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## Postcommunist Privatization and Productivity: What Have We Learned?

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# Postcommunist Privatization and Productivity

## What Have We Learned?

**T**he design of privatization policies and their consequences for firm performance have been among the most controversial issues in postcommunist Eastern Europe and the former Soviet Union. From the early 1990s, policymakers and observers saw privatization as the linchpin of a strategy to improve managerial incentives, encourage firm restructuring, and generally bring about a shift to a “private property regime.” In many countries, the initial enthusiasm for ownership change led to large-scale divestment through “mass privatization,” as well

as giveaways to employees and rapid sales to domestic and foreign investors. The emphasis on privatization became decidedly less fashionable later in the 1990s, as critics argued that the programs had either done little good but resulted in misplaced priorities (for instance, by neglecting institutional change) or had actually caused damage (for instance, by facilitating asset stripping).

Yet the evidence supporting either of these positions was until very recently quite weak. At the beginning of transition, there was little or no relevant previous experience to justify the strong pro-privatization enthusiasm. And by the

late 1990s few systematic studies existed to support the negative views of the critics, who instead relied almost entirely on either macroeconomic performance indicators (which tended to be quite poor through the mid-1990s in most countries) or on anecdotes. Just as the critics’ position, which was part of a broader attack on the “Washington consensus,” seemed to become dominant, a surge of statistical studies of privatized firms began to appear, and most of these tend to report positive effects of privatization on measures of firm performance in many countries (see the summary in Djankov and Murrell [2002]). But the studies

suffer from enough methodological weaknesses to make them ineffective in persuading most skeptics.

Recent research carried out under the auspices of the Upjohn Institute provides a firmer empirical basis for drawing conclusions about the effectiveness of privatization in raising productivity (Brown, Earle, and Telegdy 2006). The analysis overcomes the typical problems of previous studies: incomparability across countries, small sample sizes, short time series, and lack of control for selection bias in the privatization process. The data used in the analysis consist of firm-level information from four countries—Hungary, Romania, Russia, and Ukraine—that span the varieties of privatization policies and reform strategies among transition economies. The set of information covers nearly all manufacturing enterprises inherited from the central planning period, and the time series for each firm ranges from as early as 1985 (in Russia) to 2002 (in all four countries).

The large samples of firms facilitate comparisons within industries, and the long time series make it possible to take into account biases in the selection of firms to be privatized. They also allow for the possibility that privatization might have anticipatory effects, which could be either positive (if managerial incentives are increased by the expected benefits under new owners), or negative (if managers see little future with the firm and resort to asset stripping). Either type of behavior would result in a biased estimate of the privatization effect in a simple comparison of pre- and postprivatization performance. Finally, the Upjohn study applies evaluation methods developed for labor market programs to estimate the productivity impact of privatization.

### Privatization Policies and Results

The three main methods of privatization are transfer to employees, mass privatization programs, and case-by-case sales. Privatization through employee-giveaways was common in Russia and Ukraine, a bit less common in Romania, and little used in Hungary (except for some managerial buyouts).

The method is attractive because of its relative ease of administrative and political implementation and the possibility that employee ownership may improve work incentives, company loyalty, and support for restructuring; widely dispersed ownership among employees may also facilitate takeovers by outsider investors. On the other hand, insider privatization is frequently alleged to be ill-suited to the restructuring demands of the transition. Employees may lack the necessary skills, capital, technologies, and access to markets necessary to turn their firms around, and corporate governance by employees may function particularly poorly when the firm requires difficult restructuring choices involving disparate distributional impacts within the firm.

Mass privatization programs, typically involving vouchers distributed to citizens, have also accounted for a substantial share of privatization in many transition

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### **A key result of the study is strong evidence that foreign privatization has a bigger impact than domestic privatization in all four countries.**

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countries, including Romania, Russia, and Ukraine, but again not Hungary. In principle, such programs may avoid high levels of inside ownership, but in Russia and Ukraine they were in fact combined with strong preferences for employees to use their vouchers in acquiring shares in their employers. A serious problem with the programs is the risk of highly dispersed ownership structures, a problem normally addressed through the creation of intermediaries—either by the state as part of the program as in Poland and Romania—or by private parties competing for individuals' vouchers.

