# COMPANY PERFORMANCE IN UKRAINE: WHAT DETERMINES SUCCESS?

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- ABSTRACT –

This paper examines empirically the short run responsiveness of company performance to ownership and market structures, sector and regional specificity, and varying degrees of soft budget constraints. For a cross-sectional data set of Ukrainian firms, the paper provides evidence that post-privatization governance systems impact significantly on efficiency, notwithstanding the influence of privatization per se. The study reports improving short term performance with ownership concentration, which, for Ukraine, is particularly notable in manager-owned firms. Another finding is that market environment – reflected by market structure and softness of budget constraints – has a notable role in determining short run firm performance. Finally, the results suggest a significant influence of industry affiliation and regional location in shaping firm performance in Ukraine.

# 1. INTRODUCTION

It is remarkable how performance differs across firms within a transition economy like that of Ukraine. Advances of some firms in restructuring production facilities, optimizing organizational structures and boosting output are witnessed concurrently with suspension of operations and lay-offs at recently viable firms. Focused research on factors that calibrate firm performance in the *short term*, even in the rapidly changing transition environment, may help explain this puzzle. What determines the observed differences in productivity of different firms at any given point of time? For transition economies, what are the factors that most influence short run firm behavior and performance? Using a cross section comparison of 1170 firms distinct in ownership and market structures, at different levels of soft budget constraints, controlling for industry and regional specificity, this study provides some tentative answers to these questions for Ukraine.

The dramatic changes in ownership and market environment, which have been faced by firms in transition economies, contrast with the relatively stable conditions under which firms operate in developed markets. A growing body of recent research has benefited from an opportunity to examine the effects of wide-ranging reforms in former socially-planned economies on firm behavior and performance and relate these findings with those for mature market economies. Privatization and its impact on economic efficiency, the effectiveness of various corporate governance mechanisms, market competition, hardening budget constraints, restructuring in promoting firm productivity have generated perhaps the greatest interest and controversy in the transition debate.

This study enters the dispute to sharpen our understanding of what explains short run firm performance in a transition economy, and whether the differences in

ownership, market environment and restructuring efforts, *once these measures have been put into place,* account largely for huge variations in firm productivity patterns. Using productivity analysis, we attempt to explain discrepancies in firm performance for the Ukrainian case and relate them to the influence of ownership structures (private vs. state, concentrated vs. diluted, insider- vs. outsider-dominant) and market environment (competition, import penetration, soft budget constraints). In doing so, we control for industry and location-related specificity, which may influence firm performance at large. Focussing on a single year, 1998, and using Ukrainian cross-section data, we estimate a two-factor Cobb-Douglas production function that includes potentially important determinants of performance.

The use of cross-sectional data has the virtue of permitting us to focus exclusively on the short run. Contrary to some previous studies, we do not investigate the process of privatization, restructuring, and other reforms. This allows us to adopt simple OLS methodology to compare between firms distinct in ownership and market structures, regional and industry conditions, at different levels of soft budget constraints, and report some findings on what explains firm performance in Ukraine.

Our principal findings are fourfold. First, ownership is found to influence much the way firms perform. The study provides evidence for Ukraine that firm performance improves with ownership concentration. In other words, firms owned by a few large shareholders consistently outpace widely-held firms. Second, the role of insider management appears to be of particular importance for Ukrainian firms. We demonstrate that performance of manager-owned firms is superior to the rest in Ukraine. Third, market structure and soft budget constraints are shown to impact short run firm performance. Finally, industry affiliation and regional location are found to have significant effects on performance.

The reminder of this paper is organized as follows: Section 2 reviews the theoretical background and empirical evidence on the determinants of firm performance and on the efficiency-ownership relationship, performance and market environment (competition and state interference), and performance and management (ownership and replacement). Section 3 describes the data and comments on our methodology. In section 4 and 5, we outline the model specification for estimation and discuss our results. Section 6 concludes.

## 2. DETERMINANTS OF FIRM PERFORMANCE: THEORETICAL AND EMPIRICAL BACKGROUND

Privatization and its impact on economic efficiency have generated perhaps the largest interest and controversy in the transition debate. A series of empirical studies have developed a theme of ownership transformation across transition countries but a complete consensus vis a vis the impact of privatization has not emerged. While generally anticipated to create efficiency gains, privatization somehow distorted these expectations. Despite the mounting beneficial evidence for the countries of Central Eastern Europe (CEE), the success of privatization in terms of economic efficiency has often been difficult to pin down in Russia, Ukraine, other former Soviet republics. Not only the mere effect of privatization led to a tough debate. Another source of dispute has been the impact of ownership structures– insider or outsider-dominated, diluted or concentrated. Additional important focus was on the role of market structure and competition, hardening budget constraints, and restructuring efforts for firm efficiency. Finally, the effects of interactions of these reforms with ownership have devised another important domain of research. As the following survey indicates, there has been little in

the way of agreement about the manner in which these different variables impact on firm performance.

***Ownership and performance***

Most studies undertaken in industrial, developing and CEE countries document a positive influence of private ownership on economic efficiency (Meggison *et al* 1994, Lopez-de-Silane and La Porta 1999, Frydman *et al* 1997, Pohl *et al* 1997, Dewenter and Malatesta 1998). The mounting beneficial evidence on the privatization role accords with the standard economic theory that relates improved firm performance with better managerial incentives in the private sector (Vickers and Yarrow 1988). It is suggested that political slants in public decision-making – that tends to cure market failures, to follow electoral goals (over-employment) and to select politically-connected managers - largely contributes to lower efficiency of state-owned firms (Shapiro and Willig 1990, Shleifer and Vyshny 1994, Barberis *et al* 1996). Therefore, the advocates of privatization argue, transferring state property to private hands should bring sound efficiency gains.

