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People versus Incentives: The Causes and Consequences of Managerial Change in Ukraine and the Complementarity of Reforms¹

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Abstract

This paper analyses the determinants of managerial change and the impact of privatisation, competition and managerial change on firm performance, using survey data from 300 Ukrainian firms. The main findings are: (i) Ownership and competition are linked to managerial change: *de novo* firms but also privatised firms experienced less turnover than state firms, indicating an entrenchment effect. Firms with few competitors had less turnover as well. (ii) Managerial change and privatisation do not appear to play a role on their own but together positively affect profitability. (iii) Similarly, tough competition improves profitability and productivity in privatised firms only.

These findings suggest that privatisation, competition and managerial change are complementary measures to improve the performance of the firm.

Key words: managerial change, competition, privatisation, firm performance

JEL Code: D21, G34, L33, J63

1 Introduction

This paper is concerned with determining the causes of managerial change and estimating its effect on firm performance, in a slowly reforming transition country, Ukraine. It also addresses the issue of the complementarity between reforms and in particular between privatisation, competition and managerial change.

In the empirical finance literature, turnover of top executives is seen with a favourable eye as a demonstration of an efficient monitoring process, while the contract theory literature has developed many -and sometimes contradictory- theoretical implications concerning the link between performance on the one hand, and competition and privatisation on the other. The dominant view however is that both measures are beneficial to the firm. Imposing hard budget constraints and exposing the firm to tough competition should help to discipline managers. Privatisation, by bringing in new owners more interested in the profitability of the firm, will tend to sharpen the incentives provided to managers as well. Moreover, improved monitoring will help the owners in selecting the right managers. A change of managers would then serve as another indicator of restructuring.

Under communism managers were appointed according to political loyalty and their aptitude to meet the plan, not necessarily their ability to achieve efficient production levels. Direct and indirect incentives were not optimally set, e.g. soft budget constraints and the ratchet effect acted as disincentives for effort (Dewatripont and Roland, 1997). The transition process from a centrally planned economy to a market economy dramatically transformed the economic environment in which firms operate. Managers with outdated human capital were to be replaced by new people with adequate skills for managing the firm in a market economy (Barberis et al., 1996). Additionally, transition has completely transformed the provision of incentives for managers in various (direct and indirect) ways.

First of all, the privatisation process in Ukraine has resulted in an ownership structure dominated by the insiders, i.e. workers and managers (IMF, 1997; Estrin, Rosevear and Hare, 1998). While this might correct for agency problems, it also reduces the likelihood of restructuring (Blanchard and Aghion, 1996) through the allocation of voting power to stakeholders, who might be hurt by the restructuring process. Managers and workers might become entrenched and resist change that would improve the value of the firm.

Second, foreign and domestic competitive forces have been introduced: trade has been liberalised, while new firms have been created from scratch (*de novo*) and were able to avoid the disorganisation problems that tradi-

tional firms encountered (Konings and Walsh, 1999). A more competitive environment should lead to less managerial slack and better performance (Hart, 1983; Aghion, Dewatripont and Rey, 1997, 1999).

Third, in most countries hard budget constraints have been established as governments stopped allocating subsidies to unprofitable firms and allowed bankruptcies to proceed. However this factor has probably played a minor role in Ukraine due to the lack of commitment to reforms by the government.

Changing the provision of incentives is likely to lead managers to increase their effort in order to improve firm performance, but when the incumbent manager lacks the skills to restructure and run the firm in a market environment, managerial change might be a necessary step.

Product market competition also plays an important role by allowing owners to infer the manager's ability: they have the opportunity to compare the performance of the firm with the results of its competitors when common shocks are present in the industry. Having more information they will change the manager more easily if he is not working in their interests (DeFond and Park, 1999). The same is true for privatisation: the new owners, by making the manager's continuation of the job more performance related, will not only increase the incentives of the manager to produce effort but also the rate of manager turnover (Cragg and Dyck, 1999).

However, a giveaway to insiders will not have the same effect and is more likely to lead to entrenchment of bad managers, while giving good managers the right incentives to start restructuring the firm (Roland, 2000, Chapter 10)¹. Economic policy at the economy level will therefore have important consequences on the restructuring activities at the level of the firm. Competition and privatisation will make managerial change more effective, illustrating the complementarity of reforms (McMillan, 1997): reforms might be so strongly intertwined that one without another would simply have no effect at all. However, liberalisation and privatisation are likely to be subject to political constraints: resistance from bad managers organised in strong lobbies might lead the government to adopt inefficient strategies, as was the case in Russia and the Ukraine.

We use a sample of 300 Ukrainian firms to test whether competition increases managerial change and whether managerial change improves firm performance. This sample contains both traditional firms and *de novo* firms. The main results are the following. First, managerial change occurs less frequently in oligopolistic firms than in firms under other competitive regimes, dominant firms and firms facing tough competition behaving alike in that

¹However, they might lack the access to outside finance in order to engage in deep restructuring.

respect. Therefore the result is mixed regarding the effect of competition on managerial change. Second, managerial change improves profitability only in privatised firms. There is no evidence that it leads to an increase in productivity. Third though competition improves profitability and productivity in privatised firms. These conclusions play down the role of privatisation, competition and managerial change alone in a slowly reforming economy and stress the importance of the complementarity of reforms and the need of coherence in the transition process.

The paper is set up as follows. Section 2 reviews the theoretical and empirical literature on the effect of competition, privatisation, managerial change and the complementarity of reforms. Section 3 describes the data and presents some summary statistics. Section 4 discusses the results. Section 5 concludes.

2 Theoretical background

Managerial entrenchment Extended managerial discretion can lead to various forms of expropriation of firms' funds in favour of the manager. In particular, managers who are no longer competent to run the firm can entrench themselves. Increased managerial ownership might then not only lead to a positive convergence-of-interests effect, but also to a negative entrenchment effect². Manifestations of this entrenchment are numerous. Using their discretionary control power, managers can create barriers against disciplinary takeovers by eliminating a bid or causing its failure (Jensen and Ruback, 1983).

