

Effects of Privatization and Ownership in Transition Economies

Saul Estrin
Jan Hanousek
Evžen Křocenda
Jan Svejnar

The World Bank
Development Economics Department
Research Support Unit
January 2009



Abstract

The paper evaluates the effects of privatization in the post-communist economies and China. In post-communist economies privatization to foreign owners results in a rapid improvement in performance of firms, while performance effects of privatization to domestic owners are less impressive and vary across regions, coinciding with differences in policies and institutional development. In China relatively more estimates suggest that privatization to domestic owners improves the level of performance. Concentrated private ownership has a stronger positive effect on performance than dispersed ownership in the post-communist economies, but foreign joint ventures rather than wholly owned foreign firms have a positive effect in China. Worker or collective ownership does not have a negative effect. In the post-communist economies new firms are equally or more efficient than firms privatized to domestic owners, and

foreign start-ups are more efficient than domestic ones. Privatization is not associated with lower employment. When accompanied by complementary reforms, privatization has a positive effect on economic growth. Three factors appear to drive the more positive effect of privatization to foreign than domestic owners. Domestic managers have more limited skills and access to world markets, domestically privatized firms have been more subject to tunneling and in some countries new large shareholders artificially decreased performance. The important policy implication is that privatization per se does not guarantee improved performance, at least not in the short- to medium-run. Type of private ownership, corporate governance, access to know-how and markets, and the legal and institutional system matter for firm performance.

This paper—a product of the Development Economics Department, Research Support Unit (DECERS)—is part of a larger effort by the World Bank's Research Committee, in consultation with Regions and Networks, to commission surveys of recent policy research and diagnostic analyses of the current state-of-the-art in priority areas for developing countries. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. For information, contact jdethier@worldbank.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

Effects of Privatization and Ownership in Transition Economies

Saul Estrin*

Jan Hanousek**

Evžen Kočenda**

Jan Svejnar***

JEL Codes: D2, L2, O1, P5

Keywords: privatization, ownership, firm performance, economic growth, transition from plan to market, economic development, Eastern Europe

* London School of Economics, UK, CEPR and IZA

** CERGE-EI, CEPR, WDI

*** University of Michigan, CERGE-EI, CEPR, IZA

The authors are thankful for helpful comments to Olivier Blanchard, Tito Boeri, Bernardo Bortolotti, Roman Frydman, Irena Grosfeld, Sergei Guriev, Derek Jones, János Kornai, Tomek Mickiewicz, Tom Rawski, and Andrei Shleifer, and participants at numerous conferences and seminars. We would like to thank Lenka Drnáková, Natalia Khorunzhina, Brian McCauley, and Vilém Semerák for research assistance and to Faith Vlcek for valuable secretarial assistance. While preparing this paper, Svejnar benefited from support from the World Bank and NSF grant SES 0111783, while Kočenda and Hanousek benefited from GACR Grant No.402/06/1293 and FP-6 Grant No. 2005-028647. The usual disclaimer applies.

1. Introduction

This paper is motivated by the ongoing debate among economists and policy makers about the efficiency and other economic effects of privatization of state-owned enterprises (SOEs). Our goal is to evaluate what we have learned to date about the effects of privatization from the experiences during the last 15-20 years in the post-communist (transition) economies and, where relevant, China.

The transition economies – economies in Central and Eastern Europe (CEE) and in the Commonwealth of Independent States (CIS) that replaced most of the former Soviet Union -- provide a useful laboratory, having experienced major changes in the values of many relevant variables as they changed their economic system. Unlike most other developing countries and until recently also China, the transition economies for instance did not merely privatize a number of key state-owned firms or strive to improve the functioning of their legal and institutional framework. As may be seen from Table 1, they carried out a major transformation that made the share of private sector in GDP increase from extremely low levels to between 60% and 90% (see EBRD, 2007) and they instituted from scratch a market-oriented legal and institutional system. The transition economies therefore share with many other developing countries numerous characteristics associated with “weak” institutions, such as poorly conceived and/or ineffectively enforced property rights and insufficiently developed capital markets (see Daron Acemoglu, Simon Johnson and James Robinson, 2001), but they have carried much larger privatization programs than have been observed in other developing countries and until very recently also in China. One can hence obtain valuable insights about the impact of privatization by focusing on the large literature dealing with the transition. It is appropriate to undertake a study of this type now because it has been nearly twenty years since the start of transition so work has emerged based on datasets of sufficient size, length and quality to allow the use of more sophisticated methods and to address more robustly issues of causality.

There has already been one major attempt to survey this literature, by Simeon Djankov and Peter Murrell (henceforth D-M) in 2002. D-M applied a meta-analysis to the findings from a large number of diverse early studies of the transition economies (but not China), combining – controversially - various indicators of performance into one

composite measure of restructuring. The early literature focused on the impact on company performance of different types of mainly domestic owners – insiders, outsiders, investment funds – and was based largely on country-specific survey datasets that were frequently quite small and not necessarily representative. It did not examine in a major way the effects of foreign direct investment (FDI) as this remained relatively low until the mid-1990s in CEE (except for Hungary and the Czech Republic) and until the new millennium in the CIS (see Klaus Meyer, 1998).

D-M concluded that privatization to outside owners resulted in 50 percent more restructuring than privatization to insiders (current managers or workers). Privatization to workers had no effect in CEE and a negative effect in the CIS. Investment funds, foreign ownership and other block-holders were found to produce more than ten times as much restructuring as diffuse individual ownership. Hardening of budgets constraints (i.e. curtailing firms' access to formal or informal state subsidies) was also found to have a positive effect on restructuring. Among other factors, import competition had a positive effect on performance in CEE, but a negative effect in CIS. Overall, D-M noted that the impact of privatization on company performance was typically positive and statistically significant in CEE, but statistically insignificant in CIS. They suggested that this could be explained by the more widespread occurrence of insider ownership after privatization and a weaker institutional environment leading to less effective governance by outside owners in the CIS countries.¹ Finally, D-M also pointed out that about one-half of the studies they surveyed did not take into account the endogeneity and selection issues associated with changing ownership and firm performance, and they urged future research to tackle this issue.²

The present study highlights several significant shifts of emphasis in the literature in recent years. Firstly as ownership structures have evolved, research interest has shifted

¹ This was also argued in a short survey by Sergei Guriev and William Megginson (2006) which related the mixed results on the impact of privatization in transition economies to the slow progress in microeconomic and legal reform, especially in CIS countries.

² D-M's arguments were developed in Megginson (2005). He concluded that "mass" privatization often led to disappointing outcomes, perhaps because it was frequently associated with insider ownership. Indeed, despite their massive privatization programs, because of their relatively low levels of development and the widespread use of "voucher privatization", transition economies only generated 5% of the total global privatization proceeds between 1990 and 2000.

from comparing categories of domestic owners (e.g., insider versus outsider) to domestic versus foreign ownership, the performance of privatized versus *de novo* enterprises and with the impact of concentrated versus dispersed ownership. Researchers have also increasingly noted that policies and institutional development have diverged between the CEE and CIS countries, with the former increasingly adopting European Union (EU) rules and joining the EU, and the latter proceeding slower in introducing a market friendly legal and institutional system. China also began from the mid-1990s to privatize large former state owned firms. Moreover, unlike D-M who had to combine all available performance measures together in their meta-analysis, we are able to distinguish separately the impact of privatization on efficiency (total factor productivity – TFP), profitability, revenues, and other indicators. Thirdly, an important aspect of our approach is to distinguish between studies on the basis of their econometric methodology in order to focus attention on more credible results. As might be expected given the changes in emphasis and methodology, and by including a comparison with China, our conclusions are richer and more nuanced, as well as more robust, than those available to D-M.

Commencing with the macro studies, we find that the results suggest that privatization, especially when accompanied by complementary reforms, may have a positive effect on the level of aggregate output or economic growth. However, one of the most widely debated issues of transition (e.g., János Kornai, 2001), namely the effect on aggregate output and growth of rapid privatization (frequently accompanied by dispersed ownership) versus slower privatization (often with more concentrated ownership) remains unresolved.

As to the impact of privatization on the level of TFP, we find that in CEE the overall effect is mostly positive during both the early and later transition periods, but that the effect of privatization to domestic owners is quantitatively much smaller than that to foreign owners, and that it is greater in the later than earlier transition period. In CIS, privatization to foreign owners yields a positive or insignificant effect while privatization to domestic owners generates a negative or insignificant effect. In most instances, the estimated economic effect is smaller in the CIS than CEE. Overall, the TFP effect of privatization to domestic owners is weaker than that to foreign owners, takes longer to take a hold, and in the CIS it has been outright negative or insignificant. There are as yet

no TFP studies using data from China which employ robust methodologies and perhaps because of this, the available papers find diverse results, with the effect of non-state ownership being mostly positive but sometimes statistically insignificant and sometimes negative.

Concentration of ownership is important, with majority private ownership having mostly positive effects on the level of TFP. The overall positive effect is again driven primarily by foreign owned firms. The effect of majority domestic private ownership tends to be positive but smaller in magnitude. Studies that distinguish between privatized SOEs and newly created private firms suggest that *de novo* firms are more productive than or at least as productive as SOEs privatized to domestic owners. The effect of employee (insider) ownership on the level of TFP is found to be mostly statistically insignificant or in one case actually positive. Estimates of the effects of privatization on TFP growth suggest that in CEE privatization had a positive effect on the rate of change of TFP in the early transition period and that the effect disappears in the later stage.

The effect of ownership on profitability has been estimated mostly in CEE and shows a small positive or insignificant effect of privatization to domestic or foreign owners on profitability levels in the early as well late transformation periods, together with an insignificant effect of privatization to domestic and foreign owners on the rate of growth of profitability. The effect varies across types of ownership, and concentrated domestic private ownership, managerial ownership, and to a lesser extent foreign ownership tend to have a positive effect on profitability, while state keeping a golden share or concentration of worker ownership appear to be unrelated to profitability. The studies of private ownership on profit of firms in China vary considerably in terms of methodology sample size and findings, with most indicating a positive and usually significant effect.

The effect of privatization on the level of firm revenues, capturing the effect of privatization on the scale of operation of the firm, is mostly strong and positive. In terms of revenue growth, we observe in CEE a high positive effect of privatization to foreign owners in the early period and a small effect in the later period, as well as an insignificant effect of privatization to domestic owners. Overall, the studies of CEE and CIS countries indicate that privatization tends to have a positive effect on the scale of operation, while

studies of the effect of private ownership on the rate of change of scale of operations (from CEE, CIS and China) suggest that this effect is not statistically significant except in some well defined categories of ownership.

Estimates of the effect of privatization on labor productivity (not controlling for the use of others inputs) are similar to the TFP results -- the effect of privatization is primarily positive or insignificant. As in the case of TFP, foreign ownership and concentrated ownership are found to have a positive or insignificant effect, while the effects of employee and management ownership are estimated to be mostly statistically insignificant. The corresponding studies of firms in China yield mostly insignificant estimates of the effects of private/non-state ownership on labor productivity.

