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The Performance of Enterprises in Estonia 1993-1997

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Abstract:

The paper uses data from 347 large and medium sized Estonian enterprises. The data contains detailed information on ownership structures, financial information and investments. We divide the firms in the sample according to the method of privatisation and largest owner. First, we are able to provide information on how different types of owners (foreigners, domestic outsiders and insiders) participated in the privatisation process in different branches and how the ownership structures have evolved. Then we use several performance measures in evaluating the efficiency of different privatisation forms and ownership types. The performance measures include sales and employment dynamics, investment, and profit margins. We seek answers to the following questions:

- Does privatisation enhance performance?
- Does the form or time of privatisation have any effects on performance?
- Do different ownership structures matter for performance evaluations?

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1 Introduction

One of the main research topics in economics of transition has been the impact of various methods of privatisation and various ownership structures on economic performance on enterprises. It seems that a consensus has emerged considering these issues: Privatisation through sales to a core owner is widely advocated over alternative privatisation methods, such as distribution of state assets to the population by voucher schemes, or management-employee buy-outs/give-aways. Privatisation itself has been seen as beneficial *per se*, primarily through the incentive effects and possibilities of outside finance. Concerning ownership structures, privatisation to insiders[1] has been considered as inferior to selling shares to outside core owners. This is because of alleged agency problems having enterprise employees as owners. Finally, it has been expected that new enterprises with no links with former state sector would prove to be the most dynamic part of the economy.[2]

This paper reviews the Estonian experience. The large data set collected by the Center for East European Studies of Copenhagen Business School, with the help of Estonian Institute on Future Studies, on Estonian firms gives a possibility to evaluate a large host of these issues mentioned above. This particular study was undertaken by the commission of Estonian Privatisation Agency and is related to a book project of the agency (Terk 1999). A description of the data and some descriptive analysis appears in Mygind (1997), and some more rigorous analysis concerning the performance effects of privatisation is in Jones and Mygind (2000). This paper brings some more elements to the analysis, as the division of firms between different methods of privatisation. Due to the fact that the analysis of the data is still in process, and because the above mentioned book is targeted to a larger audience than professional economists, the data analysis here is *descriptive*. Therefore, the results must be regarded as preliminary. However, we believe that even this approach reveals a lot of interesting information on the Estonian privatisation experience.

So far there has been a shortage of evidence on the post-privatisation performance of Estonian enterprises. The evidence from other data than the one used here points out that the foreign owned enterprises have advantage over domestic owned firms (Varblane and Reiljan1999, Purju and Teder 1999), though Terk and Pihlak (1996) did not find pronounced differences between firms belonging to foreign or domestic *outsider* ownership, whereas they found that firms belonging to *insiders* had worse performance. Interestingly, neither Purju and Teder nor Terk and Pihlak found much evidence that privatisation would lead to performance improvements in the short term. These studies have used a substantially smaller sample than the present survey, and have not included such broad categories of privatisation methods and ownership structures than this one.

2 Data description

The initial sample of firms contains 666 enterprises. The financial data has been obtained from the Estonian statistical office, and the ownership data has been obtained by using specially designed surveys. The first financial data is from the balance sheets and income statement from the year 1993, and the first ownership data is from the first of January 1995. Questions on the ownership structure at the moment of privatisation were also included. Thereafter data has been collected annually from these firms. For this analysis, 347

[1] With the term insiders is referred to enterprise managers and employees, whereas outsiders refers to owners who are not in employment relationship with the company.

[2] There is a large literature on these issues. On the theoretical premises on the effect of privatisation and ownership structures, see e.g. Estrin (1994), The World Bank (1996), Boycko et.al. (1996), EBRD (1997); on some empirical analysis, see Earle et. al. (1996), Frydman et.al. (1997) and Jones (1998).

enterprises were selected, the selection criteria being that the firms should have at least 50 employees either in 1993 or in 1996.[3]

Since the data has been obtained directly from the Estonian statistical office, the response rates of the sample are extremely high. By looking at the responses in tables, one can however note that the number of responses drops sharply in 1996 and especially in 1997. This is however probably more due to the fact that many enterprises have disappeared through liquidations, mergers and bankruptcies. We are not always able to distinguish when the firm does not exist any more and when it does not provide information. Especially problematic is the investment data, which the statistical office does not collect from all enterprises. The investment data covers each year around 50-60 per cent of the enterprises in the sample, but these enterprises are not necessarily the same from year to year.

We use several methods in classifying the firms (see also Table 1). First, they are classified into six different branches. The branch categorisation relies upon the classification of the Estonian statistical office, which has classified the firms in 8 major groups, and three of these has been collapsed into one (industry). Secondly, they are classified into six categories according to the privatisation forms: state-owned, early privatised (which includes all firms privatised up to 1993, that year including), later privatised (after 1993), new private start-ups, former co-operatives, and joint ventures. There were two types of co-operatives in Estonia during Soviet period: First, the “old” co-operatives. These include collective farms from earlier periods which often had auxiliary units operating in other branches than agriculture, and the consumer co-operatives. Secondly, there are co-operatives established in late 1980s, which were kind of quasi-private structures outside the control of branch ministries. Unfortunately, it was not possible to distinguish the latter group from the new firms, so latter type co-operatives are simply under the newly established firms. Both types of former co-operatives usually transformed into joint-stock companies when this became possible. Joint ventures, in turn, originate from the late 1980s. They were established in co-operation with Estonian state and a foreign partner so that the Estonian state kept the majority control. Co-operatives and joint ventures are different from the more traditional types of state-owned firms in the sense that they were quasi-private structures. In privatisation process, they were privatised separately from other state-owned firms.

