

A Company's Market Value: The Methodology of Its Valuation and Methods for Its Maximization*

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ABSTRACT. This article investigates the creation and monitoring of the fundamental value of a company, the methods of its valuation, and capital market responses to changes of the fundamental value. The author uses the basic theory of discounted cash flows as his main theoretical model. This theory states that the investment value equals the net present value of future cash flows that is created as a result of this investment. Other theories referred to in the article are derived from the aforementioned model. The article contains an empirical analysis of correlation dependence between the fundamental value and the market capitalization. The figures obtained from international companies during a 5-year time period showed that the highest indices of fundamental value increase were used as output data. The article argues that the total business return has the highest correlation index with respect to a company's market value. The reasons affecting the results of the empirical research have been analyzed. The author gives some recommendations on the appreciation of a company's market value.

KEYWORDS. Capital market; market and fundamental value of a company; market capitalization; residual income; economic value added; cash value added; total business return; return on equity and return on investment; earnings per share; cash flow; cost of capital; net assets; economic depreciation; expectation premium.

Strengthening of international trade and international capital flow within the ongoing globalization processes has become a long-standing standard in the world business environment. Among the key factors of these processes are the lowering of barriers in international trade, the easing of the control over international capital flow, the harmonization of tax systems, and the liberalization of the international money market. The main consequences are a serious increase in capital flow dynamics and a geographical widening of capital flow distribution. It especially pertains to share capital which is by its nature more dynamic and mobile than loan capital.

The market value maximization of share capital in light of a conflict between business owners and other persons associated with the company (shareholders versus stakeholders) has always been an important discussion

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topic in the scientific and social circles. However, the analysis of annual financial reports from some large European stock companies discloses the fact that every year the more and more companies concentrate on conducting research into enterprise value growth (that is, broadening the use of financial activities with regard to an enterprise's fundamental value, or «value based management»). In the United States and Great Britain, these processes took place earlier than in other countries.

The American researchers Tom Copeland, Tim Koller, and Jack Murrin have underlined the following four main reasons for increasing the importance of share capital in the last decades:

- Significant restructuring of the «old economy» industries during the 1980s, which was a consequence of the process of active buy-outs of mature companies using loan capital (leveraged buyouts);
- Increase of the participation of high-level company management in the company's shareownership (option plans), awarded to appreciate their managerial activity;
- Increase of the portion of share capital in the investment portfolios of American and European households since 1982;
- Increase of the portion of share capital in the investment portfolios of American and Japanese pension funds and social insurance funds;

According to the World Investment Report 2000, international mergers and buy-outs grew annually by an average of 42 % during the 1990s, and international mergers and buy-outs play the highest role in the entire business of direct foreign investments¹. At the same time, a study conducted by Business Week indicated that out of 150 buy-outs that took place during the 1990-1995 period, only half resulted in the creation of additional value for shareholders². Having investigated 160 mergers and buy-outs during the 1979-1990 period, researcher Mark Sirower comes to the conclusion that two-thirds of them resulted in value depreciation for shareholders³. Under these circumstances, the valuation of a target company as a potential buy-out, as well as the valuation of a target company's fundamental value, becomes particularly important.

The important work on theoretical foundations of the problem of value creation and valuation of companies has been conducted by the following scientists: F. Modigliani, M. Miller, R. Brealey, S. Myers, M. Sirower, E. Arzac, T. Copeland, J. Ohlson, G. Mandle, K. Rabel, P. Seppelfricke, V. Peemöller, and many others .

¹ World Investment Report 2000 by UNCTAD.

² *Kenneth R. Ferris, Barbara S. Pecherot Pettit. Valuation: Avoiding the Winner's Curse. Williams. 2003. — P. 15.*

³ *Mark Sirower. The Synergy Trap: How Companies Lose the Acquisition Game. Free Press. — New York. 1997.*

Companies are able to create value for shareholders if they invest in projects with the return on capital larger than the cost of capital⁴. This idea is confirmed by the theory of capitalization of income (capitalization of income method of valuation⁵), the theory of discounted cash flows (Discounted Cash Flows Model — DFC Model⁶), and the theory of economic income (residual income⁷).

Using the discounted cash flows model, the value created by a company is the difference between the discounted value of a company's future cash flows and the total invested capital. The main problems of using such activities of company effectiveness as ROA (return on assets), ROE (return on equity), ROI (return on investment), EPS (earnings per share) are: 1) these activities do not take into account the cost of capital (a company's source of financing); 2) they indicate a company's short-term results because they may be subjected to the so-called «creative accounting»^{8,9}.

Ignoring the value of a company's invested capital presents a two-level disadvantage: at the first level, a positive return figure may be insufficient for paying off loans, which in turn may result in bankruptcy; at the second level, investors pumping assets into less risky industries (such as gold mining, oil production and refining, construction) expect a different return rate compared to investors aiming at riskier economy sectors (such as personal services, software development)¹⁰.

