

# Conditions for Success: The Importance of Legal Governance in the Privatization Process\*

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Using a sample of 56 developing and developed countries over the period 1986-2004, we estimate with a system GMM technique the impact of the quality of governance institutions on the success of the privatization reform, while controlling for macro-economic and political factors. Our results confirm that for privatization to succeed, the existence of efficient and well functioning governance institutions is fundamental. Our results are robust to endogeneity checks.

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## I. Introduction

Privatization is a worldwide phenomenon and has been on the economic and political agenda of both developing and developed countries for over three decades. The empirical literature on the positive impact of privatization is abundant and beautifully summarized in Megginson and Netter (2001). This literature on privatization has now reached the conventional wisdom that the success of privatization relies theoretically on the existence of efficient institutions of legal governance (Stiglitz; 1999, Dyck, 2001; Nellis, 2003; Ramamurti, 2000; etc.). The success of privatization reform indeed requires the existence of well-developed legal institutions of governance that regulate sales and market operations. These institutions include, among others, the definition and protection of private property rights, company and bankruptcy laws, contract enforcement, quality of government rule of law, the effectiveness of the judicial system, the risk of expropriation, the risk of contract repudiation, and the extent of corruption. If these institutions are not in place and functioning properly, privatization will lead to sub-optimal and even negative results (Nellis, 2003).

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Despite their importance in shaping the privatization process, the impact of legal institutions on privatization has been rarely investigated. Ramamurti (2000, p. 526) notes that "We need to understand better how these institutional differences affect a country's privatization strategy and results...".

According to Guislain (1995), the legal environment ensures that the contracts are enforced, conflicts are resolved, minority shareholders' rights are respected and bankruptcy and transactions between economic agents are well regulated. Securing property rights thus relies on the way existing laws are enforced. This implies contract law enforcement as well as law existence on the books.

Guislain (1995) argues that during the preparation of the privatization process, it is important to specifically address the following issues: how the laws on property rights are defined and enforced, what kind of constraints there are on the transfer of property rights, whether there are any restrictions on foreign ownership, how efficient the judicial system is, how individual rights are protected, etc... When the legal system is not well defined and property rights are not well protected, a new legislation must be put in place at the time of privatization in order to eliminate any obstacles to the effective transfer of ownership to maximize the chances of success of the reform. In a nutshell, implementing privatization definitely requires a reform of the legal system.

On another token, a privatization strategy that is oriented towards fostering better firm governance requires a hard budget constraint for the newly privatized firms, specifically by laws in place to govern bankruptcy procedures, information disclosure and banking regulations. These laws are necessary to ensure financial discipline and the good functioning of market economies.

This study is an attempt to fill the void in the empirical literature on the link between governance institutions and privatization. More specifically, our objective is to investigate empirically the impact of governance institutions on the privatization activity, while controlling for the determinants of privatization that has been identified in the empirical literature on the reform.

We address this particular question using an extensive panel dataset consisting of 56 developed and developing countries over the period 1986-2004. Our contribution is threefold. First, we contribute to the scarce empirical literature on the determinants of privatization by using a comprehensive approach, which examines how macroeconomic, political and institutional factors affect the privatization reform, and complement recent evidence that privatization itself has an impact on the quality of governance institutions. Second, we use a sample that includes both developing and developed countries, which allows for a large and insightful cross-country comparison. Finally, we estimate our privatization model using the System GMM technique, which allows us to control for the endogeneity (reverse causality and simultaneity) of governance institutions as well as the unobserved country-specific effects (Arellano and Bond, 1991; Arellano and Bover, 1995). Indeed, some previous studies on the determinants of privatization suffer from at least two caveats: (1) Some studies (e.g., Bortolotti et al., 2004) measure legal institutions using legal origin dummies, which fail to account for the complexity and the dynamic nature of institutions of legal governance; (2) most importantly, these studies fail to address the potential endogeneity bias of governance institutions as discussed by Boubakri et al. (2009b), Coffee (1999), Megginson and Netter (2001), and Perotti and van Oijen, (2001) among others. Thus, estimating the privatization model without controlling for the endogeneity of the institutional variable will inevitably lead to biased results and potentially wrong conclusions.

Our empirical analysis yields the following findings: We find that higher levels of country debt trigger the privatization process. Also, privatization proceeds are lower in less established democratic regimes (because of weak political accountability). Other political determinants include the significant

impact of political tenure that turns out to be significantly related to privatization: specifically, newly elected political leaders privatize more. Importantly for our purposes, we find that in addition to the impact of these control variables, our Governance index that includes corruption, bureaucratic quality, government stability and law and order, remains systematically positively and significantly related to privatization proceeds, which confirms our main expectation that the success of privatization relies on the existence of efficient and well functioning governance institutions. Controlling for endogeneity confirms this finding.

The remainder of this paper is organized as follows. In section II, we present a literature review on the link between legal institutions and privatization. Section III will discuss the sample and variables used. In section IV, we present our methodology. The results are presented in section V. Finally, section VI concludes this paper.

## **II. Institutions and Privatization**

In his Nobel Prize speech, North defines institutions as "humanly devised constraints that structure interactions. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions, and self-imposed codes of conduct), and their enforcement characteristics. Together, they define the incentive structure of societies and specifically economies (Alston et al., 1996: p. 344).

There are numerous studies that discuss the link between privatization and the legal framework. For instance, Eagle and Christensen (1994) posit that privatization reform in any country requires the existence of an institutionally friendly framework. The performance improvement of newly privatized firms is conditional on the existence of such legal framework that protects investors' rights. In the same vein, Johnson and Shleifer (2003) argue that, under weak investor protection, privatization will be unable to stimulate changes in performance and will likely lead to higher agency problems including expropriation of the firms' resources by insiders and the new majority shareholders.

Dyck (2001) introduces in a theoretical paper the notion of governance chains that control managerial behavior through a better transmission of information to investors. The author distinguishes private governance chains (i.e., ownership structure), from formal governance chains (i.e., legal institutions, property rights and state of law). The author then examines to what extent post privatization ownership structure stimulates the development of governance institutions. He reports that in the absence of initial adequate legal systems, particularly in transition economies, privatization which requires formal governance chains, failed and the transfer of ownership has led to the emergence of different forms of expropriation by firms' managers. Dyck (2001) discusses the example of the Czech Republic that privatized through vouchers before putting in place private or public regulatory bodies, ultimately resulting in multiple opportunities of expropriation by managers and majority shareholders of newly privatized firms. On the other hand, those countries that have put in place privatization that favor ownership concentration have obtained better results. Dyck (2001) explains this by the fact that economies in transition have been functioning with lagged legal systems based on the Soviet law, which includes no laws to govern the corporate world. Pistor et al. (2000) however argue that it is not so much the lack of laws but rather the lack of enforcement of existing laws that contributed to the failure of privatization in transition economies.

