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The Effects of Privatization and Ownership in Transition Economies

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In this paper, we evaluate what we have learned to date about the effects of privatization from the experiences during the last fifteen to twenty years in the postcommunist (transition) economies and, where relevant, China. We distinguish separately the impact of privatization on efficiency, profitability, revenues, and other indicators and distinguish between studies on the basis of their econometric methodology in order to focus attention on more credible results. The effect of privatization is mostly positive in Central Europe, but quantitatively smaller than that to foreign owners and greater in the later than earlier transition period. In the Commonwealth of Independent States, privatization to foreign owners yields a positive or insignificant effect while privatization to domestic owners generates a negative or insignificant effect. The available papers on China find diverse results, with the effect of nonstate ownership on total factor productivity being mostly positive but sometimes insignificant or negative.

1. *Introduction*

This paper is motivated by the ongoing debate among economists and policymakers 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 fifteen to twenty years in the postcommunist (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

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TABLE 1
Private Sector Share of Gross Domestic Product

	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 *Transition Reports*.

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 percent and 90 percent (see European Bank for Reconstruction and Development 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 A. 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 (2002). Djankov and Murrell apply 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 focuses on the impact on company performance of different types of mainly domestic owners—insiders, outsiders, investment funds—and is based largely on country-specific survey datasets that were frequently quite small and not necessarily representative. It does 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).

Djankov and Murrell conclude 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 blockholders 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 the CIS. Djankov and Murrell note that overall the impact of privatization on company performance was typically positive and statistically significant in CEE, but statistically insignificant in the CIS. They suggest 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, Djankov and Murrell also point 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 urge 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 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. Secondly, researchers have increasingly noted that policies and institutional development have diverged between the CEE and CIS countries, with the former increasingly adopting EU rules and joining the European Union, 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 Djankov and Murrell, 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

[1] This was also argued in a short survey by Sergei Guriev and William L. Megginson (2007) which related the mixed results on the impact of privatization in transition economies to the slow progress in microeconomic and legal reform, especially in the CIS countries.

[2] Djankov and Murrell's arguments were developed in Megginson (2005). He concludes 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 percent of the total global privatization proceeds between 1990 and 2000.

with China, our conclusions are richer and more nuanced, as well as more robust, than those available to Djankov and Murrell.

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 the 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 that employ robust methodologies and, perhaps because of this, the available papers find diverse results, with the effect of nonstate 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, the CIS, and China) suggest that this effect is not statistically significant except in certain 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/nonstate 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 (1) privatization results in higher exports and greater efficiency, as measured by the cost of inputs relative to sales, Tobin's *Q*, and degree of soft budget constraints, and (2) 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. We discuss the theoretical and institutional issues raised by privatization in transition economies in section 2. We briefly examine the macroeconomic evidence about the impact of privatization in section 3 before turning to a survey of the enterprise-level economics literature about the impact of privatization on different indicators of company performance in section 4. 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 R. Vining and Anthony E. Boardman 1992), as well as on evidence from developed and middle-income countries that suggested that privatization improves enterprise efficiency (see Megginson and Jeffry 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 et al. 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 subsection (2.1) below.

The transfer of ownership rights was seen by most academics and policymakers 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 subsection (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-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 subsection (2.3).

In the final subsection (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 J. 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 European Bank for Reconstruction and Development's Transition Indicators (European Bank for Reconstruction and Development, various years) progress in developing a market-supporting legal system was everywhere slow, although the pace was more rapid in CEE than the 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 European Union as a prerequisite for accession (Richard E. Baldwin, Joseph F. 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

[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).

many SOEs has proved disappointing however and, since the early 1980s, privatization has 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 Bortolloti and Domenico Siniscalco 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 2009).[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 (Schleifer 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). 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, although 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 the 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]

[4] Hanousek, Kočenda, and Svejnar (2009) 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.

[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 D. 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) analyze politically motivated privatization. They find that, when median voters favor redistribution, strategic rationing and underpricing will be needed to shift problematic preferences. John Bennett and James Maw (2003) and Bennett, Estrin, and Maw (2005) also consider underpricing 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.

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 has led analysts to stress that the 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 A. Bevan, Estrin, and Mark E. Schaffer 1999). Moreover, Roman Frydman et al. (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 D. 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 nonroutine 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 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 et al. 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 L. Glaeser and José A. 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]

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

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

[7] Privatization also has been 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; Shleifer 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) survey the impact of privatization on distribution in developing economies and conclude that privatization programs have worsened the distribution of asset ownership, more so in transitional economies than Latin America.

deficiencies in some of these 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 E. Stiglitz 2002).

