

AID, ECONOMIC FREEDOM, AND GROWTH

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Foreign aid has often been intended by donors to entice recipient nations into policy and institutional reforms favorable to private sector economic development. In this study, we investigate the relationship between aid and changes to economic freedom in recipient nations over the 1990–2000 decade. The evidence is mixed. In general, we find that foreign aid has no significant effect on economic freedom overall. However, using a hedonic approach on the different categories of economic freedom, we find that aid has still managed to contribute toward a policy and institutional environment favorable to growth, as the different categories of economic freedom improved by aid more than offset those which are harmed by aid, in terms of their impact on growth. (JEL 010, 019)

I. INTRODUCTION

Donors have multiple objectives in providing foreign assistance to poor countries. Aid is motivated in part by donors' foreign policy objectives; for example, much U.S. aid goes to Egypt and Israel to maintain peace in the region. Aid is also motivated by commercial concerns and is often granted conditional on the funds being used to purchase goods or services from firms in the donor country. Whether or not aid is successful in achieving these objectives can be assessed relatively easily. It is more difficult to determine aid's effectiveness in attaining other objectives, however, such as democracy promotion, building institutional capacity, market liberalization, and economic growth. One must control for numerous other determinants and correct for the possibility that aid is endogenously determined.

The bulk of the evidence suggests skepticism concerning donors' ability to influence these processes to a substantial degree in most developing countries through aid programs. Evidence is mixed on links between aid and

growth, and there is certainly no robust positive relationship, even for countries with better institutional and policy environments (Easterly, Levine, and Roodman, 2004; Ovaska, 2003). Boone (1996) found that aid did not increase investment or benefit the poor as measured by human development indicators but that it did increase the size of the government. Using the Freedom House and Polity democracy indexes measured over long periods of time, Knack (2004) finds that aid has no impact on democratization in developing countries. Even worse, higher aid levels are associated with significantly larger declines in institutional capacity over time, using measures of corruption, bureaucratic quality, and rule of law from the International Country Risk Guide (Knack, 2001). Both these studies correct for the possibility of reverse causation, as aid spuriously could appear ineffective if donors tend to direct it toward countries with deteriorating conditions. In fact, that is not how most donors allocate aid, and two-stage least squares tests confirm that the exogenous component of aid—aid predicted by country size, initial levels of infant mortality, literacy, and so forth—is associated with declining quality of governance and is unrelated to democratization (Knack, 2001, 2004).

More recently, foreign aid has often been intended by donors to entice recipient nations into policy and institutional reforms favorable

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ABBREVIATION

IMF: International Monetary Fund

to private sector economic development. Several studies have recently shown that increases in “economic freedom” contribute positively to national growth (Adkins, Moomaw, and Savvides, 2002; Dawson, 1998; Gwartney, Lawson, and Holcombe, 1999). Aid, therefore, can be used as a means to further the end of growth, if donors are successful in using it as a carrot to induce market-oriented reforms. Aid could sometimes have unintended and less favorable effects on economic freedom, however. Friedman (1958) long ago argued that because most foreign aid goes to governments, it tends “to strengthen the role of the government sector in general economic activity relative to the private sector.” The availability of aid funds can further rent-seeking activity (Bauer, 1984) or serve to bail out governments from crises that might otherwise be forced to adopt liberalizing reforms (Rodrik, 1996).

In this study, we investigate the relationship between aid and changes to economic freedom in recipient nations over the 1990–2000 decade. The evidence is mixed. We find that aid does not significantly increase economic freedom overall. A similar conclusion is reached by Boockmann and Dreher (2003) in the case of International Monetary Fund (IMF) and World Bank loans. However, when we disaggregate economic freedom into five separate categories, we find that they have differing effects on growth. Arguably, if growth is the ultimate objective of aid, analyses of aid’s impact on economic freedom should differentiate among the five categories by the strength of their links to growth. Adopting the hedonic approach conducted by Heckelman and Stroup (2000), we find some evidence that donors have been lucky: although foreign aid has no significant effect on economic freedom overall, aid has still managed to contribute toward a policy and institutional environment favorable to growth, as the categories of economic freedom improved by aid more than offset those which are harmed by aid, in their impact on growth.

Still, our results are not a ringing endorsement to increase aid levels. Improvements in economic freedom can be valued for their own sake, as economic rights and opportunities are often viewed as an integral part of fundamental human rights (Messick, 1995). In this regard, aid has not been successful. In fact, depending on the period analyzed and

the instruments used to correct for potential endogeneity of aid, some tests show that aid may significantly reduce economic freedom overall (Heckelman and Knack, 2008; Vasquez, 1998).

