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OWNERSHIP STRUCTURE IN RUSSIAN ENTERPRISES AND ITS RELATION WITH THEIR PERFORMANCE

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1. Introduction

Peculiar nature of ownership structure of the Russian enterprises is commonly known. In early 1990's the Government of Yegor Gaidar introduced rapid mass privatization, followed by multi-stage ownership redistribution. "Concerning ownership change, the privatization program has transferred shares in more than 12,000 companies from state to private hands, resulting in a wide variety of new ownership structures, including the participation of insiders, outsiders, and in many cases still the state. Simultaneously, policies have been enacted to liberalize prices, foreign trade, and the entry of new businesses; yet many highly concentrated sectors remain. In a few short years, a large number of firms have been privatized and experienced a rise in competition, but the outcomes are quite heterogeneous" (Earle and Estrin, 1996).

After that there were severe battles for corporate control between outsiders and insiders of the companies. The resulting ownership structures in all sectors of economy were exclusive hybrids of low transparency, dominance of holdings, expropriation of minority shareholders and a mix of strategic and residual shareholdings of state in newly privatized companies (see Brown e.a., 2006).

Therefore, corporate governance has become a burning topic in our country, and it is a trend among the largest Russian enterprises to move towards good corporate governance by, e.g. increasing disclosure and meeting international accounting standards. There have also been projects to improve corporate governance from the government and private agencies. The Federal Financial Markets Service (former Federal Commission for Securities Markets) set up the Code of Corporate Conduct. Private agencies are proposing their own initiatives and publishing their own corporate governance rankings. The main point is that the controlling owners of Russian companies understand nowadays that they need external funds to continue their development. Furthermore, some owners simply want to sell their business at a highest possible price, which is known to depend on good reputation and corporate governance standards, which warrants overcoming low transparency etc. (Djankov, 1999; Djankov and Murrell, 2002).

The problem here is that empirical studies of ownership structure in Russia are rare, and empirical evidence on its implications for performance is limited. Raw data mostly originate from the surveys or are limited to early years of reforms. Shleifer and Vishny in the survey on general corporate governance state that "there is little systematic research on Russia's corporate governance" (Shleifer and Vishny, 1997). Megginson and Netter in their survey of world-wide privatization say that "no truly persuasive empirical study of privatization in the former Soviet Union has been yet performed" (Megginson and Netter, 2001). Yet studies of ownership and its effects on performance in Russia are growing in number, and remain a widely debated topic. Most of these studies are focused on the implications of the identity of a dominant shareholder or the effects of insider ownership on performance of companies. Despite limited empirical evidence, this topic attracts the attention of both international and local policy makers.

There are several problems that make studies of ownership structure and its impact on performance of enterprises overly difficult. The main problem is data availability and reliability. Most of studies on this country are based on examination of direct ownership only, and distribution of direct shareholdings that is reported may usually be misleading due to:

– the owners with non-transparent identities;
– non-observable affiliation between separate blocks.

Detection of actual shareholders is knotty due to the existence of complex chains of intermediate companies etc., and this problem can be solved only by tracing control chains. An appropriate mechanism was first introduced in papers by La Porta and coauthors (La Porta e.a., 1999). The first attempt to trace ultimate ownership in Russia is done by Guriev and Rachinsky (Guriev and Rachinsky, 2004), for a more recent example, see Chernykh (2008). Another problem here is associated with difficulty of distinguishing between insiders' and outsiders' ownership. The latter may turn out to be affiliated with or controlled by the companies' insiders; or insider control can be veiled under the name of nominee or offshore holdings. Though managers are obliged to disclose their stakes in the enterprise they work for, this applies to direct shareholdings only. Classification of owners may constitute separate problem: in all previous studies this issue was greatly a matter of researchers' judgment. In most of the cases foreign offshores are classified as independent foreign companies and nominees are not reported at all. This may be inappropriate because one gets wrong picture from the information that is disclosed, which often contradicts commonly known ownership structure. For example, JSC "Severstal": officially disclosed ownership structure assigns the stake of 0% to Mordashov, a member of the Board of Directors and commonly known as the owner of "Severstal" through the chain of foreign offshores and ZAOs which cannot be traced down. The one thing I could do is conclude that due to same registration addresses two ZAOs' and two offshores' stakes sum up to form not four separate shares' blocks but two blocks

that belong to some other ultimate owner. Combining this knowledge with non-official information from the web, one can suppose it to be the stake of Mordashov, but I cannot do so because my study is limited to official data.

Because of these problems nearly all relevant studies of Russia use survey data. But while these questionnaires may have questions on companies' size, performance, industry and location, it is doubtful that respondents (e.g. top managers) will be willing to share this insider information with researchers, casting serious doubts about reliability of these datasets as well. Nevertheless, this issue of non-transparency is urgent because corporate governance suffers and thus stocks are less valuable and therefore outside investors prefer to stay out, while there contribution could have been of positive effect on performance of enterprises. Also the data reliability problem is a burning issue for such research aims, because the results one gets may turn out to be totally not true to life and thus unhelpful though statistically significant, while reported ownership will be similar to the situation above with JSC "Severstal".

