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Industrial and Social Policies in Countries in Transition

No. S-18

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Paper presented
at the
55th Congress of the International Institute of Public Finance,
Moscow, 23-26 August 1999

Finanzwissenschaftliche Diskussionsbeiträge
Special Series: Industrial and Social Policies in Countries in Transition

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Discussion paper series editor: Prof. Dr. Hans-Georg Petersen, University of Potsdam, Faculty of Economics and Social Sciences, P.O. Box 900 327, D-14439 Potsdam. Phone: +49-331-977-3394; Fax: +49-331-977-3392; Email: lsfiwi@rz.uni-potsdam.de

ISSN 0948 – 7549

Social Benefits and the Enterprise: Some Recent Evidence from Bulgaria and Poland*

Atanas Christev and Hans-Peter Weikard

Abstract: In socialist economies firms have provided various social benefits, like child care, health care, food subsidies, housing etc. Using panel data from Bulgarian and Polish firms, this paper attempts to explain firm-specific provision of social benefits in the process of transition. We investigate empirically with the help of qualitative response models, how ownership type and structure, firm size, profitability, change in management, foreign direct investment, wage and employment policies, union involvement and employee power have impacted the state of non-wage benefits provision.

Journal of Economic Literature Classification: C25, J32, P31, P52

* This research has been supported by the European Union's Phare ACE Programme, Grant No. P96-6227-R. Financial support to carry out the Polish survey study by the Komitet Badan Naukowych (grant No. 02507) is also gratefully acknowledged. We would like to thank Radostina Bakardjieva, Marek Bednarski, Felix FitzRoy, Stanisława Golinowska, Piotr Kurowski, Hans-Georg Petersen, Christoph Sowada, and Steffen Zillmer for their contribution to the surveys. We are particularly indebted to Marek Bednarski for numerous discussions on the privatisation process in Poland, to Piotr Kurowski for generous help with the Polish data and helpful comments. We also thank Jochen Greiner-Mai for able assistance.

1 Introduction

In socialist economies enterprises provided extensive social benefits like child care, health care, housing etc; they also contributed to workers' social security, in particular to job security. In the course of enterprise restructuring and privatization the role of the enterprise has been redefined. In this paper we seek to understand one aspect of the restructuring behavior of firms: non-wage benefits in the transition enterprise. Using survey data from Bulgarian and Polish firms we explain how enterprises in transition have responded to a changing environment with regard to the provision of social benefits. We investigate empirically the determinants of the extent and scope of provision of social benefits at the enterprise level. By social benefits we mean non-wage benefits that are voluntarily provided and we do not discuss compulsory social insurance contributions by the enterprise. What we study are the benefits in kind (i.e., housing, health care, cafeteria, transport, etc.) that the state-owned enterprise (SOE) had previously provided to its employees. Now, faced with emerging competitive pressures, the transition firm must divest of its social assets or choose to continue offering such services while taking substantial steps towards survival and restructuring. How firms in transition economies respond to this challenge depends crucially on a number of issues that could impede or facilitate the process of restructuring and privatization, viz. firm efficiency and cost structure, employment decisions, and more general welfare consequences for society that follow from such behavior.¹ We try to explain how and why ownership type and structure, firm size, wages and employment, profitability, change in management, foreign direct investment, union involvement and employee power have impacted the state of social benefits provision in transition. Government's capacity to provide incentives for an enterprise-level social policy and thus affect the transition to market economy is yet another determinant of these non-vested social benefits. Our aim is to provide a better intuition for understanding this aspect of the problem of firm restructuring.

This far few studies have empirically investigated firms' provision of social benefits in transition economies. Closest to our own work are the studies by Estrin et al. (1995) and Commander and Schankerman (1997). Estrin et al. (1995) find evidence from a survey of Polish firms that state-owned as well as privatized firms provide substantial social benefits to their employees, among them child care, health care, food and housing subsidies. They identify firm size, profitability and employee power as key determinants in the provision of benefits. Commander and Schankerman (1997) investigate size, adjustment of employment, wages and social benefits in Russia and Ukraine. They find no significant effect of ownership

¹ For a detailed analyses of these and other issues see Rein, et. al. (eds., 1997).

on the share of benefits in total workers' compensation. However, they do find that firm size has a significant positive effect on benefit provision in both countries and while monetary compensation (wages) are complements to non-wage benefits in Russia, there is no such evidence for Ukraine. Svejnar (1996) reports some results of recent employment studies in countries in transition. Although privatization is seen as one of the most important steps in the transition process, surprisingly ownership and legal form of the enterprise seem to have no effect on employment and wages. Rein et al. (eds., 1997) have collected a number of studies looking at enterprise benefits in transition economies discussing additional determinants like the role of the government and the influence of the tax system.² Surprisingly, rather than the rapid change, as documented by our survey as well (see tables 15 and 16 in the appendix), we observe a modest decline even an increase in aggregate benefits in most types of enterprises.

Our study contributes to the literature in two important ways. Firstly, we provide the first study of this kind for Bulgarian enterprises. Secondly, our Polish survey contains more recent data (up to 1997) than the study of Estrin et al. (1995). Since the Polish transformation process is probably the most advanced in Central and Eastern Europe, this study is one of the first to obtain results on enterprise benefits for an advanced stage of the transformation process. Also, given similarities in the structure of our data set for Bulgaria and Poland, we can contrast the state of benefits provision in both countries.