Entrenchment through ownership is the most obvious way by which the manager gets voting power and protects its own interests. Morck, Shleifer and Vishny (1988) find a positive relation between managerial ownership and firm Tobin's Q if the share is restricted below 5%, but a negative one if the share is situated in the 5% to 25% range. Above 25% the relationship is again positive. The interpretation of these results is that the initial positive effect reflects greater managerial incentives to maximise value as the ownership share rises. But beyond the 5% threshold, the conditions of entrenchment might be met. With more than 25%, entrenchment is probably achieved and the positive effect reflects a convergence-of-interest³.

²A more concise and global survey of the issues discussed here is available in Shleifer and Vishny (1997).

³More subtle and in a sense more positive ways have been analysed by Shleifer and Vishny (1989): they show that a manager could overinvest in assets whose value is higher under him than under the best alternative manager (ironically in this case, increasing the

The case of entrenchment through ownership applies to the Ukraine and to Russia. Estimates of the average combined ownership share of insiders (employees and managers) vary between 51 % and 80 %⁴. Moreover there seems to be much more inertia in Ukraine: the ownership structure has roughly changed since privatisation, while in Russia, on the contrary, outside investors and managers have increased their average ownership share. Finally managers were not afraid of a takeover threat after privatisation, suggesting that they were confident about their position and had achieved substantial entrenchment (Buck and Filatotchev, 1996). Filatotchev et al. (1999) find evidence that managers effectively collude with workers to maintain insider control and block takeovers by outside investors. Managers also buy out the shares of the workers in order to increase their power and impede resale to outsiders. Despite the fact that their ownership share is low, managers are able to control a much larger share by capturing the interests of the workers. Shares are weakly tradeable and the protection of minority shareholders almost nonexistent. This situation creates an environment that is extremely favorable for unmonitored managerial discretion and substantial entrenchment.

A considerable amount of studies have shown that managerial change is negatively related to past performance⁵. This means that the board or outside hostile bidders are able to (imperfectly) discipline the manager by replacing him. This is however less likely if the manager is solidly installed in his position. Morck, Shleifer and Vishny (1989) document that firms with only one young senior officer executive (“one man management”) can more easily resist disciplinary turnover (but not takeovers). Members of founding families in contrast can resist both types of measures, implying that they are effectively entrenched. More recently, Denis, Denis and Sarin (1997) find a negative relationship between the probability of top executive turnover and managerial ownership, after controlling for firm performance. This illustrates that the ownership structure has an effect on the monitoring effectiveness of the board, confirming the “entrenchment by ownership” hypothesis.

manager’s share in the firm reduces entrenchment). By doing so they make themselves more valuable to shareholders, more costly to replace and able to extract a larger rent from the relationship. This might lead the manager to excessive acquisition. Morck, Shleifer and Vishny (1992) provide evidence that bad acquisitions are driven by managerial objectives. Unrelated diversification and buying growth reduce the returns of the acquisition. Moreover managers who underperformed the industry are also the bad acquirers, as poor performance drives them to try a new activity.

⁴Estrin and Wright (1999) document the evolution of ownership structure in Russia and in Ukraine both across time and across studies.

⁵See a.o. Warner et al. (1988), Weisbach (1988), Morck, Shleifer and Vishny (1989), Denis and Denis (1995), Denis, Denis and Sarin (1997).

Managerial change and performance In the most extreme cases, managerial change then clearly benefits the firm. In the U.S., Johnson et al. (1985) found that sudden executive death may lead to an increase in the share prices of the company the executive previously managed. Indeed if the market believes that the expected future benefits associated with the replacement manager's employment will be higher than with the incumbent manager's continued employment, the sudden termination of the contract between the firm and the manager will push to share price adjustments and an increase in shareholder wealth. They show this is the case when the firm was run by the founder, the latter being able to capture a larger share of the contractual rent in his compensation, making his replacement valuable for shareholders.

While Warner et al. (1988) find no evidence that turnover affects the stock return performance of the firm, Weisbach (1988) on the contrary shows that excess returns are always positive, being larger when the CEO was not of retirement age. Dividing the sample by board composition, the effects are more positive in outside controlled and mixed boards and close to zero for inside boards. However the differences are not significant. Denis and Denis (1995) report that forced resignations and retirements are followed by significant improvements in terms of stock return and operating income growth. Moreover, important restructuring activity accompanies both types of change.

In transition countries, three studies have indicated that managerial change benefited the firm where it occurred. In China, Groves et al. (1995) noticed that, for the large majority of the firms they surveyed (those whose managers were selected by bureaucratic hierarchy), an improvement in performance was observed in firms that hired a new manager, while no improvement was detected when the incumbent manager was reappointed. The opposite is true for firms that were auctioned. This is more likely to reveal superior information by the incumbent before the bid. In the Czech Republic, Claessens and Djankov (1999) unambiguously found that bringing in new managers was associated with improvements in profitability and productivity. Finally, an empirical investigation of Russian shops by Barberis et al. (1996) found that hiring a new manager with new skills increased the likelihood of restructuring while the provision of better incentives to incumbent managers did not improve restructuring prospects in the firm.

Competition and performance A large theoretical literature has analysed how competition helps the owners to compare the performance of man-

agers in a common environment⁶. In Hart (1983) product market competition reduces slack, resulting from the conflict of interests between owners and managers, when owners are not able to monitor the manager's actions. Competition creates interdependence in firms' behaviour. Interdependence implies that firms where agency costs are high will be disciplined by the firms directly run by the owner (or where monitoring is better)⁷. In Vickers (1995) competition improves incentives for efficiency by allowing relative performance evaluation. Competition enriches the information base on which to write contracts. Risk for the manager is reduced and the optimal explicit incentive brings effort closer to the efficient level⁸.

