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# Employment and Wage Effects of Privatization

## Evidence from Transition Economies

The greatest opposition to privatizing a firm usually comes from the firm's own employees, who are fearful of wage cuts and job losses. Workers' apprehensions about privatization are consistent with standard economic analyses, whereby new private owners reduce the firm's labor costs in response to harder budget constraints and stronger profit-related incentives. Discussions of this "efficiency effect" of privatization, however, implicitly assume that the firm's output remains constant or at least does not increase. But lower costs may increase the firm's market share as well as total quantity demanded for the industry, and the new private owners may be more entrepreneurial in marketing, innovation, and entering new markets. In such cases, the firm's output will tend to rise, and if this "scale effect" dominates, then privatization could cause a net employment increase.

The implications of privatization for wages are also ambiguous. New owners may reduce wages as part of a general cost-cutting policy, but if the firm expands, it may have to offer higher wages to attract new workers. New private owners may also be more likely to adopt skill-biased technologies, resulting in a compositional shift toward higher-paid workers. Depending on the relative strength of such factors, wages may either rise or fall as a result of privatization.

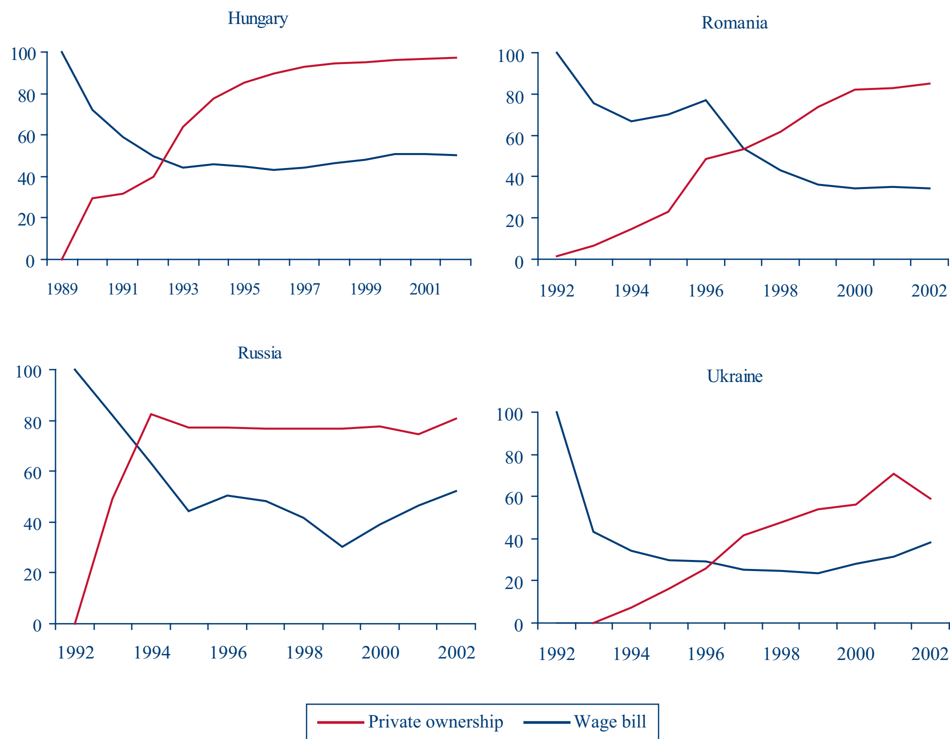
Not only does theoretical analysis fail to provide definitive predictions on the wage and employment effects of privatization, but also the existing empirical evidence is both scant and inconclusive, containing both negative and positive estimates of the effects on workers. Therefore, the Upjohn Institute, in collaboration with partners from Heriot-Watt University in Edinburgh and the Central European University Labor Project in Budapest, has recently undertaken an empirical analysis of the effects of privatization on the wage bill, employment, and wage rates of firms in Hungary, Romania, Russia, and Ukraine—countries where thousands of businesses were privatized in a relatively short period of time during the 1990s. These four countries had varied success with privatization reforms. Hungary was considered one of the most successful, Russia and Ukraine were less successful, and Romania was somewhere in the middle.