The structure of the paper is as follows. The next section briefly reviews and contrasts the institutional background of enterprise restructuring in Bulgaria and Poland. Section three describes our sample and the method of analysis. Our empirical findings are presented in section four. Section five concludes.

2 The background

In the legacy of the socialist firm, the newly emerging enterprises in Central and Eastern Europe, whether state-owned, privatized, or new private firms, provide extensive non-wage benefits to employees. Summing up the findings of three studies from Hungary, Poland and Russia conducted in the early nineties Schaffer (1995) has noted that 50-70% of firms have been providing housing or housing subsidies, 20-70% offered child care and 75% or more offered health care. 35-80% and 50-90% of firms owned cafeterias and/or holiday resorts.

It has been argued by Commander and Schankerman (1997) that the provision of social benefits at the enterprise level affects the functioning of the labor market and may hamper the process of restructuring and re-organization of firms. It reduces labor mobility and creates a

² In the case of Romania, Earle's article in Rein et al. (1997) is particularly revealing.

barrier to entry, since new firms also have to offer similar social benefits in order to compete for labor. This is a debated issue. Shaffer (1995) points out that the scale of social provision in Eastern European enterprises is not so different from Western enterprises. However there are differences in the type of benefits and the way they are provided. In Eastern Europe housing and health care are of greater relative importance and the assets necessary for their provision are usually owned by the firm.

A study of how enterprises in transition have responded to the changes in their environment can, therefore, yield interesting insights also into the reasons of social provision. The privatization process in Bulgaria was delayed for two to three years and started with a cash privatization of predominantly small and medium sized firms. Privatization of larger firms came with the mass privatization program launched in 1996.³ Similarly the Polish mass privatization program has only started in 1995, although other forms of privatization have worked quite successfully earlier („liquidation-leasing“ method).⁴ The delay of privatization of large firms, on which we have focused in our survey, does not mean that no change has occurred. Market oriented responses after price liberalization and the withdrawal of subsidies can be observed quite independently of ownership.⁵ The restructuring of enterprises has started long before privatization.

3 Survey data and method of analysis

The provision of social benefits at the enterprise level has crucially depended on the involvement of the government and firms' interaction with unions. Our sample of firms in Poland and Bulgaria has been selected to investigate patterns of firms' provision of social services in the process of transition and questionnaires have been prepared to address these issues. Disparate cases, at different stages of transformation allows for a comparison of experiences and contributes to the results in the literature.

From February to April 1998, with the support of EU-ACE Program and partner-institutions in Poland and Bulgaria, a number of enterprises in transition were surveyed. In Bulgaria the sample size contained 61 industrial companies. The sample structure was determined in view of information provided by the Bulgarian National Statistical Institute (NSI). In Poland the sample included 178 firms of different size and industry. Detailed questionnaires were sent and interviews conducted with all of the enterprises. Tables 1 and 2 give an overview of ownership type and firm size at the end of the period in our sample.

³ Cf. Pamouktchiev et al. (1997).

⁴ Cf. Bednarski (1998).

⁵ Cf. Blanchard et. al (1994) and Aghion and Carlin (1997).

Table 1: Bulgarian sample: Ownership and employment (in percent) [about here]

Table 2: Polish sample: Ownership and employment (in percent) [about here]

We observe the relative diversity of ownership categories and firm size, which we find has an important effect on the level of benefits provision in our empirical results. It is interesting to note that privatization seem to have been easier to implement in enterprises with a smaller number of employees (between 250-500) in both countries.

The questionnaires are divided in four parts. The first part consists of questions concerning location and activities of the enterprise, description of the ownership and its changes and, as far as possible, quantitative managerial data. The second part is about the employment structure and policy of the company. The third part deals with the influence of state subsidies and regulations on the enterprises' employment and investment decisions. The important last part includes qualitative information about the voluntary and compulsory social benefits provided by the company. The data contains information on employment, wages and other firm characteristics for the period 1992-1996 and 1994-1997 for Bulgaria and Poland, respectively. However, information on the provision of social benefits is only available for first and last year of each panel.

Tables 3 and 4 show growth rates of sales, employment, and wages for different ownership types. It is evident that SOEs and privatized enterprises (PRIs) in both countries behave quite differently from each other. While to a certain degree this reflects the different macroeconomic shocks of firm adjustment, it is also representative of the differing approaches to privatization and restructuring. In Bulgaria, most of the firms have experienced negative demand shocks and only PRIs have shed most labor (in effect twice as much as the rest in the beginning of the period), while at the same time wage growth in the beginning of the period has been substantial relative to their Polish counterparts. In Poland by the end of the period, PRIs have accounted for some job creation and have experienced positive sales growth.⁶ In both samples SOEs have experienced large negative demand shocks by the end of the period and cut employment least in Polish case and most in Bulgarian (see especially Figure 1). Thus, our sample of firms reflects substantial relative heterogeneity and firms' restructuring in the latter part of the decade, also characteristic for most transition economies.

⁶ This observation maybe somewhat biased since this group of firms is not homogeneous; it includes the few new private firms in our sample, however for the purposes our analysis we have preferred to keep these together with the newly privatized firms.