In their review on the literature, Megginson and Netter (2001) contend that privatization induced changes of the legal system in several countries. Among the characteristics of the process, they note the tendency of some governments to sell state owned enterprises (SOE, thereafter) to a large number of shareholders. This puts a constraint on the government because losses incurred by these

investors are politically costly as they translate in loss of votes. As a result, many governments try to put in place a stock market regulatory board at the time of privatization. In addition, local stock markets are usually illiquid and lack transparency at the beginning of the process. This in turn puts additional pressure on governments to develop such markets in order to facilitate privatization share issues and attract foreign investors.

Stiglitz (1999) on the other hand argues that privatization will not necessarily lead to improvements or changes in the legal and institutional infrastructure of the country. He points out that the failure of privatization reforms in several transition countries is not due to a bad privatization process, but is rather due to the misunderstanding of the fundamentals of a market economy. According to the author, the reforms implemented under the supervision of the IMF and the World Bank underestimated the importance of informational problems (including corporate governance problems) as well as well functioning judicial and institutional institutions, which are all required for a well functioning market economy. He also argues that privatization strategies in transition economies had a very narrow vision of institutional change which was seen as the mere implementation of some market institutions. By neglecting primarily important reforms to develop the private sector, improve competition and liberalize prices, the incentive systems that are supposed to orient managers' behavior towards productive efficiency have been absent. Under such conditions, the oligopolies that emerged after privatization were better-off blocking any institutional and legal reforms that they considered to be costly to them, given that these latter favor the introduction of competitive forces in the market.

In analyzing the Russian privatization experience, Black, Kraakman and Tarassova (2000) identify three factors that may explain the failure of the reform in this country:

1. Mass privatization of SOEs generated a large number of expropriation activities by new managers. To avoid this issue, the reform must be preceded or accompanied by reforms in the legal and market institutions of the country to enforce investors' rights.
2. The incentives towards profit put in place before the restructuring of privatized firms were diluted in a hostile environment characterized by a constraining fiscal system, high government corruption, a heavy bureaucracy and a high organized crime rate.
3. The failed privatization of the bigger firms (crown jewels) jeopardized any future reform and failed to convey credibility. Failed transactions enhanced opportunities for corruption and for expropriation of the firms' resources by new owners, without any legal consequences.

The authors conclude that decision makers should pay a particular attention to build the adequate institutional infrastructure in order to avoid any incentives for expropriation or corruption, and to further enhance market economy. Without such infrastructure, mass privatization of large firms will fail to boost economic growth.

In his study of the privatization reform in Africa, Nellis (2003) argues that "Privatization outcomes are heavily affected by the institutional setting in which divestiture takes place" (p. 11). Nellis (2003) sustains that the appropriate institutional infrastructure that guide market operations should consist of "... The definition and protection of property rights, contract enforcement and commercial dispute settlement through lawful, peaceful means, or, more broadly, court decisions that are timely and based on the law, not payments: a degree of regulatory capacity; functioning bankruptcy/insolvency regimes; and a public administration that meets modicum standards of predictability, competence and probity and thus lowers transactions costs" (p. 11). He concludes that if these institutions of legal governance are not working properly, privatization will likely lead to sub-optimal or even negative results.

In a nutshell, this theoretical literature shows that the success of privatization depends on the preexistence of an adequate institutional and legal environment that protects the rights of private investors. Surprisingly, the empirical studies on the impact of legal institutions on privatization are rare. For instance, Bortolotti et al. (2001) look at the impact of political economic and institutional factors on the privatization process. The regressions run on a sample of 49 countries over the 1977-1996 period show that the decision and the choice of the reform are significantly related to the political system in place and to the budget constraints of the country. Additionally, the authors show that stock market liquidity, the level of investor protection in the country, and the quality of institutions are all fundamental determinants of the success of the reform.

Bortolotti et al. (2004) assess empirically the determinants of privatization using a panel of 34 countries over the 1977-1999 period. They show that the extent of privatization in terms of proceeds and stakes sold are lower in civil law countries characterized by poor protection of property rights. Using a sample of 35 developing countries between 1982 and 1999, Banerjee and Munger (2004) investigate the macroeconomic, political and institutional determinants of privatization. Their institutional variable is captured by aggregating rule of law, bureaucratic quality, corruption, risk of expropriation, and repudiation of contracts. Their results show that legal institutions emerge as a significant determinant of privatization.

Recently, Adams and Mengistu (2008) examine the determinants of privatization for a sample of 22 Sub-Saharan African countries over the 1991-2002 period. Their results show that the institutional infrastructure, measured by the governance indicators developed by Kaufmann et al. (2005), is a major determinant of privatization in Sub-Saharan African countries.

While these empirical studies constitute an important step towards understanding the impact of legal institutions on the success of privatization reform, they suffer from at least two caveats. First, some studies (e.g., Bortolotti et al., 2004) measure legal institutions using legal origin dummies, which fail to account for the complexity and the dynamic nature of institutions of legal governance. Second, and most importantly, these studies fail to address the potential endogeneity bias of the legal institutions variable. Indeed, many authors argue that privatization reform will create a demand for better legal institutions (Boubakri et al., 2009b; Coffee, 1999; Megginson and Netter, 2001; Perotti and van Oijen, 2001). Thus, estimating the privatization model without controlling for the endogeneity of the institutions variable will inevitably lead to biased results and potentially wrong conclusions.

With these caveats in mind, we propose to examine in this paper the potential impact of the institutions of legal governance on privatization using a large sample of both developing and developed countries spanning nearly two decades of privatization. Next, we describe our variables and the data used in the empirical analysis.

### **III. Description of variables and data**

In this section, we describe our measures of dependent and explanatory variables and our data sources.

#### **a. Dependent Variable**

To measure privatization, we use the total proceeds from privatization as a percentage of GDP (PRIV). This variable provides an adequate measure of the change from public to private ownership and captures the level of political commitment towards better economic policies (Barnett, 2000; Davis et al., 2000). The privatization data are derived from SDC Platinum (Thomson Financial).