Still, the consensus on the performance-ownership relation is rather flimsy. Some studies suggest that market structure and competition rather than ownership determine economic efficiency (Nellis 1991). That ownership per se does not matter while market environment is important is shown at Bartel and Harrison (1999). Neo-classic economic theorists explain this by ability of market competition to ensure that a firm ends up with an optimal ownership structure (Demsetz and Lehn 1985, Nickell 1996). Another argument in this respect is found at Kikeri *et al* (1994), Barberis *et al* (1996). They stress that, while competition is literally a force that drives economic efficiency, privatization facilitates efficiency growth by reinforcing competitive pressure. Hence, in addition to the direct role it plays by giving new incentives for

owners and managers, privatization indirectly improves firm performance through its contributions toward more intense market competition, less soft budget constraints, developing capital markets.

A strand of the privatization literature expresses different opinions on which type of ownership has the largest positive impact on firm performance. Perhaps disparities in the methodologies applied and sampling construction can explain ambiguous and even contradictory results for the studies undertaken. Some scholars have used rather limited or specialised samples (Megginson *et al* 1994, Blasi and Kruse 1995). Others approached differently almost uniform across transition countries the problem of selection bias in privatization (Perevalov *et al* 2000, Marcinein and Wijnbergen 1997, Brown and Earle 2000a, Walsh and Whelan 2000, Gupta *et al* 2000). The sequencing of state-owned firms to privatization was not instantaneous and random. Apparently, the state kept better firms, or alternatively, first to privatization came the most profitable firms. To address the selection bias problem, Frydman *et al* (1997) in their study on the Czech Republic, Hungary and Poland have used the fixed effects procedure – controls for the unobserved group-specific characteristics that remain constant over time. In the study on the Russian privatization, Earle and Estrin (1997) employed the instrumental variables technique while Brown and Earle (2000a) united two approaches in tandem. Using fixed effects and instrumental variables estimators is potentially the best approach to evaluate the impact of ownership when the selection bias problem besets the privatization analysis.

Different methodologies to study the privatization effects may also explain vast variation in the findings to date. Two major methods - broadly discussed by Frydman *et al* (1997) - are the historical and synchronistic approach. The historical method develops on a comparison of the pre- and post-privatization performance of the same

firms. The significant part of privatization studies – among others are Meggison *et al* (1994), Caves (1990), Pinto *et al* (1993), Aghion *et al* (1994), Earle and Estrin (1996) - based their analyses on this method. The most important drawback of such methodology is that it does not separate the effects of privatization from those of transition reforms. Some policies may apply adequately to privatized and state firms that could induce reforms, e.g. restructuring, at firms independently of their ownership. So, changes in firm performance with privatization cannot be attributed directly to ownership alone (Frydman *et al* 1997).

Controlling for changes in the economic environment is envisaged in the synchronistic approach. It implies the comparison of performance of state-owned and privatized firms that operate under plausibly similar conditions. This method was used to evaluate the impact of ownership change by Boardman and Vining (1989), Pohl *et al* (1997). The weak point of the synchronistic approach is that the interpretation of results becomes rather subtle once the above-mentioned selection bias problem is present. Therefore, an optimal route to evaluate the privatization effect should balance merits and demerits of every approach. For instance, in addition to the synchronic comparison of firms of various types of ownership, Frydman *et al* (1997) used historical data that controlled for both the impacts of economic environment changes and the potential selection bias. In the panel data analysis of the Russian privatization, Perevalov *et al* (2000) employed fixed and random effects models (Greene 1995) that control for firm-specific features (fixed effects) and the impact of market environment changes (random effects).

In essence, the hypothesis tested in all studies on a theme is that privatization promotes firm performance. Most studies have portrayed improvement in firm performance measured by growth of labor productivity and total factor productivity

(Pohl *et al* 1997, Anderson *et al* 1997, Earle and Estrin 1997, Dewenter and Malatesta 1998, Brown and Earle 2000a,b), higher revenues (Frydman *et al* 1997, Grosfeld *et al* 1997, Megginson *et al* 1994, La Porta and Lopes-de-Silanes 1997) and wages (La Porta and Lopes-de-Silanes 1997), employment gains (Frydman *et al* 1997). Megginson *et al* (1994), La Porta and Lopes-de-Silanes (1997) empirically document improved firm profitability but generally studies on transition economies do not provide such evidence. The dominant view is that using profitability measures is questionable. Profitability is a poor measure of firm efficiency in the short-run when restructuring efforts can impose high short-term costs. It is well-known that taxable profit is subject to wide manipulations in some transition countries, particularly Russia, Ukraine. Hence, profit can hardly be considered a good indicator of firm performance, at least at this stage of transition.

That private firms outpace state-owned ones is highlighted in nearly all transition studies – with some exceptions for Russia, Ukraine, several other countries (Konings 1997a, Commander *et al* 1996, Perevalov *et al* 2000). It is interesting to investigate the source of this disparity. What was wrong, if anything, with a privatization policy in Russia that it is often considered to be a failure? Stiglitz (1999) depicts the apparent failure of the Russian privatization to produce expected efficiency gains. Along with Boycko *et al* (1994, 1996), he relates this outcome of privatization policy in Russia to its bias towards insider (worker and manager) ownership. This bias has arisen from government attempts to gain political support during privatization. The allocation of property rights to inside control was alleged to ensure such support. In a trade-off between achieving social equity and economic efficiency objectives, few governments in early transition sacrificed social justice. So, we are observing the perceived failure of insider and mass privatization in terms of economic efficiency

(Murphy *et al* 1993, Earle and Estrin 1996, Aghion and Blanchard 1996, Commander *et al* 1996, Nellis 1999, Estrin and Rosevear 1999).

