

Foreign Aid and Market-Liberalizing Reform

By JAC C. HECKELMAN[†] and STEPHEN KNACK[‡]

[†]*Wake Forest University, Winston-Salem, NC* [‡]*World Bank*

Market-oriented economic policies have been strongly linked to faster rates of economic growth. Foreign aid is often provided in part to encourage market-oriented reforms. We analyse the impact of aid on market-liberalizing policy reform, correcting for its potential endogeneity. Results indicate that higher aid slowed reform over the 1980–2000 period, as measured by a broad index of policies. Disaggregating policy into five areas, aid is associated with slower reform in some policy areas but not in others. Disaggregating by decade, the adverse impact of aid on policy reform is much more pronounced for the 1980s than for the 1990s.

INTRODUCTION

Foreign aid often is intended by donors to improve the policy environment for private-sector development in recipient nations by encouraging market liberalization. Several authors have argued, however, that aid can perversely delay or even reverse policy reform (e.g. Rodrik 1996; Kapur and Webb 2000). This study attempts to provide a more comprehensive test of the policy impact of aid, using summary measures of market-oriented economic policies and institutions. Donors' aid allocations may intentionally favour recipients with better (or improving) policies; alternatively, donors may respond to economic or humanitarian crises, produced or aggravated by poor policies, by increasing aid flows. Our tests therefore correct for the likely endogeneity of aid. Results indicate that on balance aid significantly retards rather than encourages market-oriented policy reform over the 1980–2000 period. This main finding comes with several important qualifications, however. Dividing the sample of aid recipients geographically, aid is associated with slower policy reform in sub-Saharan Africa but not elsewhere. Disaggregating economic freedom into five broad policy areas, we find that aid slows reform in some areas but not in others. Disaggregating by decade, we find that the negative effects of aid are much stronger in the 1980s than in the 1990s.

Section I of the paper briefly establishes the importance of market-oriented policies and institutions by reviewing evidence on their links to growth. Section II summarizes arguments and evidence on the effect of foreign aid on policy reform. Section III describes the data used in the empirical analysis, and the results are presented in Section IV. Implications of our findings are discussed in Section V.

I. MARKET LIBERALIZATION AND GROWTH

Various studies have analysed the growth effects of selected aspects of market-oriented public policies, including the security of property rights (Knack and Keefer 1995; Claessens and Laeven 2003), openness to trade (Sachs and Warner 1995; Frankel and Romer 2000), low inflation (Fischer 1993; Barro 1997), government expenditures and debt (Barro 1991; Easterly and Rebelo 1993), and labour and product market regulation (Loayza *et al.* 2005). Multi-dimensional indicators of market-oriented policies have been used in other growth studies, for example Burnside and Dollar (2000), who construct a

policy index from data on the budget surplus, inflation and the Sachs–Warner openness dummy. An even broader index of market-oriented policy, developed by the Fraser Institute (Gwartney and Lawson 2004), has been used extensively in empirical studies of growth. Fraser’s economic freedom index (EFI) is based on numerous specific policy indicators, which are grouped into several categories, then weighted to create an overall index value. As shown in detail by de Haan *et al.* (2006), the content of the EFI closely matches the ‘Washington Consensus’ (Williamson 2000) set of market-oriented policy prescriptions often associated with the World Bank, the International Monetary Fund and the US Treasury Department’s Office of International Affairs.

Some scholars have questioned the validity of a single index comprised of such potentially disparate measures. Leschke (2000) identifies two factors representing ‘degree of political interventions in the market’ and ‘appropriate framework of the market’. Heckelman (2000) claims that the index mixes ‘institutional settings’ and ‘macroeconomic outcomes’. De Haan *et al.* (2006) suggest that some components are better characterized as ‘institutional measures (“rules of the game”)', whereas others have more of a policy character (“the outcomes of the game”)). Furthermore, they also argue that in their view some of the individual measures considered by Fraser do not truly represent economic freedom. Given the connection of the index measures to the Washington Consensus, they suggest that an alternative, more neutral, terminology could simply be ‘market liberalization’.

Despite their misgivings on the potential shortcomings regarding the Fraser index, de Haan *et al.* (2006) conclude that ‘the index is both reliable and useful. Moreover the construction of the index makes it possible to disaggregate it and analyse the different categories and variables separately.’ This latter point is particularly relevant, because their survey of empirical studies reveals that, while the level and/or change in the Fraser index is consistently found to be positively related to growth, some of these same studies find that not all of the different measures comprising the Fraser index have significant effects on growth.

One objective of foreign aid is to encourage market-oriented reforms that encourage growth. In contrast to the literature on market-oriented policies and growth, evidence on the impact of aid on policies is relatively sparse. The remainder of this paper investigates this question using the Fraser index, taking into account the finding from the growth studies using this index that some policy areas may matter more than others. When analysing the index, therefore, we also disaggregate it into its different areas.

II. AID AND MARKET-ORIENTED POLICY REFORM

Aid can affect policies in several ways. First, aid relationships typically create opportunities for donor staff to offer policy advice, either informally or in the form of technical cooperation.¹ Although knowledge of the theoretical and empirical arguments for market-oriented policies is a non-excludable public good, aid relationships are nevertheless likely to increase the exposure of government officials in developing countries to this knowledge. Moreover, detailed policy advice and technical assistance is often required to help apply this knowledge, e.g. in the case of legal and judicial reform.

Second, in recent years some donors have allocated aid on the principle of selectivity, i.e. favouring recipients that have already achieved a more favourable policy environment for growth. Most notably, the World Bank’s International Development Association (IDA) lends about \$7 billion per year to its poorest members on highly

concessionary terms, with allocations based in large part on the Bank's assessments of the quality of policies and public sector management. The US Millennium Challenge Account is similarly based on a system for assessing the policies and institutions of poor countries, with the aim of directing aid to governments that 'rule justly, invest in their people, and encourage economic freedom'.² Selectivity of this sort can increase the incentives of developing-country governments to implement market-oriented reforms, in order to increase their aid allocations. The prospect of increased aid encourages reform, resulting in actual aid increases.

A more traditional approach often associated with the international financial institutions (IFIs) is policy conditionality, often attached to 'structural adjustment' loans. A consensus has emerged in recent years that conditionality of this type has been ineffectual (Easterly 2005; Kapur and Webb 2000; World Bank 1998; Collier 1997). If countries have to be bribed to reform in the first place, they have every incentive to implement the reforms to the minimum extent necessary to gain release of funds, and then to reverse the reforms—with the possibility of promising these same reforms again in the future in exchange for additional aid. In one frequently cited example, 'during a 15-year period, the Government of Kenya sold the same agricultural reform to the World Bank *four times*, each time reversing it after receipt of the aid' (Collier 1997, p. 60; italics in original). In another, the IMF and World Bank made 22 loans to Pakistan between 1970 and 1997 tied to budget deficit reductions, which repeatedly failed to materialize (Mallaby 2004, p. 182). Several recent World Bank and IMF studies have concluded that policy reform is driven primarily by domestic political economy considerations, and that conditionality is likely to be effective only in the early stages of reform, when it can bolster the position of reform advocates in government (World Bank 2004; Devarajan *et al.* 2001, chapter 1; Ivanova *et al.* 2003).

Often, the logic of adjustment lending is that recipient governments can use aid funds to compensate politically powerful groups who would suffer, at least in the short run, from policy and institutional reforms. Aid can, in effect, purchase their acquiescence to liberalizing reforms, increasing the survival probability of reform-minded governments. However, aid can also help non-reforming governments survive, by reducing the cost of not reforming (Rodrik 1996; Hsieh 2000). By providing an alternative source of revenue, aid can relieve pressure on recipient governments to establish the efficient policies and institutions necessary for attracting private capital (Devarajan *et al.* 2001, chapter 1). The end of US aid—which had been generous in the 1950s—is often credited for the Korean and Taiwanese reforms of the 1960s (e.g. Rodrik 1996; Brautigam 2000).

Aid can have other unintended, adverse, effects on economic policy and public-sector management. Friedman (1958) has argued that, because most aid goes to governments, it tends 'to strengthen the role of the government sector in general economic activity relative to the private sector'. Aid is commonly used for patronage purposes, by subsidizing employment in the public sector, or in state-operated enterprises, as foreign aid can provide funds for government to undertake investments that would otherwise be made by private investors. In Tanzania, for example, large and rising aid levels in the 1970s and 1980s helped sustain large government subsidies to state-owned enterprises and parastatals.

As high aid levels increase the rents available to those controlling the government, resources devoted to obtaining political influence increase; thus, a 'pervasive consequence of aid has been to promote or exacerbate the politicization of life in aid-receiving countries' (Bauer 1984, p. 38). In extreme cases, aid may even encourage coup attempts and political instability, by making control of the government and aid receipts a more

valuable prize (Grossman 1992; Oechslin 2006), with adverse effects for the security of property rights.

Although any negative effects of aid on policies are usually unintended by donors, there are some exceptions. Collier (1997) criticizes the IMF and other donors for insisting in some cases that aid recipients increase their tax revenues, often producing increases in trade taxes and other distortionary forms of mobilizing revenue in countries where the tax base is narrow and administrative capacity is weak.

