

Article

Towards Economic Corporate Sustainability in Reporting: What Does Earnings Management around Equity Offerings Mean for Long-Term Performance?

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Abstract: Companies are very important contributors to the long-term sustainable wealth of economies and society. Public companies are likely to be especially important for economic, environmental, and social development. That is why we focus on initial public offerings (IPO). Responsible external reporting relates to the long-term value of companies and influences perceptions of value by stakeholders. This study contributes to the literature not only because it concentrates on earning quality in terms of going public, but it also combines it with another market puzzle, namely, long-term value. Previous conclusions for other markets should not simply be generalized for Poland, as the country has been an emerging market with many public firms controlled by insiders, with a limited role for the equity market and quite considerable bank financing. Using a unique dataset, we find positive and significant discretionary accruals in the IPO year, which may be perceived as a sign of poor earning quality. We also show that these accruals are negatively correlated with subsequent long-term market value for IPOs made before the financial crisis. The general conclusions are robust with respect to the latest innovations in proxies for earnings management, and also to a variety of alternative specifications.

Keywords: sustainable reporting; sustainable corporate finance; earnings quality; initial public offering; long-term performance

1. Introduction

The long-term sustainable wealth of economies and society is closely connected with corporate activities. Companies are very important contributors. That is why sustainability relates very closely to corporations' activities. This paper focuses on two dimensions: one is sustainable reporting, that translates into the quality of earnings; the second is the long-term value of companies. The motivation for such research is threefold.

The aim of corporations is to maximize their value. In the process of achieving this goal, companies generate information about past, present, and future activities. It is a very important element of corporate finance management. Sustainable reporting of corporate activities is key for many stakeholders, including owners and debtholders, but also for society or other market participants [1,2]. Accounting data are crucial to assess the financial health of a company and its prospects for the future. Earnings are often considered the most important item in financial reports. Income has been proven to have an important explanatory power for equity returns. Many studies conclude that companies try to window-dress accounting numbers as they, not rarely, manage earnings for the moment. Hence, reported earnings may be manipulated to some extent. This was the main motivation behind focusing on investigating earnings management in this study, as such practices deteriorate

the quality of financial reports and bias proper value assessments. More precisely, we explore the relationship between accrual-based earnings management and subsequent long-term performance.

Public companies are key elements for economic, environmental and social development. That is why we focus on initial public offerings (IPO), as they are strictly connected with the moment of going public. Becoming a public company is a crucial change in reporting responsibility. Many accounting standards have been implemented to ensure more relevant content of financial statements for capital market participants, also by raising earnings quality. However, there is still considerable room for managerial discretion. Managers need to exercise judgement to some extent in reports, in order to make financial statements more informative. But they also sometimes behave opportunistically, and manipulate financial results and mislead some stakeholders. The moment of going public is an especially tempting event for window-dressing the financial situation by overstating performance. This is because such events usually enhance investors' interest in company fundamentals.

Focusing on earnings manipulation by IPO firms also has another dimension. Financial statement items, especially earnings, are very important elements for many groups of stakeholders, and they very often substantially influence the way of perceiving a company's value [3]. The market usually fixates on earnings. Hence, companies are tempted to apply window-dressing techniques to make the company looking more profitable. This is especially pronounced around important company events such as going public. At the same time, market newcomers are usually relatively young and small companies. Then, financial reports become an even more important source of information, compared to already listed companies. Responsible external company communication is therefore likely to be violated. On the other hand, companies that no longer stay private face greater auditing because of reporting standards for public companies. Hence, going public may be perceived as an argument for increased earnings quality. The conflicting hypotheses on the relationship between going public and earnings quality incited us to undertake an empirical investigation.

The third motivation for this research is connected to focusing on Poland as an example of an emerging market. The classification of Poland as an emerging market is a hotly debated issue now, but this country was undoubtedly classified as "emerging" during the sample period. Poland has been considered an emerging market since the transition of its economy. The proceeding change in volatility and risk in Poland, along with the development of its economy, has resulted in discussion of Poland's reclassification to the highest tier. Poland is the first Central and Eastern European (CEE) country to be upgraded to "developed market status". FTSE Russell decided recently to upgrade Poland to developed market status. The progress of Poland's economy and capital market, especially in comparison to other CEE countries, is unquestionable. Simultaneously, the Warsaw Stock Exchange (WSE) in Poland has been a leader in Central and Eastern Europe in terms of capital market development. Another issue is that the process of value creation for corporate suppliers of financing is related to corporate governance mechanisms. The legal protection of investors and ownership concentration is of enormous practical importance for the process of going public, as well as for practices of earnings management. The governance system can be a powerful explanatory tool for long-term equity price behavior. Poland is usually portrayed as an insider-dominated, corporate governance system [4,5], in contrast to many other countries for which the problem has been quite extensively empirically tested. Because of the different corporate governance mechanisms, the conclusions from other systems should not be simply replicated for Poland. All of the above facts make the possible conclusions for Poland as an example of emerging markets quite unique.

The main contribution of this research is to provide evidence of the links between earnings quality around the date of going public and the long-term value of companies that made initial public offerings (IPOs) for Poland. This issue has received little attention on emerging markets so far. We proxy for earnings management using the latest innovations in abnormal accruals. The earnings quality of IPO firms around the date of going public before and after the peak of the financial crisis is discussed. The impact of the recent financial crisis on stock markets has been discussed by many researchers using many approaches (see [6] as an example). Several robustness check backgrounds are developed

to back up the results. We conclude that earnings quality explains (at least partially) the long-term underperformance of Polish IPOs before the crisis. Our results complement the evidence provided in [7–12].

Another important contribution of this research is the empirical investigation of the issue of long-term IPO underperformance for an emerging market. Although recent years have yielded empirical research covering also the IPO puzzle on emerging markets, these results are still not sufficient or comparable to the detailed works for the USA. A substantial body of literature has examined the subsequent market performance of companies with initial public offerings. Many studies have reported that IPO companies underperform in the long-term ([13,14], among many others). Although the relatively poor performance has been quite well documented across the world markets, there have also been voices stating that long-term IPO underperformance is not unquestionable ([15–17], among others). It was not uncommon for equity markets that some of the originally detected violations in valuation (market anomalies) appeared to be somewhat sensitive to the sample period choice, or that they disappeared and reversed themselves. Next, the joint test problem also often appears. Thus, the existence of market anomalies is not treated as a one-off research problem, but the observed price patterns need to be retested and rediscussed. This is especially important for the IPO anomaly, where the domination of US-centered empirical studies has been pervasive.

The other dimension of the contribution to the existing literature is the fact that it combines IPOs with another market puzzle, i.e., earnings manipulation. Company stakeholders, especially market participants, are usually very sensitive to information about earnings. The debate on the phenomenon of post earnings-announcement price behavior has attained enormous importance ([18–21], i.a.). Such events are not the only field of interest about a firm's profitability. Market response to corporate announcements of expected or reported earnings seems to be influenced by many factors (see [22] as an example). A high quality earnings number is often perceived as an indicator of promising future performance and the intrinsic value of a company (as in [23]). Although many accounting rules exist and auditors check how they are followed, discussion of the importance of the cash and accruals part of earnings is very much alive among market participants and academics. A large and growing body of research in finance and accounting has been focused on earnings quality. [9,24–27] are examples of studies that provide evidence on earnings management. [28–30] provide a survey of the literature on earnings management and accrual manipulation and its predictive power for future equity prices [31].