Figure 1 shows the evolution of the average real wage bill and percent private ownership in each country. At this aggregate level of analysis, a strong negative correlation is evident in all four countries, which would seem to corroborate workers' fears and most economists' expectations. However, several other events that could affect the wage bill occurred during the 1990s (including macroeconomic shocks and market liberalization), and the firms selected for privatization may have been declining for extraneous reasons. To deal with these potentially confounding factors and estimate the causal effects of privatization on workers, the project has analyzed microdata on firms that have been linked over time. The methods applied to estimate the privatization effects at the firm level draw upon some of those used in evaluations of labor market training programs in the United States.

### Privatization Programs and Implications for Workers

The methods and tempos of large enterprise privatization differed quite significantly across the four countries in this study. Hungary got off to an early start in ownership transformation and maintained a consistent case-by-case

**Figure 1 Evolution of Average Real Wage Bill and Private Ownership**




NOTE: The graphs show an index of the average real wage bill and percent of majority private firms on the vertical axis, calculated from our data. The real wage bill is set at 100 in 1989 in Hungary and 1992 for Romania, Russia, and Ukraine.

method throughout the transition. Unlike many other countries, there were no significant incentives given to workers to acquire shares in their companies, nor was there a mass distribution of shares aided by vouchers. Hungarian privatization thus resulted in very little worker ownership (involving only about 250 firms), very little dispersed ownership, and instead significant managerial ownership and highly concentrated block-holdings, many of them foreign. Although the process appeared at times to be slow and gradual, in fact it was completed earlier than in most other East European countries.

In Romania, by contrast, the early attempts to mimic voucher programs and sell individual firms produced few results, and privatization really began only in late 1993, first with the program of Management and Employee Buyouts, and then with the mass privatization of 1995–1996. The consequences of these programs were large-scale employee ownership and dispersed shareholding by the general population, with little foreign involvement. Beginning in 1997, foreign investors became more involved, and blocks of shares were sold to both foreigners and domestic entities. The result was a mixture of several types of ownership and a moderate speed compared to Hungary.

Russia's and Ukraine's earliest privatization experiences have some similarities to the "spontaneous" period in Hungary, as the central planning system dissolved in the late 1980s and decision-making power devolved to managers and work collectives. In both countries, the initial consequence was large-scale ownership by managers and workers and some block-holding by domestic entities. Subsequently, privatization through sales became more common, secondary trading increased concentration, and foreigners made partial inroads.

These differences in privatization policy design could affect the impact of privatization on employment and wage outcomes through different impacts on the efficiency and scale effects of privatization. Worker-owners are likely to oppose labor-saving restructuring, for example, and they are unlikely to have incentives or resources to expand output. Outside block-holders, on the other hand, should favor cost-saving restructuring, particularly foreign investors with access to management skills, new technologies, and financing; they also are more likely to respond to opportunities for expansion. Outsiders with small shareholdings may also benefit from efficiency improvements and scale expansion, but they are unlikely to influence the firm's behavior. Therefore, both the efficiency and scale effects of privatization are likely to be smallest for domestic owners in countries where insider and mass privatization predominated, larger in cases where domestic outsiders acquired blocks of shares, and largest for privatization to foreign investors. Because these mechanisms are offsetting, however, the relative magnitudes of the effects of different types of privatization on workers are ambiguous.

### Estimated Effects of Privatization

A first finding from detailed analyses of the firm-level data in this project is that, even before privatization, there are significant differences between firms that are privatized later and those that remain state-owned. Across the four countries in the analysis, the direction of the differences of firms later privatized to domestic investors is sometimes positive and sometimes negative. But the foreign differences are quite consistent, as firms that will be foreign-owned have higher wage bills, employment levels, and average wages than either pre-domestic firms or firms that always remain state-owned in all four countries. Moreover, not only the levels but the growth rates of these outcome variables display large preprivatization differences. These results imply that there may be some selection biases in the privatization process, and that simple comparisons across ownership types may be misleading. The empirical estimates of the privatization effects in this project therefore control for any fixed differences among firms and differing trend growth rates that may affect the probability of privatization, and whether the new owners are domestic or

foreign investors. We compare alternative estimators using several specification tests, including variants of the "pre-program" test, which measures selection bias of an estimator as the difference in the dependent variable prior to treatment between the treated and comparison groups. In the privatization context, this test must be evaluated before the privatization year to avoid possible contamination through anticipatory effects.

