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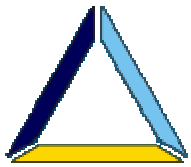

Working Paper No. 21

Iryna Akimova and Gerhard Schwödiauer

Ownership Structure, Corporate Governance and Enterprise Performance: Empirical Results for Ukraine

July 2003

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1 Abstract

The paper examines empirically the effect of ownership structure on corporate governance and performance of privatised enterprises in transition. The data are taken from a survey conducted in 2001 on 202 medium-sized and large firms in Ukraine for the period 1998 – 2000. The ownership structure is measured by the percentage of shares held by each type of owner (state, managers, workers, Ukrainian concentrated outsiders, foreign concentrated owners, stake-holding shareholders), performance is measured by sales per employee. Regression analysis is used to test the hypothesis that concentrated outside ownership influences performance positively and to detect non-linear effects of ownership variables on performance.

In contrast with important previous studies on enterprise restructuring in Ukraine (e. g., Estrin and Rosevear, European Economic Rev. 43, 1999) we find significant ownership effects on performance. Insider ownership (being a special case of stakeholding ownership) is found to have a significantly non-linear effect on performance – positive within a lower range, but negative from a threshold close to majority ownership onwards. Ukrainian outside owners in general do not have a significant effect on performance, stakeholding ownership by customers, however, affect sales prices and performance negatively. The most robust results are obtained for the effects of concentrated foreign ownership, both for levels of the respective variables in each year and for changes from one year to the other. The impact of foreign ownership on performance is significantly non-linear: Its effect is positive only up to a level that falls short of majority ownership. We conclude that this non-linearity is due to an institutional environment still adverse to foreign direct investment.

2 Introduction

In the earlier studies on the factors exerting a positive effect on enterprise restructuring in transition economies ownership emerged, besides competition and hard budget constraints, as a decisive determinant. The focus in these studies was mainly directed at the dichotomisation into state versus private ownership. Privatisation was generally found to have had a beneficial effect on the restructuring measures of former SOEs and their performance [see, e.g., the surveys by Megginson and Netter (2001), and

Djankov and Murrell (2002)]. Another question is whether and how the ownership structure affects the performance of enterprises in transition. Different types of owners, e. g. insiders versus outsiders, or concentrated versus dispersed owners, may differ in their impact on enterprise performance in transition since the ownership structures created in the privatisation process have not yet adjusted themselves in an equilibrating way according to the corporate governance requirements for value maximising management of the enterprises. Ownership structure matters in so far as it contributes to the solution of corporate governance problems.

In this paper, we report on the findings about the effect of ownership structure on performance from a survey of 202 medium-sized and large industrial firms from four regions in Ukraine. In the two best-known studies on enterprise performance, corporate governance and ownership in Ukraine by Estrin and Rosevear (1999a, b) no positive performance effects from outsider (including foreign) ownership were detected. Rather, restructuring improvements were related to insider ownership, while the apparent failure of outsider ownership seemed hard to explain. In our study, we draw on the view emphasized by Nuti (1997) that corporate governance is not just confined to the principals-agent problem of monitoring and controlling the management in order to ensure value maximisation in the interest of shareholders, but also involves the solution of a principals-principals problem of conflict of interest between shareholding stakeholders in the firm and pure shareholders. This perspective on the corporate-governance problem implies the hypothesis of a non-monotonic relationship between performance and the size of shareholding by stakeholders. Our aim is to test this hypothesis.

In part 3 of the paper we delineate the two aspects of the corporate governance problem relevant for enterprises in transition. In part 4 we briefly describe the data. Part 5 describes and interprets the results from the regression analyses in which we find significantly positive non-montonic impacts of manager, worker and, in particular, foreign ownership on performance measured by sales per employee.

3 Ownership Structure and Performance: Theoretical Considerations

Corporate-governance problems do not arise from separation of managerial control from ownership per se, but from *multiple ownership* in a company. In case of a single non-managing owner the agency problem can be solved by monitoring mechanisms and incentive schemes that make the management pursue the owner's interests, if the costs of monitoring are outweighed by the benefits accruing to the owner who bears the costs of monitoring. In fact, in this case, the separation of ownership from management is even more likely to result in performance of the firm closer to value maximisation than in the case of owner-managed enterprises since owner-managers derive satisfaction also from non-pecuniary aspects of their engagement which they trade off against profits (Jensen and Meckling, 1976; Demsetz, 1983). This internal trade-off by utility-maximising owner-managers does not necessarily lead to any social

inefficiency, nor does the incurrence of agency costs by the single outside owner due to this voluntary separation from management.

