Abnormal Retained Earnings Around The World

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♠ The views stated by the authors are their own.

Abstract

Using a firm-level survey database covering 50 countries we evaluate firms´ abnormal retained earnings. The results of our work show that the trends of cash holdings and retained earnings are independent. The results of our work indicate that small firms retain less earnings. Such is a problem once a large percentage of firms around the world are small. On the hand, we find that abnormal retained earnings decreased after 2008 financial crisis. It seems that investors are more risk averse and prefer bird-on-hands (cash dividends). Our result also establish many plausible relationships among retained earnings, agency problems and financial constraints.

JEL classification: G32; G38

Keywords: Abnormal retained earnings; Financing choices; Institutional environment; Small firms.

1. Introduction

The modern debate about capital structure and dividend policy theory has nearly 60 years old. In relation to capital structure theory, until the 80s decade, the focus of the analysis centered on topics related to the tax shield, together with the bankruptcy and agency costs and with the problems of information asymmetry, creating two currents, the trade off theory and the pecking order theory. In the last thirty years the empirical adherence of the two theories has been discussed for the financing of companies, with different results (Frank and Goyal (2005) and Shyam-Sunder and Myers (1999)). At the same time, during the last twenty years, while researchers tried to evaluate the role of both theories with the aid of the companies features, they were equally analysing the institutional factors that could influence the financing of the companies. The legal origin (civil or common), the rule of law, the perception of corruption, the protection of the rights of the shareholders and creditors, the financial architecture of the country (banking or capital market based), among other aspects (Alves and Ferreira (2011), Alves and Francisco (2015), Booth et al (2001), Demirguc-Kunt and Maksimovic (1996, 1998, 1999), Giannetti (2003), De Jong et al (2008), Fan et al (2012) and Öztekin (2015)) were now a very important topics on the firms´ capital structure analysis.

In relation to dividend policy the research produced by Lintner (1956) was a striking point concerning the referred issue. He defended that dividends move consistently towards target payouts. According to his results companies tend to set long-run target dividends-to-earnings ratios according to the amount of positive net-present-value (NPV) projects they have available and earnings increases are not sustainable. As a result, dividend policy is not changed until managers can see that new earnings levels are sustainable. The research on dividend policy also focused on the discussion between bird-in-hands (cash dividends) *versus* birds-on-the bush (capital gains). According to defenders of bird-in-hands the value of firms increases with the delivery of high dividends (Lintner (1956), Gordon (1959) and Walter (1963)). Miller and Modigliani (1961), by its turn, illustrated that under certain assumptions, dividends

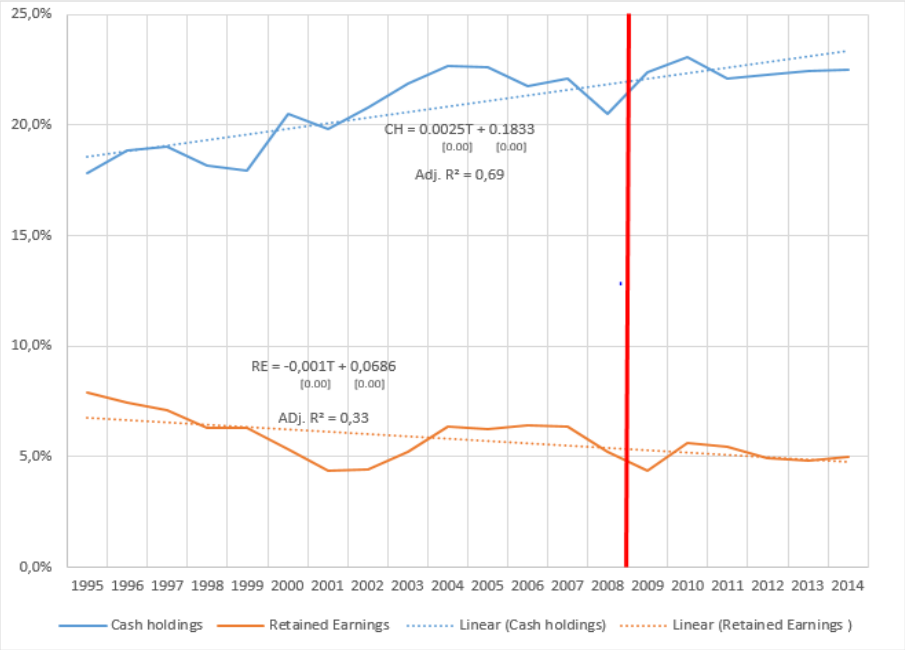
were irrelevant and had no influence on a firm´s share value. More recently, Bhattacharya (1979), John and Williams (1985) and Miller and Rock (1985) focused their research in a new theory, designated by the signalling theory. They showed that, in a world of asymmetric information, better informed insiders use the dividend policy as a signal about their firm's future prospect to less informed outsiders, and a dividend increase signals an improvement on firm's performance, contrarily to a decrease. In fact, a dividend increase (decrease) should be followed by an improvement (reduction) in a firm's profitability, earnings and growth. Moreover, there should be a positive relationship between dividend changes and subsequent share price reaction.

Recently, corporate finance also focused on another important topic related to financing decisions issue, the cash holding decisions (Opler *et al* (1999) Dittmar *et al* (2003) and Ferreira and Vilela (2004)). According to their results cash holdings decisions can be explained by the trade off theory, the pecking order theory and the free cash flow theory of Jensen (1986). In fact, apparently, the purposes of retained earnings can be similar to corporate cash holdings and both can be explained by trade off theory, i. e., to reduce the cost of financial distress and to minimise the cost of external funds. The pecking order theory can also support both topics. It postulates that funds internally generated are less costly, contrarilry to risky debt and particularly equity, the most expensive source of financing. The free cash flow theory of Jensen (1986) can also influence abnormal retained earnings and cash holdings once the excess of cash can be used by managers in their own interests, but not in the interests of shareholders. Independently of what is the theory that explain the best either cash holdings, or retained earnings, our results show a large difference between the impact of retained earnings and cash holdings on firms´ balancesheet. The weight of cash holgings on balancesheet is much higher (see figue 1), either before or after 2008 financial crisis. Our results show different trends for cash holdings and retained earnings. The annual average of retained earnings – obtained using the data of all available firms – was 6.1% in the period 1995-2007, comparing with 5% in the period 2008-2014. Cash holdings, by its turn, presented respectively 20.3% and 22.5% for both periods. These last results confirm the research that concludes the positive impact of financial crisis

on firms´ cash holdings (Song and Lee (2012) and Lian *et al* (2011)). They are also related with the findings of Graham and Harvey (2001), i. e., CFOs are continually trying to find out financing sources that allow firms to have financial flexibility in face of credit constraints and capital market devaluations, and with the precautionary motive to hold cash, defended by Keynes (1936), in order to hedge against future cash shortfall. Our results, showed that the financial flexibility in face of credit constraints or capital market devaluations (financial crisis) is solved through the usage of cash holdings instead of using retained earnings.

