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## Move to markets? An empirical analysis of privatization in developing countries

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Fondazione Eni Enrico Mattei

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An Empirical Analysis of  
Privatization in  
Developing Countries**

Sudeshna Ghosh Banerjee and

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# Move to Markets? An Empirical Analysis of Privatization in Developing Countries

## Summary

We analyze when, and to a lesser extent how, privatization occurred in a group of thirty-five low or middle-income developing countries. The theoretical perspective turns on the concept of net political benefits, which in our model is the primary determinant of privatization policies. Privatization is a means to an end, of course, rather than an end in itself. But we proceed under the assumption that policymakers have decided, for whatever reason, that privatization is a desirable goal.

The decision to privatize is captured here in three related, but distinct, dependent variables: (1) timing, (2) pace, and (3) intensity. Our notion of the independent variable, 'net political benefits,' is not measured directly, but is instead proxied by an array of macroeconomic, political, and institutional variables. Our key finding is that, though political benefits turn out to explain the timing, pace, and intensity of privatization, the effects are very different in each case.

From the theoretical framework, we hypothesize that net political benefits positively affects the timing, pace, and intensity of privatization. The timing hypothesis is tested using a Cox proportional hazard model. The Pace hypothesis is tested using a random effects negative binomial model. The intensity hypothesis is tested using the random effects model. Analyzing the causal relationships in the three models provides a macro overview of the privatization process between 1982-99.

The decision to begin to privatize (timing) is fundamentally different from the choice to implement select particular units to privatize (pace) and begin to sell off assets (intensity). In fact, we find that the factors that improve timing delay intensity: early adopters are later implementers. Furthermore, we find that a privatization policy is much more like to be a crisis-driven, last ditch effort to turn the economy around, rather than a carefully chosen policy with explicit, long-term goals. A related, and very important, finding in our analysis has to do with the "lock-in" of institutions. Large public sectors create significant pressures for privatization, in terms of timing, but large public sectors also endow important political actors with powerful resources for delaying, or blocking completely, the implementation of privatization policies. The particular form of political institutions, foreign aid regimes, and level of development of property rights systems in the nation have significant conditioning influences on the extent of lock-in. These relationships may be important for informing policy decisions, and for understanding apparent "failures" of privatization policies.

**Keywords:** Privatization, governance, political economy, international organizations

**JEL:** L33, O19, O57, P16

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**MOVE TO MARKETS?**  
**AN EMPIRICAL ANALYSIS OF PRIVATIZATION**  
**IN DEVELOPING COUNTRIES**

*"I had to fight. The government was going to sell our companies...our wealth...and enrich another country. This was my voice, my protest."*

Fanny Puntaca, 66, shopkeeper, at a protest march in Arequipa, Peru, July 13, 2002. Quoted in Forero (2002), New York Times story on sale of two state-owned electrical plants to a private Belgian company.

## **I. INTRODUCTION**

Consider a nation contemplating privatization. Almost by definition, this is a profound reversal of decades of public policy. For starters, for privatization to be controversial, the nation must have pervasive public ownership of assets. And this public ownership is no accident: for decades, in the 1930s through the 1980s, the trend was toward centralization. But for years the new trend, fostered by economic conditions, international agencies, and neo-conservative political ideology, has been away from state domination of production, and toward private ownership and free enterprise. In the process, the role of the state has been transformed as well. Where states had been producers of goods and services, in a successful private economy the state is much more likely to focus on fostering private investment, protecting property rights, and providing basic services to the poor.

But, for the angry Peruvian shopkeeper quoted above, and for thousands like her all over the world, privatization is controversial. At this point, there are many anecdotal accounts of patterns of privatization, but policy makers have little systematic knowledge about the patterns of conditions that lead to success, or failure in general. In this paper we identify a set of conditions that have led to "success," in a variety of nations over a period of nearly two decades.

Privatization can mean *denationalization* (direct sale of assets), *deregulation* (introduction of competition in sectors previously monopolized under government authority such as electrical power, natural gas, and water), or *contracting out* (lease, contract for concessions, build-own-operate, build-own-operate-transfer etc). For most nations, the privatization experience is a complex combination of all three kinds of activity. But this paper only deals with the most easily measured and clearest form of privatization, the direct sale of public assets and state-owned enterprises.

**Plan of the paper** -- Our goal is to explain the underlying political-economic interactions affecting privatization decisions. The argument rests on the claim that there are different components of what is loosely called "privatization": (1) timing, (2) pace, and (3) intensity. The *timing* of privatization decisions -- the year when privatization was first adopted -- is a critical point in the country's development path because it marks a fundamental change in direction at the highest levels of policy-

making. The *pace* (number of enterprises sold) and *intensity* (total value of enterprises sold) are two different ways of conceptualizing whether the change in policy choice leads to a change in policy implementation. Even after a government decides to privatize, implementation may be completely blocked, gradually accepted, or immediately embraced those who hold stakes in the process.

This paper asks the following questions:

- When and how have economies privatized?
- What are the factors that affect their decision-making?
- Do the same factors affect the timing, pace, and intensity decisions, and do these factors matter differently for different aspects of privatization? Is so, how?
- How does the institutional infrastructure affect the timing and implementation of privatization strategy?
- Are all the three decisions – timing, pace, and intensity, critical to the success of privatization policy?

In the following section, we present a conceptual framework of the paper, which rests on “net political benefits” (NPB). We will argue that NPB is determined (in the reduced form sense, for this model) by three components: *(i) macroeconomic variables (ii) political variables, and (iii) institutional variables*. In section III, we describe the methods we use to analyze each of our three related dependent variables (timing, pace, and intensity). We discuss the results in section IV. In the fifth and final section, a summary of our results is offered, and some tentative conclusions drawn.

## II. CONCEPTUAL FRAMEWORK

The key dependent variable causing the decision to privatize is ‘*net political benefits*’ (NPB)-difference between the benefits and costs of divestiture. For most part, costs are immediate and the prospective benefits occur in the future. So, privatization occurs when the present value of political benefits from efficiency gains are higher than political costs of redistribution. Our approach is a variant of the Rodrik’s (1994) political cost-benefit ratio (PCBR) of trade reforms. He argues that since redistributing income is politically costly, this cost must be weighed against the benefits arising from economic efficiency of trade reforms. He defines PCBR as the ratio of redistribution generated by reform to its efficiency benefits. The PCBR concept is difficult to operationalize empirically because the ‘decision to privatize’ is based on estimates of ex-ante efficiency gains and redistributive cost. The higher the excess of benefits over costs, the easier it is to implement the program. The net political benefits (NPB) affect the decision to consider privatization, and subsequently affect the timing, pace and intensity of actual privatization. It is difficult to operationalize NPB directly. But

factors that determine NPB can be categorized into 1) *macroeconomic*, 2) *political*, and 3) *institutional variables*.

One of the contributions of this paper is to combine the macroeconomic, political, and institutional variables together in the same framework to understand the strength of their effects. Some variables enhance the efficiency gains of privatization, and therefore, increase the net benefits. Other variables augment the cost by increasing distributional conflicts, and hence decrease the net benefits. We have used a number of variables to proxy for the macroeconomic, political, and institutional conditions of the economy. Data sources and descriptive statistics are discussed in Table 1, 2, and 3

The analytic model can be depicted graphically in figure 1 as:

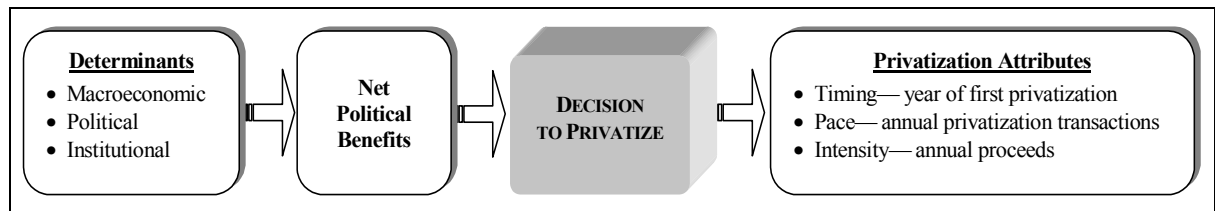


Figure 1: A model of net political benefits

A number of variables have been used as proxies for macroeconomic, political and institutional determinants of privatization. The justification of using these variables is based on the political economy of reform literature.

#### i. Macroeconomic variables

**1. Macroeconomic downturn/fiscal deficit/inflation crisis** – The impact of crisis on economic reforms has been much analyzed in the political economy literature. Most of the studies conclude that the crises (wage, fiscal deficit/inflation, growth) become so unbearable that political cost of continuing is higher than cost of policy reform. Crisis increases the cost of delaying privatization and hence the net political benefits. We hypothesize that countries adopt privatization as a response to crisis. The pace of privatization would also be affected by crisis; countries in worse fiscal crisis situations would privatize faster to raise resources.

There are two trade-offs related to crisis and reform. 1) long-term versus short-term- when is the right time to undertake reforms in crisis and how long should a country wait before taking action. 2) Distributional effects of reforms undertaken in crisis where some win and some lose. Extant literature has analyzed the role of crisis as a pre-condition for reform. Gourevitch (1986) defines crisis as ‘moments of critical choice when old relationships crumble and new ones have to be

constructed creating a more open political environment'. Reform after crisis has been labeled as the 'new conventional wisdom' (Tommasi and Valesco, 1996). For example, public sector deficits led to high inflation in the early eighties in several Latin American countries. The high inflation countries subsequently undertook reforms while the no-inflation countries were much less likely to take action. It appears that recent reforms are 'inflation's children' (Bruno and Easterly, 1996). In his analysis of trade reforms in developing countries, Rodrik (1994) has noted that 'no significant case of trade reform in a developing country in the 1980s took place outside the context of a serious economic crisis'.

