LISBON SCHOOL OF ECONOMICS & MANAGEMENT
UNIVERSIDADE DE LISBOA

MASTER

FINANCE

MASTER´S FINAL WORK

DISSERTATION

TYPE OF EARNINGS MANAGEMENT AND THE EFFECT OF AUDITORS' SIZE AND DIVIDEND THRESHOLD: EVIDENCE FROM PORTUGAL

JOKO SUPRIYANTO

NOVEMBER 2020

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ABSTRACT

The objective of this study is to investigate whether the Portuguese firms that are listed in EURONEXT Lisbon engage opportunistic or efficient earnings management and to examine the effect of auditors' size and dividend threshold on the selection of type of earnings management by the Portuguese managers.

Using the sample of 33 publicly listed Portuguese firms in period 2010 - 2018, we examine the association between discretionary accruals and future profitability. If the association between discretionary accrual and future profitability is positive significant, the firms engage efficient earnings management. Otherwise, the firms engage opportunistic earnings management. Our result shows that the Portuguese firms tend to engage efficient earnings management. This finding is contradictory with the previous studies that indicate the type of earnings management engaged by Portuguese firms is opportunistic. However, the desire to meet dividend threshold can trigger the Portuguese firms to engage opportunistic earnings management. Furthermore, the big 4 auditors fail to give an additional effect to mitigate opportunistic earnings management practices.

KEYWORDS: Earnings management; Auditors' size; Dividend Threshold.
JEL CODES: C23; D22; G34; G35; M41.

RESUMO

O objetivo deste estudo é investigar se as empresas portuguesas cotadas na EURONEXT Lisboa praticam uma gestão de resultado oportunista ou eficiente e examinar o efeito da dimensão dos auditores e do limite de dividendos na seleção do tipo de gestão de resultados praticada pelos gestores portugueses.

O estudo consiste na análise de uma amostra de 33 empresas portuguesas cotadas, durante o período de 2010 a 2018, no qual averiguamos a associação entre acréscimos discricionários e rentabilidade futura. Se a associação entre acréscimos discricionários e rentabilidade futura for positivamente significativa, as empresas praticam uma gestão de resultados eficiente. Caso contrário, as empresas praticam uma gestão de resultados oportunista.

O nosso estudo indica que as empresas portuguesas tendem a praticar uma gestão de resultados eficiente. Este resultado é contraditório aos resultados obtidos de estudos anteriores, que indicam que as empresas portuguesas praticam uma gestão de resultados oportunista. O desejo de atingir o limite de dividendos pode levar as empresas portuguesas a envolverem-se numa gestão de resultados oportunista. Adicionalmente, as 4 grandes empresas de auditoria não conseguem ajudar as empresas a mitigar a prática de uma gestão de resultados oportunista.

PALAVRAS-CHAVE: Gestão de Resultados; Dimensão dos Auditores; Limite de Dividendos.

CÓDIGOS JEL: C23; D22; G34; G35; M41.

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Joko Supriyanto

LIST OF ABBREVIATION

ACCR – Total Accruals

AUDIT – Auditors' Size

AQI – Audit Quality Indicators

CFO – Cash Flows from Operation

CMVM – *Comissão do Mercado de Valores Mobiliários*

DIV – Dividend Threshold

EARN – Earnings

LEV – Firm Leverage

NDNI – Non-Discretionary Net Income

NSOE – Non-stated-owned Enterprises

PPE – Property, Plant, and Equipment

REC – Account Receivables

REV – Revenue

ROA – Return on Assets

SIZE – Firm Size

SPA – Special Payment on Account

SOE – State-owned Enterprises.

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TYPE OF EARNINGS MANAGEMENT AND THE EFFECT OF AUDITORS' SIZE AND DIVIDEND THRESHOLD: EVIDENCE FROM PORTUGAL

By Joko Supriyanto

1. INTRODUCTION

This study aims to investigate whether Portuguese publicly traded firms engage in opportunistic or efficient earnings management in period 2010-2018. This study is motivated by the previous studies that indicate earnings management practices in Portugal tend to be opportunistic. Marques et al. (2011) found that Portuguese private firms manipulate earnings to minimize the "special payment on account" (SPA) that determine the tax liability of the firms. Ferreira et al. (2013) proved that the local politicians (in Portuguese municipalities) use earnings management to maintain earnings positive close to zero to signal their competence. Da Silva et al. (2017) documented that the Portuguese firms engage earnings management to meet dividend threshold.

Scott (2012) classified earnings management into two types. First, opportunistic earnings management occurs when the managers use their discretion to maximize their own interests. Burgstahler & Dichev (1997), Robb (1998), Bauwhede et al. (2003), Athanasakou et al. (2009) and Comprix et al. (2012) suggest that earnings management is consistent with the opportunistic perspective. Second, efficient earnings management occurs when the managers use their discretion to enhance earnings informativeness to deliver private information. Previous studies also suggest that earnings management is consistent with the efficient perspective (e.g. Subramanyam, 1996; Krishnan, 2003; Siregar & Utama, 2008).

Research in earnings management has been intensively explored in the literature; however, literature concerning determinants that affect the selection of a particular type of earnings management is quite limited. Therefore, this study also investigates whether auditors' size and dividend threshold influence the type of earnings management selected by Portuguese firms.

According to agency theory, monitoring mechanism is supposed to reduce conflict of interests between principal (shareholders) and agent (managers) and to prevent any opportunistic behaviours resulting from this conflict of interests. In this sense, Jensen &

Meckling (1976; p. 323) describe the audit function as an important role to harmonize interests of both principal and agent. Previous studies (Francis et al., 1999; Becker et al., 1998; Bauwhede et al., 2003; Van Tendeloo & Vanstraelen, 2008; Alzoubi, 2016) find that auditors' size mitigate opportunistic earnings management as firms that are audited by the big auditor firms show lower level of discretionary accruals.

Dividend threshold also plays an important role to influence managers' intention to conduct opportunistic earnings management. Daniel et al. (2008) find that firms conduct earnings management opportunistically to meet dividend threshold. Following Daniel et al. (2008), Atieh & Hussein (2012) also find that UK firms conduct earnings management opportunistically to meet dividend threshold. While Kasanen et al. (1996) provide evidence that opportunistic earnings management conducted by the finish firms motivated by the dividend threshold. Da Silva et al. (2017) find that dividend threshold triggers Portuguese firms to engage earnings management.

The sample of this study consists of 33 Portuguese firms for the years 2010 to 2018. This study uses the data from 2010 to avoid the bias resulting from the effect of financial crisis which hit financial markets around the world which greatly distorted firms' financial reporting from normal period.

The results suggest that the type of earnings management that is conducted by the Portuguese firms tends to be more efficient. This evidence is in contrast with previous earnings management research in Portugal that indicate opportunistic (e.g. Marques et al., 2011; Ferreira et al., 2013; Da Silva et al., 2017). However, we also find that the desire to meet dividend threshold can triggers the Portuguese firms to conduct opportunistic earnings management. This result is consistent with Da Silva et al. (2017) who found that Portuguese firms conduct earnings management to meet dividend threshold. Furthermore, in contrast with previous studies, we find that auditors' size fails to provide additional effect on monitoring mechanism that constrain opportunistic earnings management.