Thus, there are several reasons to study the retained earnings, namely in comparison to cash holdings: first, both variables could have the same trend in order to respond to some financing needs. Our results, does not confirm such hypothesis; second, why firms reduced the retained earnings after the 2008 financial crisis once it is is the cheapest source of corporate financing; third, what is the source of finance to attain the precautionary motive? Our results show that the retain earnings does not respond to such need, contrarily to cash holdings; fourth, once investors prefer bird-in-hands, what are the alternatives to the cheapest source of financing?

Figure 1 – Retained Earnings *versus* Cash Holdings



Note: The calculations were made considering a sample of 336.318 observations, 40.917 firms and 50 countries.

The main goal of this research is to examine which firms (including countries and financial infrastructures) presented higher abnormal retained earnings in the period from 1995 to 2014 and what explains such behaviour. For that purpose we use a panel of 336.318 observations relatively to 40.917 firms from 50 countries.

In this research we find that the cash holdings and retained earnings present independent trends. Cash holdings are strongly motivated by the precautionary motive. Retained earnings, by its turn, are related with: capital structure once it is the cheapest source of financing; dividend policy once it influence the dividend pay out and the expected dividend growth rate, within other aspects; agency costs, once it seems they can be used to align the interests of different stakeholders. For example, the impact of banking development on abnormal retained earnings is not consensual. While the impact of developed capital markets and common law based markets on abnotrmal retained earnings is positive, the contrary occurs

for emerging capital markets, civil law based countries and the USA. Probabably in the case of developed capital markets and common law based countries the management intend to align the interests of creditholders with shareholders. In the remaining cases the decrease on asymmetric information between banks and firms can be an explanation for the result; and with financial constraints once we found a negative impact of capital market development on abnormal retained earnings, with statistical significance, on developed capital markets and the opposite on civil law based countries and the USA. In relation to developed capital markets such can be a result of less restrictions on corporate financing and the investors are searching dividends. In the case of civil law based countries the positive signal can be attribute to the higher financial constraints imposed by infraestructures and probably as a result of investors prefer to retain earnings in order to obtain future market revaluations.

The paper is organized as follows. Section 2 describes the literature review, the methodology and the data. Section 3 details the main results. Section 4 presents the conclusion.

2. Literature review, methodology and data

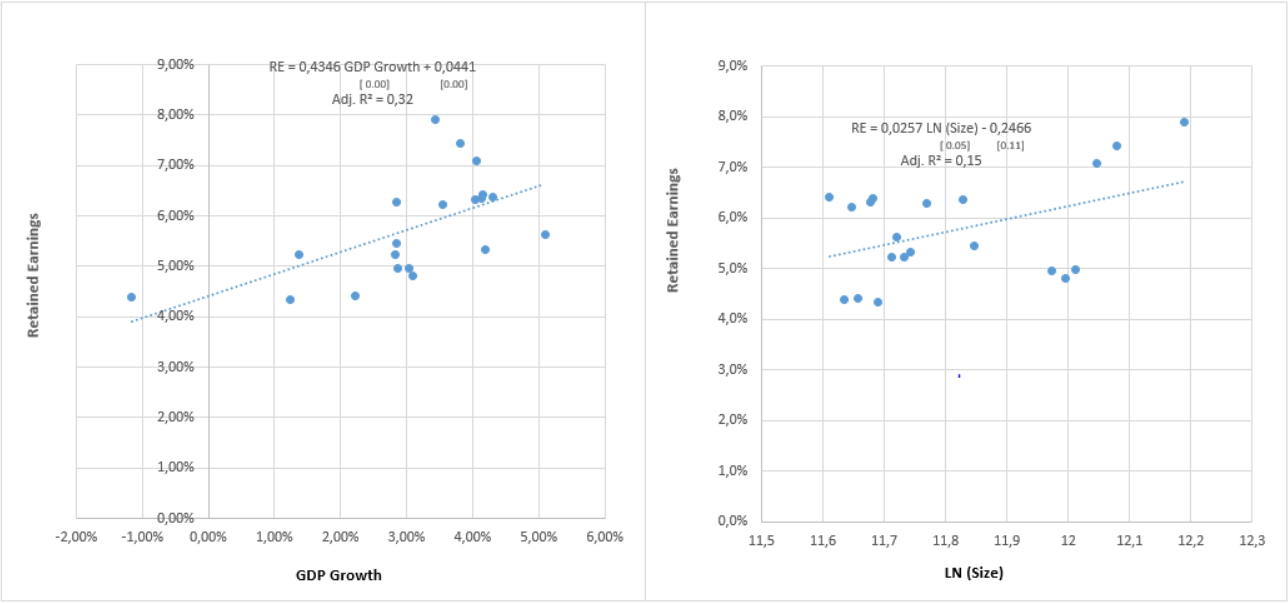
This section presents a literature review about the variables that we consider to have power to explain the retained earnings: industry risk, divididend dummy, debt to assets, size, market-to-book, crisis dummy, capital market development, banking development and GDP growth. This is an effort that includes different debates on corporate finance, namely financing choices, cash holdings, financing constraints, dividend policy and corporate investment, among others. The variables used as determinants of retained earnings reflect different financing choices perspectives (pecking order theory, trade off theory, agency theory and financial flexibility theory). Following, we introduce the methodology to calculate the abnormal retained earnings and the hypothesis formulated. In the end of this section data is presented.

