



Payout policy and earnings management:

Dividends versus stock repurchases

by

Ana Isabel Areias Ribeiro Sanches Vieira
(201107328@fep.up.pt)

Master in Finance and Taxation

Supervisor: António Cerqueira
Co-Supervisor: Elísio Brandão

September 2017

Bibliographical note

Ana Isabel Vieira was born in Oporto, Portugal in 1992.

Ana's academic education started in 2012 in the University of Oporto, School of Economics and Management, where she graduated in 2015 in the course of Economy with a final grade of 14 (of 20).

After the bachelor's course of Economy, she was moved by the desire of learn more principally about finance and taxation, but also about some other areas like audit and accounting and management control. The Master in Finance and Taxation at the University of Oporto, School of Economics and Management was the most complete to pursue this goal. Therefore, in the same year she started her course in this master.

Recently, in 5th of June 2017, she started her professional life in the areas she most love, which is the next step to keep learning and take advantage of the knowledge. She started to work at "Sonae Indústria - Management Services, S.A.", in Corporate Finance and Investor Relations, where she works until now.

Acknowledgements

Firstly, I would like to thank my advisers, PhD Professor António Cerqueira and Phd Professor Elísio Brandão for all the support they gave me in my academic life and especially in this dissertation. It is also important to thank all the professors who crossed on my academic path and helped me to learn giving me challenges and encouragement.

My thankful also go for my colleagues that became my friends and gave me support in this journey and that keep in contact reminding that they will always be there for me. A special congratulation for the master class of 2015 to 2017 by the companionship that maintains and that I hope that continues after this journey.

Additionally, is important to be grateful to my family, especially my parents and my brothers, and my friends that I keep since High School that give me support in all moments of my life and make me a more happy and complete person.

Finally, I would like to thank to my soulmate for all the support and patience and for have made this hard journey easier, but especially to make my all life better and full of happiness.

Abstract

Over the last years, the number of firms paying dividends has decreased and stock repurchases have emerged as an alternative form of payout with a crescent importance on payout structure. Therefore, we attempt to analyze the relation between payout structure and earnings management across G5 countries for the period from 2005 to 2015. We measure earnings management based on a modified Jones (1991) abnormal accruals model. Our main findings suggest a negative association between earnings management and payout policy because payout policy can be used as a form of mitigate agency problems, however this relationship is stronger for dividends than for stock repurchases. In addition, this negative relationship is stronger for regular payouts and in firms from countries with weaker investor protection, which are countries more susceptible to agency problems. These findings are important for all users of information because the manipulation of earnings can have a huge impact on real economy and financial markets and because give new highlights in the choice between stock repurchases and dividends.

Keywords:

Earnings management, accruals, dividends, stock repurchases, investor protection.

Resumo

Ao longo dos últimos anos, o número de empresas que pagam dividendos diminuiu e a recompra de ações surgiu como uma forma alternativa de pagamento com uma crescente importância na estrutura de pagamento. Sendo assim, o nosso principal objetivo é analisar a relação entre estrutura de pagamento e a gestão de resultados nos países pertencentes ao G5 para o período de 2005 a 2015. Estimamos a gestão de resultados com base num modelo de *abnormal accruals* de Jones (1991) modificado. Os nossos principais resultados sugerem uma relação negativa entre a gestão de resultados e a política de pagamentos, porque a política de pagamentos pode ser usada como uma forma de reduzir os problemas da agência, porém essa relação é mais forte para os dividendos do que para as recompras de ações. Além disso, essa relação negativa é mais forte para pagamentos regulares e em empresas de países com um nível de proteção dos investidores mais fraco, que são países mais suscetíveis a problemas de agência. Estes resultados são importantes para todos os utilizadores da informação, porque a manipulação de resultados pode ter um impacto enorme na economia real e nos mercados financeiros e porque dá novos destaques na escolha entre recompra de ações e dividendos.

Palavras-chave:

Gestão de resultados, *accruals*, dividendos, recompra de ações, proteção do investidor.

Índex of content

Bibliographical note	i
Acknowledgements	ii
Abstract	iii
Resumo.....	iv
1. Introduction	1
2. Literature review and research hypotheses	4
3. Data and methodology	8
3.1. Data and sample	8
3.2. Earnings management	9
3.2.1. Discretionary accruals.....	9
3.2.2. Earnings management- payout policy relationship.....	12
3.2.3. Repurchases Versus Dividends- more detailed analysis.....	14
3.2.4. Investor protection and earnings management- payout policy relationship.....	14
3.2.5. Firm-specific control variables	16
4. Results.....	20
4.1. Univariate analysis	20
4.2. Multivariate analysis	25
4.3. Robustness tests: Alternative measures of payout policy.....	33
5. Conclusions.....	35

Appendix A. Variable definitions	38
References	39

Index of Table

Table 1: Investor protection.....	15
Table 2: Sample composition by country	20
Table 3: Sample composition by 12 Fama and French (1997) industry classifications codes	21
Table 4: Summary statistics.....	24
Table 5: Correlation matrix	24
Table 6: Payout policy and earnings management	27
Table 7: Regular and occasional payouts and earnings management.....	30
Table 8: Investor protection and earnings management	32
Table 9: Alternative measures of payout policy	34
Table A. 1: Firm- specific control variables.....	38

1. Introduction

Earnings management has been widely studied over the years (Jones 1991; Defond & Jiambalvo 1994; Dechow *et al.* 1995; Teoh *et al.* 1998a, b; Dechow & Dichev 2002; Francis *et al.* 2005; Kothari *et al.* 2005; Ball & Shivakumar 2006; Daniel *et al.* 2008; Deng *et al.* 2017; He *et al.* 2017). In the context of agency conflicts between corporate insiders and minority shareholders, there is the possibility of corporate insiders manage earnings to extract private control benefits. Earnings management is important for all users of information and the manipulation of earnings can have a huge impact on real economy and financial markets. Recently, this issue has gained an additional importance due to the known cases of earnings manipulation.

One important determinant of earnings management is dividend policy (Daniel *et al.* 2008; He *et al.* 2017). The related studies suggest that firms that pay dividends are less prone to manipulate earnings because dividends can be used as a form of mitigate agency conflicts (Deng *et al.* 2017; He *et al.* 2017). Dividends limit the opportunistic behavior of managers because minority shareholders pressure corporate insiders to pay cash dividends and because managers can use dividends to build a worthy reputation improving access to capital markets (La Porta *et al.* 2000).

However, there is a global tendency to the reduction of firms paying dividends (Fatemi & Bildik 2012). This observed reduction of firms paying dividends is accompanied with a crescent importance of stock repurchases on payout structure (Skinner 2008; von Eije & Megginson 2008; Haw *et al.* 2011; Fatemi & Bildik 2012).

Therefore, it is extremely important to compare these two forms of payout policy to address if they are complements or substitutes. The theory of the irrelevance of dividends to firm value is consistent with the substitution hypothesis (Miller & Modigliani 1961). Grullon and Michaely (2002) also support this hypothesis based on an analysis of the market reaction to dividends cuts. The complementary hypothesis is defended by some studies that analyzed the impact on firm value (Haw *et al.* 2011) and the impact on reported losses and earnings persistence (Skinner & Soltes 2011).

The principal goal of this dissertation is to make a detailed comparison of the impact of stock repurchases and dividends on earnings management activity. To our

knowledge, the focus on this objective fills a gap in the literature. Following He *et al.* (2017), this dissertation has two more objectives. First, we attempt to analyze the capacity of dividends to mitigate agency conflicts. Second, we compare G5 countries based on their degree of investor protection. This comparison is important because in countries with weaker investor protection corporate insiders have more facility to extract private control benefits, so these countries are more susceptible to agency conflicts.

To estimate earnings management we use a modified Jones (1991) abnormal accruals model. Then, following He *et al.* (2017), we employ a OLS regression that attempts to analyze the relationship between earnings management and dividend and compare this relationships in countries with weaker or higher investor protection. We also modify this regression in order to make the detailed comparison between repurchases and dividends. In addition, based on the Skinner and Soltes (2011) division to study earnings persistence, we analyze the impact in earnings management of divide firms into firms that make regular payouts and firms that make occasional payouts. To our knowledge, this division based on the frequency of payouts in order to compare them is also little analyzed in the earnings management studies.

We employ these regressions for G5 countries over the period from 2005 to 2015. In this issue, this dissertation extends the previous literature that used different samples. G5 countries were select because are the five world's leading industrialized countries and have different classifications in terms of investor protection. Start the sample in 2005 is important because is the year of the mandatory adoption of IFRS for listed firms in European Union countries that can have a negative impact on opportunities to manage earnings. This period of recent eleven years is also relevant because the earning management theme gained importance in the years of recent global financial crisis, which started in the United States in consequence of the collapse of subprime mortgage market in 2007.

The main results are i) firms that pay dividends or make stock repurchases are less inclined to engage in earnings manipulations activities, but this association is stronger for dividends than repurchases; ii) Regular payouts are associated with less earnings manipulation than occasional payouts; iii) in civil law countries firms that pay dividends are less inclined to manage earnings but stock repurchases don't have a significant impact on earnings management and iv) in common law countries there is a negative

association between this two forms of payout and earnings management that is more stronger for dividends than repurchases.

The present dissertation is organized as follows. Section 2 provides an overview of the related literature and formulate the main research hypotheses. Section 3 presents the data and methodology. Section 4 describes the univariate and multivariate results and some robustness tests of the empirical results. Finally, section 5 concludes the dissertation.

2. Literature review and research hypotheses

The information provided by dividend policy has been widely studied over the years. Miller and Modigliani (1961) support that the dividend policy is irrelevant to firm value because firm value depends on firm's capacity to generate operational results and not on how operational results are distributed. Another important line of thought is the dividend signaling theory (Bhattacharya 1979; Bhattacharya 1980; Miller & Rock 1985). Accordingly to this theory, in context of information asymmetry dividends can be used as a financial signal of firm's value.