Previous empirical literature does not provide a clear answer on whether the positive effects of aid on market-oriented policy reform outweigh any negative impacts. Burnside and Dollar (2000) find no relationship in their sample of 56 aid recipients between aid and their policy index. As cited in Collier (1997, p. 57), a World Bank (1994) study of 26 African aid recipients found that in most countries where policies had improved aid levels had fallen, and where policies had worsened aid had increased. 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). Boockmann and Dreher (2003) disaggregate the Fraser index into its various components, regressing them on aid from the World Bank and IMF, and a set of control variables, using a panel of 85 aid recipients from 1970 to 1997. In most cases, aid variables for both of the IFIs are insignificant. For the 1990s, however, the number of World Bank programmes in a country is associated with higher ratings on several freedom components (including black market premium, private ownership rights and viability of contracts), but the amount of World Bank credit is negatively associated with these same components. Knack (2001) finds that countries receiving higher levels of aid over the 1982–95 period tend to experience greater declines in the security of private property, as measured by a rule of law index from the International Country Risk Guide.

These studies either address only limited aspects of market-oriented policies (e.g. Burnside and Dollar 2000; Knack 2001), or cover aid only from certain donors (Boockmann and Dreher 2003), and/or do not correct for potential endogeneity of aid (e.g. Vasquez 1998). The empirical analysis that follows attempts to offer a more comprehensive and rigorous test of the net impact of aid on policy liberalization.

III. DATA AND STATISTICAL METHODOLOGY

The Fraser economic freedom indexes are now updated annually. We use the 2002 revised dataset,³ which includes data on five-year intervals from 1975 to 2000. We use data only from 1980 onward, in part to avoid dropping observations (data are missing for many more countries in 1975), and in part because the emphasis by the IFIs on market-oriented policy reform (including the World Bank's structural adjustment lending) dates to about 1980. We are interested in analysing aid's impact on market-oriented reforms, reflected in changes in economic freedom from 1980 to 2000.

This version of the index has five broad categories or 'areas' of market-oriented policies and institutions: Size of Government (Area 1), Legal Structure and Security of Property Rights (Area 2), Access to Sound Money (Area 3), Exchange with Foreigners (Area 4), and Regulation of Credit, Labour and Business (Area 5). Each of these areas encompasses a variety of individual components which are assigned a score ranging from 0 to 10, with higher values representing greater levels of freedom. Some of the components have several subcomponents. A detailed description of the components and areas comprising this index is given in the Appendix. A score for each of the five areas is

TABLE 1
PAIRWISE CORRELATION MATRIX: CHANGES IN ECONOMIC FREEDOM, 1980–2000^a
(SAMPLE SIZE)

	EFI	Area 1	Area 2	Area 3	Area 4
Area 1	0.55* (71)				
Area 2	0.47* (56)	0.02 (55)			
Area 3	0.74* (73)	0.09 (70)	0.18 (56)		
Area 4	0.55* (69)	0.28* (68)	0.06 (55)	0.14 (69)	
Area 5	0.61* (66)	0.29* (64)	0.06 (50)	0.40* (66)	0.32* (64)

^aArea 1: Size of Government; Area 2: Property Rights; Area 3: Sound Money; Area 4: Openness to Trade and Investment; Area 5: Regulation.

*Significant at the 0.05 level.

calculated by the simple average of its various components. The simple average of the five area values then determines the overall economic freedom index (EFI) value. The five areas are equally weighted, but since they contain different numbers of components a component in an area containing fewer components has greater weight in the final index value. Data are incomplete for some nations. For certain country–year observations data are missing on some components in a particular area, so the area score is calculated using only partial data. For other observations data are missing on all components in an area, so no score for the area can be calculated, and the overall index may represent the average of four instead of all five areas.

In our main sample of 74 countries,⁴ only 49 have values for all five areas in both 1980 and 2000. To produce a consistent measure of change over time, the overall EFI for each country is computed using only those areas and components for which data are available for both 1980 and 2000. For example, Uganda has data on all five areas for 2000, but because it has no data on Area 1 for 1980 we use only the data for Areas 2–5 in computing its EFI change and initial value.⁵

Table 1 makes clear the importance of considering not only the overall index value, but also the separate areas. The correlations among changes in the various areas are modest, varying from 0.02 to 0.32 and averaging only 0.18. Of the ten inter-area correlations, only four are significant at the 0.05 level.⁶ Correlations of changes in each area with changes in the overall EFI range from 0.47 (Area 2) to 0.74 (Area 3).

The average change in the economic freedom index among the 74 developing countries in our study is an improvement of 0.99 on the 0–10 scale, with 13 nations experiencing a net decline in their EFI. Improvements were largest (averaging about 1.5) in Areas 3 (sound money) and 4 (outward orientation), and smallest (about 0.3) in Area 5 (regulation of credit, labour and business). Average changes over time for Area 2 should be interpreted most cautiously: its underlying components (from the International Country Risk Guide and other sources) are mostly subjectively assessed, ordinal-level variables without specified criteria for each ratings level; therefore a rating of 4 (for example) may or may not imply the same level of property rights protection in 1985 as in 2000.

Aid is measured by ‘official development assistance’ (ODA) as a percentage of gross national income (GNI), using data for the years 1980–99 from the World Bank’s *World Development Indicators*, which reports data provided by the OECD’s Development Assistance Committee, and collected in turn from each donor agency. Aid (ODA)

includes grants, and loans with a grant element of more than 25%. This definition excludes most IMF lending, as well as the majority (in most years) of World Bank loan volumes, which goes to middle-income borrowers who are charged near-market rates of interest. Roughly two-thirds of World Bank structural adjustment lending goes to middle-income countries and does not qualify as aid. About one-fourth of World Bank aid to low-income countries is in the form of structural adjustment loans.

Most aid studies (e.g. Burnside and Dollar 2000) measure aid as a percentage of GNI, but some use aid per capita additionally or instead. We follow the majority of studies in using aid as a percentage of GNI, as it better reflects the leverage that donors have with respect to persuading recipient governments and their populations to adopt market-oriented policies. For example, Israel and Jordan each averaged about \$250 per capita in aid in recent decades; but aid averaged less than 2% of GNI for Israel and more than 16% for Jordan. Donors are likely to have far more leverage over policy when their funds account for one-sixth of a recipient's GNI than when they account for one-fiftieth. Aid per capita and aid as a percentage of GNI, each averaged over the 1980–99 period, are correlated in our main sample at only 0.43 (or 0.51, using the log of aid per capita), reflecting the divergence between GNI and population (i.e. some aid recipients have much higher per capita incomes than others). We note below how our results vary if aid per capita is used in the analysis instead of the more appropriate aid-as-a-percentage-of-GNI measure.

Control variables include the initial (1980) economic freedom value, initial income per capita, average annual per capita income growth over the 1980–2000 period (based on purchasing power parity income data from the *World Development Indicators*), linguistic fractionalization and democracy. Initial economic freedom captures any regression-to-the-mean effect, as countries with higher values in 1980 have less room for improvement than those with lower initial values. Higher-income countries may be more prone to reform, for a given level of initial economic freedom. Rapid growth may disrupt, or reflect the absence of, special interests that tend to block reforms. Controlling for income and growth may also capture any tendency for the subjectively assessed components of the index (mainly in Area 2, but also in some other areas) to be inferred in part from observed economic performance. As the vast literature on economic freedom suggests, growth is expected to be endogenous to market-oriented policy reform. We therefore show below how results are affected by excluding growth from the regression.

Linguistic fractionalization is included, using data from Alesina *et al.* (2003), because polarized societies may find it more difficult to implement efficient policy reforms, even in the face of economic crisis (Alesina and Drazen 1991; Easterly and Levine 1997). The linguistic fractionalization index varies from 0 (El Salvador, Haiti, Korea and Rwanda) to 0.9 (Togo, followed closely by Cameroon and Kenya).⁷

We control for the initial level of democracy, and for the change over the period, using data from Freedom House.⁸ Theory and previous evidence do not predict a particular sign on democracy. Giving political voice to broader interests may slow reform in some contexts but speed it up in others. Of their ten African case studies, Devarajan *et al.* (2001, p. 11) note that the 'two strongest reformers—Rawlings [in Ghana] and Museveni [in Uganda]—came to power through military coups'. On the other hand, de Haan and Sturm (2003) find larger improvements in the EF index over 1975–90 where the level of political freedom is greater. Lundström (2005) qualifies this result by finding that the effect of democracy varies by EF area, and Dollar and Svensson (2000) find that democratically elected government increases the likelihood of success for World Bank structural adjustment programmes over the period 1980–95. Democracy as measured by

Freedom House is shown by Burkhart and Lewis-Beck (1994) and Farr *et al.* (1998) to be influenced positively by per capita income. For our sample over the 1980–2000 period, however, growth in per capita income is uncorrelated with the change in democracy (correlation coefficient = -0.04).