II. CHANGES IN ECONOMIC FREEDOM AND GROWTH

Several organizations have developed measures of economic freedom. The most comprehensive set was developed by the Fraser Institute (Gwartney and Lawson, 1997). The current version of this index measures the relative amount of economic freedom in five distinct categories or “areas”: Size of Government (Area 1), Legal Structure and Property Rights (Area 2), Sound Money (Area 3), Exchange with Foreigners (Area 4), and Regulation (Area 5). Each rated nation receives a score from 0 (low) to 10 (high) based on various component and subcomponent rankings in each area. The freedom index represents the average value of the five area scores.

Several studies analyzed the relationship of (earlier versions) of this index to growth, but more recent studies have shown *changes* in the index value to be more important than the *level* of the index in explaining cross-country variation in economic growth (Dawson, 1998; Gwartney, Lawson, and Holcombe, 1999). In particular, de Haan and Sturm (2000) perform robustness tests and find that changes in economic freedom are “robust,” while the level of economic freedom is “fragile” in explaining growth. One problem with relying on these results is that the change in freedom and growth are often measured over the same time period, so the change in freedom may be endogenous. Indeed, Dawson (2003) finds that several of the index components are Granger-caused by growth, while other components of the index Granger-cause growth.

To avoid the endogeneity problem, we regress growth per capita on lagged values of the change in the freedom index. Our growth measure represents the percent change in per capita national income in purchasing power parity terms from 1990 to 2000, taken from the World Bank. We use the 2002 version of the index of economic freedom and calculate the change in the index values from 1980 to 1990. Our complete data set includes 73 aid-recipient nations with available data on one or more of the five areas of economic

freedom. Because certain nations are missing data on various areas, the change in index value will not be consistently measured across countries. Therefore, we limit our growth regression sample to those nations having a value for each of the five areas in both 1980 and 1990. This leaves us initially with 47 nations.

As controls, we include other standard variables often used in the neo-classical growth literature stemming from Barro (1991). Each variable enters the regression with its 1990 value. The initial level of income is included to capture the catch-up effect since growth is easier to sustain starting from lower levels. The relative degree of democracy afforded the citizenry is also included, but the expected sign for this is ambiguous. Although greater democracy is more inclusive, it may also reflect greater opportunities for rent seeking (Cheung, 1998). Results in past studies run the gamut from positive to negative to insignificant impacts on growth (see Barro, 1996, for a survey of the democracy-growth literature).¹ We use the measure of democracy compiled by *Freedom House*, which represents the average of their political rights and civil liberties rankings. The scores run from 1 (high) to 7 (low) on their scale and, as is customary in growth studies, we invert the scale so that higher numbers represent greater democratic freedom. The investment to gross domestic product ratio, taken from the World Bank, is included as several studies have found this to be a significant positive contributor to growth. Education rates, as a proxy for human capital, and child mortality rates, each taken from the World Bank, are expected to contribute positively and negatively to growth, respectively. Finally, we include a series of dummies to capture the colonial heritage of each nation.²

Regression results are presented in Table 1, using weighted least squares analysis to correct for heteroskedasticity associated with differences in country size (population). We find that the change in economic freedom index variable has a positive and statistically significant coefficient for this sample of aid recipi-

ents, consistent with many previous studies. The control variables are all statistically significant, except for child mortality. Controlling for the other factors, nations with a higher level of income per capita experienced less subsequent growth. Democracy, as represented by political rights and civil liberties, is associated with higher growth rates. Countries devoting a larger portion of their output to investment grow faster at the margin. Higher educational attainment is also significantly correlated with higher growth.

The statistical significance of the economic freedom change seems to imply that market policy liberalization should be expected to enhance growth. However, certain types of policy reforms may be more important than others for creating the proper environment for economic growth, and using the overall index of economic freedom in place of its various categories may obscure these effects (Carlsson and Lundstrom, 2002; Heckelman and Stroup, 2000).³

To test this notion, we replaced the change in the index with changes to each of the five separate areas comprising the index. This regression is given in the last column of Table 1. We find that four of the areas generate a positive coefficient, and only one of these (Area 2) is not statistically significant at the 5% level. Area 5 (Regulation), however, generates a negative and statistically significant coefficient, which is greater in magnitude than any of the other area coefficients. Furthermore, we cannot even reject the null that the sum of all five area coefficients is equal to 0 ($p = .29$). Thus, an increase in measured freedom for regulation almost fully offsets increased freedom regarding government size, property rights, sound money, and foreign exchange *combined*. Therefore, across-the-board improvements in economic freedom will not have important effects on growth. Instead, if the goal of policy reform is growth, it would appear that market liberalizations should be focused especially in Areas 1, 3, and 4.

