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Is good governance rewarded?: a cross-sectional analysis of debt forgiveness

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Is good governance rewarded?

A cross-national analysis of debt forgiveness

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Summary. – This article analyses which factors determine the allocation of debt forgiveness. In particular, it is examined what role various aspects of governance play. The results indicate that countries' need is a powerful determinant for debt forgiveness, whereas creditors' political interest is not, apart from United States military interests. Of the various aspects of governance, only the extent to which governments are accountable, respect democratic rights as well as refrain from imposing burdens on business has a statistically significant influence. In order to set the right incentives and to ensure effectiveness of scarce financial resources, countries with good governance should be rewarded with a higher share of total debt forgiveness in the future.

Key words: aid, debt, democracy, governance, regulatory burden

1. INTRODUCTION

The question of debt forgiveness for indebted developing countries has generated an enormous amount of political as well as academic interest. The political campaign by the Jubilee 2000 network has been dubbed by a World Bank spokesman 'one of the most effective global lobbying campaigns I have ever seen' (cited in Hanlon, 2000, p. 878). An all-encompassing coalition from popstars, non-governmental organizations and churches to the World Bank and even the International Monetary Fund (IMF) seemingly united behind a call for major debt forgiveness. Of course, hidden behind this apparent convergence of views lies a great dispute about the exact details and the amount of debt to be forgiven. This is not the place to discuss either the economic, political and ethical aspects of a call for debt forgiveness or the total amount of debt that should be forgiven (see, for example, Adams, 1991; Mikkelsen, 1991; Hanlon, 2000; Roodman, 2001). Nor is this the place to tell the history of

debt forgiveness (for a brief exposition see, for example, Daseking and Powell, 1999). Instead, this article provides a quantitative analysis of the determinants of the allocation of debt forgiveness among recipient countries in the past.

Not many studies exist that have analyzed the allocation of debt forgiveness. That there is a dearth of empirical studies is somewhat surprising on at least two accounts. First, in some sense debt forgiveness can be interpreted as foreign aid or official development assistance (ODA). As Bauer (1991, p. 57) points out: 'When the Third World's creditors relieve the sovereign debtors of meeting their obligations wholly or in part, they in effect provide a form of foreign aid. Foreign aid involves a positive flow of funds to recipient Third World governments. Debt relief involves the avoidance of a negative flow.'[1] The vast majority of countries receiving debt forgiveness also receive foreign aid. Debt forgiveness can therefore even be accompanied by a reduction in foreign aid if donor countries are not willing to increase the net flow of resources to recipient countries. The point is that many authors (including the present one) have examined the determinants of the allocation of aid flows, but – despite their close links – not the determinants of the allocation of debt forgiveness (see, for example, Boone, 1996; Svensson, 1999; Alesina and Dollar, 2000; Neumayer, 2001a, 2001b, 2001c, 2002). Second, there is a mounting literature suggesting that the effects of aid flows (and consequently debt forgiveness as well) heavily depend on the quality of governance, broadly understood, in the recipient country (see, for example, Burnside and Dollar, 1997; World Bank, 1998; Svensson, 1999; Bräutigam, 2000; Knack, 2000). This is not an uncontested proposition (see, for example, Hermes and Lensink, 2001). However, if this proposition is correct, then the question whether more debt forgiveness has been allocated to countries with good governance assumes great importance. If the quality of governance was found to play no role in the allocation of debt forgiveness then the beneficial effects of debt forgiveness would be put into great doubt.

Section 2 reviews the literature and section 3 shows why rewarding governance performance might be the only way to ensure that debt forgiveness becomes more effective. Section 4 presents the research design and section 5 discusses some pertinent statistical issues. Results are reported and discussed in section 6 with some sensitivity analyses undertaken in section 7. Section 8 concludes.

2. LITERATURE REVIEW

As mentioned, not many empirical studies have addressed the question what variables, if any, can explain the allocation of debt forgiveness. Bauer (1991, p. 63) suggests that the allocation of debt forgiveness 'does not reflect the usual criteria on which official aid purports to be allocated among recipient governments, namely the level of incomes per head and the development prospects of the recipient countries. The beneficiaries of debt relief are simply those governments that have decided not to honor their obligations and have been allowed to do so very largely unscathed.' However, he does not provide a systematic quantitative analysis to back up this claim.

Hernández and Katada (1996) undertake very simple descriptive analysis of the criteria of debt forgiveness on ODA (not including official non-concessional loans) for African countries only. Dividing these countries into three groups according to the level of ODA debt forgiveness they find that neither absolute poverty as measured by gross national product (GNP) per capita nor lack of access to foreign exchange seem to have been determinants of the allocation of ODA debt forgiveness. Such debt forgiveness is correlated with relative indebtedness as measured by debt per gross domestic product (GDP), but the middle group of countries received much less debt forgiveness than the high group in spite of being severely more indebted.

Alesina and Weder (2000) provide a multivariate ordinary least squares (OLS) estimate on the sum of debt relief between 1989 and 1997 for 68 countries, controlling for a range of variables, all measured as 1990 to 1995 averages.[2] Alesina and Weder (2000) find that initial debt per GDP, the natural log of population size as well as the extent of a country's voting in concurrence with Japan in the United Nations (UN) general assembly are statistically significant explanatory variables. A country's openness towards trade (interpreted by Alesina and Weder as a proxy for a good policy track record), the natural log of its initial income per capita, its extent of respect for political rights, the number of years it has been a colony of one of the Organization of Economic Co-operation and Development (OECD) countries and the extent of its voting in concurrence with the United States in the UN general assembly are all insignificant. The coefficient of an added control variable for the extent of a country's corruption is positive, but highly insignificant.

This paper analyses more comprehensively the role governance plays in the allocation of debt forgiveness. The quality of governance has assumed great importance in recent studies looking at the effectiveness of both aid and debt forgiveness. Knack (2000), for example, argues that aid flows to countries with a bad policy record might further weaken the quality of governance. Foreign aid can drag the more talented and skilled workers away to the donor organizations, which usually pay a higher salary. More importantly, foreign aid can exacerbate existing corruption: '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 investment that would otherwise be made by private investors' (Knack, 2000, p. 5). In OLS estimation he finds evidence that those countries that received a greater share of aid tend to experience a decline in the quality of governance over time. He suggests as a possible policy approach that 'a larger fraction of aid could be tied or dedicated to improvements in the quality of governance, for example, in the form of programs

to establish meritocratic bureaucracies and strong, independent court systems' (Knack, 2000, p. 22).

In panel growth regressions, Burnside and Dollar (1997) find that aid has a positive effect on economic growth in recipient countries only if these are characterized by good governance in terms of good fiscal, monetary and trade policies. They estimate that the mean growth rate in their sample of poor developing countries would rise from 1.10% to 1.44% if the same amount of aid had been allocated in greater accordance with the policy record of recipient countries. Addressing more political aspects of governance, Svensson (1999, p. 293) finds that foreign aid has a long-term positive growth impact on recipient countries only if these respect political and civil liberties: 'Aid has a positive impact on growth in countries with an institutionalized check on governmental power; that is, in more democratic countries'.