In terms of the effect of privatization on employment, the estimates indicate that there is a tendency for privatized firms, especially those with foreign owners, to increase or not to reduce employment relative to firms with state ownership. In general, employee ownership and control do not have a significant effect on employment, providing parallel evidence to the TFP studies that this form of ownership does not result in excess employment.

Studies of the effects of ownership on wages find that state ownership is associated with lower wages in some countries, such as Russia and former Czechoslovakia, but not in others, such as Poland. In Russia, where in the 1990s firms tended to owe wages to their workers, SOEs were more likely to exhibit wage arrears than firms with domestic and foreign private ownership, firms with mixed ownership and *de novo* firms.

Studies that have analyzed the effect of privatization on other dependent variables show that (a) privatization results in higher exports and greater efficiency, as measured by the cost of inputs relative to sales, Tobin's Q, and soft budget constraints, and (b) privatization to foreign firms leads to more restructuring and sale of assets, greater likelihood of payment of dividends, and smaller likelihood of default on debt. These results exhibit a pattern that is in line with the above measures of performance.

The structure of the paper is as follows. In Section 2 we discuss the theoretical and institutional issues raised by privatization in transition economies. In section 3 we briefly examine the macroeconomic evidence about the impact of privatization before turning in

section 4 to a survey of the enterprise-level economics literature about the impact of privatization on different indicators of company performance. We conclude our study in Section 5 with policy-oriented observations.

2. Theoretical and Institutional Issues

In the early 1990s privatization was widely considered one of the keystones of the entire transition process. The policy arguments were based on successful experience in developed economies (e.g., Matthew Bishop and John Kay, 1988; Aidan Vining and Anthony Boardman, 1992), as well as on evidence from developed and middle-income countries that suggested that privatization improves enterprise efficiency (see Megginson and Jeffrey Netter, 2001 for a survey). The so called Washington Consensus emphasized privatization and belief that private ownership together with market forces would ensure efficient economic performance. Combined with price liberalization, freedom from state control was seen as the way to bring prices into line with opportunity costs and to harden budget constraints (see Kornai, 1990).

However, it was also often recognized that privatization on its own might not be sufficient and that systemic changes and policy reforms were a prerequisite for successful transition (Jan Svejnar, 1989; David Lipton and Jeffrey Sachs, 1990; Olivier Blanchard, Rudiger Dornbusch, Paul Krugman, Richard Layard, and Lawrence Summers, 1991; Philippe Aghion and Blanchard, 1994). We briefly review the accompanying policy reforms and systemic changes as well as the variation in the effectiveness of their implementation in the first sub-section (2.1) below.

The transfer of ownership rights was seen by most academics and policy makers as being crucial for the efficient allocation of resources and economic growth. As a result, much empirical work has been related to efficiency and in the second sub-section (2.2) below we therefore survey the efficiency-related arguments for privatization.³

The large scale of privatization spawned considerable variation in privatization methods. It was suggested at the time that “bad privatization methods”, for example so-

³ From a political perspective, however, privatization was viewed as being necessary in transition economies, even if there were to be no efficiency improvements -- the reason for privatization was to eradicate the command economic system rooted in communist ideology (see Andrei Shleifer and Robert Vishny, 1994).

called “mass privatization” in which ownership rights were widely dispersed, may lead to “bad ownership structures” and therefore reduce the potential gains from privatization. We evaluate this argument in the third sub-section (2.3).

In the final sub-section (2.4), we consider factors likely to influence the selection of firms for privatization. The theoretical and empirical evidence indicates that firms were not chosen to participate in the privatization process at random. Hence empirical estimates that fail to take account of this phenomenon will be biased. The prevalence of selection bias leads us to apply stricter criteria than previous surveys with respect to econometric methods when we evaluate the findings from the empirical literature in the final section of the paper.

2.1 Policies in Transition Economies

Privatization in the transition economies occurred in the context of broader systemic change. In almost all these economies, but not China (see Lawrence Lau, Yingyi Qian, Gerard Roland, 2000), governments plunged ahead with what Svejnar (2002) calls *Type I* reforms, namely macro stabilization, price liberalization and dismantling of the institutions of the communist system. Most countries also opened up rapidly to international trade, thus inducing a more efficient allocation of resources based on world market prices, and quickly reduced direct subsidies to SOEs.

Svejnar’s *Type II* reforms involved the development and enforcement of laws, regulations and institutions that would ensure a successful functioning of a market-oriented economy. These reforms included privatization and the establishment and enforcement of a market-oriented legal system and accompanying institutions able to create well-defined property rights, permit the enforcement of contracts, and limit corruption.

According to the EBRD’s Transition Indicators (EBRD, various years) progress in developing a market-supporting legal system was everywhere slow, although the pace was more rapid in CEE than CIS in limiting corruption and establishing a functioning legal framework and institutions. An important impetus for implementing legal and institutional reforms in most countries in Central Europe, the Balkans and the Baltic, has

been the need to develop a system that conforms to that of the EU as a prerequisite for accession (Richard Baldwin, Joseph Francois, and Richard Portes, 1997).

2.2 Privatization and Efficiency

Historically SOEs were established to ensure political control of production, better provision of public goods, more effective ways of dealing with externalities, spearheading of economic development in the absence of “well functioning” markets, and guaranteeing full employment and equitable income distribution. The economic performance of many SOEs proved disappointing, however, and since the early 1980s privatization started to be advocated as a means of establishing clear property rights, providing economic incentives and stimulating superior economic performance of firms and economies at large (see John Vickers and George Yarrow, 1988, Bernardo Bortolotti and Domenico Siniscalio, 2004). One argument for privatization is that firms under central planning are inefficiently large and their divestitures, combined with privatization, constitute a desirable way to improve corporate performance (see Jan Hanousek, Evžen Kočenda and Svejnar, 2008).⁴ Another argument for privatization stresses the fact that the objectives imposed by the state as owner in SOEs are not necessarily consistent with profit maximization (see Saul Estrin and Virginie Perotin, 1991). The politicization of enterprise decision-making may also open firms up to lobbying and unproductive rent seeking (see Shleifer and Vishny, 1994, 1997).

Even if the state as owner seeks to maximize the profits of its firms, problems of corporate governance may still lead to inferior performance. Outside owners – whether private or state – do not have full information about corporate performance, so firm-specific rents may be appropriated by the managers. However, private ownership may place more effective constraints on managers’ discretionary behavior, via high-powered incentives for managers (Randall Morck, Shleifer and Vishny, 1989) or through the operation of the market for corporate control (Shleifer and Vishny, 1997), though if ownership is dispersed, owners may face a free rider problem in which the individual returns to monitoring by each owner are less than the costs (Shleifer and Vishny, 1997).

⁴ Hanousek, Kočenda and Svejnar (2008) find that divestitures increase the firm’s profitability but do not alter its scale of operations, while the effect of privatization depends on the resulting ownership structure.

The weak monitoring of managers by the state and the absence of external constraints often enabled SOE managers to gain discretion and follow their own objectives (Estrin, 2002).

In much of continental Europe, greater emphasis has traditionally been placed on bank debt than equity, with governance exercised via board membership of the controlling owners. This approach has also developed in a number of transition economies. However, in many developing economies as well as in some developed countries, family and business group ownership remains predominant, and though the ownership structures are typically highly concentrated, this ownership form is argued to impair company performance relative to outsider ownership structures (Morck, Daniel Wolfenzon and Bernard Yeung, 2005). This is relevant for transition economies because, privatization, especially in the CIS, has led to the emergence of diversified business groups owned by individuals (“oligarchs”). This might explain differential performance between CEE and CIS, though preliminary evidence suggests that business groups may actually be more efficient than other privatized companies in Russia and Ukraine (see Guriev and Andrei Rachinsky, 2005; Yuriy Gorodnichenko and Yegor Grygorenko, 2008).⁵

Firms in transition economies also suffered the incentive problems caused by the softness of budget constraints (see Kornai, 1990, Mathias Dewatripont, Eric Maskin and Roland, 2000; Kornai, Maskin and Roland, 2003), with poorly performing firms often being granted easier access to external investment funds than the better performing ones (Lubomír Lízal and Svejnar, 2002). This led analysts to stress that hardening of budget constraints should be a priority and could be achieved most effectively by breaking the link between firms and the state through privatization (Alan Bevan, Estrin and Mark Schaffer, 1999). Moreover, Roman Frydman, Cheryl Gray, Marek Hessel and Andrzej

⁵ A number of theoretical papers have addressed the problems raised by the need to induce SOE managers to accept privatization (e.g. Shleifer and Vishny, 1994; Francesco Cornelli and David Li, 1997), although in practice this turned out not to be a problem. The desire to generate widespread political support for privatization in the context of *de facto* managerial control of enterprises has also been considered. For example Bruno Biais and Enrico Perotti (2002) analyzed politically motivated privatization. They found that when median voters favor redistribution, strategic rationing and under-pricing will be needed to shift problematic preferences. John Bennett and James Maw (2003) and Bennett, Estrin, and Maw (2005) also consider under-pricing, and explain how setting a zero price for privatized firms may be a rational strategy, even for a revenue maximizing government, provided the state also retains some shares in the privatized entity.

Rapaczynski (2000) have argued that the imposition of hard budget constraints on SOEs will not induce strategic restructuring because entrepreneurial incentives associated with outside investor will still be absent. This relates to the incomplete contracts ideas of Oliver Hart and John Moore (1988) that have been used to argue that state managers tend to make routine decisions whereas private owners would engage in non-routine decisions and stimulate entrepreneurship. In the presence of external shocks, privatized firms are hence thought to move more readily into new markets and product lines and hence be less likely to lay off workers than SOEs. This suggests that privatization might only be effective when control shifts to new owners, who are thereby able to change the managers. As we discuss below, delayed privatization can undermine the performance of the SOEs, since in this situation the incentives of managers become to seize assets or to tunnel them out, rather than to improve performance (see Johnson, Rafael LaPorta, Florencio Lopez-de-Silanes, and Shleifer, 2000).⁶

Perhaps the main caveat to the efficiency arguments in support of private ownership concerns the welfare dilemmas when private firms provide public goods and/or have natural monopoly power (Jean-Jacques Laffont and Jean Tirole, 1993). If firms have monopoly power, privatization can be harmful even if productive efficiency of a firm increases, unless there are adequate regulatory controls or sufficiently rapid entry (see also Edward Glaeser and José Scheinkman, 1996). Monopoly power also creates a dilemma for the state as owner in a privatization process; firms that are privatized with monopoly power can be sold for higher prices than if the company is broken up to create a more competitive market structure. Similarly, if corporate governance provisions for private firms are lax, company assets may be stolen and misallocated. Monopoly power may hence explain a divergence between empirical results concerning profitability and sales on the one hand, and TFP on the other.⁷

⁶ One can also consider the issue of corporate governance from the perspective of employee participation in management (see Derek Jones, 2004).

