USING THE IDEA OF MARKET-EXPECTED RETURN RATES ON INVESTED CAPITAL IN THE VERIFICATION OF CONFORMITY OF MARKET EVALUATION OF STOCK-LISTED COMPANIES WITH THEIR INTRINSIC VALUE

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Received 02 October 2011; accepted 07 March 2012

Abstract. This article presents the concept of investor-expected rates of return on capital of listed companies and the use of these rates in the assessment of the extent to which the stock evaluation of a given entity is compatible with its intrinsic value. The article also features results of the research aimed at verification – with the use of the presented tool – of whether the market value of WSE-listed companies reflects their fundamental value. The calculations presented in the empirical part of the article show that at the beginning of 2011, market evaluation of the most of the analysed entities greatly exceeded their fundamental value.

Keywords: DCF, EVA, valuation, capital markets, fundamental analysis, ROIC, intrinsic value.

Reference to this paper should be made as follows: Mielcarz, P.; Roman, E. 2012. Using the idea of market-expected return rates on invested capital in the verification of conformity of market evaluation of stock-listed companies with their intrinsic value, *Business, Management and Education* 10(1): 11–24. http://dx.doi.org/10.3846/bme.2012.02

JEL classification: G12.

1. Introduction

The answer to the question of whether the market share value of a given company reflects its ability to generate free cash flow is the basis for decisions taken by investors convinced that in the long term the market share value equals a given company's intrinsic value. Establishing the level of conformity of market evaluation with a given company's intrinsic value is really difficult and virtually unverifiable (Wiśniewski, Skoczylas 2002). The major difficulty in the appraisal of the intrinsic value of shares using the method of discounted future cash flow (DCF) stems from the necessity to make subjective, hence questionable assumptions in the process of evaluation (Firla 2008; Malinowska 2001). The problem of the impact of subjective assumptions on the

outcome of evaluation is additionally compounded by the high sensitivity of income model to the changes of the planned financial parameters (Szczepankowski 2007).

Another factor that raises the risk of evaluation performed with the use of DCF methods is the complexity and multidimensionality of the model itself. In practice, there are nine types of income methods, correct application of which lead to the same result (Fernandez 2007; Marciniak 2001). There are interdependences existing between particular techniques, hence the use of only one of these techniques may lead to occurrence of formal errors (Słoński 2005; Zarzecki 1999).

The criticism of discount methods is justified for one more reason. The approach basing on future cash flow and expected return rates as the only factors affecting the share value of listed companies, although dominant in the literature, is not always reflected in the investor decisions. (Fierla 2008) The mobility of capital, the short investment period of many investors, the globalization of financial markets, the liquidity of some markets and assets may cause the nonconformity of market share value of given companies with their ability to generate free cash flow to become long-term (Benson 2006; Graham, Harvey 2001). As it was said before, this statement is at the same time more intuitive than empirically verifiable, for using the model of discounted cash flow to appraise the value does not lead to clear and unbiased results.

Taking into account the aforementioned facts, two conclusions can be drawn. First, the use of discounted cash flow model does not ensure an objective valuation. Second, this model gives the possibility to manipulate the outcome of valuation.

The aim of the article is to present the concept of the ratio of investor-expected return on the invested capital and its usage in the process of verification of market valuation of listed companies in the scope of conformity with their intrinsic value. The suggested approach considerably shortens and facilitates the process of defining the level of incompatibility of market value with its intrinsic value, thus constituting a highly useful tool, helpful in investment decision-making.

The article consists of two parts and a summary. The first part introduces methodological basis for estimating the market-expected rates of return on the invested capital of listed companies. This part covers the theory of formation of ROIC indexes at the stages of company development and presents research results available in the dedicated literature in this scope. The material contained in this part allowed for the formulation of theoretical framework justifying the correctness of the presented line of thought. The second part illustrates the results of the authors' own research, which were aimed at reflecting the level of incompatibility of the market value of companies listed at Warsaw Stock Exchange with their intrinsic value calculated with the use of tools described in the theoretical sections of this article. This part contains also conclusions concerning the incompatibility of market valuation of listed companies with their ability to generate free cash flow. The last part of this report is the summary containing conclusions from the carried-out analysis.

