## DOES PRIVATIZATION HURT WORKERS? EVIDENCE FROM COMPREHENSIVE MANUFACTURING FIRM DATA IN HUNGARY, ROMANIA, RUSSIA AND UKRAINE

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The greatest opposition to privatizing a firm usually comes from the firm's own workers, fearful of wage cuts and job losses. The fears are consistent with standard economic analyses of privatization, whereby new private owners reduce costs in response to harder budget constraints and stronger profit-related incentives [1]. 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. Moreover, the new private owners may be more entrepreneurial in marketing, innovation, and entering new markets [2]. In such cases, the firm's output may tend to rise, and if this "scale effect" dominates then privatization could cause a net employment rise.

The implications of privatization for wages are also ambiguous. New owners may reduce wages as part of a general cost-cutting policy, and they may expropriate workers' rents, similar to a hostile takeover [3]. On the other hand, 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 skillbiased technologies, resulting in a compositional shift toward higher-paid workers. Privatized firms are freer to use incentive pay, which could raise wages if, for example, some form of efficiency wages would reduce quits or enhance effort. Wages may also rise if privatization permits the firm to exercise market power and rents are shared with workers. Depending on the relative strength of these 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 quite scant.

Research has been hampered by small sample sizes, short time series, and the difficult problem of defining a comparison group of firms. In the first study of effects of privatization on employment and wages, for example, Haskel and Szymanski [4] analyze 14 British publicly owned companies, of which only four were actually privatized (the others experienced liberalization).

Kikeri [5] summarizes a number of case studies, mostly carried out by the World Bank, of privatization effects on labor in several developing economies. The largest sample in the existing literature is found in La Porta and Lopez-de-Silanes' [6] analysis of 170 privatized firms in Mexico, although the post-privatization information is limited to a single year. Other studies have sometimes included employment as a possible indicator of firm performance, but only one also examines wages.

Overall, the results from this previous research are inconclusive, containing both negative and positive estimates.

In this paper, we undertake an empirical analysis of the effects of privatization on the wage bill, employment, and wage rates of firms in Hungary, Romania, Russia, and Ukraine – where thousands of businesses were privatized in a relatively short period of time during the 1990s. These four countries span the range of transition economies in terms of evaluations of their reforms, with Hungary considered one of the most success ful, Russia and Ukraine among the least success ful, and Romania somewhere in the middle.

Our basic aim in this paper is to provide robust estimates of the wage bill, employment, and wage effects of privatization using much larger and longer panels than were available to earlier researchers, but we also exploit the advantages of our data in several ways. The first concerns the relative effects of foreign and domestic ownership. Workers appear to fear foreign much more than domestic investors, but there is little evidence whether this perception is warranted. Second, we investigate the dynamics of employment and wages before and after privatization. Estimates

of pre-privatization effects are useful for taking into account possible biases in the selection of firms to be privatized and for assessing the extent to which anticipation of privatization may affect employment and wage determination; indeed, some previous studies [7] find that employment tends to decline in firms awaiting privatization. The post-privatization dynamics shed light on the speed of the changes and the long-term consequences experienced by employees.

Finally, we apply econometric methods developed for dealing with selection bias in labor mark et program evaluations. The long time series in our firm-level data permit us to estimate regression models including not only firm fixed effects but also firm-specific time trends, sometimes referred to as "random trend models."

Applied to the privatization context, these models control not only for fixed differences among firms but also differing trend productivity 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 the Heckman-Hotz [8] "pre-program" test which measures selection bias under 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.

This paper has analyzed the effects of privatization on the wage bill, employment, and wages using comprehensive data on manufacturing firms in four economies, with long time series of annual observations both before and after privatization.

The data contain comparable measurement concepts for the key variables, and we have applied consistent econometric methods to obtain comparable estimates across countries. The analysis is subject to a number of caveats we have discussed, including possibilities of measurement error, incomplete longitudinal links, function misspecification, and remaining simultaneity bias. To grapple with these issues, we have made great efforts to clean the data and improve the longitudinal links, investigated a variety of estimation and measurement methods, and have carried out extensions to the basic analysis that shed light on the gravity of the potential problems. While the caveats should be borne in mind when considering our findings, we believe that the results nonetheless provide important new evidence on the impact of privatization.