⁷ Privatization also has important for the distribution of income and wealth. Early analysts favored privatization at reduced prices and open to the population as a whole on grounds of equity (Blanchard, *et al.*, 1991) and models were developed to evaluate the political processes balancing distributive and efficiency issues (Biais and Perotti, 2002; Schleifer and Vishny, 1994). In practice, however, ownership structures have evolved to become more concentrated and the emergence of “oligarchic” business groups in the former CIS has probably also exacerbated income inequality. Nancy Birdsall and John Nellis (2003) surveyed the impact of privatization on distribution in developing economies and concluded that

2.3 Extent and Methods of Privatization

The fact that the state owned almost every industrial firm in socialist economies raised questions about how much privatization should be undertaken, by what methods and at what rate. In practice, most countries decided to privatize a large number of firms rather quickly (Estrin, 1994) and were therefore forced to innovate in privatization methods in order to address the unprecedented issues of scale and the political urgency for speed. Some authors have suggested that deficiencies in some of these the new methods of privatization, notably the widespread use of forms of “mass” privatization, whereby shares are distributed at nominal prices to the population at large, may explain the apparent initial deficiencies in the impact of the policy (e.g. Joseph Stiglitz, 2002).

The arguments for fast privatization were that (a) price liberalization and other reforms would not provide sufficient incentives for SOEs to restructure and become competitive, (b) state would not be able to resist intervening in SOEs (Frydman and Rapaczynski, 1991; Maxim Boycko, Shleifer and Vishny, 1995) and (c) managers (and/or workers) would decapitalize firms in the absence of rapid clarification of property rights (Frydman, Edmund Phelps, Rapaczynski and Shleifer, 1993; Blanchard, Dornbusch, Krugman, Layard, and Summers, 1991). In contrast, Dewatripont and Roland (1992a,b) and Roland (1994) argued that gradual privatization was needed because the political backlash to rapid privatization of all firms would be unacceptable. In particular, Dewatripont and Roland’s (1992a,b) argument for gradualism was that it allowed the government to pursue a strategy that necessitated fewer workers/voters being immediately laid off and that it would reduce uncertainty. As we discuss below, however, empirical evidence shows that in most countries privatization did not bring about a reduction in employment.

The use of mass privatization did spearhead a remarkable growth in the private sector (Table 1).⁸ However, this achievement should not conceal concerns about quality of

privatization programs had worsened the distribution of asset ownership, more so in transitional economies than Latin America.

⁸ A hidden outcome of the large-scale property transfers was the creation of lasting state control over assets in many privatized firms. The actual extent of privatization, especially in the early years of transformation, was therefore less than appears from the official statistics. See e.g., Hanousek and Kočenda (2008).

privatization that was undertaken.⁹ Mass privatization led to ownership structures that were initially highly dispersed because the entire adult population of the country, or all insiders to each firm, were allocated vouchers with which to purchase the shares of the company. Mass privatization was also argued to hinder the establishment of effective corporate governance, especially when long "agency chains" were created by the emergence of financial intermediaries holding privatization vouchers (John Coffee, 1996; Stiglitz, 2002). It probably also hindered the development of secondary capital markets and in many countries it also initially resulted in majority ownership by insiders (Estrin, 2002).

Whether as a consequence of institutional weakness and/or the methods of privatization, the EBRD Transition indicators show that capital markets in transition economies developed less quickly than other market economy structures such as liberalized price setting or openness to trade. Indeed, stock markets in transition economies during the 1990s were often characterized by insufficient regulation, institutional fragility and weak minority shareholder protection (EBRD 1998; John Bonin and Paul Wachtel, 2003).

2.4 Selection of firms to be privatized

Whatever the privatization methods used, it is likely that firms are not assigned for privatization at random. This has important implications for econometric work assessing the impact of privatization on company performance because it implies that studies that treat the allocation of firms for privatization as random or do not adequately control for the non-random selection may potentially overstate the positive effect of privatization on performance. D-M for instance indicate that 47 percent of pre-2003 studies that they survey do not control for this non-random selection.

⁹ For example, though retained state shareholdings were small in some of the leading transition economies in CEE, the state continued to own significant shareholdings in others, especially in the CIS. Thus in a 1999 survey of privatized firms, the EBRD found that in 20 of the 23 countries, the state had retained some shares in around 20% of privatized firms, with more than a 20 percent shareholding in around 12 percent of the firms. The state kept a share of more than 15 percent of privatized firms in eight countries and more than 30 percent in a further four (Bennett, Estrin and Maw, 2005). Retained state ownership has been a factor in recent Chinese privatizations (Lihui Tian and Estrin, 2008). Governments have also issued golden shares to retain influence over some of the privatized SOEs.

Realizing this shortcoming, Nandini Gupta, John Ham and Svejnar (2008) analyze the problem that arises in the studies that ignore the fact that better or worse firms may be privatized first. They note that there may be several reasons why a government may choose to sequence the privatization of SOEs. First, the government may incur excessively high transaction and congestion costs if it tries to privatize all firms simultaneously. Second, by sequencing it may reveal information about the firms to investors (later buyers may observe the quality of the firms sold earlier) if there is uncertainty about the quality of the firms being privatized, or avoid political opposition to reforms (Dewatripont and Roland, 1995). Finally it may want to sequence privatization so as to avoid unemployment (Aghion and Blanchard, 1994; and Barbara Katz and Joel Owen, 1993).

Gupta, Ham and Svejnar (2008) consider five competing government objectives for privatization: i) maximizing Pareto efficiency through resource allocation; ii) maximizing public goodwill from the free transfers of shares to the public; iii) minimizing political costs stemming from unemployment;¹⁰ iv) maximizing efficiency through information gains and v) maximizing privatization revenues. They use firm-level data from the Czech Republic to test the competing theoretical predictions about the sequencing of privatization and find strong evidence that the firms the government privatized first were more profitable, were firms in downstream industries, and in industries subject to greater demand uncertainty. Privatizing more profitable firms first is hence inconsistent with maximizing Pareto efficiency but it is consistent with the model of maximizing privatization revenues, maximizing public goodwill and minimizing the political cost of unemployment. However, the implication of the political cost model that employment growth in the firm's industry should affect sequencing is not supported by the results. Gupta, Ham and Svejnar's (2008) finding that firms in downstream industries and in industries with greater demand uncertainty were more likely to be privatized early suggests that the government placed emphasis on efficiency in the Glaeser and

¹⁰ Political configurations can influence the pace and timing of privatization, as was found by Bortolotti and Paolo Pinotti (2003) in their study of 21 OECD countries over the period 1977-2002. In particular, the authors found that political fragmentation gave several groups the opportunity to veto or otherwise block large-scale privatization, and hence delay or even halt the process.

Scheinkman (1996) sense, namely by privatizing first firms that required flexible management.¹¹

3. Privatization and Growth

A number of theoretical models provided competing predictions about the effects of privatization on macro-economic performance and growth. In Thorvaldur Gylfason (1998), privatization is shown to increase national economic output in a two-sector full-employment general-equilibrium model by enhancing efficiency as if a relative price distortion were being removed through price reform, trade liberalization, or stabilization. Nico Hansen (1997) uses a general equilibrium imperfect competition model to show that a broad distribution of ownership rights can have favorable influence on micro-economic efficiency.

Several studies use aggregate data to assess the effect of privatization on economic performance. Using data from thirty five developing market economies Patrick Plane (1997) finds that privatization (through divestiture) has a significant positive effect on economic growth and that the effect is stronger when privatization takes place in industry or infrastructure rather than in other sectors. Daniel Berkowitz and David De Jong (2001) find that regions with more large-scale privatization exhibit greater formation of new (legally registered) enterprises, which in turn exhibits a strong positive correspondence with growth. Steven Barnett (2000) uses macroeconomic and privatization data from 18 countries to find that privatization proceeds transferred to the budget tend to be saved and used to reduce domestic financing. His other main finding is that total privatization, as opposed to just the proceeds being transferred to the budget, is correlated with an improvement in macroeconomic performance as manifested by higher real GDP growth and lower unemployment. In a cross-country aggregate study, Clifford Zinnes, Yair Eilat, and Sachs (2001) use a panel data set from 25 transition countries to find that privatization does not by itself increase GDP growth, but they suggest that a positive

¹¹ Glaeser and Scheinkman (1996) examine sequencing strategies that would increase efficiency via informational gains. In their model private firms respond to demand and cost shocks, but this information is ignored by public firms. The Glaeser-Scheinkman model predicts that privatization should begin where demand or cost volatility is the greatest and where it maximizes the flow of information. Thus when demand uncertainty is greater than cost uncertainty, the authors argue that downstream firms should be privatized before upstream firms because downstream firms are better positioned to transmit information between the retail and upstream sectors.

effect is present when privatization is accompanied by hard budget constraints and in-depth institutional reforms. Bennett, Estrin and Giovanni Urga (2007) use a panel data model and GMM estimation methods for almost all the transition economies (26 countries), controlling for country or time specific factors with fixed effects. They do not identify a significant relationship between private sector share and growth; hence their results do not indicate a direct relationship between privatization and growth. However, they do have results concerning methods of privatization in that they find countries which used mass privatization enjoyed significantly higher growth post-privatization relative to pre-privatization, compared with countries that used other privatization methods. Their study suggests that, the advantage of speed in privatization brought about by mass privatization may have yielded long-term benefits in terms of economic growth.¹² Using similar data, Fabian Gouret (2007) provides complementary evidence about the impact of privatization methods on growth. He also finds a positive effect from mass privatization but it is smaller than from the more gradual methods of privatization. The difference in the results of the two studies stems from differences in specification, not completely overlapping data sets and the use of different estimation methods.

The macro studies hence suggest that privatization, especially when accompanied by complementary reforms, may have a positive effect on the level of aggregate output or economic growth, but the effect of speed, and the accompanying dispersed versus more concentrated ownership, on aggregate output and growth is unclear.

4. The Effects of Privatization on the Performance of Firms

Earlier surveys of firm-level studies examining the effects of privatization on firm performance range from ones that find a large variation of outcomes but no systematically significant effect of privatization on performance (Bevan, Estrin and Schaffer, 1999) to those cautiously concluding that privatization improves firm performance (Megginson and Netter, 2001), to ones that are fairly confident that privatization tends to improve performance (Mary Shirley and Patrick Walsh, 2001; and Djankov and Murrell, 2002).

¹² They argue that their result is due to an increase in ownership concentration following mass privatization that had strengthened control over firms.

This variation in the interpretation of results is brought about in part by the fact that the early studies had access to different and often somewhat limited data on firm performance and ownership. For these reasons, many studies treat ownership as a relatively simple categorical concept and some are often unable to distinguish the exact extent of ownership by individual owners or even relatively homogeneous groups of owners. Equally important, the diversity of interpretations and findings is generated by three types of interrelated analytical problems that may be expected in early studies in the context of the rapidly changing transition economies. First, the early studies rely on short time periods with observations concentrated immediately before and after privatization. Second, the early studies (a) use small and often unrepresentative samples of firms, (b) are frequently unable to identify accurately ownership because privatization is still ongoing or because the frequent post-privatization changes of ownership are hard to detect, and (c) often combine panel data from different accounting systems. Third, as we have discussed above, many of the early studies have not been able to control adequately for the selection/endogeneity problem of ownership and their estimates of the effects of privatization may hence be biased.

