Privatization, Regulation, and Economic Growth in Developing Countries: An Empirical Analysis

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Abstract

The primary objective of this article is to investigate the impact of privatization on economic growth in developing and transition economies. Previous studies that have attempted to measure this relationship have conflicting results, some indicating a positive impact of privatization on growth, while others indicate a negative relationship. Our study uses recent World Bank data on privatization for 117 countries over the time period 1988-2003. We explore the impact of privatization on growth by conducting two-stage least squares and ordinary least squares estimations in the context of three time frames. The second objective is to investigate the impact of competition and regulation on economic growth, and compare the relative importance of privatization and the regulatory environment for growth. Our preliminary results indicate that privatization is neutral with regard to economic growth, while a competitive regulatory environment has a positive impact on growth.

Key Words: Privatization, Ownership, Competition, Regulation, Growth, Developing Countries

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1. Introduction

The age-old question of the proper balance between the public and the private and its implication for economic performance was resolved in favour of the latter in the 1980s and 1990s. The phenomenon of privatization in the last thirty years underscored this shift in the political economy of nations, and as such has attracted the interest of researchers in many disciplines including political science, sociology, and law. In economics privatization has been analyzed from many perspectives including microeconomics, macroeconomics, and institutional economics. This paper investigates the macroeconomic facet of privatization with particular attention paid to the question of economic growth in developing countries. In so doing we hope to shed some light on the question whether the shift in favour of the private sector was warranted by the criterion of economic growth.

The bulk of the research on the link between privatization and economic performance focuses on the firm level efficiency reasons for privatization, and the relative performance of state-owned enterprises (SOEs) and privately owned firms. The economy-wide aspect of the problem has received a lesser amount of attention. For instance, Megginson and Netter (2001) present a comprehensive and rich survey of over 70 empirical studies of privatization, but have no section on the macro issues of privatization. Their references to macro-related questions in paragraph length subsections are sparse except for the section on capital market development, which has implications for macroeconomic performance. Some of the reasons for the lopsidedness of this research may include the following: the shift toward micro-foundations in the economic discipline, the inclination toward comparing SOEs and private enterprises, the political advantage of underlying firm level efficiency as the rationale for privatization (Letza, Smallman, and Sun, 2004), the stock markets' interest in privatized firms, and the fact that many of the macroeconomic aspects of privatization are of a long term nature and as such that empirical investigations have to be delayed until sufficient data is generated.

It is obvious, however, that strong connections exist between privatization and the macro economy. First, macroeconomic difficulties were key in propelling countries toward privatization (Yarrow, 1998). The stagflation of the 1970s, the general decline in macroeconomic performance of nations, and the growing government budget deficits contributed to the abandonment of the Keynesian consensus of the post-war period and to the search for alternative policies. The privatization phenomenon is akin to the nationalizations and Keynesian policies that were put in place to counter the Great Depression, even though the difficulties created by the stagflation of the 1970s were not nearly as great as the disaster of the Depression. (The current global financial and

economic crisis has created calls for the nationalization of commercial banks, while at the same time calling for the privatization of some public enterprises to reduce deficits, indicating that changes in property rights regime in response to crisis can go either way.) Second, it has been argued that privatization and other market-based policy reforms can hasten economic growth. Khan and Reinhart (1990), and Khan and Kumar (1997) estimate the coefficients of private investment and public investment with respect to GDP growth for developing countries, and conclude that the marginal productivity of private investment is greater than marginal productivity of public investment. Both studies have been used to support the key role assigned to the private sector and the market system in the development process by the International Monetary Fund (IMF) and the World Bank. Third, the very performance of privatized firms may depend critically on the business cycle (Martin and Parker, 1995), as well as the macro policy environment as often stated by both the IMF policy advisors and its critics (Stiglitz, 2002). Fourth, the success of privatization programs has to be judged ultimately by macroeconomic performance - the employment and living standards - it engenders.

Numerous studies have investigated the performance of privatized firms with regard to measures such as output, profitability, and capital investment spending. For instance, Megginson, Nash, and van Randenborgh (1994) for mostly OECD countries, and Boubakri and Cosset (1998) for developing countries, document significant post-privatization increases in output of privatized firms. These studies have many drawbacks including selection bias toward examining the healthiest of SOEs that were privatized. Their results therefore cannot be extrapolated to the macro economy level.

There are limited number of studies that investigate empirically the connection between privatization and economic growth in developing countries. Plane (1997), and

Barnett (2000) conclude that privatization has had a positive impact on economic growth. These results are contradicted by Cook and Uchida 2003, who found a robust negative effect of privatization on economic growth, and suggest that research should focus on the regulatory environment. Djankov, McLiesh, and Ramalho (2006) investigate the impact of competitive regulatory environment on growth and found a positive relationship.

The primary purpose of this paper is to reexamine the relationship between privatization and economic growth using data for 117 developing countries over the period 1988-2003. The secondary purpose is to investigate the impact of regulation on growth, and compare this impact to that of privatization. The remainder of the paper is organized as follows. The next section provides a brief review of the theoretical and empirical literature on privatization, the regulatory environment and economic growth. The third section presents the empirical model, methodology, and data. The fourth section presents the results of the empirical analysis, and the final section provides some concluding remarks.

