Abnormal Retained Earnings Around the World

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Abstract

Using a firm-level survey database covering 41 countries, we evaluate firms' abnormal retained earnings. The results of our work show that the trends of cash holdings and retained earnings are independent. While cash holdings around the world are increasing, the opposite has occurred for retained earnings. We show that cash holdings are influenced by precautionary motive and retained earnings by firms' growth opportunities. Abnormal retained earnings have risen with GDP growth and decreased following the 2008 financial crisis. This result also confirms the hypothesis of firms' growth opportunities. US firms present positive abnormal retained earnings after the 2008 financial crisis, contrary to the remaining firms around the world. This can explain recent trends in the US stock market.

JEL classification: G32; G38

Keywords: Abnormal retained earnings; Cash holdings; Firms' growth opportunities; Precautionary motive.

1. Introduction

Debate about capital structure theory has been ongoing for almost 60 years. Until the 1980s, the focus of financing theories centered on topics related to tax shields, bankruptcy and agency costs and adverse selection, creating two currents: the trade-off theory and the pecking order theory. In the last thirty years, the empirical adherence of these two theories to firms has been discussed (Frank and Goyal (2005) and Shyam-Sunder and Myers (1999)). Simultaneously, during the last twenty years, researchers have evaluated not only which firm characteristics influence financing choices but also what role institutional setting play in firms' capital structure. The legal origin, the rule of law, the perception of corruption, the protection of shareholder and creditors rights, the financial architecture of the country, among other aspects (Alves and Ferreira (2011, Booth et al (2001), Demirguc-Kunt and Maksimovic (1996, 1998, 1999), Fan et al (2012) and Öztekin (2015)), are now very important topics concerning firms' capital structure analysis.

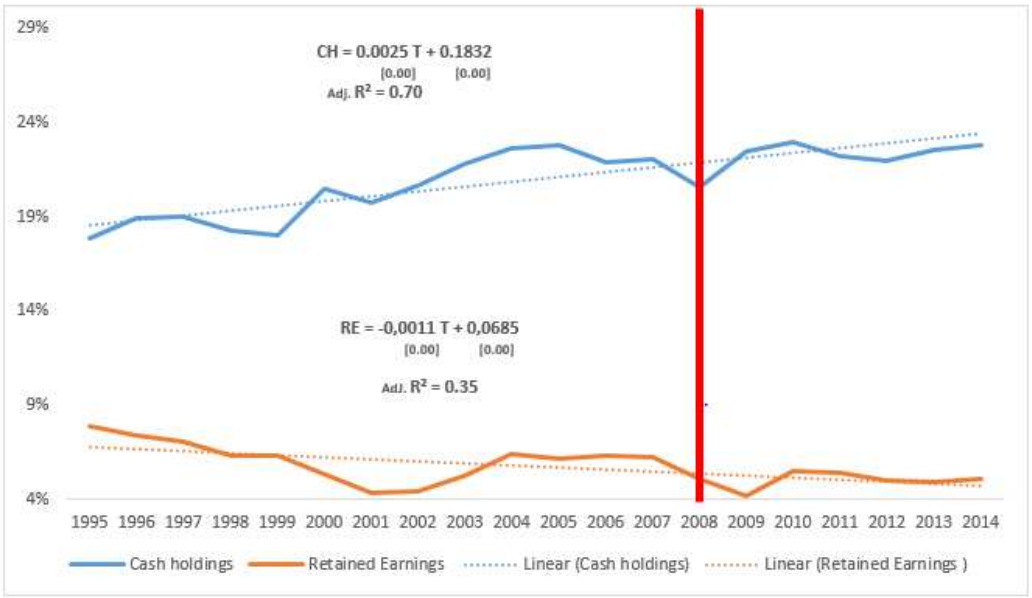
More recently, corporate finance has focused on another important topic related to financing decisions issue, the cash holding decisions (Opler *et al* (1999) Dittmar *et al* (2003), Ferreira and Vilela (2004) and Song and Lee (2012)), while considering the theoretical approach designed for capital structure issues. In perfect financial markets, whenever firms need funds, they use financial markets. In fact, the question as to why firms hold cash is an important issue regarding financing choices once we are in the presence of a decision that does not present any return and future value, although it can be a strategic decision in the face of imperfect financial markets. Retained earnings are apparently a similar decision to cash holdings. Both can be explained by the trade-off theory, i.e., by comparing benefits of liquidity with agency costs of its misuse. The pecking order theory can also support both topics. This theory postulates that funds generated internally are less costly, as opposed to risky debt,

particularly equity, the most expensive source of financing. The free cash flow theory of Jensen (1986) can also be considered in the context of retained earnings and cash holdings once the excess of cash can be used by managers for their own interests and not those of shareholders; consequently, firms increase their dividend payout ratio. In fact, both variables could have the same purposes. However, do they really? They are on opposite sides of the balance sheet. Moreover, they probably have different uses. While cash holdings are used to avoid eventual future cash shortfalls, i.e., for precautionary purposes, retained earnings are managed according to firms' eventual growth opportunities.

Regardless of the theory that best explains either cash holdings or retained earnings, our results show a large difference between the impact of retained earnings and cash holdings on firms' balance sheets. The weight of cash holdings on balance sheets is much higher (see Figure 1), both before and after the 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 6.0% in the 1995-2007 period, compared to 5.0% in the 2008-2014 period. Cash holdings, in turn, presented 20.8% and 22.2%, respectively, for each period.

