"Earnings Management" as a Factor for Underpricing Initial Public Offerings: Evidence from the Warsaw Stock Exchange

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The paper undertakes the assessment of the relationship between "earnings quality" and the underpricing effect in initial public offerings (IPO). The research encompasses data found in the financial statements of companies making their IPO on the Warsaw Stock Exchange over the years 2008–2011. The approach used to assess earnings quality was the measurement of abnormal accruals. The results of this research are consistent with other studies. They demonstrate that on the Polish capital market the "quality" of financial information is a significant factor behind the underpricing of shares in the IPO process.

Keywords: earnings quality, earnings management, accounting manipulations, accruals, IPO, underpricing.

"Kreowanie wyników" jako czynnik niedowartościowania ceny akcji spółek IPO na przykładzie GPW w Warszawie

W artykule podjęto próbę oceny zależności pomiędzy „jakością zysku" a efektem niedowartościowania ceny emisyjnej akcji spółek IPO. Badaniem objęto dane zawarte w sprawozdaniach finansowych jednostek, które dokonały pierwszej oferty publicznej poprzez wejście na GPW w Warszawie w latach 2008–2011. W celu oceny jakości zysku wykorzystano podejście oparte na pomiarze intencjonalnych różnic memoriałowych. Wyniki przeprowadzonego badania są zgodne z teoretycznymi założeniami oraz z rezultatami innych opracowań i wykazały, iż w ramach polskiego rynku kapitałowego jakość informacji finansowej jest istotnym czynnikiem uzasadniającym efekt niedowartościowania akcji w procesie IPO.

Słowa kluczowe: jakość zysku, kreowania wyniku finansowego, manipulacje księgowe, różnice memoriałowe, IPO, niedowartościowanie akcji spółek IPO.

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1. Introduction

The functioning of financial markets today and the phenomena present on them are extremely important for the development of the economy of every country, including the economy of Poland. Among segments of the financial market, one of the most important is the stock market. That market is where capital is allocated as well as the place where securities are evaluated. Its functioning facilitates the effective allocation of funds in the economy, but it primarily makes possible the attracting of capital by economic entities. It is characterized by several phenomena, one of which is the often observed effect of underpricing shares at the moment of their debut on the stock market within the framework of the initial public offering (IPO underpricing). Research conducted around the world during various period shows that the debut price in most cases is higher than the offer price. The existence of this effect is of great significance to both investors and the companies making their first public offering. Investors achieve an exceptionally high rate of return, while for the issuers, this phenomenon is an additional cost. It is within the framework of flotation that they accumulate a smaller quantity of resources than they would have received at an issue price closer to the price on the first day of the listing. The difference in price on the day of the debut and the offer price multiplied by the volume of the offer is known as "money left on the table." Money left on the table signifies lost benefits for the company that researchers call an indirect cost of going public. In many cases this indirect cost is significantly higher than the direct costs incurred by the company making its debut on the market. It is within the framework of research conducted in this area that several concepts explaining this phenomenon and defining its causes have emerged. Among the best known of these are the theory of information asymmetry, including the theory of signals (Amihud et al., 2003; Baron and Holmström, 1980; Rock, 1986; Welch, 1989), institutional theory (Hensler, 1995; Hughes and Thakor, 1992; Tinic, 1998), behavioral theory (Ljungqvist et al., 2006; Ritter, 1991; Welch, 1992), and theories from the area of corporate governance (Brennan and Franks, 1997; Pagano et al., 1998; Zingales, 1995). The most often cited theory is the theory of information asymmetry and adverse selection. The assumption behind this approach is the existence of two groups of investors. The first of these is the group of well-informed investors – i.e. those who have sufficient knowledge regarding the issuer and the offered shares. The second group consists of uninformed investors who do not have sufficient information (Grossman, 1976). The greater the uncertainty as to the fair value of the shares, the greater the advantage of the well-informed investors and the greater the discount the issuer must take into account in order to convinced the uniformed investors to buy the stock.