Since the studies are heterogeneous with respect to their methodologies, we classify all studies into those that (a) employ fixed effects or instrumental variables (IVs) to handle the selection/endogeneity problem inherent in privatization and (b) do not tackle this problem and use OLS. Our classification has an important reason behind it. First, one can make the assumption that unobservable ownership effects, including those stemming from selection of firms for privatization or acquisition of firms by foreign owners, are typically correlated with the explanatory variables and error term in the model and do not change over time. In this case the bias arising from unobserved heterogeneity can be removed by estimating the fixed effects model. The fixed effects model contains an individual specific constant that captures all time-invariant (observed as well as unobserved) characteristics. The second assumption concerns the situation in which unobservable ownership effects vary over time. In this case it is necessary to employ estimation using instrumental variables to account for the selection/endogeneity problem

inherent in privatization.¹³ The success of the IV estimation depends heavily on finding adequate instrumental variables that satisfy the exogeneity condition. As suitable instrumental variables are often difficult to obtain, the fixed effects estimation has been frequently used, especially in earlier studies.

In our evaluation, we use only estimates from the set of studies that employ fixed effects or IVs because they are less likely to suffer from selection bias. In the case of privatization, private (especially foreign) owners are naturally interested in acquiring firms that have (at least potentially) superior performance. Hence, studies that do not account for selection may erroneously attribute potentially superior performance of privatized firms to the new owners rather than to the inherently superior performance of firms selected for privatization.

In view of these issues, we consider 14 privatization studies covered by D-M that handle the selection/endogeneity problem and we add 20 studies that have been published or circulated as working papers by December 2007. In Table 2 we list these 34 studies, together with information on their region and performance indicator.

In assessing the effects of privatization, we focus on total factor productivity (TFP) and TFP growth (Figure 1a and 1b, respectively), profitability and growth in profitability (Figure 2a and 2b, respectively), and revenue level and growth in revenue (Figure 3a and 3b, respectively). We also discuss the main findings of studies dealing with labor productivity, employment, wages, and other indicators of performance (not reported in figures or tables). In the figures, we report separately results from studies dealing with Central-East Europe (CEE), including the Baltics and Balkans, and studies dealing with the Commonwealth of Independent States (CIS), which started the transition later and placed less emphasis on the development of a strong, market-oriented legal framework and institutions.¹⁴

As could be expected, even within each category of performance (e.g., TFP), the various studies employ a variety of measures (e.g., revenues, sales, or value added). Since there are very few studies that use a homogenous measure of performance, we have

¹³ Alternatively, other suitable techniques such as difference in difference estimator and matching-type estimator can be employed, provided that adequate data are available.

¹⁴ For a more detailed discussion of the results of these studies, see Estrin, Hanousek, Kočenda and Svejnar (2007), which contains detailed tables listing region, time period, performance measure, types of ownership, and resulting effects separately for each available study from the CEE, CIS and China.

decided not to perform a meta-analysis -- combining coefficients and associated standard errors from various studies to obtain a single efficient estimate of the effect of privatization on a given measure of performance. We have opted instead for a graphical presentation to synthesize results obtained from varying measures within a given category of performance. The graphical presentation in Figures 1-3 therefore serves as a proxy for a meta-analysis. As stated earlier, in Table 2 we list all the studies employed in the graphical analysis and indicate what performance measures they use. In the table we also denote whether a study deals with data from the CEE, CIS or both.

In constructing Figures 1-3, we depart from earlier surveys by distinguishing between effects on the level of performance (capturing a one-shot permanent impact) and effects on growth (capturing effects on the rate of change in performance over time). In Figures 1-3 we depict results for levels in panels A and results for growth in panels B. When summarizing the results, we divide the studies estimating the effect on level of performance into those that report relatively large effects (defined as more than 15%), medium effects (5-15%), small effects (less than 5%), and results that are statistically insignificant at the 10% test level. In terms of rate of growth, we divide the studies into those that report relatively large effects (more than 5 %), medium effects (1-5 %), small effects (less than 1 %) and effects that are statistically insignificant at the 10% test level.

We present the results graphically in the form of white, black and half-black/half-white circles. White circles denote effects of studies that cover the early-to-mid 1990's when privatization was not yet completed (the exact timeframe varies across countries). Black circles indicate that the data come from the mid-to-late 1990's onwards. Half-black/half-white circles denote effects of studies that cover both the early and late transition period. As a general rule one circle represents result for one country. For this reason the number of circles exceeds the number of studies. The difference is due to the fact that some studies report results for more than one country or group or time period. Several results from one study are translated into several circles. There are also four studies that report the average effect across more than one country. These studies are not included in the figures but their effects are captured in the text.¹⁵

¹⁵ This is case of Stijn Claessens and Djankov (1998, 2002), Wendy Carlin, Steven Fries, Shaffer and Paul Seabright (2001), and Simon Commander and Svejnar (2007).

Since the effects of foreign and domestic private ownership are in important respects different, we present in separate columns estimated effects of privatization to foreign owners, domestic private owners, and private owners as whole (studies that do not separate private owners' domestic v. foreign status).

4.1 Total Factor Productivity (TFP)

Productive efficiency, or total factor productivity, is of major interest since the communist economies collapsed in large part because they were increasingly unable to sustain innovation and technical progress. In particular, central planners were relatively capable of mobilizing labor and capital resources through compulsory full employment and high rates of investment, but they had hard time increasing the amount of output that SOEs generated from any given inputs. As a result, a major expectation during the transition has been that firms would increase their TFP.

We have identified 17 studies that control for selection/endogeneity and analyze the impact of ownership on TFP or rate of change of TFP, using value added, total product or sales revenues as the dependent variable and either dummy variables or percent share ownership as measures of different types of ownership.¹⁶

As may be seen in Panel A of Figure 1, in CEE the overall effect of private relative to state ownership on the level of TFP is mostly positive during both periods. Moreover, studies that break private ownership into categories show that the overall private v. state ownership dichotomy subsumes different private ownership effects. The studies almost uniformly suggest that privatization to foreign owners greatly increases efficiency. This effect of foreign ownership is strong and robust across regions. The effect of domestic private ownership is by and large also found positive in the CEE region, but it is quantitatively much smaller than that of foreign ownership (the quantitative effects are not fully discernible in the figure). Moreover, this effect is greater in the later than earlier transition period. In CIS, privatization to foreign owners yields a positive or insignificant effect while privatization to domestic owners generates a negative or insignificant effect. Studies that do not distinguish the national origin of the private owner produce a positive effect on TFP levels. In most instances, the estimated economic effect is smaller in the

¹⁶ There are also five studies that estimate the TFP effect by OLS.

CIS than CEE. Overall, the TFP effect of privatization to domestic owners is weaker than that to foreign owners, takes longer to take a hold, and in the CIS it has been outright negative or insignificant.

For comparative purposes, we have also surveyed the ownership-related studies that have been carried out on data from China. Probably because large scale privatization is a relatively recent phenomenon in China, there have not yet been any studies of great econometric sophistication and this may explain the patchy results. A number of studies, including Jefferson and Rawski (1996), address TFP issues with firm level data but do not examine differences in TFP related to privatization or ownership. Studies that address these issues (e.g. Yifan Hu, Frank Song, and Junxi Zhang, 2004; Shahid Yusuf, Kaoru Nabeshima, and Dwight Perkins, 2006)) find diverse results, with the effect of non-state ownership being mostly positive and often statistically significant.¹⁷

Compared to the D-M survey that found the effect of private ownership to be positive in CEE but insignificant in CIS, we hence find a strong positive effect of foreign ownership in both the CEE and CIS regions, and a quantitatively smaller positive effect of domestic private ownership in CEE and in Ukraine (together with a negative effect in Russia and the rest of CIS). The reason for finding a stronger positive effect than D-M is in part because we are focusing on studies that take into account the problem of selection/endogeneity of ownership, whereas the earlier surveys did not place as much emphasis on this issue. Indeed, the unreported OLS studies, including those in China, generate much more diverse effects in terms of the estimated OLS coefficients. Another reason for our stronger and more uniform findings of positive effects of private ownership may be that more of our studies cover recent years and privatization may take several years to have an effect as strong owners take control and markets start to function. Finally, institutional development is a slow process and more recent data may pertain to a more developed legal and institutional setting in most of the transition economies. The variety of findings about the effects of non-state ownership in China may also be related to the fact that privatization on a relatively large scale is a more recent phenomenon in China.

¹⁷ For a more detailed discussion of the results of these studies, see Estrin, Hanousek, Kočenda and Svejnar (2007).

Several studies examine concentration of ownership and find that it plays an important part, with majority private ownership having mostly positive effects on TFP. The overall positive effect is again driven primarily by foreign owned firms. The effect of majority domestic private ownership tends to be positive as well, but it tends to be smaller in magnitude. As before, the effect is found to be positive in Ukraine but negative in Russia. Overall, we hence find qualified support for the hypothesis that concentrated private ownership tends to increase efficiency more than dispersed ownership.

The existing privatization studies also provide information about the effect of employee (insider) ownership on efficiency. There has been a major debate about whether employee ownership and control are associated with lower or higher efficiency and excessive use of labor (labor hoarding).¹⁸ We have found seven studies that examine the effect of employee ownership on TFP. Six estimates from both CEE and CIS countries are statistically insignificant and one (Estonia) shows a positive effect of employee ownership on TFP. These results are different from those of D-M who find the overall effect of employee ownership on performance to be insignificant in CEE and negative in CIS. One reason for this discrepancy may be the aforementioned limited overlap between our and D-M studies in this area. Moreover, D-M report that “the results for managers and workers show a considerable degree of sensitivity to how selection bias is handled”, while we focus on studies that handle the issue of selection. Finally, D-M recalculate some estimates (e.g., in their Table 1) for the sake of comparability across studies, while we present the effects as reported in the original studies.

Two studies distinguish between privatized SOEs and newly created private firms. Klara Sabirianova, Svejnar, and Katherine Terrell (2005) use 1992-2000 firm-level data for almost all industrial firms in the Czech Republic and Russia and find that foreign start-ups are less efficient than existing foreign owned firms, but more efficient than domestic start-ups, which are in turn more efficient than existing domestic firms. This study hence suggests that new firms tend to be more efficient than firms privatized to domestic owners. Using 2002 and 2005 firm-level data from 26 transition economies, Commander and Svejnar (2007) find that domestic start up firms are less efficient than

¹⁸ In addition to our discussion above, see Manuel Hinds (1990), John Earle and Estrin (1996), and Josef Brada (1996).

foreign owned firms but not significantly different from domestic privatized or state-owned firms. The two studies hence suggest that *de novo* firms are more productive than or at least as productive as SOEs privatized to domestic owners.