These results were not completely unexpected because there have been three financial crises since the beginning of the century: the dot-com bubble, the subprime mortgage crisis and the European sovereign debt crisis. In this environment, firms use cash holdings to hedge against future shortfalls, i.e., as a precaution against unforeseen situations and emergencies, namely, credit constraints and capital market devaluations (Graham and Harvey (2001)). On the other hand, a decrease in a firm's growth opportunities and retained earnings was expected after repeated financial crises.

Figure 1 – Retained Earnings *versus* Cash Holdings



Note: The calculations were made using a sample of 312,890 observations, 36,459 firms and 41 countries.

Thus, there are several reasons for studying retained earnings and cash holdings. First, both variables could have the same trend in responding to financing needs. Our results do not confirm such a hypothesis. Second, why did firms reduce their retained earnings after the 2008 financial crisis, as these were once the cheapest source of corporate financing?" We suspect this occurred because firms' growth opportunities have been decreasing since the beginning of the century. Third, what is the source of financing to attain the precautionary motive? Our findings seem to show that retained earnings do not respond to such a need, contrary to cash holdings.

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 to explain such behavior. For that purpose, we use a panel of 312,890 observations per 36,459 firms from 41 countries.

The results of our work show that the trends of cash holdings and retained earnings are independent. While cash holdings around the world are increasing, the opposite has occurred with retained earnings. We show that cash holdings are influenced by precautionary motive and retained earnings by firms' growth opportunities. Abnormal retained earnings have risen with GDP growth and decreased following the 2008 financial crisis. This result also confirms the hypothesis of firms' growth opportunities. US firms present positive abnormal retained earnings after the 2008 financial crisis, contrary to the remaining firms around the world. This helps explaining recent trends in the US stock market.

We show that there is a positive impact of banking development on retained earnings, contrarily to capital market development. This signifies that growth opportunities are influenced by the pecking order theory. On the other hand, there are some signs that shareholders' rights influence negatively retained earnings. This is probably a consequence of the size of financing infrastructures on countries where shareholders are more protected. Still in relation to shareholder rights, a negative impact on retained earnings is in line with the "outcome model" of La Porta et al (2000), where minority shareholders force corporate insiders to disgorge cash. Moreover, firms located in developed financial market infrastructures substitute retained earnings more easily by external financing.

A positive impact of banking development on retained earnings is observed. Firms placed within developed banking systems have an infrastructure that supplies capital in an efficient and cheaper way. Thus, whenever firms' growth opportunities exhibit a positive trend, the relevant banking retains earnings for their purposes. This result also confirms the hypothesis of banking monitoring: in countries with developed banking systems, credit holders are more protected and have more information about borrowers.

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

2. Determinants of cash holdings and retained earnings

2.1. Cash holdings

In the presence of market imperfections, cash holding policies have financial and economic value and are supported by the trade-off and pecking order hypotheses. However, enterprise value is calculated by adjusting to cash and equivalents, which means the opportunity cost of cash holdings is zero. Kim *et al* (1998) developed a model where the optimal amount of liquidity is determined by a tradeoff between the low returns of liquid assets and the benefit of not using external funds. Opler et al (1999), in turn, concluded that firms allow cash holdings to rise and fall with cash flow. This is in line with Myers (1984) concerning dividend payout setting, investment opportunities fluctuation relative to internal cash flow, and safety debt issuing. Bates *el al.* (2009) found that US firms since the 1980s have increased their average cash holdings, as opposed to net debt.

Transaction costs are one of a firm's motives for holding cash. In fact, firms need liquidity for their operational transactions and cash holdings are more expensive when they have difficulties turning cash equivalents into liquidity (Baumol (1952) and Miller and Orr (1966)). Moreover, the more profitable the firm is, the more it requires liquidity to face its own transactions. Thus, there is a positive relationship between a firm's income and liquidity. Nonetheless, firms tend to build up cash during recessions once it becomes more difficult to replace cash substitutes by liquidity. In contrast, when the market is performing well, firms have easier access to external markets and cash holding needs are lower. Firms also hold cash

in their foreign subsidiaries because of the tax costs associated with repatriating foreign income (Foley et al (2007)). On the other hand, there are other costs associated with cash holdings: agency costs. In fact, managers prefer to accumulate cash in order to use it for their own purposes, not necessarily in the interest of shareholders (Jensen (1986), Opler et al. (1999), Dittmar, Mahrt-Smith, and Servaes (2003)). Firms also hold cash to increase their ability to access and to restructure their financing at low cost (Ferreira and Vilela (2004)).

Despite what has been said about cash holding motives, the most plausible and consensual is the precautionary motive of Keynes (1936), whose purpose has been described in international data (Opler et al (1999), Ferreira and Vilela (2004, Han and Qiu (2007) and Song and Lee (2012)). Lins et al (2010) showed that cash holdings are related to non-operational activities. In fact, these savings are made to avoid future cash shortfalls instead of has being used in future growth opportunities. Their findings also show that firms with higher needs for external funding in the future, or with a belief that their equity is undervalued, do not hold extra cash today. On the other hand, the same authors concluded that credit lines (in comparison with cash holdings) are used to finance a firm's growth opportunities.

