Enterprise Performance and Corporate Governance in Ukraine

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Data from a random survey of 150 Ukrainian enterprises in 1997 are used to test hypotheses on the effects of privatization on enterprise performance and restructuring, the latter being measured qualitatively. We also explore whether particular types of ownership, i.e., insider, outsider, manager, worker, have yielded differentiated enterprise performance, especially given the weak legal and institutional setting. We find no evidence that private ownership, or any particular dominant private owner, is associated with improved economic performance at the enterprise level. However, private ownership is related to several of the qualitative restructuring indices, though it is insider rather than outsider ownership that leads to greater restructuring activity, notably with respect to products and inputs. J. Comp. Econom., September 1999, 27(3), pp. 442–458. London Business School, Sussex Place, Regent’s Park, London NW1 4SA, United Kingdom. © 1999 Academic Press

Key Words: privatization; corporate governance; Ukraine; former Soviet Union.


1. INTRODUCTION

In this paper, we use data from a survey of 150 Ukrainian enterprises in 1997 to investigate the effects of privatization on enterprise behavior and performance

1 Some of the conceptual framework in the paper was developed in collaboration with John Earle. The authors also thank Larissa Leshchenko for her advice and effort in data collection and interpretation, and Manuela Angelucci for research assistance. Comments from participants in the LBS Conference on Corporate Governance in the FSU, June 1998, Simon Commander, Klaus Mayer, Mario Nuti, Mike Wright, and two anonymous referees are also gratefully acknowledged, though any errors or omissions remain the responsibility of the authors.

2 The data collection was funded by the U.K. Overseas Development Administration (ODA). The Administration can accept no responsibility for any information provided or views expressed.
in one of the less advanced transition economies, six years into the transition process. Private ownership is regarded as a key determinant of enterprise performance in transition economies (Blanchard, 1997). As reported in the overview, Ukraine has lagged in the reform stakes, with a slow pace of privatization until recently (Leshchenko and Ravenko, 1999). Our survey reveals that performance at the enterprise level has also not been improving; average output, employment, and productivity in Ukrainian firms have fallen every year since 1990 and profitability has been uniformly low, if not negative. Moreover, restructuring has been very modest, although rather more differentiated across enterprises. For example, there has been little increased trade with the West; on average only 2% of enterprise sales in 1996 went to OECD countries, up from 0.5% in 1991. Investment has also been low, so capital stock is largely obsolete.

Our purpose in this paper is to test hypotheses about the relationship between enterprise performance and ownership in Ukraine, whether, in the weak market environment created by the half-hearted reform process in Ukraine, privatization has led firms to restructure or to improve performance. We further explore whether particular ownership forms, i.e., insider, manager, worker, outsider, have yielded differentiated enterprise performance (Earle and Estrin, 1997; Frydman et al., 1997). One possible explanation for the ambiguous findings to date concerning the enterprise ownership–performance relationship (World Bank, 1996; Carlin and Landesmann, 1997) is that the dominant form of private ownership which has emerged in the region is insider ownership, especially worker ownership, although the economic models predicting an improvement in performance from privatization (Vickers and Yarrow, 1988) are predicated on the assumption of outsider ownership. Moreover, as Kornai (1994) stresses, one of the key changes required to motivate restructuring within surviving state-owned firms is enforcing a hard budget constraint. This can be achieved via a combination of privatization and the elimination of government subsidies (Schaffer, 1998). Ukraine’s slow progress in privatization is noted in the overview, and hard budget constraints had almost certainly not been achieved in Ukraine even in privatized firms by the time of the survey (European Bank for Reconstruction and Development (EBRD), 1998; Johnson, et al., 1997). Indeed, the widespread emergence of barter in countries of the former Soviet Union can be interpreted as evidence that quasi-state agencies, such as the utilities, were finding ways to offer firms continued access to credit despite ostensibly restrictive monetary policies (Commander and Mumsen, 1998). Some 78% of firms in our survey reported accepting payment through products rather than cash and, on average, 45.5% of goods were traded in this way. This proportion was slightly higher than the 42% reported by the EBRD (1997) for Russia at the same time.

We also attempt to move beyond conventional economic measures of enterprise performance, e.g., productivity and profitability, in seeking to explore the ownership–performance relationship in Ukraine. There are several reasons for this. First, the economic situation in Ukraine in recent years has been so serious
that almost all firms have been doing very badly in terms of recorded indicators. Moreover, enterprise accounting standards are poor and weakly enforced, so data on profitability and the capital stock have limited value.\footnote{3} These problems are exacerbated by very high rates of inflation in the early years of our sample period and by the scale of the informal economy, up to 50\% of GDP according to some estimates (Johnson et al., 1997). This led us to measure restructuring directly by asking firms about their restructuring activities across a large variety of areas, from cost reduction through managerial changes to asset disposal. We link these qualitative measures of restructuring activity with normal indicators of enterprise performance and relate both to ownership, differentiated according to dominant owner.