Aid, the key independent variable of interest, is potentially endogenous, as donors may direct either more or less aid towards reforming countries. The World Bank's IDA allocations (accounting for about 10% of ODA) are determined in part by internal, subjective assessments of the quality of policies and institutions, which can create a positive bias in the impact of aid on policy liberalization. The OLS coefficient for aid would not only capture the effect of any positive incentive to reform to qualify for an increased allocation, but would also reflect the impact of policy reform undertaken for other reasons (e.g. in response to a crisis, or to the economic success of other reformers) but still rewarded with higher aid. There are several reasons for believing that the positive bias in the aid–reform relationship implied by these allocation systems is minor. First, *allocations* do not always translate one-to-one into aid *commitments*, and commitments in turn do not always translate one-to-one into *disbursements*. Aid in the analysis is measured as actual disbursements. Second, most donors do not place the same emphasis on quality of policies and institutions as the IDA allocation system; and even IDA allocations were not well targeted to recipients with better policies for most of the 1980–2000 period (Easterly 2002; Dollar and Levin 2004). Third, the IDA system rewards countries for a high *level* of policy quality, while our dependent variable is *change* in the quality of policy. In any event, the results reported below are unaffected by subtracting out IDA aid.

There are likely other cases in which donors direct aid towards countries with improving policy environments, including some that tend to follow the World Bank's lead. There are also probably many other cases in which donors focus their aid on countries with poor and/or worsening policy environments, either as an inducement to reform or as a response to humanitarian crises in poorly performing countries.⁹ On balance, it is a matter of conjecture whether the net effect of all sources of bias will be positive or negative.

To correct for endogeneity concerns, we instrument for aid in most of our regressions using two-stage least-squares (2SLS). Initial (i.e. 1980) levels of life expectancy, (log of) population and sectoral composition of the economy (share of value added in manufacturing, and in agriculture) (data from the *World Development Indicators*) serve as exogenous instruments for aid. Lower life expectancy and sectoral composition of the economy are indicators of the level of development and hence of the 'need' for aid as it is likely to be perceived by donors.¹⁰ Population reflects the national prestige interests of donor countries; donors tend to spread their aid across many recipients to establish a presence, just as they have an embassy in every country. This behaviour results in higher aid levels (on a per capita basis or as a share of national income) for smaller countries. Table A1 reports the first-stage regression. The excluded instruments are all significant predictors of aid levels, and collectively they explain a sizeable fraction of variation in aid. As seen by comparing the two columns in the table, the other second-stage regressors explain only 20% of the variation in aid in the absence of the four exogenous instruments; with their inclusion, 67% of the variation in aid is explained.

Table 2 provides summary statistics for the 74 countries included in our base sample; Table A2 lists these countries, and reports for each one the change and initial level of the EFI, and aid as a percentage of gross national income averaged over the 1980–2000 period.

TABLE 2
SUMMARY STATISTICS FOR THE 74-COUNTRY MAIN SAMPLE

	Mean	Std dev.	Min.	Max.
Economic freedom index, change	0.99	1.02	- 2.83	3.45
Economic freedom index, initial	5.00	0.97	1.70	7.31
Aid/GNI (%)	6.55	8.33	0.03	51.16
Growth (%)	0.78	0.22	- 5.36	8.14
Linguistic fractionalization	0.45	0.32	0.0	0.92
Democracy, initial	3.61	1.64	1	7
Democracy, change	0.79	1.69	- 2.5	4.5
GDP ('000), initial	3.52	2.90	0.56	14.83
Life expectancy, initial (yrs)	58.22	9.28	37.71	74.60
Population, initial (m)	39.65	138.34	0.15	981.24
Agriculture, value added (% GDP)	23.45	15.12	0.98	72.03
Manufacturing, value added (% GDP)	15.07	7.80	0.65	40.48

IV. RESULTS

As a preliminary basis for comparison, we first present in Table 3 estimates from OLS regressions in which we do not correct for potential endogeneity of aid. The dependent variable is the change in the overall EFI, representing the average freedom value of the five areas. The coefficient for initial EF is negative and statistically significant, implying that, other things equal, nations with greater initial levels of 'economic freedom' tend to improve less over time, with a nearly three-quarter-point decline for each unit increase in the initial EFI value. Neither initial income nor growth is significantly related to changes in the EFI. Linguistic fractionalization has the anticipated negative sign, but is not significant.

Initial levels of democracy, and its change over time, are positively related to policy improvements, but only the change in democracy is significant. Each one-point improvement in democracy over the period is associated with a one-seventh-point increase in EFI. In the sample, Venezuela and Fiji had the largest declines (2.5 points) in democracy, while Benin experienced the largest increase (4.5 points).

In this OLS regression, which does not correct for endogeneity, aid is negatively but insignificantly related to policy reform. This finding is consistent with most previous literature, which tends to find little relationship between aid and policy reform.

Equations (2) and (3) divide the sample into 28 sub-Saharan African countries and 46 other aid recipients. Africa has been the region showing the weakest progress on development, and is the focus of recent initiatives to forgive debt and expand aid volumes (Easterly and Levine 1997; Commission for Africa 2005). Equation (2) of Table 2 shows that within Africa higher aid tends to be associated with significantly slower policy reform. Each percentage-point increase in aid's share of national income is associated, other things equal, with a reduction in EF of 0.06 point. In other words, a 17 percentage-point increase in aid is associated with a decline of one point on the 10-point EF scale. In contrast, in the non-African sub-sample aid has a positive coefficient, albeit of only half the magnitude (0.03) and only marginally significant.

Equations (4) and (5) split the sample somewhat differently, into high-aid (aid's share of income exceeds 5%) and low-aid countries. Among the 31 high-aid countries the aid coefficient is negative and significant, despite the restricted variation in aid within this

TABLE 3
AID AND CHANGE IN ECONOMIC FREEDOM INDEX, 1980–2000 (OLS REGRESSIONS)

Sample	Equations					
	(1)	(2)	(3)	(4)	(5)	(6)
	Full	AFR	Non-AFR	High aid	Low aid	Full
Constant	4.47 (7.05)	3.89 (2.92)	4.36 (5.91)	5.90 (7.85)	3.01 (4.76)	4.10 (6.94)
Initial EFI value	-0.72 (-6.67)	-0.58 (-3.20)	-0.71 (-5.70)	-1.0 (-7.50)	-0.57 (-5.31)	-0.68 (-6.44)
Initial GDP per capita ('000)	0.02 (0.43)	-0.07 (-1.08)	0.07 (1.54)	0.54 (3.84)	0.10 (1.04)	0.02 (0.43)
Avg. annual growth in per capita income	0.06 (1.09)	0.15 (1.33)	0.03 (0.60)	0.02 (0.26)	0.10 (1.91)	0.76 (1.59)
Linguistic fractionalization	-0.39 (-1.26)	0.18 (0.35)	-0.16 (-0.49)	0.12 (0.29)	-0.20 (-0.62)	-0.23 (-0.68)
Initial democracy	0.08 (1.18)	0.12 (0.74)	-0.02 (-0.21)	-0.06 (-0.67)	0.10 (1.20)	0.10 (1.35)
Change in democracy	0.14 (2.29)	0.08 (0.69)	0.15 (2.60)	-0.06 (-0.79)	0.20 (3.04)	0.15 (2.34)
Aid 1980–99	-0.03 (-1.21)	-0.06 (-2.46)	0.03 (1.89)	-0.05 (-3.07)	0.06 (0.76)	
Aid 1980–89						-0.06 (-2.13)
Aid 1990–99						0.02 (1.04)
<i>N</i>	74	28	46	31	43	74
Mean, dep. var.	0.99	0.81	1.09	0.96	1.01	0.99
Std error of est.	0.73	0.74	0.59	0.57	0.65	0.71
<i>R</i> ²	0.54	0.69	0.67	0.83	0.56	0.58

Note: *t*-statistics below coefficient estimates.

sub-sample. Among the 43 low-aid countries the aid coefficient is large (0.06) and positive, but insignificant.

Again, these results are simply intended to show the association of aid—both its exogenous and endogenous components—with policy reform. If aid tends to be targeted at good performers, these estimates will be biased upward and the true impact of aid on policy reform is more negative than indicated in equations (1)–(5) of Table 3. To the extent that aid is a response by donors to deterioration or crisis, these aid coefficients will be biased downwards and the true impact of aid on policy reform will be more favourable.

