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## Investment drivers of shareholder value creation in large publicly traded Russian companies

### Abstract

Modern financial theory maintains that it is the investment decisions that act as the major source of shareholder value creation. The article presents results of empirical study of the impact the investments in different kinds of assets have on shareholder value creation. The study is based on panel data; the sample is formed by data covering the 2004-2012 period for the largest public companies representing nonfinancial sector of Russian economy. The results obtained show that investments in new equipment are associated with higher comparative market value of a company but not with higher total shareholder return. At the same time, companies most actively increasing investment in working capital are traded with certain discount. Active investment in intangible assets makes it possible to obtain higher shareholder returns. Long-term financial assets are negatively related to both comparative market value of the company and the level of shareholder return, while no statistically significant influence of investment in short-term financial assets over company value is discovered. It is also shown that individual characteristics of companies are essential in their comparative valuation by the market and are of much less importance in explanation of shareholder returns. The applied relevance of analysis performed lies in its role in making possible for managers to single out value drivers for companies in an incomplete financial market.

**Keywords:** investment expenditures, investment drivers, value drivers, shareholder return, company value.

**JEL Classification:** G30, G31, G32.

### Introduction

Despite substantial amount of criticism driven by recent financial crisis, the concept of value based management has established itself as a dominating managerial paradigm. Accordingly, all business activities have to be directed towards attainment of sustainable growth in shareholder value in the long run while managerial decision-making has to be based on value drivers. In keeping with this approach the major objective of our research is to conduct empirical investigation of investment drivers of shareholder value creation under the conditions of Russian capital market. The applied relevance of analysis performed lies in its role in enabling managers to single out value drivers for companies in an incomplete financial market.

We hypothesize that company's investments in different kinds of assets might act in different directions when it comes to shareholder value creation. For example, it is suggested that investment in physical capital is positively related to shareholder value creation since the latter is first and foremost a result of valid decisions on investment expenditures generating economic rents (Hall, 1993; Chen and Zhang, 2007). At the same time attractive investment opportunities in the competitive goods markets occur in case the company has strong and lasting competitive advantages, some kinds of "market entry barriers" like brand names, patents, etc. (Madden et al., 2006; Ankudinov and Safina, 2011). As a result we expect that investments in intangible assets might be even stronger driver of shareholder value creation. As for the investment in

financial assets, for nonfinancial companies the chances to create value at much more efficient financial markets as compared to the goods markets are rather limited (Koller et al., 2010). Investors might also view quite negatively the fact that a nonfinancial company acts as a financial intermediary rather than investing in its core business. That is why we suggest that investments in financial assets are negatively related to shareholder value creation metrics under consideration.

In this study the Total Shareholder Return indicator as well as value multiples, such as Market-to-Book and Price/Earnings ratios are used as shareholder value creation metrics. The Total Shareholder Return indicator has been considered in depth in seminal papers on value-based management (see, for example, Rappaport, 1998). As for value multiples, it is well established in the relevant literature that market value of a company differs from its book value by present value of its future excess earnings, i.e. risk-adjusted future earnings in excess of market average. This implies that value multiples reflect valuation by investors of future abnormal returns, i.e. the spreads between expected returns and cost of capital. Value multiples are widely used in empirical analyses of returns on shareholder capital (see, for example Pandey, 2005; Malighetti et al., 2011).

Investment drivers are analyzed in terms of investments in fixed assets, working capital, intangibles, long-term and short-term financial assets. Other drivers of shareholder value creation serve as control variables and according to previous works in the field of business valuation (Bartov et al., 2002; Gou et al., 2005) and availability of basic data are broken down into three groups depending on:

- ◆ financial drivers (profitability, leverage, risk);
- ◆ ownership structure (state ownership, presence of big foreign shareholder, degree of ownership concentration);
- ◆ other control variables (size, age, macroeconomic situation, sectoral effects).

Table 1 lists major publications which helped us to select value drivers for consideration within the aforementioned groups.