Easterly (2000) examines why successive rounds of past debt forgiveness might not have had a substantial positive effect on the recipient countries. In short, he argues that the recipient countries might reveal behavior that is consistent with a high discount rate and a preference for high debt, thus substituting new borrowing for forgiven debt. He suggests that 'the granting of progressively more favorable terms for debt forgiveness may also have perverse incentive effects, as countries borrow in anticipation of debt forgiveness and delay policy reforms waiting for the best deal' (Easterly, 2000, p. 6). For a simple cross-sectional OLS analysis of a sample of 41 HIPC countries which have benefited from several past rounds of debt forgiveness he finds some evidence that might suggest that these HIPCs dis-invested in their productive potential at the same time as they accumulated high debts. He further concludes that those countries became highly indebted because of bad policies, not because of external shocks to their economies. He also finds that those countries that received most debt forgiveness among the HIPCs also borrowed most anew. Easterly (2000, p. 30) demands that 'some track record of low discount rate behavior should be required prior to

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granting debt forgiveness'. Otherwise the whole idea of debt forgiveness would become problematic since more resources were to go to 'countries with bad policies' rather than to 'poor countries with good policies' (ibid., p. 31).

Allen and Weinhold (2000), using a panel data fixed effects approach instead to test Easterly's hypothesis, fail to find evidence that countries who benefited most from debt cancellation, rescheduling or refinancing had higher inflation rates and a lower share of government spending on capital. Thus they fail to confirm that these countries can be regarded as exhibiting high discount behavior. However, they as well recognize the need to allocate debt forgiveness according to some criteria related to the quality of governance. As Allen and Weinhold (2000, p. 870) point out, if all impoverished countries received debt forgiveness independent of their policy record, then this would in many cases provide finance for 'manifestly corrupt, unaccountable, inefficient and oppressive governments, with little interest in promoting social welfare'.

3. MAKING DEBT FORGIVENESS MORE EFFECTIVE

To ensure that debt forgiveness is more effective creditor countries have basically two options available: First, they can impose conditions on the countries receiving debt forgiveness to the effect that they reform their policies, use the freed resources for particular purposes and succumb to specified criteria of transparency and accountability. A strong proponent of this option is, for example, the London-based Centre for Accountability and Debt Forgiveness (CADRE) (see Theobald, 1997). One minimum condition usually imposed on countries receiving debt forgiveness is that they follow a program imposed by the IMF. Second, creditor countries can try to allocate non-conditional debt forgiveness mainly to countries that have revealed good governance in the past.

The first option is problematic for a range of reasons: First, it interferes with the sovereignty of the recipient country and is therefore bound to be met with the same kind of hostility as IMF conditionality for structural adjustment programs. Second, recipient countries will do their best to merely create the image of compliance with the conditions imposed and revert to their old policies as soon as the creditors turn away their attention. In principle, promised funds could be revoked once the cheating becomes detected, but, as Allen and Weinhold (2000, p. 861) observe, it is very difficult for the IMF and the World Bank to withhold funds ex post if recipient countries do not comply (fully) with the ex ante agreed upon conditionality. Third, it is doubtful at least whether good governance can be externally imposed via conditions. Bad governance is usually deeply entrenched in a country's political system. It can only be overcome slowly and with the full support of the governing elite. Fourth, for the reasons just mentioned conditionality often does not and cannot tackle the root causes of bad governance, but merely requires the recipient country to change its spending pattern.[3] For example, in the so-called enhanced initiative by the IMF and the World Bank for highly indebted poor countries (HIPCs) freed resources were supposed to be spent on poverty reduction. If countries did obey this kind of conditionality, however, the economic effect of debt forgiveness might be zero or even negative. Burnside and Fanizza (2001, p. 1) argue that the conditionality of the enhanced HIPC initiative 'implies that it provides no net relaxation of the government's lifetime budget constraint' and that, worse still, 'an increase in aid resources spent domestically may produce short-run inflationary consequences that could hurt growth and destabilize output'. Perversely, given the conditionality on government spending, the recipient country can only keep inflation under control if it negates the debt forgiveness effect in issuing new debt substituting for the old forgiven debt.

The first option is therefore problematic on various accounts. Remains the second option: give more debt forgiveness to countries that have shown good governance in the past with the

hope that in rewarding past good governance these countries will strive to maintain good governance in the future. This is where the analysis of this article comes in. It aspires to provide an answer to the question which variables have determined the allocation of debt forgiveness in the past and, in particular, whether countries with good governance have been rewarded with higher debt forgiveness.

4. RESEARCH DESIGN

(a) The dependent variable

Data on debt forgiveness, the dependent variable, were derived from the Global Development Finance database of the World Bank (World Bank, 2000a). It is defined as the change in debt stock due to debt forgiveness. It does not include debt conversion schemes such as debt buybacks or debt for equity swaps. Note that the World Bank data recognize debt forgiveness only as a change in stock and no flow transactions are recorded (World Bank, 2000b, p. 79). If debt forgiveness is measured as cash-flow relief instead, often debt-service payments that are rescheduled or deferred are counted as debt forgiveness as well, which is somewhat misleading since the net present value of the outstanding debt stock is not reduced. The available data comprise the period 1989 to 1998. Ideally, one would like to make use of both the cross-section and the time-series dimension of these data. However, debt forgiveness, unlike ODA, occurs in a rather discontinuous fashion. For this reason it was necessary to discard the time-series information and to take the sum of debt forgiveness between 1989 and 1998 as the basis for the dependent variable. For the countries in our sample the total sum of debt forgiven amounts to about US$50 billion.

In the next step the debt forgiveness data have to be made comparable across countries. Two possible ways of doing this are to transform total debt forgiveness into a per capita

variable or to look at debt forgiveness per unit of GDP. In the main regressions reported below we will use GDP as the denominator. Population as the denominator is used in sensitivity analysis. Both population and GDP data in purchasing power parity came from World Bank (2001).

(b) The independent variables

As concerns the explanatory variables, let us start with governance, our major variable of interest. Governance is of course a very broad term. I define it here as the way in which policy makers are empowered to make decisions, the way in which policy decisions are formulated and implemented and the extent of which governmental discretion is allowed to encroach into the rights of citizens. To operationalize this definition of governance I use two different groups of variables. The first group comprises a set of six aggregate indicators that capture different aspects of governance. These indicators, developed by World Bank staff, are based on several different sources, partly polls of experts, partly surveys of residents and entrepreneurs within a country (Kaufmann, Kraay and Zoido-Lobatón, 1999a, 1999b). A linear unobserved components model is used to aggregate these various sources into one aggregate indicator. The advantage of such aggregation is that the underlying concept is measured with higher reliability and data become available for many more countries than would be possible if using one source only.

Each indicator provides a subjective assessment of some aspect of a country's quality of governance. The indicators are normalized such that they range from around -2.5 to 2.5 and have a mean of zero and a standard deviation of one. Higher values signal better governance. The six aggregate indicators address the following aspects (headings followed by a short description of the major components):

- Voice and accountability: respect for political rights and civil liberties, public participation in the process of electing policy makers, independence of media, accountability and transparency of government decisions.

- Political instability and violence: political and social tension and unrest, instability of government.

- Government effectiveness: stability, predictability and efficiency of governmental decisions.

- Regulatory burden: burden on business via quantitative regulations, price controls and other interventions into the economy.

- Rule of law: respect for law and order, predictability and effectiveness of judiciary system, enforceability of contracts.

- Graft: corruption, that is, the acceptance of money for providing extra-legal favours.