2.1.Literature review

We use different firm-variables as determinants of retained earnings. A firm that currently does not pay dividends raise their funds on capital markets at higher cost, contrarily to a firm that often pays dividends. But moreover, the dividends payment may help to reduce the tradicional agency problem between managers and shareholders by reducing the amount of cash disposable by executives in their own interest (Jensen (1986)). Thus, a negative relationship between dividend payments and retained earnings is expected. Moreover, the defenders of bird-in-hands will prefer to have dividends instead of capital gains. Moreover, this relationship reflect the signalling theory whose defenders say that a dividend increase (decrease) should be followed by an improvement (reduction) in a firm's profitability, earnings and growth. On the other hand, a firm that increases easily their leverage present lower problems on matter of information asymmetry (Myers (1984)) and consequently raise money at a lower cost. On the other hand, it is expected that such firm benefit of high tax shield in comparison with financial stress costs. Thus, an expected negative relationship between leverage and retained earnings is also expected. Concerning to industry risk, a firm that works on a sector based on higher volatility of earnings before interest and taxes is riskier but expectably more profitable. The rule is to issue safe securities. Internal funds are better than external funds and only, as a final resort, should a firm issue stock. In this case, it is expectable the use of retained earnings by firms, exploring the possibility of having the cheapest funding source. It is also generally accepted that larger firms present more diversified portfolios and lower probability of being in financial distress (Warner (1977) and Rajan and Zingales (1995)), encorouging large firms to hold less retained earnings. But moreover, some financial literature has concluded that small firms present higher financial constraints and consequently use less external finance (Beck et al (2005, 2008) and Audretsch and Elston (2002)). However, a firm retain more earnings to reinvest in a current and future projects only

if it is well succeeded (MacAnBhaird and Lucey (2010)) and we know that young firms grow faster but also fail at higher rates (Haltiwanger et al (2013) and Thornhill and Amit (2003)).

Figure 2 – Retained Earnings *versus* economic growth *versus* Size – average from 1995 to 2014



Note: The calculations were made considering a sample of 336.318 observations, 40,917 firms and 50 countries.

According to Myers (1977), firms with more assets in place should more easily be financed through debt than firms with growth opportunities, whose valuation depends on intangible assets and expected returns, are subject to high financial distress costs and their intangible assets have no value in the event of bankruptcy. Under these conditions, firms avoid to issue equity because much of the value created by investment would be used to offset the creditors' position (underinvestment problem). On the other hand, firms with growth opportunities, with less collateral assets, experience more problems when they are in the presence of risky projects, because creditors see that as a way to expropriate wealth from themselves (the asset substitution problem of Jensen and Meckling (1976)). In face of these observations we expect a positive relationship betwwen retained earnings and firm´ s growth opportunities.

Diverse recent research evaluated the impact of recent financial crises on firms´ capital structure. In general, the results show that debt maturity and firm leverage was reduced after a financial crisis (Voutsinas and Werner (2011), Akbar *et al* (2012) and Demirguc-Kunt *et al* (2015)). Firms substituted long term debt by short term debt, reacting to the rise of uncertainty and risk. The term premium requested by lenders increased during the crisis which made short term debt more attractive than long term debt from their point of view (Gurkaynak and Wright (2012) and Dick et al (2013)). Facing financial constraints, with barriers to access to the capital markets it is predictable that firms hold more cash than expected. In fact in the beginning of the century, Graham and Harvey (2001) introduced a new debate about financing choices that can help us to fundament the hypothesis about the relationship between abnormal retained earnings and financial crisis, the financial flexibility: an impressive number of CFO´s declared that their financial decisions are based in response to uncertainty contingencies or a firm's ability to access financing at a low cost and respond to unexpected changes in the firm's cash flows or investment opportunities in a timely manner. In fact, Campello et al (2010) and Dunchin et al (2010) showed that during the financial crisis, firms generally were more financially constrained. In reality, shareholders towards an environment of financial crisis firms can prefer to have immediate dividends instead of future capital gains, and to hold or increase cash. It is possible that we find ount a positive relationship between crisis and cash holdings for precautionary motive, and a negative relationship between retained earnings and financial crisis because investors prefer bird-in-hands. Financial literature shows how important the legal system is for financial development (La Porta et al (1998, 1999) and Demirguc-Kunt and Maksimovic (1998)) and how firms operating in countries where financial claimants are more protected (common-law based countries) tend to have capital structures with more equity and long-term debt (Demirguc-Kunt and Maksimovic (1999) and Fan et al (2012)) and probably need to retain less earnings, given the opportunities to obtain external funds. Thus, a negative relationship between capital market development and retained earnings seems to exist. Moreover, it is possible for firms located in developed capital markets, where shareholders are well protected, to pay out their earnings because they easily access

to capital markets (La Porta et al (2000) and it enables minority shareholders to extract dividend payments from corporate insiders (vd. Shleifer and Vishny (1997) and Dyck and Zingales (2004)). In relation to banking development we expect a positive relationship between retained earnings and such variable. In fact, banks located in a well developed industries will align the interests of shareholders and creditholders retaining earnings. Otherwise, shareholders could expropriate wealth from creditholders (vd. La Porta et al (1998, 2000)). Firms always need cash to fund ongoing operations, particularly when economies are growing. Probably, in face of financial needs, they need to raise funds to finance investments using simultaneously internal and external funds even if this means giving up a degree of control. Thus, the more economy grows, the more earnings are retained by firms and the more firms hold cash in order to finance their activities. In fact, if an economiy is growing the expected dividend growth rate also grows and such only it is possible increasing the firms´ return on equity and reducing the dividend pay out ratio.

2.2.Methodology and hypothesis

Basically to evaluate the recent trends on retained earnings we follow two steps. First, we present the results of some regressions of cash holdings and retained earnings, using the same independent variables (capital market develpement, banking development, GDP growth, Industry risk, dividend dummy, debt to assets, size, market-to-book, and financial crisis dummy). Fundamentally, we intend to evaluate if both variables are explained by the same variables and if both variables result from management´s precautionary motive. The regressions are based on a pooled cross section (with country, sector and year dummies) and a panel data with fixed effects (with year dummies). The results of Hausman tests confirm that the parameters obtained using the fixed effexts model are consistent and efficient. In the second step we evaluate the determinants of abnormal retained earnings, based on the approach that we will present

below. In this analysis we divide also the sample in sub samples (emerging capital markets, developed capital markets, civil law based capital markets, common law based countries and the USA).

Retained earnings are defined as net income before preferred dividends plus depreciation minus common/preferred redeemed, retired, converted, and others and cash dividends paid divided by total assets. Cash holdings, by its turn, is cash dividends paid divided by total assets.

Abnormal retained earnings are obtained based on the methodology employed by Brown and Warner (1985) and Barber and Lyon (1996). Basically firms´ abnormal retained earnings compares realized retained earnings with its expected value. The expected retained earnings is the firms´ annual average retained earnings by sector. The sample is divided considering the super sectors from industrial classification benchmark (ICB), that is, 16 sectors. By joining firms from the same sector but located in different countries we intended to build a variable that properly reflected the global systematic risk.