Table 3: Growth rates of sales, employment, and wages in Bulgaria (1993 and 1996) [about here]

Table 4: Growth rates of sales, employment, and wages in Poland (1995 and 1997) [about here]

Figure 1: Growth Rates of sales, employment and real wages in Bulgaria (column 1) and Poland (column 2) according to ownership class and for the whole sample [about here]

The extent to which we find social provision in different types of enterprises is captured in Tables 5 and 6. In accordance with findings in earlier studies, we notice that SOEs as well as PRIs in both samples seem to provide extensive social benefits at the enterprise level, even in the later stages of transition. However, it is also worth noting that Polish firms have divested social assets relative more quickly than Bulgarian firms (those differences could have an important effect on our empirical findings and should therefore be interpreted with caution). More than half of the PRI enterprises in the Polish sample provides none or only one type of benefit.

Table 5: Number of benefits provided by Bulgarian enterprises (1992) in per cent [about here]

Table 6: Number of benefits provided by Polish enterprises (1994) in per cent [about here]

The effect of trade unions on the procedure of privatization and number benefits provided in each type of enterprise in both countries are exhibited in Tables 7-8 and 9-10. As expected, heavily unionized enterprises do provide three or more benefits (especially in Bulgarian sample). In Polish firms, over the course of the sample period, those high percentages union members seem to have increased the number (between two and three) of benefits offered. Thus, we anticipate that the trade unions would have a significant positive effect on the level of benefits provision. While a number of studies have examined the effects of privatization on firm restructuring, trade unions seem to have exerted some effect on the way the company has been consequently privatized (in our empirical specification below we attempt to control for this effect). In both samples high percentage of union membership tends to influence privatization towards management employee buy-outs, more so in Bulgaria than Poland (perhaps this also reflects the differences in the way these buy-outs have occurred). While in Poland the sale to outsiders was resisted by employees, in Bulgaria most of the heavily unionized enterprises opted for sale to outsiders (perhaps in anticipation of better performance outcome and dislike of the previous management style).

Table 7: % Trade Union Members and Privatization Procedure in Bulgarian enterprises [about here]

Table 8: % Trade Union Members and Privatization Procedure in Polish enterprises [about here]

Table 9: Number of benefits provided by Unionization class in per cent (Bulgaria) [about here]

Table 10: Number of benefits provided by Unionization class in per cent (Poland) [about here]

Finally, Tables 11 and 12 indicate which type of benefits has been provided. Of the number of benefits provided, food, transport and health care seem to have been preserved and later provided in most categories of enterprises. Interestingly, in Polish SOEs housing has been relatively more difficult to divest of in stark contrast to PRIs in which only 1.9% maintained the provision at the end of the period. In Bulgaria, commercialized firms, perhaps due to cost pressures in anticipation of privatization have completely divested of housing or housing subsidies by the end of the period. Note however that the absence of housing provision in Bulgarian SOEs may point to a sample selection bias (again results for this category should be interpreted with caution).

Table 11: Type of benefit provided by enterprises of different ownership in Bulgaria [about here]

Table 12: Type of benefit provided by enterprises of different ownership in Poland [about here]

The model

Since our dependent variables convey ordinal information from the survey data, we use ordered logit models to test the above hypotheses. The basic model is built around a latent regression:

$$y^* = \beta' \mathbf{x} + \varepsilon,$$

where y^* is unobserved. We would like to examine its intensity, in our case a response to the scope and extent of social benefits. What we do have from our survey is

$$\begin{aligned} y &= 0 & \text{if } y^* \leq 0, \\ &= 1 & \text{if } 0 < y^* \leq \mu_1, \\ &= 2 & \text{if } \mu_1 < y^* \leq \mu_2, \\ &= j & \text{if } \mu_{j-1} < y^* \leq \mu_j, \\ &= k & \text{if } \mu_{k-1} \leq y^*. \end{aligned}$$

Thus the probability P of observing the desired outcome j , here the number of benefits, or their level, is a function of the independent variables and a set of cut-off points μ_j corresponding to the survey responses. In the panel data available to us, we specify random effects ordered logit models which has not been done in the literature on the provision of social benefits so far. This allows us to account for unobservable firm-specific effects, firm location, industry and other factors that might have influenced the individual firm. Hence our models measure the probability P of observing the level in benefits provision (number of benefits) over our sample period:

$$P(y = j) = P(\mu_{j-1} < y^* \leq \mu_j) \\ = P(\mu_{j-1} < \beta_i' \mathbf{x} + u_i + v_{it} \leq \mu_j).$$

μ 's are the unknown parameters to be estimated through β ; \mathbf{x} is a vector of independent factors which influence the provision of benefits and $(u_i + v_{it})$ is the composite error term.

4 Empirical findings

Our data provides evidence that even in the later stages of transition, few Polish firms adjust the level of social provision for most types of benefits. This finding is in accordance with Estrin et al. (1995, 42). However, Bulgarian firms do seem to adjust the number of social benefits offered more vigorously (Results in Tables 13 and 14). In the way we have specified our empirical model, it is important to consider carefully the interpretation of the coefficient estimates. The marginal effects (not reported here may have opposite signs than the estimate coefficients if there are more than three outcomes for the dependent variable such as in our case).⁷ Our findings below represent empirical tests on the hypothesis raised in the introduction.

Table 13: Results Bulgaria [about here]

Table 14: Results Poland [about here]

⁷ The way to interpret the estimated coefficients is as follows. Consider a SOE in 1996 with a fitted number of benefits obtained after applying the estimated coefficients to the observed values for the firms's explanatory values is 13. The cut-off point μ between two and three benefits is 9.43 reported in Table 13 (for Bulgarian firms for example, note the estimate for $\mu(02)$). The probability that this firms provides/offers three or more than three benefits is $1 - (1 + e^{(13 - 9.43)})^{-1} = 97\%$. Now examine a firm that is privatized and sold to outsiders (prvdum2 coefficient) and has the identical values for its explanatory variables. Then the firm's score is $13 - 7.38 = 5.62$. The probability P that this firm will offer three or more than three benefits is $1 - (1 + e^{(5.62 - 9.43)})^{-1} = 2.2\%$.