Until 1993 privatisation of former state-owned enterprises focused more on small- and medium-sized enterprises. From 1993 onwards, when the Estonian privatisation agency was established, the privatisation proceeded in a more systematic way, and focused on privatisation by sales to core investors. The privatisation strategy after 1993 was mainly based on sales to core investors. The bulk of the enterprises were privatised in one-and-half years after the establishment of the Privatisation Agency, so the Estonian case might be called as mass privatisation through sales.[4] The privatisation of large-scale enterprises has been mainly implemented after summer 1993, that is after Estonia amended its privatisation laws. This provides a rationale for dividing the former state owned enterprises into later and early privatised. It should also be noted that private start-ups are much underrepresented in the sample compared to their number in the total population of Estonian enterprises. This is because of the applied size criterion.

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[3] The reasons for this were that at the limits of the subproject, we were interested mainly in larger firms, and because of some time constraints, it would not have been possible to get some additional information in short time from all firms.

[4] Vouchers were also used in privatisation process, but vouchers were usually used after there was already a majority owner for the firm.

A third type of classification is the division of the data according to the owners. Strong claims have been made in the transition literature that certain types of ownership, as foreign owners and strategic owners would be superior compared to diffused domestic owners, or to enterprise managers or employees. There are extremely few examples from Estonia where majority of shares were dispersed to a larger group of distant owners, but cases where the enterprise insiders obtained the majority of shares were more typical. The classification we use here is foreigners, Estonian enterprises, Estonian individuals[5], managers, employees and state (actually, both state and municipal enterprises are included in this category). The firm is classified as being owned by a certain group when this group is the largest shareowner; thus, majority ownership is not required.

As already noted, some forms of private ownership had been created already at the end of 1980s, but privatisation really gained its momentum in the beginning of the 1990s, alongside with large societal changes. The first wave of privatisation, during which small-scale privatisation was completed and large-scale privatisation started by experimental basis, lasted until 1993, when the Estonian Privatisation Agency was established. In the first phase of privatisation, the most important group of participants in the initial phase of privatisation was the enterprise employees (Table 2). Enterprise employees got some preferable treatment in small scale privatisation, but in large scale privatisation they had only few advantages compared with other investors (Terk, 1996). Given our size criteria, which excludes most small-scale enterprises, the magnitude of employee participation in earlier phase of privatisation may be surprising. After 1993, when privatisation became more controlled, sales to employees has been unusual, and most of the enterprises were privatised to Estonian enterprises. The participation of foreign enterprises in privatisation process, even though it has gained a considerable publicity, is quite modest in our sample. In contrast, foreigners are the largest group of owners in the new start-ups group of the sample. Estonian enterprises seem to be especially well represented in the group of former co-operatives, but this might be partly due to misclassification. Our data might in fact underestimate the presence of insider ownership, since in some cases insiders have established a company which took over the assets of privatised firm, and these cases may in our data show up as outsider owned firms.

3 Observations by sectors

Table 3 gives an overview how different privatisation methods have been used in different branches. Both in early and late privatisation there have been firms from all branches, though in later privatisation firms in industry have been over-represented. On the contrary, joint ventures have been established almost exclusively in industry and trade. Some other observations can be made, like that the former co-operatives are over-represented in agriculture, and that new start-ups are most common in construction, trade and services.

In table 4, we may compare the ownership structure of sectors at two different points of time. Notably, when the state in 1994 owned 12 agricultural enterprises in our sample (or 40% of agricultural enterprises in the sample), in 1997 there was no state owned agricultural firms left. This reflects the fact that the old state farms have been either privatised or more commonly, liquidated. And while the state was in 1994 still the largest owner in industry, by 1997 its ownership in industrial enterprises is almost vanished. Transport and services seem to

[5] The distinction between Estonian enterprises and Estonian individuals is based upon the manager survey: the manager is asked to distinguish the owners between enterprises and individuals. There might, however, be some problems in this classification, because private individuals often established a company for the purpose to purchase the assets of a firm in the privatisation process. Therefore, this distinction may not always be reliable. On the other hand, we did not give it up because there are some clear differences among the firms where the owner is classified as being an enterprise or an individual.

be the two areas where state ownership still prevails. Foreign ownership is zero in agricultural enterprises and quite small in other sectors too, but large in industry. There is proportionally less manager- and employee-controlled firms in industry.

We do not attempt in the following analysis to control for variations among different branches, but some words of the comparable performance, as they appear in the data, are in order. The sectors which do in each year better than average or about the average in terms of sales dynamics are industry, transport and construction, whereas the performance of the trade sector is for each year below the average, and so is agriculture, except in 1997. Roughly the same patterns characterise the employment dynamics.