1. Some previous growth analyses take the initial values of the Freedom House indexes as we do, while others use period averages or changes over the period, both of which are more subject to endogeneity concerns.

2. Bertocchi and Canova (2002) show that colonial heritage matters for growth, and regional dummy variables lose significance when colonial heritage indicators are added to standard growth regressions.

3. Using the average level of economic freedom (rather than the change in economic freedom) from an earlier Fraser Index with a different taxonomy of component groupings, Carlsson and Lundstrom (2002) find the category representing Freedom to Exchange with Foreigners to be inversely related to growth. Heckelman and Stroup (2000) regressed growth against the starting level of each of the individual components comprising the various areas of the original version of the Fraser Index and found several components to be inversely related to growth.

TABLE 1
Growth Regressions, 1990–2000

Freedom Measure	(1) Average	(2) By Area
Intercept	-5.491 (-2.155)**	-2.102 (-1.189)
Change in economic freedom, 1980–1990		
Index	1.488 (3.257)**	
Area 1		0.996 (6.498)**
Area 2		0.141 (1.101)
Area 3		0.402 (4.375)**
Area 4		0.412 (4.166)**
Area 5		-1.482 (-3.776)**
Control variables, 1990		
Initial gross domestic product	-0.031 (-1.748)*	-0.023 (-2.689)*
Democratic freedom	0.595 (2.612)*	0.806 (4.237)**
Investment	0.099 (2.162)**	0.091 (2.865)**
Education	0.763 (2.567)**	0.253 (1.173)
Child mortality	0.010 (1.275)	-0.004 (-0.755)
Colonial dummies		
Belgium	-7.823 (-4.263)**	-9.543 (-7.279)**
Spain	0.995 (0.987)	-1.053 (-1.008)
France	2.252 (1.133)	2.011 (1.539)
Great Britain	2.130 (1.699)*	0.496 (0.556)
Netherlands	0.815 (0.712)	0.923 (1.203)
Portugal	1.555 (1.201)	-0.923 (-0.745)
United States	-2.680 (-2.375)**	-2.280 (-2.586)**
Never colonized	-0.550 (-0.486)	-2.125 (-2.629)**
Unweighted regression statistics		
R^2	0.682	0.717
Adjusted R^2	0.543	0.535
F statistic	4.912**	3.938**
No. observations	47	47
Mean, dependent variable	3.146	3.146

Notes: Estimation by weighted least squares analysis; t statistics are given in parentheses.

**Significant at 5%; *significant at 10%.

Controlling for changes to the first four areas, more regulation rather than less appears to be beneficial for growth, for this sample of aid-recipient countries. This interpretation is broadly consistent with Heckelman and Knack (2008) who also found a negative and statistically significant effect from Area 5 on growth, using initial values of the economic freedom areas and no additional controls beyond initial income level.⁴

III. THE EFFECT OF AID ON ECONOMIC FREEDOMS

Given this empirical relationship between changes to economic freedom and growth, we next investigate how aid impacted the

4. However, conclusions regarding the impact of Areas 2 and 4 would differ.

change in economic freedom. There are few previous studies of this issue. Vasquez (1998) reports that changes in aid tend to be inversely correlated with changes in the Fraser Index of economic freedom: where aid is rising (falling), economic freedom tends to fall (rise). He does not control for other determinants of economic freedom. Boockmann and Dreher (2003) regress the various individual components of the Fraser Index on World Bank and IMF aid, and a set of control variables. The aid variables are generally insignificant. When they are significant, they are about equally likely to have a positive or negative coefficient. Heckelman and Knack (2008) find that aid levels are inversely correlated with changes in the Fraser Index, but the statistical significance of this effect is only revealed when using an instrumental variables routine.

