

**DOES EARNINGS MANAGEMENT INFLUENCE DIVIDEND
POLICIES?**

- Empirical study based on different ownership contexts of Portuguese firms -

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Abstract

This study focuses on the way firms' dividend policy is influenced by earnings management. The discretionary accruals methodology defended by Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) is applied to measure earnings management. In order to add new lines of research on this matter, the study includes an in-depth analysis of the way both constructs relate to each other in different ownership contexts. The empirical study relies on an innovative set of 4,258 listed and non-listed Portuguese companies, representing a panel of around 20 thousand observations distributed over the period 2013-2017. The results demonstrate a positive statistically significant relationship between earnings management and dividend policy in the twelve methodologies considered. It is also predicted that the effect of earnings management on dividend policy is more pronounced in firms with a majority shareholder (more than 50% of share capital) as opposed to firms with non-concentrated ownership, and in firms with a majority corporate shareholder in contrast to companies with an individual/familiar ownership. In the case of the sample that faces taxpaying and non-taxpaying firms, the results about the effect of earnings management on dividend policy are relevant but present a contrary signal between each other. The divergence in terms of the relationship signal is surprising and may inspire future researches on this specific field.

Key words: Earnings management, dividend, dividend policy, ownership, shareholders

JEL classification system: G32; G35; M41

Resumo

Este estudo assenta na forma como a política de dividendos das empresas é influenciada pelas práticas de gestão de resultados. Para a mensuração destas mesmas práticas é utilizada a metodologia de *accruals* discricionários defendida por Dechow *et al.* (1995), Kasznik (1999) e Kothari *et al.* (2005). Com vista a adir novas perspetivas de pesquisa, este estudo contempla uma análise aprofundada sobre a forma como os dois construtos se relacionam entre si em diferentes contextos de propriedade acionista. O estudo empírico inovador baseia-se num conjunto de 4.258 empresas portuguesas cotadas e não cotadas, representando um painel de cerca de 20 mil observações distribuídas ao longo do período 2013-2017. Os resultados demonstram uma relação positiva estatisticamente significativa entre a gestão de resultados e a política de dividendos nas doze metodologias consideradas. Prevê-se também que o efeito da gestão de resultados na política de dividendos seja mais pronunciado em empresas com um único acionista maioritário (mais de 50% do capital social) em oposição a empresas com propriedade não concentrada e em empresas cujo acionista maioritário seja, também ele, uma empresa por contraste com entidades detidas por indivíduos/ famílias. No caso de uma amostra que confronta empresas pagadoras e não pagadoras de imposto sobre o rendimento, os resultados referentes ao efeito da gestão de resultados na política de dividendos são relevantes, pese embora apresentem um sinal contrário entre si. A divergência ao nível do sinal da relação é surpreendente e pode inspirar futuras pesquisas sobre esse campo de estudo.

Palavras-chave: Gestão de resultados, dividendos, política de dividendos, propriedade, acionistas

Classificação do JEL: G32; G35; M41

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The mission of writing a dissertation is more than deepening a specific matter with a detailed methodology; it is perhaps, one of the most demanding moments of self-awareness, concentration and self-motivation.

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“The three great essentials to achieve anything worthwhile are, first, hard work; second, stick-to-itiveness; third, common sense.” — Thomas A. Edison

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III. Glossary

AGR	Assets growth rate
CAE	Classificação Portuguesa de Atividades Económicas
CORPORATION / CORP	Dummy variable that is equal to 1 if a firm has more than 50% of share capital owned by a corporation and 0 in case more than 50% of share capital is owned by an individual/family
COUNTRY	Dummy variable that is equal to 1 if the firm has more than 50% of share capital owned by a Portuguese corporation and 0 in case more than 50% of share capital is owned by a foreign corporation
DP	Dividend Policy
EBITDA	Earnings Before Interests, Taxes, Depreciations and Amortizations
EM	Earnings Management
GAAP	Generally Accepted Accounting Principle
IFRS	International Financial Reporting Standards
INDUSTRY	Dummy variable to control for the possible industry effect
OLS	Ordinary Least Squares
OWNERSHIP / OWN	Dummy variable that is equal to 1 if a firm has more than 50% of share capital owned by a sole shareholder and 0 otherwise
PPE	Properties, Plants and Equipment
R&D	Research and Development
ROA	Return on Assets
SNC	Sistema de Normalização Contabilística
TAX	Dummy variable that is equal to 1 if the firm has more than 50% of share capital owned by a taxpaying corporation and 0 in case more than 50% of share capital is owned by a non-taxpaying corporation
YEAR	Dummy variable to control for the possible year effect

1. Introduction

The constant integration process settled by the globalization in the latest years led multinational groups to shift profit across jurisdictions through diversified earnings management policies in order to maximize the consolidated shareholders' return.

In fact, the issues surrounding income shifting/ dividend distribution based on tax motivations have effectively concerned governments, policymakers, as well as political and economic unions¹ over the time. Notwithstanding, there are several theories on dividend behavior that can go beyond the tax motivation. In fact, the *Dividend Irrelevance theory* of Miller & Modigliani (1961), the *Dividend Information Signaling* and the *Agency theory*, have also added value to the academic research on dividend policy and corresponding managerial companies' decisions.

An aspect that crosses all the above theories is the role of managers and shareholders' decisions in the determination of a firm's value through real our accounting earnings management techniques. Such practices can involve the use of discretion in financial reporting with a specific objective of altering earnings to meet predetermined targets.

Taking the above assertion as a starting point, it will be of utmost significance to understand the role of "earnings management" as a mechanism/strategy to define the level of dividends distributed by companies among different shareholder's composition.

There are several references in terms of academic literature relating earnings management and dividend policy. For example, Farinha and Moreira (2007) found a positive impact of earnings management on dividend yield based on a sample of US listed companies. Rahim (2010) described a positive effect of earnings management on dividends based on a Malaysian firms' research. Contrary to what could be expected, He *et al.* (2017) proved a negative relationship by showing that firms may employ dividend policies associated with fewer earnings manipulation in order to demonstrate a credible reputation and to allow the access to

¹ See the position of OECD (2014) stating that the key priority of governments around the globe must be to focus in address base erosion and profit shifting ("BEPS").

external funds. Despite the different points of view, this dissertation pursues a positive relationship between the constructs, meaning that earnings management leads to increase dividend distribution.

The relationship between the constructs and the characteristics of the shareholders are also subject to academic discussion. One of the references on this matter is the study of La Porta *et al.* (2000) who found evidence that dividend payouts are strongly related with minority shareholder rights. Harada and Nguyen (2011) inferred that firms with higher ownership concentration pay lower dividends. An additional point of view was present by Gopalan and Jayaraman (2012) that stated that firms controlled by families usually have concentrated ownership and this fact may lead to a higher extent of earnings management actions. According to Gonzalez *et al.* (2017), the country of origin of the largest shareholder has an important influence in terms of the level of dividends paid. On the other hand, some others argue that changes in terms of tax regimes do not influence dividends (e.g. Reddy, 2003; and Khan *et al.*, 2017). Given the lack of academic researches on the specific matter of this dissertation and the ambiguity of the results found, it is not possible to predict the signaling of the relationship between the constructs taking into account the shareholders characteristics above conjectured.

The main objective of this dissertation is to set up and measure the relationship between earnings management and dividend distribution based on evidence from Portuguese companies. Moreover, there is an additional goal related to the analysis of the relationship between the constructs taking into account different ownership contexts. To achieve this objective, different samples were tested in order to infer about whether there is an incentive to distribute more dividends through earnings management.

The first step was to structure a sample with information available in Bureau van Dijk – Sabi® database. Thus, a set of 4,258 Portuguese companies, representing around 20 thousand observations distributed over the period 2013-2017, were exported and organized in order to allow a proper empirical analysis.

The full panel was divided in accordance with Liljeblom and Maury (2016), namely into (i) entities in which a shareholder owns more than 50% of share capital (taken as satisfactory to presume ownership control) and (ii) entities in which none of the shareholders have effective control. Then, the subsample of firms with a majority shareholder was subdivided between

entities controlled by shareholders with a corporate structure and entities with an individual/family ownership. Sequentially, the subsample of firms majority owned by another corporate entity was divided based on a citizenship criterion. With this analysis it is possible to infer about the role of earnings management in terms of dividend distribution taking into account the country of incorporation of the shareholder. There is an indirect aim to infer about the (non)attractiveness of Portugal in terms of dividend distribution.

The choice of this theme relied on the fact that there is a gap in terms of literature regarding earnings management and dividend policy in different ownership contexts. Moreover, as far as was possible to survey, there are only a few studies based on historical financial data from Portuguese companies and no evidence about local empirical studies on this matter based on non-listed companies. In addition, the international pressure under profit shifting and tax avoidance matters, raise some curiosity and may also be addressed according to the results of the empirical analysis.

After the introduction presented in Chapter 1, the Chapter 2 presents the literature review, the gaps, the objectives and the hypotheses. Particularly, the first hypothesis addresses the signal of the relationship between earnings management and dividend policy within Portuguese companies. The second hypothesis infers about the influence of majority shareholders (>50% of share capital) versus non-concentrated ownership in terms of the way EM influence dividend distribution. The third hypothesis infers about the influence of EM in terms of dividend distribution in companies mostly owned by a corporate shareholder versus companies owned by an individual/family. The fourth hypothesis infers about the influence of EM in terms of dividend distribution in companies majority owned by Portuguese versus foreign shareholders. The fifth and last hypothesis took the same sample applied in the previous hypothesis and considered variable TAX in order to understand whether the tax framework can influence firms' dividend policy.

The research methodology, which includes the data and sample selections applied to address the research hypotheses, is described in Chapter 3. This chapter presents also the econometric model specifications, including the measuring mechanisms of earnings management and dividend policy applied to test the research hypotheses and the dependent and independent variables considered in the research.

In Chapter 4 the regression model results and hypothesis tests are presented, anticipated by a correlation analysis and multicollinearity diagnostics based on the model variables.

Chapter 5 presents and discusses the regression results and hypothesis tests and provides a summary of the main findings of the dissertation. A discussion on the research limitations is presented and some recommendations for future researches in the field of earnings management and dividend policy are stated.

Based on the analysis conducted and consistent with Farinha and Moreira (2007) and Rahim (2010), it was possible to find evidence of a positive statistically significant relationship between earnings management and dividend policy in the twelve methodologies considered. It is also predicted that the effect of earnings management on dividend policy is more pronounced in firms with a majority shareholder (more than 50% of share capital) as opposed to firms with non-concentrated ownership. Similar results were obtained by firms with a majority corporate shareholder in contrast to companies with an individual/familiar ownership. In case of the sample that faces taxpaying and non-taxpaying firms, the results about the outcome of earnings management on dividend policy are relevant but present a contrary signal between each other.

2. Literature Review and Hypotheses

2.1. The concept of Earnings management

The word “earnings” is, *per se*, a broad concept of utmost importance in terms of financial and accounting literature and has attracted much attention by academic researchers. This concept is related with value-added activities and is always of interest of agents in capital markets. From a theoretical point of view, the value of a company’s stock is the present value of its future earnings, concept that gained evidence with Lev (1989) by finding that the value of a firm follows the same direction of its earnings.

Managers and shareholders may have interest in leveraging present earnings in order to maximize future results. To perform such objectives they may apply real and accounting managerial strategies at their disposal, academically named as “Earnings Management”. From a Social Science point of view, the term earnings management is really well-known and it was already subject to an extensive analysis and debate.

Earnings management involves the use of discretion in financial reporting with a specific objective of altering earnings to meet predetermined targets settle by shareholders, management team or even by predictive analysts. While Schipper (1989: 92) defines earnings management as the “*Purposeful intervention in the external financial reporting process with the intent of obtaining some private gain*”, Healy and Wahlen (1999: 368) specify that it occurs when “*...managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.*”. It is a strategy of generating accounting earnings, which “*... is accomplished through managerial discretion over accounting choices and operating cash-flows...*” (Phillips, 2003: 493), which can be described as an attempt to influence or manipulate reported earnings by using specific accounting methods, deferring or accelerating expense or revenue transactions, recognizing one-time non-recurring items, or using other methodologies to influence short-term earnings (Aker *et al.*, 2007).

There is a very narrow dividing line between the definition of earnings management and fraud. In fact, both concepts differ in the fact that managers may engage in earnings management within the boundaries of the elasticity afforded by the general accounting

principles (e.g. GAAP, IFRS, SNC) without questioning the violation of these standards, making it a legal practice. Even though earnings management and fraud are not on the same level, it is not possible to withdraw the moral responsibility and the opportunistic feature of the first concept. This relationship was subject to a deep reflection by Healy and Wahlen (1999) that concluded that opportunistic earnings management takes place when accounting decisions are intentionally made in ways that mislead stakeholders about the underlying economic performance of an entity.

According to Sun and Rath (2008), there are two prevailing conditions for earnings management, namely: information asymmetry and the agency conflict (agency theory). Asymmetric information occurs when one party possesses greater material knowledge than the other party (Scott, 2009). In fact, given the asymmetric information, it may be difficult for investors to ascertain the extent of managers' earnings manipulation (Liu *et al.*, 2010). From another perspective, in order to maximize their interests, managers are willing to show a better picture of the firm's financial position to the shareholders (Bhundia, 2012), and information asymmetry has some meaningful effects on earnings management (Dadbeh and Mogharebi, 2013). On the other hand, agency theory states that: when the goals of the management team are aligned with the goals of shareholders, no conflict of interest would exist between both parties (Jensen and Meckling, 1976). Davidson III *et al.* (2004) defends that earnings management may be a type of agency cost if managers report financial results that do not present an accurate economic picture of a company and shareholders make non-optimal investment decisions as a result.

Three main techniques can be appointed to undertake earnings management strategies (Elkalla, 2017). The first technique is related to the recognition of revenues before they are actually earned or a delay in terms of the recognition of incurred expenses, which results in accruals. This practice is known as *accruals-based earnings management* and has been seen as a way of managers to modify estimates and accounting policies in order to boost or reduce earnings. One of the most well-known researches on this matter was conducted by Kothari *et al.* (2012) in which it is stated that accruals-based earnings management take place when managers get involved in the financial reporting process by exercising discretion and judgment to adjust reported earnings without any corresponding cash flow consequence. The second strategy can be identified when the management board intentionally makes decisions with an operational effect that influence actual cash flow and consequently earnings reporting,

frequently known as *real activities-based earnings management* given the proximity to the operational activity. A research on this matter was conducted by Dechow and Skinner (2000) that found evidence that managers may opportunistically reduce R&D expenses with the aim of decrease expenses in a given period. The *shifting-based earnings management* mechanism is the third possibility in managers' hands and consists in the shift of core expenses to special items in the income statement to augment earnings before extraordinary items (McVay, 2006). In fact, the accounting net income does not change but an analysis based on core/extraordinary earnings can be slightly affected. Therefore, taking the Portuguese example, the implementation of SNC eliminated the accounting concept of "extraordinary" items making this earnings management mechanism unusual.

While earlier researchers found that companies may apply both accruals-based and real activities-based earnings management mechanisms according to the managers' ability to use accruals manipulation as well as the costs of doing so (e.g., Cohen and Zarowin, 2010), other found that companies frequently substitute both techniques (Doukakis, 2014). Despite the relevance of real activities-based earnings management and the strong relationship between both described methods, the analysis carried out in this dissertation was mainly focused on the *accruals-based earnings management*.