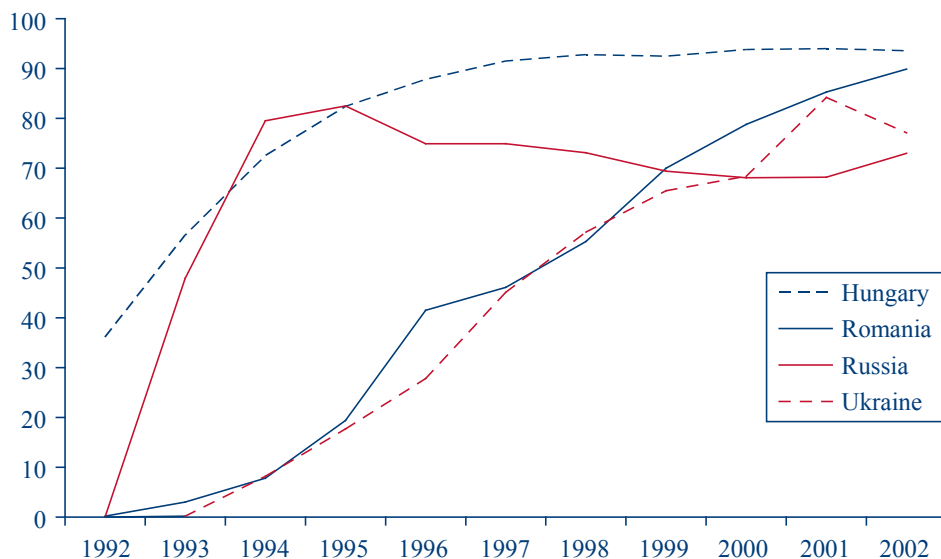
The final major privatization method, case-by-case sales of large blocks of shares to outside investors, is the method used most often in the West and to many observers is the most likely to encourage productivity-enhancing restructuring. Hungary is rare among transition economies in relying almost exclusively on sales (East Germany and Estonia are two other examples). But most countries

have used this method for some share of privatization; in this study, sales are more common in Romania and less common in Russia and Ukraine. The disadvantages of sales are related to insufficient demand and political difficulties compounded by problems of valuation. In addition, sales contracts frequently include not only a price, but also commitments regarding investment and employment, which are taken into account in selecting a buyer. Although policymakers may feel themselves politically constrained to ensure continued employment and operation of privatized firms, such restrictions could have reduced restructuring in the companies privatized through block sales, attenuating any potential benefits of privatization.

Among the recipients of blocks of shares through sales, it may be important to distinguish foreign from domestic investors. Most observers would probably agree that foreign owners are likely to have better access to finance, management skills, new technologies, and knowledge of markets, which would suggest a higher productivity effect when privatization results in foreign ownership. On the other hand, foreigners may face special difficulties restructuring firms in transition economies, where layoff decisions are highly politicized, for example, and where local networks and knowledge of local conditions may be unusually nontransparent. Under such conditions, any advantage of foreign ownership in raising productivity may be reduced, and foreigners might even do worse than well-selected domestic investors.

The available data provide information on whether the new owners of a privatized firm are predominantly domestic or foreign, but they do not otherwise distinguish the methods. Nevertheless, the policy differences across countries suggest that the effectiveness of privatization in raising productivity may vary significantly. The overall rate of privatization is shown in Figure 1, computed on the basis of the manufacturing firms originally state owned in the database. As of 1992, 35.4 percent of the Hungarian firms had already been privatized, defined here as a strict majority of shares held in

**Figure 1 Percentage of Sample Firms Privatized, by Year**



private hands, while the percentage was only 0.2 in Romania and 0.0 in Russia and Ukraine. By the end of the period, however, most of the firms had been privatized in all four countries.

