Value Creation in Russian Companies: the Role of Intangible Assets

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Abstract: In today's changing economy managers of the leading companies understand that the key sources for value creation are Intangible Assets (IA). The latest surveys confirm the fact that nowadays these assets are the value drivers and not "traditional" assets having tangible form. The same surveys confirm the fact, that one third of all the effected investment solutions is based on the existing Intangible Assets, and that the decisions made on the basis of IA allow them to make a more accurate prediction of income and profitability of a company in the future, and, hence, the company's value for the shareholders.

The research held in the paper defines the impact of fundamental value of both tangible and intangible assets on the market value of assets of Russian companies. As a general approach used herein for IA evaluation, the method of *Calculated Intangible Value (CIV)* offered by T. Stewart was chosen. According to CIV the evaluation of Intangible Assets is based on *residual operating income (REOI)* model as a variant fundamental value of equity model. The problem of Intangible Assets composition and structure is also covered in the paper. Developed econometric models are tested on the data of Russian stock market for two periods: from 2001 to 2005 year and from 2001 to 2006. In the focus of the research there is both the analysis of the sampled companies (43 companies) as a whole as well as divided into five aggregated fields: mechanical engineering, extractive industry, power engineering, communication services, and metallurgy. At the end of the paper the authors highlight the main directions for further research in the field.

Keywords: value creation, intellectual capital, fundamental value of intangible assets, market value, calculated intangible value

1. Introduction: Intangible assets and value creation

In the last decades the new conditions for business development have led to the lack of success of those companies mainly relying on traditional tangible assets such as properties, labour, financial capital and other physical resources. Such companies are now unable to cope with the new markets rules, and this has shown the importance of Intangible Assets (IA) as value drivers and sources of company's competitive advantage (Barney, 1991; Grant, 1991; Stewart, 1997). Consequently, these assets have been identified as key assets to properly identify, estimate, manage and disclosure in order to create value (Edvinsson, Malone, 1997; Sveiby, 1998).

Logic of business in knowledge-based economy is forwarded by achieving results and long-term success by value-creation. One of the most important trends in the economy of the 21st century is a shift from tangible to intangible value creation. Now the leading companies are trying to achieve not cost reduction but value creation. Except reduction of tangible assets in value, another trend is that the production is mostly based on such intangible assets as knowledge, know-how, creativity and others. One of the main challenges for management now is to create and develop the conditions that will allow them to increase the value of intangible assets and therefore the value of the whole company. The research carried out on the stock exchange show that the way companies create value effects their market value [Chen, Cheng, Hwang, 2005]. Also it is vital for a company that its intangible assets could be transformed into tangible forms (income, market value, value added). The research of Lev Baruch [Lev, 2003: 37] shows that in 2000 «net tangible and financial assets of Microsoft stand less than for 10% of its market value. The same figure for Cisco equals only 5%».

The intangible character of assets means that not all of them are reflected on the balance sheet and that they are not physically visible in a traditional sense. In [Sveiby, 1998] it is said that intellectual capital is "knowledge that can be converted into value". The authors of this paper think that only "intangible" value gives a company an opportunity to differ from its competitors as average return on tangible assets should be almost the same for all players in the industry. So only managing its intellectual capital properly may allow a company to overplay its rivals.

Figure 1 shows that if a company properly manages and develops its intellectual capital, its market value will excess its book value several times as intangible assets are the key differentiators and drivers of a company.

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The figure created by Leif Edvinsson, demonstrates the four phases of extended organizational intangible capital and market value creation.

