

**OPERATING CASH FLOWS PRESENTATION: THE
USEFULNESS OF THE DIRECT METHOD**

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*“O que dá o verdadeiro sentido ao encontro é a busca,
e é preciso andar muito para se alcançar o que está perto”*

José Saramago – Portuguese Writer

Abstract

The joint project from International Accounting Standards Board (IASB) and Financial Accounting Standards Board (FASB), *Financial Statement Presentation* (FSP), is currently proposing a requirement that will mandate cash flows statements to be prepared under the direct method. This proposal seems to oppose standard setters against accounting practice as most firms choose to report their operating cash flows disclosures by the indirect method. Nonetheless, IASB and FASB have continuously defended the direct method as a better tool to assess a company's operating performance. In this study, I challenge this assumption by comparing the predictive ability of the information provided by both methods, using a dataset of firms from 4 different countries. My results support IASB and FASB positions, as I find the direct method to offer better predictions of future operating cash flows. I also find evidence that presentation format has no significant impact on markets, suggesting that financial agents do not acknowledge the usefulness of the direct method, or do not find it attractive in a cost-benefit analysis.

Keywords: Cash Flow Disclosures, Cash Flow Statements Presentation, Direct Method

Jel Classification: M40; M41

Resumo

O projeto conjunto do International Accounting Standards Board (IASB) e do Financial Accounting Standards Board (FASB), *Financial Statement Presentation* (FSP), contém atualmente uma proposta que visa tornar obrigatória a preparação da demonstração de fluxos de caixa segundo o método direto. Esta proposta distancia os decisores políticos das práticas contabilísticas das empresas, já que a maioria das empresas opta pelo método indireto quando reportam informação sobre fluxos de caixa operacionais. Ainda assim, o IASB e o FASB têm continuamente defendido o método direto como uma melhor ferramenta para analisar o desempenho operacional das empresas. Neste estudo, eu questiono esta noção ao comparar a capacidade explicativa da informação oferecida pelos dois métodos, utilizando uma amostra composta por empresas de 4 países diferentes. Consistentes com as posições do IASB e FASB, os resultados mostram que o método direto oferece melhores previsões dos fluxos de caixa futuros das empresas. O meu estudo mostra também que a forma de apresentação dos fluxos de caixa não têm impacto significativo nos mercados, sugerindo que os agentes financeiros não reconhecem a utilidade do método direto, ou que não a consideram vantajosa numa análise custo-benefício.

Palavras-Chave: Demonstração de fluxos de caixa, Apresentação dos fluxos de caixa operacionais, método direto

Classificação Jel: M40; M41

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1. Introduction

The International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) began, in January 2005, the *Financial Statement Presentation* (FSP) joint project poised to develop and improve the quality of financial statements¹. The FSP project objective is to set a more cohesive and understandable standard for the organization and presentation of financial statements and is part of the Boards' combined effort on changing the way firms report financial information. These changes are a natural response to the current standards allowing multiple forms of presentation that imply difficulties on comparing financial information. In addition, the inconsistent classification of transactions and events recognized across financial statements decreases a users' ability to relate information in one financial statement to another.

In April 2004, when the Boards' first decided to jointly address financial statements presentation, was also decided to approach the FSP in two phases: phase A regarding the complete set of financial statements and reporting periods, and phase B concerning fundamental issues in presentation, including a proposal that requires entities to present all cash inflows and outflows in a DM statement of cash flows. Mandatory statements of cash flows disclosures under the DM are aligned with the Boards' position that this presentation format is more intuitive and comprehensible and improves ones' ability to predict future cash flows, besides increasing users' understanding of both firms' cash conversion cycle and the relation between revenues and expenses presented in other financial statements (FASB, 2010). However, few policy makers, including the Boards, currently require firms to present their operating cash flows under the DM format. China, for instance, do so, and initially, also did Portugal, Australia and New Zealand, but have since aligned their standards with the IFRS to allow the indirect method (IM) while recommending the DM.

The cautious approach of standard setters around the world to change cash flow presentation also takes in account the apparently low support of firms for the DM when given a choice. According to the American Institute of Certified Public Accountants (AICPA), in a survey published in 2005, around 99% of the United States of America

¹ From now on we refer IASB and FASB as the boards.

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(U.S.A) public firms inquired disclose their cash flow statements under the IM. The low adherence to the DM is also reported in a non-U.S.A. setting by Wallace, Choudhury and Adhikari (1999). Miller and Bahnson (2002) point the fact that firms who choose to report their cash flow statements under the DM are also required to present an IM reconciliation in the notes as a probable cause for an IM bias. Preparers that took part in the Boards' 2008 discussion paper *Preliminary views on Financial Statement Presentation* opposed the changes on presenting operating cash flows. From their perspective, the one off preparation costs, associated with a major change in reporting practices, and the (increased) ongoing costs that the DM would require outweigh the benefits provided by the standards proposed.

Academic research seems to nonetheless support DM disclosures. Hales and Orpurt (2013) state that "*literature has consistently found that DM components provide information useful for predicting future CFO and earnings*" and "*improve the informativeness of stock prices*". The aim of this study is therefore to question the usefulness of the DM, contributing with empiric evidence and providing information on the value of a DM cash flow presentation. More specifically, we try to address the following questions: (a) does the DM presentation disclose information that is useful in predicting future operating cash flows; and (b) do financial statement users utilize the information disclosed by the DM presentation?

Our research design uses an eight year period sample of public listed firms of four different countries: Portugal (Euronext Lisbon), Greece (Athens Exchange), Ireland (Dublin Exchange) and New Zealand (New Zealand Exchange). Even though all of these countries currently follow the IASB standards, their different and specific past regulatory requirements in terms of cash flow presentation allowed a study that comprises a large number of both firms which use the DM method and firms which do not do so. By avoiding the U.S.A and Australia settings, I also contribute to existing literature with research on a less documented environment.

Overall results support the Boards' position. I find the direct method to offer better predictions of future operating cash flows indicating the DM to be useful as a firm's operating performance measuring tool. I find that the information that DM presentations provide enhances the explanatory power of operating cash flows predicting models. In addition, results show that DM information is not expressed in the financial markets,

suggesting that investors do not find presentation format of cash flows disclosures to be economically relevant. These results are consistent with a wide spectrum of previous literature, as they showcase the superior explanatory power of DM information in forecasting cash flows when compared to the IM format. However, results also fail to find evidence that financial statements users incorporate this information, suggesting caution in assessing if the Boards' proposal should go forward without further research.