4 Performance differences between privatisation forms

Tables 5 and 6 give the median and mean values of sales, employment and fixed assets, divided by the privatisation groups, for the years 1994 and 1997. As expected, the later privatised firms, especially firms privatised in 1996 and 1997, are considerably larger than firms privatised earlier. It is also somewhat surprising that the median and mean values of sales and fixed assets are about the same between early privatised firms and new private start-ups, whereas the employment in start-ups is considerably lower. The largest firms by sales and especially by fixed assets are joint ventures. It might also be noted that firms privatised in 1997 and firms which were still not privatised in the end of 1997 have a skewed structure: means are much larger than median, because there is a mixture of very large and small firms.

In the following, we present the analysis on how firms with different privatisation forms have performed. We attempted to use measures that would be simple to interpret and not biased. For instance, using mean values in sales or employment dynamics may be problematic: Using the growth averages of groups, the impact of large firms is going to be pronounced, which is especially problematic when the group sizes are small. Alternative approach to take the average of individual growth rates inside the group is equally problematic, since in the turbulent transition growth rates might be extreme, again biasing the results. The simple approach taken here is to count the percentage of firms that increased sales (or employment) in a given year. The sales for each year, as all the other monetary variables, were transformed into real growth by using the producer price indices, taken from the EBRD (1998) transition report.

As can be seen from Table 7, it is quite impossible to draw strong conclusion on the sales performance of different groups. Perhaps the most interesting aspect is that a considerable amount of firms are able to increase sales in the year they are privatised, though this does not apply for the year 1997. In the year following privatisation the proportion of firms increasing sales is already less for each year than in the year of privatisation, though higher than in the year before privatisation. Thus, privatisation might boost sale performance but the impact is not necessarily very strong. Also, it might be that the firms prior to privatisation deliberately deteriorate the performance in order to buy the firm for lower prices, especially if insiders are the buyers.

The growth dynamics of sales of state owned enterprises show also an interesting pattern. The number of firms in state ownership, which are able to increase sales, rises quite dramatically from year to year. In the year 1997, the performance of state firms is comparable to that of private firms. Part of the increase in the performance of state firms is because the liquidation of unviable firms. However, the performance is enhanced not only because of liquidation, but also in the group of firms which are still state owned in the end of 1997 there has been remarkable progress. This poses a question of how much there is potential endogeneity in the results concerning state ownership: Do the firms that expect to become privatised have incentives to deteriorate performance, whereas enterprises which do not expect to be privatised have incentives to increase performance? Unfortunately, at this point we may only speculate with these issues.

The employment dynamics (Table 8) suggest that new private firms may be more prone to increase employment than other type of private and state firms. This is quite natural given that they are not likely to suffer from excess labour as are the old state firms. The sales per employees figures are also higher for new start-ups than they are for other types of private firms, except for joint ventures, which have the highest sales/employees ratio (Table 10).

It is perhaps surprising to compare the overall development of sales and employment. Overall, the growth rate of sales in fixed prices has been higher than the growth of employment in the period of 1994-97. Moreover, sales increased strongly in the year 1997 whereas the percentage of firms increasing employment was lowest that year. This is also evident from Table 9, which shows that sales per employees have grown strongly in Estonian enterprises in 1997. It is however possible that our sample gives a too dismal picture on employment development (and perhaps on sales as well), because the smallest firms are not represented in the sample, neither are firms which have been established after 1993.

The data on investment is actually not as good as other data, since the statistical office has not collected investment data on all firms on the sample. Therefore, one should take the investment figures of Table 11 with some caution (and check the number of observations). In that table, investment is proportional to the number of employees (log of investment in kroons per employee). The results seem to vary from year to year quite much, perhaps because there are different firms in different years, but it appears quite safe to say that joint ventures have higher investment levels than other type of firms.

The last indicator we used was profitability. We used as an indicator of profitability the ratio of net revenues to total expenses. Then we divided the firms in three equally large groups according to their ranking of profitability. For space reasons, we present only the results of the high profitability group (Table 12). If more than 33,3 per cent of firms in a certain group belongs to the high profitability group, then it means that among these firms there are more highly profitable enterprises than in the sample in average.[6] Again, there is quite much variability, and difficult to make strong conclusions. What may be of interest is that the most profitable firms for each year are those that were privatised in 1994, even in the year when they were still state owned!