2. Literature Review: Theories and Empirical Studies

The three pillars of Washington Consensus- fiscal austerity, privatization, and market liberalization- are aimed at creating a favourable business environment in which the private sector takes the lead in the process of economic development. The rationale for privatization include short term objectives such as raising revenues from the sale of SOEs or reducing the budget deficit; and long-term objectives such as technological advancement, increased productive efficiency, enhancing and or creating of the private sector. Privatization and other reforms are expected to lead to higher rates of economic growth. But, not all economists accept this line of thinking.

The Mainstream and the Skeptics: The channels through which privatization affect economic growth can be discussed using institutional economics, and microeconomic theories of property rights. From the long-term perspective, the case for privatization is perhaps best made by the new institutional economics. According to this theory, the most important economic rule (institution) is property rights (North, 1990). A development-compatible institutional framework requires a well-specified property rights structure whose features include exclusivity of rights to the choice of use of resources, exclusivity of rights to the services of resources, and the right to exchange the resource at mutually agreeable terms. North maintains that developing countries are characterized by inefficient institutional arrangements: inefficient property rights regimes and a productivity-inhibiting legal and regulatory environment. The result is high costs of transacting, lower volumes of exchange, and poor economic performance. It is argued that technological innovation and diffusion and capital accumulation require efficient property rights structure; and that its absence lead to the use of technologies that employ little fixed capital and a short-term focus on the part of entrepreneurs, leaving large firms in the domain of the public sector. Privatization is the key policy reforms that would change such unfavourable environment and generate a development-compatible institutional framework. North (1994) notes that privatization is no panacea and indicates the importance of other factors. Nevertheless, institutional economists and the international financial institutions, the IMF and the World Bank, have pushed for privatization in adjusting and reforming countries.

While institutional reforms such as privatization and deregulation are primarily aimed at changing the domestic political economy in favour of the private sector, they also have implications for international trade and foreign investment. As North puts it "International specialization and division of labour requires institutions and organizations to

safeguard property rights across international boundaries so that capital markets as well as other kinds of exchange can take place with credible commitments on the part of the players" (1990, p. 121). The changes wrought by privatization programs send strong psychological and legal signals to the capitalist class that the economy is moving towards a free enterprise system, and is locked in. In conjunction with deregulation, and other institutional and legal changes, privatization may reduce uncertainty and create a friendly environment for both domestic and foreign investors, and hence abet economic growth.

The microeconomic justification for private ownership and market allocation relies on a number of lines of reasoning. First, neoclassical theory suggests that communal ownership will lead to the 'tragedy of the commons'. Second, according to the dispersed knowledge theory, given the diffused nature of knowledge, decision making will be more efficient in the hands of private owners and their agents (Hayek 1949). Third, the residual claimant theory suggests that, private ownership creates the incentive to maximize profit by granting the right to claim the residual (surplus); a feature that is absent in the case of public ownership (Alchian and Demsetz, 1972). An associated argument is that the principal agent problem is less of a problem in privately owned firms than in SOEs (Jensen and Meckling, 1976).

If we remain within the set of economists who have convictions in neoclassical price theory and welfare economics, then within this spectrum those who argue for market socialism define the polar opposite case against privatization. Lange (1938), Holland (1972), and Roemer (1994) maintain that public ownership can be as efficient as private ownership, but also superior on equity grounds. But, the cause for market socialism has been lost, and the relevant dissenting views are those who fall between the two polar cases.

A number of writers within this subset emphasize the regulatory environment required to make privatization work, or even question the significance of ownership forms for efficiency. Vickers and Yarrow (1988) underscore the importance of the regulatory environment for the performance of privatized enterprises. In an skeptical analysis of privatization, Willner (2003) presents four arguments to make his case. Firstly, he shows that the comparison of costs and benefits of private and public ownership does not always favour the former. Secondly, unlike Megginson and Netter (2001) his survey of empirical studies shows no robust relationship between ownership and efficiency. Thirdly, while competition is generally beneficial, he contends that privatization may not lead to efficiency even in a competitive environment in cases where competition involves higher social costs of duplication or affects quality adversely. Lastly, he notes that results from experimental economics indicate a significant proportion of people are motivated by reciprocity than self-interest suggesting the desirability of a variety of ownership structures.

Rowthorn and Chang (1993) critique the robustness of the above mentioned micro theories in support of privatization, and instead emphasize the importance of political economy. They argue that states that can insulate themselves from pressures emanating from private or public enterprises will be able to create a competitive environment in which both forms of ownership can generate efficient outcomes. Public enterprises become efficient if the state imposes a hard budget constraint, and it also allows other public enterprises, domestic private firms, or foreign firms to compete. The conclusion of the skeptics is that the traditional motives for public ownership- externalities, natural monopoly, and lack of private venture capital- should not be easily dismissed.