This thesis is organized in 5 chapters. In chapter 2 I cover the most relevant works and investigations in this area and how the scientific discussion on reporting operating cash flows has evolved. In chapter 3 the research hypotheses and the development of the econometrical models are explained, plus I present the definition of the sample dataset. The results of our investigation are presented in chapter 4. Lastly, in chapter 5 I present the main findings and correlations of our results.

2. Literature Review

2.1 Accounting Background

IASB (former IASC) cash flows reporting standards evolved from IAS 7 *Statement of Changes in Financial Position*, issued in 1977, that required firms to prepare a statement disclosing their funds movements. The purpose of this “funds statement” was to report and explain the differences between the firms' opening and closing balance sheets, classifying these changes as either a source of funds or an application of funds. However, following widespread support that cash flows statements were more decision useful for financial statements users, IASB felt the need to issue IAS 7 *Cash Flows Statements* in 1992, proposing the replacement of the “funds statement” with a cash flows statement, focusing the changes in cash². The new cash flows reporting standard was also supported by FASB Statement of Financial Accounting Standards No. 95 (SFAS 95) *Statement of Cash Flows*, passed on November of 1987. The solution found by the IASB to the debate on presentation format of the new statement of cash flows was the same FASB used in SFAS 95: recommending the DM but allowing the IM approach in presenting operating cash flows.

² On September 6, 2007, the International Accounting Standards Board (IASB) changed the title of IAS 7 from Cash Flow Statements to Statement of Cash Flows as a consequential amendment resulting from revisions to IAS 1, Presentation of Financial Statements.

SFAS 95 superseded the Accounting Principles Board Opinion No. 19 (APB 19), *Reporting Changes in Financial Position*, which required firms to disclose a Statement of Changes in Financial Position (SCFP). APB 19 stated that the disclosures of funds should be presented under the IM format and that the DM was “*an acceptable alternative procedure*”. Drtina and Largay (1985) and Seed (1984), illustrate a bias towards the IM in firms’ accounting practices in this period of time, the latter showing 94% of the surveyed firms opting for the IM.

However, when developing the SFAS 95, the IM model as an established norm was challenged. Heath (1987) reports that most of FASB Cash Flow Task Force members had a preference for the DM format. In addition to this, Wallace, Choudhury and Pendlebury (1997) state that FASB received 322 comment letters targeting the DM versus IM debate, from various preparer and user groups, and that 53% favored the DM format against 27% favoring the IM. In the end, FASB decided to encourage the DM while allowing cash flow reporting under the IM. Hales and Orpurt (2013) point a couple of reasons for this withdrawal. First, the perception at that time that aggregated operating cash flows were not particularly useful in economic predictions and therefore, its presentation format was somewhat irrelevant. Second, the FASB believed that information provided under a DM presentation could be estimated without material errors. A more dense academic research at this period on cash flow presentation might have refuted these notions.

2.2 Forecasting and Predictive Ability

SFAS 95 states that the statement of cash flows should “*should help investors, creditors, and others to assess the enterprise's ability to generate positive future net cash flows*” and so, academic research has focused on exploring and comparing the usefulness of the DM information in forecasting models of operating cash flows and earnings.

The paper of Krishnan and Largay (2000) is often referred as one of the earliest studies on cash flow’s presentation and its impact on predicting future cash flows. Using a sample of U.S.A. public companies, the authors run a one year operating cash flows forecasting model using both information presented under the IM and estimated DM components and find that the model has smaller mean absolute percentage error when DM information is used. They also find that information provided by the DM can be only

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estimated at a cost of some estimation error and that information regarding past cash flows offers better forecasts than earnings and accruals information.

These results are corroborated by Arthur and Chuang (2006), which do not estimate the DM information. They test a sample of Australian firms with an operating cash flows forecasting model: first with aggregated cash flow information and then with DM cash flow components information. They find that when cash flow information is disaggregated in DM components, the model predictive ability is enhanced. Additionally, they also find that individual components of operating cash flows that relate most closely to operating cash flows (such as cash receipts from customers and cash payments to suppliers) have greater explanatory power when compared to other components (such as dividends received and interest paid and received).

A similar study was conducted by Cheng and Hollie (2008), using DM components estimated from information disclosed in the firms' statements of cash flows (prepared under the IM). Their results, from a sample of 29,090 U.S.A. firm-year observations, show that the information of DM components is both incrementally useful and improves the predicting ability of an operating cash flow forecasting model beyond the aggregated cash flow information, even when these components are only estimated³.

Orpurt and Zang (2009), using a different methodology, reach consistent conclusions. They collect a sample of 119 U.S.A. firms (604 firm-year observations) that disclosed their statements of cash flows under the DM over the period 1989-2002. Then, they create a larger sample of 39,355 firm-year observations which they use to compare the usefulness of DM components estimated using IM statement of cash flows and balance sheet information, against reported DM information. Their results offer evidence on the incremental usefulness of the DM information, by finding that the estimation errors (or articulation errors) that occur when DM components are estimated enhance the prediction models of future operating cash flows. This study also find that the usefulness of the reported DM information (as opposed to an estimated approach) extend to forecasting future earnings and not only to future cash flows predictions.

³ However, Hales and Orpurt (2013) offer cautious concerning these results in two particular points. First they label the increase in the model's R^2 of 0,3849 to 0,3983 when included the estimated information of "unlikely to be economically meaningful", and second, that even though the "in-sample" test supports the authors findings, the "out-of-sample" test fails to hold the incremental usefulness of estimated DM component information.

Arthur, Cheng and Czernkowski (2010) also focus on the forecasting of earnings. They run one year ahead annual earnings forecasting models using components of the IM information together with either the aggregated amount of operating cash flows or the disaggregated DM operating cash flows components. Their results support Orpurt and Zang (2009) findings, as the model using DM information nets higher explanatory power and lower prediction errors.

We extend our scope to include Farshadfar and Monem (2013a) and Farshadfar and Monem (2013b) which use Australian firms as a sample to assess the impact of DM components on future operating cash flows forecasting models. Farshadfar and Monem (2013a) find that disaggregating both operating cash flows and accruals into its components significantly improves the predictive ability of earnings for forecasting future cash flows. Farshadfar and Monem (2013b) observe that a cash flow forecasting model has an enhanced performance when aggregated operating cash flow information is replaced with DM components. Even though these studies do not directly test the incremental usefulness of the DM operating cash flows information against the IM, they offer evidence on the value of DM information.