The last contribution of this research is connected with the latest financial market turbulences. It renewed debate on the relationship between earnings management consequences and corporate value. A discussion on this, connected with the last or previous market turbulences, is present in the literature (examples include: [12,32–37]). A heated discussion on the need for a reassessment of accounting standards, as well as corporate governance rules, is important, as they have both been shown to have many weaknesses. The question of whether lessons have been learned from the last financial market turbulences is still not resolved, and there is also an argument to discuss the changes in earnings quality before and after the peak of the crisis.

The rest of the paper is structured in the following way. In the next section, previous research is discussed. Section 3 describes the sample and methodology. In Section 4.1, proxies for earnings quality are presented. Section 4.2 shortly reports the long-term value of IPOs. Section 4.3 tests the relationship between earnings quality around IPO and the subsequent long-term abnormal market value. The last section states the conclusions and outlines future research directions.

2. Earnings Quality around Going Public: The Existing Evidence

The impact of corporate sustainability on stock market returns has been a very common area of research [38], as well as the consequences of sustainability index inclusions and exclusions on corporate values [39–41]. Another important area of financial management and sustainability connections is the discussion of the relationship between social and environmental performance and financial performance [42–47].

The very first studies concerning long-term price behavior after initial public offerings in the early 1970s include those by Stoll and Curley [48] and the research by Ibbotson [49]. The milestone study by Ritter [13] documented the long-term underperformance of IPOs. He reported that IPO companies underperformed benchmark firms in the years after going public. Since then, many empirical and theoretical studies on long-term relative IPO performance appeared, initially providing conclusions for the US and other developed markets. Gradually, also studies for emerging markets appeared. Now, evidence on the IPO underperformance is mixed. Long-run underperformance was documented by e.g., Chan, Moshirian, Ng, and Wu [50], Cai, Liu, and Mase [51]. Other results are not so evident e.g., Paudyal, Saadouni, and Briston [52], Xinping and Yixia [53], Omran [54], Banu Durukan [55], or Corhay, Teo, and Rad [56]. There have been also several studies concerning the anomalous IPO price behavior on the Polish stock exchange. Aussenegg [57], Jelic and Briston [58], Lyn and Zychowicz [59] discussed it for the first stage of the equity market stage, and mainly focused on privatization issues. More recent studies on IPOs in Poland include Jewartowski and Lizińska [60], Czapiewski and Lizińska [61] and Lizińska and Czapiewski [62]. All of them reported that Polish IPOs experienced negative buy-and-hold abnormal returns, not only in comparison to the market approximated with the index, but also for one-dimensional benchmarks based on size, book-to-market, and two-dimensional benchmarks, both with equal- and value-weighting.

A lot of the literature discusses earnings management around going public, and some studies also combine it with subsequent long-term performance. There have been two conceptual streams of research, one in favour of the opportunistic earnings management and the second against such opportunistic behavior, and perceiving earnings as signals to inform investors about private information. Aharony, Lin, and Loeb [7] reported that companies manipulate earnings around going public through the selection of accounting methods that enhance reported incomes. Additionally, research by Friedlan [8] confirmed the hypothesis that IPO issuers make abnormal, income-increasing adjustments with accruals before going public. Theo and Wong [63] evidenced that managers of IPO firms misled analysts by opportunistic earnings manipulation. The works by Theo, Welch and Wong [9] and Teoh, Wong and Rao [10] also confirm earnings manipulation when firms go public. These two last papers were the first broad empirical research that extended earnings manipulation around going public to include the subsequent long-term market performance. Both studies explain underperformance after going public by the information asymmetry that exists in most IPOs. DuCharme, Malatesta, and Sefcik [11] found a significant negative relationship between abnormal accruals estimated for the year of going public and later equity returns. The results of Bradshaw, Richardson, and Sloan [64] suggest that accruals management can be used to boost stock prices around events such as equity issuance. The study by Ahmad-Zaluki, Campbell, and Goodacre [12] discusses this problem in an emerging market, and confirms income-increasing earnings management for Malaysian initial public offerings. It was especially pervasive for offerings made during the Asian economic crisis period. IPO companies that managed earnings aggressively had worse performance compared with conservative IPO issuers. However, the results were significant only for IPOs issued during the period of severe economic stress.

These results can be explained in this way: the lack of easy access to reporting history, and lack of equity market prices to observe, provide IPO managers with many opportunities to manipulate earnings. Simultaneously, managers of IPO companies also seem to have an incentive to inflate earnings artificially, as there are few such important company events in the corporate lifecycle as going public. Success at the very beginning is usually perceived as especially important because investors' attention is focused on the market newcomers. It is not unreasonable that managers of private companies do their best to make a great first impression as a public company. The financial statements of companies usually suffer a gradual loss of public attention in the later stages of public life. However, the sources of high positive reported earnings and abnormal accruals will be exhausted one day. As more information about IPO companies is revealed to the market, investors recognize the real financial situation of those firms. Inflating earnings by accruals in one period usually exacerbates

earnings in the surrounding periods when the reported profitability may be influenced downwards. This can be perceived as an argument for the negative stock return correction in the IPO aftermarket.

Despite the statistical and economic significance of the above studies, many academics contest such conclusions. Beneish [65] doubts the possibility of systematically inflating earnings without arousing the suspicions of regulators or shareholders. Ball and Shivakumar [66,67] argue that IPO firms should be induced to report more conservatively, because of the higher reporting standards demanded for public companies, better monitoring by boards and analysts, or penalties for misreporting. Auditors of public companies face greater risks of litigation and feel public pressure to audit more conservatively. Are these not satisfactory incentives for meeting higher-quality earnings reporting standards and limiting the opportunistic behavior of IPO managers? Ball and Shivakumar [66] compared earnings reported as private versus public and concluded that public companies report more conservatively. Additionally, Fan [68] reports that firms use earnings as well as ownership retention as a signal to convey information to investors in a credible manner. No evidence for a relationship between abnormal accruals and post-IPO market equity prices was found in several studies. Armstrong, Foster, and Taylor [69] reported abnormal accruals in the IPO year to be not statistically different from zero, and concluded that IPO companies are not systematically opportunistic. They also related the negative correlation between abnormal accruals in the IPO year and subsequent equity returns to cash-flow mispricing. Subramanyam [70] found evidence of a general conclusion about equities that the market attaches value to abnormal accruals. Also, Xie [71] documented a general negative relationship between abnormal accruals and subsequent stock returns, similarly to Chan, Chan, Jegadeesh, and Lakonishok [31].

More recently, a growing body of evidence has empirically tested earnings management also for equities in Poland so far. For example, Wójtowicz [72], with a sample covering the first stage of the Polish stock exchange's development up to the crisis (1995–2007), concluded that companies manage earnings to a similar extent to their foreign counterparts. Subsequent research by Brzeszczyński, Gajdka, and Schabek [73] documented the desire of public companies in Poland during 1997–2010 to report positive profits. Czajor, Michalak, Waniak-Michalak [74] investigated whether economic conditions influence earnings quality. The sample covered 1999–2011. It was found that earnings quality seems to be higher in the periods of a high GDP growth rate. However, earnings quality was not based on the estimation of abnormal accruals. Wójtowicz [75] detected signals of earnings management to achieve zero or small positive earnings surprises on the Warsaw Stock Exchange with a sample period covering the period 2012–2014. The papers mentioned above present the most important conclusions for public companies in Poland, without connecting earnings quality with IPOs.