As may be seen from Panel B of Figure 1, effects of privatization on TFP growth have been estimated by country only in the CEE region. The results suggest that in CEE privatization had a positive effect on the rate of change of TFP in the early transition period and that the effect disappears in the later stage. The studies do not distinguish between domestic and foreign categories of private ownership. Commander and Svejnar (2007) have estimated the effect of privatization to domestic and foreign owners on TFP growth on a sample of 27 transition economies, thus combining CEE and CIS countries. Using data from 2002-2005, they find the two effects to be both statistically insignificant. It is hence possible that foreign owners brought about a sizable increase in efficiency in the period immediately after acquiring the local firms in the 1990s, but that later on the rate of change in efficiency has been on average similar in all the principal types of ownership of firms.

4.2 Profitability

Profitability is an important indicator of company performance, although in the transition economies, as in many other developing countries, profits may be underreported by firms to evade taxes, and may reflect market power as well as technical efficiency.

In Figure 2 we summarize the effects of ownership on profitability from 10 studies. Most studies pertain to CEE and show a small positive or insignificant effect of privatization to domestic or foreign owners on profitability levels in the early as well late transformation periods (Figure 2A). This is accompanied by insignificant effects of privatization to domestic and foreign owners on the rate of growth of profitability (Figure 2B).

A further analysis of this overall pattern indicates that the effect varies across types of ownership (bank, investment fund, individual, etc.), with the positive effects in the case of foreign owners being brought about by industrial (non-financial) companies as owners, while in the case of domestic owners it is usually some form of financial ownership that generates positive effects on profit. In this finer categorization, however, the effects vary

across studies. Interestingly, using data from the Czech Republic, Andrew Weiss and Georgiy Nikitin (2002) find a positive effect of national (state) ownership on the rate of change of both operating profit per worker and operating profit per unit of capital, as well as a positive effect of municipal ownership on the rate of change of operating profit per worker. Using data of the publicly traded firms in the Czech Republic during 1993-1995, Hanousek and Kočenda (2003) in turn find a positive effect of foreign majority ownership on the rate of change in returns on assets. Finally, Hanousek, Kočenda, and Svejnar (2007) find positive effect of the subsequent ownership by banks on change in ROA but this effect is offset by negative effect of change in ownership. Foreign industrial owners exhibit positive effect of initial ownership on profit over sales, while effect of subsequent ownership by others foreign owners is negative. Overall, profitability is not significantly affected by the state keeping a golden share.

Three studies that control for endogeneity/selection examine the effect of ownership concentration. In the Czech Republic, Hanousek, Kočenda, and Svejnar (2007) find no effect of concentration that results from the initial large scale privatization, but they find a positive effect of majority ownership by domestic private owners as a result of ownership changes that took place after privatization. In terms of foreign ownership, the authors do not find any effect of high (majority) concentration among foreign owners, but do find that strong (blocking) minority (33-49%) foreign ownership has a positive effect on return on assets. Jeffrey Miller (2006) finds the effect of concentrated ownership on return on assets to be positive in Bulgaria, while Marko Simoneti and Alexandra Gregoric (2004) find concentrated management (but not employees) ownership to have a positive effect on profit/sales in Slovenia. Hence, concentrated domestic private ownership, managerial ownership, and to a lesser extent foreign ownership tend to have a positive effect on profitability, while state keeping a golden share or concentration of worker ownership appear to be unrelated to profitability.

Studies of the effects of ownership on profit of firms in China vary considerably in terms of their methodology, sample size and findings, and as yet only one uses sophisticated econometric methods. Thus Gary Jefferson and Jian Su (2006) estimate the effect of private ownership on profit/sales to be positive but significant only at the 10% test level. Other studies include Xiao-Yuan Dong, Louis Putterman, and Bulent Unel

(2006) who find the effect of state urban and private rural ownership to be positive, while that of state rural and private urban ownership to be negative. Several studies of China examine ownership concentration, with Ligang Song and Yang Yao (2004) finding with that state and private majority ownership has a positive effect relative to non-majority state and private ownership, with the latter not being significantly different from one another. Tian and Estrin (2008) in turn find that state having small shareholding has the largest positive value on corporate value, followed by high state shareholding, while intermediate state shareholding has the lowest effect. Finally, Qian Sun and Wilson Tong (2003) find that majority state or foreign ownership does not have a significant effect on the operating income/sales ratio.

In CEE, CIS and China, the effect of private foreign and domestic ownership on profitability is hence found to be positive or statistically insignificant, with the significance depending on the particular type of ownership. Concentrated domestic private ownership, managerial ownership, and to a lesser extent foreign ownership generally tend to have a positive effect on profitability, while evidence from CEE also suggests that profitability is unaffected by whether or not the state keeps a golden share or workers wield a more concentrated ownership.

4.3 Revenues

In Figure 3 we report the privatization effects on revenues from 14 studies. Since these studies do not control for input use, they effectively measure the effect of privatization on the scale of operation of the firm. In most studies carried out in CEE there is a strong and positive effect of private ownership on the level of revenues (Figure 3A). The effect is detected in studies that cover either the more recent period or both the earlier and more recent periods. Studies that derive their estimates only from the early period generate small (less than 5%). The positive effect is found with respect to both domestic and foreign private ownership, with foreign ownership appearing to have greater positive effects. A similarly strong positive effect is found in a study covering privatization in the early period in CIS. However, two studies that cover the later transition period in the CIS find small positive and negative effects, respectively. The CIS studies do not distinguish between domestic and foreign ownership.

In terms of revenue growth, we see in CEE a high positive effect of privatization to foreign owners in the early period and a small effect in the later period, and an insignificant effect of privatizing to domestic owners. The one study that covers CIS does not distinguish between domestic and foreign private ownership and suggests that the effect of privatization is statistically insignificant. The somewhat positive findings for foreign-owned firms may be brought about by their better access to foreign markets and possibly support from foreign headquarters.

With respect to China, Jin Jia, Sun, and Tong, (2005) find the effect of ownership on the rate of change of real sales to be insignificant, while Sun and Tong (2003) estimate this effect to be negative for state majority ownership, insignificant for foreign majority ownership and positive for companies that are listed on the stock exchange.

Overall, the studies of CEE and CIS countries indicate that privatization tends to have a positive effect on the scale of operation, while studies of the effect of private ownership on the rate of change of scale of operations (from CEE, CIS and China) suggest that this effect is not statistically significant except in some well defined categories of ownership.

4.4 Labor Productivity

Estimates of the effect of ownership on labor productivity (not controlling for the use of others inputs) are based on twenty four studies. The results of these studies have a less clear-cut interpretation since differences across types of firms could be due to different efficiency or simply to different non-labor (especially capital) factor intensity. For this reason we do not present these results graphically. Nevertheless, it is reassuring that the findings of these studies are similar to the TFP results -- they suggest that the effect of private ownership is primarily positive or insignificant. Similarly, as in the case of TFP, foreign ownership and concentrated ownership are found to have a positive or insignificant effect, while the effects of employee and management ownership are estimated to be mostly statistically insignificant. Finally, newly established firms are found to have lower labor productivity than others in some studies but not in others, but this may be brought about by a scale effect. Government retention of a golden share (veto power over certain key decisions) appears to have an insignificant effect.

The corresponding studies of firms in China yield mostly insignificant estimates of the effects of private/non-state ownership on labor productivity, with only one estimate being positive. Overall, the effects of all types of private ownership on labor productivity (not controlling for non-labor inputs) are hence found to be positive or insignificant in CEE and CIS, and mostly insignificant in China.

4.5 Employment

The effect of privatization on employment, like on revenues, is an indicator of the extent of restructuring brought about through privatization. As such, it provides an important empirical link to the theoretical models of transition.

Seventeen studies have examined the effect of ownership on employment or rate of change of employment, with thirteen of them tackling the issue of endogeneity/selection. The estimates indicate that there is a tendency for privatized firms, especially those with foreign owners, to increase or not to reduce employment relative to firms with state ownership, *ceteris paribus*, where the control variables usually but not always include output (sales) and/or output and input prices. This positive or insignificant employment effect is very different from the negative employment effect found in the Mexican privatized firms by LaPorta and Lopez-de-Silanes (1999).

In general, employee ownership and control do not have a significant effect on employment, providing parallel evidence to the TFP studies that this form of ownership does not result in excess employment.

Using a large 1980-90 sample of firms in China, Julia Lane, Harry Broadman, and Inderjit Singh (1998) find a negative effect of the state and collective ownership on both job creation and job destruction.

The studies of employment hence find that privatization in the post-communist economies and China is not associated with a reduction in employment, a phenomenon that is assumed in many theoretical models and which was documented in some developing countries (e.g., Mexico). On the contrary, private owners tend to keep employment at higher levels than SOEs, *ceteris paribus*.

4.6 Wages

Five studies of the effects of ownership on wages find that state ownership is associated with lower wages in some countries, such as Russia and former Czechoslovakia, but not in others, such as Poland. Daniel Munich, Svejnar and Terrell's (2005) study of the Czech Republic suggests that there is no significant difference in the rate of return on an additional year of education between state-owned, privatized and newly established private firms, but that private firms reward university education more than SOEs.

In Russia, where in the 1990s firms tended to owe wages to their workers, SOEs were more likely to exhibit wage arrears than firms with domestic and foreign private ownership, firms with mixed ownership and *de novo* firms (Earle and Sabirianova, 2002; Hartmut Lehmann, Jonathan Wadsworth, and Alessandro Acquisti, 1999). Hence, during this period private ownership was associated with a greater adherence to labor contracts than state ownership.

4.7 Other Indicators of Performance

At least 35 studies have analyzed the effect of ownership on other dependent variables. The following patterns of private ownership effects seem to be broadly supported by the data: (a) private ownership tends to result in higher exports and greater efficiency, as measured by the cost of inputs relative to sales, Tobin's Q, and soft budget constraints, (b) foreign firms tend to restructure and sell assets more than others (Djankov, 1999), are more likely to pay dividends (Jan Bena and Hanousek, 2008), and are less likely to default on debt (Frydman, Hessel, and Rapaczynski, 2000). Despite the fact that the broad range of indicators used in the studies precludes a unified summary, the results exhibit a pattern that is in line shown by other indicators.

5. Concluding Observations

The transformation of the former communist countries from almost completely state-owned to mostly privately-owned economies is one of the fundamental events in recent economic history. Given the relatively poor performance of the centrally planned economies before the transition, most academics and policy makers expected privatization to result in greatly improved economic performance. As it turned out, the post-communist countries went through a deep recession in the first three to eight years

of the transition, a period that usually coincided with the launch of privatization. Yet, they have been among the fastest growing economies since then -- in the last ten to fifteen years. In contrast, China did not lead its transition with large scale privatization and it avoided the transition recession observed in Central and East Europe (CEE) and the Commonwealth of Independent States (CIS). However, it is relatively soon to draw strong conclusions from the Chinese experience with privatization, and there is a paucity of econometrically convincing studies at this stage. The evidence assembled in this study suggests that privatization and performance are related but that the relationship is more complicated than has been assumed.

