The Accruals Anomaly: A 50/50 chance game?
Evidence from the Iberian Stock Markets

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Biographical introduction

Catarina Borges is an economist, graduated from Aveiro University, currently engaging the Master in Finance at the Economics and Management School of Oporto University.

Since early time, she understood the importance of invest not only in her technical skills but also in her soft skills.

During her time in Aveiro, beyond the bachelor degree in Economics, she was also a member of the Economic Students' Club. In her second year of studies, she gave voice to the economics students, being responsible to defend and help to ensure the best needs of her colleagues. She also cooperated with the Aveiro's Students Association in several projects.

In FEP, while taking the master degree, she joint to FEP Finance Club and made some voluntary work to spread financial literacy among layers younger.

Currently, she is an intern in an accounting office to stronger and consolidate her knowledge in the area since the accounting background is fundamental to unfold functions in finance.

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Abstract

Being one of the most widely studied anomalies, the Accruals Anomaly, firstly documented by Sloan (1996), is the negative relation between accounting accruals and future stock returns.

Trying to overcome some gaps in the literature, we study the relationship between managers and investor's behavior and the evolution of stock markets to understand their different contribution to the anomaly in the first place. It is our objective to understand if such close markets as Portugal and Spain behave differently in a way that contributes to the (non)existence of this anomaly and to recognize if both managers and investors play an active role in Accruals Anomaly.

The study was conducted by collecting a year-sample of both Portuguese and Spanish public companies, in the two different periods – before and during the financial crisis.

We show that 1) there is a negative relation between accruals and future returns, but only in Portugal; 2) it is possible to exploit the anomaly in Portugal and yield abnormal returns (20,4% in first year); 3) the financial crisis impacted negatively the returns achieved by Portuguese investors; 4) the overall results are consistent with earnings manipulation in Portugal and to lower income predictability in Spain due to an inflexible accounting system to record accruals.

Key-words: Accruals, Anomaly, Cash flows, Earnings, Market Efficiency

JEL-Codes: G14, D53, M12, M41

Sumário Executivo

Sendo uma das anomalias mais amplamente estudadas, a Anomalia dos *Accruals*, documentada pela primeira vez por Sloan (1996), estabelece a relação negativa entre accruals e retornos futuros.

De forma a superar algumas falhas na literatura, decidímos estudar a relação entre o comportamento de gestores e investidores e a evolução nos mercados financeiros para perceber as suas diferentes contribuições para a anomalia. É nosso objetivo compreender se mercados tão próximos se comportam tão diferentemente ao ponto de contribuir para a (não)existência da anomalia e ao mesmo tempo reconhecer se os gestores e investidores desempenham um papel ativo na Anomalia dos *Accruals*.

O estudo foi realizado através da recolha de uma amostra de dados anuais em empresas públicas portuguesas e espanholas, em dois períodos diferentes - antes e durante a crise financeira.

Mostramos que 1) existe uma relação negativa entre accruals e retornos futuros, mas apenas em Portugal; 2) é possível explorar a anomalia em Portugal e produzir retornos anormais (20,4% no primeiro ano); 3) o impacto da crise financeira afetou negativamente os rendimentos obtidos por investidores portugueses; 4) os resultados, na generalidade, são consistentes com manipulação de resultados em Portugal e com baixa previsibilidade dos resultados em Espanha devido a um sistema de contabilidade inflexível para o registo de accruals.

Key-words: Acréscimos, Anomalia, *Cash flows*, Resultados, Eficiência de Mercado

JEL-Codes: G14, D53, M12, M41

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1. Introduction

The accounting statements disclosed by companies are the major source of information for investors when trying to figure out where to invest. Therefore, understanding financial statements and the story that they told us is a major imperative. By comprehending the relationship between the earnings released and the profitability of stocks, investors can profit from taking the best decisions. However, it is important to notice that, sometimes, decisions based on earnings can be biased either because of manager's earnings manipulation or because investors fail to identify the different persistence in earnings components. The anomaly plays, therefore, an important role in the literature.

The accruals anomaly is the negative relation between accounting accruals – the non-cash component of earnings – and future stock returns. The literature supports that earnings that have a higher (lower) component of accruals when comparing to operating cashflows tend to poorly (wealthy) perform in the future. So, it is really important to understand if company's earnings are based on real cash inflows or if they are based in revenue appreciation from managers' questionable accounting practices. Firms that register a high (low) level of accruals have less (more) certain earnings and consequently should earn lower (higher) market returns.

Although Vale (2013) found evidence of the anomaly in Portugal and Papanastasopoulos (2013) in European Equity Markets, the questions and conclusions that their work raised are very different from the ones that we formulated. So, this particular study assumes great importance when we try to understand if such close markets behave differently in a way that contribute to the (non) existence of this anomaly.

Richard G. Sloan was the first to introduce the anomaly, in 1996. The author, in his paper, refers that the market participants over-weight the accrual component of earnings and consequently, under-weight the cash flow component when setting prices. Thus, the market fails to incorporate the different persistence associated to those two components showing that investors and market participants fixate on earnings when analyzing financial statements and companies' earnings – the Accruals Anomaly was born.

Sloan (1996) goes even further and mentions that this accruals anomaly is the responsible for the market misprices firms allowing the implementation of strategies that get abnormal

returns: the market forecast higher (lower) future earnings from continuous operations to firms with higher (lower) levels of accruals.

This topic has been very controversial, dividing the scientific community, either because some authors affirms that the anomaly exists and will persist in time and others do not; either because there are no consensus in the literature regarding the causes of the anomaly.

As it was mentioned before, Sloan (1996) raised for the first time the Earnings Fixation Hypothesis to explain the anomaly. Others (Hribar, 2000; Xie, 2001; Thomas and Zhang, 2002; Chan *et al.*, 2006) point the Earnings Management Hypothesis as the main cause to the problem, justifying the anomaly with the manipulation of the discretionary part of the accrual's component by managers. The bad quality of the earnings, the aggregation of the earnings' components and even the human behavior of analysts appear in the literature as causes of the anomaly.

The main aim, with this study, beyond examine if the anomaly is present in Portugal and Spain is to analyze the different agent's – investors and managers – contribution to the anomaly. By studying investors, we will try to understand if they are rational when evaluating earnings and if they can distinguish earnings components and their different levels of persistence. By studying managers, we will try to assess if earnings management has an important role in the anomaly by trying to perceive if they manipulate a particular component of accruals – the discretionary accruals.

The adoption of two different periods – before and during the financial crisis – will allow us to understand if the financial crisis is, somehow, responsible to spread or mitigate the anomaly. It is also an objective, by analyzing such different markets, to understand what may be the reasons that explain the appearance of the anomaly in the first place.

The study would not be completed without exploiting the anomaly and trying to understand whether there is any particular strategy that can produce abnormal returns.

As it was mentioned before, this research approaches both the investors and managers side. To study investors, we will start by calculating the firms' accruals since the ones that appear in the balance sheet can contain errors according to Collins and Hribar (2000). With this information, we will be able to aggregate the data by ranking firms by accruals into

equally weighted quartiles[1] and test a strategy to exploit the anomaly. A size adjustment to the returns will be employed to understand if the combination of a long position in the lowest accrual portfolio and a short position in the highest accrual portfolio yields, in fact, abnormal returns for investors. To study managers, we will use the Modified Jones Model proposed by Dechow *et al.* (1995) to calculate both component of accruals – normal and abnormal accruals – and we will analyze the latter to try to infer about earnings manipulation.

Our study show that 1) there is a negative relation between accruals and future returns, but only in Portugal; 2) it is possible to exploit the anomaly in Portugal and yield abnormal returns; 3) the financial crisis impact negatively the returns achieved by Portuguese investors; 4) the overall results are consistent with earnings manipulation in Portugal and to lower income predictability in Spain due to an inflexible accounting system to record accruals.

Besides this section, this dissertation is structured as follows: in Section 2, a literature review of the topic will be made. Formerly, the section 3 will be reserved to the hypothesis formulation where we will try to address the key points of this study. To be able to test those premises, we will define, in section 4, our sample and the methodology that we will adopt to conduct this study and in section 5 we will present our results. This research ends with a summary of the main conclusions that the research will allow us to achieve.

[1] Sloan (1996) ranked the data into deciles but since our sample is relatively smaller, we decide to divide the portfolios in quartiles.

2. Review of Literature

Trying to understand the Accruals Anomaly and what may motivate its appearance has been a challenge for researches studying this topic over the ages, seeking for a better explanation, a better strategy, a better understanding for the problem. So, in this section, we will address main conclusions and theories suggested by the authors in past years. Firstly, we will make a brief review of accruals definitions suggested by several researchers and in section 2.2 we will go deep in the subject and we will analyze both accruals components – discretionary and non-discretionary accruals. As the causes for the anomaly are a controversial topic in the literature, in section 2.3 we will enumerate the most defended sources to justify the appearance of the anomaly in first place.

2.1 A Broader Definition of Accruals

Accrual is an accounting term used to represent liabilities and non-cash assets as accounts payable, accounts receivable, goodwill, tax liabilities and interest expenses. Before the appearance of this rubric, the balance sheet was only able to record cash transactions, blocking investors to assess the real history of the company.

Healy (1985) and Sloan (1996) have been considered, for many, the accounting economics pillars in literature since their definitions[2] and models opposed, for the first time, accruals and cash flows.

Prior to Sloan (1996), many authors explored and tried to understand the relationship between earnings growth and stock prices. However, Sloan receives the credit for being the first author to separate earnings into its two components – Cash Flows and Accruals – and in their different nature in predicting future returns. The companies' earnings with a great portion of cash flows when comparing to accruals outperform those in the opposite situation.