Some recent literature examined the theory of the information content of dividends in the context of the capacity of dividends to provide information about earning manipulation (Daniel *et al.* 2008; He *et al.* 2017) and about earnings quality (Skinner & Soltis 2011; Deng *et al.* 2017). Earnings management is a matter with a crescent importance because of a large number of known cases of earnings manipulation, which can have a huge impact on real economy and financial markets. One important example of these cases is the case of Lehman Brothers investment bank that culminated in his failure in September of 2008.

The information asymmetry also rises the importance of dividends to resolve agency conflicts. In this context two agency models of dividends can be identified, the outcome model and the substitute model (La Porta *et al.* (2000)). The outcome model supports that minority shareholders pressure corporate insiders to pay cash dividends, therefore limiting their opportunistic behavior. In turn, substitute model documents that managers can use dividends to build a worthy reputation on minority shareholders' treatment with the objective of issue equity on future. In conclusion, the payment of cash dividends limits the opportunistic behavior of managers (Pinkowitz *et al.* 2006). Therefore, we expect find a negative association between dividend policy and earnings management (Deng *et al.* 2017; He *et al.* 2017).

The discussion above led us to test the following hypothesis:

Hypothesis 1: Firms that pay dividends are less inclined to manage earnings.

There are various forms of payout policy like payment of cash dividends, payment of dividends on shares, fractionation of the number of shares and repurchase of stock.

Recently, there has been an increase in stock repurchases and a decrease in dividend payments mainly in the U.S (Skinner 2008; Haw *et al.* 2011). This phenomenon of change in payout policy also occurred in Europe. von Eije and Megginson (2008) found that the number of European and U.S. firms paying dividends has decreased in recent years, but total real dividend payments increased and shares repurchases has a crescent importance as payout method both in U.S. and Europe. In addition, Fatemi and Bildik (2012) used a sample of 33 different countries to prove that this tendency of decline in payment of dividends is global.

Therefore, some recent studies included stock repurchases as an alternative form of payout (Skinner 2008; Haw *et al.* 2011; Skinner & Soltes 2011; He *et al.* 2017). He *et al.* (2017) found in robustness tests that the negative relationship between dividend policy and earning management remains when stock repurchases are used as an alternative measure of payout policy. However, to our knowledge none of these recent studies made a detailed comparison between the impact of repurchases is earnings management and the impact of dividends in earnings management.

Consequently, is extremely important to do a similar analysis for shares repurchases and compare to the results obtained for dividends:

Hypothesis 2: Firms that make repurchases are less inclined to manage earnings.

This change on payout policy raised an important question: “Are dividends and share repurchases complements or substitutes?”.

The complementarity or substitutability of these two forms of payout divides the studies into two different opinions. First, the theory of the irrelevance of dividends (Miller & Modigliani 1961) is compatible with the proposition of shares repurchases and dividends being perfect substitutes. Grullon and Michaely (2002) analyzed the market reaction to dividends cuts to confirms the substitution hypothesis.

In opposition, several studies found that dividends and shares repurchases are not perfect substitutes based on firm’s value analysis (Haw *et al.* 2011) and on earnings

quality analysis (Skinner & Soltes 2011). Stock repurchases are not a perfect substitute of dividends because can be used by corporate insiders to extract private control benefits and are more flexible not involving such a commitment as dividends, therefore stock repurchases are less effective in resolve agency problems (Haw *et al.* 2011). Skinner and Soltes (2011) analyzed earnings persistent for five group of firms which are divided based on the frequency of payments (regular, occasional or no payment) and the type of payments (dividends and repurchases). These authors found that dividends and regular payouts are better signaling earnings quality. We expect to confirm that firms that make regular payouts are more effective in reducing agency problems because these firms have a historically greater commitment with minority shareholders, which limits their opportunistic behavior.

These findings led us to the following hypotheses:

Hypothesis 3: Firms that pay dividends are less inclined to manage earnings than firms that make repurchases.

Hypothesis 4: Firms that make regular payouts are less inclined to manage earnings than firms that make occasional payouts.

In the context of the agency problems, countries with weaker investor protection are more susceptible to agency conflicts because corporate insiders have more facility in extract private benefits because interests of minority shareholders are less protected. Pinkowitz *et al.* (2006) found that the impact of dividends on firm value is higher in countries with weaker investor protection. He *et al.* (2017) confirmed that dividend policy can be used to resolve agency conflicts because found a negative association between dividend policy and earning management, which is more pronounced in countries with weaker legal protection or low governance transparency.

With the propose of confirm that dividends are used to resolve agency conflicts and agency problems are more susceptible to happen in countries with weaker investor protection, we test the following hypothesis:

Hypothesis 5: The negative relationship between firms that pay dividends to stockholders and earnings management is stronger in countries with weaker investor protection.

As discussed above, literature suggests that stock repurchases are less effective in resolve agency problems than dividends (Haw *et al.* 2011; Skinner & Soltes 2011; He *et al.* 2017) and that in an environment with weaker investor protection the possibility of controlling shareholders use stocks repurchases for opportunistic behavior is greater (Haw *et al.* 2011).

These findings suggest that the capacity of mitigate agency problems, principally in countries with weaker investor protection, is greater for dividends than stock repurchases, which led us to the following hypothesis:

Hypothesis 6: Firms that pay dividends are less inclined to manage earnings than firms that make repurchases, especially in countries with weaker investor protection.

3. Data and methodology

3.1. Data and sample

The sample used in this study includes listed firms of G5 countries¹ over the 2005-2015 period. We used firms listed on the Euronext.liffe Paris, Deutsche Boerse AG, Tokyo, London, NASDAQ or NYSE. These five countries were selected because are the world's leading industrialized countries and have different classifications in terms of investor protection, which gives us a good sample for comparing countries.

The analysis of this sample period of eleven years is relevant to examine the effects of the changes in payout policy in recent years, especially because the earning management theme gained importance in the years of recent global financial crisis, which started in the United States in consequence of the collapse of subprime mortgage market in 2007. Start the sample in 2005 is also important because this is the year of mandatory adoption of IFRS for listed firms in European Union countries. This event is an important step in financial reporting convergence, which improves the comparability between European countries. Potentially, with this mandatory adoption of IFRS, European countries will have fewer opportunities to manage earnings than Japan and United States.

The focus on these five developed countries and the period of recent eleven years extends the previous literature that used different samples.

The main source of data was Thomson Reuters Datastream database. The initial sample covered 31977 firms. Following exclusion criteria from related studies, we first excluded all firms with missing data for DS Mnemonic Code reducing the sample to 20255 firms. Second, we excluded all utilities (SIC codes 49) and financial firms (SIC codes 60-67) because these sectors have specific regulations, resulting in a sample of 14348 firms. We also excluded all observations with missing data for SIC Code, resulting in a sample of 13338 firms.

¹ G-5 countries are the following principal developed countries: France, Germany, Japan, United Kingdom and United States.

After these criteria, it still exists various firms of our sample that have no data for all variables in all of the years. Thus, in order to avoid exclude too many firms, we defined as a minimum criteria to include the firms in our sample that they must have at least 4 years of complete data. Consequently, the sample reduces to 4848 firms.

Finally, after a critical analysis of the outliers of the sample and of the subsample of each country, we excluded those firms who have extreme values without an empirically logical explanation found. Therefore, the final sample comprises 4652 firms.

3.2. Earnings management

3.2.1. Discretionary accruals

Reported earnings reflect cash flow from operations and accounting adjustments that delay or anticipate the reported of realized or to be realized cash flows. These accounting adjustments are the so-called accruals. Total accruals are divided into normal accruals (non-discretionary accruals) and abnormal accruals (discretionary accruals) (Jones 1991). Normal accruals reflect the effects of economic conditions on total accruals and discretionary accruals reflect the estimation errors of accruals (Jones 1991; Dechow & Dichev 2002). For example, if the cash receipt of a previously recognized revenue in accounts receivable is less than the original estimate, in the moment of the reversion of the accrual in the next period, the cash collected is less than the record reversed in accounts receivable and the difference between them is the estimation error. These estimation errors can be intentional or unintentional (Dechow & Dichev 2002).

Francis *et al.* (2005) argues that the discretionary component of accruals is affected by three subcomponents, the performance component, the opportunistic component and the pure noise. First, the performance component reflects the efforts of managers to provide the correct information about earnings to the market. Second, the opportunistic component reflects the ability of managers to manipulate earnings upward or downward. For last, the pure noise is related with the unintentional estimation errors.

Total accruals regression residuals is a measure that has been widely used in the literature to capture earnings management (Jones 1991; Defond & Jiambalvo 1994; Dechow *et al.* 1995; Teoh *et al.* 1998a, b; Kothari *et al.* 2005; Daniel *et al.* 2008; Deng

et al. 2017; He *et al.* 2017). This is a measure of the abnormal accruals, a positive value indicates a manipulation of earnings upward and a negative value indicate a reduction of earnings through manipulation. Therefore, the higher the absolute value of abnormal accruals the greater earnings management.

The Jones (1991) abnormal accruals model and modified versions of Jones (1991) are the most popular models to capture earnings management (Defond & Jiambalvo 1994; Dechow *et al.* 1995; Teoh *et al.* 1998a, b; Kothari *et al.* 2005; Ball & Shivakumar 2006; Daniel *et al.* 2008; He *et al.* 2017). Jones (1991) model explain the variation of total accruals in a given year as being related with change on revenues and gross property, plant and equipment. These two variables are related with the effect of changes on economic conditions on total accruals. Gross property, plant and equipment controls to the part of total accruals related with nondiscretionary depreciation expenses and revenues are a reliable control for firm's performance prior to earnings management.

Jones (1991) referred the possibility of earnings manipulation through credit sales. Therefore, several authors modified Jones (1991) model by introducing a variable that capture change in credit sales (Dechow *et al.* 1995; Teoh *et al.* 1998a, b). Dechow *et al.* (1995) compared the performance of five different models and concluded for the highest performance of a version of modified Jones (1991) that augmented the traditional model with the possibility of earnings manipulation through credit sales.

Jones (1991) and modified Jones (1991) models are mis-specified when applied to samples with extreme performance (Dechow *et al.* 1995). In order to control for the correlation between accruals and performance, Kothari *et al.* (2005) modified Jones (1991) model by introducing the variable ROA.