2. Theoretical background for estimating the market-expected ROIC index

Market value added (MVA) is defined in the dedicated literature (Dudycz 2005; Plenborg 2002) as the excess of company market value (MV) consisting of equity (E) and interest-bearing debt (D), over the book value of the capital invested (CI)[1] by the equity holders (E_{BV}) and debtholders (D)[2] (CI = D + E_{BV}):

$$MVA = MV - CI .$$ (1)

After excluding the interest-bearing debt from the calculation, the formula (1) looks as follows:

$$MVA = E - E_{BV} .$$ (2)

As it can be seen, the market value added can be calculated on the basis of widely available stock exchange information and the data stemming from the current financial statement.

In a situation when the market evaluates a given company according to its ability to generate free cash flow, its market value (MV) should be equal to the value arrived at on the basis of DCF valuation (V) (Venazi 2010). As a result, in such conditions the market value of a given share equals its intrinsic value. This statement can be formed in the following way:

$$MV = V .$$ (3)

In a situation of market imperfection, the market value will differ from intrinsic value, which gives grounds for taking investment decisions based on expectations that in the long term the market evaluation should approach the intrinsic value.

"The model of discounted cash flow used in valuations of companies and ownership instruments is based on several equivalent methods whose correct application leads to estimation of an identical outcome of evaluation of company shares or interests" (Mielcarz 2009; Maćkowiak 2009). One of the methods of valuation that give the same result as in the case of application of other discount models is the method of discounted economic value added (EVA) (Chen, Dodd 2001; Fernandez 2001). The valuation of an indebted company (V) with the use of this method, assuming the invariability of structure and cost of capital, is performed on the basis of the following formula (Wnuczak 2011; Panfil, Szablewski 2006):

$$V = CI + \sum_{t=1}^{n} \frac{EVA_t}{(1+WACC)^t} + \frac{RV_n}{(1+WACC)^n} ,$$ (4)

where:

n – the number of years of detailed projection of economic values added, RV_n – the

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[1] In the case when a company possesses non operating assets (NOA), that is assets that do not influence the company's ability to generate free cash flow or that create flows whose amount does not cover the cost of capital (the rate of return from the assets is lower than the required), the market value of such assets should be subtracted from the value of the invested capital. The correctness of such way of calculation comes from the possibility of selling NOA and handing over of the obtained excess to the owners without prejudice to the future free financial flow.

[2] For further discussion, it is assumed that the market value of the interest-bearing debt equals carrying value.

residual value calculated as the excess of timeless stream of discounted economic values added over the value of the invested capital (CI) in the period n (Martin, Petty, Rich 2003; Nita 2007).

$WACC_a$ – the weighted average cost of capital of a company in the period t ($WACC_t$) is calculated as the expected return rate from equity (r_e) and debt (r_d) capital, weighted by the shares of particular sources of capital in the capital structure (Cooper, Davydenko 2001; Fernandez 2011). This definition can be expressed with the following formula:

$$WACC_t = \frac{\left[E_{t-1}r_e + D_{t-1}r_d\left(1-T\right) \right]}{CI_{t-1}}. \tag{5}$$

EVA_t The economic value added that generated by the valuated company in the period t, could be calculated according to the formula (Valez-Pareja 2000):

$$EVA_t = \left(ROIC_t - WACC_t \right)CI_{t-1}, \tag{6}$$

where:

$ROIC_t$ – the rate of return on invested capital, calculated as the quotient of earnings before interest in the period t ($EBIT_t$) after taking taxes into account (T) and the capital invested in the beginning of the given period CI_t-

$$ROIC_t = \frac{EBIT_t\left(1-T\right)}{CI_{t-1}}. \tag{7}$$

Assuming infinite creation of economic values added, the formula for calculating the current value of an indebted company is as follows:

$$V = CI + \sum_{t=1}^{\infty} \frac{EVA_t}{(1+WACC)^t}. \tag{8}$$

In the conditions of **conformity of market value with intrinsic value** (formula 3), formula 1 can be transferred into formula 9:

$$MVA = \sum_{t=1}^{\infty} \frac{EVA_t}{(1+WACC)^t}. \tag{9}$$

Making an assumption that a given company will be generating economic values added on a constant level in the future (EVA_e) with an unchanged value of the capital invested allows for the calculation of the **market-expected future average values of return on the invested capital** $ROIC_e$. It can be calculated basing on the following formulas 10, 11 and 12:

$$MVA = \frac{EVA_e}{WACC}, \tag{10}$$

$$MVA = \frac{\left(ROIC_e - WACC \right)CI}{WACC}, \tag{11}$$

$$ROIC_e = WACC\left(1+\frac{MVA}{CI}\right), \qquad (12)$$

$$MVA = \frac{\left(ROIC_e - WACC\right)CI}{WACC}, \qquad (13)$$

Formula 12 can be significant for practical application. Assuming that an analyst has got reliable premises for estimation of the probable level of the future return on invested capital (ROIC) by the valuated company, the comparison of this amount with the market-expected level of $ROIC_e$ allows to verify if the given shares are valuated by the market according to their intrinsic value.