The previous papers focused on the informational effect of competition: how competition improves the information for the owner to design an optimal incentive scheme. Two other papers focus on the effect of competition on the manager's utility function. Aghion, Dewatripont and Rey (1997, 1999) introduce agency considerations in a Schumpeterian growth model and show that in a world where managers only care about private benefits, competition will *pressure* them to exert effort in order to keep the firm solvent. A similar idea is developed in Schmidt (1997). Competition has two effects on managerial incentives. First, there is a threat of liquidation effect that induces the manager to exert more effort (competition lowers the cost of effort). Second, competition can modify the impact of effort on performance. While the first effect is unambiguously positive, the sign of the second is not obvious.

Growing empirical evidence supports these theories. Nickell (1996) studies the impact of competition on total factor productivity level and growth in the UK manufacturing industry in the period 1972-1986 and finds that firms in a more competitive environment had higher productivity growth. Using more recent data, Nickell et al. (1997) obtain similar results. Looking at the effect of competition, financial pressure and shareholder control on firm's productivity growth, they find evidence that all three matter. Firms

⁶This paper focuses on the effect of competition on the provision of incentives for the manager. Two other ways through which competition might positively affect growth are considered in Aghion, Harris and Vickers (1997) and Aghion and Howitt (1996). In the former, in a patent race model where there is tacit knowledge, increased competition pushes the agents to innovate so as to escape competition in the case of a levelled sector, while the opposite is true for unlevelled sectors. In the latter competition increases the intersectoral mobility rate of skilled workers moving from unprofitable positions to the leading edge opportunities. Competition helps making more people benefit from the learning by doing in the leading sectors.

⁷This finding is very sensitive to the choice of the utility function (Scharfstein, 1988). See also Hermalin (1992).

⁸In a more dynamic setup however, the effect of competition is ambiguous. See also Meyer and Vickers (1997).

that increased their market share in the past (with a lag of two periods) are doing worse; firms that enjoy a rent are also performing worse. They also find a substitution effect between financial pressure and competition: declining rents lower the effectiveness of financial pressure. The same is true for shareholder control, substituting the effect of competition. Hay and Liu (1997) find that short run efficiency is positively related to the efficiency of rivals and to past losses of market share in a sample of UK manufacturing firms in the period 1970-1989. Konings (1997b) uses survey data in Hungary, Slovenia and Romania to estimate the effect of competition and ownership on firm's productivity. He shows that long run competitive pressure has a positive impact on firm's productivity in Hungary and in Slovenia (the two most advanced countries) but not in Romania. However, in Romania, the number of competitors matters. Other studies have shown that competition gives firms the right incentives to innovate (Geroski, 1990; Blundell et al., 1995, 1999). This gives backing to the hypothesis that monopolies enjoy an easy life and innovate less. Finally a recent paper by Dutz and Hayri (1999) has shown that countries that were perceived as having the most effective antitrust rules also had the higher productivity growth.

Privatisation and performance The literature on privatisation usually considers that a private owner will provide better incentives to the manager. A change in the allocation of ownership rights shifts the objectives of the principal, which is expected to lead to a change in the types of incentives provided to the manager (Vickers and Yarrow, 1988)⁹. Contrary to this view, Sappington and Stiglitz (1987) show that there is no reason why, with complete contracts and a benevolent government, the government would not be able to replicate the same incentive scheme as in the private sector (the so called irrelevance theorem).

To avoid the criticism of the irrelevance theorem other theories have tried to explain why ownership matters. Privatisation might deliver the manager from the negative influence of politicians. In a state owned firm politicians can impose excess employment to the manager at a lower cost than in a private firm. Privatisation leads to a reduction of excess employment (Shleifer and Vishny, 1994). Privatisation might play a role through another channel: by denying access to information that a malevolent government might use abusively (Shapiro and Willig, 1990). Even if the government is benevolent, under incomplete contracts, it might not be able to credibly commit to not intervene in the firm's operations, thereby distorting the managerial

⁹While recognising the first effect, Laffont and Tirole (1991) show that agency problems might be more acute in a private firm because of the multi-principal structure.

incentives (Schmidt, 1996).

Mounting empirical evidence is put forward by the proponents of privatisation to demonstrate that privatisation improves the financial performance of the firm. Complementing the earlier papers by Boardman and Vining (1989) and Megginson et al. (1994), recent exercises by LaPorta and López-de-Silanes (1999), and D'Souza and Megginson (1999) have shown a positive effect of privatisation. In Eastern Europe some studies have shown that privatisation had little effect on firm performance and that the most important factor was whether the firm was established recently (*de novo*) or traditional (Richter and Schaffer, 1996; Konings, 1997a). Other studies have demonstrated the importance of the type of private owners, stressing the importance of outside owners (Frydman et al., 1999; Earle and Estrin, 1997). In Ukraine, however, privatisation alone, even when considering different ownership types, has been shown to have no effect on firm performance (Estrin and Rosevear, 1999). The reasons put forward are the entrenchment hypothesis, the poor legal environment for the protection of outside owners, and negative selection bias for outside owners.

Complementarity of reforms Some authors have argued that new people and better incentives are complementary measures in order to improve performance:

“They might be so strongly complementary that neither change would be effective by itself. Some managers might be so inadequate as to be unable to respond to new incentives, no matter how well designed. Good managers might not work well under badly structured incentives” (Mc Millan, 1997).

While bad managers expect to suffer a utility loss if the firm is privatised and restructuring is initiated by an outsider, good managers should be compensated for the costs they incur to engage in defensive restructuring. In the former case, firing the manager will be the efficient response; in the latter, the efficient measure will be to provide better incentives (Roland, 1996; Roland, 2000, Chapter 10).