Several authors such as Healy (1985), Jones (1991) and Dechow *et al.* (1996) investigated the sort of incentives that influence managers to perform earnings management strategies. There are multiple variables such as political and governmental regulatory constraints, compensation contracts, debt covenants and/or equity incentives. These variables can be mixed. Watts and Zimmerman (1978), for example, found evidence that in specific circumstances it is not of the best interest of larger firms to come out with high profits since they would face increased intervention by political regulators. Thus, firms try to diminish political exposure by conducting activities that lead to income smoothing. However, large firms may have more concern about the reputational effect which can avoid them from manipulation practices. According to Lemma *et al.* (2013), large firms are exposed to higher reputation costs in comparison with small firms if the credibility of financial information disclosed is compromised. Larger firms also have more current assets which mean that they have a higher capacity to take earnings management actions in comparison with smaller firms (Kim *et al.*, 2003). However, the relationship between firm size and discretionary accruals is

not consensual among the academy. Authors such as Heninger (2001) and Sun and Rath (2009) found a negative association between both variables.

Mulford and Comiskey (2002) added the focus on manager's actions in order to meet stock market expectations due to the concern about potential consequences on the firm's value in case of failure of the expected target. Firms' industry may also influence earnings management behaviors (e.g. Ashari *et al.*, 1994), namely, companies in industries that are more competitive and more predisposed to international, economic, and political events have a greater predisposition towards smoothing their income. Industries such as energy, metals, mining and information technology engage in income-decreasing accruals-based earnings management, while the healthcare, telecommunications and utilities industries are associated with income increasing accruals-based earnings manipulation (Sun and Rath, 2009).

Although there are several aspects influencing earnings management, this dissertation focuses on the role of shareholders ownership and the tax-induced effect.

2.1.1. Shareholders ownership and earnings management

Ownership concentration, managerial ownership and business control are concepts often mentioned in financial literature. Usually, majority ownership concentration is treated as enough to keep managerial ownership or control over a given entity. If ownership is widely dispersed, shareholders have no sufficient incentives to overlook management closely since the benefits are too small in relation to the costs of monitoring. On the contrary, when the ownership is concentrated in a few numbers of owners, they have more stake in the firm and thus they are more likely to monitor managers' actions (Usman and Yero, 2012).

Lin (2011) found evidence that when managerial ownership is less than around 10%, managers might engage in opportunistic earnings management behaviors. The study, using Taiwanese listed firms from 1997-2007, also showed that as managerial ownership increases, managers may easily engage in efficient earnings management practices in order to improve a firm's value. Farooq and Jai (2012), investigating the effect of ownership structure on accruals-based earnings management for Morocco firms during the period 2004-2007, found that large shareholders such as institutions have a negative impact in terms of earnings management. Similar results were obtained by Warfield *et al.* (1995) and Alves (2012) that

inferred a negative relationship between accruals-based earnings management and ownership. Particularly Alves (2012) suggested that discretionary accruals as a proxy for earnings management are negatively related both to managerial ownership and to ownership concentration, using a sample of 34 non-financial listed Portuguese firms concerning the period from 2002 to 2007.

From another point of view, Gopalan and Jayaraman (2012: 118) stated that firms which are controlled by insiders such as a family, financial institution or the government “*usually have concentrated ownership stakes and enjoy control rights far in excess of their cash-flow rights*”. A lack of intervention from outside shareholders provides insiders with considerable autonomy over the decisions of the firm. Consequently, the ownership concentration may lead to a higher extent of earnings management behavior due to agency problems between controlling and minority shareholders, as well as the possibility that controlling shareholders may use their autonomy to manipulate earnings. With a sample of 51 Portuguese listed firms from 2003-2015, Lisboa (2016) inferred that accrual-based earnings management is higher in family firms than in non-family ones which suggest less quality of information in the first group.

2.1.2. Tax-induced Earnings management

Tax incentives are a real concern for managers in their decision to manipulate companies' earnings. Regardless of their location, size or industry, corporate income tax is a common expense for most companies and can represent around a third of the pre-tax income. It is therefore natural that the companies and its shareholders can fall into the temptation to reduce the amount of tax payable by using financial and accounting mechanisms (Dias, 2015).

Scholes *et al.* (1992) demonstrated that companies differ income by managing the recognition of revenue and expenses in order to benefit from corporate income tax diminution in mid-eighties. More recently, Yin and Cheng (2004) found that income-decreasing earnings management is undertaken by both profit and loss firms. In fact, the results suggest that profit firms apply more income-decreasing accruals as a reaction to tax incentives while loss firms apply more income-decreasing accruals as a result of non-tax incentives. Omar and Zolkafllil (2015) inferred that multinational groups with subsidiaries in tax haven territories, reported

lesser profits and paid lesser taxes and the findings confirm that these types of groups are engaged in profit shifting more extensively than groups without tax haven dependencies.

There is a common aspect between all the above researches, namely, the context in which earnings management is often put in place. In fact, multinational organizations may apply EM in order to handle the taxation framework in each country the group is presented. Groups have at their disposal several intercompany transactions which take us to the concept of transfer pricing.

According to OECD (2017), “transfer pricing” refers to the rules and methods applied in terms of the definition of prices established in transactions carried out between related parties (companies in a special relationship).² As mentioned by Liu *et al.* (2017), transfer pricing is really important once affects the pre-tax profits that each party earns from a cross-border transaction and the amount of corporation tax that is due in both countries. According to Canha (2006), companies focus their interest in transfer pricing in order to reduce the corporate income tax to pay in a specific country. The fixation of a specific transfer pricing can lead to a profit shifting from one country to another with lower tax rates.

The studies about the relationship between earnings management and transfer pricing are not new. Samuelson (1982) developed a theory about how transfer pricing methods were able to change firm-level decisions in terms of investments, amount and location of production. In the years following Samuelson’s research, several papers have looked at transfer-pricing behavior of multinational firms. Authors such as Grubert and Mutti (1991) and Collins *et al.* (1998) were able to provide evidence for profit shifting (even if indirectly) by demonstrating that pre-tax profits are correlated with tax differentials across countries.

A multinational group has available a set of different techniques in terms of transfer pricing that potentiate the shifting of earnings from high-tax to low-tax jurisdictions. Numerous

² Given the potential of distort taxable income by performing cross-border controlled transactions, tax authorities can adjust intragroup transfer prices according to what would have been charged by unrelated enterprises. Transfer pricing has an important role in the establishment of a common order of guidance, regulation and fair market practices among countries, tax authorities and group companies.

empirical studies, such as Hines (1999) and Newlon (2000), were able to find evidence about profit shifting through the manipulation of intercompany transactions - transfer pricing -.

Lastly, Balachandran *et al.* (2013) examined whether Australian listed companies apply impending shareholder-level tax changes to maximize shareholders' after-tax position through earnings manipulation mechanisms. The authors concluded that managers shift income from the year preceding each tax change to the first year. In addition, Balachandran *et al.* found that income deferral is more likely for dividend-paying firms; the deferral of income can be seen as an alternative form to exploit shareholder-level tax changes to enhance shareholder wealth.

There are different ways to carry out intercompany transactions. The materialization of a cash payment to a parent firm can be accomplished by a related-party transaction such as a product sale, acquisition of services or a royalty payment. There are also other ways to transfer resources to the majority owners based on financial transactions (e.g. Jiang *et al.*, 2008; and Berkman *et al.*, 2009³) or even by a dividend distribution.

There is a very close relationship between the concepts of earnings management and transfer pricing (in general). Notwithstanding, given the broad amplitude of lines of research on this matter, this dissertation aims to take a step forward in the investigation focused on *earnings management and dividends distribution* between firms and their shareholders.

2.2. The concept of dividend policy

The primary shareholders' objective of a company is to maximize its value. Companies exist to provide goods and services in order to generate revenue and, most important, to generate net income. In fact, there are few ways to revert net income to the shareholders but the most usual is through dividends. As a distribution of a portion of corporate earnings, dividends are usually decided by the board of directors and paid to a class of its shareholders in a form of cash payments, shares or stock or other property. Company's net profits are an important

³ The authors inferred that inter-corporate loans are commonly applied by China's listed firms in order to promote earnings management strategies thought transfer pricing.

factor in determining the amount of dividends and can be seen as one of the drivers of a firm's policy in terms of dividend distribution. Therefore, a dividend policy can be characterized as the standards by which a firm determines the amount of money it will pay as dividends (Tillier, 2013).

The concept of "dividend policy" has captured the interest of economists over the last decades and has been subject to an intensive theoretical analysis and empirical examination. Officer (1990), for example, found that the introduction of a dividend imputation system encourages firms with resident shareholders to increase their dividend payments. From a different perspective, Twite (2001) examined the changes in corporate capital structure upon the introduction of dividend imputation in Australia. The author concluded that there is a tax preference for dividends over corporate interest income.

One of the most relevant researches in this field was developed by Miller and Modigliani (1963) that showed that in a perfect capital market, if the dividend policy does not shape the expected rate of return of the shareholders and the firm's capital budget, then the disbursement of dividend is irrelevant to define the value of a firm. Contradictory results were unveiled by Linter (1956) in its classic study. The research developed by the author found evidence about the uncertainty of managers to increase dividend payments given the fear of not being able to keep the same level in the future. The amount of dividends became a manner for convincing investors about the persistence and quality of a company's reported earnings. Similarly, Chen and Gaviious (2016) and by Wang (2016) found that, from a debtholders' perspective, dividends paid to shareholders can lead to the reduction of the value of a company. Furthermore, the conflict of interests and the risk of a company entering in a financial distress are exacerbated in case dividend payment is based on unrealized profits because the latter may reverse in the future.

Another interesting result was obtained by Hail *et al.* (2014) that showed that, after the obligatory adoption of IFRS in a sample constituted by 29 countries, companies became less prone to the payment of cash dividends.

Although Crockett and Friend (1988) tried to prove the preference of shareholders for dividends and Myers (1990) concluded that dividend payments are, in fact, an unwritten contract between shareholders and corporate management, Frankfurter and Wood (2002: 111) presented results in order to prove that "*no dividend model, either separately or jointly with*

other models, is supported invariably.”. Similar results were prior presented by Shiller (1986), which argued that a model incorporating modern financial theories and behavioral and psychological influences might best explain corporate dividend policy. Notwithstanding, until the development of such model, tests of dividend policy theories will remain inconsistent and inconclusive.

2.2.1. Ownership composition and dividend policy

Shareholders’ composition and its concentration level can be seen as a mechanism of internal governance due to the power of largest shareholders in the control of the company’s activities and decisions. Such level of control typically leads to an agency conflict between the largest shareholders and the minority shareholders (Gedajlovic and Shapiro, 2002). Goh *et al.* (2013) shared a similar point of view by referring that ownership structure really matters by determining whether majority shareholders act in ways that are either detrimental to or in the interests of shareholders with a minority position. This theory was also defended by Short (1994) that referred that concentrated ownership allows controlling shareholders to conspire with managers to deplete the resources of the minority shareholders.

Once the effect of shareholders’ concentration is known, it is then important to establish its relationship with dividend policy. Jeong (2013) showed that a large shareholder ownership is a significant determinant of dividend smoothing in Korea. Mancinelli and Ozkan (2006) analyzed the relationship between dividend policy and ownership structure in an Italian sample and found evidence about a negative relationship between the voting rights of the largest shareholder and dividend payouts. Similar results were obtained by Harada and Nguyen (2011) and Truong and Heaney (2007). The firsts documented that firms with higher ownership concentration pay lower dividends, in the case of a sample of companies in Japan. The latest found that dividends are negatively related to ownership concentration by studying the relationship between the largest shareholder and dividend policy in a sample of 8279 listed firms in 37 countries.

However, the theory about the signal of the relationship between agency costs and dividend distribution is not consensual. For example, Jensen (1986) showed that high dividend payouts mitigate agency costs due to the pressure to reduce free cash flows that could be expensed on

unprofitable projects. Similar results were inferred by Eckbo and Verma (1994). The authors showed that majority shareholders prefer the distribution of dividends in an effort to lessen agency costs.

The role of a company's familiar/personal ownership in terms of dividend distribution is also an interesting matter of study. Zhang (1998) referred that a company with family shareholders, mainly when the family belongs to the management board, may undertake suboptimal investments due to the incapacity of diversification and consequently impose abnormal costs to the company with a possible effect in terms of profit and future dividends. La Porta, et al (2000) showed that family ownership is characterized by high agency problems and low dividend payout ratios. In addition, Aguenou *et al.* (2013) inferred that the dividend policy of firms listed in the Casablanca stock exchange is negatively influenced by the existence of a family ownership. They also affirmed that a characteristic of firms in an emerging market such as Morocco is that the low dividend payout ratios are supported by high agency problems in family-controlled firms. A recent research on this matter was conducted by Gonzalez *et al.* (2017) that inferred a negative relationship between ownership concentration and dividends when the largest shareholder is an individual investor.

Contradictory results were presented by Setia-Atmaja *et al.* (2009) that investigated whether family-controlled firms use dividends, debt and board structure to exacerbate or mitigate agency problems in Australian family firms. The authors conjectured that family controlled firms employ higher dividend payout compared to non-family firms. Gugler (2003) also affirmed that family-controlled companies are not necessarily related to dividend smoothness. Lastly, Pindado *et al.* (2012) presented evidence that family-controlled firms distribute higher and more stable dividends, based on a sample of nine Euro countries.

The level of dividends can also differ taking into account the nationality of the shareholders. For example, Gonzalez *et al.* (2017) posited that the country of origin of the largest shareholder influence the level of dividends paid. The authors found that when the largest shareholder is based in a common law⁴ country, there is a positive association between

⁴ Also known as judicial precedent or judge-made law; it is the law derived from judicial decisions of courts and similar tribunals.

ownership concentration and the level of dividends paid by companies from Latin America. Also Haniffa and Cooke (2002) showed that companies with a large proportion of foreign ownership have higher disclosure levels and Bai *et al.* (2004) found evidence about a higher market value for firms with considerable foreign ownership.

2.2.2. *The role of taxation in a firm's dividend policy*

As prior mentioned, Miller and Modigliani (1961) concluded that investors may be indifferent to the amount of dividends. However, in a context of a differential tax treatment of dividends and capital gains, the results are not strictly the same. In the presence of a tax policy over dividends, investors would prefer smaller or zero dividend distribution. Brennan (1970) showed that shareholders are influenced by the tax they will pay and they manage dividend policies according to its tax exposure. This result suggests that investors may demand a higher return (before taxes) for shares with high payout ratios due to the need to compensate the tax treatment of dividends. Bell and Jenkinson (2002) analyzed the impact of a major change in terms of dividend taxation regime implemented in the UK in mid nineties. The results provide strong support that taxation affects a company's valuation. Hassan *et al.* (2013) went further and predicted a negative impact of taxation on dividend payouts in Pakistani markets. On the other hand, Reddy (2003) concluded that the change in terms of the Indian tax regime has not really influenced the dividend behavior of local firms and Khan *et al.* (2017) also inferred that capital gains tax has no impact on dividend payments. Harris *et al.* (2001) conducted an analysis regarding the retained earnings returns in countries with different tax regimes. The authors found upper discount rates in the US and in Japan, where dividends have higher taxes than in countries such as Australia, Germany and the UK, where there is a tax credit over dividends. Lastly, a related research predicted that income deferral is more likely for dividend-paying firms. Simultaneously, dividends' deferral can be seen as an alternative approach to exploit shareholder-level tax changes to enhance shareholder wealth (Balachandran *et al.*, 2013). The results around the fiscal effect on dividend policy are, thus, ambiguous. Nevertheless, the tax framework seems to contribute most for low dividend payments.