Lastly, it's important to mention two particular studies that have find different conclusions. Farshadfar (2012), disaggregates a cash flows forecasting model to DM and IM components and find that the IM model outperforms the model using DM information. Similarly, Ding, Jeanjean and Stolowy (2006), using a sample of more than 1,000 Chinese firms, find that a cash flow forecasting model using DM information has lower predictive ability than a model using IM information.

2.3 Impact on stock prices

Other studies focused on the effect that presentation format of cash flows has on market prices to assess whether or not investors utilize DM information. Reasoning being that if the DM provides information that is relevant to the investors, then the behavior of stock returns should reflect it.

Clinch, Sidhu and Sin (2002) is one of the first works on the response of stock returns. Using a sample of Australian firms, they use an earnings response coefficient research design to find evidence on the incremental usefulness of disclosed DM components. Although the authors cannot consistently conclude DM components to offer an enhanced predictive ability for contemporaneous market returns, they find a positive

association between the degree to which investors use disaggregated DM information and the degree to which such information is useful to predict future cash flows.

On the other hand, Orpurt and Zang (2009), do find evidence that DM disclosures contribute to more efficient or informative stock prices. Their research compares information reflected in stock returns of firms disclosing DM components against firms providing only an IM statement of cash flows. Using a forecasting earnings-returns coefficient model they get improved stock price informativeness with DM disclosures, suggesting that investors incorporate this information in their investment decisions. Orpurt and Zang (2009) also control these results, testing fundamental differences between firms that opt for DM disclosures and firms who do not do so and conclude that indeed, it was presentation format, and not self-selection questions, the main factor on their findings.

Clacher, Ricquebourg and Hodgson (2013) reach conclusions that are consistent with those reached by Orpurt and Zang (2009). With an Australian sample of industrial and mining firms, for a number of years which cover a period before and after the adoption of the IFRS, they find DM statements of cash flows to be value relevant to investors. Additionally, they find that for the industrial firms subsample, the DM cash flow's value relevance significantly increases in the period after the adoption of the IFRS. To assess value relevance, the authors use a price level model that relate information provided in DM statements of cash flows with stock prices. They conclude that the DM disclosures are a "value relevant source of information in an IFRS environment".

2.4 Other relevant academic studies

Another body of literature focused a more direct analysis to both users and preparers of financial statements with the objective to find if presentation format of operating cash flows is a real concern to the accounting practice world.

Jones and Widjaja (1998) survey of 159 Australian loan officers and financial analysts did just that. The responses show that 70% of the financial statements users have preference for the DM format while just 5% favorite the IM format. This study contained several questions directly comparing both cash flows presentation methods in understandability and usefulness and overall results indicate support the DM.

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Goyal (2004), also in an Australian setting, surveys managers, shareholders, employees, suppliers, and customers as users of financial statements. The survey sample of this study is relatively small (47 responses) but the respondents averaged 8 years of experience with financial statements. His overall results demonstrate a preference for the DM approach although responses are not homogeneous across user groups. Responses from managers and shareholders, for instance, indicate the DM as superior to the IM in understanding cash flow data and providing information for decision-making. For the employees, suppliers and customers groups, they find only a small majority consider the DM to be relevant and reliable.

These results somehow validate those of Klammer and Reed (1990). They create an experiment to research and compare the real advantages (as opposed to the beliefs of the financial agents) of the DM presentation on operating cash flows. The experience consisted on asking 151 bank analysts and loan officers, working in the 10 largest U.S.A. financial institutions to make loan decisions and estimate amounts of financial data using either a DM or IM cash flow statement. The results were that participants using a set of DM information were more accurate at estimating gross cash flows and operating accruals than participants using information presented under the IM. Participants who were provided with a DM statement of cash flows also showed less variability in the size of the loans to be granted.

Lastly, Jones, Romano and Smyrniotis (1995) asked preparers of the financial statements of 210 listed companies in Australia about their attitudes to cash flow information. Their results show a strong support for the AASB 1026, *Statement of Cash Flows*, which required firms to provide a DM statement of cash flows, supplemented with an IM presentation. The majority of the respondents admitted the DM to give users a better understanding and analysis of cash flow information and company solvency. The authors also note a large number of firms preferring operating cash flows to operating profits as the superior measure on business performance.

2.5 Summary

We can define academic research on cash flows presentation to consistently find evidence on supporting the DM approach. Hales and Orpurt (2013) conclude that literature shows that “DM component information is incremental to that contained in an

IM Statement of Cash Flows and other financial statement information”⁴. They also find that “investors and creditors respond to DM presentations and that a DM Statement of Cash Flows can facilitate lending decisions, and improve the informativeness of stock prices”. In sum, past literature seems to converge results on three particular points. First, the majority of studies find cash flows presentations under the DM incrementally useful beyond other financial statements, including an IM statement of cash flows, for predicting firms’ future operating performance (measured either by future operating cash flows or earnings). Findings also show that estimating the information provided by the DM often leads to material estimation errors even though we did not cover exhaustively this subject⁵. Second, we have a number of studies documenting the impact that the presentation format of operating cash flows has on stock prices, suggesting that financial agents effectively use DM information when it’s available. Finally, we also encounter several experimental research that show analysts accomplish superior forecasts when using a DM statement of cash flows.

3. Research Design

3.1 Test Hypothesis

As stated earlier, this study’s purpose is to offer some empiric evidence onto the discussion around cash flows presentation and the usefulness of the DM. Our research design was developed into two research questions that we explore in this chapter.

3.1.1 Predictive ability of cash flows

Both IAS 7 and SFAS 95 promote the using of DM in operating cash flows disclosures by defending its usefulness to financial statements users. While SFAS 95 only encourages the use of the DM and doesn’t make further considerations, IAS 7 states that information provided by the DM presentation is suitable to estimate future cash flows and is otherwise not available. The 2009 Chartered Financial Analysis (CFA) *Institute Member Poll: Cash Flow Survey*, which assisted the Boards’ 2010 Staff Draft showed the

⁴ Hales and Orpurt (2013) also acknowledge that despite “estimates of DM components can be developed in the absence of a DM Statement of Cash Flows, several studies document that these estimates are prone to estimation error”.