The expression «dangers of using short-term economic activities of a company's effectiveness, calculated on the basis of accounting income» means that a company, aiming at a short-term increase of net profit, may cut down the funds on scientific research, engineering development, or reduce spending on some other investments, thus lowering the company's potential income. Most countries in the world will treat expenses on new product development as operational expenses, according to their accounting standards; however, in the high-tech industries such expenses should be attributed, because of their nature, to investment expenditures¹¹. Moreover, the short-term

⁴ *Enrique R. Arzac*. Valuation for Mergers, Buyouts, and Restructuring. John Wiley & Sons, Inc. — New York, 2005. — P. 77—79

⁵ *William F. Sharp, Gordon J. Alexander, Jeffrey V. Bailey*. Investments. — M.: Infra-M, 1999. — P. 548—551.

⁶ *Richard A. Brealey, Stewart C. Myers*. Principles of Corporate Finance. Seventh Edition. McGraw-Hill/Irwin. — New York, 2003. — P. 15.

⁷ *Ohlson J.* Earnings, Book Values, and Dividends in Equity Valuation // Contemporary Accounting Research. 12. Spring. — 1995. — P. 661—681.

⁸ *Budde F., Felcht U.-H., Frankemölle H.* Value Creation. Second edition. Wiley-VCH Verlag GmbH & Co. Weinheim, 2006. — P. 13—14.

⁹ *Tom Copeland, Tim Koller, Jack Murrin*. Valuation: Measuring and managing the value of the companies. Third edition. John Wiley & Sons, inc. — New York, 2000. — P. 55.

¹⁰ *Modigliani F., Miller M. H.* The Cost of Capital, Corporation Finance and the Theory of Investment. // American Economic Review 48. — June. — 1958. — P. 261—297.

¹¹ *Richard A. Brealey, Stewart C. Myers*. Principles of Corporate Finance. Seventh Edition. McGraw-Hill/Irwin. — New York, 2003. — P. 324—325.

net profit may not correspond well with the cash flow figures, which an investor may see as a depreciation of a company's value and a higher risk.

McKinsey Co. did some research on the effects of exceeding or lowering the analytical estimates for the figure of earnings per share in relation to the real-life figure¹² of EPS on the changes in stock value after announcing the company's real economic activities. 25 European companies were investigated during the 1990-2004 period. In the first research, the price of a share calculated 4 days before the official report came out was compared to the same share price calculated on the third day after publication of the official report; in the second research, four days before and on the 40th day, respectively. For the two analyzed linear regressions, the value of R^2 was calculated. In the first case, the correlation between the deviation of the value of earnings per share and the change of the price per share in a week's period equaled $R^2 = 0\%$. In the second case, where the correlation was calculated for a period of 2 months, R^2 was equal to 1%. Thus, the research shows that there is no empirical correlation between the non-expected net profit result of a company and its market value¹³.

Among the alternative economic activities that a company may show there are characteristics that take into account the cost of invested capital. Out of these characteristics, the most frequently used in practice are economic value added (EVA¹⁴), cash value added (CVA), and total business return (TBR).

Having analyzed the 2006 annual reports of some Austrian companies included in the ATX stock exchange index and some German companies included in the DAX index, the author came to the conclusion that the economic value added (EVA)¹⁵ is the most utilized characteristic.

According to the EVA calculation procedure, a company creates value in a certain time period if its net operating profit exceeds the cost of the invested capital:

$$EVA = NOPAT - WACC \times CE, \quad (1)$$

where NOPAT is the net operating profit, provided that the company uses its own assets for financing, that is without any tax shield (net operation profits after tax);

WACC is the weighted average cost of capital¹⁶;

CE is the invested capital, that is the company assets used in operations (Capital Employed¹⁷), calculated as a sum of the equity capital and the loans

¹² (real value of EPS — EPS according to analytical estimates)/(modular value of EPS according to analytical estimates)

¹³ *Budde F., Felcht U.-H., Frankemölle H.* Value Creation. Second edition. Wiley-VCH Verlag GmbH & Co. Weinheim, 2006. — P. 14.

¹⁴ EVA® is a registered trademark of Stern Stewart & Co.

¹⁵ Altogether, 12 Austrian and 15 German annual reports were analyzed. Among the companies using the value of EVA are Volkswagen, BASF, OMV, Daimler Chrysler; CVA — Bayer AG, Wienerberger AG.

¹⁶ $WACC = \frac{D}{D+E} \times r_d \times (1-t) + \frac{E}{D+E} \times r_e$, where D is the market value of loan capital, E is the market value of equity capital, t is the effective tax rate, r_d is the loan capital value, r_e is the equity capital value.

on which a company pays interest minus the available cash, the money at bank accounts, and the other liquid financial investments.

