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## Russian Securities Market: Prospects for Regional Development

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### **Russian Securities Market: Prospects for Regional Development**

The Russian securities market is one of the largest in the CIS region. Yet, it continues to suffer a great number of competitive disadvantages: high dependence on foreign portfolio investment; a strong dependence on oil prices and analogue markets; extreme risks and profitability; as well as a weak market of derivatives. It is becoming increasingly difficult to ignore the negative features of its corporate segment. One of these features is an especially high concentration but subordinate role of the equity market. The corporate bond market is underdeveloped. The largest issuer companies turn to the national securities market as a residual measure, with medium and low capitalization companies dominating.

*What are the prospects of the Russian securities market in the context of regional economic development?* Our study addresses this question in terms of market efficiency. Among other factors, the more efficiently the securities market operates, the more soundly the financial system functions and the more competitive the economic model becomes.

In recent years, there has been increasing interest in the functioning of financial markets. According to the efficient-market hypothesis (EMH), financial markets are supposed to be 'informationally efficient' [Samuelson]. In particular, a share price is expected to reflect all information available to market players, including their sentiments concerning economic prospects. Therefore, the dynamics of market capitalization constitutes one of the best indicators of a company's financial state. The controversy about scientific evidence for EMH has raged unabated for decades. The issue has grown in importance in the light of the global financial crisis. EMH has been extensively criticized [Nocera; Lowenstein; Fox], however, it is still widely used in financial analysis. So far, there has been little discussion about efficiency evaluation on particular markets. Thus, we find it worthwhile to determine what level of efficiency is observed on the Russian securities market.

In the light of these facts, the purpose of our study was to understand if there is a meaningful correlation between market-based and accounting-based indicators of the largest and most liquid Russian public companies. If there is no such correlation and, correspondingly, the stock market is inefficient, we shall then answer the further question: is it at all correct to apply market-based indicators in financial analysis? If meaningful correlation is observed, we may identify the accounting-based indicators that have the greatest impact on the market-based indicators, which could be more effectively applied in market evaluation models.

## **Methodology of research**

The market capitalization (MC) of the most liquid Russian public companies is regarded in our research as the major market-based indicator. The values of corresponding market capitalizations have been taken for the last trading day of the year. Statistical data has been obtained from the companies' official web-sites and from reports of Russian stock exchanges: the Russian Trading System (RTS), the Moscow Interbank Currency Exchange (MICEX), and the Moscow Exchange.

When selecting companies for the research, we were guided by the following principles:

1. The company is in the top-10 in terms of the turnover of shares on the Russian secondary organized market.
2. There are the financial statements for the period under analysis.
3. There are data on market capitalization for the study period, providing that a company is listed with one of the largest Russian stock exchanges.

The selection of only the top-10 listed companies for this study is connected with the peculiarities of the Russian securities market. In particular, in 2012, the top ten issuers made up about 85% of trade volumes on the Russian secondary stock market [Annual Financial Market Report 2012. P. 38]. A similar situation was observed in the previous years. Three companies listed later 2006 were excluded from the research. For seven leading companies comprising on average more than 79% of the market (see Table 1), we have studied long-term dynamics of market capitalization compared with the dynamics of the key accounting-based indicators. The analyzed companies represent the following sectors: banking (Sberbank), oil and gas production and refining (Gazprom, LUKOIL, and Rosneft), metallurgy (Norilsk Nickel and Severstal), telecommunications (Rostelecom).

Notably, the first five companies are leaders not only in terms of trade, but are also the largest in market capitalization (see Table 2). Together, they account for about 40% in the total value of the 100 largest public companies. Despite the fact that the sample size is small, we suppose that it reflects the general trends of the Russian market. Other companies are characterized either by a short public history or their shares are illiquid. Based on these considerations, the calculations have been performed on the basis of seven mentioned companies.