#### **b. Independent Variables**

### ***Public finance***

The literature on privatization sustains that high level of total debt and budget deficit triggers privatization (Ramamurti, 2000; Bortolotti et al., 2004). Countries adopt privatization reforms as a response to debt or fiscal crisis. The proceeds from privatization sales can help the country to meet its debt obligations. In turn, reducing the debt load should improve the country's creditworthiness, which lowers interest payments on sovereign loans (Boubakri et al., 2009a). The transfer of inefficient SOEs to the private sector will also help to reduce the government's budget deficit. Hirschman (1985) argues that consistent budget deficits should encourage the government to adopt privatization policy, which brings revenue to the government's depleted coffers, thereby reducing the deficit.

The above discussion engenders the following hypotheses:

**H1:** Ceteris paribus, total debt is positively related to privatization proceeds.

**H2:** Ceteris paribus, budget deficit is positively related to privatization proceeds.

To measure the outlook of public finance of a given country in a given year, we use the ratio of total debt to GDP (DEBT) and the ratio of government deficit to GDP (DEFICIT). These variables are drawn from World Development Indicators (2005).

### ***Ideology of the Executive***

It is often argued that privatization is more of a political rather than an economic decision. Right-wing parties are more likely to privatize than left-wing parties that are oriented toward central planning (Biglaiser and Brown, 2003; Bortolotti et al., 2004). In the same vein, Biais and Perotti (2002) develop a bi-partisan model of privatization in which the right-wing government maximizes the utility of the rich, whereas the left-wing government maximizes the utility of the poor. To win the election, both parties need the votes of the median class. The authors show that, by distributing substantial shares of the privatized SOEs to the electorate, hence creating some kind of "popular capitalism", the right-wing parties succeed in making the median voter favor more market-friendly policies that maximize the value of his financial assets (Bortolotti et al., 2004). In light of this discussion, we predict that:

**H3:** Ceteris paribus, a right-wing government should be associated with higher privatization proceeds.

To test this hypothesis, we use two dummy variables: (i) RIGHT takes the value of one if the party in place is right-wing oriented and zero otherwise, and NONDEM takes the value of one if the regime type is non-democratic and zero otherwise. The data on the ideology of the executive are drawn from the Database of Political Institutions (2006).

### ***The Honeymoon Hypothesis***

The honeymoon hypothesis states that privatization is implemented immediately after a change of government. The reason is that new political leaders have more political freedom due to their longer time horizons. Since reforms make things worse before they get better (Pinera, 1994), new political leaders are more willing to implement privatization in the initial years of their mandate, which enables them to take corrective measures whenever needed. In addition, they have time to reap the benefits of the privatization reform in later years (Banerjee and Munger, 2004).

To test the honeymoon hypothesis, we use the variable "Years in Office" (YRSOFFC), which simply counts the number of years a particular president has served in office. We expect a negative relationship between the variable YRSOFFC and privatization proceeds. Consequently, the following hypothesis can be made:

**H4:** Ceteris paribus, the number of years in office is negatively correlated with privatization proceeds.

The variable YRSOFFC is gathered from the Database of Political Institutions (2006).

### ***Capital Market Development***

The literature on privatization sustains that liquid and large capital market facilitates the privatization of SOEs, thereby increasing the proceeds from privatization sales (Bortolotti et al., 2004). The implementation of privatization would be extremely difficult when the appropriate financial infrastructure is lacking (Banerjee and Munger, 2004). We measure capital market development with market capitalization, which equals the total value of the country's listed stocks divided by GDP (CAP) (Levine and Zervos, 1998; Bennett et al., 2004). The discussion above leads to the following hypothesis.

**H5:** Ceteris paribus, capital market development is positively related to privatization proceeds.

### ***Governance Institutions***

The literature on privatization has now reached a conventional wisdom that the success of privatization relies on the existence of efficient institutions of legal governance (Stiglitz; 1999, Dyck, 2001; Nellis, 2003; Ramamurti, 2000; etc.). Indeed, the success of privatization reform presupposes the existence of well-developed legal institutions of governance that regulate sales and market operations.

Following Knack and Keefer (1995) and Hall and Jones (1999), we measure the quality of the country's institutions with an equally weighted index (GOV) of the following governance indicators:

- ***Corruption.*** is a measure of corruption within the political system, defined as the exercise of power for private gain. Lower scores of the index indicate that high government bureaucrats are more likely to ask for special payments, and illegal payments are common in lower levels of the government.  
The evidence shows that corruption has negative effects on private investment and economic growth (Shleifer and Vishny, 1993; Mauro; 1995). Such corruption constitutes a threat to foreign investment since it distorts the financial and macroeconomic environment, it reduces the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability, and it introduces instability into the political system (International Country Risk Guide). Therefore, if corruption is controlled, privatization transactions would be transparent and accountable, and the privatization reform would be more credible for domestic and foreign investors.
- ***Law and Order.*** is an assessment of (1) the strength and impartiality of the legal system and (2) popular observance of the law in the country. Higher scores of the index indicate a strong court system, sound political institutions and higher protection of property rights. North (1990) argues that the existence of a well-developed legal system is a precondition to investment and growth. In addition, returns to investment would be improved if ownership rights are clearly defined, such as the right to use and control assets, to dispose of assets and transfer ownership rights to others (Guislain, 1997). Consequently, an effective rule of law spurs the "Net Political Benefits" of the privatization reform (Banerjee and Munger, 2004), leading to higher revenues from privatization sales.
- ***Bureaucratic Quality.*** is an assessment of (1) the quality of public service, (2) the independence of civil service from political pressure, and (3) the strength and expertise of a country to govern without drastic changes in policy or interruptions in government services.

Shleifer and Vishny (1994) contend that privatization is more likely to be implemented by a country with an independent civil service and established mechanisms for training and recruiting bureaucrats. The reason is that the policies of state firms will remain unchanged even after a change in the government. Moreover, the higher the autonomy of the bureaucracy from political pressure, the less attractive is public ownership to politicians, and hence public ownership will be less sustainable in the long run. Following Banerjee and Munger (2004), we contend that the quality of bureaucracy positively affects privatization sales.

- **Government Stability.** is a measure of the ability of the government to stay in power and to carry out its declared program. Clarke and Cull (2002) sustain that politicians choose to adopt privatization when the political benefits from privatization outweigh the political costs. Since privatization is often associated with high political costs due to layoffs or other undesirable consequences, unstable governments may be unwilling to bear the political risk of a large scale privatization program. In the same vein, Bortolotti and Pinotti (2003) find empirically that privatization is more likely to be adopted by more stable regimes. Furthermore, less stable governments may lack the ability to enforce property rights which are necessary to implement privatization (Knack and Keefer, 1995). Accordingly, we expect a positive relationship between government stability and privatization sales.