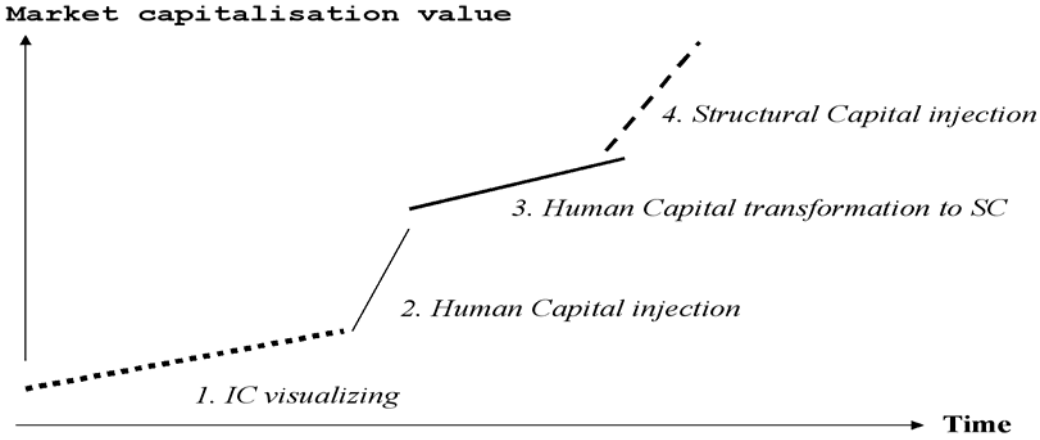

Figure 1: Market capitalization value over time. Edvinsson (2000)

Even though, a number of theoretical works have stressed the strategic importance as well as the role of intangible resources as key value drivers for company's competitiveness (Edvinsson, Malone, 1997; Sullivan, 2000; Wenner, LeBer, 1989); there is yet a lack in approaches that evaluate the mechanism by which these resources contribute to create value (Carlucci, Schiuma, 2007). This is because of the idiosyncratic nature of these assets (Hoskisson et al., 1999; Lippman, Rumelt, 1982). As a result more studies are needed in order to better understand the relationship between intangible assets, the way these assets are clustered and their role in value creation.

2. Composition and structure of intangible assets (intellectual capital)

In many works authors describe the structure of IA and try to define the main component that affects the market value. There is no uniformity about this problem in the researchers' environment, although a certain general understanding of Intangible Assets composition still exists. Thus, in (Sveiby, 1997) it is determined, that Intangible Assets of a company consist of internal (patents, concepts, licenses, administrative system, organizational structure etc.) and external (brands, trademarks, relations with customers and suppliers etc.) organization structures as well as of the competence of its personnel. According to (Petty, Guthrie, 2000), Intangible Assets of a company include organizational and human capital (internal and external). The same approach is described in (Edvinsson, Mallone, 1997; Roos et al., 1997). In (Brooking, 1996) the following constituents of Intangible Assets are distinguished: market assets, intellectual property assets, human-centered assets and infrastructure assets.

A narrower understanding of Intangible Assets is submitted in (Mayo, 2001; Ahonen, 2000). These papers claim that the base of a company's Intangible Assets is constituted namely by human capital, which requires consideration from three points of view: as the amount of employees, as employees' personal properties and as work community (organization).

On the contrary, a considerably broader definition of Intangible Assets is rendered in (Andrissen, Tissen, 2000). These researchers distinguish five asset groups that may be referred to intangible ones: 1) assets and endowments, 2) skills & tacit knowledge, 3) collective values and norms, 4) technology and explicit knowledge, 5) primary and management processes.

The position of the authors of the paper concerning the problem of composition and structure of Intangible Assets is in many respects based on Intangible Assets classification developed by *International Federation of Accountants* (IFAC, 1998). It is conceived, that three elements can be marked out in Intangible Assets structure: Human, Relationship and Structural (Organizational) Capital (see Figure 2).