We find no evidence that private ownership, or any particular dominant ownership, is associated with improved performance, measured by productivity or profitability. This is probably a consequence of the poor institutional environment and measurement problems. There may also be a time lag between privatization and improved economic performance. Therefore, it is significant that we find several of the qualitative restructuring indices to be associated with private ownership. This suggests that the effects of private ownership on restructuring activities are observed more quickly than the impact on profitability. However, we do not establish the predicted advantages of outsider ownership, even with respect to restructuring activities. Outsider ownership never leads to greater restructuring, but dominant ownership by insiders sometimes does so. It may be that the weaknesses in the legal structure and capital markets hinder effective corporate governance by outside owners.

The paper is organized as follows. We first outline briefly the Ukrainian economic environment. We then discuss the methodology of data collection and present some descriptive statistics. Hypotheses are outlined in the third section and empirical results in the fourth. We draw conclusions in the final section.


2.1. Background Information

Ukrainian GDP has been falling steadily since 1991, and has now declined to less than 50\% of its prereform level.\footnote{4} The downturn was at its worst in 1994, but when our survey was undertaken in mid-1997, signs of stabilization could be detected. During 1997, GDP fell 3.2\%, although by 7.5\% compared to the corresponding period in the first half of the year. In the first six months of 1998, Ukraine achieved its first, albeit minuscule, positive growth rate since indepen-
Ukraine suffered from very high inflation between 1991 and 1996, but this had been brought under control by the time of our survey; inflation was around 12% in 1997.

Not all the economic indicators were showing positive trends in July 1997, however. There had been little reorientation of trade from the former Soviet Union (FSU) to the West and no increase at all in total trade. As a fully integrated constituent of the Soviet Union, Ukraine used to send most of its exports to the other Soviet republics and relied upon the central marketing organizations in Moscow to market its goods. Following the breakup, Ukraine’s trade continued to be dependent upon the FSU; the percentage of total exports to the FSU remained constant at 57% between 1995 and 1996 while imports accounted for 65% in both years.

In 1991, Ukraine had approximately 18,000 large and medium-sized enterprises and 45,000 small enterprises. Several privatization programs have been started, and these have been a policy battleground between a left-dominated parliament and a center-pragmatist presidency. Most privatization has been carried out under the authority of presidential decrees. Up until 1994, enterprises were privatized by lease-buyout, at very low prices, to the workers’ collective (Filatotchev et al., 1992). In 1994, this method was halted and mass privatization commenced with the issue of privatization certificates, the creation of 1000 auction sites, automatic valuation procedures, and public information/advertising campaigns. Enterprise insiders lost most of their favorable treatment under the mass privatization program. However, they kept the right to buy shares in their companies before anyone else and at the nominal value of the shares using their own privatization certificates plus an additional 50% more in cash. Enterprises were valued using 1991 book value upgraded by a coefficient to account for the high levels of inflation. This resulted in the overvaluation of many enterprises, and probably slowed privatization.

In 1996, a new privatization voucher, the compensation certificate, was launched to compensate individuals whose savings in the state-owned savings banks had been wiped out by the hyperinflation of 1992–1994. Whereas minimum prices for shares had been set for privatization certificate auctions, compensation certificates could be used to bid for shares below this floor price. Thus, they allowed the privatization of overvalued enterprises.

This complex and highly politicized process has achieved some results. By 1997, the EBRD (1998) estimated the share of the private sector in Ukraine to be around 50%, up from less than 10% in 1991 and only 30% at the start of mass privatization in 1994. By the end of 1997, just over 45,000 small-scale enterprises and 11,591 large-scale enterprises had been privatized (Ukrainian–European Policy and Legal Advice Center, 1998). Small-scale privatization is now officially regarded as completed.
2.2. Data

The survey was designed to yield qualitative information about company behavior in 1997 and a panel of economic data going back to 1991. One hundred fifty industrial enterprises were visited between March and July 1997, with supplementary contacts during the autumn. The sample of industrial firms was drawn from the population of firms listed at the State Property Fund (SPF) with sample replacement. This list is the most complete in Ukraine and includes firms of all ownership types.

However, some sensitive companies from the military-industrial complex do not appear in the list, and firms in the informal economy are necessarily also missing (Johnson et al., 1997). The omission of military firms removes some of the reputedly worst performing firms in Ukraine and may provide a positive bias to the survey. The second omission may bias the survey in the other direction. The most dynamic firms in neighboring Poland and other transition economies have been small de novo firms (World Bank, 1996; Richter and Schaffer, 1996), and in Ukraine, many de novo firms operate in the informal sector.