In enterprises in which ownership (control rights and residual profit rights) is shared between several individuals with different preferences about non-pecuniary outcomes or the timing of profit payoffs, conflicts may arise if the transferability of ownership rights is restricted either by law, as with partnerships and closed corporations, or by imperfections of the stock market. Such conflicts lead to policies which are sub-optimal relative to the criterion of value maximisation on which the non-managing shareholders of a public (open) corporation, the shares of which are traded on an efficient stock exchange, would be able to agree. Therefore, in developed market economies partnerships and closed corporations are typically formed by owners with similar tastes (e. g. family businesses) or are found in fields of activity where the specific human capital provided by the owners matters most and the owners are financially well diversified (Fama and Jensen, 1985). This does not hold for a country such as Ukraine where the large formerly state-owned enterprises have been privatised only to a small extent as open joint-stock companies and where, in any case, an efficient stock market has been lacking. While in mature market economies, in which the transaction costs of attaining an adequate corporate form and ownership profile are relatively low, ownership structures are endogenous and close to equilibrium, in transition economies they are the result of political and administrative decisions and, in particular in slowly reforming countries, to a large extent exogenous with respect to the firms' performance and restructuring needs. Precisely for this reason the empirical correlation between different ownership structures and enterprise performance can be expected to be weak or inconclusive in data for highly developed economies (Demsetz and Lehn, 1985), while data from transition countries may provide evidence for the impact of ownership on performance (Djankov and Murrell, 2002).

The (closed or open) joint-stock companies that have resulted from the privatisation (or, at least, corporatisation) of medium and large enterprises are characterised both by the delegation of managerial functions to professional executives and by multiple ownership (unless, as in some cases, 100 % of the shares are still held by the government privatisation agency). They are therefore, as Nuti (1997) has pointed out, potentially affected by *two types of corporate-governance problems*:

(i) securing the control of shareholders over managerial discretion;

(ii) resolving the conflicts of interest arising from the existence of shareholding stakeholders.

The class (i) type of corporate-governance problems is the classical one which has received most of the attention in the literature. It arises from the dispersion of shareholder ownership, either in the form of dispersed outside ownership, as in publicly held companies in western countries or due to voucher privatisations in transition countries, or in the form of dispersed inside, i. e. worker, ownership as in Ukraine. Since the individual shareholder's marginal cost of monitoring the management is bigger than his marginal benefit from it, free-riding on the efforts of the other shareholders is a dominant strategy. One solution to this kind of corporate-

governance dilemma is provided by a well-functioning stock market, in the sense of a "market for corporate control" (Manne, 1965), which exposes underperforming managers to the threat of a takeover. While this so-called "Anglo-Saxon model" relies on the potential appearance of a dominant outside shareholder, the so-called "German-Japanese model" [see Nuti (1997) and the literature quoted there] counts on the actual presence of one major strategic shareholder (or at most very few blockholders, maybe banks) who would have the incentives to enforce value maximisation on the part of the management.

Since in transition countries such as Russia and Ukraine an efficient market for corporate control is still missing, most studies on ownership and performance in transition have put their expectations in the evolution and beneficial effects for restructuring of more concentrated ownership structures, in particular concentrated outside (and foreign) ownership. It may be also noted that both corporate-control models rely in addition on a workable market for top management which in the first phase of transition, in particular of the CIS countries, was also lacking (Akimova and Schwödiauer, 2001). Without such a market neither the disciplining of incumbent managers will be overly successful nor will their eventual replacement lead to significant improvement of performance.

While the corporate-governance problems of class (i) are of the *principals-agent* type, class (ii) refers to *principals-principals* problems. Not all kinds of conflicting interests between different groups of shareholders constitute a corporate-governance problem detrimental to the performance of the company. One type of conflict that we already alluded to above in connection with multiple ownership and heterogeneous preferences is due to capital-market imperfections, which are severe in slow-reforming transition economies. It may arise between large, strategic shareholders pursuing long-run value-maximising goals and small private shareholders more interested in currently paid-out dividends because of their liquidity constraints. This, for obvious reasons, we do not consider a corporate-governance problem. The situation is completely different for *shareholding stakeholders*, the case which was emphasized by Nuti (1997). A stakeholder is an economic agent who has an interest in the firm or in some of its activities that is not based on a claim to its residual stream of profits. Stakeholders may be suppliers of inputs, for example employees (managers and workers) and up-stream firms, customers, banks and other creditors, competitors, local and regional authorities, the central state, etc. The categorization of shareholders into stakeholders and non-stakeholders is broader and at the same time more relevant than the more common distinction between "inside" owners – which are a special kind of shareholding stakeholders, viz. employees, including managers, and their family members possessing shares in the enterprise – and "outside" owners, who may be stakeholders or not. Stakeholding outside owners seem to be of particular importance in transition economies in the early stages of reform. They may be up-stream and down-stream firms that had been part of a vertically integrated chain of SOEs before privatisation, banks established for the sole purpose of providing for the financial needs of the firm, or the "state" on various levels if it still happens to be one of the shareholders. Shareholding stakeholders may try to use their influence in order to impose on the enterprise a policy which is in their interest as