There are three main arguments discussed in the literature related to effect on crisis on reform. First, it follows from the Drazen-Grilli (1993) framework that distortions and crisis as a result of years of inefficiencies in the public sector can raise welfare if it is the only way to undertake privatization. Hence crises may be desirable if it places the economy on a welfare-superior path. How bad does it have to get before government takes the necessary reform steps? If the beneficiaries from public enterprises are a large fraction of the government's support base, then the economic downturn has to be very serious for the political decision-maker to undertake the privatization action. The Alesina-Drazen (1991) *war of attrition* framework argues that conditions must be intolerable for one of the groups to accept the rising cost of stabilization.

The key problem holding back reform is the inability to guarantee Pareto improvement. Generally, the groups that bear the burden are the poor and the workers who are too weakened to resist any longer. The distress associated with living through economic crisis makes radical measures acceptable. As long as the crisis is not worse than privatization, for everyone, reforms are stalled. In such situations the economy can go on for months or years in crisis situation, and welfare can be well below the first-best optimum. Then serious reforms are more likely to take place in periods of crisis as an increase in the cost of waiting makes political agreement more likely.

This is a specific instance of North's (1990) general "transactions cost" analysis. As North (1990, pp 8) points out:

"Transactions costs in political and economic markets make for inefficient property rights, but the imperfect subjective models of the players as they attempt to understand the complexities of the problems they confront can lead to the persistence of such property rights"

In the case of privatization, the "transactions cost" have mostly to do with guaranteeing streams of rents that meet or exceed streams under the current system. An economic cost-benefit analysis is inefficient, because the question has less to do with size of the net gains than with their distribution. So, the role of crisis becomes clear: crisis lowers the expected rent streams under the current system, making reform relatively more attractive.



Second, in the coordination or collective action framework discussed by Geddes (1994) and Haggard and Kaufman (1992), the political power is dispersed resulting in free-rider problems for the reformist politicians. The politicians who benefit from the privatization reforms may not be the ones who initiated it. Third, the special nature of privatization with its immediate costs and spread over benefits also affects the privatization decision. The politicians with short time horizon will avoid privatization preferring status quo (Przeworski and Limongi, 1991).

We will analyze how crises affect privatization decisions, using a reduced form specification. Crisis is an unobserved index; it is correlated with fiscal deficit, inflation and GDP growth rate. Data on lagged values of fiscal surplus/deficit, inflation, and GDP growth rates are used as proxies for crises, as the previous year's crisis will affect present decision-making. Lower values of fiscal surplus/deficit and growth rate variables and higher values of inflation represent worse crisis.

**2. Dependence of foreign aid** – The evidence on effect of aid on economic reforms is ambiguous. Higher levels of aid dependence would delay the privatization decision as unsustainable public sector policies can continue indefinitely. Foreign aid has been a potential source of rent that has contributed to the deterioration of the quality of state-owned enterprises (SOEs') by subsidizing employment and making unprofitable investments. Large deficits in public enterprises were sustained through foreign aid especially in sub-Saharan economies (Knack, 2000). Aid-dependent countries may be able to delay privatization by using aid to manage economic downturn or to fund government expenditure. Foreign aid represents additional sources of funds to reduce the fiscal deficit without undertaking public sector reform. Aid dependence can be counterproductive if it delays undertaking policy reforms (Casella and Eichengreen, 1996).

On one hand, privatization can be undertaken if the international aid donors insist on the countries' adopting privatization as a condition of aid. Then privatization becomes imperative for the aid-dependent economies. On the other hand, in recent times, aid has included a labor adjustment component. The technical assistance component of aid can facilitate the privatization process by setting up the institutional infrastructure to conduct privatization transactions.

So the net effect of foreign aid on desirability of privatization is indeterminate. Aid as a percentage of gross national investment will be used as a measure of aid dependence. In summary, as Rodrik (1996) notes, aid helps governments survive by reducing the cost of not doing anything and the cost of doing something. The higher the aid dependence, the higher would be the vulnerability to conditions of the international financial institutions and hence higher would be the desire for raising revenues through privatization. Aid increases the benefits of privatization as divestiture proceeds can be used to retire debt. The net effect is therefore ambiguous.

**3. Size of the public sector relative to the rest of the economy** – Economies with higher public sector concentration are expected to exhibit slower and less dynamic privatization activity. Empirical evidence indicates that the larger the size of the public sector, the more likely it would include activities that are in competitive sectors. Divesting them would involve higher potential efficiency gains (Campos and Esfahani, 1995). On the other hand, a large public sector would mean a more powerful voice of its stakeholders in the decision-making process. So, economic gains are higher but political gains lower because of transactions costs. It would be more difficult to overcome interest group opposition.

This indicator can therefore be used as a proxy for the lock-in effect of institutions. The larger the size of the public enterprises as a proportion of GDP, the higher would be the interest group stake in maintaining the status quo and higher would be the costs of privatization. The lock-in effect is particularly strong in the former socialist countries. The existing set of institutional resources constrains the public policy choices.

The lock-in effect arises from the path dependence or increasing returns of institutions. Path dependence means that the initial institutional conditions of the country matters in the ultimate outcomes. This body of work was first developed by Arthur (1989,1994) in the context of technological innovation but has similar interpretations for institutional change. After the economy has sufficiently moved far enough down a particular path, the institutions are “locked in” to one solution. The costs of transition and risk aversion in the case of uncertainty changes, resulting in lower payoffs than other efficient solutions.

The increasing returns characteristic of public sector production create organizations and interest groups with a stake in continuation of the existing institutional infrastructure. An alliance of interest groups comprising rent seeking politicians and bureaucrats, monopolists, and labor unions arises that oppose institutional change. To change the path from public sector domination to private production, the institutions have to respond to policy announcements on privatization. The higher the public sector domination, the higher must be the threshold of the NPB for divestiture to occur. Of course, as was discussed above, crisis may “solve” this problem, by loosening the “lock in” conditions.

We used the ‘state owned enterprises as a share of economic activity’ as an indicator of size of public sector. For most countries, the data does not exist after 1995. Given the stability of these values, we extrapolated (by country) to arrive at *isoegdp*. In addition to this variable, we used the initial (in the year of adoption of privatization) size of public sector to estimate the coefficients.

**4. Size of the agriculture sector** – This indicator serves as a proxy for the structure of the economy, whether the country already has a large manufacturing and services sector and consequently, a functioning private sector. A large agriculture sector increases the costs of privatization. Higher privatization activity would be associated with lower proportion of agriculture in economic activity.

The larger the relative size of the manufacturing and services sector, the more feasible it would be to divest public enterprises. The market institutions necessary for private activity are already functioning, which makes privatization easier and more credible. The public enterprises and the rest of the economy would be more interlinked and hence potential gains from privatization would be higher (Campos and Esfahani, 1996). If the relative size of agriculture sector (measured as share of agriculture in GDP) is high, the institutions necessary for privatization need to be reformed or created delaying privatization significantly.

**5. Degree of inequality** – The distributional concerns affecting a majority of the population would determine the policy choices. If the economy's wealth is unequally distributed, the ex-ante uncertainty is higher and privatization decision is more difficult.

As discussed before, privatization is a policy with significant distributional consequences. It can be argued that in countries with higher income inequality, the 'war of attrition' between groups would be more severe and privatization would be delayed (Alesina and Drazen, 1991). In addition, countries with higher income inequality will, at a given level of debt, find it more difficult to adopt policies to assure solvency (Berg and Sachs, 1988).

An alternate explanation is that in more unequal societies, power is concentrated in the hands of a few, which makes it easier to take decisions and in some cases, to expect profit from privatization. The more unequal the distribution of income, the more would be the cost of privatization, or more would be the benefits of privatization to a select few. Therefore, the relationship between the degree of inequality and privatization is ambiguous. Given the sparse nature of "high quality" observations in Deininger and Squire (1996) inequality database, it is difficult to create a time series. So we used the average gini coefficient of the entire period as the inequality variable

## **ii. Political Variables**

**1. Change in Regime/honeymoon hypothesis** – Pinera (1994) has shown empirically that reforms tend first to make things worse before they get better. As a result, reformist governments want to implement reform in the initial years of their power so that they can either take corrective measures if there is significant opposition. No less important, they have time to benefit from privatization

outcomes. So, we expect, timing, pace, and intensity of privatization to be inversely related to 'years in office'.

The honeymoon hypothesis can be derived from Alesina and Drazen's (1991) 'war of attrition' framework. The cost of avoiding the burden of policy change would increase as the crisis worsens. The gaps in payoffs to the winners and losers would widen and powerful groups would spend resources until weaker other groups concede (conditional on the fact that different groups don't have the same access to resources or power, this is especially true for poor).

A major policy reform program is thus associated with elections: victory by one side will make it more difficult for the opposing parties to block the program and shelter themselves from the burden of policy reform. Countries with political institutions that make it relatively more difficult for opposing groups to 'veto' policy reform not to their benefit will undertake the program sooner. Further, a key political problem of sustaining support for reform programs like privatization arises from its long delay in visible benefits for much of its population (Nelson, 1989). Interestingly, some empirical evidence contradicts this conventional wisdom. Rather than requiring a decade or more, privatization has shown positive benefits in terms of economic efficiency and economic welfare within 3-4 years of implementation.

'Years in office' can have a direct relationship with privatization decision. An alternate explanation relates to the time required to build credibility to implement economic reforms (Cukierman and Leviatan, 1992). Consequently, government that has been in power for sometime and have sent out prior reformist signals can undertake reforms.

**2. Ideology of the executive** - Our variable of interest is not only whether a new government implements privatization, but also the ideology of the new government. NPB of privatization increases when a 'right wing' executive is in power compared to 'left wing or centrist' governments.

This argument follows from the seminal work of Shleifer and Vishny (1994) (hereafter SV), who present a model of bargaining between the politicians and managers of state firms and the consequences of commercialization and privatization. In this view, the decision to privatize arises as the outcome of competition between politicians who benefit from government spending (bribes) and politicians who benefit from lower taxes that might result from privatization. They argue that privatization usually occurs when interests of the treasury and taxpayers win against the private interests of politicians and the coalition of interests they represent. Thus, privatization occurs when conservative government favored by taxpayers wins against leftist governments favored by labor unions. SV contend that the concerns about the treasury would dominate and privatization would

happen, when political benefits of public control are low and the demands for subsidy control are high.

