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The Politics of External Debt in Developing Countries

Emilio Colombo, Enrico Longoni
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Emilio Colombo[*]

University of Milan - Bicocca

Enrico Longoni

University of Milan - Bicocca

Abstract

We analyse the determinants of long term external debt for a large sample of developing countries. We find that, in addition to the standard economic variables, institutional and socio-political variables are a key factor in explaining the level of external debt. Overall the results point to an interpretation based on the presence of binding credit constraints. Such constraints are relaxed in the presence of high quality of institutions and low political risk, while they are tightened when socio-political risk is higher.

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[*]Corresponding author: Department of Economics, University of Milan Bicocca, Piazza dell'Ateneo Nuovo 1 (U6/329), 20126 Milan, Italy. E-mail: emilio.colombo@unimib.it. We thank Silvia Marchesi and participants at seminars in Dresden and Milano-Bicocca for helpful comments. The usual disclaimer applies.

1 Introduction

Access to foreign financing is of fundamental importance for developing countries. External resources allow countries with low levels of domestic savings to accelerate capital accumulation boosting economic growth.[1] Moreover, access to international capital markets permits consumption smoothing during periods of temporary shocks and facilitates the engagement in risk-sharing arrangements. This latter aspect is crucial for developing countries given the high economic volatility that typically characterises them.

Nonetheless the access to international capital markets has been a mirage for the majority of developing countries: the literature has extensively documented their inability to borrow from international markets and, whenever this occurs, the impossibility to do this at their own preferred terms. As stressed by Eichengreen et al. (2005) developing countries external debt is generally short term and denominated in foreign currency, exposing them to a high level of vulnerability. Several explanations have been put forward to explain this evidence.

On the one hand the debt intolerance approach (Reinhart et al., 2003) points to the institutional weaknesses of less developed economies as the cause of unreliable policies that do not allow them to manage levels of debt that are instead manageable for advanced economies.

On the other hand the "original sin" hypothesis (Eichengreen and Hausmann, 1999; Eichengreen et al., 2005) puts the emphasis on the intrinsic features of international financial markets and on the structure of international portfolios characterised by an extensive use of few currencies (due to increasing returns in currency holdings) that systematically discriminate against emerging market currencies.[2]

The original sin hypothesis is related also to a vast literature that has explored the lack of integration observed in international capital markets as caused by the difficult contract enforceability in an international setting.[3] It is well known in fact that the unavailability of a regulatory framework that allows contract enforcement with sovereign debtors changes radically the relationship between lenders and borrowers who, in addition to the usual "ability to pay" arguments, must consider also "willingness to pay" arguments. This inevitably

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[1]See Lucas (1990).

[2]This literature does not neglect the role played by domestic factors in determining the difficult access to external finance by developing countries, however it stresses that these are secondary effects as compared to the discrimination operated by international financial markets.

[3]See, among others, Bulow and Rogoff (1989), Eaton and Fernandez (1995) and Kletzer (1994).

widens the concept of creditworthiness from the standard economic elements to institutional and political aspects that can affect the decision to pay (or default) of a sovereign debtor. Moreover these imperfections are further exacerbated by the possibility of moral hazard by the debtor country that, aware of its limited liability, might use the proceeds of its borrowing to increase consumption or invest in improper projects wasting the growth-potential of debt.

All the arguments outlined above point to an international financial market that, when faced with the problem of lending to developing countries, is plagued by severe imperfections that lead to credit rationing. As Eaton and Gersowitz (1981) put it "foreign lenders do establish a credit ceiling above which they will be unwilling to increase loans".

In this paper we build on the literature described above to analyse empirically the determinants of the stock of external debt for a large set of developing countries. In particular, in addition to economic elements, we focus on the role played by institutions and socio-political factors in influencing a country's debt-ceiling. We believe that these factors, shaping the framework within which policymakers make their decisions, are a key element in the determination of creditworthiness, particularly for developing countries.

Surprisingly the literature has concentrated mainly on the possible negative consequences of (high) level of external debt, i.e. on debt default,[4] neglecting the factors that affect the general level of debt and the constraints posed by international financial markets on developing countries. This contribution tries to fill this gap and in particular ours is among the few papers that thoroughly investigate the role of political factors in determining the stock of external debt.[5]

Overall the results point to an interpretation based on the existence of binding credit constraints for developing countries. Such constraints are relaxed in the presence of high quality of institutions and low political risk, while they are tightened by higher socio-political risk. These results are robust to the chosen specification and to the estimation methodology. We also find that the debt constraint is relaxed for richer and more open economies, and in the presence of a higher level of education, deeper financial system, and flexible exchange rate regime.

The remainder of the paper is structured as follows: section 2 presents the theoretical framework underlying the empirical model, section 3 presents the data set, the variables used, and the methodology applied, section 4 presents the results, finally section 5 concludes.