2.2. Retained earnings

Supporters of the pecking order theory see retained earnings as the preferred financing source, followed by safety debt, risky debt and equity only as a last resort (Myers (1984) and Shyam-Sunder and Myers (2009)). Myers and Majluf (1984) even state that firms whose investment opportunities are higher than their operating cash flows, and which have spent all their financing capacity to issue low-risk debt, may sacrifice an investment rather than issue risk securities to finance it. However, the followers of the dynamic trade-off theory also understand the role of

retained earnings. In fact, a reduction in dividend payout will decrease taxes paid, although this will mean a lower debt-to-assets ratio and consequently lower future fiscal savings through a reduction in interest payments (Stiglitz (1973), Frank and Goyal (2005)). Independently of the adherence to both theories, there is a stylized negative (positive) relationship between leverage (retained earnings) and growth opportunities around the world ((Raghuran and Rajan (1995), Alves and Ferreira (2011) and Fan et al (2012)). Retained earnings are also studied in the context of agency costs theory (Jensen (1986) and Myers (1977)). In fact, managers appreciate shareholders' preferences for retained earnings once they obtain more opportunities to create their *"empire building"*. On the other hand, in the presence of an underinvestment problem, transferring wealth from shareholders to bondholders can be avoided by retained earnings.

Retained earnings are intimately related with dividend policy, equity valuation (through dividend growth model), and net present value of growth opportunities. Lintner (1956), in his seminal research on dividend policy, defended the idea that dividends are dependent on the positive net present value projects they have available, moving toward target payouts, until new earning levels become unsustainable. Whether in cash holdings or in retained earnings, the issue of perfect financial markets has been discussed. Miller and Modigliani (1961) illustrated that in perfect financial markets, dividends were irrelevant and had no influence on a firm's share value. However, financial markets are not perfect, and consequently there are two views on dividends: defenders of bird-in-hand (cash dividends) and defenders of bird-in-bush (capital gains). Lintner (1956), Gordon (1959) and Walter (1963) support the first point of view, arguing that capital gains are riskier and that investors expect to be compensated by higher returns, putting pressure on management to deliver higher growth in the future, which may or may not happen. More recently, Bhattacharya (1979), John and Williams (1985) and Miller and Rock (1985) focused their research on a new theory: the signaling theory. They showed that, in a world of asymmetric information, better informed insiders use dividend policy as an indication

of their firm's future prospects with less informed outsiders, and a dividend increase indicates an improvement in the firm's performance, as opposed to a decrease. In fact, a dividend increase (decrease) should be followed by an improvement (reduction) in a firm's profitability, earnings and growth.

2.3. Country-level differences

The impact of country variables on cash holdings and retained earnings has been studied from diverse aspects, particularly shareholders' rights and agency costs (Ditmar *et al* (2003), Harford *et al* (2008), Kalcheva and Lins (2007), La Porta *el al* (2000) and Lins *et al* (2010)). La Porta *et al* (2000) concluded that firms with large reinvestment opportunities and that placed in a strong institutional setting – namely, in common-law-based countries, where shareholders enjoy high levels of protection – present lower dividend payouts rather than low growth firms. According to the above authors, firms placed in developed capital markets, even with growth opportunities, are available to pay high dividend payout ratios because they can account on such an external source of financing. This argument can be used for the development of a banking system (Lins *et al* (2010)). Thus, a negative relationship between capital market development (as well as banking development) and retained earnings seems to exist. Firms with weak shareholder rights, in turn, are forced to pay dividends because shareholders are less protected. This can be a way of attenuating the probable expropriation of minority shareholders by the controlling shareholder (Shleifer and Vishny (1997) and Dyck and Zingales (2004)). La Porta et al (2000) also hypothesize that firms present high payout ratios to establish a reputation for not exploiting shareholders. As for cash holdings, we would expect a negative relationship between cash holdings and developed capital markets. Kalcheva and Lins (2007), on the other hand, document a negative relationship between cash holdings and shareholder protection.

Firms placed in countries where shareholders are poorly protected present high levels of cash holdings. Ditmar *et al* (2003) conclude that such a relationship remains, after controlling dividend payments. This indicates that there is no evidence for managers holding more cash simply because it is more difficult to access capital in markets with poor shareholder protection. The explanation for holding cash can be found in agency problems, i.e., in the possibility of managers extracting wealth from shareholders.

The impact of financial crises on retained earnings and cash holdings has also been studied recently (Khale and Stulz (2013), Song and Lee (2012)). Once more, cash holdings seem to be related to the precautionary motive and retained earnings to firms' growth opportunities. Kahle and Stulz (2013), on the other hand, present a firm's decrease in cash-to-assets ratios during 2007-2008 followed by a sharp increase in 2009. Song and Lee (2012) show that the increase in cash holdings is not explained by changes in firm characteristics but by changes in the firm's demand function for cash, particularly the precautionary motive.

2.4. Firm variables

In this research we use industry risk, dividend dummy, debt-to-assets, size and market-to-book as determinants of cash holdings and retained earnings.

