**ACADEMIC
INVESTIGATIONS
& CONCEPTS**

SECTION 1

FINANCIAL CRISIS AND ACCRUAL AND REAL EARNINGS MANAGEMENT IN EUROPE

Afroditi Papadaki*, Christos Tzovas*

* Department of Accounting and Finance, Athens University of Economics and Business, Greece

Abstract

The purpose of this study is to investigate whether firms engage more intensively in earnings management in a period of financial crisis. In particular, we examined a sample of 10.139 observations from 19 European Union countries for the period 2005-2014. Earnings management had been examined on both accrual and real earnings management basis. It appears that in the period of financial crisis firms are less inclined to use accruals for earnings management purposes, while real earnings management is not affected by financial crisis. Yet it seems that the more profitable firms and the firms audited by big auditing firms are less likely to adopt real earnings management practices. In addition, we found that firms' size and leverage are factors that affect firms' decision to manage their earnings, either on accrual or real earnings management basis.

Keywords: Earnings Management, Financial Crisis, Discretionary Accruals

1. INTRODUCTION

The present study examines the impact of global financial crisis on the earnings management policies of firms from European Union (EU) countries. In particular, this paper examines whether firms pursue earnings management policies more intensively in the period of financial crisis, comparing to the preceding and subsequent periods. We examine the earnings management policies of firms that are listed in stock exchanges of EU countries. Our sample consists of 10.139 observations from 19 EU countries for the period 2005-2014. In order to examine firms' earnings management policies we employ accruals-based earnings management models and real earnings management models.

This study contributes in the existing earning's management literature by focusing on firms' earnings management policies in the period of recent financial crisis. Furthermore this paper examines firms' earnings management policies on both accrual and real earnings management basis. Previous research has mainly employed accruals-based earnings management models.

This study by investigating the earnings management policies of EU firms, ultimately examines the quality of financial statements prepared by EU firms. The findings of this study provide an indication regarding the impact that the introduction of International Financial Reporting Standards (IFRS) has upon the quality of EU firms' financial statements. In addition it shades some light upon the effectiveness of the monitoring mechanisms imposed on EU firms.

The rest of paper is organized as follows. Section 2 discusses the findings of previous research regarding earnings management and present the hypotheses tested within study. Section 3 describes our sample. Section 4 presents the methodology we adopted. In the same section are presented the accruals-based earnings management models and

real earnings management models employed in this study. Section 5 reports the empirical results of univariate and multivariate analyses and also the results of robustness analysis. Finally, Section 6 presents our conclusions.

2. PREVIOUS RESEARCH AND HYPOTHESES DEVELOPMENT

A number of definitions of earnings management have been provided (Watts & Zimmerman, 1978; Davidson et al., 1986; Schipper, 1989; Degeorge et al., 1999; Healy & Wahlen, 1999; Beneish, 2001). In most cases, earnings management is defined as a purposeful intervention in financial reporting process with the intent of achieving certain objectives set by company's management (Burgstahler & Eames, 2006). Managers may use earnings management in order to increase firms' profitability, and to obtain as a result some private gains – e.g. bonuses - and enhance their reputation (Healy, 1985; Degeorge et al., 1999; Kao & Chen, 2004; Cheng & Warfield, 2005; Dechow & Skinner, 2000). The terms of firms' loan agreements may prompt managers to employ earnings management practices (Sweeney, 1994; Defond & Jiambalvo, 1994; Fields et al., 2001). Firm's management may attempt to avert a hostile takeover by reporting lower profits (DeAngelo, 1988; Christie & Zimmerman, 1994). Several studies indicate that the managers use earning management in order to achieve a stable growth rate of earnings per share (Earnings per Share - EPS), since they assume that potential investors are positively affected by a steady increase in earnings per share (Burgstahler & Dichev, 1997; Degeorge et al., 1999; Myers & Skinner, 1999, 2007). Earnings management may aim to income smoothing. Managers adopt this technique in order to mitigate the fluctuation in the corporation's earnings from one period to the next. They carry profits from a profitable year to a non-profitable one and achieve a steady income increase by reducing volatility. In this way managers aim to reduce the fluctuation of earnings and thereby to reduce investors' concerns about the viability of their investment, since the fluctuations of the enterprise's performance are usually connected with high risk (Healy, 1985; Davidson et al., 1986; Beattie et al. 1994). The reduction of firms' tax liability may also motivate managers in earnings management. (Boynton et al., 1992; Dhaliwal & Wang, 1992; Scholes et al., 1992; Guenther, 1994; Maydew, 1997; Palepu et al., 2004). In banking and insurance sectors, firms choose accounting policies in order to avoid violating the rules of the regulatory framework (Moyer, 1990; Scholes et al., 1990; Petroni, 1992; Beatty et al., 1995, Collins et al., 1995; Adiel, 1996). There is also evidence of earnings management used for avoiding anti-trust rules (Jones, 1991; Cahan, 1992). Furthermore, a firm may have a motive to reduce its profitability in order to reduce its political visibility (Watts & Zimmerman, 1978; Hall & Stammerjohan, 1997). Managers may use earnings management in order to display a temporary decline in firm's profits so that their bargaining power over labor unions is strengthen (DeAngelo et al., 1994).

Different views are held regarding the impact that economic downturn and instability of financial system may have upon the quality of financial statements. On the one hand, it is argued that the quality of accounting information deteriorates in the period of recession and financial turbulence. Within this context, it has been argued that in a period of economic downturn firms are more likely to manage their earnings (Bartomue and Magee, 2011). On the other hand, during periods of financial crisis firms are supposed to come under close scrutiny while the demand for higher quality accounting information is increasing. As a consequence the quality of the published financial statements is expected to improve (Francis et al., 2013; Iatridis and Dimitras, 2013). Besides in period of economic downturn, investors have lower expectations regarding firms' profitability. Thus managers may have fewer incentives to manage earnings (Jenkins et al. 2009; Ahmad-Zaluki et al. 2011). Previous research has shown that firms are less inclined to adopt earnings management practices during the period of economic downturn (Filip and Raffournier, 2012).