The essence of value creation process is obtaining higher rates of return on invested capital than the cost of its raising. The rates of return on invested capital change in time, which is proved by the theory of business development, as well as by the results of empirical research. According to the research conducted by T. Koller, M. Goedhart and D. Wessels (Koller *et al.* 2005), in an average company, in the first phase of business development the value of attained rates of return on invested capital (ROIC) does not exceed the value of the weighted average cost of capital (WACC), but it remains on the increase, though. Around the fifth year of operation, the value of ROIC becomes equal with the value of WACC index and in the tenth year it reaches its maximum value. Then, due to the influence of competition, the return on invested capital generated by mature business decreases. In the long run, maintaining of advantage of ROIC value over the cost of capital raising is associated with the necessity of maintaining competitive advantage. The changeability of the ability of companies to create values, observed empirically, is presented in Figure 1.
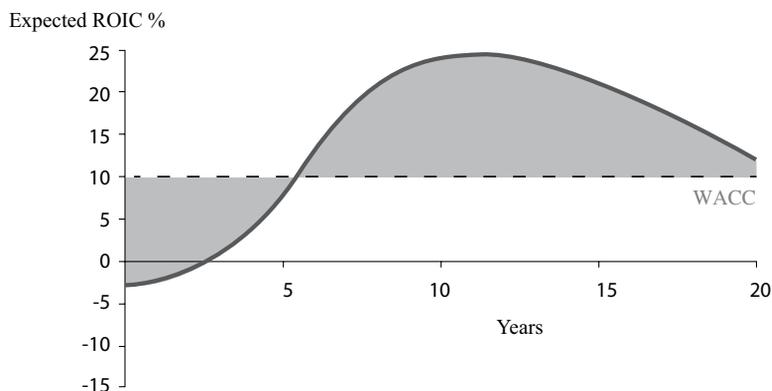
Fig. 1. Creating company value **(**Sources: Koller, T.; Goedhart, M.; Wessels, D. (2005),
Valuation, Measuring and Managing the Value of Companies, Fourth edition,
John Wiley & Sons Inc., New Jersey, p. 136)

In case of companies which are characterised by strong cost competitiveness or innovative companies the long term shape of the ROIC could differ slightly from this presented in figure 1 (Sullivan 2004; Rayan, Servaes 1997).

3. ROIC behaviour in time – empirical exemplification

The research sample consisted of forty eight non-financial business entities listed on Warsaw Stock Exchange (WSE) and featured in WIG 20[3] and WIG 40 indexes on the day of 31.12.2010 (source: www.gpwinfostrefa.pl; www.stockwatch.pl) (Table 1).

Thus, the sample represents both mature businesses, as well as smaller entities which – by definition – should be distinguished by higher dynamics of result increase, as well as higher ROIC expected in relation to historical ROIC.

Table 1. Research sample (Source: www.stockwatch.pl (31.12.2010))

WIG 20	Asseco Poland S.A., Lubelski Węgiel Bogdanka S.A., ČEZ A.S., Globe Trade Centre S.A., Grupa Lotos S.A., KGHM Polska Miedź S.A., PBG S.A., PGE Polska Grupa Energetyczna S.A., Polski Koncern Naftowy ORLEN S.A., Tauron Polska Energia S.A., Polskie Górnictwo Naftowe i Gazownictwo S.A., Telekomunikacja Polska S.A., TVN S.A.
WIG 40	Agora S.A., AmRest Holdings SE., Bioton S.A., Boryszew S.A., Budimex S.A., NG2 S.A., Centrozap S.A., Cersanit S.A., Cyfrowy Polsat S.A., Polski Koncern Mięsny Duda S.A., Echo Investment S.A., Elektrobudowa S.A., Emperia Holding S.A., Enea S.A., Eurocash S.A., Giełda Papierów Wartościowych w Warszawie S.A., Dom Maklerski IDM S.A., Impexmetal S.A., Grupa KĘTY S.A., Kogeneracja S.A., Kopex S.A., Lpp S.A., MCI Management S.A., Netia S.A., Narodowy Fundusz Inwestycyjny Empik Media & Fashion S.A., Orbis S.A., Polish Energy Partners S.A., Petrolinvest S.A., Polimex-Mostostal S.A., Polnord S.A., Zakłady Azotowe Puławy S.A., Skotan S.A., Stalprodukt S.A., Mondi Świecie S.A., Synthos S.A.