The impact of dividend policy on cash holdings has been studied by several authors, namely, Ferreira and Vilela (2004), Opler *et al* (1999) and Song and Lee (2012), and their findings are not consensual, albeit a negative influence of dividend payout on cash holdings and retained earnings is expected. In fact, dividend payments may help reduce the traditional agency problem between managers and shareholders, decreasing the amount of disposable cash used by executives for their own purposes (Jensen (1986)). The negative relationship between

cash holdings and dividend payments can also be explained by the precautionary motive. On the other hand, firms with an aggressive dividend policy do not have high growth opportunities and consequently present low levels of retained earnings. Moreover, this argument to pay dividends is considered a strength by the defenders of bird-in-hand, who prefer dividends instead of capital gains. Leverage negatively influences a firm's cash holdings and retained earnings. In fact, a firm can benefit from using the cheapest financing source, retaining earnings, which will have a negative impact on leverage (Myers (1984) and Myers and Majluf (1984)). As for cash holdings, a negative relationship with leverage is expected, which is consistent with the pecking order and free cash flow theories. The argument that high levels of debt and low cash holdings occur when a firm's investment exceeds retained earnings supports the pecking order theory. The main reason for supporting the free cash flow theory is that highly leveraged firms are subject to capital market monitoring, which prevents managerial discretion. In terms of industry risk, a firm that works in a sector based on higher volatility of earnings before interest and taxes is riskier but, as expected, more profitable. Consequently, following the pecking order theory, the more profitable a firm is, the more earnings it retains. Internal funds would be the rule of financing, instead of external funds, and consequently a positive relationship between retained earnings and industry risk would be expected, unless the industry risk is not positively related to the firm's growth opportunities. In this case, whenever there is an increase in risk to the company, it is expected that returns increase and are passed along to shareholders. As for cash holdings, a negative relationship with industry risk is expected. In fact, the riskier the firm, the more cash it holds against eventual shortfalls. Size positively influences retained earnings. Firms retain more earnings to reinvest in current and future projects solely if they prosper (MacAnBhaird and Lucey (2010)), and it is well known that young firms grow faster but also fail at higher rates (Haltiwanger et al (2013) and Thornhill and Amit (2003)). Firms that are larger presumably have been more successful through earning

retention. Consistent with all major theories, when a firm is growing, it suffers lower adverse selection problems and has more chances of obtaining external financing and consequently requires lower cash holdings (Lins *et al* (2010)). According to Myers (1977), firms with more tangible assets should more easily be financed through debt than firms with growth opportunities. Their valuation is dependent of intangible assets and expected returns, and therefore they are subject to high financial distress costs, and their intangible assets have no value in the event of bankruptcy. In this case, firms avoid issuing equity because much of the value created by investment would be used to offset the creditors' position (underinvestment problem). Thus, a positive relationship between retained earnings and the firm's growth opportunities is expected, and the same sign is expected between cash holdings and MtB.

3. Methodology, hypothesis and data

3.1. Methodology and hypothesis.

Recent trends in the evaluation of retained earnings and cash holdings are traced following two steps. First, we present the results of some regressions of cash holdings and retained earnings using the same independent variables (capital market development, banking development, shareholders rights, GDP growth, industry risk, dividend dummy, debt-to-assets, size, market-to-book, and financial crisis dummy). Basically, our intention is to evaluate whether both variables are explained by the same variables, and whether firms hold cash as a precaution and retain earnings for investments at growth opportunities. The regressions are based on a pooled cross section (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 effects model are consistent and efficient. In the second step, we evaluate the determinants of

abnormal retained earnings, based on the approach presented below. In this analysis, we also divide the sample into sub-samples (emerging capital markets, developed capital markets, low shareholder rights, high shareholder rights, 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, in turn, are cash and short-term investments 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 their expected value. The expected retained earnings are the firms' annual average retained earnings by sector. The sample is divided according to the super sectors from the industrial classification benchmark (ICB), i.e., into 16 sectors. By joining firms from the same sector but located in different countries, we intend to build a variable that properly reflects global systematic risk.

The expected retained earnings of firm i in year t is the firm's 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}, are realized retained earnings, RE_{it}, less expected retained earnings, $E(RE_{jt})$:

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

Next, we aim to identify the determinants of ARE using the independent variables and the models referred to previously, with the following hypotheses in mind:

H1: Firms' cash holdings (retained earnings) increase (decrease) after financial crises.

H2: Firms' cash holdings decrease with a rise in shareholder protection level.

H3: Firms' abnormal retained earnings decrease after financial crises.

H4: Firms' abnormal retained earnings increase with a rise in shareholders rights.

H5: Firms' abnormal retained earnings decrease with a rise in capital market development.

3.2. Data

The data extracted from WorldScope include firms from 41 countries: Argentina, Austria, Belgium, Brazil, Canada, Chile, Denmark, Egypt, Finland, France, Germany, Greece, Hong Kong, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Malaysia, Mexico, the Netherlands, New Zealand, Norway, Pakistan, Peru, the Philippines, Portugal, Singapore, South Africa, South Korea, Spain, Sri Lanka, Sweden, Switzerland, Taiwan, Thailand, Turkey, the UK, and the US.

The sample is diversified and includes 36,459 firms and 312,890 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 Mexico and India; and countries whose economies show different levels of economic growth, such as India 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. In addition, financial institutions and utilities are excluded due the regulatory rules to which they are subject.