There are two basic approaches regarding earnings management; the accruals based management and real activities management. The most common method of manipulation is via accruals (Healy & Wahlen, 1999). Accruals generate the difference between income and cash flows. Although their primary purpose is to provide information, it has been observed that the accruals are used by firms' management for earnings manipulation. The accrual based management method is popular because accruals a) are an essential part of income and is not recognized in cash flows statement b) have no direct impact on cash flows and c) are not easily detected (Peasnell et al., 2005). In most studies examining accrual based earning management (Healy, 1985, DeAngelo, 1986, Jones, 1991), total accruals are divided into non-discretionary accruals and discretionary accruals. The former are accruals resulting from the implementation of generally accepted accounting policies, while the latter results from management's accounting choices. We measure Accruals Earnings Management (AEM) by reference to the level of discretionary accruals.

Earnings management can be achieved through real activities management. For instance, the acceleration of sales, the adopted inventories policies, the increase in production in order to reduce the cost of goods sold, can influence accounting figures (Fudenberg & Tirole, 1995; Healy & Wahlen, 1999; Dechow & Skinner, 2000; Roychowhury, 2006). A firm may reduce its research and development costs in order to reduce its accrued expenses and as a consequence to increase its profits (Baber et al. 1991; Dechow & Sloan, 1991; Bushee, 1998; Bens et al., 2002, 2003). When a firm manages its earnings the level of the above mentioned items may diverge from their normal level. We measure the Real Earnings Management (REM) by reference to abnormal production cost and abnormal cash flows.

In order to investigate the impact of financial crisis upon EU firms' earnings management policies we formulated and tested the hypotheses presented below.

Hypothesis 1 (AEM): Financial crisis affects firms' inclination to engage in accruals-based earnings management.

Hypothesis 2 (REM): Financial crisis affects firms' inclination to engage in real earnings management.

3. SAMPLE SELECTION

This study uses a sample of companies listed in the stock exchanges of 19 EU countries from all sectors, except those concerned with banking, insurance, real estate and financial services. In total, 1.775 companies were included in the initial sample (Table 1). Regarding the period under investigation, the financial data which applies to this study consists of ten fiscal years, beginning in 2005 – the first year of the implementation and mandatory adoption of the IFRS by all listed companies in EU - and ending in 2014. We extracted data from Worldscope data basis.

Table 1. Countries included in the sample

Countries	Number of companies
AUSTRIA	45
BELGIUM	78
CYPRUS	30
ESTONIA	10
FINLAND	107
FRANCE	417
GERMANY	439
GREECE	155
IRELAND	29
ITALY	170
LATVIA	22
LITHUANIA	18
LUXUMBOURG	12
MALTA	9
NETHERLANDS	75
PORTUGAL	39
SLOVAKIA	6
SLOVENIA	19
SPAIN	95
TOTAL	1.775

4. RESEARCH MODELS

In the following sections we present the accruals earnings management model (AEM) and a real earnings management model (REM) used in this paper.

4.1. Accruals earnings management model (AEM)

Initially we calculated Total Accruals (TA). The most commonly used models for the calculation of total accruals are the Jones model (1991) and the modified Jones model (Dechow et al. 1995), which estimates total accruals on the basis of cash flows:

$$TA_{i,t} = NI_{i,t} - CFO_{i,t} \tag{1}$$

where:
NI_t - Net profits in year t;
CFO_t - Operating cash flow in year t.

Under these models total accruals are analysed to non-discretionary or normal accruals, (DA), which refer to accruals that relate to business activities and to discretionary or abnormal accruals (NDA) that refer to accruals that relate to managerial discretion and which can, therefore, be manipulated (Filip and Raffournier, 2012).

Kothari at al. (2005) improved the detecting and explanatory power of the Jones and the modified Jones model by taking into consideration the firm's discretionary accruals that are related to its performance. In order to estimate total accruals we used the following model. In order to measure firm's performance, we include in the model the variable Return on Assets (ROA):

$$\frac{TA_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{(\Delta Sales_{i,t})}{Assets_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{Assets_{i,t-1}} + \beta_4 ROA_{i,t} + e_{i,t} \tag{2}$$

where:
$TA_{i,t}$ - total accruals of company *i* for year *t*;
$Assets_{i,t-1}$ - total assets of company *i* for year *t-1*;
$\Delta Sales_{i,t}$ - change of sales of company i from year *t-1* to year *t*;
$PPE_{i,t}$ - total property, plant and equipment of company *i* for year *t*;
$ROA_{i,t}$ - Return on Assets for company *i* (profits before interest and taxes divided by average of total assets for year *t*);

$e_{i,t}$ - the residuals of the regression for year *t* which show discretionary accruals (the portion of total accruals which can be manipulated).

The values of $TA_{i,t}$, $\Delta Sales_{i,t}$, and $PPE_{i,t}$, were scaled by total assets of year *t-1*. To find the parameters $\widehat{\beta_0}, \widehat{\beta_1}, \widehat{\beta_2}, \widehat{\beta_3}$ and β_4 of the model 2 we run regression equations for each country and for each year. These parameters were used for the estimation of discretionary accruals. The non-discretionary accruals $NA_{i,t}$ are estimated as follows:

$$NA_{i,t} = \widehat{\beta_0} + \widehat{\beta_1} \frac{1}{Assets_{i,t-1}} + \widehat{\beta_2} \frac{(\Delta Sales_{i,t} - \Delta AR_{i,t})}{Assets_{i,t-1}} + \widehat{\beta_3} \frac{PPE_{i,t}}{Assets_{i,t-1}} + \widehat{\beta_4} ROA_{i,t} \tag{3}$$

where:
$NA_{i,t}$ - non-discretionary accruals of company *i* for year *t;*
$\Delta AR_{i,t}$ - change in accounts receivable of company *i* for year t.

