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Oscar Becerra
Eduardo Cavallo
Ilan Noy

Inter-American Development Bank
Department of Research and Chief Economist

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Oscar Becerra*
Eduardo Cavallo**
Ilan Noy***

* University of British Columbia

** Inter-American Development Bank

*** Victoria University of Wellington

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Abstract*

Using reduced-form regression models, this paper shows that average predicted private saving rates in Latin America and the Caribbean (LAC) are significantly lower than in other regions, particularly Emerging Asia (about 4 percentage points of GDP on average). Predicted public saving rates in LAC are also lower than in Emerging Asia, but by a smaller margin (1 percentage point of GDP on average). It is further shown that LAC private saving rates are below the region-specific prediction by approximately 1.5 percentage points of GDP on average. Finally, it is found that a greater reliance on external savings does not fully close the negative estimated private saving gap, reducing it by less than 1 percentage point. No gap is found in the case of public saving rates, suggesting that the lower predicted public saving rate in LAC is accounted for by the known determinants of fiscal policy.

JEL classification: E21

Keywords: Saving rates, Saving gap, Determinants of saving, Private saving, Public saving

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1. Introduction

There is a widespread perception among academic and policy circles that aggregate saving rates are “low” in the Latin American and Caribbean (LAC) region. For example, national saving rates in LAC are close to 20 percent of GDP on average vs. 30 percent of GDP in fast-growing East Asia. However, saving rates in LAC may be what they should be given the stage of development, demographic trends, and other known determinants of aggregate saving rates across countries. If that were the case, then the observed “low” saving rates in LAC would not be a mystery. These observations therefore suggest we should identify the right benchmark with which to compare Latin American saving rates.

In this paper the starting point to our inquiry about Latin America’s low saving rate is the literature on the empirical determinants of saving rates. We use reduced-form panel estimations to make cross-country and within-country comparisons of saving rates. In particular, we construct “predicted” saving rates across countries. We then quantify any possible saving gaps (i.e., the difference between observed and predicted saving rates). This two-step approach enables us to: i) make cross-countries comparisons of saving rates; and ii) assess whether the observed private and public saving rates in each country are either persistently above or below the predicted values.

Aggregate (national) saving rates can be decomposed between the private and public sectors. Figure 1a displays the average private saving rate by geographic region during the recent period (1980–2012). The “low” average saving rate of the LAC countries is clearly evident. Compared to Emerging Asia, the private saving rate of LAC countries is about six percentage points lower in the 1980s, and the difference has widened to reach nine percentage points in recent years. Despite the increase in the saving rate in LAC, from 11.6 percent in 1980–84 to 16.3 in 2010–12, the current level of saving is far below other emerging regions, including Emerging Asia, the Middle East and North Africa.¹ There is, however, important heterogeneity in the private saving rates of LAC countries. Figure 2a shows the cumulative distribution function of the saving rate by country, averaged over the period 1990–2012.² We label the data

¹ We use groupings of countries as defined by the International Monetary Fund. The definitions are available at: <http://www.imf.org/external/pubs/ft/weo/2014/01/weodata/groups.htm>

² We focus on the period 1990–2012 because our dataset is more balanced for those years. Thus, the reported differences are the result of changes in the levels of the variables rather than changes in the number of time periods included.

points related to LAC countries (in black, located to the right of the point) and Emerging Asia (in gray, located to the left of the point). All Emerging Asia countries are above the median saving rate in the sample (the dotted line), and China (ISO Code CHN) has the top saving rate in the sample. Only four LAC countries, Haiti (HTI), Trinidad and Tobago (TTO), Venezuela (VEN), and Mexico (MEX), exhibit saving rates similar to the ones for Eastern Asian countries—and three of those four are significant oil exporters. Those four countries and Chile are the only ones that have saving rates above the median. The rest of LAC countries are all between the 15th and 50th percentiles of the saving rate distribution.

In contrast with private sector saving, public saving rates in LAC countries tend to be similar to other regions. Figure 1b presents the time trends of public-sector saving rates by region. Except for the outstanding growth of public savings in the Middle East and North Africa, likely associated with a decade-long period of high oil prices, public saving rates have converged for all other regions since the beginning of the 2000s. Nonetheless, the public saving rate for LAC is still below public saving rates for Emerging Asia, including countries that are significantly poorer than the LAC norm. The LAC public saving rate is similar to the public saving rates for advanced economies (at least in the period before the onset of the Global Financial Crisis). In Figure 2b, we locate the public saving rates for LAC countries within the global distribution of the national public-sector saving rates. Ten out of 20 LAC countries are located above the world median of the public saving rate, where Venezuela (VEN), Bolivia (BOL), and Trinidad and Tobago (TTO) are the countries with the highest average public saving rate between 1990 and 2012. On the other extreme, Brazil (BRA), Argentina (ARG), and Costa Rica (CRI) exhibit the lowest average public saving rates for the region. We therefore ask two questions. First, what are the global determinants of private and public saving rates? Second, are LAC private saving rates and public saving rates at the levels predicted by the fundamentals in these countries?

The main focus of this paper is on Latin America and the Caribbean, a region with low observed national saving rates. A reduced-form investigation of the determinants of private and public saving in LAC countries is important because saving is widely seen as one of the most important determinants of long-term economic performance. There have been previous efforts to explain the determinants of LAC saving rates using observable data. In this paper, we contribute to the literature by using these determinants to make meaningful cross-regional comparisons of

saving rates. In addition, we are the first—to the best of our knowledge—to assess whether there are unexplained saving gaps in certain regions that call for complementary approaches to study aggregate saving dynamics.

2. Related Literature

The determinants of saving behavior have been studied extensively at both the micro and macro levels. Here, we are concerned with aggregate (macroeconomic) saving behavior. In the macroeconomic literature, there are four papers in particular that examine similar questions: Edwards (1996), Loayza, Schmidt-Hebbel and Servén (2000) and Grigoli, Herman and Schmidt-Hebbel (2014 and 2015).

Edwards (1996) investigates whether and why Latin American and Caribbean (LAC) countries historically appear to have lower saving rates than many other countries.³ He uses a two-stage approach. In the first stage, he estimates reduced-form equations including determinants of private and public saving rates. In the second stage, he considers two possibilities that might explain the low saving rates in LAC countries: i) differences in structural parameters and ii) differences in the levels of the determinants of the saving rates. Edwards concludes that his evidence supports the view that the observed differences in saving rates for LAC are related to differences in their determinants rather than differences in the reduced-form parameters.

The second paper, Loayza, Schmidt-Hebbel and Servén (2000), evaluates the importance of several determinants of the private and national saving rates for a wide set of developed and developing countries. The authors consider several determinants of saving decisions and estimate dynamic panel data regressions for the private and national saving rates. Grigoli, Herman and Schmidt-Hebbel (2014) update and extend the work of Loayza et al., using a larger panel database, and expanding the set of determinants. Even though they do not explore directly the saving rates of LAC countries, they estimate additional models considering only less-developed countries and find qualitatively similar results to Edwards (1996).

Finally, Grigoli, Herman and Schmidt-Hebbel (2015) analyze saving patterns and determinants in LAC. The results highlight commonalities and differences in saving behavior

³ In recent years, the policy discussion has focused on why saving rates in China are so high, rather than why saving rates in Latin America are low (e.g., Chamon and Prasad, 2010).

between LAC and other world regions. Moreover, like Edwards (1996), they find that the observed differences in saving rates for LAC are mainly related to differences in their determinants (rather than differences in the parameters).

In the reduced-form regressions in all these papers, the authors include as determinants of the private saving rate the following: the real interest rate, income variables, financial depth, demographics and life-cycle variables, proxies for crowding out from other sources of saving (public and external), and macroeconomic stability.⁴ For public saving, Edwards (1996) also considers variables related to political stability. One obvious advantage of the reduced-form approach is that the estimated parameters are not tied to a particular modeling choice, and thus they can encompass several theories on saving. In the absence of a structural model, the estimated parameters summarize more than one structural parameter. In this case, it is possible or even plausible that some of the reduced-form coefficients are not significantly different from zero because they are accounting for variation in offsetting determinants.⁵

3. Empirical Approach

We build on the literature of saving rates determinants to obtain estimates for predicted saving rates by region. Based on these estimates, we: i) compare saving rates across regions and over time, and ii) construct measures of saving gaps for each region as the difference between the actual and the predicted saving rate. This procedure requires in turn considering three important questions from a conceptual and practical view. First, what do we define as a predicted saving rate? Second, what countries should we include in the estimation? Finally, which estimation method should we use?

We follow previous literature and assume that the saving rate can be approximated by the reduced-form, linear equation

$$y_{it} = \mu + \rho y_{it-1} + x'_{it}\beta + \lambda_t + \eta_i + v_{it} \quad (1)$$

where y_{it} stands for the current level of private or public savings for country i in year t , x_{it} is a $k \times 1$ vector of determinants of the saving rate, λ_t are unobserved time components common to all countries, which we estimate and assume are fixed, and η_i and v_{it} are the country-specific

⁴ Masson, Bayoumi and Samiei (1998) and Kinugasa and Mason (2007) conduct similar reduced-form estimations of saving rates; the latter paper emphasizes the demographic transition as a major causal force in determining changes in saving behavior.

⁵ The standard textbook example that applies for our case is the relationship between saving, investment and the real interest rate.

unobserved term and the error term. We assume that η_i and v_{it} are *i.i.d.* across all i and t , and that $E(\eta_i) = 0$, $E(v_{it}) = 0$, $E(v_{it}\eta_i) = 0$ for all i , and $E(v_{it}v_{is}) = 0$ for all i and $t \neq s$. This empirical specification is similar to the one used in Loayza, Schmidt-Hebbel and Servén (2000) and Grigoli, Herman and Schmidt-Hebbel (2014).

If the saving rate can be described by equation (1), we can decompose the saving rate into two components. The first component is associated with observed determinants of the saving rate, $\hat{y}_{it}$. This variable comprises the combination of the country-specific observed determinants of the saving rate, $\rho y_{it-1} + x'_{it}\beta$, and factors that are common to all countries, which are summarized by time fixed effects λ_t . The second component is associated with country-specific, unobserved variation over time, which we cannot account for in equation (1), $u_{it} = \eta_i + v_{it}$. It is the sum of η_i , the sum of all time-invariant, country-specific characteristics that lead the level of saving to be below or above the level of saving exhibited by the average country, and v_{it} , which summarizes all the remaining differences in saving rates that the time-invariant factor does not account for.

Our strategy relies on the idea that once the main determinants of saving are properly accounted for in equation (1), the error component summarizes the saving gap. Therefore, the saving gap for country i in year t is defined as

$$u_{it} = y_{it} - \hat{y}_{it} = y_{it} - (\mu + \rho y_{it-1} + x'_{it}\beta + \lambda_t). \quad (2)$$

Thus, once we get consistent estimates of the parameter vector $\delta = (\mu, \rho, \beta', \lambda_t)'$, we can use them to compute the saving gap.⁶

The second choice is about the sample we use to get estimates of the parameter vector δ . To estimate these parameters we decide to include all countries largely because, as discussed, previous evidence suggests that cross-regional differences in saving rates are related to differences in the determinants rather than differences in the reduced-form parameters.⁷ In this way, the counterfactual saving rate is based on the assumption that the reduced form presented in equation (1) properly describes the determinants of saving for all countries included in the sample. This assumption might not be valid if the parameters (coefficients) of equation (1) are

⁶ Let denote $z_{it} = (1, y_{t-1}, x'_{it}, 1)'$ and $\delta = (\mu, \rho, \beta', \lambda_t)'$. Conditional on z_{it} , the estimator $\hat{u}_{it}$ is a consistent estimator of u_{it} as long as $\hat{\delta} \rightarrow_p \delta$. Moreover, $\sqrt{n}(\hat{u}_{it} - u_{it}) \rightarrow_d N(0, z'_{it}Vz_{it})$ where V is the asymptotic variance of $\sqrt{n}(\hat{\delta} - \delta)$.

⁷ See Edwards (1996) and Grigoli, Herman and Schmidt-Hebbel (2014 and 2015).

different for LAC countries. For robustness, we analyze the sensitivity of the results to changes in the selected sample.

