public, and there seems to be little mechanism for having managers learn from them (Wade, 2001).

Since what evaluation does take place uses reports from the very people who implemented the project, there are disconnects like that delicately described in OECD and UNDP (1999, p. 26) on Mali:

> [I]t has to be asked how the largely positive findings of the evaluations can be reconciled with the poor development outcomes observed over the same period (1985–1995) and the unfavourable views of local people. Gauging the degree to which project objectives are achieved during the actual project period clearly fails to give a proper reflection of the lasting impact on standards of living.

Although I have concentrated here on World Bank experience because of my familiarity with its operations, this focus should not be taken to suggest that the World Bank compares poorly with other official aid agencies. U.N. agencies working on development issues do not have a stellar record; they often appear to spend most of their energies on large international summits that accomplish little beside preparing for further summits. Nor should nongovernmental organizations be automatically assumed to be superior to official aid agencies. There is virtually no systematic evaluation of projects by nongovernmental organizations, and they face

some of the same incentives as official agencies to emphasize observable effort rather than focus on less observable results.

Increasing evaluation of the aid agencies need not be especially costly. In some cases, it may involve little more than specifying concrete and measurable objectives (not the dispersal of money) in advance. In other cases, case study information can be made available to outside scholars. In particular, aid agencies have almost never engaged in controlled experiments of particular interventions, despite the small amounts required relative to loan volume. The development literature has increasingly stressed scientific evaluation of interventions through controlled experiments. For example, Duflo (2001) studied an Indonesian school construction initiative that had a quasi-randomized design allowing scientific evaluation. She was able to derive estimates of the effect of school construction on learning and wages. Likewise, Kremer and Miguel (forthcoming) analyzed randomized controlled trials of treatment of intestinal parasites (worms) in school children. They found positive effects on children's school performance of a deworming program. Interventions whose value is confirmed by scientific evaluation are far from being the missing panacea, but it is clear that this kind of scientific rigor has been much too slow to find its way into the aid agencies.

In 1998, as part of legislation authorizing additional funds from the U.S. government to the International Monetary Fund, the U.S. Congress set up an advisory commission, chaired by Alan Meltzer, to consider the future roles of several international financial institutions. One of the recommendations of the Meltzer commission was that aid agencies like the World Bank undergo an independent evaluation (International Financial Institution Advisory Commission, 2000). Despite the good sense of this recommendation, it has yet to happen, maybe because the bank management feels it is being singled out. Perhaps aid agencies should collectively agree to an "Evaluation Compact" in which they all agree to an independent evaluation of their effectiveness.

The results of such evaluations could shed light on what makes aid institutions work well or less well, a subject on which there is surprisingly little knowledge after five decades of foreign aid. Aid agencies face a peculiar incentive problem: they spend one group of people's money on a different group of people. The intended beneficiaries have almost no voice in how the money is spent. There has been surprisingly little research thinking about how to design proper incentives for aid agencies to achieve results in this situation, as well as how the aid agencies can design contracts to create good incentives for recipients. Such research would likely involve principal-agent theory, organization theory, game theory and political economy.

A Realistic Vision for Foreign Aid

How to achieve a beneficial aggregate impact of foreign aid remains a puzzle. Aid agencies should set more modest objectives than expecting aid to "launch the

takeoff into self-sustained growth." Aid agencies have misspent much effort looking for the Next Big Idea that would enable aid to buy growth. Poor nations include an incredible variety of institutions, cultures and histories: millennia-old civilizations in gigantic China and India; African nations convulsed by centuries of the slave trade, colonialism, arbitrary borders, tropical diseases and local despots; Latin American nations with two centuries of independence and five centuries of extreme inequality; Islamic civilizations with a long history of technical advance relative to the West and then a falling behind; and recently created nations like tiny East Timor. The idea of aggregating all this diversity into a "developing world" that will "take off" with foreign aid is a heroic simplification. World Bank President James Wolfensohn (2001) talked in 2001 about how "we" must act to achieve the goal of "ensuring a beneficial globalization" by doubling foreign aid. President George W. Bush said in his announcement of increased aid in March 2002: "We must include every African, every Asian, every Latin American, every Muslim, in an expanding circle of development." In virtually no other field of economics do economists and policymakers promise such large welfare benefits for modest policy interventions as "we" do in aid and growth. The macroeconomic evidence does not support these claims. There is no Next Big Idea that will make the small amount of foreign aid the catalyst for economic growth of the world's poor nations.

The goal of having the high-income people make some kind of transfer to very poor people remains a worthy one, despite the disappointments of the past. But the appropriate goal of foreign aid is neither to move as much money as politically possible, nor to foster societywide transformation from poverty to wealth. The goal is simply to benefit some poor people some of the time.