Before turning to 2SLS as our main method of correcting for this potential endogeneity, we briefly look at a less formal alternative in equation (6) of Table 3, based on time series variation in the aid data. This equation is based on the full sample as in equation (1), but substitutes two aid variables—aid's share of income in the 1980s, and in the 1990s—for the original aid variable averaged over both decades. The intuition here is that aid is less subject to endogeneity in the earlier half of the period than in the latter half: aid in the 1980s cannot be influenced by policy reform in the 1990s, but aid in the

TABLE 4
AID AND CHANGE IN ECONOMIC FREEDOM INDEX, 1980–2000 (2SLS REGRESSIONS)

	Equations					
	(1)	(2)	(3)	(4)	(5)	(6)
Sample	Full	AFR	Non- AFR	High aid	Low aid	Full
Constant	4.59 (8.56)	3.98 (4.08)	4.57 (7.81)	5.95 (8.96)	3.29 (5.01)	4.53 (8.58)
Initial EFI value	-0.72 (-8.08)	-0.58 (-4.11)	-0.71 (-7.08)	-1.0 (-8.60)	-0.59 (-6.11)	-0.70 (-7.84)
Initial GDP per capita ('000)	0.01 (0.21)	-0.07 (-1.14)	0.05 (1.20)	0.54 (4.08)	0.04 (1.16)	0.01 (0.12)
Avg. annual growth in per capita income	0.45 (1.02)	0.15 (20.0)	0.01 (0.16)	0.01 (0.22)	8.39 (1.66)	0.04 (0.81)
Linguistic fractionalization	-0.40 (-1.39)	0.18 (0.37)	-0.24 (-0.68)	0.12 (0.36)	-0.11 (-0.28)	-0.42 (-1.46)
Initial democracy	0.07 (1.07)	0.12 (0.83)	-0.02 (0.11)	-0.07 (-0.73)	0.10 (1.38)	0.07 (1.0)
Change in democracy	0.15 (2.49)	0.08 (0.81)	0.16 (2.69)	-0.05 (-0.72)	0.19 (2.83)	0.15 (2.49)
Aid	-0.04 (-2.54)	-0.07 (-3.82)	0.01 (0.44)	-0.06 (-4.12)	-0.03 (-0.28)	
Programme aid						-0.08 (-2.39)
<i>N</i>	74	28	46	31	43	74
Mean, dep. var.	0.99	0.81	1.09	0.96	1.01	0.99
Std error of est.	0.73	0.63	0.97	0.50	0.60	0.69
<i>P</i> -value from over-identification test	0.30	0.09	0.69	0.20	0.83	0.21
<i>P</i> -value from <i>F</i> -test of excluded instruments	<0.0001	<0.0001	0.0001	0.0003	0.0002	<0.0001

Notes:

t-statistics below coefficient estimates.

Exogenous instruments for aid include initial-year values of (log) population, life expectancy, agriculture share of GDP and manufacturing share of GDP.

1990s could be influenced by policy reform occurring any time during the 1980–2000 period. In equation (6) aid in the 1980s (i.e. the less endogenous component of aid) has a negative and significant coefficient, while aid in the 1990s has a small, positive and insignificant coefficient. These results are consistent with the view that aid is endogenous to policy reform, and with the hypothesis that on balance, aid tends to slow rather than encourage policy reform.

Table 4 shows results based only on the exogenous component of aid, as estimated from initial levels of population, life expectancy and shares of agriculture and manufacturing in GDP using 2SLS. The aid coefficient is now negative and significant, in contrast to the slightly smaller (in absolute value) and insignificant aid coefficient in equation (1) of Table 3. The OLS coefficient thus appears to incorporate a modest upward (i.e. positive) bias, consistent with the possibility that donors tend to reward better policy performers with more aid.

The aid coefficient in equation (1) of Table 4 implies that each percentage point increase in aid, as a share of national income, slows the improvement in EF by 0.04. Comparing a country receiving virtually no aid (e.g. Korea) to one receiving 25% of its GNI in aid (Nicaragua; Guinea-Bissau is highest at 51%), the former is predicted to improve EFI by a full point more.

Equations (2) and (3) in Table 4 divide the sample into African and non-African sub-samples of aid recipients. The aid coefficient is large, negative and highly significant in the African sub-sample. The aid coefficient for the non-African sample is very small and insignificant, however: the (marginally) significant and positive coefficient of aid in OLS (equation (3) of Table 3) appears to have been produced by reverse causation from policy reform to higher aid levels.

Equations (4) and (5) divide the sample into high-aid and low-aid sub-samples. Aid has a negative and significant impact on policy reform in the high-aid sample, consistent with the OLS finding from Table 3, equation (4). Aid's coefficient is negative in the low aid sub-sample—in contrast to the positive OLS coefficient in Table 3, equation (5)—but is insignificant in either case.

Aid by type

All of the major types of aid—project aid, programme aid and technical assistance—can influence policy reform in favourable or unfavourable ways. However, programme aid (which encompasses 'structural adjustment' programmes) is the type most implicated by discussions on aid and policy reform. Programme aid is more often used as a carrot for reform than project aid and technical assistance, so it may have favourable effects on policy reform obscured by analysing aid measures that include the other types. On the other hand, programme aid as budget support or balance-of-payment support is also more likely than other types of aid to provide highly fungible resources to top officials, enabling them to survive without making otherwise necessary policy reforms.

In principal, we could test separately for the impact of different types of aid: programme, project and technical assistance.¹¹ In practice, high collinearity among the three types makes it very difficult to disentangle these impacts. Programme aid is correlated with both project aid and technical assistance at over 0.8, and the latter two types are correlated at 0.94 in our 74-country sample. Equation (6) of Table 4 substitutes programme aid for aid overall, mirroring the negative and significant coefficient on aid found in equation (1). Substituting either project aid or technical assistance for total aid produces similar results. Including multiple aid variables for any two or more types, however, produces no significant coefficients on any of them. The same holds true if we collapse all aid into just two types, programme aid and non-programme aid. There is one exception: in the high-aid sub-sample, in both OLS and 2SLS tests, programme aid has a negative and significant coefficient and other aid types are insignificant, when multiple aid types are included together in the regressions.

Policy areas

Empirical studies suggest that economic growth is more sensitive to some EF areas than to others (see de Haan *et al.* 2006 and the references therein). To see if the effect of aid varies, Table 5 reports 2SLS estimates, replacing EFI by each of its five policy areas in separate regressions. The over-identification tests (reported in the bottom row of the

table) generally support the validity of the instruments for aid. The exception is the Area 3 (Sound Money) regression.

For Area 1 (Size of Government), aid has a negative and significant coefficient twice as large as in the EFI regression. An increase of 11 percentage points in aid's share of income is sufficient to reduce the Area 1 value by a full point. For Areas 3 (Sound Money) and 4 (Openness to Trade and Investment) aid coefficients are negative and similar in magnitude to that in the EFI regression, but not statistically significant.¹² For Area 5 (Regulation), the coefficient on aid is negative but much smaller. For Area 2 (Property Rights), aid's coefficient is positive but insignificant, in contrast to results reported in Knack (2001), who concludes that aid is harmful to the security of property rights, using somewhat different time periods and measures of property rights from those used here. Knack (2001) also differs in having data on more countries than we have for Area 2; in fact, that area has fewer observations than any other in this sample.

Among the regressors other than aid, the initial EF area value is significant for all five areas. The association of income and growth with policy reform varies tremendously across the five areas. They are both strongly significant and positive only in the case of Area 2 (Property Rights).¹³ In contrast, income is negative and significant for Area 1 (Size of Government), and growth is not significant for any of the other areas. Linguistic fractionalization has the expected negative sign in most cases and is at least marginally significant in regressions for Areas 1 (Size of Government) and 4 (Openness). Initial democracy is most strongly associated with subsequent reform in Areas 1 (Size of Government) and 5 (Regulation), while the change in democracy is associated with greater reform in four of the five areas, with Area 2 (Property Rights) the exception.

Our findings provide some indication that aid discourages market-oriented policy and institutional reform more often than it facilitates it. This is especially true for Area 1 (Size of Government). However, if aid tends to discourage reform in the policy areas that matter less to growth, our findings on the adverse consequences of aid should be of somewhat less concern. To identify which policy areas appear to have the strongest growth effects, we regressed per capita income growth (1980–2000) on the initial (1980) values of each of the five policy areas, controlling for catch-up opportunities via the inclusion of initial GDP per capita as a sixth regressor. As a partial control for heteroskedasticity, the regression was estimated by weighted least squares, with results presented in Table A3 of the Appendix. We find that growth is associated with more market-oriented policies in Areas 1, 2 and 3, but with *less* market-oriented policies in Area 5. The coefficient for Area 4 is also negative, but small and insignificant.

Thus, among the different economic freedom areas, aid appears to harm growth most strongly through slowing reform in Area 1 (Size of Government). Aid slows policy reform in Area 1, as shown in Table 5, which would otherwise spur growth, as shown in Table A3. Areas 2 and 3 are also associated with faster growth, but the impact of aid on them is smaller and not significant at conventional levels. Area 5, surprisingly, is associated with lower growth, but its link with aid is even weaker. Area 4 is not strongly linked to aid, but even if it were there might be little or no impact on growth, because Area 4 values are unrelated to growth in our sample.

