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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 indicate that firms located in emerging markets retain more earnings than firms from developed countries. On the other hand, firms located on common law based countries retain earnings above the expected and higher than firms placed on civil law based countries. A possible explanation, according to our results, can be seen in the economic growth that these countries have shown in the past 20 years. The financial crisis of 2008 and its impact in the abnormal retained earnings can help to validate this result. Finally, we would like to draw attention upon the impact of the firms' size on abnormal retained earnings. According to our results this relationship is positive. This strongly questions the growth of smaller companies.

JEL classification: G32; G38

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

1. Introduction

In the last twenty years, capital markets and financial systems have shown successive crises. The burst of the dotcom in the beginning of the century, the subprime crisis and the sovereign debt crisis had a generalized impact. At the same time some developed countries, namely Greece, Italy and Portugal, registered a low growth, with their capital markets being affected by this situation. With the confidence crisis in the financial markets and with the economic instability, it was expected that companies would make an effort to retain results. This did not happen probably due to the fact of shareholders, with the help of management, preferred to have immediate dividends instead of waiting for future profits.

Even though the modern debate about the choices for financing companies is nearly 60 years old, this work has some pioneering particularities. Until the 80s decade, the focus of 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. This is to say what role they play regarding the decisions of financing, namely the legal origin (civil or common), the rule of law, the corruption perception, 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), 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)). Recently, corporate finance also focused on another issue related with financial corporate financing decisions and with the decision to retain earnings, 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 the purposes of abnormal 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, contrarily 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.

The main motivation of this work, which is based on pioneer approach, abnormal retained earnings, is to open the gateways to a matter that has not been largely discussed in comparison with external financing, the internal financing, the main source of funding used by companies. Internal financing is an important topic once the typical firm has many difficulties to obtain external funds. Such is more plausible for firms with financial constraints, namely the small ones, and we know they are the most common in all economies and how they participate on countries' growth. The relationship between financing constraints and corporate investment was firstly debated by Fazzari *et al* (1988), having them concluded that firms with high degree of financing constraints present a higher sensitivity of investment to cash flow, i. e., cash flow is an important determinant of marginal capital spending for constrained firms when external funds are costly. Kaplan and Zingales (1997) concluded that cash flow is not the ideal measure to identify the differential cost between internal and external finance. Their findings point out that less constrained firms' exhibit significantly greater investment cash flow sensitivity than more financially constrained firms. This issue is particularly relevant in recession periods or in epochs of financial crisis since the investors present much more risk aversion. It is 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.

The main goal of this research is to examine which firms (including countries and financial infrastructures) presented higher abnormal retained earnings.

Our findings indicate that firms placed on emerging markets use more internal financing than firms of developed countries. The same cannot be said about common law based countries towards civil law based ones, where the first generally present larger financial infrastructures. In these countries, despite of having an easier access to external financing, firms retain earnings above the expected and higher than civil law based countries. A possible explanation, according to our results, can be seen in the economic growth that these countries have shown in the past 20 years. The financial crisis of 2008 and its impact in the abnormal retained earnings can help to validate partially this result.

Concerning the determinants of abnormal retained earnings our results show a consensual role of firm-level variables in comparison to country-level variables. In this regard, we would like to draw attention upon

the impact of the firms' size on abnormal retained earnings. According to our results this relationship is positive. This strongly questions the growth of smaller companies. Despite their financial constraints in terms of external finance they present lower abnormal retained earnings. It is a matter that deserves definitely more in-depth research in the future.

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

2. Related literature, testable hypothesis and methodology

2.1. Related literature and testable hypothesis

This section analyses the role of recent financial crisis and financial infrastructures on abnormal retained earnings. This is an effort that includes different debates on corporate finance, namely financing choices, cash holdings, financing constraints and corporate investment, among others. The variables used as determinants of abnormal retained earnings reflect different financing choices perspectives (pecking order theory, trade off theory, agency theory and financial flexibility theory).