Note that of these five dimensions of governance, "regulatory burden" is probably the most contested and problematic one. It is strongly related to a particular neo-liberal view on economic policy, whereas the other aspects of governance are more consensually accepted across the political spectrum. Indeed, as we will see later, one of the components of this variable derives from assessments of the Heritage Foundation, a conservative U.S.-based think tank.

I will use each indicator in isolation since they all measure different aspects of governance and it is interesting to see what aspect of governance, if any, has an impact upon the allocation of debt forgiveness. In addition, I use a measure of general governance that is the average of the individual indicators – six in number for most countries, fewer for countries for which not all indicators were available.[4] The idea is to see whether governance more generally is a determinant of debt forgiveness allocation.

As mentioned, two of the major advantages of the World Bank indicator set are that it is available for many countries due to the aggregation of information from different sources with differing coverage of countries and that it is perhaps more representative since it derives from a broad set of sources. At the same time, it suffers from a number of disadvantages as well. For example, while the quality of governance is of course not a constant but evolves over time, all data entering the governance indicators stem from a single, but varying time period around the mid-1990s. One could argue that the bias introduced is likely to be small. First, the source data refer to subjective assessments for which respondents will have taken into account the quality of governance over a range of past years rather than just for the year they were surveyed. Second, the quality of certain aspects of governance in most countries is not likely to change much from year to year. This is probably true for such aspects as government effectiveness, rule of law and graft. However, other aspects of governance might change quite rapidly.

The second group of proxy variables for governance has the advantage of varying over time. It consists of three variables from the International Country Risk Guide (ICRG) as well as one variable each from Freedom House and the Heritage Foundation. Whilst data from the private company, which provides the ICRG to international business, are normally prohibitively expensive to get for researchers, data covering the period 1989 to 1995 were made freely available by King and Zeng (2001). The ICRG (2002) website describes the variables used as follows:

- Bureaucratic quality: institutional strength and quality of the bureaucracy; its capacity to govern without drastic changes in policy or interruptions in government services; its autonomy from political pressure.

- Law and order: strength and impartiality of the legal system together with the extent of popular observance of the law.

- Corruption: excessive patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business.

Note that "Bureaucratic quality" is conceptually roughly comparable to "Government effectiveness" from the World Bank indicator set and indeed forms one of its components. The same is true of "Law and order" and "Rule of law" and "Corruption" and "Graft", respectively. In addition, I use the "Civil Liberties" and "Political Rights" data from Freedom House (2000) over the period 1989 to 1998, which is conceptually roughly comparable to and forms one component of the "Voice and accountability" indicator from the World Bank. Finally, I use the simple average of the "trade policy", "government intervention", "capital flows and foreign investment", "wage and price controls" and "regulation" components of the Heritage Foundation's (2002) Index of Economic Freedom as a further variable, also called "regulatory burden". This variable is conceptually roughly comparable and forms one component of the "regulatory burden" variable of the World Bank indicator set. Unfortunately, the Heritage Foundation did not publish its index before 1995 so that the data cover the period 1995 to 1998 only. No time varying data were available that are conceptually comparable to the "Political instability and violence" indicator of the World Bank indicator set.

"Corruption" and "Law and order" are measured by the ICRG on a zero to six points and "Bureaucratic Quality" on a zero to four points scale. The higher the points the better a country fares with respect to the variable. The assessment is based on expert analysis from a worldwide network and is subjected to a peer review. The Freedom House data are based on expert assessments of the extent to which a country effectively provides for political rights

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and civil liberties (Karatnycky 1999, pp. 546-553). "Political rights" refer to, for example, the existence and fairness of elections, existence of opposition and the possibility to take over power via elections. "Civil liberties" refer to, for example, the freedom of assembly, the right to open and free discussion, the independence of media, protection from political terror and the prevalence of the rule of law. Both are measured on a one to seven points scale and I added the two variables for the purpose of analysis. The higher the score the better rights and liberties are protected. The Heritage Foundation (2002) data derive from partly objective, partly subjective assessments of pre-specified criteria. Their indices are measured on a one to five point scale. For the purpose of this article, the data were reversed such that a higher score indicates less "regulatory burden". Since the time-varying proxy variables for governance stem from different sources no attempt was made to provide an aggregate or average time-varying governance indicator.

Besides governance, which other variables are likely to have explanatory power? In accordance with the ODA allocation literature, I will look at two groups of variables. One group is supposed to measure the recipient country's need for debt forgiveness. The other group proxies the political interest of the creditors. The first group comprises three variables: For rather obvious reasons the first two – total debt per GNP and debt service divided by the value of exports of goods and services – are often regarded as a good proxy for a country's need for debt forgiveness (data from World Bank, 2000a).[5] Note that this does not mean that creditors themselves might not have an economic interest in forgiving debt for countries in dire need for debt forgiveness. While not uncontested, a huge amount of theoretical and empirical literature, as summarized comprehensively by Cline (1995, chapter 4), suggests that severe so-called debt overhang might cripple a country's economy to an extent that debt forgiveness can be in the economic interest of creditors as well if it leads to a stimulation of the economy and therefore to a higher prospect of servicing and paying back of the

outstanding debt. As a third variable for a recipient country's need for debt forgiveness we will consider the natural log of GDP per capita in purchasing power parity (data from World Bank, 2001) since, all other things equal, a poorer country is more in need of debt forgiveness than a richer one.

Political interest of the creditors is measured by five variables. The first is the number of years the recipient country has been a former colony of an OECD country (data taken from Dollar and Alesina, 2000).[6] Creditors might favor their former colonies in part at least because of a political interest in maintaining their influence on those countries. The second variable is the natural log of the minimum distance in kilometers between the capital city of an indebted developing country to either New York, Rotterdam or Tokyo (data taken from Gallup and Sachs, 1999).[7] The idea is that donor countries might give more aid to geographically close countries for reasons of strategic-political interest. This variable is supposed to proxy this interest for the major creditor countries: The US and Canada, the European Union countries as well as Japan. The third variable is arms imports as a percentage of total imports (data taken from World Bank, 2001). Many creditor countries are major arms exporters and might have an interest in forgiving debt of major arms importers.

Perhaps none of the variables listed so far truly captures the political interests of the United States, the major national creditor and arguably the most important power in such multilateral institutions as the World Bank and the IMF.[8] The United States has few ex-colonies and its political interests are global in nature. To capture some of the political interest the United States has in debtor countries I therefore include two further variables: First, the amount of per capita military grants allocated between 1989 and 1998 with data taken from USAID (1999), divided by population (taken from World Bank, 2001). The other variable tries to measure the similarity of policy positions. Signorino and Ritter (1999) have developed a measure of policy similarity. This measure conceptualises two policy positions as falling

within a policy space defined by all the possible policy positions. The measure falls in the interval –1 to 1, where –1 means that two policy positions are as far apart in the policy space as possible (complete dissimilarity) and 1 means that the two policy positions are identical (complete similarity). Gartzke, Jo and Tucker (1999) use this measure to provide estimates of the similarity of policy positions as revealed by the voting behaviour in the UN General Assembly. Data for the similarity of policy positions of debtor countries with the United States were available from 1989 to 1996.

Note that for all explanatory variables that are not constant the average value over the period 1989 to 1998 or the latest available year was taken. We have debt forgiveness data for 136 developing countries and countries in transition (former East bloc countries). However, the number of observations in the regressions reported below is somewhat lower, depending on the availability of explanatory variables. The starting regressions in each table reported in section 6, which only includes variables measuring the recipient countries' need for debt forgiveness, comprises 125 countries. The annex lists these countries.