It is worth mentioning that higher values of the index indicate better legal institutions, higher compliance with the law, and a higher protection of property rights. The governance indicators are drawn from International Country Risk Guide (2004). The discussion above leads to the following prediction.

**H6:** Ceteris paribus, the quality of governance institutions is positively related to privatization proceeds.

### c. Control Variables

#### **Legal Origin**

The legal origin dummies are good exogenous proxies for the initial size of a country's state-owned sector. According to Bortolotti et al. (2004), French civil law countries have more state-owned companies to privatize and possess larger stakes in unprofitable firms than Common law countries. Therefore, Common law countries should be associated with lower privatization proceeds. To control for the initial size of the country's SOE sector, we include a dummy variable that takes the value of one if the country has a Common law legal tradition, and zero otherwise (COMMON). This variable is drawn from La Porta et al. (1998).

#### **Initial GDP per Capita**

We control for the initial level of development with the log of the initial GDP per Capita (IGDPC). Indeed, developed countries possess well functioning capital markets and have better institutional infrastructure, which may encourage high rates of privatization. The GDP per Capita series come from the World Development Indicators (2004).

#### **Growth**

We control for the business cycle effects using the annual growth rate of GDP per Capita (GROWTH). It is likely that governments can time the sales of SOEs during periods of high growth rates in GDP per capita in order to benefit from the favorable business climate and, hence, maximize the revenues from privatization.

#### **Method of Privatization**

We use the number of Share Issue Privatization (SIP) to the total number of privatizations per year per country (NSIP) to capture the method of privatization and the willingness of governments to use the stock market as a source of financing. According to Jones et al. (1999), governments consistently under price SIP sales to credibly signal their commitment to market-oriented policies. Therefore, we expect NSIP to be negatively related to privatization proceeds. The data on the method of privatization is derived from SDC Platinum (Thomson Financial). Table 1 presents our variables, their definitions and their data sources.

#### IV. Methodology

To test our hypotheses on the macroeconomic, political and institutional determinants of privatization, we estimate the following panel (time-series cross-sectional) model:

$$\begin{aligned} \text{PRIV}_{i,t} = & \alpha + \beta_1 \text{DEBT}_{i,t-1} + \beta_2 \text{DEFICIT}_{i,t-1} + \beta_3 \text{RIGHT}_{i,t} + \beta_4 \text{NONDEM}_{i,t} \\ & + \beta_5 \text{YRSOFFC}_{i,t} + \beta_6 \text{CAP}_{i,t-1} + \beta_7 \text{GOV}_{i,t-1} + \beta_8 \text{COMMON}_i + \beta_9 \text{IGDPC}_i \\ & + \beta_{10} \text{GROWTH}_{i,t-1} + \beta_{11} \text{NSIP}_{i,t} + \mu_i + \varepsilon_{i,t} \end{aligned}$$

Where  $i$  stands for the country ( $i=1, \dots, N$ );  $t$  holds for the number of years ( $t=1, \dots, T$ ); PRIV is the privatization variable; DEBT is the ratio of total debt to GDP; DEFICIT is budget deficit to GDP; RIGHT is a dummy variable that is equal to one if the government is right-wing oriented; NONDEM is a dummy variable that is equal to one if the government in office is nondemocratic; YRSOFFC counts the number of years a particular president has served in office; CAP is our measure of capital market development; GOV is the index of legal institutions of governance; COMMON is a dummy variable that is equal to 1 if the country belongs to the Common law tradition; IGDPC is the initial GDP per Capita; GROWTH is the growth rate of GDP per Capita; NSIP is the measure of the method of privatization;  $\mu_i$  is the unobserved country-specific effect;  $\varepsilon_{i,t}$  is the error term.

The use of a panel model has several advantages over cross-sectional or time-series models. First, we account for the heterogeneity in the impact of macroeconomic, political and institutional variables on privatization. Second, by incorporating the cross-sectional and time-series dimensions in the data, we are able to obtain more precise estimates and a higher degree of freedom. Third, we are able to control for the unobserved country-specific effects that are theoretically important but too difficult to measure in purely cross-sectional or time-series models (Baltagi, 2001).

Since our data are time-series cross-sectional, heteroskedasticity and auto-correlation are a concern. Using the Modified Wald test and the Breush-Pagan test, we conclude respectively for the presence of panel heteroskedasticity and serial correlation within panels in the error series. Therefore, OLS estimates will yield biased and inconsistent estimates of the parameters' standard errors.

To tackle these issues, we estimate our privatization model using the Prais-Winsten regression technique with heteroskedastic panels corrected standard errors (PCSE)<sup>1</sup>.

Following Hicks and Swank (1992), all economic and institutional variables are lagged one year since macroeconomic and institutional developments take time to affect policy reforms.

#### V. Empirical Results

##### a. Sample

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<sup>1</sup> When computing the standard errors and the variance-covariance estimates, the disturbances are, by default, assumed to be panel heteroskedastic and serially correlated within panels.

We use an unbalanced panel data set consisting of 56 developed and developing countries that privatized their SOEs between 1986 and 2004. The list of countries appears in Table 2.

### **b. Descriptive Analysis**

Table 3 reports the descriptive statistics of our main dependent and independent variables for our sample of 56 developed and developing countries over the period 1986-2004.

Table 4 displays the parametric T-test results of the mean differences between developed and developing countries for our main variables. We note that there are significant differences between both subsamples for our privatization measure and the majority of the explanatory variables. Indeed, developed countries seem to have, on average, lower revenues from privatization sales, higher Debt-to-GDP ratios, lower budget deficits, more developed capital markets, better governance institutions, higher initial level of development, lower levels of growth of the GDP per Capita, and larger proportion of Share Issue Privatizations (SIPs) than developing countries.

### **c. Multivariate Analysis**

In this section we analyze the results of the panel regressions estimated with the Prais-Winston procedure. The results that appear in Table 5 show that the coefficients of the lag of the DEBT variable are positively and significantly related to privatization proceeds in specifications (1) and (3). Therefore, we partially confirm our hypothesis H1 that states that high debt levels should trigger privatization.

In addition, the lag of budget deficit (DEFICIT) is not significantly correlated to privatization proceeds in all our specifications. These findings don't support our hypothesis H2 that high budget deficits encourage countries to adopt privatization reform.