A closely related issue is the impact of regulation on growth. The meaning of regulation overlaps with the concepts of institutions and governance. It can be broad as to cover all aspects of social life. Here we focus on the economic aspect of regulation, i.e., rules that are meant to produce efficient economic outcomes. For rules to be so they must foster credibility, predictability, and legitimacy and fairness. These rules may pertain to issues such as entry, industrial relations, set of contracts available to entrepreneurs, industry boundaries, and natural monopoly. In general we follow North (1990) in defining economic institutions, but we divide them into those dealing with property rights (ownership structure), and those dealing with other economic rules. Privatization is a proxy for the former, and regulation is a proxy for the latter.1

As noted earlier the importance of regulation in the context of privatization has been highlighted by Vickers and Yarrow (1988). Similarly, Yarrow (1986), and Kay and Thomson (1986) while acknowledging the advantage that private firms have in monitoring managers, nevertheless contend that the regulatory environment shapes the incentive structure managers face. They seem to emphasize market structure more than ownership. A similar argument is made by Cook and Kirkpatrick (1988) in their studies of privatization in less developed countries.

This short review shows that the theoretical analyses regarding ownership and efficiency (growth) are at times conflicting. We can summarize the main statements as follows. First, privatization leads to efficiency. Second, privatization leads to efficiency only under competitive conditions. Third, the political economy of intervention, i.e., the degree to which the state is autonomous determines efficiency regardless of the

1 For definitional problems regarding regulation see Minogue (2005), and for measurement problems see Kaufmann et al (2004)

ownership structure. Given the conflicting theoretical currents one can only hope that empirical investigation illuminate the issue.

Empirical Studies: Empirical assessment of the performance of privatization is complicated by the requirements for performance measures, appropriate statistical methods and the counterfactual. We must also note that the effect of privatization on growth is of a long-term nature and investigation has to wait until sufficient time has elapsed and data is collected. The paucity of research in this area reflects these constraints.

Fowler and Richards (1995) examine the impact privatization on growth indirectly by examining the impact of the public enterprise sector on growth for OECD countries. They show that the public enterprise sector has no negative impact on economic growth and may actually has a positive influence, and thus caution against exuberance for privatization. A number of recent studies have attempted to measure the impact of privatization on economic growth and other macro variables in developing countries. Plane (1997) used Probit and Tobit models and analyzed the determinants of privatization, and its effect on the growth rate of GDP. He found a positive relationship between privatization and economic growth for thirty-five developing countries for the period of 1988-92. His analysis shows that privatizations in infrastructure and manufacturing have significant impact on economic growth, while privatization in services has insignificant impact. Cook and Uchida (2003) used extreme bounds analysis and examined the relation between privatization and growth for 63 developing economies for the period of 1988-97. They found a robust negative relationship between privatization and economic growth, contradicting the findings of Plane (1997). Using data on 18 developing and transition economies, Barnett (2000) found that privatization is associated with improvements in GDP growth, declines in unemployment rates, and

increase in tax revenue.2 Clearly, these studies show conflicting and inconclusive results on the impact of privatization on macroeconomic performance.

Among these studies the one by Cook and Uchida (2003) focuses exclusively on the impact of privatization and growth. While they find that privatization has a negative impact on economic growth, they also suggest that effective competition and its regulation need to accompany privatization to make it conducive for economic growth. Their study however does not include a measure of competition and regulation. On the other hand Djankov et al (2006), and Jalilian et al (2007) investigate the relationship between regulation and growth, but do not include privatization in their analysis. Rodrik et al (2004) use a comprehensive measure of institutions to investigate its impact on economic development, but they do not differentiate between different types of institutions as to focus on ownership structure. Our study adds to the literature in a number of ways. First, we include both privatization and measures of regulation to compare their relative importance for growth. Second, our data set on privatization is relatively recent (1988-2003) and includes a much larger set of countries (117). The large data set allows us to examine the differential impact of privatization on growth for six developing regions if any. It also allows us to delineate three timeframes- short, medium, and long terms- and investigate the impact of different time horizons.

3. Empirical Model, Methodology and Data

Generally, the growth rate of GDP can be specified as a linear function of a set of variables usually included in the regression, a subset of basic and readily quantifiable

2 For the impact of privatization on other macroeconomic variables see the following: on government budget deficits Pinheiro and Schneider (1995), and Davis et al (2000), and on investment Abdou and Moshiri (2009).

macroeconomic indicators identified by past studies as potentially important for growth, augmented with institutional variables of interest such as privatization and business regulation, and a random error term. In Cook and Uchida (2003) the regressand is GDP per capita, and the explanatory variables include the 'Barro-regressors', policy variables, and a measure of privatization. The 'Barro-regressors' include initial GDP per capita, initial life expectancy at birth, average population growth rate, the ratio of gross domestic investment to GDP, and the rate of secondary school enrolment; and the policy variables include the ratio of trade to GDP, the ratio of FDI to GDP, the ratio of external debt to GDP, inflation, and three regional dummies. In Plane (1997) the regressand is GDP growth rate, and the explanatory variables are investment to GDP ratio, inflation, real exchange rate, terms of trade, and varieties of privatization measures. Clearly, he does not include all the regressors of Barro (1991).

