

## Mechanism of Assessing Effectiveness of Investments into Securities of Leading Russian Oil Companies

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**Abstract:** Based on the method of company's value (DCF: Discounted Cash Flow), we performed calculations of fair cost of common shares of "Lukoil" public company, "NK Rosneft" OJSC and "Gazprom" public company. This index considers share's returns and riskiness and gives the possibility at further comparison with current market price of the share to take decision about effective investment of money. Based on accounting data of each company, we found indices used for fundamental analysis on the base of which one may take decisions about effectiveness of investments. We used the method of comparative coefficients where the following multipliers were considered for each company: correlation of current price of the share with revenues which fall on one share (P/S); correlation of current price of the share with net earnings on one share (P/E); correlation of current price of the share with price of assets which fall on one common share (P/BV); correlation of sum of capitalization and liabilities of the company minus money to depreciation amount, interests payable and profit before taxation (EV/EBITDA). As a result, we found out the cost of shares of each company. Total amount of paper's value of each company was defined basing upon fair price of security which was defines basing on company's cost (DCF Method) and value of the share (with method of comparative coefficients).

**Key words:** Share value, multipliers, profitability, fundamental analysis, assessment of the company

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### INTRODUCTION

For taking effective strategic solutions, skills of assessment and analysis are essential, they favor competitiveness and value of the company. That is why, each specialist in the sphere of economics must be aware of these methods which are used at securities services.

First, we should note that oil industry is one of the important ones for "well-being" of financial markets in the world and in the Russian Federation, in particular. It's development influences significant part of producing and conversion enterprises as well as the companies that sell transportation products in this industry. The key factor that influences market capitalization of these companies is world prices at oil and gas. Further, price increase will allow producing companies increase the profit at the account of sales at higher prices and it will be an additional stimulus for expansion of extraction and processing.

### MATERIALS AND METHODS

Russia's leading oil and gas companies are: "Lukoil", "Rosneft", "Surgutneftegaz", "Gazpromneft", "Tatneft", "TNK-VR", "SN-Megionneftgaz", "RITEK", "Gazprom" and "NOVATEK".

In the course of analysis, total sum of share's value was defined on the base of DCF Method Company, price and method of comparative coefficients.

For detecting dynamics of changes of net profit and depreciation, we used accounting data for several periods:

- Consolidated financial statements for 2012, 2013 and 2014 of "Lukoil" public company (Anonymous, 2015)
- Consolidated account statements for 2012, 2013 and 2014 of "NK Rosneft" OJSC
- Consolidated account statements for 2012, 2013 and 2014 of "Gazprom" public company

Total cost of each company for formed from the sum of discounted cash flow and depreciated (discounted) cost of the company (Politkovskaya, 2013). Market value is always calculated for a certain moment of time, since in a week or a month this index may change (Rappaport, 1998).

Discounting coefficient includes risk-free rate, premium for investment to equities, country risk premium and it = 12%.

Thus, method of discounting cash flow is based on forecasting future flows of the company which are discounted at discount rate which is a risk function for expected cash flows (Gordon, 1962).

Table 1: Calculation of price of “Lukoil” Public Company in millions of rubles

“Lukoil” public company nothing	2012	2013	2014	2015	2016	2017	2018
Net profit	347176	256341	267010	170821	176766	188591	202981
Increment to earlier period (%)	-	-26.16	4.16	-36.02	3.48	6.69	7.63
Depreciation	152450	166636	404742	444042.4	487159	534462.1	586358.4
Increment to earlier period (%)	-	9.31	142.89	9.71	9.71	9.71	9.71
Cash flow	499626	422977	671752	614863.4	663925	723053.1	789339.4
Discounting rate (%)	-	5.5	12	12	12	12	12
Present value of cash flow	-	-	671752	548985.2	526924.6	516466.5	502763.9
Total present value	-	-	-	-	-	-	2766892
Depreciated cost	-	-	-	-	-	-	3602374
Current calculated cost of the company (DCF)	-	-	-	-	-	-	6369266
Company’s debt	-	-	-	-	-	-	1779932
Total cost of the company	-	-	-	-	-	-	4589334

Table 2: Calculation of price of NK Rosneft OJSC in millions of rubles

NK Rosneft OJSC	2012	2013	2014	2015	2016	2017	2018
Net profit	354212	482075	283999	304278.20	314867.1	335931.7	361563.3
Increment to earlier period (%)	-	36.09	-41.08	7.14	3.48	6.69	7.63
Depreciation	227123	392231	430317	472100.8	517941.8	568233.9	623409.4
Increment to earlier period (%)	-	72.69	9.71	9.71	9.71	9.71	9.71
Cash flow	874306	714316	776379	832808.8	904165.6	984972.7	581335
Discounting rate (%)	-	5.5	12	12	12	12	12
Present value of cash flow	-	-	714316	693195.5	660959.4	645832.6	627371.1
Total present value	-	-	-	-	-	-	3341674.64
Depreciated cost	-	-	-	-	-	-	2580555
Current calculated cost of the company (DCF)	-	-	-	-	-	-	5922229
Company’s debt	-	-	-	-	-	-	5619000
Total cost of the company	-	-	-	-	-	-	303229