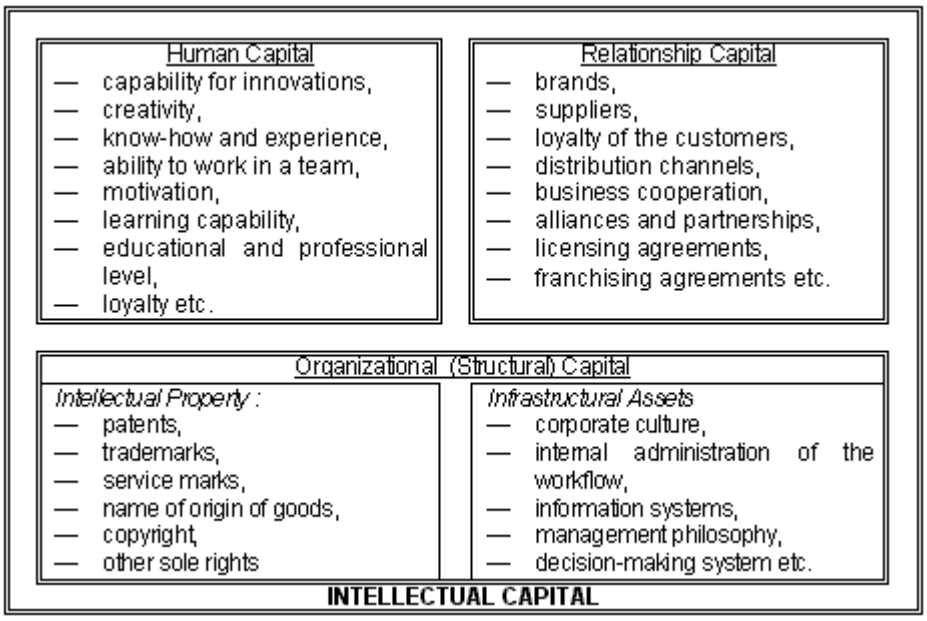

Figure 2: Intellectual Capital Structure

Human capital by IFAC — knowledge, skills and experience which employees "take with them", when they leave the company. However, we define human capital as a capability of a company to benefit from knowledge, skills and experience of employees, which immanently pertain to the latter.

Relationship capital by IFAC — resources connected with external relations of company, i.e. the relations with customers, suppliers, and other counteragents. We define the relationship capital as the capability of a company to benefit from resources connected with the company's external relations.

Organizational (Structural) Capital by IFAC — the attainments remaining inside the company. We define the structural capital not just like attainments, but like the capability of a company to benefit from attainments remaining inside the company.

It can be seen that the definitions provided by the authors of this paper are more forwarded towards value creation than those of IFAC where nothing is said about a capability of a company to benefit from these IA and therefore to create value.

The held empirical research show that the most important role in value creation plays human capital [Backhuijs et al., 1999; Johanson et al., 1999; Miller et al., 1999]. But the goal of this paper was not to extract different parts of IC, but to show its role as a whole in market value creation of Russian companies.

3. Valuing intangibles: CIV method

The Intangible Assets evaluation problem is immensely complicated and disputable. But it is clear that the problem is really important in the 21st century when IA have become the most important resources for a company and when they play almost the most important role in value creation.

The reviews of various approaches of evaluation of this kind of assets are presented in the works by [Sveiby, 2002; Bontis, 2001; Petty, Guthrie, 2000; Andrissen, Tissen, 2000]. Besides, some Russian researchers also develop the above problem in their works [Kozyrev, Makarov, 2003; Bukhvalov, 2004]. The task of this paper does not include the detailed analysis of all existing approaches; therefore we have chosen only one approach for this purpose.

As a general approach used herein for IA evaluation, we have chosen the method of *Calculated Intangible Value (CIV)* offered by T. Stewart [Stewart, 1995]. According to CIV, intangible value of a company is determined as a difference between the company's value (which, in its turn, is determined by the book value of the company's assets and discounted flow of residual operating income) and the possessed value of its tangible assets (determined by the book value of these assets and discounted flow of residual earnings using the average industrial rate of return). This difference characterizes the company's capability to use the Intangible Assets in order to "outrun" the competitors in the industry.

The calculation of Intangible Assets value in accordance with the chosen valuation method (CIV) is based on the residual operating income (REOI) model as a variant of fundamental value of equity model. *Residual operating income* is a net operating income of a company after cost deduction on all company's capital. In this case investments mean book value of net assets (*NA*) of a company. Consequently, we take here the value of net operating income for the income, i.e. the value of income before interest but after taxes (or earnings before interest – *EBI*) and we take the rate of weighed average cost of all capital (*WACC*) — k_w for the required return.

