Ownership Changes and Firm Performance in the New EU Member States

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Abstract

Using firm level data for nine EU new member states (NMS) we study the patterns of ownership change and their effects on firm performance over the late transition period from 2000 to 2015. We find that labor productivity of acquired firms by foreign investors improved after both the foreign acquisition of domestic private firms and privatization of state-owned firms to foreign investors. However, this overall tendency in the Central and Eastern Europe (CEE) is not uniform and the boost in productivity varies across countries. We document the effects of four major types of ownership changes on performance by countries and present tentative results about the key differences at a country level.

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I. Introduction

We study a much-neglected domain in postcommunist transition studies – the *changes* of the ownership and control structures over time and their effects on firm performance. Although privatization was a key element of enterprise reform in postcommunist transition, only a few empirical studies on postcommunist transition have examined ownership *change* patterns (for a transition matrix describing ownership transformation see e.g. Jones and Mygind (1999) on Estonia; Grosfeld and Hashi (2003) on the Czech Republic and Poland; Gugler and Peev (2010) on 13 transition countries; Gugler, Mueller and Peev (2013) on 12 European transition countries). The first contribution of the article is using a unique data set on annual ownership and control structures of firms in nine transition countries over the period 2000–2010 to study the effects of ownership *change* patterns on company performance in transition countries.

Second, the prevailing studies of company ownership in transition countries examine the early transition period in the 1990s and before the financial crisis in 2008 (see e.g. Simoneti et al (2005); Mueller and Peev (2007); Damijan et al (2013). Only a few studies explore ownership structures in a different time span (see e.g. Knyazeva, Knyazeva and Stiglitz (2013) on the effects of ownership change and institutional development on post-privatization performance till 2010); Konecny and Castek (2016) on ownership and performance in the Czech Republic in 2010-2012; Iwasaki and Satoshi (2018) for a recent survey on ownership concentration and performance in European transition countries). The second contribution of the article is to study the effects of privatization and ownership changes on company performance in the late transition period in CEE.

We examine the ownership structures of nine European transition countries, which have already joined the European Union (EU). Briefly, we find that labor productivity of acquired firms by

foreign investors improved after both the foreign acquisition of domestic private firms and privatization to foreign investors. The boost in productivity varies across countries. We document the effects of four major types of ownership changes on performance by countries and present tentative results about the key differences at a country level.

We proceed as follows. Section II presents a short overview of the literature. Section III discusses our main hypotheses. Section IV presents the data used in this study and Section V discusses the econometric modeling. The results of our econometric analysis are presented in Section VI. Conclusions are drawn in Section VII.

II. Literature Overview

Megginson, and Netter (2001) surveyed the early post-communist transition literature and presented evidence on privatization in Central and Eastern Europe. The authors summarize their results as follows: (1) *Private* ownership is associated with better firm-level performance than is continued state ownership. (2) *Concentrated* private ownership is associated with greater improvement than is diffuse ownership. (3) *Foreign* ownership is associated with greater post-privatization performance improvement than is purely domestic ownership. (4) Majority ownership by *outside* (non-employee) investors is associated with significantly greater improvement than is any form of insider control. (5) Firm-level restructuring is associated with significant post-privatization performance improvements, and this is a key advantage of *outsider control*— firms controlled by non-employee investors are much more likely to restructure. (6) Most studies document that performance improves more when *new managers* are brought in to run a firm after it is privatized than when the original managers are retained. (7) The role of *investment funds* in promoting efficiency improvements in privatized Czech firms is ambiguous.

(8) There is little evidence that *governments* have been able to impose hard budget constraints on firms that remain state-owned after reforms begin.

Djankov and Murrell (2002) have carried out a meta-analysis of papers examining the effects of different types of owners on enterprise restructuring in early transition years. They find that state ownership within *traditional state firms* is less effective than all other ownership types, except for *worker owners* who have a negative effect. The authors also reveal that privatization to *outsiders* is associated with 50% more restructuring than privatization to insiders (managers and workers). They also present an evidence that *investment funds, foreigners***,** and other *blockholders* produce more than ten times as much restructuring as diffuse individual ownership.