For each country and for each year the discretionary accruals $DAJ1_{i,t}$ were estimated as follows:

$$DAJ1_{i,t} = \frac{TA_{i,t}}{Assets_{i,t-1}} - \left[\widehat{\beta_0} + \widehat{\beta_1} \frac{1}{Assets_{i,t-1}} + \widehat{\beta_2} \frac{(\Delta Sales_{i,t} - \Delta AR_{i,t})}{Assets_{i,t-1}} + \widehat{\beta_3} \frac{PPE_{i,t}}{Assets_{i,t-1}} + \widehat{\beta_4} ROA_{i,t} \right] \tag{4}$$

or

$$DAJ1_{i,t} = \frac{TA_{i,t}}{Assets_{i,t-1}} - NA_{i,t} \qquad (4.1)$$

The second model we used in order to measure the quality of accruals is based on the model of Dechow and Dichev (2002), as this has been

modified by McNichols (2002) and Francis et al. (2005). The Dechow and Dichev model (2002) is considered superior of the modified Jones model regarding the detection of abnormal accruals (Francis et al., 2005). According to Dechow and Dichev model the quality of accruals is determined by the extent to which accruals are reflected upon real cash flows:

$$\frac{TA_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{CFO_{i,t-1}}{Assets_{i,t-1}} + \beta_2 \frac{CFO_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{CFO_{i,t+1}}{Assets_{i,t-1}} + \beta_4 \frac{(\Delta Sales_{i,t} - \Delta AR_{i,t})}{Assets_{i,t-1}} + \beta_5 \frac{PPE_{i,t}}{Assets_{i,t-1}} + e_{i,t} \qquad (5)$$

where:
$CFO_{i,t}$ - operational cash flows of firm *i* for year *t*;
$CFO_{i,t-1}$ - operational cash flows of firm *i* for year *t-1*;
$CFO_{i,t+1}$ - operational cash flows of firm *i* for year *t+1*.

Other variables are defined above. The values of all variables were scaled by total assets of year *t-1*. For each country and for each year the non-discretionary accruals $NA_{i,t}$ were estimated as follows:

$$NA_{i,t} = \widehat{\beta_0} + \widehat{\beta_1} \frac{CFO_{i,t-1}}{Assets_{i,t-1}} + \widehat{\beta_2} \frac{CFO_{i,t}}{Assets_{i,t-1}}$$
$$+ \widehat{\beta_3} \frac{CFO_{i,t+1}}{Assets_{i,t-1}} + \widehat{\beta_4} \frac{(\Delta Sales_{i,t} - \Delta AR_{i,t})}{Assets_{i,t-1}} + \widehat{\beta_3} \frac{PPE_{i,t}}{Assets_{i,t-1}} \qquad (6)$$

Variables as defined above. For each country and for each year the discretionary accruals $DAJ2_{i,t}$ were estimated as follows:

$$DAJ2_{i,t} = \frac{TA_{i,t}}{Assets_{i,t-1}} - \left[\widehat{\beta_0} + \widehat{\beta_1} \frac{CFO_{i,t-1}}{Assets_{i,t-1}} \right.$$
$$+ \widehat{\beta_2} \frac{CFO_{i,t}}{Assets_{i,t-1}} + \widehat{\beta_3} \frac{CFO_{i,t+1}}{Assets_{i,t-1}} \qquad (7)$$
$$+ \widehat{\beta_4} \frac{(\Delta Sales_{i,t} - \Delta AR_{i,t})}{Assets_{i,t-1}} + \left. \widehat{\beta_3} \frac{PPE_{i,t}}{Assets_{i,t-1}} \right]$$

or

$$DAJ2_{i,t} = \frac{TA_{i,t}}{Assets_{i,t-1}} - NA_{i,t} \qquad (7.1)$$

Variables as defined above. Following previous studies, we used the absolute values of the discretionary accruals as a proxy for the manipulation of profits (Becker et al., 1998; Filip and Raffournier, 2012).

4.2. Real earnings management (REM)

Earnings management can be achieved through real activities management. According to Roychowhury (2006) the most commonly used techniques of real earnings management include the management of:
  – sales revenues;
  – discretionary expenses;
  – production levels.
The divergence between the normal levels of the above mentioned items and those achieved through earnings management are called, abnormal

sales revenues, abnormal discretionary expenses and abnormal production levels.
Management of sales revenues refers to managers' actions aiming to a temporary increase of sales revenues and as a consequence of profits (Roychowhury, 2006). These actions may include the provision of extensive discounts and credit to firms' customers.
Reduction of discretionary expenses. Discretionary expenses include R&D expenses, distribution and administrative expenses and advertising expenses. The level of these expenses is determined to a considerable extent by managers' decisions. Therefore a firm can increase its profitability by reducing its discretionary expenses. Although, such a policy has a positive impact upon current year's operational cash flows, it can have a negative impact upon future period's cash flows.
Production levels. A firm can increase its production level above that required by the demand for its products. Thus, the fixed overhead are allocated to a larger quantity of production units. As a consequence the fixed cost per production unit is reduced. Although the increased production leads to an increase in total production costs and a corresponding decrease in the operational cash flows, the cost of goods sold is reduced. Consequently operational profits increase
From the above analysis we conclude that excessive discounts coupled with over production lead to higher production costs as percentage of sales, while the reduction of discretionary expenses leads to unusually low discretionary expenses as a percentage of sales. Sales discounts and overproduction have a negative impact upon abnormal cash flows, while the reduction of discretionary expenses has a positive impact upon cash flows. According to Cohen & Zarowin (2008) and Zang (2012) the higher the level of abnormal cash flows from operations and abnormal discretionary expenses the more likely is that the firm has managed its earnings by providing sales discounts and by decreasing discretionary expenses. It should be mentioned that due to lack of data regarding discretionary expenses the sample has been considerably reduced (see Doukakis, 2014).
Initially we estimated the production costs (PROD) for each firm and each year by using the following formula of Roychowdhury (2006):

$$PROD_{i,t} = COGS_{i,t} + \Delta INV_{i,t} \qquad (8)$$

where:
$PROD_{i,t}$ - production costs of firm *i* for year *t*;
$COGS_{i,t}$ - cost of goods sold of firm *i* for year *t*;

$\Delta INV_{i,t}$ - change in the level of inventories of firm *i* between periods *t* and *t-1*.