A number of studies on post-privatization performance check empirically whether the type of private ownership makes a difference. Specifically, in spirit of the classic research by Berle and Means (1932), diffusion of privatized property is predicted to impair performance results. In fact, ownership concentration, many studies reveal, improves firm performance (Morck *et al* 1988, Shleifer and Vishny 1986, Megginson *et al* 1994, Marcincin and Wijnbergen 1997, Nikitin and Weiss 1998). Not only better monitoring of managerial activities by owners is suggested to promote performance of firms with concentrated ownership. Findings for transition economies relate efficiency gains to the probability of restructuring. This happens because owners push restructuring if they are satisfied with the company's governance. Only then are they willing to supply capital to pursue new investment projects (Claessens and Djankov 1999, Pohl *et al* 1997, Barberis *et al* 1996, Earle 1999, Earle and Estrin 1996). The consensus on the beneficial role of ownership concentration is nevertheless incomplete. Some researches finds no difference in performance between diluted and concentrated firms (Demsetz and Kehn 1985, Demsetz 1983).

Another matter of lively debate is insider versus outsider ownership. The empirical studies on this issue produce ambiguous results. Some studies find no significant difference between the performance of insider- and outsider-owned firms **(**Earle *et al* 1996, Djankov and Pohl 1998). Other researchers show that insider-held firms perform better (Estrin and Rosevear 1999), whereas still others argue for the opposite (Frydman *et al* 1997, Aghion *et al* 1994, Brown and Earle 2000a). This disparity in results may be related to the time framework, in which the analysis is conducted. The effects from outsider privatization might require a longer period to

become apparent (Havrylyshin and McGettigan 1999). What also may bear on privatization results is distinguishing between employee and managerial ownership. Low effectiveness of employee-owned firms is depicted in many studies (Hansmann 1996, Frydman *et al* 1997). Workers are much less likely to initiate deep restructuring and trim employment that hardly can promote efficiency. Hence, lumping these ownership types may lead to a downward bias of findings on insider-ownership effectiveness (Frydman *et al* 1997).

An important strand in recent literature is presented by the papers that evaluate the impact of ownership structures on firm performance by modeling rather than taking them as given (Repkine and Walsh 1999, Gupta *et al* 2000, Walsh and Whelan 2000). The argument here is that inherited market conditions, biases in privatization policy can bear on the sequencing of firms to a type of private ownership. Walsh and Whelan (2000) using survey evidence for Bulgaria, Hungary, Slovakia and Slovenia show that initial demand conditions and trade orientation – focused production for the CMEA (Council for Mutual Economic Aid) or the EU markets – appear to influence the performance-ownership link. Within CMEA oriented firms, Walsh and Whelan argue, the best firms were selected to outside privatization and hence outperformed insider- and state-owned firms. Outside privatization, the authors continue, was resisted in EU oriented firms and ownership had no significant impact on performance.

Some studies have examined empirically interactions between privatization and other factors – market structure and firm management. Failure to give empirical evidence to the beneficial role of privatization prompted many researchers to think of combinatory effects that ownership change and other reforms might have in shaping firm efficiency. McMillan (1997) stressed that “neither change could be effective by itself”. Dyck in his paper (1997) and jointly with Cragg (1999) shows that managerial

replacement reinforces the positive effects of privatization. In another paper on reform complementarity, Warzynski (2000) gives evidence for Ukraine that synchronous changes in competition, privatization, and managerial behavior count for much acceleration in efficiency growth. Warzynski argues that privatization brings expected productivity gains for a firm if managerial replacement complements it. Similarly, tense competition is found to promote efficiency in privatized firms solely. Shleifer (1998) points to a stronger effect of private ownership when competition between suppliers complements it. Furthermore, Morck *et al* (1989) empirically show that competition facilitates managerial replacement, which favors firm performance. Brown and Earle (2000b) report that competition improves efficiency of a firm if its competitors are privatized. Therefore, applying in tandem some policy reforms may reinforce their own effects that would expedite efficiency growth.

***Market environment and performance***

Economic theory clearly implies that market competition enhances incentives for raising efficiency. Firstly, Aghion *et al* (1999) and Schmidt (1997) explain that a competitive market structure gives sufficient information for owners to create an effective managerial incentive system. In a more competitive environment, an increasingly likely liquidation of an insolvent firm pushes managers to exert a maximum effort. Another source of productivity accelerations emerges from the effects that competition has on innovative activity. Though there are still doubts on whether monopolies innovate less, a number of scholars find strong evidence that competition promotes innovations (Aghion *et al* 1997, Blundell *et al* 1999). Furthermore, as one may elicit from Hart (1983), a competitive environment helps to regulate most effectively owner-manager interactions.

The role of market competition – for productivity accelerations, improvements in management and corporate control, reforms in the range and quality of products – is clearly important in transition economies. On whether privatization and restructuring are sufficient to bring in sizeable efficiency gains, the views are agnostic. In this respect, competition is suggested to improve the performance of firms, markets, and economies. In the study on four transition economies, Fingleton *et al* (1996) argue that competition plays an essential role in determining firm and market performance.

Many studies confirm that competitive pressures affect firm performance. On the evidence from the UK manufacturing, Nickell (1996) relates higher growth of total factor productivity to the impact of competition. Similar evidence for Slovenia and Hungary is found at Konings (1997a). In the study on Russia, Brown and Earle (2000b) reveal beneficial effects of competition on productivity in markets, where most firms are privatized. Dutz and Hayri (1999) link higher productivity growth to intense competitive market as measured by the number of antitrust rules in the country.