We use different firm-variables as determinants of abnormal 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. On the other hand, a firm that increases easily their leverage present lower problems on matter of information asymmetry (Myers (1984)) and need to retain less earnings for precautionary motive (Keynes (1936)). An expected negative relationship between leverage and abnormal 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. 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 cash. 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 if it is well succeeded (MacAnBhaird and Lucey (2010)). In fact, earnings retainment is the cheapest way of financing for firm's growth, but such only occurs if a firm is well succeeded. Myers (1977) argues that shareholders of firms with growth potential (high market-to-book) tend to underinvest in their firms once the positive NPV of the projects is usually appropriated by bondholders. In that sense, holding cash should be the way chosen to not refuse the project's development.

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.

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

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 financial development (capital market development and banking development) and retained earnings seems to exist.

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

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. Kaplan and Zingales (1997) showed that the investment-cash flow sensitivity is the highest for firms which seem to be the least financially constrained. Thus, the more the earnings are retained by firms, the more firms invest and that occurs particularly for firms less financial constrained, and particularly when economies are growing.

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

2.2. Methodology

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).

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, a comparison among countries with different characteristics is done - emerging vs developed capital markets and civil vs common law based countries -, as well as, the impact of 2008 crisis on abnormal retained earnings. We intend to find some signs about the impact of financial system infrastructure (law, creditor and shareholder rights, banking based, capital market based, among others) and recent financial crisis on abnormal retained earnings.

Finally, the last piece of this research dedicates to evaluate the determinants of abnormal retained earnings. Firstly, we compare the results considering a panel with random and fixed firm effects. Secondly, we adopt a dynamic panel model through generalized method of moments estimator, developed by Arellano and Bond (1991). For that purpose we calculate dependent and independent variables by country, that is, the variables are obtained in a yearly basis by country. To build such variables a country should have at least 30 firms on a specific year. Thus, we have an unbalanced panel of 862 observations. A balanced panel would have 1.000 observations (50 countries times 20 years). Both et al (2001) used a similar approach to evaluate the influence of institutional variables on capital structure choice. We also take into consideration a dynamic panel data considering all firms and using the same approach, but, in general, the models are overidentified. These approaches help us to evaluate which are the main determinants of abnormal retained earnings. The model posts the following relationship between abnormal retained earnings and its determinants:

$$ARE_{k,t} = \beta_0 + (1-\alpha) ARE_{k,t-1} + \beta X_{k,t} + \lambda_k + \gamma_t + \mu_{k,t}$$

where $ARE_{k,t}$ denotes the firms' average abnormal retained earnings of country k on year t ; β_0 is the constant; $X_{k,t}$ represents a vector of exogenous explanatory variables; α and β are parameters to be estimated, λ_k represents time-invariant unobservable country-specific effects; γ_t represents time-specific effects; and the time-varying disturbance term $\mu_{k,t}$ is assumed to be serially uncorrelated with mean zero and variance σ^2 . The vector of explanatory variables, X , includes k factors ($k= 1, \dots, 9$). These are measures of (i) capital market development, (ii) banking development, (iii) economic growth, (iv) dividend payment, (v) industry risk, (vi) leverage, (vii) size, (viii) growth opportunities, and (ix) financial crisis.

Capital market development and banking development are respectively the total value of all listed shares in a stock market as a percentage of GDP and domestic credit provided by banking sector as percentage of GDP (source: World Bank, except for Taiwan¹). GDP Growth source is also from World Bank, except for Taiwan. Dividend dummy results from WC 04551. Industry risk is the yearly standard deviation by sector of earnings before interest and depreciations and amortizations (wc 18198) to total assets (wc02999). Leverage is total debt (wc03255) to total assets (wc 02999). Size are firms' sales (wc07240). Growth opportunities is market-to book. 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.

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.

¹ Data was obtained consolidating the figures available on Taiwan Stock Exchange, Directorate-General of Budget, Accounting and Statistics and The Central Bank of China, Monthly Bulletin of Statistics of the Republic of China and CEIC.

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).

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.

3. Results

Table 2 presents the retained earnings and abnormal retained earnings by country. The results diverge significantly around the world. Among the countries that retain less results (4%, or less of the asset value) we can find countries like Greece, Hong Kong, Jordania, Brazil, Bulgaria, Israel, Italy, Malaysia, Romania and Sweden. On the other side, firms in Switzerland, South Africa, Russia, Peru, The Netherlands, Denmark and Argentina retain more results. In these countries, on average, firms retain nearly 8% of the total assets. In other words, on average, the firms duplicate the value of their assets in a space frame of approximately 12.5 years only with income retention. This result explains the importance of internal finance. Beck et al (2008) only found 13 countries, on a sample of 48, which firms' external funds represent more than 50% of their financing.