Finally, our third choice is related to the type of estimator we use to obtain estimates of δ . Potential endogeneity of many of the explanatory variables (either due to simultaneity or omitted variables) may lead to inconsistent estimates of the parameters of interest. In the absence of external instruments, a typical problem in macroeconomic panels, a common procedure in the literature is relying on internal instruments to deal with the endogeneity problem, using lags of the explanatory variables as instruments of the contemporaneous values of the endogenous variables. Furthermore, yearly saving rates tend to be correlated over time, caused by both unobserved country-specific heterogeneity and state-dependence, and thus this inertia must be taken into account in the estimation. In those cases, the inclusion of a lag of the dependent variable invalidates standard fixed and random effects estimators. Here, we use more lags of both the differences and levels of the potential endogenous variables as instruments, using the System GMM estimator developed by Arellano and Bover (1995) and Blundell and Bond (1998). The System GMM estimator uses the moment conditions:

$$E(y_{it-j}\Delta u_{it}) = 0 \quad (3)$$

$$E(\Delta y_{it-k}u_{it}) = 0 \quad (4)$$

for $j \geq 2$ and $k \geq 1$. Similarly, we can find additional moment conditions for the right-hand side variables that are potentially endogenous. Let us denote the vector of right-hand side variables that we consider endogenous as w_{it} . We assume that w_{it} is predetermined, and thus present values of them are correlated with the current value of the disturbance term v_{it} , but they are not correlated with future values of the disturbance term (i.e., $E(w_{is}v_{it}) = 0$ for all $s < t$). Under this assumption, we can use the additional moment conditions

$$E(w_{it-j}\Delta u_{it}) = 0 \quad (5)$$

$$E(\Delta w_{it-k}u_{it}) = 0, \quad (6)$$

for $j \geq 2$ and $k \geq 1$. The validity of the moment conditions (3) to (6) requires that the data satisfy two assumptions. First, deeper lags of the endogenous variables are not correlated with v_{it} , which holds when v_{it} is not serially correlated (for equation (3)) and w_{it} is predetermined

(for equation (5)); second, the correlation between the levels of the endogenous variables and the unobserved country-fixed effects is constant, and so

$$E(y_{is}\eta_i) = E(y_{it}\eta_i), \quad (7)$$

for all s and t , which is valid when the series of interest is stationary.⁸ Except for the autocorrelation of the error term v_{it} , the other assumptions cannot be tested; however, we can use the Hansen specification test to test the model specification.

A final caveat: we argue that the estimated residual (2) is a consistent estimator of the actual residual as long as the vector of estimated parameters in (1) is consistent. If using internal instruments does not resolve the endogeneity problem, or if there are other specification problems, then the estimated parameters in (1) will not be consistent, and thus the reported saving gaps will not be consistent either. We opt for the use of the System GMM estimator instead of other available options (for example, the Difference GMM estimator), because the former has features that make it more appealing for our particular case. Under the assumptions mentioned above, the System GMM estimator offers more precise estimates, and it performs better in cases where the dependent variable exhibits higher persistence (ρ near to one) and the relative variance of the individual fixed effect is large relative to the disturbance term. Furthermore, the System GMM estimator uses cross-sectional and within-country variation to estimate the parameters, which is useful as several of our explanatory variables tend to have little within-country variation. In particular, it is also possible to include time-invariant covariates, which are of particular interest for our case, such as a constant term that pins down the level of the saving gaps for the benchmark case.

4. The Data

Our main source of data is the IMF's World Economic Outlook (WEO) dataset. The WEO reports information about public and private savings for a maximum of 148 economies over the period 1980–2012.⁹ Along with public and private savings and other variables from the WEO, we also use data from other sources: the World Bank's World Development Indicators dataset,

⁸ Stationarity is a sufficient condition for equation (7). There are additional cases in which (7) is also satisfied. This assumption is discussed in detail in Blundell and Bond (1998).

⁹ The WEO dataset reports information about private savings for 162 countries. We restrict our sample to countries with information about savings starting before 1995.

institutional indicators from the International Country Risk Guide (ICRG) dataset, and additional indicators from other sources (see Table A1 in the Appendix for a complete list of variables and sources).

The dependent variables in equation (1) for private and public saving rates correspond to the Gross Private and Public Saving, as percentage of the GDP.

For the private saving regressions, the independent variables we consider are the following: GDP per capita, and its growth rate (proxy for available income); allocated credit and M2 (both as ratio to GDP as proxies for financial depth); the young and old dependency ratios defined as the ratio of young (<15) or old (>65) population to the working age population (to proxy for life-cycle dynamics); gross public saving (as percentage of GDP, to proxy for potential substitutes of private saving); the inflation rate (to proxy for macroeconomic stability); the real interest rate; variables measuring political stability and the institutional operational environment including political risk, and a dummy variable for exporters of fuels (mainly oil). In some specifications, we also include external sector variables: the terms of trade, the current account balance (as percentage of GDP), remittances inflows (as percentage of GDP), a *de jure* indicator of financial openness (Chinn and Ito, 2008) and a *de facto* indicator of financial openness (ratio of foreign assets and liabilities to GDP from Lane and Milesi-Ferretti, 2007).

Regarding the public saving rate, we follow the literature and consider an economy's public saving rate as the result of economic conditions and political factors (see Edwards, 1996). To account for these factors, we include variables describing economic conditions, institutional variables and characteristics of an economy's political system. For the economic determinants, we include GDP per capita (level and growth rate) and a binary indicator for exporters of fuels. For the institutional determinants, we include ICRG institutional quality indicators and variables measuring other institutional characteristics. For political institutions, we use variables used to describe a country's political processes, such as election procedures, taken from the Database of Political Institutions (DPI), the Political Constraint Index dataset, and the Polity IV database.

Following Loayza, Schmidt-Hebbel and Servén (2000), we exclude from our analysis observations for countries in periods of high inflation, as high-inflation environments make accurate measurement of the saving indicators and the real interest rate very difficult. We exclude observations for which either inflation or real interest rate exceeds 50 percent. In addition to these observations, we also trim the sample's support by excluding observations that

were in the top and bottom one percent of observations of the distribution of private saving, after controlling for country and year fixed effects. In many cases, both exclusion criteria coincide.¹⁰ Overall, our preferred specification includes information about 114 countries over the period 1984–2012. Table A1 in the Appendix contains a list of the variables, including sources, time span, and the number of available countries.

Figure 2a shows that there are clear differences between LAC and other regions (particularly East Asia) in the distribution of private saving rates; however, the differences are not observed in the distribution of either public saving rates or the various determinants of saving rates. Table 1 presents summary statistics (mean, median, and 25th and 75th percentiles) of the distribution of the considered determinants of the private and public saving rates between 1990 and 2012. Although in the case of private saving distributions the ranges between the 25th and 75th percentiles of Latin America and Emerging Asia do not even overlap, the difference in other variables is not as evident. Table 1 shows that many distributions overlap; these include public saving rate, real interest rate, young and old dependency ratios, remittances inflows, inflation, and institutional indicators. One main difference between the determinants of saving rates is the Current Account Balance, where LAC countries show negative balances for most of the sample period. Other observed differences between LAC and other regions are related to the distributions of the income variables, where Emerging Asia shows lower levels of GDP per capita but higher growth rates than LAC, and financial depth indicators (even though the distributions overlap the upper tail is thicker for the Emerging Asia). Nonetheless, it is important to note that, for all those variables, LAC countries are located around the middle of the distributions.

5. Estimation Results

5.1 Dynamic Panel Estimation Results: Private Saving

The System GMM estimates for equation (1) are presented in Table 2. We use the two-stage System GMM estimator with Windmeijer (2005) bias-corrected standard errors. Our preferred specification is presented in column (1) and includes the first lag of the private saving rate, the

¹⁰ After we restricted the sample based on the criteria mentioned above, we exclude additional observations that occurred early in the sample but were truncated by either high-inflation or abnormal saving rates. This process led us to drop two countries—Angola and the Democratic Republic of Congo—and additional observations for some countries: Bahrain before 1986, the Republic of Congo before 1996, Guinea-Bissau before 1992, Sierra Leone before 1992, Togo before 1986, and Zambia before 2001.

public saving rate, the log and growth rate of the real GDP per capita, young and old dependency ratios, the government stability index, and an indicator variable for countries exporting fuels. We favor this parsimonious model because, while the inclusion of too many moment conditions might increase efficiency, it also weakens the validity of the Hansen's over-identification test (Roodman, 2009).¹¹ In fact, even though we limit the number of variables and internal instruments used for the estimation, the number of instruments still is close to the number of countries included in the estimation.

Results presented in Table 2 indicate that the public saving rate, the log of GDP per capita, and the dependence ratios show a negative correlation with the private saving rate, while the GDP per capita growth rate and the government stability index show positive correlations. Furthermore, private saving rates are significantly higher in countries exporting fuels. Columns (2) to (5) explore alternative specifications to our baseline model. Column (2) shows that our baseline is robust to the adjustment of the per capita income variable to PPP\$ units (the sample is smaller in this case). In column (3) we change the definition for the income variables, using the cyclical and permanent components of the log GDP per capita, computed by using the Hodrick-Prescott filter. Both coefficients are significant and have the opposite sign, where the long-run trend of the GDP is negative, while short-run fluctuations are positively correlated with private savings. Finally, we evaluate the effect of the real interest rate and the inflation rate (columns 4 and 5). The estimated effect of these variables is not statistically significant, and is estimated with very low precision.

The results presented in Table 2 are largely in line with previous estimates in the literature. However, some of the results are different. In particular, the estimated coefficient of income per capita is systematically positive and significant in Edwards (1996), Loayza, Schmidt-Hebbel and Servén (2000), and Grigoli, Herman and Schmidt-Hebbel (2014 and 2015); however, it is statistically insignificant but negative in most of our regressions. One reason for this difference may be that we are using a different definition of income, as Loayza (2000) and Grigoli, Herman and Schmidt-Hebbel (2014 and 2015) construct a measure of disposable income, while we are using raw income data from the WDI. Contrary to Edwards (1996), we

¹¹ For the specifications shown below, we consider the demographic variables, the fuel exporters indicator and the government stability index as exogenous variables, the public saving rate and the growth rate of the GDP per capita as predetermined, and instrument them with their first lag. Finally, we instrument the lagged private saving rate using its second lag.

find that government stability indicator is significant, and it is robust to alternative definitions of institutional quality. We observe higher saving rates for institutionally more stable countries.¹²

Table 3 presents the results of the baseline specification including other measures of institutional quality and political risk. The indicators of political stability are significant and suggest that saving rates are lower in countries with higher political risk. From column (2), the Law and Order index is positively correlated with saving rates, indicating that economies with stronger impartial legal systems and popular observance of the law exhibit higher saving rates. Columns (3) and (4) show the baseline regression using indicators of political risk (the number of assassinations of high government officials and government crises). In both columns, countries with higher political risk tend to have lower saving rates. When we included indicators of the political process (Columns 5 and 6), more democratic countries tend to exhibit lower private saving rates.

We also test the sensitivity of our results to different samples. In particular, we test the sensitivity of our results to several changes in the countries included in the estimated sample. The estimation results for the selected subsamples are presented in Table 4; results consistently show that the parameters are similar across specifications. The second column shows the estimates for when we exclude LAC countries from the sample (20 countries). Except for the coefficient of old dependency ratio and the GDP per capita, magnitudes remain the same. Similar results are obtained when we exclude small countries,¹³ where the largest variation occurs in the coefficient associated with Government Stability. In all cases, the changes are within a standard error of the baseline estimates. The main differences in coefficient estimates are observed when we estimate the model including only developing countries, where the coefficients of the autoregressive term, the public saving rate and the exporter of fuels dummy increase in absolute value, and the estimate for the old dependency ratio is estimated with less precision than in the baseline equation. Another notable difference in this specification is the increase in the p-value of the Hansen Test of over-identification, caused because of the large number of instruments (96) relative to the number of countries included in the estimation (83).

¹² For a theoretical model and some discussion of the possible mechanisms, see Aizenman, Cavallo and Noy (2015).

¹³ The countries excluded of the estimation are Bahamas, Bahrain, Cyprus, Iceland, Luxembourg, Malta, and Qatar.

5.2 Dynamic Panel Estimation Results: Public Saving

Next, we present the System GMM estimates of equation (1) using as dependent variable the public saving rate. The results are presented in two parts: first, we estimate a baseline equation including the GDP per capita level and growth, a binary variable for fuel exporters, and the Government Stability index. Using this regression as a baseline, we include other potential determinants of the public saving rate, variables of governance and institutional quality, and variables describing an economy's political system.

The first column of Table 5 presents the baseline equation for public saving rate. Public saving rates are positively correlated with the growth of income per capita, the income level and government stability, but the latter two are estimated with low precision. In addition, countries that are exporters of fuels tend to exhibit higher saving rates. The results are similar when we use alternative measures of income per capita (Column 2) and of permanent and cyclical components of GDP growth per capita (Column 3). We also include two alternative indicators that address checks and balances to the executive (Columns 4 and 5) and the level of democracy of an economy (Column 6). They exhibit negative correlation with saving rates, but they are also estimated with low precision.