The major difference between Megginson and Netter (2000) and Djankov and Murrell (2002) survey results is that the former presents a mixed evidence for the effects of *privatization funds* on performance.

Estrin *et al* (2009) survey the literature on the effect of privatization in Central Europe and former Soviet Union countries. They main conclusions are that 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 former Soviet Union countries, privatization to *foreign owners* yields a positive or insignificant effect, while privatization to domestic owners generates a negative or insignificant effect.

In a recent meta-analysis of the effects of ownership concentration on company performance in European transition countries, Iwasaki and Mizobata (2018) made a meta-synthesis of 1517 estimates collected from 69 previous studies and indicated the presence of a

statistically significant and positive effect of ownership concentration on firm performance. The synthesized effect size, however, is only modest at best.

Which new owners has shown better performance after privatization in CEE ? In sum, the survey evidence reveals outsiders ownership and foreign ownership as most efficient ownership structures.

III. Hypotheses

Following the theoretical and empirical literature and examining our dataset on European transition countries, we have focused on the following basic ownership patterns: (1) ownership change from state to domestic private investors (late privatization); (2) ownership change from state to foreign investors (late privatization); (3) foreign acquisitions of domestic private firms ("secondary" privatization to foreign investors and foreign acquisitions of domestic private firms *de novo*); (4) domestic acquisitions of foreign firms (domestic acquisitions of firms established through foreign green field investment and foreign M&A in early transition).

The empirical studies on the effects of the most basic ownership categories on performance in European transition countries have tested a few broad theoretical considerations about the impact of state and foreign ownership. Empirical studies addressing the effects of ownership structures on soft budget constraint in the early transition reveal that *state-owned* firms are more likely to be rescued than private firms and privatized firms. We test whether state-controlled firms have preserved their inefficient investment behavior even in late transition years. We assume that firms under state control have worse performance than other firms.

Studies have shown that firms under *foreign control* have easier access to external finance and Western markets, low-cost management and know-how transfers from abroad. To

the extent that corporate governance institutions are stronger outside of the transition countries, foreign-controlled firms should have less severe agency problems. Thus, we can expect less severe asymmetric information and agency problems in firms under foreign control compared to domestic firms. We assume that firms under foreign control have better performance than firms under domestic control.

More specifically, we test the following hypotheses:

H1: Productivity of firms acquired in domestic privatizations tends to increase after the privatizations (late domestic privatization).

H2: Productivity of firms acquired in cross-border privatizations tends to increase after the privatizations (late foreign privatization).

H3: Productivity of firms acquired in cross-border acquisitions tends to increase after the acquisitions ("secondary" privatization to foreign investors and foreign acquisitions of domestic private firms *de novo*).

IV. Data

Our basic data source is the ORBIS database issued by Bureau Van Dijk Electronic Publishing, which consists of financial and ownership information on public and private companies across Europe. From this large database, we construct a sample covering the period 2000-2015. For a detailed account of how the data was constructed, we refer to Merlevede et al. (2015). They document the `augmentation' process that overcomes drawbacks related to the way the data-provider, BvDEP, issues the database. They use multiple September issues (published on DVDs) of the database because a single issue is only a snapshot of the ownership information

and firms that exit are dropped from the next issue released. In order to get a full overview of ownership and financials through time, multiple issues are required. Using the annual ownership information from AMADEUS, we are able to establish (changes in) the percentage of foreign ownership, state ownership at firm-level and whether firms' own affiliates domestically or abroad. The data have been widely applied in earlier research. The data further holds information on revenue, capital and materials inputs, employment, date of entry, industry and location of production. We know a firm's main industry at the NACE 4-digit level, and its location at the NUTS 3-digit level.

[Table 1 about here]

Table 1 presents our sample by basic ownership categories and by countries. It shows that there is a difference in the coverage of the samples gathered for nine New EU Member States. Sample sizes for Romania, Hungary and Bulgaria are relatively large, while for the Slovak Republic, Latvia and Lithuania are comparatively small. The representativeness of the sample is a major issue in any empirical study. Our data shows a good coverage compared to Eurostat SBS statistics (see Merlevede et al., 2015). The ownership structures by countries have uniformly revealed the prevalence of private sector, both domestic and foreign firms, and domestic private ownership, especially. This is not surprising because our data focuses on the late transition period (2000-2015) when the bulk of privatization in most countries was completed.