Table 1. Main references supporting our choice of variables

Variable group	Main references
Financial drivers	<ul style="list-style-type: none"> <li>◆ Hall (1993)</li> <li>◆ Rappaport (1998)</li> <li>◆ Gou et al. (2005)</li> <li>◆ Pandey (2005)</li> <li>◆ Chen and Zhao (2006)</li> <li>◆ Madden et al. (2006)</li> <li>◆ Olsen et al. (2006)</li> <li>◆ Chen and Zhang (2007)</li> <li>◆ Margaritis and Psillaki (2010)</li> <li>◆ Malighetti et al. (2011)</li> </ul>
Ownership structure	<ul style="list-style-type: none"> <li>◆ La Porta et al. (2002)</li> <li>◆ Pedersen and Thomsen (2003)</li> <li>◆ Chua et al. (2007)</li> <li>◆ Meoli et al. (2009)</li> </ul>
Other control variables	<ul style="list-style-type: none"> <li>◆ Farinas and Moreno (2000)</li> <li>◆ Claessens et al. (2002)</li> <li>◆ Huergo and Jaumandreu (2004)</li> <li>◆ Li et al. (2004)</li> <li>◆ Malighetti et al. (2011)</li> <li>◆ Bai and Green (2011)</li> </ul>

## 1. Data and method

The sample of public companies representing nonfinancial sector of Russian economy is formed on the basis of data covering the 2004-2012 period; the sample includes 107 listed on MICEX (Moscow Interbank Currency Exchange) companies with largest annual revenues. The latter requirement for the companies to be included in the data panel is based on the assumption that shares of stock of small and middle-size companies are less liquid and their market prices less accurately reflect the process of value creation.

In general, over 250 Russian companies have shares traded on MICEX, while only 48 of them are represented in quotation list A and 46 – in quotation list B, with 98 companies included in quotation lists as a whole. Shares of other companies represent non-listed stock (for more information see [www.moex.com](http://www.moex.com)). The sample formed for the purpose of this research includes shares from quotation list as well as non-listed shares, both representing the largest companies. Notwithstanding the latter limitation the sample can be viewed as generally representing the Russian stock market as well as the structure of national economy.

The major reason to limit our research to the largest companies represented on MICEX results from the restrictions imposed by current state of Russian financial market which allow to perform market-based statistical analysis only using information for large publicly traded companies. The number of the latter is rather limited. At the same time, as it was mentioned earlier, the sample under consideration adequately represents the structure of national economy. As for the use of panel data for analysis, it results from the necessity to expand the sample and to take into account unobserved heterogeneity among the companies.

The source of data used in this study is the “System for Professional Analysis of Markets and Companies”, SPARK (for more details see [www.spark-interfax.ru](http://www.spark-interfax.ru)) insofar as the companies’ financial statements and registration data are concerned while the share price statistics was acquired from MICEX information portal (the authors can provide the formed data panel upon request). The analysis is based on annual data. However, for a number of variables data on some years are missing: a number of companies have become public later than 2004 while others since then have withdrawn their shares from public trading; negative or abnormally high values of multiples have been excluded from the sample or relevant information could be simply missing from databases. Since the number of observations differs for each company, the panel is unbalanced. It should be noted, however, that estimates are consistent if the missing data is of random character, i.e. the probability of data insufficiency on a particular variable is not dependent on the value of the variable itself.

Descriptive statistics as well as calculation algorithms of variables used in analysis are presented in Table 2. Growth rate is calculated as  $[(x_t - x_{t-1})/x_{t-1}]$ , with the data taken as of particular year end. For the lack of more informative data for risk assessment we use coefficient of variation of companies’ sales revenue for the whole period under consideration. Dummy variables of state ownership as well as of presence of big foreign shareholder are formed using All-Russian Classifier of Forms of Ownership (OKFS). The company age calculation is based upon the date of its registration as a legal entity (we are fully aware of possible limitations of this approach: some enterprises are not as young as it can be judged by the date of their registration since the market economy itself in Russia is slightly over 20 years old).