Table 3: Calculation of price of Gazprom Public Company in millions of rubles

Gazprom public company	2012	2013	2014	2015	2016	2017	2018
Net profit	556340	628144	188980	578612	598766	638826	687616
Increment to earlier period (%)	-	12.90	-69.91	206.17	3.48	6.69	7.63
Depreciation	588978	683185749548	822329.1	902177.3	989778.7	1085886	
Increment to earlier period (%)	-	15.99	9.71	9.71	9.71	9.71	9.71
Cash flow	1145318	1311329	938528	1400941	1500943	1628605	1773502
Discounting rate (%)	-	5.5	12	12	12	12	12
Present value of cash flow	-	-	938528	1250840	1191225	1163289	1129619
Total present value	-	-	-	-	-	-	5673501
Depreciated cost	-	-	-	-	-	-	5547269
Current calculated cost of the company (DCF)	-	-	-	-	-	-	11220770
Company’s debt	-	-	-	-	-	-	5057449
Total cost of the company	-	-	-	-	-	-	6163321

In Table 1, total cost of “Lukoil” public company was calculated from the sum of discounted cash flow in 2015 and depreciated (discounted) cost of the company in 2018 excluding company’s debt. Cash flow was formed from the sum of net profit and depreciation.

Net profit which would be by 2018, was predicted on the base of differentiated mean increment of net profit of pre-prediction period. Also, we calculated depreciation, annual mean increment of which was 9.47%. Thus, in the course of performed calculations, we discovered that total cost of “Lukoil” public company equaled 4589334 millions of rubles.

In Table 2 total cost of “NK Rosneft” OJSC was calculated with the help of the same method, i.e., from the sum of discounted cash flow by 2014 and depreciated

(discounted) cost of the company by 2018 exclusive of company’s debt. Cash flow was formed from the sum of the net profit and depreciation.

Net profit by 2018 was predicted on the base of differentiated mean increment of net profit of pre-prediction period. Thus, in the course of performed calculations, we discovered that total cost of “NK Rosneft” OJSC equaled \$594 158 which is quite high indicator in comparison with showings of “Lukoil” public company. By the same procedure, we calculated cost of “Gazprom” public company in Table 3.

According to our prognoses, mean increment of annual net profit equaled 82.04% and mean increment of depreciation equaled 20.82%. Total cost of the company equaled \$628,160 of millions which in comparison with other companies, takes a leading place. At the same time,

Table 4: Calculation of shares, value on the base of DCF Method

Company	ALukoil Public Company	NK Rosneft OJSC	Gazprom Public Company
Number of common shares (millions of items)	850.56	10598	23673.51
Current calculated value of the company (DCF) (millions of rubles)	4589334	303229	6163321
Fair value of common share (rubles)	5392.87	28.61	260.35
Current value as of 02.04.15 (rubles)	2613	251	147

Table 5: Calculation of indices for Coefficient Comparative Method

Company	Lukoil Public Company	NK Rosneft OJSCA	Gazprom Public Company
Net profit (millions of rubles)	2670102	83999	188980
Total amount of common shares (millions of items)	850.56	10598	23673.51
Depreciation (millions of rubles)	404742	430317	749548
Revenue (millions of rubles)	6978828	4309854	5266080
Total assets (millions of rubles)	6882905	8517000	15177470
Total short-term liabilities (millions of rubles)	787225	1873000	1855947
Cash funds (millions of rubles)	46075	28302	566782
Total long-term liabilities (millions of rubles)	992707	3746000	3201502
Interests(millions of rubles)	7931	79409	29029
Profit before taxation(millions of rubles)	59803	99506	218598
Current price as of 02.04.15 (rubles)	2613	251	147
Capitalization(millions of rubles)	2134148	2443494	3348734
EBITDA (millions of rubles)	472476	609232	997175
EPS (rubles)	288.79	29.01	7.48
P/E	9.05	8.65	19.65
S(rubles)	8200	406	222
P/S	0.31	0.61	0.66
BV (rubles)	5996.44	273.44	427.48
P/BV	0.39	0.92	0.34
(millions of rubles)	3868005	8034192	7839401
EVEBITDA	8.19	13.19	7.86

revenues increased in report period at 2.2%, up to 1.215 trillions of rubles. Prime cost of sales increased from 510,7950 billions of rubles to 575,241 billions of rubles. Revenues before taxation reduced by 13.7%, to 317,887 billions of rubles. Such high indices speak of company's high status. "Gazprom" public company is a monopolist at Russian Market.