With regard to the results of the abnormal retained earnings we have to negatively highlight Greece, Hong Kong, Jordania, Sweden, Brazil, Bulgaria, Israel, Italy, Malaysia, Romania, Canada, Chile, Japan, New Zealand, Norway, Portugal and the United Kingdom. In a general way, with statistical significance, the companies of these countries, on average, present negative abnormal retained earnings. The firms in South Africa, Russia and Peru, are on average the ones that show a higher level of abnormal retained earnings on a global scale (near to 3%). With these results it is difficult to establish a pattern in order to identify easily the factors that determine the firms abnormal retained earnings. We are in the presence of countries with a different level of financial development and economic growth, as well as with opposite legal framework and with different financial infrastructures.

[INSERT TABLE 2 ABOUT HERE]

However, considering the development of the financial sector (developed capital markets vs emerging capital markets) and the legal structures (common law based vs civil law based), in contrast to the results obtained previously, it is possible to draw conclusions. The firms located in countries with emerging capital markets, as shown in the following figure, show, on average, higher abnormal retained results than firms located in developed capital markets. The same pattern of behaviour takes place when comparing firms which have common law systems opposed to firms facing a civil law based system. In this case, common law based firms retain more abnormal earnings. If the first outcome was the expected, it cannot be said about the second. Generally the common law based countries are better equipped in terms of external sources of financing, since

as a result of the legal framework and due to the fact of investors being more protected, the accessibility to external funding is easier to them (La Porta *et al* (1997, 1998) and Demirgüç-Kunt and Maksimovic (1998)). More surprising was the result obtained for the United States compared to the four categories of countries. After the financial crisis of 2008, the north-american companies, on average, showed an abnormally high level of abnormal earning retention. This result is unexpected once the US firms are located in a country where the access to external financing is relatively easy. We suspect that is due to higher needs of investment of north-american firms. We also suspect the same with regard to firms placed on common law countries as opposed to civil law based ones.

Figure 1 – Abnormal Retained Earnings Around the World

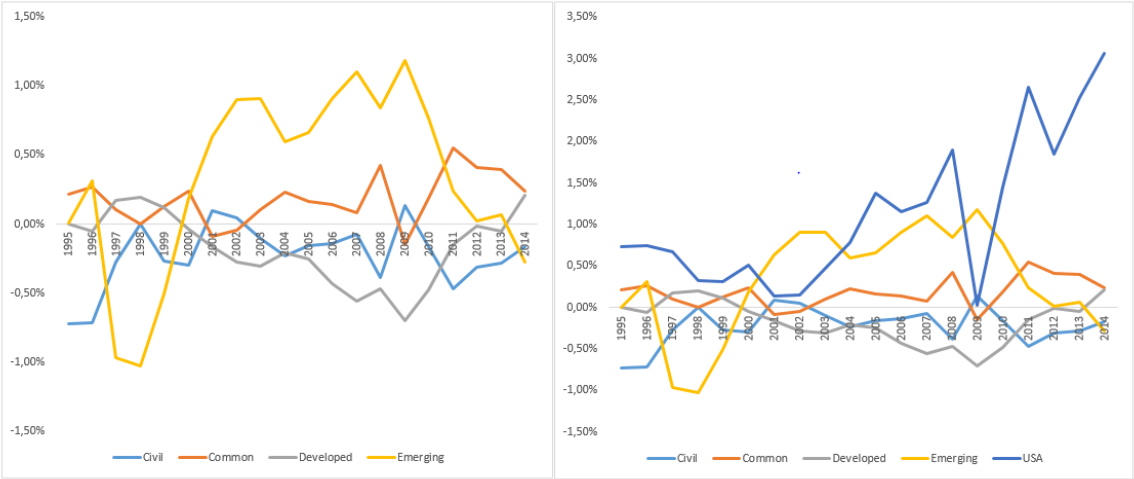


Table 3 presents an univariate analysis comparing the retained earnings and the abnormal retained earnings of emerging capital markets with developed capital markets, as well as civil law countries with common law-based countries. The analysis also evaluates both variables before and after the financial crisis.