Most privatized firms are controlled by domestic investors. The percentage of firms with majority ownership by foreigners is by far highest in Hungary, reaching 16 percent by 2002. In Romania, the percentage reaches 5 percent, and in Russian and Ukraine close to 1 percent. Although constituting a small fraction, the numbers of observations are sufficient, given the sample sizes, for estimating separate coefficients for privatization to foreign investors.

**Estimating the Productivity Effects of Privatization**

Estimating the effectiveness of privatization in raising productivity requires not only excellent data, but also careful specification of technology and of the selection of privatized firms from those initially state owned. The Upjohn study in all cases estimates privatization effects on multifactor productivity taking into account firm-level differences in labor and capital, and all estimation is carried out within industry-year cells to control for changes in prices and industry-specific shocks that could be correlated with privatization. The study

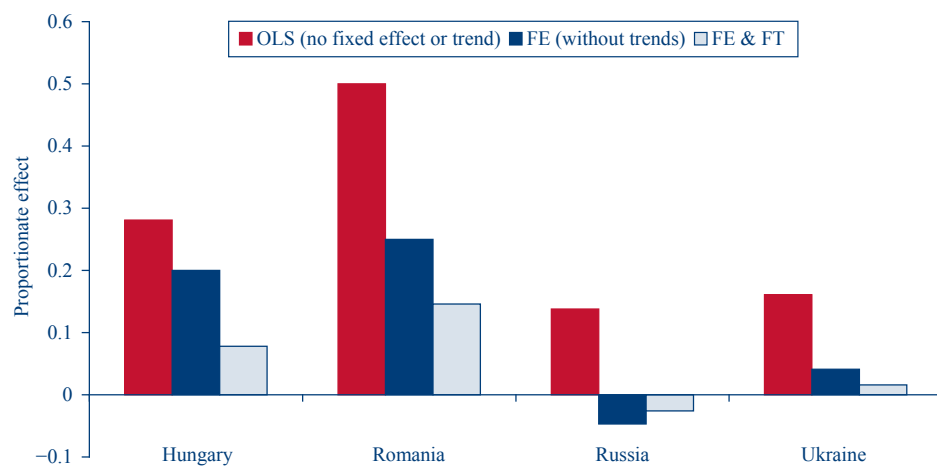
also employs a wide range of methods to estimate industry-specific production functions, including simply assuming alternative contributions of capital and labor to output. Examination of results shows that the estimated privatization effects are quite robust, hardly varying across different functional forms.

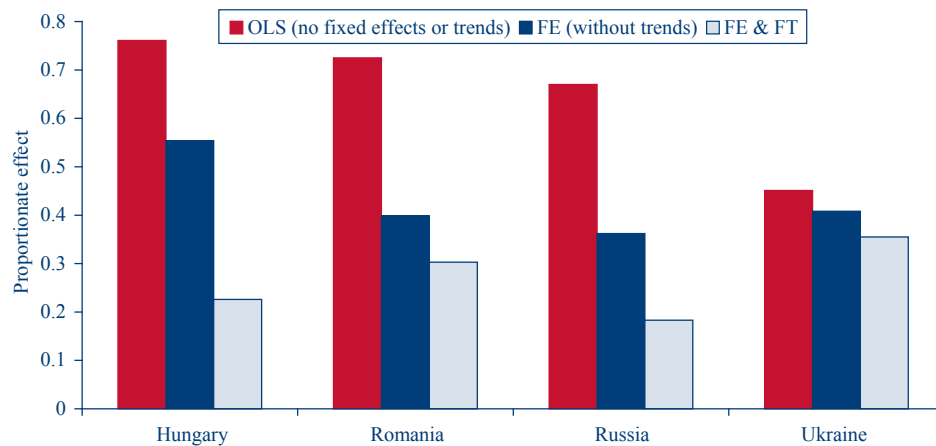
The estimation results are much more sensitive, however, with respect to the controls for selection into the privatization program. Three principal approaches are used in the study: 1) simply pooling the data and estimating standard ordinary least squares (OLS) regressions, 2) including firm-fixed effects (FE) to permit each firm to have

its own idiosyncratic level of productivity prior to privatization, and 3) including firm-specific time trends as well as fixed effects (FE&FT) to permit each firm its own idiosyncratic productivity growth. The first OLS method implicitly assumes that firms are randomly selected to be privatized, or at least that the selection process is uncorrelated with productivity. The FE approach, the second method, permits selection to be correlated with the level of productivity, and FE&FT, the third method, permits selection to be correlated also with productivity growth. Clearly, FE&FT is quite a demanding method, and it has not been used in any previous research on the effects of privatization.