Several authors presented other possible variables influencing the firm's dividend policy. For example, Frankfurter & Wood (2002) conducted an extensive analysis in terms of dividend

policy theories and their empirical tests. Beyond the theories presented in the above sections regarding the role of tax influence on dividend policy, the authors described other explanatory theories such as the information asymmetries phenomenon based on signaling model, the role of agency cost theory and the free cash flow hypothesis.

Moreover, the research performed by Chansarn and Chansarn (2016), inferred that dividend payout ratio can be determined by profitability level, operational cash flow, firm's size and sales growth. On the other hand, the dividend yield is determined by profitability, liquidity, leverage, cash flow, firm's size and also by sales growth.

As referred by Frankfurter & Wood (2002), there is no perfect model describing all possible variables that define a dividend policy. For this reason, this dissertation aims to explore the signal and the power of the relationship between dividend policy and earnings management in a context where the firms' ownership composition and its tax framework may have a special influence.

2.3. The relationship between earnings management and dividends policy

As shown in the previous sections, the constructs (i) earnings management and (ii) dividend policy have been subject to earlier researches. There are numerous common aspects among both concepts that lead to a possible discussion about the relationship between them. This section aims to establish a connection by presenting an academic discussion about that relationship, opening the door about the research hypotheses that this dissertation aims to look at.

One of the oldest references about the relationship between the constructs was studied by Lintner (1956). According to the author, the dividend policy is geared by earnings and must be constant unless managers predict a new level of earnings in a near future. Even if indirectly, his conclusions unveil to the concept of earnings management and open a new field of academic research that has been persecuted in the last decades.

One of the most cited works in this area was presented by La Porta *et al.* (2000). The authors inferred that dividend policy associated with low earnings manipulation is adopted due to

management's intention to build a strong reputation and to get access to capital markets. Furthermore, by performing a comparison between dividend-paying and non-dividend paying firms, Skinner and Soltes (2011) were able to show that the first entities [dividend payers] register more persistent earnings over the time. These results might be consistent with persistent earnings management practices.

In fact, there are different points of view regarding the signal of the relationship between earnings management and dividend payout policy. The researches supporting both points of view are presented below.

2.3.1. Positive influence between the constructs

Several studies found a positive influence of earnings management on dividend policy and the main reason pointed out is that companies incur in greater earnings management to increase their earnings and make their stocks more attractive. At the same time, they tend to boost dividend payments in order to increase dividend yield and, therefore, keep the stocks attractive.

As referred by Lin *et al.* (2014: 202), “*when accounting earnings are lower than expected dividend levels, managers will have the incentive for an upward earnings management to prevent decreases in dividends*”, which can be seen as a clear positive relationship between the constructs.

Farinha and Moreira (2007) evidenced a positive impact of earnings management on dividend yield by analyzing a sample of US-listed companies during the period 1987- 2003. Three years later, Rahim (2010) found evidence about the positive effect of earnings management on both dividend yield and dividend payout ratio, based on a research carried out in Malaysia during the years 2003-2009. Daniel *et al.* (2008) also defended a positive relationship. The authors found evidence that companies tend to manage earnings upward through accruals-based earnings management in case their earnings fall below an expected dividend level.

Another research based on Finnish firms during 1970-89 showed that firms tend to engage in earnings management in order to meet dividend-based target earnings. They argued that major institutional shareholders in Finland are looking for high yields on their stock holdings and they expect smooth dividend streams (Kasanen *et al.*, 1996). Thus, it seems to be a positive

relationship between earnings management and dividend policy. Similar results were obtained by Morghri and Galogah (2013) that found a positive influence of earnings management on dividend payout ratio of Iranian listed companies during 2006-2011. Chen and Gaviious (2016) also predicted that, based on an opportunistic conduct, managers inflate earnings in order to boost the amount of dividend per share. The common explanation is that entities take earnings management as a mechanism to increase earnings (and consequently their dividends) with the purpose of attracting investors and satisfy shareholders.

2.3.2. *Negative influence between the constructs*

There is an extensive literature that indicates that managers prefer to keep a smooth dividend policy in order to avoid possible future dividend cuts. In fact, if dividends increase due to income-increasing earnings management, this may be hugely costly for a firm because discretionary accruals can reverse in the future.

He *et al.* (2017: 268) conjectured that “*dividend paying firms manipulate earnings less than their non-paying counterparts and that the strength of the relationship may vary with country-level investor protection and transparency*”. Additionally, the same authors concluded that “*dividend payers have smaller abnormal accruals than dividend non-payers, suggesting that the former are less likely to engage in aggressive accruals management to conceal firm performance*”. Overall, the above authors were able to show that paying dividends is associated with and lead to lower earnings management. This explanation is consistent with Easterbrook’s findings. The author concluded that dividends are important to reduce agency costs of free cash flow and to minimize suboptimal managerial behavior (Easterbrook, 1984).

Also Haider *et al.* (2012) found a negative influence of earnings management on dividend payout ratio taking into account a Pakistani sample analysis during 2005- 2009. Welker *et al.* (2017), based on a policy change in China in order to infer about the effect of a mandated dividend payout regulation on companies’ financial reporting practices and correspondent cash dividend distributions, found that since dividend payout ratio is calculated based on cash dividends over earnings, companies may be incentivized to influence their payout ratios through earnings management that decreases the denominator. Therefore, companies have an

incentive to report negative discretionary accruals to lower earnings and increase dividend payout ratios.

2.4. Gaps, Objective and Hypotheses

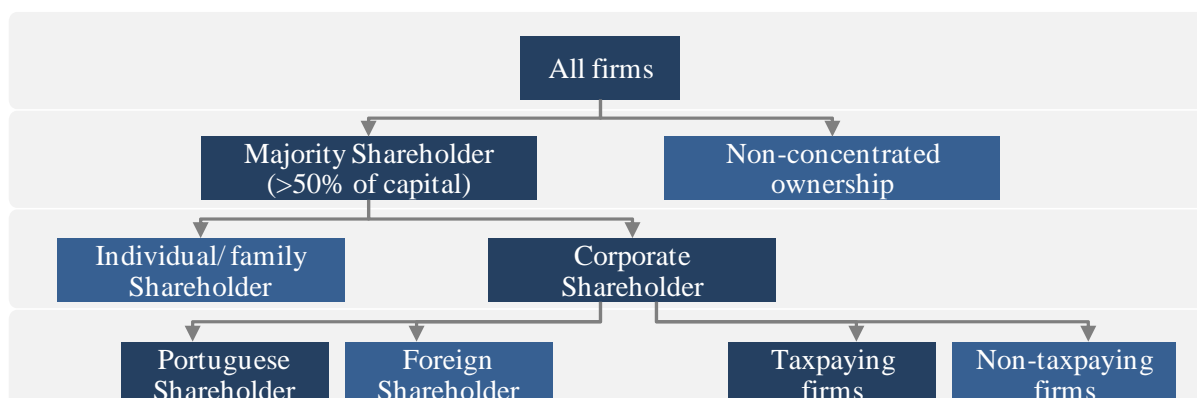
There seems to be a gap in the literature in terms of examining the link between earnings management and dividend policy in different ownership settings; specifically in a context of Portuguese companies, where the number of researches is even lesser.

As far as it was possible to survey, there is, for example, a research of Pereira and Tavares (2015) addressing the determinants of dividend policy based on financial information of non-financial Portuguese listed companies, regarding the period 1997-2011. From a different perspective, Alves (2012) analyzed the role of ownership structure and earnings management in a similar sample of 34 non-financial Portuguese listed companies. More recently, Lisboa (2016) addressed the impact of family control on earnings management of Portuguese listed companies. None of the earlier studies (i.e. Alves, 2012; Pereira and Tavares, 2015; and Lisboa, 2016) combined in the same analysis the constructs covered by this dissertation. On the other hand, there is something in common between the past researches that differs from this dissertation, namely the analysis based exclusively on a sample of Portuguese listed companies.

Thus, the objectives of this dissertation are the analysis of the relationship between earnings management and dividend distribution (by itself), as well as the analysis of this relationship taking into account different ownership contexts.

In order to contribute to the literature based on data from Portuguese firms, this dissertation applied a sample of 4,258 listed and non-listed companies, from different industries and with diverse asset's composition. One of the common aspects among the sample is that all of them, at least in one of the periods under analysis, distributed EUR 1 as dividends to their shareholders. Notwithstanding, years with zero dividends were not excluded since they might represent a business decision with statistical significance. Another important aspect of the research is that each firm was classified and aggregated based on its shareholder composition, according to Graph 1.

Graph 1 - Shareholders' composition of the sample



The sample size decreases along the research hypotheses due to theoretical and practical reasons. The first one is because it was not possible to identify past researches relating the constructs and potential statistical effects of a non-concentrated ownership. On the other hand, the information available in the database does not disclose the citizenship of individual shareholders which makes some potential hypotheses impractical for companies with this type of ownership structure.

As presented in the literature review, firms' dividend policy depends, most of the time, on management capacity and effort to fulfill shareholders requirements. To perform such assignment, managers can apply earnings management practices as an attempt to influence reported earnings by applying specific accounting methods (Aker *et al.*, 2007).

In fact, as stated by Linter (1956), the amount of dividends can be seen as a strategy to convince investors about the persistence of the firm's earnings. The uncertain reaction of investors in case of a non-expected result may pressure the management board to perform earnings management. Several studies provide clear evidence about the relationship between earnings management and dividend paying status although with mixed signaling results.

Haider *et al.* (2012) inferred a negative influence of earnings management on dividend payout and similar results were obtained by Welker *et al.* (2017) and He *et al.* (2017).

In contrast, authors such as Farinha and Moreira (2007), Daniel *et al.* (2008), Lin *et al.* (2014) and Chen and Gavius (2016) advocate a positive relationship between the constructs.

The discussions above give rise to the first hypothesis:

H1. Dividend policy is positively associated with earnings management.

The firms' ownership structure may have an influence on the level of dividends distributed. That is, controlling shareholders might force firms to pay out earnings through dividends. Farooq and Jai (2012) inferred that large shareholders have a negative influence on earnings management. A similar signal direction was obtained by Alves (2012) by relating earnings management and ownership concentration. From another perspective, Lin (2011) found that when managerial ownership is less than around 10%, managers may engage in a more opportunistic earnings management. Concerning the effect of ownership concentration in terms of dividend policy, Jeong (2013) showed that a large shareholder ownership is a significant determinant of dividend smoothing. Several authors describe a negative relationship between the voting rights of the largest shareholder and dividend payouts (e.g. Mancinelli and Ozkan, 2006; Harada and Nguyen, 2011; and Truong and Heaney, 2007).

Notwithstanding, Eckbo and Verma (1994) showed that majority shareholders prefer the distribution of dividends in an effort to lessen agency costs which can be advocated as a positive relationship between dividend policy and concentrated ownership. Based on the research performed by Liljeblom and Maury (2016), the criterion of "majority shareholder" was attributed to companies in which a shareholder owns more than 50% of share capital. This assumption is taken as satisfactory to presume ownership control.

The existing findings documented above give rise to the second hypothesis:

H2: The effect of earnings management on dividend policy is more pronounced in companies with a majority shareholder (>50% of share capital) than in companies with non-concentrated ownership.

The role of family firms in the economy has been widely debated in the academic literature. Gopalan and Jayaraman (2012) found out that firms controlled by families, typically have concentrated ownership and that this is a proxy for a higher extent of earnings management. Similar results were obtained by Lisboa (2016) that inferred that earnings management is higher in family firms than in non-family firms. From a different perspective, Zhang (1998) verified that a company mainly owned by family shareholders may lead to lower dividends

over the time. Although Gugler (2003) refers that family-controlled companies are not necessarily related with dividend smoothness, Gonzalez *et al.* (2017) inferred a negative relationship between ownership concentration and dividend distribution when the largest shareholder is an individual investor. Thus, it is expected a weaker effect of earnings management on dividend distribution when the ownership is concentrated on an individual/family. Therefore, the third hypothesis is organized in the following way:

H3: The effect of earnings management on dividend policy is more pronounced in companies with a majority corporate shareholder than in companies with an individual/familiar ownership.

Different countries have diverse economic and tax environments. Thus, the way earnings management influence dividend distribution diverges according to the country of a firm and according to the country of its shareholders. This is consistent with the findings of Omar and Zolkafli (2015) that concluded that multinational groups increase profit shifting practices the more subsidiaries they have in tax havens. Gonzalez *et al.* (2017) posited that the country of the largest shareholder influences positively dividends distribution. In a different perspective, Officer (1990) stated that countries with tax credits encourage companies with resident shareholders to increase their dividend payments. Once the sample was divided between companies majority owned by Portuguese versus foreign shareholders, without any differentiation among the latest, the signal of a possible relationship between the constructs is unexpected. Therefore, the fourth research hypothesis is acknowledged in the following way:

H4: The effect of earnings management on dividend policy is more pronounced in companies with a Portuguese majority shareholder than in companies with a foreign ownership.

According to the literature, managers consider shareholder-level tax incentives when they manipulate earnings. For this reason, the more aligned managers are with shareholders, the more likely managers take earnings management practices in order to reduce shareholders' taxes (e.g. Yin and Cheng, 2004). Numerous empirical studies show evidence about profit shifting through the manipulation of intercompany transactions (e.g. Hines, 1999; and Newlon, 2000). In the vision of Canha (2006), companies focus their interest in transfer pricing in order to reduce the corporate income tax in a specific country. Balachandran *et al.*

(2013) found that income deferral is more likely for dividend-paying firms and Brennan (1970) demonstrated that shareholders manage dividend policies according to its tax exposure. Twite (2001) concluded that there is a tax preference for dividends over corporate interest income. Based on these earlier researches, the following hypothesis aims to infer whether the effect of earnings management in terms of dividend policy is more pronounced for entities liable to corporate tax than to non-payers. It is considered the sample of companies applied in the previous hypothesis, namely companies with a majority corporate shareholder in order to obtain some insights about shareholders role on this matter, specifically:

H5: The effect of earnings management on dividend policy is more pronounced in companies (majority owned by a corporate shareholder) that pay corporate tax than in non-paying companies.

3. Research Design

3.1. Data and Sample

3.1.1. Data collection

The source of data for firm-specific variables applied in this dissertation is Bureau van Dijk – Sabi®⁵ database. The dependent variables and firm-specific independent variables are computed from the financial statements (income statement, balance sheet and cash flow statement) of the sample firms and the data comprises information from the period of 2013-2017.

The selected time period includes a medium time horizon of five years which allows a large number of observations for the data analysis. Moreover, the time period crosses different Portuguese economic cycles thereby including periods of recession and growth⁶.

According to Im *et al.* (2015) and Ho *et al.* (2015), there are relevant differences between financial and non-financial firms in terms of their income statements, which make variables more challenging to compute. Therefore, following the academic literature, financial firms were not considered in the present research.

3.1.2. Sample collection

There were considered some specific criteria in order to select an appropriate initial set of comparable information. The search parameters, as well as the main selection reason, are presented in Table 1.

⁵ Sabi is a Bureau van Dijk database of comparable financial and business information on around 3.2 million public and private Iberian companies. Sabi contains standardized annual accounts, financial ratios and ownership data of non-financial firms.

⁶ In fact, 2013 was the last year with negative real GDP growth according to PORDATA database.