Sectoral makeup of companies under consideration is as follows (according to All-Russia Classifier of Types of Economic Activities (ACTEA): mining –

19%, manufacturing – 25%, electric power generation and utilities – 42%, services and trade – 5%, transport and communications – 9%.

For the period as a whole Market-to-Book and Price/Earnings multiples averaged 1.21 and 11.6 respectively, while shareholder returns averaged

13%. All variables are characterized by significant volatility (reflected by high value of coefficient of variation, which is equal to standard deviation divided by the mean). High pre-crisis values of the variables went significantly down during the crisis with certain correction afterwards (see Figure 1).

Table 2. Descriptive statistics for the years 2004-2012

Variable	Description	Mean	St. dev.	Min	Max
Market price / book value (market-to-book)	Market capitalization / book value of equity capital	1.21	0.65	0.28	2.63
Market price / earnings	Market capitalization / net earnings	11.60	7.83	1.76	32.69
Shareholder return	Market capitalization growth rate + dividend yield	0.13	0.58	-0.92	1.92
Investment in fixed assets	Fixed assets growth rate	0.19	0.31	-0.36	1.73
Investment in working capital	Current assets growth rate	0.22	0.33	-0.35	1.42
Investment in intangible assets	Intangible assets growth rate	0.09	0.62	-0.93	2.96
Long-term financial assets	Long term financial investments growth rate	0.14	0.45	-0.73	1.70
Short-term financial assets	Short term financial investments growth rate	0.06	0.69	-0.97	1.92
Profitability	Net earnings / total assets	0.07	0.09	-0.25	0.37
Leverage	Proportion of debt in financial structure	0.46	0.25	0.00	0.92
Risk	Coefficient of variation of sales revenue for the years 2004-2012	0.52	0.24	0.13	1.27
State ownership	Dummy variable, = 1 if the government holds ownership interest in the company; = 0 otherwise	0.37	0.48	0.00	1.00
Foreign shareholder	Presence of big foreign shareholder (1 = yes; 0 = no)	0.36	0.48	0.00	1.00
Ownership concentration	Ownership interest of three largest shareholders	0.81	0.17	0.32	0.99
Size	Natural logarithm of sales revenue	23.77	1.94	13.69	28.93
Age	Number of years since company registration date	10.32	5.83	1.00	22.00

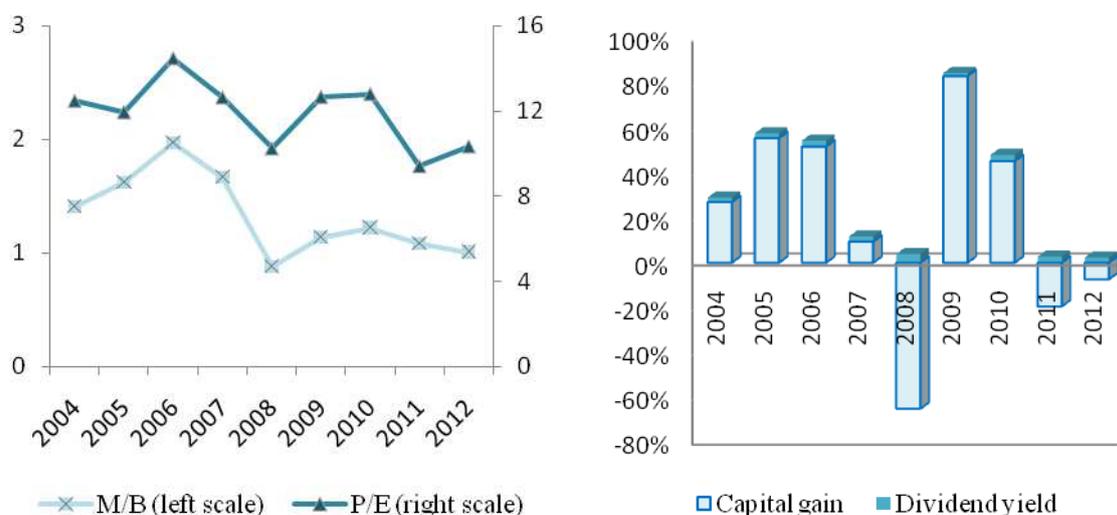


Fig. 1. Trend data of changes in average value multiples and total shareholder returns averages