2. Sample and data sources

My study is based on the publicly available information for a sample of Russian listed companies. My data is hand-collected from disclosure reports by the firms that can be found on enterprises' corporate web-sites and existing databases, such as http://www.skrin.ru. I used quarterly and annual reports that are to disclose certain information in accordance with Russian Federation's securities legislation. To insure additional accuracy of collected data, all cases of extreme or unusual entries in firm reports are verified by consulting alternative sources. As a sample I have chosen the first 50 companies from "Expert" ranking "Capitalisation-2006" as of year 2006 that can be downloaded from the official websites The main criteria of this ranking are as follows: companies' securities were at least offered in one Russian or foreign stock exchange. While determining stock prices, Russian stock exchanges or the exchanges with highest turnover were considered. Holdings and their affiliated structures were considered and ranked separately. Initially, around 1000 candidates were identified according to the previous year's ranking and statistical reports. Then there were surveys of the companies with the use of questioners and financial reports were requested. Finally, Rosstat's and ministry's data, corporate websites' and analytical agency's information was collected to form the ranking for the year 2006.

I collected data on ownership structure in year 2005 – from the reports as of the 1st quarter of the year and quarterly lists of affiliated parties and companies – and performance in year 2006, as of 31st of December 2006. Resulting data are cross-section, which allows comparisons between companies, assuming that industries are in the long-run equilibrium, and getting rid of time series problems

such as multicollinearity. Dataset constructed contains key financial and ownership data taken from open sources and authors' calculations based on them.

3. Aim of the study

This study promised to be quite interesting because the data used was quite recent (while previous studies rely mostly on early post-privatization data) and due to a novel way of ownership structure identification. The aim of my research was to analyze the impact of ownership structure on performance of 50 companies from different industries with biggest capitalization. Reasons of my choice are the following: first, these companies are quite large and exercise substantial effect on the entire economic situation in Russia. Second, the distribution of ownership rights is particularly interesting in these companies. Third, information on them is easier to collect. I wanted to test the hypothesis that companies' performance depends on the degree to which ownership is concentrated, as well as to check the relation of ownership by different groups of shareholders to corporate performance.

4. Firm performance measures

The choice of a reliable performance measure is a crucial issue for a study on any emerging markets, but it is especially problematic in the case of Russia. The concept of enterprise's performance itself can be interpreted differently. Each interpretation has its advantages and disadvantages. Assets' book value can be distorted by hyperinflation in the early transition period, followed by a series of questionable fixed assets revaluations. The widely used tax avoidance schemes damage the reliability of income statements. Market-based measures are not a universal remedy because the Russian stock market is highly volatile. Also extraordinary accounting performance may not result in better market valuation because of expropriation of the minority shareholders. And the accounting ratios are based on operating and bottom-line performance. The market-based performance measures are market-to-book ratio and stock liquidity which is usually proxied by frequency of trading. But a serious limitation is that reliable stock price indicators can be obtained not for all stocks.

For my aims I decided and was able to calculate the following ratios to measure profitability and efficiency: net profit margin, ROE and ROA. ROE is a measure of a companies' profitability that reveals how much profit is generated with the money shareholders that had been have invested. ROE is useful for comparing firms in the same industry by profitability. ROA shows how profitable a company is in relation to its total assets and how efficient management is in using its assets to generate earnings. ROA is calculated by dividing a companies' annual earnings by total assets. And profit margin is a ratio of profitability

calculated as net income divided by revenues, or net profits divided by sales and is very useful when comparing companies in similar industries.

For 37 companies for which I could find capitalization information I calculated the approximation of Tobin's Q – a proxy of long-run performance. It is defined as the ratio of the market value of the company to the replacement value of its assets, but just like Kuznetsov and Muravyev in their study of "blue chips" of Russian stock market I calculated it as unadjusted year-end values of market capitalization to book values of equity (Kuznetsov and Muravyev, 2001). Tobin's Q will reflect company value for small shareholders. Labor productivity is usually used for such investigations too but unfortunately a small number of firms from my sample reported the number of employees in their disclosure documents.

5. Ownership structure measures

For ownership structure measures I collected two separate datasets. Basing on articles that criticize e. g. that most of foreign companies are offshores in reality and facing the problem of non-transparency, complex chains of control and pyramidal ownership, I decided to trace the ultimate ownership as far as I could. The picture I got was quite different from the one that is based on official sources solely (and which was previously analyzed in earlier researches), which you can check from descriptive statistics in table 1 for reported and table 2 for calculated data sets, respectively:

In %	board	dom. fin.	dom. non-fin.	foreign	state	Widely held
Mean	3.86	27.45	31.69	14.01	3.87	19.12
St. Error	2.12	4.51	4.48	4.03	1.78	2.45
St.Dev.	15.00	31.92	31.71	28.48	12.58	17.31
Dispersion	224.92	1019.18	1005.71	810.90	158.32	299.78
Interval	74.57	99.02	100.00	92.38	52.68	84.55
Max.	74.57	99.02	100.00	92.38	52.68	84.55
Sum	193.15	1372.31	1584.72	700.58	193.35	955.90

Table 1. Descritive statistics for ownership structure data collected from official sources.