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[4]See among the most recent contributions Manasse and Roubini (2009), Van Rijckeghem and Weder (2009), Arteta and Hale (2008), and the survey by Panizza et al. (2009).

[5]Exceptions are Ozler and Tabellini (1991) and Lane (2004) although in the latter the treatment of institutional and political factors is rather superficial.

2 Theoretical framework

In order to formalise our approach we build on the work by Lane (1999, 2004), Gertler and Rogoff (1990) and Obstfeld and Rogoff (1996)[6] in assuming that imperfections in international financial markets (due to moral hazard, repudiation risk, etc.), ration developing countries' access to external finance. The working assumption is therefore that there is a ceiling on the level of debt that a borrowing (developing) country can take.

$$D_{it} \leq D_{it}^{max} = \theta_{it} Y_{it} \tag{1}$$

As stated in equation (1) the debt ceiling is increasing in the level of output: the greater the level of output the higher is the amount of collateral the borrowing country can put up against the debt (alternatively the greater the level of output the greater the damage that can be imposed on the country).[7] Empirically the parameter of interest is θ which captures additional factors, other than income level, that affect the debt ceiling.

We allow θ to vary over time and across countries and we model it as depending on the level of the country productivity, the degree of creditworthiness and external factors (shocks).

$$\theta_{it} = \theta(A_{it}, CE_{it}, CP_{it}, \eta_t) \tag{2}$$

where A_{it} identify productivity, CE_{it} and CP_{it} creditworthiness. Among the factors that affect creditworthiness we distinguish between economic aspects CE and institutional and socio-political factors CP. Finally η_t identifies all (time specific) external shocks such as shocks to the world interest rate or a contraction in global demand due to a recession in industrialised countries.

Linearising the function above we obtain the following testable equation:

$$D_{it}^{max} = \alpha + \beta_1 y_{it} + \beta_2' X_{Ait} + \beta_3' X_{CEit} + \beta_3' X_{CPit} + \eta_t + \epsilon_{it} \tag{3}$$

Where y_{it} is log output, X_{Ait}, X_{CEit}, X_{CPit} denote respectively the vectors of variables representing productivity and creditworthiness, η_t denotes a common time varying shock and ϵ_{it} the error term.

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[6]In particular chapter 6.

[7]Equation (1) could be modified in order to allow a non linear relationship between the debt ceiling and the level of output.

3 Data and methods

3.1 Sources

Our empirical investigation is based on a data set for a large number of developing countries over the period 1970-2000. Table 5 and table 6 in the Appendix provide the list of countries included in the analysis and some descriptive statistics of the variables. Since we are not interested in short term or cyclical effects we use five-year averages. Economic data are taken from the World Bank World Development Indicators data set. Political and socio-political variables come from different sources such as the Database of Political Institutions (DPI), the Cross National Time Series archive and the *Polcon* variable provided by Henisz (2002). The full list of sources is reported in the Appendix. Our dependent variable is the log of total long term per-capita external debt in constant US\$.

In the following sub-section we describe the set of variables included in our empirical model that affect the country productivity and creditworthiness as outlined in equation (3).

3.2 Explanatory variables

For the sake of clarity we will classify the explanatory variables according to the theoretical framework outlined in the previous section. Our interpretation and discussion is centred on the punishment or premium mechanisms explaining the debt ceiling imposed on developing countries by foreign investors. We work under the assumption that the credit constraint defined in equation (3) is binding and that developing countries operate at their debt ceiling ($D_{it} = D_{it}^{max}$). It could be argued that assuming a binding credit constraint on developing countries' debt is a strong assumption. Our answer is based on three considerations. First there is ample anecdotal evidence of this phenomenon as reported for instance by Eichengreen et al. (2005). Second there is no no persuasive econometric procedure that allows to relax the borrowing constraint for some countries.[8] Finally the assumption that developing countries are subject to a binding credit constraint is shared by the major part of the literature both theoretical and empirical.

The first variable that we consider is the:

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[8]The only paper that tries to deal with this issue is Eaton and Gersowitz (1981). Notwithstanding some theoretical problems (in their model a country with a higher growth potential should face a lower debt ceiling which is not found in the data), they find that the vast majority of the countries in their sample is indeed credit constrained.

(i) *Level of development.* We represent it with the log of GDP per-capita in constant US\$. As stated above a higher level of output on the one hand represents a good proxy for the ability of a country to provide its foreign lenders with a collateral, on the other hand it is directly correlated with the measure of the punishment that lenders can inflict to the country in case of default. Therefore we expect a positive sign for the coefficient of this variable.

Regarding variables representing a country productivity we consider the following:

(ii) *Human capital.* As a proxy of human capital we use the average years of higher schooling in the total population (*Educ*). As shown by the literature on economic growth, education represents a strongly growth-enhancing factor, particularly in developing countries. Thus, we expect that higher future growth prospects incorporated in a higher level of education could reduce a developing country's credit constraint.