In order to detect real earnings management we employed the following model which is based on the models of Dechow et al. (1998) and Roychowdhury (2006).

$$\frac{PROD_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \beta_4 \frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} + e_{i,t}$$

(9)

where:
$\Delta Sales_{i,t}$ - sales of firm i in year t;
$\Delta Sales_{i,t}$ - change in the level of sales of firm *i* between periods *t* and *t-1*;
$\Delta Sales_{i,t-1}$ - change in the level of sales of firm *i* between periods *t-1* and *t-2* (lagged change in sales).

Other variables as defined above. The values of all variables were scaled by total assets of year *t-1*. Abnormal production costs ($Ab\_PROD_{i,t}$) were estimated for each country and for each year by the following formula:

$$Ab\_PROD_{i,t} = \frac{PROD_{i,t}}{Assets_{i,t-1}} - \left[\widehat{\beta_0} + \widehat{\beta_1} \frac{1}{Assets_{i,t-1}} + \widehat{\beta_2} \frac{Sales_{i,t}}{Assets_{i,t-1}} + \widehat{\beta_3} \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \widehat{\beta_4} \frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} \right]$$

(10)

Variables as defined above. According to Dechow et al. (1998) and Roychowdhury (2006) operational cash flows have a linear relationship with sales figures. Operational cash flows were estimated using the following formula:

$$\frac{CFO_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + e_{i,t}$$

(11)

where:
$CFO_{i,t}$ - operational cash flows of firm *i* for year *t*;
$Assets_{i,t-1}$ - total assets of firm *i* in year *t-1*;
$Sales_{i,t}$ - sales of firm i in year t;

$\Delta Sales_{i,t}$ - change in the level of sales of firm *i* between periods *t* and *t-1*.

Abnormal Cash Flows from operationsm ($Ab\_CFO_{i,t}$) were estimated for each country and for each year by the following formula:

$$Ab\_CFO_{i,t} = \frac{CFO_{i,t}}{Assets_{i,t-1}} - \left[\widehat{\beta_0} + \widehat{\beta_1} \frac{1}{Assets_{i,t-1}} + \widehat{\beta_2} \frac{Sales_{i,t}}{Assets_{i,t-1}} + \widehat{\beta_3} \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} \right]$$

(12)

Variables as defined above. The values of variables $Sales_{i,t}$, and $\Delta Sales_{i,t}$ were scaled by total assets of year t-1. Discretionary expenses have a linear relationship with years' sales. Discretionary expenses were estimated using the following formula:

$$\frac{DISX_{i,t}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + e_{i,t}$$

(13)

where:
$DISX_{i,t}$ - discretionary expenses, including administrative expenses, advertising expense and R&D expenses.

Other Variables as defined above. The value of variables $Sales_{i,t}$ is scaled by total assets of year *t-1*.

Abnormal discretionary expenses $Ab\_DISX_{i,t}$ were estimated for each country and for each year by the following formula:

$$Ab\_DISX_{i,t} = \frac{DISX_{i,t}}{Assets_{i,t-1}} - \left[\widehat{\beta_0} + \widehat{\beta_1} \frac{1}{Assets_{i,t-1}} + \widehat{\beta_2} \frac{Sales_{i,t}}{Assets_{i,t-1}} \right]$$

(14)

Variables as defined above. The value of variables $Sales_{i,t}$ is scaled by total assets of year t-1. The variable referring to real earnings management (REAL) is composed by the variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$ (see, Doukakis, 2014). Cohen & Zarowin (2008) argue that the estimation of real earnings management, by combining variables referring to cost of goods sold and operational cash flows, has the advantage of capturing the impact of abnormal cash flows from operations.

4.3. Earnings management and financial crisis

In order to examine the impact of financial crisis upon earnings management we examine accrual and real earnings management for the following periods:
- before crisis (2007-2008);
- during crisis (2009-2010);
- after the crisis (2011-2012).

We tested the following models:

$$|DAJ1_{i,t}| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 BIG_{i,t} + \alpha_6 FC_{i,t} + e_{i,t} \tag{15}$$

$$REAL_{i,t} = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 |DAJ1_{i,t}| + \alpha_5 BIG_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 ROA_{i,t} + e_{i,t} \tag{16}$$

$$|DAJ2_{i,t}| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 BIG_{i,t} + \alpha_6 FC_{i,t} + e_{i,t} \tag{17}$$

$$REAL_{i,t} = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 |DAJ2_{i,t}| + \alpha_5 BIG_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 ROA_{i,t} + e_{i,t} \tag{18}$$

$$|DAJ1_{i,t}| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + e_{i,t} \tag{19}$$

$$|DAJ2_{i,t}| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + e_{i,t} \tag{20}$$

$$|DAJ1_{i,t}| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 Growth_{i,t} + e_{i,t} \tag{21}$$

$$|DAJ2_{i,t}| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 Growth_{i,t} + e_{i,t} \tag{22}$$

where:

$|DAJ1_{i,t}|$ - the absolute value of discretionary accruals, as they have been estimated by model (4);

