
PRICE-GENERATING CHARACTER OF INFORMATIONS ABOUT NET FINANCIAL RESULT IN THE CASE OF WARSAW STOCK EXCHANGE

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Abstract: For most governments in the world, a fundamentally strong economy is the goal of their politics. One of the determiners of such economy is operating and developed capital market. This process, however, entails the necessity of its effectiveness. In relation to the capital market, the effectiveness may be defined in three dimensions [Sharpe, 1992]. One of them is the so-called information efficiency. The first man who drew attention on the possibility of occurrence informatively effective capital market was L. Bachelier [1900]. In his study he included a theory of price formation on the French stock exchange. However, its first actual definition has been put forward much later by E. Fama [1965]. According to it, on efficient capital market “prices always fully reflect all available information”.

There is a number of information that may impact on the prices of financial instruments. These include: news of profit sharing (dividend payments), stock exchange analysts' recommendations, transactions made by insiders, split or resplit shares and information not necessarily related to particular company or an economic sector. Moreover, this information may be evidences derived from accounting. Data from the accounting system has a very significant impact related to the prices of companies listed on global stock exchanges. They enable the investors' risk on the capital market. Concerning to that, they can improve the selection of entities characterized by a good economic and financial situation. Placing funds in these can mean that investors will achieve above-average profits in the future.

One of the most important data coming from the accounting system is the information about companies net financial result (net profit or loss). Informing market participants about the net financial result may affect the price volatility of the issuer's financial instruments. It was already written about in current of the capital market research in accounting in the 1960s [Ball, Brown, 1968].

Main aim of this paper was examination the impact of announcement information about net financial result on the market value the biggest companies listed on the Warsaw Stock Exchange grouped in the WIG20 index. To achieve this aim have used the event study methodology-one of the methods of measuring information efficiency of the capital market [Fama, 1969]. It is a research instrument used to assess investors' reactions, while on the other hand it can be used as an element of financial market efficiency evaluation. For this purpose constructed 5-day long event window (where t_0 was a day of announcement the financial report). Using the event study methodology, were calculated the abnormal returns for each quarterly report publications between 2016 and mid-2018 for each company in WIG20 index. Results of this paper are given below.

Keywords: capital market, efficient market hypothesis, event study, abnormal returns, net profit.

1. CAPITAL MARKET RESEARCH IN ACCOUNTING

The overlap between accounting and capital markets has led to the emergence of a new field of science called capital markets research in accounting. For many years has been searched whether there is a relationship between the market valuation of public companies and the data in the financial statements [Grabiński et al., 2013]. Initiated in the 1960s research trend by the above-mentioned R. Ball, P. Brown and also by W. Beaver [1968], the capital market research in accounting finds its application to this day.

The close connection between accounting and capital markets cannot be overlooked. The reason for this is that reporting is the most important source of information for investors, contributing to the increase in market efficiency. Francis and Shipper [1999] confirmed the important relationship between accounting information and rates of return, claiming that it is the accounting that explains market prices in accordance with the assumptions of the information-efficient market.

Main purpose of capital market research in accounting is to verify the hypothesis that financial statements of issuers provide information more useful than other sources. If data found in company's report is considered significant by investors, capital market will evaluate immediately their impact on prices of financial instruments (e.g. shares, bonds).

One of the first article in this reseearch was description by W. Beavera, R. Clarke'a oraz W. Wrighta [1979]. They revealed strong capital market reaction on recorded earnings per share indicators higher than expected. These authors also noticed that relationship between beta coefficient (systematic risk parameter of public companies) and their reaction. Real develop of research about valuation of significance about accounting information for market

value occurred at the end of the 1980s and the beginning of the 1990s. It was during that time that the main tools for examining the relationship between reported data from financial statements and market reaction to them were formulated today. It was called earnings response coefficient [Watts, Zimmerman, 1990]. This coefficient allowed measuring price reaction of entities quoted on the stock exchange to reported financial results.

At the beginning of the 21st century, further publications concerning the impact of accounting information on the market valuation of public companies were created. Some authors have tried to prove that net financial result or other accounting values do not affect share prices, while others have claimed that there is a close relationship between these parameters. The most accurate position seems to be the determination of the impact of both the net result and other book values in a different way for business sectors [Riley et al., 2003] or countries [Goodwin, Ahmad, 2006].