⁵ See Krishnan and Largay (2000) and Orpurt, and Zang (2009) for a deep analysis on what the authors define as “articulation errors”.

majority of 541 respondents to agree that the information provided by DM disclosures improves future cash flows predictions.

In addition, a number of studies in past literature support the notion that the DM approach provide information that helps financial statements users in predicting and analyzing firms' cash flows data. As detailed in the previous chapter, works like Khrishnan and Largay (2000), Cheng and Hollie (2008) and Orpurt and Zang (2009), find evidence on the usefulness of the DM information on operating cash flows forecasting models. However, these authors are restricted to an U.S.A. and Australian settings. I test their conclusions in a different economic and accounting context with the following hypothesis:

H1: DM disclosures help a better understanding and forecasting ability of firm's future operating performance.

3.1.2 Effect on stock markets

Empiric context show a consistent low adherence of firms to the DM as previous studies indicate that when standards offer firms a choice in presentation format of operating cash flows, the percentage of firms which choose to present their statements under the IM approach is extremely high. It may be that even if the DM provide an incremental usefulness beyond IM disclosures that markets and investors do not incorporate and use that information in their financial decisions. For policy makers, finding a significant value relevance of presentation format might be crucial to support the argument in favor for mandatory DM statements of cash flows. As stated in Barth, Beaver and Landsman (2001), "value relevance literature provides fruitful insights for standard setting". I develop a second hypothesis in order to find if investors and other financial agents find information provided in DM disclosures economically relevant:

H2: Presentation format of cash flows statements is value relevant to financial markets.

3.2 Statistical regressions

3.2.1 One year operating cash flows forecasting models

In order to support **H1** I develop a one year operating cash flow forecasting model, similar to Krishnan and Largay (2000) and Orpurt and Zang (2009), who also test "DM models" versus "IM models". Krishnan and Largay (2000) uses disclosed DM information (for firms who provide DM statements of cash flows) against estimated DM

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information (for firms who provide IM statements of cash flows) and compare their forecasting models performance based on mean absolute percentage forecast errors. Orpurt and Zang (2009) on the other hand, uses reported DM information and focus on articulation errors' incremental usefulness on cash flows forecasting models.

Equation 1 presents the basic one year cash flows forecasting model I use in this study:

$$OCF_{it+1} = \alpha + \beta_1 NI_{it} + \varepsilon_{it} \quad (1)$$

The variables included are **OCF**, which is defined as the net operating cash flows of the firm (field 04860) and **NI**, represents the net income before preferred dividends (field 01551). As in Orpurt and Zang (2009), I disaggregate the earnings variable into the variables **OCF** (as defined earlier) and **ACC**, expressing firm's accruals (given as the difference between **NI** and **OCF**) on equation 2:

$$OCF_{it+1} = \alpha + \beta_1 OCF_{it} + \beta_2 ACC_{it} + \varepsilon_{it} \quad (2)$$

This two sets of equations are applied to both a DM's firms group and an IM's firms group as to evaluate the impact of presentation format in a cash flows forecasting model. I expect results to show the second model outperforming the first, for both subsets of the sample, as previous literature show benefits in disaggregating earnings into its components. I also expect equations 1 and 2 to have superior goodness-of-fit when DM firms are used, indicating the usefulness of the DM. I also estimate Equation 3 to measure this effect when we pooled the full sample of firms:

$$OCF_{it+1} = \alpha + \beta_1 OCF_{it} + \beta_2 ACC_{it} + \beta_3 DM_{it} + \beta_4 DM_{it} * OCF_{it} + \beta_5 DM_{it} * ACC_{it} + \varepsilon_{it} \quad (3)$$

The **DM** variable included in this model is a dummy variable that displays the firm's cash flows presentation format (1 when it uses the DM approach). If H1 holds, I expect coefficients β_3 and β_4 to have positive and significant coefficients.

As in previous literature, the variables present in equations 1 to 3 are all deflated by firms' total assets (field 02999) to mitigate heteroscedasticity. Regressions are estimated on a fixed effects model accounting for both time and industry.

3.2.2 Market price models

In order to check H2, I follow a price level model approach similar to Clacher et al (2013) to extract information regarding the value relevance of presenting cash flows, using a derivation of the Ohlson model (Feltham and Ohlson, 1995), displayed in our equations 4 and 5:

$$PRICE_{it} = \alpha + \beta_1 NETA_{it} + \beta_2 EPS_{it} + \beta_3 DM_{it} + \varepsilon_{it} \quad (4)$$

In this model, **PRICE** is the market capitalization of the firm (field 08001), **NETA** is the difference between the firms' total assets (field 02999) and total liabilities (field 03351) and **EPS** represents the net income before preferred dividends (field 01551). The **DM** variable included in this model is the same dummy variable used in previous equations that returns the firm's cash flows presentation format (1 when it uses the DM approach) and so, I expect coefficient β_2 to have a positive and significant value.

The next step, following Clacher et al (2013), Sloan (1996), and Barth et al (2001) is disaggregating equation 4 into equation 5, which relate presentation format to firms' operating cash flows:

$$PRICE_{it} = \alpha + \beta_1 NETA_{it} + \beta_2 OCF_{it} + \beta_3 ACC_{it} + \beta_4 DM_{it} + \beta_5 DM_{it} * OCF_{it} + \beta_6 DM_{it} * ACC_{it} + \varepsilon_{it} \quad (5)$$

Equation 4 and 5 are applied to the full pooled sample of firms to check for the dummy variables' coefficients behavior, i.e., to analyze if presentation format has an impact on stock prices. Based on literature, I expect coefficients β_4 and β_5 to be positive and significant, demonstrating that markets have the capability to absorb information provided by DM statements of cash flows.

Like previous research, the variables present in equations 4 and 5 are deflated by the number of common shares outstanding (field 05301) to mitigate heteroscedasticity. A fixed effects procedure for both time and industry is also employed.

3.3 Sample Selection

All the data was obtained via Worldscope – Datastream database except for operating cash flows information for firms disclosing DM statements of cash flows. This information was hand collected through the firms' websites as Worldscope – Datastream database provides firms' cash flows information under the IM.