Average growth rates of fixed assets, working capital and intangibles amounted to 19%, 22% and 9% respectively. Average annual growth of investments in long-term and short-term assets amounted, respectively, to 14% and 6%. Return on total assets averaged approximately 7%, percentage of debt in financial structure – 46%. State as well as nonresident shareholders are represented in the equity capital of respectively 37% and 36% companies as controlling shareholders. On an average, ownership interest of three largest shareholders amounts to 81%. Average age of companies equals to about 10 years. While

some independent variables are also quite volatile, it is generally the dependent variables – market indicators – which demonstrate the highest volatility.

To investigate the investment drivers of shareholder value creation regression analysis was performed. Within the framework of regression analysis value creation determinants are studied using two classes of models: models with random effects and pooled regressions (for more details see Cameron and Trivedi, 2009, Ch. 8, 18). Since most of analyzed variables vary insignificantly with the time, models with fixed effects are not considered here. The

models are intended to take into account cross-correlations between the errors for each particular company. Pair-wise comparison of models was conducted using the Breusch-Pagan test for comparison of models with random effects and pooled regressions. Formulae for calculation of  $\beta$  coefficients PA, RE of linear regressions can be found in (Stata, 2011). All calculations as well as data management were performed using software package STATA12.0.

## 2. Results and discussion

Tables 3 and 4 present the estimation results of models with random effects for investment drivers of shareholder value creation in terms of value multiples – Market-to-Book and Price/Earnings ratios. Table 5 presents estimates of coefficients of investment drivers regressed on total shareholder return indicator. Pair-wise comparison of models indicates higher statistical power of models with

random effects in explanation of value multiples but not the total shareholder returns. This might indicate that unobserved individual effects of companies significantly affect comparative estimates of their market capitalization and are of much less significance in explaining their shareholder returns.

The Wald test makes it possible to reject the zero hypothesis over joint insignificance of models' factors with high degree of reliability:  $p$ -values for all models are less than 0.000. It has to be noted that general macroeconomic situation, analyzed using time dummies, plays a key role in explaining changes in companies' values. For example, exclusion of time-dummies from models 1 and 2 results in Wald  $\chi^2$ -statistics decline from 390.9 to 103.9 and from 331.4 to 89.1, respectively. That can be explained by high volatility of Russian capital market while the volatility of fundamental factors of value creation is much lower.

Table 3. Investment drivers and market-to-book multiple

Variables	Market-to-book multiple				
	Model 1	Model 2	Model 3	Model 4	Model 5
Investment in fixed assets	0.122 (1.36)				
Investment in working capital		-0.041 (0.48)			
Investment in intangible assets			0.003 (0.06)		
Long-term financial investments				-0.100 (1.77)*	
Short term financial investments					0.016 (0.39)
Profitability	1.682 (3.22)***	1.638 (2.90)***	0.796 (1.51)	1.220 (2.57)**	0.705 (1.46)
Leverage	1.065 (7.17)***	1.082 (7.11)***	0.903 (4.30)***	0.956 (4.98)***	1.236 (6.54)***
Risk	0.426 (2.14)**	0.444 (2.17)**	0.418 (1.65)*	0.406 (1.62)	0.631 (2.76)***
State ownership	-0.163 (1.71)*	-0.141 (1.39)	-0.207 (1.95)*	-0.234 (1.94)*	-0.166 (1.75)*
Foreign shareholder	0.172 (1.78)*	0.157 (1.67)*	0.191 (1.72)*	0.203 (1.76)*	0.114 (0.96)
Ownership concentration	0.079 (0.32)	0.033 (0.14)	-0.308 (0.75)	-0.185 (0.53)	-0.211 (0.68)
Size	0.095 (3.14)***	0.092 (3.13)***	0.117 (3.48)***	0.101 (3.06)***	0.121 (4.12)***
Age	-0.022 (1.65)*	-0.025 (1.66)*	-0.049 (2.68)***	-0.020 (1.01)	-0.027 (1.68)*
Sectoral dummies	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes
Cons.	-1.614 (2.27)**	-1.439 (2.09)**	-1.164 (1.39)	-1.561 (2.06)**	-2.039 (2.81)***
$N$	401	395	277	316	286
Rho	0.29	0.28	0.49	0.51	0.46
Wald	390.9***	331.4***	318.5***	329.5***	475.6***
Breusch-Pagan LM	66.5***	76.9***	45.4***	77.7***	35.2***