The sample was stratified by region and by industry. Six regions in Ukraine were included, namely, Kiev, Khmel’nyts’kyy, Odessa, Dnipropetrovs’k, Ivano-Frankivs’k, L’viv, and Kharkiv. In the east, 24 firms were interviewed in Kharkiv and 31 firms in Dnipropetrovs’k. In the west, eight were visited in L’viv and 14 in Ivano-Frankivs’k oblasts. In the South, 24 were questioned in Odessa oblast. Twenty-four firms were interviewed in Khmel’nyts’kyy and 24 in the capital, Kiev. The sample covered eight industrial branches, metallurgy, chemicals, machine building, wood/paper/pulp, construction materials, textiles, food processing, and pharmaceuticals. These sectors contain the vast majority of Ukrainian manufacturing. It is hard to comment on the representativeness of a sample when the large military–industrial complex and small de novo firms are excluded, but the sample is statistically representative of the list from which it is drawn, i.e., medium-sized former state-owned firms in the industrial sector.

2.3. Descriptive Statistics

In Table 1, the survey data are used to describe the performance of the Ukrainian industrial enterprise sector from 1991 to 1996. Sales increased in
nominal terms for the average firm by 194,854% and the end-of-year consumer price index (CPI) rose over the period by 550,900%. One can only make very rough calculations of real changes because there are no sectoral deflators. Average real sales in our sample firms, deflating by the CPI, fell by more than GDP, to around 35% of the 1991 level by 1996. Employment fell by almost 40% on average over the same period. This implies that productivity, measured as sales per worker, fell during the first years of transition, to around 60% of its 1991 level. The sample also provides evidence of significant labor hoarding; enterprises report that, on average, 27.5% of their labor forces were on unpaid leave in 1996. More than half of firms report that their employment levels in that year were too high, more than a quarter of them that the overmanning was greater than 30% of the labor force. Table 1 also reveals the parlous financial condition of most firms; although the profit-to-sales ratio, measured by one minus the ratio of total operating costs to sales, was just positive on average in 1991, 1992, and 1994, firms have not been covering even their operating costs since then.

Table 1 also reveals the modest pace of restructuring in Ukraine. Employment

### Table 1

<table>
<thead>
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<tr>
<td>Investment/output ratio (%)</td>
<td>3.5</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td>(10)</td>
<td>(2)</td>
<td>(3)</td>
<td>(5)</td>
<td>(10)</td>
</tr>
<tr>
<td>Total exports in GDP (%) of which:</td>
<td>24</td>
<td>21</td>
<td>20</td>
<td>18</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>—To near abroad</td>
<td>21</td>
<td>18</td>
<td>16</td>
<td>14</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>—To former CMEA</td>
<td>2</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(7)</td>
<td>(4)</td>
<td>(3)</td>
<td>(7)</td>
<td>(7)</td>
<td>(10)</td>
</tr>
<tr>
<td>—To OECD</td>
<td>0.5</td>
<td>0.5</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
<td>(3)</td>
<td>(5)</td>
<td>(8)</td>
<td>(9)</td>
<td>(10)</td>
</tr>
<tr>
<td>—To non-OECD</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(1)</td>
<td>(1)</td>
<td>(3)</td>
<td>(4)</td>
<td>(6)</td>
</tr>
<tr>
<td>Average employment</td>
<td>1,170</td>
<td>1,087</td>
<td>1,015</td>
<td>910</td>
<td>813</td>
<td>725</td>
</tr>
<tr>
<td></td>
<td>(1,633)</td>
<td>(1,478)</td>
<td>(1,370.5)</td>
<td>(1,206.5)</td>
<td>(1,058)</td>
<td>(944.5)</td>
</tr>
<tr>
<td>“Profit”/sales(^a)</td>
<td>0.05</td>
<td>0.13</td>
<td>−0.1</td>
<td>0.15</td>
<td>−0.015</td>
<td>−0.03</td>
</tr>
<tr>
<td></td>
<td>(0.5)</td>
<td>(2.5)</td>
<td>(1)</td>
<td>(0.85)</td>
<td>(1)</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) The index used is \([1 - (\text{costs/sales})]\).

\(^7\) In this period Ukraine moved from the Ruble (1991) to the KB (1992–1995) to the Hynia. We convert at the official rate: 1 Ruble = 1 KB = 100,000 Hynia.
changes over a six-year period do not match sales or output, and there is also little evidence of the investment in new technology required for long-run restructuring (Estrin et al., 1995). The ratio of investment to output does not exceed 7% in any year after 1991, and was below 5% after 1994. As a result, the Ukrainian capital stock is found to be typically very old; almost a majority of machines in our sample firms are more than 15 years old and only 9% are less than 5 years old. Moreover, unlike in Central Europe, there has been little restructuring of exports (Carlin and Landesmann, 1997). The share of sales going to foreign markets in Ukraine fell between 1991 and 1996, although this is driven by exports to near abroad, i.e., the former Soviet Union. Sales to the OECD remain pitifully low over the period.