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The sample is comprised by firms from Portugal, Greece, Ireland and New Zealand. The selection criteria of countries to include in this study are designed to generate a sample with a number of enough firms using the DM format and firms using the IM. To ensure a DM sub-sample, I selected Portugal and New Zealand, which in the past required firms to disclose a DM statement of cash flows although currently follow the IASB approach, allowing the IM⁶. Bond, Bugeja and Czernkowski (2012) show that after Australia stopped the requirement of the DM presentation in firms' cash flows statements, in 2007, only a handful of companies switched their reporting disclosures presentation and Portuguese and New Zealand firms are expected to behave similarly. Greece and Ireland were selected as the IM sample, as these countries follow IFRS and allow public listed firms to choose between both presentation methods. I therefore expect a predominance of IM firms in this sample. The countries selection took in account several economic and demographic factors, and also safeguarded against concerns raised in La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), which find significant differences in accounting rules and enforcing practices between countries. . My analysis was initially designed to be a Europe only focused research but the lack of countries requiring or having required the DM method lead me to include New Zealand. Table 1 presents the main macroeconomic and demographic data of the countries in the sample. Except for a very high unemployment rate in Greece, extreme differences between the four countries are not identifiable. The selected countries also allows for a sample which ranges from common law origin countries (Ireland and New Zealand) to the French civil-law tradition countries (Portugal and Greece).

Obtaining the data for the listed companies of Euronext Lisbon, Athens Exchange, Dublin Exchange and New Zealand Exchange, for the years 2006-2013, I reach an initial sample of 942 firms (7.536 firm-year observations). Excluding utility, financial, mining, and public administration companies, along with negative equity firms and observations with missing information returned a final sample of 369 firms (2.285 firm-year observations) . Unlike previous academic studies, which often include mining firms in their research although they treat them in a separate industry group, I exclude the mining

⁶ For Portugal, Regulation n°4/2004 and n°5/2008 were published in “Diário da República – Boletim da CMVM n°113 – Maio 2004” and “Diário da República – Boletim da CMVM n°186 – Outubro de 2008”. For New Zealand, Financial Reporting Standard n°10, approved March 1994 by the Accounting Standards Review Board and NZ IAS 7.

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Table 1

Country economic indicators

Panel A: 2012

	Portugal	Greece	Ireland	New Zealand
Population	10.602	11.123	4.585	4.440
GDP	212.257	248.562	210.754	170.41
GDP per Capita	20019.902	22346.584	45961.959	38384.906
Inflation	115.854	122.928	108.683	136.528
Gross Debt	124.067	157.188	117.398	37.487
Unemployment	15.653	24.238	14.672	6.875

Panel B: 2014

	Portugal	Greece	Ireland	New Zealand
Population	10.623	11.040	4.805	4.518
GDP	231.214	249.449	229.649	196.217
GDP per Capita	21765.955	22594.261	47793.201	43429.127
Inflation	117.142	121.261	109.882	141.067
Gross Debt	126.689	174.697	123.668	33.278
Unemployment	15.650	26.263	11.217	5.217

i) International Monetary Fund, World Economic Outlook Database, April 2014

Variables	Units	Scale
Gross domestic product per capita, current prices	U.S. dollars	Units
Gross domestic product, current prices	U.S. dollars	Billions
Population	Persons	Millions
Inflation, average consumer prices	Index	
General government gross debt	% of GDP	
Unemployment rate	% of total labor force	

Table 2		
Definition of the sample		
	Observations	%
Euronext Lisbon	1104	100
Observations withdrawn:		
Bank and insurance companies	-208	-18,84
Utility companies	-136	-12,32
Mining companies	0	0,00
Public administration companies	0	0,00
Accounting data errors and equity less than zero	-530	-48,01
Final sample	230	20,83
Athens Exchange	Observations	%
Initial Sample	3320	100
Observations withdrawn:		
Bank and insurance companies	-520	-15,66
Utility companies	-280	-8,43
Mining companies	-56	-1,69
Public administration companies	-8	-0,24
Accounting data errors and equity less than zero	-950	-28,61
Final sample	1506	45,36
Dublin Exchange	Observations	%
Initial Sample	880	100
Observations withdrawn:		
Bank and insurance companies	-168	-19,09
Utility companies	-64	-7,27
Mining companies	-136	-15,45
Public administration companies	-8	-0,91
Accounting data errors and equity less than zero	-317	-36,02
Final sample	187	21,25
New Zealand Exchange	Observations	%
Initial Sample	2232	100,0
Observations withdrawn:		0
Bank and insurance companies	-448	-20,07
Utility companies	-320	-14,34
Mining companies	-80	-3,58
Public administration companies	0	0,00
Accounting data errors and equity less than zero	-1022	-45,79
Final sample	362	16,22

i) Data collected from Worldscope – Datastream.

Operating Cash Flows Presentation

Table 3				
Sample Distribution				
Panel A: Industry				
	Portugal	Greece	Ireland	New Zealand
Agriculture, forestry and fishing	0	62	22	37
Construction	31	137	11	7
Manufacturing	111	744	77	115
Retail Trade	31	321	9	128
Services	57	242	68	75
Total	230	1506	187	362
Panel B: Accounting method				
	Portugal	Greece	Ireland	New Zealand
Direct method	230	0	0	362
Indirect method	0	1506	187	0

i) Firm-year observations.

industry because I did not had enough cases to make viable comparisons. Portugal for instance, didn't have any mining firms in the sample. This process is illustrated in Table 2 which also show a smaller number of Portuguese and Irish firms (230 and 187, respectively) while Greece and New Zealand contributes a significant larger number of observations to the sample (1506 and 362, respectively).

Table 3 Panel: A shows the sample distribution by industry and by country. It is possible to see the manufacturing and services industries being the larger industries in each country, except in New Zealand which has a significant amount of firms in the Retail trade industry, while the extractive and construction industries represent a smaller number of firms. Again I find enough similarities across countries to support the selection criteria. Lastly, Table 3 Panel: B show the presentation format of firms in our sample. As expected, all firms from Portugal and New Zealand opt to disclose their statements of cash flows under the DM while all the Greek and Irish firms follow the IM approach.