In relation to the heteroscedasticity problem, Jones (1991) reduced heteroscedasticity by scaling all variables, including the constant term, by lagged total assets. Kothari *et al.* (2005) introduced an additional control for heteroscedasticity including a constant not scaled by total assets in Jones (1991) model and concluded for a better specification of the model.

Based on authors mentioned above, we estimate a modified cross-sectional² version of Jones (1991) model based on Dechow *et al.* (1995) and Kothari *et al.* (2005) contributions:

$$\begin{aligned} TAccr_{i,t}/A_{i,t-1} = & \beta_0 + \beta_1*(1/A_{i,t-1}) + \beta_2*((\Delta REV_{i,t} - \Delta REC_{i,t}) / A_{i,t-1} + \\ & + \beta_3*(PPE_{i,t}/A_{i,t-1}) + \beta_4*ROA_{i,t-1} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Where $TAccr_{i,t}$ is a variable for total accruals in year t for firm i and is measured as:

$$\begin{aligned} TAccr_{i,t} = & (\Delta Current Assets_{i,t} - \Delta Cash_{i,t}) - \Delta Current Liabilities_{i,t} - \\ & - Depreciation, Depletion and Amortization Expense_{i,t} \end{aligned} \quad (2)$$

and where Δ is the change of the variable between period t and $t-1$.

The explanatory variables of the model are $\Delta REV_{i,t}$, $\Delta REC_{i,t}$, $PPE_{i,t}$ and $ROA_{i,t-1}$. $\Delta REV_{i,t}$ is the change in a firm's revenue defined as revenues in year t less revenues in year $t-1$, $\Delta REC_{i,t}$ is the change in a firm's net receivables which is measured as net receivables in year t less net receivables in year $t-1$, $PPE_{i,t}$ is net property, plant and equipment⁴ in year t for firm i and $ROA_{i,t-1}$ is calculated as net income for firm i in year $t-1$ scaled by total assets for firm i in year $t-1$. $\varepsilon_{i,t}$ represents the error term. In order to reduce heteroscedasticity, all variables are scaled by lagged total assets ($A_{i,t-1}$).

² We use the cross-sectional version of Jones (1991) model, which is widely used and has given good results in terms of explanatory power (Defond & Jiambalvo 1994; Teoh *et al.* 1998a, b; Kothari *et al.* 2005; Ball & Shivakumar 2006; Daniel *et al.* 2008). We opted for the cross-sectional version of Jones (1991) model because this adjust automatically for the industry-specific economic changes that have an impact on total accruals, regardless of the impact of earnings management. Ball and Shivakumar (2006) compared the cross-sectional regression and the pooled regression and concluded for the best explanatory power of the first, measured by the R^2 .

³ The formula mentioned by Jones (1991) is the following: $TAccr_{i,t} = (\Delta Current Assets_{i,t} - \Delta Cash_{i,t}) - (\Delta Current Liabilities_{i,t} - \Delta Current Portion of Long-term Debt_{i,t} - \Delta Income Taxes Payable_{i,t}) - Depreciation, Depletion and Amortization Expense_{i,t}$. But due to data limitations the variables Current maturities of long-term debt and Income taxes payable were not used in Jones (1991) study. As we verify the same data limitation we also don't include these variables in the formula.

⁴ As Kothari *et al.* (2005), we use the net value of property, plant and equipment.

The absolute values of the residuals of equation (1) is a measure for abnormal accruals.

Each regression is estimated using OLS and separately for each industry and year (Defond & Jiambalvo 1994; Teoh *et al.* 1998a, b; Kothari *et al.* 2005; Ball & Shivakumar 2006; Daniel *et al.* 2008) and industries are grouped by the 12 Fama and French (1997) industry classification codes⁵.

3.2.2. Earnings management- payout policy relationship

The analysis of the relationship between earnings management and payout policy is divided into two, one analysis for dividend policy and other for firms that make stock repurchases.

Following He *et al.* (2017), we estimated the below regression to assess the relationship between earnings management and dividend policy:

$$ACCR_{i,t} = \beta_1 + \beta_2 * DIV_{i,t} + \sum_i^N \beta_{it} * X_{it} + \text{Fixed Effects} + \varepsilon_{i,t+1} \quad (3)$$

Where $ACCR_{i,t}$ is a measure for earnings management for firm i in year t . This measure is obtained from the absolute values of the residuals of the equation (1). In turn, $DIV_{i,t}$ is a dummy variable that is equal to 1 if the firm i pays dividends in year t , and 0 otherwise and X_i ($i=1, \dots, N$) are the firm-specific control variables. Fixed effects represent the fixed effects for country, industry and year and $\varepsilon_{i,t}$ represents the error term. We run the Hausman test and reject the null hypothesis that the random effects is adequate, so confirm that fixed effects should be included in the model. We include industry fixed effect because, as referred above, in earnings management models is essential to address for industry-specific economic changes that can have a significant impact on total accruals. We also introduce dummy variables to capture the differences

⁵ Fama and French (1997) divide industries into the following 12 classifications: 1. Consumer nondurables, that includes food, tobacco, textile, apparel, leather and toys companies; 2. Consumer durables, which includes car, TV's, furniture and household appliances companies; 3. Manufacturing, that includes machinery, trucks, planes, paper and printing companies; 4. Energy, which includes oil companies, gas and coal extraction and products companies; 5. Chemicals and Allied Products; 6. Business equipment, that includes computers, software and electronic equipment companies; 7. Telephone and television transmission; 8. Utilities; 9. Wholesale, retail and some services; 10. Healthcare, medical equipment and drugs; 11. Financial firms and 12. Other.

between countries of our sample that can affect earnings management activities, especially the differences between investor protection degrees that are studied too in this dissertation. Following He *et al.* (2017), we estimate all regressions using OLS.

To confirm hypothesis 1, we expect β_2 to be negative and statistically significant meaning that firms that pay dividends are less prone to manage earnings.

With the purpose to do the same analysis for firms that make stock repurchases, we estimated the following regression:

$$ACCR_{i,t} = \beta_1 + \beta_2 * REP_{i,t} + \sum_i^N \beta_{it} * X_{it} + \text{Fixed Effects} + \varepsilon_{i,t+1} \quad (4)$$

All variables and specifications are similar to those in model 3, except $DIV_{i,t}$ which is replaced by $REP_{i,t}$. $REP_{i,t}$ is a dummy variable that takes the value 1 if a firm makes stock repurchases in year t, and 0 otherwise⁶.

To confirm hypothesis 2, we expect β_2 to be negative and statistically significant meaning that firms that make repurchases are less inclined to manage earnings.

In addition, we include the two key explanatory variables, DIV and REP , in the same model to compare their coefficients:

$$ACCR_{i,t} = \beta_1 + \beta_2 * DIV_{i,t} + \beta_3 * REP_{i,t} + \sum_i^N \beta_{it} * X_{it} + \text{Fixed Effects} + \varepsilon_{i,t+1} \quad (5)$$

If the absolute value of β_2 is larger than the absolute value of β_3 and both values are negative, firms that pay dividends are less likely to manage earnings than firms that make stock repurchases, which is consistent with hypothesis 3.

⁶ The variable used as a proxy for repurchases activity represents the funds spent on reducing outstanding shares of common or preferred stock. This variable includes other types of activities like purchase of treasury shares and conversion of preferred stock into common stock, so repurchases activity can be overestimated. However, Haw *et al.* (2011) compared this variable with a sample manually collected of repurchases disclosed and concluded for a good correlation between these two variables, therefore they also used the funds spent on reducing outstanding shares of common or preferred stock as a proxy for stock repurchases.

3.2.3. Repurchases Versus Dividends- more detailed analysis

Based on the methodology of Skinner and Soltes (2011), we divide firms based on payout policy:

1. Firms that pay regular dividends (REG_DIV);
2. Firms that pay occasional dividends (OCCAS_DIV);
3. Firms that make regular repurchases (REG_REP);
4. Firms that make occasional repurchases (OCCAS_REP).

Then, we consider that firms pay regular dividends if pay dividends every years of the sample and make regular stock repurchases if they do it in at least half of the years. Firms make occasional stock repurchases or pay occasional dividends if they do not it in a regular way.

Second, we estimate the model (5) excluding variables Div and Rep and including the following dummy variables: REG_DIV, OCCAS_DIV, REG_REP and OCCAS_REP:

$$ACCR_{i,t} = \beta_1 + \beta_2 * REG_DIV_{i,t} + \beta_3 * OCCAS_DIV_{i,t} + \beta_4 * REG_REP_{i,t} + \beta_5 * OCCAS_REP_{i,t} + \sum_i^N \beta_{it} * X_{it} + \text{Fixed Effects} + \varepsilon_{i,t+1} \quad (6)$$

We expect earnings management to be higher as we move from the estimates to the regular payouts to occasional payouts, therefore confirming the hypothesis 4. In order to reinforcing the hypothesis 3, we expect that earnings management to be lower for firms that pay regular dividends than firms that make regular repurchases and for firms that pay occasional dividends than firms that make occasional repurchases.

3.2.4. Investor protection and earnings management- payout policy relationship

As referred by (La Porta *et al.* 2000), countries with common law legal tradition have, on average, stronger shareholder protection. This finding can also be observed on *table 1*. *Table 1* shows the classification of each one of the sample countries in terms of two measures, legal tradition of the country (Porta *et al.* 1998) and anti-director rights index (Porta *et al.* 1998). Civil law countries (France, Germany and Japan) have lower values of anti-director rights (3, 1 e 4, respectively) than common law countries (United

Kingdom and United States which have the value 5), confirming that common law countries have, on average, stronger shareholder protection.

Therefore, civil law countries are generally countries with weaker investor protection, so we expect that the negative relationship between firms that pay dividends to stockholders and earnings management to be stronger in these countries because dividends are used to resolve agency conflicts and agency problems are more susceptible to happen in these countries.