Currently, certain studies take up yet another aspect explaining the underpricing of company shares at their IPO. They indicate that the offer

price may be lower than the debut price (underpriced), but this does not necessarily mean that the shares are undervalued. In other words, the price of the day of the debut listing is overvalued and does not reflect the fair value of the stock. This question was looked at from its empirical side by Purnanadam and Swaminathan (2004), for example. Through their research, they demonstrated that IPO companies on American stock markets were characterized by an average-high valuation as compared with the other listed companies from the same sector. A possible reason for this state of affairs is that the price of the stock on debut day does not reflect its fair value, but the price that was "created" by those managing it. Topical literature indicates several conditions that pressure managers to "improve" the company image. One such case is the going public of the company. Research conducted by S. Teoh, I. Welch, and T. Wong (1998) shows that approximately 62% of analyzed companies introducing their shares to the market presented a higher level – abnormal accruals (AA) – than companies making up the control sample. The AA level is universally applied in studies measuring the reliability of information reporting – the higher this measure the lower the assessment of the reliability of a company's fundamental data. These studies also showed that in the year of entry onto the market, abnormal accruals were significantly above average and consisted of 4–5% of total assets – i.e. 25% to 50% of the total profitability of the assets. Thus, these data are proof that during a company's IPO, companies try to improve their financial data. Of course, these conclusions, like the phenomenon of data manipulation by the IPO company, is not unequivocal and is generally accepted. It is also possible to indicate studies showing that IPO companies apply more conservative solutions in the realm of accounting than other companies (Fan, 2007; Ball and Shivakumar, 2008). Nevertheless, the results of these studies can serve to forward the proposition that low earnings quality, the outcome of manipulation, may have a positive impact on overvaluation of the share price on its debut day. Hence, the goal of this paper is to assess the relationship between "earnings quality" and the phenomenon of underpricing of stocks on the Polish capital market.

2. Empirical Research Assumptions and Methodology

The problem of interpreting and estimating "earnings quality" takes on significant meaning in validating the forwarded hypothesis. The term "earnings quality" is not yet one that is universally used to look at certain desirable qualities in this category, especially in Polish literature. Nevertheless, it is not a new term. English scientific studies and literature identify the context of the concepts of "earnings" even though its definition has not as of yet been unequivocally formulated and universally accepted (Cieślik, 2007).

An analysis of topical literature makes it possible to identify a certain set of criteria for assessing "earnings quality" (Cieślik, 2007, 2009) that,

following appropriate consultations and statistical testing, could serve as an instrument for this assessment. Analysis of the literature shows that the set of criteria used to assess "earnings quality" matches the main determinants of the decision utility of accounting data as defined in SFAC, No. 2 – reliability and relevance.

The studies identifying "earnings quality" by assessing its reliability used assessments of total accruals, where in this case the "earnings quality" was deemed to be synonymous with a high reliability of that part of the accounting earnings that are not covered by real cash flows (Dechow and Dichev, 2002; Francis et al., 2005). On the other hand, studies that concentrated on the relevance of earnings to the decision process, "earnings quality" was estimated on the basis of an assessment of its stability – its high capacity to maintain its level in the future (Beneish and Vargus, 2002; Richardson, 2003).

The above approaches also found their application in the case of empirical research conducted in the area of the relationship between "earnings quality" and the underpricing of stock. For example, Kagata and Makino (2012) and Karami et al. (2014) related "earnings quality" to the "reliability of financial information," which they identified with the level of abnormal accruals. However, it should be stressed that in the case of the Japanese market, the results confirmed the existence of this relationship, while in the case of the Iranian market, although the relationship is observable it is not a significant factor.

Taking the above into account, for the purposes of this paper it has been assumed that "earnings quality" should be considered synonymous with high coverage of accounting profit in actual cash flows. In fact, some financiers are of the view that the greater the difference between accrued profit generated over the course of the fiscal year and excess money from operations – topical literature refers to this difference as "total accruals" (TA) – the lower the reliability of the company's image as presented in financial statements (Cieślik, 2010). This decomposition may be described using the following equations:

$$Zn_t = CFO_t + TA_t \qquad (1)$$

Thus:

$$TA_t = Zn_t - CFO_t \qquad (2)$$

Where:
Zn_t – net profit for year t, and
CFO_t – cash flows from operations in year t.