$|DAJ2_{i,t}|$ - the absolute value of discretionary accruals, as they have been estimated by model (5);

$LNASSETS_{i,t}$ - logarithm of total assets of firm i in year t;

$LEV_{i,t}$ - leverage of firm i in year t, defined as total liabilities to total assets;

$M/B_{i,t}$ - market to book value of firm i in year t;

$REAL_{i,t}$ - the sum of variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$;

$BIG_{i,t}$ - the variable takes value *1* if the firm has been audited by the following auditing firms Deloite, KPMG, PWC, E&Y ; and the value *0* otherwise;

$FC_{i,t}$- the variable takes the value 1 for the years of financial crisis and otherwise the value 0;

$ROA_{i,t}$- Return on Assets for firm i (Profits before taxes and interest divided by the average of total assets for year t;

$GDP_{i,t}$ - growth rate of Country's Gross National Product;

$Growth_{i,t}$ - the growth rate of sales value of firm i in year t.

In order to capture the impact of the period of financial crisis we included in the model the variable FC. This variable takes the value 1 for the years of financial crisis (period 2009-2010) and 0 otherwise (periods 2007-2008, and 2011-2012). In order to capture the impact of macroeconomic factors we include in the model the variable $GDP_{i,t}$. $Growth_{i,t}$ variable refers to change of sales and the growth rate of a firm. Similarly the $M/B_{i,t}$ variable reflects the growth prospects of a firm. According Skinner and Sloan (2002), high growth firms are more likely to manage their earnings. Therefore, if firms implement earnings-management techniques, we expect variables $GDP_{i,t}$, $Growth_{i,t}$, $M/B_{i,t}$ to be positively associated with variables $|DAJ1_{i,t}|$, $|DAJ2_{i,t}|$ and $REAL_{i,t}$.

We control for the impact of firm's leverage and size on firm's earnings management policies. In particular, we include in the model the variable LEVERAGE in order to control for the impact that considerations relating to debt covenant may have upon earnings management. Due to the fact that the debt covenants are based upon accounting figures is more likely for highly leveraged firms to manage their earnings in order to avoid violating debt covenants (DeFond and Jiambalvo, 1994; Dichev and Skinner, 2002). On the other hand, Watts and Zimmerman (1990) argue that the highly leveraged are less likely get involved in earnings management due to the fact that these firms are closely monitored by their creditors. We do not predict a sign for the variable LEVERAGE. We control for the impact of firm's size by including in our model the variable LN_Assets. Previous research has shown that larger firms are less likely to adopt earnings management practices. The internal control mechanisms of larger firms and the close monitoring of larger firms by large auditing firms are factors that deter large firms from earnings management. On the other hand, due to the fact that large firms are under pressure to meet the expectations of analysts, they are more likely to manage their earnings (Barton and Simko, 2002). Moreover, larger firms have greater negotiating towards auditing firms (Nelson et al., 2001).

5. EMPIRICAL FINDINGS

The descriptive statistics are presented in Table 2. The sample includes 1.775 firms from 19 countries for the period 2005-2014. The median and mean values of variables $|DAJ1_{i,t}|$, and $|DAJ2_{i,t}|$ are close to zero. This result is in line with the findings of Cohen et al. (2008), and Ferentinou and Anagnostopoulou (2014). Similarly the values of the variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$, are close to zero. The positive sign of the variable $REAL_{i,t}$ suggest that firms may manage their earnings.

Table 2. The descriptive statistics

	Mean	Median	SD
$DAJ1_{i,t}$	-0,0000367	0,0000205	0,1268
$|DAJ1_{i,t}|$	0,0710	0,04633	0,1061
$DAJ2_{i,t}$	0.001143	0.005845	0.158501
$|DAJ2_{i,t}|$	0.066938	0.040828	0.143676
$Ab\_CFO_{i,t}$	-0.006113	-0.008201	0.129470
$Ab\_PROD_{i,t}$	-0.001426	0.042551	0.264723
$REAL_{i,t}$	0.004686	0.043329	0.324680
$LNASSETS_{i,t}$	12.82662	12.48862	2.293902
$LEV_{i,t}$	0.577492	0.577021	0.266226
$M/B_{i,t}$	1.907192	1.280000	8.862312
$ROA_{i,t}$	0.047619	0.054873	0.163894

Note: * $DAJ1_{i,t}$ *- discretionary accruals, that have been estimated by model (4);*
$|DAJ1_{i,t}|$- *the absolute value of discretionary accruals, as they have been estimated by model (4);*
$DAJ2_{i,t}$ *- discretionary accruals, that have been estimated by model (5);*
$|DAJ2_{i,t}|$ *- the absolute value of discretionary accruals, as they have been estimated by model (5);*
$LNASSETS_{i,t}$ *- logarithm of total assets of firm i in year t;*
$LEV_{i,t}$ *- leverage of firm i in year t, defined as total liabilities to total assets;*
$M/B_{i,t}$ *- market to book value of firm i in year t;*
$REAL_{i,t}$ *- the sum of variables variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$;*
$ROA_{i,t}$ *- Return on Assets for firm i (Profits before taxes and interest divided by the average of total assets for year t;*
$Ab\_PROD_{i,t}$ *- abnormal PROD as they have been estimated by model (10);*
$Ab\_CFO_{i,t}$ *- abnormal CFO as they have been estimated by model (12).*

In Table 3 are presented the results regarding the association between the variables (pair – wise Pearson), $REAL_{i,t}$, $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$, $|DAJ1_{i,t}|$ $|DAJ2_{i,t}|$. It appears the variable $REAL_{i,t}$ is positively related with the variable $Ab\_PROD_{i,t}$ while it is negatively associated with the variable $Ab\_CFO_{i,t}$.