stakeholders but is not value-maximising and therefore disadvantageous to the other shareholders.

A shareholding stakeholder has an incentive to exploit the other shareholders through transactions which are suboptimal from the point of view of profit maximisation only if his "stake", i. e. his share of such transactions, is bigger than his share of the firm's equity, i. e. his share of the residual profit stream. If, e. g., a shareholder *i* who owns a fraction $0 < k_i \leq 1$ of the equity stock also supplies a fraction (his "stake") $0 \leq s_i \leq 1$ of the total quantity X of some of the firm's inputs the market price of which is w, then his gain as stakeholder from the company's purchasing X at a higher price $w' > w$ is

$$(w'—w)s_iX ,$$

while his loss as shareholder is

$$k_i (w'—w)X$$

If X is the total quantity sold of some of the firm's products of which a shareholding customer buys a fraction s_i and w is the price charged while a market price $w' > w$ would be obtainable, we arrive at the same expressions for gain and loss, respectively, as above. In both cases, obviously, the shareholding stakeholder's net gain is positive if and only if

$$s_i > k_i . \qquad (1)$$

Such "*less-than-balanced*" shareholders, as Nuti (1997) calls them, and not shareholding stakeholders as such, are the source of principals-principals conflicts if they gain control over the company. For a single shareholding stakeholder this would require a sufficiently big k_i (if for the sake of simplicity we assume that k_i is also the share of the voting stock). But also a homogeneous group of less-than-balanced shareholders who together have a controlling interest in the company will tend to exploit the other shareholders. The prime case is dispersed employee ownership. If X is the total input of homogeneous labor in equal quantity supplied by n workers ($s_i = 1/n$) who together possess a positive fraction $\alpha < 1$ of the firm's equity capital such that $k_i = \alpha/n$ then each of them is a less-than-balanced shareholder and will have an individual incentive to vote in favor of a wage increase. Only if 100 % of the firm is owned by the workers ($\alpha = 1$) they are balanced shareholders and do not have an incentive to overprice their labor.

As Nuti (1997) has shown the workers' incentive to favor excess employment depends on conditions similar to (1). If a shareholder *i* supplies a fraction s_i of some homogeneous input (e.g. labor) for which the firm pays a given price w then he will benefit from the firm's purchasing more than the profit-maximising quantity if and only if

$$s_i > \beta k_i , \qquad (2)$$

where $\beta = (w-m)/(w-c)$, c being the opportunity cost of supplying the extra quantity of input, and m being the average value of the marginal product of the extra input (under the simplifying assumptions that a reduction of the excess input would hit each input unit with the same probability and suppliers are risk neutral). Nuti (1997) assumes $m = c$ which yields $\beta = 1$, i. e. the equivalence of (2) and (1). If, however, $c < m$, the average wage (or unemployment benefit) obtainable for a redundant worker outside the firm being less than his marginal product inside the firm - a not altogether unrealistic assumption for some transition economies - then even in a firm 100 % owned by its workers the worker-shareholders would be less-than-balanced shareholders and employment would be suboptimally high.

In case α is small enough not to give the group of worker-shareholders control over the firm's wage or employment policy, the individual less-than-balancedness is harmless. Only if α is big enough, e. g. over 50 %, will the exploitative interests be implemented. It is important to realise that the "group action" of worker-shareholders does not require any explicit or implicit agreement of cooperation among them – no commitment problem is involved (unless voting itself is costly) since supporting a wage or employment increase is a dominant strategy for each member of the group. Thus the possibility of exploitation of other shareholders by less-than-balanced ones does not depend on ownership concentration but on the size of the fraction of voting stock held by a homogeneous group of less-than-balanced shareholders. The same considerations pertain to the owning of shares of the firm by its management playing a considerable role in transition countries like Ukraine. A small (but positive) α is likely to have a positive incentive effect on worker-shareholders as well as manager-shareholders because, if they realise that they are not strong enough to impose a distortionary redistribution of profit on the other owners they can only gain from maximising the firm's value.