The simplest ownership categorization to represent the different interests and objectives within an organization is to group firms into state-owned, commercialized, and private. One can go deeper by looking at which private group owns the shares, insiders or outsiders to the firm. Classifying even more finely, insiders can be grouped into workers and managers, and outsiders into banks and other financial institutions, foreign firms, or private individuals. We implement these three groups of categories on the basis of majority shareholders, for example, majority private, majority insider-owned, and majority worker-owned. This is because the majority shareholder group is assumed to impose its objectives on the entire organization (Earle and Estrin, 1997).

Relatively little is known about the ownership structure that has emerged in Ukraine postprivatization. However, Russian surveys (Earle and Estrin, 1997; Blasi et al., 1997) establish that privatization resulted in predominantly insider-dominated ownership structures. Earle and Estrin (1997) report that, using weighted data, insiders owned 54% of shares in Russia’s privatized firms in July 1994, of which workers owned 40% and managers 14%. Outsiders owned 21%, while the state retained a 25% share. These numbers had not altered greatly by the time of the Blasi et al., (1997) survey, two years later. Comparable figures probably pertained in Ukraine until 1994 (Buck et al., 1996).

Since 1994, the distribution of discounted shares to insiders has been limited and more outsider ownership encouraged (Leshchenko and Ravenko, 1999). In Table 2, the allocation of shares by ownership type in Ukraine in our sample is reported. Insiders, on average, own approximately 51% of shares in all privatized firms, with managers holding 8% and workers 43%. Outsiders hold 38% and the state’s residual share is 11%. This suggests some modest success for the recent

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8 Commander (1998) reports that in Central European economies such as Poland, Hungary, and the Czech Republic, the long-run elasticity of employment with respect to sales rises toward unity as transition becomes established.

9 Of our sample of 150 firms, 5% are nonincorporated state-owned firms, 3% are commercialized or leasehold state-owned firms, and the rest are partially or entirely privatized or cooperatives. Thus 81% of firms are joint stock companies. The sample is focused mainly on privatized firms (91%); there is only one entirely new firm and there are no spinoff enterprises.
Ukrainian privatization process in that, although remaining the predominant ownership group, the insider stake is on average slightly less than in Russia. However, workers hold a higher proportion of insider shareholdings in Ukraine. The state has retained ownership of the largest firms and insiders the smallest ones, so the share of insiders when firms are weighted by employment is 42%, while that of the state is 21%.\(^{10}\) This suggests some selection effects in the privatization process, perhaps related to financing constraints on potential purchasers (Earle and Estrin, 1997). Because the sample is not a panel, we are unable to explore selection effects in our empirical work.

### 3. HYPOTHESES ON ENTERPRISE PERFORMANCE

Our objective is to test hypotheses on the relationship between private ownership and enterprise performance. A large literature argues that private ownership will yield performance superior to that of state ownership, because of better managerial incentives in private firms and monitoring problems in state ones (Vickers and Yarrow, 1988). State-owned firms also have broader objectives than private ones, which may make managerial targets harder to identify and make it harder to provide focused incentives. Privatization has been established empiri-

\(^{10}\) There is a considerable variation of ownership according to the size of the firms. The shareholding of workers exceeds 50% on average in all firms employing fewer than 500 workers, and the managerial stake exceeds 25% on average in firms employing fewer than 100 workers. However, the average government holding in firms of more than 3000 employees exceeds 30%, and the state is the largest shareholder in firms of this category. The state holds no shares in firms employing fewer than 50 workers, and its stake is also very small in the size class 100–200 workers.
cally as an important factor enhancing company performance in the West (Boardman and Vining, 1989; Megginson et al., 1994), and the evidence for transition economies is also mounting (Frydman et al., 1997).