If some of the flaws noted in this article can be corrected, the international aid agencies could evolve into more effective and more accountable agencies, much as national governments in the now-rich countries gradually evolved from gangs of venal scoundrels to somewhat more effective and accountable civil servants (with plenty of further evolution still desirable in both cases!). In any case, improving quality of aid should come before increasing quantity. This step is difficult but not impossible.

I recently made a trip to Ethiopia, where amidst other business, I visited a project of a British aid organization called Water Aid, which receives funds from official aid agencies. Water Aid has put in a water pipe to carry clean water from springs on top of the mountains bordering the Great Rift Valley to villages down in the Valley. The project was run entirely by Ethiopians, with representatives from the villages on the board of the agency. At a bustling water tap in one village, the villagers watered their cattle and collected drinking water for a nominal fee paid to Water Aid, to be used for maintenance of the system. Previously, the villagers had walked every other day two miles to collect water from a polluted river that transmitted disease. Children had been kept out of school, farmers kept out of farming, all to pursue the all-consuming and back-breaking task of fetching water. With the new water pipe, life was better. I don't know if this experience is replicable on a broader scale or even if this anecdote of Water Aid offers any insight into how

to make aid more effective. But I am glad that some aid dollars can reach some very needy people some of the time.

Appendix
Alternative Definitions of Aid, Policies and Growth

This appendix presents the results of running certain key regressions in the analysis of Burnside and Dollar (2000) with different definitions of aid, policies and growth. For full definitions and discussions of the variable used, see either the original paper or Easterly, Levine and Roodman (2003), which also discusses how to add to and extend the original data.

An Alternative Definition of Aid and Defining the Variables

For Appendix Table 1, the dependent variable is per capita growth of GDP, from World Bank (2002d). The first column repeats the results of Burnside and Dollar (2000), using their Effective Development Assistance (EDA) definition of foreign aid. Data on EDA is available from Chang, Fernandez-Arias and Serven (1998) for years from 1975 to 1995. Values from 1970–1974 and from 1996–1997 were extrapolated based on the correlation of EDA with Official Development Assistance or ODA. This data was converted to 1985 dollars with World Import Unit Value index from IMF (2002, series 75).

The second column of Appendix Table 1 shows the same regression, but this time using data on Official Development Assistance, available from DAC (2002), as the definition of foreign aid. Notice that the interaction term on aid and policy is no longer statistically significant. The third column of Appendix Table 1 provides an alternate specification from the Burnside and Dollar (2000) paper, this time using a two-stage least squares approach where the political-strategic variables are used as instruments for aid. Again, the interaction term of aid and policy is not statistically significant.

The remaining independent variables in Appendix Table 1 (and in the tables that follow) are defined as follows.

Initial per capita GDP is taken from Summers and Heston (1991) and then updated using the per capita growth figures. This variable is measured as a natural logarithm of the figure in 1985 dollars.

The data for ethnic fractionalization comes from Easterly and Levine (1997). It measures the probability that two random individuals will belong to different linguistic groups.

Data on assassinations is from Banks (2002) and is adjusted per million population.

Institutional quality is measured by the PRS Group's IRIS III dataset as described in Knack and Keefer (1995). It is based on 1982 values, which are the

Appendix Table 1
Testing the Robustness of Panel Regressions to Alternative Definition of Aid
(dependent variable: per capita growth, Burnside and Dollar data and sample, 1970–1993)

Sample	*All Developing Countries*	*All Developing Countries*	*Low-Income Countries*
Regression	*Regression 5, OLS*	*Regression 5, OLS*	*Regression 8, TSLS*
Right-Hand Side Variable:	*Using Burnside-Dollar Definition for Aid*	*Using Net ODA for Aid*	*Using Net ODA for Aid*
Aid/GDP	−0.021	0.156	−0.104
	(−0.13)	(0.49)	(−0.2)
Aid/GDP[a] policy	0.186	0.188	0.32
	(2.61)[c]	(1.3)	(1.31)
Log initial GDP	−0.6	−0.778	−0.488
	(−1.02)	(−1.46)	(−0.47)
Ethnic frac.[a] assassinations	−0.424	−0.4	−0.478
	(−0.57)	(−0.51)	(−0.48)
Assassinations	−0.449	−0.416	−0.786
	(1.68)[a]	(−1.51)	(1.65)[a]
Ethnic[a] assassinations	0.792	0.788	0.866
	(1.74)[a]	(1.72)[a]	−0.87
Sub-Saharan Africa	−1.872	−2.285	−2.166
	(−2.41)[b]	(−3.28)[c]	(−2.99)[c]
Fast-growing E. Asia	1.307	1.047	1.211
	(2.19)[b]	(1.81)[a]	(−1.57)
Institutional quality (ICRGE)	0.687	0.749	0.858
	(3.90)[c]	(4.29)[c]	(4.10)[c]
M2/GDP lagged	0.012	0.011	0.024
	(0.84)	(0.77)	(1.37)
Policy	0.712	0.855	0.736
	(3.63)[c]	(4.12)[c]	(1.61)
Observations	270	266	181
R-squared	0.39	0.42	0.47