Firm size effect: Firm size has a non-trivial effect on the level of social benefits in both, Polish and Bulgarian enterprises in transition. Larger firms do seem to provide more benefits. These results conform to findings by Commander/Schankerman (1997, 9) for Russian firms and Estrin et al. (1995, 34) for Polish firms. In Bulgaria larger firms are more likely to increase benefits. (See also Commander/Schankerman p.7 for Russia and different evidence for Ukraine). The same is true for Polish firms which is unlike the finding of Estrin et al. p.45. Additionally, those Polish firms that were relatively more profitable tended to provide more social benefits.

Wage effect: There is a significant evidence of a wage effect in Bulgaria, but not Poland. A real wage increase would decrease the probability of social benefits provision in Bulgarian manufacturing firms. This is quite surprising given the findings of Commander/Schankerman (1997, 7) for Russia. However, this does seem to confirm the view that wages and benefits are substitutes, at least in the Bulgarian case.

Ownership and privatization effects: Concerning ownership we find no significant effect in Bulgaria, however the path of privatization matters. Even more so quite surprisingly, while mass privatization and direct sale methods show a significant influence, employee/manager buy-outs have a trivial effect on the number of benefits in the enterprise. This complements Commander and Schankerman (1997, p. 9) who do not find a significant effect of ownership but also do not consider privatization procedure. For Poland Estrin et al. find less decline in social benefits provision in privatized and new private firms compared to SOE's. Our data offers more detailed information on the path of privatization and ownership structure, and largely corroborates these finding: privatized and new firms in contrast to SOE's have an effect on the state of benefits provision. Unlike Bulgarian MBOEs, Polish ones seems to have a significant effect on benefits, attesting to the possibility of insiders controlling the level of benefits they get from being employed. However, none of the methods of privatization in Polish firms seems to be a significant decisive factor in the provision of benefits at the enterprise level.

Firm-specific effects: Trade unions, management change, government influence, and foreign direct investment: Surprisingly, in the process of transition trade unions in both countries seem to have no significant influence on the provision of social benefits as do foreign investors (the last variable not reported in our results, since it was highly insignificant). Finally, only in the Polish case we discover a positive influence of the government in the provision of benefits. Change in management has negatively influenced the number of benefits offered by the enterprise in Poland, but no such evidence seems present in Bulgarian enterprises.

5 Conclusions

In the socialist economies enterprises were instrumental to implementing social policy. Even holiday resorts have been sponsored or operated by large state-owned companies. Full employment was an important part of the social security system guaranteed by companies. In the process of transition to a market economy the role of the enterprise has changed. Firms must compete in product markets and reduce costs to survive. This calls for a new division of tasks between the state, the enterprise, and the household. Disadvantages (immobility of labor) and advantages (work incentives and workers' loyalty) of enterprise provision of social benefits have to be weighed against each other. There is however no general answer: The answer will depend on the service provided and specific characteristics of the firm. Government regulation, which by its very nature provides general solutions might not be adequate. An important matter of legislation however is a clear definition of property rights in social assets (cf. Rein et al. 1997).

As the transition unfolds and privatization continues, the economic effects of the level and scope of social benefits may further influence the employment behavior of the emerging market-oriented firm in the long-run; this does also affect the market opportunities for alternative, competitive providers of these services. These issues deserve further study.

References

- Aghion, Philippe/Carlin, Wendy (1997) Restructuring outcomes and the evolution of ownership patterns in Central and Eastern Europe. In: Zecchini, Salvatore (ed., 1997) *Lessons from Economic Transition. Central and Eastern Europe in the 1990s*. Dordrecht: Kluwer. 241-261.
- Bednarski, Marek (1998) *Privatisation Policy and Industrial Policy in Poland in the Period of Transformation*. Finanzwissenschaftliche Diskussionsbeiträge No. S-6. Potsdam: Universität Potsdam.
- Aghion, Philippe/Blanchard, Oliver/Burgess, Robin (1994) The behaviour of state firms in Eastern Europe pre-privatisation. *European Economic Review* 38, 1327-1349.
- Commander, Simon/Schankerman, Mark (1997) Enterprise restructuring and social benefits. *Economics of Transition* 5, 1-24.
- Earle, John S. (1997) Do East European enterprises provide social protection? Employee benefits and labour market behaviour in the East European transition. In: Rein/Friedman/Wörgötter (eds., 1997) *Enterprise and social benefits after communism*. Cambridge: Cambridge University Press. p. 49-74.
- Estrin, Saul/Schaffer, Mark E./Singh, I.J. (1995) The provision of social benefit in state-owned, privatized and private firms in Poland. Discussion paper 223, Centre for Economic Performance, LSE.
- Pamouktchiev, Hristo/Parvulov, Svilen/Petranov, Stefan (1997) Process of privatization in Bulgaria. In: Jones, Derek C./Miller, Jeffrey (eds., 1997) *The Bulgarian Economy: Lessons from Reform during Early Transition*. Aldershot: Ashgate. 205-230.
- Rein, Martin/Friedman, Barry L./Wörgötter, Andreas (eds., 1997) *Enterprise and social benefits after communism*. Cambridge: Cambridge University Press.
- Schaffer, Mark E. (1995) Should we be concerned about the provision of social benefits by firms in transition economies. *Economics of Transition* 3, 247-250.
- Svejnar, Jan (1996) Enterprises and Workers in the Transition: Econometric Evidence. *American Economic Review* 86 (P&P), 123-127.

