Valuation of Shares and Fair Value of the Companies Listed on the Wig20: Quoted On the Warsaw Stock Exchange in Poland within 2011-2015

Rafał Parvi

Wroclaw School of Banking Fabryczna, 29-31 53-609 Wroclaw, Poland

Email (corresponding author): rafalp4@o2.pl

Abstract: This paper examines share price of the companies listed on the WIG-20 and their fair value between 2005 and 2015. Data from 2005 to 2015 were collected from the Stooq.pl (Polish portal of shares). Two hypotheses are tested: (1) value of the shares based on the market price; (2) value of the shares as the fair value of shares.

Key words: Fair value of shares, Market value of shares, Company profit

1. Introduction

The WIG20 stock exchange index is an index of the 20 largest joint-stock companies listed on the Warsaw Stock Exchange. A base date for the index is 16th of April 1994 and a base value is 1000 points. It is an index of a price type (only prices of transactions included therein are taken into consideration when calculating its value). Up to 5 companies from one sector can be listed within the framework of WIG20. Investment funds are not listed in this index. On the 23rd of September 2013, 10 new companies joined the index creating WIG30. The lowest value of WIG20 was recorded upon closure on the 28th of March 1995 as 577.90 points and the highest ne on the 29th of October 2007 as 3917.87 points. A ranking of companies is created on the basis of points granted according to the formula:

2. A Review of Selected Literature

Even if the literature on the analysis of socio-economic characteristics that affect household investment on education is satisfactorily high in the context of developing countries, the attempts which have been made to analyze the influence of risk on education investment decisions are not sufficient. This review is organized under three sub-topics, namely, household socio-economic attributes associated with household education investment, the influence of risk attitudes on household education investment, and an overview of the education and socio-economic background in Sri Lanka.

$$R(i) = 0,6 * St(i) + 0,4 * Sc(i)$$

whereas the symbols mean: R (i)– company's position in the ranking (i), St(i)– participation of a company (i) in total dealing in shares of companies included in the ranking during the last year, Sc(i)– participation of a company (i) in a share value in a free circulation of companies included in the ranking as per date of its preparation. Allowing for a correction factor is intended to naturalize changes in the amount of capitalization of the market, such as: changes in the composition of an index portfolio, payout of a dividend (Barowski; Veale, 2001). The ranking is common for the indices: WIG20, mWIG40 and sWIG80. The WIG20 index is calculated according to the formula:

$$WIG20 = [(M(t) / M(0) * K(t)] * 1000$$

Rafał Parvi

Valuation of Shares and Fair Value of the Companies Listed on the Wig20: Quoted On the Warsaw Stock Exchange in Poland within 2011-2015

whereas the symbols mean: WIG20 – value of the WIG20 index, M(t) – capitalization of the index portfolio in a session t, M(0) – capitalization of the index portfolio on a base day K(t)– correction factor of the index in a session t The correction factor is calculated according to the formula:
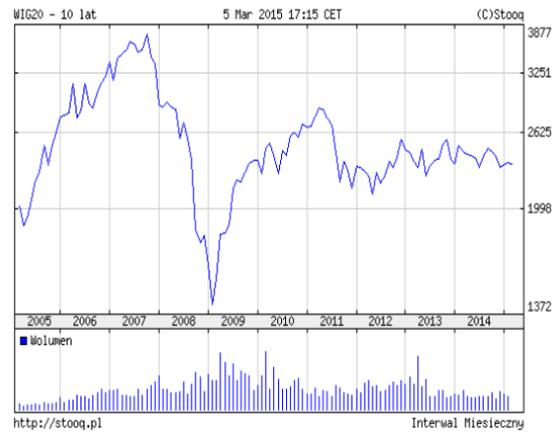
$K(t) = K (t-1) * [Mz(t) / M(t)]$

Figure 1: WIG-20 in the period from 01.2005 to 03.2015

Whereas the symbols mean: K (t) – correction factor in a session t, Mz(t) – modified value of the market capitalization for a session t (e.g. added share value of a new participant of the index).