With the propose of confirm the referred above, confirming the hypothesis 5, we estimated the following model:

$$ACCR_{i,t} = \beta_1 + \beta_2*(LAW_{i,t}*DIV_{i,t}) + \beta_3*((1-LAW_{i,t})*DIV_{i,t}) + \sum_i^N \beta_{it}*X_{it} + \text{Fixed Effects} + \varepsilon_{i,t+1} \quad (7)$$

Where, LAW is a dummy variable that assumes the value 1 if the firm is from a civil law country and zero otherwise. To confirm the hypothesis 5, we expect that the absolute value of β_2 to be higher than the absolute value of β_3 and both have a negative signal.

Table 1: Investor protection

Country	Legal traditions (Porta et al. 1998)	Anti-director rights (Porta et al. 1998)
France	French civil law	3
Germany	German civil law	1
Japan	German civil law	4
UK	English Common law	5
US	English Common law	5

This table presents the classification of each one of the sample countries in terms of two measures, legal tradition of the country (Porta *et al.* 1998) and anti-director rights index (Porta *et al.* 1998). The legal tradition of the country distinguishes the countries based on common law origin or civil law origin. The anti-director rights index ranges from 1 to 6 and higher values of the index mean higher investor protection.

In relation to the comparison between firms that pay dividends and firms that make repurchases and the possibility of the difference between them, in relation of the effectiveness in resolving agency conflicts to be higher in countries with weaker investor protection because in these countries the possibility of controlling shareholders

use stocks repurchases for opportunistic behavior is greater (Haw *et al.* 2011), we employ the following regression:

$$\begin{aligned} \text{ACCR}_{i,t} = & \beta_1 + \beta_2 * (\text{LAW}_{i,t} * \text{DIV}_{i,t}) + \beta_3 * (\text{LAW}_{i,t} * \text{REP}_{i,t}) + \\ & + \beta_4 * ((1 - \text{LAW}_{i,t}) * \text{DIV}_{i,t}) + \beta_5 * ((1 - \text{LAW}_{i,t}) * \text{REP}_{i,t}) + \sum_i^N \beta_{it} * X_{it} + \text{Fixed Effects} + \varepsilon_{i,t+1} \end{aligned} \quad (8)$$

Therefore, to confirm the hypotheses 6, we expect that the absolute value of the difference between β_2 and β_3 to be higher than the absolute value of the difference between β_3 and β_4 and that these differences be positives in absolute value meaning that firms that pay dividends are less inclined to manage earnings than firms that make repurchases, especially in countries with weaker investor protection.

3.2.5. Firm-specific control variables

The models 3 to 8 mentioned above include control variables. These variables have the purpose of control for firm characteristics than can affect earning management. In this section, we provide a descriptive analysis of firm-specific control variables. The definition of all variables and their expect sign is presented in *Appendix A- Table A1*.

Lagged abnormal accruals (ACCR(-1)) is a control variable measured as the lagged value of abnormal accruals obtained from model (1). These measure controls for the possibility of earnings management to be related with past earnings management and the omission of this variable can affect our results. We expect a positive sign for this variable confirming a positive association between past earnings management and present earnings management, which is consistent with a tendency for engage in earnings management activities that may be smaller or larger for each company (He *et al.* 2017).

Another variable used is Firm size (SIZE). In the related studies, there are two measures of firm size, market capitalization and total assets. He *et al.* (2017) found a strong correlation between total assets and market capitalization, so used only the log of market capitalization in analysis, but in robustness tests found that results remain unchanged using total assets. We expect to obtain results similar to the related studies, so we propose a negative signal for the coefficient of this variable in earnings management model (Daniel *et al.* 2008; Deng *et al.* 2017; He *et al.* 2017). These expected results suggest that bigger firms are less prone to manage earnings. This

expected result is consistent with larger firms having generally more audit quality avoiding earnings management activities that distort financial statements and having usually more reputation in market, so the potential costs of losing reputation due to earnings management are greater.

The variable Book-to-market equity ratio (BM) is widely used on the related literature. The results of prior studies suggest a negative relationship between Book-to-market equity ratio and earnings management (Deng *et al.* 2017; He *et al.* 2017). However, Daniel *et al.* (2008) don't found a significant relation between discretionary total accruals and market-to-book ratio. This measure may be interpreted as a proxy to grow opportunities, with higher values meaning lower growth opportunities and lower values meaning the opposite (Li & Kuo 2017). Smith and Watts (1992) suggest that firms with more growth opportunities (lower BM) have more information asymmetry problems, which increases agency problems. Therefore, as referred above, in firms with more agency problems managers have more incentives to manage earnings to extract private control benefits. In conclusion, we expect a negative sign for this variable in earnings management model. These expected results are consistent with firms with lower Book-to-market equity ratio being more prone to manage earnings.

The growth of revenues is another important control variable. Revenues growth (REV_GROWTH) is measured as revenues in year t less revenues in year t-1 scaled by revenues in year t-1. He *et al.* (2017) used this control variable in earnings management model and found a positive and statistically significant coefficient. Taking into account the results mentioned above, we can predict a positive relationship between the growth of revenues and earnings management. These predicted results suggest that firms with more growth of revenue are more associated to earnings management activities. This result is expected because firms with more revenues growth have more incentives to manage earnings in order to reduce earnings before taxes for reduce tax burden.

To capture the age of the firm we introduced a variable, Firm age (AGE), measured as the number of years since a firm is included in Datastream. We expect similar results to the related literature, suggesting that older firms are less prone to manage earnings (Deng *et al.* 2017; He *et al.* 2017) because in older firms generally the agency conflicts have already been resolved or reduced, therefore managers are less prone to manage earnings to extract private control benefits.

The variable Leverage (LEVERAGE) has conflicting results on the related studies. He *et al.* (2017) used a sample of 29 countries and found a negative sign for this variable in earnings management model. In opposition, Deng *et al.* (2017) found a significant positive sign using a sample of Chinese listed firms. Daniel *et al.* (2008) used a sample of S&P 1500 listed firms and don't found a statistically significant coefficient. We believe that firms with higher leverage have managers less concerned with built a worthy reputation in equity market, so this firms have more agency conflicts which increases the incentives to earnings manipulation. But the negative sign is also empirically correct because debt contracts generally have covenants that can restrict earnings manipulation.

We introduced the variable Return on assets (ROA) with the goal of analyses the impact of firm's profitability. For the coefficient of this variable the related studies have again contradictory results using different samples, using a sample of Chinese listed firms the coefficient is positive and statistically significant (Deng *et al.* 2017) and have the opposite signal using a sample of 29 countries or a subsample of the US firms (He *et al.* 2017). We conclude for a negative sign because is the sign obtained in the study with the most complete sample⁷ (29 countries) (He *et al.* 2017), suggesting that more profitable firms are less likely to manage earnings.

For last, we introduced the variable Closely-held ownership (CO). This variable represents the fraction of shares closely held by insiders and controlling shareholders. He *et al.* (2017) found a positive and statistically significant association between this variable and earnings management. Therefore, we predict a positive signal for this variable proposing that the shares closely held by insiders and controlling shareholders increase agency conflicts.

⁷ He *et al.* (2017) used a very complete sample to analyses the impact of dividend policy on earnings management across 29 countries. The sample includes 18 developed countries (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Italy, Japan, the Netherlands, Norway, Singapore, Spain, Sweden, Switzerland, the U.K. and the U.S.) and 11 emerging markets (China, India, Indonesia, Malaysia, the Philippines, Poland, South Africa, South Korea, Taiwan, Thailand and Turkey). As we can see, their sample includes the five developed countries used in the present dissertation, so the results obtained in their work are a very reliable source for the selection of our variables and the prevision of their signs.

We also introduced a variable that attempts to capture the impact of long-term tangible assets. This variable is measured as net property, plant and equipment scaled by total assets (PPE/TOTAL_ASSETS) and based on related researches we hope to find a negative association between the magnitude of long-term tangible assets and the propensity of manage earnings (He *et al.* 2017).

4. Results

This section presents the results. First, present the results of univariate analysis, which includes the analysis of the composition of the sample, the summary statistic and the correlation matrix. Second, present the results of the estimation of our models. Finally, some robustness tests are described.

4.1. Univariate analysis

The composition of our final sample by country and industry is described on *table 2* and *table 3*, respectively.

For comparison purposes, the composition of our sample is sufficiently balanced between common law and civil law countries, as we can see on *table 2* (firms in civil law countries represent approximately 45.77% of the total sample and in common law countries approximately 54.23%).

Around 6.96% of the firms of the sample are from France; 5.48% from Germany; 33.32% from Japan; 21.9% from United Kingdom and 32.22% from United States.

Table 2: Sample composition by country

Country	Nº firms	%
Civil law countries		
France	324	6.96
Germany	255	5.48
Japan	1550	33.32
Total	2129	45.77
Common law countries		
UK	1019	21.90
US	1504	32.33
Total	2523	54.23
Total	4652	100

This table presents the sample composition by country in absolute value (the number of firms in each country) and in relative value (the percentage of firm in each country in relation of the total sample). The total of absolute and relative values are presented on the end of the table. The total of absolute and relative values are also presented for civil law countries (France, Germany and Japan) and for common law countries (United Kingdom and United States).

In relation to the composition of the sample by industry (*table 3*), the industries with more firms are industry 12 (other), 6 (Business equipment), 3 (Manufacturing) and 9 (Wholesale, retail and some services) with 998 firms (approximately 21.45% of the total sample), 919 firms (approximately 19.75% of the total sample), 691 firms (14.85%) and 604 firms (12.98%), respectively. Then, by descending order are the industry 10 (Healthcare, medical equipment and drugs), 1 (Consumer nondurables), 5 (Chemicals and allied products), 2 (Consumer durables), 4 (Energy) and 7 (Telephone and television transmission), with 392 firms (approximately 8.43% of the total sample), 362 firms (approximately 7.78% of the total sample), 206 firms (4.43%), 197 firms (4.23%), 187 firms (4.02%) and 96 firms (2.06%), respectively.