The residual income model, the theoretical evidence in this research area, the practical application of the model, the fundamental works and present-day publications on the point are presented in [Volkov, 2006, 2005; 2004; Bukhvalov, Volkov, 2005a, 2005b; Volkov, Berezinets, 2006].

As mentioned above, the basis for valuation in this paper is the REOI model:

$$V_E^{REOI_j} = E_0^{BV} + \sum_{j=1}^{\infty} \frac{REOI_j}{(1+k_W)^j} = \left[NA_0^{BV} + \sum_{j=1}^{\infty} \frac{REOI_j}{(1+k_W)^j} \right] - D_0 \ , \quad (1)$$

Where V_E^{REOI} — the fundamental value of equity according to the REOI model;

E_0^{BV}, NA_0^{BV}, D_0 — book value of equity, net assets and debt at the moment (respectively);

$REOI_j$ — residual operating income in year *j*. REOI variant is EVA (economic added value);

k_W — weighted average cost of capital (*WACC*)

The transformations that should be made to the model in order to extract the fundamental values of tangible (V_T) and intangible assets (V_I) are represented in [Volkov, Garanina, 2007]:

$$V_T^{REOI} = NA_T^{BV} + \frac{NA_T^{BV} \times (RONA_{IAVG} - k_W)}{k_W} =$$
$$= NA_T^{BV} \times \left(1 + \frac{RONA_{IAVG} - k_W}{k_W}\right) = NA_T^{BV} \times \frac{RONA_{IAVG}}{k_W}, \quad (2)$$

$$V_I^{REOI} = \frac{REOI_I}{k_W} = NA_T^{BV} \times \frac{RONA - RONA_{IAVG}}{k_W}. \quad (3)$$

Hence, the *REOI* defines the effect obtained by a company from both tangible and intangible assets. The main problem lies in dividing the general effect into constituent factors. In order to solve the problem, we shall set up the following interconnected hypotheses.

Hypothesis 1. The companies referring to the same industry are characterized by approximately similar structure of assets. Therefore we may presume, that one monetary unit invested into tangible assets gives the same return throughout all the companies of the industry.

Hypothesis 2. The intra-branch differences in return of companies are explained only by exclusive intangible assets of each company.

If to accept the mentioned hypotheses, then:

- the return on tangible assets is the same for all companies and equals the average industry return rate;
- the return on intangible assets is the difference between the actual return of a company and average return in industry. In this sense, the effect of intangible assets on general return rate may be either positive (if a company's return rate prevails the average industry return rate), or negative (if opposite).

From the above, we draw two principal conclusions:

- the fundamental value of a company's equity may be either positive or zero (if the average industry return is larger than or equals null);
- the fundamental value of intangible assets may be either positive or negative, if the average industry return is non-negative.

4. The econometric models

Three models of the regression analysis which characterize the correlation between the market-value of assets and the fundamental value of tangible and intangible assets are analyzed in this research.

The market-value of a company's assets can be characterized by such subordination:

$$P_A^M = P_E^M + P_D^M , \quad (4)$$

where P_A^M, P_E^M, P_D^M – the market-value of assets, equity and debt thereafter.

Considering that the market-value of equity is market capitalization (Cap), and the market-value of debt (D) is usually assumed as its book value, equation (4) can be rewritten as:

$$P_A^M = Cap + D . \quad (5)$$

The market-value of assets for the model calculation appointed as average weighted market capitalization to the content of bids over a period of 2nd quarter, which follows after the accounting year, plus book value of debt to the end of the accounting period.