To conduct his study, Sloan (1996) follows the definition of accruals used by Dechow *et al*. (1995) which was grounded in the work of Healy (1985) and Jones (1991). Essentially, this definition of accruals is focused on the change in current net operating assets, being

[2] However, it is important to detach that the accruals' definition of Healy (1985) excludes several significant variables as non-current operating asset accruals.

the difference between earnings and accruals, the cash flow component of earnings.

Other authors, namely Richardson *et al.* (2005), decided to expand the accruals' definition. Differently from Healy (1985) and Sloan (1996), they include in their definition accruals related with non-current operating assets (namely capital expenditures), accruals related to non-current operating liabilities (as post-retirement benefit obligations), accruals related to financial assets (like long-term receivables) and also accruals related to financial liabilities (such as long-term debt).

The way we compute accruals is truly important since it will affect our outcomes and the conclusions of our study.

Sloan along with Richardson *et al.* (2005) found that by rating each accrual according to its accounting reliability, *"less reliable accruals lead to lower earnings persistence"* (Richardson et al., 2005, p. 438). They also add that "*investors do not fully anticipate the lower earnings persistence, leading to significant security mispricing"* (Richardson et al., 2005, pp. 437-438). The authors refer that the persistence of earnings and the mispricing are directly related with the reliability of the correspondent accruals. Consequently, they developed a more comprehensive definition of accruals showing that the mispricing is even greater. The anomaly is detected even when the earnings components are less reliable, namely financial accruals, extraordinary charges. In fact, when building their hedge strategy and consequently their hedge portfolios, they obtained different results from Sloan (1996). For the change in non-cash net operating assets, the hedge returns were about 18% per year. On the other hand, by using Sloan's original definition – that only includes the change in current net operating assets – the return observed is quite below – 13,3%. The stronger returns obtained by Richardson *et al*. (2005) can be effortlessly explained by this broader definition including accountants' estimates of future long term benefits. If we analyze Sloan's definition, we notice that the long term accruals are not incorporated and therefore, do not provide a complete measure of this variable. The results that the authors achieved supported the efficacy of the broader measure of accruals.

Hribar and Collins (2002), following the work of Sloan (1996), compared the results obtained by deriving the total accruals from the cash flow statement with the definition used by Sloan (1996). By conducting this study, they were able to discover that the mispricing is higher when using the Cash Flow Statement approach. They justify the result

by stating that when a firm is part from a takeover, the consolidation to the acquirer's financial statements leads to errors.

When calculating accruals, Hirshleifer *et al.* (2004) advise us to improve the Sloan (1996)'s model by incorporating accruals of past years. Recall that Sloan (1996) only considers accruals made over the past year. The authors defended that aggregating accruals over the entire life of the firm should produce a better measure of earnings quality and claim to provide supporting evidence. This particular question does not seem linear and consensual among literature. Richardson *et al.* (2005) cast doubt on the interpretation of the evidence in Hirshleifer *et al*. (2004).

2.2. Discretionary and Non-Discretionary Accruals

Dissecting the accrual rubric, there are two components that were also object of study by many authors – the discretionary and non-discretionary accruals.

Starting by the estimation of the discretionary accruals, Balsam *et al.* (2002), Dechow and Dichev (2002) among others developed several techniques that opposed the actual accrual with the accrual predicted by a model, using regressions of earning growth in different asset types. The Jones Model, developed by Jones (1991) and the Modified Jones Model, proposed by Dechow *et al.* (1995), are most used to compute the discretionary accruals.

Xie (2001), opposing theoretical accruals calculated by the Jones (1991) model to real accruals priced by the market, concluded that the market overprices abnormal accruals relative to their one-year-ahead earnings. Moreover, in his research, Xie (2001) also found that investors fail to categorize the discretionary and non-discretionary components of accruals. Consequently, they fail to identify that the first is less persistence than the latter.

Richardson *et al.* (2005) also conduct a study to try to understand the relation between high accruals firms and earnings manipulation. With this study they discover that high accrual firms are more plausible to be punished by SEC for overstating earnings. Still analyzing the topic of SEC enforcement action, Dechow *et al*. (2011a) with a wide-ranging sample reach the same conclusions. So, we can infer that when searching for earnings manipulation we should expect to find firms with high levels of accruals, namely regarding accounts receivables and inventory.

Nevertheless, it is really important to detach that is very difficult to disaggregate this two accruals components since in financial statements this separation is not compulsory. However, the anomaly appears to be stronger for discretionary accruals.

2.3 Causes of the Anomaly

Numerous authors, through the years, explored this topic trying to justify the existence of the anomaly by several factors. However, this subject is not consensual in the literature.

In this section, we will review the causes that appear to be the most supported by the scientific community to explain this phenomenon.

2.3.1 The Earnings Fixation Hypothesis

Sloan (1996) defended the Earnings Fixation Hypothesis (EFH) as the main cause for the anomaly. According to this theory, the investors fixate upon earnings and fail to separate the cash flow and accrual components of earnings. The investors need to be aware of the different forecasts that each component can induce. In fact, the author proved that investors become overly optimistic about the future of firms with high accruals and overly pessimistic regarding firms with low accruals. Thus, since the investors look at the information in a poorly way, stocks will be traded in a biased way: the high (low) accrual companies become overvalued (undervalued) and subsequently produce low (high) abnormal returns.

2.3.2 The Different Accruals Components

Bradshaw *et al.* (2001) refer that the accruals anomaly is mainly driven by working capital accruals. On the other hand, Thomas and Zhang (2002) defend that the inventory changes are the component of accruals that dominate all the others, meaning that the accrual's anomaly is strongest for inventory accruals. In their research, they found that the negative relation that Sloan (1996) documented between accruals and abnormal returns is mainly driven by inventory changes[3]. In a total of 28 years studied, the hedge returns for changes

[3] According to the authors, if a firm verifies an increase in demand/profitability, future estimations will predict an increase in demand as well. However, if for some reason the actual demand is lower than the expected, the inventory increases due to this discrepancy between sales and purchases. So, these shifts in demand are associated with profitability reversals. According to the authors, if a firm verifies an increase in

in inventories were positive in 27. The same conclusions were also reached by Chan *et al.* (2006) that justify by stating that the managers are very reticent to write-down inventories when the demand does not matches the expectations. The same results are supported by Allen *et al*. (2013). They show in their research that extreme inventory accruals are particularly likely to experience extreme subsequent reversals.

Also the Mishkin (1983)'s test allowed Xie (2001) to get the conclusion that the abnormal returns are mainly explained by this component. In fact, market assume a higher persistence of inventory changes than it actually should because investors believe that changes in inventories in year t will also be confirmed in year t+1, which does not necessarily holds.

2.3.3 The Earnings Management Hypothesis

The earnings management has been pointed by many as the main trigger of the accrual's anomaly. Dechow *et al.* (1995) evaluated alternative accrual-based models for detecting earnings management and they rejected the hypothesis of no earnings management in firms with extreme financial performance. Moreover, they also defended that when measuring firm performance we should consider both earnings and cash from operations performance, otherwise the tests could be misleader and misspecified.

Xie (2001), as it was already mentioned before, investigated a particular component of accruals – the discretionary accruals. According to this author, this component reflects managerial earnings manipulation. So, he decided to explore *"whether the market rationally prices abnormal accruals with respect to their one-year-ahead earnings implications"* (Xie, 2001, p. 358). To conduct his study, Xie (2001) used the Jones Model (1991) to decompose firm-level accruals into normal accruals and discretionary accruals[4]. The author discovered that abnormal accruals are less persistent than normal accruals. In fact, the Mishkin (1983)'s test results showed that the market overprice both discretionary and normal accruals. However, the Hedge Portfolio Test doesn´t sustain the overpricing of

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demand/profitability, future estimations will predict an increase in demand as well. However, if for some reason the actual demand is lower than the expected, the inventory increases due to this discrepancy between sales and purchases. So, these shifts in demand are associated with profitability reversals.

[4] Normal accruals are considered to be the accrual component that is expressed by the changes in sales revenues and investment expenditure, reflecting this way business conditions. Consequently, the abnormal accrual is the remain part and can be seen as the accruals' portion that can be manipulated by the managers (discretionary accrual).

normal accruals. Both tests indicate the overpricing of abnormal accruals as "more severe", with this mispricing only occurring because of market's inability to correctly assess the persistence of such accrual component. Is that lack of settings and tools that opens door to managers manipulate earnings, like in Initial Public Offerings or Seasonal Equity Offerings.

Beneish and Vargus (2002) also studied earnings manipulation and the impact of insider trading on earnings quality and in accrual's valuation. In their work, they evaluated whether a signal based on insider trading can somehow predict one-year-ahead earnings persistence and consequently help identify firms with high and low earnings quality, with earnings quality being the capability of a firm sustain their income in the future. Following Sloan's techniques, they also tested, by examining the market, if the accruals pricing in the firms with higher and lower earnings quality is different and, if so, if the low earnings quality earnings are associated with earnings management. From their research, they conclude that if managers expect the earnings to persist, they have an incentive to purchase their own firm stock. Prior authors mention that this "buy" happens before the stock prices increase and investors can see that insider buying as a positive signal of earnings quality. However, what may in fact could be happening is that managers keep to themselves information related *"to the effect of income-increasing accruals on their firm's prospectus either to strategically increase their stake in the firms' equity or to abstain from selling*" (Beneish and Vargus, 2002, p.758). The rationale behind it is quite simple: if managers manipulate earnings to cover bad performance by income-increasing accruals, it is logical that as they are aware of the poorly future performance, they sell their stock.