(iii) *Trade openness.* Openness to international trade is measured by the ratio of exports over GDP. It is well known that trade openness is one of the factors that are more robustly correlated with growth. However in our setting other factors may affect the relationship between trade and external debt. More open economies should have a higher cost in repudiating their external debt obligations. This happens not only because of trade sanctions imposed by lenders but mainly because of the disruption of trade flows that generally follows default. Moreover a higher level of trade guarantees the availability of foreign currency that is crucial for the repayment of external debt. Therefore, not only trade openness fosters a country growth's prospects, but we can also consider traded goods as a sort of collateral which increases the creditworthiness of a country. In both cases we expect economies characterised by higher levels of trade volume to have higher level of external debt.

Regarding other economic factors that affect a country's creditworthiness we consider the following:

(iv) *Financial development.* We proxy it by the level of the domestic credit provided by the banking sector as share of GDP (*Findepth*). On the one hand, more developed financial markets should be characterised by a more efficient use of funds that could be associated with better growth prospects; on the other hand financial development may also be a proxy for a discipline-effect which could reduce the willingness to borrow from

external sources in order not to worsen internal financial vulnerability and instability.[9]

(v) *Exchange rate regime.* We use a measure of the *de-facto* exchange rate regime classification by Reinhart and Rogoff (2004) . A higher value of the variable (*Excharr*) denotes a more flexible exchange rate regime.[10] We expect countries characterised by more flexible exchange rate regimes to be less vulnerable to currency crises that could trigger debt defaults. This should have a positive impact on the level of external debt.

(vi) *Involvement with international financial institutions.* Given our emphasis on developing countries we cannot ignore the fact that several countries have special access to external financing, either under the form of direct help from multilateral institutions, or via funds accessible at cheaper terms with respect to market conditions. We use two variables to capture these effects. First, aid per capita which includes both official development assistance (ODA) and official aid (*Aidpc*). Second, we use the share of concessional debt on total long term external debt (*Conc*).[11] Both factors might have a relaxing effect on the debt ceiling faced by developing countries. This is so because the existence of a relationship between borrowing countries and multilateral financial institutions reduces informational asymmetries that would be otherwise present in a market environment. Moreover, the possible dependance on foreign aid and the high cost of losing this financial resource in case of default, provides an additional punishment tool in the hands of the external creditors.

Turning to institutional factors we consider three dimensions of a country's political framework that could affect its creditworthiness: the degree of political stability, the transparency of the political process and the presence of checks and balances in the decision making process.[12]

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[9]From the discussion above it is clear that trade openness and financial development could be interpreted as affecting both a country's productivity and its creditworthiness. Our interpretation is that the openness effect operates mainly through the productivity channel while financial depth operates mainly through the creditworthiness channel.

[10]This variables assigns values ranging from 1 to 4 to classify exchange rate regimes from pegged to flexible. Technically given that we already control for the effect of spells of high inflation we assign to freely falling regimes the same value (4) as free floaters. This procedure does not effect the results.

[11]According to the definition in the GDF database provided by the World Bank, concessional debt is defined as loans with an original grant element of 25 percent or more.

[12]We have also explored other dimensions of the political space such as measures of the political system (presidential vs parliamentary) and measure of the ideological location of the government. It turns out that these variables are never significant and in addition imply the loss of several observations. Therefore, we have not included them in the analysis

(vii) *Political stability.* We proxy it with the government Herfindahl index (*Herfgov*). Lower values of the index capture a more fragmented government coalition.[13] A less fragmented political environment (associated with a lower risk of expropriation perceived by the international lenders) is generally considered as a desirable feature from the international financial community. Therefore, we predict countries characterised by higher levels of political stability to have a slacker credit constraint relative to countries with an unstable political environment.

(viii) *Transparency of the political process.* This dimension of the political environment is captured through a measure of electoral openness and political competitiveness (*Liec*). This variable quantifies the electoral competitiveness based on the number of parties competing in the last election (higher values of the variable are associated with more open electoral systems).

(ix) *Checks and balances.* This feature of the political system is captured by a measure of political constraint on the executive based on the number of veto players in the policy decision process. Taken from Henisz (2002), the index (*Polcon*) uses information on the number of independent branches of government (including executive, lower and upper legislative chambers) with veto power over policy change, the degree of alignment across branches of government based on party composition of each branch, and the degree of preference heterogeneity within each legislative branch. Thus, it combines information both on the quality of the decision process and on the ability of the executive to commit to its past policy decisions. We expect that countries with a higher level of checks and balances (higher values of *Polcon*) will also be able to obtain greater credit from their lending counterparts.

(x) *Social instability.* We complement the set of institutional variables with the measures *Assass* and *Purges* which represent the number of political assassinations and purges respectively. The inclusion of these two variables is motivated by the consideration that a stable environment from the social-political point of view represents a characteristic which can improve a country's rating by reducing the risk of expropriation faced by international lenders, improving a country's overall creditworthiness.