Table 1 - Search strategy applied in Sabi®

Selection criterion	Selected items	Selection effect	No. of rejections	Search result
Portuguese status	Active companies	Drop off inactive companies or those involved in liquidation or bankruptcy processes	-	367,482
Legal form Portugal	Limited liability company, One-person company with limited liability, Foreign entity, Limited partnership	Drop off companies that do not have the goal of profit maximization.	1,646	365,836
Consolidation code	U1 (companies with unconsolidated accounts only)	Consolidated financial statements were excluded since the analysis is performed based on individual financial statements.	928	364,908
Date of incorporation	Up to and including 31/12/2009	Include only companies whose year of incorporation was at least three years prior to the first year of financial information desired (i.e. 2013) ⁷ .	164,911	199,997
Dividends paid	2017, 2016, 2015, 2014, 2013, for at least one of the selected periods, minimum of EUR 1.	Include only companies with a minimum level of dividends distributions.	195,739	5,234
Operating revenue	2017, 2016, 2015, 2014, 2013, for all the selected periods, minimum of EUR 100 thousand.	Include only selected companies with a minimum level of operating revenue in order to exclude small businesses.	976	4,258
Sample				4,258

After applying all the above criteria, the final set of 4,258 firms was exported from Sabi® database and subject to further handling in order to obtain the variables in accordance with the following sections.

⁷ According to OECD (2017) - par. 2.77 "Net profit indicators may be directly affected by such forces operating in the industry as follows: threat of new entrants, (...) and the degree of business experience (e.g. whether the business is in a start-up phase or is mature)." For this reason, this criteria aims to eliminate companies in a start-up situation. During this period, shareholders assume investment costs without an expected return.

3.2. Measuring mechanisms of Earnings Management and dividend policy

3.2.1. Introduction

Accruals are income or expenses that a firm expects to incur and that are recorded regardless of whether cash has exchanged hands yet. These accounts include, among others, expected future cash receipts from credit sales (accounts receivable), expected future cash outlays from existing obligations (accrued payables), future tax liabilities and future interest expenses. As another example, the measurement of accounts receivable requires an estimate of future uncollectible amounts - bad debts expenses.

By recording accruals, a company can measure what it owes in the short-term and also what cash revenue expects to receive. The total accounting accruals can be computed as the difference between net income and cash flow from operation (Hribar and Collins, 2002).

As referred by Balachandran *et al.* (2013: 568), “*a company’s annual earnings are equal to cash flows plus accruals*”. In fact, the rationale behind accruals is to increment cash-based transactions with accrual-based estimates to best encapsulate the financial performance of a company at financial year-end.

The total accruals can be drill down in two components: *non-discretionary accruals* and *discretionary accruals*. The non-discretionary component represents the accruals resulting from firm’s normal operation whereas discretionary component represents accruals resulting from management’ earnings manipulation (Jones, 1991). There is no international accounting standards directly related with accruals. However, the IAS 37 – Provisions, contingent liabilities and contingent assets, is used as an example of a standard permitting a considerable degree of flexibility allowed in the measurement of some current accruals (related with expenses), and the accrual accounting is also used in the Conceptual framework to financial reporting published in 2018.

Such flexibility given by the accrual basis accounting can lead to subjective management judgment, giving managers the opportunity to manipulate earnings in order to meet their expectations and motivation (Lin *et al.*, 2014). Those current accruals for which managerial discretion is available are known as *discretionary current accruals* and are the path through which earnings management may take place (Balachandran *et al.*, 2013).

3.2.2. *Discretionary Accruals methodology*

There are several ways to measure earnings management, however, according to the literature review, earnings management is generally measured by discretionary accruals of companies (Dechow *et al.*, 1995). The literature states that companies with high discretionary accruals in absolute term tend to have more expressive earnings management. Furthermore, the positive discretionary accruals imply earnings management to increase reported earnings numbers and vice versa with negative discretionary accruals.

A large range of models to measure discretionary accruals has been presented and used in the academic literature. Some examples on this matter are the works developed by Healy (1985), DeAngelo (1986), Dechow and Sloan (1991), Jones (1991), Dechow *et al.* (1995), Kasznik (1999), Kothari *et al.* (2005), and Raman and Shahrur (2008).

Most of the recently applied models are derived from the Jones (1991) model. Notwithstanding, some authors, such as Peasnell *et al.* (2000) and Klein (2002), suggest that the modified Jones model presented by Dechow *et al.* (1995) is more effective in the detection of sales-based manipulations in comparison with the original Jones model. Recent models include additional conditioning variables, such as Kasznik (1999), Kothari *et al.* (2005) and Raman and Shahrur (2008) models. Peasnell *et al.* (2000) recommended the application of more than one model to infer about discretionary accruals in order to guarantee consistent results.

In view of the above, this dissertation proposes to infer about earnings management based on three models: (i) Dechow *et al.* (1995) - modified Jones model, (ii) Kasznik (1999), and (iii) Kothari *et al.* (2005). Raman and Shahrur (2008) model was not applied because it proposes to use the ratio of 'book-to-market' as a measure of the growth opportunities which can only be applicable for companies with public market capitalization references. However, as explained in the sample selection chapter, this dissertation is not solely focused on listed firms.

Prior to the earnings management analysis based on the identified models, the empirical estimation of the discretionary accruals requires, as a first stage, the computation of total accruals (TA).

Academic researches (e.g., Dechow *et al.*, 1995) defined total accruals as follows:

$$TA_{it} = DA_{it} + NDA_{it} \quad (1)$$

Where:

TA_{it} – Represents the total accruals of firm i, period t; DA_{it} – Discretionary accruals of firm i, period t; NDA_{it} – Non-discretionary accruals of firm i, period t.

TA_{it} can be calculated by:

$$TA1_{it} = NIBE_{it} - CFO_{it} \quad (2)$$

Where:

TA_{it} – Represents the total accruals of firm i, period t; $NIBE_{it}$ = Net income before extraordinary items for firm i, period t; CFO_{it} = Cash flow from operations for firm i, period t.⁸

or

$$TA2_{it} = \Delta CA_{it} - \Delta Cash_{it} - \Delta CL_{it} - \Delta DCL_{it} - DEP_{it} \quad (3)$$

Where:

TA_{it} – Represents the total accruals of firm i, period t; ΔCA_{it} = Variation in current assets for company i, period t; $\Delta Cash_{it}$ = Variation in cash and cash equivalents for company i, period t; ΔCL_{it} = Variation in current liabilities for company i, period t; ΔDCL_{it} = Variation in debt included in current liabilities for company i, period t; DEP_{it} = Depreciation and amortization expense for company i, period t.

Equations (2) and (3) are equivalent and empirical studies apply both to determine total accruals (e.g., Dechow *et al.*, 1995). The first one is described as the cash-flow approach and equation (3) is the balance sheet approach. Equation (3) was applied to infer about all the research hypotheses once it is commonly more accepted in the literature. Notwithstanding, this dissertation considers both methods in order to confirm the robustness of the results.

⁸ Operational Cash-flow = EBITDA – Taxation (Larcker *et al.*, 2004)

3.2.3. Dechow et al. (1995) – Modified Jones Model

The modified Jones model presented by Dechow *et al.* (1995) is designed to eliminate the tendency of the Jones model to measure discretionary accruals with the error when discretion is exercised over revenue recognition. The model is computed as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left[\frac{1}{A_{it-1}} \right] + \alpha_2 \left[\frac{(\Delta REV_{it} - \Delta AR_{it})}{A_{it-1}} \right] + \alpha_3 \left[\frac{PPE_{it}}{A_{it-1}} \right] + \varepsilon_{it} \quad (4)$$

Where:

TA_{it} – Represents the total accruals of firm i , period t ; A_{it} = Total assets in company i , period t ; ΔREV_{it} = Sale revenue in company i , period t ; ΔAR_{it} = Account receivable in company i , period t ; PPE_{it} = Gross property, plant, and equipment in company i , period t ; α = parameters to be estimated; ε_{it} = represents the error term which serves as proxy for discretionary accruals.

3.2.4. Cash-flow Jones– Kasznik (1999)

Kasznik (1999) model is focused on discretionary accruals as a source of earnings management. The author added operational cash-flow information in order to mitigate any accrual measurement error.

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left[\frac{1}{A_{it-1}} \right] + \alpha_2 \left[\frac{(\Delta REV_{it} - \Delta AR_{it})}{A_{it-1}} \right] + \alpha_3 \left[\frac{PPE_{it}}{A_{it-1}} \right] + \alpha_4 \left[\frac{CFO_{it}}{A_{it-1}} \right] + \varepsilon_{it} \quad (5)$$

Where:

TA_{it} – Represents the total accruals of firm i , period t ; A_{it} = Total assets in company i , period t ; ΔREV_{it} = Sale revenue in company i , period t ; ΔAR_{it} = Account receivable in company i , period t ; PPE_{it} = Gross property, plant, and equipment in company i , period t ; CFO_{it} = Cash flow from operations for firm i , period t ; α = parameters to be estimated; ε_{it} = represents the error term which serves as proxy for discretionary accruals.

3.2.5. Kothari et al. (2005) Model

Barth *et al.* (2001) recommended models for estimating discretionary accruals that take in consideration past and present economic performance of a firm. Therefore, Kothari *et al.* (2005) developed a model for determination of discretionary accruals that take into account Return on Assets (ROA).

The authors argue that including a constant in various accruals models can provide an additional control for heteroscedasticity not alleviated by using assets as the deflator.

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left[\frac{1}{A_{it-1}} \right] + \alpha_2 \left[\frac{(\Delta REV_{it} - \Delta AR_{it})}{A_{it-1}} \right] + \alpha_3 \left[\frac{PPE_{it}}{A_{it-1}} \right] + \alpha_4 ROA_{it-1} + \varepsilon_{it} \quad (6)$$

Where:

TA_{it} – Represents the total accruals of firm i, period t; A_{it} = Total assets in company i, period t; ΔREV_{it} = Sale revenue in company i, period t; ΔAR_{it} = Account receivable in company i, period t; $(\Delta REV_{it} - \Delta AR_{it})$ = The change in cash-basis revenue in company i, period t; PPE_{it} = Gross property, plant, and equipment in company i, period t; ROA_{it} = The return on assets ratio in company i, period t; α = parameters to be estimated; ε_{it} = represents the error term which serves as proxy for discretionary accruals.

The earnings management literature considers lagged total assets as a scaling factor in order to reduce heteroscedasticity.

Discretionary accruals are then computed as the difference between total accruals and non-discretionary accruals. Non-discretionary accruals are the predictions from the ordinary least squares (OLS) estimation of models (4), (5) and (6), while discretionary accruals are the residuals. This dissertation employs the absolute value of residuals from the abnormal accruals models presented above as an earnings management measure.

3.2.6. Mechanisms to measure Dividend policy

Dividend payout decisions have been broadly studied in the most recent financial literature given its close relationship with corporate policy matters. In fact, dividend policy depends on many factors such as the firm's financial performance and liquidity position, its life cycle, taxation and investment opportunities (among others).

The literature review widely proposes two different indicators to measure dividend policy, namely dividend yield (Adelegan, 2003; Farinha and Moreira, 2007; Farooq *et al.*, 2018) and dividend payout ratio (Rafique, 2012; Aguenauou *et al.*, 2013; Kazemi *et al.*, 2014). Notwithstanding, there are several other alternative measures of dividend policy, such as dividend growth rate; (ii) dividend to operating cash flow ratio; (iii) dividend to total asset ratio (e.g. Farooq *et al.*, 2018).

Given the characteristics of the selected sample, namely the fact that the companies are not necessarily listed in a stock market, it is not possible to consider dividend policy indicators based on market share prices. Therefore, the formula of dividend yield $(=(\text{Dividend per Share}/\text{Price per Share}) * 100)$ or dividend payout ratio $(=(\text{Dividend per Share}/\text{Dividend per Share}) * 100)$ in the way disclosed by Chansarn and Chansarn (2016), cannot be applied.

However, Aguentaou *et al.* (2013) defined dividend policy by the *Payout Ratio* (PoR) which is the percentage of earnings attributed to the shareholders paid out as dividends. In fact, the amount that is not paid by the company to shareholders is retained to pay off debt or to reinvest in core operations. The PoR formula is computed as follow:

$$PoR = \frac{Dividends_{it}}{Net\ Income_{it}} \quad (7)$$

Where:

PoR - *Payout Ratio*; $Dividends_{it}$ = Total dividends paid by company i, period t; $Net\ Income_{it}$ = Net income of company i, period t.

Dividend payouts can be seen as useful to alleviate agency conflicts through the reduction of free cash flow available to managers (Aguentaou *et al.*, 2013). A new growth-oriented company would be expected to reinvest most of its earnings and may not be judged for having a close to zero PoR. On the other hand, an established company that returns a minimum amount to shareholders would test their patience regarding management decisions.

Additionally, this dissertation considers dividend policy through another indicator weighted on companies' asset information. Balachandran *et al.* (2013), defined dividend policy by the total ordinary dividends paid during the financial year divided by total assets in which ordinary dividends represent a share of a company's profits passed on to the shareholders on a periodic basis. Since the information contained in the Sabi® Database does not distinguish ordinary dividends from qualified dividends, this dissertation considers as a proxy of total ordinary dividends the amount of dividends paid made available by the database.

In this sense, the formula considered is:

$$DIVa = \frac{Dividends_{it}}{Total Assets_{it}} \quad (8)$$

Where:

$DIVa$ – *Dividends scaled by total assets*; $Dividends_{it}$ = Total dividends paid by company i, period t;
 $Total Assets_{it}$ = Total assets of company i, period t.

Farooq *et al.* (2018) shows that reported earnings informativeness, measured by earnings–return relation, is an increasing function of dividend ratios such as $DIVa$ and they argue that higher dividends reduce agency conflicts.

3.3. Regression model

This dissertation aims to analyze the influence of earnings management on dividend policy of Portuguese companies considering different ownership contexts.

According to the literature review, the signaling of the relationship between earnings management and dividend policy can be unexpected, but this dissertation is following the hypothesis of a positive relationship, consistent with Kasanen *et al.* (1996), Farinha and Moreira (2007), Daniel *et al.* (2008), Morghri and Galogah (2013) and Lin *et al.* (2014).

The following model, by estimating an OLS regression analysis, aims to statistically support **H1** estimation:

$$DP_{it} = \alpha_0 + \beta_1 EM_{it} + \sum \beta_m CONTROL_{it}^m + \varepsilon_{it} \quad (9)$$

Where:

DP_{it} = Dividend policy in company i, period t, inferred by applying *PoR* and $DIVa$; EM_{it} = Discretionary accruals in absolute term of company i in year t, measured by Dechow *et al.* (1995) – *Modified Jones Model*, Kasznik (1999) – *Cash-flow Jones Model* and by Kothari *et al.* (2005) *Model*; $CONTROL_{it}^m$ = Control Variables in company i, period t.

Beyond the establishment of a correlation between DP and EM, this dissertation aims to infer how far and how strong is that relationship in different ownership structures.

Some authors found a negative relationship between large shareholders concentration and earnings management (e.g. Farooq and Jai, 2012; and Alves, 2012). The same signal was described by some literature regarding the effect of large shareholders decisions on dividend payouts (e.g. Mancinelli and Ozkan, 2006; and Harada and Nguyen, 2011). However, Eckbo and Verma (1994) described an opposite result by showing that majority shareholders prefer to distribute dividends in order to lessen agency costs.

Based on the above, it was laid down **H2** with the following regression:

$$DP_{it} = \alpha_0 + \beta_1 EM_{it} + \beta_2 D_OWNERSHIP_{it} + \beta_3 EM_{it} * D_OWNERSHIP_{it} + \sum \beta_m CONTROL_{it}^m + \varepsilon_{it} \quad (10)$$

Where:

DP_{it} = Dividend policy in company i, period t, inferred by applying *PoR* and *DIVa*; EM_{it} = Discretionary accruals in absolute term of company i in year t, measured by Dechow *et al.* (1995) – *Modified Jones Model*, Kasznik (1999) – *Cash-flow Jones Model* and by Kothari *et al.* (2005) *Model*; $D_OWNERSHIP_{it}$ = Dummy variable is equal to 1 if the firm i, in period t, has more than 50% of share capital owned by a sole shareholder and 0 otherwise. $CONTROL_{it}^m$ = Control Variables in company i, period t.