Table 3: Sample composition by 12 Fama and French (1997) industry classifications codes

Industry	Nº firms	%
1	362	7.78
2	197	4.23
3	691	14.85
4	187	4.02
5	206	4.43
6	919	19.75
7	96	2.06
9	604	12.98
10	392	8.43
12	998	21.45
Total	4652	100.0

This table presents the sample composition by 12 Fama and French (1997) industry classifications codes in absolute value (the number of firms in each industry) and in relative value (the percentage of firm in each industry in relation of the total sample). Fama and French (1997) divides industries into the following 12 classifications: 1. Consumer nondurables, that includes food, tobacco, textile, apparel, leather and toys companies; 2. Consumer durables, which includes car, TV's, furniture and household appliances companies; 3. Manufacturing, that includes machinery, trucks, planes, paper and printing companies; 4. Energy, which includes oil companies, gas and coal extraction and products companies; 5. Chemicals and Allied Products; 6. Business equipment, that includes computers, software and electronic equipment companies; 7. Telephone and television transmission; 8. Utilities; 9. Wholesale, retail and some services; 10. Healthcare, medical equipment and drugs; 11. Financial firms and 12. Other. The sectors 8. Utilities and 11. Financial firms are not presented on this table because we excluded them of the sample because these sectors have specific regulations. The total of absolute and relative values are presented on the end of the table.

The summary statistics of our key variables are reported on *table 4*. The statistics generally coincide with the results of related studies (Francis *et al.* 2005; Deng *et al.* 2017; He *et al.* 2017).

However, it is important to mention some results. In relation to ACCR, the values obtained are consistent with Deng *et al.* (2017) and He *et al.* (2017), except for the standard deviation (0.2352) which is bigger meaning that is more dispersion of values around the mean. DIV values are all consistent with related literature (Deng *et al.* 2017) and mean of DIV (0.6269) is higher than mean of REP (0.4573), which means that are more payments of dividends than stock repurchases. SIZE values are consistent with previous works (Francis *et al.* 2005; Deng *et al.* 2017) but standard deviation (2.1721) is slightly bigger (Deng *et al.* 2017). Relatively to REV_GROWTH the values of mean, median and standard deviation (the values of mean, median and standard deviation are 59.8444%, 4.8779% and 2971.858, respectively) are bigger than values obtained in related works (Francis *et al.* 2005; He *et al.* 2017), meaning that on average the firms of our sample have higher values for revenues growth and the values are more disperse around the mean.

Finally, the mean of ROA is negative (-0.0292) which is inconsistent with Deng *et al.* (2017) and Francis *et al.* (2005) but is supported with the results obtained by He *et al.* (2017). This negative value means that on average the firms of the sample have a negative return on assets due to a negative net income. The value of standard deviation (0.7806) of this variable is slightly higher in comparison with related studies (Deng *et al.* 2017; He *et al.* 2017).

In order to study the relationship between the variables and detect potential multicollinearity problems the correlation matrix, presented on *table 5*, was analyzed. The correlation between all variables has the expected sign. The dependent variable of our models, ACCR is negatively correlated with dividends and accruals, which is consistent with hypotheses 1 and 2. ACCR is also negatively correlated with SIZE, BM, AGE, PPE/TOTAL_ASSETS, ROA, OCCAS_DIV, REG_DIV and REG_REP. In relation to the remaining variables, REV_GROWTH, LEVERAGE, CO, NO_DIV, NO_REP and OCCAS_REP, are positively correlated with ACCR.

Generally, the correlation coefficients have low values suggesting that are no collinearity issues. The most concerning value is the highest correlation between

REG_REP and REP (0.6431), which is not a problem because the strong correlation between these variables is normal and these variables are not included in the same model.

Table 4: Summary statistics

	ACCR	DIV	REP	SIZE	BM	REV_GROWTH	AGE	LEVERAGE	PPE/TOTAL_ASSETS	ROA	CO	OCCAS_DIV	OCCAS_REP	REG_DIV	REG_REP	LAW
Mean	0.0999	0.6269	0.4573	12.8443	0.8532	59.8444	25.1090	0.5194	0.2534	-0.0292	33.3380	0.4043	0.3942	0.3579	0.3882	0.4577
Median	0.0483	1.0000	0.0000	12.8748	0.6528	4.8779	22.0000	0.4939	0.2100	0.0307	30.4400	0.0000	0.0000	0.0000	0.0000	0.0000
Std. Dev.	0.2352	0.4836	0.4982	2.1721	2.2677	2971.8580	12.5638	1.7256	0.2090	0.7806	24.1695	0.4908	0.4887	0.4794	0.4873	0.4982
Obs.	41948	56066	54134	56185	54015	51662	60476	56174	56041	56168	51187	60476	60476	60476	60476	60476

This table presents the summary statistics of our sample for the relevant variables: ACCR (measure of earnings management), DIV (dummy that takes the value 1 if the firm pay cash dividends, and 0 otherwise), REP (dummy that takes the value 1 if the firm makes stock repurchases, and 0 otherwise), SIZE (firm size), BM (Book-to-market equity ratio), REV_GROWTH (revenues growth), AGE (firm age), LEVERAGE (firm leverage ratio), PPE/TOTAL_ASSETS (long-term tangible assets), ROA (return on assets), CO (Closely-held ownership), OCCAS_DIV (dummy that takes the value 1 if the firm pay occasional dividends, and 0 otherwise), OCCAS_REP (dummy that takes the value 1 if the firm makes occasional repurchases, and 0 otherwise), REG_DIV (dummy that takes the value 1 if the firm pay regular dividends, and 0 otherwise), REG_REP (dummy that takes the value 1 if the firm makes regular repurchases, and 0 otherwise) and LAW (dummy variable that assumes the value 1 if the firms is from a civil law country and zero otherwise). The summary statistics presented are mean (mean values of the variables), median (median values of the variables), Std. Dev. (standard deviation of the variables) and Obs. (the number of observations).

Table 5: Correlation matrix

	ACCR	DIV	REP	SIZE	BM	REV_GROWTH	AGE	LEVERAGE	PPE/TOTAL_ASSETS	ROA	CO	OCCAS_DIV	OCCAS_REP	REG_DIV	REG_REP	LAW
ACCR	1.0000															
DIV	-0.2138	1.0000														
REP	-0.1302	0.2860	1.0000													
SIZE	-0.2196	0.3988	0.3463	1.0000												
BM	-0.0475	0.0683	-0.0007	0.0129	1.0000											
REV_GROWTH	0.0260	-0.0239	-0.0158	-0.0202	0.0036	1.0000										
AGE	-0.1615	0.3418	0.2459	0.4054	0.0436	-0.0199	1.0000									
LEVERAGE	0.0930	-0.0018	-0.0363	0.0893	-0.1540	-0.0062	0.0799	1.0000								
PPE/TOTAL_ASSETS	-0.1267	0.1786	0.0533	0.2330	0.0853	0.0008	0.1460	0.0863	1.0000							
ROA	-0.2394	0.1780	0.1146	0.2246	0.0512	-0.0034	0.1030	-0.3787	0.0474	1.0000						
CO	0.0106	0.0573	-0.1341	-0.3007	0.1152	-0.0005	-0.1875	-0.0106	0.0419	0.0048	1.0000					
OCCAS_DIV	-0.0250	-0.0100	-0.0813	-0.0567	0.0098	-0.0081	-0.0603	0.0871	0.0274	0.0572	0.0818	1.0000				
OCCAS_REP	0.0231	-0.0901	-0.2767	-0.1113	-0.0172	-0.0037	-0.1968	0.0148	-0.0165	0.0062	0.0520	0.1400	1.0000			
REG_DIV	-0.1584	0.5942	0.2750	0.3636	0.0632	-0.0154	0.3311	-0.0464	0.1369	0.1139	-0.0016	-0.6636	-0.1698	1.0000		
REG_REP	-0.1341	0.3009	0.6431	0.3878	0.0077	-0.0156	0.3254	-0.0418	0.0570	0.1141	-0.1578	-0.1425	-0.6784	0.3599	1.0000	
LAW	-0.1654	0.4187	0.1810	0.2057	0.1540	-0.0183	0.2158	0.0194	0.1283	0.0853	0.3258	-0.0345	-0.0883	0.3638	0.2072	1.0000

This table presents the correlation matrix of our sample for the relevant variables: ACCR (measure of earnings management), DIV (dummy that takes the value 1 if the firm pay cash dividends, and 0 otherwise), REP (dummy that takes the value 1 if the firm makes stock repurchases, and 0 otherwise), SIZE (firm size), BM (Book-to-market equity ratio), REV_GROWTH (revenues growth), AGE (firm age), LEVERAGE (firm leverage ratio), PPE/TOTAL_ASSETS (long-term tangible assets), ROA (return on assets), CO (Closely-held ownership), OCCAS_DIV (dummy that takes the value 1 if the firm pay occasional dividends, and 0 otherwise), OCCAS_REP (dummy that takes the value 1 if the firm makes occasional repurchases, and 0 otherwise), REG_DIV (dummy that takes the value 1 if the firm pay regular dividends, and 0 otherwise), REG_REP (dummy that takes the value 1 if the firm makes regular repurchases, and 0 otherwise) and LAW (dummy variable that assumes the value 1 if the firms is from a civil law country and zero otherwise).

4.2. Multivariate analysis

In this subsection, we analyze the results of the estimations of our models. First, we analyze the relation between payout policy and earnings management. Second, we do a more detailed analysis of the two forms of payout, dividends and repurchases, and of the frequency of payouts. At last, we assess the impact of the investor protection in countries in the relationship between payout policy and earnings management.

In *table 6*, we analyze the relationship between payout policy and earnings management. Column 1 focus on the relationship between dividends and earnings management. The results confirm a negative statistically significant relationship between DIV and ACCR (-0.0746). In conclusion, this result confirms that firms that pay dividends are less prone to manage earnings (hypothesis 1), which is consistent with He *et al.* (2017) results. In column 2, we introduce the firms specific control variables and there is again evidence of the negative relationship between dividends and earnings management (-0.0314), supporting the hypothesis 1.