The dummy variable RIGHT (right-wing ideology) that captures the ideology of the government is consistently positive but insignificant at conventional levels in all the model specifications. We did not find evidence that right-wing parties are more likely to privatize than left-wing parties as predicted by Biais and Perotti's (2002) theoretical model. Our hypothesis H3 is therefore not supported.

As expected, the coefficients of the dummy variable NONDEM are negative and significant at the 5% level in models (4)-(6) and at the 10% level in model (2). These results confirm the findings of Bortolotti et al. (2004) and Li and Xu (2002) that proceeds from privatization are lower in less established democratic regimes. The reason is that autocracies are characterized by weak political accountability, which is a major component of country risk. Therefore, the shares of privatized companies issued by non-democratic regimes would be highly discounted by investors, hence reducing the feasibility of privatization and leading to low privatization proceeds (Bortolotti et al., 2004).

We also note from Table 5 that the coefficients of YRSOFFC are consistently negative and significant at the 5% in models (5)-(6), and at the 10% level in model (2). These results are consistent with the honeymoon hypothesis that states that new governments privatize more. Indeed, in the honeymoon period, newly elected political leaders have more freedom of political maneuver and are relatively insulated from popular pressures (Biglaiser and Brown, 2003; Williamson and Haggard, 1994). In addition, they have time to reap any benefits from privatization in later years (Banerjee and Munger, 2004). Thus, hypothesis H4 is supported.

With respect to the capital market development variable (CAP), the results in Table 5 show that the coefficient of the lag of CAP has the expected positive sign but it is insignificant at the 5% significance level. Thus, the level of capital market development is not a key determinant of privatization. Hypothesis H5 is therefore not supported.

The quality of governance institutions has emerged as a key determinant of privatization proceeds. Indeed, the coefficients of the lagged governance index (GOV) are positive and statistically different from zero at the 5% level across all specifications. This finding provides support for the various studies that argue that the success of privatization relies on the existence of efficient and well-functioning governance institutions (Stiglitz; 1999, Dyck, 2001; Nellis, 2003; Ramamurti, 2000; Banerjee and Munger, 2004, etc.). For example, a one-unit increase in the quality of governance index (GOV) leads to an increase in the expected privatization proceeds to GDP by 22%, holding all other variables constant (Table 5, model (6)). In short, we can conclude that our findings support hypothesis H6.

We control for the initial size of the state-owned sector with a dummy variable that takes the value of one if the country belongs to the common law tradition, and zero otherwise (COMMON). The results displayed in Table 5 indicate that the coefficients of COMMON are expectedly negative and significant at the 1% level, whatever the specification. This evidence gives support to the prediction that Common law countries, with less SOEs to sell than Civil law countries, are associated with lower privatization proceeds.

We control for the level of economic development using the initial GDP per Capita (IGDPC). We find that the coefficients of IGDPC are negative and significant at conventional levels across all our specifications, indicating that developing countries have generated more revenues from privatization sales relative to GDP than developed countries. This finding confirms the results of the univariate analysis in Table 4. One possible explanation to this result is that the initial level of capital market development will condition the extent of the use of stock market to divest the ownership of SOEs (through SIP transactions). Therefore, privatizing governments in developing countries often resort to private sales to strategic investors (Boubakri et al., 2009b). Since SIPs, used by most developed countries, often involve the under pricing of public offers to signal commitment to market-oriented policies (Jones et al., 1999, Dewenter and Malatesta, 1997), the private sale of SOEs to strategic investors, widely used by developing countries, is more likely to generate higher revenues.

To test the prediction that SIP will generate lower privatization proceeds than private sales to strategic investors, we have included in model (6) the ratio of the number of SIPs to the total number of privatizations (NSIP). The evidence shows that NSIP is negatively and significantly related to privatization, indicating that privatization through public offers on the stock market yields lower revenues than private sales.

Finally, the results in Table 5 show that the lag of GROWTH is positively and significantly correlated with privatization. This finding gives support to the prediction that privatizing governments time the sales of SOEs during periods of high growth rates in order to maximize the revenues from privatization.

All in all, the evidence in Table 5 suggests that the level of national debt, democracy, the number of years the executive is in office, the quality of governance institutions, the legal origin, the initial level of development, the level of growth, and the method of divestiture are the key determinants of the privatization reform.

### **Endogeneity**

Some of our explanatory variables are conceptually endogenous to privatization. Indeed, a broad range of objectives have been put forward by governments to justify the privatization reform. These objectives include, among others, to develop local capital markets, to promote the development of

governance institutions, and to contribute to the economic growth of the country (Boubakri, Smaoui and Zammiti, 2009). Thus far, we have addressed this endogeneity issue by lagging the variables CAP, GOV, and GROWTH. However, lagging such variables provides only a partial solution to this simultaneity problem, since lagging the endogenous variables will convert them into predetermined variables but not to strictly exogenous variables (Bortolotti et al., 2004). This will inevitably lead to biased and inconsistent results.

Unlike previous studies, we propose to examine empirically the impact of governance institutions on privatization using the two-step System GMM estimator proposed by Arellano and Bover (1995) and Blundell and Bond (1998) that allows us to control for the biases associated with the endogeneity of the explanatory variables. This estimator combines, within a system, the regression in first differences and the regression in levels and uses a series of instrumental variables to remove the endogeneity of the explanatory variables. The instruments for the regression in differences are the lagged endogenous and exogenous variables previous or equal to (t-2). For the regression in levels, the instruments are the lagged first differences of the endogenous and exogenous variables<sup>2</sup>.

In our privatization model, the variables CAP, GOV, and GROWTH are treated as endogenous; the lag of the variables DEBT and DEFICIT are considered as predetermined; and the variables RIGHT, COMMON, YRSOFFC, IGDPC and NSIP are treated as strictly exogenous.

The results displayed in Table 6 show that, when compared with our previous results, the explanatory power of our independent variables is much more limited. Indeed, the coefficients of the lag of the Debt-to-GDP ratio are no longer significant at conventional levels across all the specifications. Curiously, the lag of the DEFICIT is negatively and significantly related to privatization at the 5% level in specifications (1) and (3), indicating that higher budget deficits lead to lower privatization revenues. Hypotheses H1 and H2 are therefore not supported by the data.

As for the ideology of the executive, the coefficients of the right-wing variable are not significant at conventional levels across all the specifications.