Robust t statistics in parentheses.
[a] significant at 10 percent.
[b] significant at 5 percent.
[c] significant at 1 percent.
Constant term and period dummies not reported.
Notes: In the first two columns, Burnside and Dollar argued for the exclusion of five outlying data points in their equation 5 that were distant from the main body of the data. I follow them in this exclusion for the purposes of strict comparison with their results. Low-income countries were those with per capita income less than $1900.
Sources: The ODA data come from the World Bank compilation of Chang, Fernandez-Arias and Serven (1998), IMF (2002) and DAC (2002).

earliest available (although the Burnside-Dollar paper says that it uses 1980 values). It is computed as the average of five variables.

As a measure of the financial depth of an economy, it is common to use M2/GDP, in this case lagged one period. The data is from World Bank (2002d).

Dummy variables are included for certain regions, including sub-Saharan

Africa as defined in World Bank (2002d) and also for east Asia, which in this case, includes only China, Indonesia, South Korea, Malaysia, Philippines and Thailand.

The data for budget surplus/GDP is primarily from the World Bank (2002d), although some additional values are extrapolated from IMF (2002), using series 80 and 99b (which is the local currency budget surplus) and GDP.

Inflation is from World Bank (2002d), and it is measured as the natural logarithm of 1 plus the inflation rate.

The Sachs and Warner (1995) index of policy effectiveness was extended to 1998, and slightly revised pre-1993.

An alternative measure of policy effectiveness is the weighted average of the balanced budget, inflation and Sach-Warner variables.

Alternative Definitions of Good Policy

Appendix Table 2 examines alternative definitions of good policy. The first column uses the black market premium and the measure of M2/GDP to create an index of policy effectiveness, but leaves out the Sachs-Warner definition. The second column adds the change in trade share to the policy index in the first regression. The last two columns again use these alternative measures of sound policy, but instead of using an ordinary least squares approach, they use a two-stage least squares approach. The coefficients on the interaction of aid and policy effectiveness are not significant in any of these approaches.

Alternative Time Frames for Economic Growth

Appendix Table 3 examines alternative definitions of economic growth, achieved by varying the blocks of time. Burnside and Dollar grouped their data into four-year blocks. The first three columns use an ordinary least squares regression and time periods of eight, 12 and 24 years; the remaining columns repeat this exercise using a two-stage least squares regression. In only one case is the interactive term on aid and policy statistically significant. Further, as noted in the text, when this exercise is repeated with the expanded dataset from Easterly, Levine and Roodman (2003), none of the interactive aid-policy coefficients are significant regardless of what blocks of time are used.

Appendix Table 2

Testing the Robustness of Panel Regressions to Alternative Policy Definitions

(Burnside and Dollar dataset and sample, 1970–1993, dependent variable: per capita growth)

Sampling Universe	*Only Low-Income Countries, Outliers Omitted*			
Burnside-Dollar Regression	*Regression 5, Ordinary Least Squares*		*Regression 8, Two-Stage Least Squares*	
Right-Hand Side Variable:	*Substituting Black Market Premium and M2 for Sachs-Warner*	*Adding Change in Trade Share to Policy Index in Previous Regression*	*Substituting Black Market Premium and M2 for Sachs-Warner*	*Adding Change in Trade Share to Policy Index in Previous Regression*
Aid	−0.007	−0.086	−0.262	−0.203
	(−0.04)	(−0.54)	(−0.87)	(−0.81)
Aid[a] policy	0.092	0.111	0.21	0.112
	(0.82)	(1.41)	(1.11)	(0.81)
Log initial GDP	−0.786	−1.337	−0.383	−1.044
	(−1.38)	(−2.86)[c]	(−0.50)	(−1.63)
Ethnic frac.[a] assassinations	−0.061	0.15	−0.105	0.281
	(−0.08)	(0.19)	(−0.12)	(0.31)
Assassinations	−0.193	−0.074	−0.477	−0.276
	(−0.68)	(−0.26)	(−0.88)	(−0.52)
Ethnic[a] assassinations	0.277	0.1	−0.191	−0.613
	(0.56)	(0.20)	(−0.17)	(−0.57)
Sub-Saharan Africa	−1.97	−2.49	−2.126	−2.426
	(−2.49)[b]	(−3.43)[c]	(−2.71)[c]	(−3.13)[c]
Fast-growing E. Asia	1.894	1.387	2.055	1.637
	(3.11)[c]	(2.22)[b]	(3.34)[c]	(2.56)[b]
Institutional quality (ICRGE)	0.679	0.722	0.821	0.842
	(3.64)[c]	(3.67)[c]	(3.63)[c]	(3.54)[c]
Policy	0.738	0.853	0.425	0.813
	(2.77)[c]	(3.35)[c]	(0.95)	(2.07)[b]
GDP growth lagged		0.063		0.053
		(0.86)		(0.62)
Observations	270	264	180	177
R-squared	0.35	0.43	0.4	0.46