A correlation analysis of the available market and accounting information was performed to reveal connections between the key market- (MC) and accounting-based

indicators. The following key reporting indicators were applied for our calculations: Net Profit (NP), Sales (S), Assets (A), and Equity (E). The first two indicators correspond to the profit and loss statement period, as do the last two with the balance sheet date. As is well known, only the balance sheet indicators (A, E) are comparable with Market Capitalization unconditionally, since they are shown on the certain date. The choice of the rest of indicators was dictated by their critical importance in fundamental analysis. Besides, from the theoretical perspective, all the selected indicators shall directly influence the market value of shares.

We have examined the information from the annual financial statements and from the reports for investors published on the companies' web-sites. The analyzed period comprised 10 years from 2002 to 2011. It should be noted that most companies do not provide information for earlier periods. Furthermore, financial statements for the period between January 1 and December 31, 2012 have not been published yet by all Russian companies. To identify the impact of the financial crisis on the Russian securities market, the analysis was conducted separately for the three time periods:

1. The whole period (2002-2011);
2. The pre-crisis period (2002-2007);
3. The crisis period (2008-2011).

The total number of observations for all companies for the whole period constitutes 350. To illustrate, the sample input data and calculated results for one of the companies (Sberbank) are provided in Appendix 2.

## **Findings**

The results of the correlation analysis for the pre-crisis period are represented in Table 3. Surprisingly, non-significant correlation has been observed only in one case (highlighted in gray). In 89% of cases (25 of 28), the coefficient of correlation was 85% (the coefficient of determination – 72.25%). These results support the hypothesis of close link between the major accounting- and market-based indicators and, therefore, demonstrate the high efficiency of the Russian stock market in the pre-crisis period.

Further, the indicators were studied separately. The Net Profit shows the lowest average correlation with the largest standard deviation. Apparently, this indicator is reflected in the stock price worse than the others. The Sales demonstrate the highest average correlation. However, the corresponding data is slightly different from the other two

indicators (A, E). Given the smallest standard deviation, the Equity indicator provides the best results (average correlation is 93.56%, standard deviation – 3.77%). For such data the average coefficient of determination for the sample is 87.5%, which is considered to be fairly high.

The situation significantly changed in the crisis period (see Table 4). Negative correlation is observed in 32% of cases (9 of 28, highlighted with light gray). Meaningful correlations are found in 39% of the observations (11 of 28, highlighted in dark gray). Only one company (Rostelecom, highlighted in dark gray) retained the significant correlation with all the studied parameters. There was even an increase in correlations for this company, compared with the pre-crisis period. Table 4 clearly illustrates that in the crisis period the accounting- and market-based indicators lost the connection and sometimes demonstrated mixed dynamics. Thus, the Russian stock market efficiency predictably decreased as a result of the financial crises.

For the whole analyzed period, the meaningful positive correlations were indicated in 61% of observations (Table 5, highlighted in gray). Three companies retained a significant connection between all the accounting-based indicators (NP, S, A, E) and the Market Capitalization (Norilsk Nickel, Rosneft, Rostelecom). In 2012, market efficiency was lower than in the pre-crisis period, but expectedly higher than in the crisis years. In the long run, all the interconnections are positive (normal).

The analysis of individual indicators has revealed that balance sheet indicators (A, E) are predictably more significant for the Russian stock market than profit and loss statement indicators (P, S): the first ones provide the highest average correlation and the lowest standard deviations. Taking into account that the Equity demonstrated the largest number of meaningful correlations, it appears that this indicator should be best reflected in the stock market price and considered as a feasible measure for market analysis.

## **Conclusions**

A preliminary conclusion can be made that the Russian stock market functioned efficiently in the pre-crisis period. All analyzed financial indicators revealed meaningful correlation with market capitalization. As it was proved, Equity, demonstrating the highest average correlation and the lowest standard deviation for the sample, acted as the most significant indicator. During the crisis of 2008 – 2011, the Russian stock market demonstrated a sharp decline in informational efficiency. Accounting and market-based indicators were characterized by the uncoordinated dynamics and in some cases changed in different

directions. The best results were observed for the Assets and Equity indicators, changing more consistently with the Market Capitalization.