2. EVENT STUDY METHODOLOGY

J. Dolley [1933] is the first author, which used from the range of event study. He explored stocks split for the period 1921-1933. One of the most important definitions of this methodology described E. Fama. He called abnormal returns methodology, measures investors' reactions on the grounds of difference between the realized and expected return (at the examined time period). This method was used to analyze effects of amalgamations and takeovers on capital investors' perception of companies. It can be used to evaluate reactions to shares split or resplit, announced financial performance or information about dividend or estimation of information value of shares buy back [Perepeczo, 2010].

The event study has a twofold tenor. On the one hand, it's a research instrument used to assess investors' reactions, while on the other hand it can be used as an element of financial market efficiency evaluation. In order to delve into the event study methodology, it is necessary to focus on the notion of efficiency, which has been mentioned above.

Its first definition has been put forward by E. Fama. According to it, on an efficient financial market "prices always fully reflect all available information". As written by Haugen [1996] efficient market level can be easily checked, when:

- new information immediately affects the market prices of securities,
- changes of the values prices have random character,
- cannot be achieved higher than average profits (at using each available investment strategy),
- even professional investors can't achieve above average profits.

In point of fact, any market hasn't fully fulfilled all of these conditions. Therefore, it would be possible to claim that each market is inefficient. However such a statement would strongly deviate from the truth. That's why Fama distinguished three types of efficiency (EMH – Efficient Market Hypothesis) weak, semi-strong and strong. One of the methods used to make such a measurement is event study, which enables (next to simulation methods) to test the hypothesis about the semi-strong form efficiency.

Event study consists of several steps, which are necessary to conduct it properly. According to McWilliams & Siegel [1997], these are:

- defining an event that involves coming new information,
- research of economic theory justifying prices reaction of the news,
- identification of group of companies, which experienced the event,
- choice of right length of event window,
- elimination from research sample companies, which had other event in an event window period,
- estimate the abnormal returns and testing their relevance,
- present the economic theories, which explain differences between abnormal returns in research sample and statistical testing,
- summary in annex name of companies with dates of the event occurring.

The most important thing in event study methodology is estimation of abnormal returns. In the simplest way, abnormal returns are difference between realized and expected return in period t . This is represented by the following formula:

$$AR_{it} = Rit - E(Rit),$$

where:

AR_{it} – abnormal return of security i in period t ,

Rit – realized return of security i in period t ,

$E(Rit)$ – expected return of security i in period t .

If the analyzed event will generate additional value for investors, abnormal return will be positive. Realized return in this case will be higher than expected on a given day. Otherwise, in case of negative abnormal returns

expected return will be higher than realised. It can happen when tested event will react negatively on the company [Lisicki, 2018].

Calculating the realized return is a simple task. It requires the calculation of the actual return achieved in the analyzed listing day. Whereas, estimating expected return is more complicated task which demands applying chosen model. Sudarsanam [2003] indicated existence of seven most popular models, used to calculate expected return. He specified them in three groups:

- single index models: mean-adjusted model, market-adjusted model,
- market models: single-index model (constructed by W. Sharpe), CAPM (Capital Asset Pricing Model) Three Factor Model used by E. Fama and K. French;
- portfolio models: reference portfolio model, model of control company.

The methodology of event study has been used in this article to check the impact of information provided by issuers of the Polish capital market in the periodic report on the net result achieved. My task was to verify how the reported net result (loss or profit) of the conducted activity influenced the shaping of the exchange rates of the 20 largest companies listed on the WSE, grouped in the WIG20 index.

3. IMPACT OF THE ANNOUNCEMENT OF NET FINANCIAL RESULTS ON MARKET VALUES THE BIGGEST COMPANIES LISTED ON THE WARSAW STOCK EXCHANGE

The research hypothesis of the article indicates on the existence of statistically significant return on the days accompanying the date of disclosure of the net result of the entity to the public. In order to verify this hypothesis was necessary to obtain data concerning net profit (or loss) reporting by WIG20 issuers. I adopted years 2015-2018 like a research period. The attention was focused only on quarterly reports which in the analyzed period, they were published 14 times - starting from the report for the first quarter of 2015, ending with the report for the second quarter of 2018. Membership to the WIG20 index in the whole examined period based on the annual revision of Warsaw Stock Exchange, which took place in March 2018.

Table 1 presents the net financial result of the WIG20 index companies in individual quarters of 2015-2018.