In order to control for cross-country heterogeneity we include two regional

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[13]The Herfindahl index government is calculated as the sum of the squared seat shares of all parties in the government. Alternative measures such as the degree of fractionalisation in the government yield similar results

dummy variables one for Africa and Latin America. We also control for the existence of structural differences between countries that joined the Heavily Indebted Poor Countries (HIPC) initiative jointly run by the World Bank and the IMF (*Dhipc*), and for periods of high inflation (greater than 40)%[14] with a dummy. Finally, we include time dummies in order to control for the existence of time-related shocks such as changes in the world interest rates and in capital market conditions (η_t in equation (3) above).

3.3   Methodology

We estimate equation (3) by pooled OLS. This choice is motivated by the fact that our set of of explanatory variables captures the major part of individual country heterogeneity. An alternative could be represented by the fixed effect estimator, able to fully control for cross-country heterogeneity. Such an estimator is however of limited use in the presence of variables that display scarce variability over time, which is a general feature of political and institutional variables. Reported standard errors are robust to the presence of heteroskedasticity and serial correlation.

In section 4.1 we conduct several robustness checks to our methodology using a pooled IV, a fixed effects and a GMM estimator obtaining results in line with our baseline specification.

In order to control for possible endogeneity, the level of GDP per capita and the degree of openness are measured at the beginning of each of the 5 years sample period.[15]

4   Results

Table 1 reports the results. Column 1 starts by analysing only economic controls. External debt is positively correlated with the level of economic development, the degree of openness and the level of education. These results are consistent with the credit constraint framework: a richer and more open economy is more vulnerable to the threat of sanctions and, *ceteris paribus*, is allowed to take on more debt.

Similarly, a higher level of education, signalling future growth prospects, allows a relaxation of the credit constraint. External debt is also higher in

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[14]This is the standard World Bank definition of high inflation. For theoretical and empirical underpinnings of this threshold see Dornbusch and Fischer (1993) and Bruno and Easterly (1998).

[15]In section 4.1 we provide IV estimates where GDP is instrumented with the latitude of the nation's capital.

countries that have more flexible exchange rate regimes: such regimes are in fact less vulnerable to currency crises that could trigger a debt default.

The positive and highly significant coefficient displayed by *Findepth* shows that the efficiency effect prevails over the discipline effect of financial markets. A country's involvement with multilateral institutions (share of debt lent at concessional term and the amount of aid per capita) seems to provide a positive signal allowing a relaxation of the credit constraint. Finally the dummy for high inflation displays a positive and significant coefficient.[16]

Columns 2 to 6 progressively include political and institutional controls. A higher degree of institutional quality allows developing countries to take on more debt. External debt is in fact higher in countries where the electoral system is open and competitive (variable *Liec*) and where political instability is lower (higher concentration of government seats). By the same token, socio-political instability, captured by the variables *Assass* and *Purges*, has a negative effect on a country's rating, making the credit constraint more binding.

Finally *Polcon*, despite being not statistically significant, does not quite fit with the credit constraint story outlined so far. In fact, the presence of stronger checks and balances is generally interpreted by the literature as a measure of higher institutional quality and, as such it should display a positive coefficient. However, an alternative interpretation stresses that high constraints on the executive could also reduce the effectiveness of the policies implemented and result in a higher degree of political uncertainty. A possible key to disentangle these two effects is provided by the variable *Liec*: it is likely that the way in which debt is related to political constraints depends on the transparency of the political process itself. Therefore, in column 7, we interacted *Polcon* with *Liec* (variable *Liecpol*): now the interaction term displays a negative coefficient, *Liec* remains positive while *Polcon* turns from negative to positive and gains significance. Therefore we offer the following interpretation: when the political process is opaque (low values of *Liec*) executive constraints provide a measure of institutional quality as they can prevent excessive power in the hands of the executive (hence a positive sign on *Polcon*). On the other hand, when the political process is already transparent and competitive, the presence of executive constraints can signal greater political uncertainty on policy decisions outcomes, resulting in a negative sign for *Polcon*.

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[16]This result seems in contrast with the credit constraint story; a possible explanation is that several developing countries increased their debt levels during phases of inflation stabilisation, and the five year average does not capture this trend, crystallising the high level of inflation.

4.1 Robustness checks

4.1.1 Alternative estimators

The results presented in the previous section have been subjected to several robustness checks. In particular, we test the validity of our results obtained through the pooled OLS estimator by comparing them with those obtained using different estimation methods which address specific empirical issues. Results are reported in table 2.

The first element we consider is the possible endogeneity of the level of GDP per capita. So far we have dealt with this problem by considering *Gdppc* as predetermined taking its value at the begin of each subperiod. In column 1 of table 2 we treat *Gdppc* as fully endogenous instrumenting it with the latitude of the nation's capital (Hall and Jones, 1999). The estimated coefficients, for sign and magnitude, are in line with those reported in column 7 of table 1.