The expected retained earnings of firm i in year t, is the firms´ average retained earnings in year t from the sector j where firm i operates:

$$E(RE_{it}) = RE_{jt}$$

The abnormal retained earnings of firm i in year t, ARE_{it}, is realized retained earnings RE_{it}, less expected retained earnings, $E(RE_{jt})$:

$$ARE_{it} = RE_{it} - E(RE_{jt})$$

To test the null hypothesis, in which average abnormal retained earnings is equal for a sample n, we employ a parametric test statistic:

$$t = \frac{\overline{ARE}}{S'(ARE_{it})/\sqrt{n}}$$

where $\overline{ARE}$ is the firms´ average abnormal retained earnings by country and $S'(ARE_{it})$ is the cross-sectional sample standard deviation of abnormal retained earnings for a sample of n firms from a specific country.

Following we intend to identify the determinants of $\overline{ARE}$ using the independent variables and the models referred previously, taking into account the following hypotheses:

H1: Firms raise more abnormal retained earnings after the financial crises.

H2: Firms present less abnormal retained earnings after capital market development and banking development

H3: Firms present more abnormal retained earnings after economic growth.

2.3.Data

The data extracted from Worldscope include firms from 50 countries: Argentina, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Denmark, Egypt, Finland, France, Germany, Greece, Hong Kong, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kuwait, Malaysia, Mexico, the Netherlands, New Zealand, Norway, Oman, Pakistan, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Saudi Arabia, Singapore, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, the UK, the US, and Vietnam.

The sample is diversified with 40.917 firms and 336.318 observations, covering emerging capital markets, namely the largest, such as Mexico and Brazil; several developed capital markets, such as the UK and the US; diverse banking-oriented countries, including France and Germany; countries with different levels of investor protection, such as Indonesia and New Zealand; and countries whose economies show different levels of economic growth, such as China and Greece (see Table 1).

Data cover the period from 1995 to 2014. All firm-level variables are winsorized, excluding the bottom and the top 1% of the own variable distribution. Also financial institutions and utilities are excluded due the regulamentary rules they are subject to.

[INSERT TABLE 1 ABOUT HERE]

The average retained earnings by country varies from 3% (Greece, Hong Kong and Jordan) and 8% (Argentina, Denmark, Peru, Russian Federation and Switzerland). On the other side, the average cash holdings vairies from 7% in Portugal and 29% in China. We would like to highlight in respect to average cash holdings the higher value (with statistical significance) presented by developed capital markets in comparison with emerging markets (5%). The same did not occurred in relation to retained earnings. The trends of the two variables were different in the periods before and after financial crisis. While the average retained earnings decreased from the period before to the period after the financial crisis (2%), the opposite occurred in relation to cash holdings, although in this laste situation without statistical significance. Finally, it must be referred the positive result (1%) for the difference on abnormal retained earnings on the period before in comparison to the period after financial crisis. Summing up, it seems that cash holdings explain the precautionary motive presented by Keynes (1936), contrarily to retained earnings. In this last case, the results suggest that the investors after financial crisis started to prefer to have a bird-in hands.

Concerning to firm variables the results are heterogeneous; firms from Portugal, Pakistan and Greece present, in average, the highest value for debt to assets ratio (0.32); on the opposite side are Romania and Egypt (0.16); the largest firms, in average, are located in Netherlands, Mexico and Spain. Bulgaria, Jordan, Sri Lanka, Vietnam and Romania present the smallest firms; while firms in China, Sweden, the United States and Saudi Arabia present the highest market-to-book, the opposite can be observed in Romania, Bulgaria, and Portugal; in Egypt, Finland, Japan and Chile firms often pay

dividends, contrarily to Bulgaria, Romania, United States and Canada where firms do not pay regularly dividends.

Regarding to country variables, and specifically to banking development Japan, the United States, Spain, Denmark and Canada provide the largest infrastructure; Saudi Arabia, Peru, Argentina and Oman, on the contrary, present a reduced banking development; in relation to capital market development, Romania, Argentina, Vietnam and Bulgaria present the lowest percentages for the relation between market capitalization to GDP; on the contrary, Singapore, South Africa, Switzerland and Hong Kong present the highest; in relation to economic growth, China, India, Sri Lanka and Vietnam were the winners during the period 1995-2014; Portugal, Italy, Greece and Japan were on the opposite side.

Relatively to correlation coeficients the low value obtained for the relationship between retained earnings and cash holdings, giving strength to the previous results that both results are creted by different motives. In general, the correlation coefficients present values lower than 0,10.

[INSERT TABLE 2 ABOUT HERE]

3. Results

Table 3 presents the determinants of cash holdings and retained earnings using a pooled data (with yar, country and and sector dummies) and a panel with fixed effects (with year dummies). We calculate the Hausman tests and they confirmed efficiency and consistency of the parameters of the panel data with fixed effects.

The results of all regressions confirmed that after financial crisis the level of cash holdings increased, contrarily to retained earnings. It seems that cash holdings behave as a way to to hedge against future cash shortfall. On the other hand, retained earnings decrease after financial crisis. It is possible that

firms are substituting long term debt by short term debt (vd. Alves and Francisco (2015)) and the agency costs of debt are now centered on short-term. Meanwhile, retained earnings are decreasing because investors prefer to have bird-in-hands. Concerning to the three institutional variables – capital market development, banking development and GDP growth – cash holdings increase after a rise of such institutional variables. We suspect that such occurs once firms use a period of wealth creation and financing development to increase cash holdings to make face a periods of financial crisis. In relation to retained earnings, it must be underlined the negative impact of capital market development retained earnings. Such occurs because in those countries it is easier to obtain external financing and probably firms like to present larger pay out ratios (La Porta et al (2000)). And, in fact, when we analyse the impact of dividend dummy on retained earnings, the parameter is not always negative, on the contrary, but when the parameter is consistent and efficient (fixed effects) it is in fact negative. Perhaps it is a way of the management to demonstrate to minority shareholders that they intend to not expropriate wealth from them to give to large shareholders. In relation to banking development the retained earnings, in general, increase with the use of debt by firms in order to align the interests of the shareholders with creditholders.

In relation to firm variables we would like to emphasize the opposite results of industry risk and size as explanatory variables of cash holdings and retained earnings. In relation to industry risk the opposite results suggest once more we are in the presence of two variables with different objectives in terms of corporate finance. While cash holdings reflect precautionary motives and financial flexibility, retained earnings, by its turn, represent the cheapest source of financing, dividend policy and financial constraints. In both cases the value of the parameters present a large amplitude ((from 0.0388 to 0.594 in the case of cash holdings and from -0.0299 to -0.1367 in the case of retained earnings) which means that the parameters are highly dependent of econometric choices and settings (country, year and sector). In relation to size, the parameters present a lower amplitude. However the signs of the parameters are different: while in the case of the cash holdings size influence them positively, the opposite occurs in relation to retained earnings. And in relation this latest variable is a source of concern. In fact, the smallest

firms not only present the highest financial constraints as also they are the lowest retainers of earnings. Perhaps this explains the plausible negative relationship between firms´death and age.