On the basis of historical statements for the period of 2006–2010 the historical values of ROICs have been calculated according to formula 6. The results of these calculations are presented in the tablet table:

Table 2. Historical values of ROIC (Source: the authors' own study on the basis of financial statements of the companies from the research sample)

	ROIC					ROIC average
	2006	2007	2008	2009	2010	
Asseco Poland S.A.	9.32%	4.91%	6.56%	6.59%	5.88%	6.65%
Lubelski Węgiel Bogdanka S.A.	-	-	12.68%	8.46%	9.22%	6.07%
ČEZ A.S.	9.47%	12.32%	15.22%	12.94%	9.97%	11.98%
Globe Trade Centre S.A.	-0.98%	–0.56%	–0.32%	–0.43%	–0.50%	–0.56%

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[3] 20 biggest WSE-listed companies characterised by biggest capitalisation and turnover

Continue of Table 2

	ROIC					ROIC average
	2006	2007	2008	2009	2010	
Grupa Lotos S.A.	6.09%	5.91%	-6.03%	0.00%	2.46%	1.69%
KGHM Polska Miedź S.A.	42.75%	36.45%	23.82%	20.72%	27.12%	30.17%
PBG S.A.	7.61%	4.18%	5.56%	6.60%	5.82%	5.95%
PGE Polska Grupa Energetyczna S.A.	-	-	0.64%	1.32%	0.61%	0.51%
Polski Koncern Naftowy ORLEN S.A.	8.42%	6.75%	3.11%	2.33%	8.01%	5.72%
Tauron Polska Energia S.A.	-	-	-	0.49%	0.04%	0.11%
Polskie Górnictwo Naftowe i Gazownictwo S.A.	7.96%	8.73%	1.24%	1.59%	6.44%	5.19%
Telekomunikacja Polska S.A.	6.29%	5.93%	5.35%	3.88%	–0.99%	4.09%
TVN S.A.	12.29%	16.28%	14.60%	13.86%	8.67%	13.14%
Agora S.A.	–1.29%	3.77%	2.54%	2.98%	3.49%	2.30%
AmRest Holdings SE	–	–0.24%	–0.22%	–0.17%	0.15%	–0.10%
Bioton S.A.	5.57%	3.63%	–1.38%	–8.08%	5.51%	1.05%
Boryszew S.A.	–10.49%	2.25%	–21.93%	10.97%	13.24%	–1.19%
Budimex S.A.	–4.24%	4.42%	24.78%	19.56%	26.47%	14.20%
NG2 S.A.	27.07%	25.76%	35.82%	20.81%	25.55%	27.00%
Centrozap	3.81%	–7.90%	1.26%	–0.20%	–4.65%	–1.54%
Cersanit S.A	–2.25%	6.92%	6.67%	8.54%	7.30%	5.43%
Cyfrowy Polsat S.A.	–54.18%	69.08%	73.98%	62.53%	67.87%	43.86%
Polski Koncern Mięsny Duda S.A.	9.59%	3.21%	2.28%	-12.32%	1.95%	0.94%
Echo Investment S.A.	8.09%	3.48%	7.26%	2.93%	3.96%	5.14%
Elektrobudowa S.A.	17.25%	28.94%	21.25%	17.65%	12.92%	19.60%
Emperia Holding S.A.	3.96%	2.57%	0.52%	0.40%	0.00%	1.49%
Enea S.A.	-	0.48%	0.97%	1.27%	0.81%	0.71%
Eurocash S.A.	17.75%	23.03%	27.69%	24.50%	13.46%	21.29%
Giełda Papierów Wartościowych w Warszawie S.A.	-	-	-	18.36%	18.62%	7.40%
Dom Maklerski IDM S.A.	13.88%	17.18%	–6.53%	2.11%	3.65%	6.06%
Impexmetal S.A.	2.69%	7.45%	18.30%	3.49%	5.13%	7.41%
Grupa KĘTY S.A.	5.80%	7.01%	5.23%	4.54%	0.89%	4.70%
Kogeneracja S.A.	3.18%	3.77%	2.99%	7.71%	5.36%	4.60%
Kopex S.A.	11.99%	2.36%	0.60%	0.73%	–0.01%	3.13%
Lpp S.A.	17.84%	31.74%	17.69%	15.21%	13.83%	19.26%
Mci Management S.A.	16.07%	27.58%	8.35%	12.19%	22.87%	17.41%
Netia S.A.	–12.17%	–3.41%	–3.57%	0.63%	10.11%	–1.68%
Narodowy Fundusz Inwestycyjny Empik Media & Fashion S.A.	-0.37%	-0.63%	5.58%	22.07%	3.03%	5.93%