Unfortunately, the level of total accruals presented by an economic entity cannot be directly compared with values in this category from the

previous year or with those presented by other entities. This stems from the fact that large companies show a higher TA as compared with smaller companies in a completely natural way. It is for this reason that in order to maintain the comparability of data, this research uses the TATA indicator that presents the relations between total accruals and the total value of assets at the beginning of the examined year. In this case, the level of assets is the gauge defining the scale of operations while the reason behind using the value from the beginning of the period is the assumption that if an entity is manipulating its data it can also influence the level of assets for the current year, but it cannot manipulate the value of assets for the previous year.

Conclusions regarding the "earnings quality" based on the TATA indicator, in spite of the fact that it is applied in scientific studies, are considered a simplification that in certain cases cannot be justified. In research practice, solutions involving a subdivision of the total accruals into the part derived from normal entity operations – the normal accruals (NA) – and the part that is the result of the intentional efforts of the manager – abnormal accruals (AA). At this point it should be stressed that normal accruals are shaped by the volume of operations. For their part, abnormal accruals are the result of subjective accounting choices made by the manager (Cieślik, 2010, p. 130). This decomposition may be described using the following equations:

$$Zn_t = CFO_t + TA_t \tag{3}$$

$$TA_t = NA_t + AA_t \tag{4}$$

$$Zn_t = CFO_t + NA_t + AA_t \tag{5}$$

Where:
Zn_t – net profit for year t,
CFO_t – cash flows from operations in year t.
TA_t – value of total accruals for the year t,
NA_t – value of normal accruals for the year t, and
AA_t – value of abnormal accruals for the year t.

However, it is not possible to actually perform such a subdivision on the basis of reading financial statements. To this end it is necessary to use one of the several quantitative methods described and tested in worldwide studies (Cieślik, 2010).

The Linda de Angelo (1986) model has been used in this study in order to assess "earnings quality." In this model the normal accruals for the given year are equal in value to the differences the economic entity indicated in the previous year. Thus, an increase in the level of total accruals as

compared to the previous year is, in line with the assumptions behind this model, a basis to maintain that the company has used prohibited accounting practices, where the actual formula is as follows:

$$NA_t = \frac{TA_{t-1}}{A_{t-2}} \tag{6}$$

Where:
NA_t – normal accruals for the year t,
TA_{t-1} – total accruals for the year $t-1$, and
A_{t-2} – total assets for the year $t-2$.

In using the De Angelo model and on the basis of other studies conducted in this area throughout the world, it should be expected that the group of IPO companies presenting highly positive abnormal accruals (an overstated financial result) will have a higher than average and median rate of return on shares than in the group of companies whose abnormal accrual level is low or negative.

3. Empirical Research: The Results

In order to confirm the hypothesis forwarded at the beginning, data found in the financial statements of companies making their debut on the Warsaw Stock Exchange, excluding banks, insurance associations, suppliers of financial services, and foreign companies, were subjected to analysis. The sample included all companies for which the necessary data for the years 2008–2011 were available in the Notoria, interia.pl, wp.pl, and baknier.pl economic databases. The total sample encompassed fifty-four IPO companies.

The research process encompassed four phases. The "earnings quality" of the companies was analyzed in the first using the De Angelo model. This was followed by a subdivision of the research sample into three groups. The first group consisted of IPO companies that, in the year preceding the initial public offering, showed a negative value for abnormal accruals (AA). The second group consisted of companies for which the AA level was positive. The third group encompassed companies for which that level was positive and extremely high (above 10% of assets). The relationship of the closing price for the first day of the listing to the offer price was established in the next phase for the individual companies classified to each of the three groups. Next, the average and median rates of return for the individual groups were calculated and tests were conducted for the significance of differences for independent samples in order to verify the H0 zero hypothesis regarding the equality of average values in the groups.