The equation (1) may be expressed identically as:

$$\frac{EVA}{CE} = \frac{NOPAT}{CE} - WACC = ROCE - WACC, \quad (2)$$

where ROCE is the return on capital employed, a characteristic indicating the return on net assets. If EVA exceeds 0 and $ROCE > WACC$, then a company creates value. The fact that these methods are time-oriented is their key distinction from the discounted cash flows model. The first model is future-oriented as to value creation, and may be used for strategic decision planning. At the same time, EVA is an efficient characteristic and may be used for control over carrying out the strategic plans.

We can obtain the value of MVA (market value added¹⁸) if we prognosticate the value of EVA in future time periods and calculate its discounted value (using the discount rate equal to the cost of capital). By its own nature, MVA is the same as the value of net discounted value in the DCF model. MVA shows the excess of the market value of equity and loan capital over the capital invested in a company¹⁹:

$$V = \sum_{i=1}^n \frac{FCF_i}{(1+WACC)^i} + \frac{PV_n}{(1+WACC)^n}, \quad (3)$$

where V is the company's market value, FCF is the future free cash flow²⁰. The free cash flow equals $NOPAT - \Delta CE$, where ΔCE is the change of net assets (fixed assets, working capital minus depreciation). Therefore,

$$V = \frac{NOPAT_1}{WACC} + \sum_{i=1}^{\infty} \frac{(ROCE_i - WACC) \times \Delta CE_i}{WACC(1+WACC)^i} \quad (4)$$

In equation (4), the value of capital cost $WACC$ is a constant which may not be affected by a company's operations management. The value of a company will grow if the return on net assets ($ROCE$) grows, or if some money are invested in new assets on the condition that $ROCE > WACC$ [Fig. 1].

¹⁷ The same as net assets.

¹⁸ Tom Copeland, Tim Koller, Jack Murrin. Valuation: Measuring and managing the value of the companies. Third edition. John Wiley & Sons, inc. — New York, 2000. — P. 59.

¹⁹ Richard A. Brealey, Stewart C. Myers. Principles of Corporate Finance. Seventh Edition. McGraw-Hill/Irwin. — New York, 2003. — P. 75—77.

²⁰ Cash flows from proceeds of operations minus investments for support of the operating activity extension (capital expenditure — CAPEX).

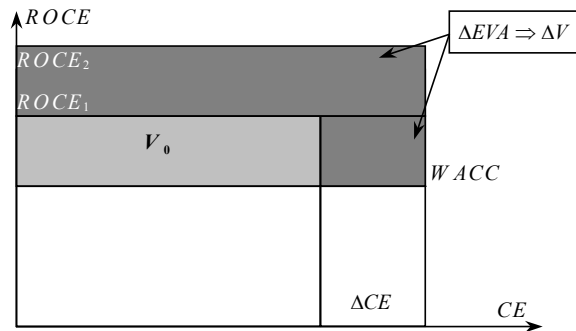


Fig. 1. The diagram of value creation according to the theory of economic value added.

The DuPont²¹ formula is more appropriate to use for a more detailed analysis of the characteristic of the return on net assets :

$$ROCE = \frac{NOPAT}{S} \times \frac{S}{CE}, \quad (5)$$

where S is the net profit on sales, $\frac{NOPAT}{S}$ is the operations sales margin,

$\frac{S}{CE}$ is the figure of net assets' turnover (asset turnover). Consequently, a company's operations margin, asset turnover, and investments used for increase of business operations are the key factors of value growth at the level of operations management. Control over a company's investment activity is important if the EVA method is used because a constant decrease of the value of net assets due to depreciation charges will distort the value of return on net assets, that is $ROCE$ will grow when the value of net profit remains stable²². Moreover, American scientist Eric Olsen considers that the use of the EVA method holds back company managers with respect to new investments since additional investments in a short-time period would cause the value of $ROCE$ go down. He also states that, because of the aforementioned problems, EVA does not clearly reflect the picture of a company's market value. To confirm his point of view, Eric Olsen quotes the research, made in 1994—1995, on the dependence of Total Shareholder Return²³ on the change of EVA . 1122 enterprises were analyzed, out of which 360 (32 %) had a positive figure of

²¹Kenneth R. Ferris, Barbara S. Pecherot Pettit. Valuation: Avoiding the Winner's Curse. Williams, 2003, — P. 32—33.

²²Rainer Strack, Ulrich Villis. RAVE™ : Integrated Value Management for Customer, Human, Suppliers and Invested Capital // European Management Journal. — Vol. 20. — 2002. — № 2. — P. 148.

²³Total Shareholders Return (Total Return to Shareholders) is the total figure of the growth of price per share and dividends per share in a certain time period.

EVA in 1994. According to the research, the correlation between *TSR* and changes of *EVA* is insignificant: $R^2=1,6\%$ ²⁴ [Fig. 2].