**3. *Political rights*** - The debate about the type of political regime most likely to undertake an economic policy reform such as privatization is still unresolved in the literature. Conflicting evidence on possible relationships between democracy and economic reforms exist. We hypothesize that timing of privatization decision will be associated with more authoritarian regimes. The pace and intensity of privatization would also be higher in authoritarian regimes as the democratic governments would be more inclined to ensure the existence of market-supporting institutions that would maximize the benefits of privatization. Therefore, democracy increases the costs of privatization and lowers the NPB.

Some studies have shown that there is no systematic evidence of relationship between regime type and the ability to undertake reform (Nelson, 1989). But evidence also exists otherwise. Authoritarian regimes may be better at taking decisions during a crisis, because there is less need to secure consent from different stakeholders. Roubini and Sachs (1989) argue that to agree on reforms is difficult, especially in conditions of crisis. Considerable empirical evidence exists regarding the effect of private ownership on economic growth and efficiency, but very little consensus exists in the initial stages of reform. The ex-ante uncertainty associated with privatization turns many voters against privatization, though they know that ex-post they could be better off. As a result, in the democracy, welfare-increasing policies may not be undertaken.

But there is no conclusive evidence that suggests authoritarian regimes are either necessary or sufficient for stabilization and privatization. Zaire, Uganda, Haiti are cases in point while in Chile and Pakistan; military rules have proceeded with privatization. Rent-seeking authoritarian regimes can slow down stabilization policies needed in the first stage of transition. Democracy is more suited to dealing with adverse shocks. Empirical analysis on the transition economies has found that democracy facilitates the adoption of market-oriented reforms. The presence of democracy may be a meta-institution for the existence of other non-market institutions (Rodrik, 2000). The checks and balances implicit in the democratic system facilitate the lock-in that blocks privatization reforms (Dethier, Ghanem and Zoli, 1999).

Democracy also changes the incentives for rent seeking. The checks and balances penalize self-interested politicians and hence limiting rent-seeking opportunities (Aslund et al, 1996). Dewatripont and Roland (1992) argue that a democratic government with the legitimacy to undertake reforms can overcome political constraints and win acceptance of transition measures, even if those reforms are painful for a majority of voters.

**4. Degree of political cohesion** – Lack of political cohesion means political actors fail to cooperate, so that pareto-improving policies are not implemented and economic outcomes are sub-optimal. Fragmented governments are less able to achieve a consensus on adopting privatization, adversely affecting NPB.

Alesina and Drazen (1991) argue that the lower cohesion, in particular, delays stabilization. Lack of cohesion increases the uncertainty regarding policy outcomes because the associated instability makes commitment incredible (Knack and Keefer, 1995). Consequently, inefficient systems are maintained, as the incumbent government cannot change the status quo. Government is unable to undertake efficient policies because it does not expect to reap its benefits in the future (Cukeirman, Edwards, and Tebellini, 1992). Uncertainty about future re-election possibilities and lack of political cohesion makes the government unwilling to undertake distributionally challenging policies (Edwards and Tebellini, 1991).

This argument is similar to Krueger's (1993) idea of a factional state where inefficient policies are maintained until the system becomes weak and unsustainable. More politically fragile countries will experience delayed stabilization programs, by this logic. Dornbusch and DePablo (1989) argued that failure to stabilize in the face of severe macroeconomic crisis is concomitant with continued fiscal polarization, instability, and the failure of any group to consolidate its power effectively. Roubini and Sachs (1989) argued that governments composed of large, short-lived, and incohesive coalitions appear to cause large budget deficits. In this paper, we argue that fragmented governments are less likely to undertake reforms and be more gradual in phasing the privatization process.

### **iii. Institutional Variables**

Among the institutional variables, we have included governance or institutional quality created by aggregating rule of law, bureaucratic quality, corruption, risk of expropriation, and repudiation of property (the variable 'gov'). Knack and Keefer (1995) and Hall and Jones (1998) have previously used such aggregation. Doubts can be raised about the ordinal nature of the governance variable, so we created a dummy variable that took the value 1 if the quality of governance was higher than the mean value of 3.5, or else it took the value 0. The results did not change, so we decided to use the ordinal variable, as a dummy variable specification would mean loss of information.

**1. Property rights/Rule of law** – Effective judicial structure would increase the NPB. North (1990) has emphasized the existence of a functioning legal system as a precondition to investment and

growth. As North asserts, “the inability of the societies to develop effective, low-cost enforcement of contracts is the most important source of both historical stagnation and contemporary underdevelopment of the third world...”. Low security of property stunts the incentives to invest, innovate, and obtain foreign technology (Mauro, 1995). The critical institutional infrastructure requirement for privatization is the firm establishment of legitimacy of property rights. This point is obvious, but is actually quite subtle.

Privatization essentially means the transfer of property rights from a public entity to private owners. Therefore, it is crucial that ownership rights be defined as the right to use and control assets, draw economic benefits from ownership, to dispose off assets, and transfer ownership rights to others (Guslain, 1997). Privatization would mean that private entrepreneurs would be at the center-stage of production and investment. This is possible when property rights are protected and rule of law exists. Rules of the game that lead to transparent and accountable economic transactions would improve the overall returns to investment (Isham and Kaufman, 1999).

**2. Corruption** - We hypothesize that the less corrupt systems are more likely to undertake privatization measures compared to economies with rampant corruption. The credibility of the program would be much higher to domestic and foreign investors if the transactions were transparent and accountable. Rival hypotheses exist. It can be argued that the countries with rampant corruption would view privatization activity as a way to expropriate state property and would actively support privatization that they expect will give them ownership of public assets. As a result, it would increase the pace of privatization.

The relationship between corruption, growth, and economic reform is ambiguous. While some authors have contended that corruption raised economic growth because of ‘speed money’ to avoid bureaucratic delay and the incentives to the bureaucrats to work harder (Huntington (1968)). In the recent years, the evidence on negative effects of corruption on investment and economic growth has been overwhelming. A number of authors (Shleifer and Vishny (1993), Rose-Ackerman (1978)) have argued that corruption slows down growth. In the first cross-country empirical analysis of its kind, Mauro (1995) examined the relationship between corruption and growth using ‘Business International’ data for the period 1980-83. He found that corruption lowers private investment and hence growth.

**3. Quality of bureaucracy** - This indicator measures the extent to which national bureaucracy enjoys autonomy from political pressure, has the strength and expertise to govern in a stable manner without drastic changes in policy, and has effective mechanisms for training and recruiting.

Often, the bureaucrats in developing countries are captured by the interests they are supposed to regulate (capture theory). They provide services to interest groups who then support those politicians who defend the governments' budget (Bates and Krueger, 1993). As a result, the greater the independence of bureaucrats from politicians, the less attractive is public ownership to politicians, and hence less sustainable public ownership will be in the long run (Shleifer and Vishny, 1994). SV contend that privatization is more likely to occur in a country with an independent civil service i.e. where the quality of bureaucracy is high. This is because, even if governments change, the policies of the state firms will remain constant. In addition, a government with high quality of bureaucracy will be more responsive to citizens' demands and consequently, would have greater commitment to service delivery (Campos, 2000). Therefore, we hypothesize that quality of bureaucracy will positively affect the privatization process.

**4. *Ethnic tensions*** –We hypothesize that the countries with higher ethnic tensions will demonstrate lower privatization activity. Social fragmentation, riots, and demonstrations negatively affect private incentives to invest and NPB. If the ethnic tensions were high, the security of life and property would be low. In addition, diversity might make it more difficult for political actors to negotiate and cooperate with each other for solutions. This variable is important in countries that depend more on foreign participation in the privatization program.

**5. *Capital market development*** – Capital market development reflects the supply side institutional response to privatization. The pace and intensity of the process would be affected by the capital market development and the process would be much more credible when appropriate market institutions exist. We hypothesize that the countries with well-developed stock markets would exhibit higher privatization activity.

Recent studies have found positive relationship between development of nation's stock market and greater efficiency and growth (Levine, 1997) and between stock market development and privatization (Demirguc-Kunt and Levine, 1994). Positive experiences in Mexico and Chile highlight the impact of well-developed stock markets on privatization choices while experiences in Ghana and Senegal showcase negative impact (Demirguc-Kunt and Levine, 1994). A well-developed financial system helps privatization by allocating funds to more efficient firms, making less efficient firms to restructure or fail and efficiently redeploying the assets of the bankrupt firms (Demirguc-Kunt and Levine, 1994). Unless there exists adequate resources and appropriate infrastructure to buy the assets of public enterprises, implementation of privatization strategy would be difficult.



Further, well-developed stock market expands the privatization choices available to the government. Options that reduce opposition to privatization like share-issue privatization and employee/management buyouts are feasible when stock market development is adequate. Use of public capital markets via share issue privatization distributes wealth to the maximum number of investors. It is possible only if the stock market development is liquid. The greater the shareholder rights in a country (more developed the stock markets), the greater the likelihood that governments would undertake share-issue privatization. Public capital markets are more likely to be used by the governments with higher fiscal need. Private placements and negotiated sales do not involve the large number of consumers and are more likely to be used when the government can more credibly commit to respect property rights and not expropriate private property (Megginson, Netter, Nash, Poulson, 1999). We include market capitalization as a percentage of GDP to account for financial market development. Because of concerns about endogeneity -- market development is often an objective for privatization -- we have lagged this variable by one period. We estimate the model using both simultaneous and lagged values of market capitalization as a share of GDP.

**6. Civil Society** – Civil society can be used as an indicator for informal institutional constraint. The appropriate legal and market institutions necessary for privatization can be imposed on the majority of population only if civil society organizations are developed. We hypothesize that the countries with higher civil liberties would exhibit higher privatization activity.