End of Table 2

	ROIC					ROIC average
	2006	2007	2008	2009	2010	
Orbis S.A.	4.04%	6.92%	2.66%	1.76%	1.40%	3.36%
Polish Energy Partners S.A.	−14.03%	5.19%	2.79%	1.84%	8.43%	0.85%
Petrolinvest	0.34%	−1.02%	−5.33%	−16.90%	−3.20%	−5.22%
Polimex-Mostostal S.A.	8.79%	4.91%	6.57%	7.37%	10.95%	7.72%
Polnord S.A.	−48.00%	2.45%	3.40%	4.27%	1.96%	−7.18%
Zakłady Azotowe Puławy S.A.	9.89%	9.32%	18.87%	16.75%	0.70%	11.11%
Skotan S.A.	−5.93%	−8.03%	−6.68%	5.71%	−2.95%	−3.57%
Stalprodukt S.A.	45.17%	40.71%	30.79%	21.15%	10.42%	29.65%
Mondi Świecie S.A.	24.28%	22.41%	11.61%	4.10%	13.93%	15.26%
Synthos S.A.	6.67%	6.52%	10.70%	5.90%	7.14%	7.38%
Average	4.58%	9.43%	8.08%	7.68%	8.19%	7.59%
Average WIG 20	8.40%	7.76%	6.34%	6.03%	6.37%	6.98%
Average WIG 40	3.17%	10.05%	8.73%	8.30%	8.87%	7.82%

The companies that particularly stand out concerning their results were Cyfrowy Polsat S.A. and KGHM Polska Miedź S.A. It should be noticed that in the studied period, the companies of lower values of capitalization featured in WIG 40 index attained higher rates of return on invested capital (7.82% on average) than the biggest companies on WSE (6.98%).
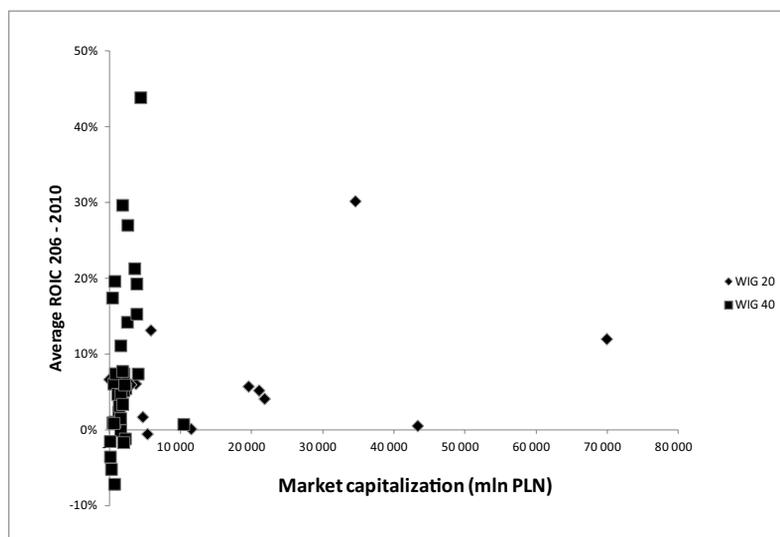
Fig. 2. The relation of capitalisation values and historical rates of return on committed capital
(Source: the authors' own study on the basis of financial statements of
the companies from the research sample)

According to the reasoning presented in the first part of this work, the expectations of investors concerning future results of a company can be estimated by calculating the average expected economic values added (EVA). Transformation of formula 11 allows for the calculation of this value:

$$EVA_e = MVA \times WACC \qquad (14)$$

The estimation of EVA began with calculation of market value added (MVA) according to formula 2. In order to do that, the information on balance sheet values and their capitalization on the day of 31.12.2010 of each of the companies were used. WACC values were estimated on the basis of analyses of stock exchange recommendations, issued by brokerage houses in 2010. In the case of occurrence of several recommendations in this period, the average values were accepted for the purpose of calculations.