Robust t statistics in parentheses.

Sources: The data on black market premiums are from World Bank, Global Development Network Growth Database, available at ⟨http://www.worldbank.org/research/growth⟩; Black Market Premia (various months); International Monetary Fund (various years); and Global Currency Report (various years). The change in trade shares is from an updated version of Summers and Heston (1991).

Appendix Table 3

Testing the Robustness of Panel Regression to Different Period Lengths

(dependent variable: per capita growth, Burnside-Dollar data and sample, 1970–1993)

Sampling Universe	*All Developing Countries, Outliers Omitted*			*Only Low-Income Countries, Outliers Omitted*		
Burnside-Dollar Regression	*Regression 5, Ordinary Least Squares*			*Regression 8, Two-Stage Least Squares*		
Right-Hand Side Variable:	*8 Year Periods*	*12 Year Periods*	*24 Year Period (Pure Cross-Section)*	*8 Year Periods*	*12 Year Periods*	*24 Year Period (Pure Cross-Section)*
Aid	−0.278	−0.117	−0.212	−0.292	−0.223	−0.026
	(−1.60)	(−0.69)	(−1.16)	(−1.10)	(−0.68)	(−0.09)
Aid[a] policy	0.178	0.069	0.051	0.148	0.147	−0.036
	(2.17)[b]	(0.72)	(0.43)	(0.97)	(0.74)	(0.16)
Log initial GDP	−1.516	−0.862	−0.842	−1.746	−0.721	−1.133
	(−3.78)[c]	(−1.81)[a]	(−1.48)	(−2.52)[b]	(−0.98)	(−1.37)
Ethnic frac.[a] assassinations	−0.672	−0.176	−0.083	−0.805	0.297	0.523
	(−0.83)	(−0.17)	(−0.08)	(−0.80)	(0.26)	(0.52)
Assassinations	−0.368	−0.254	−0.099	−0.826	−0.298	−0.172
	(−1.23)	(−0.89)	(−0.28)	(−2.28)[b]	(−0.47)	(−0.42)
Ethnic[a] assassinations	0.394	0.431	−0.348	0.308	−0.549	−1.793
	(0.77)	(0.62)	(−0.42)	(0.24)	(−0.33)	(−1.02)
Sub-Saharan Africa	−2.28	−1.937	−1.98	−2.271	−2.489	−2.964
	(−3.27)[c]	(−2.36)[b]	(−2.26)[b]	(−2.62)[b]	(−2.63)[b]	(−3.52)[c]
Fast-growing E. Asia	0.91	1.222	1.146	0.983	1.596	1.141
	(1.39)	(1.72)[a]	(1.36)	(1.03)	(1.75)[a]	(0.96)
Institutional quality (ICRGE)	0.663	0.679	0.46	0.704	0.83	0.569
	(3.86)[c]	(3.63)[c]	(2.42)[b]	(2.99)[c]	(3.24)[c]	(2.26)[b]
M2/GDP lagged	0.041	0.046	0.049	0.057	0.052	0.057
	(2.25)[b]	(2.05)[b]	(1.49)	(2.22)[b]	(1.74)[a]	(1.38)
Policy	0.752	0.848	0.829	0.941	0.566	1.066
	(3.49)[c]	(3.03)[c]	(2.06)[b]	(1.76)[a]	(0.80)	(1.17)
Observations	142	97	52	99	67	37
R-squared	0.58	0.6	0.7	0.62	0.66	0.78

Robust t statistics in parentheses.

[a] significant at 10 percent; [b] significant at 5 percent; [c] significant at 1 percent.

Constant term and period dummies not reported.

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