Alternative samples and specifications

We also tested the sensitivity of the aid–economic freedom relationship to numerous changes in sample or specification. The relevant comparison is with the aid results from

TABLE 5
AID AND CHANGE IN ECONOMIC FREEDOM BY AREA, 1980–2000 (2SLS REGRESSIONS)

EF variable	Equations				
	(1)	(2)	(3)	(4)	(5)
	Area 1	Area 2	Area 3	Area 4	Area 5
Constant	5.23 (6.91)	2.93 (3.25)	5.97 (5.74)	5.14 (7.39)	3.32 (7.20)
Initial EF value	-0.67 (-9.09)	-0.97 (-10.21)	-0.86 (-8.30)	-0.70 (-8.10)	-0.71 (-8.30)
Initial GDP per capita ('000)	-0.18 (-3.03)	0.27 (2.48)	0.15 (1.71)	-0.06 (-1.12)	0.06 (1.70)
Avg. annual growth in per capita income	-0.10 (-1.47)	0.34 (3.42)	0.15 (1.55)	-0.03 (-0.50)	0.05 (1.25)
Linguistic fractionalization	-0.82 (-1.92)	0.39 (0.78)	-0.68 (-0.10)	-0.69 (-1.76)	-0.03 (-0.12)
Initial democracy	0.21 (2.21)	0.01 (0.11)	-0.07 (-0.49)	0.13 (1.46)	0.14 (2.40)
Change in democracy	0.21 (2.38)	4.63E-5 (0.00)	0.24 (1.77)	0.15 (1.91)	0.09 (1.88)
Aid	-0.09 (-2.65)	0.06 (1.33)	-0.05 (-1.32)	-0.04 (-1.28)	-0.01 (-0.46)
<i>N</i>	71	56	73	69	66
Mean, dep. var.	1.23	0.53	1.47	1.47	0.26
Std error of est.	1.04	0.97	1.65	0.92	0.58
<i>P</i> -value from overidentification test	0.95	0.82	0.04	0.64	0.73
<i>P</i> -value from <i>F</i> -test of excluded instruments	<0.0001	0.0002	< 0.001	<0.0001	<0.0001

Notes:

t-statistics below coefficient estimates.

Exogenous instruments for aid include initial-year values of (log) population, life expectancy, agriculture share of GDP and manufacturing share of GDP.

Table 4, equation (1). To conserve space, Table 6 shows only the aid coefficient and *t*-statistic estimated under each particular change in sample or specification.

First, we added Kuwait and the United Arab Emirates to the sample. Our main 74-country sample includes all other countries with available data for the 1980–2000 period, but drops these two because their income levels were very high and aid levels were very low throughout the period; i.e. despite showing up in the DAC data as aid recipients, they look more like donor than recipient countries. Row 1 of Table 6 shows that their addition to the sample makes little difference. Row 2 instead drops not only Kuwait and the UAE, with per capita incomes exceeding \$15,000 in 1980, but also four other countries with incomes exceeding \$10,000. The magnitudes of the aid coefficient and *t*-statistic increase somewhat. Row 3 drops an additional 20 countries with incomes in 1980 exceeding \$4000; the aid coefficient and *t*-statistic for this low-income sample are very similar to those in the basic 74-country sample. Row 4 checks for sensitivity to dropping four micro-states (Belize, Barbados, Bahrain and Malta) with populations fewer than 500,000 in 1980). Results differ little from those in the basic 74-country sample.

Rows 5 and 6 show that the estimated impact of aid is more sensitive to dropping observations with extreme values on either the change in EFI or the amount of aid. In

TABLE 6
2SLS AID COEFFICIENTS UNDER ALTERNATIVE SAMPLES AND SPECIFICATIONS

Change relative to base sample and specification	Aid coefficient (<i>t</i> -statistic)	<i>N</i>
1 Kuwait and UAE added	− 0.04 (− 2.59)	76
2 4 countries with 1980 per capita income over \$10,000 dropped	− 0.05 (− 2.74)	70
3 24 countries with 1980 per capita income over \$4000 dropped	− 0.04 (− 2.38)	50
4 4 countries with 1980 population under 50,000 dropped	− 0.04 (− 2.37)	70
5 2 countries with largest increases and 2 countries with largest decreases in EF dropped	− 0.03 (− 1.40)	70
6 2 countries with highest and 2 countries with lowest aid values dropped	− 0.02 (− 0.93)	70
7 Growth dropped from list of regressors	− 0.05 (− 3.28)	74
8 Full set of regional dummy variables added	− 0.04 (− 20.09)	74
9 Aid per capita substituted for aid's share of national income	− 0.0044 (− 1.33)	74
10 Number of Paris Club debt reschedulings added to list of regressors	− 0.04 (− 2.49)	74

row 5 the two countries with the largest improvements (Uganda and Peru) and largest deteriorations (Guinea-Bissau and Venezuela) to policy reform are dropped. The magnitude of the aid coefficient declines somewhat, and it is no longer significant at conventional levels. In row 6 the two countries with the highest (Guinea-Bissau and Nicaragua) and lowest (Korea and Venezuela) aid levels are dropped. The estimated impact of aid here is even lower than in row 5. Guinea-Bissau, with its poor reform record and high aid levels, is a particularly influential case. However, it cannot be fully blamed for the negative impact of aid on policy reform in our results. When EF is broken down by area in Table 5, aid is most strongly associated with slower reform in Area 1, and Guinea-Bissau is not even in the sample for that regression. Further, note that Venezuela has the second greatest reduction in EFI (although it is nowhere near as bad as Guinea-Bissau), yet it received the second lowest amount of aid per GNI.

Row 7 retains the base 74-country sample but alters the specification, dropping the endogenous regressor, growth in per capita income. The coefficient for aid retains the same negative sign and increases somewhat in significance. Row 8 instead adds a set of regional dummy variables. This has little impact on the estimated effect of aid, and the regional dummies themselves are not jointly significant. Row 9 substitutes aid per capita for the share of aid in national income; the coefficient remains negative, but is not significant. This finding may suggest that high aid levels in middle-income countries—where aid per capita is high but aid/GNI is low—are less likely to inhibit reform as in poorer countries.

We also added various measures of economic crisis, most of which proved insignificant. Moreover, none of them affected the estimated impact of aid on policy

reform. Economic crisis is often credited as a source of policy reform, as it can upset political equilibria previously blocking the adoption or implementation of reforms (e.g. Devarajan *et al.*, 2001, chapter 1; Bambaci *et al.* 2002; Pitlik and Wirth 2003). Crisis can be measured only very crudely when examining the net outcome of all reform occurring over a 20-year period, so it is unsurprising that our measures had little explanatory power. The proxies for crisis we tested include: (i) changes in the terms of trade between 1980 and 2000; (ii) terms-of-trade volatility during the period; (iii) the minimum annual growth rate in per capita income over the period; (iv) the standard deviation in annual growth rates; (v) a dummy variable for countries experiencing shrinkage in per capita incomes of more than 4% in two or more consecutive years; and (vi) debt default, measured by the number of Paris Club debt reschedulings.¹⁴ Of these, only the debt default variable was significant ($t = 2.06$), with each rescheduling agreement associated with an increase of 0.07 in the EFI. Interpretation of this finding is not straightforward: debt rescheduling is an indicator not only of crisis, but also of an aid relationship, as countries benefiting from rescheduling agreements are required to have a current programme with the IMF committing them to implement reforms. In any event, row 10 of Table 6 shows that inclusion of the debt rescheduling variable has no effect on the aid–reform relationship.

We also tested several hypotheses on the impact of political institutions, using data from the Database on Political Institutions (DPI) constructed by Beck *et al.* (2000). A conventional view is that liberalization would be hampered by the presence of a chief executive from a left-wing party. A more recent dissenting view is represented by Cukierman and Tommasi (1998). When left-wing governments advocate market-liberalizing reforms on efficiency-enhancing grounds, they are likely to have greater credibility with the public than right-wing governments, which many voters might suspect of advocating reform purely for ideological reasons, whatever the stated objective. Examples include early-1980s Ghana under Jerry Rawlings (Devarajan *et al.* 2001, chapter 2), and early-1990s Argentina under the Peronist Carlos Menem (Bambaci *et al.* 2002, p. 81). To test these arguments, we added to our regressions a dummy variable equal to the share of years from 1980–2000 in which a country's chief executive was from a left-wing party.¹⁵ This variable was found to be related to changes in the EF index.

Delays in adopting necessary economic reforms as a response to shocks have been linked to divided government (Alesina and Drazen 1991) and to checks on the power of the chief executive (Alesina *et al.* 2006). Accordingly, in our regressions we tested several variables from the DPI, including: (i) presence of coalition government; (ii) the average level of party fractionalization in parliament overall; (iii) the government coalition in parliament; and (iv) an index of checks on executive power. None of these measures approached significance in our tests. We also tested the potential effect of parliamentary district magnitude, proportional representation and presidential (as opposed to parliamentary) systems, which Persson and Tabellini (2004) have linked to deficits, corruption and other policy outcomes. None of these variables were related to policy reform in our sample. Nor was the chief executive's average time in office significant, whether entered linearly, in logs or in quadratic form. Nor did the inclusion of any of these political institutions variables affect the strength or significance of the estimated relationship between aid and policy reform.

Some of these political economy variables could be irrelevant in non-democracies, where parliaments are largely ineffectual. However, none of these variables become significant when non-democracies are deleted from the sample. Some of these variables

could also be correlated with the Freedom House democracy variable included in the regressions. However, the political economy variables all remain insignificant if the Freedom House measure of democracy is dropped.

We do not conclude from these tests that policy reform is unaffected by political institutions. A full investigation of their impact is beyond the scope of this paper; they are treated here merely as control variables in tests designed for investigating the impact of aid.