What the authors conclude was that "*income-increasing accruals are significantly more persistent for firms with abnormal insider buying and significantly less persistent for firms with abnormal insider selling, relative to firms for which there is no abnormal insider trading*" (Beneish and Vargus, 2002, p.756).. Moreover, they also stated that insider trading information is particular useful *a priori* to identify if income-increasing accruals' quality is high or low. To summarize, the authors gave us important insights in their work. Firstly, they found evidence that the mispricing in the accruals can be mainly attributable to the mispricing of income-increasing accruals. Secondly, they discovered that income-increasing accruals tend to be overpriced when managers adopt the strategy of abnormal selling and well-priced when managers take part in an abnormal buying. Thirdly, market

participants tend to *"overprice income-increasing accruals when firm's top executives do not trade, but the overpricing is less severe than when managers engage in abnormal selling"* (Beneish and Vargus, 2002, pp. 756-757*).* Fourthly and finally, market participants tend to price and look to all increasing accruals as if they are of good quality. Investors can't distinguish if an insider selling is encouraged by liquidity or by information. It is also possible that investors "*discount insider selling signals that are contrary to their beliefs about a firm's earnings"* (Beneish and Vargus, 2002, p. 757*).*

Leuz *et al.* (2003) also approach the earnings management but from a different angle and provide evidence that earnings management is less of a concern in common law countries due to high investor protection.

Kang *et al.* (2006) also use discretionary accruals as a topic of investigation and they tried to understand whether aggregate discretionary accruals or aggregate total accruals are the better predictor of stock returns. They conclude that both the aggregate normal accruals and equal-weigh aggregate discretionary accrual do not provide considerable forecasting power. On the other side, value-weighted aggregate discretionary accruals provide strong forecasting power.

2.3.4 The Market Participants Misinterpretation

Bradshaw *et al.* (2001) stated that sell side analysts are not able to distinguish between the different characteristics of the earnings components. In fact, the market participants are not able to predict the earnings reversal on extreme accruals, with firms with high and low accruals reporting the highest forecasting errors on earnings.

Barth and Hutton (2004) also investigate the topic and conclude that analysts, overall, can't interpret in a correct way the information that is related to accruals within the reported earnings. Consequently, an investment strategy that is supported on the information provided by these particular market participants and in accruals' information is able to yield abnormal returns that proved to be statistically significant.

Other studies, like the one from Collins *et al.* (2003), mention that there's a particular group of investors (the more sophisticated ones) that are able to interpret the different information contained in earnings. However, this was only verified in a portion of the several procedures that were tested.

2.3.5 Growth Hypothesis

Zhang (2007), following the footsteps of those authors, tested whether the accrual anomaly is attributable to growth as opposed to earnings persistence – the Growth Hypothesis. Basically, Zhang (2007) examine if the accrual anomaly is mainly motivated by the fundamental growth information contained in accruals contrary to accounting distortion or managerial discretion. In his research, Zhang (2007) discovered that accruals show strong (insignificant) power predicting future stock returns in companies where accruals capture strong (weak) growth information. Moreover, when decomposing accruals into growth-related and growth-unrelated components, the author found evidence that the first has more power when predicting future stock returns than the latter. So, he concluded that the accrual anomaly is mainly attributable to the growth information that is contained within the accruals.

2.3.6 The Methodology Adopted

Kraft *et al.* (2006) refer that the anomaly could be explained by several boundaries – selection biases, data treatment and data errors – in the methodology. However, this not means that the anomaly disappear when we account for that boundaries. The authors conclude that the anomaly is still present but is driven mainly by the high accruals deciles. Similarly, Desai *et al.* (2004) found evidence that the anomaly seems to be concentrated in the highest accruals firms.

2.3.7 The "Irrationality" of Agents

Several authors argue that investors act in an irrational way and, consequently, cause the anomaly. However, as it is known, this topic – rationality against irrationality of investors – divides the financial community, casting disagreement and opposing opinions.

In favor of rationality were Wu *et al.* (2007). Assuming that we interpret accruals as a working capital investment, the authors conjecture that firms adjust their accruals to discount rate changes in an optimal way based on the q-theory. Wu *et al.* (2007) conclude that associated to higher discount rates are the less profitable investments and lower accruals (vice-versa) – Optimal Investment Hypothesis. The rationale behind the theory is that when the discount rates increase, there are less viable and profitable projects so we

verify a decreasing in accruals. Allied to this, there's an increase in future returns on average because the higher discount rate means higher expected returns going forward. As a result, accruals negatively predict future returns.

The same authors, by studying the Optimal Investment Hypothesis from different perspectives, reach the conclusion that since investment is a value driver of the accrual effect, by controlling such variable we should expect a reduction in the magnitude of the accruals anomaly. They even go further and state that investment is probably more significant when comparing to earnings in driving the anomaly. By studying the optimal investment hypothesis the authors also claim that since we verify a negative relation between investment an discount rates, accruals should covary negatively with the *ex ante* estimates of the discount rate. Last but not least, they also defend that "*the deterioration of the accrual effect in recent years might be temporary and likely to mean-revert in the near future"* (Wu *et al.*, 2007, p. 177).

2.3.8 The Risk Factor

Khan (2005) approach the topic from a risk perspective. For him, the differences found in portfolios with high and low levels of accruals can be explained by differences in risk associated to each. Khan (2005) found evidence that firms with low accruals and consequently higher returns are the ones in which the bankruptcy risk is higher. He also revealed that accruals are more related with risk proxies – economic and financial distress characteristics – rather than risk itself.

2.3.9 Anomaly as a Collateral Effect of Other Anomalies

There are several studies in the literature that look at the accrual anomaly as an effect of broader anomalies.

Collins and Hribar (2000) tried to discover if the accruals anomaly can be, somehow, explained by the post-earnings announcement drift documented by Ball and Brown (1968) and Bernard and Thomas (1989, 1990). The results showed that these two anomalies are independent from each other.

The research of Desai *et al.* (2004) and Fairfield *et al.* (2003a, b) suggested that the accrual anomaly might be related to growth. According to Desai *et al.* (2004), the anomaly is

somehow linked with another one: the Value-Glamour Anomaly, already documented in the literature. Fairfield *et al.* (2003a) argued that the accruals anomaly is a particular case of a "greater" anomaly based on growth in net operating assets. As so, they decided to explore the relation between the accruals anomaly and the growth anomaly. This anomaly reflects the market's lack of ability to correctly assess firms' growth prospects. They conclude that the mispricing of accruals is not the main responsible for the accruals anomaly as they find out that the accruals and cash flow components do not exhibit significant differences in persistence. In matter of fact, they defend that the accruals anomaly is part of a broader anomaly – the Growth Anomaly. They even refer in their article that Sloan's (1996) findings are a special case of a more general effect – the growth effect – that can be explained by diminishing marginal returns to investment and/or conservative accounting. Disagreeing from Fairfield *et al.* (2003) were Shon and Zhou (2005). They suggested that both anomalies are actually different from each other.

2.3.10. The Legal System

Many authors in the literature defend that the law prevailing in the country can also be an incentive for the appearance of the anomaly. Dechow *et al*. (2011b) found that the anomaly appears to be stronger in common law countries than in code law countries (Portugal and Spain), with Pincus *el al.* (2007) being more extreme and saying that the anomaly only appears in common law countries. The latter explain that in code law countries we verify a lower asymmetry of information between stakeholders and firm executives and consequently, in those countries there are a better understanding of earnings and its components.

Differently, LaFond (2005) and Leippold and Lohre (2010) found evidence in both civil (code) and common law countries.

3. Development of Hypothesis

Understanding financial information is key for success when applying a particular strategy instead of another. In fact, it is quite important that any investor, when analyzing earnings, is able to distinguish between cashflows and accruals since they have associated different levels of persistence and have different implications for the assessment of future earnings. Bernstein (1993) advise us to trust more on CFO and less on accruals since the latter is subject to a higher level of distortion: *"the accrual system, which produces the income number, relies on accruals, deferrals, allocations and valuations, all of which involve higher degrees of subjectivity than what enters the determination of CFO"* (Sloan, 1996, p. 291). As so, we can attest the quality of earnings by analyzing the weight of these two earnings' components in the overall income that the firms releases, with the earnings supported by casflows being of more quality than the ones relying on accruals. Following this reasoning, it is also expected that the current earnings performance is likely to persist if earnings are based more on cashflows than on accruals.

To test whether this is true in the markets under study, the first testable hypothesis will try to infer about the persistence:

> **H1:** *The current earnings performance is declining as the accrual component of earnings increases and increasing as the cashflows component of earnings increases.*

By studying this hypothesis, we will be able to understand investors' behavior towards earnings: can investors distinguish the different components of earnings and its different persistence levels or they act as having some kind of myopia which makes them not to recognize the characteristics associated to each?

Similarly to Sloan (1996), the unbiased behavior of stock prices lead us to build another hypothesis to test. By decomposing results into its components, we intend to analyze in which extent stock prices reflect the different properties of accruals' and cashflows' components of earnings. Undeniably, if investors can't distinguish the different components of earnings, they will suffer from forecasting errors and therefore misprice securities, meaning that stocks with high (low) level of accruals will be purchased for the major (small) part of investors, driving the price up (down) and consequently overvaluing (undervaluing) the stock. Indeed, this mispricing will be corrected in the future when the

persistence does not follow the investor's expectations, meaning that investors that do not look at the different components of earnings instead of abnormal returns can suffer from losses.

Ball and Brown (1968) found a positive relation between earnings and stock prices that was justified by the ability of earnings to reflect all the relevant information of a company. However, many authors defend that this positive relation between price and earnings is only due to the incapacity of investors distinguish between earnings components, leading us to formulate the second testable hypothesis:

> **H2:** *Stock prices fail to reflect the higher persistence associated to the cashflow component of earning and the lower persistence associated to the accrual component of earnings.*

With this hypothesis, we will try to test in which extent prices deviates from the rational expectations model. So, following Sloan (1996), we will test the "naïve expectations model" (investors fixate on earnings) against the null hypothesis of market efficiency.