5. STATISTICAL ISSUES

We will test the following three hypotheses. First, more debt forgiveness goes to countries in need of debt forgiveness. Second, more debt forgiveness goes to countries for which creditors have a political interest. Third, more debt forgiveness goes to countries with good governance.

Some countries do not receive any debt forgiveness at all. There are basically two options for dealing with the limitedness of the dependent variable. One is to follow the lead of the ODA allocation literature and to distinguish between two stages in the process of debt forgiveness allocation in employing the so-called two-stage or two-part model (see, for example,

Cingranelli and Pasquarello, 1985; Carleton and Stohl, 1987). The first stage is the so-called gate-keeping stage where it is determined which countries receive debt forgiveness. The appropriate estimation technique for this kind of analysis is probit.[9] The second stage is the so-called level stage where it is determined how much of a country's debt is forgiven, which has been selected as a recipient of debt forgiveness in the first stage. Usually, OLS is used at this stage. That this two-stage process might represent a realistic characterization is tentatively supported by the fact that sometimes explicit prerequisites for the eligibility for debt forgiveness are stated. For example, to qualify for debt forgiveness as part of the United States Enterprise for the America Initiative, recipient countries 'must have democratically elected governments, must not have repeatedly provided support for international terrorism, must not fail to cooperate on international drug control, and must not engage in consistent patterns of gross violations of internationally recognized human rights' (Sanford, 1995, p. 370, fn. 160). To qualify for the HIPC initiative of the World Bank and IMF, countries have to fulfill certain criteria with respect to their debt-to-export or, in few cases, their debt-to-tax ratios (Cohen, 2000).

The second method for dealing with the limitedness of the dependent variable uses an estimation technique called tobit. Use of this technique does not necessitate breaking down the process of aid allocation into two stages since, contrary to OLS techniques, tobit explicitly takes into account that the dependent variable can be zero for a substantial part of the population.

None of the two methods can be said to be superior since they are based on different assumptions. The two-stage method implicitly assumes that creditors actually do make two-stage decisions, i.e. that they first decide on whether or not a country is eligible for debt forgiveness and then on how much debt should be forgiven. Furthermore, it is assumed that the error terms from both stages are uncorrelated. The tobit method avoids the potentially

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artificial construct of a two-stage allocation process, but it suffers from restrictive underlying assumptions as well. The two main ones are that, first, the same set of variables is assumed to determine both whether the dependent variable is zero and, if positive, what size it has. Second, the sign of those variables is constrained to be the same (Verbeek, 2000, p. 207). The first assumption is not so problematic in the context of this article since I use the same variables for both the gate-keeping stage and the level stage as well in the alternative method. The second assumption is somewhat more restrictive. However, it does not seem unreasonable to assume that if a variable has a positive influence on the probability of receiving any debt forgiveness at all, then it will also have a positive influence on the amount of debt forgiven.

Heckman's (1979) two-step estimator can be interpreted as an extension of the tobit method (Amemiya 1985), relaxing both assumptions of the tobit method already mentioned as well as allowing the error terms from both steps to be correlated. However, the two-step estimator requires an exclusionary variable that has a significant impact upon the first step (selection step), but not upon the second step. Unfortunately, such an exclusionary variable is typically very difficult to find and without it model identification rests on restrictive distributional assumptions only. This dependence on distributional assumptions renders the two-step estimator inferior to either the two-part model or the tobit method in many circumstances (Puhani 2000), but not always (Leung and Yu 1996). Since no exclusionary variable could be found for this article, the two-step estimation technique is not applied.

6. RESULTS

We start with the tobit estimation technique testing for the influence of recipient need on the allocation of debt forgiveness (see regression I of table 1). Both income and the debt to GNP

ratio are statistically significant and have the expected sign. Richer countries are forgiven less debt and countries burdened by a higher debt to GNP ratio are forgiven more debt. Surprisingly, the debt service to exports ratio has an unexpected coefficient, but tests highly insignificant. Next, regression II enters our creditor interest variables. With the exception of U.S. military grants, all of them are statistically insignificant.[10] Entering each creditor interest variable in isolation leads to the same result (not shown). Clearly, creditor interest seems to be a determinant of the allocation of debt forgiveness only with respect to direct United States military or security interests. Since governance is our major explanatory variable and the other creditor interest variables remain highly insignificant when entered in combination with the various governance variables, all of the following regressions were run with U.S. military grants as the only creditor interest variable included.

< Insert Table 1 about here >

Regressions III to VIII enter each of our six different indicators of governance from the World Bank indicator set in isolation. Of these, "voice and accountability" and "regulatory burden" are statistically significant with the expected sign. The other four indicators test highly statistically insignificant. Regression IX enters the average governance indicator. It has the expected sign and tests statistically significant at the 90% level. In table 2 we undertake tobit estimations with the governance variables from the Freedom House, Heritage Foundation and the ICRG indicator set. It confirms the results from table 1 in that "political rights and civil liberties" and "regulatory burden" test statistically significant, whereas "bureaucratic quality", "law and order" and "corruption" do not.

< Insert Table 2 about here >

Next, we apply the two-stage method. Table 3 reports results for the first stage using the probit estimation technique for the World Bank indicators. Note that the reported coefficients are not probit coefficients. Instead, they are already transformed into changes in the probability at the mean of a variable, with all other independent variables held at their mean values as well.[11] Regression I starts again with the recipient need variables. Only the debt to GNP ratio is statistically significant. A one point increase in the debt to GNP ratio above its mean value increases the likelihood of becoming eligible for debt forgiveness by 0.3% if the other two independent variables are held at their mean value. Regression II enters the creditor interest variables, which are all statistically insignificant. The same is true for all the governance indicators in isolation as well as the average governance indicator with results reported in regressions III to IX. Note that in one regression the income variable becomes marginally significant as does the debt service to exports ratio in another regression, but with an unexpected sign.

< Insert Table 3 about here >

Table 4 reports first-stage estimation results for the Freedom House, Heritage Foundation and ICRG indicators. As before, the debt to GNP ratio is statistically significant throughout. Income is significant in two regressions. Interestingly, contrary to the comparable World Bank indicator, "political rights and civil liberties" tests significant with the expected sign. None of the other governance indicators tests significantly. If the allocation of debt forgiveness can be characterized by two-stage decision making then only the debt to GNP ratio and perhaps a country's poverty as well as its protection of political rights and civil

liberties seem to be statistically significant determinants of the decision on which countries are deemed eligible for debt forgiveness in stage one.

< Insert Table 4 about here >

Table 5 reports results for the second stage using OLS for the World Bank indicator set. As before, regression I starts with the recipient need variables. Similar to the tobit estimation results, both income and the debt to GNP ratio are statistically significant and have the expected sign. Entering the creditor interest variables in regression II confirms their statistical insignificance, with the exception of U.S. military grants, which tests significant throughout. Looking at the governance indicators in isolation in regressions III to VIII suggests again "voice and accountability" as well as "regulatory burden" as statistically significant explanatory variables with the expected sign. The other four are again insignificant. The average governance indicator tests statistically insignificant in regression IX. The coefficient of the income variable is significant in six regressions.