In the diagram of the WIG20 index within recent 10 years before and after the crisis in 2008, it must be observed that companies listed in this index did not return to their values from 2007 as it was in other EU countries in the indices: DAX, CAC or in the USA in the indices: S&P and NASDAQ (Fig.1). The companies listed in the mentioned indices recovered from the incurred losses and their value is estimates even over the value recorded before 2007, which means that the WIG20 index should reach the value of approx. 5200 points. This would be reflected in the fair value of companies listed therein (Fig. 1). The diagram of WIG20 P/E presents the value as per the 5th of March 2015 (value of 14.30) which proves that a total relation of price to income is on the increase and should reach at least the value of 32 (Fig. 2).

Figure 2: WIG-20 P/E in the years 2006 - 03.2015

The diagram of WIG20 P/BV presents the value as per the 5th of March 2015 (value of 1.34) which proves that a total relation of price to income is on the increase and should reach at least the value of 2.00 to 3.00 (Fig. 3).

Figure 3: WIG-20 P/BV in the years 2008 - 03.2015

3. Analysis and valuation of the energy sector's companies quoted on the Warsaw Stock Exchange (WSE) in Poland

The current price of shares of the companies listed on the WIG20 should reflect their business value and their fair value, however, bearing in mind their maximum value, we should note that for well prospering companies their current value differs strikingly from the average or maximum value that was determined during quotations over the last few years, as shown in Table 1. The share price of some of them has been reduced by 85% (JSW) and of some by less than 61% (KERNEL), which proves their diverse structure and diverse financial possibilities.

Table 1: Companies listed on the WIG20 in Poland as of 05.03.2015 (own development based on the data of the Warsaw Stock Exchange)

Name	Average rating	rating
ALIOR	3.5/5.0	B-
ASSECOPOL	4.0/5.0	AAA
BOGDANKA	4.0/5.0	BBB
BZWBK	4.0/5.0	B
EUROCASH	3.5/5.0	CCC
JSW	3.5/5.0	BB+
KERNEL	3.5/5.0	AA+
KGHM	4.0/5.0	AA+
LOTOS	4.0/5.0	BBB
LPP	4.0/5.0	A
MBANK	3.5/5.0	B
ORANGEPL	2.5/5.0	BB+
PEKAO	3.5/5.0	B+
PGE	3.5/5.0	AA
PGNIG	3.5/5.0	AA+
PKNORLEN	4.0/5.0	BBB-
PKOBP	3.5/5.0	B-
PZU	3.5/5.0	BB-
SYNTHOS	4.0/5.0	AAA
TAURONPE	3.5/5.0	BB-

With good financial data and generating earnings per share, the companies should resist crisis and stagnation prevailing currently on the world markets.

Rafał Parvi

Valuation of Shares and Fair Value of the Companies Listed on the Wig20: Quoted On the Warsaw Stock Exchange in Poland within 2011-2015

Table 2: Companies listed on the WIG20 in Poland as of 05.03.2015 (own development based on the data of the Warsaw Stock Exchange)

Name	Current price PLN	Maximum price PLN from the beginning of the stock exchange quotation
ALIOR	80.62	97.15
ASSECOPOL	57.42	69.84
BOGDANKA	85.00	131.20
BZWBK	338.05	408.30
EUROCASH	32.30	63.44
JSW	19.07	124.20
KERNEL	32.00	82.90
KGHM	119.00	167.80
LOTOS	26.68	51.22
LPP	7070.20	10049.00
MBANK	441.00	538.40
ORANGEPL	9.29	15.04
PEKAO	185.25	206.50
PGE	19.94	22.10
PGNIG	5.05	6.01
PKNORLEN	55.90	59.64
PKOBP	33.99	43.31
PZU	471.20	505.00
SYNTHOS	4.47	5.16
TAURONPE	4.68	5.64

However, it is unjust to quote rating for some companies in a manner showing their weakness, since those companies generate profit and are capable of surviving on the market and maintaining financial liquidity, which is proved by the financial results in tables 2 and 3. PKNORLEN may serve as an example.