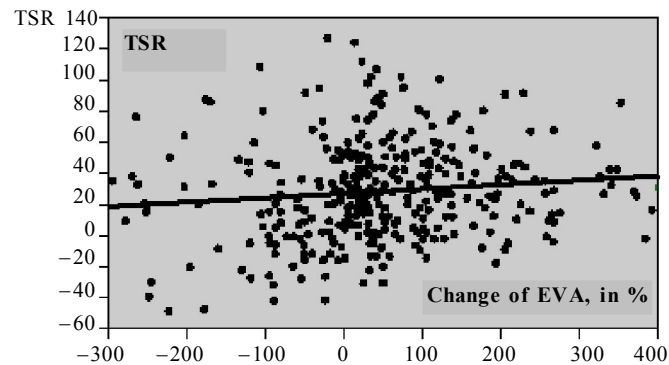


Fig. 2. Stock market reaction to changes of economic added value.

With the purpose of avoiding the problem factor of depreciation charges in the *EVA* method, the American researcher proposes his alternative approach, the method of *CVA / CFROI*, where the value of cash flow is used instead of the value of net profit, and net assets are correlated with the accumulated depreciation charges.

$$CFROI = \frac{GCF - ED}{GI},^{25} \quad (6)$$

where *GCF* means *Gross Cash Flow — NOPAT* correlated with the depreciation charges; *ED* means *Economic Depreciation*, that is the amount of money to be taken out of circulation in order to finance future replacement of fixed assets, taking into consideration the factor of regular interest payments, and which is equal to a company's cost of capital; *GI* means *Gross Investment*, that is the accounting value of net assets correlated with the accumulated depreciation charges.

$$ED = \frac{WACC}{(1 + WACC)^n - 1} \times DA, \quad (7)$$

where *DA* means *Depreciable Assets*; *n* is the average duration of depreciable assets.

²⁴ Eric E. Olsen. Economic Value Added. // Perspectives № 365. The Boston Consulting Group, Inc. 1996

²⁵ Daniel Stelter. Dealing with investors expectations. // A global study of company valuations and their strategic implications. The Boston Consulting Group, Inc. 2001. — P. 66.

The value of *CFROI* determines the return on net assets according to the historical value. If the return exceeds the cost of capital, a company is creating value; in the opposite case a company's value is being destroyed:

$$CVA = (CFROI - WACC) \times GI. \quad (8)$$

It is also advisable to use the above-mentioned DuPont formula to perform a detailed analysis of *CVA*.

The author believes that the *CVA* method corrects only one of the several defects of *EVA*, and at the same time the method needs rather complex calculation procedures. Since capital markets are long-term markets, the quoted methods are not clearly adequate when it comes to reflecting a company's future growth perspectives. As a result, the *EVA* method shows a poor correlation between TSR and changes of a company's fundamental value. However, from the capital market's point of view, the examined methods can be a very successful tool for monitoring of a company's strategic goals.

Prognosis of a company's future results is an important success factor during its valuation. A company's future profit is either accumulated in the company's equity capital as unallocated income, or paid off as dividends to shareholders. As a company's market capitalization is the market value of its equity capital, a company's unallocated income will increase its value. From the point of view of corporate financing, it is the future financial results backed up by the related cash flow that will serve as the main source of dividend payment to shareholders.

The method of discounted cash flows (*DCF*) or the method of total business return (*TBR*) calculation are indicators that take into account a company's growth of value due to future cash flows. The author believes the main defect of *DCF* is that in implementing this method it is rather difficult to tie a company's operations management activity to its value. So, the strategic goals of a company are severed from its current activity, which interferes with a company's effective development.

According to the *TBR* method, the fundamental value of a company consists of two parts: the value of current operations and the value of growth of current operations²⁶. The value of current operations is determined as a sum total of an infinite geometric series of the current cash flows. The value of growth of current operations is calculated as a discounted value of the future cash flows; the future cash flows are a function of two variables: return on invested capital and investments²⁷. So, the formula is:

$$V = f(ROCE; CE) = f_1\left(\frac{NOPAT}{S}; \frac{S}{CE}; CE\right) \quad (8)$$

²⁶ Danie. Stelter, Dr. Pascal Xhonneux. Succeed in uncertain times// Value Creation Report. The Boston Consulting Group, Inc. 2002. — P. 75.

²⁷ Modigliani F., Miller M.H. Dividend Policy, Growth and the Valuation of Shares. // Journal of Business. — 1961. — April. — P. 411—433.

or

$$V = f(CFROI; GI) = f_1\left(\frac{GCF}{S}; \frac{S}{GI}; GI\right). \quad (9)$$

A function based on the equation (4) can serve as an example of the quoted functions.

The fact that the formula contains operational financial indicators means that it is possible to tie a company's growth of value to its operational activity and also to monitor what every single member of middle management contributes to the total growth of a company's market value.