4. Empirical Results

4.1 Descriptive Statistics

Table 4 present a descriptive analysis summary for the sample. I calculate the mean, skewness and standard-deviation for Market Capitalization, Total Assets, Total Liabilities, Total Shareholders' Equity, Net Income and Net Operating Cash Flows. Similarly to Clinch et al (2002) and Clacher et al (2013), all the variables are positively skewed, exception being Net Income for the Greek firms. Portuguese firms appear the largest firms in terms of size in the sample as I consistently find higher means for the variables considered. In this analysis I find the Irish sample to be very similar to the Portuguese sample, particular in terms of *Market Capitalization* and *Net Income*. In comparison the Greek and New Zealand companies are a much smaller group of firms but also similar between them. For the Greek firms, the especially low value for the mean on the Net Income variable may be explained by its harsh economic context since the 2008 financial crisis. If we compare DM to IM firms, we see DM firms to have higher means for all the variables, which is naturally explained by the high weight of the (smaller) Greek firms on the sample.

I display the descriptive statistics of the variables used in the statistical regressions in Table 5 and Table 6. The first show a much more homogeneous sample due to the total assets deflation effect. This effect is particularly noticeable in firms' net operating cash

Operating Cash Flows Presentation

Table 4

Sample descriptive statistics

Panel A: Country

Portugal	Mean	SD	Skewness	N
Market Capitalization	906.290,51	2.209.459,04	3,737	230
Total Assets	1.592.066,13	2.294.242,93	2,306	230
Total Liabilities	1.110.193,16	1.538.538,59	1,841	230
Total Equity	416.911,67	725.401,58	3,566	230
Net Income	46.255,30	122.636,94	2,267	230
Net Operating Cash Flows	123.035,50	214.483,66	1,882	230
Greece	Mean	SD	Skewness	N
Market Capitalization	156.946,10	543.471,70	9,307	1.506
Total Assets	329.890,92	804.407,74	5,621	1.506
Total Liabilities	193.727,72	465.200,89	5,429	1.506
Total Equity	121.798,93	329.237,29	7,093	1.506
Net Income	3.227,13	80.290,46	-8,059	1.506
Net Operating Cash Flows	14.203,11	67.722,99	7,011	1.506
Ireland	Mean	SD	Skewness	N
Market Capitalization	847.678,99	1.364.133,76	2,823	187
Total Assets	980.424,24	1.706.438,48	3,091	187
Total Liabilities	644.770,51	1.232.669,71	3,243	187
Total Equity	318.281,24	472.871,29	2,587	187
Net Income	35.034,51	79.145,10	0,430	187
Net Operating Cash Flows	74.997,60	130.632,19	2,433	187
New Zealand	Mean	SD	Skewness	N
Market Capitalization	218.088,36	454.088,21	4,562	362
Total Assets	254.168,99	544.573,14	5,355	362
Total Liabilities	129.557,59	291.626,48	4,821	362
Total Equity	123.677,52	260.272,83	5,694	362
Net Income	11.957,93	32.350,62	2,946	362
Net Operating Cash Flows	20.517,32	43.041,97	4,001	362

i) Variables presented in thousands of euros.

Operating Cash Flows Presentation

Panel B: Accounting method

Direct method	Mean	SD	Skewness	N
Market Capitalization	485464,2	1459526,92	5,823311607	592
Total Assets	773960,11	1626845,333	3,745038173	592
Total Liabilities	510547,76	1094529,901	3,281762963	592
Total Equity	237602,95	515495,2913	4,986351049	592
Net Income	25282,92	82138,98024	3,638995604	592
Net Operating Cash Flows	60347,02	146485,491	3,384060677	592
Indirect method	Mean	SD	Skewness	N
Market Capitalization	233240,873	717068,3063	6,648841804	1.693
Total Assets	401745,4578	968126,3695	5,210292571	1.693
Total Liabilities	243547,5706	616059,3541	5,675263905	1.693
Total Equity	143501,3473	353261,168	5,945310632	1.693
Net Income	6740,411105	80759,75006	-6,998099207	1.693
Net Operating Cash Flows	20918,15298	79490,81125	5,508881678	1.693

i) Variables presented in thousands of euros.

Operating Cash Flows Presentation

Table 5

Descriptive statistics of variables used in one year cash flows forecasting models

Panel A: Country

Portugal	Mean	SD	Skewness	N
OCF	0,0551	0,0735	0,1270	230
NI	0,0172	0,0492	-0,3580	230
ACC	-0,0379	0,0673	0,4760	230
Greece	Mean	SD	Skewness	N
OCF	0,0307	0,1247	10,8360	1.506
NI	-0,0105	0,1000	-2,5300	1.506
ACC	-0,0412	0,1416	-13,3800	1.506
Ireland	Mean	SD	Skewness	N
OCF	0,0645	0,1479	-2,1110	187
NI	0,0169	0,1748	-1,6340	187
ACC	-0,0477	0,1221	1,2510	187
New Zealand	Mean	SD	Skewness	N
OCF	0,0600	0,3147	-1,2700	362
NI	-0,0108	0,3326	-8,3300	362
ACC	-0,0705	0,2362	-6,7460	362

Panel B: Accounting method

Direct method	Mean	SD	Skewness	N
OCF	0,0581	0,2499	-1,5190	592
NI	0,0001	0,2621	-10,4960	592
ACC	-0,0578	0,1899	-8,0690	592
Indirect method	Mean	SD	Skewness	N
OCF	0,0344	0,1279	8,6140	1.693
NI	-0,0075	0,1110	-2,2160	1.693
ACC	-0,0419	0,1396	-12,3320	1.693

Panel C: Pooled Sample

	Mean	SD	Skewness	N
OCF	0,041	0,168	1,648	2.285
NI	-0,006	0,164	-11,497	2.285
ACC	-0,046	0,154	-10,682	2.285

i) Variables presented in thousands of euros.

ii) Variables scaled by firms' total assets.