[Table 2 about here]

Table 2 reports descriptive statistics for the main patterns of ownership change. On average, ownership change has been observed in 21 percentage of firms in the sample. However, there was a significant country variation. For example, the ownership transformation was more important in the late post-communist transition in Poland (about 46 % of firms) and the Czech Republic, Latvia and Lithuania (about 40 % of firms in each country). Foreign acquisitions of domestic private firms is the major type of ownership transformation in the late transition (46.3 % of firms in the sample) together with the opposite process of sale of foreign-owned firms to domestic private owners (45.4 % of firms). There was also a late privatization but as expected its share of the total ownership changes was small (about 4 % of all firms in the sample).

V. Econometric Modeling

Main aim of our paper is to test the effects of ownership changes on firm performance. More specifically, we study the lasting effects of ownership changes by comparing pre- and post-ownership change trends in performance. In order to distinguish between pre- and post-ownership change differences in performance, we apply a similar approach as in Damijan, Kostevc and Rojec (2015) by exploreing the productivity gaps from three years before the ownership change up to three years after the event. While observed pre-ownership change productivity premia indicates that the acquiring firms are 'cherry picking' the best possible targets, post-ownership change premia points to a positive effect of changed ownership on productivity.

Ownership change premia are computed from a regression of log labor productivity on the acquisition indicator variable (Own_change_{it}) and a set of control variables:

$$\ln(VA/L)_{it-\tau} = \alpha + Own\_change_{it} + \gamma\, Controls_{it-\tau} + \varepsilon_{it} \qquad (1)$$

where $\ln(VA/L)_{it-\tau}$ is log value added per employee of firm *i* at time *t-τ*, with τ takes on (integer) values between -3 and 3. Productivity is measured in a number of different ways in the relevant literature (sales or value added per employee, variants of total factor productivity). Given data availability in different country sets, we choose to measure productivity with value added per employee. By including different lags and leads of the dependant variable relative to the year of acquisition, we can apply a common approach to estimating the pre- and post-ownership change premia of cross-border acquisitions. Own_change_{it} is an indicator variable, which assumes value 1 in the period when an acquisition was successfully completed and 0 otherwise. It also takes value of 0 for firms that were not subject to acquisition by either domestic or foreign investors.

The advantage of this approach is that it (*i*) allows us to compare acquired firms with those that did not experience a change in ownership[1], (*ii*) enables us to track the differences between the two ownership types in technical time, and (*iii*) does not change with first differencing and can therefore be applied directly in case of fixed effects estimation. If we included all the temporal indicators of the pre- and post-ownership change period in one regression we would not have been able to maintain a control group consisting solely of firms of the same ownership type, while calculating the productivity premia of acquired relative to non-acquired firms would become difficult. The clear downside of running separate regressions for each period relative to the completion of the acquisition is that our estimates potentially suffer from bias and coefficient sizes are harder to compare.

[1] The rather more standard approach of grouping technical time dummies for the pre- and post-ownership change periods in one regression means that the relevant control group(s) necessarily include other acquired firms that were acquired either before or after the acquisition of interest.

The control variables include $ln(K/L)_{it-\tau}$ which represents the log capital intensity of firm i at time $t-\tau$ and is measured by fixed assets per employee, $ln(L)_{it-\tau}$ is firm i size at time $t-\tau$ as measured by log employment, $ln(L)^2_{it-\tau}$ is the squared size term employed to capture any non-linear effects of size on performance. ϕ_T and ϕ_n are time and industry dummies (NACE Rev.2 two-digit industries). ε_{it} is the error term.

The acquisition premium, calculated from the estimated coefficient β as

$$premia = 100 * (exp(\beta) - 1) \qquad (2)$$

reveals the percentage difference in value added per employee between acquired and purely domestic firms controlling for other relevant characteristics included in the set of control variables. In order to control for any additional unobserved (time-invariant) firm heterogeneity that is not captured in (1) and which could, if correlated with the included controls, cause bias in the estimated acquisition premia, we also estimate (1) by including fixed effects. The within regressions (fixed effects) estimate a correlation between a change in ownership and a change of the dependent variable as they capture the within-firm deviations from the long-term average of the firm.