Furthermore, the coefficients of NONDEM are consistently negative and statistically different from zero at the 5% level in models (2) and (3). This finding is consistent with the results of Bortolotti et al. (2004) and Li and Xu (2002), and indicates that the absence of democracy negatively impact privatizations revenues.

The results in Table 6 also indicate that the capital market development does not emerge as an important determinant of privatization since the coefficient of CAP is not significant at the 5% level. As to the quality of governance institutions, once again the variable GOV is positively related to privatization revenues, with coefficients statistically significant at the 5% level for models (1) and (2) and at the 1% level in models (3) and (4). This evidence empirically supports Ramamurti's (2000) argument that "countries' propensity to privatize is shaped by the quality of their market-supporting institutions- that is, the sophistication of the public and private institutions that underpin any market economy".

Among the control variables, only the coefficients of the initial level of development (IGDPC) remain negatively and significantly related to privatization at the 5% level (except in model 2 where

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<sup>2</sup> Only the most recent difference is used as an instrument in the regression in levels since the lags in levels are already used as instruments in the regression in differences (Boubakri et al., 2009a).

the coefficient is significant at the 10% level), whereas the legal origin and GROWTH are no longer significantly related to privatization at conventional levels.

Finally, the method of privatization is not a key determinant of privatization revenues, the coefficient of NSIP being insignificant at the 5% level.

To summarize, our results prove that the quality of governance institutions emerges as the most important driver of the privatization reform, even after controlling for the determinants of privatization and for the endogeneity of the explanatory variables.

## **VI. Conclusion**

The empirical literature on the positive impact of privatization is abundant and beautifully summarized in Megginson and Netter (2002). This literature on privatization has now reached the conventional wisdom that the success of privatization relies on the existence of efficient institutions of legal governance (Stiglitz; 1999, Dyck, 2001; Nellis, 2003; Ramamurti, 2000; etc.). These institutions include, among others, the definition and protection of private property rights, company and bankruptcy laws, contract enforcement, quality of government rule of law, the effectiveness of the judicial system, the risk of expropriation, the risk of contract repudiation, and the extent of corruption. If these institutions are not in place and functioning properly, privatization will lead to sub-optimal and even negative results (Nellis, 2003).

Using an extensive panel dataset consisting of 56 developed and developing countries over the period 1986-2004, we provide empirical support for Ramamurti's (2000) argument that "countries' propensity to privatize is shaped by the quality of their market-supporting institutions- that is, the sophistication of the public and private institutions that underpin any market economy".

Specifically, we find that higher levels of country debt trigger the privatization process. Also, privatization proceeds are lower in less established democratic regimes (because of weak political accountability). Other political determinants include the significant impact of political tenure that turns out to be significantly related to privatization: specifically, newly elected political leaders privatize more. Importantly for our purposes, we find that in addition to the impact of these control variables, our Governance index that includes corruption, bureaucratic quality, government stability and law and order, remains systematically positively and significantly related to privatization proceeds, which confirms our main expectation that the success of privatization relies on the existence of efficient and well functioning governance institutions. Controlling for endogeneity confirms this finding.

The failure of the privatization experience in transition countries or Russia point to the importance of putting in place market-friendly institutions that protect investors' rights and our results provide empirical support to this anecdotal evidence, underscoring the importance of controlling corruption, introducing lighter bureaucratic procedures, and improving laws and their enforcement to guarantee that privatization will be a success and delivers the promised results.

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**Table 1: Variables, Proxies and Data Sources**

Variable	Proxy	Label	Expected Sign	Source
Privatization	Annual privatization proceeds to GDP	PRIV	na	SDC Platinum, Thomson Financial
Debt	Ratio of total debt to GDP	DEBT	+	World Development Indicators (2005)
Deficit	Ratio of government budget deficit to GDP	DEFICIT	+	World Development Indicators (2005)
Ideology of the Executive	Dummy variable that is equal to 1 if the government is right-wing oriented and 0 otherwise	RIGHT	+	Database of Political Institutions (2006)
Non-democratic	Dummy variable that is equal to one if the government in office is non-democratic and 0 otherwise	NONDEM	-	Database of Political Institutions (2006)
Years in Office	Number of years a particular president has served in office	YRSOFFC	-	Database of Political Institutions (2006)
Capital Market Development	Market capitalization over GDP	CAP	+	World Development Indicators (2005)
Governance Institutions	Equally weighted index of the following indicators: Government Stability, Corruption, Law and Order, and Bureaucratic Quality	GOV	+	International Country Risk Guide
Legal Origin	Dummy variable that is equal to 1 if the country belongs to the common law and 0 otherwise	COMMON	-	La Porta et al. (1998)
Initial GDP per Capita	Initial GDP per Capita	IGDPC	+	World Development Indicators (2005)
Economic Growth	Growth rate of GDP per Capita	GROWTH	+	World Development Indicators (2005)
Method of Privatization	Number of SIPs to the total number of privatizations	NSIP	-	SDC Platinum, Thomson Financial

**Table 2: Sample of privatizing countries**

<b>Panel A. Developing Countries</b>		
Argentina	Jamaica	Rep. Of Korea
Bahrain	Jordan	S. Africa
Brazil	Kuwait	Sri Lanka
Chile	Malaysia	Thailand
Colombia	Mexico	Tunisia
Cote d'Ivoire	Morocco	Turkey
Egypt	Nicaragua	Uganda
Ghana	Nigeria	Venezuela
Greece	Pakistan	Zambia
Guatemala	Panama	Zimbabwe
India	Peru	
Indonesia	Philippines	
<b>Panel B. Developed Countries</b>		
Australia	Germany	Singapore
Austria	Hong Kong	Spain
Ireland	Ireland	Sweden
Belgium	Italy	Switzerland
Canada	Japan	United Kingdom
Denmark	Netherlands	United States
Finland	New Zealand	
France	Norway	

**Table 3: Descriptive Statistics**

This table reports the descriptive statistics of our main variables for the sample of 56 countries between 1986 and 2004. The definitions of our variables appear in Table 1.