In %	board	dom. fin.	dom. non-fin.	foreign	state	widely held
Mean	10.29	1.51	5.32	3.70	13.34	20.99
St.Error	3.42	0.59	2.00	1.72	3.08	2.49
St.Dev.	24.20	4.16	14.13	12.16	21.78	17.64
Dispersio	585.77	17.30	199.56	147.95	474.33	311.02
Interval	84.45	18.87	74.32	77.59	99.98	84.55
Max.	84.45	18.87	74.32	77.59	99.98	84.55
Sum	514.66	75.42	265.91	184.85	667.22	1049.32

Table 2. Descriptive statistics for ownership structure calculated indirectly.

I consider it to be a contribution of my work that I do not analyze the relation between performance and the "first layer" ownership that is disclosed in reports but I am trying to dig deeper. When the ultimate owner controls this or that company through a chain of offshores or joint stock companies, I calculate his total stake in his ownership as a sum of direct and indirect cash flow rights, following the approach of Chernykh (2008), which she traces back to La Porta e.a. (1999). I calculate his indirect ownership rights as the product of rights along the whole chain. To demonstrate this methodology, consider in greater details just one case – that of JSC "NTMK" ("NizhneTagilskiy Matallurgicheskiy Kombinat"). This case illustrates the importance of transparency for this topic: looking at reports one can think that company is widely held, but looking underneath the surface one sees that the ultimate owner, through the chain of affiliations, is either the manager or the state.

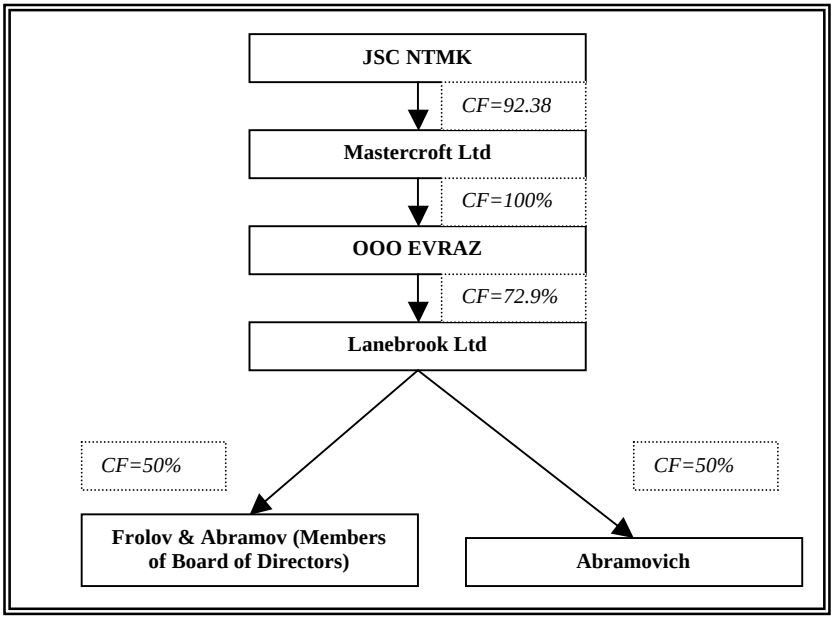

Fig. 1. Structure of NTMK indirect ownership (author's calculations).

In 2005, 92.379% of shares of JSC "NTMK" belonged to a Cyprus-based offshore company "Mastercroft Limited", 100% of whose shares, in turn, belonged to "Evraz". The latter's 72.9% of ownership rights belonged to another offshore, "Lanebrook Limited", whose ownership rights were divided between two members of the board of directors of "NTMK" – Mr.Frolov and

Mr.Abramov, who had 25% each; and Mr.Abramovich, who had 50%. This ownership chain is illustrateg on Fig.1. The ultimate cash flow rights (= ownership rights in terms of my study) of both Frolov and Abramov can be calculated as 0.25·0.729·92.379%=16.836%, and those of Abramovich – as 0.5·0.729·92.379%=33.672%. Thus, in the "reported" dataset I stated 97.379% belonging to a foreign company (like most earlier studies would have done), while in "calculated" dataset I stated 33.672% as possessed by an ultimate owner who is an outsider to the firm and 33.672% belonging to the Board of Directors.

It is subject to Russia's legislation that companies disclose their largest stakeholders at 5% threshold and the largest stakeholders of their stakeholders at 20% threshold in their quarterly reports. In the data set based on official documents solely I defined the following groups of owners: members of the board of directors, domestic financial institutions (banks, investment and pension funds, mutual funds and etc.), domestic non-financial institutions, foreign owners, state (federal, regional and municipal government). While stakes below 5% are not disclosed, I calculated widely held or non-disclosed ownership stakes as the difference between 100% and the sum of stakes owned by the groups above. Then I investigated as much as it was possible with the use of official documents and sources and recalculated the total stakes for each of these groups. Over that, I added the group of nominal owners to which I transferred stakes of offshores and nominees that could be previously considered as foreign companies and financial institutions. I also added a group of ultimate individual owners who are outsiders to the company and still own a considerable amount. Finally, for both datasets I used the sum of top three investors' stakes and the first largest shareholder's share as measures of ownership rights concentration.