This study contributes to the literature in several ways. First, we provide evidence that Portuguese firms tend to engage efficient earnings management. This finding is contrary to the previous studies that indicate earnings management conducted by the Portuguese firms is opportunistic (Marques et al., 2011; Ferreira et al., 2013, Da Silva et al., 2017). Second, this study finds evidence that dividend threshold can triggers firms to select opportunistic earnings management. The information content of dividend signals

the economic condition of the firms; hence, the firms will do whatever is required to meet dividend threshold, including engaging opportunistic earnings management (DeAngelo et al., 1992; Da Silva et al., 2017). Third, this study fails to document the auditors' size can constrain opportunistic earnings management practice in Portugal. Our result is inconsistent with the previous studies which suggest that auditors' size can mitigate opportunistic earnings management (Francis et al., 1999; Becker et al., 1998).

This study also offers some implications to the practice. First, the result shows that the Portuguese firms tend to engage efficient earnings management, which means that the investors can rely on the earnings figures reported by the Portuguese firms as they conduct earnings management to increase the informativeness of earnings to signal future profitability. Furthermore, Investors should realize that the big 4 auditors do not necessarily guarantee to restrict the Portuguese firms to engage opportunistic earnings management. Lastly, the investors should be aware that even though the firms distribute the dividend that may signal a good performance, there is still a potential that the firms engage opportunistic earnings management.

The remainder of this study is organized as follows. The next section reviews the previous literature and develops the research hypotheses. Section 3 describes the sample, the description of variables and the research design of this study. In section 4, we present the result of empirical analysis and a bunch of robustness checks. The study ends with a conclusion in section 5.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESES

2.1. Prior Research on Opportunistic and Efficient Earnings Management

From the opportunistic perspective, managers engage in earnings management to cater to their own interests instead of the shareholders' interests which they are supposed to fulfil (Scott, 2012). Previous studies investigated some incentives that trigger the firms engage opportunistic earnings management. Burgstahler and Dichev (1997) find that managers commit in earnings management to avoid reporting losses or earnings decline. Robb (1998) provides evidence that bank managers conduct greater earnings management when analysts have already reached consensus in their earnings forecasts, thus they can beat the analysts' forecasts. Comprix et al. (2012) document that managers manage

interim earnings reporting to meet or beat analysts' earnings forecasts. Athanasakou et al. (2009) document that the UK firms opportunistically conduct earnings management to meet analysts' forecast by classification shifting of core expenses to non-recurring items. Bauwhede et al. (2003) prove that Belgium firms conduct income smoothing and manage earning to meet benchmark target of previous earnings.

In Portugal, Marques et al (2011) find that Portuguese private firms manipulate earnings to minimize the "special payment on account" (SPA) that determine the tax liability of the firms. Ferreira et al. (2013) prove that the local politicians (in Portuguese municipalities) use earnings management to maintain earnings positive close to zero to signal their competence the aim for being re-elected. By managing the level of earnings in a certain level, the Portuguese politicians can signal to voters their competence. Da Silva et al. (2017) find that dividend threshold is one of the determinants that trigger Portuguese firms to conduct earnings management.

In contrast, from the efficient perspective, managers use their discretion to enhance earnings informativeness in delivering private information. Subramanyam (1996) assume that discretionary accruals as a proxy for earnings management are efficient because they show a positive and significant association with future profitability. From this positive association, discretionary accruals show their ability to signal information about firms' future profitability. Krishnan (2003) documents the significant positive relationship between discretionary accruals and stock return in the following three months after the fiscal end-year. This study indicates earnings management as a predictor for firms' stock return. Siregar and Utama (2008) also show evidence that earnings management is consistent with the efficient perspective.

2.2. Prior Research on Auditors' Size and Earnings Management

Auditing procedures play a significant role in monitoring mechanisms as they provide affirmation about the credibility of firms' financial reporting and therefore the auditors should be independent in giving the verification about the credibility of the firms' financial reporting (Alves, 2013). Bauwhede et al. (2003) argue that large auditors are more competent and/or independent than smaller auditors, thus provide a better monitoring system that constrain earnings management. The big auditor firms also have bigger cost than the small auditor firms when the audit failure occurs (Bauwhede et al.,

2003). Such costs are quasi rent (DeAngelo, 1981) and reputation (Behn et al., 1997). The big auditor firms also have greater incentive to produce better audit quality because their partners can monitor and evaluate the auditing procedure more effectively (Watts and Zimmerman, 1981).

In the literature, the effect of auditors' size on earnings management is somehow various. Becker et al. (1998) and Francis et al. (1999) show that the clients of big 6 auditors report discretionary accrual less than the discretionary accrual reported by the clients of non-big 6 auditors. In China, Chen et al. (2011) compare the impact of audit quality on earnings management for State-owned Enterprises (SOEs) and non-State-owned Enterprises (NSOEs) and document that NSOEs audited by top 8 auditors report a significantly lower level of earnings management than for NSOEs audited by non-top 8 auditors. Van Tendeloo & Vanstraelen (2008) study the impact of audit quality produced by big 4 audit firms and non-big 4 audit firms to constrain earnings management. They document that big 4 audit firms produce better audit quality than non-big 4 audit firms to prevent earnings management. Alzoubi (2016) also finds similar results as the previous studies that there is a negative association between audit quality and earnings management. The level of earnings management is significantly less among firms audited by big 4 auditors than non-big 4 auditors.

In contrary, Pio and Janin (2007) find that auditors' size has no significant effect to mitigate the earnings management activities of French firms. The institutional governance setting in France (i.e. Civil Law System) explains the absence of supervisory effectiveness by the big 5 auditors. Yasar (2013) investigates the relationship between auditors' size and earnings management in Turkey and similarly finds that there is no difference in audit quality between big 4 auditors and non-big auditors 4 to prevent earnings management practices. Yasar (2013) argue that the institutional setting in Turkey that does not encourage auditor firms to provide good quality audit mechanism (e.g. small fine and penalties are rarely applied to auditor firms when the audit failure occurs), therefore the auditors' size does not significantly constrain earnings management practice in Turkey. Tsipouridou & Spathis (2012) argue that the strong economic bonding between auditors and their clients, in fact encourage auditors to compromise their judgement in providing audit opinion. Hence, Tsipouridou & Spathis (2012) find that auditors' size does not affect the level of earnings management engaged by Greek firms. In Portugal, Alves (2013)

finds that the big 4 auditors fail to constrain earnings management practices engaged by the Portuguese firms.

2.3. Prior Research on Dividend Threshold on Earnings Management

Since Bhattacharya (1979) and Miller & Rock (1985) introduced the dividend signalling theory – which state that an increment in dividend payment indicates a better performance, conversely a decrease in dividend payment indicates a decrease in economic performance – it has been widely known that the firms are hesitant to cut dividend level. Brav et al. (2005) in Ross et al. (2010) show the survey result that state more than 90% CFOs as the respondents attempt to avoid dividend cut. The firms will do whatever is required to meet dividend threshold, including engaging opportunistic earnings management to avoid conveying bad signal to the market (DeAngelo et al., 1992).