[INSERT TABLE 1 ABOUT HERE]

The average retained earnings by country varies from 3% (Greece, Hong Kong and Jordan) and 8% (Argentina, Denmark, Peru and Switzerland). On the other hand, the average cash holdings vary from 7% in Portugal to 30% in Hong Kong. We would such as to highlight, in respect to average cash holdings, the higher value (with statistical significance) presented by developed capital markets in comparison with emerging markets (5.3%). The same did not occur in relation to retained earnings (-0.1%). The trends of the two variables were different in the periods prior to and following the financial crisis. While the average retained earnings decreased from the period prior to and following the financial crisis (-1.8%), the opposite occurred in relation to cash holdings (1.0%), although in this latter situation without statistical significance. Finally, one must point out the positive result (0.8%) for the difference in abnormal retained earnings in the period prior to, in comparison to the period following, the financial crisis.

Concerning firm variables, the results are heterogeneous; firms from Portugal, Pakistan and Greece present, on average, the highest value for debt-to-assets ratio. In contrast to this is Egypt (0.16). The largest firms, on average, are in the Netherlands, Mexico and Spain. Jordan and Sri Lanka have the smallest firms; firms in the US, Sweden, and the UK present the highest market-to-book, while the opposite is the case in Portugal, South Korea and Malaysia; in Japan and Chile, firms often pay dividends, contrarily to the United States and Canada, where firms pay no regularly dividends.

As for country variables, and specifically banking development, Japan, the United States and Spain provide the largest infrastructure; Peru, Argentina and Mexico, on the other hand, present a reduced banking development; as for capital market development, Peru, Argentina and Mexico present the lowest percentage for the relationship between market capitalization to GDP, while Singapore, Switzerland and Hong Kong present the highest; in terms of economic growth, India, Sri Lanka and Argentina were the front-runners during the 1995-2014 period, while Italy and Taiwan were at the opposite end.

Overall, it seems country variables are not definitive in establishing a pattern concerning firm characteristics. There are firms with growth opportunities both in developed capital markets and in emerging markets. The same can be said in relation to firm size and other variables.

In terms of correlation coefficients, we highlight the low value obtained for the relationship between retained earnings and cash holdings, a sign that both outcomes are created by different motives. In general, the correlation coefficients present values lower than 0.10.

[INSERT TABLE 2 ABOUT HERE]

4. Results

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

The results of all regressions confirmed that after a financial crisis, the level of cash holdings increased, contrarily to retained earnings. It seems that cash holdings are used to hedge

against future cash shortfalls. On the other hand, retained earnings decrease after a financial crisis. It is possible that the decrease in firms' growth opportunities was primarily responsible for this result. Moreover, in the face of decreases in investment opportunities, shareholders increased their payout ratios once they simultaneously preferred a bird-in-hand and impeded managers from using their money without respecting their interests.

Concerning the four institutional variables – capital market development, banking development, shareholder rights and GDP growth – cash holdings increase after a rise in such institutional variables, except with GDP growth. The impact of GDP growth on cash holdings is not conclusive. In fact, the results are dependent on an econometric approach (random effects versus fixed effects). However, in terms of fixed effects, parameters are consistent. In this case, whenever GDP grows, a firm increases its cash level, a precaution against eventual future shortfalls. Banking development and capital market development, for their part, have a positive impact on cash holdings and seem to strength the precautionary hypothesis: firms raise and hold more cash when they have the possibility to do so. This result was not expected but is somewhat in line with Dittmar et al (2003), Kalcheva and Lins (2007) and Lins et al (2010). The impact of shareholder rights on cash holdings is positive (except when we regress with random effects and when country dummy is not considered). This result was not expected, as the more rights shareholders have, the lower the cash holdings a firm should have. In fact, in countries with poor shareholder protection, capital markets are not well developed. This implies that the transaction costs of raising additional funds are higher, and firms may respond to this by holding higher liquidity. However, the positive impact of shareholder rights on cash holdings can be explained by the lower probability of the management extracting wealth from minority shareholders. Thus, there are many unresolved assumptions regarding cash holdings. Firms seem to consider the precautionary hypothesis in order to establish their cash-holding levels.

As for retained earnings, firms retain more earnings when GDP grows, and this is consistent with firms' growth opportunities. Retained earnings increases are followed by the development of the banking system but not by capital market development. This means that investments in growth opportunities take the pecking order theory into consideration. A negative sign of capital market development and shareholder rights is the consequence of firms being placed in developed infrastructures presenting more financing alternatives to retained earnings. Nevertheless, the signs of capital market development are not definitive. Nevertheless, in relation to shareholder rights a negative impact on retained earnings is in line with the "outcome model" of La Porta et al (2000), where minority shareholders force corporate insiders to disgorge cash. Moreover, firms located within developed financial market infrastructures substitute retained earnings more easily by external financing.

In terms of firm variables, we would such as to emphasize the opposite results of industry risk and size as explanatory variables of cash holdings and retained earnings. The positive impact of industry risk on cash holdings is motivated by precaution, while the negative influence of said variable on retained earnings is a reply to investors' risk aversion. The negative impact of size on cash holdings is explained by the difficulties found by small firms in obtaining external financing. The positive impact of size on retaining earnings reflects the firms' success and survival. Whatever the model being used, the sign of a dividend dummy is not consensual. As for the fixed effects approach, a negative impact on retained earnings and a positive impact on cash holdings are observed. We suspect that the firms paying dividends are larger and present less external financial constraints, and consequently require lower levels of cash holdings. On the other hand, firms that retain earnings present high-growth opportunities and deliver fewer dividends. Leverage exhibits a negative impact on cash holdings and retained earnings. In fact, a firm benefits from using the cheapest financing source, which will have a negative impact on leverage and will mean higher retained earnings and cash holdings. Mtb is positively related

with cash holdings and retained earnings because we are in the presence of a proxy for a firm with growth opportunities, with less collateral and riskier.