Thereby the single-factor model, where the influence of fundamental value of intangible assets (V_I), which is appointed by the term (3), upon the market-value of assets of a company is shown, looks like the following:

$$P_A^M = \beta_0 + \beta_1 \times V_I + \varepsilon_1 , \quad (6)$$

where β_0, β_1 - coefficients of the regression equation

ε_1 - random error

The model which allows to evaluate the influence of fundamental value of tangible assets (V_T), appointed by the term (2), upon the market-value of a company's assets, looks like the following:

$$P_A^M = \lambda_0 + \lambda_1 \times V_T + \varepsilon_2 , \quad (7)$$

where λ_0, λ_1 - coefficients of the regression equation

ε_2 - random error

The third model is a two-factor one which includes the influence of fundamental value of both tangible and intangible assets upon the market-value of assets of a company:

$$P_A^M = \mu_0 + \mu_1 \times V_T + \mu_2 \times V_I + \varepsilon_3 , \quad (8)$$

where μ_0, μ_1, μ_2 - coefficients of the regression equation

ε_3 - random error

5. Statistical information

The test of hypothesis was held on the sample of Russian companies-emitters, which sell their stocks within the Russian Trade System (RTS). Financial intermediaries (banks and financial institutes) were not included into the sample in order to adhere the data uniformity. The final sample includes 43 companies. Firstly, three econometric models were checked on the whole sample of the companies, and then separately on each industry. The companies are divided into 6 aggregated industries: mechanical engineering (includes aircraft industry and automobile manufacturing), extractive industry (includes oil holdings and oil-and-gas companies), energetic, communication services, chemical industry and metallurgy (non-ferrous and ferrous metallurgy).

Information of the publicly available nonconsolidated financial accountancy of the companies from 2001 till 2005, accommodated on their sites, was used for analysis.

Primary information about the market capitalization of the researched companies was got from the site of stock exchange RTS (www.rts.ru). An average weighted market capitalization was used in analysis. Market

capitalization represented by RTS was recounted into rubles on the average course, because ruble was elected as a currency for all the accounts. One of the most important problems of this analysis that was mentioned above is a problem of weighted average cost of capital (k_W). An average *RONA* for each industry is taken as a value of k_W in this analysis.

6. The results of the research

The 1st stage of the research is an estimation of the regression equation on the whole sample of the analyzed companies-emitters.

As it is known the coefficient of determination R^2 explains the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. It is a measure that allows us to determine how certain one can be in making predictions from a certain model.

The test of the model (6) brings the following results.

The coefficient of determination equals 0,341 and the whole equation and coefficients are significant. As a result we received the following regression functions for the model (6) using the observation data for four years (2001-2005):

$$\hat{P}_A^M = 45731{,}8 + 0{,}5201 \times V_I \,. \quad (9)$$

According to the observation data for five years (2001 — 2006) the equation of the regression function for the regression model (6) will be as follows with the coefficient of determination being equal 0,3157:

$$\hat{P}_A^M = 40744{,}16 + 0{,}2019 \times V_I \quad (10)$$

T-test is used for the analysis of significance of explanatory variables (Student criterion), and F-test (Fisher criterion) is used for testing the models for adequacy. Null and alternative hypotheses are stated in the following way:

$$H_0 : \beta_1 = 0,$$
$$H_1 : \beta_1 \neq 0.$$

If null hypothesis is rejected and the alternative hypotheses is accepted, that means that market value of assets depends on the fundamental value of intangible assets. The value of t-statistics is calculated and compared with t critical in order to test the hypotheses. In our case for the period 2001-2006 the calculated value of t-statistics equals -3,67 and with 5% confidence level t critical equals 1,9711. If

$$-t_{crit} < t < t_{crit}$$

is not carried out, null hypothesis should be rejected and the alternative hypothesis should be accepted. That means that the market value of assets of Russian companies depends on the fundamental value of intangible assets.

The regression equation (7) for four years (2001-2005), the parameters of which are estimated with the help of Least Square Method, is the following:

$$\hat{P}_A^M = 4823{,}391 + 1{,}1299 \times V_T \,. \quad (11)$$

According to the observation data for five years (2001 — 2006) the equation of the regression function for the regression model (20) will be as follows:

$$\hat{P}_A^M = 5273{,}343 + 1{,}1178 \times V_T \quad (12)$$

There the coefficient of determination for the period 2001-2006 equals 0,7454, that means that the obtained regression equation explains for 74,54% the modification of the market value of assets of a company with the help of the fundamental value of its tangible assets. In our case the calculated value of *t* equals 19,51 and the critical one equals 1,9711, that means that null hypothesis should be rejected. Thus we can accept the assumption that in Russian conditions the market value of assets of a company depends on the fundamental value of its tangible assets.