[INSERT TABLE 3 ABOUT HERE]

In table 4 we present the abnormal retained by countries, considering a pooled data (with year, country and sector dummies) and a panel data with fixed effects (with year dummies). As in the case of cash holdings and retained earnings, the hausman tests done for anormal retained earnings showed that the parameters using fixed effects are efficient and consistent. The signs of parameters are identical to those obtained for retained earnings. Capital market development produces a negative impact on abnormal retained earnings. An explanation for such result can be found in La Porta et al (2000) when they concluded that firms on undeveloped capital markets, where shareholders are not well protected, management offer a higher pay out ratio in order to signalize the investors that they are avoiding expropriate them. Moreover, this can be a measure that intend to show the large shareholders are not trying to expropriate the minority shareholders. This is particularly valid in countries with weak shareholder rights (Shleifer and Vishny (1997) and Dyck and Zingales (2004)). Concerning to economic growth, the results confirm a positive impact on retained earnings. In relation GDP growth we found a positive relationship with retained earnings. An explanation for such result can be endorsed to the dividend growth level. In fact, when a economy grows the expected growth dividend rate also increases, and such can be due to the the increase of firm´s return on equity or to the decrease of dividend pay out, or even due to both variables. Banking development, by its turn, revelead a positive impact on abnormal retained earnings. The exception occurs when we do not consider country dummies, which could mean more should be analysed in terms countries infraestructures. However, when fixed effects are used this problem disappears. This result strength the idea that the increase of retained earnings accompanies the increase of the banking development in order the interests of creditholders are aligned with the shareholders. In

relation to firm variables we emphasize the positive impact of size on abnormal retained earnings. This result, as we referred previously, is not a good new for the small firms and for the majority of countries. In reality, in general, the business environment of the most countries is covered by small firms, and the results say that shareholders are always anxious to withdraw the profits from the firms, decreasing the expected age of the firms.

[INSERT TABLE 4 ABOUT HERE]

Table 5 analyses the determinants of abnormal retained earnings, considering the following subsamples: emerging markets, developed markets, civil law based countries, common law based countries and the the USA. Some results are confirmed. GDP growth has a positive influence on abnormal retained earnings. On the other hand, small firms present lower impact on abnormal retained earnings. Concerning to capital market development we found a negative impact on abnormal retained earnings, with statistical significance, on developed capital markets and the opposite on civil law based countries and the USA. In relation to developed capital markets such can be a result of less restrictions on corporate financing and the investors are searching dividends. In the case of civil law based countries the positive signal can be attribute to the higher financial constraints imposed by infraestructures and probably as a result of investors prefer to retain earnings in order to obtain future market revaluations. In the case of the USA probably means that investors are searching dividends and the management are signaling future prospect of profits. In relation to banking development the signs of the parameter are also not consensual. While the impact of developed capital markets and common law based markets on abnotrmal retained earnings is positive, the contrary occurs for emerging capital markets, civil law based countries and the USA. Probabably in the case of developed capital markets and common law based countries the management intend to align the interests of creditholders with shareholders. In the remaining cases the decrease on asymmetric information between banks and firms can be an explanation for the result.

[INSERT TABLE 5 ABOUT HERE]

In relation to 2008 financial crisis, exception to the USA, the abnormal retained earnings presented a negative impact on abnormal retained earnings. Probably, as a result of risk aversion and the preference for the principle bird in hand.

4. Conclusion

The main goal of this research is to examine which firms (including countries and financial infrastructures) presented higher abnormal retained earnings in the period from 1995 to 2014 and what explains such behaviour. For that purpose we use a panel of 336.318 observations relatively to 40.917 firms from 50 countries.

In this research we find that the cash holdings and retained earnings present independent trends. Cash holdings are strongly motivated by the precautionary motive. Retained earnings, by its turn, are related with: capital structure once it is the cheapest source of financing; dividend policy once it influence the dividend pay out and the expected dividend growth rate, within other aspects; agency costs, once it seems they can be used to align the interests of different stakeholders. For example, the impact of banking development on abnormal retained earnings is not consensual. While the impact of developed capital markets and common law based markets on abnotrmal retained earnings is positive, the contrary occurs for emerging capital markets, civil law based countries and the USA. Probabably in the case of developed capital markets and common law based countries the management intend to align the interests of creditholders with shareholders. In the remaining cases the decrease on asymmetric information between banks and firms can be an explanation for the result; and with financial constraints once we found a negative impact of capital market development on abnormal retained earnings, with statistical

significance, on developed capital markets and the opposite on civil law based countries and the USA. In relation to developed capital markets such can be a result of less restrictions on corporate financing and the investors are searching dividends. In the case of civil law based countries the positive signal can be attribute to the higher financial constraints imposed by infraestructures and probably as a result of investors prefer to retain earnings in order to obtain future market revaluations.

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Table 1 – Summary Statistics of Firm-Level and Country-Level Variables

Retained earnings (RE) are defined as net income before preferred dividends (Worldscope data item WC 01651) plus depreciation (WC 01151) minus common/preferred redeemed, retired, converted, and others (WC 04751). CH are cash dividends paid (WC 04551) divided by total assets (WC 02999). E(RE) are expected retained earnings and it is the firms´ annual average retained earnings by sector. Industry risk is the yearly standard deviation by sector of earnings before interest and depreciations and amortizations (wc 18198) to total assets (wc02999). DA is total debt (wc03255) to total assets (wc 02999). Size are firms´ sales (wc07240). MtB is market-to book (growth opportunities). Market-to-book is defined as total liabilities (WC 03351), preferred stock (WC 03451), deferred taxes (WC 03263), convertible debt (WC 18282) and market capitalization (wc08001) divided by total assets. Dividend dummy results from WC 04551. BD is banking development and is defined as domestic credit provided by banking sector as percentage of GDP (source: World Bank, except for Taiwan). CMD is capital market development and is defined as the total value of all listed shares in a stock market as a percentage of GDP (source: World Bank, except for Taiwan). GDP Growth source is also from World Bank, except for Taiwan. Firms and N are the number of firms and observations, respectively. Sample period is from 1995 to 2014.