The civil society norms or behavior ease the coordination problems and makes transactions easier and less costly (North, 1992). Scully (1988) has argued that nations that have chosen to suppress economic, political, and civil liberties have greatly reduced the standard of living of their citizens. Isham et al (1995) empirically demonstrate that higher civil liberties are associated with better economic returns on government projects. In an empirical study of transition economies, Dethier, Ghanem, and Zoli (1999) conclude that the existence of vibrant civil society has the maximum power to explain the adoption of economic liberalization measures.

#### **d. Control variables**

A number of control variables will be used to control for confounding factors. Two dummy variables are used to control for regional influences. Asia is the default category. A dummy variable, *D\_lac* takes the value 1 when the country is in Latin America and 0 otherwise. Similarly, another dummy - *D\_Africa*, takes the value 1 when the country is in Africa and 0 otherwise. This is mainly to control for the peer-group effect of privatization, whether the geographical location of a country in Africa or Latin America vis-à-vis Asia increases the probability of privatization.

In addition, an indicator of trade dependence (trade as a share of GDP) is used to control for the country's global integration. This variable is also an indicator for non-natural or endogenous rents accruing to some politicians and bureaucrats. The lower the trade dependence in an economy or higher the level of protectionism, the higher would be the potential for rent. In addition, previous reform experience in terms of trade reform would make it easier to undertake privatization reforms. It is because trade reforms have similar distributional issues and require similar institutional mechanisms as privatization. The process would be facilitated if the country has previous reform experiences.

Finally, initial GDP per capita (corrected for differences in purchasing power parity) is used to control for the base level of development in the economy. Developed countries may have better institutional structure and market mechanisms, facilitating private sector reform. Therefore, it would be imperative to control for the level of development to understand the strength of the coefficients correlated with the development indicator. In addition, we include 'adult illiteracy' as an indicator of economy's development.

Before we begin discussing the methods and results, a word of caution is necessary. The situation in developing countries is not so simple that an analytic model such as above or cross-country regressions will provide the complete picture. Though we touched on these concepts previously in this section, it is necessary to reiterate at this point. In this context, we draw on the recent work by Bardhan (1999). The transactions cost reducing institutions, taken for granted in the developed countries, are nascent or dis-functional in the third world. The institutions, such as property rights, land markets, market-friendly business environment, functioning capital markets, necessary for successful privatization have to be created or strengthened. In addition, 'credible commitment by the government', to respect private property rights and contracts is significant for private enterprise to thrive. In case of predatory state, that might not be the case.

As we have discussed previously, privatization is a contentious issue as it causes distributive conflicts. Even if the country wants to move forward to an optimal solution such as privatization; it can be held back by path-dependent processes; resulting in sub-optimal solutions. If the existing institutions are 'locked in', the new adopters have no choice but to follow, delaying privatization. From the 'lock-in' phenomenon in developing countries, there are some elite groups who are unduly favored in the present system who will resist any institutional change associated with privatization. Though privatization would be Pareto superior for all groups in the long run, what matters is who gains in *relative* and not *absolute* and *when*. There are short-term losers in the process such as labor who are concentrated and vocal. On the other hand, gainers such as new entrepreneurs or customers benefiting from privatization are diffuse. As a result, collective action problem exists and bargaining

process on dividing the potential benefits from privatization would break down. In such a case, the potential gainers cannot credibly commit to compensate the losers. Here the role of state becomes critical to solve the collective action problem, a number of countries have undertaken labor training programs, generous severance packages, social-safety nets or guarantees from new owners about job losses to compensate the losers from privatization.

### **III. METHODS**

Based on the analytic concepts in section II, we develop an empirical framework to test the hypotheses. The hypotheses are tested using a time series-cross section dataset. The empirical methods are discussed in the context of timing, pace, and intensity of privatization. We use the Cox proportional hazards model to test the timing, random effects negative binomial model for the pace, and random effects model for the intensity of privatization decision. We use STATA 7 version to estimate the above models.

The sample in the empirical analysis includes 35 diversified groups of low-income or middle-income countries from the developing world. The countries in the sample are: a) from Latin America --Argentina, Mexico, Colombia, Bolivia, Venezuela, Ecuador, Peru, Brazil, Honduras, Guatemala, El Salvador, Paraguay, Panama, Uruguay, Trinidad and Tobago, and Costa Rica; b) from Africa -- Cote d'Ivoire, Egypt, Tunisia, Ghana, Nigeria, Morocco, Zambia, Kenya, Zimbabwe, and South Africa; and c) from Asia -- India, Indonesia, Bangladesh, Pakistan, Sri Lanka, Malaysia, Philippines, Thailand, and Turkey. Annual data for 18 years (1982-99) on the 35 countries are used to construct a pooled cross-section/time-series dataset with 630 observations. The country provides the cross-section variation while year provides the time-series variation. Therefore, the analysis can identify both cross-section and temporal dynamics of privatization.

#### **a. Timing model**

Why are some countries more open to adopting privatization than others? For this purpose, the panel dataset is used to analyze the transition from no privatization to a formal privatization policy. We use the hazard analysis/survival analysis/event history analysis to model this transition. In the hazard analysis, the time until the event (in this case privatization) and the event itself are combined in the same dependent variable.

The hazard model is appropriate to model our problem as it includes time-varying covariates. The speed at which privatization occurs depends on the rate at which the different independent variables change. The dependent variable in our analysis is dichotomous, reflecting whether privatization occurred or not. At each year, if the country experienced privatization, the dependent

variable is coded 1; if not, it is coded 0. As the variable becomes 1, the later observations are dropped from the analysis because it is the change to a privatization regime we are looking for. In event history models, it is critical to pinpoint the time when analysis can start. In this study, time is measured from 1982 (the starting year of analysis). This decision is driven by data considerations as well as theoretical reasoning. Most of the countries started privatizing sometime during the 1980s'. The period of analysis covers the phase that experienced most of the privatization activity in the developing world. All of the sample countries for this analysis experienced a transition within the sample period except for Thailand and Bangladesh.

The cumulative probability density function can be expressed as:

$$F(t) = \int_0^t f(u) du \dots\dots\dots(1)$$

The hazard function can therefore be expressed as the rate at which an event occurs in the interval (t, t+Δt), given that it has not occurred until the beginning of t. The hazard rate can be expressed as a function of

$$h(t) = \lim_{\partial t \rightarrow 0} \frac{P(t + \partial t \geq T \geq t \mid T \geq t : \alpha, \beta' X)}{\partial t} \dots\dots\dots(2)$$

baseline rate  $\alpha$  and the covariates X.

Then, the survivor function can be expressed as:

$$S(t) = \exp\left[-\int_0^t h(u) du\right] = \exp^{-H(t)} \dots\dots\dots(3)$$

$$H(t) = \int_0^t h(u) du \dots\dots\dots(4)$$

$$f(t) = h(t)S(t) \dots\dots\dots(5)$$

Then, the probability density function can be expressed as:

$$f(t) = h(t) \exp\left[-\int_0^t h(u) du\right] \dots\dots\dots(6)$$

The most general of all continuous hazards model is the proportional hazard model that is semi-parametric in nature. It is parametric because it specifies a specific functional form in the regression model, but it is non-parametric because it does not specify the exact form of the

$$h(t, X, \beta, h_0) = \phi(X, \beta)h_0(t) \dots \dots \dots (7)$$

distribution of event times (Allison, 1984). As Allison (1984) notes, this model is ‘extraordinarily general and non-restrictive’. We tested for the appropriateness of the proportional hazards assumption (stphstest in STATA7); the significant chi2 suggested that the specification is correct.

Therefore, the change to privatization from a no-privatization state can be modeled as a function of the explanatory covariates:

$$h_{it}(t, X) = \beta_1(\text{lagged fiscal deficit as share of GDP})_{it} + \beta_2(\text{lagged inflation})_{it} + \beta_3(\text{lagged growth rate})_{it} + \beta_4(\text{agriculture as share of GDP})_{it} + \beta_5(\text{aid as share of GNI})_{it} + \beta_6(\text{degree of inequality})_{it} + \beta_7(\text{years in office})_{it} + \beta_8(\text{right ideology of the executive})_{it} + \beta_9(\text{index of cohesion})_{it} + \beta_{10}(\text{SOE sector as share of GDP})_{it} + \beta_{11}(\text{quality of governance})_{it} + \beta_{12}(\text{democracy})_{it} + \beta_{13}(\text{market capitalization as share of GDP})_{it} + \beta_{14}(\text{initial GDP per capita})_{it} + \beta_{15}(d\_lac)_{it} + \beta_{16}(d\_Africa)_{it} + \beta_{17}(\text{adult illteracy})_{it} + \beta_{18}(\text{trade\_op})_{it}$$

As is true for all regression models, a positive sign of the covariate implies that it positively affects the dependent variable, which in this case is the probability of privatization. The opposite is true if the coefficient is negative. Following Box-Steffensmeier and Jones (1996), the interpretation of the coefficient of a dichotomous explanatory variable is the percentage change in the hazard of experiencing privatization,  $100[e^{(\beta_k*1)} - e^{(\beta_k*0)}] / e^{(\beta_k*0)}$ , if the coefficient is negative. Consequently,  $e^{(\beta_k*1)} < 1$  and the hazard of experiencing privatization as a result of that covariate is negative. For continuous variable,  $100[e^{(\beta_k*(x+\delta))} - e^{(\beta_k*x)}] / e^{(\beta_k*x)}$ , the percentage change in the hazard rate as a result of  $\delta$  change in the independent variable  $x$  explains the effect of the variable<sup>1</sup>.