5 Differences by dominating owner

Finally, we try to shed some light on the relative performance of different ownership groups, using categorisations outlined above. Since the performance of the state sector was reviewed in the previous section, we concentrate here only on the private sector performance. Table 13a shows the ownership structures in the end of 1994 and in the end of 1997. The most frequent changes are away from state ownership, as a consequence of privatisation. The other category with falling frequency is employee-owned firms. Moreover, table 13b reveals that the changes away from employee ownership mainly happen in the group of early privatised enterprises. It seems likely that in many cases employee ownership has been window-dressing for a

[6] Highly profitable in this context means only that the firms belong to the best third. In practice, this means that net revenues were about 5-6% higher than total expenses, whereas for around a third of enterprises for each year expenses were higher than revenues. The sales/expenses ratio tended to fall somewhat in latest years.

management take-over.[7] Another group, which takes over employee-owned firms are Estonian individuals, but we suspect that many of these "outsiders" are in fact former employees. A practical implication of this for the reader is that in the following tables the groups do not consist always of same enterprises. For instance, the growth dynamics of 1994 for employee owned companies refer to companies which were employee owned in the end of 1994, the dynamics of 1995 refer to companies which were employee owned in the end of 1995, and so on. It would be potentially interesting and important to control for the impact of changes in ownership, but we have not attempted to do that here.[8]

Another interesting aspect from Table 13 concerns the survival of the enterprises. First of all, a high proportion of state owned firms have been liquidated. More than a quarter of the firms, which were state owned in 1994, has been liquidated by the end of 1997. Perhaps more interesting however is that a smaller proportion of firms owned by insiders and individuals are liquidated during that period than firms owned by foreigners or other enterprises. Especially manager owned firms survived better.

Table 14 on the dynamics of sales under different owner shows again that there is a considerable variety between groups in different years. The group of foreign owners does each year better than average, and the group of Estonian individual owners do every year worse than average. Considering employment (Table 15), the differences are more pronounced: Foreign firms are clearly better than domestic firms in creating employment. The differences are even larger when joint ventures are excluded (except for the year 1997, when joint ventures did actually better than foreign owned firms in average). And despite the fact that foreign firms seem to be more prone to hire new employees, the sales per employees and investment per employees are at much higher level in these firms. Among domestic owners, it is more difficult to make any kind of strong conclusions. Employee-owned firms seem to have somewhat lower sales per employees and investment averages.

The surprise may be the profitability measures. For every year, except 1995, the insider owned firms are doing better in terms of profitability than outsider owned firms. The share of profitable insider owned companies seems, if anything, being increased over time. One would perhaps expect the higher investment ratios of foreign owned firms to show up as improved profitability over time, but so far there is not much evidence on that.

6 Differences in performance between dominating owners in different forms of privatisation

The last piece of evidence considers the relative performance of different owners divided by privatisation forms. For space limitations, the results are not referred in tables, but are briefly reviewed here.

After firms have been divided into smaller groups, the group sizes get quite small, which is likely to be the reason for the great variability of the performance from year to year. Concerning sales and employment, the best group of firms in early privatised firms is clearly foreign enterprises. It also seems that the early privatised foreign owned firms are the best of foreign firms in Estonia, since in other groups (later privatised and new private) it is not easy to say whether foreign owned firms are doing remarkably better than domestic firms. Foreign owned firms have higher level of sales per employees and investment per employees in all groups, except for investment in new private firms.

[7] Terk (1996) explains that in earlier stages of privatisation, the politicians and public opinion were somewhat more favourable to plans to privatise if the new owners represented a larger interest group than managers alone.
[8] Actually, Jones and Mygind (1999) found with the same data that ownership changes affect results.

Another interesting observation seems to be that among insider owned firms, the most successful are those that are former co-operatives. The rates of growth of sales and employment are higher for insider owned firms in this group than for insider owned companies in other groups, though the level of sales per employees or investment per employees are not particularly high.

Concerning profitability, it appears that insider dominated firms are the most profitable in all groups. This is especially true among new private firms, where foreign and outsider owned firms are not very profitable. In contrast, foreign firms do not fare well in profitability comparisons, with the exception of early privatised foreign firms.[9]

7 Conclusions

Because of the absence of various controls, the results of the analysis should be regarded as preliminary. However, they seem to be broadly in line with the more advanced approach used by Jones and Mygind (2000). Thus, the support for the claim that privatisation improves performance at the firm level receives only modest support. The performance indicators we use are sometimes better after privatisation than before privatisation, but not always. Given the development of economic performance of state owned enterprises, we do neither find evidence for the hypothesis that state ownership would necessarily lead to inferior performance. We should however be aware of some selection biases. It is suggested that immediately following the establishment of privatisation agency, such enterprises were privatised for which it was easy to find buyers (i.e. better firms), in 1996-1997 somewhat inferior firms were privatised, and the firms still in state ownership or part of them may be “crown jewels”. The data gives support for these claims. Thus, the remaining state firms do not form an ideal control group. Secondly, even if we accept the conclusion that the performance of state firms is not different than those of private firms, it does not mean that privatisation, as a fundamental change affecting the economic system, would not matter. Instead, the good performance of the state firms may result from enhanced incentives to operate in a market-based system.

On the ownership groups, we find some support to the claim that foreign ownership brings beneficial effects, especially considering employment creation, investment and sales per employees. Despite these advantages, very few enterprises in our sample attract after privatisation foreign capital. Also, we fail to find much evidence on the inferiority of insider owned firms, though it seems that sales per employees and investment per employees are especially in employee owned firms in a lower level than the average. On the contrary, it seems that insider owned firms have a higher propensity to survive and have higher profits than other types of firms.

[9] Possibly transfer pricing could be an explanation to this.