Competition and managerial change Competition facilitates monitoring and is therefore likely to increase managerial turnover. Morck, Shleifer and Vishny (1989) have shown that boards replaced top managers when the firm was underperforming compared to its industry. Similar results were obtained in a recent paper by DeFond and Park (1999), who find that CEO turnover is negatively associated with the level of industry concentration and

that relative performance evaluation measures are strongly associated with managerial turnover in highly competitive industries, while firm-specific measures are used in industries with a more concentrated market structure.

Privatisation and managerial change Privatisation might lead to better performance only if it allows for managerial change. Dyck (1997) formalised this complementarity in a paper justifying the decision by the German government to quickly privatise Eastern German firms, mainly to Western German firms. Privatisation allows inside owners (Western owners who know their managers) to acquire Eastern firms and to allocate their managers from the West to the East. By contrast outside owners (the government) are uninformed about managers' skills. This informational disadvantage implies outside owners will hire a below-average ability manager. Cragg and Dyck (1999) take the argument further: privatisation might lead to more efficiency by disturbing the state manager's quiet life. They examine the extent of top management replacement and link it to the type of owner. They find that turnover and firing rates are higher in privatised firms. Therefore this gives weight to the assumption that privatisation can improve firm performance if the new owners make turnover more likely by linking continued employment to performance, raising both incentives and turnover.

In Russia and in Ukraine, on the contrary, privatisation has transformed the managers and the workers in shareholders and has rarely allowed outside investors to change the manager. In Russia, positive examples of broken entrenchment are reported in Shleifer and Vasiliev (1996). However, Frydman et al. (1996) show that these cases are more the exception than the rule.

The rest of the paper will test the different hypotheses that were presented, namely:

1) Does competition increase the likelihood of managerial change? A more competitive environment should drive bad managers out of the firm, *either by the increased information obtained through relative evaluation or by the natural Schumpeterian effect of competition*. We also look at the effect of ownership, and other variables such as age, past performance and other firm characteristics.

2) Does managerial change improve the performance of the firm? The turnover should be associated with an improvement in the firm's human capital, leading to brighter prospects for the firm. We also test the effect of competition and of privatisation. The former should be positive as competition improves the incentives provided to managers. The latter however will be positive only if it improves the corporate governance of the firm.

3) Do we find evidence of complementarity between reforms? The effects

of managerial change should reinforce the effects of competition and of privatisation if improved incentives are not sufficient on their own. New people and new incentives would then be necessary.

3 Data

The data contains firm-level information about many aspects of the economic life of 300 Ukrainian firms. The survey was conducted by LICOS in 1997 on the basis of personal interviews with firms' managers in two regions, Kiev and Dnipropetrovsk and contains retrospective information on firm characteristics from 1989 to 1997. The sample of firms was designed so as to include more or less 50% *de novo* firms and 50% traditional firms. The reason why this stratification was chosen is to stress the differences between the two types of firms that could affect performance. Moreover previous studies have reported the superior performance of *de novo* firms compared to traditional firms (Konings, 1997a; Richter and Schaffer, 1996; Earle, Estrin and Leshchenko, 1996). This dataset is unique in the respect that it is the only one in Ukraine that is composed of these two types of firms.

Type of ownership We have information about the ownership structure of 297 firms. Each firm was asked to disclose the ownership share of the state, the municipality, the manager, the employees, private domestic investors and foreign investors. We define various categories of firms based on the answers.

A *de novo* firm is defined as a firm that started operating after January 1991, with no participation neither from the state nor from the municipality, and has been private since establishment¹⁰. These new firms were expected to emerge from the new spirit of entrepreneurship that the adoption of a market economy was supposed to create.

A *traditional firm* can be either entirely state-owned or privatised (a few cooperatives are also present in the dataset). The firm is said to be *state-owned* if the state retains a stake of at least 51%. Some are *100% state owned* (27 firms) while others were partially privatised. The firm is *privatised* if it reports having been privatised and has less than 100% state ownership. In most cases the state kept no stake at all in the firm (93 firms out of 120) but it retained a majority stake in 13 firms.

¹⁰This definition explains why the fraction of *de novo* firms in the sample is not exactly 50 %: the definition in the sample was to consider as a *de novo* firm all private firms created after 1989. Knowing that transition only started in 1991 when Ukraine declared its independence, we simply imposed a narrower restriction.

A firm is said to be *employee owned* if employees own more than 50% of the firm. This occurs for 88 firms (around 30 % of the sample). Overlapping with the two other categories is allowed but only 12% of the *de novo* firms are employee owned; so employee ownership mainly results from the privatisation process. Only 12 firms have foreign participation of at least 50% and among them 9 are *de novo*. This reflects the lack of attractiveness of the Ukraine in terms of FDI, mostly due to widespread corruption, weak legal environment and the government's poor commitment to reforms. Finally two firms are majority owned by the municipality (municipality has a minority share in two other firms). Table 1 summarises the distribution of ownership types in our sample.

< Table 1 around here >

Managerial change As shown in table 2, a clear difference exists among the different types of firms. Managerial change is less likely in *de novo* firms. This finding confirms the fact that *de novo* firms were able to avoid the necessary upgrading of human capital since they were founded with the right manager without any political interference.

State firms were the most active in the firing decision, much more than privatised firms. This might be because of political cycles, will for restructuring, or simply -as we stressed before- as the result of the privatisation process that gave power to the insiders who blocked managerial change.

< Table 2 around here >

Table 3 indicates that important changes in the key management staff have increased significantly throughout transition, especially since 1993, and has reached a peak in 1996 with more than 20% of the firms reporting a managerial change. After some time even *de novo* firms started to replace the managers.