We also investigated the possibility of conditional effects of aid. Dollar and Svensson (2000) found that the success of structural adjustment programme reforms depended on a variety of factors, including the degree of ethnic fractionalization and whether the leaders were democratically elected. We tried interacting aid with our measures of fractionalization and initial level of democracy, but the interaction terms were never found to come close to standard levels of statistical significance.

Our final investigation, reported in Table 7, compares aid's impact on reform before and after the end of the Cold War. Aid allocation decisions by the United States and other donors during the Cold War were often dominated by strategic considerations, potentially at the expense of market-liberalizing policy reform, as corrupt regimes such as Mobutu's in Zaire (now the Democratic Republic of Congo) were propped up by aid. The 1990s also witnessed an increased donor emphasis on the quality of governance, including protection of property rights, reflected mainly in Area 2 of the EFI. Moreover, the IFIs may have learned from some of their early mistakes with structural adjustment lending and conditionality. Ratings by the World Bank's Operations Evaluation Department show large increases from the 1980s to the 1990s in the percentage of adjustment loans with 'satisfactory' or better outcomes (Killick 2004; World Bank 2004). Whether for these or other reasons, the 1990s experienced much more reform than the 1980s: the mean change in EFI for our 74-country base sample is only 0.19 for the 1980s, but 0.80 for the 1990s.¹⁶ Moreover, although countries receiving high aid levels as a share of GNI in the 1980s also tended to be recipients of large aid volumes in the 1990s (the correlation is 0.82), the same is not true for reform: the change in EFI across decades is actually negatively correlated (-0.19 , $\rho = 0.11$). A final reason for breaking the period into decades is to permit the inclusion of many ex-Communist countries that embarked on the transition to market economies and began receiving aid from the West in the 1990s.

Table 7 presents regression results for the change in EFI separately by decade, adjusting all variables accordingly. As in the 1980–2000 tests, the aid coefficient is negative and highly significant for the 1980s. For the same set of 74 countries, however, aid is not significantly related to the change in EFI in the 1990s. A cautionary note in interpreting these findings is that aid in the 1980s regression does not pass the over-identification test. Another notable difference between the 1980s and 1990s regressions is that policy reform is more strongly associated with growth and with improvements in democracy in the later decade.

Equation (3) of Table 7 also covers the 1990s, but adds 17 additional countries. Of these, 13 are ex-Soviet bloc countries which abandoned communism and became recipients of substantial aid in that decade.¹⁷ The other four (El Salvador, Haiti, Singapore and Syria) are countries for which data on sectoral composition of the economy (used as instruments for aid) are available for the 1990s but were unavailable for earlier years. The average increase in EFI among these 17 countries in the 1990s was 1.19, compared with 0.80 for the other 74 countries. The addition of these 17 countries in equation (3) changes the aid coefficient from negative to positive, but it remains

TABLE 7
AID AND CHANGE IN ECONOMIC FREEDOM INDEX, BY DECADE
(2SLS REGRESSIONS, FULL SAMPLE)

	Equations		
	(1)	(2)	(3)
Decade	1980–90	1990–2000	
Constant	1.99 (2.32)	4.29 (5.37)	4.51 (5.94)
Initial EFI value	– 0.41 (– 4.47)	– 0.78 (– 7.70)	– 0.70 (– 9.19)
Initial GDP per capita ('000)	0.02 (0.56)	0.01 (1.33)	0.01 (3.16)
Avg. annual growth in per capita income	0.05 (1.45)	0.11 (3.07)	0.13 (4.36)
Linguistic fractionalization	– 0.14 (– 0.48)	– 0.07 (– 0.25)	0.14 (0.55)
Initial democracy	0.12 (0.62)	0.08 (0.40)	– 0.18 (– 1.03)
Change in democracy	0.13 (0.67)	0.10 (1.94)	0.05 (1.0)
Aid	– 0.05 (– 2.87)	– 0.01 (– 0.38)	0.02 (1.29)
<i>N</i>	74	74	91
Mean, dep. var.	0.19	0.80	0.89
Std error of est.	0.69	0.61	0.66
<i>P</i> -value from overidentification test	0.04	0.20	0.12
<i>P</i> -value from <i>F</i> -test of excluded instruments	<0.0001	<0.0001	<0.0001

Notes: *t*-statistics below coefficient estimates. Exogenous instruments for aid include initial-year values of (log) population, life expectancy, agriculture value added and manufacturing value added as shares of GDP.

insignificant. Compared with equation (2), the association of reform with income levels and growth is stronger, but its association with changes in democracy is weaker. A dummy for seven new EU members (admitted in May 2004) from the ex-Soviet bloc, when added to the regression, has a positive but insignificant coefficient.¹⁸

V. DISCUSSION

Our results show that between 1980 and 2000, countries receiving higher levels of aid were less likely to adopt market-oriented reforms than those receiving low levels. Although this finding may be welcomed by aid sceptics, who believe a 'world without development aid' would experience more 'real reform' towards market-oriented policies (Vasquez 1998, p. 276), several important qualifications to our work need to be made before such a conclusion can be reached.

First, our decade analyses are consistent with other evidence (e.g. Koeberle 2003, p. 253) that donors' attempts to influence policy have become more effective (or less counterproductive) over time. Donors now acknowledge more readily the primacy of

domestic political economy factors in determining the direction and pace of reform (World Bank 2004), and recognize that aid is likely to facilitate reform only where a significant commitment exists within the government. Second, the impact of donors should not be equated simply with the impact of aid volumes. Policy advice can be effective in countries with small aid programmes, measured as a share of GNI; examples include China and the Dominican Republic (World Bank 2004, pp 18, 27–8; Mallaby 2004, p. 410). Third, the impact of donors may go beyond country-specific aid and advice. The IFIs and other donors disseminate ideas globally, thereby contributing to the spread of market-oriented reforms through the provision of intellectual public goods. For example, most of the data underlying the Fraser Institute's index, which are heavily relied on in numerous academic studies on the growth effects of economic policy, are generated by the IMF. The World Bank and the IMF are the largest producers and distributors of advocacy pieces for market-oriented policy and institutional reforms, in their numerous reports and working papers. Fourth, donors often have other objectives instead of, or in addition to, policy reform to stimulate private-sector development. Education and health policy, for example, are not reflected in the Fraser index. Non-policy objectives, including humanitarian, gender equity, environmental and bilateral donors' foreign policy goals, may also justify aid programmes. The effectiveness of aid in meeting many of these goals have not been sufficiently analysed, but donors may view their aid programmes as successful on these terms even if they are counterproductive in generating market-friendly policy reforms.

This study has analysed the impact of all ODA on market-oriented policy reform. Some forms of aid, from some donors, may be more effective (or at least less harmful) than others. We did not find much distinction from separately analysing programme aid, project aid and technical assistance. Further research could disaggregate aid by donor agency (World Bank, IMF, UN agencies, various bilaterals), or by sector (e.g. aid for banking and financial services, or for strengthening civil society and public-sector accountability and capacity), to examine potential differences in their impact on market-liberalizing reform. Further research could also examine the impact of financial flows other than ODA, including non-concessional lending by aid agencies. Finally, the impact of other factors, including economic crises, changes in government and other political economy variables, could be investigated more thoroughly, by examining five-year periods instead of the 10- and 20-year periods analysed in this study.

APPENDIX: AREAS AND COMPONENTS OF THE ECONOMIC FREEDOM INDEX

Area 1: Size of Government: Expenditures, Taxes and Enterprises

- A: General government consumption spending as a percentage of total consumption
- B: Transfers and subsidies as a percentage of GDP
- C: Government enterprises and investment as a percentage of GDP
- D: Top marginal tax rate (and the income threshold to which it applies)
 - i. Top marginal income tax rate (and the income threshold at which it applies)
 - ii. Top marginal income and payroll tax rate (and the income threshold at which it applies)

Area 2: Legal Structure and Security of Property Rights

- A: Judicial independence: the judiciary is independent and not subject to interference by the government or parties in disputes
- B: Impartial courts: a trusted legal framework exists for private businesses to challenge the legality of government actions or regulation
- C: Protection of intellectual property

D: Military interference in rule of law and the political process

E: Integrity of the legal system

Area 3: Access to Sound Money

A: Average annual growth of the money supply in the last five years minus average annual growth of real GDP in the last ten years

B: Standard inflation variability in the last five years

C: Recent inflation rate

D: Freedom to own foreign currency bank accounts domestically and abroad

Area 4: Freedom to Exchange with Foreigners

A: Taxes on international trade

i. Revenue from taxes on international trade as a percentage of exports plus imports

ii. Mean tariff rate

iii. Standard deviation of tariff rates

B: Regulatory trade barriers

i. Hidden import barriers: no barriers other than published tariffs and quotas

ii. Costs of importing: the combined effect of import tariffs, license fees, bank fees, and the time required for administrative red-tape

C: Actual size of trade sector compared to expected size

D: Difference between official exchange rate and black market rate

E: International capital market controls

i. Access of citizens to foreign capital markets and foreign access to domestic capital markets

ii. Restrictions on the freedom of citizens to engage in capital market exchange with foreigners—index of capital controls among 13 IMF categories

Area 5: Regulation of Credit, Labour, and Business

A: Credit Market Regulations

i. Ownership of banks: percentage of deposits held in privately owned banks

ii. Competition: domestic banks face competition from foreign banks

iii. Extension of credit: percentage of credit extended to private sector

iv. Avoidance of interest rate controls and regulations that lead to negative real interest rates

v. Interest rate controls: interest rate controls on bank deposits and/or loans are freely determined by the market

B: Labour Market Regulations

i. Impact of minimum wage: the minimum wage, set by law, has little impact on wages because it is too low or not obeyed

ii. Hiring and firing practices: hiring and firing practices of companies are determined by private contract

iii. Share of labour force whose wages are set by centralized collective bargaining

iv. Unemployment benefits: the unemployment benefits system preserves the incentive to work

v. Use of conscripts to obtain military personnel

C: Business Regulations

i. Price controls: extent to which businesses are free to set their own prices

ii. Administrative conditions and new businesses: administrative procedures are an important obstacle to starting a new business

iii. Time with government bureaucracy: senior management spends a substantial amount of time dealing with government bureaucracy

iv. Starting a new business: starting a new business is generally easy

v. Irregular payments: irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection, or loan applications are very rare.