Table 6 explores other economic and political determinants of public savings. It includes indicators of development of the financial sector, M2 and credit to the financial sector (both as percentage of GDP), measures of political risk, and other institutional variables. Neither the political risk nor the financial development variables are statistically significant, and among the institutional variables considered, corruption, democratic accountability and military in politics are significant. These variables take lower values on governments with weaker democracies and higher influence of military in politics, which implies that countries with more balanced democracies tend to have lower saving rates. The results are consistent with the obtained in Columns (4) to (6) of Table 5, where higher checks and balances are negatively correlated with the public saving rate. Similarly, when we consider the characteristics of the political system, the results are not significant in all but two specifications, the one including the legislative elections dummy and the remaining years in the current term (Table 7) to control for the political cycle.

5.3 Comparing Predicted Saving Rates across Regions

Since we assume homogeneity in the coefficients of equation (1), cross-regional differences in the predicted saving rate must be explained by differences in the levels of the determinants of the saving rate. For concreteness, in what follows we focus on the baseline regressions reported in column (1) of Table 2 for the private saving regressions and column (1) of Table 5 for the public saving regressions.

The average predicted trends by region, aggregated over five-year averages, are presented in Figure 3 (for private saving) and Figure 6 (for public saving). Figure 3 shows that predicted private saving rates are on average lower in LAC and Sub-Saharan Africa than in Advanced Economies or other Emerging regions (in particular, Emerging Asia). This suggests that once we take into account the level of the determinants of private saving rates in each region, then saving rates in LAC are indeed below the average saving rates in Emerging Asia by roughly 4 percentage points of GDP. In contrast, public saving rates tend to be homogeneous across regions (except for Middle-East and North Africa).

For private saving rates, Table 8 presents the average contribution of each saving rate determinant, $\bar{x}_k^r \hat{\beta}_k$, where the average $\bar{x}_k^r$ is computed first by taking country averages and after that taking averages by region. The most important determinants of the level of predicted private saving are the life-cycle variables, the public saving rate, the political stability proxy, and per capita GDP. Except for the public saving rate, the average contribution of these determinants for LAC countries is among the lowest in each category: compared to other emerging regions, LAC countries have the highest negative values for the contributions of the young and old dependence ratios. The absolute contribution of the government stability index for LAC is the lowest contribution among all regions. In contrast, public saving levels put less pressure on the private saving rate for LAC than for other emerging regions, similar to the levels observed for Emerging Europe and CIS. Adding all the determinants up, the average predicted private saving rate in LAC is 17.1 percent of GDP, vs. 20.9 percent in Emerging Asia and 19.8 percent in Advanced Economies.

Table 10 presents the same decomposition for the case of public saving rates. The most important sources determining the level of predicted public saving rates are income level (GDP per capita), followed by the persistence factor and the proxy for government stability. There are less significant cross-regional differences in the weights of each individual determinant. This

notwithstanding, the average predicted public saving rate in LAC (i.e., 2.8 percent of GDP) is below the saving rate predicted for Emerging Asia (3.5 percent of GDP) due to a relatively higher incidence of the persistence term in the latter region.

5.4 Private Saving Gaps

Having estimated equation (1) to obtain the predicted saving rates, we can now calculate the saving gaps for every region as defined in equation (2). The average predicted trends by region, aggregated over five-year averages, are presented in Figure 3. Along with the natural trend implied by the persistence observed in private saving rates, the predicted saving rates are above actual saving rates for LAC countries, implying an average negative saving gap over the entire period. This is not surprising in light of the data already presented in Figure 2a; however, it is surprising given the sharp contrast with other regions. In particular, except for the case of Emerging Europe, the predicted private saving rate for emerging regions is closer to the actual observed saving level. In line with what we reported in Figure 3, Table 8 shows that LAC and Emerging Europe are the regions with the largest negative saving gaps, and Eastern Asia is the region with the largest positive private saving gap.¹⁴

All these results only add more questions to the puzzle of why LAC countries have low saving rates. The determinants of saving suggest that the predicted level of saving should exhibit lower saving rates than other regions, particularly East Asia. Nonetheless, the actual level of saving is even lower than the expected/predicted for LAC countries, and thus their saving gaps are the highest among emerging regions.

Unobserved heterogeneity may be an important component of any explanation to this missing saving, so we next analyze the trends of the saving gaps by country. Figure 4 presents the saving gaps, and the associated confidence intervals, over the sample period (1990-2012) for each country, while Figure 5 provides additional detail by tracing, for each country, the actual and predicted private saving rates. Table 9 attempts to generalize this information by smoothing the data into five-year averages (for the period 1985-2012). The figures and the table show that there is a high level of heterogeneity in saving rates by country, where the most intriguing cases

¹⁴ The reported saving gaps are computed based on the results from baseline regressions; i.e., column (1) of Table 2 for the private saving regressions. For robustness checks, we have computed the saving gaps for all the estimated models in Tables 8 and 10. The results (available upon request) shows that the ordering described in the paper holds across specifications, which is not surprising as many of the covariates we reported are not significant.

are Bolivia, Dominican Republic, and Paraguay, countries for which the saving gap is widening, especially after 2000. As Figure 5 shows, the widening gap in those cases is caused by changes in the observed saving rate—instead of the predicted saving rate, which remains relatively stable.

5.5 Public Saving Gaps

Following the same procedure we used in the previous section, we now examine the gaps for the public saving rates for LAC countries. The average public saving rate by region is presented in Figure 6. Contrary to the case of the private saving rate, the public saving gap for LAC is among the smallest when compared with other regions: the average public saving gap for LAC countries was only -0.2 percent of GDP between 1984 and 2012. Table 10 describes the contribution of each of the explanatory variables in our estimated reduced-form model to the estimated level of public saving, by region. As noted above, the estimated saving gap is negative for LAC countries, but the actual saving rates are only marginally lower than the predicted ones for the region.

The public saving gaps by country are presented in Figure 7 and Table 11. Figure 7 presents estimated public saving gaps per country, while in Table 11 we smooth the data and describe the saving gaps in five-year averages. Overall, the highest estimates for the public saving gaps are reported for Bolivia (1.9 percent of GDP) and Paraguay (1.4), and the lowest estimated public saving gaps are Venezuela (-2.6), Trinidad and Tobago (-2.5), Brazil (-1.6), and Bahamas (-1.3). Except for Trinidad and Tobago, the public saving gaps do not show any obvious time trends over the sample period.

5.6 The Role of External Saving

The previous sections presented the analysis of the public and private saving gaps without including measures of external savings. External savings may be a substitute for national savings, such that countries with more access to external financing may have lower saving levels. However, causality regarding external savings is difficult to address, as countries with lower initial saving rates demand more external funding, and the observed external saving rate is then the response to the demand for lending. Similarly, economies with low public saving rates might also implement policies to get additional external resources. An interesting question, though, is

whether the estimated negative (private) saving rate gap in LAC disappears once we take into account the availability of external saving as a separate determinant of the saving rate.

Table 12 presents the System GMM estimates of equation (1) including external sector variables as determinants of the private saving rate. The coefficient of the current account is positive and significant, implying that countries with larger current account deficits tend to have lower private saving rates. Moreover, the coefficient of the terms of trade is positive and significant in most of the specifications. When we consider measures of financial openness, a *de jure* measure in column (3) and a *de facto* one in column (4), the correlation between financial openness and private saving rates is not significant.

We also consider the effect of remittances, since they are a significant source of external funding for some developing countries, including many of the LAC countries (especially in Central America). We use a direct measure of net remittance inflows as percentage of the GDP, and an indirect measure that is the stock of emigrants as percentage of population. Both cases show a negative and significant correlation between the remittance measures and the private saving rates, implying that economies with larger remittance inflows tend to save less domestically.¹⁵

Similarly, Table 13 presents System GMM estimates for the public saving specifications, including the measures of external savings. The current account balance appears positive and significant, suggesting external saving also works as a partial substitute for public saving. The other significant effect in these regressions is that associated with the coefficient of *de jure* financial openness, which in this case is negative, implying that countries with higher financial openness tend to have lower public saving rates (again the direction of the causality is not straightforward). Other variables, such as the *de facto* financial openness measure and net remittances, are not significant in the specification of public saving rate.

Using the estimated models for Tables 12 and 13, we estimate again the public and private saving gaps for LAC countries. The summary of the results is in Figures 8 and 9 and Tables 14 and 15. LAC countries tend to exhibit lower private saving rates than Emerging Asian countries, and these differences are partially compensated by larger current account deficits. Once we control for the current account balance, the estimated private saving gaps for LAC and Emerging Asian countries narrow. As Table 14 shows, after the inclusion of the Current Account

¹⁵ These variables decrease the size of our sample significantly.

Balance, the average private saving gap for LAC countries is -0.9 percent of the GDP, 0.6 percentage points smaller (in absolute value) than the estimated gap in the specification without external saving (-1.5 percent of GDP). On the contrary, the positive saving gap in Emerging Asian countries is 1.7 percent of GDP, 0.9 percentage points higher than in the baseline estimation. The actual and predicted values with the specification including the current account balance are presented in Figure 8.

Regarding public saving gaps, Table 15 presents the estimated public saving gaps for the baseline model and the model including public saving rate. Contrary to the results obtained with the private saving rates, the public saving gaps for LAC exhibit minor changes after the introduction of the current account balance (from -0.2 to -0.1 percent of GDP).

6. Conclusions

We have attempted to construct reduced-form models of the determinants of private and public saving that will assist us in explaining the mystery of low saving rates observed in LAC countries. We use these models to make cross-country comparisons of saving rates. We show that “predicted” saving rates in LAC, in particular *private* saving rates, are lower than in other regions. Moreover, in LAC countries the actual private saving rates are even lower than predicted, and thus the LAC saving gap is among the highest among emerging regions.

Our model, however, does not explain the saving gap. In that sense, we are still left with a mystery of saving in LAC countries. This notwithstanding, we make two contributions. First, we delimit the scope of the mystery showing that there is a negative gap only in the case of private saving rates. Second, we quantify the size of the mystery. We estimate that, on average, the negative private saving rate gap in LAC is 1.5 percent of GDP. Finally, we show that the mystery is only partially solved when we include external saving among the explanatory variables (i.e., the estimated private saving gap falls to -0.9 percent of GDP). This suggests that greater reliance on external saving does not fully explain the LAC saving deficit.

Our results suggest that there is a need to expand the research agenda on the determinants of saving rates in the world, going beyond the cross-country reduced form regression approach we apply here. While saving rates in LAC are indeed lower compared to other regions, only a part of that difference is successfully explained by our econometric models. There are some promising research avenues that may shed light on the mystery of saving in

LAC. For example, a fallout from the Global Financial Crisis is a new emphasis on the role that risk and risk perceptions play in determining behavior and therefore economic magnitudes. Recently, Mody, Ohnsorge and Sandri (2012),¹⁶ Aizenman and Noy (2013), and Aizenman, Cavallo and Noy (2015) have all emphasized the role that the awareness of risk plays in determining saving behavior. Risk, per se, is not a focus of our work here. But, in so much as LAC countries may be perceived as having different risk profiles than countries in other regions, that difference may also affect rates of saving in the region.

¹⁶ Mody, Ohnsorge and Stephan (2012) focus in particular on the Global Financial Crisis, while Schrooten and Stephan (2005) focus on the transition to market economies in Eastern Europe, observing that saving rates increased significantly in the latter part of the 1990s in the transition countries.

References

- Aizenman, J., and I. Noy. 2013. "Household Saving and the Long Shadow of Macroeconomic Shocks." NBER Working Paper 19067. Cambridge, United States: National Bureau of Economic Research
- Aizenman, J., E. Cavallo and I. Noy. 2015. "Precautionary Strategies and Household Saving." *Open Economies Review* 26(5): 911-939.
- Arellano, M., and O. Bover. 1995. "Another Look at the Instrumental Variables Estimation of Error-Components Models." *Journal of Econometrics* 68: 29–51.
- Bebczuk, R., and E. Cavallo. 2014. "Is Business Saving Really None of Our Business?" Working Paper IDB-WP-523. Washington, DC, United States: Inter-American Development Bank.
- Blundell, R., and S. Bond. 1998. "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models." *Journal of Econometrics* 87: 115–143.
- Chamon, M.D., and E.S. Prasad. 2010. "Why Are Saving Rates of Urban Households in China Rising?" *American Economic Journal: Macroeconomics* 2(1): 93-130.
- Chinn, M.D. and H. Ito. 2008. "A New Measure of Financial Openness." *Journal of Comparative Policy Analysis* 10(3): 309-322.
- Cronqvist, H., and S. Siegel. 2015. "The Origins of Savings Behavior." *Journal of Political Economy* 123(1): 123-169.
- Edwards, S. 1996. "Why Are Latin America's Savings Rates So Low? An International Comparative Analysis." *Journal of Development Economics* 51: 5-44.
- Grigoli, F., A. Herman and K. Schmidt-Hebbel. 2014. "World Saving." IMF Working Paper 14/204. Washington, DC, United States: International Monetary Fund.
- Grigoli, F., A. Herman and K. Schmidt-Hebbel. 2015. "Saving in Latin America and the Caribbean: Performance and Policies." IMF Working Paper 15/108. Washington, DC, United States: International Monetary Fund.
- Horioka, C.Y., and J. Wan. 2007. "The Determinants of Household Saving in China: A Dynamic Panel Analysis of Provincial Data." *Journal of Money, Credit and Banking* 39(8): 2077-2096.