Thus the *main hypothesis* about the quantitative relationship between the performance of an enterprise and the extent of worker and/or manager ownership of it is the *non-monotonicity* of this relationship: Within a low range of insider ownership an increase in the shareholdings of workers or managers can be expected to be beneficial; in a higher range, where the threshold may lie above which the respective group gains a controlling influence, performance should be negatively affected by higher shareholdings of workers or managers.

In the above exposition of intra-shareholder conflicts due to shareholding stakeholders we have focused, following Nuti (1997), on homogeneous group of less-than-balanced shareholders who can spontaneously synchronise their voting behavior without having to resort to collusive bargaining. The question arises how the analysis can be extended to the case of heterogeneous shareholding stakeholders. After all, in the real world the workforce of an enterprise is not homogeneous but consists of subgroups different due to skill, age, seniority, etc. If the share package held by the workers as a whole is distributed more or less evenly among them, a single subgroup can not expect to command a controlling interest on its own, it will have to align itself with the other subgroups is order to fully utilise the potential power of workers' ownership rights. Some efforts

will have to be invested in designing a scheme that gives each subgroup an incentive to vote for it. The same holds for shareholding stakeholders who are suppliers of produced inputs or customers of the firm. They differ, among other things, with respect to the product they sell or buy, and the volume and value of their respective sales and purchases.

Let us take the extreme case where the shareholding stakeholders are up-stream firms each of which supplies a different specific input. Then each of the shareholding suppliers, unless he owns 100 % of the firm, is a less-than-balanced shareholder in the sense of condition (1) since $s_i = 1$ by definition. The definition of a "stake" as the shareholder's fraction of the quantity of input is, however, not relevant for the case of heterogeneous suppliers, and the condition that for a group of n suppliers of different inputs $k_1 + \ldots + k_n$ be above the controlling threshold is not sufficient to make them exploit the other shareholders. In order to give each of them an incentive to collude against the other shareholders, i.e. to make them less-than-balanced shareholders in the relevant sense, the condition

$$g_i / g > k_i \qquad (3)$$

must be satisfied for all $i = 1, \ldots, n$, where g_i is the gain of shareholding supplier i and g is the sum of all gains. If y_i denotes the value of sales of supplier i to the firm at market prices and y the corresponding total value of sales of the group, then

$$y_i / y > k_i \qquad (4)$$

would be the relevant less-than-balancedness condition under which all n suppliers would benefit from a common mark-up on their opportunity costs (market prices). In case the k_i are of similar size but the sales shares rather different, the shareholding stakeholders would not be willing to agree on an increase of their selling prices above market prices by the same percentage since this would obviously violate condition (3).

The upshot is that for heterogeneous groups of shareholding stakeholders the transactions costs of arriving at an agreement to pool voting rights in order to redistribute profits to the disadvantage of other shareholders are likely to be significant and increasing in the number of coalition partners necessary to attain a controlling position. In a low range of shareholding by a group of outside stakeholders an increase in their shareholding may not increase their incentive to support value maximisation, rather they may try to collude with the management. Thus, a higher percentage of shareholding by outside stakeholders as a group need not produce the non-monotonic effect predicted for insider, especially worker, ownership. In particular, if outside owners consist both of shareholding stakeholders and pure shareholders they do not have an unambiguous common interest in enforcing a value-maximising policy of the firm, in which case the empirical effect of concentrated outside ownership on performance may be insignificant.

4 The Data

The empirical analysis is based on data from a survey conducted in 2001 on 202 medium-sized and large industrial firms in Ukraine for the period 1998-2000. **Table 1** presents some sample characteristics.