Our hypothesis from the literature is therefore that, for each firm $i$,

$$P_i = f(E_i, \text{Own}_i),$$

where $P_i$ denotes an indicator of performance, $E_i$ denotes a vector of factors exogenous to the firm influencing performance, and Own$_i$ denotes the ownership form for the enterprise. Depending on the variable used to proxy $P_i$, for example, price–cost margin, total factor productivity, labor productivity, or profitability, $E_i$ can include elements such as product and input prices, market structure, or financial constraints.\(^{11}\)

We can reformulate the hypothesis for the Ukrainian context in terms of performance indicators and the ownership form. We distinguish between conventional measures of performance and restructuring, which is the variable stressed in the transition literature as the key to economic growth and progress (Estrin et al., 1995; World Bank, 1996). Restructuring is a dynamic phenomenon, and Earle and Estrin (1996) argue that restructuring, because it entails a change in behavior across a range of decisions, has to be understood as a multifaceted activity. The reforms which transformed the system from planning to market altered the equilibrium configurations of inputs and outputs in firms, tightened constraints, particularly budget constraints, and exposed managerial systems as being inadequate to the new environment. Perhaps most significantly, organizational strategies had to be altered in the direction of profit maximization, so that the new market signals did motivate firms to change their allocation decisions (Kornai, 1994). The bundle of activities to which we refer as restructuring is therefore very broad, partially qualitative and partially quantitative, and hard to measure. Restructuring can be categorized into five broad areas of enterprise and management activity, namely product restructuring, input restructuring, management and labor restructuring which includes changes in corporate governance, asset disposal, and financial restructuring. The Ukrainian survey instrument contained 27 questions about restructuring, each using a qualitative response scaled from 1, i.e., no change at all, to 5, i.e., everything has changed. To allow for the diversity of restructuring, we group the 27 questions under the five headings above and use unweighted means in each of the five groups to calculate “restructuring indices.” Examples of each type of activity are\(^{12}\):

Product restructuring, e.g., adjustment to quality, product mix, structure of sales by region, country, and outlet.

\(^{11}\) For example, in work on transition, Earle et al. (1996) use employment, sales, and profits as indicators of performance, Earle and Estrin (1997) use labor productivity and control for market structure, and Alfandori and Schaffer (1996) control for financial constraints.

\(^{12}\) The full questionnaire and the 27 questions are available from the authors.
Input restructuring, e.g., reducing waste in material inputs, energy, changing suppliers.

Management and labor restructuring, e.g., changing management structure, new board of directors, new top managers, effective system of corporate governance.

Asset disposal, e.g., sales of fixed or social assets.

Financial restructuring, e.g., restructuring loans, lengthening period for payables, reducing receivables outstanding.

In the early years of transition, the extent of restructuring activity may be as useful as conventional measures of enterprise performance in indicating the progress of the enterprise sector towards a market economy. Moreover, it is in the areas of enterprise objectives, corporate governance, orientation to the domestic and the international market, and the social role of the enterprise that ownership changes might be expected to impact first. Restructuring may be a particularly important indicator of corporate performance in the Ukrainian context because of the measurement problems for more conventional variables. Profitability is very badly measured because of poor accounting standards and widespread tax evasion (Ukrainian–European Policy and Legal Advice Centre, 1997) and difficulties also stem from the fact that fixed assets are not measured properly in company accounts, due partially to high inflation.

These arguments lead us to extend hypothesis (1) and propose the structure

\[ P_i = f(R_i) = f(E_i, \text{Own}_i), \]

where \( R_i \) denotes the vector of restructuring indices. The previous discussion suggests that restructuring in each dimension will be greater in private than in state-owned enterprises. We further hypothesize that greater restructuring activity will lead to enhanced performance; Eq. (2) argues that the primary channel through which ownership affects performance is restructuring. This is consistent with the theoretical literature that views privatization as affecting enterprise performance primarily through managerial incentives and the independent monitoring of managerial behavior through capital markets.

Equation (1) could now be interpreted as presenting an alternative view of the performance–ownership relationship which does not rely on restructuring. Privatization could improve some enterprise performance indicators directly, for example, by providing access to new technologies and capital equipment that increase productivity and profitability without influencing the restructuring activities measured by our indices.\(^{13}\) Hence Eq. (1) provides an alternative hypothesis to Eq. (2).

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\(^{13}\) Our survey does not provide evidence on investment activity apart from information in value terms on investments which proved hard to interpret. Hence we have been unable to explore in a satisfactory way the issues addressed in Roland and Verdier (1992) or in Konings and Walsh (1998).
The timing of the relationship between restructuring and performance also merits attention. If the restructuring activities are defined correctly, it is axiomatic that we would predict a strong positive association in the long run. However, in the short run, the relationship might be weak or even negative. For example, strategies of product restructuring, from selling domestically or within the FSU to selling to Western markets, might not immediately affect profits. Indeed, in the short term, restructuring and profitability might be inversely related because enterprises might need to increase costs to develop a market-oriented system of product control, quality, and accounting or to develop appropriate marketing, finance, and personnel divisions before the benefits to revenue began to show. Estimates of the two parts of Eq. (2) and of Eq. (1) are discussed in the following section.