In the context of the analysis conducted here the author would like to underline the importance of the structure of a company's funding sources and the effect the indicator of financial leverage (or gearing²⁸) has on a company's market value. On the one hand, an increase of the figure of financial leverage increases the fundamental value of a company due to the presence of tax shield (tax shield covers the interest on loan capital). As a result, a company's owners get a larger cash flow through additional dividends (see Modigliani, Miller, Brealey). On the other hand, due to a higher leverage a company can get a less expensive loan capital for its own future investment projects, thus optimizing the weighted average cost of capital. Based upon this reasoning, investors can show more interest in companies with a relatively low leverage. This interest of investors may reveal itself when such companies are bought with higher than expected acquisition premiums.

The author conducted the following research to analyze the effects of growth of a company's fundamental value on its market capitalization. Ten companies were chosen out of each of ten different economic industries. The ten chosen-from-each-industry companies showed the best results of average annual growth of *TBR* in their particular industry during the 1998—2002 period²⁹ [Table 1]. Out of the total of one hundred companies, four companies that demonstrated the highest and four companies that demonstrated the lowest average annual of *TSR* during the analyzed period were excluded from the analysis³⁰. For the remaining sample of 92 companies, the linear regression was calculated for both dependent *TSR* and independent *TBR* [Fig. 3].

Table 1

Data for Calculating *TSR* / *TBR* Dependency

²⁸ Gearing is the ratio (expressed as percentage) of long-term loan capital to equity capital.

²⁹ The value of *TBR* was calculated by Boston Consulting Group. The calculation took into account the efficiency of use of assets, cash flow margin, and growth of investments during the analyzed period.

³⁰ *Danie. Stelter, Dr. Pascal Xhonneux. Back to Fundamentals // Value Creation Report. The Boston Consulting Group, Inc. — 2003. — P. 41—77.*

Industry	Company	Market Capitalization, 09.30.03 (in billions of U.S. dollars)	Average Value of TSR, in 1998-2002	Average Value of TBR, in 1998-2002
Media & Entertainment	Wolters Kluwer	3,657	-10 %	23 %
Automotive engineering	Volkswagen	15,774	-6 %	21 %
Technologies	SAP	34,792	-4 %	21 %
Technologies	SBC Communications	73,95	-4 %	15 %
Conglomerates	Dover	7,166	-3 %	16 %
Chemical Industry	Akzo Nobel	8,039	-3 %	13 %
Technologies	Nextel	19,508	-2 %	15 %
Media & Entertainment	Emap	3,195	-1 %	15 %
Transportation & Tourism	Carnival	21,318	-1 %	19 %
Chemical Industry	Lubrizol	1,671	0 %	13 %
Chemical Industry	Nan Ya Plastics	7,578	0 %	16 %
Pharmaceutics & Biotechnologies	Guidant	14,576	0 %	30 %
Technologies	Verizon Comms.	90,902	0 %	20 %
Chemical Industry	Carlisle Cos	1,338	1 %	16 %
Chemical Industry	Dow Chemicals	29,804	1 %	13 %
Conglomerates	General Electric	298,662	1 %	20 %
Conglomerates	Imperial Hdg.	1,441	2 %	17 %
Conglomerates	Industriarden	2,434	2 %	16 %
Retail & Wholesale Trade	Dixons Group	4,215	2 %	24 %
Automotive engineering	Scania	4,441	2 %	20 %
Industrial goods	Parker Hannifin	5,282	2 %	16 %
Automotive engineering	Magna Intl.	6,165	2 %	25 %
Conglomerates	Aptargroup	1,328	3 %	18 %
Industrial goods	Illinois Toolworks	20,399	3 %	15 %
Pharmaceutics & Biotechnologies	Merck & Co.	113,33	3 %	20 %
Chemical Industry	Airgas	1,306	4 %	12 %
Conglomerates	Teleflex	1,718	4 %	19 %
Chemical Industry	Millipore	2,241	4 %	17 %
Media & Entertainment	Daily Mail&general	3,666	4 %	20 %
Pharmaceutics & Biotechnologies	Novo Nordisk	10,07	4 %	23 %
Media & Entertainment	Thomson	16,945	4 %	17 %
Automotive engineering	Aisin Seiki	3,953	5 %	21 %