Few papers link earnings management with initial public offerings for Poland. Lizińska and Czapiewski [76] examine the properties of discretionary accruals for Polish IPO companies in the pre- and post-crisis years. It was reported that IPO firms engage in more aggressive income-increasing earnings management, but the conclusions were derived on the basis of abnormal accruals estimated using the simple DeAngelo and modified Jones models. Lizińska and Czapiewski [77] reported that the tendency to report small incomes was much higher compared to small losses around going public. Also, the propensity to achieve the threshold of the previous year's profitability was more pronounced. The results seem to support the hypothesis of opportunistic earnings management in IPO year, as abnormal accruals estimated with the DeAngelo and Jones model were positive and significant. The results of another paper [78] suggest that IPO companies that managed earnings more aggressively experienced worse abnormal long-term market performance. However, the difference between returns among firms with lower and higher discretionary accruals was not immense in many investment periods, which is an argument for expanding and continuation of research for Poland. The research was based on the cross-sectional version of several models for discretionary accruals (such as the Jones, modified Jones, McNichols, and Ball-Shivakumar models).

The relationship between earnings quality around initial public offerings in Poland and long-term abnormal market performance has been investigated very little so far. [79] tested the long-term consequences of earnings management for initial offerings from 1996–2010. No significant relation between long-term abnormal buy-and-hold returns and earnings management was observed, but earnings management was measured in a quite simplified way without decomposition into discretionary and non-discretionary accruals. In consequence, no adjustments for industrial or annual factors determining the level of accruals were applied.

Such conflicting views on the presence of opportunistic earnings manipulation in IPO year and on the relation between abnormal accruals and subsequent performance are important arguments for an empirical re-examination of earnings quality around going public. This is especially interesting for emerging capital markets, as few studies have been yet published.

3. Sample and Methodology

3.1. Sample Description

The research sample covers non-financial initial public offerings (IPOs) on the Warsaw Stock Exchange (WSE), which is the main equity market in Poland (listings on the *New Connect*, which is the alternative equity market in Poland, are excluded). The sample includes only offerings with a new common stock issuance. Only offerings completed by companies without a prior trading history on alternative markets were included. The sources of data include Notoria Serwis, the official site of the WSE (gpw.pl), and gpwinfostrafa.pl. Close prices include all of the necessary adjustments in close equity prices (such as dividends, splits, and pre-emptive rights). Our database also covers the delisted companies.

The original sample consisted of 247 IPOs from 2000–2012. The years before 2000 had to be excluded as there was no detailed financial statement and market adjusted data for the research design planned, or they were either selective or of poor quality. The market dataset covers the years up to 2015. The research discusses the long-term consequences of earnings quality, so we end with IPOs made in 2012, to have enough data to measure their long-term performance after going public. Summing up, equities completed before 2000 were excluded, as no reliable data could be retrieved; likewise, IPOs offered after 2012 had to be excluded, as an aftermarket period was necessary to observe long-term price behavior. Next, the research had to be limited only to non-financial IPOs because of the different financial statements standards for the financial sector. This left us with 207 IPOs. The descriptive statistics for research samples were given in Table 1.

Table 1. Sample characteristics.

	2000–2012 with Crisis Years	2000–2012 without Crisis Years	Period I	Period II
Manufacturing	70	47	39	8
Construction	13	7	4	3
Petroleum and Related Industries	12	9	4	5
Retail Trade	23	20	17	3
Wholesale Trade	19	17	14	3
Non-Financial services	70	56	41	15
Finance, Insurance and Related Business	40	33	16	17
Sum: Non-financial Industries	207	156	119	37
Sum: All Industries	247	189	135	54

Many studies on IPOs touched on the problem of investor-sentiment driven equity market [80,81]. The period from 2000 to 2012 covers huge market turbulences. The changes of the WIG index (the main equity index for Poland), its levels as well as returns, are both illustrated in Figure 1. The market experienced strong price declines across the world, including Poland. The rapid decline of the market value of public companies started in the middle of 2007, and the continuation of the bear market was

also observed in 2008. Hence, equities offered during the peak of the crisis were excluded from the final sample. Next, two sub-periods were distinguished: Period I covered the years before the crisis (IPOs from 2000 to the half of 2007). Period II covered equity issues after the peak of the crisis (IPOs starting from 2009 up to 2012).

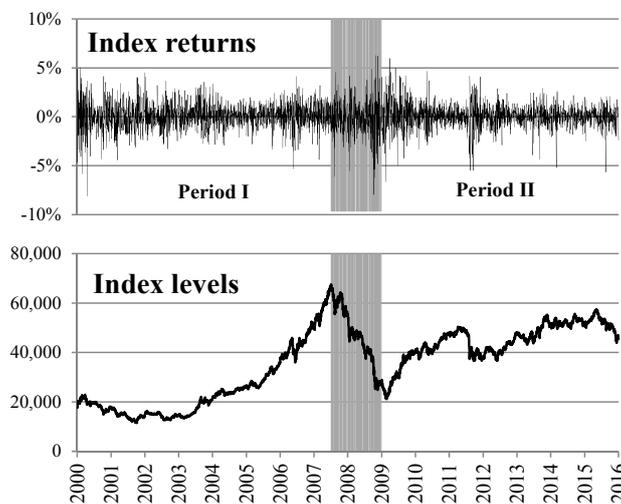


Figure 1. Market situation during sample period.

3.2. Methodology

Firms do not usually publicize the reliability of reported profits. Hence, the quality of earnings cannot be measured directly. Several earnings quality proxies were employed in the literature. They include earnings smoothness [82], earnings persistence [83], asymmetric timelines [84], target beating [85], and abnormal accruals [86]. The present research touches upon the last area, which is actually a very broad one. We assume that earnings manipulation is approximated with discretionary accruals.

Accruals are defined as the difference between a company's earnings and its cash flow. Not all accruals are exposed to managerial discretion to the same extent, and, in line with the literature, total accruals were decomposed into discretionary and non-discretionary accruals (as in [86]):

$$TACC_{it} = NDACC_{it} + DACC_{it}, \quad (1)$$

where: $TACC$ is total accruals, $NDACC$ is non-discretionary (normal) accruals, and $DACC$ is discretionary (abnormal) accruals.

Several models were employed to derive normal levels of accruals. Deviations from the normal levels of accruals are termed "abnormal accruals". To estimate the models, we run cross-sectional regressions for every industry and year. At least five companies are required in an industry group in a year to run the industry regression for a given year. Each firm was excluded from the industry group to run regressions for other IPO companies during the two-year period after initial public offering. Discretionary accruals for each IPO firm were calculated for each of the firm-year combination as the difference between the real and non-discretionary accruals. Total real accruals were received [83,86] with lagged assets as the deflator used to reduce heteroscedasticity in residuals for accruals and their components [87] according to the formula:

$$TACC_{it} = (\Delta CA_{it} - \Delta Cash_{it}) - \Delta CL_{it} - Depr_{it}, \quad (2)$$

where ΔCA is change in current assets, $\Delta Cash$ is change in cash; ΔCL is change in current liabilities, and $Depr$ is depreciation; the change was calculated between t time and $t - 1$.