Contrary to the aggregate correlations between privatization and the wage bill, and the expectations of workers and many specialists, our firmlevel regression results show a clear negative effect of privatization on workers only in Russian domestic privatization, and the effect even there is quite small. This demonstrates the danger of drawing conclusions about the effects of particular reforms using only aggregated data, especially when multiple economic changes take place at the same time.

At the beginning of the privatization process, workers feared foreign privatization most of all, assuming that new foreign owners would implement massive layoffs and wage cuts in their efforts to enhance efficiency. What has actually happened, however, is that privatization to foreign owners produced positive wage bill gains, at least compared to unprivatized and domestically privatized firms. They achieved this by having expanded scale to an even greater extent, than cutting employment cost for efficiency reasons, producing an overall increase in demand for labor. Regarding domestic ownership, the patterns in Hungary and Romania are quite different from those in Russia and Ukraine. The former have substantially enhanced efficiency, if not quite as much as their foreign counterparts, while the latter have not. The overall effect on workers has been similar in all four countries, however, due to a compensating increase in scale in Hungarian and Romanian domestically-privatized firms and no change in Russia and Ukraine.

Some economists theorized that managers would begin cutting employment and wages in anticipation of privatization in order to enhance their reputation as profit maximizers, and a few previous studies have found patterns consistent with this story. The evidence presented here, however, shows that workers tended to enjoy positive effects even in the year or two leading up to privatization.

Though the average effects on workers tend to be negligible or positive, worker opposition could still be justified if privatization reduces employment or wage security. No such evidence is found in Hungary or Romania. In fact, foreign privatization in those countries unambiguously improves worker welfare, not only increasing the average level, but also reducing downside risk. In Russia and Ukraine, though, privatization reduces security.

These cross-country and domestic vs. foreign patterns suggest that the tradeo ff between efficiency enhancement and worker welfare assumed by Aghion and Blanchard (1998) and others is questionable: efficiencyenhancing owners appear to be good for workers. Greater efficiency helps firms gain mark et share and reduces the likelihood of severe distress or exit, hence raising labor demand. Their workers' wages and employment prospects improve as a result, both on average and through minimization of downside risk.

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## ОБЛАЧНЫЙ ФЕНОМЕН ОН-ЛАЙН-БУХГАЛТЕРИИ

## О.Н. Рыбин, канд. физ.-мат. наук, доц. Л.В. Гиринова, ассист.

На данном этапе развития информационных и компьютерных технологий спож но представить себе бесперебойное функцио нирование современного биз неса без соотв етствующего программного обеспечения. Речь идет, в первую очередь, о различных ав тома тизиров анных бухгалтерских системах (AC). Первые бухгалтерские АС стали настоящим спасением и для бизнеса, и для тех, кто занимается его учетом. Сначала появились простые системы для несложных операций. Впоследствии, развитие компьютерной техники подтолкнуло разработчиков программного обеспечения (ПО) к созданию глобальных автоматизированных систем учета.

Современное бухгал терское ПО позволяет не только хранить необходимую информацию в структурированном виде, но и бухгалтерские автоматически создавать по ней отчеты. Ha сегодняшний день существует множество подобных программ, в том числе достаточно узкоспециализированных, например, программы, позволяющие составлять сметы по конкретному виду деятельности в конкретной отрасли. В странах СНГ самым популярным является пакет "1С: Бухгалтерия". Используются и другие менее популярные пакеты, например, «БОСС» и «БЭСТ», программы «Инфо-Бухгалтер» и «Турбо-Бухгалтер». Эффективное ведение учета в таких «мегапрограммах» требует профессиональных навыков в П-бухгалтерии.

Развитие малого бизнеса вызвало резкий спрос на ПО, которое решает локальные задачи. Стали появляться программы для малого бизнеса – узкопрофильные, с хорошим функциональными возможностями. Среди них одни предназначены для подготовки отчетов, другие – для их сдачи. Украина хоть и шла в фарватере этого процесса, но порадовала пользователей своими собственными электронными новациями OPZ, М.Е.Дос, Минисофт, 1С:Торговля для ЧП, АртЗвит.

Достижения компаний Apple и Microsoft в области ITиндустрии привели к появлению тех нологий нового уровня – облачных технологий или SaaS технологий.