Notes: Estimates of models with random effects are presented for investment drivers of shareholder value creation. Description of variables under consideration is presented in Table 2.  $t$ -statistics adjusted for heteroscedasticity are given in parentheses. Sectoral dummies are included into the models as well as time dummies. Rho value shows part of total variance explained by variance of panel component. Wald statistics is used to test joint significance of independent variables. Breusch-Pagan test is performed to compare models with random effects and pooled regressions. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Turning to the discussion of investment drivers of shareholder value creation, it should be first noted that investment in fixed assets is positively related to higher comparative valuation of the company by the market (coefficient at the variable in model 1 is significant at 10% level using single-tailed test; in model 6 it is significant at 5% level), but not to higher total shareholder return. The obtained estimates are consistent with results of earlier empirical studies (Kleidon, 1986; Chen and Zhang, 2007). At the same time investment in working capital is negatively and statistically significantly related only to price/earnings multiple (model 7). In

model 2, describing market-to-book multiple, the sign at the variable “investment in working capital” is also negative, however the estimate is unreliable. This kind of relation between company value and its investment in tangible assets can be explained by rather conservative approach on the part of majority of Russian managers: most of them are hardly aware of principles of value based management, consequently no particular attention is paid to low asset turnover. At the same time increased working capital expenditures might not be perceived as related to implementation of creating shareholder value investment projects as well.

Table 4. Investment drivers and price/earnings multiple

Variables	Price/earnings				
	Model 6	Model 7	Model 8	Model 9	Model 10
Investment in fixed assets	2.399 (2.02)**				
Investment in working capital		-2.274 (1.85)*			
Investment in intangible assets			0.374 (0.47)		
Long term financial investments				-1.284 (1.38)	
Short term financial investments					-0.497 (0.77)
Leverage	2.378 (1.12)	3.095 (1.68)*	4.449 (1.74)*	4.992 (1.96)**	4.060 (1.65)*
Risk	7.148 (2.35)**	6.725 (2.10)**	6.530 (1.93)*	5.053 (1.67)*	4.898 (1.24)
State ownership	1.204 (0.96)	0.700 (0.55)	-0.731 (0.51)	-0.734 (0.52)	0.185 (0.11)
Foreign shareholder	1.933 (1.65)*	2.162 (1.66)*	1.809 (1.22)	2.646 (1.99)**	1.951 (1.22)
Ownership concentration	3.733 (1.25)	3.647 (1.21)	4.502 (1.32)	1.477 (0.40)	2.017 (0.55)
Size	0.493 (0.98)	0.407 (0.82)	0.520 (0.95)	0.331 (0.63)	0.520 (0.84)
Age	0.041 (0.30)	0.008 (0.06)	0.075 (0.43)	0.057 (0.40)	0.080 (0.43)
Sectoral dummies	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes
Cons.	-7.619 (0.55)	-5.070 (0.37)	-10.719 (0.71)	-3.320 (0.23)	-7.122 (0.43)
N	416	413	300	330	283
Rho	0.25	0.26	0.27	0.29	0.34
Wald	77.0***	68.1***	105.3***	106.0***	44.0***
Breusch-Pagan LM	18.5***	31.4***	22.3***	23.3***	15.7***