Table 6

Descriptive statistics of variables used in price models

Panel A: Country

Portugal	Mean	SD	Skewness	N
PRICE	3,9890	6,1598	4,0385	230
NETA	4,4766	10,3619	6,1875	230
EPS	0,5090	2,5497	5,8832	230
OCF	0,8264	3,8835	10,8203	230
ACC	-0,3196	3,6854	-1,6227	230
Greece	Mean	SD	Skewness	N
PRICE	4,0023	10,9099	10,4940	1.506
NETA	2,6228	7,8474	8,1290	1.506
EPS	0,2868	2,2083	5,9240	1.506
OCF	0,5600	1,7955	-4,6610	1.506
ACC	-0,2732	2,6471	21,9520	1.506
Ireland	Mean	SD	Skewness	N
PRICE	6,3788	10,6087	3,5250	187
NETA	2,6228	3,0194	1,3630	187
EPS	0,2868	0,5980	1,4350	187
OCF	0,5600	0,9339	2,1430	187
ACC	-0,2732	0,6160	-1,9480	187
New Zealand	Mean	SD	Skewness	N
PRICE	1,2050	1,0717	1,5870	362
NETA	0,8799	0,9053	1,4976	362
EPS	0,0733	0,1923	8,3299	362
OCF	0,1385	0,1949	1,5660	362
ACC	-0,0647	0,2164	1,1923	362

i) Variables presented in thousands of euros.

ii) Variables scaled by firms' common shares outstanding.

Operating Cash Flows Presentation

Panel B: Accounting method

Direct method	Mean	SD	Skewness	N
PRICE	2,2866	4,1531	6,1310	592
NETA	2,2773	6,7218	9,6460	592
EPS	0,2422	1,6062	9,5390	592
OCF	0,4062	2,4473	17,1960	592
ACC	-0,1638	2,3036	-2,7610	592

Indirect method	Mean	SD	Skewness	N
PRICE	4,2648	10,8994	9,7110	1.693
NETA	3,7443	7,4790	8,4070	1.693
EPS	0,0702	2,0935	6,1520	1.693
OCF	0,3017	1,7239	-4,6860	1.693
ACC	-0,2315	2,5049	23,0420	1.693

Panel C: Pooled Sample

	Mean	SD	Skewness	N
PRICE	3,752	9,655	10,600	2.285
NETA	3,364	7,317	8,601	2.285
EPS	0,115	1,980	6,676	2.285
OCF	0,329	1,937	6,517	2.285
ACC	-0,214	2,454	17,556	2.285

- i) Variables presented in thousands of euros.
- ii) Variables scaled by firms' common shares outstanding.

Operating Cash Flows Presentation

Table 7

Pearson correlations coefficient

Panel A: Variables used in one year cash flows forecasting models

Direct method	OCF	NI	ACC
OCF	1		
NI	0,726***	1	
ACC	-0,312***	0,427***	1

Indirect method	OCF	NI	ACC
OCF	1		
NI	0,324***	1	
ACC	-0,658***	-0,499***	1

Pooled Sample	OCF	NI	ACC
OCF	1		
NI	0,569***	1	
ACC	-0,485***	0,443***	1

Panel B: Variables used in price models

Direct method	PRICE	NETA	EPS	OCF	ACC
PRICE	1				
NETA	0,635***	1			
EPS	0,513***	0,845***	1		
OCF	0,245***	0,376***	0,414***	1	
ACC	0,097***	0,189***	0,257***	-0,773***	1

Indirect method	PRICE	NETA	EPS	OCF	ACC
PRICE	1				
NETA	0,811***	1			
EPS	0,427***	0,364***	1		
OCF	-0,004	0,123***	0,150***	1	
ACC	0,360***	0,219***	0,733***	-0,563***	1

Pooled Sample	PRICE	NETA	EPS	OCF	ACC
PRICE	1				
NETA	0,766***	1			
EPS	0,421***	0,451***	1		
OCF	0,029	0,194***	0,215***	1	
ACC	0,316***	0,211***	0,637***	-0,616***	1

i) *** significant at a 0.01 level; ** significant at a 0.05 level; * significant at a 0.10 level.

ii) Panel A: Variables scaled by firms' total assets.

Panel B: Variables scaled by firms' common shares outstanding.

flows – OCF_{it} . In Table 6, we see the majority of deflated variables are positively skewed, much like the unscaled variables. Scaling the variables for equations 4 and 5 reveals however more visible similarities between the Portuguese, Irish and, to a lesser degree, Greek firms and differences to the New Zealand firms. The lower average earnings in the Greek sub sample persists. Nonetheless, results for the full sample seem similar to Clinch et al (2002) and Clacher et al (2013).

Lastly, Pearson's correlations in Table 7 allows me to check for multicollinearity problem. For the operating cash flows forecasting models I do not find problematic correlations. For the price models, the highest observed correlations are between $NETA_{it}$ (Net Assets) and EPS_{it} (Earnings per Share) and between OCF_{it} (Net Operating Cash Flows) and ACC_{it} (Accruals), 0,845 and -0,773, respectively, for DM firms. For IM firms, we identify a high correlation, 0,811, between $Price_{it}$ (Stock Prices) and $NETA_{it}$. While the high correlations between the operating cash flows variables and accruals are an expected result since I construct the variable ACC_{it} from variables EPS_{it} and CF_{it} , the other reported correlations can influence findings. I find however, that when analyzing Pearson's correlations for the full sample, only the $NETA_{it}/EPS_{it}$ high correlation persists and fall back to a lower 0,766 value.

4.2 Multiple Linear Regressions

As in Francis and Schipper (1999), Clinch et al (2002) and Clacher et al (2013), I remove observations with an absolute student residual greater than 3.0. I also remove outliers considered with a Cook's distance approach. Results are summarized in Table 8, which presents the output of final regressions for the one year operating cash flows forecasting models and Table 9 which shows the results for the market price model regressions.

Equations 1 to 3 are statistically validated through the F-tests. Using the adjusted R^2 values to compare the explanatory power of these models, we can see that disaggregating equation 1 into equation 2 consistently returns a better performance. For the DM firms we see an adjusted R^2 value of 0,395, for equation 1, and 0,637, for equation 2. For the IM sample, the adjusted R^2 values are 0,233 and 0,293 for equations 1 and 2, respectively. I also find subtle improvements in the standard errors of the estimate when