However, the positive effect of competition on firm efficiency has not been uniformly pinned down. La Porta and Lopez-de-Silanes (1999), Perevalov *et al* (2000) failed to find evidence for improved cost efficiency with more intense competition. Similar results with respect to productive efficiency are suggested at Brown and Earle (2000b). Perevalov *et al* 2000 argue that these apparently inadequate findings are consistent with the inferences of Willig's model (1987). Willig develops a model to show that competition promotes efficiency once the effect of demand elasticity dominates that of demand contraction. Hence, in the contracting economy competition may not have the effect one expects (Perevalov *et al* 2000).

Another dimension of the market environment - governmental interference - has become a matter of lively debate in the literature. Discriminatory governmental policy

towards public and private sector firms is neither new nor scanty. Kornai's well-known "soft budget constraint" best describes the phenomenon of governmental assistance to some firms (1992). This policy may develop in barriers to market entry of private firms that protect state insiders from competition, direct and indirect subsidies. Easier discipline of financial markets for state-owned firms might evince as loans at lower than market interest rates, often under explicit or implicit governmental guarantees. Misalliance in the market conditions for private and public firms, its influence on firm efficiency is found at Kikeri *et al* (1994), Barberis *et al* (1996). Bartel and Harrison (1999) show empirically that state-owned firms are inefficient in consequence of the influence of the environment in which they operate, rather than due to any impact of ownership.

From a theoretical standpoint and based on the empirical evidence, the impact of market environment on firm efficiency is deemed significant, albeit perceived differently.

***Management and performance***

A growing body of recent research has emphasized the role of management in shaping firm performance. In this respect, previous studies have disentangled two aspects of the managerial influence. These are managerial ownership and managerial change.

*Managerial ownership*

A number of past papers has focused on the performance-managerial ownership relation. The increase in shareholding of managers, as shown in Holderness *et al* (1998) for the world exchange-listed companies from 13% in 1935 to 21% in 1995, raises interest in this corporate governance mechanism. Entrenchment through ownership is apparently important for managers to maximize their benefit. It is particularly important

in transition economies, of which quite many have ended up with insider privatization. Here managerial ownership – through direct shareholding or collusion with workers, including trustee direction of their stock - has become exceedingly widespread: above 50% for Russia and Ukraine (Estrin and Wright 1999).

On whether the impact of managerial ownership is different from that of outsiders, the views are discordant. It is suggested that managerial ownership may imply a negative factor for firm efficiency when incompetent managers-shareholders do not withdraw themselves from running the firm. If such executives did not have substantial voting power, they would risk to be dismissed by other owners. Some scholars argue for improvements in firm performance with increased managerial stock and attribute this outcome to more efficient resolving of the agency problem. Convergence of proprietary and managerial interests should favor performance. Using a piece-wise relation between managerial ownership and the firm, Tobin's Q, Morck *et al* (1988) confirm this hypothesis finding a positive link between large managerial ownership, i.e. above 25%, and firm performance.

The counter evidence to these findings is provided at Himmelberg *et al* (1999). Their research doubts the postulate that managerial entrenchment through ownership raises firm value. They extend the analysis of the efficiency-ownership link to examining the main factors that determine managerial ownership. The scholars conclude that managerial shareholding and firm performance are endogenously specified by exogenous changes in the firm environment. Controlling for observable and unobservable (fixed effects) firm characteristics, they failed to find empirical evidence that changes in managerial ownership affect firm performance.

*Managerial replacement*

A growing body of recent research has examined the impact of managerial change on firm performance. Many studies point to a negative relation between managerial replacement and firm performance in past (Morck *et al* 1989, Weisbach 1988, Denis *et al* 1997). Similar findings are documented at Johnson *et al* (1985) who give evidence of benefits, created by random changes in management – for the force majeur reasons, e.g. death - on the shareholding value. The explanation suggested relates this increase to market expectations of prospective upturns in firm performance and the shareholding value with new management. In line with these findings, Denis *et al* (1995) document improved firm profitability with forced management replacement. Most scholars suggest that firm restructuring follow changes in corporate control, which apparently largely complements the gains from managerial change. Nevertheless, the accord on the benefits from managerial replacement is not complete. Warner *et al* (1988) doubt the importance of managerial change and suggest that managerial turnover does not affect the return on shareholder capital.

The critical role that human capital plays in economic transformation implies particular relevance of managerial change in transition economies. Replacement of old managers is generally associated with bringing in new skills and knowledge by incoming managers. Thus, it might be particularly interesting to evaluate the role of managerial replacement in these countries. Fortunately, research in this dimension is not scarce, and the beneficial impact of changes in management is documented widely. Barberis *et al* (1996) give strong evidence for Russia that the presence of new managers raises the probability of firm restructuring. In addition, the scholars caution that there is no evidence for the positive effects of equity incentives of old managers on restructuring. Similar findings on improvement in firm performance are shown for China in Groves *et al* (1995), the Check Republic in Claessens and Djankov (1999).

## 3. DATA DESCRIPTION

In this study, the sources of the cross-section data set are threefold. The primary data come from the Center of Public Information of the State Committee on Securities and Stock Exchange that collects mandatory for submission reports on shareholders and performance of Ukrainian open joint stock companies (JSCs). The latter reflects in the distinctive feature of the sample used – the data pertain entirely to open JSCs. Although the sample does not include closed JSCs, we would argue that it is representative of the behavior that might be observed in the whole population of firms. Primarily, the share of closed JSCs is comparatively low: in 1998, by the number of employees in manufacturing, Ukrainian closed JCSs covered 9% of the entire population, ranked substantially below the leaders, open JCSs, with a share of 47.5%. In addition, the performance of Ukrainian open JSCs is unlikely to differ significantly from that of closed JSCs for two reasons. First, it is generally admitted that the influence of insiders is very strong at closed JCSs. By contrast to the western experience, in Ukraine with its insider-overwhelmed privatization, the role of insiders is also crucial at many open JSCs (Estrin and Wright 1999). Hence, it is reasonable to expect no critical disparity in performance of closed and open Ukrainian JCSs. Second, the period after forming closed and open JCSs (1-5 years) might be too short for potential differences to become apparent.