Notes: Estimates of models with random effects are presented for investment drivers of shareholder value creation. Description of variables under consideration is presented in Table 2. *t*-statistics adjusted for heteroscedasticity are given in parentheses. Sectoral dummies are included into the models as well as time dummies. Rho value shows part of total variance explained by variance of panel component. Wald statistics is used to test joint significance of independent variables. Breusch-Pagan test is performed to compare models with random effects and pooled regressions. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Investment in intangible assets acts as the strongest determinant of shareholder returns compared to other investment drivers. Coefficient at the variable is positive and significant at 5% level (model 13). The obtained results are generally consistent with the conclusions of earlier empirical studies of the effect

investments in R&D and market research programs have on value creation (Hirschey, 1985; Madden et al., 2006; Ankudinov and Safina, 2011). However, we failed to establish any statistically significant relationship between investment in intangible assets and comparative market value of a company.

As for financial assets, long-term financial investments, as it has been expected, are negatively related to both market valuation of the company and return for shareholders. Coefficients at the variable in models describing market-to-book and price/earnings multiples is significant at 10% level (model 4) and at 10% level using single-tailed test (model 9) respectively; and in model describing shareholder return – at 10% level (model 14). It should be noted that in modern Russian economy with high level of ownership concentration the situation where controlling shareholders use the company as a “financial intermediary” to manage their personal financial investments is by no means infrequent. Apparently, the market values companies most actively using the aforementioned practices with some discounts. Meanwhile no negative effect upon company value is discovered of investment in short-term financial assets. All this to a certain extent fits into conceptual framework of corporate finance: while investing in short-term financial assets can be to a larger extent justified in the context of corporate cash management, there is much less rationale for substantial investing by a nonfinancial company in long-term financial assets with much more efficient financial markets as compared to goods markets (Koller et al., 2010). Besides, in unstable economies like that of Russia market can be expected to offer certain premiums for higher liquidity; however, the empirical evidence of that for Russian nonfinancial companies is patchy and inconclusive.

Next we offer some commentaries on the impact other variables have over shareholder value creation indicators. Companies’ profitability has the strongest influence over shareholder value creation. Technically speaking, according to model 1 estimates, the 10% higher return on assets is associated, *ceteris paribus*, with increase in market-to-book multiple by 0.168. The results are consistent with those of earlier studies (Kleidon, 1986; Chen and Zhang, 2007; Malighetti et al., 2011). It has to be noted, that profitability can be viewed as an indirect indicator of existence of company-specific competitive advantages which form the basis of shareholder value creation in competitive goods markets (Olsen et al., 2006). Profitability variable is excluded from the model describing price/earnings multiple, due to linear correlation of the variables (calculations of both dependent and independent variables involve net earnings of the company).

Level of financial leverage is also positively related to indicators of shareholder value creation. It should be noted here that capital structure policy of many otherwise financially sound national companies is quite conservative; so wider reliance on debt financing might well lower the companies’ cost of capital. Besides, financial leverage can act as a disciplinary tool for management thus bringing down agency costs. Empirical evidence of similar relation between financial policy and shareholder value creation can be found in the literature (Margaritis and Psillaki, 2010).