Column 3 of *table 6* analysis the repurchases and column 4 differs from 3 because includes the firm-specific control variables. Columns 3 and 4 focus on the relationship between repurchases and earnings management and conclude for a significant negative association between them (-0.0360 in column 3 and -0.0107 in column 4). These results give support to the hypothesis 2, so firms that make repurchases are less inclined to manage earnings. He *et al.* (2017) used, in robustness tests, repurchases as an alternative form of payout policy and also find a negative sign between repurchases and earnings management.

In relation to the columns 5 and 6 of *table 6* the objective is compare repurchases and dividends in terms of capacity to resolve agency conflicts. The column 6 is more complete than column 5 because includes the control variables. The conclusion is the same in columns 5 and 6, the absolute value of the coefficient associated to DIV is bigger than the absolute value of the coefficient of REP and both coefficients are negatives and statistically significant (in column 5 the coefficient of DIV is -0.0697 and the coefficient of REP is -0.0220; in column 6 the coefficient of DIV is -0.0307 and the coefficient of REP is -0.0074). These findings mean that firms that pay dividends are less prone to manage earnings than firms that make stock repurchases, so are more effective in resolve agency conflicts, which leads to the confirmation of hypothesis 3. Skinner and Soltes

(2011) compared the impact of repurchases and dividends on earnings persistence and also found better results for firms that pay dividends than firms that make stock repurchases.

Regarding the firm-specific control variables, as expected the coefficients of the variables ACCR(-1) (0.0987 in column 2, 0.1014 in column 4 and 0.0981 in column 6), REV_GROWTH (8.22E-07 in column 2, 8.93E-07 in column 4 and 8.17E-07 in column 6) and LEVERAGE (0.0266 in column 2, 0.0279 in column 4 and 0.0262 in column 6) are positive and statistically significant. However, the coefficient of the variable REV_GROWTH is very close to zero. The signals of the coefficients of ACCR(-1) and REV_GROWTH are consistent with He *et al.* (2017) work. The coefficient of leverage supports Deng *et al.* (2017) research, so doesn't give support to other related literature with contrary results (Daniel *et al.* 2008; He *et al.* 2017).

Also consistent with related studies, the coefficients of SIZE (-0.0097 in column 2, -0.0112 in column 4 and -0.0093 in column 6), AGE (-0.0006 in columns 2, -0.0007 in column 4 and -0.0005 in column 6), ROA (-0.0437 in column 2, -0.0454 in column 4 and -0.0433 in column 6) and PPE/TOTAL_ASSETS (-0.0682 in column 2, -0.0716 in column 4 and -0.0696 in column 6) are negative and statistically significant. The coefficient of SIZE is consistent with Daniel *et al.* (2008), Deng *et al.* (2017) and He *et al.* (2017); the coefficient of AGE is consistent with Deng *et al.* (2017) and He *et al.* (2017) and the coefficients of ROA and PPE/TOTAL_ASSETS give support to He *et al.* (2017) results.

In conclusion larger firms, older firms, firms with higher profitability and long-term tangible assets are associated with lower earnings management. The positive relation between past and present earnings management is verified, meaning that is a tendency for firms engage in earnings management that is smaller or lower for each company. Regarding the coefficient of REV_GROWTH, this evidence that the magnitude of sales growth has a very small impact on the incentive to manipulate earnings. For last, firms with higher leverage ratios are associated with more earnings manipulation, meaning that the possible increase in agency conflicts more than offset the possible effect of restrictions on earnings manipulation through covenants associated to debt contracts.

The coefficients of BM and CO are not significant, meaning that, contrary to the expected based on related studies (Deng *et al.* 2017; He *et al.* 2017), the Book-to-market

equity ratio and the fraction of shares closely held by insiders and controlling shareholders have no impact on earnings management activities.

Table 6: Payout policy and earnings management

Variable	(1)	(2)	(3)	(4)	(5)	(6)
C	0.1721***	0.2745***	0.1293***	0.2788***	0.1817***	0.2734***
	46.2424	29.3320	39.2964	29.1940	46.6829	28.6155
DIV	-0.0746***	-0.0314***			-0.0697***	-0.0307***
	-27.8644	-11.5928			-24.7867	-11.0037
REP			-0.0360***	-0.0107***	-0.0220***	-0.0074***
			-14.8692	-4.6868	-8.9082	-3.2070
ACCR(-1)		0.0987***		0.1014***		0.0981***
		21.9370		22.3102		21.5450
SIZE		-0.0097***		-0.0112***		-0.0093***
		-14.8038		-17.2256		-13.7454
BM		-0.0006		-0.0003		-0.0006
		-0.7362		-0.3101		-0.6968
REV_GROWTH		8.22E-07*		8.93E-07*		8.17E-07*
		1.7516		1.8894		1.7315
AGE		-0.0006***		-0.0007***		-0.0005***
		-5.7844		-6.6364		-5.3795
LEVERAGE		0.0266***		0.0279***		0.0262***
		8.1357		8.4229		7.9108
ROA		-0.0437***		-0.0454***		-0.0433***
		-14.8749		-15.3686		-14.6405
CO		3.53E-05		8.3E-06		3.15E-05
		0.6792		-0.1556		0.5899
PPE/TOTAL_ASSETS		-0.0682***		-0.0716***		-0.0696***
		-12.4278		-12.7688		-12.4100
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.07465	0.13945	0.06262	0.13648	0.07660	0.13976
Adjusted R-squared	0.07410	0.13858	0.06204	0.13558	0.07601	0.13884
F-statistic	134.95320	160.10810	108.71220	151.96300	129.63290	151.42670
Prob. (F-statistic)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

This table present the OLS estimates of model (3) (in column 1, without firm-specific control variables and in column 2) , model (4) (in column 3, without firm-specific control variables and in column 4) and model (5) (in column 5, without firm-specific control variables and in column 6). The dependent variable of all models, $ACCR_{i,t}$, is a measure for earnings management for firm i in year t obtained from the absolute values of the residuals of the equation (1). The independent variables related to payout policy are $DIV_{i,t}$, which is a dummy variable that is equal to 1 if the firm i pays dividends in year t , and 0 otherwise and $REP_{i,t}$ that is a dummy variable that takes value 1 if a firm makes stock repurchases in year t , and 0 otherwise. The firm-specific control variables include the lagged value of dependent variable ($ACCR(-1)$), firm size ($SIZE$), the log of book-to-market equity ratio (BM), revenues growth (REV_GROWTH), firm age (AGE), firm leverage ratio ($LEVERAGE$), return on assets (ROA), Closely-held ownership (CO) and long-term tangible assets ($PPE/TOTAL_ASSETS$). All firm-specific control variables are defined on *Appendix A- Table A1*. In all models are included fixed effects for country, industry and year. Coefficient values are listed at bold and blow them are the t-statistics.

***, **, * Indicate significance at the 1%, 5% and 10% levels, respectively.

Regarding the frequency of payouts, the column 1 of *table 7* compares firms that pay dividends in a regular way with firms that pay dividends with an occasional frequency. The coefficients of REV_DIV (-0.1089) and OCCAS_DIV (-0.0866) are both significantly negatives, which reinforces hypothesis 1.

However, the absolute value of the coefficient of REV_DIV is higher than the absolute value of the coefficient of OCCAS_DIV, confirming that firms that make regular payouts are less inclined to manage earnings than firms that make occasional payouts (hypothesis 4). This result is in line with the expectation of firms that make regular payouts be more effective in reducing agency problems because these firms have a historically greater commitment with minority shareholders, which limits their opportunistic behavior. Skinner and Soltes (2011) compared the impact of regular payouts and occasional payouts on earnings persistence and also found better results for firms that make regular payouts than firms that make occasional payouts.

The column 2 of *table 7* presents a similar comparison between firms that make regular repurchases and firms that make occasional repurchases. The hypothesis 2 is also reinforced because the coefficients of REG_REP (-0.0705) and OCCAS_REP (-0.0461) are negatives and statistically significant. Regarding the hypothesis 4 is confirmed again because the absolute value of the coefficient of REG_REP is bigger than the absolute value of the coefficient of OCCAS_REP.

In relation the columns 3 and 4 of *table 7*, these four coefficients are analyzed together (REG_DIV, OCCAS_DIV, REG_REP AND OCCAS_REP). The hypotheses 1 and 2 are confirmed again because the coefficients of these four variables are significantly negatives. The hypothesis 4 is also confirmed because the absolute value of the coefficient of REG_DIV (-0.0942 in column 3 and -0.0410 in column 4) is higher than the absolute value of the coefficient of OCCAS_DIV (-0.0779 in column 3 and -0.0390 in column 4) and the absolute value of the coefficient of REG_REP (-0.0402 in column 3 and -0.0174 in column 4) is higher than the absolute value of the coefficient of OCCAS_REP (-0.0271 in column 3 and -0.0167 in column 4). Another important conclusion is the reinforce of hypothesis 3 (firms that pay dividends are less inclined to manage earnings than firms that make stock repurchases) because the absolute value of the coefficient of REG_DIV is higher than the absolute value of REG_REP and the absolute value of the coefficient of OCCAS_DIV is higher than the absolute value of the coefficient of OCCAS_REP.

The column 4 of *table 7* is different from column 3 because includes the firm specific control variables. The conclusions for these variables are similar to the results obtained on *table 6*, except for the coefficient of REV_GROWTH that is not statistically significant. In conclusion, the small positive impact of revenues growth on earnings management is not significant.