As it can be seen from the above, the cost of "Lukoil" public company, calculated with the help of DCF Method, equaled \$95,451 of millions, cost of "NK Rosneft" OJSC equaled \$594,158 of millions and cost of "Gazprom" public company equaled \$628,160 of millions.

Then, on the base of companies' cost, we calculated fair cost of common share of each company. It should be noted that this index holistically characterizes investment attraction of a security and considers its returns and riskiness. In result, fair cost, compared with current market price of security, gives possibility to take investment decision unequivocally (Shapiro, 1989).

Table 4 represents fair cost of each company's share which calculated as correlation of current calculated value of the company with the number of common shares. Consequently, according to our calculations, fair value of share of "Lukoil" public company equaled 5392,87 rubles, fair value of share of "NK Rosneft" OJSC 28,61 and fair value of share of "Gazprom" public company 260,35 rubles. It should be noted that according to calculation of share's value via DCF Method, shares of "Lukoil" Public

Company and "Gazprom" Public Company are underestimated at stock market and shares of "NK Rosneft" OJSC overestimated.

Further step was calculations of data of the three companies ("Lukoil" public company", "NK Rosneft" OJSC and "Gazprom" Public Company) according to comparative coefficients method.

In accordance to accounting records of these companies for 2014, indices for comparative coefficients method were found.

In Table 5 at calculation of coefficient comparative method, we used the following indices of companies' financial statement: net profit, total amount of common shares, depreciation, revenue, total assets, total short and long-term liabilities, cash funds, interests to be paid, profit before taxation and current price as of the moment of analysis.

## RESULTS AND DISCUSSION

Calculation of indices was performed in the following way:

- Capitalization was defines as product of total amount of common shares and current share's value as of 02.04.15
- Profit before payment of interests, taxes and non-monetary expenses (EBITDA) was formed from the sum of depreciation, interests to be paid and profit before taxation

Table 6: Comparative method of coefficients of Lukoil Public Company, NK Rosneft OJSC and Gazprom Public Company

Company	Multipliers			
	P/S	P/E	P/BV	EV/EBITDA
Lukoil@ public company	0.31	9.05	0.39	8.19
NK Rosneft@ OJSC	0.61	8.65	0.92	13.19
Gazprom@ public company	0.66	19.65	0.34	7.86
Mean value	2.54	16.45	2.94	11.35
Weight of multiplier (%)	0.3	0.1	0.3	0.3
Growth potential of Lukoil Public Company (%)	69.89	37.57	41.03	19.01
Total growth potential of Lukoil Public Company (%)		42.73		
Growth potential of NK Rosneft OJSC (%)	-13.66	43.93	-40.22	-26.11
Total growth potential of NK Rosneft OJSC (%)		-5.84		
Growth potential of Gazprom Public Company (%)	-20.20	-36.64	61.76	24.00
Total growth potential of Gazprom Public Company(%)		1.18%		
Share value of Lukoil Public Company (rub.)		3729.65		
Share value of NK Rosneft OJSC (rub.)		236.35		
Share value of Gazprom Public Company (rub.)		148.73		

- Net Profit for one common Share (EPS) was found as correlation of net profit to general amount of common shares
- Index P/E was calculated as correlation of current price to net profit for one common share
- Revenue which falls on one Share (S) was defined as correlation of revenue to general amount of common shares
- Index P/S was calculated as correlation of current share price to revenue that falls on one share
- Cost of assets which fall on one common share or "Book Value" (BV) was found as correlation between difference between assets and responsibilities of the company to general number of common shares
- P/BV index was defined as correlation between current share value with "book value" of the share
- EV index was formed from the sum of capitalization and liabilities of the company minus money assets
- EV/EBITDA index was calculated as correlation of capitalization sum and liabilities of the company minus money assets to the sum of depreciation, interests to be paid and profit before taxation
- Thus, the following indices (multipliers) were found for comparative coefficient method: P/S of "Lukoil" public company equaled 0.31, P/S of "NK Rosneft" OJSC it equaled 0.61 and P/S of "Gazprom" public company it equaled 0.66. P/E of "Lukoil" public company was 9.05, P/E of "NK Rosneft" OJSC equaled 8.65 and at "Gazprom" public company, this index equaled 19.65. P/BV of "Lukoil" public company equaled 0.39, P/BV of "NK Rosneft" OJSC equaled 0.92 and P/BV of "Gazprom" public company equaled 0.34. EV/EBITDA of "Lukoil" public company equaled 8.19, EV/EBITDA of "NK Rosneft" OJSC equaled 13.19 and EV/EBITDA of "Gazprom" public company equaled 7.86

Below in Table 6, using above calculated indices, we found their mean value, on the base of which each multiplier was assigned with corresponding weight in this analysis method. Thus, P/S; 0.3, P/E; 0,1, P/BV; 0.3, EV/EBITDA; 0.3. In the end, we calculated total growth potential for each company and defined value of the share.