If investors can't distinguish the different levels of persistence that is associated to each component of earnings, it is expected that they will overprice stocks with a higher accrual component and underprice stocks that have a lower component of accruals, creating, therefore, an arbitrage opportunity. This leads us to the third testable hypothesis:

> **H3:** *A trading strategy that combines a long and a short position in stock firms with the lowest and highest reported accruals, respectively, can generate positive abnormal returns.*

The results will evidence if investors can exploit this market flaw, yielding abnormal returns.

The last topic that our study will address is related with abnormal accruals and earnings manipulation. Similarly to Xie (2001), we will try to find evidence of earnings management, leading us to formulate the fourth and final hypothesis:

> **H4:** *The market correctly prices abnormal accruals regarding to their one-year-ahead firm earnings.*

Recall that, according to Xie (2001) earnings manipulation is made through abnormal accruals (also denominated discretionary accruals).

Recurring to the Mishkin (1983)'s test, we will be able to compare the theoretical abnormal accruals computed by the Modified Jones Model with the abnormal accruals priced by the market. By using this technique, we can conjecture if the lack of accruals persistence documented by Sloan (1996) is due to the abnormal accruals (market assessment of persistence) or to the normal accruals (historical earnings persistence).

If results show that the valuation attributable to abnormal returns by the market is significantly larger than its forecasting coefficient, then we can conclude that the market is overpricing abnormal accruals. On the other hand, if the valuation of the market is smaller than the forecasting coefficient, the market is underpricing abnormal accruals. Based on the outcomes, Xie (2001) attributed any market's mispricing as a failure to properly distinguish different levels of persistence, as the forecasting coefficient is a measure of abnormal accruals' persistence according to Freeman *et al.* (1982) and Sloan (1996).

4. Data and Methodology

To conduct our empirical analysis, we consider all public firms in Portugal and Spain, quoted in *PSI Geral* and *Bolsa de Madrid* with all available information, in the period of 1995 to 2013[5]. Both accounting variables and stock prices were extracted from the Datastream database.

From the sample were excluded 1) banks, companies that belonged to the financial sector and life insurance companies since they do not have the financial information needed to calculate accruals; 2) anonymous sports societies due to their very specialized accounting systems; 3) companies that were unclassified; 4) companies quoted in another market different from the origin market and 4) companies with missing information in general or insufficient data to calculate accruals.

Moreover, for the sake of consistency, we will only include in our sample firms with the same fiscal year, otherwise accounting information will be available in the market in two different moments in time. This approach is consistent with the one followed by Sloan but different from Xie' (2001). Instead, the author preferred to adjust the sample and form 12 hedge portfolios, one for each fiscal year-end month and conduct the hedge portfolio test separately for each of the 12 fiscal year-end months.

In the end, my sample is composed by 33 Portuguese companies and 93 Spanish companies, in a total of 125 firms and 2,299 firm-year observations.

This study implies the formulation of several hypotheses and depends on econometric inference to achieve results.

Following Sloan (1996), after defining the testable hypothesis and the sample to which our study applies, we need to compute the variables that assume particular relevance in our study – Earnings, Accruals and Cashflows.

Earnings is the operating income after depreciation defined in Datastream as the *"earnings of a company before interest expense and income taxes. It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized"*. As Dechow *et al*. (1995) and Sloan (1996), we calculate accruals as follow:

[5] Initially, the period of the analysis started in 1994 and ended in 2014 but do to the fewer observation in the extreme years, we decide to shorten the sample.

$$\mathrm{ACC}_t = (\Delta\mathrm{CA}_t - \Delta\mathrm{Cash}_t) - (\Delta\mathrm{CL}_t - \Delta\mathrm{STD}_t - \Delta\mathrm{TP}_t) - \mathrm{Dep}_t \quad (1)$$

where,

ACC_t, is the accruals in period t;

$\Delta\mathrm{CA}_t$, is the change in current assets in period *t*;

$\Delta\mathrm{Cash}_t$, is the change in cash/cash equivalents in period *t*;

$\Delta\mathrm{CL}_t$, is the change in current liabilities in period *t*;

$\Delta\mathrm{STD}_t$, is the debt included in current liabilities in period *t*;

$\Delta\mathrm{TP}_t$, is the income taxes payable in period *t*;

Dep_t, is the depreciation and amortization expenses in period *t*.

In this definition, it is excluded the debt in current liabilities because it is related to financing transactions and only operating transactions should be considered. Moreover, income taxes payable are also not considered to maintain the consistency with the concept of earnings that was used by the authors in the empirical tests.

All the variables were extracted directly from the database with the exception of short-term debt and depreciations since the variables were not available *per se*. The short-term debt was calculated as the difference between total debt and long term debt and depreciations were calculated as the difference between EBITDA (Earnings Before Interest, Taxes, Depreciations and Amortizations) and EBIT (Earnings Before Interest and Taxes).

Following Sloan, cashflows were calculated as the residual part of earnings and accruals.

Since the empirical analysis requires both cross-sectional and temporal comparisons (panel data), we scale the following three components by the average total assets (Sloan, 1996):

$$\mathrm{EARN_t} = \frac{\text{Income from Continuing Operations}_t}{\text{Average Total Assets}_{T^6}} \quad (2)$$

$$\mathrm{ACC}_t = \frac{\text{Accruals}_t}{\text{Average Total Assets}_T} \quad (3)$$

[6] T refers to the variation between the period t and t-1.

$$\text{CFO}_t = \frac{\text{Income from Continuing Operations}_t - \text{Accruals}_t}{\text{Average Total Assets}_T} \quad (4)$$

In our analysis, we also wanted to infer in which magnitude each accrual component – Current Assets, Current Liabilities and Depreciations – affects the total accruals. So, by decomposing this variable into those components, we were able to reach important conclusions that will be detailed in further sections. The variables were measured as follow:

$$\text{CURR ASST}_t = \frac{\Delta\text{CA}_t - \Delta\text{Cash}_t}{\text{Average Total Assets}_T} \quad (5)$$

$$\text{CURR LIAB}_t = -\frac{\Delta\text{CL}_t - \Delta\text{STD}_t - \Delta\text{TP}_t}{\text{Average Total Assets}_T} \quad (6)$$

$$\text{DEP}_t = -\frac{\text{Dep}_t}{\text{Average Total Assets}_t} \quad (7)$$

Investors often try to beat the market with their strategies and predictions. When they suspect the presence of an anomaly, investors see an opportunity to yield abnormal returns and they promptly define a strategy to exploit this arbitrage opportunity to extract as much value as they can get.

To study the trading strategy defined before, we first ranked firms by its accruals and build quartiles with the extreme observations. We only include in the study companies that have both available information for the calculation of accruals and historical stock prices[7].

Before computing abnormal accruals, there are several key aspects that we need to be aware of. The way we calculate abnormal returns have a great impact in the conclusions our study reach. Zach (2003) in his article list several aspects that are important to be well defined before the returns' calculation. Firstly, it is important to be careful when choosing the benchmark portfolio used to adjust firms' raw returns (size, book-to-market, others) because the magnitude of those returns can be affected by the adjustment that we made.

[7] Since Datastream database do not recognize when a particular company delists, we assume that if a company does not suffer variations in price in a period longer than 12 months, is delisted.

Secondly, we need to see which valuing scheme – equally or value weighted portfolios – we want to follow since the adoption of one over the other also affects the magnitude of our abnormal returns. Thirdly, we also should be aware that, when building portfolios, we need to decide if we will have a dynamic portfolio that changes composition according to the ranking of accruals in a particular period (for instance, every month) or if we opt for a portfolio that is built according to its accrual ranking in the begin of the period and stays unchanged for the rest of the time ((unchanged portfolios vs. (re)balanced portfolios). And lastly, we must decide if returns are calculated by a buy-hold procedure or by using the cumulative abnormal returns technique.

In this study, the portfolios that were built according to the ranking of accruals are equally weighted portfolios, meaning that when measuring returns, every stock will have the same weight in the portfolio. Abnormal returns are calculated for the three subsequent years. The return cumulation period starts 4 months after the end of the fiscal year in which accruals are measured. According to Alford *et al.* (1994) and Sloan (1996), we should give this lag before starting calculating the returns to guarantee that the financial statement are available and consequently the prices reflect all the available information in the market. If, for instance, a company delisted according to the procedure we adopted (already explained before), we decide to divide the return cumulation period in two parts (or more, depending how many companies have delisted in different periods), with the weight given to each of the periods being different, since the composition of the portfolio is different in these two (or more) moments.

The prices[8], as was already mentioned before, were extracted from Datastream.

The computation of abnormal returns requires that we make an adjustment for size. According to Sloan (1996) and following Ou and Penman (1989) and Bernard and Thomas (1990), we should try to understand if our strategy yields abnormal returns by comparing the annual buy-hold returns of our portfolio with the annual buy-hold returns of a portfolio with approximately the same market value. Once again, following Sloan (1996), we build portfolios ranking firms by its market value of equity at the beginning of the year in which the return cumulation period begins. After building this market value ranking, we chose to each security in our accrual ranked portfolio, whenever possible, the observation

[8] Sloan (1996) used stock returns inclusive of dividends so, we extract from Datastream the adjusted price to reflect this particular condition.

immediately before as a proxy for our new size-matched portfolio. Consequently, the abnormal returns are computed as the difference between a firm's annual buy-and-hold return and the annual buy-hold return for the same period on the market capitalization-based portfolio (Xie, 2001). In our study, these portfolios stay unchanged for the entire period, changing only between years.