VI. Results

Table 3 shows results of estimating our basic model on the pooled sample (across all countries). The evidence of post-ownership change performance uniformly indicates that foreign ownership drastically improves acquired firms labor productivity. The premia of the ownership change from domestic private to foreign is statistically significant at the 99 percent confidence

level and rises from 28.00 to 87.00 and t-statistics from 17.50 to 38, respectively. The latter effect is shown to last up to at least the third year after acquisition.

[Table 3 about here]

Privatization of state-owned firms to foreign investors has also positive and statistically significant effect. The premia of ownership change from state to foreign ownership is statistically significant at the 99 percent confidence level and rises from 13.00 to about 16.00. This effect is also shown to last up to at least the third year after privatization.

However, our results have demonstrated that not any type of privatization has positive impact on firm performance. Privatization of state-owned firms to domestic investors appears to improve relatively firm performance, but labor productivity still remains negative three years after privatization. Moreover, firms selected for privatization to domestic investors have shown weaker productivity than firms selected for foreign investors over the three-years years before privatization, which indicates a potential cherry-picking process by foreign investors of best performing firms. However, we cannot exclude the possibility that governments may design privatization policies selecting best performing firms for privatization to foreign investors. We shall examine this issue in our analysis by countries in the subsection 5.2.

The table also displays the results about the effects of ownership change from foreign to domestic owners. This kind of ownership transformation has highly negative impact on labor productivity.

While the results across the pooled sample represent a good starting point for our analysis they may hide the great deal of heterogeneity between countries that we have mentioned in our discussion on Tables 1 and 2 above. Thus, we examine the country patterns in detail. The main

results of our econometric estimation by countries are reported in Tables 3 – 7. We have focused on four major patterns of ownership change: (1) late privatization to domestic private investors; (2) late privatization to foreign investors; (3) foreign acquisitions of domestic private firms; (4) domestic acquisitions of firms established through foreign green field investment and foreign M&A in early transition. The effects of each of these patterns on labor productivity are discussed in turn.

5.1. Privatization to domestic investors

Table 4 reports the results of an estimation of the effect of privatization to domestic investors. We need estimates by country to establish whether the effects of the ownership changes are different across the sampled countries. Pooled estimates with country-specific intercepts, presented in Table 3, allowed for different average labor productivity across countries, but did not control for the possibility of country-specific elasticities of the remaining variables. Table 4 therefore presents the baseline estimate of the effects of privatization to domestic investors on labor productivity of the nine EU NMS in our sample. As before, we only present estimates and relevant heteroscedasticity robust standard errors for the coefficient on the ownership change indicator variable. Presentation of complete tables of estimates would only add to the length of the article but without necessarily helping the major discussion. Estimates by country reveal a further dimension of the within sample heterogeneity that was concealed in the pooled sample estimates.

[Table 4 about here]

Firms in Bulgaria, the Czech Republic and Poland experience a productivity decline after the privatization to domestic investors but there are remarkable country differences. First, in Bulgaria the coefficients on ownership change indicator are negative and statistically significant in both pre-privatization and post-privatization periods with worsening labor productivity after privatization. While Bulgarian firms being chosen for privatization had below-average productivity, in case of the Czech Republic more productive firms were chosen for domestic privatization. In both countries, late transition privatization to domestic owners have yielded negative results. Second, Polish firms being chosen for privatization had below-average productivity like in Bulgaria but in the case of Poland slightly improved post-privatization labor productivity has been observed.

Slovenia is an obvious outlier experiencing a boost of labor productivity after late privatization to domestic investors. The rest of the country subsamples, with exception of Estonia, yield positive but insignificant post-privatization productivity differences for firms privatized by domestic owners. None of the country subsamples conforms completely to the pooled estimates, indicating that those estimates were importantly affected by sample composition.