The results confirm that the firms located in emerging capital markets, on average, retain more results (+0.34%) and present higher abnormal retained results (+0.68%) than firms established in markets with developed capitals. Simultaneously, the standard deviation of the retained and abnormal retained earnings is lower for firms located in emerging capital capitals. This confirms the need of companies located in these markets to resort to internal funds in a systematic way given their financial infrastructure.

Also, as referred before, the results shown in table 3 confirm that, on average, common law based countries show a higher level of earnings retention (0.60%) and of abnormal earning retention (+0.37%) than civil law based countries. However, the standard deviation of both variables is higher in common law based countries. The results obtained before and after the financial crisis turned the retained and abnormal retained earnings even more divergent: firms on common law based countries retained more earnings compared to firms placed on civil law based countries.

[INSERT TABLE 3 ABOUT HERE]

Table 4 studies firm and country-level determinants of abnormal retained earnings, using a panel of random and fixed firm effects. Capital market development, banking development and GDP growth are used as country-level determinants, industry risk, and dividend dummy, debt to assets, size and market-to-book are firm-level. A dummy for the financial crisis of 2008 is also considered as independent variable. The Hausman test suggests the use of fixed effects. However, in order to give robustness to the results, the panels of random and fixed effects are presented.

In relative terms, regarding the country variables it must be stressed the positive impact of GDP on abnormal retained earnings, independently of using random or fixed effects. This seems to indicate that firms retain more results as the economy grows in order to provide a larger set of opportunities of investment. Concerning the other two institutional variables, capital market development and banking development, the results are ambiguous.

[INSERT TABLE 4 ABOUT HERE]

With regard to the firm variables the results are more uniform. The firms that operate within riskier industries, where cash flow varies more, present higher abnormal retained earnings. This result responds to the assumption formulated that the firms which generate more cash flow retain more profit, as the internal funds are the source of a more economic financing (Myers (1984). At the same time, firms that regularly pay dividends retain less results. A possible explanation for what happened is formulated in the traditional problem

of conflict between managers and shareholders. Firms retain less results to avoid managers using cash flow in a discretionary way for their interest. The hypothesis that companies with a higher leverage show a lower level of retained results has been equally validated. The size parameter of the firms shows a positive sign. This means that the larger firms retain higher abnormal earnings. This result is apparently controversial as there is vast literature which concludes that firms of smaller size show more financial constraints, which means they use less external finance (Beck et al (2005, 2008) and Beck and Demirguc-Kunt (2006)).

However, these results only tell us that small firms proportionally use less external finance to face their needs of investment given their lower capacity to obtain external financing. Our results, on the contrary, and in line with MacAnBhaird and Lucey (2010), show that as firms grow, they present higher abnormal retained earnings. With regard to the growth opportunities, as expected, the results indicate that firms with these characteristics present higher abnormal results. The parameter that compares the period before and after of the financial crisis of 2008 shows a negative sign. Apparently, the retained results of the firms decreased after that event.

In table 5 there are a number of regressions presented about abnormal retained earnings by group of countries: emerging capital markets, developed capital markets, civil law based countries and the USA. The results, in general, confirm what was obtained of table 4, namely: the signs of the parameters of the firms' variables; the less consensual findings for country variables. Several research papers about financing choices found identical results (Booth et al (2001), Gianetti (2003) and Öztekin (2015)); the positive impact of economic growth on abnormal retained earnings; with the financial crisis of 2008, firms, with the exception of north American companies, presented less abnormal retained earnings; capital market development and banking development also seem to have a negative impact in the abnormal retained earnings. This seems to meet the idea that given lower financial constraints, meaning an easier external financing, firms resort less to internal financing.

[INSERT TABLE 5 ABOUT HERE]

In table 6 a robustness test to the previous results is presented using a dynamic panel data model with country effects, recurring to the generalized method of moments estimator of Arellano–Bond (1991). The variables are measured by country. We also calculate the Sargan test to evaluate over-identifying restrictions. In all regressions is accepted the absence of correlation between instruments and also between the residuals and instruments. We note that there is no second-order autocorrelation of errors for difference equation,

because the test of second order autocorrelation (AR2) does not allow rejecting the hypothesis of absence of second-order autocorrelation.