< Table 3 around here >

However the reasons invoked to explain the change are different according to the type of the firm: the survey indicates that the most important reasons justifying the decision for the *de novo* firms were voluntary leave and the growth of the firm. For traditional firms, it was mainly due to a change of strategy, the need for new managers with new skill, and bad management (Table 4).

Table 4 indicates the percentage of firms for which the proposed reason was the most important to explain the managerial change.

< Table 4 around here >

Competition Firms were also questioned about their competitive environment. They were asked about the number of competitors operating in the same market. Along with Nickell (1996) we argue that this is a good measure of competition: managers know better than anyone else their firm’s environment and this measure also reflects import competition. Moreover work by Selten (1973) and Bresnahan and Reiss (1991) has shown that “four are few and six are many”, in the sense that collusion is not sustainable with more than five firms in the same market. Other measures of market structure like market share or concentration ratio do not always share these advantages and hardly identify the relevant market.

Around 15% of the firms reported they were dominant on their market. Competition is moderately tough in 28% of the cases, while most firms (57%) report evidence of highly competitive environment with more than five competitors. However “ownership matters”, since *de novo* firms are more prevalent in competitive environments and the state still controls dominant firms, possibly because of market power concern in the absence of an effective regulatory body (Table 5). But it also indicates that state firms are shielded from competition.

<Table 5 around here>

4 Results

4.1 Determinants of managerial turnover

In our sample the stylised facts we just stressed indicate that managerial change occurs less frequently in *de novo* firms. Indeed one might argue that these firms were established from scratch directly with the right managers, so that they were able to avoid disorganisation in their managerial team. Moreover we test whether the competitive regime affects managerial change. More competition should be associated with more turnover.

We use a probit model:

$$\Pr \{MCH_i = 1 \mid X_i\} = F(X_i, \beta) \quad (1)$$

where i is a firm’s index, MCH is equal to 1 if the firm changed the manager, X_i is a vector containing the explanatory variables and β is the coefficient vector. The distribution of F is the standard normal distribution function:

$$F(X, \beta) = \Phi(X, \beta) = \int_{-\infty}^{\beta'X} \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}t^2} dt \quad (2)$$

The loglikelihood function is given by:

$$L(\beta | X, y) = \sum_{i=1}^N y_i \ln F(\beta' X_i) + \sum_{i=1}^N (1 - y_i) \ln [1 - F(\beta' X_i)] \quad (3)$$

Finally we replace F by the expression in (2), and we maximise L with respect to β .

We want to test the effect of the following variables on the probability of managerial change: *type* identifies the ownership type of the firm (de novo, state or privatised), *comp* defines the competitive environment of the firm and Z are other factors that can affect managerial change (such as the share or the age of the manager) that we use to test the robustness of the findings. Results for four different specifications are presented in Table 6.

<Table 6 around here>

In column (1), we see that, as expected, *de novo* firms and privatised firms are less likely than state firms to have experienced a change in manager. The former group could avoid the costly search for the right manager and the latter are captured by the interests of the insiders who want to remain employed. In column (2) we add the share of the manager as an additional measure of managerial entrenchment, that negatively influences the probability of managerial change. In column (3) we introduce the variables describing the competitive environment. We find that firms with few competitors are less likely to change manager. A lack of competition implies less turnover: that is what we expected. However the behaviour of dominant firms does not differ from the one of firms in a competitive environment. This result suggests that competition does not really play the role of a tool to help monitoring the managers, although there are signs that competition has a minor effect compared to oligopolistic markets. Instead one might be tempted to interpret it as a sign that owners replace managers in dominant firms to protect the rent. Since dominant firms are mostly state firms (see table 4) restructuring is more likely to imply firing the manager. But the result can also be driven by political cycles. This seems most likely knowing that progress in restructuring has been very slow in Ukraine (EBRD, 1997).

The results are quite robust to the introduction of additional variables. Previous studies on managerial turnover have indicated that bad past performance (either in terms of income growth or stock return) was strongly associated to a change of manager. As we do not have a precise indicator of the past performance of the firm, we use as a proxy the financial difficulties of the firm. Bad performance in the past should lead the firm to a situation close to insolvency, and that is what we try to capture. In column (4), the

coefficient of financial difficulties is positive but not significant. Past performance apparently does not play a strong role in the removal of the manager, possibly because of the described managerial entrenchment.

The age of the manager negatively influences turnover. Again we expected the opposite: older managers have Soviet-type human capital that might be outdated. This bolsters the previous findings that managers in privatised firms remain in position, and that turnover in state firms does not change the nature of the manager’s human capital.

Other variables were tested as well but did not play a significant role in explaining managerial change. These were various sector dummies, contemporaneous performance indicators and variables of import dependence.

4.2 Effects of managerial change on firm performance

We now test whether managerial change helped to improve the performance of the firm. The two dependent variables that are used are the change in profitability and the change in productivity from 1994 to 1997. The variables are constructed on the basis of the manager’s answer to the question:

“Did productivity (profitability) of your company since 1995 (since last year):

- a) decrease;
- b) stay the same;
- c) increase ?”

As a result we define two discrete variables $\Delta PROD$ and $\Delta PROF$ that can take only three values. These variables have the big advantage that they avoid the usual caveat of accounting measures that are unreliable for tax evasion reasons. We focus on the effect of managerial change and of competition on these two indicators of performance. We control for size, ownership, age of the equipment and investment decisions. We run an ordered probit regression, where the latent regression is:

$$y_i^* = \beta' X_i + \varepsilon_i \tag{4}$$

where

$$y_i = -1 \text{ if } y_i^* \leq 0$$

$$y_i = 0 \text{ if } 0 < y_i^* \leq \mu$$

$$y_i = 1 \text{ if } y_i^* > \mu$$

where y_i is a measure of performance, X_i being a vector of the explanatory variables: *MANCH* is the dummy variable for a change of manager, *comp* and *type* are defined as before, and Z_i is a vector containing control variables: size and age of the capital. μ is another unknown parameter to be estimated. The probabilities are:

$$\begin{aligned}\Pr \{y_i = -1 \mid X_i\} &= 1 - \Phi(\beta' X_i) \\ \Pr \{y_i = 0 \mid X_i\} &= \Phi(\mu - \beta' X_i) - \Phi(-\beta' X_i) \\ \Pr \{y_i = 1 \mid X_i\} &= 1 - \Phi(\mu - \beta' X_i)\end{aligned}$$

A loglikelihood function is obtained similarly and we maximise with respect to β . Table 7 and 8 show the results.