Table 3. The results regarding the association between the variables (pair – wise Pearson)

	$REAL_{i,t}$	$Ab\_CFO_{i,t}$	$Ab\_PROD_{i,t}$	$|DAJ1_{i,t}|$
$REAL_{i,t}$	1			
$Ab\_CFO_{i,t}$	-0.621777 (-79.82536)***	1		
$Ab\_PROD_{i,t}$	0.918711 (233.9018)***	-0.261926 (-27.28898) ***	1	
$|DAJ1_{i,t}|$****	0.004237 (0.426025)	-0.071730 (-7.230969)***	-0.030949 (-3.113399)***	1
$|DAJ2_{i,t}|$	0.023627 (2.376334)**	-0.119416 (-12.09362)***	-0.031102 (-3.128752)***	0.653513 (86.81253)***

Note: *   *significant at the .1 level (2-tailed);*
** *significant at the .05 level (2-tailed);*
*** *significant at the .01 level (2-tailed);*
**** $|DAJ1_{i,t}|$- *the absolute value of discretionary accruals, as they have been estimated by model (4);*
$|DAJ2_{i,t}|$ *- the absolute value of discretionary accruals, as they have been estimated by model (5);*
$Ab\_PROD_{i,t}$ *- abnormal PROD as they have been estimated by model (10);*
$Ab\_CFO_{i,t}$ *- abnormal CFO as they have been estimated by model (12).*

In order to examine the impact of financial crisis upon earnings management, we compared the mean and the median values of the accruals and real earnings management variables before financial crisis (2007-2008), during financial crisis (2009-2010) and after financial crisis (2011-2013). In order to compare the mean values we used the t-test, while for the comparisons of medians we used the Wilcoxon/Mean – Whitney.

The mean value of $|DAJ1_{i,t}|$ is lower during the financial crisis period comparing to the periods before and after it. The mean value of $Ab\_CFO_{i,t}$ increases in the periods during and after financial crisis. The mean value of $Ab\_PROD_{i,t}$ is almost zero in all periods. These findings suggest that accruals earnings management decreased during financial crisis. The real earnings management does not appear to be affected by financial crisis.

Table 4. The impact of financial crisis

	Mean	Median
2007-2008		
$|DAJ1_{i,t}|$	0,078260	0,051098
$Ab\_CFO_{i,t}$	0,0000011	-0,007428
$Ab\_PROD_{i,t}$	-0,0000043	0,038268
$REAL_{i,t}$	0,002086	0,037549
2009-2010		
$|DAJ1_{i,t}|$	0,068916	0,046030
$Ab\_CFO_{i,t}$	-0,007822	-0,004346
$Ab\_PROD_{i,t}$	-0,00000015	0,039869
$REAL_{i,t}$	0,0070253	0,03676
2011-2013		
$|DAJ1_{i,t}|$	0,070931	0,044308
$Ab\_CFO_{i,t}$	-0,008082	-0,011138
$Ab\_PROD_{i,t}$	-0,0000286	0,051460
$REAL_{i,t}$	0,008541	0,055100
Difference between 2007-2008 and 2009 -2010		
$|DAJ1_{i,t}|$	0,009343***	0,005068***
$Ab\_CFO_{i,t}$	0,0078231**	-0,003082
$Ab\_PROD_{i,t}$	-0,00000415***	-0,001601
$REAL_{i,t}$	-0,0494	0,000789
Difference between 2009-2010 and 2011 -2013		
$|DAJ1_{i,t}|$	-0,0020149	0,001722
$Ab\_CFO_{i,t}$	0,00026	0,006792
$Ab\_PROD_{i,t}$	0,00002845	-0,011591
$REAL_{i,t}$	-0,0152	-0,01379

Note: *   *significant at the .1 level (2-tailed);*
         **   *significant at the .05 level (2-tailed);*
         ***   *significant at the .01 level (2-tailed);*
         ****   *$|DAJ1_{i,t}|$- the absolute value of discretionary accruals, as they have been estimated by model (4);*
                $Ab\_PROD_{i,t}$ - abnormal PROD as they have been estimated by model (10);
                $Ab\_CFO_{i,t}$- abnormal CFO as they have been estimated by model (12);
                $REAL_{i,t}$ - the sum of the values of the variables
                $Ab\_PROD_{i,t}$ and$Ab\_CFO_{i,t}$.

In the Tables 5, 6, 7 and 8 are presented the results of the following models:

Table 5. The results of the following models

$|DAJ1_{i,t}| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 BIG_{i,t} + \alpha_6 FC_{i,t} + e_{i,t}$	
$REAL_{i,t} = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 |DAJ1_{i,t}| + \alpha_5 BIG_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 ROA_{i,t} + e_{i,t}$	
	$|DAJ1_{i,t}|$	$REAL_{i,t}$
C	0,152503 (24.34658)***	-0.061062 (-2.424295)**
$LNASSETS_{i,t}$	-0,008065(-13.83836)***	0.006409 (2.602594)***
$LEV_{i,t}$	0,037946 (3.733296)***	0.040502 (1.168996)
$M/B_{i,t}$	0,000209 (0.885552)	-0.001001 (-1.415610)
$REAL_{i,t}$/ $|DAJ1_{i,t}|$	-0,002386 (-0.159509)	0.023702 (0.148359)
$BIG_{i,t}$	0,001923(0.641593)	-0.020328 (-2.458743)**
$FC_{i,t}$	-0,004508 (-2.098774)**	-0.002211 (-0.327226)
$ROA_{i,t}$		-0.502822 (-3.032167)
Adjusted R-squared	0,034376	0.071310
F-statistic	6,15194	111.7363
P-value	0,000	0,000
N	10.450	10.450