[INSERT TABLE 6 ABOUT HERE]

The results do not support the hypothesis that firms located on countries with a larger financial infrastructure (small capital market and banking sector) recur less to internal financing. However, the same cannot be said about economic growth, where results support what was shown in tables 4 and 5, as the higher growth rate of an economy shows higher growth rates, the firms seek more internal financing. The firms' variables confirm the signs previously detected. With regard to the period after the financial crisis of 2008 there are no evident signals that the firms have moved to have positive abnormal retained earnings, contrary to what should be expected about financial constraints data placed by financial infrastructures.

4. Conclusion

The financial economy has given more emphasis to external financing than to internal financing. However, it is the latter that firms generally seek. In this work the evolution of internal financing is analyzed in different geographical points.

The results of our work indicate that firms located in emerging markets use more internal financing than firms of developed countries. This result was expected as the financial infrastructure of the first is less sophisticated and of a lower dimension, not allowing companies to have an easy access to external financing. Nevertheless, the same cannot be said about common law based countries towards civil law based ones, where the first generally present larger financial infrastructures. In these countries, despite of having an easier access to external financing, they retain earnings above the expected and higher than civil law based countries. A possible explanation, according to our results, can be seen in the economic growth that these countries have shown in the past 20 years. The financial crisis of 2008 and its impact in the abnormal retained earnings can help to validate partially this result.