Formula 12 was used in order to estimate the investor-expected average rates of return on invested capital. The results of the performed calculations are presented in Table 3.

Table 3. Estimation of the value of MVA (m. PLN) and ROICe (Source: the authors' own study on the basis of financial statements of the companies from the research sample)

	E	Ebv	MVA	WACC	CI	ROICe
NG2 S.A.	2,611	339	2,272	10.80%	375.3	76.16%
Eurocash S.A.	3,584	239	3,345	10.70%	579.8	72.43%
Giełda Papierów Wartościowych w Warszawie S.A.	2,057	396	1,661	11.10%	400.1	57.17%
Cyfrowy Polsat S.A.	4,427	1,059	3,368	11.00%	1,131.8	43.73%
Boryszew S.A.	2,257	400	1,857	9.62%	568.2	41.06%
Lpp S.A.	3,879	756	3,123	10.00%	1,031.0	40.29%
Budimex S.A.	2,540	643	1,897	9.80%	654.0	38.23%
Synthos S.A.	4,062	1,112	2,950	10.10%	1,112.5	36.88%
Cersanit S.A	2,326	586	1,740	9.00%	603.9	34.93%
Emperia Holding S.A.	1,593	657	936	10.90%	659.4	26.37%
KGHM Polska Miedź S.A.	34,600	14,456	20,144	11.90%	16,836.8	26.14%
Elektrobudowa S.A.	792	322	470	10.10%	330.6	24.45%
PBG S.A.	3,045	1,190	1,855	12.00%	2,100.8	22.60%
Mondi Świecie S.A.	3,875	1,433	2,442	9.90%	1,909.9	22.56%
Echo Investment S.A.	2,016	572	1,444	8.60%	1,057.2	20.34%
Lubelski Węgiel Bogdanka S.A.	3,741	1,958	1,783	11.40%	2,414.6	19.82%
Narodowy Fundusz Inwestycyjny Empik Media & Fashion S.A.	2,159	860	1,299	9.62%	1,272.1	19.44%
Polish Energy Partners S.A.	661	265	396	7.84%	277.3	19.04%
AmRest Holdings SE	1,609	660	949	8.40%	809.0	18.25%

End of Table 3

	E	Ebv	MVA	WACC	CI	ROICe
Skotan S.A.	151	86	65	9.62%	85.8	16.93%
Polimex-Mostostal S.A.	1,857	918	939	10.30%	1,545.2	16.56%
PGE Polska Grupa Energetyczna S.A.	43,360	28,520	14,840	10.70%	28,519.6	16.27%
Grupa KĘTY S.A.	1,173	608	565	9.00%	713.4	16.13%
Stalprodukt S.A.	1,857	1,360	497	11.20%	1,359.7	15.30%
Kogeneracja S.A.	1,638	887	751	8.20%	1,020.7	14.24%
TVN S.A.	5,854	2,022	3,832	7.80%	5,135.9	13.62%
Polski Koncern Mięsny Duda S.A.	507	281	226	8.60%	399.2	13.46%
Telekomunikacja Polska S.A.	21,838	12,900	8,938	9.30%	21,197.0	13.22%
ČEZ A.S.	69,940	30,773	39,167	7.70%	59,356.6	12.78%
Mci Management S.A.	447	499	−52	12.00%	579.4	10.92%
Agora S.A.	1,329	1,132	197	9.40%	1,287.7	10.84%
Kopex S.A.	1,397	1,347	50	10.30%	1,351.0	10.68%
Zakłady Azotowe Puławy S.A.	1,625	1,645	−20	10.40%	1,755.7	10.28%
Impexmetal S.A.	870	779	91	9.10%	826.1	10.10%
Orbis S.A.	1,889	1,732	157	9.30%	1,886.0	10.07%
Polskie Górnictwo Naftowei Gazownictwo S.A.	21,063	18,664	2,399	9.00%	20,422.1	10.06%
Asseco Poland S.A.	4,111	4,307	−196	10.40%	4,592.1	9.96%
Dom Maklerski IDM S.A.	650	654	−4	9.62%	654.4	9.56%
Polski Koncern Naftowy ORLEN S.A.	19,589	19,539	50	9.30%	27,889.9	9.32%
Grupa Lotos S.A.	4,721	5,952	−1,231	10.50%	10,337.3	9.25%
Netia S.A.	2,025	2,296	−271	10.20%	2,323.3	9.01%
Globe Trade Centre S.A.	5,375	4,046	1,329	6.70%	5,410.3	8.35%
Centrozap	134	203	−69	9.62%	378.7	7.88%
Tauron Polska Energia S.A.	11,514	16,524	−5,010	10.52%	17,372.1	7.49%
Enea S.A.	10,462	10,027	435	7.10%	10,147.4	7.40%
Polnord S.A.	738	1,140	−402	9.40%	1,543.9	6.95%
Bioton S.A.	807	1,308	−501	9.62%	1,428.2	6.24%
Petrolinvest	300	1,034	−734	9.62%	1,093.8	3.16%