APPENDIX:**Table 1: Bulgarian sample: Ownership and employment (in percent)**

EMPLOYMENT (1996)	ENTERPRISE OWNERSHIP			
	SOE	ComJS	PRI	Total
250-500 employees	14.8	1.6	36.1	52.5
501-1000 employees	0.0	0.0	18.0	18.0
above 1000 employees	1.6	9.8	18.0	29.5
Total	16.4	11.5	72.1	100

SOE State-owned enterprise

ComJS Commercialized joint-stock enterprise

PRI Privatized enterprise

Table 2: Polish sample: Ownership and employment (in percent)

EMPLOYMENT (1997)	ENTERPRISE OWNERSHIP					
	SOE	SOJS	ComJS	NIF	PRI	Total
below 250 employees	2.8	1.1	1.1	0.6	2.2	7.9
251-500 employees	13.5	6.2	3.9	1.7	15.2	40.4
501-1000 employees	4.5	5.0	5.0	9.0	9.6	33.1
above 1000 employees	2.8	3.4	4.5	5.6	2.2	18.5
Total	23.6	15.7	14.6	16.9	29.2	100

SOE State-owned enterprise

SOJS State-owned joint-stock enterprise (State-Treasury firms)

ComJS Commercialized joint-stock enterprise

NIF National Investment Fund enterprises

PRI Privatized enterprise

Table 3: Growth rates of sales, employment, and wages in Bulgaria

	Bulgaria: mean (standard deviation), median							
	1993				1996			
	SOE (N=10)	ComJS (N=7)	PRI (N=44)	Total (N=61)	SOE (N=10)	ComJS (N=7)	PRI (N=44)	Total (N=61)
growth rate of sales	-0.058	-0.022	-0.036	-0.038	-0.218	-0.063	-0.078	-0.099
	(0.26)	(0.21)	(0.35)	(0.32)	(0.27)	(0.16)	(0.29)	(0.28)
	0.031	-0.052	-0.099	-0.076	-0.196	-0.137	-0.082	-0.103
growth rate of employment	-0.049	-0.019	-0.104	-0.085	-0.016	0.007	-0.007	-0.066
	(0.09)	(0.02)	(0.15)	(0.13)	(0.02)	(0.02)	(0.09)	(0.07)
	-0.019	-0.013	-0.078	-0.042	-0.019	0.009	0.000	-0.004
growth rate of real wage	0.137	0.171	0.215	0.197	-0.254	-0.103	-0.098	-0.124
	(0.13)	(0.10)	(0.20)	(0.19)	(0.13)	(0.19)	(0.26)	(0.24)
	0.177	0.208	0.224	0.216	-0.299	-0.157	-0.084	-0.140

Table 4: Growth rates of sales, employment, and wages in Poland

	Poland: mean (standard deviation), median											
	1995						1997					
	SOE (N=41)	SOJS (N=28)	ComJS (N=25)	NIF (N=30)	PRI (N=51)	Total (N=175)	SOE (N=42)	SOJS (N=28)	ComJS (N=26)	NIF (N=30)	PRI (N=51)	Total (N=178)
growth rate of sales	0.046	-0.058	-0.021	0.117	0.107	0.050	-0.048	0.004	-0.005	-0.036	0.011	-0.014
	(0.30)	(0.49)	(0.26)	(0.16)	(0.39)	(0.34)	(0.21)	(0.24)	(0.23)	(0.17)	(0.42)	(0.29)
	0.018	0.026	-0.030	0.113	0.042	0.037	-0.049	-0.031	0.032	-0.022	0.034	0.000
growth rate of employment	-0.065	-0.048	-0.052	0.012	-0.007	-0.030	-0.069	-0.089	-0.081	-0.086	0.020	-0.051
	(0.10)	(0.06)	(0.11)	(0.08)	(0.15)	(0.12)	(0.10)	(0.11)	(0.14)	(0.13)	(0.19)	(0.15)
	-0.033	-0.045	-0.021	0.005	0.003	-0.024	-0.053	-0.033	-0.057	-0.061	0.005	-0.045
growth rate of real wage	-0.001	0.039	-0.013	0.068	0.039	0.027	0.069	0.077	0.080	0.059	0.057	0.067
	(0.11)	(0.07)	(0.28)	(0.17)	(0.07)	(0.15)	(0.10)	(0.07)	(0.08)	(0.06)	(0.22)	(0.14)
	0.009	0.025	0.002	0.041	0.036	0.022	0.050	0.069	0.072	0.057	0.088	0.064

Table 5: Number of benefits provided by Bulgarian enterprises in per cent

ENTERPRISE OWNERSHIP				
Benefits 1992 (1996)	SOE	ComJS	PRI	Total
None	20.0 (10.0)	14.3 (0.0)	18.2 (11.4)	18.0 (9.8)
1	10.0 (20.0)	0.0 (0.0)	13.6 (15.9)	11.5 (14.8)
2	0.0 (10.0)	0.0 (14.3)	15.9 (18.2)	11.5 (16.4)
3	40.0 (30.0)	42.9 (14.3)	34.1 (29.5)	36.1 (27.9)
more than 3	30.0 (30.0)	42.9 (71.4)	18.2 (25.0)	23.0 (43.2)
Total	16.4	11.5	72.1	100