In table 3, the most important ratios presenting the financial condition of the WIG20 sector's companies were presented. The profit per share was generated in 20 examined companies. It shows that developers invest a lot, what determines their value and the generated profit per share (Copeland, 1997).

In the WIG20 sector there are four companies, the values of which approach their maximum prices on 06.03.2015, can be recorded, and they are PEKAO, PGE and PZU. However, other companies do not show their maximum or even fair value, though they can show the net profit and good financial condition, and they are ALIOR, BOGDANKA, SYNTHOS and TAURONPE. Some companies were overvalued by even 30%. The flagship companies, such as PGE and PZU, stay ahead with the best results, as shown in Table 1-2.

Generally, the value of the index P/OE is a useful tool for determining an absolute share value referred to the operating profits. Using the operating profit instead of a net profit (the P/E index) allows for rejecting single events. Moreover, a net profit is easier to handle. Fewer companies incur losses at the level of an operating profit rather than a net value, which allows for a broader use of P/OE.

The P/BV index informs how the company's own capital is valued by the market at a given moment. A general interpretation of the index consists in the fact that the P/BV indices below 1 mean a low price of a company, whereas a value over 3 that a company is overrated.

The value of the C/P index is expressed in the way that when the value of the index is lower, then the price for the purchased company's shares is theoretically lower too, which means that the enterprise is more attractive. It is used in order to demonstrate cyclic profits and losses of the analyzed companies (the income is much more stable than the company's profit).

Rafał Parvi

Valuation of Shares and Fair Value of the Companies Listed on the Wig20: Quoted On the Warsaw Stock Exchange in Poland within 2011-2015

Table 3: Technical assessment of companies listed on the WIG20 as of 06.03.2015 (own development based on the data of the Warsaw Stock Exchange)

Name	P/OE (price/ operating earnings)	P/BV (price/ book value)	P/P (price/ profit)
ALIOR	14.54	1.93	2.60
ASSECOPOL	7.98	0.61	0.77
BOGDANKA	8.41	1.19	1.47
BZWBK	12.71	1.86	4.23
EUROCASH	15.60	4.32	0.26
JSW	-6.66	0.28	0.34
KERNEL	2.55	0.74	0.32
KGHM	6.57	0.97	1.14
LOTOS	-3.54	0.60	0.17
LPP	21.25	7.90	2.71
MBANK	11.26	1.68	3.48
ORANGEPL	12.36	0.98	1.00
PEKAO	12.62	2.02	5.55
PGE	7.32	0.83	1.33
PGNIG	7.75	0.99	0.87
PKNORLEN	-5.08	1.17	0.22
PKOBP	9.77	1.57	2.88
PZU	10.10	3.18	2.41
SYNTHOS	11.91	2.76	1.17
TAURONPE	4.64	0.45	0.44

The price to the operating earnings shows the losses of the company, and this state of affairs was reported in the examined stock exchange quoted companies (3 companies). The ALIOR, EUROCASH, LPP achieved a very high ratio, and the KERNEL – an average one. In contrast, analyzing P/BV and P/P, it should be noted that both the price to the book value and the price to profit demonstrate that four companies exemplary operate on the market and have a value of more than 2.0, and these are EUROCASH, LPP, PEKAO and SNTHOS. Other companies do not significantly differ from the average values. Only TAURONPE is significantly below the thresholds and shows the negative values (0.45 and 0.44) (Copeland, 1997; Jajuga 1996; Parvi, 2014; Pierce, 2004; Thompson, 2008).