Previous studies show that dividend threshold is one of the important thresholds that triggers the firms to engage earnings management. Kasanen et al. (1996) document that firms conduct earnings management due to the existence of dividend threshold for smooth dividend payment by showing the positive significant association between *reporting earnings* and *dividend-based targeted earnings*. The firms will conduct income-increasing earnings management to meet dividend target. Bennett & Bradbury (2007) find that dividend threshold triggers the *asymmetry of earnings distribution*, which is a proxy for earnings management.

Furthermore, Daniel et al. (2008) study the direct impact of dividend threshold to discretionary accrual as a proxy for earnings management and find that dividend threshold has a positive direct impact on discretionary accrual. Replicating the model of Daniel et al. (2008), Atieh & Hussain (2012) find the supportive result of the previous studies that dividend threshold is a significant determinant of earnings management in UK. In Portugal, Da Silva et al. (2017) find that Portuguese firms engage earnings management to meet dividend threshold.

2.4. Research Hypotheses

As mentioned above, earnings management is classified into two types: efficient and opportunistic. Earnings management is opportunistic if managers use their discretion to

maximize their utility, thereby garbling earnings, while it is efficient if managers use their discretion to communicate private information about firm future profitability which is yet to be reflected in the historical cost-based earnings (Subramanyam, 1996; Siregar and Utama, 2008). Following these previous studies, we test whether earnings management is efficient or opportunistic by defining the ability of discretionary accruals to signal firms' future profitability. If earnings management is efficient, then the discretionary accruals (earnings-management proxy) will have a significant positive relationship with future profitability. Otherwise, earnings management is opportunistic. Since the relationship can go either way – negative if earnings management is opportunistic and positive if efficient – then we formulate the first hypothesis as a non-directional hypothesis.

H1a: There is a relationship between discretional accruals and future profitability.

Auditing procedures play a significant role in monitoring mechanisms as they provide affirmation about the credibility of firms' financial reporting and therefore the auditors should be independent in giving the verification about the credibility of the firms' financial reporting (Alves, 2013). Big auditors viewed as a good verifier due to the competency and independency to provide monitoring system that prevent firms to engage opportunistic earnings management (Bauwhede et al., 2003). Large auditors also have great incentives to produce better auditing mechanism to detect and reveal the firms' misreporting because the partners can be more effectively monitored in the large audit firms (Watts and Zimmerman, 1981). Big auditors also face a greater cost when the audit failure occurs (Bauwhede et al., 2003). As a result, to preserve their reputation and to avoid legal lawsuit (Behn et al., 1997), the big auditors will be more conservative and will restrain the clients from using discretionary accruals.

In this sense, numerous studies suggest that the big auditor firms constrain the firms to engage earnings management (Becker et al., 1998; Francis et al., 1999; Van Tendeloo & Vanstraelen 2008; Chen et al., 2011; Alzoubi, 2016). Therefore, we expect that big 4 auditors will constraint the firms from engaging opportunistic earnings management, and therefore we formulate the next hypothesis:

H1b: The effect of discretionary accruals on future profitability is higher on firms audited by Big 4 auditors than on firms audited by non-Big 4 auditors.

Dividend signalling theory states that an increment in dividend payment indicates a better performance, conversely a decrease in dividend payment indicates a decrease in economic performance (Bhattacharya, 1979; Miller & Rock, 1985). It has been widely known that the firms are hesitant to cut dividend level (Daniel et al., 2008). Brav et al. (2005) in Ross et al. (2010) show the survey result that state more than 90% CFOs as the respondents attempt to avoid dividend cut. The cut of dividend can be viewed as a bad signal for the economic condition of the firms. Thus, the firms will do everything required – include engaging opportunistic earnings management – to meet dividend threshold (DeAngelo et al., 1992).

Previous studies find that dividend threshold is a determinant that triggers firms to conduct opportunistic earnings management. Kasanen et al. (1996) find that the firms engage earnings management due to the existence of dividend threshold to meet. Daniel et al. (2008) and Atieh & Hussein (2012) study the direct impact of dividend threshold to discretionary accrual as a proxy for earnings management and find that dividend threshold has a positive direct impact on discretionary accruals. The firms engage opportunistic earnings management to meet dividend threshold. Da Silva et al. (2017) find that Portuguese firms engage earnings management to meet dividend threshold.

Thus, we expect that dividend threshold will trigger the firms to conduct opportunistic earnings management. Hence:

H1c: The higher the level of dividend threshold, the lower the effect of discretionary accruals on future profitability.

3. DATA AND RESEARCH DESIGN

3.1. Data and Sample Selection

The sample for the study is composed of all the firms listed on the EURONEXT Lisbon in year 2010 – 2018. We exclude financial and real estate investment industries from the sample due to the difference accounting approach, thus the firms in financial or real estate investment industries may use different way in conducting earnings management. We also exclude the firms with incomplete data used to measure all the variables in this study. The final sample consists of 33 firms listed on the EURONEXT Lisbon. Table 3.1 shows the sample selection procedure. The data is collected from Thomson Reuters DataStream and the annual reports of the firms.

3.2. Variable Definition

3.2.1. Future Profitability

Previous studies measure future profitability with three proxies: Cash flow operation from the next year (CFO_{t+1}), non-discretionary accrual ($NDNI_{t+1}$), and earnings from the next year ($EARN_{t+1}$) (Subramanyam, 1996; Krishnan, 2003). This study follows Siregar and Utama (2008) using three proxies to measure future profitability:

- CFO_{t+1} = one-year ahead cash flows from operation
- $NDNI_{t+1}$ = one-year ahead non-discretionary net income ($EARN_{t+1} - DAC_{t+1}$)
- $\Delta EARN_{t+1}$ = one-year ahead change in earnings ($EARN_{t+1} - EARN_t$)

All variables are scaled by beginning total assets.

This study uses $\Delta EARN_{t+1}$ to measure future profitability due to the weakness of the proxy $EARN_{t+1}$. Earnings consists of discretionary accruals, thus if there is a positive and significant relationship between discretionary accruals in year t and earnings in year t+1, it could be due to management creating other discretionary accruals in year t+1 and not an indication of efficient earnings management (Siregar and Utama, 2008). Table 3.3 shows the significant correlation between discretionary accruals in year t and year t+1, which supports the argument. As a substitute for traditional earnings measures, we use change in earnings instead ($\Delta EARN_{t+1}$). Because earnings and discretionary accruals tend to have a stationary nature (Siregar and Utama, 2008). The use of change in earnings will control for the stationary nature of discretionary accruals (Siregar and Utama, 2008). Furthermore, we also use one-year ahead cash flows from operation (CFO_{t+1}) and one-year ahead non-discretionary net income ($NDNI_{t+1}$). These two proxies do not have a discretionary-accrual element, so they do not have the inherent problems of earnings.