Gopalan and Jayaraman (2012) and Lisboa (2016) found evidence that Family-owned companies are more prone to engage in earnings management. On the other hand, Gonzalez *et al.* (2017) inferred that family-owned companies are used to distribute lower dividends. Aguenau *et al.* (2013) inferred that the dividend policy is negatively influenced by the existence of a family ownership. Based on the above assumptions, it was laid down **H3**. The model applied to infer this hypothesis is the following:

$$DP_{it} = \alpha_0 + \beta_1 EM_{it} + \beta_2 D_CORPORATE_{it} + \beta_3 EM_{it} * D_CORPORATE_{it} + \sum \beta_m CONTROL_{it}^m + \varepsilon_{it} \quad (11)$$

Where:

DP_{it} = Dividend policy in company i, period t, inferred by applying *PoR* and *DIVa*; EM_{it} = Discretionary accruals in absolute term of company i in year t, measured by Dechow *et al.* (1995) – *Modified Jones Model*, Kasznik (1999) – *Cash-flow Jones Model* and by Kothari *et al.* (2005) *Model*; $CORPORATE_{it}$ = is a dummy variable that is equal to 1 if the firm i, in period t, has more than 50% of share capital owned by a corporation and 0 in case more than 50% of share capital is owned by an individual/family. $CONTROL_{it}^m$ = Control Variables in company i, period t.

Earnings management can be influenced by the country of incorporation of the main shareholder. In fact, most of the times, the tax framework takes a special influence of this matter (e.g. Omar and Zolkafllil, 2015). Academic researches provide similar results for the existence of a relationship between the country of a shareholder's firm and the level of dividends (e.g. Gonzalez et al., 2017; and Officer, 1990). Taking into account these considerations, **H4** was formulated and the model to infer this hypothesis is as follow:

$$DP_{it} = \alpha_0 + \beta_1 EM_{it} + \beta_2 D_COUNTRY_{it} + \beta_3 EM_{it} * D_COUNTRY_{it} + \sum \beta_m CONTROL_{it}^m + \varepsilon_{it} \quad (12)$$

Where:

DP_{it} = Dividend policy in company i, period t, inferred by applying *PoR* and *DIVa*; EM_{it} = Discretionary accruals in absolute term of company i in year t, measured by Dechow *et al.* (1995) – *Modified Jones Model*, Kasznik (1999) – *Cash-flow Jones Model* and by Kothari *et al.* (2005) *Model*; $COUNTRY_{it}$ = is a dummy variable that is equal to 1 if the firm i, in period t, has more than 50% of share capital owned by a Portuguese corporation and 0 in case more than 50% of share capital is owned by a foreign corporation. $CONTROL_{it}^m$ = Control Variables in company i, period t.

Omar and Zolkafllil (2015) showed that multinational groups with subsidiaries in tax haven territories, reported lesser profits and paid lesser taxes and Hines (1999) and Newlon (2000) found evidence about profit shifting through the manipulation of intercompany transactions. Similarly, Balachandran *et al.* (2013) found that income deferral is more likely for dividend-paying firms and Twite (2001) concluded that there is a tax preference for dividends over corporate interest income and Brennan (1970) showed that shareholders are influenced by the tax they will pay. Based on the above, it was lay down **H5** with the following regression:

$$DP_{it} = \alpha_0 + \beta_1 EM_{it} + \beta_2 D_TAX_{it} + \beta_3 EM_{it} * D_TAX_{it} + \sum \beta_m CONTROL_{it}^m + \varepsilon_{it} \quad (13)$$

Where:

DP_{it} = Dividend policy in company i, period t, inferred by applying *PoR* and *DIVa*; EM_{it} = Discretionary accruals in absolute term of company i in year t, measured by Dechow *et al.* (1995) – *Modified Jones Model*, Kasznik (1999) – *Cash-flow Jones Model* and by Kothari *et al.* (2005) *Model*; TAX_{it} = is a dummy variable that is equal to 1 if the firm i, in period t, has more than 50% of share capital owned by a taxpaying corporation and 0 in case more than 50% of share capital is owned by a non-taxpaying corporation. $CONTROL_{it}^m$ = Control Variables in company i, period t.

3.4. Dependent and independent variables and control variables

This dissertation is focused on the way earnings management practices might contribute to defining a company's dividend policy in different ownership frameworks.

As far as it was possible to go in terms of academic research, the authors usually determine earnings management as the dependent variable (e.g. He *et al.*, 2017). Notwithstanding, given the main purpose of this dissertation as well as the identified research hypotheses, dividend policy figures out as *dependent variable*, which is consistent with Aguenauou *et al.* (2013) and Chansarn and Chansarn (2016). As already mentioned, dividend policy is deducted based on PoR and DIVa indicators.

The *independent variables* or *regressors*, represent inputs or potential causes that can explain the company's dividend policy. In order to meet the purpose of this dissertation, EM is considered an independent variable of the model. As explained, since it is not possible to observe the value of EM in the accounting statements of the companies, it is applied the accruals approach estimated as the residual from Dechow *et al.* (1995), Kasznik (1999) and by Kothari *et al.* (2005) Models. This indirect methodology aims to capture the subtle income management techniques applied to avoid detection by outsiders.

In addition, dummy variables OWNERSHIP, CORPORATE, COUNTRY and TAX are considered in order to capture different effects and support the research hypotheses. The cross effect of EM and the dummy variables may provide useful information about a possible exacerbated effect of the regressors in terms of dividend policy.

In terms of *control variables*, this dissertation follows a methodology close to Lee *et al.* (2007) and Watrin *et al.* (2012). For this reason, it is considered the variables *Leverage*, *Profitability*, *Firms Size* and *Assets growth rate* ("AGR"). According to the literature, the *Leverage* ratio can be calculated as the sum of long-term and short-term debt, scaled by total assets⁹ (Francis *et al.*, 2011). *Profitability* ratio is calculated as the net income, scaled by total assets (i.e. ROA) (Burgstahler and Dichev, 1997). The control variable *Firms Size* is

⁹ In order to be consistent with the remain research model, the control variables are scaled by the total assets of period t-1.

computed by the logarithm of total assets. *Assets growth rate* can be deducted by the total asset variation, in percentage (Lee and Mande, 2003). Following Hail *et al.* (2014), it will be also added the control variables *Total Equity* (calculated as total equity scaled by total assets).

Finally, the research model contemplates the following controls commonly used: an INDUSTRY dummy variable to control for the possible industry effect and a YEAR dummy variable to control for the possible year effect.

4. Results

4.1. Characterization Study

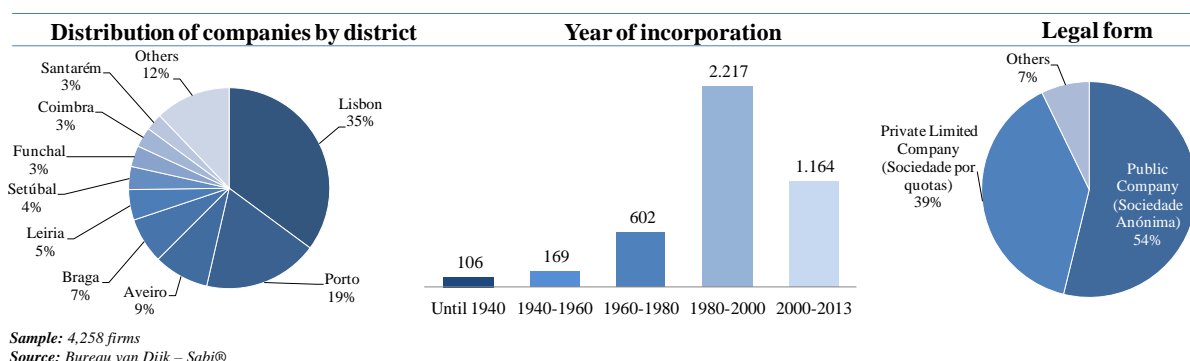
The main objective of this section is to characterize the sample that supports the research model and that is the empirical base of analysis of the hypotheses addressed in this dissertation.

In order to enhance the quality of the analysis, the final set of companies share some common aspects namely, all companies pursue a profitable business activity, they are not start-ups and all firms registered a minimum threshold in terms of operating revenue and dividends paid¹⁰.

On the basis of the foregoing, the final set is composed by a sample of 4,258 Portuguese firms.

Some characteristics of the sample are presented in Graph 2.

Graph 2 – Sample characterization



As it is possible to verify, the major number of companies is located in the districts of Lisbon (1,496) and Porto (786). Around 52% were incorporated between 1980 and 2000 and the

¹⁰ Please see section 3.1.2.

majority of the firms have a legal form of public company¹¹ (2,292) against 39% of private limited companies¹².

By looking into the financial statements of the sample, it is possible to find out that there is a relatively large heterogeneity in a matter of companies' size. In order to avoid any concern in terms of analysis, the research design includes different scaling factors (e.g. total assets) among the dependent and independent variables. In addition, all research hypotheses contain the control variable *Firms Size* aiming the prediction of inconsistencies throughout the analysis (Lee & Mande, 2003).

Therefore, the table below presents statistical analysis in terms of financial information of the sample.

Table 2 – Financial information of the sample - statistical analysis

			<i>EUR Thousands</i>			
Total Assets			Turnover		Dividends paid	
	2013	2017	2013	2017	2013	2017
Maximum	13,888,129	9,610,652	4,442,618	3,773,428	364,803	380,203
Q3 (Third quartile)	12,276	14,019	11,010	13,198	916	1,000
Median	4,326	4,971	3,933	4,563	201	291
Q1 (First quartile)	1,746	1,993	1,346	1,434	50	92
Minimum	26	32	0	0	0.001	0.002

Sample: 4,258 firms

Source: Bureau van Dijk – Sabi®

Based on the above, it is possible to infer that 50% of the sample registered total assets between EUR 2.0-14.0 million (2017). Regarding the turnover, the interquartile range contains firms with an amount between EUR 1.4-13.2 million (2017). As referred previously, the dividend paid is the key component to obtain the dependent variables of the research model considered in this dissertation. Therefore, the interquartile range varies between EUR 92 thousand and a million (2017).

The sample can also be divided taking into account the business activity of each company.

¹¹ It is a corporation whose ownership is dispersed among the general public in many shares of stock which are freely traded.

¹² The responsibility of the partners is limited to the capital share they hold.

Table 3 - Industry membership of the sample

Activity Code (CAE Rev. 3 ¹³)		No. of firms	%
Group	Industry Group		
G	Wholesale and retail trade; repair of motor vehicles and motorcycles (#45-#47)	1,132	26.6%
C	Manufacturing activities (#10-#33)	1,008	23.7%
M	Consulting, scientific, technical and similar activities (#69-#75)	314	7.4%
H	Transport and storage (#49-#53)	249	5.8%
Others	-	1,555	36.5%
Total		4,258	100%

Where:

Group / Industry Group is the nomenclature utilized in the technical document (“ficha técnica”) prepared by INE (Instituto Nacional de Estatística) regarding Portuguese activity codes (CAE Rev. 3 - last review in 2017); **No. of firms** is the number of firms in each industry and the (%) is the percentage of firms in each industry in relation to the total sample.

Source: Bureau van Dijk – Sabi®

The largest portion of firms is from group G, representing 26.6% of the sample. Another highly represented industry is group C, with 23.7% of the sample.

According to Albrecht and Richardson (1990), Ashari *et al.* (1994) and Sun and Rath (2009), there is an important relationship between the constructs and firms’ industry. To overcome this issue, the data was aggregated into industrial groups (the ones presented in Table 3) and added to the research model through fixed effect in a form of dummy variables.

Lastly, it is relevant to characterize the sample according to the shareholders’ composition since this information is exceedingly relevant in terms of the research hypotheses.

The following table contains in detail the shareholders’ composition of the sample firms.

¹³ Portuguese Classification of Economic Activities.

Table 4 – Shareholders’ composition of the sample

		<i>No. of companies</i>			
		Type of shareholder			
		Corporate Shareholder		Individual/ family Shareholder	Total
Portuguese Shareholder	Foreign Shareholder				
Shareholder’s concentration	Majority Shareholder (>50% of capital)	1,615	629 ¹⁴	648	2,892
	Non-concentrated ownership	-	-	-	955
	No information	-	-	-	411
Total					4,258

In order to infer about shareholders’ concentration [H2], it was considered the sample of “majority shareholder” (2,892 firms) against the sample of “non-concentrated ownership” (955 firms).

Regarding the analysis based on the type of shareholder [H3], two samples were confronted, namely, the sample of “corporate shareholder” (1,615+629 firms) and the sample of “individual/ family shareholder” (648 firms). Consequently, the analysis regarding the nationality of the shareholder [H4] faced the sample of “Portuguese shareholder” (1,615 firms) and the sample of “foreign shareholder” (629 firms).

The shareholders’ composition was taken into account in the research design throughout multiple dummy variables (i.e. OWNERSHIP, CORPORATE, COUNTRY and TAX).

4.2. Descriptive statistics and correlations

The financial information of the sample composed by 4,258 companies was then manipulated in order to obtain the dependent and independent variables during the five years under analysis. This approach led to a full panel of 21,290 observations.

¹⁴ Foreign Shareholders: 34% - Spain; 16% - France; 11% - Germany; 10% - The Netherlands; 5% - United Kingdom; 5% - Luxembourg; and 18% - Others (e.g. Italy, Switzerland, Sweden).

In the literature about the constructs (i.e. earnings management and dividend policy) is possible to find a number of authors advocating that outliers shall be expunged to ensure that regression results are not influenced by extreme observations (e.g. Cheng and Warfield, 2005). For this reason, the outliers were removed from the initial set of data in a two-step approach. Firstly, the extreme values regarding the dependent variables (i.e. PoR and DIVa) were simultaneously winsorized to the 1 and 99 percentiles. Then, the same approach was applied to the dependent variable of models (4), (5) and (6), namely $\frac{TA_{it}}{A_{it-1}}$ which represents the level of Total Accruals divided by Total Assets from period t-1¹⁵. Once TA was analyzed based on two methodologies (i.e. TA1 and TA2) according to models (2) and (3), the final sample of data is composed by two panels as can be perceived in the following table:

Table 5 – Data rejection matrix

		Initial set of information	Rejected data	Remaining data
Full panel		21,290	-	-
Outliers	PoR and DIVa	-	786	20,504
	TA1 / TA2	-	424 / 442	20,082 / 20,064

Where:

PoR is the payout ratio and DIVa is dividends scaled by total assets (dependent variables); TA1 / TA2 are total accruals divided by lagged total assets and derive from two different methodologies as defined in models (2) and (3).

Both panels contain an equivalent number of observations over the five years of analysis which may bring robustness to the analysis. Nevertheless, all regressions contemplate a fixed effect to control an eventual year outcome (i.e. YEAR). Table 6 contains additional details about the data applied in the regression models.

¹⁵ As mentioned in section 3.2, Earnings management cannot be identified in a company's financial statements. However, it is possible to deduct based on the error term of a regression model as presented by Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005).

Table 6 – Distribution of observations over the five years of analysis

		<i>Panel data</i>					
Total Accruals	Dependent variables	2013	2014	2015	2016	2017	Total
TA1 (2)	PoR	3,982	4,013	4,017	4,035	4,035	20,082
	DIVa						
TA2 (3)	PoR	3,974	4,025	4,012	4,023	4,030	20,064
	DIVa						

Where:

PoR is the ratio of dividends scaled by net income and **DIVa** is the ratio of dividends scaled by total assets (dependent variables); **TA1** / **TA2** are total accruals divided by lagged total assets and derive from two different methodologies as defined in models (2) and (3).