In this paper we test the relationship between growth and the institutional variables of privatization and business regulation using the following linear equation:

$$GY = \alpha + \delta X + \beta I + \varepsilon$$

where GY is the average annual growth rate of real GDP; X is a set of control variables including the ratio of domestic investment to GDP, the ratio of external debt to GDP, inflation, the ratio of FDI to GDP, and terms of trade; I is a set of institutional variables including privatization and business regulation (competition); and ε is a random error term. (See appendix for more definitions of variables).

In addition, our regression analysis takes into account regional differences, and specifies three timeframes. Adhering to the World Bank classification of regions, we identify six regions: East Asia and Pacific, Europe and Central Asia or Transition Economies, Latin America and the Caribbean, Middle East and North Africa, South Asia,

and Sub-Saharan Africa. Regional differences are captured by intercept and interactive (slope) dummies in the regressions. Figure 1 shows scatter plots with fitted lines between GDP growth rates and privatization in different regions. In all regions except the Middle East and North Africa there is a positive correlation, but our empirical analysis below will shed more light on this relationship.

The three timeframes for the regression equations are: the short run meaning a year; the medium term defined as 4-year period, and the long-run which includes the entire sixteen period for which data is available**.** The short-term regression equations use annual data and fixed effect method, with privatization measured as a ratio of the contemporaneous revenue from privatization to GDP of the corresponding year (PRVRATIO). The medium term equations attempt to reduce the year-to-year fluctuations by using 4-year average data. Again we use the fixed effect method. Adopting the method of Cook and Uchida (2003), privatization is measured as the value of the cumulative revenue over four years divided by the average GDP for the corresponding period (PRVCUMRATIO). The long-term equations capture the behaviour of growth over the entire available period and are estimated by cross-section regression. Again privatization is measured as the value of the cumulative revenue over all years divided by the average GDP for the entire relevant period (PRVCUMRATIO). The long-run analysis is perhaps the most appropriate for examining the impact of institutional changes such as privatization and regulation on economic growth.

Furthermore, it could be suggested that countries with consistent privatization policy programs can signal and create a better business environment than countries with a stop-and-go programs. In other words, the policy has to be consistent and credible before having a meaningful impact. We have taken this factor into account by defining

consistency as having privatization revenues in each of the interval periods specified by the medium-term analysis. We have included a vector of consistency dummy (CONSISTDUM) that is set to 1 if a country has privatization revenue in each of the medium-term periods, and 0 otherwise.

The measurement of regulation is rather subjective as compared to the measure of privatization. Djankov et al (2006) use measures from the World Bank's Doing Business database with a relative focus on entry conditions, while Jalilian et al (2007) use a more comprehensive measure developed by Kauffmann et al (2004). The latter developed a composite index of governance based on close to 200 measures by 25 organizations including the World Economic Forum, and the Economist Intelligence Unit. They divided these measures into six clusters or aspects of governance viz, voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Jalilian et al (2007) choose two of these clusters, government effectiveness and regulatory quality, to measure regulation. Their rationale is that the two represent the process of regulation, and the type of regulation relevant for businesses. Conceptually we agree with their suggestions, but we use a simpler measure of these aspects of regulation.

First, we measure the quality aspect of regulation using the data on conditions of local competition gathered by the World Economic Forum's Global Competitiveness Report. This measure, referred to as 'Intensity of Local Competition', ranks countries using Executive Opinion Survey, where the answers are scored on a seven point scale as follows**:** competition in the local market is (1 = limited in most industries and price cutting is rare, 7 = intense in most industries as market leadership changes over time). Second, we measure the process aspect of regulation using another indicator collected by

the same source to measure the degree to which the state is insulated from enterprise pressures. This measure known as 'Transparency of Government Policy Making' is based on response to the statement: 'firms in your country are usually informed clearly and transparently by the government on changes in policies and regulations affecting your industry (1 = never informed, 7 = always fully and clearly informed).

Data on privatization revenue were obtained from the World Bank Privatization Database at rru.worldbank.org. Data on the 'intensity of local competition', and 'transparency of government policy making' are World Development Report 2005. All the other variables and country classification on the basis of regions are from World Development Indicators 2005.

To avoid biased estimation results due to the existence of endogenous variables, the short-term and medium-term regression equations are estimated by two-stage least square (2SLS) method. The lags of the dependent and independent variables are used as instrumental variables. The cross section regressions are estimated by the ordinary least squares (OLS), but heteroskedasticity is removed using the White method.

4. The Empirical Results

The results of the regression analysis are tabulated in Table 1 and Table 2. The report in Table 1 is based on annual data for equations 1 and 2; and four year average data for equations 3 and 4. Both the LS and the 2SLS regression results are reported for comparisons. The results show that domestic investment, external debt, and inflation tend to have the expected signs, and at varying degrees of traditionally accepted significance levels. The variable of special interest in this table is privatization. In none of the equations, does privatization has a significant impact on growth. Similarly none of the

regional slope dummies are significant. It appears that, in the short term and medium term, privatization is neutral with regard to growth in developing countries.