<Table 7 around here>

In column 1 of table 7, we see that *de novo* firms perform better than either state or privatised firms. This confirms previous findings that a new spirit of entrepreneurship explains the better performance of these newly established firms. Privatisation does not influence the profitability of the firm. The most convincing explanation for this finding lies in the way privatisation proceeded and the results that emerged from it. Managers entrenched themselves in their job and blocked restructuring with the passive assistance of the workers. Investment in 1996 - that is a clear sign of deep restructuring - also increased profitability. New equipment is necessary to replace the outdated physical capital.

In column 2 we introduce our competition variables. Competition by itself does not play a role, but tough competition improves the performance of the firm when it was privatised. This might indicate that the combined effects of competition and privatisation on the manager's incentives leads to improved performance. This stresses the complementarity of reforms: one reform can reinforce the effects of another.

In column 3 we add size dummy variables. The results remain unchanged. No size class differs from each other in terms of performance, except medium enterprises (between 250 and 500 employees) which perform worse. Column 4 shows the effect of managerial change for the three types of firms. While it has no effect in state firms and in *de novo* firms, it is positive and significant for privatised firms. As we stressed before, managerial change was not necessary in *de novo* firms. In state firms, turnover was decided for political reasons and did not yield results. But in privatised firms, managerial change is important to break the damaging tie that links the manager to the firm when

the environment has changed. Again this suggests that the complementarity of the reforms plays an important role in restoring profitability.

Managerial change in traditional firms before 1992 negatively influences change in profits. We can assume that these changes did not intrinsically modify the type of the manager because transition had not started yet. These changes are interpreted as unnecessary. Note that the *de novo* variable is no longer significant. This may indicate that the main difference between new and traditional firms lies in the bad initial allocation of human capital in a distorted ownership structure.

Finally our results are robust to the inclusion of a variable describing the age of physical capital. The share of equipment older than 25 years (very old) negatively influences change in profitability as well as the share of capital between 8 and 25 years (old). This illustrates the lack of restructuring and the upholding of obsolete physical capital.

Results are rather similar for productivity (table 8). Investment in 1996 remains very significant, as well as tough competition for privatised firms and managerial change before 1992.

Three major differences arise. First, size plays a more important role. Small firms (less than 100 employees) have improved their productivity more than larger firms. Second managerial change does not influence significantly the change in productivity. One explanation might be that in an environment of underdeveloped financial markets and lack of foreign investment, restoring profitability would be a first step before improving the productivity. Third, competition negatively influences productivity growth, except in privatised firms. Maybe this means that state firms have not modified their behaviour and are hurt by increased competition; and that *de novo* firms lack the access to finance to react to increased competition.

Other specifications were also tested although these are not reported in the paper. In particular we analysed the effect of the type of owner when the firm was privatised and we could not find evidence that one type of owner was more beneficial than another. This could be an indication that privatisation has led in practice to few improvements in corporate governance, whatever the form it has taken. Another explanation, as suggested by Estrin and Rosevaer (1999), could be that outside investors only gained control in poorly performing firms.

<Table 8 around here>

4.3 Simultaneity and sample selection bias

Our specification suffers from two potential econometric drawbacks: the first one is that the change in performance and managerial change could be simultaneously determined. In this case, the explanatory variable would no longer be exogenous and would need to be instrumented. Because the survey asked about the change in performance at the end of the period while managerial change occurred during the period, the causation is in our view one-way: a change in the firm's human capital in a not-so-distant past influences the future performance of the firm, while managerial change itself is likely to be influenced by past performance or exogenous factors. Therefore managerial change can be viewed as exogenous in the specification used in subsection 4.2.

The second problem arises from the fact that *the firms to be privatised were not randomly selected and that only the worst firms were privatised while the state kept the best firms in its hands*¹¹. As insiders were seen as in control of the firm, they could have influenced the privatisation process. Evidence of this kind is available from Russia (Earle and Estrin, 1997) and the Czech Republic (Marcincin and van Wijnbergen, 1997). The first paper shows that the best firms were privatised to insiders, creating a negative selection bias for outside investors, while the second finds that the best firms were not sold through voucher privatisation, suggesting a positive selection bias for non-voucherised firms.

To check the selection hypothesis in our sample we regress the dummy variable *PRIV* over various indicators about the type of the firm. As in subsection 4.1 we use a probit model:

$$\Pr \{PRIV_i = 1 \mid X_i\} = F(X_i, \beta) \quad (5)$$

The elements included in X_i are the size, the age of the capital, the competitive environment of the firm, and whether the firms experienced financial difficulties at the beginning of transition.

Results are shown in table 9. As we suspected firms that were privatised in our sample were predominantly large (most likely to employ between 250 and 1000 workers) and were in a competitive environment. This means that the state did not privatise dominant firms, and therefore that these firms are still monitored by the authority. This might reflect one of the concerns evoked by Tirole at the beginning of transition that "firms in industry that are potentially noncompetitive should be kept a while longer under public

¹¹This argument is usually put forward the other way round, that is, in order to play down the effect of privatisation: privatised firms performed better because only the best firms were privatised.

ownership before they are handed in to the stable private investors” (Tirole ,1991, p.239). But the state could have kept these firms for non-optimal opportunistic reasons (Shleifer and Vishny, 1994). Privatised firms did not differ from non privatised firms in terms of type of capital or in terms of financial difficulties. We are therefore unable to say much about the optimal sequencing.