## **b. Pace/Frequency**

Pace is defined as the number of privatization transactions each year

$$PACE = \beta_1(\text{lagged fiscal deficit as share of GDP})_{it} + \beta_2(\text{lagged inflation})_{it} + \beta_3(\text{lagged growth rate})_{it} + \beta_4(\text{agriculture as share of GDP})_{it} + \beta_5(\text{aid as share of GNI})_{it} + \beta_6(\text{degree of inequality})_{it} + \beta_7(\text{years in office})_{it} + \beta_8(\text{right ideology of the executive})_{it} + \beta_9(\text{index of cohesion})_{it} + \beta_{10}(\text{SOE sector as share of GDP})_{it} + \beta_{11}(\text{quality of governance})_{it} + \beta_{12}(\text{democracy})_{it} + \beta_{13}(\text{market capitalization as share of GDP})_{it} + \beta_{14}(\text{initial GDP per capita})_{it} + \beta_{15}(d\_lac)_{it} + \beta_{16}(d\_Africa)_{it} + \beta_{17}(\text{adult illteracy})_{it} + \beta_{18}(\text{trade\_op})_{it}$$

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<sup>1</sup> The independent variables in our model include both time-varying and time-invariant covariates. This leads to insights about the full span of the privatization process. It is superior to cross-section or panel study designs. In cross-section studies, the dynamics of privatization cannot be modeled. Panel studies, though they involve cross-section time-series data, may not lead to accurate conclusions of rates and timing of change. It would depend on the spacing of panels (Box-Steffensmeier and Jones, 1998).

A random effects Poisson model can be used to analyze the determinants of the event (privatization) count. Event counts are ‘variables that have for observations  $i(i=1 \dots N)$  the number of occurrences of an event in a fixed domain’. In our analysis, the domain for each observation is a ‘year’ (King, 1988). The Poisson assumption is appropriate as the events occur randomly in time. In a Markov sense, ‘random’ means that the expected rate of occurrence of the next event either remains constant ( $=\theta$ ) or is uncorrelated with the number of observed events. In addition, the random error around  $\theta$  in one instant of time is independent and uncorrelated with random error in the next instant of time (King, 1988). Previous empirical research has proved that the Poisson specification is well suited to handle integer properties of count data directly and accommodate counts that are aggregated over time periods. The ‘number of transactions’ comes from the same event - privatization. The dependent variable has non-negligible probabilities of zero. It can also include non-negative integers and 0 as natural outcome of the process. In addition, the random effects model assumes an equi-correlated covariance matrix, so it takes care of the serial correlation<sup>2</sup>.

Following Hausman et. al (1984), let  $n_{it}$  be the privatization event count for the country  $i$  and year  $t$

$$E(\eta_{it} | X_{it}) = \lambda_{it} \dots\dots\dots(8)$$

$$V(\eta_{it} | X_{it}) = \lambda_{it} \dots\dots\dots(9)$$

$$\Pr(\eta_{it} = f(\eta_{it})) = \frac{e^{-\lambda_{it}} \lambda_{it}^{\eta_{it}}}{\eta_{it}!} \dots\dots(10)$$

$$\lambda_{it} = \exp(X_{it}\beta) \dots\dots\dots(11)$$

$\lambda_{it}$  is assumed to be distributed randomly in the sample, and follows a gamma distribution. When a gamma distribution is assumed, the  $\Pr(n_{it})$  reduces to a negative binomial distribution. In negative binomial model, the Poisson parameter  $\lambda_{it}$  is distributed randomly across countries and across time, according to a gamma distribution with shape parameters  $(\gamma, \delta)$  (Hausman et al, 1984).  $\gamma$  can be assumed to be an exponential function of the explanatory variables,  $\gamma_{it} = \exp(X_{it}\beta)$ , while the

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<sup>2</sup>A restrictive assumption of the Poisson model is the equality between mean and variance of the distribution. This assumption may not take into account over dispersion, meaning that variance may be higher than the mean. As a result, the estimated covariance matrix is biased downward, resulting in overstated significance levels (Liao, 1994). In this case, the alternative hypothesis considers the local alternatives to the Poisson distribution of  $y_t$ . If the Poisson goodness of fit test is significant, then Poisson model does not fit the data. Then more generalized models like the negative binomial model can be used. In these generalized models, Poisson parameter is also a random variable and not a deterministic function of independent covariates.

ratio  $\delta_i/1+\delta_i$  can be assumed to follow a beta distribution with shape parameters (r,s). The joint probability of a country's number of privatization transactions over the period 1982-97 is:

$$pr(y_{i1} \dots y_{iT} | X_{i1} \dots X_{iT}) = \frac{\overline{(r+s)} \overline{(r + \sum \gamma_{it})} \overline{(s + \sum \gamma_{it})}}{\overline{(r+s)} \overline{(r+s + \sum \gamma_{it} + \sum y_{it})}} * \prod_t \frac{\overline{(\gamma_{it} + y_{it})}}{\overline{(\gamma_{it})} \overline{(y_{it} + 1)}} \dots (12)$$

### c. Intensity/Value

This econometric model includes alternative measures of privatization intensity. In the third model of privatization decision-making, we define two definitions of “intensity” – 1) log privatization proceeds in constant USD, 1996=100, and 2) privatization proceeds as share of GDP. Due to unavailability of credible privatization proceeds data before 1988; this estimation is based on 1988-99. In effect, the dependent variable is simply:

$$\text{INTENSITY} = \text{VALUE} = \beta_1(\text{lagged fiscal deficit as share of GDP})_{it} + \beta_2(\text{lagged inflation})_{it} + \beta_3(\text{lagged growth rate})_{it} + \beta_4(\text{agriculture as share of GDP})_{it} + \beta_5(\text{aid as share of GNI})_{it} + \beta_6(\text{degree of inequality})_{it} + \beta_7(\text{years in office})_{it} + \beta_8(\text{right ideology of the executive})_{it} + \beta_9(\text{index of cohesion})_{it} + \beta_{10}(\text{SOE sector as share of GDP})_{it} + \beta_{11}(\text{quality of governance})_{it} + \beta_{12}(\text{democracy})_{it} + \beta_{13}(\text{market capitalization as share of GDP})_{it} + \beta_{14}(\text{initial GDP per capita})_{it} + \beta_{15}(\text{d\_lac})_{it} + \beta_{16}(\text{d\_Africa})_{it} + \beta_{17}(\text{adult illiteracy})_{it} + \beta_{18}(\text{trade\_op})_{it}$$

The model we estimate is:

$$Y_{it} = \alpha_i + X_{it}' \beta + \varepsilon_{it} \dots (13)$$

Where  $\alpha_i$  capture the country specific time-invariant factors omitted from the model. Following Nielsen and Grady (2000), the country specific errors are now distributed randomly in space and time. The random coefficients model is estimated using the GLS estimator, where

$$\beta = [X' \Omega^{-1} X]^{-1} X' \Omega^{-1} Y$$

and

$$\Omega = \sigma^2 \begin{bmatrix} A & 0 & \dots & 0 \\ 0 & A & \dots & 0 \\ \dots & \dots & \dots & \dots \\ 0 & 0 & \dots & A \end{bmatrix}$$

and where

$$A = \begin{bmatrix} 1 & \rho & \dots & \rho \\ \rho & 1 & \rho & \dots \\ \dots & \dots & \dots & \dots \\ \rho & \rho & \dots & 1 \end{bmatrix}$$

The pooled cross-section time-series design enables the use of a number of specifications that control for heterogeneity bias. It controls for the time-invariant country specific effects that may be omitted from the regression model. In a panel dataset, the country specific effects are included in the country specific intercept that may be fixed or random (Nielsen and Grady, 2000).

In cases where the design is cross section dominant and there are significant unit specific effects, random effects model is most useful. Unlike the fixed effects specification, it removes only a fraction of the country-specific means and permits the use of time-invariant regressors. In effect, it does not include any ‘between country’ variation in the sample. But the ‘between country’ variation is important in determining dynamics of privatization. Random effects model is appropriate as the sample group of countries is drawn from the large population of countries where country specific constant terms are randomly distributed across units. In addition, the random effects model is asymptotically efficient compared to fixed effects model (Hannan and Tuma, 1984). One of the problems of random effects models is the lack of concern for autocorrelation. Our data do not suffer from the biases of autocorrelated errors because the data matrix is ‘wide’ (cross-section dominant) rather than ‘tall’ (Stimson, 1985). The consistency of the specifications can be tested using the Hausman test. In random effects specification, this consistency depends on zero correlation between the error term and the regressors. The insignificant chi2 statistic (recorded below Table 6, 7) in the hausman test suggested that random effects’ is an appropriate specification.



#### IV. DISCUSSION

The macroeconomic, political, and institutional factors explain the timing, pace, and intensity - the three crucial parameters of the privatization policy. The discussion of the results follows from the tables 4, 5, 6, and 7. In our paper, the decision to privatize and its implementation have emerged as two distinct entities. A number of factors that actually facilitate the privatization decision later hamper its implementation and delay the process. For example, domestic political economy variables explain pace and intensity decisions in a similar way but affect timing very differently. The results from the timing model suggest that in countries with homogenous population, high growth rate, lower inequality, higher share of manufacturing sectors and market capitalization, an open policy to trade actually delay privatization compared to countries that do not have the above attributes. It appears that instability hastens privatization. Instead of a planned and cautious decision, privatization is actually a response to instability and crisis. The forces are aligned momentarily to cope with crisis and to take controversial decisions.

Crisis does not always lead to reform. In fact, most countries go through small crisis situations before undertaking reform when crisis is really severe. In such situations, the countries not only face burgeoning deficits, inflation, and growth rates but also high debt service payments. Consequently, the countries' future aid depends on its adopting economic reforms. In many poor countries, the 'aid-for-reform' packages are allocated in crisis to countries unprepared for reform. Though such countries privatize early, the constraints that increase the political costs surface during the implementation of the privatization process. While they announce the adoption of economic reforms, implementation depends on supporting institutional infrastructure. In most economies, these institutions either have to be created (as in many transition economies) or have to be tailored to support privatization.

*The size of the public sector speeds up the timing but slows down the pace and intensity of privatization.* The timing of the privatization policy is hastened by the size of the public sector. For instance, one percentage point increase in the initial size of public sector increases the hazard by 1.03 times (model 4, table 4). But a large public sector also means an institutional structure that has a stake in perpetuating the present arrangement. This finding is consistent with the '*lock-in of institutions*' concept discussed earlier in the conceptual framework. The institutions are locked-in and the interest groups present barriers to delay the privatization process, as divestiture reduces their rents. Thus, the transactions cost of undertaking divestiture is high, adversely affecting the pace of privatization.