The results of the estimations presented in Table 3 prove that, on average, WSE's investors expect higher rates of return in case of companies from WIG 40. The value of average positive differences between the ROIC$_e$ value and the average-weighted capital cost WACC for WIG20 index has been estimated for 4.08%, while for WIG40 it is 13.15%. These expectations find no grounds for the ROIC attained by the studied companies in the years 2006–2010. Figures 3 and 4 show the differences between the investor-expected average ROIC indexes and the values of return on invested capital in the years 2006–2010.
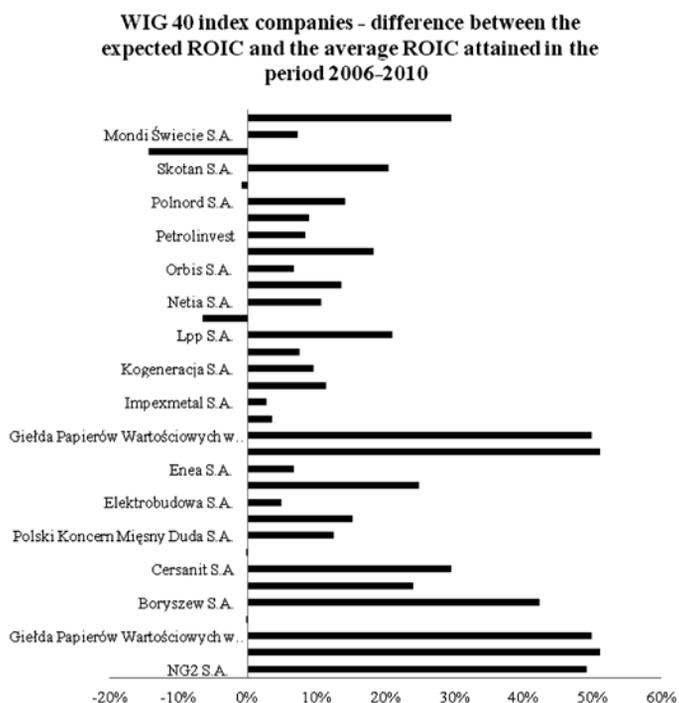
**WIG 40 index companies - difference between the
expected ROIC and the average ROIC attained in the
period 2006–2010**

Fig. 3. WIG 40 index companies – difference between the expected ROIC and the average
ROIC attained in the period 2006–2010 (Source: own work)

**WIG 20 index companies - difference between the expected ROIC and the
average ROIC attained in the period 2006–2010**
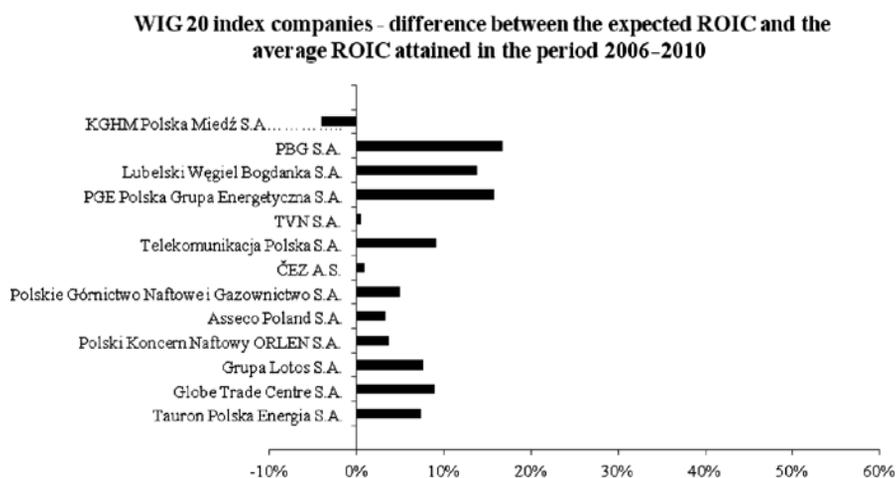
Fig. 4. WIG 40 index companies: difference between the expected ROIC and the average ROIC
attained in the period 2006–2010 (Source: own work)