According to method of comparative coefficient, we estimated that value share of "Lukoil" public company equaled 3729.65 rub. value share of "NK Rosneft" OJSC equaled 148.73 rub. and value share of "Gazprom" Public Company equaled 148.73 rub. When compared with current share value of these companies, it should be noted that shares of "Lukoil" Public Company and "Gazprom" Public Company are underestimated at the market while shares of "NK Rosneft" OJSC are overestimated.

Conclusions about effectiveness of investment into securities (common shares) of "Lukoil" Public Company, "NK Rosneft" OJSC and "Gazprom" Public Company was made on the base of analysis performed, having compared two methods: method of company's cost and comparative method of coefficients.

Then, we calculated predicted growth potential of shares of "Lukoil" public company, "NK Rosneft" OJSC and "Gazprom" public company according to Table 8 and 9 and, we gave corresponding recommendation about security. As a rule, financial analytics give recommendations about purchase, if growth potential of share is more than 15%; in case growth potential varies from 15-15%, analytics recommend accumulate them and in case growth potential is <15% sale is recommended.

In Table 7, according to our predictions, share value of "Lukoil" Public Company is underestimated in comparison with current share value and it = 4893.91 rub.

**Table 7: Predicted growth potential of shares of Lukoil Public Company**

Total share value of Lukoil Public Company	Value (rub.)	Weight
DCF Method (rub.)	5392.87	0.7
Comparative coefficients method (rub.)	3729.65	0.3
Total predicted share value (rub.)	4893.91	-
Total predicted growth potential (%)	87.29	-
Recommendations	Buy	-

**Table 8: Predicted growth potential of shares of NK Rosneft OJSC**

Total share value of NK Rosneft OJSC	Value (rub.)	Weight
DCF Method (rub.)	28.61	0.7
Comparative coefficients method (rub.)	236.35	0.3
Total predicted share value (rub.)	90.93	-
Total predicted growth potential (%)	63.77	-
Recommendations	Sell	-

**Table 9: Predicted growth potential of shares of Gazprom Public Company**

Total share value of Gazprom Public Company	Value (rub.)	Weight
DCF Method (rub.)	260.35	0.7
Comparative Coefficients Method (rub.)	148.73	0.3
Total predicted share value (rub.)	226.86	-
Total predicted growth potential (%)	54.33	-
Recommendations	Buy	-

Total growth potential equaled 87.29%. Since, growth potential is >15%, it is recommended to buy this security.

In Table 8, according to our predictions, share value of “NK Rosneft” OJSC equaled 90.93 rub. In comparison with current price, this share is overestimated by the market. Predicted potential of decreasing of this share equaled 63.77% and it is primarily connected large debts of the company.

In Table 9 total predicted share value of “Gazprom” public company equals 226.86 which is higher than the market value, consequently, this share is also underestimated. Total predicted growth potential of this share equaled 54.33%.

**Summary:** In this connection, we gave the following recommendation: to buy shares of “Lukoil” and “Gazprom” public companies and to open short position regarding the shares of “NK Rosneft” OJSC. It should also be noted that applied method of calculation of companies’ values (DCF) cannot be called a universal one, thus, it is not appropriate for all the companies. This is, first of all, connected with significant changes in business activity of organization (for example with reorganization of the company) which eventually influence assets and liabilities of the company. It says that it is necessary using additional indices of company’s

financial statements, while performing analysis which would allow predicting share value with more precision.

Thus, assessment mechanism of efficiency of investments into securities lies in performing accurate formalized analysis, on the base of which decision about investment is taken. Thus, two methods were used for analysis, method of company’s value and method of comparative coefficients where indices that give adequate assessment of investments’ efficiency were used, fair value of security and indices of fundamental analysis.

While assessing efficiency of investments into securities, one should pay attention to problems and perspectives of application of methods of securities’ assessment in conditions of Russian Stock Market.

## CONCLUSION

As it can be seen from the above, “Lukoil” and “Gazprom” public companies occurred to be underestimated. The highest growth potential belongs to “Lukoil” public company, it equals 87.29%, then goes “Gazprom” public company with its 54.33%. Shares of “NK Rosneft” OJSC are overestimated at security market and potential of decrease of share’s value is 63.77%.

## ACKNOWLEDGEMENT

The research is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

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