Table 5. Investment drivers and total shareholder return

Variables	Total shareholder return				
	Model 11	Model 12	Model 13	Model 14	Model 15
Investment in fixed assets	0.025 (0.40)				
Investment in working capital		0.081 (1.18)			
Investment in intangible assets			0.062 (2.08)**		
Long term financial investments				-0.049 (1.68)*	
Short term financial investments					0.039 (1.44)
Profitability	1.144 (4.71)***	1.265 (5.66)***	0.602 (2.34)**	1.165 (4.07)***	1.270 (4.87)***
Leverage	0.231 (2.80)***	0.214 (2.82)***	0.063 (0.83)	0.096 (1.40)	0.251 (2.64)***
Risk	0.066 (0.79)	0.095 (1.38)	0.037 (0.38)	0.068 (0.85)	-0.018 (0.22)
State ownership	0.034 (1.10)	0.011 (0.38)	-0.005 (0.16)	0.023 (0.75)	0.037 (1.06)
Foreign shareholder	0.016 (0.47)	-0.010 (0.29)	0.021 (0.67)	-0.008 (0.27)	-0.044 (1.37)
Ownership concentration	-0.116 (1.68)*	-0.196 (2.47)**	-0.181 (1.91)*	-0.010 (0.13)	-0.179 (1.67)*
Size	0.010 (1.20)	0.007 (0.86)	0.013 (1.28)	0.012 (1.62)	-0.006 (0.63)
Age	0.001 (0.36)	0.003 (0.69)	-0.007 (1.66)*	-0.003 (0.76)	0.002 (0.36)

Table 5 (cont.). Investment drivers and total shareholder return

Variables	Total shareholder return				
	Model 11	Model 12	Model 13	Model 14	Model 15
Sectoral dummies	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes
Cons.	-0.114 (0.51)	0.001 (0.01)	0.122 (0.41)	-0.125 (0.48)	0.316 (1.05)
<i>N</i>	446	436	320	363	289
Wald	538.5***	519.2***	683.0***	845.3***	609.4***

Notes: Estimates of pooled regressions are presented for investment drivers of shareholder value creation. Description of variables under consideration is presented in Table 2. *t*-statistics adjusted for heteroscedasticity are given in parentheses. Sectoral dummies are included into the models as well as time dummies. Wald statistics is used to test joint significance of independent variables. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Business risk measured in terms of companies' sales revenue volatility is directly related to value multiples. For example, higher by 0.25 sales revenue coefficient of variation (one standard deviation) leads to higher values of market-to-book and price/earnings multiples approximately by 0.11 (model 1) and 1.79 (model 6) respectively. At the same time coefficient at the variable is insignificant in models, describing shareholder returns. Therefore, even if riskier shares generally sell with some premium to the market, that does not necessarily result in higher shareholder returns. Meanwhile, the very relation between value creation indicators and company risk level is by no means trivial. On the one hand, the higher the risk the higher the company cost of capital and, consequently, the lower is the market value (negative correlation). On the other hand, higher risk might well lead to higher returns in the future, which are not reflected by current profitability variable (positive correlation) (Koller et al., 2010).

As for ownership structure variables, the coefficient at dummy variables of state ownership is statistically significant only in the models describing price/earnings multiple and is negative. The obtained results are consistent with those of earlier studies (Pedersen and Thomsen, 2003; Meoli et al., 2009; Malighetti et al., 2011). At the same time the relation between the state presence in equity capital and shareholder value creation is also by no means clear cut. On the one hand, state-owned companies are in a position to lobby favorable laws and regulations, secure profitable contracts, enjoy preferences in acquisition of various licenses and permits, etc. On the other hand, investors might be aware that in state-owned companies the interests of stakeholder "the state" might well prevail over the interests of stakeholder "shareholder", and shareholder value maximization might be of no particular importance for such companies.

By contrast, the very fact of presence of a foreign shareholder is positively related to value multiples. It should be noted here that foreign control might indirectly indicate possible implementation of

value-based management as well as wider use of financial tools to discipline managers. A number of empirical studies demonstrate that the very fact of implementation of value-based management can be related to shareholder value creation (Hogan and Lewis, 2005; Rapp et al., 2011). At the same time the correlation between variables of state ownership and presence of controlling foreign shareholder on the one hand and shareholder return on the other is statistically insignificant.