Table 1 Quarterly net financial result of the issuers grouped in WIG20 index for years 2015-mid2018 (in mln PLN).

Company/ Quarter	Q2 2018	Q1 2018	Q4 2017	Q3 2017	Q2 2017	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016	Q4 2015	Q3 2015	Q2 2015	Q1 2015
ALIOR	195,6	171,1	143,1	190,1	100	82,4	369,5	86,9	81,7	80,2	39,6	91	87,8	91,2
BZWBK (SANTANDER)	635	438,7	549	559,9	651,1	453	460,9	425,9	723,5	556,5	277,1	472,7	541,6	1036
CCC	234,1	-130,5	148,7	41,2	148,1	-50,6	186,6	8,2	131,6	-19,5	105,2	33,8	105,1	6,4
CDPROJEKT	29,5	22,9	45,9	35,7	73,3	45,3	79,3	36,6	102,1	32,6	65,7	40,4	241,5	-5,2
CYFROWY	235,8	300,8	167,1	242,9	291,2	279,4	349,9	278,2	237,7	175,5	185,6	502,5	304,5	170,8
ENERGA	281	275	221	68	174	310	80	313	-35	106	136,1	166,2	178	351,8
EUROCASH	36,8	-15,8	9,8	35,7	52,6	-14,9	66,9	58,7	52,5	1,2	97	70,1	48,6	-3,4
JSW	324,1	753,9	747,8	360,4	566,2	294,9	294,4	-139	-89,3	-59,8	-2520	0,9	-426,2	-198,1
KGHM	172	439	176	604	96 (398	-4996	329	135	370	-4460	33	795	397
LOTOS	534,9	320,8	484,7	618,8	157,5	410,9	303,5	379,9	225,8	106	-391,3	-249,2	478,6	-101,4
LPP	310	-115	302	85,1	173	-117	158,2	-6,5	89	-65,6	173	79,7	136,6	-37,3
MBANK	287,4	411	311,6	291,4	269,7	218,8	292,5	230,5	388,5	307,8	309,5	319,5	221,3	381
ORANGE	-16	-50	-198	28	71	39	-1898	37	17	98	-153	110	126	171
PEKAO	539,8	392,3	1054	536,2	535,1	349,7	494,7	520,7	690,5	573,4	438,4	610,5	619,2	624,4
PGE	267	959	-319	1463	533	882	1421	626	-324	900	995	1029	-5965	1095

PGNIG	970	1599	430	367	499	1599	690	280	-120	1386	-21	291	621	1243
PKNORLEN	1744	1042	1591	1603	1541	1920	1789	1527	1608	337	-81	795	1367	756
PKOBP	933	757	820	902	857	525	593,3	768,5	873,5	638,6	444,3	815,2	702,9	647,2
PZU	782	640	764	700	506	940	638,5	649	166,2	486,6	509,9	510,9	380,3	941,3
TAURON	-74	637	194	189	364,5	641	102	271	-330	323,2	-2880	358,1	216,5	502

Source: own study based on <https://stooq.pl/t/?i=532> (access:25.01.2019).

Analyzing, in the context of determining the net result, quarterly reports of the WIG20 index companies generated a total of 280 cases of disclosure of the quarterly net result to the public. For the purpose of this article were created 280 four-day event window (where day t_0 was the date of available the quarterly report of issuer). They were to allow the estimation of impact of the net result on changes in the market valuation of the issuers. What is extremely important for the nature of the study, in some cases, when was determined the date of event window, I did not take into account real date of publication of the quarterly report, but the date of company's previously presented estimates of accounting data that would appear in it. From the point of information effectiveness view, first market reaction to the data derived from accounting. Therefore, the estimates published earlier in the report may have made investors aware of the effect of issuers of economic activity.

A comparison of the averaged abnormal returns for each of the 20 issuers of the WIG20 index is presented in table 2. Moreover, I added the with the results of the t-test of their significance (given in brackets).

Table 2 Averaged abnormal returns (%) for each days of the event window of the WIG20 index companies and their p value.