[INSERT TABLE 3 ABOUT HERE]

In Table 4 we present abnormal retained earnings by country, considering a panel data with fixed effects (with year dummies). The signs of parameters are identical to those obtained for retained earnings. Capital market development produces a negative impact on abnormal retained earnings, although without statistical significance. Banking development, in turn, confirms its positive impact on abnormal retained earnings. Firms placed in developed banking systems have an infrastructure that supply capital in an efficient and cheaper way. Thus, whenever firms' growth opportunities exhibit a positive trend, the relevant banking system retains earnings for their purposes. This result confirms the hypothesis of banking monitoring: in countries with developed banking systems, credit holders are more protected and have more information about borrowers. As for GDP growth, we found a positive impact of such a variable on abnormal retained earnings. This confirms the hypothesis that abnormal retained earnings are dependent on firm growth opportunities. In fact, one expects an increase in abnormal retained earnings during a period of economic growth. For their part, abnormal retained earnings decrease after a financial crisis, reflecting lower firm growth opportunities. GDP growth and financial crises reflect the effect of firm growth opportunities on abnormal retained earnings.

Industry risk presents a negative impact on abnormal retained earnings, although without statistical significance because of the way the variable was built. Investors seem to be risk averse and prefer dividends instead of being exposed to a firm's growth opportunities. Dividend payments negatively influence abnormal retained earnings. Shareholders prefer

dividends instead of growth opportunities, particularly when the latter do not exist. On the other hand, dividend payment is a practice of large firms, which lack the financial external constraints of small firms. Moreover, this signifies that management is not trying to expropriate minority shareholders. The results also confirm that leverage influences negatively retained earnings. This result confirms the reputation of the pecking order theory, and in particular retained earnings as the cheapest source of financing. Size positively influences retained earnings, and this reflects at least the larger problems of small firms to raise money. They retain fewer earnings but are asking credit holders and shareholders to have trust in their purposes. Obviously, they will have difficulty growing. MtB positively influences retained earnings, which confirms our previous results that firms with growth opportunities and low collateral assets must retain more in order fulfill their objectives.

[INSERT TABLE 4 ABOUT HERE]

Table 5 analyzes the determinants of abnormal retained earnings using the following subsamples: emerging markets, developed markets, civil-law-based countries, common-law-based countries, countries with low shareholder rights, countries with high shareholder rights, and the USA. In terms of country variables, we would like to highlight the positive consensual impact of GDP growth on abnormal retained earnings. This confirms the hypothesis of growth opportunities, i.e., growth opportunities increase with GDP and reflect higher abnormal retained earnings. This happens whatever subsample is used. Banking development, except for emerging markets and the USA, shows a positive impact on abnormal retained earnings. Managers seem to use private credit to finance abnormal retained earnings, i.e., growth opportunities. In the case of emerging markets and the USA, capital market development has a positive effect on abnormal earnings. This puzzle must be analyzed in further research, because both samples

present different institutional settings and, according to the pecking order hypothesis, firms should choose debt instead of equity. Nevertheless, in relation to banking development, one must note the higher value of the high shareholders parameter in relation to the low shareholders parameter – 0.0183 vs. 0.0007 – confirming the agency hypothesis. However, the same trend is not confirmed when we compare common-law-based countries with civil-law-based countries. We expected a higher value for common-law-based parameters, but this did not occur.

With regard to firm variables, the results are in line with previous ones. The higher negative value for dividend parameters in the case of the subsample low shareholders rights – -0.0048 vs. -0.0006 – reflects higher dividend payout ratios on undeveloped infrastructures where investors can be expropriated. This also occurs when we compare civil-law-based countries with common-law-based countries, and when we compare emerging countries with developed capital markets.

[INSERT TABLE 5 ABOUT HERE]

As for the 2008 financial crisis, except for the USA, abnormal retained earnings showed a negative impact on abnormal retained earnings. Possibly because of low-growth opportunities, investors have preferred a bird-in-hand. The positive signal obtained for the USA reflects a different trend in growth opportunities and probably explains, at least partially, the return of the American capital market.

5. Conclusion

The results of our work show opposite trends for cash holdings and retained earnings. Cash holdings around the world have increased, motivated by precaution, contrary to retained earnings, which have followed a decreasing trend in firms' growth opportunities. In fact, we show that cash holdings are influenced by precautionary motives and retained earnings by firm growth opportunities. Abnormal retained earnings have risen with GDP growth and have decreased following the 2008 financial crisis, confirming the hypothesis of firm growth opportunities. US firms present positive abnormal retained earnings after the 2008 financial crisis, contrary to the remaining firms around the world. This helps explain recent trends in the US stock market.