Privatised firms clearly needed deep restructuring. However these firms are also controlled by insiders: in more than half of the firms workers own more than 50% of the shares. The average share of employees among the 120 firms is 61%. Proponents of the mass privatisation hoped that a secondary markets for shares would emerge and that outsiders would take control of the firm and restructure it. In practice this did not happen.

< Table 9 around here >

5 Conclusion

We analysed the behaviour of firms in terms of managerial change. We detected significant differences in that respect between traditional firms and *de novo* firms, the latter experiencing less managerial turnover. State firms were the most active in firing managers. Moreover competition weakly causes an increase in managerial change as we first thought: firms with few competitors fire less managers than firms in more competitive environment but also than dominant firms. The effect of managerial change and of competition on firm performance is positive if interacted with privatisation. This shows the importance of the complementarity of reforms.

A clear pattern emerges in the sense that these findings make sense in a context where managers in state firms are appointed on the basis of political connections and where managers in privatised firms might stay entrenched despite lacking adequate human capital. However, when managerial change is actually applied in the privatised firm, it improves the performance of the firm by introducing new human capital. Finally *de novo* firms perform better since they avoid the disorganisation problems and are created with a better manager and better incentives.

Competition does not exactly play the role we expected: there is no straightforward link between competition and turnover, and competition leads to improved performance only in interaction with other reforms. The reason may be related to the very specific context of a slowly reforming transition economy: first, soft budget constraints of various types (bad bank loans, direct subsidies, tax arrears,...) slow down the speed at which the

firms adapt to the new environment; second, the fact that bankruptcy laws are not implemented does not give incentives to traditional firms to be more productive in order to avoid going bankrupt. Third, financial markets are underdeveloped, what might impede profitable opportunities to be realised. Fourth, capital markets do not monitor firms' performance as they do in developed countries. Fifth widespread corruption and mostly unmonitored abuse of dominant position impedes the development of start-up businesses. The creation of a level playing field through the hardening of competition policy and of budget constraints would facilitate entry and ensure the effectiveness of competition as an efficiency enhancing tool.

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Table 1: Distribution of firms by type (in % of the sample)

<i>Type</i>	<i>Nr. of firms</i>	<i>% of firms</i>
de novo	138	46.5%
of which foreign	10	3.4%
of which domestic	128	43.1%
traditionnal	154	51.8%
<i>of which privatised</i>	120	40.4 %
- majority foreign	3	1%
- majority state	13	4.4%
- majority private domestic	14	4.7%
- majority "insiders"	75	24.6%
<i>of which 100% state owned</i>	27	9.1%
<i>of which municipality</i>	2	0.7%
<i>of which cooperatives</i>	5	1.7%
others	5	1.7%
TOTAL	297	100%

Table 2: Percentage of firms that experienced change in key management staff

	<i>De novo</i>	<i>All</i>	<i>Privatised</i>	<i>State</i>
Managerial change	34.23 %	45.45 %	47.9 %	62.5 %
Nr. Obs.	138	297	120	40

Table 3: Evolution of managerial change (% of all firms)

<i>Year</i>	<i>ALL</i>	<i>DE NOVO</i>	<i>Traditional</i>	<i>Privatised</i>	<i>State</i>
1989	1.34%	-	2.61%	1.68%	5%
1990	1.34%	-	1.96%	0.84%	5%
1991	2.69%	-	5.23%	2.52%	15%
1992	4.38%	0.72%	7.19%	4.2%	10%
1993	5.05%	2.17%	7.19%	6.72%	7.5%
1994	11.45%	6.52%	15.68%	15.96%	17.5%
1995	17.84%	10.14%	24.84%	21.85%	35%
1996	21.55%	21.01%	22.22%	23.53%	25%
1997	13.80%	10.87%	16.34%	19.33%	10%

Table 4: Reasons of managerial change (% of firms reporting the proposed reason as the most important)

<i>Reason</i>	<i>all</i>	<i>de novo</i>	<i>traditional</i>	<i>privatised</i>	<i>state</i>
voluntary leave	12.92%	13.95%	12.61%	14.29%	10.71%
new skills	12.92%	9.3%	15.13%	13.19%	25%
change in corporate strategy	15.79%	13.95%	15.97%	16.48%	14.29%
growth of the firm	9.57%	15.12%	5.88%	3.3%	10.71%
downsizing	5.74%	2.33%	7.56%	8.79%	7.14%
new owners	2.39%	1.16%	3.36%	3.3%	3.57%
mismanagement	9.57%	5.81%	12.61%	13.19%	14.29%
retirement	7.66%	4.65%	10.08%	5.49%	25%

Table 5: Distribution of the firms by competitive regime

<i>Type of regime</i>	<i>All</i>	<i>De novo</i>	<i>Traditional</i>	<i>Privatised</i>	<i>State</i>
dominant firm	14.8%	10.1%	19.5%	15%	30%
between 2 and 4 competitors	27.6%	23.9%	30.5%	30%	30%
more than 5 competitors	57.6%	65.9%	50%	55%	40%

Table 6: Probit results, dependent variable: managerial change

Dep. var.: MCH	(1)	(2)	(3)	(4)
de novo	-0.8*** (-3.9)	-0.65*** (-3.01)	-0.66*** (-2.91)	-0.71*** (-3.01)
privatised	-0.45** (-2.2)	-0.45** (-2.17)	-0.44** (-2.06)	-0.41* (-1.93)
share of manager		-0.005** (-1.97)	-0.005* (-1.94)	-0.005* (-1.92)
many competitors			-0.20 (-0.84)	-0.30 (-1.24)
few competitors			-0.56** (-2.24)	-0.61** (-2.46)
increase in competition			-0.16 (-1.27)	-0.10 (-0.55)
financial difficulties				0.38 (1.59)
age of the manager				-0.02* (-1.87)
constant	0.41** (2.37)	0.44** (2.49)	1.11** (2.93)	1.19** (2.37)
Pseudo R ²	0.04	0.05	0.07	0.08
Nr. Obs.	297	296	296	295