Industry	Company	Market Capitalization, 09.30.03 (in billions of U.S. dollars)	Average Value of TSR, in 1998-2002	Average Value of TBR, in 1998-2002
Retail & Wholesale Trade	Next	4,988	5 %	21 %
Pharmaceutics & Biotechnologies	Becton Dickinson	9,172	5 %	18 %
Pharmaceutics & Biotechnologies	Baxter Intl.	17,055	5 %	19 %
Retail & Wholesale Trade	Home Depot	75,4	5 %	28 %
Consumer Goods	Pepsico	79,085	5 %	20 %
Transportation & Tourism	Abertis	6,17	6 %	23 %
Industrial goods	CRH	8,458	6 %	26 %
Media & Entertainment	Univision Communications	8,082	7 %	17 %
Retail & Wholesale Trade	Walmex	13,408	7 %	22 %
Technologies	Alltel	14,73	7 %	16 %
Chemical Industry	Valspar	2,362	8 %	26 %
Industrial goods	Cemex	9,445	8 %	17 %
Retail & Wholesale Trade	Staples	11,687	8 %	23 %
Consumer Goods	Reckitt Benckiser	13,772	8 %	23 %
Consumer Goods	Gen. Mills	17,54	8 %	21 %
Technologies	Telstra	34,392	9 %	22 %
Industrial goods	Centex	4,81	10 %	27 %
Automotive engineering	Paccar	8,671	10 %	20 %
Media & Entertainment	Omnicom	13,654	10 %	16 %
Technologies	Microsoft	300,629	10 %	37 %
Chemical Industry	Johnson Matthey	3,228	11 %	17 %
Conglomerates	3M	54,082	11 %	14 %
Conglomerates	Barloworld	1,425	12 %	23 %
Consumer Goods	Cintas	6,318	12 %	22 %
Media & Entertainment	McGraw-Hill	11,879	12 %	22 %
Transportation & Tourism	Fedex	19,219	12 %	15 %
Pharmaceutics & Biotechnologies	Medtronic	57,088	12 %	19 %
Pharmaceutics & Biotechnologies	Johnson & Johnson	146,976	12 %	27 %
Transportation & Tourism	MGM Mirage	5,539	13 %	18 %
Industrial goods	American Standards	6,088	13 %	16 %

Industry	Company	Market Capitalization, 09.30.03 (in billions of U.S. dollars)	Average Value of TSR, in 1998-2002	Average Value of TBR, in 1998-2002
Consumer Goods	Heineken	12,83	13 %	22 %
Industrial goods	United Technologies	36,23	13 %	29 %
Chemical Industry	Reliance Inds.	12,93	14 %	13 %
Consumer Goods	Avon Products	15,25	14 %	22 %
Media & Entertainment	Westwood One	3,033	15 %	17 %
Retail & Wholesale Trade	Starbucks	11,263	16 %	24 %
Industrial goods	Danaher	11,312	16 %	25 %
Automotive engineering	Gentex	2,661	19 %	26 %
Retail & Wholesale Trade	Ross Stores	3,526	19 %	21 %
Automotive engineering	Hyundai Motor	6,114	20 %	26 %
Conglomerates	Wesfarmers	5,734	21 %	14 %
Consumer Goods	Gallaher Group	5,922	21 %	24 %
Automotive engineering	Porsche	6,63	21 %	27 %
Pharmaceutics & Biotechnologies	Biomet	8,589	21 %	24 %
Pharmaceutics & Biotechnologies	St. Jude Medical	9,733	21 %	28 %
Technologies	Dell	87,385	21 %	19 %
Transportation & Tourism	Kowloon Motor Bus.	1,931	22 %	22 %
Consumer Goods	Tiffany & Co.	5,438	22 %	23 %
Industrial goods	Vinci (ex SGE)	5,453	22 %	17 %
Pharmaceutics & Biotechnologies	Altana	8,015	22 %	32 %
Media & Entertainment	Publicis Groupe	4,834	23 %	17 %
Consumer Goods	Beiersdorf	9,609	23 %	21 %
Consumer Goods	Sysco	21,213	23 %	31 %
Transportation & Tourism	CH Robinson	3,271	24 %	18 %
Technologies	Oracle	61,099	24 %	18 %
Media & Entertainment	TF1	5,73	25 %	17 %
Automotive engineering	Hero Honda Motors	1,288	27 %	25 %
Retail & Wholesale Trade	CDW Computer	4,766	27 %	21 %

Industry	Company	Market Capitalization, 09.30.03 (in billions of U.S. dollars)	Average Value of TSR, in 1998-2002	Average Value of TBR, in 1998-2002
	Centers			
Retail & Wholesale Trade	Kohls	18,162	27 %	30 %
Transportation & Tourism	Expedito Intl.	3,69	28 %	19 %
Automotive engineering	Harley-Davidson	14,588	28 %	36 %
Retail & Wholesale Trade	Bed Bath & Beyond	11,314	29 %	41 %
Technologies	Nokia	66,369	31 %	25 %
Transportation & Tourism	Ryanair	4,615	44 %	28 %
Transportation & Tourism	Patrick Corp.	1,349	64 %	22 %
Transportation & Tourism	Toll Holding	1,315	66 %	28 %
Industrial goods	Impala Platinum	4,509	71 %	20 %
Conglomerates	Wipro	6,077	78 %	24 %

Source of Data: Boston Consulting Group.