We show there are some signs that the impact of banking system development on retained earnings is positive, contrary to capital market development. This can signify that growth opportunities are influenced by the pecking order theory once stock issuing is the last resort. On the other hand, there are some signs that shareholder rights negatively influence retained earnings, which is the consequence of the alternatives offered by banking and capital market infrastructures. Nevertheless, the signs of capital market development are not definitive. The negative impact of shareholder rights on retained earnings is in line with the "outcome model" of La Porta et al (2000), where minority shareholders force corporate insiders to disgorge cash.

A positive impact of banking development on abnormal retained earnings is observed. Firms placed in developed banking systems have an infrastructure that supplies capital in an efficient and cheaper way. Thus, whenever firm growth opportunities exhibit a positive trend, the banking system involved retains earnings for their purposes. This result confirms the

hypothesis of banking monitoring: in countries with developed banking systems, credit holders are more protected and have more information about borrowers.

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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) divided by total assets (WC 02999). CH is cash and short-term investments (WC 02001) 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. SR is shareholder rights (La Porta et al (1999). Firms and N are the number of firms and observations, respectively. Sample period is from 1995 to 2014.

Country	RE	E(RE)	CH	IndRisk	D/A	SIZE	MtB	Dividend D	BD	CMD	GDP GROWTH	SR	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	2	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	0	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	5	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	2	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	3	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	3	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	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	2	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	5	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	4	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	3	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	1	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	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	2	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	2	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	4	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	4	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	3	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	4	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	4	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	3	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	2	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	5	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	5	9 399	69 420
Mean	0.06	0.06	0.20	0.15	0.24	12.01	1.50	0.58	1.47	1.15	0.02	3.04		
Emerging														
ARGENTINA	0.08	0.06	0.11	0.14	0.18	11.61	1.26	0.45	0.29	0.15	0.06	4	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	3	390	2 472
CHILE	0.05	0.06	0.09	0.14	0.21	11.71	1.21	0.84	0.90	1.02	0.04	5	158	1 739
EGYPT	0.06	0.05	0.22	0.14	0.16	10.87	1.54	0.74	0.82	0.49	0.04	2	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	5	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	2	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	1	151	926
MALAYSIA	0.04	0.05	0.17	0.14	0.22	10.77	1.13	0.60	1.30	1.41	0.05	4	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	1	146	1 572
PAKISTAN	0.07	0.05	0.12	0.14	0.33	10.82	1.28	0.69	0.44	0.22	0.04	5	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	3	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	3	182	1 983
SOUTH AFRICA	0.08	0.06	0.18	0.16	0.17	11.75	1.48	0.63	1.74	1.96	0.03	5	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	3	142	1 183
TAIWAN	0.05	0.05	0.27	0.16	0.22	11.50	1.38	0.56	1.45	1.41	0.00	3	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	2	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	2	243	2 035
Mean	0.06	0.05	0.14	0.14	0.23	11.16	1.34	0.57	0.79	0.70	0.04	3.12		
Developed - Emerging	0.00	0.00	0.05											
p-value	0.35	0.01	0.00											
Common - Civil	0.00	0.00	0.03											
p-value	0.55	0.82	0.20											
Before Crisis - After Crisis	0.02	0.01	-0.01											
p-value	0.00	0.00	0.46											

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) divided by total assets (WC 02999). CH is cash and short-term investments (WC 02001) 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. SR is shareholder rights (La Porta et al (1999). Sample period is from 1995 to 2014.

	RE	CH	IndRisk	D/A	SIZE	MtB	Dividend D	BD	CMD	GDP GROWTH	SR
RE	1.00										
CH	0.00	1.00									
IndRisk	-0.02	0.20	1.00								
D/A	-0.12	-0.35	-0.12	1.00							
SIZE	0.24	-0.17	-0.17	0.09	1.00						
MtB	0.12	0.29	0.21	-0.08	-0.07	1.00					
Dividend D	0.17	-0.07	-0.19	-0.08	0.37	-0.09	1.00				
BD	-0.02	0.13	0.02	-0.05	0.23	-0.01	0.08	1.00			
CMD	-0.03	0.09	0.01	-0.05	-0.04	0.02	-0.04	0.01	1.00		
GDP GROWTH	0.05	-0.07	-0.05	0.03	-0.13	0.05	-0.02	-0.42	0.12	1.00	
SR	0.02	0.04	0.11	-0.02	-0.03	0.12	-0.10	0.25	0.22	0.12	1.00