The sample does not include new private enterprises (so-called *de novo* firms) because by nature - formed in the environment of a market-oriented economy - they are likely to outperform consistently traditional firms (Earle *et al* 1996, Richter and Schaffer 1996, Konings 1997b, Brown and Earle 2000b). The data set of 1170 medium- and large-size firms from all main industries covers 20% of employment in Ukraine's manufacturing in 1998. This period has been chosen so as to avoid the huge instabilities

in firm performance associated with the adverse effects of macroeconomic shocks in the early 1990s (disorganization, trade and price liberalization, privatization), and to have allowed sufficient time to pass for the effects of reforms to become observable. Table 1 shows, by industry and ownership, the sample distribution.

In contrast to many previous studies that base their findings on small surveys and censuses records, this study uses data on a large number of variables on firm performance, ownership structure, and market environmental effects. For each of 1170 firm observations, there is a comprehensive list of all items from balance sheets, financial statements, the most disaggregated 5-digit industry (ZKGNG) and 2-digit region classification, the structures of fixed capital, shareholders with at least 5% of company shares and management, the status of privatization and market indicators. In addition to general performance indicators, the collected data allow us to monitor the capital structure of a firm (own vs. attracted, short- vs. long-term funds), the availability of external support (subsidies, tax arrears, and payables), and its variations across firms. At the same time, the data restrict our choice with respect to price information on output, and adjustment to hidden unemployment. The former relates to increasingly wide-spread overstatement of costs and, correspondingly, profit understatement[3]. A further limitation is the two-digit industry disaggregation level of import penetration variables. Another drawback of the data is lack of firm-level information on hidden unemployment or under-employment. Although highly desirable for Ukraine, it is impossible to adjust labor data for this factor, which produces less accurate estimates of firm productivity.

We enrich the database collected from the primary source with information from the State Property Fund of Ukraine. It incorporates data on state shareholding, initial

ownership from privatization and the method of privatization, and finally pre-privatization conditions of a firm. The last source of macro-level data is the State Committee of Statistics of Ukraine. Official data on two-digit industry production and employment, producer price deflators, imports/exports of goods and services and other macroeconomic indicators are obtained from the Committee. Some references are made to data from the National Bank of Ukraine (exchange rates) and the Institute of Economic Research and Policy Consulting (concentration indices).

Using cross-section data has the virtue of allowing us to focus on the short run. This means that we may safely ignore the endogeneity problems which beset many of the production function studies concerned with ownership and its impact. The likely endogeneity of privatization is evident in many countries (Perevalov *et al* 2000, Marcinein and Wijnbergen 1997, Brown and Earle 2000a, Walsh and Whelan 2000, Gupta *et al* 2000). However, this is arguably of little consequence when we consider a "snapshot" of industry at a time when a given ownership structure is in place. A similar argument holds with respect to other potential sources of endogeneity – inputs, market structure, a soft budget constraint, and insider management, not to mention labor and capital. Indeed, the longer the time span of interest, the greater the likelihood that a particular variable will become endogenous. Consider, as a simple example, the problem of output as a function of labor. In a market economy, in the medium and long runs, labor is determined by the wage level, which is in turned influence by output. But this mechanism is not very important in the short run, particularly in an economy beset by problems of disguised unemployment.

Thus, given the above argument, it is clear that great care needs to be taken in the interpretation of our results. We are concerned with the impact of ownership,

[3] Ukraine's official statistics report 2% of Ukrainian enterprises as having been loss-makers in 1990, 12%

managerial and other environmental variables on the levels of sales and output, respectively, when the levels of these explanatory variables is considered *fixed* within each firm in the sample.

## 4. EMPIRICAL MODEL

In the spirit of many previous researchers, we evaluate firm performance by production rather than cost efficiency. Driven by the main question of this study – what explains short run firm performance - we model firm productivity with standard production inputs, i.e. capital and labor, and factors expected to most influence productivity of firms in transition economy. With respect to the performance indicators, we use the value of output and annual revenues. In Ukraine, the Soviet period practice of production for its own sake (with concomitant wide-spread overstocking), rather than consumer-oriented manufacturing was rather common at least in the early years of transition. Therefore, output may sometimes give misleading inferences about firm performance. Using output and sales values synchronously may help attenuate this problem.

We estimate the two-factor production function:

$$Y = F(A, K, L)$$

where **Y** is the performance indicator being estimated, **K** and **L** are production inputs, the level of *working* capital[4] and labor respectively. **A** designates total factor productivity and is a vector of ownership, market structure, import penetration, SBC,

in 1995, 30% in 1996, 45% in 1997, 54% in 1998 and 56% in 1999 respectively.

[4] While it is more usual to use the level of fixed in such functions, our data on fixed capital are highly suspect. Fixed capital never proved significant in any of the regressions run. Using working capital implies that measured elasticities do not have their usual interpretation. On the other hand, as we are concerned with the impact of factors other than inputs, it is important to use a measure of capital which best explains output and sales.

industry and region related variables[5]. Table 2 reports descriptive statistics for all variables.

The vector of ownership variables is threefold[6]. The first distinction is made between privatized and state-owned firms. The benchmark for state ownership is the 50% stake or the controlling share held by government. Under the assumption that large shareholders, including the state, do not behave passively, this selection makes sense. A firm with mixed private-state ownership but the controlling share - hence effective control over a firm – belonging to the state can be reasonably expected to perform similar to firms with complete state ownership. *STATE* indicates the state share of firm assets.