First, privatization to foreign owners is found to result in considerably improved performance of firms virtually everywhere in the transition economies – an effect that is best characterized as a fairly rapid shift in performance rather than a gradual improvement over an extended period of time. Second, the performance effect of privatization to domestic owners has on average been less impressive and it has varied across regions. The effect has been smaller, often delayed, but positive in CEE; it has been nil or even negative in Russia and the rest of the CIS. This divergence of findings between the CEE and CIS coincides with differences in policies and institutional development in the two regions, with the former increasingly adopting European Union (EU) rules and joining the EU, and the latter proceeding slower in introducing a market friendly legal and institutional system. Third, in China the results to date are less clear cut and relatively more estimates suggest that privatization to domestic owners improves the level of performance, perhaps because of the benefits of the gradual reform process.

In-depth firm-level studies further suggest that concentrated (especially foreign) private ownership has a stronger positive effect on performance than dispersed ownership in CEE and CIS, but foreign joint ventures rather than wholly owned foreign firms have a positive effect on the level of total factor productivity in China. Worker ownership in CEE and CIS (collective ownership in China) does not seem to have a negative effect. Data from CEE and CIS suggest that new firms are equally or more efficient than firms privatized to domestic owners, and foreign start-ups appear to be more efficient than domestic ones. Interestingly, contrary to assumptions of many theoretical models, as well as evidence from some developing countries (e.g., Mexico), privatization in the post-

communist economies is not associated with a reduction in employment. On the contrary, private owners tend to keep employment at higher levels than state-owned firms, *ceteris paribus*. Finally, macro studies are consistent with micro analyses in that they suggest that privatization, especially when accompanied by complementary reforms, may have a positive effect on the level of aggregate output or economic growth. An important issue that remains unresolved is whether speed of privatization, and the accompanying dispersed versus more concentrated ownership, has a positive or negative effect on aggregate output and growth.

In view of the above results, the question naturally arises as to why the effect of privatization in CEE and CIS has been smaller in the case of domestic than foreign private owners. Discussions with managers, policy makers and analysts suggest three leading explanations. The finding may reflect in part the limited skills and access to world markets on the part of the local managers. Domestically owned privatized firms are also the ones where performance-reducing activities such as looting, tunneling and defrauding of minority shareholders have been most frequent. Finally, in a number of countries the nature of the privatization process initially prevented large domestic private owners from obtaining 100% ownership stakes and insiders or the state often owned sizeable holdings (see Kočenda and Hanousek, 2008). It frequently took these large shareholders several years to squeeze out minority shareholders and in the process the large shareholders sometimes artificially decreased the performance of their newly acquired firms in order to squeeze out the minority shareholders at low share prices.

The results highlight the importance of good management and corporate governance, access to world markets, and the presence of a functioning legal and institutional framework. For the former state-owned firms, restructuring is most easily and effectively achieved by foreign ownership. Foreign firms routinely bring in capable expatriate managers and invest heavily in training local managers. They sell products through their global distributional networks, introduce a relatively advanced system of corporate governance and stress the importance of business ethics. Corporate governance of foreign firms hence compensates to a considerable extent for the underdeveloped legal and institutional system in many transition economies. While some domestic firms have also developed good corporate governance, the underdeveloped legal system has allowed

local managers (or block shareholders) in many privatized firms to maximize their own benefits at the expense of corporate performance and hence welfare of (other) shareholders as well as stakeholders such as workers and government treasury. This is likely to account for the limited positive performance effects of privatization to domestic private owners as compared to the performance of firms privatized to foreign investors. Interestingly, in China the constraints imposed by the government on foreign firms, together with a relatively functioning legal system, have diminished the difference between the performance of private domestic and foreign firms and made domestic-foreign joint ventures the most productive form of corporate ownership.

The most important policy implication of our survey is that privatization *per se* does not guarantee improved performance, at least not in the short- to medium-run. Type of private ownership, corporate governance, access to know-how and markets, and the legal and institutional system matter for firm restructuring and performance. Foreign ownership tends to have a positive effect on performance. The positive effect of privatization to domestic owners, to the extent that it exists, takes a number of years to materialize.

References:

Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "The Colonial origins of Comparative Development: An Empirical Investigation," *American Economic Review*, 91(5): 1369-85.

Aghion, Philippe, and Olivier Blanchard. 1994. "On the Speed of Transition in Central Europe." *NBER Macroeconomics Annual*, 283-320.

Andreyeva, Tatyana. 2003. "Company performance in Ukraine. What governs its success." Economics Education and Research Consortium Working Paper 03/01.

Angelucci, Manuela, Saul Estrin, Jozef Konings, and Zbigniew Zólkiewski. 2002. "The Effect of Ownership and Competitive Pressure on Firm Performance in Transition Countries: Micro Evidence from Bulgaria, Romania and Poland." The William Davidson Institute Working Paper 434.

Baldwin, Richard E., Joseph F. Francois, and Richard Portes. 1997. "The Costs and Benefits of Eastern Enlargement: The Impact on the EU and Central Europe." *Economic Policy*, 12(24): 125-76.

Barnett, Steven. 2000. "Evidence on the Fiscal and Macroeconomic Impact of Privatization." IMF working paper 130.

Bena Jan, and Jan Hanousek. 2008. "Rent Extraction by Large Shareholders: Evidence Using Dividend Policy in the Czech Republic." *Czech Journal of Economics and Finance*, 58(3-4), 106-130.

Bennett, John, Saul Estrin and James Maw. 2005. "Why Did Transition Economies Choose Mass Privatization?" *Journal of the European Economic Association*, 3(2-3): 567-75.

Bennett, John, Saul Estrin, and Giovanni Urga. 2007. "Privatization Methods and Economic Growth in Transition Economies", Forthcoming in *Economics of Transition*.

Bennett, John and James Maw. 2003. "Privatization, Partial State Ownership, and Competition." *Journal of Comparative Economics*, 31(1): 58-74.

Berkowitz, Daniel, and David N. De Jong. 2001. "Policy Reform and Growth in Post-Soviet Russia." *European Economic Review*, 47(2): 337-52.

Bevan, Alan, Saul Estrin, and Mark Schaffer. 1999. "Determinants of Enterprise Performance during Transition." Centre for Economic Reform and Transformation Working Paper 99/03.

- Biais, Bruno and Enrico Perotti.** 2002. "Machiavellian Privatization." *American Economic Review*, 92(1): 240-58.
- Birdsall, Nancy and John Nellis.** 2003. "Winners and Losers: Assessing the Distributional Impact of Privatization." *World Development*, 31(10): 1617-33.
- Bishop, Matthew, and John Kay.** 1988. *Does Privatisation Work? Lessons from the UK*. London: Centre for Business Strategy, London Business School.
- Blanchard, Olivier, Rudiger Dornbusch, Paul Krugman, Richard Layard, and Lawrence Summers.** 1991. *Reform in Eastern Europe*. Cambridge, MA: MIT Press.
- Bonin, John P., and Paul Wachtel.** 2003. "Financial Sector Development in Transition Economies: Lessons from the First Decade." *Financial Markets, Institutions and Instruments*, 12(1): 1-66.
- Bortolotti, Bernardo, and Paolo Pinotti.** 2003. "The Political Economy of Privatization." Fondazione Eni Enrico Mattei Working Paper 2003.45.
- Bortolotti, Bernardo and Domenico Siniscalco.** 2004. *The challenges of privatization: An international analysis*. Oxford and New York: Oxford University Press.
- Boycko, Maxim, Andrei Shleifer, and Robert Vishny.** 1995. *Privatizing Russia*. Cambridge, MA: MIT Press.
- Brada, Josef C.** 1996. "Privatization Is Transition – Or Is It?" *Journal of Economic Perspectives*, 10(2): 67-86
- Brown J. David, and John S. Earle.** 2001a. "Privatization, Competition and Reform Strategies: Theory and Evidence from Russian Enterprise Panel Data." CEPR Discussion Paper Series 2758.
- Brown J. David, and John S. Earle.** 2001b. "Competition Enhancing Policies and Infrastructure: Evidence from Russia." CEPR Discussion Paper 3022.
- Brown J. David, John S. Earle, and Almos Telegdy.** 2006. "The Productivity Effects of Privatization: Longitudinal Estimates from Hungary, Romania, Russia, and Ukraine." *Journal of Political Economy*, 114(1): 61-99.
- Carlin, Wendy, Steven Fries, Mark E. Schaffer, and Paul Seabright.** 2001. "Competition and Enterprise Performance in Transition Economies: Evidence from a Cross-country Survey." CEPR Discussion Paper 2840.
- Claessens, Stijn, and Simeon Djankov.** 1998. "Politicians and Firms in Seven Central and Eastern European Countries." The World Bank Policy Research Working Paper 1954.

Claessens, Stijn, and Simeon Djankov. 1999. "Ownership Concentration and Corporate Performance in the Czech Republic." *Journal of Comparative Economics* 27(3): 498-513.

Claessens, Stijn, and Simeon Djankov. 2002. "Privatization Benefits in Eastern Europe." *Journal of Public Economics*, 83(3):307-24.

Claessens, Stijn, Simeon Djankov, and Gerhard Pohl. 1997. "Ownership and Corporate Governance: Evidence from the Czech Republic." The World Bank Policy Research Working Paper 1737.

Coffee, John C. 1996. "Institutional Investors in Transitional Economies: Lessons from the Czech Experience," in: Frydman, R., Gray, C., and Rapaczynski, A. (eds.): Corporate governance in Central Europe and Russia. Volume 1. Banks, Funds, and Foreign Investors. Budapest, CEU Press, pp.111-86.

Commander, Simon, and Jan Svejnar. 2007. "Do Institutions, Ownership, Exporting and Competition Explain Firm Performance? Evidence from 26 Transition Countries." IPC Working Paper No. 28. International Policy Center, Gerald R. Ford School of Public Policy, University of Michigan.

Cornelli, Francesco and David D. Li. 1997. "Large Shareholders, Private Benefits of Control, and Optimal Schemes of Privatization." *RAND Journal of Economics*, 28(4): 585-604.

Dewatripont, Mathias, Eric Maskin, and Gerard Roland. 2000. "Soft Budget Constraints and Transition." In *Planning, Shortage and Transformation*, ed. Eric Maskin and Andras Simonovitz. Cambridge: MIT Press.

Dewatripont, Mathias, and Gerard Roland. 1992(a). "Economic Reform and Dynamic Political Constraints." *Review of Economic Studies*, 59(4): 703-30.

Dewatripont Mathias and Gerard Roland. 1992(b). "The Virtues of Gradualism and the Legitimacy in the Transition to a Market Economy." *Economic Journal*, 102(411): 291-300.

Dewatripont, Mathias, and Gerard Roland. 1995. "The Design of Reform Packages Under Uncertainty." *American Economic Review*, 85(5): 1207-23.

Djankov, Simeon. 1999. "Ownership Structure and Enterprise Restructuring in six newly independent states." *Comparative Economic Studies*, 41(1): 75-95.

Djankov, Simeon, and Bernard Hoekman. 2000. "Foreign Investment and Productivity Growth in Czech Enterprises." *The World Bank Economic Review*, 14 (1): 49-64.