Country	RE	E(RE)	CH	Ind Risk	D/A	SIZE	MtB	Dividend D	BD	CMD	GDP GROWTH	Firms	N
Developed													
AUSTRIA	0,07	0,06	0,18	0,14	0,24	12,48	1,32	0,69	1,26	0,26	0,02	124	1.010
BELGIUM	0,07	0,06	0,18	0,15	0,24	12,52	1,51	0,63	1,12	0,65	0,02	154	1.310
CANADA	0,05	0,06	0,19	0,18	0,21	10,87	1,66	0,31	1,84	1,09	0,02	2.287	13.766
DENMARK	0,08	0,06	0,17	0,15	0,25	11,81	1,57	0,59	1,85	0,53	0,01	217	2.061
FINLAND	0,07	0,06	0,18	0,15	0,24	12,51	1,60	0,80	1,00	1,13	0,02	159	1.734
FRANCE	0,06	0,06	0,19	0,16	0,22	12,29	1,48	0,61	1,21	0,76	0,02	1.087	8.631
GERMANY	0,06	0,06	0,22	0,16	0,20	12,17	1,56	0,50	1,37	0,46	0,01	1.018	8.460
GREECE	0,03	0,05	0,10	0,14	0,33	11,35	1,15	0,58	1,21	0,43	-0,01	323	2.297
HONG KONG	0,03	0,05	0,30	0,15	0,19	11,37	1,34	0,53	1,63	7,57	0,04	970	11.216
IRELAND	0,06	0,06	0,24	0,16	0,23	12,41	1,70	0,61	1,49	0,57	0,05	90	777
ISRAEL	0,04	0,05	0,29	0,17	0,28	11,18	1,37	0,35	0,86	0,78	0,04	421	3.048
ITALY	0,04	0,06	0,16	0,15	0,27	12,66	1,31	0,59	1,24	0,40	0,00	311	2.784
JAPAN	0,05	0,06	0,25	0,15	0,23	12,77	1,16	0,85	3,21	0,75	0,01	4.401	46.453
KOREA (SOUTH)	0,05	0,05	0,21	0,15	0,25	11,81	1,13	0,59	1,46	1,42	0,04	1.820	17.875
NETHERLANDS	0,08	0,06	0,15	0,15	0,23	13,14	1,69	0,65	1,65	0,99	0,02	249	2.377
NEW ZEALAND	0,05	0,06	0,12	0,15	0,22	11,06	1,66	0,70	1,31	0,35	0,03	144	1.240
NORWAY	0,05	0,06	0,23	0,15	0,29	11,79	1,61	0,44	0,78	0,50	0,02	309	2.187
PORTUGAL	0,05	0,06	0,07	0,14	0,34	12,04	1,12	0,58	1,44	0,39	0,02	100	834
SINGAPORE	0,05	0,05	0,25	0,15	0,20	11,27	1,23	0,64	0,82	2,08	0,06	708	7.307
SPAIN	0,06	0,06	0,13	0,14	0,29	12,97	1,53	0,65	1,91	0,90	0,01	176	1.092
SWEDEN	0,04	0,06	0,23	0,16	0,17	11,29	1,92	0,52	1,29	0,90	0,02	566	4.357
SWITZERLAND	0,08	0,06	0,22	0,15	0,21	12,86	1,67	0,70	1,66	2,11	0,02	258	2.896
UNITED KINGDOM	0,05	0,06	0,20	0,16	0,17	11,41	1,76	0,63	1,54	1,25	0,02	2.812	20.414
UNITED STATES	0,07	0,06	0,25	0,17	0,23	12,17	1,97	0,30	2,07	1,26	0,03	9.399	69.420
Mean	0,06	0,06	0,20	0,15	0,24	12,01	1,50	0,59	1,47	1,15	0,02		
Emerging													
ARGENTINA	0,08	0,06	0,11	0,14	0,18	11,61	1,26	0,45	0,29	0,15	0,06	68	548
BRAZIL	0,04	0,05	0,17	0,15	0,29	12,43	1,40	0,63	0,87	0,51	0,03	390	2.472
BULGARIA	0,04	0,05	0,09	0,15	0,18	8,84	1,03	0,27	0,58	0,20	0,03	194	1.285
CHILE	0,05	0,06	0,09	0,14	0,21	11,71	1,21	0,84	0,90	1,02	0,04	158	1.739
CHINA	0,05	0,05	0,29	0,15	0,21	12,18	1,93	0,69	1,47	0,47	0,09	2.516	11.463
EGYPT	0,06	0,05	0,22	0,14	0,16	10,87	1,54	0,74	0,82	0,49	0,04	138	911
INDIA	0,07	0,05	0,09	0,15	0,31	10,88	1,39	0,64	0,67	0,77	0,07	2.235	18.996
INDONESIA	0,06	0,06	0,15	0,14	0,31	11,15	1,39	0,48	0,44	0,40	0,05	362	4.241
JORDAN	0,03	0,05	0,14	0,15	0,17	9,12	1,35	0,35	1,08	1,06	0,05	151	926
KUWAIT	0,06	0,05	0,23	0,14	0,22	11,17	1,30	0,64	0,65	1,16	0,03	94	660
MALAYSIA	0,04	0,05	0,17	0,14	0,22	10,77	1,13	0,60	1,30	1,41	0,05	1.086	12.087
MEXICO	0,06	0,06	0,10	0,14	0,24	13,10	1,28	0,46	0,36	0,29	0,03	146	1.572
OMAN	0,07	0,05	0,16	0,14	0,25	10,18	1,40	0,60	0,34	0,46	0,04	84	580
PAKISTAN	0,07	0,05	0,12	0,14	0,33	10,82	1,28	0,69	0,44	0,22	0,04	189	2.197
PERU	0,08	0,05	0,10	0,15	0,21	11,25	1,23	0,54	0,20	0,41	0,05	108	910
PHILIPPINES	0,06	0,06	0,16	0,15	0,20	10,41	1,37	0,43	0,52	0,55	0,05	182	1.983
POLAND	0,06	0,05	0,14	0,15	0,17	11,22	1,40	0,36	0,56	0,31	0,04	364	2.799
ROMANIA	0,04	0,05	0,12	0,16	0,15	9,98	0,97	0,28	0,39	0,12	0,03	121	852
RUSSIAN FEDERATION	0,08	0,05	0,13	0,17	0,26	12,60	1,22	0,33	0,35	0,51	0,03	398	1.669
SAUDI ARABIA	0,07	0,05	0,15	0,13	0,20	12,19	2,26	0,70	0,18	0,64	0,05	93	649
SOUTH AFRICA	0,08	0,06	0,18	0,16	0,17	11,75	1,48	0,63	1,74	1,96	0,03	554	4.152
SRI LANKA	0,06	0,06	0,11	0,14	0,22	9,44	1,39	0,65	0,45	0,25	0,06	142	1.183
TAIWAN	0,05	0,05	0,27	0,16	0,22	11,50	1,38	0,56	1,45	1,41	0,05	1.693	17.493
THAILAND	0,06	0,06	0,13	0,14	0,28	11,09	1,27	0,67	1,30	0,65	0,04	511	5.899
TURKEY	0,05	0,05	0,13	0,14	0,22	11,83	1,43	0,38	0,64	0,32	0,05	243	2.035
VIETNAM	0,07	0,05	0,18	0,14	0,25	9,78	1,16	0,59	1,07	0,21	0,06	594	3.471
Mean	0,06	0,05	0,15	0,15	0,22	11,07	1,36	0,55	0,73	0,61	0,05		
Developed - Emerging	0,00	0,00	0,05										
p-value	0,41	0,00	0,00										
Common - Civil	0,00	0,00	0,03										
p-value	0,46	0,95	0,19										
Before Crisis - After Crisis	0,02	0,01	-0,01										
p-value	0,00	0,00	0,43										