Finally, when opting between the buy-hold abnormal returns ($\mathrm{BHAR_{i,t}}$) or the cumulative abnormal returns ($\mathrm{CAR_{i,t}}$) technique to calculate the returns of exploiting the strategy, we selected the first method over the latter:

$$\mathrm{BHAR}_{i,t} = \prod_{i}^{t}(1 + R_{it}) - \prod_{i}^{t}(1 + R_{pt}) \tag{8}$$

where,

BHAR_{it}, is the Buy-Hold annual return in year *t* for the *i* firm:

i, is the firm for which we are calculating the return;

t, is the year in which we are measuring the returns.

We opt for this procedure because, according to Zach (2003), this method "*correctly tracks the returns earned by a buy-and-hold investor because it takes into account the compounding of returns*" (Zach, 2003, p.18) contrary to which we should expect from $\mathrm{CAR_{i,t}}$. He justifies his choice by saying that the "*CAR method does not compound returns and therefore its returns do not reflect the profits (or losses) of investors. If researchers are specifically interested in returns to trading strategies, like in the case of the accrual anomaly, then BHAR is preferred"* (Zach, 2003, p.18). However, it is important to be aware that the method adopted produces returns that are much more skewed and more open to cross-sectional dependence problems[9].

Once rankings and the way we calculate abnormal accruals are defined, the abnormal returns for each quartile can be calculated by averaging the abnormal returns of all firms in a particular quartile.

[9] Tzachi Zach (2003) applied a calendar-time approach which addresses cross sectional dependence and skewness and the statistical significance of the returns did not change.

Lastly, as it's our objective to discover if managers manipulate, in fact, earnings, we will calculate abnormal accruals since, according to Xie (2001), this component of accruals is the accrual component that is easier to manipulate.

Xie (2001) used the Jones (1991) model[10] to compute the normal accruals, being the residual part of accruals, the abnormal accrual. However, since Dechow *et. al.* (1995) defended that a Modified Jones Model provides a more powerful test of earnings management compared to Healy (1985) and the Standard Jones Model, we applied this procedure to calculate normal accruals. The model can be described as follow:

$$\mathrm{ACC}_t = \mathrm{a}_1\left(\frac{1}{\mathrm{AV\ T.\ A_T}}\right) + \mathrm{a}_2\left(\frac{\Delta\mathrm{REV_T} - \Delta\mathrm{NET\ REC_T}}{\mathrm{AV\ T.\ A_T}}\right) + \mathrm{a}_3\left(\frac{\mathrm{PPE_t}}{\mathrm{AV\ T.\ A_T}}\right) + \mathrm{e_t} \qquad (9)$$

where,

ACC_t, is the accruals already deflated by the average total assets in period *t*;

$\mathrm{AV\ T.\ A_T}$, is the average total assets between periods;

$\Delta\mathrm{REV_t}$, is the variation in the revenues between periods;

$\Delta\mathrm{NET\ REC_t}$, is the variation in net receivables between periods;

$\mathrm{PPE_t}$, is the gross property, plant and equipment in period *t*.

Please note that according to this model, we should divide the variables by the total assets at the beginning of the period. However, we change this criterion for consistency reasons since all the other variables were scaled by the average total assets.

After the computation of these two accrual's components – normal accruals and abnormal accruals – to be able to understand if the market is over or underestimating the abnormal accruals compared to its one-year-ahead earnings implications, we will employ the Mishkin (1983)'s test, similarly to Xie (2001). This test is supported by two equations:

$$\mathrm{EARN_{t+1}} = \gamma_0 + \gamma_1\mathrm{CFO}_t + \gamma_2\mathrm{NAC}_t + \gamma_3\mathrm{ABNAC_t} + \mathrm{v_{t+1}} \qquad (10)$$

[10] The author alerted us to be careful when using the Jones Model since this model not captures only managerial discretion leading to *"unintentional misstatements"*.

$$\text{ABN RET}_{t+1} = \alpha + \beta\left(\text{EARN}_{t+1} - \gamma_0 - \gamma^*_1\text{CFO}_t - \gamma^*_2\text{NAC}_t - \gamma^*_3\text{ABNAC}_t\right) + \varepsilon_{t+1} \quad (11)$$

where,

EARN_t, is the income before extraordinary items in year t;

CFO_t, is the cash flow from operations in year t;

NAC_t, is the normal accruals in year t;

ABNAC_t, is the abnormal accrual is year t;

ABN RET_{t+1}, is the size-adjusted return in year t+1;

With these two equations – the forecasting equation in (10) and the valuation equation in (11) – we will be able to compare the theoretical results achieved by the model with the real market results, understanding this way if the market under or overprices the ability of a particular earnings' component to forecast one-year-ahead earnings. So, firstly, we need to estimate the coefficients of each earnings component in each equation separately and in a second phase, by comparing the coefficients of both equations jointly (imposing the restriction of the coefficient of the forecast equation to be equal to the one of the valuation equation), we can infer in which extent market misprices the components. However, it is important to mention that this procedure has its own limitations.

Although we can easily understand the value of Mishkin (1983)'s test, Kraft *et al.* (2007) alert us to the main flaws of using this technique. According to those authors, the Mishkin (1983)'s test is *"sensitive to the presence of omitted variables (…) that are themselves mispriced when attempting to draw inferences about specific components of earnings (e.g. accruals and cash flows)"* (Soares and Stark, 2011, p. 3). Other authors, namely, Kothari *et al.* (2005), referred that this test is sensitive to the treatment of extreme observations. And the list of criticism goes on. Francis and Smith (2005) mentioned that the Mishkin (1983)'s test has some flaws when using cross-sectional estimates to investigate the presence of the accruals anomaly. Pope (2001) also discredits the Mishkin (1983)'s test by pointing out that if we have different forecasting implications for one-year-ahead accruals and cash flows, abnormal accruals can't be model as a function of unexpected earnings alone. However, despite its limitations, it is the best technique when trying to studying this particular subject.

5. Empirical Results

After the consolidation of the hypothesis and procedures in previous sections, we applied our methodology to our firm sample and we tested the several formulated hypothesis. Since they relate somehow accruals and earnings, we decide to first observe how earnings and its two components – accruals and cashflows – behave. By observing the Panel I of Table 1, we found evidence of a negative relation between accruals and cashflows in both markets, with the earnings increasing as accruals increase, similar to Dechow *et al.* (1994) and Sloan's (1996) findings.

Table 1: Mean (Median) Values of the Ranking Accruals Quartile Portfolios

	Portugal				Spain			
	Q_1	**Q_2**	**Q_3**	**Q_4**	**Q_1**	**Q_2**	**Q_3**	**Q_4**
Panel I: Component of Earnings								
EARN[a]	0,067	0,053	0,058	0,090	0,045	0,084	0,078	0,083
	(0,070)	(0,047)	(0,057)	(0,062)	(0,035)	(0,089)	(0,078)	(0,088)
ACC[b]	-0,119	-0,058	-0,028	0,028	-0,130	-0,057	-0,022	0,060
	(-0,116)	(-0,059)	(-0,024)	(0,022)	(-0,125)	(-0,058)	(-0,021)	(0,045)
CFO[c]	0,164	0,106	0,082	0,052	0,165	0,143	0,104	0,032
	(0,140)	(0,114)	(0,096)	(0,041)	(0,179)	(0,148)	(0,104)	(0,025)
Panel II: Component of Accruals								
CURR ASST[d]	-0,021	0,000	0,040	0,079	-0,035	0,014	0,030	0,105
	(-0,021)	(0,000)	(0,040)	(0,079)	(-0,015)	(0,011)	(0,022)	(0,092)
CURR LIAB[e]	-0,024	-0,006	-0,021	-0,002	-0,023	-0,018	-0,015	-0,020
	(-0,024)	(-0,006)	(-0,021)	(-0,002)	(-0,016)	(-0,019)	(-0,007)	(-0,026)
DEP[f]	-0,066	-0,050	-0,053	-0,046	-0,059	-0,052	-0,039	-0,035
	(-0,066)	(-0,050)	(-0,053)	(-0,046)	(-0,059)	(-0,052)	(-0,041)	(-0,035)

[a] **Earnings:** income from continuing operations deflated by the average total assets.

[a] **Accruals:** the change in non-cash current assets, less the change in current liabilities and depreciation expenses, deflated by the average total assets.

[c] **Cashflows:** the difference between earnings and accruals (both deflated by the average total assets).

[d] **Current Assets:** the change in non-cash current assets deflated by the average total assets.

[e] **Current Liabilities:** minus the change in current liabilities deflated by the average total assets.

[f] **Depreciations:** minus the depreciation expense deflated by the average total assets.

[g] **Q** stands for Quartile.

The Panel II shows the decomposition of accruals into its main components. We can notice that current assets and depreciation expenses increase as accruals increase, corroborating Sloan (1996)'s findings. However, current assets seem to be the ones that impact accruals the most since they assume, generally, the greater percentage on accruals. The current liabilities and current assets according to Sloan (1996) have a negative relation, results that our research also corroborates, being quite intuitive to say that growing firms usually experience high working capital requirements since this is the most inexpensive way for a firm to grow. Our data shows that firms with increasing accruals register both an increase in current assets and decrease in current liabilities, increasing this way working capital requirements. Depreciations increase linearly as we move down quartiles.

To be able to identify the outliers, we use the excel function TRIMMEAN. This function calculates the mean, excluding a particular percentage of data, half from the top and half from the bottom. In our particular case, we decide to exclude 20% of the total firm sample. The number of observations to exclude was achieved by simply multiplying the number of observations by the percentage, with the largest and smallest observations being the ones that were removed. If the TRIMMEAN and the mean were equal, we did not exclude any.