In column 2 we report estimates obtained with a panel fixed effect estimator. Despite its disadvantages with variables that are either fixed or display limited time variability, fixed effects allow to fully control for cross-country unobserved heterogeneity. While the sign of the coefficients are all confirmed, not surprisingly we find that some variables that display limited time variability over time lose statistical significance.

Finally we also consider the dynamic system GMM estimator. Given our focus on the stock of long run debt and the use of five year averages the use of such an estimator is not entirely appropriate, however it allows us to take into account the persistence of the stock of external debt including (and properly instrumenting) the lagged dependent variable as regressor. Column 3 reports the results using the "system GMM" estimator (Blundell and Bond, 1998). In addition to the positive and significant coefficient on the lagged value of debt all the results presented above are confirmed.[17]

4.1.2 Parameter heterogeneity

Parameters heterogeneity is a typical shortcoming of regression analysis based on large samples of countries. In particular, our sample consists of countries that differ in many structural dimensions such as, for instance, size and the stage of economic development. Despite controlling for a large set of institutional and economic dimensions, there is always the possibility that results are driven by some structural aspect not accounted for. We therefore re-estimate

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[17]As customary with GMM estimators we perform the test for autocorrelation in the disturbance term and the Sargan test for instrument validity. We reject the null of no correlation of order one but we cannot reject the null of no correlations of second order autocorrelation. The Sargan-Hansen test confirms instrument validity.

the system on sub-samples divided on the basis of per-capita GDP (as a proxy for the stage of economic development) and population (as a proxy for the size of a country). In table 3 we progressively exclude from the regression the 5, 10 and 15 poorest countries (columns 1 to 3); subsequently we progressively exclude the 5, 10 and 15 richest countries (columns 4 to 6) of the sample. Finally in the last column we have excluded the 5 poorest and 5 richest countries. The results of the baseline regression appear remarkably robust both in terms of significance and also in terms of coefficient stability. In table 4 we repeated the exercise excluding countries according to the population size. Again results appear very robust.

5   Conclusions

This paper provides an analysis of the determinants of long-term external debt for a large sample of developing countries, focussing in particular on the role played by economic, institutional and socio-political factors. We find support for the theories that emphasise that developing countries are constrained in their access to external finance. In line with many models of international credit rationing, there exists a strong and positive association between the level of external debt, the level of output and the degree of trade openness. Thus, the potential loss in output or the costs due to the disruption of trade it would incur in case of non repayment, have a positive effect on the debt ceiling. We also find evidence of a positive effect of education, depth of the domestic financial system, and exchange rate flexibility on external debt. Regarding institutional and socio-political factors our results show that they have a strong influence on the level of external debt. We find that higher transparency of the electoral system, and higher political stability are rewarded by international financial markets. In fact a sound institutional and political environment lowers the credit risk associated to a country also by decreasing the risk of expropriation so that countries characterised by these two features are allowed to take on more debt. On the contrary, the binding credit constraint faced by developing countries is tightened as the socio-political risk perceived by international lenders increases.

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Table 1: Economic, political and socio-political determinants.

	Col1	Col2	Col3	Col4	Col5	Col6	Col7
Gdppc	0.767***	0.789***	0.850***	0.855***	0.857***	0.843***	0.837***
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
Open	1.119***	1.099***	1.333***	1.344***	1.306***	1.278***	1.236***
	(0.22)	(0.24)	(0.26)	(0.26)	(0.26)	(0.26)	(0.25)
Educ	0.958***	1.120***	1.215***	1.213***	1.148***	1.102***	1.213***
	(0.25)	(0.25)	(0.25)	(0.25)	(0.26)	(0.26)	(0.25)
Excharr	0.122***	0.102***	0.090***	0.089***	0.092***	0.085***	0.078**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Findepth	0.477***	0.470***	0.345***	0.342***	0.328***	0.348***	0.358***
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.11)
Conc	0.029	0.229	0.239	0.226	0.211	0.175	0.185
	(0.25)	(0.27)	(0.27)	(0.27)	(0.27)	(0.26)	(0.26)
Aidpc	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***	0.004***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dinfla	0.134*	0.166*	0.227**	0.237**	0.218**	0.207**	0.230**
	(0.08)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)	(0.09)
Liec		0.038*	0.052**	0.066***	0.068***	0.052**	0.071***
		(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
Herfgov			0.411***	0.377**	0.366**	0.411***	0.368**
			(0.14)	(0.15)	(0.15)	(0.15)	(0.15)
Polcon				-0.191	-0.221	-0.229	2.309**
				(0.16)	(0.16)	(0.16)	(1.09)
Liecpol							-0.383**
							(0.16)
Assass					-0.052**	-0.047*	-0.054**
					(0.03)	(0.03)	(0.02)
Purges						-0.652***	-0.616***
						(0.23)	(0.22)
Dhipc	0.097	0.187*	0.288***	0.282***	0.269***	0.256**	0.255***
	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)	(0.10)
Dafrica	0.418***	0.485***	0.494***	0.489***	0.469***	0.422***	0.434***
	(0.11)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Damerica	0.483***	0.438***	0.301***	0.306***	0.332***	0.335***	0.357***
	(0.10)	(0.10)	(0.09)	(0.09)	(0.10)	(0.10)	(0.10)
Cons	-1.107**	-1.026	-1.842***	-1.853***	-1.791***	-1.537**	-1.584**
	(0.55)	(0.63)	(0.63)	(0.63)	(0.64)	(0.63)	(0.63)
R-squared	0.83	0.83	0.85	0.85	0.86	0.86	0.86
No. of Obs.	322	275	249	249	249	249	249