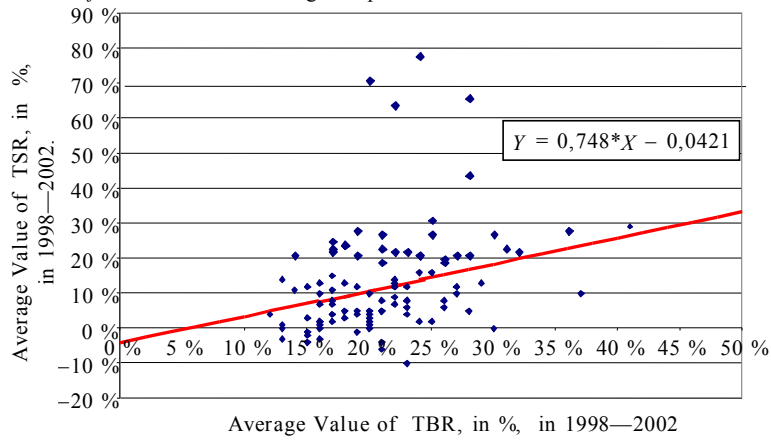


Fig. 3. Stock market reaction to changes of total business return

For the analyzed data, the R^2 figure of the obtained linear regression is 18.7 %, which is more than ten times as much as the figure of correlation of

TSR and *EVA*. The Pearson correlation, calculated for the data series of *TSR* and *TBR*, is 0.408.

The given analysis underlines that only a part of the real market value of a company depends on its fundamental value. A deviation of the empirical results from the theoretical calculations can be partially explained by the fact that investors have their subjective expectation premium³¹ during valuation of a company's real value. According to scientists F. Budde, U.-H. Felcht, and H. Frankemölle, expectation premium appears, in the first place, as a result of asymmetrical information exchange between a company's management and its investors. As an example, they quote the «bubble» that was created in the chemical industry at the end of the 1990s, when most of the companies were highly overvalued because of the non-adequate market capital expectations. Their research also states that investors overreact to current economic fluctuations, overestimating both market drop and growth. Expectation premiums and economic cycles in an industry correlate well, and they tend to approach zero in a long-term perspective³².

In empirical research, American scientist E. Arzac shows some cases of overestimation of riskiness in relation to small companies which leads to underestimation of their value. Investors believe that small companies may have more problems with liquidity than large ones, which, from the capital market's point of view, results in bigger cost of capital for small companies³³. Moreover, investors often overestimate the «scale effect» in large companies, which results in positive expectation premiums.

Eric Olsen selects some additional impact factors affecting the expectation premium: volatility of the figures of return on net assets, utilization of cash flows, the structure of a company's own and loan capital, and a company's organizational complexity³⁴. Fig. 4 shows the average expectation premiums of the ten most successful (in their particular industries) companies in 2000 and 2003³⁵.

³¹ Premium may be also a negative figure in which case the real value of a company is below its fundamental value.

³² Budde F., Felcht U.-H., Frankemölle H. Value Creation. Second edition. Wiley-VCH Verlag GmbH & Co. Weinheim, 2006. — P. 15—17.

³³ Enrique R. Arzac. Valuation for Mergers, Buyouts, and Restructuring. John Wiley & Sons, Inc. — New York, 2005. — P. 55—59.

³⁴ Eric E. Olsen. New Directions in Value Management. // Perspectives. The Boston Consulting Group, Inc. — 2002.

³⁵ Reports from Boston Consulting Group, Inc. formed the data. From each industry, ten companies with the highest *TSR* were analyzed and, based on them, the average premium value, measured against market capitalization, was calculated. Since the analyzed companies had the highest *TSR* figures, the average premiums happened to be accordingly high.

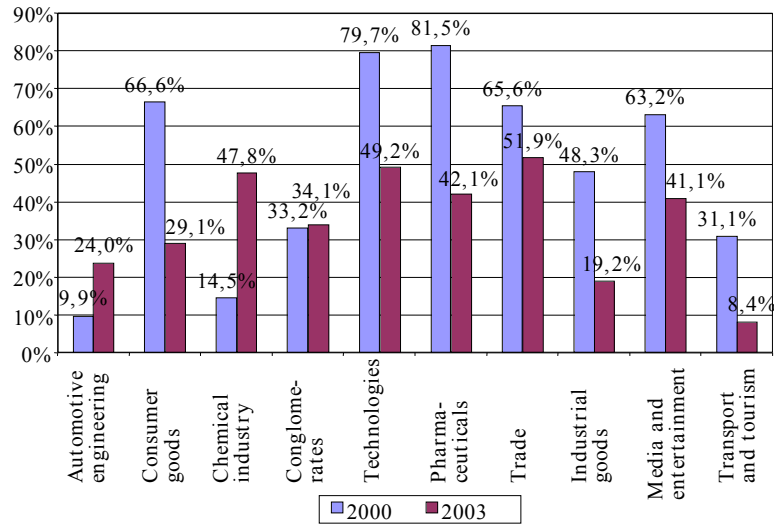


Fig.4. Expectation premium in different industries in 2000 and 2003

Interesting results were obtained by analyzing premiums during the 2000—2002 period. The research looked at ten companies with the highest *TSR* figures selected in six industries. For these companies, the average annual expectation premium³⁶, the excess of investment growth over the industry's average figure³⁷, the excess of the *CFROI* value over the industry's average figure, and the figure of market capitalization were calculated [Table 2].