Appendix Tables

TABLE A1
FIRST-STAGE REGRESSION FOR AID, 1980–2000 (FULL SAMPLE)

	Equation	
	(1)	(2)
Constant	11.41 (2.30)	46.04 (5.62)
Initial EFI value	0.55 (0.62)	– 0.15 (– 0.24)
Initial GDP per capita (*000)	– 1.33 (– 4.26)	– 0.47 (– 1.58)
Avg. annual growth in per capita income	– 1.16 (– 2.94)	0.06 (0.19)
Linguistic fractionalization	– 1.16 (0.41)	– 3.50 (– 1.64)
Initial democracy	– 0.57 (– 0.86)	– 0.55 (– 1.12)
Change in democracy	0.72 (1.24)	0.05 (0.12)
Log initial population		– 2.86 (– 6.99)
Initial life span		– 0.64 (– 4.81)
Initial agriculture proportion		0.12 (2.04)
Initial manufacturing proportion		0.42 (4.02)
<i>N</i>	74	74
<i>R</i> ²	0.38	0.72
Mean, dep. var.	6.55	6.55
Std error of est.	6.87	4.78

Note: *t*-statistics below coefficient estimates.

TABLE A2
COUNTRIES IN BASE SAMPLE

Country	EF change	Initial EF	Aid (%GNI)
Algeria	0.61	3.89	0.50
Argentina	2.83	4.35	0.09
Bahrain	0.32	7.31	2.13
Bangladesh	1.83	3.69	5.24
Barbados	0.06	5.66	0.53
Belize	0.35	5.82	6.58
Benin	0.49	5.17	11.24
Bolivia	2.42	4.28	8.75
Botswana	1.56	5.46	5.50

TABLE A2
CONTINUED

Country	EF change	Initial EF	Aid (%GNI)
Brazil	1.05	4.33	0.05
Burundi	1.00	4.16	17.41
Cameroon	- 0.35	5.77	4.24
Central African Republic	0.48	4.64	14.34
Chad	1.31	4.35	13.99
Chile	2.26	5.22	0.17
China	1.57	3.93	0.42
Colombia	0.78	4.72	0.23
Congo, Democratic Republic	0.25	3.43	4.79
Congo, Republic of	0.14	4.76	8.30
Costa Rica	1.44	5.82	3.02
Cote d'Ivoire	0.90	5.32	5.88
Cyprus	0.34	5.64	0.90
Dominican Republic	0.87	5.89	1.47
Ecuador	- 0.61	5.85	0.08
Egypt	1.98	4.68	5.63
Fiji	0.51	5.64	3.06
Gabon	1.09	4.17	2.30
Ghana	2.69	2.93	8.12
Guatemala	- 0.10	6.48	1.70
Guinea-Bissau	- 2.83	5.43	51.16
Guyana	2.69	3.71	19.78
Honduras	0.49	5.83	8.67
India	0.84	5.24	0.71
Indonesia	0.85	5.11	1.22
Iran	1.05	4.01	0.10
Jamaica	2.68	4.24	4.35
Jordan	1.94	5.26	12.28
Kenya	1.44	5.12	8.64
Korea	1.22	5.76	0.03
Madagascar	1.02	4.33	11.04
Malawi	- 0.27	4.85	21.93
Malaysia	- 0.22	6.88	0.45
Mali	- 0.20	5.84	18.98
Malta	0.70	5.50	1.10
Mauritius	2.12	5.28	2.45
Mexico	0.64	5.52	0.08
Morocco	1.38	4.54	3.17
Namibia	2.30	1.70	4.88
Nepal	0.20	5.68	9.65
Nicaragua	2.51	4.02	24.93
Niger	0.11	5.37	15.05
Nigeria	1.51	3.87	0.59
Oman	1.35	5.85	0.82
Pakistan	0.84	4.60	2.55
Panama	1.22	5.96	0.88
Papua New Guinea	- 0.35	6.25	10.40
Paraguay	0.34	6.51	1.42
Peru	3.04	3.78	1.34

TABLE A2
CONTINUED

Country	EF change	Initial EF	Aid (%GNI)
Philippines	1.76	5.30	1.70
Rwanda	- 0.01	5.28	20.38
Senegal	0.60	5.20	13.29
Sierra Leone	0.55	5.05	14.40
South Africa	1.02	5.70	0.30
Sri Lanka	1.12	4.94	6.91
Thailand	0.60	6.02	0.86
Togo	0.83	4.19	12.12
Trinidad & Tobago	1.96	5.06	0.25
Tunisia	1.07	4.99	2.12
Turkey	2.11	3.71	0.43
Uganda	3.45	3.16	11.66
Uruguay	0.60	5.88	0.29
Venezuela	- 0.80	6.56	0.05
Zambia	1.34	5.08	20.12
Zimbabwe	0.15	4.65	4.88

TABLE A3
ECONOMIC FREEDOM AND GROWTH, 1980-2000

Constant	0.21 (- 7.69)
Initial GDP per capita ('000)	- 0.67 (- 8.07)
Area 1	0.87 (4.12)
Area 2	0.80 (4.12)
Area 3	0.26 (3.05)
Area 4	- 0.12 (- 0.82)
Area 5	- 1.05 (- 2.96)
<i>N</i>	49
Mean, dep. var.	2.17
R^2	0.82
<i>F</i> -statistic	31.24
Std error of est.	1.17

Notes:
t-statistics below coefficients.
Estimation by weighted least squares.

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NOTES

1. 'Virtually all planned [World] Bank country operations', including investment projects, diagnostic studies, etc. and adjustment lending, 'have policy reform objectives' (World Bank 2004, p. 10).
2. See www.mca.gov. The study by Burnside and Dollar (2000), concluding that aid contributes to growth only in good policy environments, is often cited as justification for allocating aid in this way. Easterly *et al.* (2004), however, find that the Burnside–Dollar result is not robust in tests that include newly available data for a few additional countries and years.
3. This dataset is available on-line at: <http://freetheworld.com/download.html>
4. We drop the oil-rich nations of Kuwait and United Arab Emirates but show in our robustness tests below that their inclusion has little impact on the primary regressions.
5. Across countries there is some inconsistency, because data are available for anywhere between one and five areas. The cost of being fully consistent in this respect would be to rely on a sample of only 49 countries.
6. Correlations among *levels* of the five areas average only 0.21 in 1980, but 0.34 in 2000. These correlations are based only on the 74 aid recipients in our main sample, but they change little when all countries (including aid donors) in the economic freedom dataset are included.
7. Alesina *et al.* (2003) also constructed indexes of religious and 'ethnic' fractionalization, correlated respectively with linguistic fractionalization in our sample at 0.35 and 0.65. These alternative fractionalization measures produce similar results if substituted for the one based on language. We use the latter because 'ethnicity' is not clearly defined by Alesina *et al.* (2003). Among the three indexes, linguistic fractionalization best predicts ethnic tensions across countries, using subjective assessments from the International Country Risk Guide (at www.prsgroup.com).
8. See www.freedomhouse.org. 'Democracy' is the simple average of the Freedom House political freedoms and civil liberties indexes. We reverse the 1–7 scale so that higher values indicate greater democracy. Initial level and change are correlated at -0.54 , and both are significant at higher levels when entered together than if either one is included alone.
9. Including growth in our tests is a partial control for this latter effect.
10. The omitted category of economic activity is the sum of services and industry exclusive of manufacturing (primarily minerals and energy). Separating those into two variables adds no explanatory power, with a *t*-statistic of only -0.2 for services. The sectoral composition variables are jointly significant at the 0.01 level whether two or three of them are included in the first-stage regression.
11. The OECD data also include a fourth category of commodity aid, which in practice in recent years has become something of a miscellaneous category of aid programmes that do not fit neatly into any of the other three types.
12. These results for Areas 3 and 4 are broadly consistent with the absence of a significant link in Burnside and Dollar (2000) between aid and an index of policy reform constructed from inflation, an openness dummy and budget deficits. The comparison is highly inexact, however, because there is no deficits measure included in EF, and Burnside and Dollar use data for only 56 countries.
13. Area 2 is the one area measured mostly using subjective measures; these subjective assessments conceivably are influenced by income levels and recent growth performance.
14. See www.clubdeparis.org. The number varied in our base sample from 0 (for 27 countries) to 14 (Senegal), with a mean of 3.
15. The DPI coders 'classify parties as left if their names reveal them to be communist, socialist, or social democratic' or if their data sources on party orientation labelled them as left-wing (Beck *et al.* 2000).
16. All five areas showed large improvements on average in the base sample in the 1990s, particularly Areas 3 (Sound Money) and 4 (Openness). In the 1980s average ratings improved only for Areas 1 (Size of Government) and 4.
17. These countries are Albania, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Russia and Ukraine.
18. These seven include Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland and Slovak Republic. Cyprus, Malta and Slovenia are also new members but they are not included in our sample. Alternative dummies including Bulgaria and Romania (on track for membership in 2007), and Croatia and Turkey (negotiating for membership) produced even weaker results.