< Insert Table 5 about here >

Table 6 reports second-stage OLS estimation results for the Freedom House, Heritage Foundation and ICRG indicators. The debt to GNP ratio is statistically significant throughout as before, but the income variable only in two regressions. Interestingly, while the insignificance of "bureaucratic quality", "law and order" and "corruption" confirms the analysis in table 5, both "political rights and civil liberties" and "regulatory burden" test insignificant as opposed to "voice and accountability" and the "regulatory burden" variable from the World Bank indicator set.

< Insert Table 6 about here >

All in all the results reported above provide a mixed picture of the role the quality of governance plays in the allocation of debt forgiveness. Apart from "political rights and civil liberties" none of our six governance indicators is a statistically significant determinant of whether or not a country is deemed eligible for receiving any debt forgiveness. As concerns the amount of debt forgiven most of our governance indicators remain statistically insignificant independent of the estimation technique used. "Voice and accountability", "political rights and civil liberties" as well as the "regulatory burden" variable from both indicator sets assume statistical significance in the tobit estimations. But only "voice and accountability" as well as "regulatory burden" from the World Bank indicator set remain statistically significant in the OLS estimations of the two-stage technique. Even then, the effect of good governance on the allocation of debt forgiveness is somewhat modest. To see this, refer to table 7, which compares the second stage OLS regressions III and VI from table 5 to the same model without the governance indicators, but provides standardized beta coefficients instead and constrains the sample to be the same. The R^2 rises from .4292 to merely .4624 if "voice and accountability" is added as an explanatory variable and to .4627 if "regulatory burden" is added instead. In other words, variations in our governance indicators do not add much to an explanation of the variation in the dependent variable debt forgiveness. Looking at the beta coefficients we see that the effect of "voice and accountability" is estimated as .22 and that of "regulatory burden" as .20. In other words, a one standard deviation increase in these aspects of governance leads to a .19 and .22 standard deviation increase in debt forgiveness. In comparison, the effect on the dependent variable of a one

standard deviation increase in the debt to GNP ratio, one of the variables measuring a country's need for debt forgiveness, is about three times higher.

< Insert Table 7 about here >

7. SENSITIVITY ANALYSIS[12]

What happens to the results for the governance indicators if we replace the dependent variable debt forgiveness per GDP by debt forgiveness per capita? The answer is not much. The only difference is that the average governance variable as well as the "regulatory burden" variable from the Heritage Foundation in tobit estimation become statistically insignificant, whereas "graft" assumes statistical significance. "Law and order" also assumes statistical significance, but with an unexpected sign, both in the tobit as well as the second stage OLS estimations. That is, countries with a lower "law and order" performance are estimated to receive higher debt forgiveness per capita.

Are the major results driven by the presence of outliers? The answer is no. Belsley, Kuh and Welsch (1980) suggest excluding observations as outliers that have both high residuals and a high leverage. I applied their criterion together with their suggested cut-off point to the model that includes all three debtor need variables plus the United States military grants variable for the regressions for which debt forgiveness per GDP is the dependent variable.[13] Doing so leads to the exclusion of Angola, Bolivia, Congo (Republic), Egypt, Guinea-Bissau, Guyana, Nicaragua, Yemen and Zambia from the sample. As concerns the governance variables, the only thing that changes is that the average governance indicator as well as "political rights & civil liberties" and the "regulatory burden" variable from the Heritage Foundation become statistically significant in the level stage estimations. Interestingly, the

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United States military grants variable loses significance in all tobit estimations, tests significant with a negative sign in most first-stage regressions and remains significant with a positive sign in most second-stage OLS regressions. In other words, once outliers are excluded countries that receive more United States military grants per capita are less likely to receive debt forgiveness, but once selected receive more debt forgiveness than others.

As concerns potential problems caused by simultaneity, these should only be marginally relevant for our governance indicators. There is no reason to presume that the amount of debt forgiveness will have had a substantial impact upon the quality of governance. While there have sometimes been conditions imposed on the beneficiary countries with regard to, for example, government spending, no such conditions with regard to governance were set up to any great extent. As argued above, even if they were it would be doubtful whether recipient countries would actually be willing to put the demands into reality. It seems equally doubtful that they would change the quality of their governance on their own in response to debt forgiveness.

Simultaneity is likely to be much more of a problem for the three indicators measuring recipient country need. After all, it is the very aim of debt forgiveness to reduce the debt to GNP ratio as well as the debt service to exports ratio and to increase, if indirectly, income levels within the recipient country. To check for simultaneity bias in the estimations, I have therefore instrumented these three variables using their respective average values in the five year period 1984 to 1988 as instruments. Since these instruments are determined prior to the period of debt forgiveness looked at here, simultaneity bias should no longer pose a problem.

With respect to United States military grants one might argue that they are not influenced by the amount of debt a country is forgiven, since the grants fulfil specific United States strategic policy interests. On the other hand, since both military grants and debt forgiveness improve the net financial position of the recipient country the two could be regarded as

substitutes both from the perspective of the United States and the recipient country. However, this assumes that the resources freed up by debt forgiveness would be spent on the same purposes that the military grants would have been spent on.

On the whole, there seemed to be strong arguments for instrumenting only with respect to the debtor need variables.[14] Of course, this comes at the price of a decrease in the precision of estimation as well as loss of observations since often the instruments are not available for all countries. It is interesting to note that even then "voice and accountablity" as well as "regulatory burden" from the World Bank indicator set remain statistically significant with the expected sign in both tobit and second-stage OLS estimations, whilst "political rights and civil liberties" is significant in the first-stage probit estimations. In all other cases, none of the governance variables assumes significance, apart from "law and order", which is significant with an unexpected sign in both tobit and first-stage probit estimations. As concerns the debtor need as well as the United States military grants variable, there is practically no change compared to the regressions without instrumentation.

8. CONCLUSION

The analysis in this paper has shown that the need for debt forgiveness is clearly a powerful determinant of the allocation of debt forgiveness, thus confirming the first hypothesis. As concerns the second hypothesis, the evidence supports the statistical significance of creditors' political interest only for the United States military grants variable. As concerns the third hypothesis, there is no clear answer. There is evidence that some aspects of governance have an influence on the allocation of debt forgiveness, but other aspects and governance in general were often found to be statistically insignificant. It is maybe not surprising that of all the different governance aspects "voice and accountability", "political rights and civil liberties"

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and "regulatory burden" should stand out as having some, if modest, influence on the allocation of debt forgiveness. After all, the respect for the political and participatory rights of citizens and the abstention from highly distortionary and burdensome economic policies have long been a top priority on the demand list of aid donors and debt creditors. As mentioned above, whilst respect for political and participatory rights of citizens is more consensually accepted as one aspect of good governance, "regulatory burden" is more contestable as it relates to a particular view on economic policy making.

Overall, it seems therefore fair to say that in the past debt forgiveness has not been used much to reward countries with good governance. From a normative point of view, future debt forgiveness should revert this. Allocating a greater share of debt forgiveness to countries with good governance would set the right incentives for highly indebted countries and would most likely lead to a more effective and productive use of the resources employed. This will be true no matter what the total amount of debt forgiven for all countries, an issue, which this article has not discussed.

By implication, a similar argument can be made for the allocation of new lending and, indeed, for aid disbursement. Critics argue that the debt crisis is partly to blame on loose lending to corrupt and unaccountable governments with poor and highly distortive economic policies, that is, countries with bad governance (Hanlon, 2000; Roodman, 2001). To prevent this from re-occurring lenders need to take better into account the quality of governance of potential borrowers whilst at the same time trying to help those countries improving their governance that are committed to reform.