6. Control variables

Since a variety of factors can jointly affect ownership concentration and dependent variables, I used several control variables.

Industry	Number of firms	Percentage
Banking	1	2
Car manufacturing	1	2
Oil & gas	12	24
Retail trade	3	6
Food processing	1	2
Telecommunications	10	20
Transportation	1	2
Chemical production	3	6
Ferrous metals	8	16
Non-ferrous metals	3	6
Energy	7	14
Total	50	100

Table 3. Summary of the number of companies from the sample in each industry that is present.

Control variables account for leverage, industry, age (number of years since state registration as open joint stock company) and shareholders' identities (in case of concentration analysis) effects. Leverage is controlled by gearing ratio. The industry-specific dummies are for banks, food, car manufacturing, retail (for Tobin's Q analysis this industry is not present), telecommunications, electrical energy, transportation, chemical production, black metals and colored metals; oil and gas is the base – omitted – category. Summary of the number of companies in each industry is provided in Table 3.

Also for my analysis of concentration I used shareholders' groups as dummies and the base category is domestic non-financial category.

7. Specifications and estimation results

To test the relationship between performance and ownership structure, I used OLS regressions. I regressed each of the indicators of performance that I have outlined above on ownership measures, starting with the simplest specifications and then extending them by adding the control variables and dummies for industries or the owner's identity in case of test on concentration. See the full list of the variables used in Appendix 1.

While I both collected information on reported ownership and also calculated a more reliable dataset of ownership measures, I conducted OLS analysis on both datasets and compared them. First, let me describe my results for the recalculated – reliable – ownership information and then I will summarize the most interesting comparisons with official data's analysis. Variables are named in the same way for both datasets with few exceptions (when this or that category is not present at all, as discussed above).

To investigate the effect of concentration (from reliable dataset as I have stated above) on performance of enterprises I started with the following specification whose regression output is provided in Appendix 2 as Model 1:

$$ROE = \alpha + \beta\ TOP1 + \varepsilon \quad (1)$$

Interpretation is such that there is positive relation between the first largest shareholder's stake and ROE. Coefficient equals 0.003 and is significant at 5% level. In other words with an increase in TOP1 by 1 (while measured in percents, by 1 percentage point) ROE will rise by 0.003.

Then I extended the specification above by adding variables of age and leverage as explanatory variables (Model 2 in Appendix 2):

$$ROE = \alpha + \beta_1\ TOP1 + \beta_2\ AGE + \beta_3\ LEVERAGE + \varepsilon \quad (2)$$

One can see that the magnitude and the sign of the coefficient have not changed, it is still significant. Age turned out to influence negatively the *ROE* indicator of performance (each additional year since state registration lowers *ROE* of the enterprise by 0.026 ceteris paribus), while leverage – positively.

Ceteris paribus the higher the gearing ratio, the more profit is generated from money invested by shareholders, which in general does make sense.

With regard to analysis of relation between *ROE* and concentration of ownership rights I also analyzed specifications 3 (Model 3) and 4 (Model 4):

$$ROE = \alpha + \beta_1 TOP1 + \beta_2 AGE + \beta_3 LEVERAGE + \beta_4 BOARD + \beta_5 NOMINAL + \beta_6 FOREIGN + \beta_7 STATE + \beta_8 ULT\_IND + \varepsilon \quad (3)$$

$$ROE = \alpha + \beta_1 TOP1 + \beta_2 AGE + \beta_3 LEVERAGE + \beta_4 BOARD + \beta_5 NOMINAL + \beta_6 FOREIGN + \beta_7 STATE + \beta_8 ULT\_IND + \beta_9 BANKS + \beta_{10} FOOD + \beta_{11} CARS + \beta_{12} SALES + \beta_{13} TMT + \beta_{14} TRNSPRT + \beta_{15} CHEM + \beta_{16} COL\_MET + \beta_{17} BL\_MET + \beta_{18} EL\_EN + \varepsilon \quad (4)$$

In both cases coefficients of *TOP1*, *LEVERAGE* and *AGE* were of the same magnitude and sign as in (1) and (2), thus the relationship is positive and interpreted in the same way as above. Few of the industry and identity dummies were significant and in specification (4). F-statistics was already insignificant at 10% level in specification (4), but I suppose it could be the case because of fewer degrees of freedom left, while my sample was of a moderate size.