So it can be concluded that in Russian conditions the market value of assets of a company depends on fundamental values of both tangible and intangible assets.

The analysis of two-factor model allows to draw the conclusion, in what degree each of the independent parameters influence the dependent one. As the result of the test the following regression equation is obtained for four-year period (2001 – 2005):

$$\hat{P}_A^M = 8{,}0923 + 1{,}0966 \times V_T + 0{,}2689 \times V_I . \quad (13)$$

According to the observation data for five years (2001 – 2006) the equation of the regression function for the regression model (8) will be as follows:

$$\hat{P}_A^M = 3971{,}695 + 1{,}0677 \times V_T + 0{,}1610 \times V_I . \quad (14)$$

In this case the value of the coefficient of determination and adjusted coefficient of determination have high values (0,7504 and 0,7369 respectively), what says about the tight relationship between the analyzed variables. That means that in Russian conditions the market value of assets of companies for 75,04% depends on the fundamental value of its tangible and intangible assets.

The following hypotheses are formulated in order to test the significance of the explanatory variables, which the model contains:

$$H_0^1 : \mu_1 = 0, \quad H_1^1 : \mu_1 \neq 0$$

$$H_0^2 : \mu_2 = 0, \quad H_1^2 : \mu_2 \neq 0$$

As the test shows, null hypotheses can be rejected on both explanatory variables and that means that the market value of assets of Russian companies depends on fundamental value of both tangible and intangible assets. The results of the analysis concerning model (8) are represented in Table 2.

Table 2: The results of testing two-factor model (8) for the whole sample

№	Statistical characteristic	Estimators of coefficients			
		m_1		m_2	
	Observation period	4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)
1	Coefficient before the independent variable	1,0966	1,0677	0,2689	0,1610
3	t-statistics	20,7	18,80	20,73	2,02
4	t-critical (5%-confidence level)	1,9741	1,9712	1,9741	1,9712
7	F-statistics	73,32	55,49	73,32	55,49
8	F-critical (5%- significance level)	3,0498	3,0398	3,0498	3,0398
9	The conclusion about null hypothesis according to the results of F-test	To reject	To reject	To reject	To reject

The 2nd stage of the research concerns the analysis of models on the sample that is divided into 5 selected industries: mechanical engineering (1), extractive industry (2), power engineering (3), communication services (4) and metallurgy (5). Chemical industry was excluded because of the shortage of sample. The results of the analysis of single-factor models (6), (7) and two-factor model (8) are represented in Tables 3–5.

Table 3: The results of testing single-factor model (6)

№	Statistical characteristic	Industry					
		mechanical engineering		extractive industry		power engineering	
		4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)
1	Coefficient of determination R^2	0,1156	0,1958	0,1038	0,2753	0,5368	0,3552
2	Coefficient before the independent variable	0,0969	0,1015	0,5736	0,5236	0,7859	0,8396
5	t- statistics	0,42	0,48	1,24	– 2,73	6,88	5,26
6	t-critical (5%-significance level)	2,101	2,0639	2,032	2,0154	2,0129	2,001
7	The conclusion about null hypothesis according to the results of t-test	To accept	To accept	To accept	To reject	To reject	To reject

(continued)

№	The name of characteristic	Industry			
		communication services		metallurgy	
		4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)
1	Coefficient of determination R^2	0,4464	0,5129	0,3821	0,2526
2	Coefficient before the independent variable	0,2485	0,2507	0,01619	– 0,7784
5	t- statistics	2,09	2,46	2,66	– 1,67
6	t-critical (5%-significance level)	2,0322	2,0154	2,101	2,0639
7	The conclusion about null hypothesis according to the results of t-test	To reject	To reject	To reject	To accept

Table 4: The results of testing single-factor model (7)