Table 6: Number of benefits provided by Polish enterprises in per cent

ENTERPRISE OWNERSHIP						
Benefits 1994 (1997)	SOE	SOJS	ComJS	NIF	PRI	Total
None	31.0 (28.6)	46.4 (46.4)	42.3 (42.3)	33.3 (26.7)	50.0 (48.1)	41.0 (38.8)
1	16.7 (23.8)	14.3 (14.3)	11.5 (15.4)	10.0 (23.3)	23.1 (25.0)	16.3 (21.3)
2	19.0 (19.0)	14.3 (17.9)	23.1 (23.1)	10.0 (26.7)	9.6 (17.3)	14.6 (20.2)
3	16.7 (19.0)	17.9 (17.9)	11.5 (15.4)	23.3 (10.0)	13.5 (7.7)	16.3 (13.5)
more than 3	16.7 (9.5)	7.1 (3.6)	11.5 (3.8)	23.3 (13.3)	3.8 (1.9)	11.8 (6.2)
Total	23.6	15.7	14.6	16.9	29.2	100

Table 7: % Trade Union Members and Privatization Procedure in Bulgaria

% °1992 (1996)	Privatization Procedure (in percent)				
	NP	MP	MEBO	DS	Total
No Union	25.0 (25.0)	5.6 (5.6)	0.0 (0.0)	0.0 (8.3)	4.9 (6.6)
0-50 %	0.0 (0.0)	13.9 (19.4)	0.0 (11.1)	0.0 (16.7)	8.2 (16.4)
51-75 %	0.0 (25.0)	13.9 (22.2)	0.0 (22.2)	16.7 (25.0)	11.5 (23.0)
76-100 %	75.0 (50.0)	66.7 (52.8)	100.0 (66.7)	83.3 (50.0)	75.4 (54.1)
Total	6.6	59.0	14.8	19.7	100.0

NP Not Privatized enterprise

MP Mass Privatization enterprise

MEBO Employee/Management Buy-out, or Company Leased enterprise

DS Direct Sale

Table 8 % Trade Union Members and Privatization Procedure in Poland

Table 6 - % Trade Union members and Privatization Procedure in Poland						
	Privatization Procedure (in percent)					
% °1994 (1997)	NP	MP	MEBO	CP	DS	Total
No Union	12.1 (10.6)	5.9 (5.9)	22.0 (24.4)	0.0 (0.0)	6.7 (6.7)	11.2 (11.2)
0-50 %	30.3 (33.3)	52.9 (50.0)	53.7 (58.5)	27.3 (36.4)	53.3 (66.7)	41.6 (45.5)
51-75 %	45.5 (45.5)	38.2 (41.2)	22.0 (14.6)	54.5(50.0)	40.0 (20.0)	39.3 (36.0)
76-100 %	12.1 (10.6)	2.9 (2.9)	2.4 (2.4)	18.2 (13.6)	0.0 (6.7)	7.9 (7.3)
Total	37.1	19.1	23.0	12.4	8.4	100.0

NP Not Privatized enterprise

MP Mass Privatization (General Privatization) enterprise

CP Capital Privatization

MEBO Employee/Management Buy-out, or Company Leased enterprise

DS Direct Sale

Table 9: Number of benefits provided by Unionization class in percent (Bulgaria)

Benefits 1992 (1996)	No Trade Unions	0 – 50°%	51 – 75°%	76 – 100°%
None	33.3 (25.0)	0.0 (10.0)	28.6 (14.3)	17.4 (6.1)
1	0.0 (25.0)	0.0 (0.0)	14.3 (28.6)	13.0 (12.1)
2	33.3 (50.0)	20.0 (20.0)	14.3 (7.1)	8.7 (15.2)
3	33.3 (0.0)	40.0 (30.0)	42.9 (35.7)	34.8 (27.3)
more than 3	0.0 (0.0)	40.0 (40.0)	0.0 (14.3)	26.1 (39.4)
Total	4.9 (6.6)	8.2 (16.4)	11.5 (23.0)	75.4 (54.1)

Table 10: Number of benefits provided by Unionization class in percent (Poland)

Benefits 1994 (1997)	No Trade Unions	0 – 50°%	51 – 75°%	76 – 100°%
None	55.0 (55.0)	40.5 (38.3)	40.0 (37.5)	28.6 (23.1)
1	15.0 (25.0)	21.6 (23.5)	8.6 (17.2)	28.6 (23.1)
2	15.0 (10.0)	12.2 (24.7)	17.1 (15.6)	14.3 (30.8)
3	15.0 (10.0)	13.5 (8.6)	21.4 (20.3)	7.1 (15.4)
more than 3	0.0 (0.0)	12.2 (4.9)	10.0 (9.4)	21.4 (7.7)
Total	11.2 (11.2)	41.6 (45.5)	39.3 (36.0)	7.9 (7.3)

Table 11: Type of benefit provided by enterprises of different ownership class in Bulgaria