Djankov, Simeon, and Peter Murrell. 2002. "Enterprise Restructuring in Transition: A Quantitative Survey." *Journal of Economic Literature*, 40(3): 739-92

Dong, Xiao-Yuan, Louis Putterman, and Bulent Unel. 2006. "Enterprise Restructuring and Firm Performance: A Comparison of Rural and Urban Enterprises in Jiangsu Province." *Journal of Comparative Economics*, 34(3): 608-633.

Earle, John S., and Saul Estrin. 1996. "Employee Ownership in Transition." In *Corporate Governance in Central Europe and Russia. Insiders and the State*, ed. Roman Frydman, Cheryl W. Gray, and Andrzej Rapaczynski. Budapest: Central European University Press.

Earle John S., and Klara Sabirianova. 2002. "How Late to Pay? Understanding Wage Arrears in Russia" *Journal of Labor Economics*, 20(3): 661-707.

EBRD. various annual issues. *Transition Report*. London: EBRD.

Estrin, Saul. 1994. *Privatization in Central and Eastern Europe*. London, U.K.: Longman.

Estrin, Saul. 2002. "Competition and Corporate Governance in Transition." *Journal of Economic Perspectives*, 16(1): 101-24.

Estrin, Saul, Jan Hanousek, Evžen Kočenda, and Jan Svejnar. 2007. "Effects of Privatization and Ownership in Transition Economies." IPC Working Paper No. 30. International Policy Center, Gerald R. Ford School of Public Policy, University of Michigan.

Estrin, Saul, and Virginie Perotin. 1991. "Does Ownership Always Matter?" *International Journal of Industrial Organization*. 9(1): 55-72.

Frydman, Roman, Marek Hessel, and Andrzej Rapaczynski. 2000. "Why Ownership Matters? Entrepreneurship and the Restructuring of Enterprises in Central Europe." C.V. Starr Center for Applied Economics, New York University Working Paper 00-03.

Frydman, Roman, Cheryl W. Gray, Marek Hessel, and Andrzej Rapaczynski. 1999. "When does Privatization Work? The Impact of Private Ownership on Corporate Performance in Transition Economies." *Quarterly Journal of Economics* 114(4) (1999): 1153-91.

Frydman, Roman, Cheryl W. Gray, Marek Hessel, and Andrzej Rapaczynski. 2000. "The Limits of Discipline: Ownership and Hard Budget Constraints in the Transition Economies." *Economics of Transition*, 8(3): 577-601.

Frydman, Roman, Edmund S. Phelps, Andrzej Rapaczynski and Andrei Shleifer. 1993. "Needed Mechanisms of Corporate Governance and Finance in Eastern Europe." *Economics of Transition*, 1(2): 171-207.

Frydman, Roman, and Andrzej Rapaczynski. 1991. "Markets and Institutions in Large Scale Privatization: An Approach to Economic and Social Transformation in Eastern Europe", In *Reforming Central and Eastern European Economics; Initial Results and Challenges*, ed. Vittorio Corbo, Fabrizio Coricelli, and Jan Bossak. Washington D.C.: The World Bank.

Glaeser, Edward L., and José A. Scheinkman. 1996. "The Transition to Free Markets: Where to Begin Privatization." *Journal of Comparative Economics* 22(1): 23-42.

Gorodnichenko Yuriy, and Yegor Grygorenko. 2008. "Are Oligarchs Productive? Theory and Evidence." *Journal of Comparative Economics*, 36(1): 17-42.

Gouret, Fabian. 2007. "Privatization and output behavior during the transition: Methods matter!" *Journal of Comparative Economics*, 35:3-34.

Grigorian, David A. 2000. "Ownership and Performance of Lithuanian Enterprises." The World Bank Policy Research Working Paper Series 2343.

Grosfeld, Irena, and Thierry Tressel. 2002. "Competition and Ownership Structure: Substitutes or Complements? Evidence from the Warsaw Stock Exchange," *Economics of Transition*, 10(3): 525-551.

Gupta, Nandini, John Ham and Jan Svejnar. 2008. "Priorities and Sequencing in Privatization: Theory and Evidence from the Czech Republic." *European Economic Review*, ... (1): ...

Guriev, Sergei and William Megginson. 2006. "Privatization: What Have We Learned?" in Bourguignon, Francoi and Boris Pleskovic eds. *Beyond Transition*. Proceedings of the 18th ABCDE, World Bank.

Guriev, Sergei, and Andrei Rachinsky. 2005. "The Role of Oligarchs in Russian Capitalism." *Journal of Economic Perspectives*, 19(1): 131-50.

Gylfason, Thorvaldur. 1998. "Privatization, Efficiency and Economic Growth." CEPR Discussion Paper 1844.

Hanousek, Jan, and Evžen Kočenda. 2003. "The Impact of Czech Mass Privatization on Corporate Governance." *Journal of Economic Studies*, 30(3/4): 278-93.

Hanousek, Jan, and Evžen Kočenda. 2008. "Potential of the State to Control Privatized Firms." Forthcoming in *Economic Change and Restructuring*.

- Hanousek, Jan, Evžen Kočenda, and Jan Svejnar.** 2007. "Origin and Concentration: Corporate Ownership, Control, and Performance in Firms after Privatization." *Economics of Transition*, 15(1): 1-31.
- Hanousek, Jan, Evžen Kočenda, and Jan Svejnar.** 2008. "Divestitures, Privatization and Corporate Performance in Emerging Markets. Forthcoming in *Economics of Transition*.
- Hansen, Nico A.** 1997. "Privatization, Technology Choice and Aggregate Outcomes." *Journal of Public Economics*, 64(3): 425-42.
- Hart, Oliver D. and John Moore.** 1988. "Incomplete Contracts and Renegotiation." *Econometrica*, 56(4): 755-85.
- Hinds, Manuel.** 1990. "Issues in the Introduction of Market Forces in Eastern European Socialist Economies." In *Managing Inflation in socialist Economies in Transition*, ed. Simon Commander. Washington, D.C.: World Bank.
- Hu, Yifan, Frank Song, and Junxi Zhang.** 2004. "Competition, Ownership, Corporate Governance and Enterprise Performance: Evidence from China." Hong Kong Institute of Economics and Business Strategy Working Paper 1111.
- Jefferson, Gary H. and Jian Su.** 2006. "Privatization and restructuring in China: Evidence from shareholding ownership, 1995–2001." *Journal of Comparative Economics*, 34(1): 146–166.
- Jia, Jin, Qian Sun and Wilson Tong.** 2005. "Privatization via an Overseas Listing: Evidence from China's H-Share Firms." *Financial Management*, 34(3): 5-30.
- Johnson, Simon, Rafael LaPorta, Florencio Lopez-de-Silanes, and Andrei Shleifer.** 2000. "Tunneling." *Law and Economic Development*, 352-57.
- Jones, Derek C.** 2004. "Ownership and participation: A review of the empirical evidence for Transition Economies". *Advances in the Economic Analysis of Participatory and Labor managed Firms*, 8: 171-209,
- Jones, Derek, Mark Klinedinst, and Charles Rock.** 1998. "Productive Efficiency during Transition: Evidence from Bulgarian Panel Data." *Journal of Comparative Economics*, 26(3): 446-64.
- Jones, Derek C., and Niels Mygind.** 2002. "Ownership and Productive Efficiency: Evidence from Estonia." *Review of Development Economics*, 6(2): 284-301.
- Katz, Barbara G., and Joel Owen.** 1993. "Privatization: Choosing the Optimal Time Path." *Journal of Comparative Economics*, 17(4): 715-36.

Kornai, Janos. 1990. *The Road to a Free Economy. Shifting from a Socialist System: The Example of Hungary.* New York: W. W. Norton.

Kornai, Janos. 2001. "Ten Years after the Road to a Free Economy." In Boris Pleskovic and Nicholas Stern, eds. *Annual World Bank Conference on Development Economics 2000*, pp.46-66, Washington DC, World Bank, 2001.

Kornai, Janos, Eric Maskin, and Gerard Roland. 2003. "Understanding the Soft Budget Constraint." *Journal of Economic Literature*, 41(4): 1095-136.

Laffont, Jean-Jacques, and Jean Tirole. 1993. *A theory of Incentives in Procurement and Regulation.* Cambridge, MA: The MIT Press.

Lane, Julia, Harry Broadman and Inderjit Singh. 1998. "Labor Flexibility, Ownership and Firm Performance in China." *Review of Industrial Organization*, 13: 621-635.

LaPorta, Rafael, and Florencio Lopez-de-Silanes. 1999. "The Benefits of Privatization: Evidence from Mexico." *The Quarterly Journal of Economics*, 114: 1193-1242.

Lau, Lawrence J., Yingyi Qian, and Gerard Roland. 2000. "Reform without Losers: An Interpretation of China's Dual-Track Approach to Transition." *Journal of Political Economy*, 108(1): 120-43.

Lehmann, Hartmut, Jonathan Wadsworth, and Alessandro Acquisti. 1999. "Grime and Punishment: Job Insecurity and Wage Arrears in the Russian Federation." *Journal of Comparative Economics*, 27(4): 595-617.

Lipton, David, and Jeffrey Sachs. 1990. "Creating a Market Economy in Eastern Europe: The Case of Poland." *Brookings Papers on Economic Activity*, 1990(1): 75-147.

Lízal, Lubomír, and Jan Svejnar. 2002. "Investment, Credit Rationing and the Soft Budget Constraint: Evidence from Czech Panel Data." *The Review of Economics and Statistics*, 84(2): 353-70.

Maurel, Mathilde. 2001. "Investment, Efficiency, and Credit Rationing: Evidence from Hungarian Panel Data." William Davidson Institute Working Paper 403.

Meggison, William L. 2005. *The Financial Economics of Privatization.* New York: Oxford University Press.

Meggison, William L., and Jeffrey Netter. 2001. "From State to Market: A Survey of Empirical Studies on Privatization." *Journal of Economic Literature*, 39(2): 321-389.