№	The name of characteristic	Industry					
		mechanical engineering		extractive industry		power engineering	
		4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)
1	Coefficient of determination R^2	0,2787	0,3144	0,7288	0,6749	0,8418	0,9484
2	Coefficient before the independent variable	0,5438	0,54079	1,0667	1,04125	1,5288	1,7141
5	t- statistics	1,9	2,21	8,75	8,03	14,88	20,31
6	t-critical (5%-significance level)	2,101	2,0639	2,032	2,0154	2,013	2,001
7	The conclusion about null hypothesis according to the results of t-test	To accept	To reject	To reject	To reject	To reject	To reject

(continued*)*

№	The name of characteristic	Industry			
		communication services		metallurgy	
		4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)
1	Coefficient of determination R^2	0,7308	0,7453	0,8529	0,8455
2	Coefficient before the independent variable	1,0595	0,9983	1,0100	1,4477
6	t-critical (5%-significance level)	2,032	2,0154	2,101	2,0639
7	The conclusion about null hypothesis according to the results of t-test	To reject	To reject	To reject	To reject

Table 5: The results of testing two-factor model (8)

№	The name of characteristic	Industry					
		mechanical engineering		extractive industry		power engineering	
		4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)
1	Coefficients of determination						
	— R^2	0,3242	0,3266	0,7566	0,6749	0,8425	0,9502
	— adjusted R^2	0,0829	0,1021	0,7166	0,6236	0,8238	0,9446
2	Coefficients before						
	The first independent variable	0,7745	0,7662	1,0551	0,9756	1,592	1,8104
	The second independent variable	-0,2661	0,6469	0,4537	0,0150	0,0509	0,0675
4	t-test (5%-significance level)						
	— t-critical	2,109	2,8073	2,035	2,0167	2,014	2,0017
	— t- statistics (m1)	2,08	2,18	8,97	7,53	9,03	16,61
	— t- statistics (m2)	– 0,97	– 0,57	2,05	2,07	2,44	2,09
7	F- test (5%-significance level)						
	— F- critical	3,555	3,4221	3,2759	3,2145	3,1996	3,1559
	— F- statistics	1,34	1,44	18,65	13,15	44,95	76,27
8	The conclusion about null hypothesis according to the results of F-test	To accept	To accept	To reject	To reject	To reject	To reject

(continued)

№	The name of characteristic	Industry			
		communication services		metallurgy	
		4 years (2001/05)	5 years (2001/06)	4 years (2001/05)	5 years (2001/06)
1	Coefficients of determination				
	— R^2	0,7648	0,8282	0,8811	0,8467
	— adjusted R^2	0,7256	0,8010	0,8386	0,7956
2	Coefficients before				
	The first independent variable	1,0061	1,0654	1,2278	1,2531
	The second independent variable	0,166	0,3142	0,4027	0,1855
4	t-test (5%-significance level)				
	— t-critical	2,034	2,0167	2,109	2,8073
	— t- statistics (m1)	6,37	8,35	7,66	8,35
	— t- statistics (m2)	2,08	4,64	2,82	2,96
7	F- test (5%-significance level)				
	— F- critical	3,2759	3,2145	3,555	3,4221
	— F- statistics	19,51	26,48	19,07	16,57
8	The conclusion about null hypothesis according to the results of F-test	To reject	To reject	To reject	To reject

While testing the model (6) for the period of 5 years the following facts were found out: the relationship between the market value of assets of companies and the fundamental value of intangible assets was better

explained in such industries as communication services and power engineering where coefficients of determination equal 0,5129 and 0,3552 respectively. It should be noted that comparing to the results obtained for the period of 4 years R^2 for the power engineering industry has decreased from 0,5368 to 0,3552. Only in the mentioned industries and in the extractive industry null hypothesis is rejected. In all the other industries null hypothesis can not be rejected as the result of t-test analysis.