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TABLE 1. BRANCH, PRIVATISATION AND OWNERSHIP CLASSES USED

Branch:
1. Agriculture and fishing
2. Industry (manufacturing, wood, mining etc.)
3. Construction
4. Trade
5. Transport
6. Services

Privatisation:
1. Early privatised (-1993) (EP)
2. New start-ups (NS)
3. Former cooperatives (FC)
4. Joint ventures (JV)
5. Later privatised (1994) (LP94)
6. Later privatised (1995)(LP95)
7. Later privatised (1996)(LP96)
8. Later privatised (1997)(LP97)
9. All late privatised (ALP)
10. State owned in the end of 1997 (SO97)
11. State owned (SO)

Ownership:
1. Foreign(For)
2. Estonian enterprises(Ent)
3. Managers(Man)
4. Employees(Emp)
5. Estonian individuals(Ind)

TABLE 2.
PRIVATISATION IN ESTONIA, ACCORDING TO THE YEAR, INITIAL LARGEST OWNER, AND PRIVATISATION GROUP

PRIVATISATION OF STATE-OWNED ENTERPRISES

year/owner	foreign	Estonian enterprise	managers	employees	Estonian individuals	n.a.	total
1989	0	1	0	1	0	0	2
1990	0	2	4	1	3	0	10
1991	1	1	4	18	2	0	26
1992	4	5	3	4	1	0	17
1993	4	9	4	10	1	0	28
1994	1	3	2	4	2	0	12
1995	5	22	7	1	2	0	37
1996	2	7	2	0	1	0	12
1997	1	7	1	1	0	3	13
Total	18	57	27	40	12	3	157

OWNERSHIP OF PRIVATE START-UPS

year/owner	foreign	Estonian enterprise	managers	employees	Estonian individuals	Total
1989	0	2	0	0	0	2
1990	2	2	1	2	2	9
1991	5	0	7	3	2	17
1992	7	3	5	5	1	21
1993	2	0	0	0	0	2
Total	16	7	13	10	5	51

OWNERSHIP OF FORMER COOPERATIVES

year/owner	foreign	Estonian enterprise	managers	employees	Estonian individuals	Total
1988	0	0	2	0	0	2
1989	0	1	0	0	0	1
1990	0	4	0	1	0	5
1991	0	4	0	3	1	8
1992	0	10	0	3	5	18
1993	0	7	3	1	4	15
1994	0	4	0	1	1	6
Total	0	30	5	9	11	55

OWNERSHIP OF JOINT VENTURES

	foreign	Estonian enterprise		Total
1989	1	0		1
1990	1	0		1
1991	1	1		2
1992	3	1		4
1993	2	0		2
1994	3	0		3
1995	2	0		2
1996	1	0		1
Total	14	2		16

Note: The privatisation year refers to the year when the firm became majority owned by private entities.

TABLE 3. THE USE OF DIFFERENT PRIVATISATION METHODS ACCORDING TO BRANCHES

	EP	NS	FC	JV	LP	Total
Agriculture	3	3	11	0	5	22
	3,6%	5,9%	20,0%	0,0%	6,8%	7,9%
Industry	49	24	23	12	50	158
	59,0%	47,1%	41,8%	70,6%	67,6%	56,4%
Construction	7	6	2	0	5	20
	8,4%	11,8%	3,6%	0,0%	6,8%	7,1%
Trade	10	10	9	4	7	40
	12,1%	19,6%	16,4%	23,5%	9,5%	14,3%
Transport	8	3	5	1	4	21
	9,6%	5,9%	9,1%	5,9%	5,4%	7,5%
Service	6	5	5	0	3	19
	7,2%	9,8%	9,1%	0,0%	4,1%	6,8%
Total	83	51	55	17	74	280

Note: The percentage implies how many firms in a privatisation groups works in given branch. For instance, 3,6% of all early privatised firms are in agriculture, which is lower than the percentage of agricultural firms among all privatised firms.

TABLE 4a. Largest owners in the end of 1994 in different branches

	SO	FOR	ENT	MAN	EMP	IND	Total
Agriculture	12	0	4	3	5	6	30
	9,0%	0,0%	6,2%	7,5%	12,2%	18,8%	8,7%
Industry	65	23	39	17	18	16	178
	48,9%	63,9%	60,0%	42,5%	43,9%	50,0%	51,3%
Construction	15	3	3	3	6	1	31
	11,3%	8,3%	4,6%	7,5%	14,6%	3,1%	8,9%
Trade	18	8	6	8	4	7	51
	13,5%	22,2%	9,2%	20,0%	9,8%	21,9%	14,7%
Transport	13	1	7	4	4	1	30
	9,8%	2,8%	10,8%	10,0%	9,8%	3,1%	8,7%
Service	10	1	6	5	4	1	27
	7,5%	2,8%	9,2%	12,5%	9,8%	3,1%	7,8%
Total	133	36	65	40	41	32	347

Note: The percentage implies how many firms of a given owner type are represented in given branch.