Another significant result, while regressing on the biggest individual stake from reliable dataset, I received with respect to Tobin's Q. In the simplest specification (5) concentration of ownership in hands of the first largest shareholder turns out to increase the value of the company (Model 1 in Appendix 3). This is somewhat unexpected: less dispersed ownership leaves more room for extraction of private benefits by the controlling shareholders, so this relation, if any, should have been negative. Coefficient of *TOP1* is significant at 10% level only, which may be the result of omitted variables in this specification.

$$TQ = \alpha + \beta\ TOP1 + \varepsilon \quad (5)$$

While controlling for *AGE* and *LEVERAGE* and adding largest owner's identity's dummies, we get specifications (6) and (7) reported in Appendix 3 as Models 2 and 3, respectively.

$$TQ = \alpha + \beta_1 TOP1 + \beta_2 ULT\_IND + \beta_3 STATE + \beta_4 BOARD + \beta_5 NOMINAL + \beta_6 FOREIGN + \varepsilon \quad (6)$$

$$TQ = \alpha + \beta_1 TOP1 + \beta_2 AGE + \beta_3 LEVERAGE + \beta_4 BOARD + \beta_5 NOMINAL + \beta_6 FOREIGN + \beta_7 STATE + \beta_8 ULT\_IND + \varepsilon \quad (7)$$

Coefficient of *TOP1* is around 0.045 and marginally significant at 1% level and F-statistics is significant at 5% level. The result can be interpreted as evidence of low risk of small shareholders' expropriation, because if coefficient

is positive then the value of company for small shareholders will rise by 0.045 with increase in *TOP1* by 1 percentage point. Among dummy variables' coefficients only *FOREIGN*'s coefficient is insignificant. Thus there is no significant difference on impact of the largest shareholder's stake on Tobin's Q if it belongs to domestic non-financial institution or to a foreign investor unlike for other groups of the largest shareholder.

All other performance indicators showed no significant relation with ownership concentration measured as *TOP1*. Therefore I organized next tests to see whether the sum of ownership rights of three largest shareholders has any implication for performance. I used another concentration measure, namely *TOP3*. The shortest specification (8) (Model 1 in Appendix 4) is as follows:

$$ROE = \alpha + \beta\ TOP3 + \varepsilon \tag{8}$$

TOP3's coefficient of 0.002 was significant at 10% level and revealed positive relation between *TOP3* and *ROE*, which is logical due to results with *TOP1* testing above. While adding control and dummy variables (Models 2 through 4 in Appendix 4), explanation power of regression improved, though there was no change to magnitude of coefficients. Unfortunately, no other performance indicators were found to be significantly related to concentration measured by *TOP3*.

The next step of my analysis as I have announced before was to regress performance measures on the variables reflecting total stakes of the state, members of the board of directors, foreign investors and the widely held stakes – each group one by one. And I am still analyzing the recalculated (more reliable) dataset. I started with the group of insiders to the company – members of the board of directors.

Among all performance measures I have spotted positive relationship between the sum of board's stakes and net profit margin and *ROA*. I started with the simplest specifications and extended them with control and dummy variables. The magnitude of coefficients of *BOARD1* did not change, but the explanatory power of regressions increased and significance at 10% (marginally) and 5% level respectively was present. Estimates of equation 9 (Model 2) and 10 (Model 3) are presented in Appendix 5.

$$\begin{aligned} ROA = {} & \alpha + \beta_1 ROARD1 + \beta_2 AGE + \beta_3 LEVERAGE + \beta_4 EL\_EN + \\ & + \beta_5 BL\_MET + \beta_6 BANKS + \beta_7 FOOD + \beta_8 COL\_MET \\ & + \beta_9 CHEM + \beta_{10} TRNSPRT + \beta_{11} CARS + \beta_{12} SALES + \beta_{13} TMT + \varepsilon \end{aligned} \tag{9}$$

$$NP = \alpha + \beta_1 ROARDI + \beta_2 AGE + \beta_3 LEVERAGE + \beta_4 EL\_EN + \\ + \beta_5 BL\_MET + \beta_6 BANKS + \beta_7 FOOD + \beta_8 COL\_MET \\ + \beta_9 CHEM + \beta_{10} TRNSPRT + \beta_{11} CARS + \beta_{12} SALES + \beta_{13} TMT + \varepsilon \quad (10)$$

From my point of view it could reflect better monitoring of managers: while the sum of stakes belonging to the Board of Directors increases by 1 percentage point (and I assume it to proxy the sum of management's stakes while in this or that way these parties are affiliated in my sample), ROA and net profit margin ratios rise too by 0.001 and 0.0027 respectively. I assume it may be due to more active participation of Board who are interested in better results now. No sign of minority shareholders expropriation is spotted, which is unexpected but still consistent with earlier finding that while insiders' stakes are small, there is no entrenchment effect.

I also tested for implications of foreign ownership and the only performance indicator, the coefficient of which was significantly different from zero, was Tobin's Q for 37 of sampled firms. In specification (11) *FOREIGN1*'s coefficient was positive and equal 0.0496 and significant at 5% level (Model 1 Appendix 6).

$$TQ = \alpha + \beta\ FOREIGN1 + \varepsilon \quad (11)$$

It is logical while foreign ownership is associated with higher corporate governance and less minority shareholders expropriation, thus less risk and higher value of the enterprise for small shareholders. Adding control variables of age and leverage does not change the magnitude of *FOREIGN1*'s coefficient and corresponding *t*-statistics, though the *F*-statistics is quite low.