TABLE 2
Impact of Aid on Economic Freedom Change, 1990–2000

Economic Freedom Measure	(1) Equal Weights	(2) Hedonic Growth, Coefficient Weights	(3) Hedonic Growth, <i>t</i> Statistic Weights
Intercept	4.161 (6.376)**	1.871 (1.099)	3.477 (4.437)**
Aid, 1990–2000	–0.002 (–0.101)	0.281 (2.712)**	0.057 (1.778)*
Growth, 1990–2000	0.177 (2.859)**	0.596 (2.041)**	0.237 (2.593)**
Initial economic freedom level, 1990	–0.728 (–6.370)**	–0.484 (–3.377)**	–0.606 (–5.126)**
R^2	0.396	0.147	0.304
Adjusted R^2	0.367	0.107	0.271
F statistic	15.037**	9.452**	13.157**
No. observations	68	68	68
Mean, dependent variable	0.909	2.042	1.167

Notes: Estimation by two-stage least squares regression; *t* statistics are given in parentheses.

**Significant at 5%; *significant at 10%.

To supplement these studies, we initially regressed the change in the economic freedom index from 1990 to 2000 against the initial level of the economic freedom index in 1990, growth from 1990 to 2000, and aid averaged over 1990–2000.⁵ Because aid and growth are measured during the concurrent period of the index change, it is possible that they are endogenously determined, as aid may be targeted based on improvements or failings in policy reform (Heckelman and Knack, 2008). We therefore use as instruments for aid and growth the initial level of the economic freedom index and the control variables and colonial dummies presented in the growth regressions from Table 1.

To determine whether aid tends to increase or decrease economic freedom overall, we first used the standard economic freedom index that weights equally each of the five areas for which data are available. Because we are now using later dates for the change in economic freedom, the data are more complete. Our sample consists of the 68 nations that have values in all five areas for both 1990 and 2000. As reported in the first regression column in Table 2, we find that aid has a slightly negative but statistically insignificant impact on the change in economic freedom. In addition, we find evidence of a strong “catch-up”

5. Aid is measured by “official development assistance,” which includes grants, and loans with a grant element of more than 25%, as reported by the Organisation for Economic Co-Operation and Development’s Development Assistance Committee. These aid data are then normalized as a percentage of each country’s gross national income.

effect in economic freedom, as those with higher initial index values show smaller subsequent improvements (or a larger decline) in their average freedom score. Economic freedom also appears to be a normal good, as economies that grow faster have greater improvements in freedom.

Consistent with previous studies, aid appears to be an ineffective means of leveraging market-liberalizing policy reforms, as measured by the overall index of economic freedom. To the extent that freedom is valued not only for its own sake but also for its expected contribution to growth in poor nations, an important question worth pursuing is whether aid encourages reform in those areas of economic freedom that are most strongly linked to growth. As is shown in Table 1, consistent with previous studies, not all freedoms are beneficial to growth. The success or failure of aid, then, depends in part on its relationship to increasing economic freedom in those specific areas most beneficial to growth. To test this notion, we created a hedonic index with weights derived from the growth-freedom regression in Table 1.⁶ First, we weighted each of the five area values by its estimated coefficient from the growth regression; accordingly, Area 1

6. The Pacific Research Institute (2004) uses a hedonic regression to impute the weights for one version of its economic freedom index of the U.S. states. They regress each state’s net migration rate against the economic freedom components, assuming a Tiebout model of sorting so that the hedonic weights represent proxies for how important each type of freedom is to the individuals’ decision on where to live.

(Size of Government) had the largest positive weight and Area 5 (Regulation) received a large negative weight. In order to make the magnitudes more comparable to the original index, we rescaled the coefficient weights by dividing through by the sum of the coefficients so that the new weights sum to 1. Because the hedonic index does not contain strictly positive weights, its interpretation changes. Higher values for the index do not always correspond to greater economic freedom, as lower scores to Area 5 would entail a higher index value. Because the hedonic weights were derived specifically from each area's relationship to growth, this new index represents a scale of *growth-enhancing policies and institutions*, which in the cases of Areas 1–4 is associated with more freedom, but in Area 5 with less freedom.⁷

Our weighting scheme implies that if aid led to across-the-board equal declines in every area, this would not appreciably harm growth since the reductions in Area 5 are sufficiently beneficial to almost fully offset the harm done from reductions in the other four areas. In fact, as shown in the middle column of Table 2, we find that aid leads to a positive overall change in this hedonic index. Thus, although we previously found that aid did not typically benefit economic freedom on average, we do find that its effect on growth-enhancing policies and institutions is positive. In addition, there is evidence for regression to the mean on this index as well, and the effect from growth on changes to this index remains strongly significant.