5.2. Privatization to foreign investors

Table 5 reports the results of an estimation of the effect of privatization to foreign investors. Firms in most countries show relatively better post-privatization labor productivity but again important country differences exist. In six countries, more productive firms were chosen for privatization to foreign investors. On average, these firms had positive labor productivity over the three years period before privatization but only firms in Estonia and Slovenia improved their performance after being privatized to foreign investors. On the other hand, after

privatization to foreign investors there was no effect in Poland and Latvia, and there was even decline of labor productivity in Romania and the Slovak Republic.

[Table 5 about here]

In the rest of the countries (Bulgaria, the Czech Republic and Hungary), firms being chosen for privatization had below-average labor productivity and there was slightly improved post-privatization labor productivity but coefficients on ownership change indicator were insignificant for Bulgaria and the Czech Republic and only statistically significant at the 90 percent confidence level for Hungary. In sum, none of the country subsamples conforms completely to the pooled estimates. We have observed important differences in selected firms for privatization to foreign investors and post-privatization performance among countries. The presented evidence needs further examination at a country level that we shall briefly discuss in subsection 5.5.

5.3. Foreign acquisitions of domestic private firms

In the late postcommunist transition period, ownership sale from domestic private to foreign investors is the most prevailing pattern of ownership transformation in CEE countries. The results of an estimation of our model for the effects of ownership change on firm performance are reported in Table 6.

[Table 6 about here]

Firms in five countries (Bulgaria, the Czech Republic, Hungary, Slovenia and the Slovak Republic) have shown increase in labor productivity over the three years period after acquisitions by foreign investors but the boost of productivity is not so dramatic compared to one observed in privatized firms to foreign investors. In the rest of the countries, coefficients on ownership change indicator were either positive but insignificant or there was no sensible change in productivity.

5.4. Ownership change from foreign to private domestic owners

We have also presented evidence for the importance of sale of firms owned by foreign investors to domestic owners in the late transition period since 1999. The motivation for this kind of ownership transfer varied by countries.

[Table 7 about here]

Table 7 reports the results of an estimation of the effect of ownership change from foreign to domestic investors to labor productivity. Only in Poland and Romania, this effect is positive but the relative increase of labor productivity is small. On the other hand, in Bulgaria the effect was negative but productivity decline was not so substantial. The rest of the country subsamples show productivity decline or no effect on performance for foreign firms acquired by domestic investors.

5.5. Discussion

We have presented tentative results about the effects of four major patterns of ownership change on labor productivity in nine new EU member states over the late transition period (2000-2015). The results reveal a great heterogeneity between countries. Nevertheless, a few major

tendencies of the effects of ownership structures on productivity might be outlined. The nine former communist countries, upon which we have focused, fell into four major cases. First, the greatest positive (negative) effect on labor productivity of ownership change to foreign (domestic) investors has been made in firms in Bulgaria and the Czech Republic. In both countries, any type of ownership transformation to foreign investors in the late transition boosts labor productivity and *vice versa* the ownership change to domestic private owners leads to decline in performance. Why are domestic private owners in these countries not successful? Second, in Hungary ownership change from domestic to foreign hands increases labor productivity and the change to domestic private owners do not appear to be an important determinant of performance. Why are domestic private owners in Hungary not so important like foreign ones? Third, Polish firms after ownership changes to domestic private investors have shown better performance than firms after ownership transformation to foreign investors. Why are domestic private owners in this country more successful? These questions remains open for further examination. Fourth, the rest of subsamples of countries have shown no particular pattern of labor productivity behavior following ownership changes. However, there are also interesting observations in this group of countries. For example, the effects of late privatization to foreign investors in Romania and the Slovak Republic have led to decline in labor productivity.

VII. Conclusion

We have seen that there are large differences across the nine new EU member states, included in our study, in the extent to which ownership changes have affected labor productivity. Using firm level data for nine EU new member states we study the patterns of ownership change and their effects on firm performance over the late transition period from 2000 to 2015. We find

that labor productivity of acquired firms by foreign investors improved after both the foreign acquisition of domestic private firms and privatization to foreign investors. However, this overall tendency in Central and Eastern Europe (CEE) is not uniform and the boost in productivity varies across countries. We document the effects of four major types of ownership changes on performance by countries and present results about the key differences at a country level. Our results are tentative. Why are domestic private owners in Bulgaria and the Czech Republic not successful? Why are domestic private owners in Hungary not so important like foreign ones? Why are domestic private owners in Poland more successful? These questions remain open for further examination.