Testing H1

The first testable hypothesis, as it was stated in previous sections, expects to confirm the different persistence levels of earning's components. Following Sloan (1996)[11], we compute the following regressions:

$$\mathrm{EARN}_{t+1} = \alpha_0 + \alpha_1 \mathrm{EARN}_t + \mathrm{v}_{t+1} \quad (12)$$

$$\mathrm{EARN}_{t+1} = \gamma_0 + \gamma_1 \mathrm{ACC}_t + \gamma_2 \mathrm{CFO}_t + \mathrm{v}_{t+1} \quad (13)$$

By estimating equation (12), we were able to assess in which magnitude the earnings of the next year are a reflection of the present earnings. However, since we also wanted to infer about the different persistence levels of earnings, we computed equation (13), disintegrating earnings in their two components – accruals and cashflows.

Table 2 and 3 illustrate the impact of current earnings on future performance and the average level of earnings persistence of each component of accruals, respectively.

[11] Sloan (1996) build this hypothesis following the work of Freeman *et al*. (1982).

Table 2: Results of estimating an OLS Regression to examine the impact of Current Earnings[a] on Future Earnings performance

	Coefficients	St. Error	T-statistic	Significance
Panel I: Regressions using actual values – Portugal				
α_0	0,003	0,014	0,203	0,840
α_1	0,706	0,186	3,798	0,000
Model Significance:	0,000			
R^2	0,093			
Test α_1=0				
Marginal Siginificance	0,000			
Panel II: Regressions using actual values – Spain				
α_0	0,009	0,005	1,731	0,084
α_1	0,683	0,040	1,697	0,000
Model Significance:	0,000			
R^2	0,446			
Test α_1=0				
Marginal Siginificance	0,084			

[a] **Earnings**: Income of a company before interest expense and income taxes, It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized. This variable was deflated by the average total assets.

Overall results show that earnings are mean-reverting, with the average persistence parameter, α_1, being 0,706 and 0,683 for Portugal and Spain, respectively.

By testing if α_1=0, the results allow us to conclude that, in both countries, the earnings performance is transitory, for a significance level of 10%, meaning that current earnings explain future earnings performance.

Results presented in Table 3 show us that in both in Portugal and in Spain, $\gamma_1 < \gamma_2$, reflecting the lower persistence of accruals regarding cashflows. In Portugal, the accruals persistence coefficient, γ_1, is -0,127, against the cashflows persistence coefficient, γ_2, of

0,009. In Spain, γ_1 is 0,547 against γ_2 of 0,659, respectively. Moreover, when testing if the coefficients are equal ($\gamma_1 = \gamma_2$), we reject the null hypothesis for both markets, when a significance level of 10% is considered, confirming the different persistence levels associated to the different earnings components.

These findings are consistent with the ones already documented in the literature.

Table 3: Results of estimating an OLS Regression to examine the impact of Cashflows[a] and Accruals[b] on Future Earnings[c] performance

	Coefficients	St. Error	T-statistic	Significance
Panel I: Regressions using actual values - Portugal				
γ_0	0,040	0,010	4,052	0,000
γ_1	-0,127	0,104	-1,217	0,226
γ_2	0,009	0,022	0,407	0,684
Test if $\gamma_1 = \gamma_2$				
Marginal Significance	0,0983			
Panel II: Regressions using actual values - Spain				
γ_0	0,007	0,005	1,403	0,162
γ_1	0,547	0,046	1,202	0,000
γ_2	0,659	0,042	1,572	0,000
Test if $\gamma_1 = \gamma_2$				
Marginal Significance	0,001			

[a] **Cashflows:** difference between Earnings (defined as earnings of a company before interest expense and income taxes. It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized) and Accruals. Both variables were deflated by the average total assets.

[c] **Earnings:** income of a company before interest expense and income taxes. It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized. This variable was deflated by the average total assets.

[b] **Accruals:** difference between the change in non-cash assets, the current liabilities and the depreciation expenses. This variable was deflated by the average total assets.

Testing H2

The second testable hypothesis tries to detect if prices reflect the different features of earnings components. Both Sloan (1996) and Xie (2001) recur to the Mishkin (1983)'s test to test the rational expectations theory, so, following their guidelines we will test together the following regressions:

$$\mathrm{EARN}_{t+1} = \alpha_0 + \alpha_1 \mathrm{EARN}_t + \mathrm{v}_{t+1} \quad (14)$$

$$\text{ABN RET}_{t+1} = \beta(\mathrm{EARN}_{t+1} - \alpha_0 - \alpha_1{}^{*}\mathrm{EARN}_t) + \varepsilon_{t+1} \quad (15)$$

And

$$\mathrm{EARN}_{t+1} = \gamma_0 + \gamma_1 \mathrm{ACC}_t + \gamma_2 \mathrm{CFO}_t + \mathrm{v}_{t+1} \quad (16)$$

$$\text{ABN RET}_{t+1} = \beta(\mathrm{EARN}_{t+1} - \gamma_0 - \gamma_1{}^{*}\mathrm{ACC}_t - \gamma_2{}^{*}\mathrm{CFO}_t) + \varepsilon_{t+1} \quad (17)$$

By building this equation system, we can compare the results of the forecasting equations (14) and (16) with the ones obtained from the valuation equations (15) and (17), allowing us to trace the extent in which the market follows its fundamental principles.

The results from estimating equations (14) and (15) are illustrated in Table 4.

By testing $\alpha_1 = \alpha_1{}^{*}$, we seek to discover if stock prices anticipate this difference in earnings persistence performance. In other words, we are testing for efficiency of markets.

In Portugal, the earning's coefficient in the forecasting equation, α_1, is 0,727 and the earning's coefficient in the valuation equation, $\alpha_1{}^{*}$, is 1,614. In Spain, the earning's coefficient in the forecasting equation, α_1, is 0,681 and the earning's coefficient in the valuation equation, $\alpha_1{}^{*}$, is -1,806. However it seemed that the market was overpricing (underpricing) earnings in Portugal (Spain), there isn't statistical significance inference to reject H0, meaning that our results don´t classify the markets as being inefficient. This hypothesis was not also rejected by Sloan (1996) in his study.

The results from estimating equations (16) and (17) are illustrated in Table 5.

Table 4: Results derived from a Nonlinear Weighted Least Squares estimation to analyze the information content of Current Earnings[a] in Future Earnings and the respectively impact on Stock Price[b] performance

	Estimate	St. Error	T-statistic	Significance
Panel I: Regressions using actual values of financial statement variables – Portugal				
α_0	0,001	0,014	0,061	0,952
α_1	0,727	0,186	3,918	0,000
α_1^*	1,614	0,708	2,280	0,023
β[c]	1,168	0,514	2,273	0,024
Testing Market Efficiency		$\alpha_1 = \alpha_1^*$		
Marginal Significance		0,206		
Panel II: Regressions using actual values of financial statement variables – Spain				
α_0	0,009	0,005	1,665	0,096
α_1	0,681	0,044	1,543	0,000
α_1^*	-1,806	2,514	-0,718	0,473
β	0,664	0,650	1,021	0,308
Testing Market Efficiency		$\alpha_1 = \alpha_1^*$		
Marginal Significance		0,323		

[a] **Earnings:** income of a company before interest expense and income taxes. It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized. This variable was deflated by the average total assets.

[b] **Abnormal Returns:** computed as the difference between the raw buy-hold return and the return of a similar market portfolio. To calculate the returns we, per Sloan, use the adjusted price to include dividends and other liquidation distributions. The return cumulation period begins after 4 months in which the financial variables were calculated.

[c] **β**: a valuation multiplier.

Since we do not reject the null hypothesis of efficiency, the results shown in the table below that confirm $\gamma_1 < \gamma_2$ should allow us to conclude that $\gamma_1^* < \gamma_2^*$, meaning that the efficiency of markets should guarantee that stock prices reflect the different impact that

accruals and cashflows have on earnings. However, although we verify this premise to Spain, the same does not holds in Portugal[12].

Table 5: Results from estimating a Nonlinear Weighted Least Squares Regression to examine the impact of information contained in Cashflows and Accruals on Stock Price performance

	Estimate	St. Error	T-statistic	Significance
Panel I: Regressions using actual values of financial statement variables – Portugal				
γ_0	0,044	0,012	3,677	0,000
γ_1	-0,110	0,126	-0,874	0,383
γ_2	0,008	0,027	0,297	0,767
γ_1^*	2,384	2,556	0,932	0,352
γ_2^*	-0,067	0,256	-0,261	0,794
β	0,519	0,484	1,072	0,284
Testing Market Efficiency	$\gamma_1 = \gamma_1^*$ and $\gamma_2 = \gamma_2^*$			
Marginal Significance	0,616			
Panel II: Regressions using actual values of financial statement variables – Spain				
γ_0	0,007	0,005	1,423	0,155
γ_1	0,547	0,045	1,207	0,000
γ_2	0,658	0,042	1,581	0,000
γ_1^*	-1,282	0,946	-1,356	0,176
γ_2^*	-0,482	0,620	-0,778	0,437
β	1,302	0,613	2,124	0,034
Testing Market Efficiency	$\gamma_1 = \gamma_1^*$ and $\gamma_2 = \gamma_2^*$			
Likelihood ratio statistic	0,154			

The variables used to compute the model were defined/ calculated as follow:

- **Earnings:** income of a company before interest expense and income taxes. It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized. This variable was deflated by the average total assets.

- **Accruals:** difference between the change in non-cash assets, the current liabilities and the depreciation expenses. This variable was deflated by the average total assets.

[12] The results, once again, do not reject the null hypothesis of market efficiency. We believe that even when markets are efficient, there are moments in time that create arbitrage opportunities for the existence of the anomaly. However, is that efficiency that will correct those momentaneous opportunities and erode the abnormal returns.

- **Cashflows:** difference between Earnings and Accruals (both deflated by the average total assets).

- **Abnormal Returns:** computed as the difference between the raw buy-hold return and the return of a similar market portfolio. To calculate the returns we, per Sloan, use the adjusted price to include dividends and other liquidation distributions. The return cumulation period begins after 4 months in which the financial variables were calculated.