While regressing performance on "reliable" state's total stake (indifferent whether federal, regional or municipal), the significant relationship was identified between variables *ROA* and *STATE1* (equation (12) and Model 1 in Appendix 7):

$$ROA = \alpha + \beta\ STATE1 + \varepsilon \quad (12)$$

Each additional unit of state's ownership lowered *ROA* of companies by 0.001 at 10% significance level. Controlling for age and leverage increased explanatory power of regression, still magnitude and significance level of *STATE1*'s coefficient did not change, though the *F*-statistics is significant at 10% level and not 5% now. Adding dummies for industries makes coefficient and *F*-statistics insignificant, though it may be due to fall in degrees of freedom. I assume interpretation of this result to be the following: as *ROA* shows how profitable a company is relative to its total assets, it gives an idea as to how efficiently are the assets used by managers to raise profit. Thus the higher is "participation" of state, the less space is left for managers to strive for efficiency, and thus *ROA* is negatively related to the sum of ownership rights in possession of state

Next were the tests for relation between total amount of ownership rights that are widely held (or non-disclosed ownership) and performance. Results proved to be quite interesting. Again the only significant implications of widely held ownership rights were identified for *ROE* (marginally significant) and Tobin's Q. Estimates of equation 13 (Model 1) and 14 (Model 3) are provided in Appendix 8.

$$ROE = \alpha + \beta\ WIDE\_HELD1 + \varepsilon \tag{13}$$

$$TQ = \alpha + \beta_1 WIDE\_HELD + \beta_2\ TMT + \beta_3\ CARS +$$

$$\beta_4 EL\_EN + + \beta_5 BL\_MET + \beta_6\ BANKS + \beta_7\ FOOD + \tag{14}$$

$$\beta_8 COL\_MET + \beta_9\ CHEM + \beta_{10}\ TRNSPRT + \varepsilon$$

Several industry dummies in (14) are significantly different from zero, thus industry matters for performance also. However, for both the relationship turned out to be significantly negative unexpectedly. Explanation may be such that control and supervision over enterprises are low when widely held rights increase in amount, it is more difficult to have agreeable decisions and etc., thus performance suffers and value of company falls due to risks of ineffective enterprise's behavior. Negative relation between Tobin's Q and amount of non-disclosed ownership is moreover consistent with my earlier results of positive relation between the very same Tobin's Q and concentration.

Now let me summarize the most interesting findings of OLS analysis of the dataset that I constructed from officially reported information solely. I compared the latter to my OLS analysis of recalculated ownership data. Due to the lack of space regression outputs are not reported here, but can be consulted in a complete version of the paper.

First of all, for reported ownership there was evidence of relationship between concentration measured as *TOP1* and net profit margin. The coefficient of *TOP1* was significantly different from 0 and moreover negative. For a subset of regressors of this equation magnitude of coefficients and t-statistics did not significantly change. On the contrary, in the analysis presented above there was no significant relationship between analogous variables. Another curious comparison is such that reported ownership concentration (*TOP1*) showed no significant relation with Tobin's Q. The coefficients were positive like in reliable data's case, but magnitude and t-statistics were completely different.

Performance measures regressed on the total stakes of the state, members of the board of directors, foreign investors and the widely held stakes – each group one by one, analogous to specifications (9) and (10) – resulted in no significant relationships. Finally, results of OLS analysis differed across the two datasets are in regard of foreign and state ownership: if recalculated ownership data showed no evidence as such, reported ownership data suggested a significant and positive relationship between ownership and performance measures.

8. Conclusion

Using the tools of linear regressions' OLS estimation, I analyzed both reported and a more thoroughly investigated ownership data. I was able to detect positive relation between concentration and such performance measures as ROE and Tobin's Q. Also I received the evidence that the more ownership rights are widely held the smaller are the same performance measures. Moreover I compared these results to what one would have concluded from analyzing the dataset on ownership that was constructed from reported data solely and found substantial differences in results.

These comparisons truly underlie the importance of reliability of data, while one can conclude the existence of impact on performance which does not exist in reality. And vice versa, one can arrive at conclusion of no impact of ownership on performance, while the dataset where ownership is investigated and calculated in a more thorough way shows a definite relation.

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Appendix 1
List of variables

1. Performance-dependent variables:

TQ - Tobin's Q approximation (ratio)
ROE - return on equity (ratio)
ROA - return on assets (ratio).

2. Ownership - independent variables:

TOP1- stake of the first largest shareholder (%).
TOP3 - sum of stakes of 3 largest shareholders (%).
BOARD1 - sum of stakes owned by the Board of Directors (%).
DOM_FIN1 - sum of stakes owned by domestic financial institutions (%).
WIDE_HELD1 - sum of widely held stakes or non-disclosed ownership (%).
FOREIGN1 - sum of stakes owned by foreign investors (%).
STATE1 - sum of stakes owned by the state (%).
DOM_NFIN1 - sum of stakes owned by domestic non-financial institutions (%).
NOMINAL1 - sum of stakes owned by nominal owners (%).
ULT_IND1 - sum of stakes owned by ultimate owners-outsiders to the firm (%).

3. Control variables:

AGE - number of years since state registration as JSC.
LEVERAGE - gearing ratio of the company (long-term liabilities to equity).