- Lane, P.R., and G.M. Milesi-Ferretti. 2007. "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970-2004." *Journal of International Economics* 73(2): 223-250.
- Loayza, N., K. Schmidt-Hebbel and L. Servén. 2000. "What Drives Private Saving Across the World?" *Review of Economics and Statistics* 82(2): 165-181.
- Mason, A., and T. Kinugasa. 2007. "Why Countries Become Wealthy: The Effects of Adult Longevity on Saving." *World Development* 35(1): 1-23.
- Masson, P.R., T. Bayoumi and H. Samiei. 1998. "International Evidence on the Determinants of Private Saving." *World Bank Economic Review* 12(3): 483-501.
- Mody, A., F. Ohnsorge and D. Sandri. 2012. "Precautionary Savings in the Great Recession." *IMF Economic Review* 60(1): 114-138.
- Roodman, D. 2009. "A Note on the Theme of Too Many Instruments." *Oxford Bulletin of Economics and Statistics* 71(1): 135-158.
- Schrooten, M., and S. Stephan. 2005. "Private Savings and Transition: Dynamic Panel Data Evidence from Accession Countries." *Economics of Transition* 13(2): 287-309.
- Windmeijer, F. 2005. "A Finite Sample Correction for the Variance of Linear Efficient Two-Step GMM Estimators." *Journal of Econometrics* 126(1): 25-51.
- Zinman, J. 2014. "Household Debt: Facts, Puzzles, Theories, and Policies." NBER Working Paper 20496. Cambridge, United States: National Bureau of Economic Research.

Tables and Figures

Figure 1a. Average Private Saving Rate by Region, 1980–2012

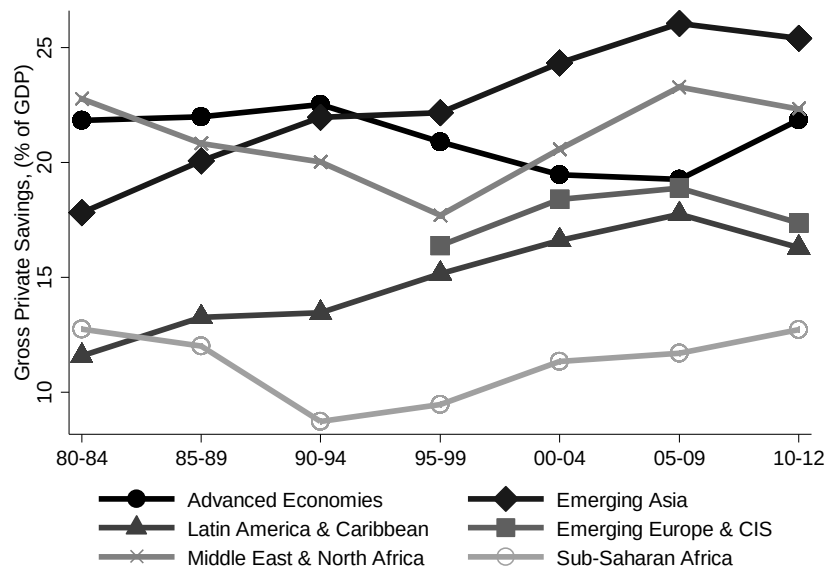


Figure 1b. Average Private Saving Rate by Region, 1980–2012

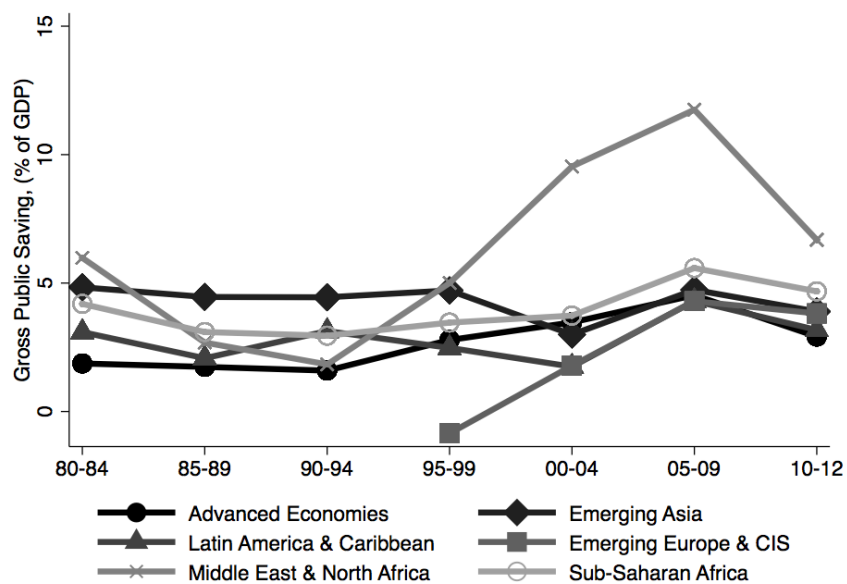


Figure 2a. Cumulative Distribution Function of the Average Private Saving Rate by Country, 1990–2012

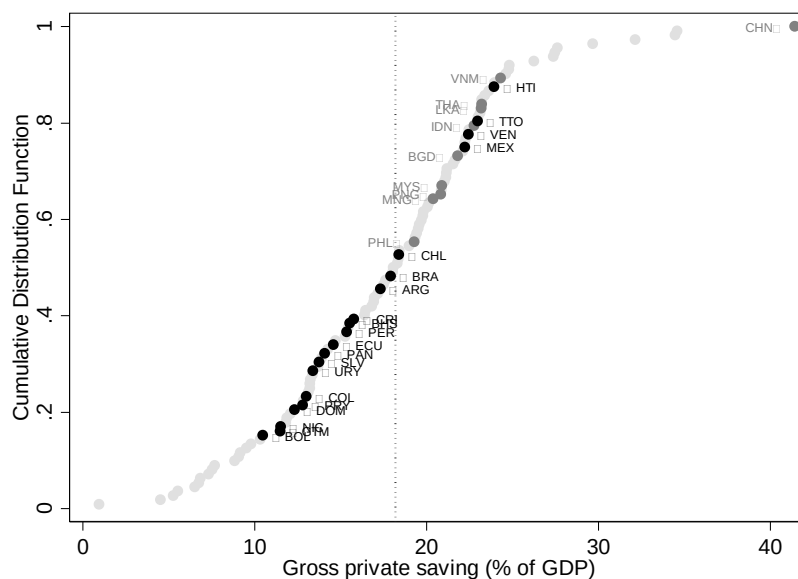


Figure 2b. Cumulative Distribution Function of the Average Public Saving Rate by Country, 1990–2012