Note: Dependent variable is (log) external debt per capita, 5 years averages. Estimation is Pooled OLS, with robust standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies included but not reported.

Table 2: Robustness: different methodologies

	IV	FE	SystemGMM
Extdebt(t-1)			0.483***
			(0.05)
Gdppc	0.537***	1.260***	0.141**
	(0.13)	(0.21)	(0.07)
Open	1.390***	0.804*	0.707***
	(0.26)	(0.47)	(0.11)
Educ	1.502***	1.223**	0.571***
	(0.29)	(0.56)	(0.19)
Excharr	0.079***	0.198***	0.012
	(0.03)	(0.04)	(0.02)
Findepth	0.356***	0.492***	0.256***
	(0.10)	(0.10)	(0.05)
Conc	-0.375	0.494	-0.274*
	(0.30)	(0.44)	(0.15)
Aidpc	0.004***	0.002	0.002***
	(0.00)	(0.00)	(0.00)
Liec	0.074***	0.104***	0.046***
	(0.03)	(0.03)	(0.01)
Herfgov	0.391***	0.343**	0.205**
	(0.15)	(0.16)	(0.08)
Polcon	2.585**	2.613***	1.038**
	(1.15)	(0.73)	(0.47)
Liecpol	-0.416**	-0.410***	-0.202***
	(0.17)	(0.12)	(0.07)
Assass	-0.049*	-0.021	-0.035**
	(0.03)	(0.03)	(0.01)
Purges	-0.760***	-0.126	-0.412***
	(0.28)	(0.23)	(0.13)
Dinfla	0.235**	0.013	0.232***
	(0.10)	(0.12)	(0.05)
Dhipc	0.187**	.	-0.162
	(0.09)	.	(0.12)
Dafrica	0.405***	.	0.026
	(0.12)	.	(0.06)
Damerica	0.524***	.	0.172**
	(0.13)	.	(0.08)
Cons	0.493	-4.648***	1.562***
	(0.92)	(1.54)	(0.46)
R-squared	0.85	0.53	
No. of Obs.	249	249	245

Note: Dependent variable is (log) external debt per capita, 5 years averages. Col. 1 reports a IV estimator where *Gdppc* has been instrumented with the latitude of a nation's capital. Col 2 and 3 use a fixed effect estimator and a GMM system estimator. Robust standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies included but not reported.