Another hedonic weighting scheme would entail using the t statistics rather than the coefficients from the same growth regression (Heckelman and Stroup, 2000). The advantage to using t statistics is that the weights combine information from both the point estimate of an area's contribution to growth and

the error distribution on the estimated marginal impact. Thus, *ceteris paribus*, marginal impacts that are estimated more precisely obtain greater weights in absolute value. Under this scheme, according to our estimated t statistics in Table 1, the weights do not sum to anywhere near 0, so across-the-board equal changes to each area will significantly alter the index score. The signs of the weights stay the same (positive for Areas 1–4 and negative for Area 5), but the relative magnitudes are appreciably affected. Area 1 now receives the largest total weight. Again, we rescale the weights so they sum to 1.

The final column in Table 2 presents aid regressions using the hedonic index with weights derived by the estimated t statistics reported in Table 1. Similar to the other hedonic index, we find that aid promotes favorable changes in the index of growth-enhancing policies and institutions, but the level of confidence in this result falls appreciably. Again, while aid has no effect on overall economic freedom, when the latter is disaggregated into five distinct areas, aid (perhaps fortuitously) tends to increase the freedoms that contribute to growth and/or to detract from the freedoms with a weak or negative relation to growth. Finally, we again find evidence for regression to the mean for this hedonic index, and growth once again is found to strongly positively impact changes to the index value. Thus, controlling for the starting index score and aid levels, greater growth leads to further improvements in this hedonic index, which was constructed in a way that higher index scores should translate to further growth. Improvements to growth-enhancing institutions lead to more growth, which in turn leads to further improvements to the same growth-enhancing institutions.

IV. DISCUSSION

Economic freedom not only has long been viewed in certain circles as having an intrinsic value all its own but has also increasingly been valued more recently as an important means to development and growth, rather than purely as an end in itself. We find that variations in aid levels (averaged over the 1990s) are unrelated to changes in the broadest measure of economic freedom from 1990 to 2000 among aid recipients. Donors' aid programs on average appear to be ineffective in

7. By construction, this hedonic index of economic freedom will be more strongly correlated with growth than the equal-weighted economic freedom index and is intended here solely for testing the impact of aid on an index of policies and institutions empirically shown to be relevant for growth. It would be inappropriate to use this new index for making additional inferences about the impact from greater economic freedom across all five areas on growth (Heckelman and Stroup, 2002, 2005; Sturm, Leertouwer and de Haan, 2002). Also note that we are using a different sample period and set of nations in Table 2 than in Table 1 from which the weights were constructed.

encouraging general market-oriented institutional and policy reform across the board.

In focusing on the growth objective, however, and disaggregating the overall index of economic freedom into its five major areas, we find some positive evidence for aid's effects. Specifically, aid levels are positively related to improvements in a hedonic index, which assigns greater positive weights to those areas of economic freedom that are more strongly linked to growth and lower or negative weights to the areas weakly or negatively correlated to growth. It is implausible of course to imagine that donors are aware of the fortuitous fact that aid seems to encourage the types of reform that appear in recent years to have had the largest growth impacts and to discourage reforms that have had negative growth impacts.

Coupled with our other studies, the overall evidence on the impact of aid programs, on the quality of governance (Knack, 2001), democracy (Knack, 2004), and economic freedom (Heckelman and Knack, 2008), suggests that donors should have modest expectations regarding their influence over political and economic reforms in poor countries and that they should experiment on a small scale with various approaches, with a view toward gradually accumulating knowledge on what if any interventions might be effective in inducing favorable reforms.

Still, the limited (or even adverse) effects of donors' country programs on economic and political reform do not necessarily imply that they deserve no credit for substantial advances by developing countries in recent decades.⁸ The international financial institutions and other donors arguably have contributed to the spread of market-oriented reforms through provision of intellectual public goods that do not take the form of country-specific aid. For example, the World Bank is the single largest producer and distributor of advocacy pieces for market-oriented policy and institutional reforms, in its annual World Development Report, periodic Policy Research Reports, numerous Policy Research Working Papers,

and other publications. The World Bank and IMF produce much of the data relied on by academic studies demonstrating the links between economic performance and market-oriented policies and institutions—and the IMF is by far the largest source of data used in constructing the Fraser Institute's index of economic freedom.

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8. Between 1980 and 2000, the average Fraser economic freedom rating for developing countries improved by 20%, with increases outnumbering declines by more than 6–1. The average Freedom House ratings of political and civil liberties improved by a roughly similar amount, with cases of increasing freedoms outnumbering declining freedoms by more than 2–1.

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