Another distinction is associated with separating ownership from control. In other words, private firms are distinguished with respect to their ownership concentration. Here firms are divided into those that are widely held, i.e. those with a diluted ownership structure, and those with relatively few large owners, i.e. those with a concentrated ownership structure *CONCENT*. The benchmark to decide whether an owner is sufficiently large to create ownership concentration is a 25% + 1 stake (blocking share).

The final distinction is insider- versus outsider-dominant ownership. The availability of data on owners with shares above 5% restricts the analysis of insider-outsider ownership to concentrated structures only. Despite data limitations, we suggest that in Ukraine diluted insider (employees) and outsider shareholders are not different much in their influence on firm governance and performance and thus can be united into one group. Several reasons may ground this argument: lack of market knowledge and

[5] The Appendix provides precise definitions of all variables employed.
[6] Given the negligible share of foreign ownership in Ukraine (0.1% in 1998), we do not consider it separately.

experience of newly-emerged shareholders, poor protection of minority ownership rights and undeveloped stock markets. Given the instrumental role that managers play in many Ukrainian firms (for connections and inside information), we expect better performance of manager-owned firms or a positive influence of inside ownership, *INSIDE*.

In modeling firm performance in Ukraine, the study also tries to incorporate the impact of market environment – market structure, import penetration, soft budget constraints. As indicators of market structure, *MARKET*, we use the Herfindahl-Hirschman indices (HHI) calculated for four-digit industries. Additional market pressure comes from foreign producers, whose large-scale market entry generally implies more tense competition for inhabitant local firms. The share of imported goods and services in every two-digit industry measures the variable *IMPORT*.

With respect to the effect of SBC, we use a proxy of the extent of state assistance *SBC* and its interaction with state ownership *SBC-STATE*. Given the types of SBC in Ukraine's economy (Table 3 gives a summary**)** and the available data, we measure SBC as the ratio of tax arrears to tax liabilities. This should indicate whether a firm benefits from the preferential state policy: the government may discriminate among firms by permitting some of them not to pay tax arrears, that are then often restructured or writing-off completely.

In addition to the ownership and market structure factors, the model accounts for regional and industry differences among firms. The latter could be of particular relevance for Ukraine given the large disparities across various industries and regions. It is often noted that industrial affiliation alone may signal much in terms of a firm ability to boost sales, attract investment. Many facts – most FDI in the trade sector and food-processing industry, large differences in the rates of industry growth and privatization,

the 47% share of metallurgy in Ukraine's exports, regional mismatch – suggest a need to control for the industry and location influence. Industry and region dummies are supplemented by industry cross-products with capital and labor inputs. This accounts for possibly differing production and sales functions across industries and regions.

Thus, with the parameters specified above, we estimate the following equation:

$$\log Y = \sum_n a_{kn} \log K_i + \sum_n a_{ln} \log L_i + \beta_0 STATE_i + \beta_1 CONCENT_i + \beta_2 INSIDE_i + \beta_3 MARKET_i + \beta_4 IMPORT_i + \beta_5 SBC_i + \beta_6 SBC\_STATE_i + \sum_n y_n Industry + \sum_m y_m \text{Re}\, gion + u_i$$

where all variables are defined above. Table 4 presents the results of the model estimations.

## 5. RESULTS DISCUSSION

The analysis of Ukrainian firms performance in 1998, as shown in Table 4, suggests following. In contrast with the generally argued view that private firms outpace those from public sector, our estimates for Ukraine suggest an insignificant role of the level of privatization in shaping short run firm performance. We fail to find a significant positive effect of privatized property in either regression. On the contrary, in the output model specification the coefficient of state share is positive and significant at 10% level. Our explanation for this seemingly ambiguous result for a purportedly market-oriented Ukrainian economy is two-fold. First, Ukraine's institutional environment can hardly be considered as favorable for private sector development. Poor contract enforcement, insecure property rights, and particularly weak legal protection of minority shareholder rights, budget softness for selected firms and undeveloped market institutions conflict with market principles as such. If so, our finding indicates serious drawbacks in Ukrainian economic policymaking, and suggests a need for further reform. Second, the

effects of privatization might require a longer period to become apparent, and therefore might not be observed for the 1998 data used.

Another focus of the study is on the effect of separating ownership from control and the emerging disparity in performance of firms with diluted and concentrated ownership structures. In this respect, the study provides evidence for Ukraine that short run firm performance improves with ownership concentration. We demonstrate that firms owned by a few large shareholders consistently outpace widely-held firms. Whatever performance measure is used, the coefficient on the ownership concentration variable *CONCENT* is invariably positive and significant. This result is consistent with the expectations of the corporate governance theory.

Additional important finding is that in Ukraine manager-owned firms perform best. The more influential is the role of managers, here through ownership, the better is firm performance. The estimated coefficient on managerial ownership, *INSIDE,* shows its significant positive impact on firm performance in both specifications. As distinct from findings for developed economies on the highest positive influence of concentrated shareholding by outsiders, our result illustrates some distinctive features of Ukraine's economy. We suggest that this disparity in results is driven by the role of institutions - formal and informal norms – which is of paramount importance in Ukraine. Inherited from the Soviet period, the critical role of informal norms, e.g. personal connections of managers with top authorities, bureaucrats and decision-makers, as well as isolation and low transparency of the whole system, still describes Ukraine's economy. Another explanation is related to the time framework in which the analysis is conducted. As with privatization, the effects from outsider privatization might require a longer period to become apparent.