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Tables

Table 1: Data sample, number of firms by type of ownership in final year

Country	Total firms	State	Domestic private	Foreign
BG	31,072	1,901	29,171	1,797
CZ	8,416	190	8,223	1,201
EE	15,673	75	15,597	1,260
HR	22,380	13	22,367	601
HU	36,737	91	36,645	834
LT	1,157	39	1,117	203
LV	3,024	108	2,916	383
PL	10,623	1,712	8,911	2,031
RO	156,798	1,509	155,275	7,069
SI	15,994	154	15,839	617
SK	1,772	37	1,735	240
Total	**303,646**	**5,829**	**297,796**	**16,236**

Table 2: Descriptive statistics on ownership change, by type of ownership (in % of total)									
Country	**No. Firms**	**Ownership changes**		**State to domestic private**	**State to foreign**	**Domestic to foreign**	**Domestic to state**	**Foreign to domestic private**	**Foreign to state**
		No.	**%**						
BG	31,072	6,036	19.4	4.9	4.6	40.4	5.4	40.1	4.5
CZ	8,416	3,403	40.4	3.9	2.8	44.6	3.3	42.8	2.7
EE	15,673	2,923	18.6	0.1	1.4	49.4	0.2	47.4	1.4
HR	22,380	1,362	6.1	0.2	0.1	53.7	0.1	45.7	0.1
HU	36,737	4,890	13.3	2.0	1.3	47.8	1.6	46.1	1.2
LT	1,157	461	39.8	1.3	3.5	47.1	0.2	44.5	3.5
LV	3,024	1,201	39.7	1.2	3.3	46.0	2.5	43.8	3.2
PL	10,623	4,854	45.7	3.5	4.0	43.4	3.8	41.6	3.7
RO	156,798	36,483	23.3	1.4	1.9	47.1	0.6	46.8	2.1
SI	15,994	1,397	8.7	3.2	1.2	46.5	4.4	43.8	0.9
SK	1,772	514	29.0	1.4	1.6	49.4	1.6	44.6	1.6
Total	**303,646**	**63,524**	**20.9**	**2.0**	**2.3**	**46.3**	**1.6**	**45.4**	**2.4**

Table 3: Premia of ownership change, pooled over all countries, labor productivity (in %)								
Ownership change	**Obs.**	**Year before / after ownership change**						
		-3	**-2**	**-1**	**0**	**1**	**2**	**3**
state to domestic private	952,636	-20.2	-18.0	-20.0	-14.9	-17.9	-14.2	-14.2
		[-7.37]***	[-6.53]***	[-7.12]***	[-6.21]***	[-3.94]***	[-4.09]***	[-4.05]***
state to foreign	952,756	13.2	12.9	12.4	13.0	16.7	16.6	15.6
		[4.96]***	[4.86]***	[4.66]***	[4.86]***	[5.45]***	[5.44]***	[5.11]***
domestic private to foreign	952,885	28.0	28.0	27.9	28.0	87.0	87.1	86.5
		[17.47]***	[17.44]***	[17.43]***	[17.50]***	[38.69]***	[38.74]***	[37.72]***
foreign to domestic private	952,892	4.4	4.4	4.5	4.4	-29.1	-29.1	-28.8
		[3.03]***	[3.06]***	[3.11]***	[3.04]***	[-21.30]***	[-21.31]***	[-20.68]***

Note: Robust t-statistics in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 4: Ownership premia for ownership change from state to private domestic (labor productivity, in %)