Table 4: Value of the companies listed on the WIG20 as of 06.03.2015

Name	Fair value	Deviation from the fair value in PLN
ALIOR	96.45	15.83
ASSECOPOL	63.87	6.45
BOGDANKA	110.45	25.45
BZWBK	400.96	62.91
EUROCASH	48.63	16.33
JSW	52.77	33.70
KERNEL	53.10	21.10
KGHM	150.74	31.74
LOTOS	40.33	13.65
LPP	10000.00	2929.80
MBANK	502.65	61.65
ORANGEPL	12.88	3.59
PEKAO	199.41	14.16
PGE	20.38	0.44
PGNIG	6.00	0.95
PKNORLEN	59.03	3.13
PKOBP	40.34	6.35
PZU	500.99	29.79
SYNTHOS	5.10	0.63
TAURONPE	5.13	0.45

Rafał Parvi

Valuation of Shares and Fair Value of the Companies Listed on the Wig20: Quoted On the Warsaw Stock Exchange in Poland within 2011-2015

Deviation from the fair value in PLN = DevFV
DevFV = Fair value - current value

Other companies have shown a substantial profit which was generated in 2014, and they were 20 companies. Currently, the value of companies significantly deviates from the maximum value achieved a few years ago. The only exceptions are ASSECOPOL, ORANGEPL, PGE, PGNIG, PKNORLEN, PKOBP, SYNTHOS and TAURONE, which achieved almost the maximum value in its history. Other companies have the value less than 90% of the maximum one (Table 4). However, the fair value which should be reflected by the share prices of the examined companies significantly differs from the calculated value, which was presented in Table 4. In some cases, it is even 90% of the current value. The fair value is considerably higher than the current value of the examined companies.

4. Conclusion

The share price of companies listed in WIG20 is considerably underrated. However, it may be suspected that the value of these shares is underrated intentionally for the investors moving around the globe with an investment capital which depends exclusively on the profit, i.e. quick purchase and sale of shares, whereas they are not interested in investing and receiving dividends, which is connected with maintaining shares in an investment portfolio.

Explicitly, it may be observed that the share price of companies listed in WIG20 differs considerably from the fair value that was calculated and presented in the elaboration. For this reason, it must be particularly stressed that the value should be reached in the future periods, which may be supported by an increasing value of a price/income relation (P/E) in the WIG20 index where the minimum level is left behind. The fair value of companies listed in WIG20 should be reached in the period of two years, i.e. until 2017 (Parvi, 2014; Pierce, 2004).

References

- Borowski K., Wyznaczanie punktów zwrotnych indeksu Wig przy pomocy wybranych metod analizy czasowej". Bossa.pl Copeland T., Koller T., Murrin J. Wycena: mierzenie i kształtowanie wartości firmy", WIG – Press, Warszawa 1997, pp. 65-69.
- Jajuga K., Jajuga T. Inwestycje", Wydawnictwo Naukowe PWN, Warszawa 1996, pp. 34-57.
- Parvi R., "Investment funds and their financial effectiveness", Goce Delchev University Macedonia & THOMSON Ltd. Slovakia, EDIS – Publishing Institution of the University of Zilina, 2014, pp. 262-267.
- Parvi R., "Share price of companies listed on WIG20 and their fair value". EDIS – Publishing Institution of the University of Zilina EIIC – 3 rd Electronic International Interdisciplinary Conference 2014, pp. 169-177.
- Parvi R., "Valuation of share and their fair value of the banking sector's companies quoted on the Warsaw Stock Exchange in Poland within 2008-2014", Goce Delchev University Macedonia & THOMSON Ltd. Slovakia, EDIS – Publishing Institution of the University of Zilina, 2014, pp. 76-81.
- Pierce R., "Stocks, Options & Spreads, Infinity Publishing" 2004, pp. 110-115.
- Thompson B., "Stock Market Superstar", Insomniac Press 2008, pp. 52-54.
- Veale S., "Stocks, Bonds, Options, Futures", Prentice Hall Press 2001, pp. 88-125