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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) and 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)	IndRisk	D/A	SIZE	MtB	Dividend D	BD	CMD	GDP GROWTH	Firms	N
ARGENTINA	0.08	0.06	0.14	0.18	11.61	1.26	0.45	0.29	0.15	0.06	68	548
AUSTRIA	0.07	0.06	0.14	0.24	12.48	1.32	0.69	1.26	0.26	0.02	124	1.010
BELGIUM	0.07	0.06	0.15	0.24	12.52	1.51	0.63	1.12	0.65	0.02	154	1.310
BRAZIL	0.04	0.05	0.15	0.29	12.43	1.40	0.63	0.87	0.51	0.03	390	2.472
BULGARIA	0.04	0.05	0.15	0.18	8.84	1.03	0.27	0.58	0.20	0.03	194	1.285
CANADA	0.05	0.06	0.18	0.21	10.87	1.66	0.31	1.84	1.09	0.02	2.287	13.766
CHILE	0.05	0.06	0.14	0.21	11.71	1.21	0.84	0.90	1.02	0.04	158	1.739
CHINA	0.05	0.05	0.15	0.21	12.18	1.93	0.69	1.47	0.47	0.09	2.516	11.463
DENMARK	0.08	0.06	0.15	0.25	11.81	1.57	0.59	1.85	0.53	0.01	217	2.061
EGYPT	0.06	0.05	0.14	0.16	10.87	1.54	0.74	0.82	0.49	0.04	138	911
FINLAND	0.07	0.06	0.15	0.24	12.51	1.60	0.80	1.00	1.13	0.02	159	1.734
FRANCE	0.06	0.06	0.16	0.22	12.29	1.48	0.61	1.21	0.76	0.02	1.087	8.631
GERMANY	0.06	0.06	0.16	0.20	12.17	1.56	0.50	1.37	0.46	0.01	1.018	8.460
GREECE	0.03	0.05	0.14	0.33	11.35	1.15	0.58	1.21	0.43	-0.01	323	2.297
HONG KONG	0.03	0.05	0.15	0.19	11.37	1.34	0.53	1.63	7.57	0.04	970	11.216
INDIA	0.07	0.05	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	0.14	0.31	11.15	1.39	0.48	0.44	0.40	0.05	362	4.241
IRELAND	0.06	0.06	0.16	0.23	12.41	1.70	0.61	1.49	0.57	0.05	90	777
ISRAEL	0.04	0.05	0.17	0.28	11.18	1.37	0.35	0.86	0.78	0.04	421	3.048
ITALY	0.04	0.06	0.15	0.27	12.66	1.31	0.59	1.24	0.40	0.00	311	2.784
JAPAN	0.05	0.06	0.15	0.23	12.77	1.16	0.85	3.21	0.75	0.01	4.401	46.453
JORDAN	0.03	0.05	0.15	0.17	9.12	1.35	0.35	1.08	1.06	0.05	151	926
KOREA (SOUTH)	0.05	0.05	0.15	0.25	11.81	1.13	0.59	1.46	1.42	0.04	1.820	17.875
KUWAIT	0.06	0.05	0.14	0.22	11.17	1.30	0.64	0.65	1.16	0.03	94	660
MALAYSIA	0.04	0.05	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	0.14	0.24	13.10	1.28	0.46	0.36	0.29	0.03	146	1.572
NETHERLANDS	0.08	0.06	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	0.15	0.22	11.06	1.66	0.70	1.31	0.35	0.03	144	1.240
NORWAY	0.05	0.06	0.15	0.29	11.79	1.61	0.44	0.78	0.50	0.02	309	2.187
OMAN	0.07	0.05	0.14	0.25	10.18	1.40	0.60	0.34	0.46	0.04	84	580
PAKISTAN	0.07	0.05	0.14	0.33	10.82	1.28	0.69	0.44	0.22	0.04	189	2.197
PERU	0.08	0.05	0.15	0.21	11.25	1.23	0.54	0.20	0.41	0.05	108	910
PHILIPPINES	0.06	0.06	0.15	0.20	10.41	1.37	0.43	0.52	0.55	0.05	182	1.983
POLAND	0.06	0.05	0.15	0.17	11.22	1.40	0.36	0.56	0.31	0.04	364	2.799
PORTUGAL	0.05	0.06	0.14	0.34	12.04	1.12	0.58	1.44	0.39	0.02	100	834
ROMANIA	0.04	0.05	0.16	0.15	9.98	0.97	0.28	0.39	0.12	0.03	121	852
RUSSIAN FEDERATION	0.08	0.05	0.17	0.26	12.60	1.22	0.33	0.35	0.51	0.03	398	1.669
SAUDI ARABIA	0.07	0.05	0.13	0.20	12.19	2.26	0.70	0.18	0.64	0.05	93	649
SINGAPORE	0.05	0.05	0.15	0.20	11.27	1.23	0.64	0.82	2.08	0.06	708	7.307
SOUTH AFRICA	0.08	0.06	0.16	0.17	11.75	1.48	0.63	1.74	1.96	0.03	554	4.152
SPAIN	0.06	0.06	0.14	0.29	12.97	1.53	0.65	1.91	0.90	0.01	176	1.092
SRI LANKA	0.06	0.06	0.14	0.22	9.44	1.39	0.65	0.45	0.25	0.06	142	1.183
SWEDEN	0.04	0.06	0.16	0.17	11.29	1.92	0.52	1.29	0.90	0.02	566	4.357
SWITZERLAND	0.08	0.06	0.15	0.21	12.86	1.67	0.70	1.66	2.11	0.02	258	2.896
TAIWAN	0.05	0.05	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	0.14	0.28	11.09	1.27	0.67	1.30	0.65	0.04	511	5.899
TURKEY	0.05	0.05	0.14	0.22	11.83	1.43	0.38	0.64	0.32	0.05	243	2.035
UNITED KINGDOM	0.05	0.06	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	0.17	0.23	12.17	1.97	0.30	2.07	1.26	0.03	9.399	69.420
VIETNAM	0.07	0.05	0.14	0.25	9.78	1.16	0.59	1.07	0.21	0.06	594	3.471
Total	0.06	0.06	0.16	0.23	11.79	1.51	0.55	1.68	1.22	0.03	40.917	336.318

Table 2 – Retained Earnings and Abnormal Retained Earnings by Country

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 are abnormal retained earnings and compares the firms' retained earnings with its expected value. The expected retained earnings is the firms' annual average retained earnings by sector.