Country	Obs.	Year before / after ownership change						
		-3	**-2**	**-1**	**0**	**1**	**2**	**3**
BG	99,858	-38.7	-36.9	-34.8	-33.7	-41.3	-39.2	-39.5
		[-8.90]***	[-8.34]***	[-7.32]***	[-8.07]***	[-6.70]***	[-8.40]***	[-8.95]***
CZ	61,965	87.9	38.8	13.4	1.4	-57.9	-51.5	-49.9
		[4.00]***	[1.95]*	[1.01]	[0.13]	[-1.92]*	[-2.82]***	[-3.13]***
EE	50,883	-26.5	-32.7	-25.7	-21.9	-17.4	-17.4	-17.4
		[-0.85]	[-1.47]	[-1.08]	[-0.96]	[-0.72]	[-0.72]	[-0.72]
HU	31,096	18.7	29.7	7.7	42.0	25.6	41.4	26.3
		[0.64]	[0.99]	[0.27]	[1.33]	[0.84]	[1.26]	[0.88]
LV	758	38.4	38.3	38.3	38.3	38.3	38.3	38.3
		[0.71]	[0.71]	[0.71]	[0.71]	[0.71]	[0.71]	[0.71]
PL	81,429	-18.4	-18.9	-19.5	-18.7	-17.5	-16.2	-15.3
		[-4.56]***	[-4.69]***	[-4.80]***	[-4.75]***	[-4.24]***	[-3.84]***	[-3.54]***
RO	560,217	-20.2	-16.1	-14.8	-2.1	1.9	6.2	2.4
		[-3.89]***	[-3.00]***	[-3.26]***	[-0.48]	[0.20]	[0.88]	[0.22]
SI	52,786	-2.4	0.0	7.7	9.3	23.3	19.0	25.7
		[-0.14]	[0.00]	[0.76]	[0.89]	[1.94]*	[1.80]*	[1.92]*
SK	13,408	84.2	66.6	71.1	63.2	54.9	30.6	103.3
		[2.99]***	[2.28]**	[2.35]**	[2.14]**	[1.55]	[0.77]	[3.17]***

Note: Robust t-statistics in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 5: Ownership premia for ownership change from state to foreign (labor productivity, in %)

Country	Obs.	Year before / after ownership change						
		-3	**-2**	**-1**	**0**	**1**	**2**	**3**
BG	99,858	-4.0	-3.8	-4.5	-3.6	-2.9	-0.9	-1.2
		[-0.40]	[-0.37]	[-0.44]	[-0.35]	[-0.28]	[-0.09]	[-0.11]
CZ	61,965	-41.9	-36.5	-32.2	-30.0	-8.0	-12.8	-14.1
		[-3.02]***	[-2.66]***	[-2.35]**	[-2.19]**	[-0.37]	[-0.74]	[-0.85]
EE	50,883	176.7	169.4	177.6	181.9	186.7	186.7	186.7
		[3.83]***	[3.85]***	[3.99]***	[4.11]***	[4.18]***	[4.18]***	[4.18]***
HU	31,096	-47.3	-49.1	-46.5	-51.3	-48.8	-52.4	-49.3
		[-1.72]*	[-1.78]*	[-1.73]*	[-1.86]*	[-1.78]*	[-1.94]*	[-1.81]*
LV	758	135.0	143.1	143.1	143.1	143.1	143.1	143.1
		[3.06]***	[2.95]***	[2.95]***	[2.95]***	[2.95]***	[2.95]***	[2.95]***
PL	81,429	14.1	13.3	13.5	13.3	13.0	13.2	13.2
		[1.74]*	[1.65]*	[1.67]*	[1.65]*	[1.62]	[1.64]	[1.64]
RO	560,217	9.5	9.1	8.4	9.6	7.8	8.0	6.7
		[3.03]***	[2.93]***	[2.71]***	[3.05]***	[2.50]**	[2.56]**	[2.14]**
SI	52,786	42.7	43.5	32.9	31.3	33.6	31.9	30.5
		[4.30]***	[4.21]***	[3.85]***	[3.65]***	[3.81]***	[3.68]***	[3.56]***
SK	13,408	151.8	156.5	157.2	163.7	163.4	159.8	148.0
		[8.13]***	[8.13]***	[8.11]***	[8.00]***	[7.70]***	[7.92]***	[7.90]***

Note: Robust t-statistics in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 6: Ownership premia for ownership change from private domestic to foreign (labor productivity, in %)