Table 1
Sample characteristics

	% of total sample
Regional distribution:	
Kyiv	31.7
Lviv	20.8
Kharkiv	39.6
Sumy	7.9
Industry distribution:	
Machine building	47.2
Light industry	15.2
Food industry	12.9
Construction materials	5.6
Wood processing	5.1
Chemical industry	3.9
Others	10.1
Size (number of employees in 2000):	
100-250	18.4
251-500	39.3
501-1000	27.0
>1000	15.3
Type of ownership:	
Corporatised state firms	17.6
Privatised enterprises	82.4

The survey focused on the development of ownership structure between 1998 and 2000. All companies in the sample are former SOEs which have been at least corporatised (i.e. turned into joint-stock companies with 100% of equity held by the state). In 2000 82,4 % were "privatised" in the sense that less than 100 % of their equity was held by the state. We distinguish between the following seven *ownership categories*:

a) the state;

b) enterprise insiders;

- managerial employees ("managers");
- non-managerial employees ("workers");

c) Ukrainian outside owners:

- Ukrainian financial organisations;
- Ukrainian non-financial organisations;
- Ukrainian private households;

d) foreign owners.

In **Table 2** some statistics on percentage of equity stock held by each type of owner in 2000 are given:

Table 2
Ownership structure of the surveyed companies in 2000: Descriptive statistics

Groups of owners	Mean (standard deviation)	Min	Max
State	11.6 (24.2)	0	100
Insiders, including	47.9 (34.8)		
Managers:	17.5 (18.9)	0	86
Workers:	30.4 (34.8)	0	95
Ukrainian outside Organisations	17.8 (25.1)	0	81
Foreigners	7.2 (18.5)	0	75
Ukrainian households	15.5 (20.4)	0	84

For 2000 the dominance of insider ownership is still the most prominent feature of the ownership structure. Compared to 1998 the average size of worker ownership declined by 5 percentage points while the shareholding of managers increased slightly (by roughly 1.5 percentage points). Reflecting the continuation of the privatisation process in Ukraine, the average shareholding of the state decreased as well (by 3.5 percentage points). Correspondingly, concentrated outside ownership increased: Ukrainian financial organisations (which in 2000 held 5 %) by 1.5 percentage points, Ukrainian non-financial organisations by 2.5 percentage points, and foreign ownership by 2.5 percentage points. Between 1998 and 2000, changes in ownership occurred in 23 % of the firms in the sample. Both the perception of interviewed managers and objective figures indicate that concentrated outside ownership was strengthened: 12 % of the firms underwent a change in the type of their majority owners, in almost two thirds of the cases insiders lost their majority position, in 55 % (out of the total 66%?) of the cases to Ukrainian organisations and foreign outsiders. The change in the percentage of shares owned by the largest shareholders sheds additional light on the development of concentrated ownership. In 1998 the average equity stake of the largest shareholder (considering management a single shareholder) was about 38 %; in 2000 it had increased to almost 44 %. The next four largest shareholders in both years possessed a bit more than 9 % of the total equity. While in 1998 for 44.4 % of the firms management was the largest shareholder, in 2000 this number had gone down to 38.8 %. The percentage of enterprises with Ukrainian financial organisations as largest shareholders decreased too (from 8.5 % to 6.2 %), while the share of those with Ukrainian non-financial outside owners holding the largest package of shares increased slightly (from 17.1 % to 17.8 %) and of those with foreign largest shareholders significantly (from 10.3 % to 15.5 %).

The survey also provides some information on shareholding stakeholders. **Tables 3** and **4** show that for some of the companies in the sample shareholding stakeholders play a considerable role.

Table 3
Shareholding stakeholders in 2000

Shareholders	N (% of the firms)
Customers	11 (10.7%)
Suppliers	9 (8.6%)
Banks	5 (4.9%)

Table 4
Shareholding stakeholders of the firm in 2000: Participation in ownership and commercial activity of the firm

	Mean	st.dev.	Min	Max	N of observations
Percentage of shares owned by customers	40.0	27.6	1	79	11
Percentage of shares owned by suppliers	29.4	23.8	5	60	9
Percentage of shares owned by banks who provide credits to the firm	22.9	18.3	5	52	5
Sales to customers-shareholders as percentage of total sales	35.9	32.4	2	99	11
Purchase from supplier-shareholders as percentage of total purchases	27.9	35.3	1	99	9
Credit from the bank-shareholder as percentage of total credits	15.0	11.0	5	15	5

5 Estimation Results

We estimate OLS regressions, explaining the firms' performance by ownership structure variables, of the following form:

$$PERF_i = a + bCON_i + cOWN_i + dOWN_i^2 + \varepsilon_i \quad (5)$$

$PERF_i$ is labour productivity (sales per employee), CON_i is a vector of control variables (for industry, employment size, number of competitors, labor productivity in previous year, share of barter in total sales of previous year). For the ownership variable OWN_i we take the percentage of shares owned by the state, managers, workers (or insiders together), Ukrainian concentrated outside owners (i. e., financial and non-financial organisations), and foreign owners. We estimate the effects of ownership on performance separately for each ownership category as well as for the combination of all the ownership types (Ukrainian private households being left out). The variable OWN_i enters equation (5) not only linearly but also

squared: If the parameters *c* and *d* differ in sign, we obtain a non-monotonic relationship between performance and ownership. **Table 5** gives estimation results for labor productivity and ownership structure in 2000.