The fluctuating level of total accruals can be the result of many factors. The first models assumed that it is mainly because of the changing level of discretionary accruals [88]. Over time, arguments appeared that non-discretionary accruals should not remain constant and be only firm-specific. Hence, the next models also controlled for changes in economic circumstances, as the level of non-discretionary accruals may also vary over time [86]. In this research, the cross-sectional version of the Jones model is applied [11,26,70] for non-discretionary accruals estimation:

$$NDACC_{it}^J = \alpha_{i1} \left(\frac{1}{A_{i,t}} \right) + \alpha_{i2} \Delta REV_{i,t} + \alpha_{i3} PPE_{i,t} + \varepsilon_{i,t}, \quad (3)$$

where A is total assets, ΔREV is change in revenues, and PPE is gross property, plant and equipment; all components are scaled by lagged assets.

Firms sometimes manage earnings by the time location of revenues. In such situations, the traditional Jones model may misestimate discretionary accruals, as it does not adjust for growth in credit sales. Hence, the cross-sectional version of modified Jones model as in Dechow, Sloan, Sweeney [89] was applied:

$$NDACC_{it}^{mJ} = \alpha_{i1} \left(\frac{1}{A_{i,t}} \right) + \alpha_{i2} (\Delta REV_{i,t} - \Delta REC_{i,t}) + \alpha_{i3} PPE_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where ΔREC is change in receivables; all components are scaled by lagged assets.

We also apply the Kothari, Leone, and Wasley [90] model to include the effectiveness of performance matching. The Jones model is then augmented to include return on assets:

$$NDACC_{it}^{KLW} = \alpha_{i1} \left(\frac{1}{A_{i,t}} \right) + \alpha_{i2} \Delta REV_{i,t} + \alpha_{i3} PPE_{i,t} + \alpha_{i4} ROA_{i,t-1} + \varepsilon_{i,t}, \quad (5)$$

where: ROA —return on assets.

We also apply the model proposed by Dechow and Dichev [91] in the version modified by McNichols [92]. Operating cash flow is included in the cross-sectional Dechow-Dichev regression. The regression coefficients for non-discretionary accruals are estimated with the combination of both the Jones and the Dechow-Dichev models:

$$NDACC_{it}^{McN} = \alpha_{i1} \left(\frac{1}{A_{i,t}} \right) + \alpha_{i2} CFO_{i,t-1} + \alpha_{i3} CFO_{i,t} + \alpha_{i4} CFO_{i,t+1} + \alpha_{i5} \Delta REV_{i,t} + \alpha_{i6} PPE_{i,t} + \varepsilon_{i,t}, \quad (6)$$

where: CFO is cash flow from operating activities; all components are scaled by lagged assets.

Cross-sectional regressions for each year and each of the industries on the WSE in Poland were estimated according to the four mentioned models. Additionally, average discretionary accruals for all of the models was calculated.

The long-term performance of IPO companies was approximated with buy-and-hold abnormal returns ($BHAR$) up to four years after going public, assuming a year to have 252 trading days. The buy-and-hold return for each IPO was defined as:

$$BHR_{i,T} = \prod_{t=1}^T (1 + R_{i,t}) - 1, \quad (7)$$

where R was the daily equity return, and T was the trading session number with 1 assigned to the first day after going public.

The buy-and-hold return for an IPO company was related to a benchmark. As in most of the event studies for IPO, we take the main market index for the Warsaw Stock Exchange (WIG Index) to measure expected performance:

$$BHR_{i,T}^{WIG\ Index} = \prod_{t=1}^T (1 + R_{i,t}^{WIG\ Index}) - 1, \quad (8)$$

where $R^{WIG\ Index}$ was the daily market return matched to a given IPO firm and event window. We calculate BHR in two versions: one with the starting point of the investment on the first day in public (P_0), and the second approach that starts three months later, and thus excludes the most volatile prices (P_{3M}). We describe these two possibilities as Specification A and Specification B, respectively. Hence, the buy-and-hold abnormal performance for each IPO is estimated according to:

$$BHAR_{i,T} = BHR_{i,T} - BHR_{i,T}^{WIG\ Index}, \quad (9)$$

Earnings management and the subsequent long-term performance were both observed around the time of the initial public offering. Discretionary accruals as a measure of earnings quality were estimated not only for the year of going public (Y_0), but also for the two preceding years ($Y - 2$ and $Y - 1$), and for the four consecutive years ($Y + 1$, $Y + 2$, $Y + 3$, $Y + 4$). On some research stages, some IPOs missing a particular kind of data were excluded, in order to fulfill the models' requirements. To minimize the effect of extreme values, outliers calculated for $BHARs$ and $DACCs$ were found with the interquartile range and eliminated. The Cramér von Mises test was used to test the distribution normality. Both parametric (Student t -test) and non-parametric (Wilcoxon signed-rank test) tests were employed.

Then, ordinary least square regressions were employed to check whether earnings quality around IPO was a good predictor for long-term abnormal equity performance in two ways. First, we checked whether the level of earnings quality has an explanatory power for the long-term performance of IPOs with continuous abnormal accruals included as explanatory variable ($DACC$). Next, we checked if the fact of earnings manipulation was important for the long-term stock valuation of IPO firms with the application of a discretionary variable, and assigned value of 1 if abnormal accruals were positive ($DACC_DISC$); otherwise, zero.

A set of control variables was included: the size of the IPO firm before IPO (measured with the log of book value of assets in the year before going public, $SIZE$), first-day reaction to the offering (measured with short-term underpricing relative to the market, $UNDERPR$), accounting profitability change at IPO (measured with the net income change in the IPO year, NI_CHANGE), leverage at IPO (measured as total debt to assets before IPO, LEV), and ownership concentration (measured with the Herfindahl-Hirschman Index, HH).

4. Results and Discussions

4.1. Earnings Management around IPO

Earnings management is proxied with discretionary accruals, as it cannot be measured directly. Different cross-sectional models for non-discretionary accruals are subject to different kinds of biases. There is no generally-accepted method to measure earnings quality. Earnings management is proxied as the magnitude of estimation errors in accruals according to different models. One of the first such models was proposed by Jones [86]. As discussed in McNichols [93], it may sometimes be biased, because its construction still includes non-discretionary elements other than the result of managers' discretion. Dechow and Dichev [91] argue that additional factors to the Jones and the modified Jones models enable us to control for some fundamental factors influencing accruals. The construction of the McNichols [92] model is based on the relationship between accruals and cash flows in the immediately adjacent periods. The Kothari, Leone, and Wasley [90] model is based on performance matching on return on assets to enhance the reliability of estimates.