4. Industry dummy variables:

BANKS - 1 if bank industry, 0 – otherwise.
FOOD -1 if food industry, 0 – otherwise.
CARS - 1 if car manufacturing industry, 0 – otherwise.
TMT - 1 if telecommunications industry, 0 – otherwise.
TRNSPRT - 1 if transportation industry, 0 – otherwise.
CHEM - 1 if chemacal production industry, 0 – otherwise.
COL_MET - 1 if colored metals industry, 0 – otherwise.
BL_MET - 1 if black metals industry, 0 – otherwise.
EL_EN - 1 if electric energy industry, 0 – otherwise.
SALES - 1 if retail industry, 0 – otherwise.
OIL - base (omitted) category.

5. Ownership dummy varuables

BOARD - 1 if *TOP1* belongs to the Board of Directors, 0 – otherwise.
DOM_FIN - 1 if *TOP1* belongs to domestic financial company, 0 – otherwise.
FOREIGN - 1 if *TOP1* belongs to a foreign investor; 0 – otherwise.
STATE - 1 if *TOP1* belongs to the state; 0 – otherwise.
NOMINAL - 1 if *TOP1* belongs to a nominal investor or an offshore; 0 – otherwise.
ULT_IND - 1 if *TOP1* belongs to an ultimate owner who is an outsider to the firm; 0 – otherwise.
DOM_NFIN - base (omitted) category.

Appendix 2

Dependent Variable: *ROE*								
	Model 1		Model 2		Model 3		Model 4	
Variable	Coef-t	*t*-stat.	Coef-t	*t*-stat.	Coef-t	*t*-stat.	Coef-t	*t*-stat.
Constant	0.1000	1.4210	**0.3570**	2.8340	0.1870	0.9770	0.4730	1.3830
TOP1	*0.0030*	2.1300	**0.0030**	2.7400	**0.0030**	2.7350	0.0030	1.8160
AGE			*-0.0250*	-2.5470	*-0.0280*	-2.5610	*-0.0230*	-2.5870
LEVERAGE			0.0170	1.4400	0.0160	1.3220	0.0220	1.5050
BOARD					0.1880	1.1360	0.1730	0.6500
NOMINAL					0.1780	1.1600	0.0190	0.0700
FOREIGN					0.1330	0.6420	0.3300	0.9690
STATE					0.1900	1.2160	0.1540	0.5760
ULT_IND					0.2860	1.7590	0.2070	0.7400
BANKS							-0.3080	-1.1640
FOOD							-0.5350	-1.7290
CARS							-0.2470	-0.6770
SALES							-0.2430	-1.3200
TMT							**-0.3030**	-2.7750
TRNSPRT							-0.1360	-0.6030
CHEM							-0.1280	-0.9490
COL_MET							-0.1100	-0.7540
BL_MET							-0.2390	-1.7870
EL_EN							-0.0960	-0.9410
R-sq.		0.0864		0.2219		0.2857		0.4614
Adj. R-sq.		0.0674		0.1712		0.1463		0.1486
Underlined - significant at 10%; *italics* significant at 5%; in **bold** significant at 1%								

Appendix 3

Dependent Variable: *TQ*						
	Model 1		Model 2		Model 3	
Variable	Coefficient	*t*-statistic	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Constant	1.3370	1.5990	**5.0440**	2.7520	**6.3280**	2.8530
TOP1	0.0310	1.7340	*0.0440*	2.5640	*0.0460*	2.5850
AGE					-0.1470	-1.1560
LEVERAGE					0.1260	0.5760
BOARD			-5.6700	-2.7030	*-5.5490*	-2.5870
NOMINAL			-3.5330	-1.8230	-3.1400	-1.5810
FOREIGN			-2.5210	-1.0730	-1.9000	-0.7830
STATE			-4.7650	-2.4030	*-4.5470*	-2.2660
ULT_IND			-5.5450	-2.6610	*-5.0140*	-2.3310
R-sq.		0.0791		0.3823		0.4145
Adj. R-sq.		0.0528		0.2588		0.2472
Underlined – significant at 10%; *italics* significant at 5%; in **bold** significant at 1%						

Appendix 4

Dependent Variable: *ROE*								
	Model 1		Model 2		Model 3		Model 4	
Variable	Coef-t	*t*-stat.	Coef-t	*t*-stat.	Coef-t	*t*-stat.	Coef-t	*t*-stat.
Constant	0.0950	1.1300	0.2880	1.9020	0.2260	1.8330	*0.5030*	2.5720
TOP3	0.0020	1.7890	0.0020	1.9690	0.0010	1.1510	0.0010	1.1070
AGE			-0.0180	-1.8350			*-0.0230*	-2.0910
LEVERAGE			0.0200	1.6360			0.0230	1.5150
BANKS					-0.0670	-0.2900	-0.2070	-0.7990
FOOD					-0.2720	-1.1680	-0.2210	-1.0020
CARS					-0.2680	-1.1040	-0.3410	-1.4760
SALES					-0.2270	-1.5750	-0.2450	-1.7960
TMT					-0.1860	-1.8250	*-0.2240*	-2.2970
TRNSPRT					-0.0240	-0.1060	-0.0200	-0.0930
CHEM					-0.1630	-1.1270	-0.1410	-1.0210
COL_MET					0.0220	0.1550	-0.0240	-0.1750
BL_MET					-0.0920	-0.9080	-0.1390	-1.4020
EL_EN					-0.0880	-0.8160	-0.0920	-0.9010
R-sq.		0.0626		0.1652		0.2114		0.3370
Adj. R-sq.		0.0430		0.1108		-0.0168		0.0988
Underlined - significant at 10%; *italics* significant at 5%; in **bold** significant at 1%								