Table 2 presents the results of the cross-section regression analysis, which captures the impact of institutional changes on long-run growth in developing countries for the period 1988-2003. As mentioned earlier, the long run analysis is perhaps the most appropriate approach to studying institutional changes and their impact on the economy. Before examining the impact of privatization and regulation on growth, we consider as a benchmark the empirical results for the model without these two variables of interest. Colum (1) shows that the results are consistent with growth models in general. Domestic investment and foreign direct investment have the expected positive signs and are statistically significant. Similarly, external debt and inflation have the expected negative signs and are statistically significant. The negative sign on LOG(PCY1988) indicates that there is conditional convergence among developing countries.

Now consider the role played by the institutional variables of interest. The privatization coefficient is negative for transition economies and positive for the rest of the regions, but all are statistically insignificant. In column (2) we add the measure for consistency in privatization. The results with regard to domestic investment, external debt, and inflation remain the same; privatization becomes less important, while consistency is significant. It seems that the signals given by consistency, instead of privatization as such are more important. In column (3) we add a measure of competition and the regression improves by 16 percentage points (see adjusted R^2). Competition is positive and significant and its presence in the model makes the effect of domestic investment stronger (0.08 to 0.17), debt slightly weaker, and FDI significant. Privatization becomes negative for some regions, but remains statistically insignificant.

In column (4) we used another measure of regulation, transparency, which measures the degree to which firms are informed about changes in regulation. The results are very similar to the results in column (3) where a measure of competition was used. We may conclude therefore that the results of these equations indicate that consistency in privatization policy and the regulatory environment are more important than ownership structure.

5. Concluding Remarks

This paper has examined the extent to which privatization and regulation affect economic growth in developing countries. The framework used for investigating the issue took into account other determinants of growth including investment and other macroeconomic variables. Utilizing a large sample of transition economies and developing countries over the period 1988-2003, a variety of empirical tests was undertaken. The main results can be summarized as follows.

Unlike Plane (1997) who finds a positive and significant relation between privatization and growth, and Cook and Uchida (2003) who found a negative and significant relation, our findings indicate that privatization per se has no statistically significant impact on growth. While we have not conducted an empirical test on the relationship between privatization and inequality, we suspect that privatization has contributed to the rise in inequality observed in the last two decades (IMF 2007). Therefore, it appears that privatization cannot be supported on either the criterion of efficiency or equity.

Our proposition that consistency of privatization programs may create an attractive business environment and propel growth is supported by the empirical results. However, it is not clear why the degree of privatization as such has no significant impact

on growth, and the contrast between the two results requires an explanation. Our conjecture is that the consistency dummy measures credibility, predictability, and stability- features that are key to the regulatory environment- rather than ownership structure.

Perhaps the most striking result as shown in columns (3) and (4) of Table 2 is the significant impact of the competition/regulation measures on growth. This result addresses the question raised by Cook and Uchida (2003) on the importance of competition and its regulation in the context of privatization. But, our preliminary results go further and indicate that privatization may not matter at all for growth. The results give a tentative support for the contentions of Rowthorn and Chang (1993) that forms of ownership are neutral with regard to efficiency. In other words, a variety of ownership structures are compatible with growth, and the appropriate mix of private, collective, and public ownership depends on criteria broader than efficiency and growth alone.3

We can tentatively glean two implications, one for theory and another for policy, from our analysis. Concerning theory, the results affirm the emphasis that the neoclassical framework puts on investment for economic growth in developing countries. The results do not support the arguments of the new institutional economics and microeconomic theory in favour of private property regime. The results bolster the claim that the regulatory environment is important for economic performance. Therefore, the key policy implication is that policy makers focus more on the regulatory environment than on facilitating the dominance private ownership structure.

3 Our cross sectional analysis does not take into account the performance of particular countries. In particular it could be argued that China's spectacular growth performance correlates with its privatization program. As noted earlier one of the reasons for privatization is the creation of the private sector. But, this can be achieved by what is known as 'privatization from below' Naughton (1994). This can be defined broadly as a policy that allows economic space for domestic private or collective firms as well as FDI without much actual privatization of existing SOEs. The Chinese route is more of 'privatization from below' than selling of the SOEs.

There are a number of improvements we plan for the future to gain additional insights. First, we would like to add more control variables that are usually included as 'Barro regressors'. Second, a larger sample that includes industrialized countries can help determine how sensitive our results are to a change in sample size. Lastly, inclusion of a more comprehensive measure of regulation, political governance, and corporate governance is required to have a better understanding of the role of the regulatory environment on growth.

References

Abdou, A. and S. Moshiri (2009) Privatization and capital formation in developing countries: an empirical investigation, *International Review of Applied Economics*, Volume 23, No. 5, pp. 557-575.

Alchian, A. and H. Demsetz (1972) Production, information costs and economic organization. *American Economic Review* 62, 777–95.

Barnett, S. (2000) Evidence on the fiscal and macroeconomic impact of privatization, *IMF Working Paper*, July, Washington D.C.: IMF.