The arguments for fast privatization were that (1) price liberalization and other reforms would not provide sufficient incentives for SOEs to restructure and become competitive, (2) the state would not be able to resist intervening in SOEs (Frydman and Andrzej Rapaczynski 1991; Maxim Boycko, Shleifer, and Vishny 1995), and (3) managers (and/or workers) would decapitalize firms in the absence of rapid clarification of property rights (Frydman et al. 1993; Blanchard et al. 1991). In contrast, Dewatripont and Roland (1992a, 1992b) and Roland (1994) argue 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, 1992b) argument for gradualism is 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 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 C. 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 European Bank for Reconstruction and Development 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 (European Bank for Reconstruction and Development 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

[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).

[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 European Bank for Reconstruction and Development finds that, in twenty of the twenty-three countries, the state had retained some shares in around 20 percent 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.

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 nonrandom selection may potentially overstate the positive effect of privatization on performance. Djankov and Murrell, for instance, indicate that 47 percent of pre-2003 studies that they survey do not control for this nonrandom selection.

Realizing this shortcoming, Nandini Gupta, John C. 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 G. Katz and Joel Owen 1993).

Gupta, Ham, and Svejnar (2008) consider five competing government objectives for privatization: (1) maximizing Pareto efficiency through resource allocation, (2) maximizing public goodwill from the free transfers of shares to the public, (3) minimizing political costs stemming from unemployment,[10] (4) maximizing efficiency through information gains, and (5) 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 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 macroeconomic performance and growth. In Thorvaldur Gylfason (1998), privatization is shown to increase

[10] Political configurations can influence the pace and timing of privatization, as was found by Bernardo Bortolotti and Paolo Pinotti (2003) in their study of twenty-one 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.

[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.

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 A. Hansen (1997) uses a general equilibrium imperfect competition model to show that a broad distribution of ownership rights can have favorable influence on microeconomic 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 N. DeJong (2003) 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 eighteen 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 twenty-five transition countries to find that privatization does not by itself increase GDP growth, but they suggest that a positive 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 (twenty-six 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 postprivatization relative to preprivatization, 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

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

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 M. Shirley and Patrick Walsh 2000; Djankov and Murrell 2002).

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 (1) use small and often unrepresentative samples of firms, (2) are frequently unable to identify accurately ownership because privatization is still ongoing or because the frequent postprivatization changes of ownership are hard to detect, and (3) 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 (1) employ fixed effects or instrumental variables (IVs) to handle the selection/endogeneity problem inherent in privatization and (2) 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.

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

In view of these issues, we consider fourteen privatization studies covered by Djankov and Murrell that handle the selection/endogeneity problem and we add twenty studies that have been published or circulated as working papers by December 2007. We list these thirty-four studies, in table 2, together with information on their region and performance indicator.

In assessing the effects of privatization, we focus on TFP and TFP growth (figures 1 and 2, respectively), profitability and growth in profitability (figures 3 and 4, respectively), and revenue level and growth in revenue (figures 5 and 6, 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 CEE, including the Baltics and Balkans, and studies dealing with the 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 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 1–6 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 CEE, the CIS, or both.

In constructing figures 1–6, 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 1–6, 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 percent), medium effects (5–15 percent), small effects (less than 5 percent), and results that are statistically insignificant at the 10 percent test level. In terms of rate of growth, we divide the studies into those that report relatively large effects (more than 5 percent), medium effects (1–5 percent), small effects (less than 1 percent), and effects that are statistically insignificant at the 10 percent test level.

We present the results graphically in the form of white, black, and half-white/half-black circles. White circles denote effects of studies that cover the early-to-mid 1990s when privatization was not yet completed (the exact timeframe varies across countries). Black circles indicate that the data come from the mid-to-late 1990s onwards. Half-white/half-black 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

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

TABLE 2
List of Surveyed Studies: Territorial Coverage and Performance Indicators