We employed several benchmarks to discuss the robustness of earnings management proxies: the McNichols model (hereafter McN), Kothari, Leone, and Wesley model (KLW), Jones model (J), modified Jones model (mJ), and the average of discretionary accruals according to all models (Av). The detailed properties of discretionary accruals around going public for the period of 2000–2012 (excluding the years of rapid changes around the peak of the financial crisis) are presented in Table 2. Similar estimates are given in Table 3, that presents the results of discretionary accruals estimation for two subperiods. The first period covers the years before the crisis (Period I, hereafter), and the second encompasses initial public offerings completed in the years after the crisis (Period II).

Table 2. Earnings management proxied by discretionary accruals around IPO during 2000–2012.

	Y – 2	Y – 1	Y0	Y + 1	Y + 2	Y + 3	Y + 4
Panel A: McNichols Model							
Mean	−0.1058	−0.0487	0.0594	−0.0104	−0.0134	−0.0163	−0.0062
Median	−0.0421	−0.0197	0.0461	0.0000	−0.0122	−0.0196	−0.0097
<i>p</i> -value (t-stud)	0.0774	0.2016	0.0074	0.6265	0.3619	0.2056	0.7016
	*		***				
<i>p</i> -value (Wilc.)	0.0452	0.0852	0.0007	0.4218	0.2624	0.2161	0.1226
	**	*	***				
<i>p</i> -value (CvM)	0.0000	0.0000	0.0000	0.0001	0.0000	0.0062	0.0000
	***	***	***	***	***	***	***
St.dev.	0.4676	0.4570	0.2623	0.2628	0.1770	0.1434	0.1747
Skewness	−0.93	−0.76	−0.11	0.18	−0.31	−0.09	0.72
Kurtosis	4.28	7.50	2.14	2.89	3.36	0.99	3.83
Observations	63	145	144	153	147	125	116
Panel B: Kothari, Leone, Wasley Model							
Mean	−0.1215	−0.0501	0.0406	−0.0421	−0.0207	−0.0319	−0.0029
Median	−0.0902	−0.0175	0.0538	−0.0261	−0.0144	−0.0307	−0.0139
t-stud	**	**		**	*	***	
Wilc.	***	*	**	**	**	***	***
CvM	***	***	***	***	***	**	***
Observations	64	140	147	157	158	141	132
Panel C: Modified Jones Model							
Mean	−0.0877	0.0132	0.0694	−0.0289	−0.0153	−0.0233	0.0015
Median	−0.0203	−0.0002	0.0576	−0.0127	−0.0156	−0.0207	−0.0123
t-stud	***		**	*		**	
Wilc.	**		***		**	**	
CvM	***	***	***	***	***	***	***
Observations	130	149	149	158	159	143	134
Panel D: Jones Model							
Mean	−0.0561	−0.0228	0.0708	−0.0343	−0.0139	−0.0262	−0.0033
Median	−0.0271	−0.0038	0.0592	−0.0181	−0.0164	−0.0241	−0.0121
t-stud			**	**		**	
Wilc.	**		***	*	*	**	
CvM	***	***	***	***	***	***	***
Observations	138	148	157	160	164	145	134
Average for models	−0.0850	−0.0266	0.0603	−0.0291	−0.0158	−0.0247	−0.0026

The levels of discretionary accruals in IPO year (Y0) are positive and significant. Accruals rise as managers inflated earnings above cash flows. The forecast errors are consistently positive for all models and robust to different periods. However, the comparison of the pervasiveness of earnings management for both periods gives mixed results. The level of discretionary accruals in the IPO year reported for listings before the crisis is higher according to three out of four proxies, but only for two models may the difference be concluded as being economically significant. Hence, it is hard to draw any conclusions based on the comparison of earnings management proxies between two subperiods.

We also find across multiple models that positive abnormal accruals in the IPO-year were followed by negative accruals in subsequent years. The number of IPO companies with positive accruals was

significantly higher in the year of going public in comparison to the surrounding years. A sizeable amount of literature has provided evidence for large positive discretionary accruals in the year of IPO. Our findings are coherent with the conclusions of Friedlan [8], Theo, Welch, and Wong [9], but are not in line with Armstrong, Foster, and Taylor [69], and Ball and Shivakumar [67], nor with Venkataraman, Weber, and Willenborg [94].

Table 3. Earnings management proxied by discretionary accruals around IPO—for subperiods of 2000–2012.

	Period I—before the Crisis							Period II—after the Crisis						
	Y – 2	Y – 1	Y0	Y + 1	Y + 2	Y + 3	Y + 4	Y – 2	Y – 1	Y0	Y + 1	Y + 2	Y + 3	Y + 4
Panel A: McNichols Model														
Mean	–0.0592	–0.0039	0.0513	–0.0385	–0.0223	–0.0099	–0.0102	–0.0466	–0.1457	0.0779	–0.0095	–0.0240	–0.0152	0.0069
Median	–0.0294	–0.0154	0.0413	–0.0352	–0.0060	–0.0047	–0.0117	–0.0432	–0.0257	0.0597	0.0063	–0.0259	–0.0292	0.0149
<i>p</i> -value (t-stud)	0.3355	0.9287	0.0807	0.2650	0.2153	0.5404	0.5613	0.5758	0.1259	0.0074	0.7072	0.3885	0.3604	0.7303
			*							***				
<i>p</i> -value (Wilc.)	0.1673	0.3748	0.0312	0.2634	0.3674	0.5308	0.0739	0.3488	0.1048	0.0019	0.9493	0.2449	0.4389	0.7344
			**				*			***				
<i>p</i> -value (CvM)	0.0000	0.0000	0.0014	0.0000	0.0000	0.0091	0.0000	0.0027	0.0000	0.0248	0.2358	0.3071	0.1027	0.6740
	***	***	***	***	***	***	***	***	***	**				
St.dev.	0.3888	0.4327	0.2906	0.3605	0.1890	0.1611	0.1796	0.3661	0.6117	0.1840	0.1667	0.1624	0.0800	0.0580
Skewness	0.03	0.55	–0.14	–1.06	–1.18	0.09	0.75	0.48	–4.65	0.73	–0.52	0.44	0.16	–0.03
Kurtosis	4.28	5.37	1.56	4.47	4.76	0.89	3.70	5.24	26.06	2.70	–0.09	1.23	–0.53	–1.33
Observations	41	101	100	110	112	101	106	20	43	44	44	35	24	9
Panel B: Kothari, Leone, Wasley Model														
Mean	–0.1871	–0.0408	0.0258	–0.0944	–0.0243	–0.0249	–0.0133	0.0936	–0.0430	0.0520	0.0133	–0.0009	–0.0387	0.0071
Median	–0.1152	–0.0142	0.0599	–0.0430	–0.0260	–0.0224	–0.0204	0.0155	–0.0343	0.0332	0.0111	–0.0037	–0.0351	0.0047
t-stud	***			***		*				*			***	
Wilc.	***		*	***	**	*	*			*			***	
CvM	***	***	***	***	***	**	***	***	***	***		***	**	
Observations	41	99	103	114	114	106	108	20	42	43	44	45	33	24
Panel C: Modified Jones Model														
Mean	–0.0981	0.0245	0.0492	–0.0651	–0.0243	–0.0180	–0.0080	–0.0063	–0.0447	0.0528	0.0087	–0.0031	–0.0300	0.0105
Median	–0.0171	0.0070	0.0751	–0.0447	–0.0321	–0.0196	–0.0163	–0.0477	–0.0147	0.0403	0.0143	0.0020	–0.0212	0.0155
t-stud	**			**	*				*	**			**	
Wilc.			**	**	**		*		*	**			*	
CvM	***	***	***	***	**	***	***	***	***	**		***		
Observations	92	103	103	114	113	107	109	39	43	44	43	45	35	23
Panel D: Jones Model														
Mean	–0.0693	–0.0335	0.0518	–0.0711	–0.0225	–0.0194	–0.0099	–0.0224	–0.0244	0.0549	0.0131	0.0003	–0.0302	0.0129
Median	–0.0161	–0.0030	0.0682	–0.0402	–0.0257	–0.0155	–0.0150	–0.0556	–0.0075	0.0437	0.0157	0.0000	–0.0277	0.0140
t-stud			***	***						**			**	
Wilc.			**	**	**		*	**	**	**			**	
CvM	***	***	***	***	**	**	***	***	***	**		**		
Observations	99	104	111	116	118	108	109	39	45	44	44	45	35	24
Average for models	–0.0952	–0.0133	0.0446	–0.0675	–0.0233	–0.0182	–0.0103	–0.0015	–0.0641	0.0594	0.0064	–0.0059	–0.0295	0.0098