Similarly to Sloan's findings in US, Portuguese and Spanish investors do not seem to fixate on earnings since γ_1 and γ_2 are different from α_1. In fact, the Portuguese market attributes a higher persistence to accruals than cashflows, contrary to Spain, with investors treating accruals as a more persistent component of earnings that in fact it is. This means that, in Portugal, the market do not appear to anticipate the lower (higher) persistence in earnings performance that is associated to accruals (cashflows). Consequently, these findings allow us to speculate about the existence of the anomaly in Portugal, prediction that we will be able to confirm by testing H3.

Testing H3

To test our third hypothesis, we rank firms according to their accrual magnitude to be able to build equally weighted portfolios (quartiles). By computing the annual buy-hold return for each of the three subsequent years we were able to assess if a strategy that combines a long position in the lowest accruals portfolio with a short position in the highest accruals portfolio yields abnormal returns. The results are presented in Table 6.

According to Schwert (2003), *"anomalies are empirical results that seem to be inconsistent with maintained theories of asset pricing behavior"*, (Schwert, 2003, p. 939). On one hand, researchers look at this phenomenon as a way to challenge literature and principles already defended. On the other, investors see anomalies as an opportunity to profit from a market flaw. So, analyzing the investors side and following Sloan, we tested if the strategy described before yields, indeed, abnormal returns.

Panel I evidence decreasing marginal returns in Portugal, with this strategy yielding abnormal returns only in the first year of the strategy (20,4%, -1,1%% and -10,2%). Contrary, in Spain, we observe negative returns in the three periods in study, with these returns being less negative as the years pass by (-26,1%, -12,7% and -1,9%). Therefore, the

negative relation between accruals and stock returns – the accruals anomaly – is only present in Portugal (and not in Spain)[13], as results in H2 suggested.

Table 6: Abnormal Size-Adjusted Returns[a] of Equal Weighted Accruals[b] Portfolios Time Series

	Portugal			Spain		
	t+1	**t+2**	**t+3**	**t+1**	**t+2**	**t+3**
Panel I: Abnormal returns covering all period from 1996 to 2013						
Q_1	0,040	0,012	-0,024	-0,032	-0,139	-0,031
Q_4	-0,163	0,023	0,078	0,230	-0,012	-0,013
Hedge[c]	0,204	-0,011	-0,102	-0,261	-0,127	-0,019
Panel II : Abnormal returns from 2000 (inclusive) to 2006						
Q_1	0,028	-0,038	-0,162	-0,092	-0,103	-0,196
Q_4	-0,090	-0,168	0,150	0,268	-0,046	-0,027
Hedge	0,118	0,130	-0,313	-0,360	-0,057	-0,169
Panel III: Abnormal returns from 2007 (inclusive) to 2013						
Q_1	0,092	-0,177	-0,107	-0,003	-0,162	0,113
Q_4	-0,005	0,059	0,080	-0,033	-0,032	0,151
Hedge	0,096	-0,236	-0,187	0,030	-0,131	-0,038

[a] **Size-Adjusted Returns:** the returns were computed as the difference between the raw buy-hold return of the portfolio and the raw buy-hold return of the correspondent size-matched portfolio. The size matched portfolio was created by ranking firms by its market value at the beginning of the year and choosing the observation immediately before as a proxy for the security held in accruals portfolio.

[b] **Accruals:** difference between the change in non-cash assets, the current liabilities and the depreciation expenses. Accruals were deflated by the Average Total Assets.

[c] **Hedge:** the hedge strategy consists in adopt a long position in the lowest accruals portfolio with a short position in the highest accruals portfolio.

[13] This conclusion takes in consideration all sample.

To investigate if the final crisis of 2007 was somehow responsible to spread or mitigate the anomaly, we divide de sample in two periods – before and after/during the financial crisis, considering the returns of the past 12 years. Panel II and Panel III report those results.

Prior to the 2007 financial crisis, this strategy, in Portugal, yielded positive returns in the t+1 and t+2 (11,8%, 13,0% and -31,3%), with the return of first year being relative smaller and the return of second year being considerably higher than the ones we verified before (when we analyze all sample). In Spain, we observe that the returns for this period are, similarly to before, negative for all the years in consideration (-36,0%, -5,7% and -16,9%), with this particular time period explaining most of the results obtained in the Panel I.

Post 2007, the returns achieved in Portugal decrease considerably, being positive only in the first year (9,6%, -23,6%, -18,7%). In Spain, surprisingly, we notice that this strategy yields positive returns in the first year of the strategy (3,01%) raising us some questions. To be able to understand if the positive results mean that the anomaly is appearing in recent years or not we divide this sample period in two: from 2007 to 2009 and from 2010 to 2013. Non documented results show us that the strategy yielded positive returns from 2007 to 2009, in t+1 and t+2, registering only losses in the t+3 (8,3%, 1,6% and -2,8%). From 2010 to 2013, the returns are negative in the three years (-0,9%, -27,7% and -5,1%), meaning that there's no evidence of the accrual anomaly in Spain in recent years.

The results allow us to conclude that in countries, like Portugal, where the anomaly is present, the 2007 financial crisis had a great impact in the magnitude of the returns earned by investors. In countries like Spain, where we did not find evidence of the anomaly[14], the strategy cannot be applied and yield abnormal returns.

We believe that the existence of the accruals anomaly is connected to the market attributing a higher persistence to accruals than cashflows. Recall that H2 confirmed these results for Portugal contrary to Spain. However, it is important to be aware that the (non) existence of the anomaly can also be a reflection of all of the problems that calculating the returns of this particular strategy bear. Kothari (2001) highlights the extreme skewness of long-term abnormal returns, the survival biases and inference problems arising from cross-

[14] Since we only find positive abnormal returns in the period from 2007 to 2009, we believe that the anomaly is not present in this market. In fact, these positive returns can be connected to other factors extra-anomaly.

sectional dependence as the main difficulties faced by anyone trying to compute accruals' anomaly abnormal returns.

Regarding the anomaly as a consequence of the legal system of the country, our results point that the law of the country has weaker explication power in the appearance of the anomaly since both countries are code law countries and have both French origin. Agreeing is LaFond (2005), stating that the anomaly in neither connected to the legal framework the country is inserted to, neither with investor protection or the dependence on accruals accounting.

A recent study of Goncharov *et al.* (2013) concluded that Spanish accruals are not associated with greater insider returns or income predictability, since the country hasn't a flexible accounting system to record accruals. Moreover, Ball *et al.* (2000, 2003) argued that, in Spain, information flows easily between small stakeholders. Therefore, it not surprising that we did not found the anomaly in this market.

Testing H4

To test if the market prices cashflows and accruals components correctly regarding their one-year-ahead firm earnings, we follow Xie (2001)'s guidelines and we estimate the following regressions using an iterative nonlinear weighted least squares estimation procedure:

$$\mathrm{EARN}_{t+1} = \gamma_0 + \gamma_1 \mathrm{CFO}_t + \gamma_2 \mathrm{NAC}_t + \gamma_3 \mathrm{ABNAC}_t + \mathrm{v}_{t+1} \quad (18)$$

$$\mathrm{ABN\ RET}_{t+1} = \alpha + \beta(\mathrm{EARN}_{t+1} - \gamma_o - \gamma_1{}^{*}\mathrm{CFO}_t - \gamma_2{}^{*}\mathrm{NAC}_t - \gamma_3{}^{*}\mathrm{ABNAC}_t) + \varepsilon_{t+1} \quad (19)$$

where,

EARN_{t+1}, is the earnings in the period *t+1*;

CFO_t, is the cashflows from operations in period *t*;

NAC_t, is the normal accrual component in period *t*;

$ABNAC_t$, is the abnormal accrual component in period *t*,

$\mathrm{ABN\ RET}_{t+1}$, is the sized-adjusted return in period *t+1*.

Please note that normal accruals are obtained by the Modified Jones Model, being the abnormal accrual the residual part of total accruals.

Similarly to H2, we estimate equation (18) to observe the theoretical coefficients of cashflows and accruals components – normal and abnormal accruals – and we estimate equation (19) to understand the real pricing of those same variables by the market. Several tests were conducted and the results are presented in Table 7.

By imposing $\gamma_i{}^* = \gamma_i$, we want to assess if the market rationally prices the variables under analysis (cashflows, normal accruals and abnormal accruals).

In Portugal, the market seems to underprice cashflows (γ_1=0,002; $\gamma_1{}^*$=-0,163) and overprice both components of accruals – normal accruals (γ_2=-0,880; $\gamma_2{}^*$=10,934) and abnormal accruals (γ_3=-0,077; $\gamma_3{}^*$= 4,867) – which is consistent with previous findings. To test whether these underprice of cashflows and overpricing of accruals components is statistically significant, we test $\gamma_i = \gamma_i{}^*$ (i=1, 2, 3). The results, does not allow us to reject H0 neither for cashflows, neither for normal accruals and abnormal accruals. However, when we test the overprice of both components of accruals together, there is statistical significance inference, for a level of 10%, to reject H0, meaning that the market does not overprice, in the same magnitude, these two components of accruals. Comparing the coefficients attributable by the market, with the theoretical values provided by the forecast equation, we can affirm that the overprice is more severe for abnormal accruals, which is consistent with earnings manipulation of earnings by managers, contributing this way to the existence of the accruals anomaly in Portugal.

In Spain, the market seems to underprice both cashflows (γ_1 = 0,648; $\gamma_1{}^*$= -0,528) and accruals components – normal accruals (γ_2= 0,570; $\gamma_2{}^*$=-1,554) and abnormal accruals (γ_3= 0,538; $\gamma_3{}^*$= -1,290). Following the same procedure, we test $\gamma_i = \gamma_i{}^*$ (i=1, 2, 3) to see if the underprice is statistically significant. The results show that the underpricing of cashflows and abnormal accruals is statistically significant, contrary to the underpricing of normal accruals, when a significance level of 10% is assumed. This suggest that managers does not seem to manipulate accruals through abnormal accruals to present better earnings, once again evidencing why we did not find the anomaly in Spain.