- Meyer, Klaus.** 1998. Direct investment in economies in transition.” New Horizons in International Business series. Cheltenham, U.K. and Northampton, Mass.: Elgar.
- Miller, Jeffrey.** 2006. “Evaluation of Mass Privatization in Bulgaria.” William Davidson Institute Working Paper 814.
- Morck, Randall, Andrei Shleifer, and Robert W. Vishny.** 1989. “Alternative Mechanisms for Corporate Control”. *American Economic Review*. 79(4): 842-52.
- Morck, Randall, Daniel Wolfenzon, and Bernard Yeung.** 2005. “Corporate Governance, Economic Entrenchment, and Growth.” *Journal of Economic Literature*, 43(3): 655-720.
- Munich, Daniel, Jan Svejnar, and Katherine Terrell.** 2005. “Returns to Human Capital under the Communist Wage Grid and During the Transition to a Market Economy.” *The Review of Economics and Statistics*, 87(1): 100-23.
- Orazem, Peter F., and Milan Vodopivec.** 2004. “Do Market Pressures Induce Economic Efficiency? The Case of Slovenian Manufacturing, 1994-2001.” World Bank Policy Research Working Paper 3189.
- Perevalov, Yuri, Ilya Gimadii, and Vladimir Dobrodey.** 2000. “Does Privatization Improve Performance of Industrial Enterprises? Empirical Evidence from Russia.” *Post-Communist Economies*, 12(3): 337-63.
- Pivovarsky, Alexander.** 2001. “How Does Privatization Work?: Ownership Concentration and Enterprise Performance in Ukraine.” IMF Working Paper 01/42.
- Pivovarsky, Alexander.** 2003. “Ownership Concentration and Performance in Ukraine’s Privatized Enterprises.” *IMF Staff Papers*, 50(1): 10-42.
- Plane, Patrick.** 1997. “Privatization and Economic Growth: An Empirical Investigation from a Sample of Developing Market Economies.” *Applied Economics*, 29(2): 161-78.
- Roland, Gerard.** 1994. “On the Speed and Sequencing of Privatization and Restructuring.” *The Economic Journal*, 104(426): 1158-68.
- Sabirianova Klara, Jan Svejnar, and Katherine Terrell.** 2005. “Foreign Investment, Corporate Ownership, and Development: Are Firms in Emerging Markets Catching Up to the World Standard?” William Davidson Institute Working Paper 734.
- Salis, Sergio.** 2006. “Evaluating the Causal Effect of Foreign Acquisition on Domestic Performances: The Case of Slovenian Manufacturing Firms.” William Davidson Institute Working Paper 803.

- Shirley, Mary, and Patrick Walsh.** 2001. "Public versus Private Ownership: The Current State of the Debate." World Bank Policy Research Paper 2420.
- Shleifer, Andrei, and Robert W. Vishny.** 1994. "Politicians and Firms." *Quarterly Journal of Economics*, 109:4: 995-1025.
- Shleifer, Andrei, and Robert W. Vishny.** 1997. "A Survey of Corporate Governance." *Journal of Finance*, 52(2): 737-83.
- Simoneti, Marko, Joze P. Damijan, Matija Rojec, and Boris Majcen.** 2005. "Case-by-case versus Mass Privatization in Transition Economies: Initial Owner and Final Seller Effects on Performance of Firms in Slovenia." *World Development*, 33(10): 1603-25.
- Simoneti, Marko, and Aleksandra Gregoric.** 2004. "Managerial Ownership and Corporate Performance in Slovenian Post-privatisation Period." *European Journal of Comparative Economics*, 1(2): 217-41.
- Smith, Stephen, Beom-Cheol Cin, and Milan Vodopivec.** 1997. "Privatization Incidence, ownership Forms, and Firm Performance: Evidence from Slovenia." *Journal of Comparative Economics*, 25: 158-179.
- Song, Ligang, and Yang Yao.** 2004. "Impacts of Privatization on Firm Performance in China." China Center for Economic Research Working Paper E2004005.
- Stiglitz, Joseph.** 2002. *Globalization and its Discontents*. New York: Norton.
- Sun, Qian, and Wilson H. S. Tong.** 2003. "China share issue privatization: the extent of its success." *Journal of Financial Economics*, 70(2): 183-222.
- Svejnar, Jan.** 1989. "A Framework for the Economic Transformation of Czechoslovakia." *PlanEcon Report*, 5(52): 1-18.
- Svejnar, Jan.** 2002. "Transition Economies: Performance and Challenges," *Journal of Economic Perspectives*, 16(1): 3-28.
- Tian, Lihui, and Saul Estrin.** 2008. "Retained State Shareholding in Chinese PLCs: Does Government Ownership Always Reduce Corporate Value?" *Journal of Comparative Economics*, 36(1): 74-89.
- Vickers, John, and George Yarrow.** 1988. *Privatization: An Economic Analysis*. Cambridge, MA: MIT Press.
- Vining, Aidan R., and Anthony E. Boardman.** 1992. "Ownership versus Competition: Efficiency in Public Enterprise." *Public Choice*, 73(2): 205-39.

Warzynski, Frederic. 2003. "Managerial Change, Competition, and Privatization in Ukraine." *Journal of Comparative Economics*, 31(2): 297-314.

Weiss, Andrew, and Georgiy Nikitin. 2002. "Effects of Ownership by Investment Funds on the Performance of Czech Firms" in *Designing Financial Systems in Transition Economies: Strategies for Reform in Central and Eastern Europe*, ed. Anna Meyendorff and Anjan V. Thakor. Cambridge, MA: MIT Press.

Yusuf, Shahid; Nabeshima, Kaoru and Perkins, Dwight H. 2006. *Under New Ownership: Privatizing China's State-owned Enterprises*. Washington, DC: World Bank.

Zaldueño, Juan. 2003. "Enterprise Restructuring and Transition: Evidence from the Former Yugoslav Republic Macedonia." International Monetary Fund Working Paper 03/136.

Zinnes, Clifford, Yair Eilat, and Jeffrey Sachs. 2001. "The Gains from Privatization in Transition Economies: Is Change of Ownership Enough?" *IMF Staff Papers* 48(0): 146-70.

Table 1: Private Sector Share of GDP

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Czech Republic	10	15	30	45	65	70	75	75	75	80	80	80	80	80	80	80	80
Hungary	25	30	40	50	55	60	70	75	80	80	80	80	80	80	80	80	80
Poland	30	40	45	50	55	60	60	65	65	65	70	75	75	75	75	75	75
Slovak Republic	10	15	30	45	55	60	70	75	75	75	80	80	80	80	80	80	80
Slovenia	15	20	30	40	45	50	55	60	60	60	65	65	65	65	65	65	65
Estonia	10	10	25	40	55	65	70	70	70	75	75	75	80	80	80	80	80
Latvia	10	10	25	30	40	55	60	60	65	65	65	65	70	70	70	70	70
Lithuania	10	10	20	35	60	65	70	70	70	70	70	70	75	75	75	75	75
Bulgaria	10	20	25	35	40	50	55	60	65	70	70	70	70	75	75	75	75
Romania	15	25	25	35	40	45	55	60	60	60	60	65	65	65	70	70	70
Russia	5	5	25	40	50	55	60	70	70	70	70	70	70	70	70	65	65
Ukraine	10	10	10	15	40	45	50	55	55	55	60	60	65	65	65	65	65

Source: European Bank for Reconstruction and Development (EBRD), Transition Reports

Table 2
List of surveyed studies: territorial coverage and performance indicators

Author(s)	TFP	Profitability	Sales&Revenues	D-M
Andreyeva (2003)	×		×	
Angelucci, Estrin, Konings, Zolkiewski (2002)	○		○	
Brown and Earle (2001a)	×			YES
Brown and Earle (2001b)	×			YES
Brown, Earle and Telegdy (2006)	⊗			
Carlin, Fries, Schaffer, Seabright (2001)			⊗	YES
Claessens and Djankov (1998)	○			
Claessens and Djankov (1999)		○		YES
Claessens and Djankov (2002)			○	
Claessens, Djankov and Pohl (1997)		○		YES
Commander and Svejnar (2007)	⊗			
Djankov and Hoekman (2000)			○	
Frydman, Gray, Hessel, and Rapaczynski (1999)			○	YES
Frydman, Hessel, and Rapaczynski (2000)			○	YES
Grigorian (2000)			○	YES
Grosfeld and Tressel (2002)	○			
Hanousek, Kocenda, and Svejnar (2007)		○	○	
Hanousek and Kocenda (2003)		○		
Jones and Mygind (2002)			○	YES
Jones, Klinedinst and Rock (1998)	○			YES
Maurel (2001)			○	
Miller (2006)		○		
Orazem and Vodopivec (2004)	○			
Perevalov, Gimadii, and Dobrodey (2000)		×	×	YES
Pivovarsky (2001)			×	
Pivovarsky (2003)	×			
Sabirianova, Svejnar, and Terrell (2005)	⊗			
Salis (2006)	○		○	
Simoneti, Damijan, Rojec, and Majcen (2005)	○			
Smith, Cin, and Vodopivec (1997)	○			YES
Simoneti and Gregoric (2004)	○	○		
Weiss and Nikitin (2002)	○	○		YES
Warzynski (2003)		×		YES
Zalduendo (2003)		○		

Note: ○ denotes coverage of the CEE countries; × denotes coverage of the Russia and CIS region; ⊗ denotes combination of the coverage for CEE, Russia and CIS. Yes in the D-M column indicates the study is covered by Djankov and Murell (2002).

Figure 1.A.
TFP level

		CEE			Russia & CIS		
		Private domestic	Any private	Private foreign	Private domestic	Any private	Private foreign
Positive effect	Large effect (>15%)	● ●		○ ● ● ● ● ● ● ● ●		●	● ●
	Medium effect (5-15%)	● ● ●				●	
	Small effect (<5%)					●	
Negative effect	Insignificant	●		● ●	●	○	●
	Small effect (<5%)				●		
	Medium effect (5-15%)				●		
	Large effect (>15%)		○				

Figure 1.B.

TFP growth

		CEE			Russia & CIS		
		Private domestic	Any private	Private foreign	Private domestic	Any private	Private foreign
Positive effect	Large effect (>5%)	○	○				
	Medium effect (1-5%)						
	Small effect (<1%)		○ ●				
Insignificant		●		○ ●			
Negative effect	Small effect (<1%)						
	Medium effect (1-5%)						
	Large effect (>5%)						

Figure 2.A.
Profitability level

		CEE			Russia & CIS		
		Private domestic	Any private	Private foreign	Private domestic	Any private	Private foreign
Positive effect	Large effect (>15%)						
	Medium effect (5-15%)		◐				
	Small effect (<5%)	○ ◐		◐ ●			
	Insignificant	●	◐	○		○	
Negative effect	Small effect (<5%)						
	Medium effect (5-15%)						
	Large effect (>15%)						

Figure 2.B.
Profitability growth

		CEE			Russia & CIS		
		Private domestic	Any private	Private foreign	Private domestic	Any private	Private foreign
Positive effect	Large effect (>5%)						
	Medium effect (1-5%)					◐	
	Small effect (<1%)		○				
Insignificant		○ ●		○ ●			
Negative effect	Small effect (<1%)						
	Medium effect (1-5%)						
	Large effect (>5%)						

Figure 3.A.
Revenue level

		CEE			Russia & CIS		
		Private domestic	Any private	Private foreign	Private domestic	Any private	Private foreign
Positive effect	Large effect (>15%)	◐		◐ ● ●		○	
	Medium effect (5-15%)	◐					
	Small effect (<5%)	○		○		●	
Insignificant							
Negative effect	Small effect (<5%)					●	
	Medium effect (5-15%)						
	Large effect (>15%)						

Figure 3.B.

Revenue growth

		CEE			Russia & CIS		
		Private domestic	Any private	Private foreign	Private domestic	Any private	Private foreign
Positive effect	Large effect (>5%)			○			
	Medium effect (1-5%)						
	Small effect (<1%)			● ○			
Insignificant		○ ●				○	
Negative effect	Small effect (<1%)						
	Medium effect (1-5%)						
	Large effect (>5%)						