Table 2 – Correlation Coefficients

Retained earnings (RE) are defined as net income before preferred dividends (Worldscope data item WC 01651) plus depreciation (WC 01151) minus common/preferred redeemed, retired, converted, and others (WC 04751). CH are cash dividends paid (WC 04551) divided by total assets (WC 02999). E(RE) are expected retained earnings and it is the firms´ annual average retained earnings by sector. Industry risk is the yearly standard deviation by sector of earnings before interest and depreciations and amortizations (wc 18198) to total assets (wc02999). DA is total debt (wc03255) to total assets (wc 02999). Size are firms´ sales (wc07240). MtB is market-to book (growth opportunities). Market-to-book is defined as total liabilities (WC 03351), preferred stock (WC 03451), deferred taxes (WC 03263), convertible debt (WC 18282) and market capitalization (wc08001) divided by total assets. Dividend dummy results from WC 04551. BD is banking development and is defined as domestic credit provided by banking sector as percentage of GDP (source: World Bank, except for Taiwan). CMD is capital market development and is defined as the total value of all listed shares in a stock market as a percentage of GDP (source: World Bank, except for Taiwan). GDP Growth source is also from World Bank, except for Taiwan.

	CH	RE	ARE	CMD	BD	GDP GROWTH	IndRisk	Dividend D	D/A	SIZE	MtB	CrisisD
CH	1,00											
RE	0,00	1,00										
ARE	0,01	0,99	1,00									
CMD	0,08	-0,03	-0,03	1,00								
BD	0,13	-0,02	-0,02	0,04	1,00							
GDPGROWTH	-0,04	0,05	0,03	0,06	-0,41	1,00						
IndRisk	0,19	-0,02	0,00	0,02	0,03	-0,06	1,00					
DividendD	-0,06	0,16	0,16	-0,04	0,08	0,00	-0,18	1,00				
D/A	-0,34	-0,12	-0,13	-0,05	-0,04	0,02	-0,11	-0,08	1,00			
SIZE	0,28	0,12	0,11	0,02	0,00	0,06	0,20	-0,08	-0,09	1,00		
MtB	-0,16	0,24	0,23	-0,03	0,23	-0,12	-0,15	0,36	0,09	-0,06	1,00	
CrisisD	0,03	-0,04	0,00	0,01	0,05	-0,16	-0,15	0,04	-0,02	-0,10	0,02	1,00

Table 3 – Cach Holdings and Retained Earnings around the World

Dependent variable is cash holdings and retained earnings. Retained earnings are defined as net income before preferred dividends (Worldscope data item WC 01651) plus depreciation (WC 01151) minus common/preferred redeemed, retired, converted, and others (WC 04751). Cash dividends is cash dividends paid (WC 04551) divided by total assets (WC 02999). ARE compares the firms´ retained earnings with its expected value. The expected retained earnings is the firms´ annual average retained earnings by sector. Industry risk is the yearly standard deviation by sector of earnings before interest and depreciations and amortizations (wc 18198) to total assets (wc02999). DA is total debt (wc03255) to total assets (wc 02999). Size are firms´ sales (wc07240). MtB is market-to book (growth opportunities). Market-to-book is defined as total liabilities (WC 03351), preferred stock (WC 03451), deferred taxes (WC 03263), convertible debt (WC 18282) and market capitalization (wc08001) divided by total assets. Dividend dummy results from WC 04551 (source: World Bank, except for Taiwan). (source: World Bank, except for Taiwan). GDP Growth source is also from World Bank, except for Taiwan. Observations and firms are the number of observations and firms, respectively. Sample period is from 1995 to 2014. Statistical inference based on cluster-robust standard errors at the firm level. White (1980) heteroskedasticity robust p-values are in parentheses.

VARIABLES	Cash Holdings				Retained Earnings			
	Pooled			Fixed Effects	Pooled			Fixed Effects
CMD_t	0.0022	0.0086	0.0023	0.0028	-0.0004	-0.0019	-0.0005	-0.0004
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.09)	(0.00)	(0.08)	(0.34)
BD_t	0.0265	0.0457	0.0232	0.0038	0.0087	-0.0099	0.0083	0.0162
p-value	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)	(0.00)	(0.00)	(0.00)
$GDPGROWTH_t$	0.0396	0.1103	0.0497	0.1366	0.1783	0.1575	0.1786	0.1369
p-value	(0.07)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$IndRisk_t$	0.5940	0.1288	0.1575	0.0388	-0.0299	-0.1277	-0.1367	-0.0489
p-value	(0.00)	(0.00)	(0.00)	(0.26)	(0.00)	(0.00)	(0.00)	(0.00)
Dividend D_t	-0.0044	-0.0006	0.0008	0.0123	0.0210	0.0173	0.0207	-0.0027
p-value	(0.00)	(0.48)	(0.38)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
D/A_t	-0.3388	-0.3226	-0.3232	-0.1839	-0.0679	-0.0672	-0.0696	-0.1116
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$SIZE_t$	-0.0187	-0.0158	-0.0183	-0.0287	0.0127	0.0125	0.0127	0.0231
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MtB_t	0.0522	0.0493	0.0498	0.0222	0.0105	0.0109	0.0107	0.0127
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$CrisisD_t$	0.0305	0.0298	0.0371	0.0333	-0,0266	-0,0182	-0,0255	-0,0299
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	0.2094	0.2356	0.2493	0.5064	-0.0720	-0.0641	-0.0654	-0.2035
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	No	Yes	No	Yes	No	Yes	No
Sector dummy	No	Yes	Yes	No	No	Yes	Yes	No
Observations	336.318	336.318	336.318	336.318	336.318	336.318	336.318	336.318
Firms	40.917	40.917	40.917	40.917	40.917	40.917	40.917	40.917
Adj. R^2	0.23	0.25	0.27	0.68	0.12	0.12	0.13	0.41