Countries with large manufacturing structures have capital-intensive processes and an existing market infrastructure to raise capital. Since agriculture is usually not capital intensive,

likelihood of existence of supporting market institutions to raise debt and equity capital is low. One standard deviation increase in agriculture as a share of GDP, that amounts to 9.7%, results in a .28 years decrease in the time till privatization (model 2, table 4). As a result, the pace of privatization will be delayed by lack of supporting market infrastructure in agrarian economies. But the existence of a large agrarian sector hastens the timing of privatization. Given the high positive relationship between agriculture as a proportion of GDP and GDP per capita, privatization appears as a way to raise scarce resources. *Though more agrarian economies announce the divestiture plans sooner, the implementation is impacted by lack of market supporting institutions.*

The institutional infrastructure of the economy, proxied by the 'quality of governance' index, has emerged as a significant determinant of privatization decisions. But the effect is not uniform across the three decisions. The ex-ante expectation about the benefits is high, but the implementation of the process requires an adequate social infrastructure. The existence of law and order tradition, low corruption, high bureaucratic quality, low risk of expropriation or repudiation of contracts, and more homogenous societies makes the privatization program more credible and positively affects its outcomes. The results empirically prove Nellis's (1999) argument that 'in an institutional vacuum privatization can and has led to stagnation and decapitalization rather than better financial results and increased efficiency'. For example, a one-unit increase in 'quality of governance' increases the expected number of privatization transactions by 66 percent, holding all other variables constant (model 4, table 5). 'Ethnic tension' emerges as a significant determinant of timing of privatization. More homogenous societies would actually delay privatization and they gather more resources from privatization.

The supporting market institutions, proxied by the 'market capitalization as percent of gross domestic product', is a significant determinant of timing, pace, and intensity of privatization. *Market infrastructure unambiguously impacts privatization decisions.* Countries with superior market infrastructure privatize later, one standard deviation increase in *mlag* would decrease privatization by .87 years. But such countries have an easier time implementing privatization. For example, the existence of capital markets and the necessary supporting structure in the form of investment bankers, lawyers, financial advisors provide the institutional support that hasten and facilitate the implementation of the privatization policy. The implementation of divestiture follows a standard but complicated process - company selection, preparation for privatization, asset valuation, preparation of the sales guidelines, sales announcement and promotion, registration of interest, pre-qualification, bid evaluation, authorization and contract adjudication, and finally divestiture (Megyery and Sader, 1997). If the country already has experience with private enterprises and market supporting institutions exist, it would facilitate the divestiture process. In addition, the existence of capital

markets facilitates broad based ownership of privatized shares and enhances the transparency and credibility of the process. Also, it signifies an institutional mechanism to channel scarce resources to productive activities and reduce dependence on foreign investment.

Economic crisis is an important variable in determining the privatization decisions. This result supports the previous research that ‘economic reforms are inflation’s children’ (Bruno and Easterly, 1996). In fact, none of the recent reform initiatives have happened without serious macroeconomic crisis in the economy. Crisis propels the announcement of the privatization policy with the long-term objective to raise resources for social sectors. This result confirms the traditional wisdom that domestic political economy drives economic reforms. By increasing the cost of delay, it accelerates privatization. *Though crisis is a catalyst for divestiture, it does not sustain it.* The empirical findings suggest the opposite. Fiscal prosperity actually increases the pace and intensity of privatization. Macroeconomic management in the form of budget surplus, low inflation, and high growth rates increases the credibility of the reformist government and raises the value of the enterprises. This is consistent with Dollar and Svensson’s (1998) argument that reforms in a recession involve a higher political cost and will be more difficult to implement.

Degree of inequality affects divestiture differentially. *Divestiture decision is hastened in highly unequal societies.* The ex-ante expectation of efficiency benefits of privatization outweighs the real costs in highly unequal societies. The real distribution costs emerges during the implementation of divestiture decisions, adversely affecting the pace and intensity of privatization. The decisions regarding the individual enterprises are delayed or mired in controversies as a result. Intensity is positively affected in case of equal economies. As Knack and Keefer (1995) have argued previously, in response to exogenous crisis, equality reduces disagreement with privatization policy. One unit increase in the gini coefficient increases the hazard by 1.06 times (model 4, table 4).

Among the political variables, ideology and political cohesion are significant. There is some evidence that new governments privatize more. For example, a new government would privatize more by 1.03 times (model 5, table 4). The dummy variable ‘exec\_r’ (right wing ideology) captures the ideological and political dimensions of the government. It is evident that ‘right wing’ ideology positively affects the privatization decisions. The ‘market oriented’ ideology of conservatives is easier to negotiate with stakeholders and convince the investors that the process is irreversible. *‘Right’ ideology has emerged as a significant factor in privatization decisions.* In fact, incidence rate of undertaking larger number of privatization transactions is higher by 1.52 times or 52% in countries where right wing politicians control the executive (model 6, table 5). This result is consistent with Shleifer and Vishny’s (1994) theoretical model that claimed that privatization occurs when conservative government favored by taxpayers wins against leftist governments favored by labor

unions. We also find evidence of fragmented governments delaying privatization; fragmentation in governments' decreases the hazard by .60 times. This result makes intuitive sense; the fragmented governments will take more time to arrive at a decision.

*Democracy has emerged as a significant variable in the privatization process.* Recent research (Devarajan et al, 2001) concurs that there is no relationship between formal democratic institutions and good economic policy. Successful reformers encourage a broad consultative process to arrive at a consensus on economic reformers, but this can happen irrespective of the type of political structure. Authoritarian regimes of Ghana and Uganda adopted reforms while those in Nigeria and Zaire did not. Similarly, democratic governments in Zambia and India have struggled with economic reforms. The failure to clearly articulate the relationship between democracy and privatization is consistent with the failure of the cross-country research to establish a relationship between democracy and economic growth (Helliwell, 1994, De Melo et. al. 1996). We find the democratic societies privatize sooner but their implementation is delayed. Hazard increases 1.20 times for each unit increase in democracy indicator or one standard deviation increase in the indicator hastens privatization by .49 years (model 4, table 4). In more autocratic societies, the process is facilitated by small number of decision makers while the more open system in democratic societies puts pressure on the existing governments to undertake efficiency enhancing economic reforms. As a result, implementation takes longer.

Geographical location matters in the timing of privatization. We find that Africa and Latin America have delayed their privatization compared to Asia but Asia lags behind in privatization volumes. Malaysia, Thailand and Bangladesh were early pioneers. More illiterate countries privatize sooner but their pace is delayed. Countries with lower literacy rate privatize sooner with the ex-ante goal of using the proceeds for health and education. But during implementation, the illiteracy becomes a burden, slowing down the process. We also find evidence for trade openness of an economy. More open countries delay privatization and their pace is slower. It is possible the urgency to undertake private sector reform for financial proceeds is less for more globally integrated economies.

## **V. CONCLUSION**

Though not as dramatic as evidenced in the transition economies in Eastern Europe, the move from the planned economies to the markets has brought about profound changes in the overall structure of the economy in the developing countries. As a result, it is critical for present and future reformers to understand the factors that maximize the gains from privatization and economic reforms.

In summary, public sector reform or divestiture is successful if it is desirable, feasible, and credible (BIB, 95). The factors that unambiguously affects the three criteria are existence of

supporting market institutions, overall quality of governance, non-agrarian economy, technical assistance from foreign donors, small public sector, fiscal stability, and right wing, new, cohesive, government. It is a combination of all these factors acting together that facilitate the privatization decisions and enhance the gains from divestiture. After two decades of privatization efforts around the world, it is time to reflect and understand how and why privatization occurred. The results from this paper will help us do just that.

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**Table 1: Definition, description, and sources of explanatory variables**

Explanatory variables	Definition, description, and sources
<b>MACROECONOMIC VARIABLES</b>	
<b><i>Fis_def1</i></b> - Budget deficit as a percentage of Gross Domestic Product(excluding grants); lagged one period	IMF International Finance statistics, 2000
<b><i>Infla_1</i></b> – Annual inflation rate; lagged one period	World Development Indicators, 2000
<b><i>Gro_rat1</i></b> – Growth rate; lagged one period	World Development Indicators, 2000.
<b><i>Aid_GNI</i></b> - Aid as a percentage of Gross National Investment	World development indicators, 2000
<b><i>Agr_GDP</i></b> - Agriculture value added as a percentage of GDP	World development indicators, 2000
<b><i>Degree_1</i></b> - Degree of inequality in the economy	Deininger and Squire (1996)
<b><i>Soe_GDP</i></b> - Size of the public sector as a percentage of GDP	Haggarty and Shirley (1997)
<b><i>Soe_initial</i></b> – size of public sector in the year of adoption of privatization policy	
<b>POLITICAL VARIABLES</b>	
<b><i>Yrs_offc</i></b> – Number of years the chief-executive has been in office	Beck et al (2001)
<b><i>Exec_r</i></b> – Dummy for ‘right’ ideology of the chief executive’ s party	Beck et al (2001)
<b><i>Cohes_in</i></b> – Index of political cohesion	Beck et al (2001)
<b><i>Democ</i></b> =Pol_rights + civ_lib <b><i>Pol_rights</i></b> - Political rights available to citizens <b><i>Civ_lib</i></b> – Civil liberties available to citizens	Freedom House (2001) Freedom house (2001)
<b>INSTITUTIONAL VARIABLES</b>	
<b><i>Corr_gov</i></b> – Corruption in government; degree to which business transactions involve corruption or questionable payments; varies from 0-6	ICRG (IRIS3)
<b><i>Rule_law</i></b> – Rule of law; degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes; varies from 0-6	ICRG (IRIS3)
<b><i>Bur_qlty</i></b> – Quality of bureaucracy; measures the regulatory environment the domestic and foreign firms must face when seeking approvals and permits. ranges from 0-6	
<b><i>Repu_con</i></b> – Risk of repudiation of contracts by government; measures the ‘possibility that foreign businesses, contractors and consultants face the risk of contract modification, postponement or scaling down as a result of change in government, income drop, budget cutbacks, indigenization pressure or change in government priorities’; the score ranges from 0-10	ICRG (IRIS3)
<b><i>Expro_ri</i></b> - Risk of expropriation of private investment; measures the risk of ‘outright confiscation and forced nationalization’ of property; ranges from 0-10.	ICRG (IRIS3)
<b><i>Mlag</i></b> – Stock market capitalization as a % of GDP; lagged one period	Beck at el (2000).
<b><i>Ethn_ten</i></b> – Ethnic tension; measures ‘degree of tension within a country attributable to racial, nationality and language divisions; from 0-6	ICRG (IRIS3)
<b>CONTROL VARIABLES</b>	
<b><i>Init_gdpcap</i></b> – Initial GDP per capita	World Development Indicators 2000
<b><i>D_Africa, D_LAC</i></b> – Dummy for the continents	World Development Indicators, 2000.
<b><i>Trade_op</i></b> – Trade openness	World Development Indicators, 2000.
<b><i>Adult_il</i></b> – adult Illiteracy (age 15 and above)	World Development Indicators, 2000