Country	Obs.	Year before / after ownership change						
		-3	**-2**	**-1**	**0**	**1**	**2**	**3**
BG	99,858	18.5	18.8	20.1	20.6	21.9	21.9	21.6
		[1.61]	[1.63]	[1.76]*	[1.78]*	[1.83]*	[1.84]*	[1.84]*
CZ	61,965	37.5	37.7	37.7	37.6	39.9	38.9	38.3
		[6.73]***	[6.79]***	[6.80]***	[6.79]***	[6.95]***	[6.90]***	[6.83]***
EE	50,883	3.3	3.5	3.3	3.2	3.1	3.1	3.1
		[0.38]	[0.40]	[0.38]	[0.37]	[0.36]	[0.36]	[0.36]
HU	31,096	97.0	97.3	98.8	97.7	97.9	98.2	97.7
		[6.65]***	[6.64]***	[6.74]***	[6.65]***	[6.68]***	[6.71]***	[6.70]***
LV	758	25.6	26.3	26.3	26.3	26.3	26.3	26.3
		[1.49]	[1.51]	[1.51]	[1.51]	[1.51]	[1.51]	[1.51]
PL	81,429	23.8	24.0	23.8	23.9	23.8	23.6	23.4
		[5.81]***	[5.90]***	[5.85]***	[5.87]***	[5.84]***	[5.76]***	[5.74]***
RO	560,217	27.9	27.7	27.7	28.0	27.6	27.7	26.8
		[15.44]***	[15.35]***	[15.38]***	[15.56]***	[15.11]***	[15.32]***	[13.60]***
SI	52,786	61.7	61.7	59.7	58.2	58.3	59.3	58.9
		[11.48]***	[11.48]***	[11.13]***	[10.75]***	[10.73]***	[11.12]***	[10.55]***
SK	13,408	21.3	21.3	21.4	21.3	21.4	21.2	21.6
		[3.76]***	[3.76]***	[3.79]***	[3.77]***	[3.79]***	[3.76]***	[3.82]***

Note: Robust t-statistics in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 7: Ownership premia for ownership change from foreign to private domestic (labor productivity, in %)

Country	Obs.	Year before / after ownership change						
		-3	**-2**	**-1**	**0**	**1**	**2**	**3**
BG	99,858	23.9	23.5	22.0	21.9	19.6	20.0	20.4
		[2.03]**	[2.00]**	[1.91]*	[1.88]*	[1.64]	[1.69]*	[1.74]*
CZ	61,965	-4.5	-4.6	-4.5	-4.4	-6.1	-5.2	-4.7
		[-0.97]	[-0.98]	[-0.97]	[-0.95]	[-1.28]	[-1.10]	[-1.00]
EE	50,883	33.4	33.2	33.4	33.5	33.6	33.6	33.6
		[3.30]***	[3.29]***	[3.31]***	[3.31]***	[3.32]***	[3.32]***	[3.32]***
HU	31,096	-34.8	-35.1	-35.3	-35.2	-35.2	-35.3	-35.4
		[-4.15]***	[-4.17]***	[-4.22]***	[-4.18]***	[-4.19]***	[-4.22]***	[-4.24]***
LV	758	11.5	11.1	11.1	11.1	11.1	11.1	11.1
		[0.67]	[0.65]	[0.65]	[0.65]	[0.65]	[0.65]	[0.65]
PL	81,429	19.8	19.6	19.8	19.7	19.8	20.1	20.2
		[4.86]***	[4.83]***	[4.89]***	[4.84]***	[4.86]***	[4.90]***	[4.94]***
RO	560,217	-2.8	-2.6	-2.6	-2.9	-2.6	-2.7	-2.0
		[-1.78]*	[-1.69]*	[-1.68]*	[-1.87]*	[-1.67]*	[-1.72]*	[-1.16]
SI	52,786	-13.5	-13.5	-12.5	-11.6	-11.6	-12.3	-12.0
		[-3.39]***	[-3.39]***	[-3.09]***	[-2.82]***	[-2.82]***	[-3.05]***	[-2.83]***
SK	13,408	44.5	44.7	44.5	44.7	44.6	44.7	44.1
		[6.95]***	[6.99]***	[6.97]***	[7.00]***	[6.98]***	[7.00]***	[6.92]***

Note: Robust t-statistics in brackets, *** p<0.01, ** p<0.05, * p<0.1