Table 8

Results of the one year cash flows forecasting models regressions

Panel A: $OCF_{it+1} = \alpha + \beta_1 NI_{it} + \varepsilon_{it}$			
Variables	Prediction	DM firms	IM firms
Intercept		0,041 (0,000)***	0,011 (0,018)**
NI	+	0,438 (0,000)***	0,400 (0,000)***
N		556	1578
Adjusted R ²		0,395	0,233
F-Value		31,273***	40,969***
Panel B: $OCF_{it+1} = \alpha + \beta_1 OCF_{it} + \beta_2 ACC_{it} + \varepsilon_{it}$			
Variables	Prediction	DM firms	IM firms
Intercept		0,018 (0,066)*	0,006 (0,180)
OCF	+	0,577 (0,000)***	0,539 (0,000)***
ACC	+	0,200 (0,000)***	0,298 (0,000)***
N		555	1575
Adjusted R ²		0,637	0,293
F-Value		75,957***	51,25***
Panel C: $OCF_{it+1} = \alpha + \beta_1 OCF_{it} + \beta_2 ACC_{it} + \beta_3 DM_{it} + \beta_4 DM_{it} * OCF_{it} + \beta_5 DM_{it} * ACC_{it} + \varepsilon_{it}$			
Variables	Prediction		Pooled sample
Intercept			0,015 (0,000)***
OCF	+		0,538 (0,000)***
ACC	+		0,307 (0,000)***
DM	+		0,008 (0,043)**
DM*OCF	+		0,100 (0,009)**
DM*ACC	±		-0,071 (0,129)
N			2136
Adjusted R ²			0,357
F-Value			0,015
i)	*** significant at a 0,01 level; ** significant at a 0,05 level; * significant at a 0,10 level.		
ii)	Variables scaled by firms' total assets.		
iii)	Output of final regressions (cook's distance and student residuals outliers excluded).		

Table 9

Results of the price models regressions

Panel A: $PRICE_{it} = \alpha + \beta_1 NETA_{it} + \beta_2 EPS_{it} + \beta_3 DM_{it} + \varepsilon_{it}$

Variables	Prediction	Pooled Sample
Intercept		2,328 (0,000)***
NETA	+	0,672 (0,000)***
EPS	+	1,829 (0,000)***
DM	+	-0,147 (0,252)
N		2207
Adjusted R ²		0,523
F-Value		173,733***

Panel B: $PRICE_{it} = \alpha + \beta_1 NETA_{it} + \beta_2 OCF_{it} + \beta_3 ACC_{it} + \beta_4 DM_{it} + \beta_5 DM_{it} * OCF_{it} + \beta_6 DM_{it} * ACC_{it} + \varepsilon_{it}$

Variables	Prediction	Pooled sample
Intercept		2,144 (0,000)***
NETA	+	0,681 (0,000)***
OCF	+	1,465 (0,000)***
ACC	+	1,225 (0,000)***
DM	+	0,005 (0,972)
DM*OCF	+	-0,463 (0,247)
DM*ACC	±	-0,756 (0,023)**
N		2193
Adjusted R ²		0,502
F-Value		131,276***

- i) *** significant at a 0,01 level; ** significant at a 0,05 level; * significant at a 0,10 level.
- ii) Variables scaled by firms' common shares outstanding.
- iii) Output of final regressions (cook's distance and student residuals outliers excluded).

decomposing earnings into net operating cash flows and accruals. In both equations all the variables included were reported statistically significant.

In a goodness-of-fit analysis⁷ we are able to see that the “DM model” outperforms the “IM model”. I find improvements in the adjusted R^2 values of +0,162 and +0,344 for equations 1 and 2, respectively, when we run a DM/IM firm comparison. These results are consistent with evidence from equation 3. Our variables of interest, DM_{it} and $DM_{it} * OCF_{it}$, give information on the presentation effect of presentation format in forecasting operating cash flows. We find the coefficients for both these variables to be positive and statistically significant, suggesting the usefulness of the DM approach.

Taken together, we find these set of results to support sufficient evidence to support our first hypothesis that indeed DM disclosures helps a better understanding and enhance one’s ability to forecast firms’ future operating performance.

In Table 9 we have the results of the final regressions which test the presentation format of cash flows statements in stock prices. Both regressions were statistically validated through the F-test although an adjusted R^2 comparison to Clacher et al (2013), reporting 0,719 and 0,731, against these results, 0,523 and 0,502, shows these regressions as not so efficient models. The assets and earnings variables behaved as in previous studies. In both regressions, coefficients for the $NETA_{it}$, EPS_{it} , OCF_{it} and ACC_{it} were all positive and significant. However our variables of interest behaved unexpectedly. In equation 4, the DM_{it} variable which controls for presentation format is statistically insignificant with a p value of 0,252. Equation 5 presented a similar outcome. Again, we find both DM_{it} and $DM_{it} * OCF_{it}$ return no significant statistical evidence to the model, with p values of 0,972 and 0,247, respectively. These results offer evidence that stock prices are not influenced by the presentation format on firms’ cash flows disclosures, suggesting that investors and other financial agents do not recognize the direct method to provide useful information beyond the IM approach and therefore dismissing the second hypothesis of this study.

⁷ Orpurt and Zang (2009) reported adjusted R^2 values of 0.4375 and 0.4569 in similar equations.

5. Conclusions

The discussion by standard setters to whether or not to require the DM format to be mandatory by firms in their cash flow disclosures is an ongoing decision. In one hand, consistent academic evidence and previous literature seems to support and welcome such changes. On the other hand, empiric context and reality shows us a very little percentage of firms which choose to present their cash flow statements via the DM.

Overall, results show DM disclosures to be useful to assess firms' future operating performance. When tested against the IM approach, the information provided in DM statements of cash flows significantly improved and enhanced the one year operating cash flows forecasting models. However, I fail to find evidence that financial agents incorporate this information into their economic decisions. Presentation format seems to be irrelevant to markets and investors, since not being reflected and incorporated in stock prices. In sum, my findings support the changes considered by the Boards regarding mandatory DM disclosures, although a careful cost analysis is advised, as the benefits of this presentation format is not soundly noticed by users.

Studies like Sondhi, Sorter, White (1998), Wallace et al (1997) and Hales and Orpurt (2013) state the higher cost for firms to acquire the direct method information as a possible reason for the low adherence to this format. My study suggests even though DM presentations are useful to financial statements users, markets and investors do not value that information in a way that suppresses or compensates firms' additional costs. My study is limited because I did not analyzed the value relevance of DM components and only tested the aggregated amounts of operating cash flows. It might be true that for investors there is no significant differences between the two methods of presenting operating cash flows when dealing with aggregated amounts but testing specific DM components might pose as an opportunity of research. Another limitation that restrict inferences from my conclusions is that it is possible that country effects still managed to influence findings. A true test to these results would be possible with a sample of firms that disclose both DM and IM cash flows statements.

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