Table 3: Robustness Checks: Income Categories

	Poor 5	Poor 10	Poor 15	Rich 5	Rich 10	Rich 15	Poor-Rich 5
Gdppc	0.825***	0.829***	0.846***	0.784***	0.792***	0.715***	0.750***
	(0.07)	(0.08)	(0.07)	(0.08)	(0.08)	(0.09)	(0.09)
Open	1.327***	1.244***	1.220***	1.425***	1.571***	1.948***	1.486***
	(0.26)	(0.26)	(0.27)	(0.28)	(0.31)	(0.35)	(0.28)
Educ	1.194***	1.294***	1.395***	1.249***	1.480***	1.729***	1.224***
	(0.26)	(0.25)	(0.28)	(0.26)	(0.28)	(0.36)	(0.27)
Excharr	0.095***	0.111**	0.095**	0.091***	0.090***	0.090***	0.110***
	(0.03)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.04)
Findepth	0.331***	0.362***	0.356***	0.334***	0.404***	0.488***	0.340***
	(0.12)	(0.12)	(0.12)	(0.11)	(0.10)	(0.10)	(0.11)
Conc	0.186	0.228	0.016	0.228	0.184	0.205	0.221
	(0.30)	(0.33)	(0.35)	(0.28)	(0.27)	(0.27)	(0.31)
Aidpc	0.004***	0.003***	0.003***	0.004***	0.003***	0.002**	0.004***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dinfla	0.198**	0.182	0.190*	0.256**	0.267***	0.165	0.222**
	(0.10)	(0.11)	(0.11)	(0.10)	(0.10)	(0.11)	(0.11)
Liec	0.068**	0.063*	0.077**	0.087***	0.091***	0.108***	0.073**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Herfgov	0.203	0.258	0.234	0.340**	0.279	0.074	0.142
	(0.15)	(0.16)	(0.16)	(0.17)	(0.17)	(0.20)	(0.17)
Polcon	2.840**	3.126**	3.011*	2.941**	2.893**	1.898*	2.830**
	(1.34)	(1.55)	(1.62)	(1.13)	(1.15)	(1.07)	(1.37)
Liecpol	-0.459**	-0.492**	-0.484**	-0.473***	-0.476***	-0.351**	-0.466**
	(0.20)	(0.23)	(0.24)	(0.17)	(0.17)	(0.16)	(0.20)
Assass	-0.056**	-0.050**	-0.051**	-0.041	-0.038	-0.027	-0.044*
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Purges	-0.750***	-0.746***	-0.492	-0.577**	-0.525**	-0.472**	-0.723***
	(0.24)	(0.27)	(0.31)	(0.23)	(0.22)	(0.23)	(0.26)
Dhipc	0.250**	0.289**	0.442***	0.219**	0.285***	0.297***	0.220*
	(0.11)	(0.13)	(0.15)	(0.11)	(0.09)	(0.09)	(0.11)
Dafrica	0.389***	0.365***	0.272*	0.464***	0.524***	0.641***	0.397***
	(0.13)	(0.14)	(0.15)	(0.12)	(0.11)	(0.12)	(0.13)
Damerica	0.345***	0.316***	0.267**	0.374***	0.385***	0.426***	0.381***
	(0.10)	(0.10)	(0.11)	(0.10)	(0.10)	(0.12)	(0.11)
Cons	-1.399**	-1.556*	-1.818**	-1.798***	-1.926***	-1.565**	-0.987
	(0.68)	(0.82)	(0.71)	(0.65)	(0.64)	(0.71)	(0.76)
R-squared	0.84	0.81	0.79	0.84	0.85	0.85	0.82
No. of Obs.	223	203	181	219	203	179	200

Note: Dependent variable is (log) external debt per capita, 5 years averages. Estimation is Pooled OLS, with robust standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies included but not reported. Cols. 1-3 exclude the 5, 10, 15 poorest countries respectively, cols. 4-6 exclude the 5, 10, 15 richest countries respectively. Col. 7 excludes the 5 richest and the 5 poorest countries.

Table 4: Robustness Checks: Population Categories

	Small 5	Small 10	Small 15	Large 5	Large 10	Large 15	Small-Large 5
Gdppc	0.834***	0.847***	0.967***	0.784***	0.760***	0.783***	0.772***
	(0.08)	(0.08)	(0.07)	(0.06)	(0.07)	(0.07)	(0.07)
Open	1.789***	1.827***	2.034***	1.266***	1.101***	1.007***	1.740***
	(0.35)	(0.38)	(0.39)	(0.28)	(0.26)	(0.25)	(0.39)
Educ	1.379***	1.484***	1.489***	1.336***	0.851***	0.975***	1.635***
	(0.26)	(0.28)	(0.28)	(0.30)	(0.32)	(0.32)	(0.30)
Excharr	0.071*	0.041	0.074*	0.088***	0.080**	0.101***	0.082**
	(0.04)	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.04)
Findepth	0.295	0.222	-0.243	0.375***	0.349**	0.476***	0.372*
	(0.20)	(0.20)	(0.18)	(0.12)	(0.14)	(0.11)	(0.22)
Conc	0.277	0.272	0.640**	0.177	-0.280	-0.260	0.290
	(0.28)	(0.29)	(0.30)	(0.30)	(0.27)	(0.28)	(0.29)
Aidpc	0.003***	0.006**	0.003	0.004***	0.004***	0.004***	0.004***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dinfla	0.272***	0.333***	0.245**	0.281***	0.229**	0.179*	0.333***
	(0.10)	(0.11)	(0.11)	(0.09)	(0.10)	(0.09)	(0.11)
Liec	0.107***	0.102***	0.100***	0.060**	0.046	0.043	0.088***
	(0.03)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Herfgov	0.278*	0.208	0.246	0.360**	0.477***	0.486***	0.289*
	(0.17)	(0.18)	(0.19)	(0.16)	(0.17)	(0.16)	(0.17)
Polcon	2.810**	2.582**	2.514*	2.694**	2.914***	2.595***	2.784**
	(1.08)	(1.21)	(1.36)	(1.15)	(0.91)	(0.95)	(1.10)
Liecpol	-0.457***	-0.442**	-0.418**	-0.404**	-0.457***	-0.401***	-0.417**
	(0.16)	(0.18)	(0.20)	(0.17)	(0.14)	(0.14)	(0.17)
Assass	-0.048**	-0.057**	-0.069***	-0.047*	-0.071***	-0.067**	-0.029
	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)
Purges	-0.516**	-0.528**	-0.277	-0.273	-0.138	-0.116	-0.244
	(0.21)	(0.22)	(0.23)	(0.25)	(0.22)	(0.21)	(0.24)
Dhipc	0.256**	0.166	0.059	0.231**	0.247**	0.331***	0.277**
	(0.11)	(0.12)	(0.13)	(0.12)	(0.11)	(0.09)	(0.12)
Dafrica	0.517***	0.434***	0.512***	0.480***	0.246	0.364***	0.585***
	(0.13)	(0.14)	(0.13)	(0.15)	(0.15)	(0.13)	(0.16)
Damerica	0.344***	0.290**	0.127	0.364***	0.287***	0.300***	0.361***
	(0.12)	(0.13)	(0.10)	(0.10)	(0.11)	(0.11)	(0.12)
Cons	-2.195***	-2.113***	-2.579***	-1.377**	-0.584	-0.936	-1.731***
	(0.62)	(0.66)	(0.68)	(0.64)	(0.68)	(0.64)	(0.66)
R-squared	0.86	0.86	0.88	0.85	0.88	0.89	0.85
No. of Obs.	220	198	176	215	191	174	193

