

## The accrual anomaly: Evidence from Borsa İstanbul<sup>☆</sup>

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### Abstract

In this study, we seek to answer whether stock prices fully reflect information in accruals and cash flows about future earnings. Following prior research, we perform Mishkin test and hedge portfolio analysis. The results based on full sample do not indicate mispricing in the components of earnings on Borsa İstanbul. When we exclude loss firms from the full sample, mispricing of total accruals and its components, and thus the presence of accrual anomaly on Borsa İstanbul, is revealed. Using trading strategy based on total accruals of profit firms, investors may generate abnormal returns of 18.58%. These results may suggest that Borsa İstanbul is not efficient in semi-strong form.

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### 1. Introduction

Starting with the article of Sloan (1996) titled “Do Stock Prices Fully Reflect Information in Accruals and Cash Flows About Future Earnings”, the cash flow and accrual components of earnings have been frequently used in testing stock market efficiency. Sloan (1996) examines the impact of different persistence degrees of cash flow and accrual components of earnings on the persistence of earnings and its reflection on stock prices. The author asserts that when market participants create an expectation of future period earnings, they overestimate the persistence of accruals and underestimate the persistence of cash flows. Consequently, the author indicates that firms with high (low) accruals earn negative (positive) abnormal returns in the future periods. This

condition signifies that markets overprice accruals and is defined as the “accrual anomaly”.

Following Sloan (1996), several studies examine accrual components (Richardson, Sloan, Soliman, & Tuna, 2005; Thomas & Zhang, 2002; Xie, 2001), behavior of third parties (Barth & Hutton, 2004; Bradshaw, Richardson, & Sloan, 2001; Teoh & Wong, 2002), relations between accrual anomaly and other anomalies (Collins & Hribar, 2000; Desai, Rajgopal, & Venkatachalam, 2004), alternative explanations for the accrual anomaly (Hirshleifer, Hou, & Teoh, 2011; Khan, 2008), and international evidence on the existence and persistence of the accrual anomaly (Dopuch, Seethamraju, & Xu, 2010; Pincus, Rajgopal, & Venkatachalam, 2007; Richardson, Tuna, & Wysocki, 2010). Most of these studies explore the existence of the accrual anomaly from various aspects and concentrate on capital markets of developed countries like U.S. and E.U.

The main purpose of this study is to investigate the existence of accrual anomaly on Borsa İstanbul. In this context, the general framework of our study is designed similar to Sloan (1996), Xie (2001), Pincus et al. (2007), and Dopuch et al. (2010). In order to test the existence of accrual

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anomaly, we use Mishkin test and hedge portfolio analysis. Our full sample consists of 158 firms. Also, we look into whether loss firms affect accrual anomaly. Thus, we form a sub-sample consisting of 53 firms, which make profit consistently between the years 2005 and 2010. In the analysis, financial statements of these firms between the years 2005–2010 and market data of them between the years 2006–2012 are used.

Our results demonstrate that loss firms in the full sample mask the existence of the accrual anomaly on Borsa İstanbul. On the one hand, Mishkin test results of the profit firms sub-sample indicate that total accruals and its components are overpriced. On the other hand, hedge portfolio analysis results show that trading strategy based on total accruals may generate abnormal returns of 18.58%. These results may imply that Borsa İstanbul is not efficient in semi-strong form.

This paper is organized as follows: Section 2 reviews the literature on accrual anomaly; Section 3 presents the hypotheses of the study; Section 4 describes data and variables; Section 5 introduces empirical tests used in the study; Section 6 reports the empirical results, and the last section summarizes the findings and implications.

## 2. Literature review

The first empirical study on the relationship between earnings and stock returns is conducted by Ball and Brown (1968). The authors demonstrate that unexpected earnings changes have positive correlation with future stock returns. Following Ball and Brown (1968), numerous studies have examined the relationship between earnings and stock returns (Beaver, Lambert, & Morse, 1980; Demirtas & Zirek, 2011; Easton & Harris, 1991; Kormendi & Lipe, 1987; Kothari, 2001). Since earnings consist of two underlying components, namely cash flows and accruals, the relationship between cash flow and accrual components of earnings and stock returns is also investigated extensively in the literature. These studies indicate that there is negative (positive) correlation between the magnitude of accrual (cash flow) components of current earnings and future stock returns.