The test of model (7) revealed the following fact: the relationship between the market value of assets of companies and the fundamental value of tangible assets was better explained in such industries as metallurgy and power engineering. The same results were obtained while testing the model for the period of 4 years. Coefficients of determination for both industries are more than 0,84. Despite of the fact that the value of R^2 in the other industries is a little bit lower, in all the industries null hypothesis is rejected and the alternative hypothesis is accepted.

And after testing the two-factor model (8) for both periods in all the industries, except mechanical engineering, a very close relationship between the analyzed variables was found. Coefficient of determination in all the cases is more than 0,675. Null hypothesis is rejected in all the industries, again except mechanical engineering, that means that the market value of assets depends on the fundamental value of tangible and intangible assets in all the researched branches.

We can make a conclusion that for the year 2006 the situation has not changed greatly and on the Russian market the influence of fundamental value of tangible assets on the market value of assets of a company still surpasses the influence of fundamental value of intangible assets upon the same variable.

7. Conclusion

The conditions of knowledge-based economy have led to increasing attention to intangible assets [Stewart, 1997; Petty, Guthrie, 2000; Bontis, 2001]. And a special area that attracts interest of academics and practitioners is the role of intangible assets in creating the value of a company and the way it can be measured (Stewart, 1997; Edvinsson, Malone, 1997; Sveiby, 1998).

Using the balance-sheet methodology, firm value can be viewed as the sum of values of tangible and intangible assets. More precisely, valuation of a company's tangible assets to access the fair market value needs to be adjusted by the value of intangible assets. These idiosyncratic assets are now of greater importance than those already in place in terms of a company's value creation. Due to the strategic relevance of intangible assets management for a company's competitiveness, understanding the way these assets are converted into value is vital. In particular this understanding should help managers to be able to make better informed decisions with regard to intangible assets allocation and their management.

In the paper some questions connected with Intangible Assets' definition, structure and valuation are discussed. The main aim of the research was to find out whether there is a connection between the market value of a company's assets and the fundamental value of its tangible and intangible assets. Financial information concerning 43 companies-emitters, which trade their stocks on Russian Trade System for two periods: from 2001 till 2005, and from 2001 till 2006 was used in the analysis.

Three models of regression analysis are represented in the work. Two of them are single- factor ones and characterize the relationship between the market value of a company's assets and the fundamental value of its tangible and intangible assets respectively. The 3rd model is a two-factor one and allows us to reveal the influence of separate components of the model upon the market value of a company's assets.

As the represented two-factor model is the most completed, let us make the main conclusions. The estimator of the coefficient m_1 of the regression equation (the fundamental value of tangible assets) shows the effectiveness of the invested money into tangible assets of a company. One monetary unit invested into tangible assets should give the same return for all the companies belonging to the same industry, as it was mentioned above. The estimator of the coefficient m_2 of the regression equation (the fundamental value of intangible assets) testifies intra-branch differences in the return of companies' assets. Return which is given by intangible assets is the difference between a company's expected return rate and industry average return rate. Concerning the whole sample of the researched companies the following results were obtained. Every extra ruble invested into intangible assets brings 4,16 rub, into tangible assets – 9,04 rub. of the market value of assets (with average market rate k_w=12,5%).

The results which were obtained in the research generally matched the expected ones. But we can make an assumption that they could change if the size of the sampled were bigger.

The tested econometric models have shown that even though intangible assets "matter" in Russian companies' value creation, their role is not as significant as the role of tangible assets. We can make a conclusion that on the Russian market the influence of fundamental value of tangible assets on the market value of assets of a company surpasses the influence of fundamental value of intangible assets upon the same parameter.

This paper is one of the first where the authors tried to evaluate Intangible Assets on the Russian market. Further research in this field will develop not only the direction of testing the researched models for sustainability as statistical information accumulated, but also the direction of developing and testing other models of Intangible Assets valuation in Russian companies. Moreover, the problem of extracting separate elements of Intangible Assets from their aggregate value needs to be solved.

The main problem in the realization of this kind of research on the Russian market is the shortage of statistical information. A greater number of companies-emitters could be included in the sample, but their reporting is not publicly available. That is why further research in this field will be based on accumulated statistical information.

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