Surprisingly, the Russian stock market has shown *a medium level of informational efficiency* in terms of correlation over the whole analyzed period. The dynamic of accounting- and market-based indicators has on average been coordinated. The most significant financial indicator for the Russian stock market, as might be expected, is Equity, providing the highest average correlation. If we generalize the results of the correlation analysis based exceptionally on this indicator, it is evident that the market efficiency has dropped by 51% compared with the pre-crisis period (the decrease in the average correlation for the sample from 93.56% to 45.49%), and by 27% during the whole period as a result of the financial crisis (the corresponding decrease from 93.56% to 68.53%).

In conclusion, the study has revealed that today, the Russian stock market is characterized *by low informational efficiency*. In this study, we only discuss a gradual approach of the Russian securities market to the average level of competitiveness in emerging markets, which manifests itself in its quantitative parameters. That is why, *the prospects for its development should be considered, above all, not in the international, but only in regional context*. At the same time, as numerous empirical studies show [Levine. P. 27], the development of the financial sector is a key driver of economic growth. Thus, *an effective strategy for the development of the Russian securities market is one of the pre-conditions for sustainable economic growth of the CIS countries*.

The post-crisis period will most likely be marked with the recreation of the speculative market model. However, the process of the Russian securities market development and performance parameters normalization will probably continue, accompanied by a faster growth of liquidity, diversification of institutions and instruments. As a result, the Russian securities market will be able to claim a significant role in regional development. Nevertheless, it will likely retain peripheral importance and in the short term it will hardly be able to compete with developed securities markets.

To confirm our conclusions, further research should be pursued. It would be worthwhile to conduct a comparative analysis with other emerging and developed countries. Additionally, a longer period for more Russian public companies should be analyzed. Unfortunately, the extension of the study period is hardly possible, since there are no published accounting statements for earlier periods in the public domain. Another important limitation concerns a short public history of most Russian companies.

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Appendix 1: Tables and Figures (for placement in paper)

Table 1: Trade volumes share of the largest companies on the Russian secondary organized market (2009 – 2012, %)

Company	2009	2010	2011	2012	The mean
Sberbank	40,1	36,5	35,4	34,2	36,6
Gazprom	24,2	19,6	24,6	17,2	21,4
Total for 2	64,3	56,1	60,0	51,4	58,0
LUKOIL	7,1	6,1	6,5	8,2	7,0
Norilsk Nickel	6,9	8,2	6,4	4,5	6,5
Rosneft	4,8	5,6	5,1	5,8	5,3
Severstal	0,6	1,6	1,6	1,6	1,4
Rostelecom	0,7	1,0	1,6	1,4	1,2
Total for 7	84,4	78,6	81,2	72,9	79,3

[Source: www.cbr.ru]

Table 2: Capitalization of the largest Russian companies at the end of 2012

Company	Capitalization, RUR mln.	Share, %	Place in the Top-100
Sberbank	2 004 348	7,78	3
Gazprom	3 416 561	13,27	1
LUKOIL	1 706 145	6,63	4
Norilsk Nickel	1 070 756	4,16	5
Rosneft	2 856 209	11,09	2
<b>Total for 5</b>	<b>11 054 019</b>	<b>42,93</b>	
<b>Total for top-100</b>	<b>25 751 448</b>	<b>100,00</b>	

[Source: <http://riarating.ru/infografika/20130201/610536030.html>]

Table 3: Coefficients of correlation between accounting-based indicators and market capitalization of the leading Russian public companies (2002 – 2007, %)

Company	Net Profit / MC correlation	Sales / MC correlation	Assets / MC correlation	Equity / MC correlation
Sberbank	98,93%	96,84%	97,38%	92,06%
Gazprom	97,24%	99,56%	97,47%	97,98%
LUKOIL	95,17%	97,50%	95,62%	95,06%
Norilsk Nickel	85,11%	98,22%	94,31%	96,31%
Rosneft	69,88%	87,00%	85,26%	96,10%
Severstal	79,53%	93,27%	90,85%	89,05%
Rostelecom	49,50%	94,78%	95,11%	88,35%
<b>The mean</b>	<b>82,19%</b>	<b>95,31%</b>	<b>93,71%</b>	<b>93,56%</b>
<b>Standard Deviation</b>	<b>17,85%</b>	<b>4,23%</b>	<b>4,34%</b>	<b>3,77%</b>