4.2. Long-Term IPO Performance

In this section, we investigate the long-term performance of Polish initial public offerings. The long-term market performance of IPOs was measured with average buy-and-hold abnormal returns (BHAR). BHARs are defined as the average return from a strategy of investing in IPO firms and selling at the end of the four-year holding period versus a comparable strategy for all firms listed on the Warsaw Stock Exchange in Poland (approximated with the main market index). Buy-and-hold returns are usually perceived in the literature as the approach that resembles investors' actual investment experience. The results are detailed in Table 4.

Table 4. Long-term performance after IPO (buy-and-hold abnormal returns).

	Y1	Y1.5	Y2	Y2.5	Y3	Y3.5	Y4
Specification A (P0)							
Panel A: 2000–2012							
Mean [%]	−10.76	−8.90	0.49	−16.48	−15.39	−16.86	−18.35
Median [%]	−11.52	−21.28	−17.60	−22.50	−28.55	−33.94	−36.71
<i>p</i> -value (t-stud)	0.0013 ***	0.0657 *	0.9485	0.0074 ***	0.0166 **	0.0118 **	0.0142 **
<i>p</i> -value (Wilc.)	0.0003 ***	0.0005 ***	0.0064 ***	0.0000 ***	0.0006 ***	0.0002 ***	0.0000 ***
<i>p</i> -value (CvM)	0.2208	0.0000 ***	0.0000 ***	0.0000 ***	0.0000 ***	0.0000 ***	0.0000 ***
St.dev. [%]	44.70	65.58	102.94	80.59	84.21	85.81	93.92
Skewness	0.39	1.34	2.42	1.13	0.72	0.93	1.33
Kurtosis	0.31	3.15	8.49	2.47	0.84	1.38	2.84
Observations	183	186	186	176	175	168	161
Panel B: Period I							
Mean [%]	−7.69	−7.18	11.22	−14.77	−12.27	−18.26	−19.36
Median [%]	−13.26	−20.50	−14.99	−25.66	−28.62	−33.94	−35.80
t-stud	*			*		**	**
Wilc.	**	***	*	***	***	***	***
CvM	*	***	***	***	***	***	***
Observations	131	132	133	124	126	126	123
Panel C: Period II							
Mean [%]	−15.36	−22.70	−19.36	−17.37	−23.85	−27.57	−31.14
Median [%]	−10.77	−25.05	−21.20	−18.05	−29.61	−37.80	−48.68
t-stud	***	***	**	**	***	***	**
Wilc.	***	***	**	**	**	***	***
CvM						*	
Observations	53	51	52	52	48	41	36
Specification B (P3M)							
Panel A: 2000–2012							
Mean [%]	−8.99	−13.44	−12.50	−16.04	−21.69	−27.85	−34.00
Median [%]	−11.46	−15.07	−14.09	−21.65	−30.70	−36.17	−39.26
t-stud	***	***	***	***	***	***	***
Wilc.	***	***	***	***	***	***	***
CvM		**	**	***	***	***	***
Observations	182	172	171	168	155	153	139
Panel B: Period I							
Mean [%]	−10.31	−12.48	−12.23	−21.17	−27.09	−25.74	−30.08
Median [%]	−13.47	−14.81	−14.13	−25.44	−31.83	−34.39	−38.56
t-stud	***	***	**	***	***	***	***
Wilc.	***	***	***	***	***	***	***
CvM		*	***	***	***	***	***
Observations	128	122	120	117	105	113	111
Panel C: Period II							
Mean [%]	−10.14	−15.79	−13.14	−10.46	−12.68	−16.81	−44.97
Median [%]	−7.53	−20.22	−13.62	−18.91	−26.36	−38.02	−39.99
t-stud	*	**	*				***
Wilc.	*	**	*			*	***
CvM					**	**	
Observations	52	50	51	49	43	42	27

The empirical results provided evidence that the long-term underperformance level for the Warsaw Stock Exchange remained statistically and economically important in the period under review. The long-term abnormal buy-and-hold returns were strongly negative and significant in the prevailing number of estimation versions.

4.3. The Relation between Earnings Quality and Market Performance

In this section, we discuss the relation between earnings manipulation around going public and the long-term market performance of IPOs. Table 5 reports regression results. The first panel shows the results for the years 2000–2012 (without the peak of the financial crisis), whereas Panels B and C report for two subperiods (Period I—before the crisis, and Period II—after the crisis). The tests are based on regressions for the long-term market performance and earnings management proxies with a set of control variables. We include two enhanced cross-sectional models for discretionary accruals in regressions, namely the McNichols (McN) and Kothari, Leone, Wesley (KLW) models. Additionally, the results are presented in two general specifications. Specification A refers to continuous estimates of earnings management (DACC), whereas in Specification B, discretionary variables are employed with a value of 1 assigned for positive abnormal accruals in IPO year, and a value of 0 for other issues (DACC_DISC). Such a construction of regressions enables us to check the importance of not only pervasiveness of earnings quality, but also to discuss the fact of earnings manipulation, no matter the scale of such practices. An additional set of regression is based on the average of the estimates for discretionary accruals according to all of the four earlier described models (Av). The odd columns refer to the buy-and-hold strategy with the beginning of the investment period in the first day in the aftermarket (columns 1, 3, 5 and 7, 9, 11). The even columns present the results for buying three months later, as it eliminates the hottest period from the four-year period after going public (columns 2, 4, 6, and 8, 10, 12). The first panel of Table 5 demonstrates that the relationship between long-term market performance and both the levels of earnings quality (DACC) and the fact of earnings manipulation (DACC_DISC) was negative for 2000–2012 (without the peak of the financial crisis). However, the predictive power of both versions of discretionary accruals explanatory variables around IPO for stock returns in the aftermarket was significant only in several of the research variants.

Table 5. OLS results for estimating long-run returns (dependent variable: BHAR).