Note: *   *significant at the .1 level (2-tailed);*
         **   *significant at the .05 level (2-tailed);*
         ***   *significant at the .01 level (2-tailed);*
         ****   *$|DAJ1_{i,t}|$- the absolute value of discretionary accruals, as they have been estimated by model (4);*
                $LNASSETS_{i,t}$ - logarithm of total assets of firm i in year t;
                $LEV_{i,t}$ - leverage of firm i in year t, defined as total liabilities to total assets;
                $M/B_{i,t}$ - market to book value of firm i in year t;
                $REAL_{i,t}$ - the sum of variables variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$;
                $ROA_{i,t}$- Return on Assets for firm i (Profits before taxes and interest divided by the average of total assets for year t;
                $BIG_{i,t}$ - the variable takes value 1 if the firm has been audited by the following auditing firms Deloite, KPMG, PWC, E&Y ; or Grant Thornton, and the value 0 otherwise;
                $FC_{i,t}$- the variable takes the value 1 for the years of financial crisis and the value 0

Table 6. The results of the following models

	$|DAJ2_{i,t}|$	$REAL_{i,t}$
$\lvert DAJ2_{i,t}\rvert = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3\,M/B_{i,t} + \alpha_4\,REAL_{i,t} + \alpha_5 BIG_{i,t}$		
$REAL_{i,t} = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3\,M/B_{i,t} + \alpha_4\,\lvert DAJ2_{i,t}\rvert + \alpha_5 BIG_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 ROA_{i,t} + e_{i,t}$		
	$\lvert DAJ2_{i,t}\rvert$	$REAL_{i,t}$
C	0.155424 (19.99816)***	-0.063117 (-3.035036)***
$LNASSETS_{i,t}$	-0.008793 (-15.04832)***	0.005812 (2.160503)**
$LEV_{i,t}$	0.052331 (4.725967)***	0.060216 (1.894342)*
$M/B_{i,t}$	0,0000772 (0.529498)	-0.001011 (-1.437288)
$REAL_{i,t}/\ \lvert DAJ2_{i,t}\rvert$	0.002001 (0.239241)	-0.000416 (-0.009009)
$BIG_{i,t}$	-0.004602 (-1.086495)	-0.019969 (-2.438793)**
$FC_{i,t}$	-0.008253 (-3.209935)***	-0.002120 (-0.311473)
$ROA_{i,t}$		-0.507192 (-2.936690)***
Adjusted R-squared	0.027743	0.074962
F-statistic	49.11849	117.5650
P-value	0,000	0,000
N	10.450	10.450

Note: *   *significant at* the .1 level (2-tailed);

            **   *significant at* the .05 level (2-tailed);

            ***   *significant at* the .01 level (2-tailed);

            **** $\lvert DAJ2_{i,t}\rvert$ *- the absolute value of discretionary accruals, as they have been estimated by model (5);*
$LNASSETS_{i,t}$ - logarithm of total assets of firm i in year t;
$LEV_{i,t}$ - leverage of firm i in year t, defined as total liabilities to total assets;
$M/B_{i,t}$ - market to book value of firm i in year t;
$REAL_{i,t}$ - the sum of variables variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$;
$ROA_{i,t}$- Return on Assets for firm i (Profits before taxes and interest divided by the average of total assets for year t;
$BIG_{i,t}$ - the variable takes value 1 if the firm has been audited by the following auditing firms Deloite, KPMG, PWC, E&Y; or Grant Thornton, and the value 0 otherwise;
$FC_{i,t}$- the variable takes the value 1 for the years of financial crisis and the value 0.

Table 7. The results of the following models

	$|DAJ1_{i,t}|$	$|DAJ2_{i,t}| = \alpha_0$
$\lvert DAJ1_{i,t}\rvert = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3\,M/B_{i,t} + \alpha_4\,REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + e_{i,t}$		
$\lvert DAJ2_{i,t}\rvert = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3\,M/B_{i,t} + \alpha_4\,REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + e_{i,t}$		
	$\lvert DAJ1_{i,t}\rvert$	$\lvert DAJ2_{i,t}\rvert = \alpha_0$
C	0.151670 (23.95209)***	0.157117 (18.17349)***
$LNASSETS_{i,t}$	-0.008052 (-15.27542)***	-0.009154 (-12.50964)***
$LEV_{i,t}$	0.039292 (3.905300)***	0.052132 (4.651085)***
$M/B_{i,t}$	0.000192 (0.846072)	0,0000758 (0.520218)
$REAL_{i,t}$	-0.001984 (-0.132774)	0.002061 (0.248077)
$GDP_{i,t}$	0.002017 (6.164917)***	-0.000347 (-0.870315)
$FC_{i,t}$	0.000117 (0.048234)	-0.009043 (-4.060472)***
Adjusted R-squared	0.037962	0.027631
F-statistic	67.67362	48.91904
P-value	0,000	0,000
N	10.450	10.450

Note: *   *significant at* the .1 level (2-tailed);

            **   *significant at* the .05 level (2-tailed);

            ***   *significant at* the .01 level (2-tailed);

            $\lvert DAJ1_{i,t}\rvert$- *the absolute value of discretionary accruals, as they have been estimated by model (4);*
$\lvert DAJ2_{i,t}\rvert$ - the absolute value of discretionary accruals, as they have been estimated by model (5);
$LNASSETS_{i,t}$ - logarithm of total assets of firm i in year t;
$LEV_{i,t}$ - leverage of firm i in year t, defined as total liabilities to total assets;

            ****   *$M/B_{i,t}$ - market to book value of firm i in year t;*
$REAL_{i,t}$ - the sum of variables variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$;
$ROA_{i,t}$- Return on Assets for firm i (Profits before taxes and interest divided by the average of total assets for year t;
$FC_{i,t}$- the variable takes the value 1 for the years of financial crisis and the value 0.
$GDP_{i,t}$ - growth rate of Country's Gross National Product.