Barro, R. (1991) Economic growth in a cross-section of countries, *Quarterly Journal of Economics*, 106(2), pp. 407-43.

Boubakri, N. and J. Cosset (1998) The financial and operating performance of newly privatized firms: evidence from developing countries, *Journal of Finance*, 53, pp. 1081-110.

Cook, P. and C. Kirkpatrick (1988), Privatization in less developed countries: a survey of the issues, in Cook and Kirkpatrick eds., *Privatization in Less developed Countries*, New York: St. Martin's Press.

Cook, P. and Y. Uchida (2003) Privatization and economic growth in developing Countries, *Journal of Development Studies*, 39(6), pp. 121-154.

Davis, J., Ossowski, R., Richardson, T., and Barnett, S. (2000), Fiscal and macroeconomic impact of privatisation, *Occasional Paper*, No.194, Washington D.C.: IMF.

Djankov, S., C. McLiesh, R. M. Ramalho (2006) Regulation and growth, *Economics Letters*, 92, pp. 395-401.

Fowler, P. and D. Richards (1995) Test evidence for the OECD countries, 1965-85: the relationship between the size of the public enterprise sector and economic growth, International Journal of Social Economics, 22(3), pp. 11-23.

Hayek, F. (1949) Economics and knowledge, in F. Hayek, *Individualism and Economic Order*, London: Routledge & Kegan Paul.

Holland, S. (1972) *The State as Entrepreneur: New Dimension for Public Enterprise*, London: Weidenfeld & Nicolson.

International Monetary Fund (2007) *World Economic Outlook: Globalization and Inequality*, Washington, D.C.

Jalilian, H., C. Kirkpatrick, and D. Parker (2007) The Impact of Regulation on Economic Growth in Developing Countries: A Cross-Country Analysis, *World Development*, Vol. 35, No. 1, pp. 87–103

Jensen, M. and H. Meckling (1976) Theory of the firm: managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics* 3, 305–60.

Kaufmann, D., A. Kraay, and P. Zoido-Lobaton (2002) Governance matters II: updated indicators for 2000/01, World Bank Working Paper No. 277, Washington D.C. World Bank.

Kay, J. and D. Thomson (1986) Privatization: a policy in search of a rationale, *Economic Journal*, 96, 381

Khan, M. and M. Kumar (1997) Public and private investment and the growth process in developing countries, *Oxford Bulletin of Economics and Statistics*, 59 (1), pp. 69-88.

Khan, M., and C. Reinhart (1990) Private investment and economic growth in developing countries, *World Development*, 8, pp. 19-27.

Lange, O. (1938) *On the Economic Theory of Socialism*, Minneapolis, Minnesota: Minnesota University Press.

Letza, S., C. Smallman, and X. Sun, (2004) Reframing privatization: deconstructing the myth of efficiency, *Policy Sciences*, 37(2), pp. 159-83.

Levine, R. (1997) Financial development and economic growth: views and agenda, *Journal of Economic Literature*, 35, pp. 688-726.

Martin, S. and D. Parker (1995) Privatization and economic performance throughout the UK business cycle, *Managerial and Decision Economics* 16(3): pp. 225-237.

Megginson, W., R. Nash, and M. van Randenborgh (1994) The financial and operating performance of newly privatized firms: an international empirical analysis, *Journal of Finance*, 49 (2), pp. 403-52.

Megginson, W. and Netter, J. (2001) From state to market: a survey of empirical studies on privatisation, *Journal of Economic Literature*, 39(2), pp. 321-389.

Minogue, M. (2005) Apples and oranges: problems in the analysis of comparative regulatory governance, Working Paper no. 94, Centre for Regulation and Competition, IDPM, University of Manchester.

Naughton, B. (1994) Chinese institutional innovation and privatization from below, *American Economic Review*, Vol. 84, No. 2, Papers and Proceedings, pp. 266-270.

North, D. (1990) *Institutions, Institutional Change, and Economic Performance* (New York: Cambridge University Press).

North, D. (1994) Economic performance through time, *American Economic Review*, 84(3), pp. 359-368.

Pinheiro, A. and B. Schneider (1995) Fiscal impact of privatization in Latin America, *Journal of Development Studies*, 31(5), 751-85.

Plane, P. (1997) Privatisation and economic growth: an empirical investigation from a sample of developing market economies, *Applied Economics*, .29(2), pp. 161-178.

Rodrik, D., A. Suramanian, and F. Trebbi (2004) Institutions rule: the primacy of institutions over geograpghy and integration in economic development, *Journal of Economic Growth*, 9, 131-165.

Roemer, J.A. (1994) *A Future for Socialism*. Cambridge, MA: Harvard University Press.

Rowthorn, B. and A. Chang (1993) Public ownership and the theory of the state, in *The Political Economy of Privatization* Clarke, T. and C. Pitelis eds. (London: Routledge).

Stiglitz, J. (2002) *Globalization and its Discontents* (New York: W.W. Norton and Company).

Vickers, J. and Yarrow, G. 1988. *Privatization: An Economic Analysis* (*C*ambridge, MA: MIT Press)

Yarrow, G (1986) Privatization in theory and practice, *Economic Policy*, Vol. 2, April 1986.