3.2.2. Earnings Management

The widely well-known proxy for earnings management is discretionary accruals. There are many models of discretionary accruals in earnings management literature. This study uses several models of discretionary accruals that are commonly used in the earnings management literature:

a. Model Jones (1991)

$$ACCR_{it} = \alpha_0 + \alpha_1 \Delta REV_{it} + \alpha_2 PPE_{it} + \varepsilon_{it} \quad (1)$$

Where:

$ACCR_{it}$ Total accruals in year *t*

ΔREV_{it} Change in revenue from year *t-1* to year *t* ($REV_t - REV_{t-1}$)

PPE_{it} Gross property, plant, and equipment in year *t*

All variables are scaled by the total assets year *t-1*

b. Model Dechow et al. (1995)

$$ACCR_{it} = \alpha_0 + \alpha_1[\Delta REV_{it} - \Delta REC_{it}] + \alpha_2 PPE_{it} + \varepsilon_{it} \quad (2)$$

Where:

ΔREC_{it} Change in net account receivables from year *t-1* to year *t* ($REC_t - REC_{t+1}$)

All variables are scaled by the total assets year *t-1*

c. Model Kasznik (1999)

$$ACCR_{it} = \alpha_0 + \alpha_1[\Delta REV_{it} - \Delta REC_{it}] + \alpha_2 PPE_{it} + \alpha_3 \Delta CFO_{it} + \varepsilon_{it} \quad (3)$$

Where:

ΔCFO_{it} Change in cash flows from operation from year *t-1* to year *t* ($CFO_t - CFO_{t-1}$)

All variables are scaled by the total assets in year *t-1*

d. Model Khotari et al. (2005)

$$ACCR_{it} = \alpha_0 + \alpha_1 \Delta REV_{it} + \alpha_2 PPE_{it} + \alpha_3 ROA_{it} + \varepsilon_{it} \quad (4)$$

Where:

ROA_{it} Return on assets in yeat *t*

All variables are scaled by the total assets in year *t-1*

Non-discretionary accruals ($NDAC_{it}$) are the fitted value of the above equations and discretionary accruals (DAC_{it}) are formed as the residuals. Following Subramanyam, (1996) and Siregar & Utama, (2008), we use a cross-sectional method by year. We estimate each model separately for each year. The cross-sectional method by firm industry is not used because we do not have enough sample firms for each industry.

Based on the adjusted R^2, one of the above models is selected to decompose discretionary and non-discretionary elements for the main analysis. The rest of the models will be analysed in the robustness check section. Table 3.4. shows the evaluation of the discretionary accrual models based on the adjusted R^2. Table 3.4. presents that Kothari et

al. (2005) model has the highest adjusted R^2. Hence, we employ this model in our main analysis and the other models in sensitivity analysis.

3.2.3. Auditors' Size

Auditing literature has focused mainly on the difference between big auditors and non-big auditors. Following Van Tendeloo & Vanstraelen (2008) and Alves (2012) we measure variable auditors' size with dummy variable, 1 if the auditor firms are big-4 auditor, 0 otherwise.

3.2.4. Dividend Threshold

We measure dividend threshold by dividend per share of the previous year. Daniel et al. (2008) state that the dividend per share in year *t*-1 is the dividend threshold that triggers firms to conduct earnings management.

3.2.5. Leverage

Following the existing literature, we measure variable leverage (*LEV*) by the total debt over total assets (Peasnell et al., 2005; Yang et al., 2008; Alves, 2013).

3.2.6. Firms Size

Following the previous studies, we measure variable firm size (SIZE) by the total assets scaled by the beginning total assets. (Bathacharya, 2001; Peasnell et al., 2005).

3.3. Research Design

In this section we describe our research design. To test *H1a*, whether the Portuguese firms engage efficient or opportunistic earnings management, we examine the relationship between discretionary accruals (DAC_{it}) and firms' future profitability (X_{it+1}). This following equation is formulated through an ordinary least square approach:

$$X_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDAC_{it} + \beta_3 DAC_{it} + \beta_4 AUDIT_{it} + \beta_5 DIV_{it} + \beta_6 LEV_{it} + \beta_7 SIZE_{it} + \sum_{t=1}^{9} \delta t + \varepsilon_{it} \quad (5)$$

The dependent variable of this study is future profitability (X_{it+1}). We use three proxies to measure firms' future profitability. One-year ahead cash flows from operation

(CFO_{it+1}), one-year ahead non-discretionary net income ($NDAC_{it+1}$), and one-year ahead change in earnings ($\Delta EARN_{it+1}$).

Earnings are formed by three elements: cash flows from operation (CFO_{it}), non-discretionary accruals ($NDAC_{it}$), and discretionary accruals (DAC_{it}). Variable DAC_{it} is the testing variable of this study. If the earnings management is efficient, the coefficient of DAC_{it} (β_3) will be positive and if the coefficient of DAC_{it} (β_3) is negative, the earnings management is opportunistic. The other variables: $AUDIT_{it}$ (auditors' size), dividend threshold (DIV_{it}), leverage (LEV_{it}) and firms' size ($SIZE_{it}$) are the control variables. *i* is for firms, *t* is year 2010 – 2018 and *t+1* is year 2011-2019.

Hypotheses *1b* and *1c* imply that the effect of DAC_{it} to future profitability (X_{it+1}) is moderated by the hypothesized variables (auditors' size and dividend threshold). Hence, to test hypotheses H1b and H1c, we use the following model:

$$\begin{aligned} X_{it+} &= \beta_0 + \beta_1 CFO_{it} + \beta_2 NDAC_{it} + \beta_3 DAC_{it} + \beta_4 DAC_{it}\ x\ AUDIT_{it} \\ &+ \beta_5 DAC_{it}\ x\ DIV_{it} + \beta_6 AUDIT_{it} + \beta_7 DIV_{it} + \beta_8 LEV_{it} + \beta_9 SIZE_{it} \\ &+ \sum_{t=1}^{9} \delta t + \varepsilon_{it} \end{aligned} \quad (6)$$

In this study, we expect Hypothesis 1b: $\beta_4 > 0$, Hypothesis 1c: $\beta_5 < 0$. As mentioned in the hypothesis development, we use moderating variables to observe the incremental effect of these moderating variables ($AUDIT_{it}$ and DIV_{it}) to the association between DAC_{it} and future profitability (X_{it+1}). For example, if $AUDIT_{it}$ equals to zero, then the effect of discretionary accruals on future profitability is β_3, and if the $AUDIT_{it}$ equals to one, then the effect of discretionary accruals on future profitability is $\beta_3 + \beta_4$. β_4 is the difference between $AUDIT_{it}$ equals to zero and $AUDIT_{it}$ equals to one, which is the coefficient of the moderating variables.

To control omitted factors of the variation over time, we use a fixed-effect specification for year. Another statistical issue is related to a multicollinearity problem. To check whether our variables have a multicollinearity issue, we compute Variance Inflation Factor (VIF). Table 3.6 shows the result of VIF of the independent variables in this research. In general, a multicollinearity problem exists if the value of VIF exceeds 10. Thus, the independent variables of this research do not have a multicollinearity problem.