Panel A: IPOs during 2000–2012												
	Specification A						Specification B					
	KLW		McN		Av		KLW		McN		Av	
	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DACC	−0.3388	−0.4019	−0.5720	−0.8733	−0.3669	−0.5895						
<i>p</i> -value	0.2150	0.1582	0.0931	0.0130	0.1314	0.0247						
			*	**		**						
DACC_DISC							−0.2962	−0.2548	−0.3291	−0.4271	−0.2378	−0.321
<i>p</i> -value							0.0691	0.1447	0.0372	0.0086	0.1481	0.0737
							*		**	***		*
SIZE	0.1057	0.0608	0.1040	0.0342	0.0916	0.0411	0.1141	0.0653	0.1125	0.0620	0.0981	0.0449
<i>p</i> -value	0.0718	0.3207	0.0854	0.5758	0.1196	0.5156	0.0461	0.2739	0.0482	0.2862	0.0934	0.4734
	*		*				**		**		*	
UNDERPR	−0.2898	−0.3142	−0.1231	−0.0945	−0.4108	−0.4884	−0.3216	−0.3378	−0.2460	−0.2509	−0.4468	−0.5335
<i>p</i> -value	0.4426	0.4301	0.7423	0.8052	0.2733	0.2305	0.3845	0.3924	0.4982	0.5048	0.2330	0.1919
NI_CHANGE	1.6927	1.1949	1.9575	1.8152	1.8692	1.6748	1.6020	0.9305	1.5080	1.1021	1.6139	1.2463
<i>p</i> -value	0.0674	0.2655	0.0286	0.0708	0.0417	0.1254	0.0519	0.3166	0.0631	0.2258	0.0507	0.1973
	*		**	*	**		*		*		*	
LEV	−0.7499	−0.2895	−0.9004	−0.4533	−0.6346	−0.1645	−0.6671	−0.2620	−0.6400	−0.2229	−0.5311	−0.1024
<i>p</i> -value	0.0692	0.5009	0.0317	0.2856	0.1194	0.7064	0.0922	0.5289	0.1029	0.5798	0.1801	0.8101
	*		**				*					
HH	−0.0945	−0.0334	−0.1763	−0.2473	−0.2860	−0.3247	−0.0957	−0.0610	−0.1384	−0.1097	−0.2700	−0.3169
<i>p</i> -value	0.8560	0.9506	0.7328	0.6338	0.5831	0.5601	0.8507	0.9079	0.7840	0.8309	0.6020	0.5666
Constant	−1.0079	−0.7111	−0.9105	−0.3028	−0.8498	−0.4511	−0.9894	−0.6257	−0.9627	−0.5184	−0.8529	−0.3418
<i>p</i> -value	0.1479	0.3341	0.1983	0.6764	0.2181	0.5471	0.1452	0.3877	0.1530	0.4555	0.2206	0.6499
Observations	108	103	104	99	113	108	111	106	111	106	115	110
Adjusted R2	0.0364	−0.0159	0.0598	0.0339	0.0366	0.0200	0.0542	−0.0111	0.0636	0.0369	0.0388	0.0056
F Statistic	1.6743	0.7342	2.0919 *	1.5729	1.7092	1.3644	2.0511 *	0.8087	2.2459 **	1.6696	1.7677	1.1019

Table 5. Cont.

Panel B: IPOs before the peak of the crisis												
	Specification A						Specification B					
	KLW		McN		Av		KLW		McN		Av	
	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DACC	−0.5099	−0.3876	−0.7465	−0.9073	−0.4678	−0.5337						
<i>p</i> -value	0.0913	0.1664	0.0507	0.0086	0.0769	0.0419						
	*		*	***	*	**						
DACC_DISC							−0.5299	−0.4044	−0.4031	−0.4852	−0.4636	−0.4858
<i>p</i> -value							0.0058	0.0274	0.0273	0.0038	0.0164	0.0113
							***	**	**	***	**	**
SIZE	0.1574	0.1426	0.1499	0.1017	0.1421	0.1200	0.1680	0.1400	0.1561	0.1337	0.1553	0.1304
<i>p</i> -value	0.0234	0.0315	0.0358	0.1188	0.0426	0.0894	0.0099	0.0255	0.0183	0.0292	0.0213	0.0551
	**	**	**		**	*	***	**	**	**	**	*
UNDERPR	−0.3266	−0.1668	−0.0659	0.0431	−0.4289	−0.3666	−0.4186	−0.2997	−0.1941	−0.0915	−0.5117	−0.4800
<i>p</i> -value	0.4368	0.6742	0.8751	0.9097	0.3059	0.3818	0.2963	0.4373	0.6265	0.8030	0.2118	0.2417
NI_CHANGE	1.5756	0.3201	1.9968	1.2440	1.8437	0.8541	1.3122	0.4227	1.2565	0.5640	1.5145	0.7684
<i>p</i> -value	0.1726	0.7648	0.0713	0.2078	0.1051	0.4446	0.1809	0.6480	0.2084	0.5347	0.1259	0.4320
			*									
LEV	−0.7440	−0.1254	−0.8817	−0.3662	−0.5987	−0.0005	−0.7467	−0.1851	−0.6331	−0.0949	−0.5309	0.0352
<i>p</i> -value	0.1359	0.7864	0.0848	0.4196	0.2180	0.9992	0.1101	0.6739	0.1804	0.8246	0.2533	0.9388
			*									
HH	−0.1923	−0.0311	−0.3029	−0.2599	−0.3935	−0.3193	−0.1756	−0.0589	−0.3152	−0.1961	−0.3793	−0.3529
<i>p</i> -value	0.7402	0.9542	0.6026	0.6182	0.5029	0.5825	0.7510	0.9107	0.5757	0.7022	0.5068	0.5340
Constant	−1.5207	−1.7158	−1.3813	−1.0985	−1.3680	−1.4116	−1.3072	−1.3811	−1.3497	−1.3563	−1.2627	−1.2331
<i>p</i> -value	0.0740	0.0379	0.1100	0.1701	0.1050	0.1016	0.0955	0.0744	0.0920	0.0710	0.1181	0.1332
Observations	83	83	79	79	87	87	85	85	85	85	88	88
Adjusted R2	0.0710	0.0175	0.0940	0.0650	0.0674	0.0387	0.1274	0.0569	0.096	0.0991	0.0977	0.0645
F Statistic	2.0440 *	1.2438	2.3484 **	1.9042 *	2.0353 *	1.5770	3.0433 ***	1.8454	2.4869 **	2.5392 **	2.5706 **	1.9990 *

Table 5. Cont.