Table 5
Performance regressions

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Industry dummies	Y	Y*	Y	Y*	Y**
Size 2000 (employment)	-0.001 (0.001)	-0.001 (0.001)	-0.001(0.001)	-0.0006(0.0009)	-0.002(0.001)*
N of competitors	-5.2 (4.0)	-1.9(2.7)	-6.0(4.3)	-2.3(3.0)	-6.2(5.2)
Labor productivity 1999	1.45(0.27)**	1.13(0.16)**	1.1(0.27)**	1.0(0.88)**	1.2(0.35)**
Barter 1999	-0.24(0.10)**	-0.06(0.07)	-0.23(0.10)**	-0.17(0.88)**	-0.24(0.10)**
State ownership	-	-	-	-	-0.33(0.43)
State own. Squared	-	-	-	-	0.003(0.005)
Manager ownership	-	-	0.95(0.55)*	-	0.35(0.63)
Manager own. Squared	-	-	-0.01(0.009)	-	0.002(0.002)
Worker ownership	0.94(0.39)**	-	-	-	0.27(0.45)
Worker own. Squared	-0.01(0.004)**	-	-	-	-0.006(0.004)
Ukrainian outsider ownership	-	-	-	-	0.33(0.47)
Ukr.outs.own.squared	-	-	-	-	-0.005(0.006)
Foreign ownership	-	1.56(0.64)**	-	-	1.71(0.72)**
Foreign own.squared	-	-0.02(0.01)**	-	-	-0.02(0.01)**
Insider ownership	-	-	-	0.50(0.28)**	-
Insider own. Squared	-	-	-	-0.004(0.002)**	-
Constant	17.6(13.3)	7.6(9.2)	25.9(13.5)*	10.6(10.5)	10.5(10.6)
Adj R sq	0.61	0.64	0.59	0.60	0.74
F	8.9**	12.0**	8.10**	10.0**	8.7**

OLS regression, dependent variable-labour productivity in 2000 (Thousand HRV sales per employee), coefficients (st.errors), ownership variables in 2000 (% of shares),
*p<0.1; **p<0.05

Equation 1 in Table 5 yields labor productivity as a linear-quadratic function of the size of shareholding by workers implying a maximum positive impact of worker ownership around a workers' package of 47 %. Below this threshold an increase of worker shareholding increases performance, a rise of worker ownership above this threshold giving workers as less-than-balanced shareholders a controlling stake in the company has a decreasing effect on performance. Equation 3 gives a similar result for manager ownership, though with a statistically non-significant quadratic term. For insider ownership as such (equation 4) the non-monotonicity is again significant. The regression with "Ukrainian concentrated outsider ownership" as the only ownership variable does not yield statistically significant results and is not reported in Table 5. If we considered the problem of corporate governance mainly under the perspective of the principals-agent relationship between outside owners interested in value maximisation and managers, this result would be difficult to interpret. It is more plausible in the light of the less-than-balanced shareholding stakeholder theory of corporate governance. If an increase in the shareholding of concentrated outsiders gives more influence to shareholding stakeholders, then the impact on performance would rather be negative. Very likely this is the case for part of the firms in the sample, which makes the variable "Ukrainian concentrated outsider ownership" insignificant. In fact, if one estimates a performance equation with the percentage of shares in customers' hands as an ownership variable besides state, insider and foreign ownership (**Table 6**), then the extent of customer shareholding exerts a significantly negative influence on labor productivity.

Table 6
Effect of customer-shareholdership

	Labor productivity 2000 (dep. variable)
Industry dummies	Y**
Size 2000	-0.0009(0.002)
Barter in sales 2000	-0.09(0.04)
Number of competitors 2000	-0.87(1.8)
Labor productivity 1999	0.99(0.10)**
State ownership 2000	-0.03(0.05)
Insiders ownership 2000	-0.002(0.04)
Foreigners ownership 2000	0.09 (0.09)
% of shares in customers' hands 2000	-0.13 (0.07)*
Constant	32.4(8.2)**
Adj R sq.	0.8756
F	29.5**

OLS regression, dependent variable-labour productivity in 2000 (Thousand HRV sales per employee), coefficients (st.errors), ownership variables in 2000 (% of shares),
*p<0.1; **p<0.05

The results for foreign ownership are particularly robust. Equation 2 in Table 5 explains labor productivity as a significantly linear-quadratic function of the size of foreign shareholding. A rise in foreign ownership has a positive impact on performance up to a threshold value of 39 %, above

which an increase in foreign shareholding begins to have a diminishing effect. If all ownership types are included in the regression (equation 5), only foreign ownership remains statistically significant with roughly the same threshold value (43 %).