Another inference draws on the role of market environment in determining firm performance in Ukraine. In this respect, there are several indications. Firstly, market concentration *MARKET* - as measured by the HHI - is shown to influence the way firms perform in the short term. Its coefficient is positive and significant at 5% level in both specifications. This result may indicate that in less dispersed markets firms perform better because monopolies gain from their market power. In other words, competition is not yet a force to be reckoned with in driving firm efficiency in Ukraine. Import penetration to a firm market seems to have an insignificant influence on firm performance.

With respect to the effect of another variable of interest, soft budget constraints *SBC*, it is found important for firm performance, the coefficient being negative and significant. This result shows that repeated budget "overshooting" damages firm performance. Once a firm expects to receive external assistance, it is more likely to indulge into less careful expenditures and to feel protected from whatever competition there might be in the market.

Finally, we examine how performance of Ukrainian firms differs across industries and regions. We find that, albeit variably, there is a disparity in the effects of industry and regional factors on firm performance. Specifically, we show that food-processing firms perform better than average. We suggest several explanations to this result. First, food-processing firms were the pioneers in initiating reforms (privatization, restructuring) and attracting the greatest share of FDI in Ukraine: for the food-processing industry, it averaged at 25-27% during 1993-1999 (State Committee of Statistics). By their nature, food-processing firms have a quick return to capital and do not require much start-up investment. Increasing domestic and foreign competition may additionally promote efficiency growth. Another finding is the negative and significant

coefficient (at 10%), for energy sector firms in the sales regression. The slow speed of reforms in the industry may explain this result.

With respect to the regional specificity, we find that firms located in the central and eastern Ukraine and, particularly, Kiev demonstrate better performance than in the rest of the country. The explanation to these results is straightforward. It is common knowledge that firms in the capital (with the greatest solvent demand and the most developed infrastructure) have better opportunities to raise revenues and attract investment and new technologies. Export-oriented production - metallurgy and chemical manufacturing, which constitutes around 65% of the total Ukrainian export, can explain superior performance of firms located in the eastern and central regions.

## 6. CONCLUSION

In this paper we use a large cross-sectional data set of Ukrainian firms to estimate how short run firm performance in Ukraine is driven by the effects of ownership and market structures, insider management, industry and regional specificity and SBC. We describe the discrepancy in firm performance using productivity analysis and use a simple OLS regression model to illustrate this issue for Ukraine.

Our principal findings are fourfold. First, privatization does not play the role we might expect. Our estimates for Ukraine indicate that there is no significant link between firm performance and privatization for the performance measures used. As distinct from previous studies for other transition economies, we cannot report the superior performance of privatized widely-held firms compared to those in the public sector. In line with a considerable body of corporate governance theory, we reveal consistently better performance of firms owned by a few large shareholders. This pattern does not emerge entirely due to lower agency costs associated with concentrated

ownership. The problem of ownership dispersion tends to be exceedingly significant when effective mechanisms for legal protection of minority ownership rights are absent. Admittedly, this is the case for many transition economies, Ukraine in particular. Concentrated shareholding ensures the most effective governance and hence the best firm performance.

Second, we report that managers appear to play an important role in performance of Ukrainian firms. Specifically, we find that manager-owned firms perform significantly better than other firms in Ukraine. As opposed to most findings of previous research, this result is nevertheless in accord with our expectations. Since Soviet times, enterprise managers have always played an instrumental role in every aspect of their firms activities: production and procurement, product choice and distribution. Everything used to be tied to personal connections of the manager with suppliers, governmental authorities, etc. Though arguably less crucial today, governance by well-connected managers continues to influence much the way Ukrainian firms perform. When ownership and control are not separated, this positive effect becomes even stronger. Our result on the beneficial impact of managerial ownership in Ukraine confirms this remark.

Another apparent finding is that market environment – reflected by market structure and softness of a budget constraint – has a notable role in determining firm performance in Ukraine. The tentative result that firms in more concentrated markets perform better suggests a need for deeper reforms with respect to competition policy. Competitive forces, rather than gains from monopoly power, should drive efficiency growth, promote innovations, and bring performance improvements if policy makers desire a market economy. Also, the softness of budget constraints is shown to damage firm performance. This result is consistent with the evidence from other transition

economies, of which most have already initiated reforms to eliminate SBC. Hardening budget constraints –minimizing the extent of direct and indirect subsidies, barter transactions, all types of arrears, unjustified offsets, debt restructuring, various privileges to selected firms – is essential if a transition to a market economy is the goal of economic policy.

Finally, our results indicate the significant influence of industry affiliation and regional location in determining firm performance in Ukraine. This is yet further evidence of the weakness of the market in 1998 Ukraine.

The above results may be summarized as follows: Notwithstanding the apparent speed and extent of economic reforms prior to 1998, it is clear that the firms in our snapshot of the 1998 Ukraine economy behaved more as if they were still in a loosely reformed Soviet environment, than as if they were operating in a market economy.

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**APPENDIX:**

**Variables Definition**

*CONCENTi* is the sum of private stakes of which every exceeds 25% + 1 share.

*IMPORTi* is the market share of imports penetration.

*INDUSTRYi* is an industry dummy. Other manufacturing industries with an industry index 19000 serve a baseline.

*INSIDEi* is the sum of managerial stakes.

*Ki* is the natural log of the value of working capital of a firm.

*Li* is the natural log of the number of employees.

*MARKETi* is the Herfindahl-Hirschman Index (HHI) equal to the sum of squared shares of all producers in disaggregated four-digit industry, divided by 10,000.

*STATEi* is the state share in the shareholding capital of a firm.

*REGIONi* is a region dummy (northern, eastern, western, southern parts of Ukraine, the Ukrainian capital Kiev). South is the base category.