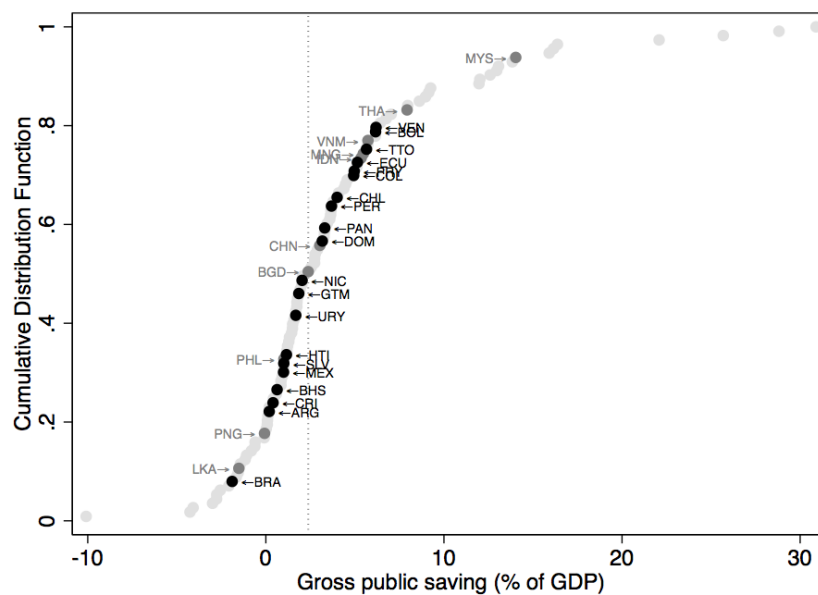


Figure 3. Predicted Private Saving Rates by Region

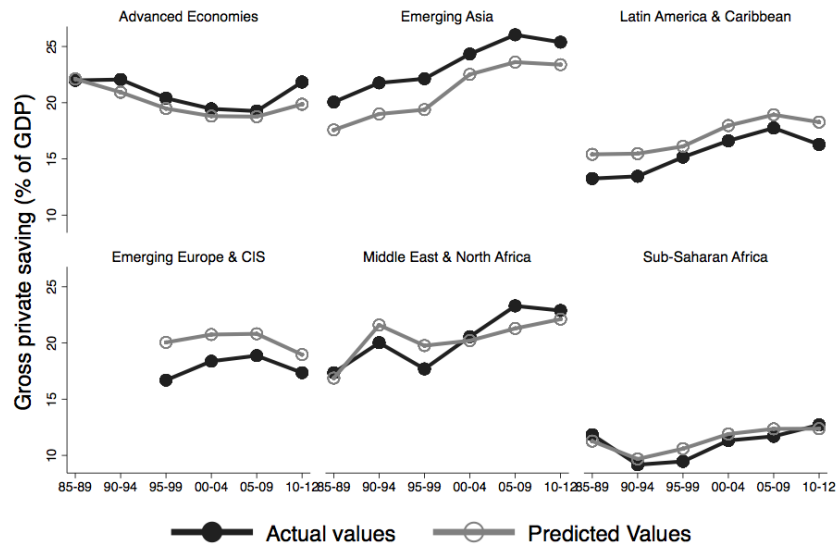


Figure 4. Private Saving Gaps for LAC Countries, 1990–2012

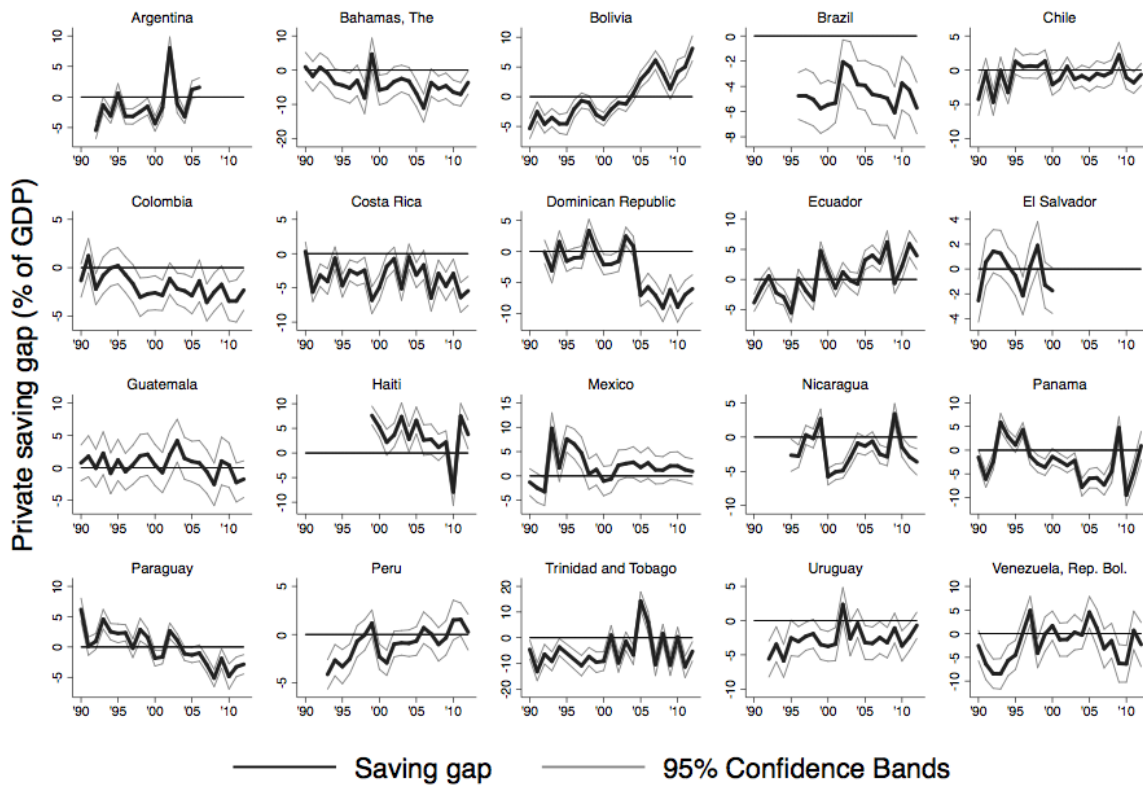


Figure 5. Private Saving Rates for LAC Countries, 1990–2012

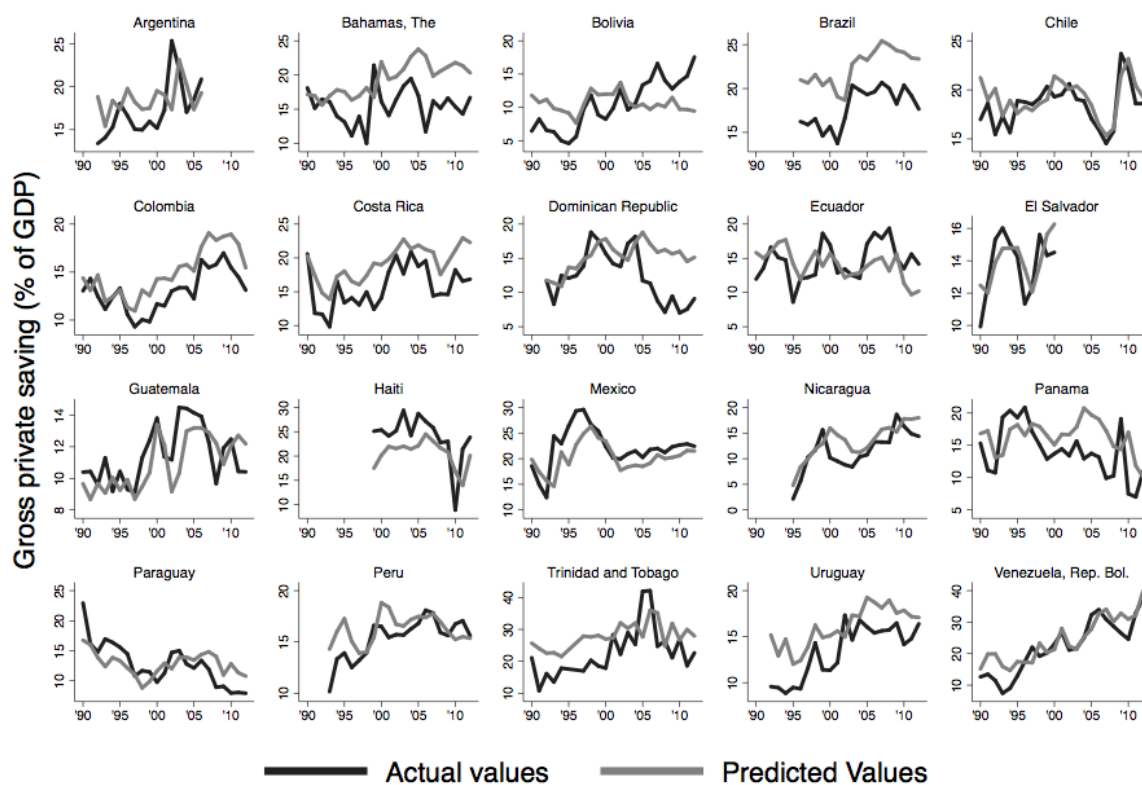


Figure 6. Predicted Public Saving Rates by Region

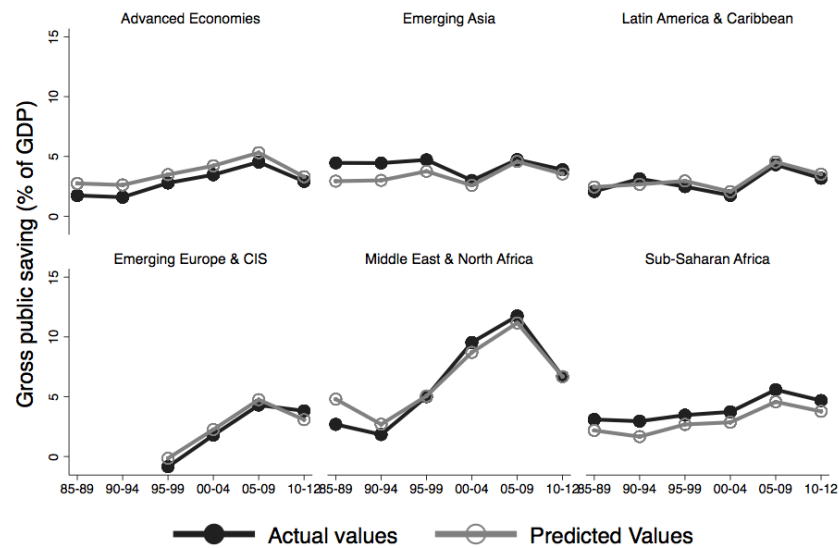


Figure 7. Public Saving Gaps for LAC Countries, 1990–2012

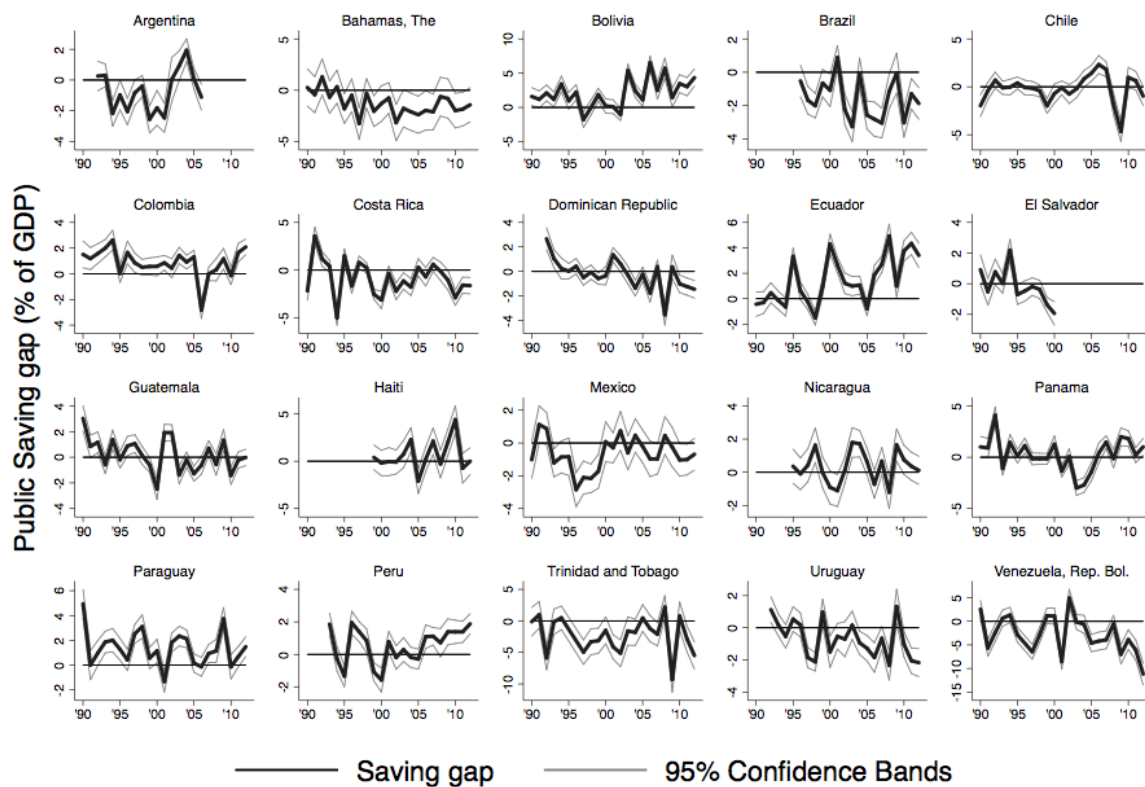


Figure 8. Predicted Private Saving Rates by Region: Model Including Current Account Balance

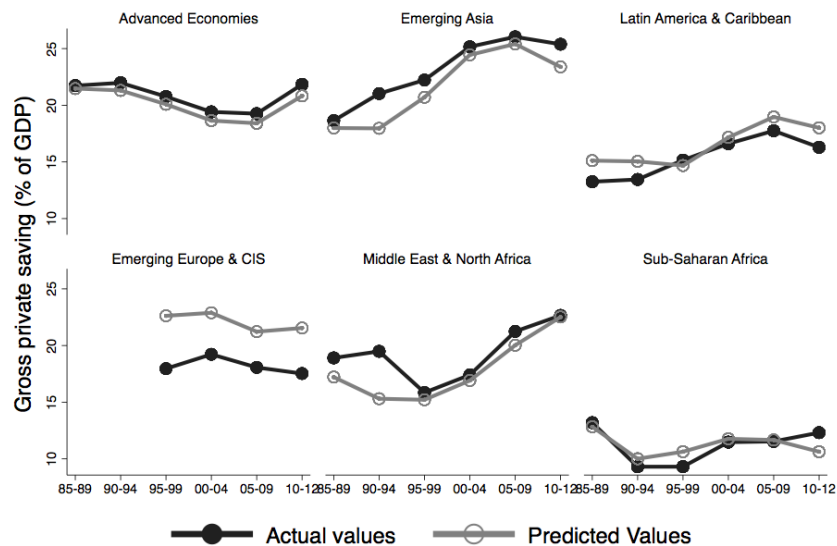


Figure 9. Predicted Public Saving Rates by Region: Model Including Current Account Balance

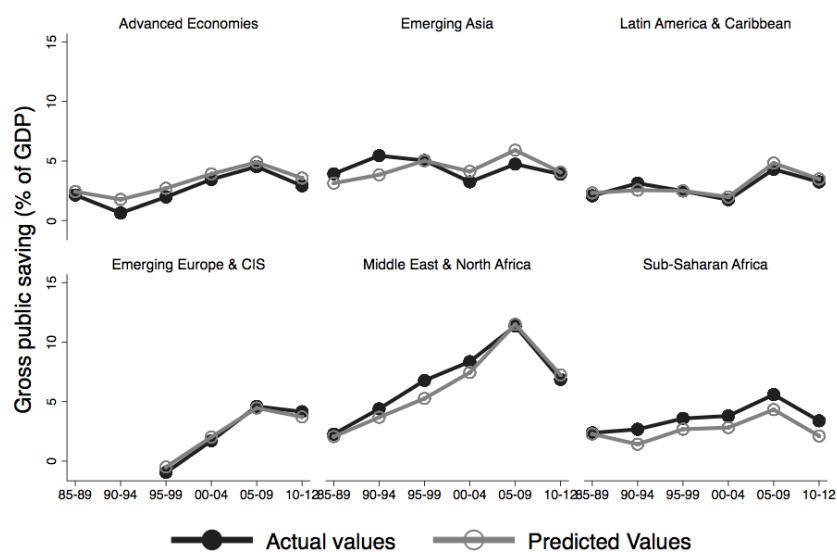


Table 1. Mean, Median, and Percentiles 25th and 75th of the Distributions of Determinants of the Private Saving Rate, 1990–2012