[Source: authors' calculations]



Table 4: Coefficients of correlation between accounting-based indicators and market capitalization of the leading Russian public companies (2008 – 2011, %)

Company	Net Profit / MC correlation	Sales / MC correlation	Assets / MC correlation	Equity / MC correlation
Sberbank	19,56%	89,30%	49,98%	53,76%
Gazprom	57,85%	34,65%	63,55%	65,89%
LUKOIL	-22,55%	-14,53%	71,36%	62,97%
Norilsk Nickel	95,95%	-9,45%	49,04%	75,65%
Rosneft	-48,49%	-30,59%	45,21%	47,02%
Severstal	-42,55%	-52,95%	-66,98%	-85,01%
Rostelecom	99,34%	98,51%	97,73%	98,16%
<b>The mean</b>	<b>22,73%</b>	<b>16,42%</b>	<b>44,27%</b>	<b>45,49%</b>
<b>Standard Deviation</b>	<b>63,06%</b>	<b>59,20%</b>	<b>52,28%</b>	<b>59,87%</b>

[Source: authors' calculations]

Table 5: Coefficients of correlation between accounting-based indicators and market capitalization of the leading Russian public companies (2002 – 2011, %)

Company	Net Profit / MC correlation	Sales / MC correlation	Assets / MC correlation	Equity / MC correlation
Sberbank	50,79%	68,53%	67,71%	69,34%
Gazprom	43,03%	37,45%	47,26%	48,93%
LUKOIL	65,49%	45,71%	41,70%	39,66%
Norilsk Nickel	84,68%	77,56%	85,03%	91,54%
Rosneft	66,29%	66,99%	77,03%	71,87%
Severstal	8,25%	49,01%	59,13%	66,43%
Rostelecom	86,94%	95,30%	89,51%	91,93%
<b>The mean</b>	<b>57,92%</b>	<b>62,93%</b>	<b>66,77%</b>	<b>68,53%</b>
<b>Standard Deviation</b>	<b>27,16%</b>	<b>20,20%</b>	<b>18,37%</b>	<b>19,62%</b>

[Source: authors' calculations]

## Appendix 2: Initial data and calculations (example)

Company: Sberbank, JSC

Unit of measure: thousands of RUR.

Table A: Initial statement data

<b>Date of Report</b>	<b>Net Profit</b>	<b>Sales</b>	<b>Assets</b>	<b>Equity</b>
01.01.2003	31 244 118	119 258 332	1 083 311 898	135 501 134
01.01.2004	33 744 909	136 643 499	1 463 660 898	139 951 514
01.01.2005	43 670 882	172 675 095	1 944 287 656	173 524 531
01.01.2006	62 929 968	233 396 464	2 537 179 786	255 043 009
01.01.2007	87 868 870	295 303 015	3 447 595 770	323 229 791
01.01.2008	116 684 723	443 075 961	4 944 822 057	679 505 278
01.01.2009	109 939 802	620 022 471	6 719 019 447	775 517 025
01.01.2010	21 694 495	811 316 235	7 096 995 293	848 253 110
01.01.2011	173 978 563	796 993 292	8 523 247 230	1 049 887 154
01.01.2012	310 494 911	837 887 816	10 419 419 163	1 300 642 439

Table B: Capitalization at year end, RUR bln.

<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
121,22	147,94	261,57	748,06	1796,43	2315,8	463,1	1853,6	2322,6	1765,51

Table C. Calculation of correlation

2002-2007	Correlation
Net Profit / MC	<b>98,93%</b>
Sales / MC	<b>96,84%</b>
Assets / MC	<b>97,38%</b>
Equity / MC	<b>92,06%</b>

2008-2011	Correlation
Net Profit / MC	<b>19,56%</b>
Sales / MC	<b>89,30%</b>
Assets / MC	<b>49,98%</b>
Equity / MC	<b>53,76%</b>

2002-2011	Correlation
Net Profit / MC	<b>50,79%</b>
Sales / MC	<b>68,53%</b>
Assets / MC	<b>67,71%</b>
Equity / MC	<b>69,34%</b>