Table 4 – Abnormla Retained Earnings around the World

Dependent variable is cash holdings and retained earnings. Retained earnings are defined as net income before preferred dividends (Worldscope data item WC 01651) plus depreciation (WC 01151) minus common/preferred redeemed, retired, converted, and others (WC 04751). Cash dividends is cash dividends paid (WC 04551) divided by total assets (WC 02999). ARE compares the firms´ retained earnings with its expected value. The expected retained earnings is the firms´ annual average retained earnings by sector. Industry risk is the yearly standard deviation by sector of earnings before interest and depreciations and amortizations (wc 18198) to total assets (wc02999). DA is total debt (wc03255) to total assets (wc 02999). Size are firms´ sales (wc07240). MtB is market-to book (growth opportunities). Market-to-book is defined as total liabilities (WC 03351), preferred stock (WC 03451), deferred taxes (WC 03263), convertible debt (WC 18282) and market capitalization (wc08001) divided by total assets. Dividend dummy results from WC 04551 (source: World Bank, except for Taiwan). (source: World Bank, except for Taiwan). GDP Growth source is also from World Bank, except for Taiwan. Observations and firms are the number of observations and firms, respectively. Sample period is from 1995 to 2014. Statistical inference based on cluster-robust standard errors at the firm level. White (1980) heteroskedasticity robust p-values are in parentheses.

VARIABLES	Abnormal Retained Earnings			
	Pooled			Fixed Effects
CMD_t	-0.0005	-0.0020	-0.0005	-0.0005
p-value	(0.04)	(0.00)	(0.04)	(0.26)
BD_t	0.0070	-0.0100	0.0066	0.0148
p-value	(0.00)	(0.00)	(0.00)	(0.00)
$GDPGROWTH_t$	0.1769	0.1544	0.1734	0.1335
p-value	(0.00)	(0.00)	(0.00)	(0.00)
$IndRisk_t$	0.0166	-0.0609	-0.0714	-0.0008
p-value	(0.00)	(0.00)	(0.00)	(0.96)
Dividend D_t	0.0201	0.0170	0.0206	-0.0030
p-value	(0.00)	(0.00)	(0.00)	(0.00)
D/A_t	-0.0684	-0.0671	-0.0695	-0.1107
p-value	(0.00)	(0.00)	(0.00)	(0.00)
$SIZE_t$	0.0123	0.0125	0.0128	0.0230
p-value	(0.00)	(0.00)	(0.00)	(0.00)
MtB_t	0.0103	0.0108	0.0106	0.0124
p-value	(0.00)	(0.00)	(0.00)	(0.00)
$CrisisD_t$	0.0020	0.0092	0.0030	-0.0062
p-value	(0.19)	(0.00)	(0.05)	(0.00)
Constant	-0.1520	-0.1509	-0.1520	-0.2322
p-value	(0.00)	(0.00)	(0.00)	(0.00)
Year dummy	Yes	Yes	Yes	Yes
Country dummy	Yes	No	Yes	No
Sector dummy	No	Yes	Yes	No
Observations	336.318	336.318	336.318	336.318
Firms	40.917	40.917	40.917	40.917
Adj. R^2	0.11	0.10	0.12	0.06

Table 5 – Abnormla Retained Earnings around the World by Class of Countries

Panel regressions report firm fixed-effects. Dependent variable is abnormal retained earnings (ARE). Retained earnings (RE) are retained earnings. Retained earnings are defined as net income before preferred dividends (Worldscope data item WC 01651) plus depreciation (WC 01151) minus common/preferred redeemed, retired, converted, and others (WC 04751) and cash dividends paid (WC 04551) divided by total assets (WC 02999). ARE compares the firms´ retained earnings with its expected value. The expected retained earnings is the firms´ annual average retained earnings by sector. Industry risk is the yearly standard deviation by sector of earnings before interest and depreciations and amortizations (wc 18198) to total assets (wc02999). DA is total debt (wc03255) to total assets (wc 02999). Size are firms´ sales (wc07240). MtB is market-to book (growth opportunities). Market-to-book is defined as total liabilities (WC 03351), preferred stock (WC 03451), deferred taxes (WC 03263), convertible debt (WC 18282) and market capitalization (wc08001) divided by total assets. Dividend dummy results from WC 04551 (source: World Bank, except for Taiwan). (source: World Bank, except for Taiwan). GDP Growth source is also from World Bank, except for Taiwan. Observations and firms are the number of observations and firms, respectively. Sample period is from 1995 to 2014. Statistical inference based on cluster-robust standard errors at the firm level. White (1980) heteroskedasticity robust p-values are in parentheses.

VARIABLES	Emerging Markets	Developed Markets	Civil Law based Countries	Common Law based Countries	USA
CMD_t	0.00020	-0.0007	0.0204	-0.0004	0.0110
p-value	(0.22)	(0.00)	(0.00)	(0.35)	(0.00)
BD_t	-0.0133	0.01083	-0.0084	0.0105	-0.0436
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$GDPGROWTH_t$	0.0749	0.1689	0.1481	0.12947	0.0957
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)
$IndRisk_t$	0.1481	-0.0569	0.0709	-0.0556	0.0237
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.37)
Dividend D_t	-0.0060	-0.0010	-0.0058	-.00509	-0.0059
p-value	(0.00)	(0.16)	(0.00)	(0.56)	(0.00)
D/A_t	-0.1291	-0.1031	-0.1293	-0.1000	-0.0916
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$SIZE_t$	0.0178	0.0260	0.0202	0.02465	0.0377
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MtB_t	0.0142	0.0123	0.0142	0.01151	0.0144
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$CrisisD_t$	-0.0061	-0.0173	-0.0058	-0.0210	0.0012
p-value	(0.03)	(0.00)	(0.00)	(0.00)	(0.48)
Constant	-0.1873	-0.3230	-0.2729	-0.28553	-0.3864
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Year Dummy	Yes	Yes	Yes	Yes	No
Observations	102.772	233.546	164.616	171.702	69.420
Adj. R^2	0.11	0.06	0.09	0.06	0.08