<b>Variable</b>	<b>N</b>	<b>MEAN</b>	<b>STD</b>	<b>MIN</b>	<b>MAX</b>
<b>PRIV</b>	581	0.651	1.075	0.000	7.983
<b>DEBT</b>	326	74.443	144.751	5.404	1820.870
<b>DEFICIT</b>	413	-1.934	11.975	-203.719	21.249
<b>RIGHT</b>	1045	0.326	0.469	0.000	1.000
<b>NONDEM</b>	1045	0.134	0.341	0.000	1.000
<b>YRSOFFC</b>	1045	6.705	7.742	1.000	46.000
<b>CAP</b>	812	54.432	58.704	0.285	456.089
<b>GOV</b>	1064	4.510	1.216	0.000	6.750
<b>COMMON</b>	1064	0.375	0.484	0.000	1.000
<b>IGDPC</b>	1008	8606.328	8669.356	160.717	30324.714
<b>GROWTH</b>	1003	3.390	3.858	-13.452	33.990
<b>NSIP</b>	1064	0.115	0.243	0.000	1.000

**Table 4: Test of differences between developed and developing countries**

COUNTRY	PRIV	DEBT	DEFICIT	RIGHT	Yrsoffc	CAP	GOV	IGDPC	GROWTH	NSIP
Australia	0.874	27.465	0.740	0.421	4.421	72.784	5.816	15083	3.415	0.075
Austria	0.381		-1.837	0.263	4.579	13.823	5.770	17330	2.384	0.117
Belgium	0.528	120.418	-0.480	1.000	5.211	51.664	5.480	16350	2.200	0.135
Canada	0.142	69.371	-1.916	0.421	4.842	74.725	6.033	18169	2.832	0.149
Denmark	0.431	45.415	2.331	0.579	4.526	43.244	5.908	23979	1.819	0.057
Germany	0.219	58.827	-1.370	0.684	7.947	35.524	4.461	17198	2.085	0.085
Finland	0.833	50.096	3.884	0.158	2.842	81.794	6.197	17741	2.257	0.072
France	0.287		-2.647	0.421	2.000	52.858	5.276	17122	2.158	0.162
Hong Kong	0.404	27.277	-6.954			246.814	4.783	15094	4.884	0.356
Ireland	0.676		-1.500	0.263	3.211	62.321	5.539	10542	6.294	0.325
Italy	0.680		-1.567	0.263	1.632	30.328	4.678	14436	1.816	0.123
Japan	0.150	44.823	-1.186	0.895	2.000	79.590	5.421	27545	2.300	0.316
Netherlands	0.461	52.423	-0.362	0.526	6.211	93.181	6.072	16697	2.583	0.160
New Zealand	1.554	42.335	2.392	0.474	3.211	41.443	5.803	15807	2.378	0.153
Norway	0.536	25.031	12.029	0.474	2.632	30.358	5.776	27919	2.826	0.080
Portugal	1.326	1203.639	-3.280	0.632	2.895	28.941	5.184	6394	3.180	0.403
Singapore	0.085	85.026	13.711	0.000	11.316	145.149	5.704	10969	6.717	0.065
Spain	0.499	75.991	-0.760	0.421	7.105	48.054	5.099	9286	3.147	0.107
Sweden	1.110	62.549	2.440	0.158	2.737	80.247	5.987	21355	2.072	0.079
Switzerland	0.078	22.253	-0.438	0.000	2.632	160.506	6.171	30325	1.387	0.116
UK	0.396	50.510	-0.249	0.632	5.316	129.366	5.684	17684	2.583	0.120
USA	0.015	34.965	-1.955	0.579	4.053	104.143	5.776	25891	3.069	0.117
<b>Developed</b>	<b>0.530</b>	<b>116.579</b>	<b>0.501</b>	<b>0.441</b>	<b>4.348</b>	<b>77.584</b>	<b>5.574</b>	<b>17860</b>	<b>2.927</b>	<b>0.153</b>
<b>Countries avg.</b>										
Argentina	1.141		-5.836	0.632	4.211	26.070	4.086	6546	2.149	0.045
Bahrain	0.153	21.048	0.436	0.000	16.632	94.570	4.664	8491	4.973	0.053
Brazil	0.709		-2.072	0.474	3.053	24.690	4.000	3273	2.254	0.121
Chile	0.611	23.329	-0.536	1.000	5.474	82.395	4.559	2506	5.979	0.033
Colombia	0.690	15.195	-7.114	0.263	2.474	12.772	3.289	1683	3.189	0.066
Cote d'Ivoire	0.528	134.991		0.000	14.105	8.193	3.697	791	1.429	0.089
Egypt	0.308	38.072	0.861	0.000	14.000	18.024	3.987	1138	4.138	0.168
Ghana	0.548			0.211	10.000	14.132	3.836	199	4.498	0.132
Greece	0.447		-1.890	0.211	3.211	41.894	4.658	8438	2.337	0.139
Guatemala	2.749	15.226	-1.020	0.789	2.526	1.015	3.092	1409	3.472	0.000
India	0.067	54.000	-3.252	0.316	2.895	27.675	3.868	266	5.787	0.152
Indonesia	0.280	42.007	0.395	0.000	17.632	18.999	3.342	449	5.067	0.208
Jamaica	2.128	111.289	-5.910	0.211	6.000	40.965	3.638	2511	2.096	0.000
Jordan	1.925	110.008	-1.308	0.000	29.895	68.445	4.329	2126	3.333	0.079
Kuwait	1.073		-37.524	0.000	18.000	58.768	4.178	13879	6.147	0.100
Malaysia	0.568	60.269	-0.606	0.000	12.842	167.451	4.559	2044	6.481	0.140
Mexico	0.574	31.574	-0.735	0.211	5.421	25.897	3.816	4760	2.539	0.073
Morocco	1.478	80.896	-2.419	0.000	24.000	19.972	4.605	1054	3.415	0.131
Nicaragua	1.532		-3.378	0.263	4.579		3.750	948	1.370	0.000
Nigeria	0.741			0.263	4.632	8.331	3.053	298	3.839	0.044
Pakistan	0.563	77.206	-4.950	0.158	3.105	13.642	3.408	407	4.377	0.127
Panama	1.439		0.852	0.526	2.737	18.419	3.013	3433	3.104	0.026
Peru	1.183	69.661	-2.336	0.579	4.474	17.313	3.270	2189	2.312	0.053
Philippines	0.691	58.229	-2.145	0.000	4.000	48.669	3.283	831	3.688	0.168
South Korea	0.299	9.210	2.095	0.526	3.263	41.701	3.605	4810	6.890	0.291
South Africa	0.314	45.443	-4.006	0.474	3.158	145.650	4.447	3075	1.936	0.000