The estimation framework needs to be extended to address the dominant ownership issue. In Western economies, private ownership (PRIV) is taken to mean ownership by outsiders, exercising effective corporate governance through competitive capital markets in the context of a developed system of corporate law (EBRD, 1998). In practice, these conditions do not in general apply in transition economies and particularly not in Ukraine (Frydman et al., 1996; World Bank, 1996). Moreover, ownership in transition economies is usually highly dispersed in the hands of managers and workers, with significant outside blockholders being the exception rather than the rule (Earle and Estrin, 1997). Table 2 demonstrates that this is the case in Ukraine.

Private ownership in transition economies per se may therefore not yield the performance benefits predicted by the theory and private firms in which insiders are the predominant owners may also fail to restructure. In what follows, we test for the impact of privatization at three levels, state-owned versus private firms, insider- (IO) and outsider-owned (OO), and at the finest classification, manager-owned (MO), worker-owned (WO), outsider-owned (OO), and state-owned firms (SO). The small number of remaining firms without a dominant owner are divided into those in which insiders, i.e., workers plus managers, have a dominant stake (INO), and firms with no clear owners (NCO). The equivalent category for the middle level of classification, insider versus outsider versus state, is denoted “no owner” (NO). Finally, there are a few Ukrainian firms that have been privatized but in which the state retains a dominant shareholding. We refer to these as commercialized firms (COM).

For the second part of Eq. (2), we specify 15 estimating equations, 3 for each of the five restructuring indices $j = 1, \ldots, 5$,

$$R_{ij} = a_0 + a_1 \text{Priv}_i + a_2 E_i + e_i,$$  
(3.1)

$$R_{ij} = b_0 + b_{11} \text{IO}_i + b_{12} \text{OO}_i + b_{13} \text{NO}_i + b_{14} \text{COM}_i + b_2 E_i + e_i,$$  
(3.2)

$$R_{ij} = c_0 + c_{11} \text{MO}_i + c_{12} \text{WO}_i + c_{13} \text{OO}_i + c_{14} \text{INO}_i + c_{15} \text{NCO}_i + c_{16} \text{COM}_i + c_2 E_i + e_i,$$  
(3.3)
where $e_i$ denotes the error term. The omitted ownership category contains firms that have not been privatized.

Our discussion suggests that privatization will always lead to restructuring, but that the improvement will be more marked in outsider-owned than in insider-owned firms. Privatization to insiders may or may not yield improvement relative to state ownership (Earle and Estrin, 1996). This implies that the coefficient on private ownership ($a_1$) will be positive, as will be the $b$ and $c$ coefficients in Eq. (3.2) and (3.3). More restructuring in outsider-owned firms leads to the prediction that $b_{12}$ and $c_{13}$ will be significantly larger than the other $b$ and $c$ coefficients, respectively.

Equation (2) suggests that we should also investigate whether ownership and enterprise performance are related directly. We can derive three equations analogous to (3.1)–(3.3) relating enterprise performance to each of the three levels of ownership. If ownership impacts enterprise behavior in the short run through restructuring rather than performance, then the coefficient on ownership in the equations would be insignificant.

Finally, the first part of Eq. (2) can be tested by estimating

$$P_{ij} = h_0 + h_iR_{ij} + e_{ij}. \quad (4)$$

We would expect performance and restructuring to be positively related, i.e., $h_{ij} > 0$ for all $j$. However, whether because of measurement error or because the period in question is too short, some or all $h_{ij}$ may equal zero, which is the null. Moreover, since product and input restructuring require fewer financial and managerial resources and are likely to encounter less internal opposition than the other restructuring activities, we might expect these to be significant determinants of performance, even if the other activities are not.

**TABLE 3**

<table>
<thead>
<tr>
<th>Restructuring index</th>
<th>Pseudo-$R^2$</th>
<th>Chi$^2$</th>
<th>Coefficient on private ownership ($a_1$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>0.0202</td>
<td>17.20</td>
<td>1.25* (0.64)</td>
</tr>
<tr>
<td>Input</td>
<td>0.0258</td>
<td>22.67**</td>
<td>1.40** (0.61)</td>
</tr>
<tr>
<td>Management/labor</td>
<td>0.0330</td>
<td>26.06**</td>
<td>-0.84 (0.65)</td>
</tr>
<tr>
<td>Asset disposal</td>
<td>0.0459</td>
<td>25.09**</td>
<td>1.26 (0.71)</td>
</tr>
<tr>
<td>Financial</td>
<td>0.016</td>
<td>13.64</td>
<td>0.70 (0.66)</td>
</tr>
</tbody>
</table>

* Significant at the 90% level.
** Significant at the 95% level.
*** Significant at the 99% level.
4. EMPIRICAL RESULTS

We first explore the relationship between restructuring and the dominant ownership form. We go on to consider the impact of ownership on two measures of enterprise performance, namely, operating profitability (1-cost/sales ratios) and labor productivity (sales per worker), and explore the relationship between labor productivity and the five indices of restructuring. We proxy for $E_i$ with sectoral and regional dummy variables.