REFERENCES

- ALESINA, A. and DRAZEN, A. (1991). Why are stabilizations delayed? *American Economic Review*, **81**, 1170–88.
- , DEVLEESCHAUWER, A., EASTERLY, W., KURLAT, S. and WACZIARG, R. (2003). Fractionalization. *Journal of Economic Growth*, **8**, 155–94.
- , ARDAGNA, S. and TREBBI, F. (2006). Who adjusts and when? Harvard Institute of Economic Research Discussion Paper No. 2108.
- BAMBACI, J., SARONT, T. and TOMASSI, M. (2002). The political economy of economic reforms in Argentina. *Journal of Policy Reform*, **5**, 75–88.
- BARRO, R. (1991). Economic growth in a cross section of countries. *Quarterly Journal of Economics*, **106**, 407–43.
- (1997). *Determinants of Economic Growth: A Cross-Country Empirical Study*. Cambridge: MIT Press.
- BAUER, P. T. (1984). *Reality and Rhetoric: Studies in the Economics of Development*. Cambridge: Harvard University Press.
- BECK, T., CLARKE, G., GROFF, A., KEEFER, P. and WALSH, P. (2000). New tools and new tests in comparative political economy. World Bank Policy Research Working Paper No. 2283.
- BOOCKMANN, B. and DREHER, A. (2003). The contribution of the IMF and the World Bank to economic freedom. *European Journal of Political Economy*, **19**, 633–49.
- BRAUTIGAM, D. (2000). *Aid Dependence and Governance*. Stockholm: Almqvist & Wiksell International.
- BURKHART, R. and LEWIS-BECK, M. (1994). Comparative democracy: the economic development thesis. *American Political Science Review*, **88**, 903–10.
- BURNSIDE, C. and DOLLAR, D. (2000). Aid, policies, and growth. *American Economic Review*, **90**, 847–68.
- CLAESSENS, S. and LAEVEN, L. (2003). Financial development, property rights, and growth. *Journal of Finance*, **58**, 2401–36.
- COLLIER, P. (1997). The failure of conditionality. In C. Gwin and J. M. Nelson (eds.), *Perspectives on Aid and Development*. Washington, DC: Overseas Development Council.
- COMMISSION FOR AFRICA (2005). Our common interest: Report of the Commission for Africa. (www.commissionforafrica.org).
- CUKIERMAN, A. and TOMMASI, M. (1998). When does it take a Nixon to go to China? *American Economic Review*, **88**, 180–97.
- DE HAAN, J. and STURM, J.-E. (2003). Does more democracy lead to greater economic freedom? New evidence for developing countries. *European Journal of Political Economy*, **19**, 547–63.
- , ——— and LUNDSTRÖM, S. (2006). Market oriented institutions and policies and economic growth: a critical survey. *Journal of Economic Surveys*, **20**, 157–191.
- DEVARAJAN, S., DOLLAR, D. and HOLMGREN, T. (2001). *Aid and Reform in Africa*. Washington, D.C.: The World Bank.
- DOLLAR, D. and LEVIN, V. (2004). The increasing selectivity of foreign aid, 1984–2002. World Bank Policy Research Working Paper 3299.
- and SVENSSON, J. (2000). What explains the success or failure of structural adjustment programs? *Economic Journal*, **110**, 894–917.
- EASTERLY, W. (2002). The cartel of good intentions: the problem of bureaucracy in foreign aid. *Journal of Policy Reform*, **5** (4), 223–50.
- (2005). What did structural adjustment adjust? The association of policies and growth with repeated IMF and World Bank adjustment loans. *Journal of Development Economics*, **76**, 1–22.
- and LEVINE, R. (1997). Africa's growth tragedy: policies and ethnic divisions. *Quarterly Journal of Economics*, **112**, 1203–50.
- and REBELO, S. (1993). Fiscal policy and economic growth: an empirical investigation. *Journal of Monetary Economics*, **32**, 417–58.
- , LEVINE, R. and ROODMAN, D. (2004). Aid, policies, and growth: comment. *American Economic Review*, **94**, 774–80.
- FARR, W. K., LORD, R. A. and WOLFENBARGER, J. L. (1998). Economic freedom, political freedom, and economic well-being: a causality analysis. *Cato Journal*, **18**, 247–62.
- FISCHER, S. (1993). The role of macroeconomic factors in growth. *Journal of Monetary Economics*, **32**, 485–512.
- FRANKEL, J. A. and ROMER, D. (2000). Does trade cause growth? *American Economic Review*, **89**, 379–99.
- FRIEDMAN, M. (1958). Foreign economic aid: means and objectives. *Yale Review*, **47**, 500–16.
- GROSSMAN, H. I. (1992). Foreign aid and insurrection. *Defense Economics*, **3**, 275–88.
- GWARTNEY, J. and LAWSON, R. (2004). *Economic Freedom of the World: 2004 Annual Report*. Vancouver, B.C.: The Fraser Institute.

- HECKELMAN, J. C. (2000). Economic freedom and economic growth: a short-run causal investigation. *Journal of Applied Economics*, **3**, 71–91.
- HSIEH, C.-T. (2000). Bargaining over reform. *European Economic Review*, **44**, 1659–76.
- IVANOVA, A., MAYER, W., MOURMOURAS, A. and ANAYIOTOS, G. (2003). What determines the implementation of IMF-supported programs? IMF Working Paper WP/03/8. Washington D.C.: International Monetary Fund.
- KAPUR, D. and WEBB, R. (2000). Governance-related conditionalities of the IFIs. Prepared for the XII Technical Group meeting of the Intergovernmental Group of 24 for International Monetary Affairs, Lima, Peru, March 1–3.
- KILLICK, T. (2004). Politics, evidence and the new aid agenda. *Development Policy Review*, **22**, 5–29.
- KNACK, S. (2001). Aid dependence and the quality of governance: cross-country empirical tests. *Southern Economic Journal*, **68**, 310–29.
- and KEEFER, P. (1995). Institutions and economic performance: cross-country tests using alternative institutional measures. *Economics and Politics*, **7** (3), 207–27.
- KOEBERLE, S. G. (2003). Should policy-based lending still involve conditionality? *World Bank Research Observer*, **18**, 249–73.
- LESCHKE, M. (2000). Constitutional choice and prosperity: a factor analysis. *Constitutional Political Economy*, **11**, 265–79.
- LOAYZA, N., OVIEDO, A. M. and SERVEN, L. (2005). Regulation and macroeconomic performance. World Bank Policy Research Working Paper 3469.
- LUNDSTRÖM, S. (2005). The effect of democracy on different categories of economic freedom. *European Journal of Political Economy*, **21**, 967–980.
- MALLABY, S. (2004). *The World's Banker: A Story of Failed States, Financial Crises, and the Wealth and Poverty of Nations*. New York: Penguin Press.
- OECHSLIN, M. (2006). Foreign aid, political instability and economic growth. Unpublished manuscript, University of Zurich.
- PERSSON, T. and TABELLINI, G. (2004). Constitutions and economic policy. *Journal of Economic Perspectives*, **18**, 75–98.
- PITLIK, H. and WIRTH, S. (2003). Do crises promote the extent of economic liberalization? An empirical test. *European Journal of Political Economy*, **19**, 565–81.
- RODRIK, D. (1996). Understanding economic policy reform. *Journal of Economic Literature*, **34**, 9–41.
- SACHS, J. and WARNER, A. (1995). Economic reform and the process of global integration. *Brookings Papers on Economic Activity*, **1**, 1–95.
- VASQUEZ, I. (1998). Official assistance, economic freedom, and policy change: is foreign aid like champagne? *Cato Journal*, **18**, 275–86.
- WILLIAMSON, J. (2000). What should the World Bank think about the Washington consensus? *World Bank Research Observer*, **15**, 251–64.
- WORLD BANK (1994). *Adjustment in Africa: Reform, Results and the Road Ahead*. World Bank Policy Research Report. Washington DC: The World Bank.
- (1998). *Assessing Aid: What Works, What Doesn't, and Why*. New York: Oxford University Press.
- (2004). *2003 Annual Review of Development Effectiveness: The Effectiveness of Bank Support for Policy Reform*. Operations Evaluation Department. Washington, D.C.: The World Bank.