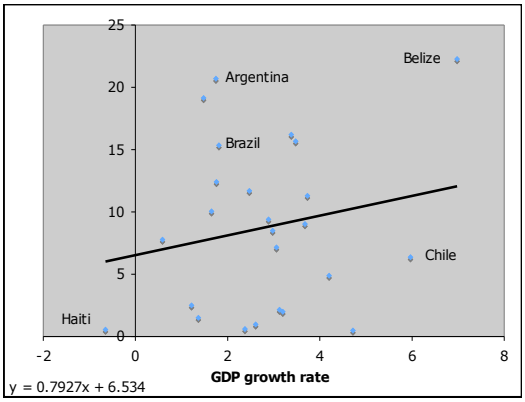
Yarrow, G. (1998) A theory of privatization, or why bureaucrats are still in business, *World Development*, 27(1), pp. 157-168.

Willner, J. (2003) Privatization: a sceptical analysis, in D. Parker and D. Saal, *International Handbook on Privatization*, Cheltenham: Edward Elgar

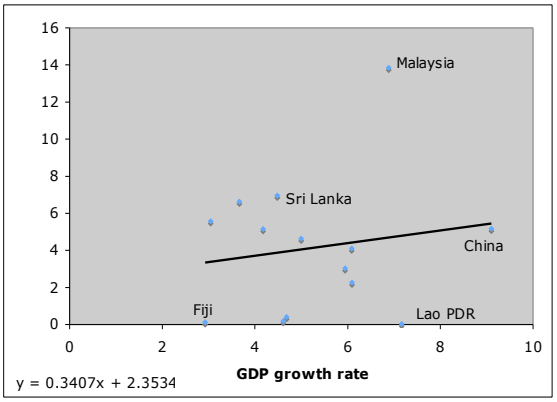
World Bank (2005a). *World Development Report 2005: Better Investment Climate for Everyone* (New York: World Bank and Oxford University Press).

World Bank (2005b) *World Development Indicators.* Washington, D.C.

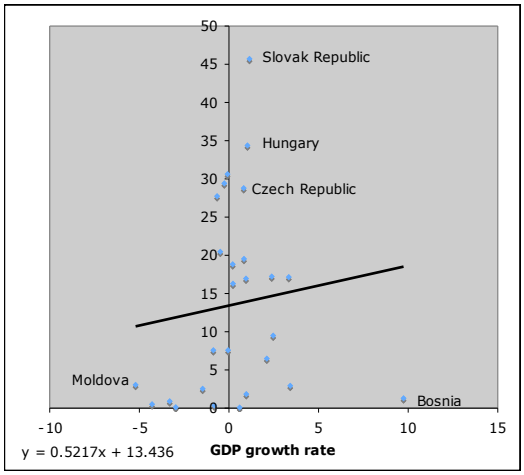
Figure 1 – Growth and Privatization in Different Regions



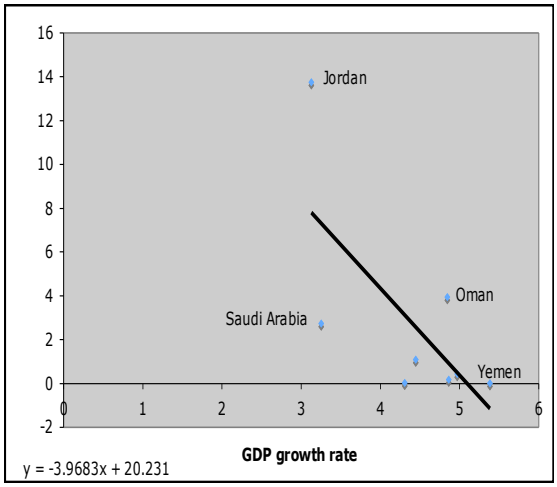
Latin America



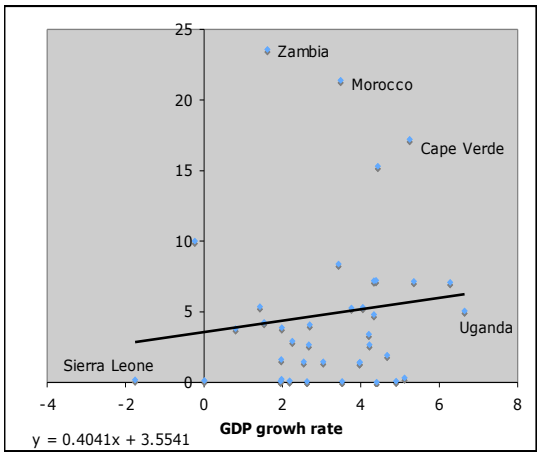
East Asia



Transition Economies



Middle East and North Africa



Sub- Saharan Africa

Table 1 The growth regression results: short run and medium run (1988-2003)