Table 3 – Cash Holdings and Retained Earnings around the World

Dependent variable is cash holdings and retained earnings. 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) divided by total assets (WC 02999). CH is cash and short-term investments (WC 02001) 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. SR is shareholder rights (La Porta et al (1999). 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	0.0117	0.0022	0.0028	-0.0005	-0.0026	-0.0005	-0.0004
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.07)	(0.00)	(0.06)	(0.31)
BD_t	0.0286	0.0492	0.0246	0.0020	0.0090	-0.0106	0.0086	0.0158
p-value	(0.09)	(0.00)	(0.00)	(0.59)	(0.00)	(0.00)	(0.00)	(0.00)
$GDPGROWTH_t$	-0.0177	-0.0790	- 0.0127	0.0947	0.1555	0.2009	0.1558	0.1304
p-value	(0.45)	(0.00)	(0.58)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
SR	0.0753	-0.0108	0.0567	(omitted)	-0.0320	0.0028	-0.0324	(omitted)
p-value	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	
$IndRisk_t$	0.6081	0.0882	0.0852	0.0233	-0.0328	-0.1510	-0.1385	-0.0528
p-value	(0.00)	(0.00)	(0.00)	(0.51)	(0.00)	(0.00)	(0.00)	(0.00)
Dividend D_t	-0.0047	-0.0033	0.0009	0.0138	0.0228	0.0191	0.0226	-0.0023
p-value	(0.00)	(0.00)	(0.34)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
D/A_t	-0.3377	-0.3202	-0.3213	-0.1828	-0.0661	-0.0659	-0.0679	-0.1110
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$SIZE_t$	-0.0193	-0.0174	-0.0190	-0.0287	0.0128	0.0131	0.0129	0.0233
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MtB_t	0.0547	0.0515	0.0522	0.0229	0.0105	0.0112	0.0108	0.0126
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$CrisisD_t$	0.0342	0.0189	0.0428	0.0342	-0,0242	-0,0111	-0,0230	-0,0297
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-0.0849	0.3016	0.0383	0.5240	0.0556	-0.0801	0.0667	-0.2080
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	312.890	312.890	312.890	312.890	312.890	312.890	312.890	312.890
Firms	36.459	36.459	36.459	36.459	36.459	36.459	36.459	36.459
Adj. R^2	0.26	0.26	0.28	0.06	0.12	0.12	0.13	0.07

Table 4 – Abnormal Retained Earnings around the World

Dependent variable is abnormal retained earnings. 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) divided by total assets (WC 02999). CH is cash and short-term investments (WC 02001) 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. SR is shareholder rights (La Porta et al (1999). 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.

ARIABLES	**ABNORMAL RETAINED EARNINGS**			
	(1)	(2)	(3)	(4)
CMD t	-0.0005	-0.0003	(omitted)	(omitted)
p-value	(0.24)	(0.58)		
BD t	0.0145	(omitted)	0.0143	0.0142
p-value	(0.00)		(0.00)	(0.00)
GDPGROWTH t	0.1279	0.1060	0.1514	0.1253
p-value	(0.00)	(0.00)	(0.00)	(0.00)
SR	(omitted)	(omitted)	(omitted)	(omitted)
p-value				
IndRisk t	-0.0024	-0.0065	-0.0022	(omitted)
p-value	(0.89)	(0.70)	(0.90)	
Dividend Dt	-0.0025	-0.0025	-0.0024	-0.0025
p-value	(0.00)	(0.00)	(0.00)	(0.00)
D/At	-0.1102	-0.1098	-0.1101	-0.1102
p-value	(0.00)	(0.00)	(0.00)	(0.00)
SIZE t	0.0233	0.0232	0.0232	0.0232
p-value	(0.00)	(0.00)	(0.00)	(0.00)
MtB t	0.0123	0.0123	0.0123	0.0123
p-value	(0.00)	(0.00)	(0.00)	(0.00)
CrisisD t	-0.0060	-0.0016	-0.0202	-0.0203
p-value	(0.00)	(0.33)	(0.05)	(0.05)
Constant	-0.2892	-0.2671	-0.2892	-0.2895
p-value	(0.00)	(0.00)	(0.00)	(0.00)
6	Yes	Yes	Yes	Yes
Observations	312.890	312.890	312.890	312.890
Firms	36.459	36.459	36.459	36.459
Adj. R^2	0.06	0.06	0.06	0.06

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

Panel regressions report fixed-effects. Dependent variable is abnormal retained earnings (ARE). 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) divided by total assets (WC 02999). CH is cash and short-term investments (WC 02001) 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. SR is shareholder rights (La Porta et al (1999). 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	Low SR	High SR	USA
CMD_t	0.0049	-0.0007	0.0067	-0.0004	-0.0076	-0.0008	0.0110
p-value	(0.00)	(0.00)	(0.00)	(0.35)	(0.00)	(0.05)	(0.00)
BD_t	-0.0179	0.01083	0.0202	0.0106	0.0007	0.0183	-0.0436
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.83)	(0.00)	(0.00)
$GDPGROWTH_t$	0.0576	0.1689	0.1348	0.1295	0.1059	0.1607	0.0957
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.03)
$IndRisk_t$	0.1637	-0.0569	0.0726	-0.0556	0.0270	-0.0251	0.0237
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.24)	(0.37)
Dividend D_t	-0.0054	-0.0010	-0.0043	-0.0006	-0.0048	-0.0006	-0.0059
p-value	(0.00)	(0.16)	(0.00)	(0.56)	(0.00)	(0.52)	(0.00)
D/A_t	-0.1316	-0.1031	-0.1307	-0.1000	-0.1247	-0.1035	-0.0916
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$SIZE_t$	0.0171	0.0260	0.0205	0.0247	0.0211	0.0242	0.0377
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MtB_t	0.0148	0.0123	0.0145	0.0115	0.0151	0.0118	0.0144
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
$CrisisD_t$	-0.0033	-0.0173	-0.0122	-0.0210	-0.0140	-0.0204	0.0012
p-value	(0.25)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.48)
Constant	-0.1798	-0.3230	-0.2820	-0.2855	-0.2364	-0.3104	-0.3864
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	No
Observations	79.344	233.546	141.188	171.702	99.299	213.591	69.420
Adj. R^2	0.12	0.06	0.09	0.06	0.09	0.06	0.08