**Table 4 (Continued): Test of differences between developed and developing countries**

<b>COUNTRY</b>	<b>PRIV</b>	<b>DEBT</b>	<b>DEFICIT</b>	<b>RIGHT</b>	<b>Yrsoffc</b>	<b>CAP</b>	<b>GOV</b>	<b>IGDPC</b>	<b>GROWTH</b>	<b>NSIP</b>
Sri Lanka	0.420	95.775	-6.836	0.000	5.842	13.303	3.296	554	4.321	0.160
Thailand	0.406	28.811	2.039	0.579	2.737	48.174	4.336	987	6.245	0.151
Tunisia	0.473	59.479	-2.354	0.000	11.158	11.045	4.329	1395	4.147	0.110
Turkey	0.163	37.100	-5.714	0.737	2.421	20.544	3.980	2226	3.963	0.097
Uganda	0.227	47.167	-2.540	0.000	10.000	0.634	3.625	161	6.149	0.000
Venezuela	0.970		-0.795	0.263	3.316	9.273	3.730	5192	1.084	0.007
Zambia	1.720	190.700	-1.747	0.000	10.947	8.005	3.099	408	1.625	0.000
Zimbabwe	0.136	59.305	-4.405	0.000	8.737	33.110	3.500	563	1.547	0.105
<b>Developing</b>	<b>0.802</b>	<b>60.640</b>	<b>-3.379</b>	<b>0.255</b>	<b>8.161</b>	<b>36.053</b>	<b>3.821</b>	<b>2619</b>	<b>3.702</b>	<b>0.090</b>
<b>Countries avg.</b>										
<b>Test of Means</b>										
<b>(t-statistic)</b>	<b>-2.06**</b>	<b>2.41**</b>	<b>3.67***</b>	<b>6.33***</b>	<b>-7.69***</b>	<b>10.42***</b>	<b>32.09***</b>	<b>53.22***</b>	<b>-3.08***</b>	<b>4.16***</b>

**Table 5: Prais-Winsten Regressions**

This table shows the results of our privatization model estimated with the Prais-Winsten regression technique with heteroskedastic panels corrected standard errors (PCSE) for our sample of 56 countries for the period 1986-2004. The dependent variable is privatization proceeds to GDP (PRIV). The definitions of our variables appear in Table 1. \*\*\*, \*\*, \* refer to the 1, 5 and 10% levels of significance respectively. Robust standard errors consistent in the presence of heteroskedasticity and autocorrelation within the panel are reported.

Explanatory Variables	Expected Sign	(1)	(2)	(3)	(4)	(5)	(6)
CONSTANT	+	0.874*** (0.000)	1.015*** (0.000)	1.095*** (0.000)	1.151*** (0.000)	0.500* (0.055)	0.633** (0.011)
DEBT <sub>t-1</sub>	+	0.000*** (0.006)	0.000* (0.064)	0.000** (0.036)	0.000 (0.254)	-0.000 (0.736)	-0.000 (0.284)
DEFICIT <sub>t-1</sub>	+	0.006 (0.720)	0.005 (0.756)	0.008 (0.637)	-0.003 (0.861)	-0.007 (0.642)	-0.016 (0.429)
RIGHT	+	0.523 (0.128)	0.476 (0.176)	0.459 (0.164)	0.480 (0.148)	0.408 (0.181)	0.288 (0.256)
NONDEM	-		-0.445* (0.057)		-0.439** (0.046)	-0.465** (0.044)	-0.489** (0.007)
YRSOFFC	-			-0.018 (0.113)	-0.024* (0.065)	-0.030** (0.026)	-0.028** (0.012)
CAP <sub>t-1</sub>	+				0.001 (0.267)		
GOV <sub>t-1</sub>	+					0.227** (0.022)	0.220** (0.011)
COMMON	-	-0.574*** (0.002)	-0.611*** (0.003)	-0.567*** (0.000)	-0.723*** (0.001)	-0.826*** (0.001)	-0.916*** (0.000)
IGDPC	+	-0.000** (0.041)	-0.000** (0.037)	-0.000** (0.018)	-0.000*** (0.014)	-0.000*** (0.001)	-0.000*** (0.001)
GROWTH <sub>t-1</sub>	+	0.064*** (0.002)	0.055*** (0.002)	0.067*** (0.002)	0.066*** (0.001)	0.059*** (0.001)	0.073*** (0.000)
NSIP	-						-0.698*** (0.006)
Observations		163	163	163	159	163	163
R -square		0.246	0.247	0.269	0.282	0.302	0.333

**Table 6: System GMM Regressions**

This table shows the results of our privatization model estimated with the with the System GMM procedure of Blundell and Bond (1998) for our sample of 56 countries for the period 1986-2004. The dependent variable is privatization proceeds to GDP (PRIV). The definitions of our variables appear in Table 1. The Hansen (1982) test tests the validity of our instruments, while AR2 is the Arellano and Bond (1991) test of the absence of second order autocorrelation in the differentiated residuals, \*\*\*, \*\*, \* refer to the 1, 5 and 10% levels of significance respectively. Two-step system GMM estimator is used. Windmeijer (2005) finite-sample correction to the two-step covariance matrix is employed. Robust standard errors consistent in the presence of heteroskedasticity and autocorrelation within the panel are reported.

<b>Explanatory Variables</b>	<b>Expected Sign</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
CONSTANT	+	-1.454 (0.150)	-0.209* (0.050)	-1.775** (0.019)	-2.084** (0.015)
DEBT <sub>t-1</sub>	+	-0.000 (0.486)	-0.000 (0.534)	-0.000* (0.059)	-0.000 (0.452)
DEFICIT <sub>t-1</sub>	+	-0.035** (0.015)	-0.040 (0.236)	-0.049*** (0.000)	-0.028* (0.089)
RIGHT	+	-0.197 (0.344)	-0.407 (0.144)	-0.429 (0.170)	-0.105 (0.673)
NONDEM	-	-0.677* (0.080)	-0.598** (0.017)	-0.795** (0.012)	-0.576 (0.181)
YRSOFFC	-		-0.029* (0.094)		
CAP	+			-0.002 (0.553)	
GOV	+	0.589** (0.027)	0.814** (0.024)	0.716*** (0.004)	0.660*** (0.004)
COMMON	-	-0.402* (0.095)	-0.488 (0.206)	-0.287 (0.417)	-0.389 (0.192)
IGDPC	+	-0.000** (0.031)	-0.000* (0.090)	-0.000** (0.015)	-0.000*** (0.008)
GROWTH	+	-0.048 (0.300)	-0.048 (0.552)		-0.019 (0.704)
NSIP	-				0.472 (0.463)
Nbr of Instruments		23	23	20	23
Hansen test		0.377	0.192	0.253	0.322
AR2 test		0.452	0.366	0.188	0.295