Benefits 1992 (1996)	ENTERPRISE OWNERSHIP			
	SOE	ComJS	PRI	Total
Housing	0.0 (0.0)	42.9 (0.0)	4.5 (0.0)	8.2 (8.2)
Cafeteria	60.0 (70.0)	57.1 (100.0)	68.1 (77.2)	65.6 (78.7)
Transport	30.0 (30.0)	100.0 (42.9)	13.6 (25.0)	19.7 (29.5)
Health care	50.0 (70.0)	57.1 (57.1)	59.0 (68.1)	57.4 (70.5)
Child care	0.0 (0.0)	85.7 (0.0)	2.2 (0.0)	1.6 (0.0)
Company Pensions	0.0 (10.0)	0.0 (0.0)	2.2 (9.0)	1.6 (8.2)
Other	40.0 (60.0)	57.1 (85.7)	50.0 (61.4)	49.2 (63.9)
Total	16.4	11.5	72.1	100

Table 12: Type of benefit provided by enterprises of different ownership class in Poland

Benefits 1994 (1997)	ENTERPRISE OWNERSHIP					
	SOE	SOJS	ComJS	NIF	PRI	Total
Housing	33.3 (23.8)	25.0 (17.9)	23.1 (11.5)	36.7 (23.3)	3.8 (1.9)	22.5 (14.6)
Cafeteria	35.7 (37.7)	21.4 (21.4)	30.8 (34.6)	36.7 (36.7)	17.3 (15.4)	27.5 (27.5)
Transport	33.3 (33.3)	21.4 (17.9)	7.7 (7.7)	26.7 (16.7)	19.2 (17.3)	22.5 (19.7)
Health care	57.1 (50.0)	50.0 (50.0)	57.7 (53.8)	63.3 (66.7)	38.5 (42.3)	51.7 (51.1)
Child care	9.5 (4.8)	10.7 (3.6)	11.5 (7.8)	23.3 (6.6)	9.6 (5.8)	12.4 (5.6)
Company Pensions	0.0 (2.4)	0.0 (0.0)	0.0 (0.0)	3.3 (3.3)	0.0 (0.0)	1.0 (1.1)
Other	9.5 (11.9)	3.6 (7.1)	7.7 (7.7)	13.3 (10.0)	9.6 (7.7)	9.0 (9.0)
Total	23.6	15.7	14.6	16.9	29.2	100

Table 13: Results Bulgaria

Log likelihood function -148.954

 $\chi^2_{(8)}=32.48$ (0.00)

Number of observations=122

Dependent Variable: Number of Benefits (1992 and 1996)

| RANDOM EFFECTS Ordered Logit Model

Index function for probability standard error t-ratio p-value

Constant	-2.754116219	6.1895605	-.445	0.65
RWAGE	.1626472703	.04770025	3.410	0.00
SIZE	2.571775141	1.0024410	2.566	0.01
MANAGE	1.111950911	.96054719	1.158	0.25
UNIONPW	-0.026604639	.02036117	-1.307	0.19
OWNDUMM	-.1166609504	2.2370099	-.052	0.96
PRVDUM1	-5.479062762	3.2819300	-1.669	0.10
PRVDUM2	-7.378876525	3.5828105	-2.060	0.04
PRVDUM3	1.758119862	7.4284644	.237	0.81

Threshold parameters for index model

Mu(01)	4.813211485	1.2992251	(ancillary parameters)
Mu(02)	9.434315164	1.2397690	
Mu(03)	19.45560767	2.7797074	
Mu(04)	29.55810453	4.7831698	

rwage log of real wage 1992 and 1996

size log of employment 1992 and 1996

manage Dummy variable, =1 if there has been a change in management in the time period, =0 otherwise.

unionpw percentage unionization for the time period

owndumm Dummy variable, =1 if firm is privatized, =0 otherwise

prvdum1 Dummy variable, =1 if firm is mass privatized, =0 otherwise

prvdum2 Dummy variable, =1 if firm is under direct sale, =0 otherwise

prvdum3 Dummy variable, =1 if firm is employee/management buy-out, =0 otherwise

Table 14: Results Poland

Log likelihood function -405.417

 $\chi^2_{(14)}=59.02$ (0.00)

Number of observations=336

Dependent Variable: Number of Benefits (1994 and 1997)

RANDOM EFFECTS Ordered Logit Model

Index function for probability standard error t-ratio p-value

Constant	-7.862504977	3.4358068	-2.288	0.02
RWAGE	-.0649358619	.20223511	-.321	0.75
SIZE	2.025492060	.53599923	3.779	0.00
PROFITS	-1.507458335	.82339608	-1.831	0.07
MANAGE	-2.923354702	.65459112	-4.466	0.00
UNIONPW	.0210938622	.01628432	1.295	0.20
GOVINFL	-1.507159270	.64629318	-2.332	0.01
OWND1	.0224513748	1.1986328	.019	0.99
OWND2	-3.114929504	3.2311754	-.964	0.34
OWND3	-2.920762880	1.6021196	-1.823	0.07
OWND4	-.0329373394	1.9938284	-.017	0.99
OWND5	-8.890122887	5.2807335	-1.684	0.09
PRDUM1	-1.506519823	3.2469247	-.464	0.64
PRDUM2	-.7724049694	1.2361817	-.625	0.53
PRDUM3	1.177212143	1.6118156	.730	0.47
PRDUM4	2.901104159	3.2048084	.905	0.37

Threshold parameters for index model

Mu (01)	3.829120653	.38698035	(ancillary parameters)
Mu (02)	7.250938202	.51730891	
Mu (03)	10.96106849	.73103649	
Mu (04)	14.74164141	.81716305	
Mu (05)	15.28235936	.88925551	
Mu (06)	17.30652509	2.3740059	

rwage log of real wage 1994 and 1997

size log of employment 1994 and 1997

profits Dummy variable, =1 if firm declared positive profits for the time period, =0 otherwise

manage Dummy variable, =1 if there has been a change in management in the time period, =0 otherwise.