Table 2

Dependence of expectation premium on fundamental value and capitalization

Characteristic	Pirson Correlation to the Premium Value	R^2 of Linear Regression with Variable Premium
CFROI	-0,122	1,52 %

³⁶ Expectation premium was calculated according to the formula: (market capitalization)/(fundamental value) - 1.

³⁷ Investment growth was calculated using an index — the investment level for all companies was accepted at 100 in 1998.

Investment Growth	-0,123	1,50 %
Market Capitalization	0,644	41,52 %

Source: the author's own calculation.

The research results indicate that the value of expectation premium does not depend on the factors of fundamental value, but it vastly depends on market capitalization; companies with high market capitalization had a higher average expectation premium than companies with low capitalization.

The BCG empirical research shows that long-term expectation premiums verge to zero. The higher level of premiums at the end of the 1990s — beginning of the 2000s is closely tied to the Internet development and the new economy boom³⁸. The research confirms the thesis of a cyclical nature of

the expectation premium value. The author believes that the detected short-term correlation between the capitalization and the level of overestimation (by investors) of a company's real value can be understood in light of the fact that, in a period of financial boom, large liquid companies come to the investors' attention in the first place because large companies are associated with great financial capacity, and, consequently, high growth potential.

The same BCG research proves a high correlation rate between a company's fundamental value and its market value in a long-time perspective³⁹. The research, conducted by the author, did not indicate such high correlation rate because for his empirical research a relatively short time span with good activity on the world's stock markets was selected. But even in these conditions, the correlation coefficient was 0.4; it proves that there was a large interdependence between the analyzed characteristics. Summing up the results of the research in this article, the author would like to stress the following important points for managing a company's value:

— To obtain the real picture of a company's value, it is necessary to take into account such characteristics as cost of capital, the company's development perspectives, historical value of the capital invested in the company;

— In a short-time period, the capital market can value the company considering a certain expectation premium (negative or positive). The premium size depends on the general mood on the stock market and in the corresponding industry. It also depends on the quality of communication between company and investor;

³⁸ Daniel. Stelter, Pascal Xhonneux. Back to Fundamentals// Value Creation Report. The Boston Consulting Group, Inc., 2003. — P. 8—10.

³⁹ The 1926—2003 period was analyzed in the research.

— In a long-time perspective, the company’s fundamental value and its market value are highly correlated;

— The best way to value the company’s fundamental value is to use the characteristic of total business return. The key factors of value growth at the level of operations management are the figures of operations margin, net asset turnover, and growth of investments into projects with high net asset return;

— The characteristic of cash added value is a useful tool for operational control over the development of the company’s value.

As a result of fundamental value, market capitalization is a consequence of the wisely chosen strategy, high-quality operational performance, successful managerial decisions and organizational support in putting these decisions into practice. Figure 5 shows the effects of operational and strategic management on a company’s market value.

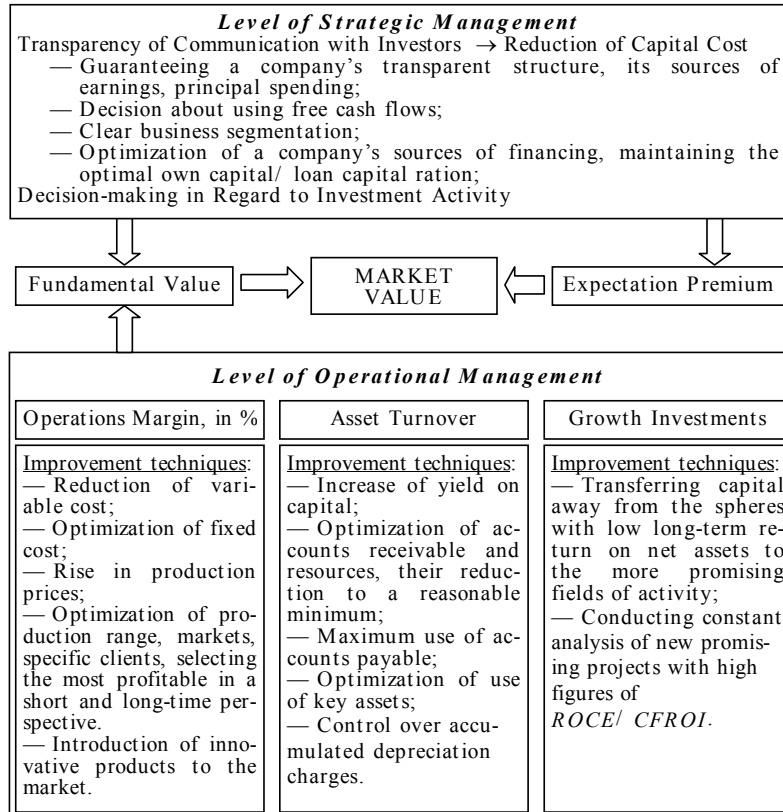


Fig. 5. Effects of operational and strategic management
on a company's market value

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