On average, the extent of restructuring in Ukrainian enterprises is very low. For the 27 questions on a one-to-five scale, the highest average score is 3.78 for change in inventory policy and the lowest is 1.18 for change in new loans. The average score is less than 2.0, representing a small amount of change in 12 areas of the 27, and less than 3 representing moderate change in 23 of the 27.

We report in Tables 3, 4, and 5 results from estimating Eqs. (3.1)–(3.3). The omitted ownership category is nonprivatized firms. The equations were estimated using ordered logit methods because the dependent variable is an index ranging from 1 to 5. Our equations provide a significant explanation of input, management and labor restructuring, and asset disposal, although the proportion of the variance explained is always small. We are never able to offer a significant explanation of financial restructuring, which in Ukraine appears to be independent of ownership as well as of sectoral and regional factors. Also, restructuring

<table>
<thead>
<tr>
<th>Coefficient on</th>
<th>Product</th>
<th>Input</th>
<th>Management/ labor</th>
<th>Asset disposal</th>
<th>Financial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insider owned ($b_{11}$)</td>
<td>1.36**</td>
<td>1.66***</td>
<td>-0.88</td>
<td>1.32**</td>
<td>0.69</td>
</tr>
<tr>
<td>Outsider owned ($b_{12}$)</td>
<td>1.03</td>
<td>1.08</td>
<td>-0.69</td>
<td>1.07</td>
<td>0.54</td>
</tr>
<tr>
<td>No clear owner ($b_{13}$)</td>
<td>0.87</td>
<td>1.66**</td>
<td>-0.41</td>
<td>1.44*</td>
<td>1.03</td>
</tr>
<tr>
<td>Commercialized ($b_{14}$)</td>
<td>1.87**</td>
<td>1.25</td>
<td>-1239</td>
<td>1.50*</td>
<td>1.15</td>
</tr>
<tr>
<td>Sector dummies</td>
<td>Yes</td>
<td>Yes*</td>
<td>Yes**</td>
<td>Yes**</td>
<td>Yes</td>
</tr>
<tr>
<td>Regional dummies</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Chi²</td>
<td>20.04</td>
<td>25.53**</td>
<td>28.29**</td>
<td>25.98**</td>
<td>15.03</td>
</tr>
<tr>
<td>Pseudo-$R^2$</td>
<td>0.0236</td>
<td>0.0290</td>
<td>0.0359</td>
<td>0.0475</td>
<td>0.0177</td>
</tr>
</tbody>
</table>

Note. Figures in parentheses are standard errors. Coefficients estimated from Eq. (3.2) using ordered logit methods.
* Significant at the 90% level.
** Significant at the 95% level.
*** Significant at the 99% level.
of management and labor is always found to be independent of ownership
categories. It is striking that, as predicted, the equations perform better as the
ownership categorization gets finer. For example, the $\chi^2$ in the management/labor
restructuring equation rises from 26.06 in Table 3 to 28.29 in Table 4 and 30.03
in Table 5, with the pseudo-$R^2$ increasing accordingly. This supports the view
that, in transition economies, it is important not merely to specify whether firms
are private or state-owned but to classify carefully the dominant owner. Sectoral
factors are typically significant in explaining variation in restructuring. The
sectoral dummies are probably proxying product market competitiveness and/or
financial constraints, although we do not have the information to unpack these
matters further. However, despite the deep regional diversity in Ukraine, regional
factors do not significantly explain differences in the extent of enterprise restruc-
turing.

The equations for input, management and labor restructuring, and asset dis-
posal in Tables 3 and 4, and for these and product restructuring in Table 5, are
significant at the 90% or above level. In these equations we isolate some
significant positive effects on restructuring from nonstate ownership. Thus the
coefficient for private ownership is positive and significant in the input restruc-