Table 7 contains the descriptive statistics of the continuous variables applied in the regression models. As previously mentioned, all variables were analyzed based on two different panels, namely, namely TA1 and TA2, which represents the total accruals according to methodologies (2) and (3). Although these methods aim to reach the same output, the table below shows some differences among the descriptive statistics which is consistent with the results described by Hribar and Collins (2002).

The average and median of both dependent variables (PoR and DIVa) are similar along TA1 and TA2. As previously described, PoR and DIVa equal to zero were not disregarded from the panels once they provide important information about the non-distribution of dividends in specific years. Therefore, those observations influenced a median level of zero in both indicators. The standard deviation is significantly higher in PoR (in comparison with DIVa) due to the amount of variation/dispersion of data. Once PoR derives from the amount of paid dividends scaled by net income, the denominator can assume positive and negative values¹⁶. Those results may predict better statistical inference in the case of dependent variable DIVa.

Earnings management proxy was deducted from Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) models. The results in terms of average, median and standard deviation are similar among them. Notwithstanding, it is possible to verify that EM_{TA1} presents higher values in all the statistics and in the three considered models (in comparison with EM based

¹⁶ The panel data contains observations with a negative PoR which means that firms distributed dividends in years of negative net income.

on EM_{TA2}). For this reason, it is expected that EM_{TA2} may provide better results in terms of statistical inference.

Mean result of PoR is consistent with Chansarn and Chansarn (2016), DIVa with Khan *et al.* (2017) and Gonzalez *et al.* (2017) and *Profitability* with He *et al.* (2017). The remaining results are slightly different from the literature which may represent the differences in terms of markets, years under analysis and type of companies (listed versus non-listed companies). This assumption can be supported by the comparison with the results of Lisboa (2016) which applied an analysis consistent with this dissertation in terms of market and years of analysis. However, the author describes dissimilar results in terms of *Firms Size* and EM given a sample of only listed companies.

Table 7 - Descriptive statistics for continuous variables (TA1 and TA2)

Variable	Total Accruals	No.	Average	Median	Standard deviation	Minimum	Maximum
PoR	TA1	20,082	0.50	0.00	1.12	-1.47	12.41
	TA2	20,064	0.51		1.13		
DIVa	TA1	20,082	0.04	0.00	0.08	0.00	0.60
	TA2	20,064					
EM _{Dechow}	TA1	20,081	0.76	0.65	0.80	0.00	72.11
	TA2	20,064	0.70	0.46	0.73		20.32
EM _{Kaszniak}	TA1	20,081	0.75	0.63	0.81	0.00	71.96
	TA2	20,064	0.70	0.46	0.73		21.18
EM _{Kothari}	TA1	20,081	0.76	0.65	0.80	0.00	72.05
	TA2	20,064	0.70	0.46	0.72		19.61
Leverage	TA1	20,067	0.18	0.09	0.29	0.00	16.34
	TA2	20,060			0.28		
Profitability	TA1	20,082	0.09	0.06	0.17	-0.95	15.21
	TA2	20,064	0.08		0.12		2.89
Firms Size	TA1	20,082	6.71	6.66	0.69	4.36	10.14
	TA2	20,064	6.72	6.67	0.70		
AGR	TA1	20,082	0.07	0.02	0.64	-0.96	75.24
	TA2	20,064	0.06		0.60		
Total Equity	TA1	20,082	0.52	0.50	0.58	-19.69	60.35
	TA2	20,064			0.56		

Where:

PoR is the ratio of dividends scaled by net income and **DIVa** is the ratio of dividends scaled by total assets (dependent variables); **EM** refers to discretionary accruals computed from Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) in accordance with models (4), (5) and (6), respectively. **Leverage**, **Profitability**, **Firms Size**, **AGR** and **Total Equity** are control variables. **Leverage** is the sum of long-term and short-term debt, scaled by lagged total assets; **Profitability** is the net income, scaled by lagged total assets; **Firms Size** is the logarithm of total assets; **AGR** is the Assets growth rate deducted by the total asset variation; **Total Equity** is calculated as total equity scaled by lagged total assets. **TA1 / TA2** are total accruals divided by lagged total assets and derive from two different methodologies as defined in models (2) and (3).

Finally, Table 8 presents Pearson correlation (ρ) matrix among all continuous variables of the research model. Full results considering both approaches in terms of TA are also presented in the below table. This analysis aims to study the relationship between the variables and predict potential multicollinearity concerns.

The dependent variables (PoR and DIVa) are positively correlated with the three methods of EM which is consistent with hypothesis 1, although only considering TA2 is possible to obtain a statistical significance of 5%. The correlation results between dependent and control variables (*Leverage*, *Profitability*, *Firms Size*, *Assets growth rate* and *Total Equity*) are also consistent in terms of signal and statistical significance.

In general, the correlation coefficients present low values suggesting that there are no collinearity issues. The highest value in terms of Pearson correlation can be identified between (i) the three EM approaches (ρ 0.9-1.0); (ii) the control variables *Assets growth rate* and *Total Equity* (ρ 0.7); and (iii) the dependent variables (ρ 0.46). Notwithstanding, these results do not represent a main concern once the variables of situations (i) and (iii) are not simultaneously included in the same regression model and the variables of situation (ii) are not the main regressors of the analysis.

Table 8 - Pearson correlation (ρ) matrix for continuous variables

		TA2									
TA1	Variable	PoR	DIVa	EM Dechow	EM Kasznik	EM Kothari	Leverage	Profitability	Firms Size	AGR	Total Equity
	PoR	1	0.461**	0.027**	0.028**	0.030**	-0.047**	-0.010	0.051**	-0.043**	- 0.023**
	DIVa	0.461**	1	0.074**	0.075**	0.083**	-0.139**	0.420**	- 0.025**	-0.052**	0.018*
	EM _{Dechow}	0.005	0.025**	1	0.998**	0.986**	-0.016*	0.136**	- 0.129**	0.237**	0.118**
	EM _{Kasznik}	0.003	0.049**	0.969**	1	0.993**	-0.015*	0.137**	- 0.127**	0.245**	0.125**
	EM _{Kothari}	0.005	0.022**	1.000**	0.968**	1	-0.016*	0.151**	- 0.128**	0.235**	0.116**
	Leverage	-0.050**	- 0.135**	0.067**	0.067**	0.067**	1	- 0.176**	0.120**	0.035**	- 0.437**
	Profitability	-0.015*	0.286**	0.033**	0.201**	0.035**	-0.129**	1	- 0.080**	0.168**	0.221**
	Firms Size	0.053**	- 0.019**	-0.018*	-0.017*	-0.018*	0.107**	- 0.050**	1	0.008	-0.017*
	AGR	-0.046**	- 0.055**	0.544**	0.577**	0.545**	0.049**	0.251**	0.007	1	0.742**
	Total Equity	-0.023**	0.016*	0.428**	0.463**	0.429**	-0.435**	0.298**	-0.010	0.713**	1

Where:

TA1 / TA2 are total accruals divided by lagged total assets and derive from two different methodologies as defined in models (2) and (3). From the left to the right is possible to obtain the correlation results applying TA1. From the top to the bottom is possible to obtain the correlation results applying TA2. **PoR** is the ratio of dividends scaled by net income and **DIVa** is the ratio of dividends scaled by total assets (dependent variables); **EM** refers to discretionary accruals computed from Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) in accordance with models (4), (5) and (6), respectively. **Leverage**, **Profitability**, **Firms Size**, **AGR** and **Total Equity** are control variables. **Leverage** is the sum of long-term and short-term debt, scaled by lagged total assets; **Profitability** is the net income, scaled by lagged total assets; **Firms Size** is the logarithm of total assets; **AGR** is the Assets growth rate deducted by the total asset variation; **Total Equity** is calculated as total equity scaled by lagged total assets.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels (respectively).

4.3. Regression results

In this section, the outcomes of the regression analysis of the models presented in section 3.3 are summarized. As referred earlier, regression analysis took place for 2 different dependent variables, namely, Payout Ratio (PoR) and Dividend over total assets (DIVa). In order to increase the reasonableness of the analysis, the independent variable Earnings Management (EM) was deducted from two different approaches in terms of Total Accruals (TA1 and TA2) and analyzed according with three different methods: Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) which represents the analysis of the simple regression (Hypothesis 1) based on twelve combinations.

Based on the above, in As previously described, the adjusted R2 is generally more expressive considering TA2 methodology on total accruals and Kothari results regarding EM (Kothari *et al.*, 2005). Moreover, all models present statistical significance regarding the regressor (i.e. EM) discussed in Hypothesis 1. For these reasons, the results presented in Table 10 are limited to the methodology TA2 / Kothari.

Table 10 contains the regression models that infer about Hypotheses 2, 3, 4 and 5, namely H2, H3, H4 and H5 (respectively).

According to H2 columns, there is a positive statistically significant relationship between EM and PoR and between PoR and firms with more 50% of share capital owned by a sole shareholder (isolated variable OWN). Notwithstanding, the interaction between EM and dummy variable OWNERSHIP is not statistically significant and therefore, it is not possible to predict that companies majority owned by a sole shareholder incur in more aggressive earnings management practices in order to maximize dividend distribution (considering the payout ratio – PoR). From a different perspective, EM isolated variable is not statistically significant to explain the dependent variable DIVa, while the interaction variable EM and dummy variable OWNERSHIP it is. The latest results give support to hypothesis 2 which is consistent with Eckbo and Verma (1994). The signal of the relationship between *Firms Size* and the dependent variables is contradictory but statistically significant in both regression models.

Columns H3 provide information about the effect of EM on dividend policy whether more than 50% of share capital is owned by a corporation or by an individual/family. There is a positive relationship between EM and dividend policy but this relationship is statistically significant only when controlling shareholders are corporations and therefore, it is not possible to infer about the effect of family-owned companies (when dummy CORP is zero). These findings can support Hypothesis 3 that states that the effect of earnings management on dividend policy is more pronounced in companies with a majority corporate shareholder and that is close enough to La Porta, *et al.* (2000) and Gonzalez *et al.* (2017) researches about the role of family firms on dividend policy. Control variables *Leverage*, *Profitability*, *Firms Size* and *Assets growth rate* are statistically significant in both regression models to predict PoR and DIVa despite the different signals in the case of the regressors *Profitability* and *Firms Size*.

Regarding H4 columns, specifically the case of variable PoR, there is a negative relationship between dividend policy and the interaction variable EM x COUNTRY, although not statistically significant. Contrary, when dummy variable COUNTRY takes value 0 (which means that the dependent variables are predicted by the isolated variable EM), it is possible to find a positive relationship (statistically significant). These results suggest that in companies whose controlling shareholders are not Portuguese, the EM practices positively influence dividend policies (i.e. PoR). In some sense, these results are consistent with Omar and Zolkafli (2015) that inferred that earnings management practices are more pronounced in groups with subsidiaries in tax haven territories. Regardless of the value taken by the dummy variable COUNTRY, it is not possible to establish a statistically significant relationship between EM and our dependent variable DIVa. Even so, dummy variable COUNTRY is, by itself, a predictor of firms' dividend policies (i.e. DIVa). Control variables *Leverage*, *Profitability* and *Assets growth rate* are statistically significant in both regression models to predict PoR and DIVa, despite the different signals in the case of regressor *Profitability*. A possible explanatory reason for the absence of statistical significance may be the fact that dummy variable COUNTRY takes value 1 for Portuguese shareholders and 0 otherwise. However, the sample includes different countries (when dummy takes value 0) with different tax regimes which may bias the capacity of the regressors to explain the model.

Lastly, H5 columns present an analysis in terms of the role of taxation influencing a firm dividend distribution mediated by EM. According to Brennan (1970), Twite (2001) and Balachandran *et al.* (2013), the isolated effect of dummy variable TAX in terms of the dependent variables PoR and DIVa is statistically significant and presents a positive signal. This isolated finding means that the sample firms that pay corporate income tax tend to distribute more dividends. By taking PoR as a starting point, it is possible to observe in Table 10 that the interaction between EM and dummy variable TAX is not statistically significant and therefore, it is not possible to envisage that taxpaying firms incur in earnings management practices with an objective of maximizing dividends distribution. Notwithstanding, in case the dummy variable TAX takes value 0 (which is given by the non-taxpaying firms), the sole effect of EM is statistically significant and takes a positive signal. A possible illation is that there is a difference between the accounting and tax results (e.g. Dias, 2015) which may lead to non-taxpaying firms to run earnings management strategies in order to maximize dividend distribution based on the accounting results against the tax result that provides inputs to define the corporate income tax amount.

In terms of dependent variable DIVa, it is relevant to comment that the dummy variable TAX takes statistical relevance in both scenarios meaning that whether the dummy takes 0, that is a positive effect of EM on DIVa; on the other hand, the interaction variable EMxTAX takes a negative influence on the dependent variable. This finding can be interpreted in the following way: taxpaying firms, whose main shareholder is a corporate firm with more than 50% of the share capital, are more tempted to perform earning management practices in order to reduce dividend distribution.

Summarizing the prior findings, it is possible to verify that EM positively influence dividend policy considering both indicators applied in the analysis – PoR and DIVa –. The results were consistent in all methodologies considered.

Moreover, the interaction variable EMxOWN is only statistically significant in case of DIVa which means that only with this dependent variable Hypothesis 2 can be corroborated.

The interaction variable EMxCORP, that supports the analysis of Hypothesis 3, has statistical significance for both dependent variables and is higher than EM (Dummy=0); therefore, it is possible to corroborate the hypothesis that the effect of earnings management on dividend policy is more pronounced in firms with a majority corporate shareholder than companies with an individual/family ownership.

Regarding Hypothesis 4, although the country of the majority shareholder influences dividend policy by itself, it was not possible to infer the effect of the interaction variable EMxCOUNTRY due to the absence of a statistical significance. For this reason, it is not possible to corroborate this hypothesis.

The results are not statistically significant to infer about the interaction variable applied in Hypothesis 5 regarding dependent variable PoR. However, considering DIVa, there is a really interesting result that mixes up the effect of the dummy variable. In fact, taxpaying firms influence EM to lower dividend policy; contrary, non-taxpaying firms influence EM to higher dividend distribution. Wherefore, the opposite signals do not allow a proper inference to support Hypothesis 5.

Table 10 it is possible to analyze the relationship between the dependent variables and earnings management (EM). The results confirm a positive statistically significant relationship of 1% between PoR and DIVa and EM in all inferred methodologies. These

results confirm the findings of Kasanen *et al.* (1996), Farinha and Moreira (2007), Rahim (2010), Morghri and Galogah (2013) and Lin *et al.* (2014) that firms that manage earnings are more prone to distribute dividends. In case of PoR, β coefficient takes values from 0.066 (TA2/ Dechow) to 0.072 (TA2 / Kothari). On the other hand, DIVa β coefficient takes values from 0.005 (TA2/ Dechow, Kasznik and Kothari) to 0.014 (TA1 / Dechow). β coefficient of the model can be interpreted as the change in Dividend Policy (our dependent variable) associated with a 1 unit change in EM (the regressor) when all other variables in the regression are fixed.

With regards to control variables, *Leverage*, *Firms Size* and *Total Equity* are statistically significant (at least 5%), although with different signals; *Leverage* and *Total Equity* are negatively associated with the dependent variables and *Firms Size* presents an opposite result. These results suggest that firms with a higher percentage of debt and equity over total assets (*Leverage* and *Total Equity*, respectively) distribute less dividends (which is consistent with Chansarn and Chansarn (2016) and Gonzalez *et al.* (2017) results). Contrary, the results suggest that bigger firms measured by the logarithm of total assets (*Firms Size*) influence positively dividend policy. However, those findings are inconsistent with Aguenauou *et al.* (2013) and Gonzalez *et al.* (2017) results.