Table 7: Regular and occasional payouts and earnings management

Variable	(1)	(2)	(3)	(4)
C	0.2033***	0.1612***	0.2225***	0.2875***
	48.5508	40.9023	48.8599	30.4251
REG_DIV	-0.1089***		-0.0942***	-0.0410***
	-31.0154		-25.1502	-10.9696
OCCAS_DIV	-0.0866***		-0.0779***	-0.0390***
	-26.6796		-23.3645	-11.9248
REG_REP		-0.0705***	-0.0402***	-0.0174***
		-21.0419	-11.3404	-5.1608
OCCAS_REP		-0.0461***	-0.0271***	-0.0167***
		-14.4456	-8.3589	-5.5197
ACCR(-1)				0.0970***
				21.5946
SIZE				-0.0090*
				-13.4429
BM				-0.0004
				-0.4555
REV_GROWTH				7.41E-07
				1.5819
AGE				-0.0005***
				-5.3422
LEVERAGE				0.0287***
				8.7040
ROA				-0.0402***
				-13.6297
CO				4.06E-05
				0.7785
PPE/TOTAL_ASSETS				-0.0662***
				-12.0503
Country FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R-squared	0.07959	0.06728	0.08241	0.14177
Adjusted R-squared	0.07902	0.06671	0.08180	0.14082
F-statistic	139.41990	116.31110	134.46210	149.83840
Prob. (F-statistic)	0.00000	0.00000	0.00000	0.00000

This table presents the OLS estimates of model 6 (in column 1, 2 and 3 without firm-specific control variables and in column 4 the complete model). The dependent variable of all models, $ACCR_{i,t}$, is a measure for earnings management for firm i in year t obtained from the absolute values of the residuals of the equation (1). The independent variables related to payout policy are the dummy variables **REG_DIV**, which takes the value 1 if the firm pays regular dividends, and 0 otherwise; **OCCAS_DIV**, that takes the value 1 if the firm pays occasional dividends, and 0 otherwise; **REG_REP**, which takes the value 1 if the firm makes regular repurchases, and 0 otherwise and **OCCAS_REP**, that takes the value 1 if the firm makes occasional repurchases, and 0 otherwise. The firm-specific control variables include the lagged value of dependent variable (**ACCR(-1)**), firm size (**SIZE**), the log of book-to-market equity ratio (**BM**), revenues growth (**REV_GROWTH**), firm age (**AGE**), firm leverage ratio (**LEVERAGE**), return on assets (**ROA**), Closely-held ownership (**CO**) and long-term tangible assets (**PPE/TOTAL_ASSETS**). All firm-specific control variables are defined on *Appendix A- Table A1*. In all models are included fixed effects for country, industry and year. Coefficient values are listed at bold and below them are the t-statistics.

***, **, * Indicate significance at the 1%, 5% and 10% levels, respectively.

The impact of the degree of investor protection of countries is studied on *table 8*. The column 1 and 2 focus on the impact of weaker or strong investor protection in the countries in the relationship between DIV and ACCR. The absolute value of coefficient of LAW*DIV (-0.0933 in column 1 and -0.0451 in column 2) is bigger than the absolute value of the coefficient of (1-LAW)*DIV (-0.0737 in column 1 and -0.0297). The values of these coefficients mean that there is a negative relationship between firms that pay dividends and earnings management that is more pronounced in civil law countries, which generally are countries with weaker investor protection, thus confirming hypothesis 5. This result is consistent with He *et al.* (2017) results.

The results of columns 3 and 4 of *table 8* confirm that firms that pay dividends are less inclined to engage in earnings manipulation activities than firms that make stock repurchases, especially in countries with weaker investor protection (hypothesis 6), which is consistent with He *et al.* (2017) findings. This result is suggested because the value of coefficient LAW*DIV (-0.0949 in column 3 and -0.0461 in column 4) is statistically significant and negative but the coefficient of LAW*REP is insignificant (-0.0151 in column 3 and significant but insignificant in column 4, which is the column with the complete model), this suggest that in civil law countries firms that pay dividends are less prone to manage earnings but stock repurchases has no significant impact on earnings management. In contrary, the coefficients of (1-LAW)*REP (-0.0408 in column 3 and -0.0129 in column 4) and (1-LAW)*DIV (-0.0631 in column 3 and -0.0279 in column 4) are both negatives and statistically significant and the coefficient of (1-LAW)*DIV is higher in absolute value than the coefficient of (1-LAW)*REP , which suggest than in common law countries both the payment of dividends and stock repurchases are associated with the reduction of earnings manipulation activities but firms that pay dividends are less prone to manage earnings than firms that make repurchases.

The coefficients of the firm-specific control variables that are included in column 2 and 4 of *table 8* give us the same conclusions that in *table 6*.

Table 8: Investor protection and earnings management

Variables	(1)	(2)	(3)	(4)
C	0.2015***	0.2997***	0.2114***	0.2958***
	70.6314	35.6740	71.1269	34.4859
LAW*DIV	-0.0933***	-0.0451***	-0.0949***	-0.0461***
	-34.7870	-16.0257	-28.6277	-13.7030
LAW*REP			-0.0151***	-0.0026
			-4.6278	-0.8797
(1-LAW)*DIV	-0.0737***	-0.0297***	-0.0631***	-0.0279***
	-24.0029	-9.8547	-19.2500	-8.9060
(1-LAW)*REP			-0.0408***	-0.0129***
			-12.1619	-3.9820
ACCR(-1)		0.1004***		0.0989***
		22.3047		21.7239
SIZE		-0.0099***		-0.0094***
		-16.0880		-14.4175
BM		-0.0010		-0.0010
		-1.2352		-1.1687
REV_GROWTH		9.09E-07*		8.32E-07*
		1.9283		1.7610
AGE		-0.0006***		-0.0006***
		-6.6832		-6.0226
LEVERAGE		0.0242***		0.0244***
		7.4058		7.3908
ROA		-0.0434***		-0.0435***
		-14.7256		-14.6688
CO		-7.70E-05		-8.16E-05
		-1.5607		-1.5884
PPE/TOTAL_ASSETS		-0.0677***		-0.0690***
		-12.4131		-12.4167
Country FE	No	No	No	No
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R-squared	0.06988	0.13203	0.07385	0.13858
Adjusted R-squared	0.06939	0.13150	0.07330	0.13771
F-statistic	142.83040	248.08210	134.99190	159.32340
Prob. (F-statistic)	0.00000	0.00000	0.00000	0.00000

This table present the OLS estimates of model (7) (in column 1, without firm-specific control variables and in column 2) and model (8) (in column 3, without firm-specific control variables and in column 4). The dependent variable of all models, $ACCR_{i,t}$, is a measure for earnings management for firm i in year $t+1$ obtained from the absolute values of the residuals of the equation (1). The key independent variables are the interaction between $LAW_{i,t}$ and $DIV_{i,t}$ ($LAW_{i,t}*DIV_{i,t}$), the interaction between $LAW_{i,t}$ and $REP_{i,t}$ ($LAW_{i,t}*REP_{i,t}$), the interaction between $(1-LAW_{i,t})$ and $DIV_{i,t}$ ($(1-LAW_{i,t})*DIV_{i,t}$) and the interaction between $(1-LAW_{i,t})$ and $REP_{i,t}$ ($(1-LAW_{i,t})*REP_{i,t}$), where $DIV_{i,t}$ is a dummy variable that is equal to 1 if the firm i pays dividends in year t , and 0 otherwise, $REP_{i,t}$ that is a dummy variable that takes value 1 if a firm makes stock repurchases in year t , and 0 otherwise and $LAW_{i,t}$ is a dummy variable that assumes the value 1 if the firms is from a civil law country and zero otherwise. The firm-specific control variables include the lagged value of dependent variable ($ACCR(-1)$), firm size ($SIZE$), the log of book-to-market equity ratio (BM), revenues growth (REV_GROWTH), firm age (AGE), firm leverage ratio ($LEVERAGE$), return on assets (ROA), Closely-held ownership (CO) and long-term tangible assets ($PPE/TOTAL_ASSETS$). All firm-specific control variables are defined on *Appendix A- Table A1*. In all models are included fixed effects for industry and year. Coefficient values are listed at bold and blow theme are the t-statistics.

***, **, * Indicate significance at the 1%, 5% and 10% levels, respectively.

4.3. Robustness tests: Alternative measures of payout policy

In order to reinforce our key hypothesis (hypothesis 1), we replace the variable DIV for two alternative forms of payout policy, dividend payout ratio and dividend-price ratio (Daniel *et al.* 2008; Deng *et al.* 2017; He *et al.* 2017).

In columns 1 and 2 of *table 9* we find a statistically negative association between dividend-payout ratio and earnings management (not statistically significant in column 1 but significant in column 2 (-0.3089), which is the column with the complete model) and in columns 3 and 4 we find a statistically negative association between dividend-price ratio and earnings management (-0.009 in column 3 and -0.004 in column 4), reinforcing the hypothesis 1.

The results of the firm-specific variables, columns 2 and 4, are also confirmed.

Table 9: Alternative measures of payout policy

Variable	(1)	(2)	(3)	(4)
C	0,1071***	0,2811***	0,120***	0,277***
	36,8555	29,8120	42,882	29,675
DIV_PAYOUT	-0,0465	-0,3089**		
	-0,2888	-1,9791		
DIV_PRICE			-0,009***	-0,004***
			-15,943	-8,176
ACCR(-1)		0,1024***		0,101***
		22,7223		22,462
SIZE		-0,0119***		-0,011***
		-18,8976		-17,972
BM		-0,0002		9,32E-05
		-0,2789		0,114
REV_GROWTH		9,03E-07*		8,60E-07*
		1,9187		1,830
AGE		-0,0007***		-0,001***
		-7,1337		-6,517
LEVERAGE		0,0293***		0,029***
		8,8886		8,782
ROA		-0,0454***		-0,045***
		-15,4084		-15,356
CO		7,52E-06		8,09E-06
		0,1437		0,156
PPE/TOTAL_ASSETS		-0,0693***		-0,069***
		-12,5475		-12,664
Country FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
R-squared	0,058161	0,135497	0,06714	0,13767
Adjusted R-squared	0,05759	0,134615	0,06657	0,13680
F-statistic	101,9777	153,5382	118,46990	157,99650
Prob. (F-statistic)	0,00000	0,00000	0,00000	0,00000

This table present the OLS estimates of a modified model (3) replacing the variable $DIV_{i,t}$ by two alternatives measures, DIV_PAYOUT (in column 1, without firm-specific control variables and in column 2) and DIV_PRICE (in column 3, without firm-specific control variables and in column 4). The variable DIV_PAYOUT is defined as dividends per share scaled by net income and DIV_PRICE is defined as dividends per share scaled by stock price. The dependent variable of all models, $ACCR_{i,t}$, is a measure for earnings management for firm i in year t obtained from the absolute values of the residuals of the equation (1). The firm-specific control variables include the lagged value of dependent variable ($ACCR(-1)$), firm size ($SIZE$), the log of book-to-market equity ratio (BM), revenues growth (REV_GROWTH), firm age (AGE), firm leverage ratio ($LEVERAGE$), return on assets (ROA), Closely-held ownership (CO) and long-term tangible assets ($PPE/TOTAL_ASSETS$). All firm-specific control variables are defined on *Appendix A- Table A1*. In all models are included fixed effects for country, industry and year. Coefficient values are listed at bold and blow theme are the t-statistics.