We estimated the same equations for labor productivity in 1999, the respective controls, and ownership structure of 1998 (**Table 7**). We again obtain significant results for the foreign ownership variable with somewhat lower critical threshold values (32 % for foreign ownership as the only ownership variable, 26 % for foreign ownership in combination with the other ownership types).

Table 7
Regressions for performance in 1999

Industry dummies	Y**	Y**
Size 1999 (employment)	-0.0001 (0.0005)	-0.0006 (0.0005)
Number of competitors	1.05 (0.8)	0.90 (1.1)
Labour productivity 1998	0.78 (0.04)**	0.75 (0.06)**
Barter 1998	0.01 (0.005)*	0.02 (0.009)**
State ownership	-	0.05 (0.11)
State ownership squared	-	-0.0002 (0.001)
Manager ownership	-	-0.20 (0.26)
Manager ownership squared	-	0.004 (0.005)
Worker ownership	-	0.02 (0.13)
Worker ownership squared	-	0.001 (0.001)
Ukrainian outsider ownership	-	-0.11 (0.15)
Ukr. Outsider ownership squared	-	-0.11 (0.15)
Foreign ownership	1.92 (0.8)**	2.59 (0.82)**
Foreign ownership squared	-0.03 (0.01)**	-0.05 (0.01)**
Constant	-2.1 (4.5)	-5.0 (5.6)
Adj R sq	0.91	0.95
F	72.2**	53.6**

OLS regression, dependent variable: labour productivity in 1999, coefficients (st.errors); ownership variables in 1998 (% of shares), *p<0.1; **p<0.05

How can the result that foreign ownership above a level which falls significantly short of majority ownership has a diminishingly positive impact on performance be interpreted? One interpretation mightbe that foreign owners too, when they acquire a controlling stake in the company as less-than-balanced shareholders, also use their influence to siphon off profit. An alternative interpretation, which we find more plausible, is that the non-montonicity of the foreign ownership effect is due to an institutional environment still adverse to foreign majority ownership.

Table 8
Regressions for sub-groups

	Grand bribes to influence legislation	**Grand bribes to influence legislation**	**Bribes to arbitrage courts**	**Bribes to arbitrage courts**	**Petit bribes to escape regulations or taxes**	**Petit bribes to escape regulations or taxes**
	No obstacle	**Obstacle**	**No obstacle**	**Obstacle**	**No obstacle**	**Obstacle**
Labour productivity 1999	0.70 (0.18)**	2.5 (0.35)**	0.66 (0.24)**	2.3 (0.32)**	0.84 (0.19)**	2.3 (0.3)**
Number of employees 2000	0.006 (0.008)	-0.003 (0.003)	0.002 (0.02)	-0.002 (0.003)	0.0005 (0.001)	-0.003 (0.003)
Industry dummies	Y	Y*	Y	Y*	Y	Y*
Number of competitors 2000	-3.4 (4.9)	-4.4 (4.9)	-8.2 (7.3)	1.28 (4.4)	-2.9 (4,4)	-2.4 (4.3)
Barter 2000	0.02 (0.08)	-.13 (0.11)	0.01 (0.14)	-0.16 (0.09)	-0.04 (0.13)	-0.11 (0.08)
Foreign ownership 2000	-8.1 (5.4)	3.56 (0.83)**	-4.2 (15.0)	2.6 (0.77)**	0.93 (1.0)	3.3 (0.71)**
For.ownership 2000, squared	0.48 (0.28)	-0.058 (0.01)**	0.27 (0.77)	-0.04 (0.01)**	-0.01 (0.01)	-0.053 (0.01)**
Constant	24.6 (17.3)	40.7 (21.7)*	32.2 (25.7)	13.2 (16.8)	4.8 (15.4)	24.3 (16.8)
Adj R sq.	0.785	0.802	0.734	0.749	0.672	0.794
F	11.2**	11.3**	7.0**	10.7**	8.7	13.3**
N	110	58	91	80	65	89