	LAC				Emerging Asia			
	Mean	Median	P25	P75	Mean	Median	P25	P75
Gross Private Saving (% of GDP)	16.0	15.0	12.9	18.2	23.8	22.3	20.8	23.2
Gross Public Saving (% of GDP)	2.8	2.6	1.0	4.9	4.3	4.2	1.0	5.7
Current Account Balance (% of GDP)	-2.1	-1.8	-3.8	-0.7	0.1	0.3	-2.1	2.3
GDP per capita (log)	8.1	8.2	7.7	8.6	7.1	7.0	6.8	7.1
GDP per capita growth (annual %)	2.2	2.2	1.3	3.5	4.2	4.1	3.7	5.0
GDP per capita, trend component (log)	8.1	8.2	7.7	8.6	7.1	7.0	6.8	7.1
GDP per capita, cycle component (% of GDP)	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1
Young Dependency ratio (% of population 14-65)	54.9	53.7	44.0	65.5	50.4	50.2	41.6	61.9
Old Dependency ratio (% of population 14-65)	9.5	8.5	7.7	9.2	7.7	7.1	5.9	9.9
Exporter of Fuels, mainly oil (0-1)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Real Interest Rate ($\log(1 + r)$)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Inflation Rate ($\log(1 + \pi)$)	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
Terms of Trade (log)	4.6	4.6	4.5	4.7	4.6	4.6	4.6	4.7
Domestic credit to private sector (% of GDP)	33.4	26.2	21.1	40.6	56.7	33.8	25.8	107.9
Money and quasi money (M2, % of GDP)	40.0	35.5	29.5	49.4	67.9	49.7	38.5	104.7
Financial Openness, de Facto (Chinn & Ito)	0.8	0.6	0.1	1.8	-0.1	-0.2	-0.8	0.5
Financial Openness, de Jure (Lane and Milesi-Ferretti)	126.3	104.7	74.7	148.8	105.6	102.9	89.6	119.6
Net Remittance Inflows (% of GDP)	3.7	1.0	0.2	6.3	2.5	0.8	0.5	6.6
Government Stability (0 high political risk, 12 low risk)	7.7	7.7	7.3	8.2	8.2	7.7	7.6	8.9
Law and Order (0 high risk - 6 low risk)	3.0	2.9	2.5	3.5	3.3	3.4	2.7	4.0
Corruption (0 high risk - 6 low risk)	2.7	2.7	2.3	3.1	2.4	2.3	2.2	2.7
Military in Politics (0 high risk - 6 low risk)	3.4	3.3	2.4	4.4	3.2	2.9	2.4	3.8
Democratic Accountability (0 high risk - 6 low risk)	4.1	4.2	3.8	4.7	3.5	4.0	3.4	4.1
Number of political assassinations (Average last five years)	0.7	0.2	0.1	1.0	0.2	0.0	0.0	0.3
Number of Government Crises (Crises per year)	0.2	0.2	0.0	0.4	0.1	0.1	0.0	0.3
Checks and Balances index (Executive discretion 1 -)	3.6	3.5	3.3	3.8	3.3	3.2	2.2	4.0
Political Constraints, POLCONV (Executive discretion 0 - Pol Constraints 1)	0.5	0.5	0.4	0.7	0.4	0.4	0.2	0.6
Legislature fractionalization (0 low - 1 high fractionalization)	0.7	0.7	0.6	0.7	0.5	0.6	0.4	0.6
Government seats in legislature (Fraction of total, 0 - 1)	0.5	0.6	0.5	0.6	0.7	0.7	0.6	0.8
Years Left in Current Term (years)	1.9	2.0	1.6	2.2	2.1	2.0	1.9	2.6
Revised Polity score (-10 full autocracy - 10 full democracy)	7.4	7.5	6.7	8.8	3.0	4.2	2.1	6.4

Table 2. Estimation Results: System GMM Estimation*Dependent variable: Gross Private Saving (% of GDP)*

	(1)	(2)	(3)	(4)	(5)
	Baseline	GDP, PPP			
Gross Private Saving, first lag (% of GDP)	0.45 [0.04]***	0.37 [0.08]***	0.47 [0.04]***	0.43 [0.05]***	0.43 [0.05]***
Gross Public Saving (% of GDP)	-0.64 [0.07]***	-0.72 [0.08]***	-0.56 [0.08]***	-0.67 [0.07]***	-0.66 [0.07]***
GDP per capita (log)	-0.51 [1.10]	-0.76 [1.25]		0.16 [0.94]	0.45 [0.96]
GDP per capita growth (annual %)	0.18 [0.04]***	0.16 [0.04]***		0.21 [0.04]***	0.2 [0.04]***
GDP per capita, trend component (logs)			-2.25 [1.04]**		
GDP per capita, cycle component (% of GDP)			0.25 [0.07]***		
Young Dependency ratio (% of population 14-65)	-0.17 [0.06]***	-0.19 [0.07]***	-0.24 [0.06]***	-0.15 [0.05]***	-0.13 [0.05]**
Old Dependency ratio (% of population 14-65)	-0.26 [0.14]*	-0.26 [0.14]*	-0.09 [0.13]	-0.34 [0.13]**	-0.34 [0.12]***
Government Stability (0 high political risk, 12 low risk)	0.48 [0.15]***	0.52 [0.18]***	0.57 [0.15]***	0.46 [0.15]***	0.43 [0.15]***
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	7.48 [2.21]***	7.84 [2.05]***	8.89 [2.13]***	6.86 [2.21]***	6.49 [2.15]***
Real Interest Rate $\log(1+r)$				-2.73 [1.76]	
Inflation Rate $\log(1+\pi)$					-0.02 [1.35]
Number of Observations	2,374	2,216	2,375	2,374	2,374
Number of Countries	114	114	114	114	114
Number of Instruments	96	90	96	98	98
AR(1) Test, p-value	1.4E-07	1.6E-05	1.0E-07	2.9E-07	3.1E-07
AR(2) Test, p-value	0.48	0.62	0.57	0.56	0.55
Hansen Test, p-value	0.27	0.17	0.35	0.28	0.32

Robust standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01

Table 3. Estimation Results: Alternative Stability Indicators*Dependent variable: Gross Private Saving (% of GDP)*

	(1)	(2)	(3)	(4)	(5)	(6)
Gross Private Saving, first lag (% of GDP)	0.46 [0.04]***	0.45 [0.05]***	0.51 [0.05]***	0.45 [0.05]***	0.44 [0.04]***	0.46 [0.04]***
Gross Public Saving (% of GDP)	-0.62 [0.08]***	-0.61 [0.07]***	-0.59 [0.07]***	-0.61 [0.08]***	-0.61 [0.07]***	-0.6 [0.06]***
GDP per capita (log)	-0.85 [1.27]	-0.37 [1.17]	-1.46 [1.03]	-0.7 [1.17]	-0.28 [1.03]	0.2 [1.06]
GDP per capita growth (annual %)	0.19 [0.04]***	0.21 [0.04]***	0.16 [0.05]***	0.21 [0.04]***	0.22 [0.04]***	0.21 [0.03]***
Young Dependency ratio (% of labor force)	-0.17 [0.07]**	-0.16 [0.06]**	-0.2 [0.06]***	-0.18 [0.07]***	-0.16 [0.06]***	-0.15 [0.05]***
Old Dependency ratio (% of labor force)	-0.27 [0.12]**	-0.26 [0.14]*	-0.16 [0.11]	-0.25 [0.13]*	-0.25 [0.12]**	-0.26 [0.10]***
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	7.73 [2.47]***	6.93 [2.19]***	7.27 [1.84]***	7.07 [2.40]***	6.58 [2.08]***	5.14 [2.24]**
Law and Order (1 low - 6 high)	0.67 [0.37]*					
Number of political assassinations (Average last five years)		-0.18 [0.20]				
Number of Government Crises (Crises per year)			-0.59 [0.24]**			
Checks and Balances index (Executive discretion 1 -)				-0.15 [0.18]		
Political Constraints (POLCONV) (Executive discretion 0 - Pol Constraints 1)					-1.4 [1.98]	
Revised Polity score (-10 full autocracy - 10 full democracy)						-0.19 [0.08]**
Number of Observations	2,374	2,351	2,014	2,317	2,350	2,281
Number of Countries	114	113	113	113	114	110
Number of Instruments	96	98	86	98	98	98
AR(1) Test, p-value	1.3E-07	1.4E-07	4.1E-08	1.8E-07	1.3E-07	1.6E-07
AR(2) Test, p-value	0.34	0.38	0.15	0.33	0.42	0.33
Hansen Test, p-value	0.24	0.16	0.26	0.15	0.23	0.5

Robust standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01

Table 4. Estimation Results: Other Samples*Dependent variable: Gross Private Saving (% of GDP)*

	Baseline	Excluding LAC	Excluding Small Countries	Developing Only
Gross Private Saving, first lag (% of GDP)	0.45 [0.04]***	0.43 [0.05]***	0.45 [0.05]***	0.47 [0.04]***
Gross Public Saving (% of GDP)	-0.64 [0.07]***	-0.63 [0.08]***	-0.63 [0.07]***	-0.66 [0.09]***
GDP per capita (log)	-0.51 [1.10]	-0.26 [0.93]	-0.31 [1.09]	-1.58 [1.71]
GDP per capita growth (annual %)	0.18 [0.04]***	0.17 [0.04]***	0.18 [0.04]***	0.17 [0.05]***
Young Dependency ratio (% of labor force)	-0.17 [0.06]***	-0.18 [0.05]***	-0.18 [0.06]***	-0.21 [0.08]***
Old Dependency ratio (% of labor force)	-0.26 [0.14]*	-0.39 [0.15]**	-0.33 [0.14]**	-0.42 [0.12]***
Government Stability (0 high political risk, 12 low risk)	7.48 [2.21]***	7.46 [2.59]***	7.5 [1.91]***	8.52 [2.59]***
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	0.48 [0.15]***	0.48 [0.16]***	0.47 [0.16]***	0.50 [0.14]***
Number of Observations	2,374	1,911	2,254	1,767
Number of Countries	114	94	107	83
Number of Instruments	96	96	96	96
AR(1) Test, p-value	1.4E-07	4.5E-06	5.3E-07	3.7E-07
AR(2) Test, p-value	0.48	0.66	0.54	0.33
Hansen Test, p-value	0.27	0.76	0.21	0.94

Robust standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01

Table 5. Estimation Results: Public Saving Rate*Dependent variable: Gross Public Saving (% of GDP)*

	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	GDP, PPP				
Gross Public Saving, first lag (% of GDP)	0.68 [0.04]***	0.65 [0.05]***	0.69 [0.04]***	0.69 [0.05]***	0.7 [0.04]***	0.7 [0.04]***
GDP per capita (log)	0.44 [0.36]	0.64 [0.52]		0.53 [0.41]	0.3 [0.32]	0.47 [0.37]
GDP per capita growth (annual %)	0.13 [0.02]***	0.1 [0.02]***		0.13 [0.02]***	0.14 [0.02]***	0.13 [0.03]***
GDP per capita, trend component (logs)			0.57 [0.37]			
GDP per capita, cycle component (% of GDP)			0.22 [0.06]***			
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	2.83 [0.96]***	2.75 [0.94]***	2.47 [1.03]**	2.2 [0.80]***	2.88 [0.97]***	1.95 [0.84]**
Government Stability (0 high risk - 12 low risk)	0.11 [0.07]	0.12 [0.08]	0.13 [0.07]*			
Political Constraints (POLCONV) (Executive discretion 0 - Pol Constraints 1)				-2.37 [1.57]		
Checks and Balances index (Executive discretion 1 -)					-0.14 [0.14]	
Revised Polity score (-10 full autocracy - 10 full democracy)						-0.09 [0.06]
Number of Observations	2,374	2,207	2,374	2,350	2,317	2,281
Number of Countries	114	114	114	114	113	110
Number of Instruments	92	86	92	94	94	94
AR(1) Test, p-value	5.0E-07	2.8E-06	1.0E-06	6.3E-07	4.0E-07	4.0E-07
AR(2) Test, p-value	0.29	0.22	0.35	0.45	0.3	0.29
Hansen Test, p-value	0.45	0.48	0.39	0.48	0.27	0.42

Robust standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01

Table 6. Estimation Results: Public Saving Rate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gross Public Saving, first lag (% of GDP)	0.67 [0.04]***	0.67 [0.04]***	0.69 [0.04]***	0.75 [0.05]***	0.68 [0.04]***	0.7 [0.04]***	0.67 [0.04]***
GDP per capita (log)	0.74 [0.43]*	0.81 [0.52]	0.53 [0.35]	0.09 [0.25]	0.92 [0.48]*	0.92 [0.49]*	0.86 [0.43]**
GDP per capita growth (annual %)	0.12 [0.03]***	0.12 [0.03]***	0.13 [0.02]***	0.13 [0.03]***	0.12 [0.02]***	0.14 [0.02]***	0.12 [0.03]***
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	2.44 [1.12]**	2.34 [1.20]*	2.8 [1.02]***	2.45 [0.80]***	1.82 [1.09]*	1.83 [0.94]*	1.91 [0.97]*
Government Stability (0 high risk - 12 low risk)	0.12 [0.07]	0.12 [0.08]					
Money and Quasi Money (% of GDP)	-0.02 [0.01]						
Domestic Credit to private sector (% of GDP)		-0.02 [0.01]					
Number of political assassinations (Average last five years)			-0.06 [0.11]				
Number of Government Crises (Crises per year)				0.03 [0.13]			
Corruption (0 high risk - 6 low risk)					-0.75 [0.40]*		
Military in Politics (0 high risk - 6 low risk)						-0.68 [0.34]**	
Democratic Accountability (0 high risk - 6 low risk)							-0.62 [0.28]**
Number of Observations	2,263	2,343	2,351	2,014	2,374	2,374	2,374
Number of Countries	113	114	113	113	114	114	114
Number of Instruments	94	94	94	82	92	92	92
AR(1) Test, p-value	6.8E-07	9.7E-07	4.4E-07	3.0E-06	7.9E-07	4.8E-07	6.3E-07
AR(2) Test, p-value	0.24	0.3	0.37	0.52	0.29	0.29	0.3
Hansen Test, p-value	0.68	0.77	0.4	0.72	0.48	0.47	0.45