The presented calculations prove that in the case of both WIG20 and WIG40-listed companies the expectations of investors in the scope of the ability of given companies to achieve future ROIC were far beyond the average rates of return attained by the investors in the years 2006–2010. For the companies included in WIG20, the excess of the average expected ROIC rate (ROIC$_e$) over the historical ROIC rates was 6.78%, while in the case of WIG40-listed companies it was as much as 17.14%. The scale of differences between the investor-expectations and the historical results is depicted synthetically in Figure 5.
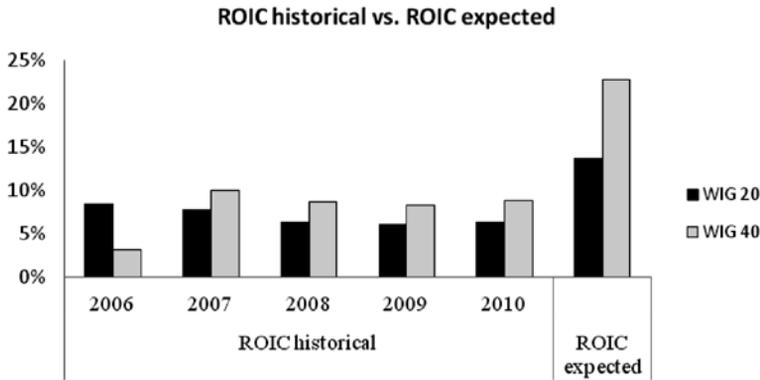
Fig. 5. Comparison of average historical ROIC and investor-expected ROIC in the beginning of 2010 (Source: own work)

4. Conclusions

The presented calculations suggest that in the beginning of 2011, the market valuations of big companies on WSE greatly exceeded their historical ROICs. Taking into consideration that majority of the analysed companies are mature entities this phenomena could prove the market overvaluation. In other words, market valuations of most companies could find no confirmation in fundamental valuations performed according to the theory of business development and the results of empirical research. While the higher expectations of investors in relation to the rates of return on committed capital of WIG 40 companies over WIG 20 companies may seem justified by the level of development of these entities, the amount of excess of expected ROIC over historical ROIC in the case of both indexes speaks in favour of the argument of overvaluation of the Polish capital market. Taking into account the macroeconomic situation in this period, it is hard to find the right premises to prove that the future results of companies will differ much from their historical results. Though the big differences between the expected and the historical ROIC in the period of 2009–2010 might be ascribed to the effects of global crisis, the comparison of the expected rates with those attained in 2007 – the period of the peak of economic boom – point to irrationality of the investors' expectations.

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INVESTUOTOJO KAPITALO RINKOS GRĄŽOS RODIKLIŲ NAUDOJIMAS, TIKRINANT BIRŽOJE LISTINGUOJAMŲJŲ KOMPANIJŲ RINKOS VERTĘ SU JŲ TIKRĄJA VERTE

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Santrauka

Straipsnyje pateikiama investuotojo laukiama kapitalo grąžos rodiklių koncepcija ir šių rodiklių taiky-mas, vertinant, kiek kompanijų akcijų vertė atitinka jų tikrąją vertę. Taip pat pateikiami tyrimo, kurio tikslas – patikrinti taikomus metodus, rezultatai. Tyrimui atlikti pasirinktos Varšuvos akcijų biržoje lis-tinguojamosios kompanijos ir tikrinama, ar šių kompanijų rinkos vertė atitinka jų tikrąją vertę. Straipsnio empirinėje dalyje pateikiami skaičiavimai rodo, jog 2011 m. pradžioje daugumos analizuotųjų kompanijų rinkos vertė buvo gerokai didesnė už jų esamą vertę.

Reikšminiai žodžiai: DCF, EVA, vertinimas, kapitalo rinkos, fundamentalioji analizė, ROIC, tikroji vertė.

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