The results from these estimations imply that, on average, privatization has had little effect on the wage bill. If the wage bill represents a summary indicator of worker welfare, the firm-level analysis in this project does not support the common belief that privatization hurt workers. When new domestic owners are distinguished from foreign investors, the results for the former tend to be similar to the overall private results, as domestic owners dominate in most privatized companies. The results also provide no support for the widespread fear of foreign owners; on the contrary, they provide strong evidence that foreign owners increased the wage bill in the two Central and East European countries in our study, and in the two formerly Soviet republics the effect seems to be zero in the most pessimistic case.

These results for the wage bill can be decomposed into component parts, as shown in Table 1 for employment and in Table 2 for wages. The tables show two alternative specifications that differ only on whether firm-specific trends are controlled for in the estimation procedure; in both cases firm fixed effects are included. The effects of domestic privatization on either employment or wages differ very little across the two specifications, in no case showing large negative effects. The largest in magnitude are the implied 3–5 percent reduction in wages in domestically privatized firms in Hungary and Russia.

The estimated effects of foreign privatization are positive for both employment and wages in both specifications in every country. The inclusion of firm-specific trends does make a substantial difference to the magnitude and statistical significance of the results, with substantial and significant impacts remaining for employment in Hungary and for wages in Hungary and Romania. Specification tests are somewhat inconclusive about whether it is best to include the firm-specific trends on statistical grounds, so the results are somewhat ambiguous as to whether the benefits of foreign privatization for employment and wages are uniformly strongly positive or sometimes merely weakly positive. In all cases, however, the data reject the proposition that the effects are strongly negative.

**Table 1 Employment Effects of Privatization**

| | Hungary | Romania | Russia | Ukraine |
|---|---|---|---|---|
| No trends | | | | |
| Domestic | –0.030 | 0.187** | –0.007 | 0.017 |
| | (0.035) | (0.026) | (0.006) | (0.009) |
| Foreign | 0.428** | 0.285** | 0.152** | 0.135 |
| | (0.073) | (0.086) | (0.043) | (0.077) |
| With trends | | | | |
| Domestic | 0.002 | –0.030 | 0.005 | –0.006 |
| | (0.024) | (0.017) | (0.004) | (0.008) |
| Foreign | 0.154** | 0.000 | 0.043 | 0.030 |
| | (0.050) | (0.068) | (0.041) | (0.070) |

NOTE: Foreign = 1 if the majority of the firm's shares are owned by foreigners in year $t – 1$. Domestic = 1 if the firm was private in year $t – 1$ but not majority-owned by foreigners. "No trends" specification includes firm fixed effects and industry-year interactions; "with trends" adds individual firm trends. Standard errors (corrected for firm clustering) are shown in parentheses. * = significant at the 5% level. ** = significant at the 1% level.

**Table 2 Wage Effects of Privatization**

| | Hungary | Romania | Russia | Ukraine |
|---|---|---|---|---|
| No trends | | | | |
| Domestic | –0.027 | –0.023 | –0.047** | 0.003 |
| | (0.015) | (0.012) | (0.008) | (0.011) |
| Foreign | 0.307** | 0.235** | 0.244** | 0.304** |
| | (0.033) | (0.054) | (0.064) | (0.095) |
| With trends | | | | |
| Domestic | –0.045** | 0.006 | –0.032** | –0.004 |
| | (0.016) | (0.013) | (0.007) | (0.011) |
| Foreign | 0.066* | 0.116* | 0.019 | 0.079 |
| | (0.033) | (0.057) | (0.063) | (0.097) |

NOTE: Foreign = 1 if the majority of the firm's shares are owned by foreigners in year $t – 1$. Domestic = 1 if the firm was private in year $t – 1$ but not majority-owned by foreigners. "No trends" specification includes firm fixed effects and industry-year interactions; "with trends" adds individual firm trends. Standard errors (corrected for firm clustering) are shown in parentheses. * = significant at the 5% level. ** = significant at the 1% level.