Table 7. Estimation Results: Public Saving Rate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gross Public Saving, first lag (% of GDP)	0.69 [0.04]***	0.69 [0.04]***	0.69 [0.04]***	0.69 [0.05]***	0.69 [0.04]***	0.68 [0.04]***	0.7 [0.05]***
GDP per capita (log)	0.51 [0.35]	0.51 [0.33]	0.42 [0.39]	0.28 [0.29]	0.42 [0.37]	0.3 [0.31]	-0.04 [0.21]
GDP per capita growth (annual %)	0.13 [0.02]***	0.13 [0.02]***	0.14 [0.02]***	0.13 [0.03]***	0.13 [0.02]***	0.14 [0.02]***	0.15 [0.02]***
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	2.8 [1.01]***	2.7 [0.97]***	2.67 [0.99]***	2.53 [1.08]**	2.76 [1.11]**	2.91 [1.11]**	1.83 [0.81]**
Presidential election (1 in election year, 0 otherwise)	-0.05 [0.20]						
Legislature election (1 in election year, 0 otherwise)		-0.38 [0.12]***					
Chief Executive Party Orientation (1 if right, 0 otherwise)			-0.98 [0.77]				
Chief Executive Party Orientation (1 if center, 0 otherwise)			-0.47 [0.55]				
Chief Executive Party Orientation (1 if left, 0 otherwise)			-0.45 [0.54]				
Largest Government Party Orientation (1 if right, 0 otherwise)				-0.82 [0.64]			
Largest Government Party Orientation (1 if center, 0 otherwise)				-0.61 [0.59]			
Largest Government Party Orientation (1 if left, 0 otherwise)				-0.4 [0.50]			
Legislature fractionalization (0 low - 1 high fractionalization)					-1.28 [1.07]		
Government seats in legislature (Fraction of total, 0 - 1)						1.44 [1.04]	
Years Left in Current Term (years)							0.1 [0.05]**
Number of Observations	2,350	2,351	2,346	2,235	2,208	2,233	2,121
Number of Countries	113	113	113	111	113	113	105
Number of Instruments	94	94	96	96	94	94	94
AR(1) Test, p-value	4.4E-07	4.5E-07	4.3E-07	1.3E-06	9.7E-07	3.3E-07	2.6E-06
AR(2) Test, p-value	0.37	0.38	0.36	0.79	0.23	0.44	0.65
Hansen Test, p-value	0.39	0.44	0.3	0.2	0.31	0.14	0.34

Table 8. Contribution of the Explanatory Variables to the Predicted Private Saving Rate by Region, 1984 – 2012

	LAC	Emerging Asia	Middle East & North Africa	Sub-Saharan Africa	Emerging Europe & CIS	Advanced Economies
Persistence	7.0	10.3	9.5	4.8	8.4	9.3
Public saving rate	-1.7	-2.8	-5.8	-2.6	-1.6	-1.9
Young dependence ratio	-9.3	-8.7	-9.0	-13.9	-5.1	-4.7
Old dependence ratio	-2.5	-2.0	-1.5	-1.5	-4.5	-5.3
Government stability	3.6	3.8	4.2	3.8	4.0	4.0
GDP per capita	-4.1	-3.5	-4.3	-3.3	-4.1	-5.1
GDP per capita growth	0.4	0.7	0.3	0.2	0.9	0.5
Exporters of fuels	0.7	0.0	3.7	0.9	0.0	0.0
Time fixed effects	0.5	0.6	0.5	0.6	0.3	0.6
Constant	22.4	22.4	22.4	22.4	22.4	22.4
Predicted private saving rate	17.1	20.9	20.3	11.4	20.6	19.8
Actual private saving rate	15.6	23.1	21.2	10.9	18.4	20.4
Estimated saving gap	-1.5	2.2	1.0	-0.5	-2.2	0.6

Table 9. Estimated Private Saving Gaps for LAC Countries, 1985 – 2012

	85-89	90-94	95-99	00-04	05-09	10-12	Total
Argentina		-3.3	-1.9	-0.5	1.4		-1.3
Bahamas		-0.9	-3.2	-4.0	-6.3	-5.7	-3.9
Bolivia	-6.4	-4.1	-2.3	-1.5	3.7	5.8	-0.9
Brazil			-5.1	-3.8	-4.9	-4.6	-4.6
Chile	-1.1	-2.5	0.9	-1.0	-0.1	-1.2	-0.8
Colombia	0.1	-0.6	-1.6	-2.2	-2.4	-3.1	-1.6
Costa Rica	-0.2	-2.6	-3.9	-2.6	-3.8	-4.9	-3.0
Dominican Republic		-0.5	0.0	-0.5	-7.0	-7.3	-2.9
Ecuador	-2.4	-2.0	-1.2	0.0	3.1	4.0	0.0
El Salvador	0.2	0.2	-0.4	-1.7			-0.1
Guatemala	-1.7	0.8	1.0	1.5	-0.1	-1.2	0.1
Haiti			7.6	4.2	3.1	1.1	3.4
Mexico	3.4	0.9	4.1	1.2	1.8	1.4	2.0
Nicaragua			-0.5	-3.9	-0.8	-2.7	-1.9
Panama	-1.9	-0.2	-0.5	-3.4	-3.8	-4.5	-2.2
Paraguay		2.9	1.8	-0.2	-2.4	-3.7	0.0
Peru		-3.4	-1.1	-1.6	-0.3	1.1	-0.9
Trinidad and Tobago	-9.1	-7.4	-9.3	-5.2	0.2	-5.5	-5.8
Uruguay		-5.0	-2.7	-1.6	-2.7	-2.3	-2.7
Venezuela	-4.7	-6.3	-1.0	-0.2	-1.0	-2.7	-2.6

Table 10. Contribution of the Explanatory Variables to the Predicted Public Saving Rate by Region, 1984 – 2012

	LAC	Emerging Asia	Middle East & North Africa	Sub-Saharan Africa	Emerging Europe & CIS	Advanced Economies
Persistence	1.8	3.0	6.0	2.8	1.5	2.0
Government stability	0.8	0.8	0.9	0.8	0.9	0.9
GDP per capita	3.5	3.0	3.7	2.8	3.5	4.4
GDP per capita growth	0.3	0.5	0.2	0.2	0.6	0.3
Exporters of fuels	0.3	0.0	1.4	0.3	0.0	0.0
Time fixed effects	0.0	0.0	0.1	0.0	0.1	0.0
Constant	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Predicted public saving rate	2.8	3.5	8.5	3.1	2.7	3.7
Actual public saving rate	2.6	4.3	9.0	4.0	2.5	2.9
Saving gap	-0.2	0.8	0.5	1.0	-0.2	-0.7

Table 11. Estimated Public Saving Gaps for LAC Countries, 1985 – 2012

	85-89	90-94	95-99	00-04	05-09	10-12	Total
Argentina		-0.5	-1.4	-0.3	-0.5		-0.7
Bahamas		0.2	-1.6	-1.8	-1.6	-1.7	-1.3
Bolivia	0.7	1.9	0.6	1.4	3.5	3.6	1.9
Brazil			-1.2	-1.1	-1.9	-2.1	-1.6
Chile	1.9	-0.4	-0.4	-0.2	-0.2	0.2	0.2
Colombia	1.2	1.8	0.7	0.8	0.0	1.2	0.9
Costa Rica	0.6	-0.4	-0.3	-1.7	-0.2	-2.0	-0.6
Dominican Republic		1.3	-0.1	0.0	-1.0	-1.2	-0.2
Ecuador	-0.1	-0.2	0.6	2.0	1.9	3.8	1.2
El Salvador	0.1	0.7	-0.6	-1.9			-0.1
Guatemala	0.3	1.2	0.3	0.0	-0.1	-0.6	0.2
Haiti			0.4	0.5	0.4	1.2	0.6
Mexico	-2.1	-0.2	-1.9	0.1	-0.4	-0.9	-0.8
Nicaragua			0.5	0.3	0.2	0.4	0.3
Panama	-1.1	1.3	0.2	-1.1	0.5	1.0	0.1
Paraguay		2.0	1.6	1.2	1.2	0.7	1.4
Peru		0.8	0.4	-0.2	0.8	1.6	0.6
Trinidad and Tobago	-3.5	-0.9	-3.8	-2.8	-2.0	-2.5	-2.5
Uruguay		0.3	-0.5	-0.7	-1.0	-1.8	-0.7
Venezuela	-2.1	-0.7	-2.8	-0.7	-4.1	-7.1	-2.6

Table 12. Estimation Results: Model for Private Saving Rate Including External Saving Indicators*Dependent variable: Gross Private Saving (% of GDP)*

	(1)	(2)	(3)	(4)	(5)	(6)
Gross Private Saving, first lag (% of GDP)	0.46 [0.04]***	0.28 [0.05]***	0.47 [0.05]***	0.48 [0.05]***	0.51 [0.04]***	0.43 [0.06]***
Gross Public Saving (% of GDP)	-0.56 [0.07]***	-0.74 [0.09]***	-0.59 [0.08]***	-0.6 [0.07]***	-0.56 [0.08]***	-0.56 [0.10]***
GDP per capita (log)	0.01 [0.84]	-2.29 [1.07]**	-0.11 [0.97]	0.55 [0.77]	-0.35 [0.69]	-0.37 [1.01]
GDP per capita growth (annual %)	0.18 [0.04]***	0.2 [0.04]***	0.18 [0.05]***	0.19 [0.04]***	0.17 [0.06]***	0.17 [0.05]***
Young Dependency ratio (% of labor force)	-0.15 [0.05]***	-0.23 [0.06]***	-0.16 [0.05]***	-0.13 [0.04]***	-0.13 [0.04]***	-0.18 [0.06]***
Old Dependency ratio (% of labor force)	-0.3 [0.13]**	-0.08 [0.13]	-0.31 [0.13]**	-0.35 [0.13]***	-0.21 [0.11]*	-0.26 [0.14]*
Government Stability (0 high risk, 12 low risk)	0.36 [0.12]***	0.67 [0.11]***	0.37 [0.13]***	0.37 [0.11]***	0.41 [0.13]***	0.4 [0.15]**
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	5.58 [1.79]***	5.54 [2.37]**	5.97 [1.97]***	5.21 [1.80]***	5.17 [2.01]**	6.92 [2.29]***
Terms of Trade (log)	6.21 [1.72]***	1.97 [2.24]	6.25 [1.97]***	5.92 [1.74]***	7.71 [1.99]***	7.38 [2.63]***
Current Account Balance (% of GDP)		0.47 [0.06]***				
Financial Openness (Chinn & Ito)			0.05 [0.29]			
Financial Openness (Lane and Milesi-Ferretti)				-0.003 [0.003]		
Net Remittance Inflows (% of GDP)					-0.11 [0.14]	
Stock of emigrants (% of population)						-0.18 [0.07]**
Number of Observations	2,282	2,172	2,192	2,178	1,747	1,992
Number of Countries	112	110	112	111	104	111
Number of Instruments	98	100	96	96	100	81
AR(1) Test, p-value	1.7E-07	1.3E-05	9.3E-08	9.9E-08	1.3E-06	2.1E-06
AR(2) Test, p-value	0.31	0.36	0.37	0.45	0.61	0.65
Hansen Test, p-value	0.4	0.15	0.38	0.61	0.61	0.32

Robust standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01

Table 13. Estimation Results: Model for Public Saving Rate Including External Saving Indicators*Dependent variable: Gross Public Saving (% of GDP)*