**Table 2: Descriptive statistics of explanatory variables**

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Min</i>	<i>Max</i>
<b>Timing<sup>1</sup></b>	630	.5825	.4935	0	1
Latin America	289	.55	.49	0	1
Africa	180	.55	.49	0	1
Asia	161	.67	.47	0	1
<b>Pace<sup>2</sup></b>	630	4.02	8.27	0	57
Latin America	289	3.77	8.77	0	57
Africa	180	3.7	6.82	0	40
Asia	161	4.81	8.82	0	51
<b>Intensity<sup>3</sup></b>	266	4.82	2.25	0	10.35
Latin America	106	5.25	2.53	0	10.35
Africa	75	4.08	1.83	0	7.97
Asia	85	4.92	2.06	0	8.05
<b>Intensity<sup>4</sup></b>	404	.66	1.54	0	12.62
Latin America	186	.73	1.62	0	11.79
Africa	117	.72	1.86	0	12.62
Asia	101	.43	.76	0	4.97

1. Timing of first privatization
2. Number of privatization transactions each year
3. Log privatization proceeds in millions (in constant USD, 1996=100)
4. Privatization proceeds as a share of GDP

**Table 3: Definition, description, and sources of explanatory variables**

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>S.D.</i>	<i>Min</i>	<i>Max</i>
Fis_defl (Budget deficit or surplus as a % of GDP)	566	-3.88	4.47	-45.08	5.08
Infla_1 (Annual inflation rate)	584	98.16	640.89	-.81	11749.64
Gro_rat1 (Annual growth rate)	629	3.24	4.22	-13.38	13.28
Aid_GNI (Foreign aid as a % of GNI)	619	3.39	5.18	-.47	62.99
Agr_GDP (Agriculture as a % of GDP)	621	18.50	9.78	1.44	59.73
Ineq (Degree of inequality)	630	45.24	8.02	31.42	62.3
Soe_initial (initial size of SOEs as % of GDP)	630	10.96	7.58	1.64	32.8
Isoegdp (SOEs as share of GDP, extrapolated)	596	10.04	8.44	8.44	0.44
Yrs_offc (Number of years in office of the government)	630	7.06	8.20	1	38
Exec_r ('Right' ideology of the executive)	630	.339	.473	0	1
Cohes_in (Degree of political cohesion)	630	.536	.777	0	4
Democ (Democracy)	630	8.86	2.74	2	14
Mlag (Market capitalization as a % of GDP)	355	26.42	43.39	.28	329.36
Qual_gov (Quality of governance)	630	3.53	1.00	1.11	6.33
Ethn_ten (Ethnic tension)	630	3.84	1.72	0	9
Init_gdpcap (Initial GDP per capita)	630	1848.74	1530.76	235.92	6572.09
D_Africa (Dummy for Africa)	630	.28	.45	0	1
D_lac (Dummy for Latin America)	630	.45	.49	0	1
Adult_il (Adult illiteracy)	630	26.15	19.29	2.3	74.4
Trade_op (Trade openness)	623	84.62	46.05	16.13	333.71

**Table 4: Timing model**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Dependent variable: Time till privatization</i>							
fis_defl	0.009	0.05	-0.042	0.015	-0.048	-0.017	-0.007	0.017
	-0.04	-0.048	-0.034	-0.04	-0.034	-0.041	-0.038	-0.048
infla_1	0	0	0	0	0	0	0	0
	(0.000)***	(0.000)***	(0.000)**	(0.000)***	(0.000)**	(0.000)***	(0.000)***	(0.000)***
gro_rat1	-0.004	-0.017	-0.037	-0.043	-0.033	-0.037	0	-0.012
	-0.025	-0.021	(0.018)**	(0.016)***	(0.017)*	(0.016)**	-0.023	-0.02
aid_gni	-0.007	0.026	-0.01	0.024	-0.003	0.008	-0.002	0.009
	-0.024	-0.028	-0.025	-0.031	-0.012	-0.012	-0.01	-0.01
agr_gdp	0.015	0.029	-0.002	-0.018	-0.004	-0.002	0.012	0.037
	-0.011	(0.014)**	-0.009	-0.015	-0.009	-0.016	-0.01	(0.016)**
ineq	0.009	0.051	0.004	0.061	-0.002	0.037	0.004	0.035
	-0.013	(0.020)***	-0.016	(0.021)***	-0.016	(0.021)*	-0.013	(0.016)**
yrs_offc	0.001	0.006	0.007	0.012	0.006	0.011	0.001	0.006
	-0.012	-0.01	-0.013	-0.013	-0.014	-0.013	-0.012	-0.011
exec_r	0.471	0.389	0.129	-0.21	0.096	-0.259	0.389	0.251
	(0.207)**	-0.291	-0.18	-0.298	-0.177	-0.288	(0.214)*	-0.294
cohes_in	-0.059	-0.246	-0.276	-0.509	-0.239	-0.421	-0.057	-0.21
	-0.093	(0.108)**	(0.094)***	(0.168)***	(0.082)***	(0.145)***	-0.087	(0.108)*
soe_initial	0.027	0.049					0.024	0.043
	(0.011)**	(0.012)***					(0.012)*	(0.011)***
mlag	-0.001	-0.006	-0.009	-0.02				
	-0.003	-0.004	(0.004)**	(0.005)***				
qual	-0.111	-0.152	-0.11	-0.159	-0.182	-0.243	-0.175	-0.238
	-0.173	-0.177	-0.179	-0.173	-0.165	-0.167	-0.155	-0.162
ethn	-0.167	-0.155	-0.174	-0.156	-0.146	-0.126	-0.147	-0.143
	(0.063)***	(0.070)**	(0.060)***	(0.068)**	(0.065)**	(0.071)*	(0.068)**	(0.076)*
democ	0.035	0.08	0.072	0.183	0.058	0.122	0.032	0.055
	-0.032	(0.047)*	(0.038)*	(0.066)***	-0.036	(0.065)*	-0.029	-0.042
init_gdpcap		0		0		0		0
		(0.000)***		(0.000)**		(0.000)***		(0.000)***
d_africa		-1.229		-1.152		-0.883		-0.973
		(0.340)***		(0.347)***		(0.297)***		(0.283)***
d_lac		-1.238		-1.86		-1.256		-0.889
		(0.441)***		(0.344)***		(0.430)***		(0.376)**
adult_il		0.018		0.022		0.016		0.012
		(0.007)**		(0.009)**		(0.009)*		(0.007)*
trade_open		0		-0.005		-0.004		0
		-0.002		-0.003		-0.003		-0.002
mcap_gdp					-0.006	-0.013	0	-0.002

					(0.003)**	(0.006)**	-0.002	-0.002
isoegdp			0.018	0.036	0.015	0.027		
			-0.013	(0.016)**	-0.013	(0.015)*		
Robust standard errors in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%								

**Table 5: Pace/frequency model**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<b>Dependent variable: annual privatization transactions</b>							
fis_defl	0.044	0.036	0.036	0.035	0.017	0.012	0.019	0.014
	(0.022)**	-0.023	-0.025	-0.025	-0.023	-0.024	-0.021	-0.022
infla_1	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
Gro_rat1	0.018	0.017	0.022	0.019	0.032	0.033	0.032	0.034
	-0.018	-0.019	-0.019	-0.019	(0.018)*	(0.019)*	(0.019)*	(0.019)*
Aid_gni	0.041	0.049	0.033	0.028	0.006	0.005	0.011	0.012
	-0.029	-0.031	-0.027	-0.034	-0.012	-0.014	-0.013	-0.013
Agr_gdp	-0.032	-0.013	-0.018	-0.027	-0.012	-0.009	-0.023	0.003
	(0.017)*	-0.021	-0.014	-0.02	-0.014	-0.02	-0.016	-0.021
ineq	-0.022	-0.02	-0.037	-0.038	-0.043	-0.061	-0.018	-0.014
	-0.017	-0.023	(0.017)**	(0.021)*	(0.017)**	(0.022)***	-0.017	-0.022
Yrs_offc	-0.016	-0.002	-0.026	-0.017	-0.03	-0.024	-0.022	-0.007
	-0.013	-0.015	(0.014)*	-0.016	(0.014)**	-0.016	(0.013)*	-0.015
exec_r	0.27	0.326	0.385	0.417	0.474	0.502	0.264	0.257
	-0.22	-0.23	(0.220)*	(0.247)*	(0.205)**	(0.239)**	-0.212	-0.224
cohes_in	0.067	0.101	0.005	0.017	0.001	0.06	0.012	0.057
	-0.097	-0.108	-0.105	-0.121	-0.098	-0.113	-0.095	-0.107
Soe_initial	-0.021	0.01					-0.014	0.02
	-0.018	-0.022					-0.017	-0.021
mlag	0	-0.001	-0.003	-0.004				
	-0.002	-0.002	-0.004	-0.004				
qual	0.558	0.495	0.589	0.506	0.298	0.26	0.4	0.347
	(0.106)***	(0.116)***	(0.113)***	(0.121)***	(0.122)**	(0.129)**	(0.114)***	(0.121)***
ethn	-0.01	0.045	0.032	0.105	0.105	0.118	0.03	0.091
	-0.067	-0.077	-0.068	-0.078	-0.069	-0.08	-0.066	-0.078
democ	-0.111	-0.137	-0.135	-0.124	-0.167	-0.184	-0.117	-0.151
	(0.042)***	(0.048)***	(0.042)***	(0.050)**	(0.042)***	(0.050)***	(0.041)***	(0.046)***
init_gdpcap		0		0		0		0
		0		0		0		0
d_africa		-0.531		-0.069		0.309		-0.54
		-0.461		-0.45		-0.421		-0.446
d_lac		-0.301		-0.408		0.247		-0.201
		-0.427		-0.436		-0.441		-0.416