Company/ Day of event window	t_0	t_1	t_2	t_3
ALIOR	-0,36 (0,6277)	-0,85(0,0452)*	-0,59 (0,2860)	0,07(0,8746)
BZWBK (SANTANDER)	-0,21(0,7931)	1,22(0,0219)*	-0,33(0,4964)	0,23(0,6024)
CCC	0,22(0,8204)	-1,1(0,2393)	-0,06(0,9236)	-0,26(0,5733)
CDPROJEKT	-0,43(0,6503)	-0,23(0,8351)	-0,76(0,4752)	0,92(0,1491)
CYFROWY	0,89(0,6513)	-0,83(0,5739)	0,74(0,7315)	0,36(0,8871)
ENERGA	-0,69(0,1459)	-1,78(0,1238)	-1,15(0,0936)	0,08(0,8782)
EUROCASH	-3,77(0,0043)*	-1,24(0,0909)	0,42(0,5977)	1,28(0,0491)*
JSW	-0,79(0,4835)	1,2(0,2496)	0,5(0,5408)	0,57(0,6585)
KGHM	-0,69(0,5253)	-0,97(0,3485)	-0,66(0,3119)	-0,33(0,6746)
LOTOS	2,26(0,0160)*	1,02(0,0096)*	0,11(0,8188)	-0,53(0,3345)
LPP	-0,8(0,3928)	0,28(0,7695)	-0,39(0,6077)	0,51(0,0162)*
MBANK	-0,01(0,9931)	0,57(0,3202)	0,25(0,5849)	0,98(0,3036)
ORANGE	0,37(0,1485)	1,04 (0,4834)	1,08(0,0271)*	-0,54(0,1075)
PEKAO	1,21(0,012)*	0,13(0,7566)	-0,82(0,0431)*	0,43(0,1982)
PGE	0,64(0,2070)	0,09(0,8670)	0,88(0,0870)	-0,1(0,6981)
PGNIG	-0,04(0,9742)	0,04(0,9271)	-0,06(0,8588)	-0,46(0,3679)
PKNORLEN	-1,67(0,0336)*	0,78(0,1529)	0,45(0,3226)	0,00(0,9986)
PKOBP	0,28(0,7090)	-1,03(0,0406)*	0,1(0,8288)	-0,19(0,6279)
PZU	-0,06(0,8723)	0,12(0,8157)	0,72(0,1356)	-0,05(0,8315)
TAURON	0,68(0,1538)	-0,11(0,7533)	-1,14(0,0216)*	0,46(0,1689)

Source: own study. * statistical significance $p < 0,05$

As you can see in the table 2 averaged abnormal returns for the WIG20 companies are very varied. They take value in the range of -3,77% (EUROCASCH t_0) to 2,26% (LOTOS t_0). Unfortunately, only in 13 cases averaged abnormal returns of the respondents total (16,25% of the total research sample) can be determined the existence of statistical significance. The rest of cases are not statistically different from zero. It means that the publication of quarterly report with information about net profit result in issuers grouped in WIG20 index does not affect on above-average changes in the return on their shares. Basis of the obtained results adopted hypothesis must be rejected. Expectation of extraordinary volatility of the returns in days neighboring of announcement quarterly net financial result in companies WIG20 index can be considered unjustified.

However, in the above mentioned group of issuers can find entities which in four-day event averaged abnormal returns were statistically significant at least one day. They have been shaded in the table above. Particularly worth attention are results of the five biggest banks listed on Warsaw Stock Exchange (ALIOR, BZWBK, MBANK, PEKAO, PKOBP). Four of them showed significant averaged abnormal returns minimum in one researched day (ALIOR, BZWBK and PKOBP in t_1 , PEKAO in t_0 and t_2). This may indicate that market valuation of banks grouped in WIG20 index is more sensible on the present of net financial results in their quarterly report. However, this requires more detailed research focusing on shaping the return in the days neighboring to the date of publication of the financial statements in banking sector companies listed on Warsaw Stock Exchange.

CONCLUSION

A current of capital market research in accounting initiated half a century ago is a subject of research many scientists in all corners of the world. In reference to its assumption, information derived from accounting and from financial reporting are important factor, which affect on market valuation of the public companies.

This article try to check that information about quarterly net financial result of the biggest companies listed on Warsaw Stock Exchange has an impact on short term returns of their shares. For this purpose I have used event study methodology, created by E. Fama, which is used i.a. for verification of semi-strong capital market efficiency. I estimated abnormal returns for each of 20 issuers between 2015 and mid-2018 quarterly report. Averaged results does not show statistically significant relationship between announced net financial result and abnormal returns in days of its publication. Only in banks (four out of five) listed on WIG20 is noticeable some correlation, what may means that these issuers react stronger on publication quarterly report containing information about net financial result.

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