3.4. Descriptive Statistics

Table 3.7 shows the descriptive statistics for variables used in the empirical models. On average, the sample firms of this study have positive future cash flows from operation and positive non-discretionary accruals earnings (CFO_{t+1} and $NDNI_{t+1}$). The sample firms have slightly inclining earnings with the mean of $\Delta EARN_{t+1}$ positive 0.005479. The means of discretionary accruals is 0.000000 which may be concluded that on average, the Portuguese firms in our sample almost do not engage earnings management in their financial reporting. Most of our sample firms are audited by big-4 auditors (69.3%). The average dividend per share of the sample is 0.121630.

Table 3.8 presents the Pearson correlation among variables. The negative and significant correlation between *CFO* and *DAC* is consistent with the smoothing earnings management; when the firms have high positive cash flows from operation, they engage earnings management to reduce the level of cash flows from operation, and *vice versa*. Future cash flow from operation has positive significant correlation with the firm size, indicating that large firms have high positive cash flows from operation.

The positive correlation between *DIV* and *CFO* indicates that the firms that pay higher dividend per share have higher cash flow from the operation in the following year. Table 3.8 indicates that the large firms tend to be audited by the big-4 auditors, shown by the positive significant correlation between *SIZE* and *AUDIT*. The positive correlation between *SIZE* and *DIV* indicates that the larger firms the higher level of dividend per share that firms distribute.

4. RESEARCH ANALYSIS

4.1. Opportunistic or Efficient Earnings Management?

The results from regression of the first research model (equation 5) are shown in table 4.1. the regression result supports hypothesis 1a with significant level at 5%. The coefficient of variable DAC_t is positive (significant level at 5%) with two out of three variables as proxies for future profitability (CFO_{t+1} and $NDNI_{t+1}$), shown in columns (1) and (2). This finding tends to be consistent with the perspective of efficient earnings management. The Portuguese firms tend to engage earnings management to increase earnings informativeness to signal private information about future profitability of the firms. The finding of this study is contrary with the previous studies in Portugal that

indicate earnings management in Portugal is opportunistic. Portuguese firms engage opportunistic earnings management to minimize tax liability (Marques et al., 2011) and to meet dividend threshold (Da Silva et al., 2017). Ferreira et al. (2013) show that politicians in public municipalities in Portugal engage earnings management to show their competence for campaign purpose.

Our result is consistent with the previous studies. Subramanyam (1996) provides evidence that the earnings management improves the predictability of reported earnings, and therefore predicts the future profitability. Krishnan (2003) finds that managers use accruals earnings to communicate their private information, thereby improving the ability of earnings to reflect underlying economic value. Siregar & Utama (2008) prove that Indonesian firms engage efficient earnings management to signal future profitability of the firms.

4.2. The Effect of Auditors' Size and Dividend Threshold

The following research hypotheses (H1b and H1c) address the effect of auditors' size ($AUDIT_{it,}$), dividend threshold (DIV_{it}) on the relationship between discretionary accrual (DAC_{it}) and future profitability, which is proxied by CFO_{it+1}, $NDNI_{it+1}$ and $\Delta EARN_{it+1}$.

Table 4.2 presents the regression result of equation 6. The regression result shows that the interaction variable DAC_{it}*$AUDIT_{it}$ does not have significant association with the proxies of future profitability ($CFO_{it+1,}$ $NDNI_{it+1}$ and $\Delta EARN_{it+1}$). These findings indicate that the auditors' size fails to provide a monitoring mechanism to prevent opportunistic earnings management practices. Consistent with Alves, (2013) that finds the big 4 auditors fail to constrain earnings management practices engaged by the Portuguese firms. Pio and Janin (2007) find that auditors' size has no significant effect to mitigate the earnings management activities of French firms. The institutional governance setting in France (i.e. Civil Law System) explains the absence of supervisory effectiveness by the big 5 auditors. Yasar (2013) investigates the relationship between auditors' size and earnings management in Turkey and similarly finds that there is no difference in audit quality between big 4 auditors and non-big auditors 4 to prevent earnings management practices.

In contrast with the hypothesis 1b, which expects that the interaction of auditors' size and discretionary accruals has a positive significant association with future profitability.

This may relate to the condition of the auditing industry in Portugal, which is extremely competitive. The number of registered auditors in CMVM for public interest of investment scheme (*Auditores de EIP – Organismos de Investimento Colectivo*) is much bigger (377 registered auditors in 2019) than the number of firms that are obliged to use the auditors' service. In this situation, the firms have bargaining power that may influence auditors' decisions to conclude audit opinion. Thus, unsurprisingly we saw the involvement of a big auditor firm in *Luanda Leaks* scandal that occurred recently in Portugal.

The interaction variable DAC_{it}*$EXDIV_{it}$ has a significant negative association with the variable future profitability (CFO_{it+1}). This finding indicates that the expected dividend can triggers the firms to conduct opportunistic earnings management. The result of this study is consistent with the previous studies which show that dividend threshold triggers the firms to engage opportunistic earnings management (Kasanen et al., 1996; Daniel et al., 2008; Atieh and Hussain, 2012; Da Silva et al., 2017). Thus, hypothesis 1c is supported.

The underlying rational of this finding is due to the fact that dividend cut can convey a bad signal to the market (Bhattacharya, 1979; Miller & Rock, 1985), thus the firms will do everything required – include engaging opportunistic earnings management – to meet dividend threshold (DeAngelo et al., 1992). Brav et al. (2005) in Ross et al. (2010) show the survey result that states more than 90% CFOs as the respondents attempt to avoid dividend cut.

4.3. Robustness Checks

We conduct several sensitivity analyses to assess the robustness of our findings. Firstly, we measure discretionary accruals using other alternative models (Jones, 1991; Dechow et al., 1995; Kasznik, 1999). Table 4.3 shows the result of hypothesized variables using other discretionary models. In Model 1, variable *DAC* shows positive sign to two proxies of future profitability (CFO_{t+1} and $NDNI_{t+1}$) using other discretionary models. The positive association between *DAC* and two proxies of future profitability (CFO_{t+1} and $NDNI_{t+1}$) indicate that the Portuguese firms tend to engage efficient earnings management. Furthermore, the auditors' size fails to influence the relationship between discretionary accrual and future profitability, showed by the interaction variable

*DAC*AUDIT* insignificantly associated with future profitability proxies (CFO_{it+1}, $NDNI_{it+1}$ and $\Delta EARN_{it+1}$). For the interaction variable DAC*DIV slightly negative significant with variable future profitability (CFO_{it+1}) which indicate that dividend threshold trigger Portuguese firms to engage opportunistic earnings management. Hence, the result is consistent with our main analysis.

Second robustness check is performed to confirm that the sovereign debt crisis in Portugal in 2010 to 2014 will not affect the result of main analysis of the study. The regression was reperformed by excluding period 2010 – 2014. The result does not differ from main analysis that indicate the Portuguese firms tends to engage efficient earnings management.