adult_il		-0.026		-0.021		-0.021		-0.024
		(0.011)**		(0.011)*		(0.010)**		(0.010)**
trade_open		-0.003		-0.004		-0.003		-0.004
		-0.002		-0.003		-0.003		-0.003
isoegdp			-0.048	-0.04	-0.054	-0.049		
			(0.013)***	(0.015)***	(0.014)***	(0.016)***		
mcap_gdp					0.008	0.01	0.003	0.003
					(0.004)**	(0.005)**	-0.002	-0.002
Constant	0.355	0.96	1.014	2.456	2.209	3.771	0.462	0.743
	-1.273	-1.576	-1.146	-1.538	(1.151)*	(1.487)**	-1.249	-1.553
Number of coun_id	35	35	33	33	34	34	35	35

Standard errors in parentheses  
\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

**Table 6: Intensity/value model I**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Dependent variable: log privatization proceeds in constant USD (1996=100)</b>								
fis_defl	0.062	0.07	0.063	0.075	0.035	0.037	0.042	0.047
	-0.045	-0.047	-0.049	-0.05	-0.045	-0.046	-0.042	-0.043
infla_1	0	0	0	0	0	0	0	0
	(0.000)*	(0.000)*	0	(0.000)*	0	(0.000)*	(0.000)*	(0.000)*
gro_rat1	0.013	0.011	0.017	0.014	0.003	-0.002	0.002	-0.001
	-0.035	-0.036	-0.038	-0.039	-0.037	-0.037	-0.035	-0.035
aid_gni	-0.097	-0.089	-0.108	-0.102	-0.035	-0.035	-0.031	-0.033
	-0.063	-0.068	(0.065)*	-0.072	-0.032	-0.033	-0.031	-0.032
agr_gdp	-0.088	-0.089	-0.074	-0.09	-0.095	-0.106	-0.114	-0.128
	(0.041)**	(0.054)*	(0.040)*	-0.055	(0.037)***	(0.051)**	(0.037)***	(0.051)**
ineq	-0.002	0.001	0.001	0.001	-0.033	-0.058	-0.029	-0.037
	-0.044	-0.058	-0.046	-0.06	-0.046	-0.054	-0.044	-0.056
yrs_offc	-0.027	-0.032	-0.03	-0.04	-0.03	-0.039	-0.03	-0.035
	-0.032	-0.034	-0.034	-0.037	-0.034	-0.035	-0.032	-0.033
exec_r	-0.565	-0.665	-0.251	-0.378	0.256	0.251	-0.137	-0.183
	-0.485	-0.506	-0.558	-0.617	-0.511	-0.547	-0.456	-0.471
cohes_in	0.054	0.062	0.077	0.032	0.139	0.163	0.08	0.113
	-0.197	-0.206	-0.226	-0.236	-0.219	-0.23	-0.196	-0.205
soe_initial	-0.036	-0.028					-0.046	-0.047
	-0.047	-0.056					-0.046	-0.054
mlag	0.003	0.005	0.003	0.004				
	-0.004	-0.005	-0.01	-0.011				
qual	0.223	0.18	0.221	0.163	0.238	0.138	0.326	0.284
	-0.235	-0.255	-0.266	-0.28	-0.253	-0.269	-0.231	-0.25
ethn	-0.031	-0.016	-0.044	0.023	-0.036	-0.032	-0.05	-0.066
	-0.141	-0.166	-0.16	-0.188	-0.158	-0.177	-0.135	-0.154

democ	-0.207	-0.23	-0.203	-0.204	-0.257	-0.303	-0.26	-0.294
	(0.105)**	(0.121)*	(0.108)*	-0.128	(0.105)**	(0.121)**	(0.103)**	(0.119)**
init_gdpcap		0		0		0		0
		0		0		0		0
d_africa		-0.036		0.112		0.739		0.462
		-1.235		-1.289		-1.122		-1.167
d_lac		-0.155		-0.31		1.107		0.522
		-1.163		-1.34		-1.145		-1.101
adult_il		-0.006		-0.008		-0.007		-0.008
		-0.027		-0.028		-0.026		-0.026
trade_open		-0.007		-0.012		-0.012		-0.007
		-0.006		-0.008		(0.007)*		-0.006
isoegdp			-0.024	-0.022	-0.041	-0.046		
			-0.03	-0.034	-0.03	-0.032		
mcap_gdp					0.015	0.027	0.01	0.014
					-0.009	(0.011)**	(0.004)**	(0.005)***
Constant	8.618	9.527	8.007	9.787	9.589	12.349	9.89	11.665
	(3.038)***	(3.896)**	(2.883)***	(3.837)**	(2.796)***	(3.518)***	(2.958)***	(3.731)***
Number of coun_id	35	35	33	33	34	34	35	35

Standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Hausman test: Model 2: chi2 =8.78; (prob>chi2)=.84

Model 4: chi2=8.58; (prob>chi2)=.90

Model 6: chi2 =9.05; (prob>chi2)=.87

Model 8: chi2=10.02; (prob>chi2)=.77

**Table 7: Intensity/value model II**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>Dependent variable: Privatization proceeds as share of GDP</b>								
fis_defl	0	-0.011	-0.002	-0.008	-0.007	-0.028	0	-0.02
	-0.042	-0.044	-0.044	-0.047	-0.036	-0.039	-0.035	-0.038
infla_1	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
gro_rat1	0.008	0.006	0.005	-0.007	0.013	0.01	0.013	0.017
	-0.034	-0.034	-0.035	-0.036	-0.032	-0.032	-0.03	-0.031
aid_gni	0.061	0.032	0.073	0.029	0.037	0.01	0.037	0.017
	-0.051	-0.057	-0.049	-0.054	-0.025	-0.027	-0.025	-0.027
agr_gdp	-0.027	-0.041	-0.025	-0.061	-0.015	-0.042	-0.013	-0.027
	-0.032	-0.041	-0.027	(0.034)*	-0.019	(0.025)*	-0.022	-0.029
ineq	0.01	-0.012	-0.013	-0.059	-0.022	-0.078	0.001	-0.037
	-0.034	-0.045	-0.031	-0.038	-0.021	(0.028)***	-0.023	-0.031
yrs_offc	-0.01	-0.011	-0.019	-0.034	-0.013	-0.026	-0.002	-0.004
	-0.027	-0.029	-0.026	-0.027	-0.02	-0.021	-0.02	-0.022
exec_r	-0.134	-0.076	-0.041	0.188	-0.059	0.156	-0.079	-0.035

	-0.4	-0.424	-0.405	-0.436	-0.311	-0.339	-0.328	-0.353
cohes_in	0.042	0.082	0.02	0.034	0.029	0.131	0.039	0.156
	-0.192	-0.206	-0.211	-0.223	-0.173	-0.189	-0.159	-0.18
soe_initial	-0.003	-0.005					-0.003	-0.013
	-0.036	-0.044					-0.024	-0.03
mlag	0	0.003	-0.003	0.002				
	-0.004	-0.005	-0.008	-0.009				
qual	-0.11	-0.117	-0.107	-0.185	-0.142	-0.245	-0.154	-0.162
	-0.204	-0.219	-0.222	-0.226	-0.181	-0.186	-0.17	-0.183
ethn	0.14	0.108	0.212	0.247	0.205	0.194	0.134	0.082
	-0.12	-0.144	(0.126)*	(0.144)*	(0.103)**	(0.116)*	-0.098	-0.116
democ	-0.072	-0.084	-0.098	-0.06	-0.088	-0.104	-0.036	-0.083
	-0.085	-0.099	-0.082	-0.097	-0.062	-0.075	-0.064	-0.077
init_gdpcap		0		-0.001		0		0
		0		(0.000)**		(0.000)**		0
d_africa		0.764		1.629		1.688		1.091
		-0.977		(0.832)*		(0.589)***		-0.667
d_lac		0.913		1.114		1.551		1.375
		-0.93		-0.892		(0.633)**		(0.644)**
adult_il		-0.017		-0.017		-0.017		-0.019
		-0.021		-0.018		-0.013		-0.015
trade_open		-0.004		-0.011		-0.007		-0.004
		-0.005		(0.005)*		(0.004)*		-0.004
isoegdp			-0.049	-0.073	-0.052	-0.079		
			(0.023)**	(0.025)***	(0.018)***	(0.020)***		
mcap_gdp					0.003	0.011	0.005	0.011
					-0.006	-0.007	-0.003	(0.004)***
Constant	1.459	3.703	2.898	7.043	2.972	7.221	1.193	4.09
	-2.461	-3.097	-2.18	(2.661)***	(1.589)*	(1.997)***	-1.77	(2.244)*
Number of coun_id	35	35	33	33	34	34	35	35
Standard errors in parentheses								
* significant at 10%; ** significant at 5%; *** significant at 1%								

Hausman test: Model 2: chi2 =15.10; (prob>chi2)=.37

Model 4: chi2=17.28; (prob>chi2)=.30