The estimated effects of privatization on productivity using these three methods are shown in Figure 2. The vertical axis measures the estimated proportionate increase in productivity associated with a change from majority state to majority private ownership. OLS estimates are quite large in all four countries, although the magnitudes vary significantly across them. But the FE estimates vary even more, remaining large in Hungary and Romania, but becoming small in Ukraine and slightly negative in Russia. The FE&FT results are further attenuated, but they remain significant in Hungary and Romania, with magnitudes of 0.08 and 0.14, respectively. They are negative in Russia and small (but positive) in Ukraine. The results therefore imply robust evidence of large differences in

**Figure 2 Estimated Productivity Effects of Privatization**



**Figure 3 Estimated Productivity Effects of Privatization to Foreign Investors**

the estimated privatization effect across the four countries in the study. While the effect is clearly larger in the two former Soviet “satellites” than in the two former Soviet member states, the ranking within these groups is rather surprising: the evidence implies a somewhat larger effect in Romania than Hungary, and in Ukraine relative to Russia.

Turning to the effect of privatization to foreign investors, Figure 3 shows results for the OLS, FE, and FE&FT methods. Again, adding firm-fixed effects and firm-specific trends diminishes the estimated effects. By contrast with the overall privatization effects of Figure 2, however, in all cases the estimates of the foreign effects remain large, and in all cases they are much larger than the estimates of the overall effects. Moreover, the foreign effects vary much less across countries than the overall effects, suggesting that foreign investors tend to have similar positive effects on privatized companies across a range of types of economies.

### Conclusions

These findings strongly support the view that privatization usually raises productivity, and they provide some support for the view that the method of privatization matters. The only relevant distinction that can be directly measured in the Upjohn study is predominantly foreign versus predominantly domestic ownership, and a key result of the study is strong evidence that foreign privatization has a bigger impact

than domestic privatization in all four countries. Further evidence that privatization method matters comes from cross-country comparisons. The largest cross-country differences are between the two East European countries (Hungary and Romania) versus the two former Soviet Republics (Russia and Ukraine), which may be attributed to differences in the “quality” of privatization, especially

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the extent of concentrated outside ownership. In this sense, the results in this study put Djankov and Murrell’s (2002) hypothesis of such a difference between Eastern Europe and the former Soviet Union on much firmer ground.

Not all the results are consistent with this “regional divide,” nor with the interpretation that the method of privatization drives its effectiveness in raising firm productivity. Most clearly, this can be seen from the ordering of the magnitude of privatization effects, with Romania’s larger than Hungary’s and Ukraine’s larger than Russia’s. This ranking is inconsistent both with superior privatization policies in Hungary compared to Romania and Russia compared to Ukraine, as well as with

the ratings of these countries of their “progress in transition” by international agencies.

A further inconsistency appears from a comparison of the overall and foreign effects. Foreign privatizations are always carried out through sales in all four countries, but while domestic privatizations are also sales in Hungary, they are less likely to be sales in Romania and still less likely to be so in Russia and Ukraine. Thus, if sales produce better productivity effects than other methods of privatization, the difference between the foreign and overall effects should be smallest in Hungary, second smallest in Romania, and greatest in Russia and Ukraine. But the data show large differences between the foreign and overall effects in all four countries, and the difference is as large for Hungary as for Romania.

Finally, the result that the productivity effects of foreign privatizations are large and of similar magnitude for all these countries calls into question the view that complementary aspects of the macroeconomic or business environment alter the effectiveness of privatization, unless foreign firms are less sensitive to such conditions. The cross-country variation in the productivity effects of privatization remains an important question to address in future research.

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