In equation 6 of our research, we use two moderating variables in the same model. To capture better moderating effect of each moderating variable, we break down research model 2 (equation 6) into several sub-models, with only one moderating variable in each model. Thus, we have the following model:

$$X_{it+1} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NDAC_{it} + \beta_3 DAC_{it} + \beta_4 DAC_{it}\ x\ Dk_{it} + \beta_5 Dk_{it} + \beta_6 LEV_{it} + \beta_5 SIZE_{it} + \sum_{t=1}^{9} \delta t + \varepsilon_{it}$$

Where:

Dk = AUDIT, k_1 = DIV.

The results of the above model are similar with our main analysis results.

We change variable DIV as dummy variable to capture the existence of dividend threshold. Value 1 if the firms distribute the dividend in the previous year, 0 otherwise. The result shows similar with the main analysis that indicate the dividend threshold encourage the Portuguese firms to engage opportunistic earnings management.

5. CONCLUSION, LIMITATION AND FUTURE RESEARCH

In this paper we investigate whether Portuguese firms engage opportunistic or efficient earnings management. Furthermore, we study the effect of auditors' size and dividend threshold on the selection of type of earnings management. Hypotheses are tested on a sample of 33 Portuguese firms that are listed in EURONEXT Lisbon in period 2010-2018. We begin by defining whether Portuguese firms conduct opportunistic or efficient earnings management. Our study documents that the type of earnings

management favoured by publicly listed firms in Portugal tends to be efficient. Our result is contrary with previous studies that indicate the Portuguese firms engage opportunistic earnings management practice to meet a certain interest (Marques et al., 2011; Ferreira et al., 2013; Da Silva et al., 2017). Further analysis reveals that the big-4 auditors fails to provide monitoring system that prevent opportunistic earnings management practice in Portugal. This result is consistent with Alves (2013). The institutional matters that allow the management of the firms has powerful bargaining power that may influence auditors to provide audit opinion. Next, we find that the dividend threshold can triggers the firms to engage opportunistic earnings management. This finding is consistent with the existing literature (Kasanen, 1996; Daniel et al., 2008; Atieh & Hussein, 2012; Da Silva et al., 2017).

Our findings provide several contributions to the literature. We find the type of earnings management engaged by Portuguese firms is efficient. Our result extends the existing literature of type of earnings management which is mainly focused on the decentralized and big markets such as US and UK. Second, our study extends the current literature in earnings management in providing evidence that dividend threshold triggers the firms to engage opportunistic earnings management. Finally, we study the effectiveness of auditors' size in Portugal to prevent the opportunistic earnings management. The results show that the big-4 auditors fail to provide a monitoring function that prevents opportunistic earnings management.

The study also provides some implications to the practice. First, based on the result of our study, investors can rely on the earnings figures reported by the publicly listed Portuguese firms as they engage earning management to increase the informativeness of earnings to signal future profitability. Furthermore, investors should be aware that the big 4 auditors do not necessarily guarantee to prevent the Portuguese firms to engage opportunistic earnings management. Investor can rely on the Audit Quality Indicators (AQI) that are released by the *Comissão do Mercado de Valores Mobiliários* (CMVM) in 2020 to assure the audit monitoring mechanism that prevent opportunistic earnings management practices. Moreover, the investors should realize that even though the firms distribute the dividend that may signal a good firm performance, there is a potential that the firms still engage opportunistic earnings management. Lastly, the result of this study shows that the effect of auditors' size lowers the association between discretionary

accruals and future profitability. It means that the big 4 auditors in Portugal fail to constrain opportunistic earnings management practices. This finding could suggest to the regulatory bodies to apply stricter evaluation for registered auditors and tougher penalty for the audit failure.

There are some spotted limitations to our study. First, it is still questionable whether discretionary accruals models accurately decompose total accruals into non-discretionary and discretionary elements. Thus, there is the possibility of misclassifying the element of discretionary and non-discretionary element. If some element of non-discretionary accrual is mistakenly classified as discretionary accruals, then this may explain the positive association between discretionary accruals and future profitability. Second, the sample firms of this study are quite small, which may influence the result of this study. However, this limitation is an immediate consequence of the small market like in Portugal.

There are two ways to manage earnings. Earnings are managed through the accruals manipulation without affecting cash flows (discretionary accrual earnings management). Second, earnings are managed through real activities that affect the cash flow of the firms (real earnings management). Future research could use alternative models to decompose discretionary and non-discretionary elements such as real earnings management model (Roychowdhury, 2006).

Future research could use variable audit quality by using alternative measurement such as auditors' expertise, auditors' independency to investigate the effect of audit as monitoring mechanism to prevent opportunistic earnings management practice.

Our research is not intended to identify which variable is the best to measure future profitability. Future research could try to identify which variable is the best or identify another variable to measure future profitability.

The last recommendation for future research is that future research could consider alternative internal and external factors that may affect the selection of type of earnings management, such as analysts' forecasts, debt constraint, corporate governance system, ownership structure, etc.

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APPENDICES

Table A.1

Sample selection procedure

Total number of firms listed in Euronext Lisbon in year 2010 – 2018	43
Firms in financial and real estate investment industries	(8)
Firms with incomplete data	(2)
Total sample firms	**33**
Number of years	9
Total observations	**297**

Table A.2

List of Sample Company

NO	FIRMS
1	TOYOTA CAETANO PORTUGAL SA
2	MARTIFER SGPS SA
3	TEIXEIRA DUARTE SA
4	SONAE INDUSTRIA SGPS SA
5	MOTA EGIL SGPS SA
6	REN REDES ENERGETICAS NACIONAIS SGPS SA
7	EDP ENERGIAS DE PORTUGAL SA
8	PHAROL SGPS SA
9	NOS SGPS SA
10	SONAECOM SGPS SA
11	JERONIMOS MARTINS SGPS SA
12	SONAE SGPS SA
13	NAVIGATOR COMPANY SA
14	SEMAPA SOCIEDADE DE INVESTIMENTO E GESTAO
15	ALTRI SGPS SA
16	INAPA INVESTIMENTOS PARTICIPACOES E GESTAO
17	SONAE CAPITAL SGPS SA
18	CORTICEIRA AMORIM SGPS SA
19	RAMADA INVESTIMENTOS E INDUSTRIA SA
20	CTT CORREIOS DE PORTUGAL SA
21	COFINA SGPS SA
22	FUTEBOL CLUBE DE PORTO FUTEBOL SAD
23	SPORTING CLUBE DE PORTUGAL FUTEBOL SAD
24	GALP ENERGIA SGPS SA
25	NOVABASE SGPS SA
26	REDITUS SOCIEDADE GESTORA DE PARTICIPACOES SOCIAIS SA
27	GLINTT GLOBAL INTELLIGENT TECHNOLOGIES SA
28	LISGRAFICA IMPRESSAO E ARTES GRAFICAS SA
29	LITHO FORMAS SA
30	ESTORIL SOL SGPS SA
31	SPORT LISBOA E BENFICA FUTEBOL SAD
32	IMOBILIRIA CONSTRUTORA GRAO PARA SA