TABLE 4B Largest owners in the end of 1997 in different branches

(Note: The percentage implies how many firms of given owner type are represented in given branch)

	SO	FOR	ENT	MAN	EMP	IND	liquidated	no data	Total
Agriculture	0	0	5	4	3	4	12	2	30
	0,0%	0,0%	6,6%	8,2%	13,6%	12,9%	19,7%	5,4%	8,5%
Industry	7	29	52	22	10	16	24	18	178
	21,9%	74,4%	68,4%	44,9%	45,5%	51,6%	39,3%	48,7%	51,3%
Construction	5	2	3	8	2	2	8	1	31
	15,6%	5,1%	4,0%	16,3%	9,1%	6,5%	13,1%	2,7%	8,9%
Trade	5	4	5	6	3	4	11	13	51
	15,6%	10,3%	6,6%	12,2%	13,6%	12,9%	18,0%	35,1%	14,5%
Transport	9	2	6	5	2	2	3	1	30
	28,1%	5,1%	7,9%	10,2%	9,1%	6,5%	4,9%	2,7%	8,7%
Service	6	2	5	4	2	3	3	2	27
	18,8%	5,1%	6,6%	8,2%	9,1%	9,7%	4,9%	5,4%	7,8%
Total	32	39	76	49	22	31	61	37	347

Table 5. MEAN AND MEDIAN VALUES OF SALES, EMPLOYMENT AND FIXED ASSETS IN 1994, BY PRIVATISATION FORM

	N 1994, sales	Sales 94, mean	Sales 94, Median	N 1994, empl.	Empl. 94 mean	Empl. 94, median	N 1994, Fixa	Fixa 94, mean	Fixa 94, median
EP	83	16247	6997	83	186	112	81	4139	1331
NS	51	17212	9166	51	105	67	49	4223	1157
FC	54	17451	7548	54	171	103	54	5919	2984
JV	17	67465	35037	17	219	179	17	65046	30879
LP94	12	15130	11374	12	147	109	11	2415	2006
LP95	37	20769	9198	36	242	138	37	6144	3392
LP96	12	35986	48930	12	452	334	12	6639	4928
LP97	13	85920	24014	13	488	169	13	19949	1609
ALP	74	33768	11292	73	305	163	73	8122	2161
Not priv.*	66	49778	5632	65	398	85	64	32036	1338
All	345	29275	8191	343	239	103	338	13641	1780

Table 6. MEAN AND MEDIAN VALUES OF SALES, EMPLOYMENT AND FIXED ASSETS IN 1997, BY PRIVATISATION FORM

	N 1997, sales	Sales 97, mean	Sales 97, Median	N 1997, empl.	Empl. 97 mean	Empl. 97, median	Fixa 97, N	FIXA97, mean	Fixa97, median
EP	66	16706	6828	68	129	81	70	11697	2653
NS	47	15435	5106	45	74	69	48	8791	2875
FC	49	23137	8032	50	132	76	51	16304	5880
JV	16	66301	20907	17	156	93	17	111277	32093
ALP	68	35836	9359	68	254	122	68	21005	6133
SO	25	89964	10241	26	510	96	26	109527	5137
All	274	31948	8215	281	189	82	289	29275	4683

Note: Sales and fixed assets (FIXA) have been deflated to 1994 figures using producer price indexes from EBRD transition report (1997) and Estonian statistical yearbook 1998 for 1997 figures.
N=Number of observations.

*Not privatised refers to companies which were never privatised, including firms which were state-owned in the end of 1997 and state-owned firms which were later liquidated.

TABLE 7.
Percentage of firms which increased sales by privatisation form

	1994		1995		1996		1997	
EP	59,8	N=82	34,2	N=76	37	N=73	60,6	N=66
NS	70,6	N=51	38,8	N=49	41,7	N=48	50	N=46
FC	51,9	N=54	42,6	N=47	37	N=46	57,5	N=47
JV	47,1	N=17	28,6	N=14	35,7	N=14	73,3	N=15
LP94	75	N=12	66,7	N=12	54,5	N=11	45,5	N=11
LP95	21,6	N=37	51,4	N=37	37,1	N=35	62,9	N=35
LP96	16,7	N=12	16,7	N=12	60	N=10	44,4	N=9
LP97	38,5	N=13	33,3	N=12	45,5	N=11	8,3	N=12
ALP	75	N=12	55,1	N=49	44,6	N=56	47,8	N=67
SO97	37,5	N=32	50	N=28	51,9	N=27	59,3	N=27
SO	24,2	N=128	38,8	N=67	43,5	N=46	59,3	N=27
Total	46,8	N=344	40,4	N=302	40,3	N=283	55,6	N=268

Note: All late privatised refers to firms, which were privatised after 1993 and which Were private in the given year. State owned refers to firms which were state owned in the given year.
Note: Sales and fixed assets (FIXA) have been deflated to 1994 figures using Producer price indexes from EBRD transition report (1997) and Estonian statistical yearbook 1998 for 1997 figures.