The twelve estimations presented in As previously described, the adjusted R2 is generally more expressive considering TA2 methodology on total accruals and Kothari results regarding EM (Kothari *et al.*, 2005). Moreover, all models present statistical significance regarding the regressor (i.e. EM) discussed in Hypothesis 1. For these reasons, the results presented in Table 10 are limited to the methodology TA2 / Kothari.

Table 10 contains the regression models that infer about Hypotheses 2, 3, 4 and 5, namely H2, H3, H4 and H5 (respectively).

According to H2 columns, there is a positive statistically significant relationship between EM and PoR and between PoR and firms with more 50% of share capital owned by a sole shareholder (isolated variable OWN). Notwithstanding, the interaction between EM and dummy variable OWNERSHIP is not statistically significant and therefore, it is not possible to predict that companies majority owned by a sole shareholder incur in more aggressive earnings management practices in order to maximize dividend distribution (considering the payout ratio – PoR). From a different perspective, EM isolated variable is not statistically

significant to explain the dependent variable DIVa, while the interaction variable EM and dummy variable OWNERSHIP it is. The latest results give support to hypothesis 2 which is consistent with Eckbo and Verma (1994). The signal of the relationship between *Firms Size* and the dependent variables is contradictory but statistically significant in both regression models.

Columns H3 provide information about the effect of EM on dividend policy whether more than 50% of share capital is owned by a corporation or by an individual/family. There is a positive relationship between EM and dividend policy but this relationship is statistically significant only when controlling shareholders are corporations and therefore, it is not possible to infer about the effect of family-owned companies (when dummy CORP is zero). These findings can support Hypothesis 3 that states that the effect of earnings management on dividend policy is more pronounced in companies with a majority corporate shareholder and that is close enough to La Porta, *et al.* (2000) and Gonzalez *et al.* (2017) researches about the role of family firms on dividend policy. Control variables *Leverage*, *Profitability*, *Firms Size* and *Assets growth rate* are statistically significant in both regression models to predict PoR and DIVa despite the different signals in the case of the regressors *Profitability* and *Firms Size*.

Regarding H4 columns, specifically the case of variable PoR, there is a negative relationship between dividend policy and the interaction variable EM x COUNTRY, although not statistically significant. Contrary, when dummy variable COUNTRY takes value 0 (which means that the dependent variables are predicted by the isolated variable EM), it is possible to find a positive relationship (statistically significant). These results suggest that in companies whose controlling shareholders are not Portuguese, the EM practices positively influence dividend policies (i.e. PoR). In some sense, these results are consistent with Omar and Zolkafli (2015) that inferred that earnings management practices are more pronounced in groups with subsidiaries in tax haven territories. Regardless of the value taken by the dummy variable COUNTRY, it is not possible to establish a statistically significant relationship between EM and our dependent variable DIVa. Even so, dummy variable COUNTRY is, by itself, a predictor of firms' dividend policies (i.e. DIVa). Control variables *Leverage*, *Profitability* and *Assets growth rate* are statistically significant in both regression models to predict PoR and DIVa, despite the different signals in the case of regressor *Profitability*. A possible explanatory reason for the absence of statistical significance may be the fact that

dummy variable COUNTRY takes value 1 for Portuguese shareholders and 0 otherwise. However, the sample includes different countries (when dummy takes value 0) with different tax regimes which may bias the capacity of the regressors to explain the model.

Lastly, H5 columns present an analysis in terms of the role of taxation influencing a firm dividend distribution mediated by EM. According to Brennan (1970), Twite (2001) and Balachandran *et al.* (2013), the isolated effect of dummy variable TAX in terms of the dependent variables PoR and DIVa is statistically significant and presents a positive signal. This isolated finding means that the sample firms that pay corporate income tax tend to distribute more dividends. By taking PoR as a starting point, it is possible to observe in Table 10 that the interaction between EM and dummy variable TAX is not statistically significant and therefore, it is not possible to envisage that taxpaying firms incur in earnings management practices with an objective of maximizing dividends distribution. Notwithstanding, in case the dummy variable TAX takes value 0 (which is given by the non-taxpaying firms), the sole effect of EM is statistically significant and takes a positive signal. A possible illation is that there is a difference between the accounting and tax results (e.g. Dias, 2015) which may lead to non-taxpaying firms to run earnings management strategies in order to maximize dividend distribution based on the accounting results against the tax result that provides inputs to define the corporate income tax amount.

In terms of dependent variable DIVa, it is relevant to comment that the dummy variable TAX takes statistical relevance in both scenarios meaning that whether the dummy takes 0, that is a positive effect of EM on DIVa; on the other hand, the interaction variable EMxTAX takes a negative influence on the dependent variable. This finding can be interpreted in the following way: taxpaying firms, whose main shareholder is a corporate firm with more than 50% of the share capital, are more tempted to perform earning management practices in order to reduce dividend distribution.

Summarizing the prior findings, it is possible to verify that EM positively influence dividend policy considering both indicators applied in the analysis – PoR and DIVa –. The results were consistent in all methodologies considered.

Moreover, the interaction variable EMxOWN is only statistically significant in case of DIVa which means that only with this dependent variable Hypothesis 2 can be corroborated.

The interaction variable EMxCORP, that supports the analysis of Hypothesis 3, has statistical significance for both dependent variables and is higher than EM (Dummy=0); therefore, it is possible to corroborate the hypothesis that the effect of earnings management on dividend policy is more pronounced in firms with a majority corporate shareholder than companies with an individual/family ownership.

Regarding Hypothesis 4, although the country of the majority shareholder influences dividend policy by itself, it was not possible to infer the effect of the interaction variable EMxCOUNTRY due to the absence of a statistical significance. For this reason, it is not possible to corroborate this hypothesis.

The results are not statistically significant to infer about the interaction variable applied in Hypothesis 5 regarding dependent variable PoR. However, considering DIVa, there is a really interesting result that mixes up the effect of the dummy variable. In fact, taxpaying firms influence EM to lower dividend policy; contrary, non-taxpaying firms influence EM to higher dividend distribution. Wherefore, the opposite signals do not allow a proper inference to support Hypothesis 5.

Table 10 include an INDUSTRY dummy and a YEAR dummy as a fixed effect to avoid potential influences. Thus, information regarding 2017 and G Group of Industry¹⁷ were excluded.

The adjusted R^2 of the explanatory model of PoR takes an average of 0.012 (either TA1 or TA2) and DIVa takes an average of 0.013 considering TA1 and 0.20 considering TA2. Since the adjusted R^2 can be seen as a statistic that gives some information about the goodness of fit of a model, it is possible to infer that all methodologies can be applied to predict PoR (no differences in terms of adjusted R^2); for DIVa, the model that better fits is the one considering the approach TA2 / Kothari.

¹⁷ Wholesale and retail trade; repair of motor vehicles and motorcycles.

Table 9 - Regression estimates of dividend policy

Variables	TA1						TA2					
	PoR			DIVa			PoR			DIVa		
	Dechow	Kasznik	Kothari	Dechow	Kasznik	Kothari	Dechow	Kasznik	Kothari	Dechow	Kasznik	Kothari
β (t-statistic)												
Constant	-0.094 (-1.158)	-0.087 (-1.069)	-0.094 (-1.161)	0.022*** (3.797)	0.025*** (4.477)	0.022*** (3.856)	-0.120 (-1.435)	-0.122 (-1.463)	-0.128 (-1.532)	-0.001 (-0.106)	-0.001 (-0.130)	-0.001 (-0.184)
EM	0.067*** (5.450)	0.071*** (5.776)	0.067*** (5.454)	0.014*** (15.857)	0.010*** (11.811)	0.013*** (15.224)	0.066*** (5.776)	0.069*** (5.940)	0.072*** (6.261)	0.005*** (6.625)	0.005*** (6.774)	0.005*** (7.031)
Leverage	-0.326*** (-8.744)	-0.333*** (-8.904)	-0.326*** (-8.744)	-0.044*** (-16.658)	-0.043*** (-16.367)	-0.043*** (-16.571)	-0.305*** (-7.662)	-0.305*** (-7.658)	-0.304*** (-7.625)	-0.025*** (-9.250)	-0.025*** (-9.251)	-0.025*** (-9.222)
Profitability	-0.017 (-0.347)	-0.072 (-1.488)	-0.017 (-0.357)	0.157*** (45.777)	0.147*** (43.087)	0.157*** (45.644)	-0.126* (-1.818)	-0.128* (-1.838)	-0.137** (-1.966)	0.299*** (64.279)	0.298*** (64.258)	0.298*** (64.023)
Firms Size	0.106*** (9.083)	0.105*** (9.056)	0.106*** (9.084)	0.002** (2.527)	0.002** (2.260)	0.002** (2.502)	0.108*** (9.251)	0.108*** (9.262)	0.109*** (9.294)	0.003*** (4.253)	0.003*** (4.261)	0.003*** (4.283)
AGR	-0.042* (-1.861)	-0.043* (-1.916)	-0.042* (-1.864)	-0.015*** (-9.411)	-0.013*** (-8.258)	-0.015*** (-9.244)	-0.026 (-0.997)	-0.027 (-1.054)	-0.028 (-1.105)	-0.014*** (-8.154)	-0.014*** (-8.206)	-0.014*** (-8.246)
Total Equity	-0.117*** (-4.393)	-0.120*** (-4.488)	-0.117*** (-4.395)	-0.017*** (-9.256)	-0.016*** (-8.684)	-0.017*** (-9.155)	-0.093*** (-3.156)	-0.093*** (-3.143)	-0.091*** (-3.076)	-0.006*** (-3.087)	-0.006*** (-3.078)	-0.006*** (-3.017)
INDUSTRY dummies	Yes											
YEAR dummies	Yes											
Adjusted R ²	0.012	0.012	0.012	0.127	0.122	0.126	0.012	0.012	0.012	0.203	0.203	0.204
No. obs.	20,082						20,064					

Where:

TA1 / TA2 are total accruals divided by lagged total assets and derive from two different methodologies as defined in models (2) and (3). **PoR** is the ratio of dividends scaled by net income and **DIVa** is the ratio of dividends scaled by total assets (dependent variables); **EM** refers to discretionary accruals computed from Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) in accordance with models (4), (5) and (6), respectively. **Leverage**, **Profitability**, **Firms Size**, **AGR** and **Total Equity** are control variables. **Leverage** is the sum of long-term and short-term debt, scaled by lagged total assets; **Profitability** is the net income, scaled by lagged total assets; **Firms Size** is the logarithm of total assets; **AGR** is the Assets growth rate deducted by the total asset variation; **Total Equity** is calculated as total equity scaled by lagged total assets.

In all models are included fixed effects for INDUSTRY and YEAR. Coefficient values are listed on top and below them are the t-statistics.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels (respectively).

As previously described, the adjusted R2 is generally more expressive considering TA2 methodology on total accruals and Kothari results regarding EM (Kothari *et al.*, 2005). Moreover, all models present statistical significance regarding the regressor (i.e. EM) discussed in Hypothesis 1. For these reasons, the results presented in Table 10 are limited to the methodology TA2 / Kothari.¹⁸

Table 10 contains the regression models that infer about Hypotheses 2, 3, 4 and 5, namely H2, H3, H4 and H5 (respectively).

According to H2 columns, there is a positive statistically significant relationship between EM and PoR and between PoR and firms with more 50% of share capital owned by a sole shareholder (isolated variable OWN). Notwithstanding, the interaction between EM and dummy variable OWNERSHIP is not statistically significant and therefore, it is not possible to predict that companies majority owned by a sole shareholder incur in more aggressive earnings management practices in order to maximize dividend distribution (considering the payout ratio – PoR). From a different perspective, EM isolated variable is not statistically significant to explain the dependent variable DIVa, while the interaction variable EM and dummy variable OWNERSHIP it is. The latest results give support to hypothesis 2 which is consistent with Eckbo and Verma (1994). The signal of the relationship between *Firms Size* and the dependent variables is contradictory but statistically significant in both regression models.

Columns H3 provide information about the effect of EM on dividend policy whether more than 50% of share capital is owned by a corporation or by an individual/family. There is a positive relationship between EM and dividend policy but this relationship is statistically significant only when controlling shareholders are corporations and therefore, it is not possible to infer about the effect of family-owned companies (when dummy CORP is zero). These findings can support Hypothesis 3 that states that the effect of earnings management on dividend policy is more pronounced in companies with a majority corporate shareholder and that is close enough to La Porta, *et al.* (2000) and Gonzalez *et al.* (2017) researches about the

¹⁸ Notwithstanding, all other combinations in terms of TA2 were conducted and a brief summary is presented in section 4.4 - Robustness tests.

role of family firms on dividend policy. Control variables *Leverage*, *Profitability*, *Firms Size* and *Assets growth rate* are statistically significant in both regression models to predict PoR and DIVa despite the different signals in the case of the regressors *Profitability* and *Firms Size*.

Regarding H4 columns, specifically the case of variable PoR, there is a negative relationship between dividend policy and the interaction variable EM x COUNTRY, although not statistically significant. Contrary, when dummy variable COUNTRY takes value 0 (which means that the dependent variables are predicted by the isolated variable EM), it is possible to find a positive relationship (statistically significant). These results suggest that in companies whose controlling shareholders are not Portuguese, the EM practices positively influence dividend policies (i.e. PoR). In some sense, these results are consistent with Omar and Zolkafli (2015) that inferred that earnings management practices are more pronounced in groups with subsidiaries in tax haven territories. Regardless of the value taken by the dummy variable COUNTRY, it is not possible to establish a statistically significant relationship between EM and our dependent variable DIVa. Even so, dummy variable COUNTRY is, by itself, a predictor of firms' dividend policies (i.e. DIVa). Control variables *Leverage*, *Profitability* and *Assets growth rate* are statistically significant in both regression models to predict PoR and DIVa, despite the different signals in the case of regressor *Profitability*. A possible explanatory reason for the absence of statistical significance may be the fact that dummy variable COUNTRY takes value 1 for Portuguese shareholders and 0 otherwise. However, the sample includes different countries¹⁹ (when dummy takes value 0) with different tax regimes which may bias the capacity of the regressors to explain the model.

Lastly, H5 columns present an analysis in terms of the role of taxation influencing a firm dividend distribution mediated by EM. According to Brennan (1970), Twite (2001) and Balachandran *et al.* (2013), the isolated effect of dummy variable TAX in terms of the dependent variables PoR and DIVa is statistically significant and presents a positive signal. This isolated finding means that the sample firms that pay corporate income tax tend to distribute more dividends. By taking PoR as a starting point, it is possible to observe in Table

¹⁹ As described in Table 4.

10 that the interaction between EM and dummy variable TAX is not statistically significant and therefore, it is not possible to envisage that taxpaying firms incur in earnings management practices with an objective of maximizing dividends distribution. Notwithstanding, in case the dummy variable TAX takes value 0 (which is given by the non-taxpaying firms), the sole effect of EM is statistically significant and takes a positive signal. A possible illation is that there is a difference between the accounting and tax results (e.g. Dias, 2015) which may lead to non-taxpaying firms to run earnings management strategies in order to maximize dividend distribution based on the accounting results against the tax result that provides inputs to define the corporate income tax amount.