	(1)	(2)	(3)	(4)	(5)	(6)
Gross Public Saving, first lag (% of GDP)	0.66 [0.05]***	0.67 [0.06]***	0.62 [0.04]***	0.66 [0.05]***	0.73 [0.06]***	0.64 [0.06]***
GDP per capita (log)	0.44 [0.33]	0.08 [0.36]	0.25 [0.29]	0.36 [0.38]	0.48 [0.53]	0.27 [0.40]
GDP per capita growth (annual %)	0.15 [0.03]***	0.14 [0.03]***	0.21 [0.02]***	0.14 [0.03]***	0.12 [0.03]***	0.17 [0.03]***
Exporter of Fuels (mainly oil) (1 if exporter, 0 otherwise)	3.09 [1.24]**	0.68 [1.02]	3.81 [1.25]***	3.22 [1.21]***	2.2 [1.93]	3.54 [1.46]**
Government Stability (0 high risk - 12 low risk)	0.05 [0.08]	0.05 [0.09]	0.14 [0.05]**	0.08 [0.08]	0.11 [0.10]	0.09 [0.09]
Terms of Trade (log)	3.67 [1.35]***	1.8 [1.16]	4.85 [1.27]***	3.6 [1.34]***	6.41 [1.88]***	3.59 [1.66]**
Current Account Balance (% of GDP)		0.22 [0.03]***				
Financial Openness, de Jure (Chinn & Ito)			-0.10 [0.16]			
Financial Openness, de Facto (Lane and Milesi-Ferretti)				-0.001 [0.001]		
Net Remittance Inflows (% of GDP)					0.10 [0.15]	
Stock of emigrants (% of population)						-0.04 [0.04]
Number of Observations	2,282	2,172	2,192	2,178	1,747	1,992
Number of Countries	112	110	112	111	104	111
Number of Instruments	94	96	92	92	96	77
AR(1) Test, p-value	1.4E-06	2.0E-05	2.0E-06	1.9E-06	3.4E-05	6.9E-06
AR(2) Test, p-value	0.13	0.16	0.07	0.079	0.5	0.25
Hansen Test, p-value	0.34	0.13	0.34	0.35	0.21	0.16

Robust standard errors in brackets. * p<0.10, ** p<0.05, *** p<0.01

Table 14. Contribution of the Explanatory Variables to the Predicted Private Saving Rate by Region, 1984 – 2012

	Private saving gap - Baseline/a					
	LAC	Emerging Asia	Middle East & North Africa	Sub-Saharan Africa	Emerging Europe & CIS	Advanced Economies
Persistence	7.0	10.7	9.3	4.9	8.6	9.4
Public saving rate	-1.7	-3.0	-6.3	-2.2	-1.6	-1.5
Young dependence ratio	-9.3	-8.4	-9.1	-13.9	-5.0	-4.7
Old dependence ratio	-2.5	-2.0	-1.6	-1.5	-4.6	-5.3
Government stability	3.6	3.8	4.2	3.9	4.0	4.0
GDP per capita	-4.1	-3.6	-4.2	-3.3	-4.1	-5.1
GDP per capita growth	0.4	0.8	0.3	0.2	0.8	0.5
Terms of Trade						
Current Account Balance						
Exporters of fuels	0.7	0.0	3.2	0.9	0.0	0.0
Time fixed effects	0.5	0.5	0.5	0.5	0.2	0.5
Constant	22.4	22.4	22.4	22.4	22.4	22.4
Predicted private saving rate	17.1	21.4	18.8	11.9	20.8	20.3
Actual private saving rate	15.6	23.9	20.3	11.1	18.7	20.7
Saving gap	-1.5	2.6	1.5	-0.8	-2.1	0.4
	Private saving gap - Including Current Account Balance					
Persistence	4.4	6.7	5.8	3.1	5.4	5.9
Public saving rate	-1.9	-3.4	-7.2	-2.5	-1.8	-1.7
Young dependence ratio	-12.9	-11.6	-12.6	-19.3	-6.9	-6.5
Old dependence ratio	-0.8	-0.6	-0.5	-0.5	-1.5	-1.7
Government stability	5.0	5.3	5.8	5.3	5.5	5.5
GDP per capita	-18.5	-16.2	-19.0	-14.7	-18.6	-22.9
GDP per capita growth	0.4	0.8	0.3	0.3	0.9	0.5
Terms of Trade	9.2	9.1	9.2	9.1	9.1	9.0
Current Account Balance	-1.1	-0.2	2.5	-2.0	-1.3	-0.3
Exporters of fuels	0.6	0.0	2.4	0.6	0.0	0.0
Time fixed effects	0.0	-0.1	-0.2	-0.1	-0.7	0.0
Constant	32.3	32.3	32.3	32.3	32.3	32.3
Predicted private saving rate	16.5	22.2	18.9	11.6	22.5	20.3
Actual private saving rate	15.6	23.9	20.3	11.1	18.7	20.7
Saving gap	-0.9	1.7	1.3	-0.5	-3.8	0.4

a/ The saving gap is computed using countries for which information of Current Account Balance is available

Table 15. Contribution of the Explanatory Variables to the Predicted Public Saving Rate by Region, 1984 – 2012

	Public saving gap - Baseline/a					
	LAC	Emerging Asia	Middle East & North Africa	Sub-Saharan Africa	Emerging Europe & CIS	Advanced Economies
Persistence	1.8	3.1	6.3	2.3	1.4	1.5
Government stability	0.8	0.8	0.9	0.8	0.9	0.9
GDP per capita	3.5	3.1	3.6	2.8	3.5	4.4
GDP per capita growth	0.3	0.5	0.2	0.2	0.6	0.3
Terms of Trade						
Current Account Balance						
Exporters of fuels	0.3	0.0	1.2	0.3	0.0	0.0
Time fixed effects	0.0	0.0	0.1	0.0	0.1	0.0
Constant	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Predicted public saving rate	2.8	3.8	8.5	2.7	2.7	3.3
Actual public saving rate	2.6	4.6	9.7	3.4	2.4	2.3
Saving gap	-0.2	0.8	1.3	0.8	-0.2	-1.0
	Public saving gap - Including Current Account Balance					
Persistence	1.7	3.1	6.1	2.3	1.4	1.5
Government stability	0.4	0.4	0.5	0.4	0.4	0.4
GDP per capita	0.7	0.6	0.7	0.5	0.7	0.8
GDP per capita growth	0.3	0.6	0.2	0.2	0.7	0.4
Terms of Trade	8.3	8.3	8.4	8.3	8.3	8.2
Current Account Balance	-0.5	-0.1	1.2	-0.9	-0.6	-0.1
Exporters of fuels	0.1	0.0	0.3	0.1	0.0	0.0
Time fixed effects	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Constant	-8.0	-8.0	-8.0	-8.0	-8.0	-8.0
Predicted public saving rate	2.7	4.6	9.1	2.6	2.6	2.9
Actual public saving rate	2.6	4.6	9.7	3.4	2.4	2.3
Saving gap	-0.1	0.0	0.6	0.9	-0.1	-0.6

a/ The saving gap is computed using countries for which information of Current Account Balance is available

Appendix

Table A1. Variables Included in the Estimations

Variable	Source	Maximum time span	Countries
Gross Private Saving	World Economic Outlook Dataset	1980-2012	148
Gross Public Saving	World Economic Outlook Dataset	1980-2012	148
Current Account Balance	World Development Indicators Dataset	1980-2012	146
Net Remittance Inflows	World Development Indicators Dataset	1980-2012	139
Real Interest Rate	World Development Indicators Dataset	1980-2012	141
Inflation Rate	World Development Indicators Dataset	1980-2012	148
Terms of Trade	World Economic Outlook Dataset	1980-2012	145
GDP per capita	World Development Indicators Dataset	1980-2012	148
GDP per capita growth	World Development Indicators Dataset	1980-2012	148
Young Dependency ratio	World Development Indicators Dataset	1980-2012	146
Old Dependency ratio	World Development Indicators Dataset	1980-2012	146
Domestic credit to private sector	World Development Indicators Dataset	1980-2012	145
Money and quasi money	World Development Indicators Dataset	1980-2012	147
Exporter of Fuels, mainly oil	Global Development Network Dataset	1980-2012	148
Financial Openness (de Jure)	Chinn & Ito (2008)	1980-2011	146
Financial Openness (de Facto)	External Wealth of Nations Dataset	1980-2011	146
Government Stability	International Country Risk Guide Dataset	1984-2012	121
Law and Order	International Country Risk Guide Dataset	1984-2012	121
Corruption	International Country Risk Guide Dataset	1984-2012	121
Military in Politics	International Country Risk Guide Dataset	1984-2012	121
Democratic Accountability	International Country Risk Guide Dataset	1984-2012	121
Number of political assassinations	Cross National Time Series Dataset	1980-2012	147
Number of Government Crises	Cross National Time Series Dataset	1980-2008	147
Checks and Balances index	Dataset of Political Institutions	1980-2012	143
Legislature fractionalization	Dataset of Political Institutions	1980-2012	143
Government seats in legislature	Dataset of Political Institutions	1980-2012	143
Years Left in Current Term	Dataset of Political Institutions	1980-2012	132
Presidential election	Dataset of Political Institutions	1980-2012	143
Legislature election	Dataset of Political Institutions	1980-2012	143
Chief Executive Party Orientation	Dataset of Political Institutions	1980-2012	143
Largest Government Party Orientation	Dataset of Political Institutions	1980-2012	140
Political Constraints, POLCONV	Political Constraint Index Dataset	1980-2012	144
Revised Polity score	Polity IV Dataset	1980-2012	135

Table A2. Summary Statistics*Number of countries (maximum): 114, Total number of observations: 2,374*

	Mean	Standard Deviation		Minimum	Maximum
		Between	Within		
Gross Private Saving (% of GDP)	17.3	6.7	4.9	-13.6	52.4
Gross Public Saving (% of GDP)	3.8	6.3	3.9	-23.9	50.6
Current Account Balance (% of GDP)	-1.5	7.0	5.3	-44.6	44.6
GDP per capita (log)	8.1	1.6	0.2	4.7	11.1
GDP per capita growth (annual %)	2.4	2.0	3.8	-29.7	38.1
GDP per capita, trend component (log)	8.1	1.6	0.2	4.8	11.1
GDP per capita, cycle component (% of GDP)	0.1	0.2	2.3	-14.8	16.6
Young Dependency ratio (% of population 14-65)	54.2	23.5	6.1	15.5	107.2
Old Dependency ratio (% of population 14-65)	11.1	7.0	1.3	1.2	39.0
Exporter of Fuels, mainly oil (0-1)	0.1	0.3	0.0	0.0	1.0
Real Interest Rate ($\log(1 + r)$)	0.0	0.0	0.1	-0.4	0.4
Inflation Rate ($\log(1 + \pi)$)	0.1	0.1	0.1	-0.4	0.5
Terms of Trade (log)	4.6	0.2	0.2	2.9	6.2
Domestic credit to private sector (% of GDP)	46.8	36.8	16.4	0.8	250.1
Money and quasi money (M2, % of GDP)	54.7	41.9	15.8	0.8	336.1
Financial Openness, de Jure (Chinn & Ito)	0.4	1.4	0.8	-1.9	2.4
Financial Openness, de Facto (Lane and Milesi-Ferretti)	242.9	1282.2	131.8	16.4	14802.8
Net Remittance Inflows (% of GDP)	1.8	4.5	1.8	-11.1	32.8
Government Stability (0 high political risk, 12 low risk)	8.0	1.1	1.8	1.0	12.0
Law and Order (0 high risk - 6 low risk)	3.8	1.2	0.7	0.0	6.0
Corruption (0 high risk - 6 low risk)	3.0	1.1	0.7	0.0	6.0
Military in Politics (0 high risk - 6 low risk)	3.8	1.6	0.8	0.0	6.0
Democratic Accountability (0 high risk - 6 low risk)	4.0	1.3	0.8	0.0	6.0
Number of political assassinations (Annual average last five years)	0.2	0.5	0.5	0.0	10.2
Number of Government Crises (Crises per year)	0.1	0.2	0.4	0.0	5.0
Checks and Balances index (Executive discretion 1 -)	3.0	1.3	1.0	1.0	16.0
Political Constraints, POLCONV (Executive discretion 0 - Pol Constraints 1)	0.4	0.3	0.2	0.0	0.9
Legislature fractionalization (0 low - 1 high fractionalization)	0.6	0.2	0.1	0.0	0.9
Government seats in legislature (Fraction of total, 0 - 1)	0.6	0.2	0.1	0.0	1.0
Years Left in Current Term (years)	2.0	0.5	1.4	0.0	6.0
Revised Polity score (-10 full autocracy - 10 full democracy)	3.9	6.0	2.8	-10.0	10.0
Presidential election (1 if election year, 0 otherwise)	0.1	0.1	0.3	0.0	1.0
Legislature election (1 if election year, 0 otherwise)	0.2	0.1	0.4	0.0	1.0
Chief Executive Party Orientation (1 if right, 0 otherwise)	0.3	0.3	0.3	0.0	1.0
Chief Executive Party Orientation (1 if center, 0 otherwise)	0.1	0.2	0.2	0.0	1.0
Chief Executive Party Orientation (1 if left, 0 otherwise)	0.3	0.3	0.3	0.0	1.0
Largest Government Party Orientation (1 if right, 0 otherwise)	0.3	0.3	0.3	0.0	1.0
Largest Government Party Orientation (1 if center, 0 otherwise)	0.1	0.2	0.2	0.0	1.0
Largest Government Party Orientation (1 if left, 0 otherwise)	0.3	0.3	0.3	0.0	1.0