Panel C: IPOs after the peak of the crisis												
	Specification A						Specification B					
	KLW		McN		Av		KLW		McN		Av	
	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}	P ₀	P _{3M}
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
DACC	0.6119	−0.3509	0.2482	−1.3024	1.0802	−0.3377						
<i>p</i> -value	0.4517	0.6732	0.8144	0.2986	0.2469	0.7641						
DACC_DISC							0.2318	−0.0694	0.0762	−0.266	0.3002	0.051
<i>p</i> -value							0.4801	0.8252	0.8672	0.5411	0.4321	0.898
SIZE	−0.0492	0.2990	−0.0646	0.2858	−0.0617	0.1670	0.0197	0.3251	−0.0016	0.3166	0.0325	0.2128
<i>p</i> -value	0.7531	0.1188	0.6821	0.1204	0.6642	0.3218	0.9052	0.0870	0.9924	0.0913	0.8438	0.2219
								*		*		
UNDERPR	1.2633	3.0578	1.6399	2.8446	0.8579	1.3777	0.0815	2.1310	0.2611	2.3408	−0.0932	0.9094
<i>p</i> -value	0.4611	0.1601	0.3254	0.1706	0.5624	0.4523	0.9588	0.2548	0.8717	0.2153	0.9472	0.5701
NI_CHANGE	0.1365	3.4746	0.0279	4.5896	0.0241	2.6635	0.7470	4.7335	0.8079	5.4876	1.0272	3.4781
<i>p</i> -value	0.9373	0.4099	0.9878	0.2805	0.9883	0.5425	0.6811	0.2213	0.6612	0.1717	0.5658	0.3637
LEV	−0.1808	−2.2085	0.0138	−2.5688	−0.0986	−1.7246	0.0019	−2.2622	0.0211	−2.3766	−0.0436	−1.7762
<i>p</i> -value	0.8325	0.0552	0.9876	0.0272	0.9025	0.1110	0.9984	0.0458	0.9818	0.0381	0.9601	0.0913
		*		**				**		**		*
HH	−1.0258	−1.8309	−0.8982	−1.6923	−1.2295	−2.0300	−0.5406	−2.1641	−0.7031	−2.1572	−0.9301	−2.2132
<i>p</i> -value	0.3619	0.1604	0.4328	0.1770	0.2564	0.1350	0.6441	0.0938	0.5551	0.0880	0.4183	0.0897
								*		*		*
Constant	0.5268	−2.3261	0.5767	−1.9912	0.6518	−0.9515	−0.5832	−2.4767	−0.2343	−2.1759	−0.6733	−1.4561
<i>p</i> -value	0.7536	0.2158	0.7363	0.2735	0.6669	0.5665	0.7524	0.1950	0.8997	0.2595	0.7177	0.4502
Observations	24	18	24	18	25	19	25	19	25	19	26	20
Adjusted R2	−0.1813	0.1122	−0.2184	0.1852	−0.1218	−0.0235	−0.2510	0.0764	−0.2851	0.1020	−0.2239	−0.0206

The financial crisis that exploded in 2007 called for a fundamental reassessment of corporate governance mechanisms and accounting standards. This was the main reason to split initial public offerings into two subsamples, according to the time of going public. We hypothesize that the pervasiveness, mechanisms, motives, and consequences of earnings management could be quite different before and after the peak of the last crisis.

Panels B and C of Table 5 report the regression results for both subperiods. The results for initial public offerings completed before the peak of the crisis indicate that high levels of abnormal accruals are associated with worse long-term relative market performance of IPO companies. The extending majority of regression variants prove to be statistically significant. The results may be interpreted as supporting the thesis about the predictive power of accrual-based earnings manipulation around IPO for long-term stock returns. We also find a positive relationship between earnings quality around going public and the abnormal long-term equity performance for IPOs before the crisis. Such conclusions could not be derived for IPOs made after the crisis. For the second period, the results were not sufficient to conclude that abnormal accruals explain the long-run underperformance of IPOs in the aftermarket. The mechanisms of earnings management appear to be quite different for the period before and after the peak of the last crisis. The findings for the period before the crisis were coherent with the conclusions of Friedlan [8], Theo, Welch, and Wong [9], but not in line with Armstrong, Foster, and Taylor [69] and Ball and Shivakumar [67] nor with Venkataraman, Weber, and Willenborg [94].

5. Conclusions

Business sustainability has been one of the leading topics in the area of the financial management since the beginning of the century. Sustainable corporate performance should relate to three elements: financial, social, and environmental [95,96]. Sustainability transposed to the business level is defined as “meeting the needs of a firm’s direct and indirect stakeholders, without compromising its ability to meet the needs of future stakeholders as well” [95]. One of the key elements of corporate sustainability is the idea of integrating the short-term and long-term aspects [95]. When a company is going public, the short-term goals of managers or existing shareholders may undermine the long-term gains of all stakeholders. It is contrary to the idea of sustainable growth. Poor quality of earnings at the moment of going public may negatively influence the company’s ability to meet the needs of all stakeholders in the future.

This study contributes the existing literature in several ways. The main contribution is that the research provides empirical evidence on the links between earnings quality around initial public offerings and the long-term value of companies for Poland, which is an example of emerging markets. We empirically investigate whether earnings are systematically opportunistic for companies that are going public. Poland was classified as an emerging market during the research period. It is also portrayed as an insider-dominated corporate governance system. Since the transition of the economy, it has experienced a change in volatility and risk, along with the development of its economy. Many public firms in Poland are controlled by insiders, and the role of the public equity market is limited, with considerable bank financing. The latest financial market turbulences renewed the debate on the associations between earnings management and corporate value. Therefore, our motivation was to re-test the underperformance of IPO firms together with earnings management around going public in the light of these changes, as there have still been few studies for non-US equity markets.

We find with the sample of initial public offerings listed in Poland during 2000–2012 that the levels of abnormal accruals (as a proxy for earnings manipulation) in the IPO year are consistently positive and significant for all models, and robust to different periods. High discretionary accruals may be a sign that companies boost accounting profits above cash flows. It may be interpreted that the companies opportunistically managed earnings. The latest innovations in proxies for earnings management are incorporated into our research design. Several accrual-based methods are employed to discuss the robustness of results, namely the McNichols model, Kothari, Leone, and Wesley model, Jones model, and modified Jones model. The number of IPO firms with positive accruals is higher

in the year of going public than in the surrounding years. We also find across multiple models that positive abnormal accruals in the IPO-year are followed by negative accruals in subsequent years. However, the comparison of the pervasiveness of earnings management for the periods before and after the peak of the last financial crisis gives mixed results, and it is not sufficient to draw any indisputable conclusions.

The main contribution of the research is connected with combining earnings quality around going public in an emerging market with another market IPO puzzle, namely long-term price behavior. The predictive power of earnings quality, as well as the fact of earnings manipulation around IPO for long-term stock returns in the aftermarket, is rarely significant for the whole sample period 2000–2012 (excluding the peak of the financial crisis). We provide evidence that, only for initial public offerings completed before the peak of the crisis is better earnings quality associated with higher market performance of IPO companies in subsequent years so aggressive IPO firms experienced stronger long-term underperformance. The extending majority of regression variants is statistically significant. Similar conclusions could not be derived for the equity offerings after the crisis. For the second period, the results are not sufficient to conclude that abnormal accruals explain the long-run underperformance of IPOs in the aftermarket. The results for IPOs in Poland should not be generalized to other markets because of different institutional and regulatory environment settings.

These findings also provide opportunities for future research. A possible research direction may be to check whether the conclusions of this research are the result of a broader market anomaly. It leaves a more general question about the predictive power of earnings quality and cash flow for equity prices in Poland. Next, it would be useful to gain additional insights into engaging in real activities manipulation around going public with a discussion of the substitutionary or complementary relation of such practices to accruals. Another challenging direction of future research could be focused on the application of a calendar-time portfolio approach in the analysis of the long-term consequences of earnings manipulation in Poland. Such future research directions would broaden the conclusions of our research and give additional insights into the problem of earnings management for the moment and the idea of sustainable long-term value management.

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