*SBCi* is the ratio of tax arrears to tax liabilities.

*SBC-STATEi* is the ratio of liquid assets to overdue payables.

*Yi* is the natural log of the value of production output (sales).

**TABLE 1. Number and Distribution of Firms by Industry and Ownership**

| Ownership / Industry | State-owned | Privatized | |
|---|---|---|---|
| | | Concentrated | Diluted |
| Energy sector | 12 | 4 | 7 |
| Metallurgy | 12 | 16 | 21 |
| Chemical and oil-chemical industry | 8 | 8 | 9 |
| Machinery and metal-working | 31 | 49 | 121 |
| Wood-processing, pulp and paper industry | 1 | 11 | 9 |
| Construction materials industry | 5 | 25 | 35 |
| Light industry | 2 | 4 | 13 |
| Food-processing industry | 22 | 43 | 122 |
| Other manufacturing industries | 8 | 8 | 24 |
| Agricultural sector | 11 | 18 | 79 |
| Transportation and communications | 21 | 20 | 95 |
| Construction | 9 | 23 | 60 |
| Trade, procurement and services | 45 | 56 | 113 |
| **Total** | ***187*** | ***285*** | ***698*** |

**TABLE 2. Descriptive Statistics**

| Variable | | Mean | Standard Deviation |
|---|---|---|---|
| Production inputs | *K*, Capital (ths. UAH) | 28,539.47 | 107,752.50 |
| | *L*abor (number) | 788.74 | 2,106.66 |
| Ownership | *STATE* share, % | 20.931 | 27.205 |
| | *CONCENT*ration share, % | 25.512 | 29.198 |
| | *INSIDE*r share, % | 5.360 | 11.738 |
| Interactions | *SBC-STATE* | 3.822 | 14.865 |
| Market environment | *MARKET* structure, (HHI) | 0.166 | 0.204 |
| | *IMPORT*, % | 0.214 | 0.251 |
| | *SBC*, % | 0.153 | 0.378 |

**TABLE 3. Summary of Direct and Indirect Subsidies**

| Direct subsidies | Tax policy | Overdue payables | Non-monetary transactions | Banking subsidies | Other |
|---|---|---|---|---|---|
| Transfers to enterprises<br><br>Subsidies on products<br><br>Subsidies on production inputs, pollution reducing technologies, etc. | Tax exemptions/preferential taxing<br><br>Free economic zones<br><br>Tax arrears<br><br>Writing-off or restructuring of tax arrears | Arrears between domestic firms (payables or trade credits)<br><br>Wage arrears<br><br>Payables/trade credits to foreign firms | Mutual offsets<br><br>Barter transactions<br><br>Bills of exchange | Credits at a lower than market interest rate<br><br>Credits under government implicit or explicit guarantees<br><br>Interest payments<br><br>Payables to banks | Regulation of foreign-trade operations (import quotas, export subsidies)<br><br>Privileged governmental contracts/orders<br><br>Price supports<br><br>Privileged renting of state land, buildings, facilities at a lower than market rate |

*Source*: Legeida N., 2001, "*Implicit Subsidies*", Institute of Economic Research and Policy Consulting

**TABLE 4. Production Function Regressions**

| Variable | Firm Performance: OLS results | |
|---|---|---|
| | **Sales** | **Output** |
| Log of production capital, *LogK* | 0.339 (2.697) | 0.287 (2.640) |
| Log of labor force, *LogL* | 0.823 (5.805) | 0.870 (6.855) |
| State share, *STATE* | 0.001 (0.944) | 0.003 (1.897) |
| Ownership concentration, *CONCENT* | 0.006 (4.630) | 0.003 (2.022) |
| Insider ownership, *INSIDE* | 0.006 (2.659) | 0.007 (2.534) |
| Market concentration, *MARKET* | 0.395 (2.627) | 0.364 (2.076) |
| Import penetration, *IMPORT* | -0.275 (-1.155) | -0.099 (-0.402) |
| SBC | -0.363 (-3.246) | -0.254 (-1.930) |
| SBC-State share, *SBC-STATE* | -0.001 (-0.440) | -0.003 (-0.906) |
| Agricultural sector | 1.187 (1.015) | -0.163 (-0.184) |
| Chemical and oil-chemical industry | -0.183 (-0.129) | -0.698 (-0.434) |
| Construction and construction materials | 0.072 (0.095) | -0.059 (-0.080) |
| Energy sector | -3.558 (-1.860) | -0.784 (-0.450) |
| Food-processing industry | 1.138 (1.719) | 1.249 (1.569) |
| Machinery and metal-working | 0.522 (0.815) | 0.046 (0.067) |
| Metallurgy | 0.525 (0.520) | -0.419 (-0.327) |
| Light industry and wood-processing, pulp and paper industry | -0.639 (-0.665) | -1.478 (-1.343) |
| Trade, procurement and services | 0.879 (1.064) | 0.093 (0.103) |
| Transport and communication sector | -0.482 (-0.597) | -0.762 (-0.881) |
| Eastern region | 0.334 (4.263) | 0.369 (3.898) |
| Western region | -0.010 (-0.112) | -0.050 (-0.501) |
| Central region | 0.174 (2.061) | 0.224 (2.302) |
| Capital: Kiev | 0.398 (3.603) | 0.686 (5.445) |
| Constant | 0.119 (0.220) | 0.016 (0.029) |
| Industry cross-products[7] | yes | yes |
| R-squared | 0.823 | 0.788 |
| Number of observations | 1170 | 1090 |

The t-statistics are reported in parentheses. They are based on White-corrected robust standard errors adjusted for clustering on a firm code

[7] Though included into the regressions, industry cross-products with logK and logL are not reported here for the sake of saving space.