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Product</th>
<th>Input</th>
<th>Management/ labor</th>
<th>Asset disposal</th>
<th>Financial</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker owned ($c_{12}$)</td>
<td>1.51**</td>
<td>1.64**</td>
<td>0.73</td>
<td>1.39</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>(0.69)</td>
<td>(0.66)</td>
<td>(0.70)</td>
<td>(0.75)</td>
<td>(0.70)</td>
</tr>
<tr>
<td>Manager owned ($c_{11}$)</td>
<td>2.26</td>
<td>4.87***</td>
<td>−0.49</td>
<td>1.86</td>
<td>−1.98</td>
</tr>
<tr>
<td></td>
<td>(1.74)</td>
<td>(1.79)</td>
<td>(1.79)</td>
<td>(1.85)</td>
<td>(1.90)</td>
</tr>
<tr>
<td>Outsider owned ($c_{13}$)</td>
<td>1.03</td>
<td>1.01</td>
<td>−0.68</td>
<td>1.04</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>(0.69)</td>
<td>(0.66)</td>
<td>(0.70)</td>
<td>(0.75)</td>
<td>(0.71)</td>
</tr>
<tr>
<td>“Insider dominated” ($c_{14}$)</td>
<td>0.03</td>
<td>1.15</td>
<td>−1.99</td>
<td>0.65</td>
<td>−0.23</td>
</tr>
<tr>
<td></td>
<td>(1.09)</td>
<td>(1.04)</td>
<td>(1.11)</td>
<td>(1.09)</td>
<td>(1.07)</td>
</tr>
<tr>
<td>No clear owner ($c_{15}$)</td>
<td>0.83</td>
<td>1.56**</td>
<td>−0.44</td>
<td>1.41*</td>
<td>1.14</td>
</tr>
<tr>
<td></td>
<td>(0.81)</td>
<td>(0.78)</td>
<td>(0.78)</td>
<td>(0.85)</td>
<td>(0.82)</td>
</tr>
<tr>
<td>Commercialized ($c_{16}$)</td>
<td>1.85**</td>
<td>1.23</td>
<td>−1.41</td>
<td>1.47</td>
<td>1.15</td>
</tr>
<tr>
<td></td>
<td>(0.85)</td>
<td>(0.80)</td>
<td>(0.84)</td>
<td>(0.90)</td>
<td>(0.91)</td>
</tr>
<tr>
<td>Sector dummies</td>
<td>Yes*</td>
<td>Yes**</td>
<td>Yes***</td>
<td>Yes**</td>
<td>Yes*</td>
</tr>
<tr>
<td>Regional dummies</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Chi$^2$</td>
<td>22.94**</td>
<td>28.90*</td>
<td>30.03**</td>
<td>26.71**</td>
<td>18.72</td>
</tr>
<tr>
<td>Pseudo-$R^2$</td>
<td>0.0270</td>
<td>0.0329</td>
<td>0.0381</td>
<td>0.4890</td>
<td>0.0220</td>
</tr>
</tbody>
</table>

* Significant at the 90% level.
** Significant at the 95% level.
*** Significant at the 99% level.
turing equation, for insider ownership in the product, input, and asset disposal equation, and for worker ownership in the product and input equations. We also isolate some significant positive effects from no clear private ownership and commercialization in these areas of restructuring.

Contrary to expectations from theory, however, we are not able to distinguish any more marked influence from outside ownership; quite the reverse. The equations refute the view that outsider ownership will yield greater restructuring than insider or commercialized ownership: indeed, in our equations, outsider ownership does not generate more restructuring activity than state ownership. The improved explanation as we disaggregate ownership categories more finely comes from stronger effects from insider ownership and commercialization.

Our attempts to explore the direct relationship between enterprise performance and ownership, and that between performance and restructuring, using ordinary least squares, were less satisfactory. The profitability equations were very poorly determined, probably reflecting measurement error. The labor productivity equations were slightly better fitting, but the $R^2$ never exceeded 0.06 and the equations were not statistically significant at the 95% level. The coefficients on the ownership variables were never statistically significant at even the 90% level in any of the equations. The equations are not reported because they are too weak to permit sensible hypotheses testing. The estimates of Eq. (4) were also poor, though the equation itself was significant, as were some of the regional dummies.

However, there was no significant association between performance and any indicator of restructuring. In the early years of transition, Ukrainian companies’ multifaceted activities to restructure were not directly associated with improvements in conventional measures of performance such as productivity.

5. CONCLUSIONS

We have analyzed the impact of privatization on restructuring and enterprise performance in Ukraine, using a large new company data base. Privatization is not found to be related to conventional measures of enterprise performance such as profitability and productivity. This is not a consequence of a highly aggregated specification of private ownership; the results hold even if we identify ownership form in a finer way. These findings are similar to those for Russia by Earle et al. (1996).

However, we do identify a positive significant relationship between restructuring, measured qualitatively, and ownership, and as predicted the relationship becomes stronger as the ownership classes become more narrowly defined. However, the results also refute theoretical expectations; outsiders do not perform better as owners than does the state. Restructuring improvements come from insider ownership and commercialization. This suggests that deficiencies of insiders as owners may have been overstated for the Ukrainian environment, especially when one focuses on product and input rather than financial restruc-
turing. Outsiders may not be able to impose effective corporate governance on Ukrainian firms, partly because of entrenched management and weak capital markets and partly because the dispersion of outside ownership prevents outsiders from influencing enterprise performance.

REFERENCES


Frydman, Roman, Gray, Cheryl, Hessel, Marek, and Rapaczynski, Andrzej, “Private Ownership and