Appendix 5

Dependent Variable: *ROA*						
	Model 1		Model 2		Model 3	
Variable	Coefficient	*t*-statistic	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Constant	**0.0980**	7.0700	0.0700	1.3200	0.1160	1.9760
BOARD1	0.0020	1.8840	*0.0010*	2.0600	0.0010	1.6460
AGE			0.0030	0.7230	0.0010	0.3320
LEVERAGE			*-0.0100*	-2.0400	*-0.0130*	-2.1340
BANKS					0.0070	0.0670
FOOD					-0.0600	-0.6720
CARS					-0.1140	-1.2690
SALES					-0.0570	-1.0040
TMT					-0.0680	-1.8360
TRNSPRT					0.0820	0.9300
CHEM					-0.0300	-0.5440
COL_MET					0.0900	1.59130
BL_MET					-0.0110	-0.2410
EL_EN					-0.0420	-1.0450
R-sq.		0.0689		0.1510		0.3699
Adj. R-sq.		0.0495		0.0960		0.1424
Underlined - significant at 10%; *italics* significant at 5%; in **bold** significant at 1%						

Appendix 6

Dependent Variable: *TQ*						
	Model 1		Model 2		Model 3	
Variable	Coefficient	*t*-statistic	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Constant	**2.4540**	7.0460	3.0760	1.9130	*3.8860*	2.1110
FOREIGN1	*0.0490*	2.0480	*0.0520*	2.1090	0.0130	0.2610
AGE			-0.0640	-0.4880	-0.0400	-0.3100
LEVERAGE			0.2250	0.9840	1.9880	1.9100
BANKS					-18.295	-1.9300
FOOD					2.7200	0.6120
CARS					-0.5930	-0.2700
TMT					**-2.7060**	-2.9790
TRNSPRT					-0.9590	-0.5010
CHEM					*-3.1060*	-2.1140
COL_MET					-1.8410	-0.9430
BL_MET					*-2.4540*	-2.4240
EL_EN					-1.9740	-2.0220
R-sq.		0.1071		0.1361		0.5285
Adj. R-sq.		0.0816		0.0576		0.2927
Underlined - significant at 10%; *italics* significant at 5%; in **bold** significant at 1%						

Appendix 7

Dependent Variable: *ROA*						
	Model 1		Model 2		Model 3	
Variable	Coefficient	*t*-statistic	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Constant	**0.1220**	8.1720	0.1020	1.9110	*0.1360*	2.2740
STATE1	-0.0010	-1.8180	-0.0010	-1.7080	-0.0010	-1.4730
AGE			0.0020	0.5410	0.0010	0.2290
LEVERAGE			-0.0090	-1.7920	*-0.0130*	-2.1920
BANKS					0.0610	0.5510
FOOD					-0.0740	-0.8190
CARS					-0.1290	-1.4220
SALES					-0.0380	-0.6940
TMT					-0.0560	-1.5040
TRNSPRT					0.1210	1.2950
CHEM					-0.0440	-0.7800
COL_MET					0.0840	1.4740
BL_MET					0.0150	0.3680
EL EN					-0.0270	-0.6460
R-sq.		0.0645		0.1283		0.3610
Adj. R-sq.		0.0450		0.0715		0.1302
Underlined - significant at 10%; *italics* significant at 5%; in **bold** significant at 1%						

Appendix 8

Dependent Variable: *ROE*						
	Model 1		Model 2		Model 3	
Variable	Coefficient	*t*-statistic	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Constant	**0.2950**	6.1140	**0.4870**	3.7740	**0.6920**	4.6950
WIDE_HELD1	-0.0020	-1.5960	-0.0020	-1.3720	*-0.0020*	-1.2460
AGE			-0.0180	-1.7320	-0.0230	-2.1450
LEVERAGE			0.0150	1.2490	0.0180	1.2690
BANKS					-0.1760	-0.6860
FOOD					-0.2130	-0.9730
CARS					-0.3410	-1.4970
SALES					*-0.2800*	-2.0310
TMT					**-0.2670**	-2.9390
TRNSPRT					-0.0800	-0.3670
CHEM					-0.1410	-1.0330
COL_MET					-0.0720	-0.5190
BL_MET					-0.1720	-1.6540
EL_EN					-0.1430	-1.4030
R-sq.		0.0506		0.1304		0.3437
Adj. R-sq.		0.0308		0.0737		0.1066
Underlined - significant at 10%; *italics* significant at 5%; in **bold** significant at 1%						