According to the estimates obtained the degree of ownership concentration is not related to comparative valuation of company by the market; however it is negatively related to total shareholder return. Our results are not consistent with those obtained for developed markets with predominantly dispersed ownership which demonstrate positive influence of ownership concentration over market values of companies (La Porta et al., 2002; Pedersen and Thomsen, 2003). The authors offer the following explanation for their results: in case there is a small number of shareholders, it is easier for them to consolidate control and concentrate their efforts on shareholder value maximization. For Russian market characterized by high degree of ownership concentration the problem of consolidation of control is of much less importance, while excessively high degree of ownership concentration may result in disregard of minority shareholders interests. Besides, our analysis is subjected to a number of limitations: variables were formed on the basis of the data which not always correctly reflects the actual characteristics of ownership structure of a particular company. For example, national company may well appear for a foreign shareholder by registering in foreign, usually offshore, jurisdiction. In addition, when it comes to information about big shareholders, the data may be available only about nominal holders, not ultimate owners.

The larger companies exhibit higher values of market-to-book multiple, while the most mature are characterized by lesser values of the multiple. The result is consistent with those of earlier empirical

studies (Malighetti et al., 2011). However, coefficients at the variables of size and age in other models are less reliable. The obtained results can be explained by the fact that shares of large companies are more actively traded on the market and may belong to “blue chips” thus attracting investors ready to pay premium prices. Company age as an indicator of its lifecycle phase may reflect, *ceteris paribus*, the availability of attractive investment opportunities. The relation between firm’s growth opportunities and its age has been addressed in a number of studies (see, for example, Farinas and Moreno, 2000; Huergo and Jaumandreu, 2004; Valitov et al., 2013; Safiullin et al., 2013); the latter – for Russian companies).

An important role in shareholder value creation is played by sectoral effects and macroeconomic factors. Test for significance of sectoral dummies and time dummies has shown their joint statistical significance.

### 3. Reliability of obtained results

A number of diagnostic tests have been performed to support the validity of obtained results. Variance Inflation Factors (VIF-factors) have been calculated to test the hypothesis on the presence of multicollinearity. The values of VIF-factors for independent variables in all models are lower than 2.0 (except for time dummies and sectoral dummies); the average value of VIF in all models is lower than 3.0, which makes it possible to reject the hypothesis on multicollinearity.

The results of Breusch-Pagan test for heteroscedasticity confirm the presence of heteroscedasticity in all models: for economic data one should rarely expect homoscedasticity of residuals. To eliminate the heteroscedasticity problem in linear regressions the two-tailed *t*-test was used for  $\beta$ -coefficients on the basis of robust standard errors adjusted for heteroscedasticity.

As for possible endogeneity problem caused by omitted variables, we try to alleviate the problem introducing wide range of control variables.

A number of limitations of the performed analysis have to be noted. Firstly, as it was mentioned earlier, due to unavailability of some data a number of variables (ownership structure, risk) might not properly represent the characteristics under investigation. Secondly, though we include into the

sample only the largest companies, there still exists a problem of low liquidity of shares of a number of those companies leading to substantial discrepancies between their market and fundamental values. Thirdly, we are fully aware that regressions reflect correlations, but not causality of relations under investigation.

### Conclusion

The results obtained in the course of empirical investigation of investment drivers of shareholder value creation allow for the following conclusions:

- ◆ investment in new equipment is related to higher comparative market value of a company, but not to higher total returns for its shareholders;
- ◆ no positive effect of investment in working capital on shareholder value creation is observed; moreover, companies, rapidly expanding their investments in current assets are traded on the market with certain discount;
- ◆ active investment in intangible assets is positively related to total shareholder return;
- ◆ investment in long-term financial assets is negatively related to both company market value and return for its shareholders, while no statistically significant effect on company values is established of investment in short-term financial assets;
- ◆ such financial value drivers as profitability, financial policy and level of risk are positively related to shareholder value creation;
- ◆ ownership structure variables emerge as company value determinants: companies with participation of the state in equity capital sell with certain discount while those with controlling nonresident shareholder – with certain premium to the market;
- ◆ macroeconomic factors are proved to be much stronger shareholder value creation determinants as compared to individual characteristics of the companies;
- ◆ individual characteristics of companies are essential in their comparative valuation by the market and are of much less importance in explanation of shareholder returns.

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