The existence of the accrual anomaly is primarily introduced by Sloan (1996). This study examines the quality of information contained in the accrual and cash flow components of current earnings and the extent to which this information is reflected in stock prices. The author indicates that the persistence of current earnings performance is decreasing the magnitude of the total accrual component of earnings and increasing the magnitude of cash flow component of earnings. However, the author states that investors cannot distinguish the different properties of total accrual and cash flow components of current earnings. Therefore, applying both the Mishkin and hedge portfolio tests, Sloan (1996) demonstrates that investors misprice the total accrual components of current earnings between the years 1962–1991 in the U.S. According to Mishkin test results, investors overprice the persistence of total accruals and underprice the persistence of cash flows. In order to corroborate Mishkin's test results, Sloan (1996) develops a

trading strategy that requires taking a long position in the portfolio consisting of stocks of firms reporting a relatively low level of total accruals and a short position in the portfolio consisting of stocks of firms reporting a relatively high level of total accruals. Sloan (1996) shows that hedge portfolio strategy generates annual abnormal returns of 0.104, on average.

Following Sloan (1996), several studies investigate the accrual anomaly from various aspects. For example, Xie (2001) decomposes total accruals into normal accrual and abnormal accrual components by using Jones (1991) model. The Mishkin test results of Xie (2001) report that the persistence coefficients of normal accruals and abnormal accruals (0.70 and 0.57) are lower than their valuation coefficients (0.78 and 0.69). Therefore, Xie (2001) indicates that investors overprice total accrual components and also the mispricing in abnormal accruals is more significant than that in normal accruals. The hedge portfolio test results of Xie (2001) support these findings. It documents that the hedge portfolio based on abnormal accruals generates positive and statistically significant abnormal return (0.11). Other researchers also examine various components of total accruals to determine components that cause the accrual anomaly (Allen, Larson, & Sloan, 2013; Chan, Chan, Jegadeesh, & Lakonishok, 2006; Richardson et al., 2005; Thomas & Zhang, 2002).

The presence of the accrual anomaly is investigated internationally, as well. Pincus et al. (2007) examine stock markets in 20 countries that adopted common law or code law legal tradition. The authors determine the existence of the accrual anomaly in four countries having a common law legal tradition (Australia, Canada, the U.K., and the U.S.). On the other hand, Leippold and Lohre (2012) demonstrate the existence of the accrual anomaly in both common law (Australia, Canada, Hong Kong, Ireland, Thailand, the U.K., the U.S.) and code law countries (Denmark, France, Germany, Italy, Japan, and Switzerland). There are also studies examining whether the accruals anomaly appears in developed and developing countries (Clinch, Fuller, Govendir, & Wells, 2012; Dimitropoulos & Asteriou, 2009; Fazeli & Aflatooni, 2010; Kaserer & Klingler, 2008; Khanchel El Mehdi, 2011; Koerniadi & Tourani-Rad, 2007; Sehgal, Subramaniam, & Deisting, 2012; Soares & Stark, 2009; Vivattanachang & Supattarakul, 2013). Çelik, Özkan, and Akarım (2013) claim the existence of accrual anomaly in the Turkish stock market by using data from 131 manufacturing firms between the years of 1998–2010. Mishkin's test results of this study statistically support the existence of the accrual anomaly. On the other hand, the authors do not corroborate their results economically by applying hedge portfolio analysis. By using the data between 1998 and 2010, the authors ignore the effects of adoption of International Financial Reporting Standards (IFRS) in Turkey in 2005 on the presence of the accrual anomaly. In addition, the authors do not construct a sub-sample, which includes only profit firms or loss firms, in order to observe the effect of the inclusion of loss firms in the analysis.

In recent years, several studies assert that the accrual anomaly weakens significantly or even disappears. Dopuch

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