33	IBERSOL SGPS SA
TOTAL SAMPLE 33 FIRMS	
1	BANCO COMERCIAL PORTUGUESE
2	BANCO ESPIRITO SANTO
3	MAXIRENT
4	FLEXDEAL SIMFE
5	PATRIS INVESTIMENTOS
6	RAIZE-INSTITUICAO DE PAGAMENTOS
7	SONAGI LIMITED DATA
8	NEXPONOR SICAFI REIT
TOTAL FIRMS IN FINANCIAL AND REAL ESTATE INDUSTRY 8 FIRMS	
1	SOCIEDADE DAS AGUAS
2	FENALU
TOTAL FIRMS WITH INCOMPLETE DATA 2 FIRMS	

Table A.3
Correlation between discretionary accruals in year *t* and year *t*+1

	DAC_t
DAC_{t+1}	0.3663
	0.0000*

Notes:
t = year 2010 – 2018
t+1 = year 2011 – 2019
* *p* value with significant level 1%

Table A.4
Evaluation of earnings management models

EM models	Adjusted R^2									
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**Mean**
Jones (1991)	0.0657	0.0481	0.1513	0.3190	0.1002	0.0395	0.0835	0.0252	0.2011	**0.1148**
Dechow et al. (1995)	0.0613	0.0243	0.0416	0.3286	0.0827	0.0936	0.0486	0.0256	0.1743	**0.0978**
Kasznik (1999)	0.0421	0.0069	0.0381	0.3795	0.0699	0.2542	0.5149	0.0527	0.2051	**0.1737**
Kothari et al. (2005)	0.0359	0.7314	0.2198	0.8649	0.0746	0.6380	0.3107	0.9834	0.6224	**0.4979**

Notes:
Model Jones (1991)
$ACCR_{it} = \alpha_0 + \alpha_1 \Delta REV_{it} + \alpha_2 PPE_{it} + \varepsilon_{it}$
Model Dechow et al. (1995)
$ACCR_{it} = \alpha_0 + \alpha_1 [\Delta REV_{it} - \Delta REC_{it}] + \alpha_2 PPE_{it} + \varepsilon_{it}$
Model Kasznik (1999)
$ACCR_{it} = \alpha_0 + \alpha_1 [\Delta REV_{it} - \Delta REC_{it}] + \alpha_2 PPE_{it} + \alpha_3 \Delta CFO_{it} + \varepsilon_{it}$
Model Kothari et al. (2005)
$ACCR_{it} = \alpha_0 + \alpha_1 \Delta REV_{it} + \alpha_2 PPE_{it} + \alpha_3 ROA_{it} + \varepsilon_{it}$
$ACCR_{it}$ is total accrual. ΔREV_{it} is change in revenue from year *t*-1 to year *t* ($REV_t - REV_{t-1}$). PPE_{it} is gross property, plant, and equipment in year *t*. ΔREC_{it} is change in net A/R from year *t*-1 to year *t* ($REC_t - REC_{t-1}$). ΔCFO_{it} is change in cash flow from operation from year *t*-1 to year *t* ($CFO_t - CFO_{t-1}$). ROA_{it} is return on assets in year *t*.

Table A.5
Variable definition

Variables	Source	Definition
Dependent variables		
CFO_{t+1}	a	One-year ahead cash flows from operation
$NDNI_{t+1}$	a	One-year ahead non-discretionary accrual net income ($EARN_{t+1} - DAC_{t+1}$)
$\Delta EARN_{t+1}$	a	One-year ahead change in earnings ($EARN_{t+1} - EARN_t$)
Independent variables		
CFO	a	Cash flow from operation
NDAC	a	Non-discretionary accruals components. The fitted value of discretionary accrual models (Jones, 1991; Dechow et al., 1995; Kasznik, 1999; Kothari et al., 2005)
DAC	a	Discretionary accruals components. The residual value of discretionary accrual models (Jones, 1991; Dechow et al., 1995; Kasznik, 1999; Kothari et al., 2005)
AUDIT	b	Auditors' size. Dummy variable. Value 1 if the firms audited by the big-4 auditors. Value 0, otherwise.
DIV	a	Dividend Threshold. Dividend per share in year *t*
LEV	a	Firm leverage. Total debt scaled by total assets
SIZE	a	Firm size. Total assets scaled by the beginning total assets.

[a] Thomson Reuters DataStream
[b] Firms' Annual Reports

Table A.6
Variance Inflation Factors

Variables	Coefficient variance	Uncentered VIF	Centered VIF
CFO	0.0077	4.8209	3.5023
NDAC	0.0004	1.0988	1.0427
DAC	0.0098	2.7756	2.7756
AUDIT	0.0001	5.3186	1.2714
DIV	0.0003	1.5688	1.2301
LEV	0.0000	6.3155	1.4489
SIZE	0.0002	3.4882	1.7912

Notes:
CFO = cash flows from operation, NDAC = non-discretionary accruals, DAC = discretionary accruals, AUDIT = Auditors' size. Value 1 if the firm is audited by big 4 auditors and 0 otherwise, DIV = Dividend threshold. Dividend per share in year *t*, LEV = firms' leverage, SIZE = firms' size.

Table A.7
Descriptive statistic

	Mean	Median	Maximum	Minimum	Standard deviation
CFO_{t+1}	0.053301	0.045524	0.475827	-0.318571	0.088685
$NDNI_{t+1}$	0.009034	0.019755	0.887470	-2.608364	0.193365
$\Delta EARN_{t+1}$	0.005479	0.002110	3.106076	-2.365952	0.265951
CFO	0.050530	0.050091	0.427859	-3.112828	0.082490
NDAC	-0.046975	-0.041309	1.130307	-0.262469	0.202691
DAC	0.000000	0.002460	0.314615	-0.259293	0.064866
DIV	0.121630	0.031000	2.300000	0.000000	0.232202
LEV	0.376277	0.392600	0.831583	0.205965	0.205664
SIZE	0.356193	0.229037	1.375525	0.012743	0.366567
n	297	297	297	297	297

	Proportion Dummy = 1	**Proportion** Dummy = 0
AUDIT	69.3%	30.7%

Notes:
CFOt+1 = one-year ahead cash flows, NDNIt+1 = one-year ahead non-discretionary net income, ΔEARNt+1 = one-year ahead change in earnings, CFO = cash flows from operation, NDAC = non-discretionary accruals, DAC = discretionary accruals, AUDIT = Auditors' size. Value 1 if the firm is audited by big 4 auditors and 0 otherwise, DIV = Dividend threshold. Dividend per share in year *t*, LEV = firms' leverage, SIZE = firms' size.