In order to do so, creditors and lenders need to invest more into developing high-quality indicators of governance and collecting the necessary data. At the moment, besides major efforts at the World Bank, the construction of governance indicators is mainly left to private companies that sell their information to international business. Their view on what constitutes

good governance need not coincide with how creditors and lenders perceive good governance, however. There is therefore still a long way to go to strengthen the importance of good governance in international financial lending and aid allocation decisions.

NOTES

[1] Note that debt relief and debt forgiveness are often used interchangeably, while sometimes debt relief is also used as a more general term encompassing forgiveness, rescheduling, buyback schemes etc. In section 4, we will define the meaning of debt forgiveness used in this article.

[2] Note that Alesina and Weder (2000) use the term 'debt relief' in a broader sense encompassing both debt forgiveness and debt rescheduling.

[3] Indeed, as Theobald (1997, p. 301) points out, at least for Africa and despite the rhetoric to the contrary, conditionality has always focused on purely economic rather than political aspects. Bad governance is as much a political as an economic problem, however.

[4] Note that due to strong collinearity the six indicators of governance were not entered simultaneously.

[5] From a theoretical perspective the debt to exports ratio could have been used in lieu of the debt to GNP ratio (the two variables are highly correlated – correlation coefficient of .67 in our sample). However, the debt to GNP ratio proved to be a much more potent explanatory variable and was therefore preferred here.

[6] Alternatively, a dummy variable for colonial status could have been created. The results on the colony variable reported below remain basically the same if the dummy variable is used instead.

[7] If this data was not available for a particular country, the existing data from a geographically close country was taken instead.

[8] On United States influence in the World Bank, see, for example, Wade (2002).

[9] Alternatively, logit estimation could have been undertaken. The two techniques provide very similar results in standard situations (Verbeek, 2000).

[10] Note that contrary to Alesina and Weder (2000) we find that creditors do not forgive more debt for their former colonies. The results are not directly comparable, however, since Alesina and Weder (2000) look at debt relief rather than debt forgiveness and employ a much smaller sample.

[11] Note that the probabilities are contingent on specific values of the independent variables because the probit model is nonlinear, and therefore nonadditive, in the probabilities.

[12] In order to save space results of the sensitivity analysis are merely described, but not reported. All results can be received from the author upon request.

[13] The criterion is to exclude an observation if its so-called DFITS is greater than twice the square root of (k/n), where k is the number of independent variables and n the number of observations. DFITS is defined as the square root of ($h_i/(1-h_i)$), where h_i is an observation's leverage, multiplied by its studentized residual.

REFERENCES

Adams, P. (1991). <u>Odious debts: Loose lending, corruption, and the third world's environmental legacy</u>. London: Earthscan.

Alesina, A. and Weder, B. (2000). <u>Do corrupt governments receive less foreign aid?</u> Mimeo, Harvard University and University of Basel.

Alesina, A. and Dollar, D. (2000). Who gives foreign aid to whom and why? <u>Journal of Economic Growth, 5</u>(1) 33-63.

Allen, T. and Weinhold, D. (2000). Dropping the debt for the new millennium: is it such a good idea? <u>Journal of International Development, 12</u>(6), 857-875.

Amemiya, T. (1985). <u>Advanced econometrics</u>. Cambridge (Mass.): Harvard University Press.

Bauer, P. (1991). <u>The development frontier: Essays in applied economics</u>. London: Harvester Wheatsheaf.

Belsley, D.A., Kuh, E. and Welsch, R.E. (1980). <u>Regression diagnostics</u>. New York: John Wiley and Sons.

Boone, P. (1996). Politics and the effectiveness of foreign aid. <u>European Economic Review, 40</u>(2), 289-329.

Bräutigam, D. (2000). <u>Aid dependence and governance</u>, Washington D.C.: American University

Burnside, C. and Dollar, D. (1997). <u>Aid, policies and growth</u>. Policy Research Working Paper 1777. Washington D.C.: World Bank.

Burnside, C. and Fanizza, D. (2001). <u>Hiccups for HIPCs</u>. Mimeo. Washington D.C.: World Bank and International Monetary Fund.

Carleton, D. and Stohl, M. (1987). The Role of Human Rights in U.S. Foreign Assistance Policy: a Critique and Reappraisal. <u>American Journal of Political Science, 31</u>(4), 1002–1018.

Cingranelli, D.L. and Pasquarello. T.E. (1985). Human Rights Practices and the Distribution of U.S. Foreign Aid to Latin American Countries. <u>American Journal of Political Science, 29</u>(3), 539–563.

Cline, W.R. (1995). <u>International debt reexamined</u>. Washington D.C.: Institute for International Economics.

Cohen, D. (2000). <u>The HIPC initiative: True and false promises</u>. Technical Papers 166. Paris: Organization of Economic Co-operation and Development.

Daseking, C. and Powell, R. (1999). <u>From Toronto terms to the HIPC initiative: a brief history of debt relief for low-income countries</u>. Working paper 99/142. Washington D.C.: International Monetary Fund.

Easterly, W. (2000). <u>How did highly indebted poor countries become highly indebted? Reviewing two decades of debt relief</u>. Mimeo. Washington D.C.: World Bank.

Freedom House (2000). <u>Annual Surveys of Freedom Country Ratings 1972-73 to 1999-00</u>. New York: Freedom House.

Gallup, J.I. and Sachs, J. (1999). <u>Geography and economic development</u>. Mimeo. Cambridge (Mass.): Harvard University.

Gartzke, E., Jo, D.J. and Tucker, R. (1999). The similarity of UN policy positions, 1946-96, Dataset. http://www.vanderbilt.edu/~rtucker/data/affinity/un/similar

Hanlon, J. (2000). How much debt must be canceled? <u>Journal of International Development 12</u>(6), 877-901.

Heckman, J. (1979). Sample selection bias as a specification error. <u>Econometrica, 47</u>(1), 153-161.

Heritage Foundation (2002). <u>The Index of Economic Freedom</u>. Washington, D.C.: The Heritage Foundation.

Hermes, N. and Lensink, R. (2001). Changing the conditions for development aid: A new paradigm? Journal of Development Studies, 37(6), 1-16.

Hernández, L. and Katada, S.N. (1996). Grants and debt forgiveness in Africa: a descriptive analysis. Policy Research Working Paper 1653. Washington D.C.: World Bank.

ICRG (2002). The Rating System. http://icrgonline.com

Karatnycky, Adrian (ed.) (1999). Freedom in the World – The Annual Survey of Political Rights and Civil Liberties 1998-1999. New York: Freedom House.

Kaufmann, D., Kraay, A. and Zoido-Lobatón, P. (1999a). Aggregating Governance Indicators. Policy Research Working Paper 2195. Washington D.C.: World Bank.

Kaufmann, D., Kraay, A. and Zoido-Lobatón, P. (1999b). Governance Matters. Mimeo. Washington D.C.: World Bank.

King, G. and Zeng, L. (2001). Improving Forecasts of State Failure. World Politics, 53(4), 623-658.

Knack, S. (2000). Aid Dependence and the quality of governance: a cross-country empirical analysis. Mimeo. Washington D.C.: World Bank.

Mikkelsen, J.G. (1991). Deserved debt relief: A note. World Development, 19(8), 1117-1120.