### Efficiency and Scale Effects

The results from this research suggest—contrary to the expectations of many workers, policymakers, and economists—that average wages and employment have not been substantially reduced by either domestic or foreign privatization. As discussed earlier, however, privatization may affect firm scale and efficiency in ways that produce opposing effects on workers. The lack of negative consequences could result from new private owners failing to improve efficiency, or it could result from scale

effects that offset the efficiency effects of private ownership. To explore these possibilities, it is useful to decompose the estimated impact of privatization on the wage bill into unit labor cost reduction (efficiency) and output expansion (scale) effects.[1]

The results of this decomposition show a striking regularity: foreign owners have been much more active in both dimensions than domestic owners. Although smaller, the scale effect is positive in each country for domestic privatization with the exception of Russia, where it is negative but small and statistically insignificant. The efficiency effect measured as unit labor cost reduction is positive for all countries and both ownership forms, although again it is larger under foreign ownership. This regularity holds for the scale effect measured as the effect of privatization on output and for the efficiency effect measured as unit labor cost reduction within each country. The scale effect is not only positive and significant in each country for foreign privatization, but also for domestic privatization with the exception of Russia, where it is negative but small and statistically insignificant. The efficiency effect measured as unit labor cost reduction is positive for all countries and both ownership forms, although again it is larger under foreign ownership.

The effects vary widely across countries: while the foreign effects are similar for Hungary, Romania, and Ukraine, they are substantially smaller in Russia. But the domestic pattern is still more pronounced, as Hungary and Romania show sizable scale and efficiency effects of domestic ownership, while both effects are negligible in Russia and Ukraine. Thus, the cross-country domestic wage bill patterns (small and negative everywhere) mask large differences in scale and efficiency effects.

## Conclusion

Although economic analyses of the effects of privatization have focused almost entirely on firm performance, the greatest political and social controversies have usually concerned the consequences for the firm's employees. In most cases, it has been assumed that the employment and wage effects would be negative, and workers all around the world have reacted to the prospect of privatization, especially that to foreigners, with protests and strikes. Yet there have been very few systematic studies of the relationship between privatization and outcomes for the firm's workers, and previous research has been hampered by small sample sizes, short time series, and little ability to control for selection bias. It has therefore remained unclear whether workers' fears of privatization are in fact warranted.

The new research in this project, however, finds no evidence of large systematic negative consequences of privatization for employment and wages. In two of the four countries studied, small negative effects on wages are estimated for domestic privatization, but they are indeed quite small (minus 3–5 percent). By contrast, privatization to foreign investors produces consistently positive effects on the wage bill, employment, and wages in all four countries, regardless of estimation technique. The precise magnitudes vary with the econometric specification, but even in the most demanding specification for the data, the foreign results are positive and sometimes they are large and statistically significant.

The project also investigates the two alternative mechanisms through which privatization may affect outcomes for workers: efficiency and scale. The negligible effects of domestic privatization imply that these effects are largely offsetting. In Hungary and Romania, however, the offsetting scale and efficiency effects have both been large, while in Russia and Ukraine they have been small. Foreign privatization has resulted in much larger efficiency effects in all four countries, but still much larger scale effects, resulting in the increased employment and wages in foreign-owned firms that we observe after privatization.

An important caveat is that privatization may affect other aspects of worker welfare, including employment turnover, fringe benefits, and other work conditions. The data used in the project do not follow workers who are displaced, nor do they provide information on the alternative jobs for workers who are hired. The project therefore does not carry out a complete welfare evaluation of privatization, but it does provide new information on the effects on the wage bill, employment, and average wages at privatized firms, effects that would be important elements in such an evaluation.

Subject to this caveat, the results of the project imply that efficiency-enhancing owners may be good for workers, at least in terms of average employment and wage levels. Greater efficiency helps firms expand sales, reducing the likelihood of severe distress and raising labor demand. Workers' employment and wage prospects are never systematically diminished by privatization, and in some cases—particularly with foreign ownership—they actually brighten.

**Notes**

This article is based on Upjohn Institute Working Paper No. 05-125, "Does Privatization Hurt Workers? Lessons from Comprehensive Manufacturing Firm Panel Data in Hungary, Romania, Russia, and Ukraine," by J. David Brown, John S. Earle, and Almos Telegdy.

1. The wage bill is by definition unit labor cost times output, and therefore the proportional effect of privatization on the wage bill equals the proportional effect on unit labor cost plus the proportional effect on output.

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