Author(s)	TFP	Profitability	Sales and Revenues	D–M
Andreyeva (2003)	2		2	
Angelucci, Estrin, Konings, Zolkiewski (2002)	1		1	
Brown and Earle (2001a)	2			Yes
Brown and Earle (2001b)	2			Yes
Brown, Earle and Telegdy (2006)	3			
Carlin, Fries, Schaffer, Seabright (2001)			3	Yes
Claessens and Djankov (1999a)		1		Yes
Claessens and Djankov (1999b)	1			
Claessens and Djankov (2002)			1	
Claessens, Djankov and Pohl (1997)		1		Yes
Commander and Svejnar (forthcoming)	3			
Djankov and Hoekman (2000)			1	
Frydman, Gray, Hessel, and Rapaczynski (1999)			1	Yes
Frydman, Hessel, and Rapaczynski (2000)			1	Yes
Grigorian (1999)			1	Yes
Grosfeld and Tressel (2002)	1			
Hanousek, Kočenda, and Svejnar (2007)		1	1	
Hanousek and Kočenda (2003)		1		
Jones and Mygind (2002)			1	Yes
Jones, Klinedinst and Rock (1998)	1			Yes
Maurel (2001)			1	
Miller (2006)		1		
Orazem and Vodopivec (2004)	1			
Perevalov, Gimadii, and Dobrodey (2000)		2	2	Yes
Pivovarsky (2001)			2	
Pivovarsky (2003)	2			
Sabirianova, Svejnar, and Terrell (2005)	3			
Salis (2005)	1		1	
Simoneti, Damijan, Rojec, and Majcen (2005)	1			
Smith, Cin, and Vodopivec (1997)	1			Yes
Simoneti and Gregoric (2004)	1	1		
Weiss and Nikitin (2002)	1	1		Yes
Warzynski (2003)		2		Yes
Zalduendo (2003)		1		

Notes: "1" denotes coverage of the CEE countries; "2" denotes coverage of the Russia and CIS region; "3" 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).

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]

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 versus foreign status).

4.1 *Total Factor Productivity*

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 a 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 seventeen 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 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 versus 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 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 Gary H. Jefferson, Thomas G. Rawski, and Yuxin Zheng (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 H. Perkins 2006)) find diverse results, with the effect

15 This is case of Stijn Claessens and Djankov (1999b, 2002), Wendy Carlin et al. (2001), and Simon Commander and Svejnar (forthcoming).

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

		CEE			Russia and 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 1. Total Factor Productivity Level

Notes: White circles denote effects of studies that cover the early-to-mid 1990s period. Black circles denote effects of studies that cover the mid-to-late 1990s onwards. Half-white/half-black circles denote effects of studies covering both periods. One circle represents result for one country.

of nonstate ownership being mostly positive and often statistically significant.[17]

Compared to the Djankov–Murrell survey that finds the effect of private ownership to be positive in CEE but insignificant in the 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 the CIS). The reason for finding a stronger positive effect than Djankov–Murrell 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

[17] For a more detailed discussion of the results of these studies, see Estrin et al. (2007).

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 nonstate ownership in China may also be related to the fact that privatization on a relatively large scale is a more recent phenomenon in China.

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 the CIS countries are statistically insignificant and one (Estonia) shows a positive effect of employee ownership on TFP. These results are different from those of Djankov–Murrell 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 Djankov–Murrell studies in this area. Moreover, Djankov and Murrell 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, Djankov and Murrell 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 Z. 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 twenty-six transition economies, Commander and Svejnar (forthcoming) find that domestic start up firms are less efficient than 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 figure 2, 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 (forthcoming) estimate the effect of privatization to domestic and foreign owners on TFP growth on a sample of twenty-seven transition economies, thus combining CEE and CIS countries. Using data from 2002–05, they find the two

[18] In addition to our discussion above, see Manuel Hinds (1991), John S. Earle and Estrin (1996), and Josef C. Brada (1996).

		CEE			Russia and 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. Total Factor Productivity Growth

Notes: White circles denote effects of studies that cover the early-to-mid 1990s period. Black circles denote effects of studies that cover the mid-to-late 1990s onwards. Half-white/half-black circles denote effects of studies covering both periods. One circle represents result for one country.

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 figures 3 and 4, we summarize the effects of ownership on profitability from ten 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 3). This is accompanied by insignificant effects of privatization to domestic and foreign owners on the rate of growth of profitability (figure 4).

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

		CEE			Russia and 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. Profitability Level

Notes: White circles denote effects of studies that cover the early-to-mid 1990s period. Black circles denote effects of studies that cover the mid-to-late 1990s onwards. Half-white/half-black circles denote effects of studies covering both periods. One circle represents result for one country.

by industrial (nonfinancial) 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 1993–95, 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 other 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,

		CEE			Russia and 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 4. Profitability Growth

Notes: White circles denote effects of studies that cover the early-to-mid 1990s period. Black circles denote effects of studies that cover the mid-to-late 1990s onwards. Half-white/half-black circles denote effects of studies covering both periods. One circle represents result for one country.