Table 8. The results of the following models

$\|DAJ1_{i,t}\| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 Growth_{i,t} + e_{i,t}$		
$\|DAJ2_{i,t}\| = \alpha_0 + \alpha_1 LNASSETS_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 M/B_{i,t} + \alpha_4 REAL_{i,t} + \alpha_5 GDP_{i,t} + \alpha_6 FC_{i,t} + \alpha_7 Growth_{i,t} + e_{i,t}$		
	$\|DAJ1_{i,t}\|$	$\|DAJ2_{i,t}\|$
C	0.146860 (0.8102)	0.153077 (17.92835)
$LNASSETS_{i,t}$	-0.007677 (-15.75446)***	-0.008860 (-12.25061)
$LEV_{i,t}$	0.037964 (3.749210)***	0.051612 (4.550119)
$M/B_{i,t}$	0.000132 (0.647995)	0,0000589 (0.429992)
$REAL_{i,t}$	-0.000955 (-0.071264)	0.002318 (0.287053)
$GDP_{i,t}$	0.002004 (6.158447)***	-0.000366 (-0.917330)
$FC_{i,t}$	0.000570 (0.240234)	-0.008484 (-3.818132)
$Growth_{i,t}$	0.001006 (1.131462)	0.000318 (1.113768)
Adjusted R-squared	0.064928	0.027836
F-statistic	101.1272	42.21457
P-value	0,000	0,000
N	10.450	10.450

Note: *   *significant at* the .1 level (2-tailed);

       **   *significant at* the .05 level (2-tailed);

       ***   *significant at* the .01 level (2-tailed);

       **** $\|DAJ1_{i,t}\|$- *the absolute value of discretionary accruals, as they have been estimated by model (4);*
$\|DAJ2_{i,t}\|$ - *the absolute value of discretionary accruals, as they have been estimated by model (5);*
$LNASSETS_{i,t}$ - *logarithm of total assets of firm i in year t;*
$LEV_{i,t}$ - *leverage of firm i in year t, defined as total liabilities to total assets;*
$M/B_{i,t}$ - *market to book value of firm i in year t;*
$REAL_{i,t}$ - *the sum of variables variables $Ab\_PROD_{i,t}$ and $Ab\_CFO_{i,t}$;*
$ROA_{i,t}$- *Return on Assets for firm i (Profits before taxes and interest divided by the average of total assets for year t;*
$FC_{i,t}$- *the variable takes the value 1 for the years of financial crisis and the value 0.*
$GDP_{i,t}$ - *growth rate of Country's Gross National Product.*
$Growth_{i,t}$ - *the growth rate of sales value of firm i in year t.*

The results in Tables 5-6 suggest that variables $|DAJ1_{i,t}|$ and $|DAJ2_{i,t}|$ are negatively associated with variable FC. It appears that in the period of financial crisis, firms use to lesser extent accruals as a mechanism of earnings management. These results support our first hypothesis (H1) according to which firms' tendency to manage their accruals is affected by the prevailing financial crisis. The value of the variable REAL does not appear to be related with variable FC. These results do not support our second hypothesis (H2) according to which firms' tendency to engage in real-earnings management is affected by the prevailing financial crisis. These findings are in line with the findings of previous research which suggest that in the periods of financial turbulence the quality of accounting information may not deteriorate (Jenkins et al. 2009; Ahmad-Zaluki et al. 2011; Filip and Raffournier, 2012; Francis et al. 2013; Iatridis and Dimitras, 2013). No significant association seems to exist between with the level of accruals and the level real-earnings management.

Although, earnings management does not appear to be associated with the period of financial crisis, other factors seem to influence firms' tendency to manipulate their earnings. GDP appears to be positively associated with discretionary accruals (Tables 7, 8). These results suggest that in the periods of GDP increase earnings management is intensified while the quality of reported profits is deteriorating. It seems that the more leveraged firms are more likely to manage their earnings through accruals. Similarly, the more leveraged firms are

more likely to manage their earnings through real earnings management. These findings are in line with the findings of DeFond and Jiambalvo (1994) and Dichev and Skinner (2002). The size of the firm is negatively associated with the level of accruals. On the other had the size of the firm is positively related with the REAL variable.

The negative association between variables ROA and REAL (Table 5) suggest that the less profitable firms may have more incentives to adopt real earnings management practices. The negative association between REAL and BIG suggests that firms refrain from real earnings management when they are audited by large auditing firms. This finding is in line with findings of previous research (e.g. Iatridis and Dimitras, 2013).

6. CONCLUSION

Despite the fact that earnings management does not increase during the period of financial crisis, the findings of this study indicate that in the periods of GDP increase earnings management is intensified while the quality of profits is deteriorating. The association between profitability and earnings management indicates that the less profitable firms are more likely to manage their earnings. Leverage is positively associated with earnings management while the larger firms are less likely to manage their earnings. Similarly the firms that are audited by big-auditing firms are less likely to manage their earnings.

The findings of this study can have some implications regarding the accounting standards setting procedure. The findings of this study indicate that despite the introduction of IFRS, firms have a scope to get involved in earning management practices. The introduction of IFRS does not automatically leads to an improvement of the quality of the published financial statements.

This paper adds to the existing earnings' management literature by approaching the issue from alternative angles. In particular, we examined the impact that recent financial crisis may have upon firms' earnings management policies. In addition, we include in our analysis not only accruals-based models but real-earnings management models as well. The examination of additional real-earnings management techniques may facilitate our comprehension regarding real-earnings management. The further investigation of the impact of macroeconomic factors can expand the scope of the analysis undertaken within this paper. In particular, the interrelation between various macroeconomic factors and their impact upon earning's management can be further explored. Furthermore, the examination of additional environmental factors can enrich the findings of this study. For instance, it can be examined the impact upon firms' earnings management policies of country-specific factors such as political stability and the quality of regulatory framework. Besides, the further examination of the association between the audit quality and earnings management may improve our understanding concerning the effect of monitoring mechanisms on firms' earnings management policies.

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