OLS regression, dependent variable-labour productivity in 2000 (Thousand HRV sales per employee), coefficients (st.errors), ownership variables in 2000 (% of shares),
*p<0.1; **p<0.05

Table 9
Regressions for sub-groups

	Infrequent petit corruption	Frequent petite corruption	Rather predictable regulations	Unpredict-able regulations	Members of lobby group	Non-members of lobby group
Labour productivity 1999	1.2 (0.55)**	1.1 (0.29)**	1.1 (0.20)**	1.11 (0.14)**	0.66 (0.19)**	1.94 (0.28)**
Number of employees 2000	0.04 (0.01)**	-0.0004 (0.003)	-.005 (0.006)	-0.005 (0.002)*	-.0.0002 (0.003)	-0.008 (0.004)**
Industry dummies	Y	Y	Y	Y*	Y**	Y**
Number of competitors 2000	0.71 (3.3)	-1.7 (3.4)	-2.6 (4.2)	-3.3 (1.9)	-4.3 (6.0)	-1.8 (2.7)
Barter 2000	-0.09 (0.10)	-0.05 (0.04)	-0.10 (0.08)	-0.15 (0.03)**	-0.06 (0.15)	-0.14 (0.07)**
Foreign ownership 2000	28.9 (6.7)**	0.18 (0.74)	2.3 (0.90)**	-0.31 (0.48)	0.77 (4.7)	1.10 (0.56)**
For ownership 2000, squared	-0.60 (0.14)**	-0.002 (0.01)	-.03 (0.01)**	0.024 (0.01)	-0.01 (0.01)	-0.01 (0.009)
Constant	-34.4 (18.8)*	-20.0 (17.5)	23.0 (13.8)	19.8 (14.5)	15.6 (18.4)	21.3 (11.1)*
Adj R sq.	0.850	0.610	0.644	0.95	0.805	0.642
F	11.3**	6.98**	9.8**	61.2**	9.6**	9.6**
N	92	80	91	79	54	147

OLS regression, dependent variable-labour productivity in 2000 (Thousand HRV sales per employee), coefficients (st.errors), ownership variables in 2000 (% of shares),
*p<0.1; **p<0.05

In an environment in which informal networks, corrupt practices, arbitrariness of regulation and taxation, weak contract enforcement by courts etc. play a considerable role, foreign investors as providers not only of financial capital, but also of new technology, management know-how and profitable market outlets can be expected to do better in an alliance with Ukrainian partners who know how to deal with the particularities of the business environment. Similarly, the system is not going to accept/permit performance, unless a Ukrainian "Roof" is permitted to share in the reward. There is some evidence for this interpretation. In the survey, managers were asked whether and to what extent (on a four-point scale) they considered petit bribes to escape regulations, to avoid taxes or to receive government services, ineffective enforcement of commercial contracts, bribing arbitration courts, grand bribes to influence legislation etc. as significant barriers to business development. Performance equations which we estimated for the subgroups of those firms that do not perceive

these aspects of the business environment as obstacles at all show no significant impact of foreign ownership, while for the complementary subgroup foreign ownership is significant and non-monotonic (**Table 8**). The foreign ownership variable is also significant and non-monotonic for those subgroups of firms who report a low frequency of petty corruption, being no member of a lobby group and perceiving regulations as reasonably predictable, while it is not significant for the performance of other firms (**Table 9**). This means that the performance of firms which to a large extent rely on circumventing and manipulating the administrative and legal rules does not benefit from foreign ownership.

6 Summary and Conclusion

The paper examines the effect of ownership structure on the performance of privatised (or at least corporatised) Ukrainian enterprises. The data are obtained from a survey conducted in 2001 on 202 medium-sized and large industrial firms for the period 1998 to 2000. The ownership structure is measured by the percentage of shares held by each type of owner (state, managers, workers, Ukrainian concentrated outsiders, foreign owners), performance is measured by sales per employee. In contrast with previous studies on enterprise restructuring in Ukraine by Estrin and Rosevear (1999 a, b) we find significant ownership effects on performance for manager, worker and foreign ownership. The ownership effects are non-linear: increasing in a range below majority shareholding, but decreasing above a threshold close to majority ownership. For manager and worker shareholding we explain this non-monotonicity by the stakeholding interests of those owner groups. The non-linearity of foreign ownership effects, which is the most robust one, we interpret rather as being due to an institutional environment still adverse to foreign majority ownership.

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