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 percent) 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 Aleksandra 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, Jefferson and Jian Su (2006) estimate effect of private ownership on profit/sales to be positive but significant only at the 10 percent 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 that state and private majority ownership has a positive effect relative to nonmajority 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 H. S. Tong (2003) find that majority state or foreign ownership does not have a significant effect on the operating income/sales ratio.

In CEE, the 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 figures 5 and 6, we report the privatization effects on revenues from fourteen 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 5). 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 percent). 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 the 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 the 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, the CIS, and China) suggest that this effect is not statistically significant except in some well defined categories of ownership.

		CEE			Russia and 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 5. Revenue Level

Notes: White circles denote effects of studies that cover the early-to-mid 1990s period. Black circles denote effects of studies that cover the mid-to-late 1990s onwards. Half-white/half-black circles denote effects of studies covering both periods. One circle represents result for one country.

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 nonlabor (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/nonstate ownership on labor productivity, with only one estimate

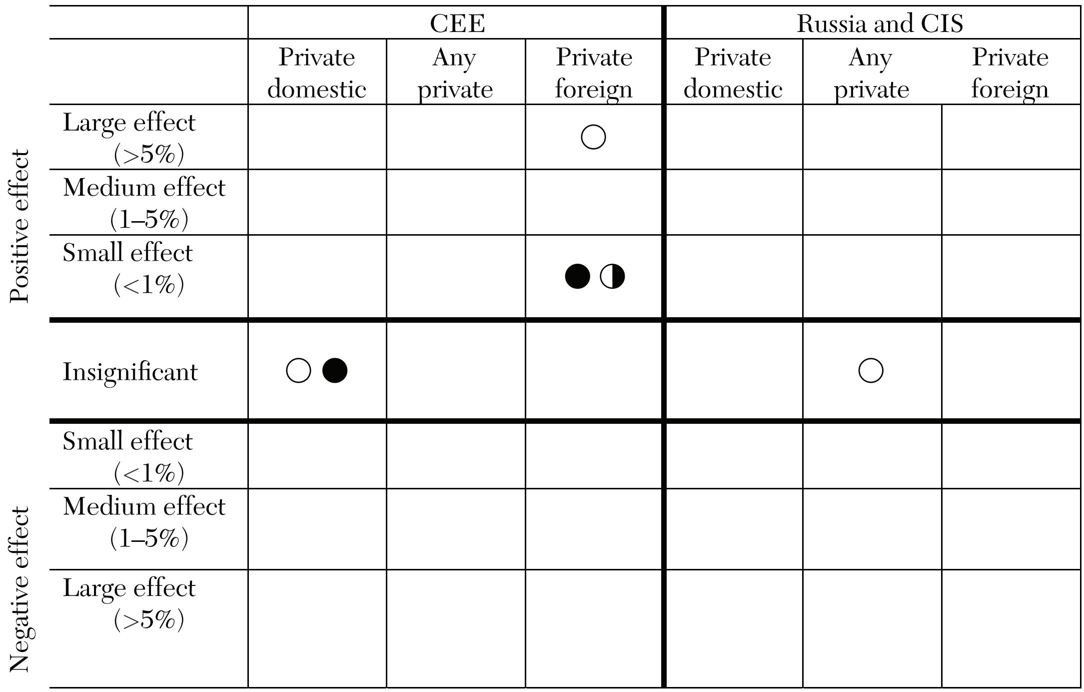

Figure 6. Revenue Growth

Notes: White circles denote effects of studies that cover the early-to-mid 1990s period. Black circles denote effects of studies that cover the mid-to-late 1990s onwards. Half-white/half-black circles denote effects of studies covering both periods. One circle represents result for one country.

being positive. Overall, the effects of all types of private ownership on labor productivity (not controlling for nonlabor inputs) are, hence, found to be positive or insignificant in CEE and the 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 Rafael La Porta and Florencio 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 G. 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 thirty-five 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: (1) 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, and (2) 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, Marek 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 policymakers expected privatization to result in greatly improved economic performance. As it turned out, the postcommunist 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 CEE and the 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 CEE and the CIS coincides with differences in policies and institutional development in the two regions, with the former increasingly adopting EU rules and joining the European Union, 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 the 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 the CIS (collective ownership in China) does not seem to have a negative effect. Data from CEE and the 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 the CIS has been smaller in the case of domestic than foreign private owners. Discussions with managers, policymakers 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 percent ownership stakes and insiders or the state often owned sizeable holdings (see Hanousek and Kočenda 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.

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