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Citations:

Bluebook 21st ed.
Tomi Ovaska, The Failure of Development Aid, 23 CATO J. 175 (2003).

ALWD 6th ed.
Ovaska, T. ., The failure of development aid, 23(2) Cato J. 175 (2003).

APA 7th ed.
Ovaska, T. (2003). The failure of development aid. Cato Journal, 23(2), 175-188.

Chicago 17th ed.
Tomi Ovaska, "The Failure of Development Aid," Cato Journal 23, no. 2 (Fall 2003): 175-188

McGill Guide 9th ed.
Tomi Ovaska, "The Failure of Development Aid" (2003) 23:2 Cato J 175.

AGLC 4th ed.
Tomi Ovaska, 'The Failure of Development Aid' (2003) 23(2) Cato Journal 175.

MLA 8th ed.
Ovaska, Tomi. "The Failure of Development Aid." Cato Journal, vol. 23, no. 2, Fall 2003, p. 175-188. HeinOnline.

OSCOLA 4th ed.
Tomi Ovaska, 'The Failure of Development Aid' (2003) 23 Cato J 175

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The Failure of Development Aid

Tomi Ovaska

In the last half century, developed countries have paid increasing attention to the problems of developing countries. Not only has the disastrously low level of economic development in large parts of the world become apparent over time, but also all the undesired side effects of enduring poverty: poor health, widespread diseases, low life expectancy, and the general lack of means of entire nations to deal with basic needs. Wealthy countries do not necessarily have purely unselfish motives when helping poorer countries through financial aid. Part of any aid constantly flows back to donors through highly stipulated procurement contracts. Aid has also increased the potential for donors to buy preferential future treatment for the business firms of their own nationality. Politically, aid can be seen as serving to buy increased international and regional clout through new political allies. Moreover, aid may bring more stability to world affairs, assuming it increases economic growth in recipient countries. Development aid is also seen as a way to advance some core values of the donors.

Despite the steady flow of development aid to poor countries in the last 50 years, the results have been somewhat disappointing, as noted by Bovard (1986), Burnside and Dollar (2000), the World Bank (1998), Vásquez (1998), Easterly (2001), and Easterly and Levine (2001). Even though some countries, notably in East Asia, have managed to break out of poverty, many of the poorest countries have actually seen their real per capita incomes decline since the 1970s. More than one billion people still live on less than $1 a day. Many of the advances in basic health care and education in the last few decades have been negated by the rapid spread of HIV/AIDS, particularly in the world's poorest countries. Given the ineffectiveness of past aid and fiscal constraints the donor countries have faced in the 1990s,

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a type of aid fatigue among the donors has become apparent. The long-term trend of increasing aid disbursements was broken in the mid-1990s, and has given way to a systematic reevaluation of donor-initiated development strategies.

Even if development aid has not been as effective as the international community has wished, world leaders have been consistent in signaling their determination to improve the lot of the poorest countries. The United Nations 2001 conference of 140 world leaders in Monterrey reiterated further support for the Millennium Development Goals—cutting in half the proportion of people living on less than $1 a day, eliminating gender disparity in education, reducing child mortality by two-thirds, and developing a global partnership for development—that are to be achieved by 2015. How are these goals to be achieved? The World Bank offers a two-pronged solution: first, double the current flow of aid to developing countries, and second, make a new commitment to good governance on the part of the recipient countries. In this study, I look at whether an increase in the level of development aid is likely to result in increased growth rates for developing countries and whether the quality of governance affects the results of aid.

Previous Literature on the Effectiveness of Development Aid

Previous literature on development aid has looked at how aggregate flows of aid have affected economic growth of individual countries. Dalgaard, Hansen, and Tarp (2000) summarize the findings from the last 30 years and a total of 131 cross-country studies by noting that aid has increased aggregate savings and investments, though by less than the aid flow itself, and has led to increased economic growth in cases where the lack of capital base was the most important factor in holding back growth. This conclusion, however, sheds little light on how to improve the growth rates in the larger group of aid recipient countries where growth lags below potential.

The most recent econometric studies have concentrated on suggesting alternative ways to reach better results from development aid. For instance, contrary to many previous findings, Boone (1996) found that in a sample of 96 recipient countries, foreign aid did not significantly contribute to investment or economic growth rates, or to an improvement in human development indicators. However, giving aid to politically liberal regimes did seem to lead to lower infant mortality.