Note: t-values equivalent in parentheses; *, **, *** denote significance respectively at 10%, 5% and

1%

Table 7: Ordered probit analysis of profitability change

Dep. var.: Δ PROF	(1)	(2)	(3)	(4)	(5)
de novo	0.60*** (2.94)	0.83*** (2.79)	0.71** (2.20)	0.39 (1.08)	0.46 (1.24)
privatised	0.28 (1.34)	-0.13 (-0.44)	-0.11 (-0.37)	-0.61 (-1.59)	-0.53 (-1.31)
investment in '96	0.63*** (4.23)	0.70*** (4.59)	0.77*** (4.90)	0.79*** (4.95)	0.74*** (4.38)
many competitors	-	-0.45 (-1.15)	-0.48 (-1.20)	-0.58 (-1.37)	-0.55 (-1.26)
few competitors	-	0.06 (0.25)	0.05 (0.22)	0.04 (0.16)	0.08 (0.32)
many * de novo	-	-0.14 (-0.34)	-0.12 (-0.29)	-0.07 (-0.16)	-0.22 (-0.46)
many * priv	-	0.88** (2.03)	0.98** (2.21)	1.11** (2.39)	1.00** (2.05)
0-50 emp.	-	-	-0.06 (-0.22)	-0.07 (-0.22)	-0.26 (-0.81)
50-100 emp.	-	-	-0.01 (-0.03)	-0.10 (-0.26)	-0.15 (-0.38)
100-250 emp.	-	-	-0.49 (-1.48)	-0.46 (-1.33)	-0.50 (-1.40)
250-500 emp.	-	-	-0.72* (-1.92)	-0.61 (-1.59)	-0.57 (-1.45)
500-1000 emp.	-	-	-0.01 (-0.03)	-0.12 (-0.28)	-0.04 (-0.08)
MCH*state	-	-	-	-0.10 (-0.26)	0.05 (0.13)
MCH*de novo	-	-	-	0.15 (0.69)	0.08 (0.35)
MCH*priv	-	-	-	0.43* (1.66)	0.54** (2.00)
MCH before '92	-	-	-	-1.07** (-2.52)	-1.03** (-2.47)
share of very old equip.	-	-	-		-0.01** (-2.17)
share of old equip.	-	-	-		-0.01** (-2.26)
share of middle age equip.	-	-	-		-0.003 (-1.07)
Pseudo R ²	0.05	0.07	0.09	0.13	0.13
Nr. Obs.	252	252	252	241	241

Note: see table 5

Table 8: Ordered probit analysis of productivity change

Dep. var.: Δ PROD	(1)	(2)	(3)	(4)	(5)
de novo	0.58*** (2.88)	0.63** (2.14)	0.53* (1.68)	0.15 (0.42)	0.19 (0.53)
privatised	0.05 (0.25)	-0.36 (-1.25)	-0.22 (-0.73)	-0.66* (-1.77)	-0.51 (-1.28)
investment in '96	0.59*** (3.93)	0.63*** (4.11)	0.70*** (4.43)	0.71*** (4.38)	0.64*** (3.73)
many competitors	-	-0.59 (-1.54)	-0.70* (-1.75)	-0.88** (-2.08)	-0.85** (-1.96)
few competitors	-	-0.13 (-0.54)	-0.30 (-1.13)	-0.35 (-1.32)	-0.35 (-1.30)
many * de novo	-	0.13 (0.31)	0.05 (0.13)	0.16 (0.36)	0.08 (0.17)
many * priv	-	0.88** (2.07)	0.87** (2.00)	1.04** (2.28)	0.91* (1.91)
0-50 emp.	-	-	0.86*** (2.70)	0.84*** (2.58)	0.77** (2.27)
50-100 emp.	-	-	0.93** (2.33)	0.82** (2.02)	0.82** (1.98)
100-250 emp.	-	-	0.30 (0.86)	0.36 (0.99)	0.37 (1.00)
250-500 emp.	-	-	0.26 (0.66)	0.34 (0.40)	0.45 (1.08)
500-1000 emp.	-	-	0.39 (0.87)	0.30 (0.67)	0.39 (0.85)
MCH*state	-	-	-	-0.49 (-1.26)	-0.32 (-0.80)
MCH*de novo	-	-	-	0.18 (0.75)	0.19 (0.79)
MCH*priv.	-	-	-	0.23 (0.88)	0.29 (1.10)
MCH before '92	-	-	-	-0.73* (-1.89)	-0.72* (-1.87)
share of very old equip.	-	-	-	-	-0.01* (-1.90)
share of old equip.	-	-	-	-	-0.005 (-1.34)
share of middle age equip.	-	-	-	-	-0.002 (-0.56)
Pseudo R ²	0.05	0.07	0.09	0.11	0.12
Nr. Obs.	259	259	259	259	248

Note: see table 5

Table 9: probit results, dependent variable: PRIV

Dep. var.: PRIV	
0-50 emp.	-0.12 (-0.28)
50-100 emp.	-0.08 (-0.17)
100-250 emp.	0.09 (0.25)
250-500 emp.	1.09** (2.19)
500-1000 emp.	1.44** (2.38)
Financial difficulties	0.09 (0.22)
share of very old equipment	0.002 (0.35)
share of old equipment	0.002 (0.49)
few competitors	0.73** (2.10)
many competitors	0.94*** (2.83)
constant	-0.39*** (-0.84)
Pseudo R ²	0.14
Nr. Obs.	150

Note: see table 5