Neumayer, E. (2001a). Is respect for human rights rewarded? An analysis of bilateral and multilateral aid allocation before and after the end of the Cold War. Mimeo. London: London School of Economics.

Neumayer, E. (2001b). What factors determine the allocation of aid by Arab countries and multilateral agencies? Mimeo. London: London School of Economics.

Neumayer, E. (2001c). The determinants of aid allocation by regional multilateral development banks and United Nations agencies. Mimeo. London: London School of Economics.

Neumayer, E. (2002). Do human rights matter in bilateral aid allocation? A quantitative analysis of 21 donor countries. Social Science Quarterly (forthcoming).

Puhani, P. (2000). The Heckman correction for sample selection and its critique. Journal of Economic Surveys, 14(1), 53-68.

Roodman, D.M. (2001). Still waiting for the Jubilee: Pragmatic solutions for the Third World debt crisis. Worldwatch Paper 155. Washington D.C.: Worldwatch Institute.

Sanford, J.E. (1995). Foreign debts to the U.S. government: recent rescheduling and forgiveness. George Washington Journal of International Law and Economics, 28(2), 345-400.

Signorino, C.S. and Ritter, J.M. (1999). Tau-b or Not Tau-b: Measuring the Similarity of Foreign Policy Positions. International Studies Quarterly, 43(1), 115-144.

Svensson, J. (1999). Aid, growth and democracy. Economics and Politics, 11(3), 275-297.

Theobald, R. (1997). Can debt be used to combat political corruption in Africa? Crime, Law and Social Change, 27(3/4), 299-314.

USAID (1999). U.S. Oversees Loans and Grants Online (Greenbook). http://qesdb.cdie.org

Verbeek, M. (2000). A Guide to Modern Econometrics. Chichester: John Wiley and Sons.

Wade, R. (2002). U.S. hegemony and the World Bank: the fight over people and ideas. Review of International Political Economy, 9(1), (forthcoming).

World Bank (1998). Assessing aid: What works, what doesn't, and why. New York: Oxford University Press.

World Bank (2000a). Global Development Finance Indicators on CD-Rom. Washington D.C.: World Bank.

World Bank (2000b). Global Development Finance. Washington D.C.: World Bank.

World Bank (2001). World Development Indicators on CD-Rom. Washington D.C.: World Bank.

Table 1. *Tobit estimation for World Bank indicators*

	I	II	III	IV	V	VI	VII	VIII	IX
Debt/GNP	.34***	.35***	.33***	.34***	.34***	.35***	.34***	.34***	.35***
	(7.52)	(7.16)	(7.50)	(7.03)	(7.03)	(7.74)	(7.26)	(6.67)	(7.61)
Debt service/exports	-.27	-.50	-.21	-.53	-.56	-.60	-.34	-.43	-.29
	(.74)	(1.24)	(.58)	(1.26)	(1.33)	(1.58)	(.87)	(.99)	(.78)
ln(GDP p.c.)	-16.06***	-13.08**	-23.87***	-18.49**	-22.98***	-23.38***	-17.65**	-19.04**	-21.47***
	(3.30)	(2.22)	(4.36)	(3.04)	(3.87)	(4.27)	(3.17)	(3.07)	(3.78)
U.S. military grants p.c.		3.29*	3.33**	3.09*	2.86*	2.82*	3.07*	3.12*	2.92*
		(1.94)	(2.75)	(1.92)	(1.86)	(1.86)	(1.96)	(1.92)	(1.89)
U.S. policy similarity		-36.58							
		(1.32)							
Colony		.08							
		(.51)							
ln(Distance)		-1.60							
		(.18)							
Arms imports		-.81							
		(.66)							
Voice and accountability			16.23**						
			(2.87)						
Political instability and violence				-5.75					
				(.92)					
Government effectiveness					7.14				
					(.86)				
Regulatory burden (World Bank)						17.17**			
						(2.74)			
Rule of law							-5.75		
							(.16)		
Graft								21.27	
								(.62)	
Average governance									13.98*
									(1.76)
N	125	115	118	102	103	112	112	102	118
of which uncensored	93	86	88	75	76	85	85	75	88
Pseudo R-squared	.0725	.0796	.0844	.0833	.0832	.0851	.0776	.0828	.0794

Note: Dependent variable is debt forgiveness. Absolute t-values in parentheses. Coefficient on constant not reported.

* statistically significant at 90% level ** at 95% level *** at 99% level.

Table 2. *Tobit estimation for Freedom House, Heritage Foundation and ICRG indicators*

	I	**II**	**III**	**IV**	**V**
Debt/GNP	.34***	.43***	.37***	.41***	.43***
	(7.76)	(6.90)	(7.95)	(6.50)	(6.92)
Debt service/exports	-.29	-.29	-.50	-.32	-.30
	(.82)	(.66)	(1.26)	(.73)	(.67)
ln(GDP p.c.)	-23.14***	-14.23**	-23.21***	-12.80*	-14.84**
	(4.15)	(2.08)	(3.92)	(1.95)	(2.26)
U.S. military grants p.c.	3.43**	3.05*	3.18**	3.23**	3.02*
	(2.27)	(1.89)	(2.09)	(2.02)	(1.87)
Political rights and civil liberties	3.23**				
	(2.29)				
Bureaucratic quality		-1.61			
		(.31)			
Regulatory burden (Heritage Foundation)			14.01*		
			(1.90)		
Law and order				-7.70	
				(1.58)	
Corruption					-.20
					(.04)
N	125	81	107	81	81
of which uncensored	93	63	80	63	63
Pseudo R-squared	.0812	.0850	.0878	.0883	.0849

Note: Dependent variable is debt forgiveness. Absolute t-values in parentheses. Coefficient on constant not reported.

* statistically significant at 90% level ** at 95% level *** at 99% level.

Table 3. *Gate-keeping stage (probit estimation) for World Bank indicators*

	I	II	III	IV	V	VI	VII	VIII	IX
Debt/GNP	.003**	.002***	.003***	.002**	.002***	.002**	.001**	.002**	.003***
	(3.06)	(3.46)	(3.31)	(3.06)	(3.21)	(2.86)	(3.08)	(3.13)	(3.31)
Debt service/exports	-.002	-.002*	-.001	-.002	-.002	-.001	-.001	-.001	-.001
	(.79)	(1.93)	(.84)	(1.34)	(1.35)	(1.57)	(1.27)	(1.15)	(.90)
ln(GDP p.c.)	-.032	-.005	-.035	-.020	-.033*	-.015	-.010	-.011	-.033
	(1.18)	(.45)	(1.50)	(1.06)	(1.66)	(1.17)	(.86)	(.72)	(1.40)
U.S. military grants p.c.		-.001	.001	-.000	-.000	-.000	.000	.000	.000
		(.39)	(.30)	(.03)	(.09)	(.16)	(.17)	(.23)	(.08)
U.S. policy similarity		-.069							
		(1.40)							
Colony		-.000							
		(.38)							
ln(Distance)		-.016							
		(1.29)							
Arms imports		-.001							
		(.27)							
Voice and accountability			.030						
			(1.45)						
Political instability and violence				-.004					
				(.25)					
Government effectiveness					.018				
					(.86)				
Regulatory burden (World Bank)						-.002			
						(.15)			
Rule of law							.133		
							(1.47)		
Graft								.166	
								(1.15)	
Average governance									.036
									(1.20)
N	125	115	118	102	103	112	112	102	118
Pseudo R-squared	.2782	.3692	.3450	.3455	.3537	.3540	.3782	.3624	.3410

Note: Dependent variable is dummy for debt forgiveness eligibility (1 = country receives debt forgiveness; 0 = country does not receive debt forgiveness). Absolute z-values in parentheses. Heteroscedasticity-robust standard errors. Coefficient on constant not reported. * statistically significant at 90% level ** at 95% level *** at 99% level.