In another recent study, Burnside and Dollar (2000) examined the effectiveness of aid in a sample of 56 developing countries. The authors found that aid given to countries with good institutions and policies has a far higher likelihood to affect growth positively than aid given to countries of poor institutions and policies. For this the authors developed their own quality of governance measures—namely, budget surplus, inflation, trade openness, and institutional quality. However, Alesina and Weder (2002) note that there is little evidence that well-governed countries actually receive more foreign aid.

Using the same sample as Burnside and Dollar, Hansen and Tarp (2001) did find a positive relationship between foreign aid and real per capita growth, but also noted, as have Levine and Renelt (1992), that the results are highly sensitive to the choice of regressors and to the econometric models. The governance measures turned out to be significant, but only under conditions the authors deemed highly objectionable.

Measuring Aid and Governance

Compared with previous literature on the effectiveness of development aid, this study uses a more comprehensive governance measure in aid regressions, two alternative data sets on measuring aid disbursements, and country-specific econometric modeling. Gwartney and Lawson (2002) have constructed an Economic Freedom of the World (EFW) index that goes back to the year 1970, and is far more comprehensive than that used by previous studies. Instead of concentrating on only a few policy variables (budget surplus, inflation, trade openness, institutional quality), the EFW comprises 37 variables that fall under five general headings: size of government; legal structure and security of property rights; access to sound money; freedom to exchange with foreigners; and regulations of credit, labor, and business (Gwartney and Lawson 2002: 8–9).

Even though the index by its nature ultimately relies on individual researchers' assessments of the importance of various variables to economic growth, several recent studies—such as Gwartney, Lawson, and Holcombe (1999); Haan and Sturm (1999); Wu and Davis (1999); Heckelman and Stroup (2000); and Ali and Crain (2002)—have confirmed its relevance as an approximate measure for governance and growth. As such, the EFW index is a step forward in measuring the nature of a country's domestic policy environment, and is used in this study to approximate the quality of governance.

When measuring aid flows, most recent studies have used the OECD data set of net Official Development Assistance (ODA), defined as transfers from a donor minus any repayment during a given period. Transfers include any assistance, save military aid, with a grant element of at least 25 percent. However, Chang, Fernandez-Arias, and Serven (1999) argue that the net ODA figures overstate the level of assistance. They propose a new valuation approach: Efficient Development Assistance (EDA), which adjusts for the varying degrees of concessionality in loans, and uses a country-specific discount rate in assessing the value of a transfer. In this study, I use both net ODA and EDA to see whether the choice of data set is critical for the regression results.

Econometrically, I use a two-stage, least-squares fixed effects (FE) model. Contrary to the conventional OLS-based aid studies, my model allows for country-specific effects in capturing variation across countries and time shifts in the regression function.[1] Since aid is likely to be an endogenous variable on the right-hand side of the regression, an aid policy function was also used.[2]

The Model and Empirical Results

The data sample covers 86 developing countries and the years 1975–98. The 24 years are divided into five periods: 1975–79, 1980–84, 1985–89, 1990–94, 1995–98. Each period consists of the average for those years. The countries are listed in Table 1.

The model is written as

$$(1)\quad \text{growth}_{it} = \alpha + \gamma'(\text{control})_{it} + \beta_1'(\text{aid})_{it} + \beta_2'(\text{aid}^{*}\text{policy})_{it} + \beta_3'(\text{aid}^2)_{it} + \varepsilon_{it},$$

the first-stage equation being

$$(2)\quad \text{aid}_{it} = f(z_{it}),$$

where z refers to the instrumental variables.

[1]The FE model was chosen over the random-effects model based on the Hausman statistic. The likelihood ratio test between the one-way and two-way FE model suggested the use of the latter.

[2]The instruments used in the study had the desirable econometric characteristics: high correlation with the regressor, and at the same time no correlation with the error term. The choice of instruments was based both on previous studies and my own previous experience as a development officer in one national aid agency. The main findings of the paper were not affected by the inclusion or exclusion of a few instruments, indicating a reasonable robustness of the results.

TABLE 1

LIST OF COUNTRIES

Albania	El Salvador	Niger
Algeria	Fiji	Nigeria
Argentina	Gabon	Oman
Bahamas*	Ghana	Pakistan
Bahrain*	Guatemala	Panama
Bagladesh	Guinea-Bissau	Papua New Guinea
Barbados	Guyana	Paraguay
Belize	Haiti	Peru
Benin	Honduras	Philippines
Bolivia	Kong Kong*	Rwanda
Botswana	India	Senegal
Brazil	Indonesia	Sierra Leone
Burundi	Iran, Islamic Rep.	Singapore*
Cameroon	Israel*	Slovenia*
Central African Republic	Jamaica	South Africa*
	Jordan	Korea, Rep.
Chad	Kenya	Sri Lanka
Chile	Kuwait	Tanzania
China	Madagascar	Thailand
Colombia	Malawi	Togo
Congo, Dem. Rep.*	Malaysia	Trinidad and Tobago
Congo, Rep.	Mali	Tunisia
Costa Rica	Malta	Turkey
Cote d'Ivoire	Mauritius	Uganda
Croatia*	Mexico	United Arab Emirates*
Cyprus*	Morocco	Uruguay
Dominican Republic	Namibia*	Venezuela
Ecuador	Nepal	Zambia
Egypt, Arab Rep.	Nicaragua	Zimbabwe

*EDA not available.

The dependent variable in the model is *real GDP growth per capita*. Descriptions of the independent variables follow.[3]

Initial level of GDP per capita (log, in real $) measures the conditional rate of convergence of the economy to its long-run position. Based on the neoclassical growth model, the coefficient of the initial GDP should be negative, that is, the higher the initial income level the slower the growth.

[3]The choice of variables was based on the following studies on economic growth: Ali and Crain (2002); Barro (1997); Burnside and Dollar (2000); Gwartney; Lawson, and Holcombe (1999); and Carlsson and Lundström (2002).

Population growth (%) decreases the share of capital per worker and is therefore expected to slow economic growth. This effect may be reinforced by the fact that additional productive resources are redirected for child care.

Government consumption (as a % of GDP) approximates the public-sector spending that does not contribute to an increase in nation's productivity. Thus, this measure is always less than total government expenditure. An increasing government consumption is associated with higher tax rates and lower work incentives for the population.

Human capital: (a) Secondary education (as a % of relevant age group) measures the level of human capital that raises the skill level of population and, therefore, total productivity; (b) Life expectancy (log, in years) reflects the general health status of population, a larger number signaling a higher likelihood for economic growth.

Investment (as a % of GDP) is one of the principal components of the neoclassical growth theory. A higher investment ratio increases the amount of capital per worker and, therefore, total productivity and economic growth.

Economic Freedom of the World (EFW) index (on a scale of 0 to 10) approximates the level of freedom in a society as measured by the levels of personal choice, voluntary exchange, competition, and protection of person and property. A higher index number is associated with better governance and potentially higher economic growth.

Inflation (GDP deflator, %) measures change in annual price level. High rate of inflation is associated with uncertainty that makes it difficult for individuals to calculate the net benefits of any given economic activity in the future. In an environment of high and unpredictable inflation, people are more likely to refrain from potentially productive projects.

Foreign aid: (a) Official Development Assistance (ODA, as a % of GDP), and (b) Efficient Development Assistance (EDA, as a % of GDP), according to neoclassical growth theory, are expected to raise the level of savings in society, and through investment increase the level of economic growth. However, foreign aid may also crowd out domestic investment, decrease work effort, and if tied to unproductive projects, may actually lead to slower growth.

Instruments for foreign aid: In taking into account the potential endogeneity of foreign aid in the regressions, the following variables are used to explain the flows of aid: (a) income per capita (in $) at the beginning of each period; (b) total population (in millions of inhabitants); (c) infant mortality (deaths before the age of one, per thousand); and (d) illiteracy rate (as a % of adult population).

The following data sources were used: *World Development Indi-*

cators (World Bank 2001, 2002) for all variables except the EFW index, which is from Gwartney and Lawson (2002), and EDA, which is from Chang, Fernandez-Arias, and Serven (1999). Data on ODA are taken from both the WDI and *International Development Statistics* (OECD 2001).

Table 2 presents the empirical findings of the study. Regressions (1) and (2) use basic OLS without group dummy variables.[4] The results from the two OLS regressions yielded somewhat different results. The initial level of GDP per capita, life expectancy, investment and economic freedom of the world all turned out to be of the expected sign and significant in explaining economic growth. Inflation and government consumption were also significant in one of the two regressions. For inflation, the significance was probably due to the ODA data set that included a few observations with inflation rates in the thousands. When the outliers were purged, inflation actually became less significant without affecting the significance of any other variable. Interestingly, all three aid variables—aid as a % of GDP, aid interacted with freedom index, and aid squared—were insignificant, the only exception being aid squared in the EDA data set. The two OLS regressions were able to explain about 35 percent of the variation in the data set.

Regressions (3) to (10) use an FE model with group dummy variables and period effects. Regressions (3) and (4) use full samples with no parameter restrictions. In regressions (5) and (6) countries that are one standard deviation or more below sample mean of the EFW index are excluded. This tests whether excluding relatively poor governance countries from the sample would have a positive effect on aid effectiveness. Regressions (7) and (8) exclude only the very poorest governance countries—the limit being two or more standard deviations from the sample mean. Here another restriction was set for initial income. Countries considered had to have an initial income of less than $2,200 per capita. Since the range of income in the sample varied widely, this restriction was created to ensure that the sample contained countries in approximately the same development phase. Finally, regressions (9) and (10) removed the restrictions on the economic freedom of the world variable, but doubled the income allowed

[4]The limited availability of the EFW index observations for the period in the mid-1970s caused the data sets to be unbalanced. However, even when it would have been straightforward to extrapolate the missing observations, this was not done. Since variation in the EFW index not only can be fairly large but also unpredictable in direction for five-year averages, it was considered better to omit some observations rather than introduce potential bias to the sample.

TABLE 2

ESTIMATES OF THE 1975–98 REAL GDP PER CAPITA EQUATIONS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Constant	−16.09**	−16.75**	92.87**	7.20	95.38*	6.86	37.13	60.84	105.0**	31.71
	(1.43)	(2.53)	(2.03)	(0.26)	(1.68)	(0.24)	(0.64)	(1.41)	(2.15)	(0.87)
Initial level of GDP per capita	−0.81**	−0.80***	−10.5***	−6.33***	−9.79***	−6.06***	−10.3***	−10.1***	−12.0***	−8.05***
	(2.41)	(3.05)	(5.47)	(4.00)	(4.34)	(4.47)	(4.64)	(4.67)	(5.41)	(2.95)
Population growth	−0.26	−0.78***	−0.30	0.36	−0.51	0.19	−0.30	0.47	−0.26	0.60
	(1.04)	(4.30)	(0.08)	(1.14)	(0.86)	(0.52)	(0.58)	(1.00)	(0.62)	(1.53)
Government consumption	−0.11***	−0.37	−0.21**	−0.12*	−0.26	0.17	−0.11	−0.99	−0.23***	−0.18**
	(2.64)	(1.16)	(2.51)	(1.79)	(1.39)	(1.50)	(1.11)	(0.86)	(2.62)	(2.40
Secondary education	−0.36	−0.10	0.10***	0.41	0.16**	0.91*	0.10**	0.12**	0.11***	0.81**
	(0.24)	(0.09)	(2.82)	(1.44)	(2.40)	(1.96)	(2.09)	(2.33)	(2.71)	(2.15)
Life expectancy	3.75*	4.75***	−8.52	6.82	−10.05	5.08	2.24	−2.58	−8.78	3.70
	(1.65)	(2.67)	(0.93)	(1.43)	(0.80)	(0.91)	(0.18)	(0.32)	(0.92)	(0.69)
Investment	0.25***	0.18***	0.35***	0.18***	0.36***	0.16***	0.35***	0.34***	0.34***	0.25***
	(8.12)	(7.30)	(7.30)	(4.07)	(5.21)	(3.03)	(6.04)	(5.55)	(7.52)	(4.94)
Economic freedom of the world (EFW) index	0.86***	0.46**	1.53***	1.06***	1.56	1.93**	2.60***	1.36*	1.44***	0.47
	(3.09)	(2.24)	(2.03)	(2.62)	(1.47)	(2.23)	(2.30)	(1.68)	(3.23)	(1.40
Inflation	−0.76	−0.12***	−0.12**	−0.13***	−0.35	−0.66	−0.56	−0.12***	−0.97*	−0.12***
	(1.42)	(3.80)	(2.07)	(3.91)	(1.17)	(0.03)	(0.52)	(3.14)	(1.73)	(3.37)
Aid (ODA)	—	0.42	—	0.84**	—	1.13	—	0.93**	—	0.15
		(0.24)		(2.53)		(1.13)		(1.99)		(0.50)
Aid (ODA) × EFW	—	0.36	—	−0.79*	—	−0.81	—	−0.19***	—	—
		(0.01)		(1.79)		(0.56)		(2.92)		
Aid^2 (ODA)	—	−0.17	—	−0.25***	—	−0.43**	—	−0.19**	—	−0.20***
		(0.90)		(3.16)		(2.50)		(2.18)		(2.97)
Aid (EDA)	0.43	—	0.32	—	1.42	—	1.34**	—	−0.17	—
	(1.62)		(0.72)		(0.86)		(2.16)		(0.69)	

Aid (EDA) × EFW	-0.72	—	-0.66	—	-0.22	—	-0.23°°	—	—	—
	(1.60)		(0.87)		(0.82)		(1.98)			
Aid^2 (EDA)	-0.90°°	—	-0.39°°°	—	-0.65°°°	—	-0.30°°	—	-0.34°°°	—
	(2.25)		(3.93)		(3.00)		(2.60)		(3.57)	
N	235	328	235	328	146	219	174	214	221	278
Adjusted R^2	0.36	0.35	0.65	0.58	0.63	0.55	0.65	0.57	0.66	0.59

NOTES: Dependent variable: annual real GDP growth per capita. Equations (1) and (2): OLS without group dummy variables. Equations (3)–(10): 2SLS fixed effects (FE) model with group dummy variables and period effects. Absolute t-values in parentheses: °°° denotes significance at the 1 percent level, °° at the 5 percent level, and ° at the 10 percent level. Instruments for aid: income per capita at the beginning of each period, population, infant mortality, and illiteracy rate.

in the sample. The new limit was set to an annual income of $4,400 per capita, above which countries were not considered.

Compared with OLS, the FE model significantly boosted the explanatory power of the model: adjusted R^2 now ranging from 55 to 66 percent. Initial level of GDP per capita and investment were consistently very important in explaining economic growth, with the EFW index and secondary education not far behind in importance. Government consumption, depending on the regression, was occasionally significant, and negative.

The effect of aid on growth can be calculated by taking a partial derivative of equation (1) with respect to aid:

$$(3) \quad \delta(\text{growth})/\delta(\text{aid}) = \beta_1 + \beta_2 * (\text{policy}) + 2\beta_3 * (\text{aid}).$$

Substituting significant coefficients and sample averages (see Table 3) to the partial derivative equation above yields an average of -3.65 for FE regressions (3)–(10), the range being from –6.11 to –2.56. What this means is that on average a 1 percent increase in aid as a percentage of GDP in the sample decreases annual real GDP per capita growth by 3.65 percent.[5] Thus, the finding indicates that decreasing the level of development aid may actually have a beneficial effect on growth. One can try to explain this finding in various ways.

For instance, if new aid is likely to flow to countries with poor economic performance, aid dependency, a disincentive to self-improvement, may be created. If alternatives for a recipient nation are (a) to get free aid if no extra economic effort is made, or (b) to get no aid if extra economic effort is made, then rational individuals and governments may in some circumstances well decide to forgo the extra effort option. If option (a) is accepted, and the aid is allocated to inefficient uses—perhaps because of a corrupt recipient government, or because the donor has restricted (tied) the use of the aid—then it is possible that the recipient nation would be worse off with the outside help. This logic is reminiscent of that by Devarajan, Dollar, and Holmgren (2001), Vásquez (1998), and Kornai (1992).

Furthermore, contrary to the results of Burnside and Dollar (2000), it seems to matter very little in terms of economic growth whether aid is given to countries with good governance, institutions, and policies, or not. Even though it seems plausible that aid given to countries with good governance would yield better results than aid

[5]Even though initial GDP per capita was used to control for the fact that aid may flow to countries with the poorest economic performance, additional tests were also performed. The results from Granger causality tests, with both one and two period lags, were inconclusive, though.

TABLE 3

DESCRIPTIVE STATISTICS

Variable	Mean	Std. Dev.	Minimum	Maximum	Cases
Real GDP per capita growth (average annual % change)	1.15	3.50	-11.51	13.55	413
Initial Level of GDP per capita (in log dollars)	7.15	1.28	0.86	10.54	415
Population growth (average annual % change)	2.32	1.31	-6.19	16.13	435
Government consumption (% of GDP)	14.41	6.19	1.41	48.06	409
Secondary education (% of age group)	43.41	25.30	0.00	100.0	403
Life expectancy (in log years)	4.09	0.19	3.53	4.37	434
Investment (% of GDP)	21.94	7.71	3.58	52.43	416
Economic Freedom of the World index (scale: 0–10)	5.35	1.10	1.77	9.06	382
Inflation (GDP deflator, %)	70.31	434.6	-3.41	6,962	419
Aid (ODA) (% of GDP)	5.44	7.82	0.00	55.36	435
Aid (ODA) × EFW	26.75	34.04	0.00	171.5	382
Aid^2 (ODA)	90.69	287.1	0.00	3,064	435
Aid (EDA)	4.37	6.02	-0.08	39.07	287
Aid (EDA) × EFW	20.21	25.42	-0.47	123.2	252
Aid^2 (EDA)	55.19	162.3	0.00	1,526	287
Population (in millions)	40.03	144.4	0.14	1,225	435
Infant mortality (per thousand live births)	33.49	11.08	0.00	56.88	434
Illiteracy rate (% of adult population)	33.36	23.51	0.40	93.02	420
GDP per capita (in dollars)	2,949	4,542	119.0	34,517	414

NOTE: All results based on nonmissing observations—86 countries.

given to countries with poor governance, dropping the aid-interacted-with-governance variable actually increased the explanatory power (as measured by adjusted R^2) of the model.

Interestingly, in the 3 out of 10 cases in which the aid-interacted-with-governance term was statistically significant, it always had a *negative* sign. One possible explanation for the finding could be that donors may feel freer to attach strings to aid to countries with good governance then to countries with poor governance, that is, stipulations are more likely to be attached and enforced when donors feel a higher level of confidence that the stipulations will be followed by the recipient. Again, if these stipulations redirect recipient's scarce resources into relatively inefficient uses, economic growth could be negatively affected.

Finally, the use of alternative aid data sets—EDA and ODA—yielded essentially the same results. This is hardly surprising since the correlation coefficient between these sets was very close to one for comparable sets. Even though EDA by construction probably ought to be the preferred choice in aid regressions, the closeness of the results also means that the results from aid studies before 1998 and the EDA data set may still be reasonably comparable with results from newer studies that use EDA.

Conclusion

This study examined the effect of development aid on economic growth for the years 1975–98. The sample covered up to 86 developing countries, used two alternative data sets for aid, and compared with previous studies of aid effectiveness, used a more advanced measure of the quality of governance.

Contrary to some previous findings in the development aid literature, the results from the fixed effect (FE) model with group dummy variables and period effects indicated a *negative* relationship between development aid and economic growth. In particular, it was found that a 1 percent increase in aid as a percent of GDP decreased annual real GDP per capita growth by 3.65 percent.

Furthermore, aid given to countries with a better quality of governance was not found to improve the effectiveness of aid, contrary to the suggestion in Burnside and Dollar (2000). Indeed, it was suggested that their results may emanate from the negative effects of aid on work effort and from the stipulated end uses of aid, which may lead to misallocation of scarce resources in the recipient country.

Overall, the results of this study do not provide support for the notion that international development aid—at least as in practice

between 1975 and 1998—helps developing countries to higher growth trajectories. The study also pointed out that the level of governance as measured by the EFW index was a considerable factor in explaining growth in the sample. *This was not the case when it was coupled with development aid.* Thus, the current role of western governments is not easily justifiable if the objective of aid disbursement is to foster economic growth. This does not, of course, exclude any other rationale that may be behind development aid, such as providing humanitarian aid in case of emergencies. However, if the objective of development aid is to foster growth, the current donor governments may be well advised, as the importance of the economic freedom index in the regressions suggested, to move their development policy focus from cash grants to programs that help create sound institutional environments in recipient countries. Helping and encouraging developing countries to create business environments that are compatible with free markets is a promising and a potentially cost-effective way to unleash the individual effort and creativity in those countries.

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