Note: Dependent variable is (log) external debt per capita, 5 years averages. Estimation is Pooled OLS, with robust standard errors reported in parentheses. ***,**,* denote significance at the 1, 5 and 10 percent levels respectively. Time dummies included but not reported. Cols. 1-3 exclude the 5, 10, 15 smallest countries respectively, cols. 4-6 exclude the 5, 10, 15 largest countries respectively. Col. 7 excludes the 5 smallest and the 5 largest countries.

Table 5: List of countries.

Algeria	Guyana *	Panama
Argentina	Haiti	Paraguay
Benin *	Honduras	Peru
Bolivia *	Hungary	Philippines
Botswana	India	Poland
Brazil	Indonesia	Senegal *
Burundi	Iran, I.R. of	South Africa
Cameroon *	Jamaica	Sri Lanka
Central African Republic	Jordan	Syrian Arab Republic
Chile	Kenya *	Thailand
China	Lesotho	Togo *
Colombia	Malawi *	Tunisia
Congo, Republic of	Malaysia	Turkey
Costa Rica	Mali *	Turkmenistan
Dominican Republic	Mauritania	Uganda *
Ecuador	Mauritius	Uruguay
Egypt	Mexico	Venezuela
El Salvador	Nepal	Zambia *
Gambia, The *	Nicaragua	Zimbabwe
Ghana *	Niger *	
Guatemala	Pakistan	

Note: (*) indicates HIPC countries.

Table 6: Descriptive statistics: all countries.

Var.	Mean	SD. Dev	Min	25	50	75	Max	N.Obs.
Aidpc	0.47	0.63	0.00	0.09	0.24	0.56	4.27	687
Conc	0.42	0.29	0.00	0.15	0.37	0.66	1.00	662
Excharr	2.18	1.07	1.00	1.00	2.00	3.00	4.00	511
Findepth	0.40	0.29	0.00	0.21	0.34	0.51	2.80	594
Open	0.29	0.18	0.01	0.15	0.25	0.41	1.01	606
Herfgov	0.86	0.25	0.00	0.80	1.00	1.00	1.00	545
Educ	0.15	0.16	0.00	0.03	0.09	0.22	0.75	428
Edebtpc	5.90	1.31	0.63	5.04	5.97	6.89	8.50	604
Gdppc	6.77	1.09	3.80	5.80	6.79	7.59	9.06	626
Liec	4.72	1.99	1.00	3.00	4.80	7.00	7.00	601
Polcon	0.17	0.26	0.00	0.00	0.00	0.32	0.86	660
Assass	0.27	0.77	0.00	0.00	0.00	0.20	7.40	658
Purges	0.08	0.24	0.00	0.00	0.00	0.00	2.60	658

Data source

Variable	Description	Source
Extdebtpc	Log total long term external debt per capita, constant USD	WDI
Gdppc	Log gdp pro capite, constant USD, beginning of period	WDI
Excharr	*De facto* exchange rate classification	Reinhart and Rogoff (2004)
Findepth	Domestic credit to the banking sector as pct of GDP	WDI
Open	Export over GDP, beginning of period	WDI
Educ	Average years of secondary schooling	Barro and Lee (2000)
Aidpc	Aid per capita	WDI
Conc	Share of concessional debt on total long term external debt	WDI
Dinfla	Dummy for high inflation countries ($> 40\%$)	WDI
Herfgov	Herfindal Index for government	DPI
Polcon	Political constraint index	Witold Henisz
Liec	Legislative index of electoral competitiveness	DPI
Assass	Assassinations	CNTS archive
Purges	Purges	CNTS archive