TABLE 8.
Percentage of firms which increased employment by privatisation form

	1994		1995		1996		1997	
EP	34,9	N=83	28,6	N=77	29,7	N=74	23,5	N=68
NS	64,7	N=51	49	N=49	46,9	N=49	33,3	N=45
FC	35,2	N=54	28,6	N=49	44,7	N=47	22,9	N=48
JV	35,3	N=17	21,4	N=14	28,6	N=14	43,8	N=16
LP94	41,7	N=12	36,4	N=11	60	N=10	27,3	N=11
LP95	5,6	N=36	38,9	N=36	42,9	N=35	45,7	N=35
LP96	16,7	N=12	8,3	N=12	9,1	N=11	11,1	N=9
LP97	7,7	N=13	33,3	N=12	18,2	N=11	25	N=12
ALP	41,7	N=12	38,3	N=47	39,3	N=56	34,3	N=67
SO97	25,8	N=31	36,7	N=30	31	N=28	25	N=32
SO	13,6	N=125	24,7	N=73	26,5	N=49	25	N=32
Total	31,9	N=342	32	N=309	36,3	N=289	29	N=276

Note: All late privatised refers to firms, which were privatised after 1993 and which were private in the given year. State owned refers to firms which were state owned in the given year.

TABLE 9.
Percentage of firms which increased sales per employees by privatisation form

	1994	1995	1996	1997
EP	64,6 N=82	43,4 N=76	42,5 N=73	80,3 N=66
NS	52,9 N=51	44,9 N=49	33,3 N=48	68,2 N=44
FC	75,9 N=54	57,5 N=47	45,7 N=46	80,4 N=46
JV	47,1 N=17	28,6 N=14	42,9 N=14	73,3 N=15
LP94	75 N=12	63,6 N=11	30 N=10	72,7 N=11
LP95	55,6 N=36	52,8 N=36	51,4 N=35	71,4 N=35
LP96	41,7 N=12	33,3 N=12	80 N=10	66,7 N=9
LP97	69,2 N=13	33,3 N=12	45,5 N=11	33,3 N=12
ALP	75 N=12	55,3 N=47	52,7 N=55	64,2 N=67
SO97	51,6 N=31	64,3 N=28	63 N=27	77,8 N=27
SO	54,8 N=124	47,8 N=67	34,8 N=46	77,8 N=27
Total	60,6 N=340	48 N=144	42,2 N=42,2	73,6 N=265

Note: All late privatised refers to firms, which were privatised after 1993 and which were private in the given year. State owned refers to firms which were state owned in the given year.

Note: Sales and fixed assets (FIXA) have been deflated to 1994 figures using producer price indexes from EBRD transition report (1997) and Estonian statistical yearbook 1998 for 1997 figures.

TABLE 10.
Level of sales per employee, average (log)

	1993	1994	1995	1996	1997
EP	3,94 N=82	4,19 N=83	4,14 N=76	4,04 N=75	4,44 N=66
NS	4,54 N=51	4,65 N=51	4,58 N=49	4,42 N=48	4,63 N=44
FC	3,92 N=55	4,23 N=54	4,38 N=47	4,3 N=50	4,34 N=48
JV	4,99 N=17	4,83 N=17	5,24 N=14	5,08 N=16	4,87 N=16
ALP		4,21 N=12	4,09 N=48	4,21 N=56	4,32 N=68
SO	4,1 N=140	4,17 N=125	4,27 N=67	4,44 N=48	4,76 N=28
All	4,14 N=345	4,29 N=342	4,32 N=301	4,3 N=293	4,48 N=270

Note: The figures are logarithms of the ratio [Sales (in 1000 EEKs) /number of employees].

TABLE 11.
Level of investment per employee (log), privatisation form averages

	1993	1994	1995	1996
EP	7,67 N=50	7,87 N=47	8,03 N=54	8,21 N=36
NS	8,83 N=23	8,32 N=21	8,08 N=36	7,92 N=27
FC	7,43 N=38	7,69 N=27	8,03 N=34	7,75 N=30
JV	9,9 N=9	10,21 N=8	9,95 N=11	8,89 N=9
ALP		8,24 N=8	8,36 N=44	8,08 N=33
SO	7,44 N=97	7,05 N=89	7,47 N=52	8,48 N=27
All	7,74 N=217	7,64 N=200	8,07 N=231	8,13 N=162

Note: The figures are logarithms of the ratio [Sales (in EEKs) /number of employees].
The value of investments has been deflated to 1994 using producer price index.

TABLE 12.
Percentage of firms belonging to the highest profit group, by privatisation form.

	1993	N,93	1994	N,94	1995	N,95	1996	N,96	97	N,97
EP	39	N=82	39,8	N=83	39,5	N=76	45,3	N=75	31,8	N=66
NS	31,4	N=51	31,4	N=51	28,6	N=49	31,3	N=48	38,3	N=47
FC	36,4	N=55	42,6	N=54	40,4	N=47	28	N=50	38,8	N=49
JV	35,3	N=17	35,3	N=17	35,7	N=14	31,3	N=16	37,5	N=16
LP94	58,3	N=12	58,3	N=12	58,3	N=12	45,5	N=11	45,5	N=11
LP95	29,7	N=37	29,7	N=37	37,8	N=37	31,4	N=35	28,6	N=35
LP96	25	N=12	25	N=12	16,7	N=12	30	N=10	33,3	N=9
LP97	23,1	N=13	23,1	N=13	16,7	N=12	8,3	N=12	15,4	N=13
ALP			58,3	N=12	42,9	N=49	33,9	N=56	29,4	N=68
SO97	31,3	N=32	31,3	N=32	17,9	N=14	33,3	N=27	28,6	N=28
SO	29,8	N=141	23,4	N=128	17,9	N=67	22,9	N=48	28,6	N=28

TABLE 13a. OWNERSHIP CHANGES BETWEEN END OF 1994/END OF 1997.