***, **, * Indicate significance at the 1%, 5% and 10% levels, respectively.

5. Conclusions

This dissertation focuses on the relationship between payout policy and earnings management. The relationship between dividends and earnings management has been widely studied by related literature (Daniel *et al.* 2008; He *et al.* 2017). However, the crescent importance of stock repurchases on payout structure over the last years (Skinner 2008; von Eije and Megginson 2008; Haw *et al.* 2011; Fatemi and Bildik 2012) has given a new highlight on this theme, therefore we also analyzed the relationship between stock repurchases and earnings management. Following that, we attempt to make a detailed comparison of the impact of these two forms of payout. Additionally, we compare the payout structure of the companies based on the frequency of payments and the differences in the relationship between earnings management and the two forms of payout in civil law countries and in common law countries.

For the referred goals, we use a data sample of firms from the five world's leading industrialized countries (France, Germany, Japan, United Kingdom and United States) for the recent period of 2005-2015. We measure earnings management based on a modified Jones (1991) abnormal accruals model and estimate all regressions that analyze the relationship between earnings management and the other variables using OLS.

As expected, we found a negative relationship between dividends and earnings management and between repurchases and earnings management, however this association is stronger to firms that pay dividends than firms that make stock repurchases. This suggest that dividends are more effective in resolve agency conflicts than stock repurchases. The negative relationship between dividends and earnings management is confirmed in all regressions estimated and is reinforced in robustness tests when two alternative measures of dividend policy are employed.

In a more detailed analysis, we divide the two forms of payout (repurchases and dividends) based on the frequency and found that firms that make regular payouts are less inclined to manage earnings than firms that make occasional payouts. This result confirms that these firms have a historically greater commitment with minority shareholders, which limits their opportunistic behavior.

In relation to the study of the differences between civil law countries and common law countries, we found that the negative relationship between firms that pay dividends

is more pronounced in civil law countries, because these are generally countries with weaker investor protection so are more susceptible to agency conflicts (La Porta *et al.* 2000). In relation to stock repurchases, we find that in civil law countries have no significant impact and in common law countries confirms that firms that pay dividends are less prone to manage earnings than firms that make stock repurchases.

We also found that larger firms are associated with lower earnings management, which is consistent with larger firms having generally more audit quality and reputation in the market. Older firms also are associated with lower earnings management, suggesting that generally these firms have already resolved or reduced the agency conflicts. Additionally, we also found that firms with higher profitability and long-term tangible assets are associated with lower earnings management.

In relation to the incentives to earnings manipulation we found the past earnings management and higher leverage ratios. These findings suggest a tendency for engage in earnings management activities that may be smaller or larger for each company and that the possible increase in agency conflicts with higher leverage ratio more than offset the possible effect of restrictions on earnings manipulation through covenants associated to debt contracts.

Contrary to the expected based on related studies (Deng *et al.* 2017; He *et al.* 2017), we conclude that the growth of revenues, the book-to-market equity ratio and the fraction of shares closely held by insiders and controlling shareholders have no impact on earnings management activities.

These findings are important for all users of information because the manipulation of earnings can have a huge impact on real economy and financial markets and this dissertation gives evidence on the determinants of earnings management, especially the repurchases and dividends. These results are also helpful on the payout structure choice because result from a detailed comparison between repurchases and dividends in relation to the effectiveness on reduce agency conflicts and the impact on earnings management.

The main limitation of our study is that we do not extend the analysis of investor protection to other measures besides the legal tradition of the country.

This dissertation extends related studies because use a different sample of countries in a more recent period to make a more detailed comparison between repurchases and

dividends. This theme still has many possible developments. First, the detailed comparison of repurchases and dividends can be extended to the impact in other measures like earnings persistence, earnings quality and earnings informativeness. Second, a sample with more countries could allow a deeper analysis of different measures of investor protection or a comparison between developed and emerging countries. Third, study the impact of the mandatory adoption of IFRS in earnings management and compare European countries with other countries.

Appendix A. Variable definitions

Table A. 1: Firm- specific control variables

Variable	Definition	Expected sign
ACCR(-1)	Lagged abnormal accruals, measured as the lagged value of abnormal accruals obtained from the discretionary accruals model.	+
SIZE	Firm size that is valuated through the natural logarithm of total assets.	-
BM	Log of book-to-market equity ratio, where book-to-market equity ratio = (book value of equity/market value of equity) and book value of equity is measured as the difference between total assets and total liabilities.	-
REV_GROWTH	Revenues growth is measured as the sales or revenues in year t less sales or revenues in year t-1 scaled by sales or revenues in year t-1.	+
AGE	Firm age is measured as the number of years since a firm is included on Datastream.	-
LEVERAGE	Leverage is calculated as total liabilities/ total assets.	+/-
ROA	Return on assets, which is calculated as net income before extra items/preferred dividends scaled by total assets.	-
CO	Closely-held ownership. This variable represents the fraction of shares closely held by insiders and controlling shareholders.	+
PPE/TOTAL_ASSETS	Net property, plant and equipment scaled by total assets.	-

This table presents the definition of control variables and the expected signs according to the related literature as described on section 3.2.5.

References

- Ball, R., Shivakumar, L., 2006. The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research* 44, 207-242
- Bhattacharya, S., 1979. IMPERFECT INFORMATION, DIVIDEND POLICY, AND THE BIRD IN THE HAND FALLACY. *Bell Journal of Economics* 10, 259-270
- Bhattacharya, S., 1980. Nondissipative Signaling Structures and Dividend Policy. p. 1. John Wiley & Sons
- Daniel, N.D., Denis, D.J., Naveen, L., 2008. Do firms manage earnings to meet dividend thresholds? *Journal of Accounting & Economics* 45, 2-26
- Dechow, P.M., Dichev, I.D., 2002. The quality of accruals and earnings: The role of accrual estimation errors. *Accounting Review* 77, 35-59
- Dechow, P.M., Sloan, R.G., Sweeney, A.P., 1995. DETECTING EARNINGS MANAGEMENT. *Accounting Review* 70, 193-225
- Defond, M.L., Jiambalvo, J., 1994. DEBT COVENANT VIOLATION AND MANIPULATION OF ACCRUALS. *Journal of Accounting & Economics* 17, 145-176
- Deng, L., Li, S., Liao, M., 2017. Dividends and earnings quality: Evidence from China. *International Review of Economics & Finance* 48, 255-268
- Fama, E.F., French, K.R., 1997. Industry costs of equity. *Journal of Financial Economics* 43, 153-193
- Fatemi, A., Bildik, R., 2012. Yes, dividends are disappearing: Worldwide evidence. *Journal of Banking & Finance* 36, 662-677
- Francis, J., LaFond, R., Olsson, P., Schipper, K., 2005. The market pricing of accruals quality. *Journal of Accounting & Economics* 39, 295-327
- Grullon, G., Michaely, R., 2002. Dividends, share repurchases, and the substitution hypothesis. *Journal of Finance* 57, 1649-1684
- Haw, I.-M., Ho, S.S.M., Hu, B., Zhang, X., 2011. The contribution of stock repurchases to the value of the firm and cash holdings around the world. 17, 152
- He, W., Ng, L., Zaiats, N., Zhang, B., 2017. Dividend policy and earnings management across countries. *Journal of Corporate Finance* 42, 267-286
- Jones, J.J., 1991. EARNINGS MANAGEMENT DURING IMPORT RELIEF INVESTIGATIONS. *Journal of Accounting Research* 29, 193-228
- Kothari, S.P., Leone, A.J., Wasley, C.E., 2005. Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39, 163-197
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 2000. Agency problems and dividend policies around the world. *Journal of Finance* 55, 1-33

- Li, L., Kuo, C.-S., 2017. CEO equity compensation and earnings management: The role of growth opportunities. *Finance Research Letters* 20, 289-295
- Miller, M.H., Modigliani, F., 1961. DIVIDEND POLICY, GROWTH, AND THE VALUATION OF SHARES. *Journal of Business* 34, 411-433
- Miller, M.H., Rock, K., 1985. DIVIDEND POLICY UNDER ASYMMETRIC INFORMATION. *Journal of Finance* 40, 1031-1051
- Pinkowitz, L.E.E., Stulz, R.E.N., Williamson, R., 2006. Does the Contribution of Corporate Cash Holdings and Dividends to Firm Value Depend on Governance? A Cross-country Analysis. *Journal of Finance* 61, 2725
- Porta, R.L., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W., 1998. *Law and Finance*. p. 1113. The University of Chicago Press
- Skinner, D.J., 2008. The evolving relation between earnings, dividends, and stock repurchases. *Journal of Financial Economics* 87, 582-609
- Skinner, D.J., Soltes, E., 2011. What do dividends tell us about earnings quality? *Review of Accounting Studies* 16, 1-28
- Smith, C.W., Watts, R.L., 1992. THE INVESTMENT OPPORTUNITY SET AND CORPORATE FINANCING, DIVIDEND, AND COMPENSATION POLICIES. *Journal of Financial Economics* 32, 263-292
- Teoh, S.H., Welch, I., Wong, T.J., 1998a. Earnings management and the long-run market performance of initial public offerings. *Journal of Finance* 53, 1935-1974
- Teoh, S.H., Welch, I., Wong, T.J., 1998b. Earnings management and the underperformance of seasoned equity offerings. *Journal of Financial Economics* 50, 63-99
- von Eije, H., Megginson, W.L., 2008. Dividends and share repurchases in the European Union. *Journal of Financial Economics* 89, 347-374