In terms of dependent variable DIVa, it is relevant to comment that the dummy variable TAX takes statistical relevance in both scenarios meaning that whether the dummy takes 0, that is a positive effect of EM on DIVa; on the other hand, the interaction variable EMxTAX takes a negative influence on the dependent variable. This finding can be interpreted in the following way: taxpaying firms, whose main shareholder is a corporate firm with more than 50% of the share capital, are more tempted to perform earning management practices in order to reduce dividend distribution.

Summarizing the prior findings, it is possible to verify that EM positively influence dividend policy considering both indicators applied in the analysis – PoR and DIVa –. The results were consistent in all methodologies considered.

Moreover, the interaction variable EMxOWN is only statistically significant in case of DIVa which means that only with this dependent variable Hypothesis 2 can be corroborated.

The interaction variable EMxCORP, that supports the analysis of Hypothesis 3, has statistical significance for both dependent variables and is higher than EM (Dummy=0); therefore, it is possible to corroborate the hypothesis that the effect of earnings management on dividend policy is more pronounced in firms with a majority corporate shareholder than companies with an individual/family ownership.

Regarding Hypothesis 4, although the country of the majority shareholder influences dividend policy by itself, it was not possible to infer the effect of the interaction variable EMxCOUNTRY due to the absence of a statistical significance. For this reason, it is not possible to corroborate this hypothesis.

The results are not statistically significant to infer about the interaction variable applied in Hypothesis 5 regarding dependent variable PoR. However, considering DIVa, there is a really interesting result that mixes up the effect of the dummy variable. In fact, taxpaying firms influence EM to lower dividend policy; contrary, non-taxpaying firms influence EM to higher dividend distribution. Wherefore, the opposite signals do not allow a proper inference to support Hypothesis 5.

Table 10 - Regression estimates of dividend policy in different ownership contexts

TA2	H2		H3		H4		H5	
	PoR	DIVa	PoR	DIVa	PoR	DIVa	PoR	DIVa
Variables	β (t-statistic)							
Constant	-0.245*** (-2.759)	-0.009 (-1.510)	-0.012 (-0.117)	0.014** (1.979)	0.040 (0.296)	0.026*** (2.836)	-0.237 (-1.628)	0.008 (0.835)
EM (Kothari)	0.051** (2.027)	0.000 (0.238)	0.005 (0.158)	0.000 (-0.061)	0.115*** (3.560)	0.003 (1.322)	0.118** (2.009)	0.014*** (3.348)
OWN	0.098*** (3.518)	0.012*** (6.410)	-	-	-	-	-	-
EM x OWN	0.029 (1.041)	0.006*** (3.212)	-	-	-	-	-	-
CORP	-	-	0.208*** (5.743)	0.025*** (10.279)	-	-	-	-
EM x CORP	-	-	0.082** (2.320)	0.006** (2.490)	-	-	-	-
COUNTRY	-	-	-	-	-0.013 (-0.327)	-0.008*** (-2.967)	-	-
EM x COUNTRY	-	-	-	-	-0.038 (-1.018)	0.003 (1.207)	-	-
TAX	-	-	-	-	-	-	0.223*** (3.591)	0.010** (2.264)
EM x TAX	-	-	-	-	-	-	-0.032 (-0.521)	-0.009** (-2.134)
Leverage	-0.267*** (-6.312)	-0.020*** (-7.223)	-0.206*** (-4.193)	-0.012*** (-3.511)	-0.321*** (-5.114)	-0.024*** (-5.491)	-0.321*** (-5.138)	-0.025*** (-5.774)
Profitability	-0.178** (-2.407)	0.306*** (61.746)	-0.196** (-2.260)	0.326*** (54.875)	-0.253** (-2.458)	0.348*** (48.761)	-0.298*** (-2.871)	0.348*** (48.390)
Firms Size	0.100*** (7.951)	0.002** (2.060)	0.056*** (3.715)	-0.003*** (-3.053)	0.078*** (4.423)	-0.001 (-0.924)	0.087*** (4.970)	-0.001 (-0.487)
AGR	-0.044 (-1.627)	-0.016*** (-9.105)	-0.065** (-2.020)	-0.018*** (-8.087)	-0.089** (-2.329)	-0.024*** (-8.951)	-0.093** (-2.444)	-0.024*** (-8.903)
Total Equity	-0.065** (-2.071)	-0.002 (-0.959)	-0.025 (-0.658)	0.003 (1.018)	0.021 (0.470)	0.012*** (3.804)	0.025 (0.548)	0.012*** (3.877)
Industry dummies	Yes							
Years dummies	Yes							
Adjusted R ²	0.014	0.217	0.019	0.234	0.010	0.232	0.012	0.231
No. obs.	18,122		13,555		10,419		10,419	

Where:

TA2 is total accruals divided by lagged total assets and defined in model (3). **H2**, **H3**, **H4** and **H5** are the regression models supporting hypotheses 2, 3, 4 and 5, respectively. **PoR** is the ratio of dividends scaled by net income and **DIVa** is the ratio of dividends scaled by total assets (dependent variables); **EM** refers to discretionary accruals computed from Kothari *et al.* (2005) in accordance with model (6). **OWN** is a dummy

TA2	H2		H3		H4		H5	
	PoR	DIVa	PoR	DIVa	PoR	DIVa	PoR	DIVa
Variables	β (t-statistic)							

variable that is equal to 1 if a firm has more than 50% of share capital owned by a sole shareholder and 0 otherwise. **CORP** is a dummy variable that is equal to 1 if a firm has more than 50% of share capital owned by a corporation and 0 in case more than 50% of share capital is owned by an individual/family. **COUNTRY** is a dummy variable that is equal to 1 if the firm has more than 50% of share capital owned by a Portuguese corporation and 0 in case more than 50% of share capital is owned by a foreign corporation. **TAX** is a dummy variable that is equal to 1 if the firm has more than 50% of share capital owned by a taxpaying corporation and 0 in case more than 50% of share capital is owned by a non-taxpaying corporation. **EMxOWN**, **EMxCORP**, **EMxCOUNTRY** and **EMxTAX** are interaction variables that take EM value in case dummy variable is 1 and 0 otherwise. **Leverage**, **Profitability**, **Firms Size**, **AGR** and **Total Equity** are control variables. **Leverage** is the sum of long-term and short-term debt, scaled by lagged total assets; **Profitability** is the net income, scaled by lagged total assets; **Firms Size** is the logarithm of total assets; **AGR** is the Assets growth rate deducted by the total asset variation; **Total Equity** is calculated as total equity scaled by lagged total assets.

In all models are included fixed effects for INDUSTRY and YEAR. Coefficient values are listed on top and below them are the t-statistics.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels (respectively).

4.4. Robustness tests

In order to reinforce the analysis, the dependent variables were inferred based on different methodologies. For this reason, six different specifications of the model are estimated for each of the two dependent variables (i.e. discretionary accruals derived from the Dechow Model, the Kasznik Model and the Kothari Model) considering two approaches for Total Accruals (TA1 and TA2).

Once Table 9 presents the analysis of Model H1 with all the twelve different specifications, and the literature considers TA2 as the most recommended methodology to infer about the Total accruals component of earnings (appointed as the balance sheet approach), a robustness analysis was carried out to the remaining Models H2 to H5.

The results considering the discretionary accruals computed from Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) are presented in Table 11. According to the robustness analysis, it is possible to infer that similar results are obtained by considering any of the models. The analysis was focused on the interaction variables (EM x Specific Dummy) due to its connection with the hypothesis settle on this dissertation.

In general terms, H2 and H5 are statistically significant for all EM models, only considering dependent variable DIVa. H3 is statistically significant (at a 5% level) for all EM models and for both dependent variables. In the case of H4, there is no statistical significance in any of

the EM models, therefore it is not possible to properly infer about the hypothesis that underlies the model.

Table 11 – Robustness analysis considering the three EM models (Dechow, Kasznik and Kothari)

Model	Total accruals methodology	EM Model	Dependent variable	EM x Specific Dummy	β	P-value Significance
H2	TA2	Dechow	PoR	EM x OWN	0.035	
		Kasznik			0.034	
		Kothari			0.029	
		Dechow	DIVa		0.005	***
		Kasznik			0.006	***
		Kothari			0.006	***
H3		Dechow	PoR	EM x CORP	0.080	**
		Kasznik			0.081	**
		Kothari			0.082	**
		Dechow	DIVa		0.005	**
		Kasznik			0.005	**
		Kothari			0.006	**
H4		Dechow	PoR	EM x COUNTRY	-0.038	
		Kasznik			-0.037	
		Kothari			-0.038	
		Dechow	DIVa		0.003	
		Kasznik			0.003	
		Kothari			0.003	
H5	Dechow	PoR	EM x TAX	-0.016		
	Kasznik			-0.021		
	Kothari			-0.032		
	Dechow	DIVa		-0.012	***	
	Kasznik			-0.011	**	
	Kothari			-0.009	**	

Where:

H2, **H3**, **H4** and **H5** are the regression models supporting hypotheses 2, 3, 4 and 5, respectively. **TA2** is total accruals divided by lagged total assets and defined in model (3). **EM** refers to discretionary accruals computed from Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005) in accordance with models (4), (5) and (6), respectively. **PoR** is the ratio of dividends scaled by net income and **DIVa** is the ratio of dividends scaled by total assets (dependent variables); **EMxOWN**, **EMxCORP**, **EMxCOUNTRY** and **EMxTAX** are interaction variables that take EM value in case dummy variable is 1 and 0 otherwise. **OWN** is a dummy variable that is equal to 1 if a firm has more than 50% of share capital owned by a sole shareholder and 0 otherwise. **CORP** is a dummy variable that is equal to 1 if a firm has more than 50% of share capital owned by a corporation and 0 in case more than 50% of share capital is owned by an individual/family. **COUNTRY** is a dummy variable that is equal to 1 if the firm has more than 50% of share capital owned by a Portuguese corporation and 0 in case more than 50% of share capital is owned by a foreign corporation. **TAX** is a dummy variable that is equal to 1 if the firm has more than 50% of share capital owned by a taxpaying corporation and 0 in case more than 50% of share capital is owned by a non-taxpaying corporation.

***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels (respectively).

5. Conclusions

This dissertation focuses on the relationship between earnings management and dividend policy in different ownership contexts. To perform this analysis, the constructs earnings management and dividend policy were dissected in order to enable an in-depth understanding of the role of the shareholders in the definition of firms' dividend decisions. To force financial results to meet certain targets, managers and shareholders may apply real and accounting managerial strategies, well known as Earnings Management. As referred by Aker *et al.* (2007), this concept can be described as the attempt to manipulate reported earnings to influence short-term earnings. Naturally, management capacity to influence whatever it is in a firm depends on its ownership position and its ability to exercise control (e.g. Usman and Yero 2012; Lin, 2011; and Alves, 2012). The economic principles preach that the role of a company is to maximize results. Companies hold indeed, a few ways to revert those results to the shareholders (e.g. transfer pricing transactions); however, the most common is through dividends. Nevertheless, it is imperative to raise an important question: do shareholders always want to maximize firms' dividend distribution? There is no closed answer for this, even so, this dissertation meant to go further on this matter. For this reason, an empirical analysis with the support of Bureau van Dijk – Sabi® database was conducted, aiming to analyze earnings management behaviors through discretionary accruals methodologies scrutinized by Dechow *et al.* (1995), Kasznik (1999) and Kothari *et al.* (2005), as well as the role of the previous methodologies in terms of firms' dividend distribution (measured by two variables – *Payout Ratio* – PoR and Dividends scaled by total assets – DIVa). The sample is composed by a set of listed and non-listed 4,258 Portuguese representing a panel of around 20 thousand observations, distributed over the period 2013-2017.

The basilar research hypothesis inferred by this dissertation was about the potential role of earnings management on dividend policy. Contrary to the results presented by He *et al.* (2017) but on the same path of Farinha and Moreira (2007) and Morghri and Galogah (2013), it was possible to infer a positive statistically significant relationship between the constructs in all the six different specifications of the model estimated for each of the two dependent variables (totaling twelve regressions statistically analyzed). Although these results are relevant *per si*, this dissertation went slightly beyond by perceiving the role of a majority

shareholder with more than 50% of share capital on its capacity to mediate dividend policy through earnings management.

Hence, the second hypothesis inferred about a possible more pronounced effect of EM on dividend policy in firms which have a majority shareholder (with more than 50% of share capital) against non-concentrated ownership firms. The results show that is statistically significant to affirm this, whenever dividend policy is evaluated based on DIVa. In a general way, it is possible to contradict the results of Mancinelli and Ozkan (2006) and Harada and Nguyen (2011) that described a negative relationship between the voting rights of the largest shareholders and dividend payouts.

The third hypothesis aimed to infer whether the effect of EM on dividend policy is stronger in firms with a majority corporate shareholder than in companies with an individual/ familiar ownership. The interaction variable EMxCORP that supports the model has statistical significance for both dependent variables and is higher than EM (Dummy=0), which corroborate the hypothesis of differences among the two types of shareholders. In a certain way, this finding is contradictory with Lisboa (2016) that inferred that EM is higher in family firms than in non-family firms; on the other hand, Zhang (1998) showed that a firm owned by a family may lead to lower dividends over the time.

The fourth hypothesis did not reach a proper conclusion due to the absence of statistical significance. The initial objective was to infer about Gonzalez *et al.* (2017) findings regarding the role of the largest shareholder in terms of its capacity to shape dividend distribution. The way the empirical study was organized might impair better results; however, a future line of research can be structured over these learnings.

The fifth hypothesis focused on the effect of earnings management on dividend policy in companies (majority owned by a corporate shareholder) that pay corporate tax versus non-paying firms. The main objective of this analysis was to persecute Brennan (1970) findings related to shareholders' intent to manage dividend policy according to their tax exposure. There is a really interesting result that mixes up the effect of the dummy variable applied in the model. According to the statistical results, taxpaying firms influence EM to lower DIVa; contrary, non-taxpaying firms influence EM to higher DIVa. Thence, the opposite signals do not allow a proper inference to support this hypothesis.

This study contributes to the academic literature in the following described ways. First, the results give us a better understanding of the relationship between earnings management and dividend policy in a sample composed by Portuguese companies; second, this dissertation performed an analysis about the constructs based on a large sample of 4,258 (listed and non-listed companies) and a panel data of around 20 thousand observations; third, it was possible to predict a positive statistically significant relationship between the constructs in the twelve methods considered; fourth, it was predicted that the effect of earnings management on dividend policy is more pronounced on (i) firms with a majority shareholder (more than 50% of share capital) as opposed to firms with non-concentrated ownership, (ii) firms with a majority corporate shareholder as opposed to companies with an individual/familiar ownership. In case of taxpaying firms versus non-taxpaying firms, the results are relevant but are opposite to each other.

Notwithstanding, this dissertation has some limitations. For one side, the research model only includes a five years' panel data which is related with the limitation of the database as well as the way to avoid financial information recorded in the former Portuguese accounting principles (i.e. POC). In addition, this dissertation focuses on specific dimensions of earnings management through academic models of prediction. However, the results may not fully represent the reality of each company even considering the six different methodologies of analysis. A comparison analysis of means and deviations across the various subsamples was not performed although these results may be interesting in a future analysis.

As a final point, it is expected that the conclusions from this dissertation may contribute to the academic literature in terms of the relationship between the constructs in different ownership contexts. Moreover, we hope that the conclusions may help policymakers and regulators in their on-going quest to reform the Portuguese tax system by providing insights on tax motivations, in terms of distribution of capital gains.

We hope to encourage and inspire further academic studies on the role of earnings management in terms of firms' financial and tax results, the matter of international tax avoidance and profit shifting thought dividends, as well as the role of ownership concentration on earnings management and dividend policy.

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