Table A.8
Pearson correlation

	CFO_{t+1}	**$NDNI_{t+1}$**	**$\Delta EARN_{t+1}$**	**CFO**	**NDAC**	**DAC**	**AUDIT**	**DIV**	**LEV**	**SIZE**
CFO_{t+1}	1.0000									
$NDNI_{t+1}$	0.4711	1.0000								
	0.0000***									
$\Delta EARN_{t+1}$	0.0079	0.5374	1.0000							
	0.8927	**0.0000*****								
CFO	0.5891	0.3264	(0.0310)	1.0000						
	0.0000***	**0.0000*****	0.5953							
NDAC	0.0642	0.0602	(0.7484)	0.0530	1.0000					
	0.2700	0.3014	**0.0000*****	0.3627						
DAC	(0.3506)	(0.1730)	(0.0379)	(0.0721)	0.0000	1.0000				
	0.0000***	**0.0028****	0.5156	**0.0000*****	1.0000					
AUDIT	0.0478	0.1221	(0.0270)	0.0664	0.1340	0.0602	1.0000			
	0.4120	**0.0354****	0.6424	0.2540	**0.0209****	0.3008				
DIV	0.2995	0.1634	(0.0304)	0.2875	0.1714	(0.1596)	0.1850	1.0000		
	0.0000***	**0.0047*****	0.6021	**0.0000*****	0.2200	**0.0059*****	**0.0014*****			
LEV	(0.2938)	(0.0558)	0.0155	(0.3610)	0.0689	0.2408	0.1668	(0.2766)	1.0000	
	0.0000***	0.3378	0.7904	**0.0000*****	0.2364	**0.0000*****	**0.0039****	**0.0000*****		
SIZE	0.5261	0.2281	0.0305	0.5010	(0.0308)	(0.2713)	0.2686	0.3683	(0.4255)	1.0000
	0.0000***	**0.0001*****	0.6001	**0.0000*****	0.5974	**0.0000*****	**0.0000*****	**0.0000*****	**0.0000*****	

Notes:
CFOt+1 = one-year ahead cash flows, NDNIt+1 = one-year ahead non-discretionary net income, ΔEARNt+1 = one-year ahead change in earnings, CFO = cash flows from operation, NDAC = non-discretionary accruals, DAC = discretionary accruals, AUDIT = Auditors' size. Value 1 if the firm is audited by big 4 auditors and 0 otherwise, DIV = Dividend threshold. Dividend per share in year *t*, LEV = firms' leverage, SIZE = firms' size.
***Significant at 1%, **significant at 5%, *significant at 10%.

Table A.9
Regression of future profitability on discretionary accruals, other earnings component, and control variables.

Variables	Expected sign	CFO_{t+1}	$NDNI_{t+1}$	$\Delta EARN_{t+1}$
CFO	+	0.1865	0.6182	-0.5354
		0.0645*	**0.0370****	**0.0709***
NDAC	+	0.0099	-0.1435	-1.1378
		0.6074	**0.0118****	**0.0000*****
DAC	+/-	0.2205	0.6616	-0.5115
		0.0354**	**0.0315****	**0.0960***
AUDIT	+	0.0094	0.1421	0.1429
		0.6407	**0.0174****	**0.0168****
DIV	-	0.0260	0.1093	0.0951
		0.1813	**0.0559***	**0.0962***
LEV	-	0.0281	-0.0314	0.0141
		0.4386	0.7674	0.8948
SIZE	+	0.0418	-0.0498	0.0434
		0.0448**	0.4141	0.4768
n		297	297	297
Adjusted R^2		0.5558	0.1948	0.5737
F-statistic		10.4964	2.8367	11.2135
***p*-value (F-statistic)**		0.0000	0.0000	0.0000

Notes:
CFOt+1 = one-year ahead cash flows, NDNIt+1 = one-year ahead non-discretionary net income, ΔEARNt+1 = one-year ahead change in earnings, CFO = cash flows from operation, NDAC = non-discretionary accruals, DAC = discretionary accruals, AUDIT = Auditors' size. Value 1 if the firm is audited by big 4 auditors and 0 otherwise, DIV = Dividend threshold. Dividend per share in year *t*, LEV = firms' leverage, SIZE = firms' size.
***Significant at 1%, **significant at 5%, *significant at 10%.

Table A.10
Regression of future profitability on discretionary accruals, discretionary accruals-auditors' size, discretionary accruals-dividend threshold, and control variables.

Variables	Expected sign	CFO_{t+1}	$NDNI_{t+1}$	$\Delta EARN_{t+1}$
CFO	+	0.1612	0.6061	-0.5238
		0.1199	**0.0476****	**0.0869***
NDAC	+	0.0075	-0.1486	-1.1426
		0.6951	**0.0091*****	**0.0000*****
DAC	+/-	0.2749	0.9357	-0.1791
		0.0535*	**0.0256****	0.6687
DAC*AUDIT	+	-0.0265	-0.2996	-0.4011
		0.8522	0.4758	0.3405
DAC*DIV	+	-0.6555	-1.2479	-1.0466
		0.0334**	0.1683	0.2482
AUDIT	+	-0.0029	0.1062	0.1054
		0.8927	**0.0980***	0.1009
DIV	+	0.0307	0.1228	0.1091
		0.1173	**0.0338****	**0.0593***
LEV	-	0.0229	-0.0429	0.0035
		0.5265	0.6866	0.9739
SIZE	+	0.0447	-0.0692	-0.0459
		0.0334**	0.4252	0.4575
n		297	297	297
Adjusted R^2		0.5606	0.1971	0.5746
F-statistic		10.2100	2.7723	10.7538
***p*-value (F-statistic)**		0.0000	0.0000	0.0000

Notes:
CFOt+1 = one-year ahead cash flows, NDNIt+1 = one-year ahead non-discretionary net income, ΔEARNt+1 = one-year ahead change in earnings, CFO = cash flows from operation, NDAC = non-discretionary accruals, DAC = discretionary accruals, AUDIT = Auditors' size. Value 1 if the firm is audited by big 4 auditors and 0 otherwise, DIV = Dividend threshold. Dividend per share in year *t*, LEV = firms' leverage, SIZE = firms' size.
***Significant at 1%, **significant at 5%, *significant at 10%.

Table A.11
Hypothesis analysis with other discretionary models

	CFO_{t+1}	Sig	**$NDNI_{t+1}$**	Sig	**$\Delta EARN_{t+1}$**	Sig
Model 1						
DAC						
Jones (1991)	+		+		-	**
Dechow et al. (1995)	+		+	*	-	**
Kasznik (1999)	+		+		-	**
Model 2						
DAC*AUDIT						
Jones (1991)	+		-		+	
Dechow et al. (1995)	+		-		+	
Kasznik (1999)	+		-		+	
DAC*DIV						
Jones (1991)	-	**	-		-	
Dechow et al. (1995)	-	*	-		-	
Kasznik (1999)	-		+		-	

Notes:
CFOt+1 = one-year ahead cash flows, NDNIt+1 = one-year ahead non-discretionary net income, ΔEARNt+1 = one-year ahead change in earnings, CFO = cash flows from operation, NDAC = non-discretionary accruals, DAC = discretionary accruals, AUDIT = Auditors' size. Value 1 if the firm is audited by big 4 auditors and 0 otherwise, DIV = Dividend threshold. Dividend per share in year *t*, LEV = firms' leverage, SIZE = firms' size.
***Significant at 1%, **significant at 5%, *significant at 10%.