OWNERSHIP 1994/OWNERSHIP 1997

	SO 97	FOR 97	ENT97	MAN97	EMP97	IND97	n.a. 97	liq. 97	Total 94
State 94	32	12	33	7	1	1	11	36	133
Foreign 94	0	24	2	2	1	0	2	5	36
Est. enterprise 94	0	1	32	2	2	1	14	13	65
Managers 94	0	0	4	28	2	3	2	1	40
Employees 94	0	1	4	8	13	7	4	4	41
Individuals 94	0	1	1	2	3	19	4	2	32
Total 97	32	39	76	49	22	31	37	61	347

Table 13b. OWNERSHIP CHANGES IN EARLY PRIVATISED ENTERPRISES

OWNERSHIP 1994/OWNERSHIP 1997

	FOR 97	ENT97	MAN97	EMP97	IND97	n.a. 97	liq. 97	Total 94
Foreign 94	6	0	0	0	0	0	2	8
Est. enterprise 94	0	13	0	0	0	3	5	21
Managers 94	0	1	12	0	0	0	1	14
Employees 94	0	1	7	7	4	4	3	26
Est. individuals 94	0	1	1	0	9	1	2	14
Total 97	6	16	20	7	13	8	13	83

PERFORMANCE OF ENTERPRISES BY OWNERSHIP GROUPS.

TABLE 14.
Percentage of firms which increased sales, by ownership groups.

	1994	1995	1996	1997
Foreign	72,2 N=36	44,7 N=38	45 N=40	67,6 N=37
ENT	58,5 N=65	37,8 N=74	45,1 N=71	63,9 N=72
MAN	61,5 N=39	52,8 N=53	39,6 N=53	52,1 N=48
EMP	65 N=40	30,6 N=36	43,5 N=23	59,1 N=22
IND	50 N=32	36,7 N=30	31 N=29	51,6 N=31
Foreign2*	80 N=25	50 N=28	46,7 N=30	64 N=25
Total	61,3 N=212	41 N=234	41,7 N=216	59,5 N=210

*Group foreign 2 excludes joint ventures.

TABLE 15.
Percentage of firms which increased employment, by ownership groups.

	1994	1995	1996	1997
Foreign	58,3 N=36	55,2 N=38	47,5 N=40	37,8 N=37
ENT	36,9 N=65	29,7 N=74	34,3 N=73	31,9 N=72
MAN	53,8 N=39	34,6 N=52	43,4 N=53	29,2 N=48
EMP	39 N=41	33,3 N=36	30,4 N=23	22,7 N=22
IND	31,3 N=32	23,3 N=30	34,5 N=29	25,8 N=31
Foreign2*	68 N=25	64,3 N=28	53,3 N=30	36 N=25
Total	43,2 N=213	34,5 N=235	38,5 N=218	30,5 N=210

*Group foreign 2 excludes joint ventures.

TABLE 16.
Averages of sales per employees by ownership groups, (logs)

	1994	1995	1996	1997
Foreign	5,21 N=36	5,19 N=38	4,95 N=41	5,17 N=38
ENT	4,31 N=65	4,3 N=73	4,42 N=72	4,59 N=73
MAN	4,26 N=39	4,27 N=53	4,18 N=54	4,27 N=48
EMP	3,94 N=41	3,81 N=36	3,75 N=24	4,17 N=22
IND	4,15 N=32	4,08 N=30	3,97 N=29	4,26 N=31

Note: The figures are logarithms of the ratio [Sales (in 1000 EEKs) /number of employees].

TABLE 17.
Averages of investment per employees by ownership groups, (logs)

	1994	1995	1996
Foreign	9,46 N=16	9,66 N=29	8,56 N=25
ENT	8,13 N=37	8 N=60	8,19 N=43
MAN	8,73 N=13	8,41 N=39	7,74 N=32
EMP	7,41 N=26	7,74 N=25	6,83 N=11
IND	7,51 N=18	7,44 N=25	8,26 N=18

Note: The figures are logarithms of the ratio [Sales (in EEKs) /number of employees].

TABLE 18.
Percentage of firms belonging to the highest profit group, by largest owner.

	1994 N	1995 N	1996 N	1997 N
FOR	27,8 N=36	36,8 N=38	26,8 N=41	34,2 N=38
ENT	32,3 N=65	41,9 N=74	34,7 N=72	26,7 N=75
MAN	46,2 N=39	39,6 N=53	42,6 N=54	43,8 N=48
EMP	41,5 N=41	33,3 N=36	45,8 N=24	54,6 N=22
IND	56,3 N=32	36,7 N=30	37,9 N=29	22,6 N=31