unionpw percentage unionization for the time period

govinfl Dummy variable, =1 if firm considered government to have had influence on the provision of benefits, =0 otherwise

ownd1, 2, 3, 4, 5 Dummy variable, =1 if firm is ComJS, NIF, Employee/Management Buy-out, Privatized, Private (De Novo), =0 otherwise

prdum1,2,3,4 Dummy variable, =1 if firm is direct sale, capital privatized, company leasing, mass privatized =0 otherwise

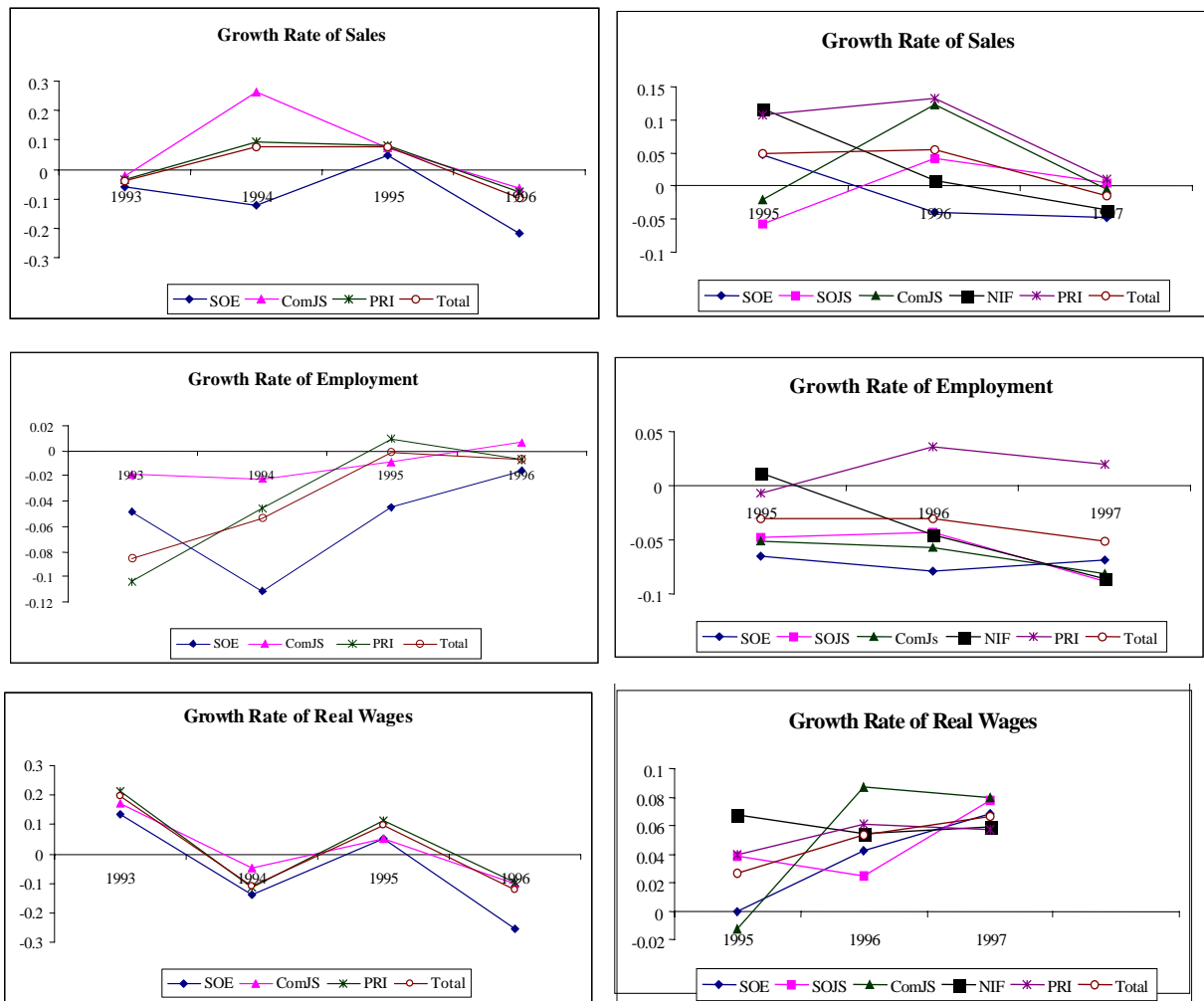
Table 15: Change in level of social provision in Bulgaria according to ownership (1992-96)

	SOE	ComJS	PRI	Total
Increase	10.0	28.6	20.5	19.7
Maintain	80.0	42.9	75.0	72.1
Reduce	10.0	28.6	4.5	8.2
	16.4	11.5	72.1	100

Table 16: Change in level of social provision in Poland according to ownership (1994-97)

	SOE	SOJS	ComJS	NFI	PRI	Total
Increase	7.1	3.6	7.7	10.0	1.9	5.6
Maintain	73.8	89.3	80.8	60.0	90.4	79.8
Reduce by less	11.9	3.6	3.8	13.3	5.8	7.9
Reduce by more	7.1	3.6	7.7	16.7	1.9	6.7
	23.6	15.7	14.6	16.9	29.2	100

Figure-1: Growth Rates of sales, employment and real wages in Bulgaria (column 1) and Poland (column 2) according to ownership class and for the whole sample



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