Table 7: Results derived from an Nonlinear Weighted Least Squares Estimation of Cashflows', Normal Accruals's and Abnormal Accruals's Market Pricing respecting to their one-year-ahead Earnings

	Estimate	Std Error	T-statistic	Significance
Panel I: Regressions using actual values of financial statement variables - Portugal				
γ_0	0,015	0,015	0,995	0,321
γ_1	0,002	0,022	0,076	0,940
γ_2	-0,880	0,351	-2,505	0,013
γ_3	-0,077	0,104	-0,743	0,458
γ_1^*	-0,163	0,396	-0,411	0,681
γ_2^*	10,934	15,956	0,685	0,494
γ_3^*	4,867	6,480	0,751	0,453
α	-0,251	0,088	-2,850	0,005
β	0,382	0,485	0,788	0,432
Testing		Chi-Square	Significance	
$\gamma_1 = \gamma_1^*$		0,172	0,678	
$\gamma_2 = \gamma_2^*$		0,548	0,459	
$\gamma_3 = \gamma_3^*$		0,582	0,446	
$\gamma_2^*=\gamma_3^*$ and $\gamma_2=\gamma_3$		5,360	0,069	
Panel II: Regressions using actual values of financial statement variables - Spain				
γ_0	0,009	0,008	1,184	0,237
γ_1	0,648	0,043	1,490	0,000
γ_2	0,570	0,146	3,908	0,000
γ_3	0,538	0,047	1,141	0,000
γ_1^*	-0,528	0,671	-0,787	0,431
γ_2^*	-1,554	1,634	-0,951	0,342
γ_3^*	-1,290	0,949	-1,359	0,174
α	0,007	0,090	0,080	0,936
β	1,320	0,614	2,150	0,032
Testing:		Chi-Square	Significance	
$\gamma_1 = \gamma_1^*$		3,061	0,080	
$\gamma_2 = \gamma_2^*$		1,676	0,196	
$\gamma_3 = \gamma_3^*$		3,703	0,054	
$\gamma_2^*=\gamma_3^*$ and $\gamma_2=\gamma_3$		0,083	0,959	

The variables used to compute the model were defined/ calculated as follow:

- Earnings: income of a company before interest expense and income taxes. It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized. This variable was deflated by the average total assets.

- Cashflows: difference between Earnings and Accruals (both deflated by the average total assets).

- NAC (normal accruals): accruals predicted by the Modified Jones Model, estimated for firm-year observations.

- ABNAC (abnormal accruals): residual value of accruals estimated by the Modified Jones Model for firm-year observations.

- Abnormal Returns: computed as the difference between the raw buy-hold return and the return of a similar market portfolio. To calculate the returns we, per Sloan, use the adjusted price to include dividends and other liquidation distributions. The return cumulation period begins after 4 months in which the financial variables were calculated.

When testing the underpricing of both accruals components, the results do not allow us to reject the null hypothesis of the underpricing in the same extent.

6. Conclusions

When trying to assess the financial strength of a company, investors, auditors and managers often recur to earnings as a key performance indicator. Therefore, it is really important that agents are aware of earnings' different contributions and levels of persistence.

The flexibility that accruals bring to financial statements is vital to record some cash inflows that a company is expecting to receive in a near future or even to record some depreciation expenses that were settled in some prior reporting period. However, since they are associated to high levels of subjectivity, it might create arbitrage opportunities either from managers, or from investors. If managers are focused in their empire building instead of doing what is best for shareholders, they will camouflage bad earnings with optimistic forecast through accruals or even worsen companies' earnings to be able to benefit from tax shields. Consequently, prices will not reflect its fundamental value since earnings are biased, given investors an opportunity to profit from this market flaw.

This study explores the contribution of these two major groups – managers and investors – to the anomaly both in Portugal and Spain.

Our research shows, both in Portugal and in Spain, a lower persistence of accruals regarding cashflows. However, the Portuguese market doesn't seem to be aware of this earning's feature (contrary to the Spanish market) meaning that it attributes a higher persistence to accruals than to cashflows contributing to the accruals anomaly appearance.

Moreover, our study showed that although the market appears to be overpricing (underpricing) earnings in Portugal (Spain), we could not reject the null hypothesis of market efficiency, leading us to believe that this disequilibrium might be temporary.

When trying to exploit the anomaly, our results revealed decreasing marginal returns in Portugal, with this strategy yielding abnormal returns only in the first year of the strategy (20,4%, -1,1%% and -10,2%) and with the financial crisis impacting negatively the magnitude of returns yielded. Contrary, in Spain, we observe negative returns in the three periods in study, with these returns being less negative as the years pass by (-26,1%, -12,7% and -1,9%).

Regarding the contribution of managers to the anomaly, we found evidence of earnings manipulation in Portugal but not in Spain, results that also support the existence of the anomaly in one market over the other.

Overall, we believe that finding the anomaly is a consequence of the different persistence levels of earnings components, as documented by Sloan (1996). Besides, we consider that the way we define accruals, the way we calculate abnormal returns and the way we adjust for size has also a great impact in the results that we achieved.

These results raise several topics for further research. As a consequence of new and challenging asset pricing theories and new ways of looking at market behavior, new research methodologies were developed.

We advise that further researchers change some of our methodological aspects to be able to understand if the conclusions and the main insights remain the same. Since our study follows Sloan (1996)'s guidelines, when calculating abnormal returns although we control for divestitudes, we did not control for mergers. However, according to Zach (2003) mergers and acquisitions can affect earnings since the balance sheet of end-of-the-year of a merged firm is not equal, neither comparable, to the same balance sheet in the beginning-of-the-year since the increase in several balance sheet variables transmit a false increase in accruals, creating some bias. Therefore, we should exclude from our sample companies in this situation. The same should be applied to IPOs and SEOs mainly because companies that will enter in those financial operations experience an increase in working capital registering, therefore, higher accruals.

Moreover, since the way we calculate returns affects the results that we achieve, we recommend researchers to recur to several methods to deal with this problem (namely, cumulative returns (CAR_t) vs. buy-hold returns ($BHAR_t$)) to have a clearer perspective of the phenomenon under study. Mitchell and Stafford (2000), as well as Fama (1998), prefer CAR's over BHAR's.

Lastly, we also advise further investigators, when controlling outliers, to substitute the "TRIMMEAN" by the Least Trimmed Squares (LTS), a procedure used by Knez and Ready (1997) and replicated by Kraft (2006). They defend that this procedure excludes the observations that most of the times are not recognized as outliers by the majority of investors.

Given the amount of research on the accrual anomaly and the complexity associated to some improvements, it was not possible for us to adjust for all the situations described before.

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8. Annexes

A. Variables

The variables used in our study are described in the table below.

Variable	Code	Datastream Description
Cash	(WC02003)	Represents money available for use in the normal operations of the company. It is the most liquid of all of the company's assets.
Current Assets (Total)	(WC02201)	Represents cash and other assets that are reasonably expected to be realized in cash, sold or consumed within one year or one operating cycle. Generally, it is the sum of cash and equivalents, receivables, inventories, prepaid expenses and other current assets. For non-U.S. corporations, long term receivables are excluded from current assets even though included in net receivables.
Current Liabilities (Total)	(WC03101)	Represent debt or other obligations that the company expects to satisfy within one year.
Earnings Before Interest and Taxes	(WC18191)	Represent the earnings of a company before interest expense and income taxes. It is calculated by taking the pre-tax income and adding back interest expense on debt and subtracting interest capitalized.
Long Term Debt	(WC03251)	Represents all interest bearing financial obligations, excluding amounts due within one year. It is shown net of premium or discount.
Income Taxes Payable	(WC03063)	Represents an accrued tax liability which is due within the normal operating cycle of the company.
Market Value For Company	(MVC)	MVC is the consolidated market value of a company displayed in millions of units of local currency. MVC is the same value as MV for companies with a single listed equity security. However, for companies with more than one listed or unlisted equity security MVC represents: EQUITY A(MV) + EQUITY B(MV) + EQUITY C(MV) etc .
Net Receivables	(WC02051)	Represent the amounts due to the company resulting from the sale of goods and services on credit to customers (after applicable reserves). These assets should reasonably be expected to be collected within a year or within the normal operating cycle of a business.
Price	(P)	The ‘current’ price on Datastream’s equity programs is the latest price available to us from the appropriate market in primary units of currency (except in the case of the UK where price is given in pence). It is the previous day’s closing price from the default exchange except

		where more recent or real-time prices are available. The 'current' prices taken at the close of market are stored each day. These stored prices are adjusted for subsequent capital actions, and this adjusted figure then becomes the default price offered on all Research programs. The actual historical prices can be accessed using the unadjusted price datatype (UP). Prices are generally based on 'last trade' or an official price fixing. For stocks which are listed on more than one exchange within a country, default prices are taken from the primary exchange of that country (note that this is not necessarily the 'home' exchange of the stock). For Japan and Germany , prices from the secondary markets can be obtained by qualifying the price datatype with an exchange code (see below for details).
Property, Plant and Equipment	(WC02301)	represents tangible assets with an expected useful life of over one year which are expected to be used to produce goods for sale or for distribution of services.
Revenues	(WC01001)	Represent gross sales and other operating revenue less discounts, returns and allowances.
Total Assets	(WC02999)	Represent the sum of total current assets, long term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets.
Total Debt	(WC03255)	Represents all interest bearing and capitalized lease obligations. It is the sum of long and short term debt.

Note: WC stands for Worldscope.