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THE PROVISION OF SOCIAL BENEFITS IN STATE-OWNED, PRIVATIZED AND PRIVATE FIRMS IN POLAND

S. Estrin, M.E. Schaffer and I.J. Singh

ABSTRACT

We use evidence from a survey of approximately 200 Polish state-owned, privatized, and *de novo* private manufacturing firms to investigate the nature and scope of enterprise-level provision of social benefits, and in particular how enterprise-level social provision is changing with transition, privatization and the emergence of the new private sector. We find that social provision remains surprisingly widespread, and has not been greatly reduced in either the state-owned or the privatized sectors. *De novo* private firms offer a substantially smaller but still significant range of social benefits to workers and, if anything, they are tending to increase rather than reduce the scale of their provision. The other main determinants of the scale of social provision aside from ownership form are firm size and employee power (the latter not explicitly via the union structure), both of which are associated with higher levels of social provision. Money wages and the provision of social benefits appear to be complementary rather than substitutes. Assets used for the provision of social benefits are concentrated in state-owned firms, but there is relatively little social asset disposal; the *de novo* private sector is expanding the range of social benefits offered but is not investing significantly in social assets. Social provision has been declining in state-owned firms, less so in privatized firms, and increasing (modestly) in new private firms. On average the decline in the state-owned and formerly state-owned sectors is surprisingly small. The key determinants of the pace of change aside from ownership form are the size of the firm and its profitability, both of which are associated with increases or slower declines in social provision; in the case of the state-owned sector, provision also declines more slowly when the tax-based income policy (the "popiwek") binds.

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S. ESTRIN, M.E. SCHAFFER AND I.J. SINGH

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THE PROVISION OF SOCIAL BENEFITS IN STATE-OWNED, PRIVATIZED AND PRIVATE FIRMS IN POLAND[1]

S. Estrin, M.E. Schaffer and I.J. Singh

Introduction

It was a standard observation in texts about socialist economies that enterprises provided extensive non-wage social benefits (Gregory and Stuart, 1989; Wiles, 1977), though the actual scale of the provision was rarely indicated. The existence of significant social benefits at the enterprise level, and the implications for restructuring, privatization and the transformation process in general has also been frequently noted in the transition literature (Fischer and Gelb, 1991; Portes, 1993; Frydman, Rapaczynski and Earle, 1993; Estrin, 1994). Yet, there has been virtually no detailed information about the nature and scope of enterprise-level provision of social benefits, let alone any attempts to analyze either its diversity or its determinants. Finally, while there are frequent assertions about how enterprise-level social provision is changing with transition, privatization and the emergence of the new private sector, there is no hard evidence on the matter. It is these inadequacies in our knowledge that we seek to redress in this paper, which draws on the evidence from a three-year panel of approximately 200 Polish firms.

Non-wage social provision is an interesting issue because it is a factor influencing both labour supply and product market structure in the transition process. While analysts know that social provision to employees was often extensive, there has been little empirical indication of its scale, its diversity and of the factors encouraging its use by some firms but not others. These factors are important because over-extensive social provision could raise the costs of enterprise restructuring, and may alienate potential foreign investors if they are forced to take these assets on along with the more productive ones. Aghion, Blanchard and Burgess (1994) have suggested that the degree of social provision may also influence the structure of coalitions emerging in support of unbundling, typically in the direction of hindering restructuring. On the labour side, social provision restricts labour mobility, so its sectoral and structural pattern may be an important explanatory factor in regional unemployment differences. By raising the effective wage paid in the state sector, social provision also places pressure on private firms who wish to recruit - either to match in terms of social provision or to substitute through higher pay. Finally, the pre-existence of social benefits provides the state sector with a simple route to raise total remuneration even in the presence of tax-based incomes policies. We will test hypotheses based on these ideas in the latter sections of the paper.

The main findings of the paper are that social benefits are concentrated in state-owned firms. To a considerable extent, they are also present in privatized companies, but are found considerably less frequently in the *de novo* private sector. The extent of provision within the state sector is primarily determined by enterprise size and is correlated with the level of wages. However, it is interesting to find that provision is also positively related to indicators of employee power. Social provision has been declining in state-owned and privatized firms, but increasing (modestly) in new private firms. On average the decline in the state-owned and formerly state-owned sectors is surprisingly small. The key determinants of the pace of change are the size of the firm and its profitability; in the case of the state-owned sector, provision also declines more slowly when the tax-based income policy (the "popiwek") binds.

There are a further three sections in this paper. In the next section, we briefly outline the methodology of the survey and provide summary statistics about enterprise behaviour in Poland over the sample period, 1991-1993. The nature and scope of social benefits is outlined in the third section, and simple hypotheses about the determinants of provision are tested. In the fourth section, we summarize and attempt to explain the recent changes in social provision including changes in investments in social assets. Conclusions are drawn in the final section.

1. Sample Size, Selection and Characteristics

The survey was sponsored by the World Bank Research Project on Enterprise Behaviour and Economic Reform, and was undertaken between November 1993 and March 1994 by a team of Polish economists headed by Professor Marek Belka. A survey questionnaire in two parts was administered to 200 enterprises in the manufacturing sector. Seven of the original 200 firms withdrew from the survey after they had supplied most of the requested information and were replaced with seven additional firms, giving a total sample size of 207. The first part of the questionnaire was undertaken primarily by interview with senior managers, and involved qualitative questions about a variety of subjects including marketing, technology, employment, finance and corporate governance. A few of these questions covered social benefits and social issues. The second part of the questionnaire was quantitative and drew on various elements of the firm's profit and loss accounts, balance sheets and other economic data for the three years 1991-1993.

The minimum firm size covered in the sample was 25 employees. The sample was stratified by ownership form as follows: 40 enterprises were emerging (*de novo*) private firms (POE's); 45 were privatized firms (PRE's); 41 were state-owned firms which had been converted into joint stock companies ("commercialized", "corporatized") and were awaiting privatization (SA's) and 80 were traditional (not yet commercialized) state-owned firms (SOE's). Within these categories the selection of firms was random. All major manufacturing subsectors are well-represented. In our analysis we do not weight by size, and there are only minor differences between the sectoral distribution of the firms in our sample compared to the weight of sectors in aggregate manufacturing employment.

The first four tables provide a picture of the firms in our sample, and of the key differences in situation and enterprise economic performance by ownership type in Poland at the end of 1993. This picture is of considerable interest in its own right because of the shortcomings of the available data on the Polish private sector published by the Polish Central Statistical Office. Though the quality of these data is probably the best among transition countries, they suffer from two important drawbacks. First, the CSO data make no distinction between the *de novo* private sector and the privatized sector. Second, the CSO definition of the "private sector" in use since 1991 includes cooperatives. Poland began the transition with a substantial number of manufacturing cooperatives, accounting for 13% of industrial employment in 1989 compared to 17% for the emerging private sector proper. During the communist period Polish cooperatives had little real autonomy, but the situation in the transition is quite different and in this sense cooperatives are correctly classified as part of the private sector. Cooperative performance has, however, been quite poor during the transition, and over the period 1989-1993 the output and employment of industrial cooperatives has roughly halved, though even now their weight in manufacturing is still substantial relative to the emerging private sector.[2] At the same time, the emerging private sector, by all accounts, has enjoyed explosive growth and now accounts for perhaps one-third or more of total industrial output. The Polish CSO statistics on the private sector thus unfortunately combine what are several quite distinct ownership groups: *de novo* private firms, formerly state-owned firms that have been privatized, and cooperatives.[3]

We note first from Table 1 that, as expected, most *de novo* private firms are small, and most state firms (SA's and SOE's) are large. However it is encouraging that there are already a few large *de novo* private firms, and that more than one third of privatized firms are small or medium-sized. It is also noteworthy that virtually all commercialized firms are large. The reason for this is that the bulk of these firms are to be included in the Polish Mass Privatization Programme (MPP) and so had to be converted into joint stock companies.

The Polish industrial sector began to grow again in 1992 after a deep recession, and total manufacturing output grew by 12% in 1993. Tables 2 and 3 provide a picture of how the growth was distributed between the ownership types. Commencing with sales growth in Table 2, we find rapid real growth (in excess of 10%) concentrated in the private sector, both in privatized and especially in *de novo* private firms. Only a minority of SOE's and merely a quarter of commercialized firms display rapid sales growth. On the other hand, the macroeconomic expansion is leaving few firms out completely; only 5% of private firms and 20% or less of state-owned firms were still shrinking in 1993.

The picture is rather different for employment growth, reflecting the fact that current and former state-owned firms often still had significant amounts of hoarded labour, and that private firms need to employ extra workers in order to grow. Thus a third or more of PRE's, SA's and SOE's record rapid employment reductions; in each case, higher proportions than display rapid declines in sales. Almost none of the state-owned and formerly state-owned firms record rapid increases in employment, as against 50% of *de novo* private firms. Thus sales growth is fairly widely dispersed, though more marked in the private sector, while employment growth is concentrated in *de novo* private firms.

Finally, the pre-tax profit margin by ownership type is reported in Table 4. Although there is considerable dispersion of profitability within ownership groups, the patterns are more or less as predicted. The bulk of emerging private sector firms have near positive (margins of -5% to 5%) or high (margins above 5%) profitability; the privatized and commercialized categories have substantial numbers of both firms with large losses (margins below -5%) as well as firms with large profits; and most traditional state-owned firms are either roughly breaking even or making large losses. It is also interesting that a slightly higher proportion of commercialized firms have profits in excess of 5% of sales than do privatized firms.

In summary, most *de novo* private firms are small, while most state-owned firms and especially the commercialized ones are large. Privatized firms can be both medium-sized or large. Growth in 1993 was widely diffused through the economy, but rather more concentrated in private firms, while financial distress as revealed by low profit margins was concentrated in the state-owned sector.

2. Scope and Determinants of Enterprise Social Provision

The survey instrument contained questions about the nature of social provision within each firm, as well as information about factors which might in principle explain the extent of enterprise-level social benefits. In this section, we briefly survey the scope of social provision, before testing some simple hypotheses about its determinants.

We report information about the nature and scale of provision in the two hundred-odd firms sampled in Table 5. The data reveal that social provision in late 1993 remained quite extensive in both range and extent four years into the transition process. A majority of firms sampled offered holiday subsidies, health care provision and a housing subsidy. More than one third of firms offered child care facilities and almost one third provided some form of food subsidy. Textual questions allowed the interviewers to discover more about the extraordinary variety of social provision in Poland; almost a quarter of sampled firms offered social benefits in addition to the major five categories in Table 5a; these included arrangements for compassionate leave, payments in kind and other gifts such as sending children to recreational camps. It is clear from Table 5b that social benefits are not regarded by management as substitutes for one another; most firms offer three benefits or more and only 10% of sampled firms offer no social benefits at all.

There are a number of common assertions about social provision that can be tested on this sample. The first concerns the relationship between social benefits, enterprise size and ownership form. Enterprise provision of social benefits was an important feature of the large socialist enterprise, and as such seems likely to be concentrated in state-owned firms, or former state-owned firms. In contrast, one might expect very little social provision in the *de novo* private firms, who would have to build social assets or use valuable revenue to match state-owned sector provision. Privatized firms would probably take an intermediate position, with management gradually seeking to reduce social provision but perhaps having made little progress in the short term. An alternative approach to the issue is to note that a variety of what we call "social benefits" are frequently provided by employers in developed countries as part of the remuneration package offered to their employees, and that in many socialist countries the scale of social benefits offered, measured in cost terms, was not actually extremely high. In Poland, for example, the expenditures of the social and housing funds (including financial transfers and loans to workers) of industrial enterprises in the late 1980s amounted to about 5% or so of gross wage costs.[4] This view would suggest that emerging private sector firms may need to start offering social benefits in order to attract more labour and that they may not find it prohibitively costly to do so.

An important distinction between commercialized and state-owned firms rests in their sector and financial situation; the former have been deemed eligible for the MPP and are likely on average to be in a somewhat better position. In so far as the run down of social provision is related to financial distress, one might expect lower levels of provision in the SOE's. Given economies of scale in certain forms of social provision - notably health, creches and perhaps holiday homes - one might expect a clear correlation between provision and size. This would operate independently of the ownership-size relationship noted in Table 1, which established that private firms, and especially *de novo* private firms, are smaller than their state-owned counterparts.

We examine these ideas through a number of cross-tabulations before testing them more formally in a regression framework. The relationship between social provision and ownership is reported in Table 6. As expected, the frequency of provision of most benefits is very high in the state sector, and rather lower in the private sector. This is true for each type of benefit, and for the number of benefits. Thus, the majority of SA's and SOE's offer more than three benefits, but no POE's offer more than two. However, there are some surprises in Table 6. Firstly, there is a higher degree of provision of social benefits in the *de novo* private sector than one might have expected; more than half of the sample firms in this ownership category do make some social provision despite the fact that, as we saw in Table 1, these firms are typically small or medium-sized. This suggests that private firms may need to offer social benefits to compete in the labour market with the state sector. We return to this possibility below.

Even more striking is the very high degree of social provision in the privatized firms; a level by benefit type and by number of benefits, not greatly different to that observed in the state sector. Thus only 4% of privatized firms offer no social benefits, and the pattern of provision matches that of the state-owned firms. This suggests that privatization in Poland has not entailed to a significant degree the unbundling - especially of social assets, and the reduction of non-wage employee provision - that had been hoped for by some outside observers. One reason may be that the majority of privatizations in this period were to insiders - coalitions of managers and workers - who only had limited interests in unbundling or in adjusting the balance of money wage to non-wage payments. An alternative (though not necessarily a competing) explanation is that the returns to unbundling (cost savings, revenues from sales of social assets) are often low compared to the returns to keeping these assets in their current uses.

The relationship between social provision, enterprise size and unionization is reported in Tables 7 and 8. Table 7 confirms that provision is extensive in large firms and modest in small ones, though the picture is not as simple as one might have expected; more than one quarter of firms employing more than 250 workers provide fewer than two benefits, while more than one third of small firms provide more than two benefits.

Poland is unusual amongst the economies in transition for the magnitude and importance - political as well as economic - of its trade union movement. The Solidarity union played the leading role in bringing down the communist government, and studies confirm the continued importance of trade unions in enterprise decision-making (see Estrin, Gelb and Singh, 1993). In the West, one would expect some degree of association between the degree of unionization (as a proxy for employee bargaining power) and the level of remuneration, both in money wages and via social benefits. Given the availability of detailed data on this subject in the questionnaire, the relationship could be investigated in this survey.

The relevant cross tabulations are contained in Table 8. The *de novo* private sector is totally non-unionized, regardless of size and sector. The proportion of the labour force unionized is typically more than 30% in all other ownership forms, with almost one third of firms reporting unionization ratios in excess of 60%. The largest proportion of firms are found in the category 31-60% unionized in all three state and formerly state-owned firm categories. Unionization is however noticeably lower in privatized firms, almost one quarter of which have extremely low unionization rates. The causality, however, almost certainly runs from unionization to ownership form rather than the other way round. This is because Polish unions wield significant influence over the privatization process in firms where they are powerful (see Estrin, Gelb and Singh, 1993), often to hinder or prevent the ownership change. Hence privatization was probably more easily effected in enterprises where unionization levels were low.

Table 8b indicates that the conventional positive relationship between unionization and size, holds, in the Polish economy. Given the findings in Table 1, Table 8b in part merely reconfirms the relationship between unionization and ownership type. However, it is interesting that while unionization rates are low in both small and middle-sized firms, they are high in around one third of medium-sized firms and even in 11% of small ones.

Table 8c reveals a clear correlation between the extent of social provision and the level of unionization. Note, however, that a reasonable proportion of firms with virtually zero or very low unionization rates still offer social benefits, and that the proportion of firms offering each type of benefit differs little between the 31-60% unionization and the 61-100% unionization categories.

The descriptive statistics indicate that the nature and scope of social provision is positively related to ownership form, size of firm and unionization rate. To test this view more rigorously, we used regression analysis with the number of benefits being the dependent variable. The dependent variable is assumed to convey ordinal information only[5] and so we use an ordered logit estimating equation. In an ordered logit procedure, the probability of observing outcome n - here, the number of benefits - is estimated as a linear function of independent variables and a set of cut-off points k_n corresponding to the set of outcomes:

$$\text{Probability(number of benefits=n)} = \text{Probability}(k_{n-1} < \mathbf{x_i}\beta + u_i \leq k_n)$$

where $\mathbf{x_i}$ is the vector of independent variables for firm i, β is the vector of coefficients on the independent variables, and u is an error term, assumed to be logistically distributed.[6] By assumption, k_{-1} is taken as $-\infty$, and k_N, where in this case N is the maximum number of benefits observed in the sample, is taken as $+\infty$.

Ownership type was controlled for via ownership dummy variables (with state-owned firms as the basis for comparison) and size (after some experimentation, by the natural logarithm of employment).[7] Employee bargaining power is proxied by the percentage of the labour force which is unionized and by the response to a qualitative question about the objectives of the firm.[8] The equation reported in Table 9 also tests two other hypotheses that have emerged in our discussion. The first is the idea that firms in a less favourable financial situation will be either unable to offer social benefits - this might apply to *de novo* private firms - or, if already providing them in the state sector, will be under pressure to reduce provision. We noted above that this might explain the observed differences between SA's and SOE's in the extent of provision. We test this view by including as independent variables two indicators of current enterprise performance: the growth of sales in 1993 as against 1992 and the profit margin over sales in 1993.

The second issue raised by the cross tabulations concerns the nature of the remuneration package offered in the private and state sector respectively, and the impact of tax-based incomes policies. *A priori*, one might expect that firms which pay higher money wages would offer fewer social benefits, *ceteris paribus*. However, in enterprise where tax-based incomes policies might potentially apply (e.g. the state sector) one would expect social provision to be more extensive as a mechanism of raising total remuneration without breaching tax norms. We test these ideas by including the average wage in 1993 and a dummy variable for firms in which the "popiwek" was binding either in 1992 or 1993.

The results are reported in Table 9, and for the main variables confirm many of our prior views. There is no significant difference between SOE's and SA's in the number of benefits provided, but *de novo* firms provide significantly fewer (the coefficient on POE is negative and significantly different from the benchmark ownership class, which we have taken to be SOE's[9]). However, the regression also confirms that privatized firms are not statistically significantly different from state-owned ones in the scale of social provision. In short, the ownership form division which is statistically significant in determining social provision is between *de novo* private and current and former state-owned firms, rather than between state and private firms *per se*.

The size effect on social provision is positive and statistically significant, even where we control for ownership, and the distribution of the impact is lognormal. Once we control for size and ownership form, unionization is not quite statistically significant.[10] However, the general impact of employee power on non-wage social benefits is confirmed by the significant positive coefficient on the dummy variable indicating the importance of employee preferences in decision-making.

The finding that state-owned and privatized firms do not differ significantly in the number of benefits offered even after controlling for differences in employee power is consistent with the proposition that state-owned and formerly state-owned firms inherit historically accepted norms for the provision of social benefits as part of their compensation packages. Employees expect these services, and firms do not readily drop them even as ownership changes occur. *De novo* private firms, by contrast, have greater leeway and do not have the burden of this historical legacy. They are freer to arrive at total compensation packages which may or may not include such non-wage benefits.

There is only mixed evidence for the effect of the firm's financial situation on social provision. Surprisingly, firms which grew fast in 1993 offered fewer social benefits, even when we control for size and ownership. This might suggest that widespread social provision exercises a constraining influence on the growth of the firm, perhaps because managers are more concerned with employee welfare issues than with taking advantage of the new growth opportunities. There is, however, no significant effect from profit margins, perhaps because social provision is probably more closely related to previous than current returns on capital.

Finally, the results concerning wage trends appear to refute the view of wages and social benefits as substitutes - the two are in fact significantly associated in this equation. This is consistent with the view of social benefits as part of a typical total remuneration package offered to employees, as well as with an efficiency wage type-of-view in which some firms offer high pay in both money and non-money terms. In the Polish context, the latter may arise from managers and workers agreeing to extract most or all available surplus to employee remuneration, whether in wages or non-wage benefits. Both wages and social provision are therefore less in enterprises with smaller firm-specific costs to distribute. Such a view fits with the surprising finding that social provision is not greater in firms where the tax-based incomes policy is binding.

The questionnaire also yielded information about the social assets owned by the firms, which offers a slightly different picture of the nature and scope of social provision. The distribution of social assets by type and ownership form is reported in Table 10. The most common social asset is holiday homes and housing, followed closely by health clinics. In fact creches and cultural assets were very rare in our sample, and even company dining facilities were relatively infrequent. The pattern by ownership is more striking than for the provision of benefits, presumably because even if they provide benefits, *de novo* firms have neither the available resources nor the motivation to purchase social assets. Thus virtually no *de novo* private firms own any social assets at all, and ownership is concentrated in the state-owned sector. Privatized firms own fewer assets than state-owned ones, though it is unclear whether this is because the assets have been disposed of, or because privatization was easier in firms with fewer social assets.

The relationship between the provision of social benefits and the ownership of social assets is clarified with reference to Table 11. Very few firms offer housing or food assistance without owning the asset. Moreover, most firms which provide child-care assistance do not own a creche. However, the limited ownership of social assets in health and holiday areas do not present widespread offering of social benefits.

Table 11 also highlights the differences in the nature of provision between state and private sectors. The lack of social assets does not prevent relatively widespread provision of social benefits in the private sector, especially in the area of health-care. However, private firms have steered away from social benefits which might entail large sunk costs in social assets - housing and child care facilities. In state-owned firms there is a closer correlation between ownership of assets and social provision.

Finally, we note that only 13 of the firms in our sample had made recent major investments in social assets. Although *de novo* private firms were the most likely to do so, the percentage of investing POE firms was still only 10%.

3. The Determinants of Changes in Social Provision

Analysts of transitional economies tend to believe that the provision of social benefits will decline across the board, because of privatization, tightening budget constraints and increasing market pressures. The questionnaire contains information about changes in the scale of social benefits over the preceding two years which allow for the testing of some simple hypotheses.

The changes in social provision by ownership type is reported in Table 12, as the answer to a question about the adjustments in social provision coded in four categories between an increase and a big fall. Social provision declined in around 45% of firms, but increased in 7%. Perhaps more significantly, a majority of firms in the sample registered either an increase or no change in social provision. It is clear from these numbers that while Polish firms may be restructuring in various ways pre- or post-privatization (see Pinto, Belka and Krajewski, 1994), relatively few of them are adjusting their provision of social benefits downwards in a significant way. This is especially apparent in the figures for disposals of social assets - only 32 firms disposed of social assets between 1991 and 1993, only three of these being privatized firms. The main reason given for asset disposal was to allow the firm to concentrate on its core business (59% of cases) or to repay debts (19%). The relatively low number of asset disposals, and the fairly high frequency of disposals via gifts (nearly one third) compared to sales or leasings, provide support for our earlier suggestion that the return to disposals may be relatively low.

The findings by ownership type are also revealing. The largest falls in social provision are recorded in the state-owned sector, and especially in SOE's where a majority of enterprises display some sort of fall. The decline is more modest in privatized firms, the absolute majority of which have kept social provision constant! It is also interesting that *de novo* private firms are more likely to be increasing than decreasing provision, though of course the majority keep their level of provision constant (at or near zero).

In attempting to explain the change in provision of social benefits, we included in our estimating equation all the factors predicted to be relevant in our understanding of the level of provision, as well as variables to control for changing enterprise circumstances, especially financial situation. Hence as before, we include ownership dummies, a proxy for size (the natural logarithm of employment) and indicators of employee power (the unionization rate and our indicator for labour power). The equation also contains as independent variables the profit to sales ratio in 1993, the growth in sales in 1993 and a dummy variable for the imposition of the tax-based incomes policy. Since the non-wage benefit is now specified in rate of change form, the wage variable is also entered as a percentage change. Finally, the questionnaire also contains information about whether employee power is increasing or declining, which is extended to include the proxies for worker's influence over changes in social provision. As before, the dependent variable is assumed to contain ordinal information only and is coded such that a larger value implies a larger decline in benefits offered.

The results of the ordered logit regression are reported in Table 13. The decline in social benefits is most marked in state-owned and commercialized firms; there is no significant difference between them (SOE's are the benchmark and the coefficient on the SA dummy variable is insignificantly different from this benchmark). However, the decline is significantly less in privatized firms and the negative coefficient is even larger (though not significantly so) for *de novo* private firms. Far from encouraging the reduction in social provision, privatization appears to hinder it! The size effect, however, follows expectations, with greater declines in larger firms (the coefficient on log employment is positive), *ceteris paribus*. Since we know that more benefits are provided in larger firms, there is presumably a scale effect with social benefits tending to be reduced in proportion to initial provision. Employee power, whether indicated by objectives, changing authority in the firm or unionization rate, appears to be unrelated to the decline in benefits, suggesting that observed changes are influenced more by "push" factors (external circumstances) than by internal structures.

This view is broadly confirmed by looking at the coefficients and t-statistics on the indicators of the enterprises' economic situation. Firms with larger profit margins display significantly smaller declines in social provision, suggesting a pivotal role of financial circumstances in the decision to reduce provision. However, since the recent growth of sales (which may be a better indicator of likely future profitability) is not significant, changes in social provision may be driven primarily by short-term financial pressures. Finally, though we found a positive relationship between the level of social provision and the level of wages in Table 9, the relationship breaks down in rate of change form; there is no significant relationship between the change in benefits and the change in wages in Table 13. However, we do find evidence that social provision is being used strategically by firms; benefits are reduced by less in enterprises in which the tax-based incomes policy is biting.

4. Conclusions

In this paper, we provide one of the first quantitative evaluations of the scale of non-wage social provision in transitional economies, as well as a preliminary effort to explain both the level and the change in provision. Our main findings are that social provision remains surprisingly widespread, and has not been greatly reduced in either the state-owned or the privatized sectors. Moreover, even *de novo* private firms offer a surprising range of social benefits to workers and, if anything, they are tending to increase rather than reduce the scale of their provision.

The main determinants of the scale of social provision are ownership structure, size of firm and employee power, the latter not explicitly via the union structure. Money wages and the provision of social benefits appear to be complementary rather than substitutes. Social assets are concentrated in state-owned firms, but there is relatively little social asset disposal; the *de novo* private sector is expanding the range of social benefits offered but is not investing significantly in social assets. Changes in the provision of social benefits have been modest, and are explained by ownership form, size and profitability. There is also some evidence of substitution between money wages and social benefits in firms subject to the tax-based incomes policy.

ENDNOTES

1. This paper was prepared for the March 1994 CEPR/IAS Conference on Social Protection and the Enterprise in Transitional Economies. The paper is a product of the World Bank Research Project on Enterprise Behaviour and Economic Reform in Central and Eastern Europe.

2. For more on the cooperative sector in transition, see Schaffer (1994).

3. Our sample of 207 firms included 5 cooperatives founded during the communist period. Given that the transition has meant control of these cooperatives was devolved to their members, we classify the 5 cooperatives in our sample as "privatized" firms, PRE's.

4. See <u>Rocznik Statystyczny Przemysłu, 1990</u>.

5. That is, we are assuming that the scale of social services implied by "two benefits" is greater than that implied by "one benefit", and that "three benefits" means more services than "two benefits", but we make no assumptions about how the jump in the scale of social provision from "one benefit" to "two benefits" compares to the jump from "two benefits" to "three benefits".

6. Assuming a normal distribution for the error term corresponds to the ordered probit estimating procedure. As it happens, ordered probit estimations gave virtually identical results.

7. Employment is the relevant indicator since it is workers who receive the non-wage social benefits, and employment has typically adjusted less than sales or output to the new market conditions. Goodness-of-fit tests indicate the dominance of the logarithmic specification.

8. The variable LPOWER is equal to unity if the firm responds that increasing wages or employment (rather than profits, sales growth, or some other goal), are its

main objective; zero otherwise.

9. An example of how to interpret the estimated coefficients is as follows. Consider an SOE firm whose score (the fitted number of benefits obtained by applying the estimated coefficients to the observed values of the firm's independent variables) is 9.0. The cut-off k between three and four benefits offered is 10.41 (_cut3 in Table 9). The probability that the firm offers four or more benefits is $1 - 1/(1+e^{(9.0-10.41)}$ = 20%. Now consider a firm with identical values for all independent variables except that it is a *de novo* private firm. The coefficient on the dummy variable POE is -1.75, and so this firm's score is 9.0-1.75=7.25. The probability that this firm offers four or more benefits is $1 - [1/(1+e^{(7.25-10.41)}]$ = 4%.

10. Though the extent of social provision is correlated with unionization rates, we cannot discern an effect independent from enterprise size and ownership.

Table 1: Employment Size vs. Ownership

Percentage of firms in given ownership class

Employment in 1993	Ownership POE	PRE	SA	SOE	All
< 50	31	4	0	5	9
51-250	62	36	8	28	32
> 250	8	60	93	67	59
Total	100	100	100	100	100

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

NB: Figures may not sum to 100 due to rounding.

Table 2: Sales Growth in 1993 vs. Ownership

Percentage of firms in given ownership class

Sales growth in 1993	Ownership POE	PRE	SA	SOE	All
< -10%	5	12	20	16	14
-10 to 10%	22	29	53	43	38
> 10%	73	59	28	41	48
Total	100	100	100	100	100

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

NB: Figures may not sum to 100 due to rounding.

Table 3: Employment Growth in 1993 vs. Ownership

Percentage of firms in given ownership class

Employment growth in 1993	Ownership				
	POE	PRE	SA	SOE	All
< -10%	18	30	28	37	30
-10 to 10%	32	64	73	58	57
> 10%	50	7	0	5	13
Total	100	100	100	100	100

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

NB: Figures may not sum to 100 due to rounding.

Table 4: Profit Margin in 1993 vs. Ownership

Percentage of firms in given ownership class

Profit margin in 1993	Ownership				
	POE	PRE	SA	SOE	All
< -5%	10	29	37	46	33
-5 to 5%	58	40	24	43	42
> 5%	33	31	39	11	25
Total	100	100	100	100	100

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

NB: Figures may not sum to 100 due to rounding.

Table 5: Scope of Social Provision in Late 1993

a. By Benefit Type

	Benefit	Percentage of firms
1.	Child care	34
2.	Health care	64
3.	Food subsidy/cafeteria	29
4.	Housing/housing subsidy	52
5.	Holiday subsidy/resort	74
6.	Other responses (volunteered by the interviewee), e.g.	24
	- Travel assistance	3
	- Compassionate leave	11
	- Payment in kind	3
	- Children's recreational camps etc.	7
	- Cultural events	2

NB: Since the responses in (6) were volunteered by the interviewee, the frequencies are not directly comparable with those for (1)-(5).

b. By Number of Benefits

Number of benefits	Percentage of firms
none	10
1	10
2	25
3	24
> 3	31

Table 6: Social Benefits and Ownership

a. By Benefit Type

Benefit type	% of firms in ownership class providing benefit			
	POE	PRE	SA	SOE
1. Child care	8	47	46	34
2. Health care	30	64	83	70
3. Food subsidy/cafeteria	10	31	41	31
4. Housing/housing subsidy	3	49	78	65
5. Holiday subsidy/resort	15	80	95	89

b. By Number of Benefits

Number of benefits	% of firms in ownership class			
	POE	PRE	SA	SOE
none	45	4	0	1
1	28	2	5	7
2	28	33	12	25
3	0	27	32	31
> 3	0	33	51	36

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

Table 7: Social Benefits by Size Class

a. By Benefit Type

	% of firms in size class providing benefit		
Benefit type	L ≤ 50	51-250 L	L > 250
1. Child care	11	21	45
2. Health care	33	45	78
3. Food subsidy/cafeteria	6	9	43
4. Housing/housing subsidy	22	32	68
5. Holiday subsidy/resort	22	59	89

b. By Number of Benefits

	% of firms in size class providing benefit		
Number of Benefits	L ≤ 50	51-250 L	L > 250
none	39	21	0
1	28	12	6
2	17	35	20
3	17	21	27
> 3	0	11	47

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

Table 8: Unionization, Ownership Structure and Social Provision

a. Unionization by Ownership Type

% of labour force unionized	% of firms in ownership class				
	POE	PRE	SA	SOE	All
< 10%	100	24	5	11	30
11 - 30%	0	18	5	19	12
31 - 60%	0	47	59	51	42
61 - 100%	0	11	32	20	16

b. Unionization and Size

% of labour force unionized	% of firms in size class		
	L ≤ 50	51-250 L	L > 250
< 10%	78	56	7
11 - 30%	11	11	13
31 - 60%	0	24	58
61 - 100%	11	9	21

c. Unionization and Social Benefits

% of firms in unionization class providing:	% of labour force unionized			
	< 10%	11-30%	31-60%	61-100%
1. Child care	17	24	44	47
2. Health care	34	68	74	88
3. Food subsidy/cafeteria	13	36	37	33
4. Housing/housing subsidy	19	56	69	68
5. Holiday subsidy/resort	34	84	91	97

Table 9: Number of Social Benefits, Ordered Logit Estimates

```
Ordered Logit Estimates                                 Number of obs =     189
                                                           chi2(10)    = 172.36
                                                         Prob > chi2   = 0.0000
Log Likelihood = -244.87871                              Pseudo R2     = 0.2603

Dependent variable: num_bens

------------------------------------------------------------------------------
                 |      Coef.   Std. Err.       t     P>|t|     [95% Conf. Interval]
-----------------+------------------------------------------------------------
log_yg93         |  -1.340359   .5626419    -2.382   0.018    -2.450623   -.2300945
      w93        |    .052068   .0120792     4.311   0.000     .0282319    .0759037
    log_l        |   1.062006   .1808166     5.873   0.000     .7051998    1.418813
profmarg         |   -.006084   .0056119    -1.084   0.280    -.0171582    .0049898
  lpower         |    .598881   .2852406     2.100   0.037     .0360145    1.161748
unionper         |    .012930   .0078239     1.653   0.100     -.002509     .028369
  tipbind        |    .199253   .3521816     0.566   0.572    -.4957088    .8942148
       sa        |   -.193438   .3861624    -0.501   0.617    -.9554538    .5685787
      pre        |   -.604971   .4417241    -1.370   0.173    -1.476628    .2666856
      poe        |  -1.749283   .6304030    -2.775   0.006    -2.993261   -.5053055
-----------------+------------------------------------------------------------
    _cut0        |    5.07142   1.166912
    _cut1        |    6.94938   1.182920
    _cut2        |    8.77055   1.218266
    _cut3        |   10.41410   1.286335
    _cut4        |   12.08071   1.365897
------------------------------------------------------------------------------
```

num_bens	Number of (core) social benefits offered: child care, health care, food subsidy/cafeteria, housing/housing subsidy, holiday subsidy/resort
log_yg93	Sales growth in 1993 (log form)
w93	Average wage in 1993
log_l	Natural log of employment
profmarg	Profit/sales ratio in %
lpower	Dummy variable, = 1 if wage or employment growth are among the main objectives of the firm, 0 otherwise
unionper	Percentage unionization
tipbind	Dummy variable, = 1 the tax-based incomes policy ("popiwek") was binding in 1992 or 1993, 0 otherwise
sa	Dummy variable, = 1 if firm is state-owned and commercialized, 0 otherwise
pre	Dummy variable, = 1 if firm is privatized, 0 otherwise
poe	Dummy variable, = 1 if firm is *de novo* private, 0 otherwise

_cut0	Upper cut-off k_0 corresponding to break between zero benefits and one benefit offered (see text).
_cut1	Upper cut-off k_1 corresponding to break between one benefit and two benefits offered.
_cut2	Upper cut-off k_2 corresponding to break between two and three benefits offered.
_cut3	Upper cut-off k_3 corresponding to break between three and four benefits offered.
_cut4	Upper cut-off k_4 corresponding to break between four and five benefits offered.

Bottom cut-off $k_{-1} = -\infty$ and top cut-off $k_5 = +\infty$ by assumption.

Table 10: Social Assets by Ownership Form

% of firms in ownership class owning asset

Asset type	POE	PRE	SA	SOE	All
1. Creche	0	0	5	5	3
2. Health clinic	0	22	63	58	40
3. Buffet/cafeteria	3	22	37	27	23
4. Apartments	0	33	71	53	42
5. Hostel for workers	0	18	27	14	15
6. Holiday resort/ facilities	5	29	76	63	47

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

Table 11: Provision of Social Benefits vs. Ownership of Social Assets

Percentage of firms in ownership class

Column 1 (SO): Provision of social benefit

Column 2 (NA): Provision of social benefit WITHOUT ownership of corresponding social asset

	POE		PRE		SA		SOE		All	
No. of firms	40		45		41		81		207	
	SO	NA	SO	NA	SO	NA	SO	NA	SO	NA
Child care	8	8	47	47	46	41	35	30	34	31
Health care	30	30	64	42	83	20	70	12	64	24
Cafeteria	10	8	31	9	42	5	31	4	29	6
Housing	3	3	49	9	78	5	65	9	52	7
Holiday-related	15	10	80	51	95	20	89	26	74	27

SO: Service offered
NA: No ownership of asset

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

Table 12: Change in Level of Social Provision 1991-93 vs. Ownership

Percentage of firms in given ownership class

Change in level of benefits	Ownership				
	POE	PRE	SA	SOE	All
Increase	13	7	5	5	7
Constant	83	51	41	31	47
Small fall	3	27	29	21	20
Big fall	3	16	24	43	26
Total	100	100	100	100	100

POE	Emerging private sector firm
PRE	Privatized firm
SA	State-owned and commercialized
SOE	State-owned, traditional (unincorporated)

NB: Figures may not sum to 100 due to rounding.

Table 13: Change in Level of Social Provision, Ordered Logit Estimates

```
Ordered Logit Estimates                           Number of obs =    186
                                                    chi2(12)      =  58.29
                                                   Prob > chi2    = 0.0000
Log Likelihood = -193.50035                        Pseudo R2      = 0.1309

Dependent variable: dec_bens

------------------------------------------------------------------------------------------------
                   |      Coef.   Std. Err.       t     P>|t|        [95% Conf. Interval]
-------------------+----------------------------------------------------------------------------
log_yg93           |  .3285795  .5487357    0.599   0.550          -.7544554   1.411614
log_wg93           | -.2307489  .2269670   -1.017   0.311          -.6787117   .2172139
   log_l           |  .4291567  .1771566    2.422   0.016           .0795043    .778809
profmarg           | -.0168792  .0063358   -2.664   0.008          -.0293842  -.0043741
  lpower           |  .1421633  .3026764    0.470   0.639          -.4552265   .7395531
lpow_con           | -.1308180  .4675894   -0.280   0.780          -1.053695   .7920591
lpow_dwn           |  .3375714  .5613917    0.601   0.548          -.7704425   1.445585
unionper           |  -.0029661 .0089083   -0.333   0.740          -.0205483    .014616
 tipbind           |  -.6912439 .3623595   -1.908   0.058           -1.40643   .0239418
       sa          |  -.7525479 .4219571   -1.783   0.076           -1.585361  .0802652
      pre          | -1.3462390 .4516796   -2.981   0.003           -2.237715   -.454763
     poe           | -2.2297960 .6776825   -3.290   0.001           -3.567333  -.8922604
-------------------+----------------------------------------------------------------------------
    _cut0          |  -1.811747   1.13902
    _cut1          |   1.693163   1.11465
    _cut2          |   2.770431   1.12681
---------------------------------------------------------------------------
```

dec_bens	Decline in scale of social benefits in the preceding two years (1=increase, 2=constant, 3=small decline, 4=big decline)
log_yg93	Sales growth in 1993 (log form)
log_w93	Real wage growth in 1993 (log form)
log_l	Natural log of employment
profmarg	Profit/sales ratio in %
lpower	Dummy variable, = 1 if wage or employment growth are among the main objectives of the firm, 0 otherwise
lpow_up	Dummy variable, = 1 if firm said labour power had been increasing over the preceding two years, 0 otherwise [DROPPED]
lpow_con	Dummy variable, = 1 if firm said labour power had been constant over the preceding two years, 0 otherwise
lpow_dwn	Dummy variable, = 1 if firm said labour power had been falling over the preceding two years, 0 otherwise
unionper	Percentage unionization

tipbind	Dummy variable, = 1 the tax-based incomes policy ("popiwek") was binding in 1992 or 1993, 0 otherwise
sa	Dummy variable, = 1 if firm is state-owned and commercialized, 0 otherwise
pre	Dummy variable, = 1 if firm is privatized, 0 otherwise
poe	Dummy variable, = 1 if firm is *de novo* private, 0 otherwise
_cut0	Upper cut-off k_0 corresponding to break between an increase and no change in social benefits offered (see text).
_cut1	Upper cut-off k_1 corresponding to break between no change and a small fall in social benefits offered.
_cut2	Upper cut-off k_2 corresponding to break between a small fall and a large fall in social benefits offered.

Bottom cut-off $k_{-1} = -\infty$ and top cut-off $k_3 = +\infty$ by assumption.

REFERENCES

Philippe Aghion, Olivier Blanchard and Robin Burgess, `The Behaviour of State Firms in Eastern Europe, Pre-Privatisation', European Economic Review, Vol 38, No. 6, June 1994.

Saul Estrin (ed.) (1994), *Privatization in Central and Eastern Europe*, Longman: London.

Saul Estrin, Alan Gelb and I.J. Singh (1993), `Restructuring, Viability and Privatisation: A Comparative Study of Enterprise Adjustment in Transition', London Business School/World Bank, forthcoming in Journal of Comparative Economics.

Stanley Fischer and Alan Gelb, `The Process of Socialist Economic Transformation', Journal of Economic Perspectives, Vol. 5, No. 4, Fall 1991.

Roman Frydman, Andrzej Rapaczynski and John S. Earle et al. (1993), *The Privatization Process in Central Europe*, Central European University Press: London.

Paul R. Gregory and Robert C. Stuart (1989), *Comparative Economic Systems*, 3rd ed., Houghton Mifflin: Boston.

Brian Pinto, Marek Belka and Stefan Krajewski, `Transforming State Enterprises in Poland: Evidence on Adjustment by Manufacturing Firms', Brookings Papers on Economic Activity, No. 1, 1994.

Richard Portes (ed.) (1993), Economic Transformation in Central and Eastern Europe: A Progress Report, CEPR and European Commission: London and Brussels.

Mark E. Schaffer (1994), `Worker Participation in Socialist and Transitional Economies', LSE, Centre for Economic Performance, Working Paper No. 399. Forthcoming in the WIDER volume on Participation and Cooperation in Economic Enterprises, R. Rowthorn (ed.).

P.J.D. Wiles (1977), *Economic Institutions Compared*, Blackwell: Oxford.