	(1)	(2)	(3)	(4)
C	-2.89	6.15	-2.88	-3.27
	(2.03)	(2.67)	(1.41)	(2.52)
DI	0.37*	-0.08	0.17*	0.14**
	(0.09)	(0.09)	(0.04)	(0.06)
DBTY	-0.16***	-0.11	-0.04	-0.23***
	(0.10)	(0.15)	(0.06)	(0.13)
INF	-0.002**	0.00	-0.0008**	-0.00
	(0.0006)	(0.00)	(0.0004)	(0.00)
TT	…	0.00	0.025**	0.04**
		(0.01)	(0.009)	(0.02)
FDI	-0.08	0.13	-0.03	0.16
	(0.11)	(0.30)	(0.08)	(0.17)
PRVRATIO	4.49	0.94	…	…
	(30.8)	(5.13)		
PRVCUMRATIO	…	….	0.12	1.43
			(0.77)	(1.48)
Regions:				
TRANS	0.11	-0.36	0.17	-0.33
	(0.24)	(0.48)	(0.19)	(0.49)
SSAF	0.23	-0.03	0.08	0.09
	(0.28)	(0.41)	(0.10)	(0.16)
MENA	1.08	-0.67	0.16	-0.14
	(2.55)	(0.66)	(0.23)	(0.31)
LA	0.02	0.10	0.05	0.27
	(0.22)	(0.39)	(0.11)	(0.22)
EASTA	0.69	-0.06	0.09	0.89
	(3.03)	(0.70)	(0.26)	(0.58)
SA	4.49	0.94	0.124	1.43
	(30.8)	(5.13)	(0.77)	(1.48)
Adjusted R^2	0.29	0.12	0.25	0.17
SEE	3.54	3.66	2.62	2.62
Observations	229	326	284	212

Notes: The dependent variable is real GDP growth. The first two columns are based on annual data, and the last two columns are based on four-year average data. Figures in parentheses are standard errors. Asterisks indicate significance at the 1% (*), 5% (**), and 10% (***) levels. The estimation methods are least squares in columns 1 and 2, and 2SLS in columns 3 and 4.

Table 2- The growth regression results: the long run (1988-2003)

	(1)	(2)	(3)	(4)
DI	0.09**	0.08**	0.17*	0.16*
	(0.04)	(0.04)	(0.04)	(0.04)
DBTY	-0.13**	-0.14**	-0.12	-0.14**
	(0.07)	(0.07)	(0.09)	(0.08)
INF	-0.001*	-0.001*	0.001*	-0.001*
	(0.000)	(0.000)	(0.000)	(0.000)
TT	0.014	0.014	0.02	0.017
	(0.013)	(0.012)	(0.013)	(0.014)
FDI	0.15	0.15	0.36*	0.34*
	(0.13)	(0.11)	(0.10)	((0.10)
LOG(PCY1988)	-0.28**	-0.29**	-0.34**	-0.26**
	(0.19)	(0.18)	(0.18)	(0.18)
COMPET	…	…	0.62**	
			(0.31)	
TRANSPARENT	…	…	…	0.67*
				(0.31)
CONSISTDUM	…	1.17*	0.42	0.26
		(0.41)	(0.37)	(0.39)
PRVCUMRATIO				
TRANS	-0.11	-.07	-0.27	-0.05
	(0.10)	(0.7)	(0.12)	(0.06)
SSAF	0.01	0.001	-0.03	-0.04
	(0.05)	(0.03)	(0.06)	(0.06)
MENA	0.007	0.02	-0.01	0.01
	(0.32)	(0.02)	(0.05)	(0.04)
LA	0.06	0.03	0.04	0.06
	(0.06)	(0.02)	(0.06)	(0.06)
EASTA	0.07	0.08	-0.01	-0.05
	(0.78)	(0.04)	(0.1)	(0.10)
SA	0.07	-0.08	0.02	-0.03
	(0.18)	(0.15)	(0.18)	(0.18)
Adjusted R^2	0.45	0.48	0.64	0.66
SEE	1.41	1.36	1.12	1.10
No. of observations	67	67	67	67

Notes: The dependent variable is the average real GDP growth over the period. The estimation method is OLS. Figures in parentheses are standard errors and are based on White Heteroskedasticity-consistent covariance matrix. Intercept dummies for regions are included. Asterisks indicate significance at the 1% (*), 5% (**), and 10% (***) levels.

Appendix: Definitions of Notations

C	Constant
DI	Domestic capital formation as a percentage of GDP
DBTY	External debt as a percentage of GDP
INF	Rate of inflation
TT	Terms of trade
FDI	Foreign direct investment as a percentage of GDP
PRVRATIO	Contemporaneous privatization revenue as a percent of GDP
PRVCUMRATIO	Cumulative privatization as a percentage of the relevant period average GDP
CONSISTDUM	Dummy for how consistent a country's privatization program is.
COMPET	A measure of the degree of local competition as perceived by survey respondents.
TRANPARENT	A measure of the transparency of government regulation as perceived by survey respondents.
TRANS	Transition economies.
SSAF	Sub-Saharan African Countries
MENA	Middle East and North Africa
LA	Latin America and the Caribbean countries
EASTA	East Asia countries
SA	South Asian countries