Descriptive statistical data for the conducted research is presented in Table No. 1. They unequivocally indicate that there are significant differences among the groups identified on the basis of "earnings quality." The scale of underpricing of IPO shares in the group of companies with the extremely high level of abnormal accruals is the highest. This finding relates to both the quantity of companies that demonstrate the examined effect and the value of above-average profits achieved by investors. It is in this group that it is possible to observe the phenomenon of underpricing the offer price in 92% of cases, while the level of above-average profits achieved an average value of 35.5%. For comparison, the group of companies with negative values for abnormal accruals had an average rate of return on the share of less than 5%, while the undervaluation effect was observed with respect to only 68% of the companies.

	Negative AA	Positive AA	Positive AA > 10%
$\frac{Cd}{Ce} \geq 100\%$	21	13	11
$\frac{Cd}{Ce} < 100\%$	11	9	1
Percentage share $\frac{Cd}{Ce} \geq 100\%$	68.0%	59.0%	92.0%
Percentage share $\frac{Cd}{Ce} < 100\%$	32.0%	41.0%	8.0%
Percentage share $\frac{Cd}{Ce} \geq 110\%$	29.0%	**27.0%**	42.0%
Percentage share $\frac{Cd}{Ce} \geq 120\%$	3.0%	**18.0%**	33.0%
Median	104.7%	101.1%	107.5%
Average AA value	104.8%	120.4%	138.5%

Legend: *Cd* – closing price on the debut day, *Ce* – offer price.

Tab. 1. Descriptive Date for the Relationship between Underpricing IPO Shares and the Level of Abnormal Accruals as a Measure of "Earnings Quality". Source: Own work on the basis of data from the financial statements of the examined IPO companies.

The differences demonstrated within the framework of the descriptive analysis are also confirmed by a statistical test. What this shows is that when comparing the "Negative AA" group with the "Positive AA > 10%" group, the zero hypothesis regarding the equality of average values should be rejected. Thus, the average value of the above-average rates of return on IPO shares in both groups differs significantly and in line with the assumptions behind the test, this cannot be considered as being by chance (Table No. 2). However, there is no basis for rejecting the zero hypothesis in the case of the comparison of the averages of the groups encompassing companies with positive and negative abnormal accruals. Such a result is no

surprise. The research question relates to the assessment of the relationship between underpricing the offer prices of IPO companies and the "creation of results" by the company management. Naturally this phenomenon must be more concentrated in the case of companies that shape their results in an aggressive manner.

Positive average AA	Negative average AA	t	df	p	N significant	N significant	Standard deviation	Standard deviation	Quotient F	P variance
1.204	1.048	1.44	51	0.155	22	31	0.5900	0.1024	33.174	0.000
Positive average AA > 10%	Negative average AA	t	df	p	N significant	N significant	Standard deviation	Standard deviation	Quotient F	P variance
1.385	1.0486	2.45	41	0.018	12	31	0.7624	0.1024	55.391	0.000

Tab. 2. Data from the Statistical Tests of the Significance of Differences in the Average Independent Samples for Companies Making Their Debut on the Warsaw Stock Exchange in the Years 2008–2011. Source: Own work on the basis of data from the financial statements of the examined IPO companies.

4. Conclusion

The results of the conducted research allow the statement that, subject to the conditions of the Polish capital market, it is possible to observe the underpricing effect in the case of the offer price of IPO companies. This effect is significantly greater in entities for which the reliability of results presented in their financial statements is doubtful. Thus, these results confirm the hypothesis that a significant factor in achieving an above-average rate of results on IPO shares on their debut day is the "created" potential share value, not its fair value. For this reason, this may be a situation in which the IPO company shares are underprices, but it does not necessarily mean that the shares themselves are undervalued – sold below their fair value.

In spite of the finding of empirical proof confirming the above relationship, worth noting are the limitations of the methodology as assumed for this research. The method used in estimating abnormal accruals does not take into account the impact on their level of changes to the scale of operations. Moreover, in the case of rapidly developing companies, a high level of abnormal accruals is rather normal, and a significant portion of IPO companies may be placed in such a category. Nevertheless, observations made within the framework of this study do provide input into the

discussion on "earnings quality" and its importance for effectiveness on the Polish capital market and may serve as a premise for further research in this area.

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