Table 4. *Gate-keeping stage (probit estimation) for Freedom House, Heritage Foundation and ICRG indicators*

	I	II	III	IV	V
Debt/GNP	.003**	.001**	.003**	.001**	.001**
	(2.92)	(2.61)	(2.26)	(2.68)	(2.71)
Debt service/exports	-.001	-.001	-.002	-.001	-.001
	(.52)	(.78)	(.94)	(1.03)	(.98)
ln(GDP p.c.)	-.085**	-.015	-.058*	-.012	-.015
	(2.18)	(1.16)	(1.65)	(1.09)	(1.12)
U.S. military grants p.c.	.004	.028	.005	.029	.022
	(.78)	(.33)	(1.32)	(.39)	(.24)
Political rights and civil liberties	.019**				
	(2.08)				
Bureaucratic quality		-.006			
		(.81)			
Regulatory burden (Heritage Foundation)			.026		
			(.76)		
Law and order				-.008	
				(1.17)	
Corruption					-.014
					(1.61)
N	125	81	107	81	81
Pseudo R-squared	.3091	.3244	.3226	.3334	.3415

Note: Dependent variable is dummy for debt forgiveness eligibility (1 = country receives debt forgiveness; 0 = country does not receive debt forgiveness). Absolute z-values in parentheses. Heteroscedasticity-robust standard errors. Coefficient on constant not reported. * statistically significant at 90% level ** at 95% level *** at 99% level.

Table 5. *Level stage (OLS estimation) for World Bank indicators*

	I	II	III	IV	V	VI	VII	VIII	IX
Debt/GNP	.30***	.30***	.29***	.31***	.31***	.32***	.30***	.30***	.30***
	(3.39)	(3.54)	(3.36)	(3.33)	(3.32)	(3.59)	(3.29)	(3.27)	(3.42)
Debt service/exports	-.35	-.50	-.29	-.64	-.64	-.58	-.45	-.57	-.37
	(.80)	(.93)	(.62)	(1.09)	(1.21)	(1.18)	(.89)	(.98)	(.81)
ln(GDP p.c.)	-11.22*	-8.32	-17.94**	-11.40	-15.49*	-16.71**	-13.71*	-13.61	-14.67**
	(1.88)	(1.12)	(2.70)	(1.66)	(2.10)	(2.45)	(1.86)	(1.56)	(2.18)
U.S. military grants p.c.		2.95*	2.92***	2.65***	2.47***	2.50***	2.53***	2.60***	2.59***
		(1.97)	(5.67)	(6.53)	(5.09)	(5.05)	(5.50)	(5.34)	(5.58)
U.S. policy similarity		-17.68							
		(.50)							
Colony		.04							
		(.18)							
ln(Distance)		5.38							
		(.72)							
Arms imports		-.63							
		(.25)							
Voice and accountability			13.69**						
			(2.37)						
Political instability and violence				-6.93					
				(.80)					
Government effectiveness					4.36				
					(.48)				
Regulatory burden (World Bank)						15.09**			
						(2.51)			
Rule of law							-43.62		
							(1.30)		
Graft								4.40	
								(.10)	
Average governance									8.40
									(1.01)
N	93	86	88	75	76	85	85	75	88
R-squared	.4152	.4364	.4590	.4589	.4519	.4627	.4385	.4510	.4337

Note: Dependent variable is debt forgiveness. Only countries with positive debt forgiveness included. Absolute t-values in parentheses. Heteroscedasticity-robust standard errors.

Coefficient on constant not reported. * statistically significant at 90% level ** at 95% level *** at 99% level.

Table 6. *Level stage (OLS estimation) for Freedom House, Heritage Foundation and ICRG indicators*

	I	II	III	IV	V
Debt/GNP	.30***	.39***	.34***	.38***	.40***
	(3.36)	(4.27)	(3.45)	(4.28)	(4.16)
Debt service/exports	-.35	-.25	.34	-.27	-.32
	(.81)	(.43)	(.48)	(.46)	(.54)
ln(GDP p.c.)	-16.02**	-9.97	-16.15*	-7.96	-9.98
	(2.39)	(2.12)	(2.12)	(1.01)	(1.30)
U.S. military grants p.c.	2.94***	2.52**	2.72**	2.70**	2.55***
	(6.61)	(4.09)	(5.14)	(3.92)	(4.57)
Political rights and civil liberties	1.95				
	(1.39)				
Bureaucratic quality		1.19			
		(.28)			
Regulatory burden (Heritage Foundation)			11.18		
			(1.46)		
Law and order				-5.24	
				(1.08)	
Corruption					3.79
					(.79)
N	93	63	80	63	63
R-squared	.4451	.4858	.4791	.4945	.4908

Note: Dependent variable is debt forgiveness. Only countries with positive debt forgiveness included. Absolute t-values in parentheses. Heteroscedasticity-robust standard errors.

Coefficient on constant not reported. * statistically significant at 90% level ** at 95% level *** at 99% level.

Table 7. *Level stage (OLS estimation): Standardized beta-coefficients*

	I	III	VI
Debt/GNP	.58***	.57***	.61***
	(3.35)	(3.34)	(3.59)
Debt service/exports	-.07	-.06	-.12
	(.67)	(.58)	(1.18)
ln(GDP p.c.)	-.18*	-.29**	-.27**
	(1.79)	(2.55)	(2.45)
U.S. military grants p.c.	.14***	.16***	.13***
	(6.71)	(5.57)	(5.05)
Voice and accountability		.21**	
		(2.41)	
Regulatory burden			.21**
			(2.51)
N	85	85	85
R-squared	.4292	.4624	.4627

Note: Dependent variable is debt forgiveness. Coefficients are standardized beta coefficients. Only countries with positive debt forgiveness included. Absolute t-values in parentheses. Heteroscedasticity-robust standard errors. Coefficient on constant not reported. * statistically significant at 90% level ** at 95% level *** at 99% level.

Appendix: *List of countries in tables 1 and 3, regression I*

Albania, Algeria, Angola, Argentina, Armenia, Azerbaijan, Bangladesh, Barbados, Belarus, Belize, Benin, Bhutan, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo (Democratic Republic), Congo (Republic), Costa Rica, Cote d'Ivoire, Croatia, Czech Republic, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial-Guinea, Eritrea, Estonia, Ethiopia, Fiji, Gabon, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hungary, India, Indonesia, Iran, Jamaica, Jordan, Kazakhstan, Kenya, Korea (Republic), Kyrgyz Republic, Laos, Latvia, Lebanon, Lesotho, Lithuania, Macedonia (FYR), Madagascar, Malawi, Malaysia, Maldives, Mali, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Nepal, Nicaragua, Niger, Nigeria, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Romania, Russian Federation, Rwanda, Samoa, Senegal, Sierra Leone, Slovak Republic, Solomon Islands, South Africa, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Swaziland, Syria, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe.