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**OWNERSHIP STRUCTURES, PATTERNS OF CONTROL
AND ENTERPRISE BEHAVIOR IN RUSSIA**

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ABSTRACT

In this paper, we analyse the effects of the massive Russian privatisation programme on the ownership of Russian firms and on the behaviour of formerly state owned enterprises. A large random sample of Russian firms is used to investigate the emerging ownership structures, patterns of control and enterprise behaviour. We find that workers have become the dominant owners in a majority of Russian private firms; 65% of the total as against 19% being manager owned and 16% being outsider owned. Higher ownership appears to confer significantly more influence over decision-making on managers and outsiders, but not on workers. Most importantly however, we find no evidence that privatisation affects any major area of enterprise behaviour or performance.

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OWNERSHIP STRUCTURES, PATTERNS OF CONTROL AND ENTERPRISE BEHAVIOR IN RUSSIA

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"We have created a broad basis of shareholders who have an economic interest in the success of the reform" A. Chubais (FT, 30th June 1994)

"Most enterprises continue to be run unchallenged by old management teams, which often lack the human capital and interest to initiate significant restructuring" M. Boycko (FT, 30th June 1994).

1. INTRODUCTION

According to The Financial Times (June 27, 1994), Russia's mass privatization program, carried out between late 1992 and mid-1994, "sold more than 11,000 state owned enterprises, accounting for around 70% of Russian industry, in exchange for cash and 148m freely distributed vouchers." From a very low level in 1992, employment in the private sector is estimated to have grown to around 50% of the labor force (EBRD, cited in IHT). It is unsurprising therefore that Russia's pro-reform politicians, as well as some Western analysts (see eg Leiberman and Nellis (1994)) have hailed the program as a success. But for many observers the speed of privatization has been bought at the price of sub-optimal ownership structures, which may carry deleterious implications for the restructuring process.

Surprisingly, there has been little empirical analysis as yet of which ownership forms have emerged, nor of the implications for the control and behavior of formerly state owned firms. Government sources suggest that some 40 million people, around half the labor force, have become shareholders (Reuters, 30 June 1994), and according to Professor Yasin, head of Yeltsin's advisory economic

council, "insiders own on average some 70% of the privatized enterprises" (reported in FT, 30th June 1994). Data from a sample of 142 firms by Blasi and Shleifer (1995) indicate that insiders held on average some 65% of the shares in 1993. The ownership question may be crucial, for economic theory predicts different performance, not merely depending on whether firms are privately or state owned, but according to whether privately owned firms are insider or outsider controlled, and whether the controlling group of insiders are managers or workers (see eg Aghion, Blanchard, Burgess (1994)). While all the evidence suggests that it is employees who hold a majority of shares (see eg Blasi (1994)), control is usually argued to be vested primarily in the hands of senior management (see eg Blasi and Shleifer (1995), Commander, Dhar, Yemtsov (1995)). However, there has not yet been an attempt to describe the patterns of ownership and control, nor to analyze the impact on different areas of enterprise decision-making. It is these three issues - ownership structures, patterns of control and enterprise behavior - and their inter-relationships which are the subject matter of this paper.

The following two sections set the context for the empirical work. A framework of analysis is outlined in section 2, which summarizes hypotheses about how alternative majority ownership forms might influence control and behavior, and there is a brief discussion of institutional features of ownership in Russia in the third. The fourth section addresses the question of who owns Russian firms, on the basis of a sectorally as well as geographically representative structured random sample (see Fan and Fang (1995)). Enterprises are categorized, according to largest ownership holdings, into State-Owned (SO), Worker-Owned (WO), Manager-Owned (MO), Outsider-Owned (OO), and new (*de novo*) private firms (DNs); these are the groupings which form the basis for the subsequent analysis of control and behavior. We find that, among all privatized companies, workers hold 48% of shares, managers 21% and outsiders 20%; the remaining shares are still held by the state. Workers hold a dominant stake in 65% of privatized firms; managers in 19% and outsiders in 16%. Privatized

firms make up almost 60% of firms in the sample; of the remainder almost two thirds are still in state hands.

In the fifth section we begin to investigate whether majority ownership has yet translated itself into control in Russian firms. The qualitative evidence suggests that "management and executive boards" have the greatest influence over all types of enterprise decisions, irrespective of the structure of shareholdings. Although consistent with widespread popular perception, this result emanates from the opinion of managers responding to the survey, suggesting further investigation into enterprise behavior. This we do in the sixth section, which inquires whether different majority ownership forms lead to different economic relationships with the state, and to different economic performance. We find striking evidence that the development of a politically independent and market oriented enterprise sector is associated with private ownership, most noticeably in *de novo* private firms but also in dominant worker owned ones. There are relatively few ownership effects on other indicators of performance, however, though this may reflect the relatively short period that the new owners have had to implement restructuring. Policy conclusions are drawn in the seventh section.

2. ALTERNATIVE OWNERSHIP FORMS AND ENTERPRISE BEHAVIOR: SOME HYPOTHESES

Although the literature on transition has stressed that privatization is a critical component of the transition process, there have been few attempts to evaluate the comparative strengths and weaknesses of alternative majority ownership structures for the newly privatized companies. Earle and Estrin (1995) argue that the balance of advantage shifts between different ownership forms according to the problem under consideration. For example, outsider ownership may offer superior access to external capital markets but may also cause greater social dislocation, while worker ownership may slow employment restructuring. In this section, we provide a simplified

comparison of alternative majority ownership forms in achieving four widely accepted objectives of the transition¹, namely:

- developing a politically independent and market oriented enterprise sector, which we term "depoliticization"²
- long term restructuring
- short term restructuring
- minimizing transaction costs associated with further evolution of ownership

The hypothesized impact of each ownership form, relative to one another and against the base case of state ownership, is reported in Figure 1. The figure summarizes the analysis which follows, and indicates, for example, the predicted extent of depoliticization in worker owned firms, relative both to state ownership and the other ownership forms. But a few words of caution are needed. Firstly, the figure summarizes results derived from theoretical models of 100% ownership by one or another group. However in defining our five ownership forms empirically, we take a majority stake, (or indeed the largest single stake if other holdings are diversified), as implying effective control of the firm. This may be misleading. In practice, the largest group of owners may have highly diversified holdings, while minority interests may be highly concentrated, giving the latter effective control. For example, enterprises classified as worker-owned according to ownership stake may actually be managerially controlled. We return to this issue below.

Moreover, there are many assumptions behind the hypothesized behavior in the table, not all of which will always be satisfied. Three cases will suffice. First, the extent of restructuring will typically be greater when product and factor markets are more competitive, *ceteris paribus*. If sectoral and regional diversity is sufficient, these elements might swamp any independent ownership effects. Second, the precise institutional form of different ownership types may significantly affect behavior. Thus, firms owned collectively by workers with limited share

tradeability might be expected to perform much worse than those owned by workers on the basis of individually held and freely tradeable shares. Finally, the situation of the firm itself is relevant. Profitability clearly assists restructuring regardless of ownership form. On the other hand, collective employee ownership might be beneficial in situations of extreme loss-making by geographically isolated firms, because such a form allows workers to trade wages for employment security. These provisos aside, the figure reports predictions about the relative impact of alternative ownership forms on restructuring. The arguments are summarized in the following subsections.

2.1 Developing a Politically Independent and Market Oriented Enterprise Sector

A fundamental objective for new ownership structures in transitional economies is to promote the clarification of property rights, and to establish new objectives of the firm. All privatizations assign titles of ownership to particular individuals. But founding a new relationship with the state involves ensuring the freedom of firms from arbitrary interference and a radical reorientation of goals from seeking rents to satisfying the demands of the market, (see Boycko, Shleifer, and Vishny (1993), Frydman and Rapaczynski (1994)).

Relative to state ownership, *de novo* private and outside private ownership seem likely to be best able to ensure depoliticization of the firm and reorientation of objectives. To the extent that the new owners are entrepreneurs, they will less be a part of the old order and perhaps also have more restricted access to the flow of subsidies³. Insiders will also have incentives to increase economic profits, since they personally stand to gain via their shareholdings. But they may also have closer ties to the state bureaucracy, and greater opportunities to pursue special concessions than outsiders or new entrepreneurs.

Within the category of insiders, one might also predict a difference between managerial and worker ownership. If budget constraints are soft, it is arguable that transfers of ownership either to

managers or to workers will have little or no effect on enterprise behavior because both sets of new owners will remain motivated to maximize rents rather than profits or earnings per worker. Insider privatization is therefore unlikely to bring many benefits until budget constraints are tightened. Under somewhat harder budget constraints, the net returns to profit as against rent seeking will be determined by both the opportunity costs and the benefits, which are in turn affected by the prospects of the firm, its environment, the political situation, etc. However, there may be some differences between employee and managerial ownership in this respect. Workers represent a new and more diffuse group of owners than managers, who are generally survivors from an earlier period, maintaining their good connections and bad habits. The costs to seek rents may be higher for worker owned firms than those under managerial ownership because the former organization may have more diffuse and heterogeneous objectives. More importantly, the benefits to rent-seeking may be lower in employee-owned firms because managers, given their longstanding connections under the previous regime, may be more effective at extracting subsidies. Managers may also be able to achieve higher returns to rent seeking because they may be better able to appropriate the rents for themselves personally, or because there are fewer of them among whom to share the spoils. In such circumstances, insider privatization to employee owners, by weakening the old relationships, might be superior to managerial ownership. However, we predict that both will prove inferior on this score to outsider privatization.

2.2 Long Term Restructuring

We focus on three issues here: unbundling, organizational structure and investment. The boundaries of firms in a market economy are supposed to be determined by efficiency considerations: the costs and benefits of integration. But in socialist economies, as emphasized by Kornai (1991), the relationship between the managers of firms and their superiors, whether the director of a trust or a branch minister,

differed little from the relationship between the manager and the foreman or production supervisor under his/her direction. An important element in the transition process is therefore to reorganize the groups of productive units which previously comprised the enterprise sector to form a new industrial structure in which the boundaries of the firms minimize internal transactions costs.

A market orientation should also be reflected in changes in enterprise organizational form. The structure of the organization should be adapted to be able to respond to the changing demands of customers, to ensure adequate mechanisms for managerial control, and to provide appropriate information for rational decision-making. This may involve for example the establishment of new functional divisions within the firms suitable for finance or marketing, and the development of new control and monitoring systems. Finally long-term restructuring involves investment in capital equipment, to introduce new technologies, to raise quality standards, to broaden product differentiation, and to address input wastage and its environmental consequences. An important issue is the ability of different ownership forms to mobilize capital and to introduce new technologies.

Restructuring, both long and short term, are primarily problems faced by current and former state owned firms, so we exclude *de novo* private firms from these comparisons.⁴ Provided outsiders are able to exercise their nominal property rights, outsider ownership is probably the form best suited to long term restructuring. This is because given their profit orientation, outside owners will take the most dispassionate view of existing production and organizational structures, and because in principle they suffer least from agency problems in their dealings with external capital markets. Insider owned firms might be predicted to suffer more serious difficulties in raising outside capital because of the agency problems faced by lenders and minority investors (see eg Shleifer and Vasilyev (1995), Hansmann (1990) for summaries).

Ownership by managers is also likely to dominate that of nonmanagerial employees in redefining the appropriate boundaries of the firm. Worker ownership may still be superior to state ownership

because rearranging the boundaries of the firm will be possible provided the employee gainers can compensate the losers. In principle, even highly egalitarian employee-owned firms with high solidarity may therefore be able to undertake some restructuring and unbundling provided it offers a potential Pareto improvement and some form of compensation package can be agreed upon.

In some situations, however, this compensation will not be possible and potential Pareto improvements will not be convertible into actual Pareto improvements (for instance, because lump-sum transfers are infeasible or because of severe capital market imperfections). The biggest problems are likely to arise due to the difficulties of collective decision-making under uncertainty, and particularly when some groups of workers are earning supra-competitive rents. Many enterprises have a large number of restructuring paths which they could potentially follow, for instance changing product lines, re-organizing company divisions, or adopting different kinds of new technologies, but each has different implications for the value of the human capital of various groups of workers in the company. Given that the profit associated with each path is also greatly uncertain, each group of workers will try to block paths which seem likely to downgrade their own skills. Thus, it may not be difficult for blocking coalitions to form *ex ante*, preventing *ex post* desirable restructuring.

In resolving these agency problems, managerially owned firms have a clear advantage. They will be motivated to undertake any restructuring or rearrangements in the boundaries of the firm which increase profits. Supra-competitive wages may be reduced and workers laid off with little or no compensation. Agency problems apart, managerial ownership can therefore potentially yield restructuring benefits analogous to those of investor ownership, greater than those under worker ownership.

2.3 Short Term Restructuring

The transition process demands that firms become responsive in the short term to market signals in terms of both the products they choose to supply and in their use of factor inputs. In firms for which the optimal level of output has fallen, the ownership system must be able to effect large decreases in employment and other inputs. Due to the inherited technologies and the production practices which were wasteful in the use of inputs, including energy and labor, new owners must have the incentives and the ability to ensure that costs are reduced, that the factor mix is rationalized, that productivity is raised, and that quality is improved. These are the standard problems of restructuring (see eg Belka et al (1994), Estrin et al (1993)).

Once again, one predicts outside owners to have less qualms than insiders about reducing employment, and other short term restructuring measures. However, they might be unable to exercise their property rights in such sensitive areas, especially if insiders refuse to cooperate. Moreover, if product or factor markets are relatively more competitive and budget constraints hard, insiders may be forced to restructure and improve their efficiency in order to survive.

Comparing managerial and worker ownership, it is important to stress that both have equivalent incentives to increase economic profits and to cut non-labor costs. But worker-controlled firms are likely to perpetuate even more than managerially owned ones inefficiencies in the allocation of labor. However, the flip side is that worker owners would probably be able to get rid of managers more easily. In cases where managerial turnover is a *sine qua non* for the firm to be turned around, managerial ownership has the disadvantage of entrenching bad managers.

2.4 Evolution of Governance Form

The transition process involves dynamic adjustment by organizations to changed and changing economic circumstances. The outcome of the process may be path dependent, and the appropriate institutional arrangements may gradually change as the process unfolds.

In such circumstances, it may not be possible to specify *ex ante* the optimal ownership structure but it would be desirable that whatever structure is first selected should have the flexibility to evolve as the dynamic path of transformation proceeds. The lower the transaction costs involved in exchanging ownership rights, the less binding the initial allocation of ownership rights, because markets would emerge to ensure a reallocation to achieve better matching of owners with assets. Institutions concerning property rights should therefore be designed to lower those transaction costs and to facilitate the development of financial markets. The new ownership configuration should also minimize the probability of degeneration back to state ownership.

Widespread ownership by outsiders, whether *de novo* or in privatized firms, is likely to encourage the development of secondary markets and thus further the evolutionary process of matching and rematching assets with owners. In contrast, concentrated insider ownership will discourage the development of takeover markets, because the lack of liquidity in small numbers of shares implies that it may be very difficult in a takeover action to earn the control premium on minority stakes previously acquired; thus rematching is inhibited. If worker shareholdings are widely dispersed, secondary markets may develop more easily than if shares are concentrated in the hands of a few managers. Although still difficult, it may be somewhat easier for outsiders to take over companies by buying up small numbers of shares than by negotiating with a single manager or a small group of managers. The reason is that, while there may be a collective interest of the insiders to keep out outsiders, individual employees may "free ride" by selling their small holdings to outsiders. Concentrated insider holdings are more likely to lead to entrenchment because of the informational advantage of insiders over outsiders. In an environment of great uncertainty over the prospects for any company and lack of financial markets functioning to provide estimates of value, the concentration of holdings together with the asymmetry of information may give rise to adverse selection in the market for corporate control.

2.5 Summary of Hypotheses

In summary, outside ownership is predicted to provide the greatest progress towards our four objectives for enterprises in transition; where relevant this performance would be matched by *de novo* owners. Insider privatization is expected to be superior to state ownership, but worse than majority outsider control. If we compare forms of insider ownership, worker ownership is hypothesized to have deficiencies in long term restructuring, especially rearranging the boundaries of the firm, and short term restructuring when employment levels are at issue, but perhaps to be superior in terms of depoliticization and in the evolution of governance structure.

3. INSTITUTIONAL FEATURES OF RUSSIAN PRIVATIZATION

The Russian mass privatization involved large-scale giveaways to insiders on the argument that there was no politically feasible alternative form of privatization. This is because managers and workers had already accumulated tremendous political influence and enterprises, had gained significant autonomy and *de facto* property rights. Early methods of ownership decentralization under *Perestroika* had already emphasized leasing arrangements, eventually resulting in insider buyouts at highly preferential prices.

The institutional features implied by the State Privatization Program seem straightforward. The legal form of enterprises is an open, individually owned joint stock company and shares are in principle fully tradable, and voting rights (of voting shares) freely and equally exercised. But there are some important qualifications relevant to our hypotheses above, which we list in increasing order of importance. First, in addition to the better known ways in which workers were able to acquire shares, there was possibility of a kind of

ESOP, the FARP (Fund of Workers' Shares). On average the FARP seems to hold only a minor fraction of shares, but may sometimes be more significant, exercising a governance role and/or restraining share trading⁵. Second, under the "Option 1" method of privatization, 25 percent of company shares were given to company employees free-of-charge, but under the condition that they be non-voting⁶. Third, as noted above, many companies were privatized outside of the State Privatization Program, generally through the buyout of a lease granted to the workers' collective during the years of *Perestroika*. According to Webster et al (1994), "almost all former leaseholds were either closed joint stock or limited liability companies..." (page 11). In closed joint stock companies, share trading is permitted only among employees and with the approval of the workers' collective (which apparently survives in many firms).

Furthermore, many observers question the degree to which the legal institutions function in practice, even in nominally open joint stock companies. For instance, there seems to be some evidence of ESOP-like trusts forming with the motivation of stifling worker influence. According to Blasi (1994), many managers intended to form a trust for the employees' shares in order to control how those shares were voted. More generally, voting rights may not always be freely exercised. Managers have reportedly often postponed the first general meeting of shareholders after privatization, and voting is said to be sometimes conducted neither by secret ballot nor in proportion to shareholdings. Despite frequent press accounts, it is difficult to obtain reliable information on such practices or to estimate their prevalence.

There also seem to be many constraints on the tradeability of shares, resulting partly from attempts by insiders to prevent the entry of outside investors and partly from the limited development of secondary markets. Probably the best evidence for the poor possibilities for share trading was the extremely low cash value of vouchers and implied low value of company shares⁷. Because the cash value of vouchers was determined, for the most part, by transactions involving minority investors, it seems likely that the control premium

in this case is simply enormous: outsiders have little willingness to pay for minority stakes in insider-controlled firms⁸.

Finally, we come to the issue of residual softness of budget constraints. Little change in enterprise behavior can be expected to result from ownership changes in situations where firms systematically do not bear the costs or win the benefits of their actions. It is often assumed that subsidy reductions are necessarily associated with privatization, but in Russia this may not be true. Indeed, shortly after the voucher privatization process began, and no doubt intended to encourage that process to move forward, Yeltsin signed a State Decree "On Not Permitting Discrimination Against Privatized Enterprises in the Provision of State Financial Support" (November 27, 1992). Nonetheless, there seems to be agreement that subsidies and money creation have generally been declining in 1993 and 1994, so that the "non-discrimination" may be starting to apply in the sense of hard budget constraints for all. If true, then privatization could begin affecting behavior in Russia. We examine the evidence provided by the survey on these points below.

4. CORPORATE CONTROL IN RUSSIAN ENTERPRISES

In our subsequent empirical work, we address whether firms owned by different groups of majority of dominant owners behave differently. The five categories of ownership groups were constructed as follows. The firm in the sample were first classified according to whether they were old enterprises (privatized or state owned (SO)) or new private ones (DNs)⁹. Categories for the possible controlling interests in the old firms were then defined on the basis of the information on legal form, method of privatization, status of privatization, and the structure of ownership, the latter given by the percentage of voting shares held at the time of interview by ten categories of owners¹⁰.

Old firms were then categorized into state and those claiming their company "has been privatized"¹¹. The latter companies were designated as outsider-owned (OO) if banks, investment funds, other domestic firms, foreign institutions, and individuals other than employees together held more than the combined total for insiders¹². Insider-owned companies were considered to be managerially controlled (MO) when the percentage of shares held by managers was at least as great as that held by non-managerial employees. Those which had a larger share held by non-managerial employees we classified as worker-owned (WO)¹³.

Table 1 reports information on the ownership structure, of the 439 companies in the sample. Of these, 45 are DNs, and 325 are old firms, of which 110 still have a dominant state share and 214 are majority privatized¹⁴. The sample of state owned and privatized firms was randomly drawn from a list of the population of industrial firms employing more than 15 workers, to which were added a predetermined number of *de novo* firms. The data therefore provide an opportunity, which is particularly valuable in the absence of comprehensive official statistics, to measure the ownership outcome of the Russian privatization process. Workers have become dominant owners in a majority of cases: WOs account for 138 firms, 65 percent of the total; 19 percent, or 40 firms, are MOs; while the remaining 16 percent, 36 firms, are OOs. Among all privatized companies, workers hold an (unweighted) average of 47.5 percent of all shares, and managers hold 20.8, which yields a total insider stake of 68.3 percent, over two-thirds of all shares. The remainder is divided between the state (10.7 percent) and outsiders (19.7 percent), while 1.1 percent of the shares were owned by non-classifiable "others."¹⁵

The sample contains significant diversity in terms of category of dominant owner, which makes it well-suited for our purpose of relating these categories to various aspects of the firms' behavior. There also appears to be an association between the extent of share ownership held by workers and that held by outsiders: both are more likely to own shares in a company dominated by the other than they are to own

shares in a company dominated by either managers or the state. Managers and outsiders seem particularly loathe to own shares in one another's companies. In addition, the state seems to exhibit a slight preference for share ownership in companies dominated by managers over those dominated by workers and those by outsiders. Together, these results provide some evidence against the somewhat prevalent views (for instance, in Webster et al (1994)), that managers and workers are in close coalition with one another in privatized Russian firms and that managers are more likely than workers to become independent of the state.

Official data on the ownership structure of the newly privatized companies is unavailable. However, our results on ownership shares are of the same order as those obtained from three earlier surveys that attempted to obtain some of this information for samples of privatized companies. In Pistor's (1993) sample of 36 firms, all employees together received an average of 61.8 percent of all shares, while outsiders had 19 percent on average, and the State Property Fund retained 19.3 percent. Blasi's (1994) survey of 127 privatized firms found 90 percent with majority employee ownership. On average, all insiders had 65 percent of shares in his sample, with a median of 60 percent.¹⁶ Finally, Webster et al (1994) reports on a survey conducted in October 1993 of 92 privatized firms in Moscovskaya and Vladimirskaya oblasts. On average, only 10 percent of shares remained with the state from these companies, managers had 17 percent, and workers have 61 percent.

These studies of course rely on small non-random samples, and did not have information on key aspects of ownership rights, such as whether shares were voting or non-voting. Our findings also differ, particularly insofar as the managerial stake in the companies in our sample is significantly larger¹⁷ and because we did find a significant number of outsider-controlled companies among those privatized. The survey was also conducted later, and there may, of course, have been some evolution of the ownership structure, although most

commentators believe such changes have been so far minimal, (see Blasi and Shleifer (1994)).

Tables 2 to 4 provide information on other characteristics of our sample by our categories of ownership. Table 2 reports the breakdown according to legal form for 415 companies for which this information is available. Among privatized companies, the joint stock form overwhelmingly predominates, with 90 percent of the total, but, we are unable to distinguish closed from open joint stock companies. DNs exhibit a wider variety of forms; the largest number are individual entrepreneurs.

In Table 3, the distribution by industrial branch is shown, and in Table 4 the distribution by region. In order to control for differences in technologies and in shocks across firms, we have disaggregated branches according to the major product, which results in 26 roughly two-digit industrial branches. The survey instrument also asked which firms were part of the military-industrial complex (MIC); 53 of the 369 placed themselves in that category, as against 14 in the defence sector. Around 60% of MIC firms remain state owned, a higher proportion than of all firms, and of the around 40% which have been privatized, more than half are worker owned. Table 3A gives a simpler picture of the distribution of ownership classes across sectors. Sectors can be combined into 4 main groups: Group 1 includes sectors 1 and 2; Group 2 sectors 3-13; Group 3 sectors 14-20; and Group 4 sectors 21-26. 65% of enterprises in Group 1 (fuel and energy) are SO, 20% are WO, 10% are MO, 5% are OO with no DN's. Clearly the state still controls these sectors of the economy, perhaps to levy taxes on their profits. In Group 2 around 70% of enterprises are SO and WO. These sectors need considerable investments but their products are in demand. 67% of enterprises in Group 3 are also SO and WO, perhaps so the state can continue to control such sectors as electronics. In Group 4 workers control more than 45% and the state less than 20% of enterprises, perhaps because these sectors require lower levels of investment.

Regarding regions, we have combined similar groups of *oblasts* into 9 regions closely following the usual division of the Russian

Federation into 12 economic regions which differ in the level of economic development and infrastructure, the availability of natural and human resources, their fields of specialization and their geographic locations. Due to a small number of observations in some regions, however, we have combined the regions of the North and North-West, Central and Central-Chernozem, and Eastern Siberia and Far East. In Kaliningrad, we had no observations, and we treat Moscow as a separate region¹⁸.

5. OWNERSHIP AND CONTROL IN RUSSIAN FIRMS

What do these data on the structure of ownership imply for who controls Russian firms and for enterprise behavior? Despite the relatively small proportion of managerially dominated firms, and of managerial ownership generally, most observers believe that top managers have remained firmly in control (eg Blasi (1994), Boycko, Shleifer and Vishny (1993)). In this section we look at the reported degree of "influence" over various types of decisions exercised by different owners, to test whether nominal ownership and effective controls are positively correlated.

"Influence" is measured in our data as a qualitative variable which can take on one of three values: "rarely or never influential" (1), "moderate influence" (2), or "dominant, most important" (3). We assume that these categories are adequate proxies for participation in decision-making concerning the firm's operation and analyze their relationship with ownership shares.

Tables 5A, 5B, 5C, and 5D contain the means, by ownership-control type, of the reported influence of several kinds of "actors"¹⁹ over four different types of decisions: (A) sales, production, marketing, and current operations; (B) employment, hiring and firing of workers, and social and non-wage benefits; (C) employment, hiring and firing of management, and managerial compensation; (D) allocation of profits, major investments, sale or lease of major assets, and financial issues

generally. One might expect the influence of outside owners to be greater in D than the other decision areas; of workers to be relatively greater in B; and of managers in A. One would also expect dominant owners to have significantly more influence than other actors in general on decision-making.

In fact, none of these propositions seems to hold for these data. Rather, in every firm "management and executive boards" are reported to have the greatest influence on all types of decisions. They are closely followed by managerial shareholders, while at first glance all other actors dwindle into insignificance.

There are however a few specific areas in which dominant ownership category impacts upon control over enterprise decisions. First, we note that worker shareholder control is consistently greatly on average than the influence accorded to any other decision-making set of actors, though markedly less than managerial influence. In this regard, it is particularly worrisome that workers are seen as moderately influential over the allocation of profit, especially in worker owned firms. This sits slightly uneasily with studies which dismiss the influence of workers outright (see eg Blasi and Shleifer (1995)). The flip side is that we find limited evidence of outside owners, either individuals or institutions, having significant influence over enterprise decisions, though outsiders do have some influence over financial decisions in OOs, and banks on production and sales. This weak outside control is despite the fact that the survey suggests that their shareholdings are considerable (15% on average) and that they are dominant shareholders in around 15% of privatized firms. This suggests that, rather than searching for changed shareholdings, one has to look to changes in control and behavior before applauding the gradual increase in outsider shareholdings in Russian firms. Finally, we note a continued, if secondary, influence of the state, especially in state owned firms and in decisions regarding production and the allocation of profit.

We go on to investigate more systematically whether these measures of influence are associated with the magnitude of ownership

stakes using correlation analysis. Table 6 contains simple correlation coefficients between influence and ownership share. The coefficients are typically low and relatively few are statistically significant²⁰. However, it is interesting to note that the two groups upon whom higher ownership confers significantly more influence are managers, over the issues of long run resource allocation, and outside individual owners, over all issues except question of short run sales and production. Banks as owners also appear to be able to exercise some control via their shareholding over production decisions. Worker shareholdings are positively correlated with influence, especially over questions of managerial employment and long run allocative issues, but the effect is not quite significant.

These results might be taken as evidence for the common view that Russian managers are largely in control of their firms, regardless of share ownership (see Blasi (1994), Boycko, Shleifer, and Vishny (1993), and Shleifer and Vasilyev (1994)). It must be remembered, however, that in all cases the evidence relies on the self-reported perceptions of managers themselves. The widespread self-confidence of managers does not in itself constitute sufficient evidence. Table 6 suggests that the higher shareholding yields greater influence, both to outsiders and to banks, and while the evidence on worker shareholdings is weaker, one could imagine a normally quiescent workforce intervening to prevent drastic restructuring. We therefore go on to examine how closely the objectives of the firm, as demonstrated through observable actions, follow the interests of dominant shareholder groups.

6. OWNERSHIP AND ENTERPRISE BEHAVIOR

In this section, we analyze empirically whether different structures of shareholding influence enterprise behavior in Russia. In particular, we test some of the hypotheses outlined in the second section about the relative effects of privatizing to different dominant

ownership groups. We report our findings in three subsections, namely,

- changing the nature of the economic relationship between the firm and the state ("depoliticization")
- long and short term restructuring strategies ("reorientation")
- short term enterprise performance eg in employment, sales, exports etc.

The latter two subsections conflate the second and third "objectives of transition" from section 2 above, in a manner dictated by the data.

Unlike in the previous section, where we looked at both the number of shares held by each ownership group, and firms categorized according to dominant owner, in the work which follows we look only at the five ownership groups by controlling shareholder interest. Our general approach is to use regression analysis to investigate whether there are statistically significant differences in enterprise performance by dominant ownership category, and if so, whether these differences persist once we control for sectoral, regional, and firm-specific sources of heterogeneity within each ownership class.

Our approach is to estimate four OLS regressions on each indicator of performance, commencing just with the ownership dummies, then adding a lagged endogenous variable (where available), then including sectoral and regional dummies and finally also controlling for size by employment in 1991. The simplest equation provides information on the distribution of performance by ownership types. The second is a dynamic specification which indicates the impact of ownership on change in performance. Neither of these equations include any other explanatory variables, and they are intended to describe in a statistically meaningful way the differences between the ownership groups. The third equation tests whether ownership effects on the change in performance can be isolated when a fuller set of explanatory variables has been included as independent variables to control for firm specific heterogeneity in the data set. In the absence of a formal model to guide the choice of independent variable, and for parsimony and consistency between equations, we

prefer to report only regressions which control for competitive market pressures and locational effects, picked up by sectoral and regional dummies respectively²¹. However, since the size of the firm may be an important variable for certain aspects of Russian transition, especially when comparing *de novo* with current and former state owned firms, we sometimes also report a final equation which further includes a proxy for firm size, namely employment in 1991²². This helps in the analysis of the relative performance of *de novo* firms, which could perform differently because they are new and private, or because they are new and small (see Richter and Schaffer (1995)²³.

6.1. Distancing From the State

In this subsection, we investigate the hypothesis that, relative to state ownership, outsider owned firms, and especially DNs, will be the most successful in distancing themselves from the state. Between managerially and worker-owned firms, we want to test whether worker-owned firms become relatively less dependent on the state than their managerially owned counterparts.

Our initial approach is descriptive. In Table 7 we report several proxies for state influence in, and support for, enterprises. The first three variables concern sales of products to state-customers, the argument being that the relationship between the enterprise and the state will be closer in enterprises producing primarily for procurement, whether military or not. PRFORST2 is the percentage of revenue from all "government customers," while PRFORST4 is the percentage of revenue from the sale of what we infer to be publicly procured goods²⁴. According to both measures, government sales are most important to SOs, followed in order by MOs and OOs, but they are least important to WOs. Although the standard deviations are large enough to suggest caution in interpreting the results, on average it does appear that the WOs have the least supply ties to the state among old companies. Surprisingly however, the proportion of total revenue derived from government sales on the part of DNs is quite high -- 30.8 percent --

perhaps providing evidence of some dependency also of the new private sector on the state in Russia.

PROFORST measures the change in the percentage of revenue derived from sales of publicly procured goods since 1990²⁵. The decrease averaged only 2.6 percent, with the size of the decline directly related to the current level, so that these sales fell the most in SOs, followed by MOs, OOs, and WOs. Regression results are reported in Table 8.1. In the first column, the only independent variables are dummies for dominant owner groups. We confirm that WOs, OOs, and DNs receive a smaller percentage of their revenue from the state, differences which are significant at the one percent level (for WOs), the five percent level (for DNs), and the ten percent level (for OOs). But these results are level rather than rate of change phenomena; they vanish in the second column, where PRFORST4 from 1990 is added to the right-hand side. The lagged dependent variable has a coefficient of .66, which, with a T-statistic of 27.5, accounts for much of the variation in current sales to the state. This is evidence that there is significant inertia in sales to the state. The third column shows the results from adding controls for sector and region, many of which are significant, but the most important explanatory variable remains the 4-year lagged dependent variable. In the latter two equations, we do not pick up any significant differences across ownership forms. This suggests that the significant rankings by ownership type are selection effects by history, region and sector, and the ownership category is not yet significantly affecting the pace of change of sales to the state.

Although it is unlikely to be under the direct influence of enterprises, the continuing existence of price controls does reflect lingering state involvement in enterprise behavior, as well as an issue for which influence costs could be quite high. Such controls persist largely through the ability of local governments to constrain the size of markups. PRICONT in Table 7 is a dummy variable equal to one if the firm reports that there are "price controls or fixed profit margins on [their] major products," and zero otherwise. By this measure, prices are far from fully liberalized in Russia, with a full 57 percent of SOs

reporting price controls. Distinctly fewer privatized companies, 30-32 percent, face controls on their output prices, and the fraction for DNs, 24 percent, is still less, although the levels are high in absolute terms.

We now turn to the vexed issue of state support for the enterprise sector. ARRTOST measures the percentage of tax liabilities which were more than three months overdue as of April 1, 1994. This follows exactly our predicted pattern. Arrears were highest among SOs at 20 percent, followed by MOs and WOs at 13 percent, OOs and DNs at 6 percent. The next two variables measure loans received with state support. STATLOAN is a dummy variable taking the value of one if either of the company's two largest outstanding loans was received from or mandated or guaranteed by the Central Bank or any state agency and the value of 0 otherwise. 20 percent of SOs receive such loans, while only 13-14 percent of privatized companies and only 9 percent of new private firms do. A measure of preferential credits is PREFLOAN, the percentage of all loans for which the interest rate is below the discount rate of the CBR. Once again, SOs receive the best treatment: 22.1 percent of their loans are preferential, compared to 20.6 percent among OOs, 15.2 percent among WOs, 14.0 percent among DNs, and 6.4 percent on average for MOs.

The final set of variables we have to measure the extent of depoliticization consists of various indicators of direct government assistance to the companies. As shown in Table 7, GOVSUP92, GOVSUP93 and GOVSUP94, are dummy variables equal to one if the enterprise admitted receiving any type of support from the state -- subsidies, investments, tax benefits or exemptions, preferential credits, or others -- in 1992, 1993, and 1994, respectively. The percentage of companies reporting support rose from 22 percent in 1992 to 32 percent in 1993 before falling back to 26 percent in 1994. The highest percentage of companies is for the group of SOs, of whom 39 percent received support in 1994. Surprisingly, OOs were next with 31 percent, followed by MOs and WOs with 20 and DNs as expected were least with 16 percent.

This pattern is confirmed from estimating logistic regressions with GOVSUP94 as dependent variable are shown in Table 8.2. Also before, the first column shows the simple specification where only ownership dummies are included on the right-hand side. DNs, WOs, and MOs have a significantly lower probability of receiving state support than do SOs, while between SOs and OOs there is no statistically significant difference. The results in columns 2 and 3, however, make evident that there is quite significant persistence in the receipt of government support: the lagged dependent variable is highly significant in both equations, implying that the same firms receiving support in 1993 also tended to receive it in 1994. It is impressive that the coefficient on WOs remains statistically significant in these regressions, implying a systematic regularity that more worker owned firms lost support in 1994.

The reported total value (in current mln RBS) of all of the same categories of government assistance are represented in Table 7 by GOVASS92, GOVASS93, and GOVASS94 for 1992, 1993, and 1994, respectively²⁶. Assistance declined sharply in 1994, to about 20 percent of its real value in 1993, once privatization had been accomplished. Mean assistance is highest in SOs, next highest in OOs, followed by WOs, MOs, and DNs. Privatized firms received substantially fewer subsidies than did state-owned enterprises. Because ownership types also differ by size, we divided government assistance by employment; GASS94BE equals the ratio of GOVASS94 to employment in 1994. Scaling by size reduces the difference between dominant owner types, while preserving their order in the receipt of assistance. The change in this ratio from 1993 to 1994 is variable GASS43BE, which showed there was little nominal change, but a strong real decline in all the enterprises which we could classify by dominant owner. For example, WOs received only 42 percent of the assistance per employee in 1994 compared to what they received in 1993 (measured in 1994 rubles), while OOs received about 32 percent, and MOs about 28 percent. By these measures, Russian budget constraints seem to have hardened quite significantly in 1994.

The regression results in Table 8.3 provide further support for this conclusion. In column 1, GOVASS94 is regressed only on ownership dummies, demonstrating again that the lower level of assistance provided to WOs, MOs, and DNs is statistically significantly lower than that for SOs, while the OOs show no clear difference. Column 2 adds the lagged values of the dependent variable, which, as with the previous Table 8.2, reduces most of the ownership dummies to insignificance. The coefficient on WO however remains negative and significant. In the following column, however, where sector and regional dummies are added, even the WO dummy loses significance.

In this sub-section, we have looked at government enterprise relations in terms of procurement, price controls and subsidy. The findings taken together conform with our prior hypotheses - the influence of the state via these three channels is most marked in the remaining state owned firms, and least in *de novo* private firms. Insider privatization does act to break the links with the state, though more markedly in worker-owned than managerially owned firms. Surprisingly however, the relationship between the state and outsider firms remains very strong, comparable to that in state owned firms. This could be explained by selection effects: outsiders may have tended to take control in firms historically closely connected with the state. In any case, our results demonstrate the powerful inertia in the relationship between the state and the enterprise sector.

6.2. Reorientation of Firm's Objectives and Restructuring

We hypothesized in the second section that privatized firms, particularly those which are outsider-controlled, may be superior to state-owned firms in most areas of restructuring. In comparing insider-controlled firms, worker ownership might lead to relatively less unbundling, investment and reduction of labor costs than managerial ownership. We test these hypotheses in this section using qualitative data from the questionnaire recording managers' own views about their restructuring strategies. The questions cover four areas of enterprise

decision-making: production, marketing, employment policy, and investment. Managers are invited to indicate their priorities across a variety of responses in each area, being allowed to respond on a scale from 1 (not important) to 3 (very important) for each response. The results are tabulated in Table 9, which reports the rank order of responses by ownership type and the average response on the 1 to 3 scale.

In sharp contrast to the findings concerning depoliticization, we see little evidence that majority ownership stakes are yet influencing restructuring strategies among privatized firms, though DNs are clearly somewhat different. The most striking thing about Table 9 is how little the responses vary by ownership type. For example the mean response across the ten possible actions under the heading of production strategy varies between 1.94 and 2.06. The variation is in fact hardly greater within any particular answer. It is perhaps encouraging, however, that marketing and investment/finance strategies are on average regarded as slightly more important than production or employment strategies, regardless of ownership type.

Commencing with production strategy, the rank orders of importance are remarkably similar in all five ownership types. The ranks in Table 9 rise with the importance attached to a strategy, so we note that all firms attach least significance in their production strategy to disposing of assets, seeking foreign consultants and closing plants or shops, and most importance to increasing the efficiency of input use and to investments. The only major exceptions are privately owned firms, which presumably are not encumbered with poor practices, at least to the same extent. Hence as we would expect they place less importance on investment policy, changing product mix and improving efficiency of resource use, and emphasize, even more than other ownership groups, technology, product quality and investment.

Privately owned firms are also rather different in terms of employment strategies; employment reductions are seen as much less important, presumably because being new organizations, they have not inherited the bloated labor forces of current and former state owned

firms. However, apart from this, the similarities across ownership types are much more revealing than the differences and not entirely consistent with the view of unconstrained managerial control. In all ownership forms, the most important strategy by far on the labor side is an increase in wages, followed by the desire to increase wage differentials. Outsider-owned firms however place slightly more stress on establishing an internal wage structure than insider-owned firms however, and surprisingly slightly less weight on employment reduction.

Turning to investment strategy, some modest differences begin to appear within the private group. New private firms place particular emphasis on seeking foreign investors and reducing bank borrowing. A similar stress on foreign investment is placed by both state and worker-owned firms. However, managerially owned firms in particular, and outsider firms also, shy away somewhat from foreign involvement; perhaps in the case of the latter category because foreign advice and capital is less needed and in the case of the former because it would threaten managerial entrenchment. Outside owners also place less stress on obtaining new loans than any other ownership form.

On the marketing side, all ownership types rate an improvement of marketing and discovering new domestic markets very highly, but place less emphasis on price adjustments or changing suppliers. One intriguing difference, however, is that managerially owned firms place less weight on increasing exports, while state and worker-owned firms regard international markets as being of potentially greater importance.

6.3 Enterprise Performance

We conclude our evaluation of the impact of different majority ownership forms by looking, not at the self-reported intentions of managers, but at the behavior of their firms. We report the result of regression analysis undertaken to analyze various elements of company performance in Russia, including sales, employment, exports and pay. Means of the variables under consideration by ownership type are

outlined in Table 10, where some differences by ownership type do emerge, though the standard deviations are typically large.

The first variable in Table 10 is sales in 1994. State-owned firms are much the largest enterprises, followed by worker-owned, managerially owned, outsider-owned and privately owned. The five types of firms in fact increased sales at a similar average rate between 1992 and 1994. Size according to employment shows a similar pattern. The Russian firms in our sample are not major exporters outside the former Soviet Union; on average only 4 percent of sales go to such customers and the maximum observed in the whole sample is only 20 percent of total sales. Non-FSU exports are slightly higher on average in outsider owned and worker owned firms than in SOs or MOs and negligible in DNs.

The information on profits provided in our survey is poor, but the questionnaire did ask firms to report whether they were typically profit makers. The average response to this question is reported in the second row of Table 10. As can be seen, according to Russian accounting procedures most firms normally make profits, and the differences across ownership types are negligible. Turning to capacity utilization, rates in 1994 are very low, averaging around 53 percent across all firms. However, they are higher among DNs and lower in outsider-owned firms. The Russian capital stock according to the survey is relatively modern; only around 32 percent is reported as being more than 15 years old. Unsurprisingly, DNs have significantly younger capital on average, but SOs, WOs and MOs are all close to the mean. But the proportion of old capital is rather higher in outsider owned firms: 42 percent of the total. Finally, average wages for workers and for managers are highest in DNs and lowest in worker owned firms. State-owned and managerially owned firms are around the mean, while pay for both groups is rather above average in outsider-owned firms.

In the remainder of this section we use regression analysis to investigate whether these differences persist once we control for sectoral, regional and firm-specific sources of heterogeneity within each

ownership class. Our approach is to estimate the four versions of the performance equations outlined at the start of this section.

Performance in short term restructuring is analyzed in Tables 11 and 12, which explain 1994 sales and non-FSU exports respectively. Commencing with sales, we note from column (1) of Table 11 that *de novo* private firms are significantly smaller than state owned firms (always the omitted class), as are worker owned firms. However, in the dynamic specification of columns (2) and (3) there are no significant ownership effects, though the sign on all privatized firms is positive relative to SOs. We interpret this to imply that majority ownership structures are not yet significantly impacting on the rate of change of sales, though there is great persistence in turnover as well as significant market environment effects from sectors and regions²⁷.

From Table 12 we find that worker-owned, and even more so outsider-owned firms, export significantly more than the other three ownership types. Despite considerable inertia in export performance over time, this result persists for worker owned firms in the dynamic specification, and remains nearly significant when sectoral and regional fixed effects are taken to account. DNs export notably less; all other ownership forms have a positive sign relative to state owned firms. We note from the fourth column that the size of firms is not however a significant explanatory variable for non-FSU exports; its inclusion leaves other results unchanged.

Turning to capacity utilization, we find contrasting ownership effects in column(1) of Table 13. There is no significant difference between the rate of capacity utilization in WOs, MOs and SOs. However, capacity utilization is significantly lower in outsider owned firms, and higher in DNs. The latter is easy to explain - *de novo* private firms did not inherit the same excess capacity and are in fact growing (see Richter and Schaffer (1995)). Perhaps outsiders have taken control only of firms with more serious restructuring problems, for instance having faced a larger output drop or inherited worse capital. It is interesting that these effects typically persist in the dynamic specifications, so the change in capacity utilization is also correlated

significantly with ownership, positively for DNs and negatively for outsider-owned firms. There is also weak evidence that the further decline in capacity utilization tends to be correlated with employee ownership. Once again, the size of the firm does not impact on the other results, and the size variable is not significant.

It is interesting to ask whether the differences by ownership type are associated with the vintage of the capital stock. There is some evidence for this view in Table 14, at least with respect to *de novo* private firms. These are found to have a significantly lower proportion of capital more than fifteen years old. However, there is no explanation of the poor showing of outsider and worker-owned forms vis-a-vis capacity utilization here; the coefficient on OOs is insignificant and on WOs positive and weakly significant. Size of firm is once again not significant.

A major issue which we predicted would distinguish insider and outsider privatization was employment. The regressions reported in Table 15 however, provide little support as yet for our hypotheses. We do find in column (1) that *de novo* private firm are significantly smaller. However the equations also reveal very strong persistence of employment with significant sectoral effects but no ownership impact in the dynamic specifications. It would not be sensible to include a size effect here, as in other equations, because we measure size of firm by lagged employment to 1991. Finally, we look at insider (manager and worker) remuneration in Tables 16 and 17; one might expect these to be higher in insider than outsider controlled or state owned firms. In fact, there is no evidence that Russian managers or workers are taking advantage of their position as yet to pay themselves higher wages. No insider ownership variables are anywhere significant. Interestingly, however, wages of both managers and workers are found to be higher in *de novo* private firms, though this is a feature caused by inertia, sector and region rather than adjustment behavior. Interestingly, large firms pay workers more, but not managers.

In summary, therefore, enterprise behavior indicates more ownership effects than we found in terms of managers' self-reported

restructuring intentions. However these tend to concern the level of performance rather than the pace of adjustment. There is particularly evidence of differences in behavior between *de novo* private firms and all other ownership types. Privatization does not yet seem to be affecting employment or sales adjustment.

7. CONCLUSION

The most widely noted features of Russian privatization have been its scale and remarkable speed. In this paper, we have tried to explore the implications of the privatization program for dominant ownership forms, and to analyze the effects of different ownership structures for enterprise behavior. Our findings confirm the central ownership role granted by the privatization process to managers and particularly workers, though it also reveals a higher proportion of outsider dominated firms - both privatized and formed *de novo* - than expected. What are the consequences of this ownership structure for enterprise behavior and restructuring, and what are the policy implication of these findings?

Theory led us to expect much better enterprise performance across the board from outsider than state-owned firms, with insider-controlled companies being somewhere in between. The balance of advantage between worker and managerial ownership depended on the issue raised, with majority managerial ownership potentially offering advantages in long-term and short-term restructuring, but worker ownership perhaps superior in achieving a greater degree of depoliticization and possibilities for evolution.

Our findings go some way towards confirming these hypotheses. We find significant differences across various aspects of control, behavior and restructuring between state-owned and outsider-owned firms, most notably DNs. There are also differences between state and insider-owned firms, though they are less marked. The balance of

advantage between managerially owned and worker-owned firms is unclear overall, but strikingly we confirm that depoliticization is more associated with the latter than the former majority ownership form. The results on DNs are particularly encouraging because in other work (see eg Belka, Estrin, Schaffer and Singh (1994)), one of us has argued that, in Poland at least, it is the small and middle sized enterprises of the *de novo* private sector which is in fact leading the transition process. Our findings provide an initial indication that the same forces may be at work in Russia (see also Richter and Schaffer (1995)).

But our understanding of the Russian privatization process is also much enriched by focusing on the areas in which the data do not support our hypotheses. Although still preliminary, the most striking result is that the differences between state-owned and privatized firms, regardless of majority ownership form, are typically not very great, especially regarding the key issue of restructuring. This phenomenon is probably explained by the fact that the restructuring which is occurring at the moment arises primarily from the hardening of budget constraints, and this impacts more or less across the board (if not indeed more markedly on state owned firms). Evidence from Poland (see, eg Belka *et al* (1993), Estrin *et al* (1993)) suggest that state owned firms will adjust their behavior in the early phase of transition solely in response to hard budget constraints and increased market competition, without any significant impact from changes in ownership and control. The force of this point is increased when we note that the survey was undertaken relatively soon after the mass privatization was completed, probably before major behavioral changes could be expected as a consequence of the new ownership structures.

More subtly, the results for enterprises privatized to outsiders are disappointing. There is no evidence of greater depoliticization, nor of differences in restructuring strategy, and apart from exports, virtually no difference in performance compared with the other privatized firms, the state owned sector. One explanation may be that outsiders have simply not yet been able to establish effective control over the firms in which they have a majority stake; a view consistent with the evidence

about managerial dominance over decision-making in the fifth section. There is also some evidence to suggest that outsiders have taken majority control over somewhat inferior firms, in terms of capacity utilization, overemployment, profitability and so forth. Perhaps insiders, who by all accounts controlled the firm's privatization process only accepted majority outsider ownership when the situation of the firm was so desperate that the wider resources of outsiders were needed to ensure survival of the organization. In this case, the poor performance of outsiders would be related to the larger scale of the task in hand, rather than deficiencies of outsider control as a majority governance group.

Finally, we must consider the consequences of worker ownership. Our study reveals that Russian privatization has created an economy primarily comprising majority worker-owned firms. But the effects on behavior and restructuring are not yet as disastrous as might have been predicted. Many of the reasons we have already noted: for instance that worker ownership may assist the process of depoliticization, but restructuring, where it may prove a major impediment, has hardly begun. Some may take heart from the fact that, even in worker-owned firms, managerial control seems assured. However, the fact remains that majority worker ownership may present a threat to effective restructuring in the future, both in the long term when the key is access to external capital markets, and in the short term when firms need to address the problem of overstaffing.

Policy conclusions follow directly from these findings. First, the mass privatization program has of necessity concentrated the attention of policymakers on the former state-owned sector, but in terms of performance and behavior, prospects look better with *de novo* firms. The government may wish to develop a more systematic strategy for small and medium enterprise development, especially in the classic areas of SME weakness: access to outside (loan) capital, management training, and dealing with bureaucracy.

The government may also wish to look more closely at what is going on in outsider-controlled firms, to see whether the problems arise

from deficiencies in the legal institutions and arrangements for corporate governance. If so, regulatory changes or more effective enforcement of current legal requirements may be required.

Finally, we return to the overhanging threat of majority employee control. We do not feel that the potential governance and behavioral problems will necessarily be resolved by continued effective managerial control. In situations of conflict between workers and managers, for example over mass redundancies, either managers will give way to the dominant owner, or they will in some way overrule workers, which is counter-productive insofar as it acts to undermine emerging property rights and the rule of law. The way forward is instead for majority worker ownership to evolve to new ownership forms, most significantly outsider ownership. The key policy is therefore to ensure that secondary markets are functioning so that worker shareholdings can be traded, and that purchasers obtain full voting rights with their shares.

ENDNOTES

1. Justification for these objectives and further discussion is contained in Earle and Estrin (1995)
2. The term "depoliticization" does not precisely capture the concept which we are investigating. According to the Webster New Collegiate Dictionary, it means "to take out of the realm of politics". We are concerned with inculcating a profit orientation and establishing market discipline over firms. This relates to the nature of control over enterprises (eg state versus private), the objectives of the controlling group (eg rent versus profit maximizing) and to the environment in which they operate (eg soft versus hard budget constraints). For ease of exposition we henceforth use the term depoliticization to refer to this complex process of firms distancing themselves from the state.
3. Webster and Charap (1993) in an early survey of 99 private manufacturing firms in St Petersburg find that the vast majority of Russian entrepreneurs formerly held high level posts in state owned enterprises. However, while their skills in the sector are clearly relevant, it is unclear that these new entrepreneurs would also be able to take with them favored access to government grants, let alone rent seeking attitudes.
4. The *de novo* private sector as a whole, of course, can influence industrial and economic restructuring. For example they may invest and minimize labor costs. But they are not adjusting from a former state owned structure to a market determined optimum, rather adjusting as profit-maximizers to changing market conditions. As such, we exclude them from the table.
5. Unfortunately, we are able with our data neither to compute the shares held in a FARP nor to assess its effects on behavior.
6. Although the data do not distinguish voting from non-voting shares, we know the method of privatization and were able to make

adjustments for this factor in our appraisal of corporate control below.

7. According to Boycko, Shleifer, and Vishny (1993), imputing the value of the entire Russian capital stock on the basis of the cash value of vouchers would result in a figure around the net worth of one large U.S. company.

8. Some evidence may be found in Pistor (1993), who states, for her sample of recently privatized companies, that "trading volumes were low, and usually occurred among employees and former employees" in the summer of 1993. Moreover, the prices on the secondary markets were reportedly still much lower than in the original voucher auctions, again implying extreme shyness on the part of outsiders. Webster et al (1994) also found little evidence of share trading.

9. A major gap in the sample concerns the date of privatization. We can assume that most of the privatizations in the State Program were implemented from late 1992 until mid-1994, but lease buyouts may have taken place earlier.

10. The structure of ownership was not available in some observations, but often, for instance in unincorporated state enterprises, it could be inferred and imputed. In other cases, firms claimed to be privatized, but reported that a majority of their shares were still held by the state; we classified them as state-owned (SO). Problems also arose due to missing values, answers of an unspecified or ambiguous "other," and the presence of nonvoting shares. Option 1 in the State Privatization Program gave employees 25 percent of the shares free-of-charge, but the shares carried no voting rights; we subtracted those shares from the numbers given for insiders, and on this basis reclassified a number of companies.

11. In the group of potentially privatized, we designated as SO all companies in which the federal and regional property fund still owned 50 percent or more of the shares.

12. Unfortunately, we had no information on which of these entities might themselves still be state-owned, and in our analysis we are implicitly assuming they are all private.

13. When the data did not permit us to classify companies by dominant owner, including cases of inconsistent answers across questions, the firms are designated "unclassified".

14. The remaining firms are unclassified.

15. The open-ended answers to the ownership (and other) questions allowed several "other" owners to be classified reliably into one of our categories.

16. Thus the distribution is positively skewed, implying that there were few firms which had a small proportion of insider ownership. Outsiders had an average of 21.5 percent of the shares, and the state retained 13 percent on average. Blasi also provided information on the division of shareholdings between top managers and all other employees: top managers had an average of 8.6 percent of all shares (the median was 5 percent).

17. Blasi has pointed out that he defines managers as top managers while we refer to all managers. Using our definition, he finds median managerial ownership to be 15%.

18. Our 10 areas were constructed as follows: Moscow (Moscow city), Center (Vladimirskaya, Voronezhskaya and Moskovskaya oblasts), Urals (Permskaya, Sverdlovskaya oblasts and Bashkorstan), West Siberia (Novosibirskaya, Tyumenskaya, Kemerovskaya oblasts and Altayskiy kraj), East Siberia (Krasnoyarskiy and Primorskiy kraj), Povolzhski (Tatarskaya, Saratovskaya and Samarskaya oblasts), North Caucasus (Rostovskaya oblast and Stavropolskiy kraj), North (St. Petersburg and Leningradskaya oblast), North (Arkhangelskaya and Volgogradskaya oblasts), and Volga-Vyatka (Nizhnegordskaya oblast).

19. This includes owners and other actors not specifically identified

as owners, but whom we use as proxies for the corresponding ownership group, namely local and federal governments and banks.

20. This result remains essentially unchanged when the ownership share variables are allowed non-linear effects as follows: less than 10 percent was reclassified as "1", 10 to 25 percent as "2", and over 25 percent as "3".

21. A persistent problem with this data set is that, because of missing values scattered across variables, a change in specification of the equation can lead to major changes in the size of the data set upon which the model is estimated. These differences are minimized by including only lagged endogenous variables (since firms typically report the previous value for a variable if they report it currently) and sectoral and regional dummies (which we have for all firms). The number of observations will typically be smaller when firm size is included in the fourth specification.

22. In the cases where we estimated equations with such a specification, the data set is a slightly updated version.

23. We are indebted to Mark Schaffer for suggesting this line of enquiry.

24. The variable is defined as the sum of "Military goods" and "non-military goods purchased by the state (hospital products, schoolbooks, etc.)"; PRFORST4 is therefore smaller than PRFORST2.

25. The change in PRFORST2 is unavailable.

26. Because data are provided in the table only for the first half of 1994, the comparisons in this paragraph multiply the amount of assistance for 1994 by two. When calculating real changes, we employ the relevant price index for the first half of 1994.

27. The fourth equation, controlling for size, is not included in Table 11 because of the close relationship between sales and employment. As

expected, in the regression employment was found to have a positive and significant coefficient.

TABLE 1**Distribution of Ownership by Dominant Owner Type**

| OWNER | DOMINANT OWNER ²⁸ | | | | | TOTAL |
|-----------------------|------------------------------|-----|----|----|----|-------|
| | SO | WO | MO | OO | DN | |
| STATE | | | | | | |
| Mean | 89 | 10 | 13 | 12 | 1 | 34 |
| Standard Deviation | 21 | 14 | 15 | 13 | 5 | 40 |
| WORKERS | | | | | | |
| Mean | 7 | 63 | 14 | 26 | 6 | 31 |
| Standard Deviation | 14 | 20 | 20 | 14 | 17 | 31 |
| MANAGERS | | | | | | |
| Mean | 2 | 12 | 63 | 7 | 58 | 17 |
| Standard Deviation | 5 | 11 | 23 | 7 | 39 | 26 |
| OUTSIDERS | | | | | | |
| Mean | 2 | 14 | 9 | 53 | 26 | 15 |
| Standard Deviation | 6 | 16 | 12 | 21 | 36 | 22 |
| NUMBER OF ENTERPRISES | 110 | 138 | 40 | 36 | 45 | 439 |

SO - enterprises with dominant state stake

WO - enterprises with dominant workers stake

MO - enterprises with dominant managers stake

OO - enterprises with dominant outsiders stake

DN - new established privately owned enterprises

The TOTAL column includes firms which were not classifiable according to dominant owner, thus this does not correspond strictly to the sum (or average) of the previous five columns.

²⁸ It was possible to classify some firms (2 WOs and 20 DNs) even without complete information on ownership shares.

TABLE 2**Legal Form by Dominant Owner Type**

| LEGAL FORM | DOMINANT OWNER | | | | | TOTAL |
|-------------------------|----------------|------------|-----------|-----------|-----------|------------|
| | SO | WO | MO | OO | DN | |
| Joint Stock | 27 | 120 | 30 | 31 | 12 | 267 |
| Limited Liability | 0 | 1 | 3 | 0 | 3 | 7 |
| General Partnership | 1 | 0 | 1 | 0 | 1 | 4 |
| Limited Partnership | 0 | 9 | 5 | 0 | 11 | 33 |
| Cooperatives | 0 | 1 | 0 | 0 | 2 | 2 |
| Physical Persons | 0 | 0 | 0 | 0 | 14 | 15 |
| State-owned Joint Stock | 8 | 0 | 0 | 0 | 0 | 11 |
| Leasehold | 0 | 2 | 0 | 0 | 1 | 3 |
| Non-incorp. state-owned | 68 | 0 | 0 | 0 | 0 | 70 |
| Other | 5 | 0 | 0 | 0 | 0 | 3 |
| TOTAL | 109 | 133 | 39 | 31 | 44 | 415 |

The TOTAL column includes firms which were not classifiable according to dominant owner, thus this does not correspond strictly to the sum of the previous five columns.

TABLE 3
Branch by Dominant Owner Type

| INDUSTRY SECTOR | DOMINANT OWNER | | | | | TOTAL |
|------------------------------|----------------|------------|-----------|-----------|-----------|------------|
| | SO | WO | MO | OO | DN | |
| Energy | 5 | 1 | 1 | 0 | 0 | 7 |
| Fuel | 8 | 3 | 1 | 1 | 0 | 13 |
| Ferrous metallurgy | 1 | 5 | 1 | 3 | 0 | 10 |
| Nonferrous metallurgy | 1 | 5 | 1 | 1 | 0 | 8 |
| Chemicals | 3 | 8 | 2 | 0 | 4 | 17 |
| Heavy machine building | 6 | 11 | 2 | 1 | 1 | 21 |
| Electrotechnical | 3 | 5 | 2 | 1 | 2 | 13 |
| Machine tools & Computers | 7 | 5 | 1 | 1 | 3 | 17 |
| Automobile industry | 1 | 5 | 1 | 2 | 2 | 11 |
| Agricultural machinery | 4 | 5 | 0 | 5 | 2 | 16 |
| Light machine building | 2 | 1 | 0 | 0 | 3 | 6 |
| Defence industry | 6 | 4 | 2 | 1 | 1 | 14 |
| Ship building | 2 | 2 | 1 | 3 | 0 | 8 |
| Radio industry | 9 | 3 | 0 | 0 | 0 | 12 |
| Communications & Electronics | 7 | 6 | 0 | 3 | 1 | 17 |
| Metal constructions | 3 | 5 | 2 | 4 | 1 | 15 |
| Machine repairing | 6 | 5 | 2 | 3 | 0 | 16 |
| Wood harvesting | 8 | 2 | 0 | 0 | 0 | 10 |
| Wood working industry | 3 | 6 | 3 | 2 | 3 | 17 |
| Construction materials | 6 | 7 | 1 | 1 | 11 | 26 |
| Textiles | 4 | 11 | 6 | 1 | 4 | 26 |
| Clothing industry | 2 | 13 | 6 | 1 | 4 | 26 |
| Food processing | 6 | 8 | 3 | 1 | 0 | 18 |
| Meat and milk | 1 | 9 | 0 | 1 | 1 | 12 |
| Other industrial production | 6 | 3 | 2 | 0 | 1 | 12 |
| Commercial activity | 0 | 0 | 0 | 0 | 1 | 1 |
| Military Industrial Complex | 31 | 12 | 5 | 4 | 1 | 53 |
| TOTAL | 110 | 138 | 40 | 36 | 45 | 369 |

TABLE 3A

Dominant Owner by Industry Sector Group

| INDUSTRY SECTOR GROUP | DOMINANT OWNER | | | | | TOTAL |
|-----------------------|----------------|------------|-----------|-----------|-----------|------------|
| | SO | WO | MO | OO | DN | |
| Fuel & Energy | 13 | 4 | 2 | 1 | 0 | 20 |
| Heavy Industry | 36 | 56 | 13 | 18 | 18 | 141 |
| Light Industry | 42 | 34 | 8 | 13 | 16 | 113 |
| Consumer Goods | 19 | 44 | 17 | 4 | 11 | 95 |
| TOTAL | 110 | 138 | 40 | 36 | 45 | 369 |

Notes:

- SO - enterprises with dominant state stake
- WO - enterprises with dominant workers stake
- MO - enterprises with dominant managers stake
- OO - enterprises with dominant outsiders stake
- DN - new established privately owned enterprises

TABLE 4**Region by Dominant Owner Type**

| REGION | TOTAL | DOMINANT OWNER | | | | |
|----------------|-------|----------------|-----|----|----|----|
| | | SO | WO | MO | OO | DN |
| NORTH | 53 | 17 | 16 | 6 | 10 | 4 |
| VOLGA-VYATKA | 21 | 6 | 9 | 1 | 2 | 3 |
| POVOLZHSKI | 49 | 21 | 18 | 5 | 1 | 4 |
| NORTH CAUCASUS | 36 | 1 | 23 | 5 | 3 | 4 |
| URALS | 49 | 18 | 14 | 5 | 6 | 6 |
| WSIBERIA | 43 | 13 | 21 | 3 | 4 | 2 |
| ESIBERIA | 29 | 8 | 6 | 6 | 3 | 6 |
| MOSCOW | 43 | 16 | 11 | 6 | 3 | 7 |
| CENTRE | 46 | 10 | 20 | 3 | 4 | 9 |
| TOTAL | 369 | 110 | 138 | 40 | 36 | 45 |

Notes:

- SO - enterprises with dominant state stake
- WO - enterprises with dominant workers stake
- MO - enterprises with dominant managers stake
- OO - enterprises with dominant outsiders stake
- DN - new established privately owned enterprises

TABLE 5A**Clarification of Property Rights
Influence of Actors by Dominant Owner Type**

| ACTOR | DOMINANT OWNER | | | | | TOTAL |
|---------------------------|----------------|------|------|------|------|-------|
| | SO | WO | MO | OO | DN | |
| Management, Board of Dir. | 2.77 | 2.68 | 2.86 | 2.63 | 2.76 | 2.73 |
| Manager shareholders | 2.48 | 2.48 | 2.58 | 2.48 | 2.65 | 2.52 |
| Worker shareholders | 1.36 | 1.39 | 1.41 | 1.24 | 1.32 | 1.35 |
| Outside indiv. owners | 1.15 | 1.15 | 1.00 | 1.30 | 1.30 | 1.17 |
| Outside inst. owners | 1.26 | 1.25 | 1.00 | 1.30 | 1.00 | 1.21 |
| Local government | 1.34 | 1.20 | 1.16 | 1.13 | 1.23 | 1.23 |
| Federal government | 1.47 | 1.24 | 1.30 | 1.38 | 1.22 | 1.35 |
| Banks | 1.19 | 1.33 | 1.27 | 1.41 | 1.31 | 1.30 |

Notes:

SO - enterprises with dominant state stake

WO - enterprises with dominant workers stake

MO - enterprises with dominant managers stake

OO - enterprises with dominant outsiders stake

DN - new established privately owned enterprises

The TOTAL column includes firms which were not classifiable according to dominant owner, thus this does not correspond strictly to the sum (or average) of the previous five columns.

TABLE 5B**Decisions Concerning Employment Hiring And Firing
Of Workers, Social And Non-wage Benefits**

| ACTOR | DOMINANT OWNER | | | | | TOTAL |
|---------------------------|----------------|------|------|------|------|-------|
| | SO | WO | MO | OO | DN | |
| Management, Board of Dir. | 2.71 | 2.60 | 2.78 | 2.51 | 2.66 | 2.66 |
| Manager shareholders | 2.44 | 2.40 | 2.55 | 2.46 | 2.64 | 2.49 |
| Worker shareholders | 1.451 | 1.43 | 1.47 | 1.27 | 1.21 | 1.41 |
| Outside indiv. owners | .14 | 1.11 | 1.00 | 1.17 | 1.20 | 1.11 |
| Outside inst. owners | 1.25 | 1.19 | 1.00 | 1.26 | 1.00 | 1.15 |
| Local government | 1.26 | 1.21 | 1.19 | 1.36 | 1.18 | 1.22 |
| Federal government | 1.19 | 1.13 | 1.14 | 1.21 | 1.14 | 1.17 |
| Banks | 1.08 | 1.11 | 1.09 | 1.03 | 1.14 | 1.11 |

The TOTAL column includes firms which were not classifiable according to dominant owner, thus this does not correspond strictly to the sum (or average) of the previous five columns.

TABLE 5C**Decisions Concerning Employment Hiring And Firing
Of Management, Managerial Compensation**

| ACTOR | DOMINANT OWNER | | | | | TOTAL |
|---------------------------|----------------|------|------|------|------|-------|
| | SO | WO | MO | OO | DN | |
| Management, Board of Dir. | 2.69 | 2.61 | 2.86 | 2.74 | 2.66 | 2.69 |
| Manager shareholders | 2.40 | 2.32 | 2.52 | 2.57 | 2.74 | 2.47 |
| Worker shareholders | 1.24 | 1.33 | 1.36 | 1.26 | 1.28 | 1.31 |
| Outside indiv. owners | 1.11 | 1.12 | 1.00 | 1.17 | 1.10 | 1.11 |
| Outside inst. owners | 1.21 | 1.23 | 1.06 | 1.41 | 1.00 | 1.19 |
| Local government | 1.30 | 1.19 | 1.13 | 1.25 | 1.10 | 1.22 |
| Federal government | 1.26 | 1.16 | 1.14 | 1.10 | 1.14 | 1.19 |
| Banks | 1.10 | 1.11 | 1.10 | 1.03 | 1.14 | 1.11 |

Notes:

SO - enterprises with dominant state stake

WO - enterprises with dominant workers stake

MO - enterprises with dominant managers stake

OO - enterprises with dominant outsiders stake

DN - new established privately owned enterprises

The TOTAL column includes firms which were not classifiable according to dominant owner, thus this does not correspond strictly to the sum (or average) of the previous five columns.

TABLE 5D**Decisions Concerning Allocation Of Profits, Major Investments,
Sales Or Lease Of Major Assets, Financial Issues Generally**

| ACTOR | DOMINANT OWNER | | | | | TOTAL |
|---------------------------|----------------|------|------|------|------|-------|
| | SO | WO | MO | OO | DN | |
| Management, Board of Dir. | 2.77 | 2.87 | 2.92 | 2.67 | 2.63 | 2.81 |
| Manager shareholders | 2.47 | 2.53 | 2.81 | 2.41 | 2.71 | 2.59 |
| Worker shareholders | 1.42 | 1.68 | 1.63 | 1.26 | 1.26 | 1.53 |
| Outside indiv. owners | 1.19 | 1.23 | 1.10 | 1.43 | 1.22 | 1.25 |
| Outside inst. owners | 1.46 | 1.34 | 1.12 | 1.63 | 1.00 | 1.37 |
| Local government | 1.34 | 1.27 | 1.23 | 1.33 | 1.29 | 1.29 |
| Federal government | 1.46 | 1.25 | 1.28 | 1.32 | 1.27 | 1.32 |
| Banks | 1.24 | 1.27 | 1.13 | 1.23 | 1.22 | 1.23 |

Notes:

SO - enterprises with dominant state stake

WO - enterprises with dominant workers stake

MO - enterprises with dominant managers stake

OO - enterprises with dominant outsiders stake

DN - new established privately owned enterprises

The TOTAL column includes firms which were not classifiable according to dominant owner, thus this does not correspond strictly to the sum (or average) of the previous five columns.

TABLE 6**Correlation of Ownership and Influence**

| TYPE OF OWNER | n | TYPE OF DECISION | | | |
|------------------------------|-----|------------------|--------|--------|--------|
| | | A | B | C | D |
| Manager-shareholders | 257 | 0.108 | 0.133 | 0.143 | 0.176* |
| Worker-shareholders | 233 | 0.109 | 0.083 | 0.135 | 0.127 |
| Outside individual owners | 160 | 0.178 | 0.215* | 0.188* | 0.197* |
| Outside institutional owners | 123 | 0.030 | 0.051 | 0.154 | 0.157 |
| Local government | 202 | 0.017 | 0.020 | 0.063 | 0.071 |
| Federal government | 188 | 0.150 | -0.051 | -0.007 | 0.052 |
| Banks | 193 | 0.209* | -0.060 | 0.065 | 0.142 |

Notes:

* - 1-tailed Significance: 0.01

A - sales, production, marketing, current operations

B - employment, hiring and firing of workers, social and non-wage benefits

C - employment, hiring and firing of management, managerial compensation

D - allocation of profits, major investments, sale or lease of major assets, financial issues generally

TABLE 7**Depoliticization**

| | DOMINANT OWNER | | | | | TOTAL |
|--------------------|----------------|-------|-------|-------|-------|-------|
| | SO | WO | MO | OO | DN | |
| PRFORST2 | | | | | | |
| Mean | 32.72 | 22.56 | 24.03 | 23.82 | 30.77 | 26.27 |
| Standard Deviation | 42.00 | 35.44 | 37.43 | 40.95 | 42.09 | 38.61 |
| PRFORST4 | | | | | | |
| Mean | 9.93 | 2.21 | 7.58 | 3.10 | 3.02 | 5.50 |
| Standard Deviation | 24.66 | 12.34 | 21.98 | 13.93 | 11.03 | 19.18 |
| PROFORST | | | | | | |
| Mean | -5.56 | -1.08 | -2.89 | -1.93 | .20 | -2.56 |
| Standard Deviation | 17.41 | 5.18 | 11.31 | 9.90 | 3.26 | 11.56 |
| PRICONT | | | | | | |
| Mean | .57 | .32 | .32 | .30 | .24 | .38 |
| Standard Deviation | .52 | .47 | .47 | .47 | .43 | .48 |
| ARRTOST | | | | | | |
| Mean | 20.00 | 13.03 | 13.16 | 6.25 | 6.15 | 13.88 |
| Standard Deviation | 33.67 | 27.24 | 24.77 | 21.65 | 22.19 | 28.56 |
| STATLOAN | | | | | | |
| Mean | .20 | .14 | .13 | .14 | .09 | .13 |
| Standard Deviation | .40 | .34 | .33 | .36 | .29 | .34 |
| PREFLOAN | | | | | | |
| Mean | 22.09 | 15.21 | 6.40 | 20.58 | 14.00 | 16.03 |
| Standard Deviation | 35.49 | 27.54 | 15.79 | 25.26 | 31.94 | 28.38 |

Definitions:

PRFORST4 = percentage of production to the state out of the total revenues in 1994;

PRFORST(T-4) = percentage of production to the state out of the total revenues in 1990;

PROFORST = change in percentage of total revenue provided by these goods in 1994 compared to 1990.

ARRTOST = percentage of liabilities to the state which are overdue more than three months.

PRICONT=dummy which takes on value of 1 if there is rice control and 0 otherwise.

STATLOAN=dummy which takes on value 1 if enterprise received any loan from government.

PREFLOAN=percentage of total loans received at the central bank discount rate.

The TOTAL column includes firms which were not classifiable according to dominant owner, thus this does not correspond strictly to the sum (or average) of the previous five columns.

TABLE 7 continued

| | DOMINANT OWNER | | | | | TOTAL |
|--------------------|----------------|--------|--------|--------|-------|---------|
| | SO | WO | MO | OO | DN | |
| GOVSUP92 | | | | | | |
| Mean | .33 | .19 | .18 | .23 | .13 | .22 |
| Standard Deviation | .47 | .40 | .38 | .43 | .34 | .41 |
| GOVSUP93 | | | | | | |
| Mean | .46 | .32 | .28 | .37 | .16 | .32 |
| Standard Deviation | .50 | .47 | .45 | .49 | .37 | .47 |
| GOVSUP94 | | | | | | |
| Mean | .39 | .20 | .20 | .31 | .16 | .26 |
| Standard Deviation | .49 | .40 | .41 | .47 | .37 | .44 |
| GOVASS92 | | | | | | |
| Mean | 93.67 | 13.47 | 10.95 | 13.97 | .18 | 30.02 |
| Standard Deviation | 449.48 | 57.94 | 31.22 | 48.98 | .79 | 225.60 |
| GOVASS93 | | | | | | |
| Mean | 611.69 | 67.29 | 139.72 | 213.09 | 5.52 | 220.32 |
| Standard Deviation | 3150.09 | 239.02 | 519.93 | 905.69 | 28.30 | 1621.70 |
| GOVASS4 | | | | | | |
| Mean | 368.50 | 107.06 | 82.92 | 163.62 | 3.09 | 160.22 |
| Standard Deviation | 1281.96 | 700.49 | 231.05 | 613.77 | 11.71 | 784.17 |
| GASS94BE | | | | | | |
| Mean | .16 | .10 | .06 | .11 | .03 | .79 |
| Standard Deviation | .50 | .61 | .17 | .30 | .09 | 13.36 |
| GASS4BE | | | | | | |
| Mean | -.61 | -.38 | -.37 | -.58 | -.15 | .30 |
| Standard Deviation | 2.42 | 1.17 | 1.48 | 1.68 | .68 | 13.35 |

Definitions:

GOVSUP94-92 = dummy defined as 0 if there was no government support in 1994-92 respectively, 1 otherwise.

GOVASS94-92 = mln rubles of government assistance in years 1994-92 respectively.

GASS94BE = mln 1994 rubles of government support per employee received in 1994.

GASS4BE = GOVASS94/EMPLOYMENT91 - GOVASS93*IPI/EMPLOYMENT93, where IPI is Industrial Price Index.

TABLE 8.1**Depoliticization Regressions**

| INDEPENDENT VARIABLES | DEPENDENT VARIABLES | | |
|--------------------------|---------------------|-----------------|-----------------|
| | PRFORST4 | | |
| | 1 | 2 | 3 |
| WO | -7.72** (2.46) | 1.22 (1.27) | 1.24 (1.43) |
| MO | -2.34 (3.52) | 1.89 (1.76) | 2.48 (1.91) |
| OO | -6.83* (3.77) | 1.02 (1.92) | .96 (2.16) |
| DN | -6.90** (3.36) | 2.17 (2.47) | 1.99 (2.80) |
| PRFORST (t-4) | NO | .66*** (.02) | .67*** (.03) |
| REGIONS | NO | NO | YES |
| SECTORS | NO | NO | YES |
| N | 323 | 279 | 279 |
| adj R ² | .023 | .736 | .737 |

Notes:

* = significant at 10% level;

** = significant at 5% level;

***= significant at 1% level.

Definitions:

PRFORST4 = percentage of production to the state out of the total revenues in 1994;
 PRFORST(T-4) = percentage of production to the state out of the total revenues in 1990;
 ARRTOST = percentage of liabilities to the state which are overdue more than three months.

TABLE 8.2**Depoliticization Regressions: Existence of Government Support
(logits)**

| INDEPENDENT VARIABLES | DEPENDENT VARIABLE: GOVSUP94 | | |
|--|------------------------------|------------------|-------------------|
| | 1 | 2 | 3 |
| WO | -.94*** (.29) | -.84** (.38) | -1.21*** (.47) |
| MO | -.94** (.44) | -.58 (.57) | -.56 (.66) |
| OO | -.34 (.41) | -.10 (.56) | -.47 (.66) |
| DN | -1.25 (.46) | -.30 (.58) | .05 (.70) |
| GOVSUP92 | NO | .51 (.37) | .21 (.45) |
| GOVSUP93 | NO | 3.16*** (.39) | 3.64*** (.49) |
| REGIONS | NO | NO | YES |
| SECTORS | NO | NO | YES |
| CORRECT PREDICTIONS (PROPORTION) | 73.78 | 86.22 | 87.57 |
| N | 370 | 370 | 370 |

Notes:

* = significant at 10% level;

** = significant at 5% level;

***= significant at 1% level.

Definitions:

GOVSUP94-92 = dummy defined as 0 if there was no government support in 1994-92 respectively, 1 otherwise.

TABLE 8.3

Depoliticization Regressions: Magnitude of Government Assistance

| INDEPENDENT VARIABLES | DEPENDENT VARIABLE: GOVASS94 | | |
|-------------------------|------------------------------|---------------------|---------------------|
| | 1 | 2 | 3 |
| WO | -261.44** (110.18) | -150.79* (83.24) | -134.66 (91.16) |
| MO | -285.58* (158.13) | -131.82 (117.11) | -124.02 (125.15) |
| OO | -204.88 (166.33) | -64.37 (124.29) | -81.16 (134.08) |
| DN | -365.41** (151.49) | -175.82 (113.52) | -176.75 (128.14) |
| GOVASS92 | NO | .79*** (.14) | .82*** (.15) |
| GOVASS93 | NO | .20*** (.02) | .19*** (.02) |
| REGIONS | NO | NO | YES |
| SECTORS | NO | NO | YES |
| No. OF PLANTS | NO | NO | NO |
| EMPLOYMENT IN 1991 | NO | NO | NO |
| EMPLOYMENT IN 1994 | NO | NO | NO |
| ADJUSTED R ² | .013 | .36 | .37 |
| N | 353 | 343 | 343 |

Notes:

* = if significant at less than 10% level;

** = if significant at less than 5% level;

***= significant at 1% level.

Definitions:

GOVASS94-92 = mln rubles of government assistance in years 1994-92 respectively.

TABLE 9

**Responses on Importance of Management Strategies
(Rank Order)**

9.1 Responses on Importance of Production Strategy

| No | Production strategy | SO | WO | MO | OO | DN |
|-----------|--|-------------|-------------|------------|-------------|-------------|
| 1 | Change in area of activity | 6 | 4 | 7 | 4 | 5 |
| 2 | Changing production mix within | 8 | 7 | 8 | 8 | 6 |
| 3 | Change of inventory policy | 5 | 6 | 4 | 7 | 3 |
| 4 | Closing of plant/shop | 3 | 3 | 3 | 1 | 2 |
| 5 | Change in product quality | 7 | 7 | 6 | 9 | 9 |
| 6 | Disposing of assets | 1 | 1 | 2 | 2 | 1 |
| 7 | More efficient use of productive resources | 10 | 10 | 10 | 10 | 7 |
| 8 | Changing technology | 4 | 4 | 5 | 5 | 8 |
| 9 | Seeking foreign consulting adv. | 2 | 2 | 1 | 3 | 3 |
| 10 | New investments | 9 | 9 | 9 | 6 | 10 |
| | Mean | 1.94 | 1.97 | 1.9 | 2.05 | 2.06 |

9.2 Responses on Importance of Employment Strategy

| No | Employment | SO | WO | MO | OO | DN |
|-----------|--|-------------|-------------|-------------|-------------|-------------|
| 1 | Decrease in labor | 4 | 5 | 5 | 4 | 3 |
| 2 | Increase in labor | 2 | 1 | 3 | 3 | 5 |
| 3 | Cutting social benefits | 3 | 3 | 2 | 2 | 1 |
| 4 | Cutting wages | 1 | 2 | 1 | 1 | 2 |
| 5 | Increasing wages | 7 | 7 | 7 | 7 | 7 |
| 6 | Increasing wage differentials | 6 | 6 | 6 | 6 | 6 |
| 7 | Modifying or establishing an internal wage scale | 5 | 4 | 4 | 5 | 4 |
| | Mean | 1.97 | 1.95 | 2.00 | 1.97 | 1.88 |

9.3 Responses on Importance of Investment Strategy

| No | Investment strategy | SO | WO | MO | OO | DN |
|----|----------------------------------|-------------|-------------|-------------|-------------|-------------|
| 1 | Reducing new bank borrowing | 6 | 5 | 6 | 5 | 7 |
| 2 | Reschedule loans | 3/4 | 2 | 3/4 | 2 | 5 |
| 3 | Obtain new loans from banks | 2 | 4 | 3/4 | 1 | 2 |
| 4 | Obtain new loans from non banks | 1 | 1 | 1 | 3 | 3 |
| 5 | Lengthening period for payables | 5 | 6 | 7 | 7 | 1 |
| 6 | Reducing outstanding receivables | 8 | 8 | 8 | 8 | 6 |
| 7 | Change bank connections | 3/4 | 3 | 2 | 4 | 4 |
| 8 | Seeking foreign investors | 7 | 7 | 5 | 6 | 8 |
| | Mean | 2.12 | 2.15 | 2.14 | 2.21 | 2.07 |

| No | Marketing strategy | SO | WO | MO | OO | DN |
|----|--|-------------|-------------|-------------|-------------|-------------|
| 1 | Improve marketing | 7 | 6 | 7 | 7 | 6 |
| 2 | Change distribution network | 3 | 5 | 5 | 6 | 4 |
| 3 | Change suppliers | 2 | 2 | 3 | 2 | 2 |
| 4 | Seeking new domestic markets | 6 | 7 | 6 | 5 | 7 |
| 5 | Increasing export efforts | 5 | 4 | 1 | 3 | 3 |
| 6 | Increase product price relative to competitors | 1 | 1 | 2 | 1 | 1 |
| 7 | Drop product price relative to competitors | 4 | 3 | 4 | 4 | 5 |
| | Mean | 2.06 | 2.14 | 2.07 | 2.13 | 2.04 |

TABLE 10**Company Performance**

| | DOMINANT OWNER | | | | | TOTAL |
|-------------------------------------|----------------|-------|------|------|------|-------|
| | SO | WO | MO | OO | DN | |
| Sales | | | | | | |
| Mean | 157022 | 5970 | 3785 | 3071 | 682 | 7382 |
| Standard Deviation | 53763 | 41956 | 8913 | 5354 | 3086 | 36949 |
| Profit Maker Dummy | | | | | | |
| Mean | .86 | .86 | .90 | .89 | .87 | .87 |
| Standard Deviation | .34 | .35 | .30 | .32 | .34 | .34 |
| Capacity Utilization | | | | | | |
| Mean | 54 | 50 | 56 | 43 | 43 | 53 |
| Standard Deviation | 26 | 26 | 24 | 29 | 29 | 27 |
| % Sales to non-government in 1994 | | | | | | |
| Mean | 90 | 98 | 92 | 97 | 97 | 95 |
| Standard Deviation | 25 | 12 | 22 | 14 | 11 | 19 |
| % Sales Exported to non-FSU in 1994 | | | | | | |
| Mean | 3 | 5 | 2 | 8 | 9 | 0 |
| Standard Deviation | 6 | 15 | 7 | 20 | 20 | 0 |

TABLE 10 continued
Company Performance

| | DOMINANT OWNER | | | | | TOTAL |
|---------------------------------------|----------------|--------|--------|--------|--------|---------|
| | SO | WO | MO | OO | DN | |
| Percent of Capital Stock aged > 15yrs | | | | | | |
| Mean | 36 | 29 | 30 | 42 | 9 | 32 |
| Standard Dev. | 29 | 28 | 31 | 316 | 23 | 31 |
| Employment in 94 | | | | | | |
| Mean | 3016 | 1886 | 1293 | 2072 | 98 | 1904 |
| Standard Dev. | 7959 | 8196 | 1808 | 3639 | 146 | 6269 |
| Wage of workers | | | | | | |
| Mean | 135988 | 127062 | 131510 | 144357 | 173633 | 1355451 |
| Standard Dev. | 111337 | 98102 | 102536 | 118705 | 141316 | 08353 |
| Wage of managers | | | | | | |
| Mean | 162957 | 159976 | 174029 | 205718 | 226103 | 1734741 |
| Standard Dev. | 175990 | 132727 | 162253 | 174979 | 196806 | 59915 |

Notes:

- SO - enterprises with dominant state stake
- WO - enterprises with dominant workers stake
- MO - enterprises with dominant managers stake
- OO - enterprises with dominant outsiders stake
- DN - new established privately owned enterprises

TABLE 11**Sales in 1994**

| | 1 | 2 | 3 |
|-------------------------------------|---------------------|-------------------|-------------------|
| WO | -9775* (5581) | 2912 (2021) | 3277 (2206) |
| MO | -11916 (8063) | 3035 (3037) | 2136 (3230) |
| OO | -12631 (8357) | 2437 (3188) | 1642 (3481) |
| DN | -15020*** (7524) | 2605 (3002) | 2691 (3385) |
| Lagged endogenous variable (1 year) | No | 2.76*** (0.08) | 2.76*** (0.08) |
| Sectors | No | No | Yes** |
| Regions | No | No | Yes** |
| Adjusted R ² | 0.006 | 0.86 | 0.86 |
| N | 2.98 | 246 | 246 |

Notes:

- SO - enterprises with dominant state stake
 WO - enterprises with dominant workers stake
 MO - enterprises with dominant managers stake
 OO - enterprises with dominant outsiders stake
 DN - new established privately owned enterprises

TABLE 12**Percentage Sales Exported to Non-FSU**

| | 1 | 2 | 3 | 4 |
|----------------------------|-------------------|-------------------|-------------------|-----------------|
| WO | 2.24* (1.64) | -2.71** (1.47) | 2.58 (1.67) | .10 (2.19) |
| MO | .07 (2.28) | 1.27 (2.06) | .58 (2.27) | -3 (3.39) |
| OO | 6.16*** (2.52) | 3.48 (2.29) | 4.09 (2.45) | 2.77 (3.23) |
| DN | -2.55 (2.17) | .29 (1.98) | -.003 (2.34) | -4.08 (4.47) |
| Sectors | No | No | Yes | Yes |
| Regions | No | No | Yes | Yes |
| Size/1000 | No | No | No | .14 (.12) |
| Lagged endogenous variable | No | 8.89*** (1.01) | 8.29*** (1.12) | .77*** (.14) |
| Adjusted R ² | .02 | .21 | .17 | .12 |
| N | 325 | 325 | 325 | 243 |

Notes

- * denotes significance at 10% level
- *** denotes significance at 5% level
- *** denotes significance at 1% level

TABLE 13**Capacity Utilization in 1994**

| | 1 | 2 | 3 | 4 |
|----------------------------|--------------------|-------------------|-------------------|------------------|
| WO | -3.50 (3.78) | -3.97* (2.43) | -3.17 (2.73) | -4.74* (2.81) |
| MO | 1.77 (5.37) | -5.46 (3.47) | -5.68 (3.76) | -7.33* (3.74) |
| OO | -10.63* (5.87) | -3.38 (3.80) | -7.42* (4.20) | -7.68* (4.02) |
| DN | 16.00*** (5.02) | 5.87** (3.23) | 8.70** (3.76) | 7.03 (5.39) |
| Size/1000 | No | No | No | -0.14 (.17) |
| Lagged endogenous variable | No | 0.87*** (0.04) | 0.85*** (0.05) | .88*** (.05) |
| Sectors | No | No | Yes | Yes |
| Regions | No | No | Yes** | Yes |
| Adjusted R ² | 0.06 | 0.62 | 0.62 | .68 |
| N | 294 | 285 | <u>246</u> | <u>235</u> |

Notes

- * denotes significance at 10% level
- *** denotes significance at 5% level
- *** denotes significance at 1% level

TABLE 14**Proportion of Capital Stock More than 15 Years Old**

| | 1 | 2 | 3 |
|-------------------------|-------------------|-------------------|-----------------|
| WO | -6.84* (3.96) | -5.96 (5.19) | -5.82 (5.92) |
| MO | 6.17 (5.78) | 3.42 (7.41) | 5.01 (8.25) |
| OO | 6.57 (5.84) | 8.74 (7.6) | 10.04 (8.32) |
| DN | -27.0*** (5.3) | -23.6*** (7.0) | 1.24 (12.85) |
| Average of sector | No | -0.02 (0.14) | .02 (.19) |
| Size/1000 | No | No | .17 (.36) |
| Sector | No | Yes*** | Yes |
| Region | No | Yes*** | Yes |
| Adjusted R ² | 0.09 | 0.08 | .02 |
| N | 308 | 244 | 193 |

Notes

- * denotes significance at 10% level
- ** denotes significance at 5% level
- *** denotes significance at 1% level

TABLE 15**Full Time Employment**

| | 1 | 2 | 3 |
|----------------------------|-------------------|-------------------|--------------------|
| WO | -1130 (895) | -183 (277) | -161 (279) |
| MO | 1723 (1269) | 930 (391) | -176 (382) |
| OO | 944 (1352) | -428 (415) | -327 (414) |
| DN | -2918** (1206) | 153 (405) | 200 (418) |
| Lagged endogenous variable | No | 0.92*** (0.02) | -0.91*** (0.02) |
| Sector | No | No | Yes*** |
| Region | No | No | Yes |
| Adjusted R ² | 0.007 | 0.91 | 0.93 |
| N | 337 | 317 | 317 |

Notes

* denotes significance at 10% level

** denotes significance at 5% level

*** denotes significance at 1% level

TABLE 16**Average Monthly Wage of Managers**

| | 1 | 2 | 3 | 4 |
|-------------------------------------|---------------------|-------------------|-------------------|-------------------|
| WO | -2981 (22733) | -20219 (19217) | -4737 (20887) | -10530 (23967) |
| MO | 11071 (33007) | -19910 (28176) | -6645 (29000) | -19562 (32013) |
| OO | 42760 (34183) | -10793 (29363) | 19446 (31141) | 7112 (34160) |
| DN | 63146*** (31995) | 23213 (27675) | 30414 (31174) | 61325 (60562) |
| Size | No | No | No | -2.37 (1.48) |
| Lagged endogenous variable (1 year) | No | 0.94*** (0.16) | 1.63*** (0.18) | 1.60*** (.21) |
| Sector | No | No | Yes*** | Yes |
| Regions | No | No | Yes*** | Yes |
| Adjusted R ² | 0.007 | 0.31 | 0.35 | .36 |
| N | 306 | 306 | 306 | 245 |

Notes

* denotes significance at 10% level

** denotes significance at 5% level

*** denotes significance at 1% level

TABLE 17**Average Monthly Wage of Workers**

| | 1 | 2 | 3 | 4 |
|-------------------------------------|--------------------|--------------------|-------------------|-------------------|
| WO | -7418 (15319) | -14204 (14548) | -4352 (14872) | -8884 (14626) |
| MO | -2969 (22690) | -9136 (21408) | -11830 (20866) | -12636 (19778) |
| OO | 98780 (23242) | 3492 (22205) | 7872 (22343) | 8496 (21043) |
| DN | 39153** (21741) | 29694 (68208) | 26662 (22155) | 29514 (37275) |
| Size | No | No | No | 1.59* (0.92) |
| Lagged endogenous variable (1 year) | No | 0.792*** (0.12) | 0.58 (0.12) | 1.64*** (0.18) |
| Sectors | No | No | Yes* | Yes |
| Regions | No | No | Yes* | Yes |
| Adjusted R ² | 0.004 | 0.13 | 0.27 | 0.43 |
| N | 310 | 310 | 310 | 248 |

Notes:

* denotes significance at 10% level

** denotes significance at 5% level

*** denotes significance at 1% level

FIGURE 1

**Comparison of the Impact of Alternative Ownership
Forms in Attaining Objectives of Transition**

| | WO | MO | OO | DN |
|--------------------------------|---------|---------|----------|--------|
| Reorientation | ++ | + | +++ | +++ |
| Long-Term Restructuring | | | | |
| unbundling | + | ++ | +++ | U |
| investment | + | ++ | +++ | U |
| internal organization | | | +++ | U |
| Short-Term Restructuring | | | | |
| non-labor cost minimization | ++ O | ++ + | ++ ++ | U U |
| labor cost minimization | | | | |
| Evolution | ++ | + | +++ | +++ |

All entries are relative to the status quo; state ownership

Notes:

- + denotes better
- ++ denotes much better
- +++ denotes comparable to Western firms
- U denotes not a relevant comparison
- O denotes the same as the status quo

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