Country	RE	S _{RE}	p-value	ARE	S _{ARE}	p-value
ARGENTINA	0,08	0,10	0,00	0,02	0,10	0,00
AUSTRIA	0,07	0,08	0,00	0,01	0,08	0,01
BELGIUM	0,07	0,09	0,00	0,02	0,09	0,00
BRAZIL	0,04	0,10	0,00	-0,01	0,10	0,00
BULGARIA	0,04	0,09	0,00	-0,01	0,10	0,01
CANADA	0,05	0,14	0,00	-0,01	0,14	0,02
CHILE	0,05	0,07	0,00	-0,01	0,07	0,02
CHINA	0,05	0,08	0,00	0,00	0,07	0,47
DENMARK	0,08	0,11	0,00	0,02	0,11	0,00
EGYPT	0,06	0,07	0,00	0,01	0,07	0,02
FINLAND	0,07	0,09	0,00	0,01	0,09	0,00
FRANCE	0,06	0,09	0,00	0,01	0,09	0,09
GERMANY	0,06	0,11	0,00	0,00	0,11	0,41
GREECE	0,03	0,08	0,00	-0,03	0,08	0,00
HONG KONG	0,03	0,11	0,00	-0,02	0,11	0,00
INDIA	0,07	0,08	0,00	0,01	0,08	0,00
INDONESIA	0,06	0,09	0,00	0,00	0,09	0,12
IRELAND	0,06	0,12	0,00	0,01	0,11	0,12
ISRAEL	0,04	0,11	0,00	-0,01	0,11	0,00
ITALY	0,04	0,08	0,00	-0,01	0,08	0,00
JAPAN	0,05	0,06	0,00	-0,01	0,06	0,00
JORDAN	0,03	0,08	0,00	-0,02	0,08	0,00
KOREA (SOUTH)	0,05	0,10	0,00	0,00	0,10	0,12
KUWAIT	0,06	0,09	0,00	0,00	0,09	0,15
MALAYSIA	0,04	0,08	0,00	-0,01	0,08	0,00
MEXICO	0,06	0,07	0,00	0,01	0,07	0,03
NETHERLANDS	0,08	0,10	0,00	0,02	0,10	0,00
NEW ZEALAND	0,05	0,11	0,00	-0,01	0,11	0,03
NORWAY	0,05	0,12	0,00	-0,01	0,12	0,07
OMAN	0,07	0,07	0,00	0,02	0,07	0,00
PAKISTAN	0,07	0,08	0,00	0,01	0,08	0,00
PERU	0,08	0,09	0,00	0,03	0,09	0,00
PHILIPPINES	0,06	0,10	0,00	0,00	0,10	0,39
POLAND	0,06	0,10	0,00	0,01	0,10	0,00
PORTUGAL	0,05	0,07	0,00	-0,01	0,07	0,03
ROMANIA	0,04	0,10	0,00	-0,01	0,10	0,01
RUSSIAN FEDERATION	0,08	0,10	0,00	0,03	0,10	0,00
SAUDI ARABIA	0,07	0,07	0,00	0,01	0,07	0,00
SINGAPORE	0,05	0,09	0,00	0,00	0,09	0,20
SOUTH AFRICA	0,08	0,11	0,00	0,03	0,11	0,00
SPAIN	0,06	0,08	0,00	0,00	0,08	0,34
SRI LANKA	0,06	0,07	0,00	0,01	0,07	0,03
SWEDEN	0,04	0,14	0,00	-0,02	0,14	0,00
SWITZERLAND	0,08	0,10	0,00	0,02	0,10	0,00
TAIWAN	0,05	0,08	0,00	0,00	0,08	0,36
THAILAND	0,06	0,09	0,00	0,01	0,09	0,01
TURKEY	0,05	0,10	0,00	0,00	0,09	0,41
UNITED KINGDOM	0,05	0,13	0,00	-0,01	0,13	0,03
UNITED STATES	0,07	0,15	0,00	0,01	0,15	0,06
VIETNAM	0,07	0,08	0,00	0,02	0,08	0,00
All	0,06	0,11	0,00	0,00	0,11	0,50

Table 3 - Univariate Analysis by Category of Country

RE and ARE are retained earnings and abnormal retained earnings. S'_{RE} and S'_{ARE} are respectively the standard deviation of retained earnings and abnormal retained earnings. The sample is divided considering the instabilities that occurred in world markets during the global financial crisis that began in 2008. N° OBS are the number of observations.

All				
	RE	ARE	S'_{RE}	S'_{ARE}
Emerging Capital Markets	5.83%	0.47%	8.49%	8.43%
N° OBS			102.772	
Developed Capital Markets	5.49%	-0.21%	11.70%	11.58%
N° OBS			233.546	
Emerging vs Developed Capital Markets	0.34%	0.68%	0.53	0.53
p-value	0.00	0.00	0.00	0.00
Before Crisis				
Emerging Capital Markets	6.44%	0.58%	8.93%	8.88%
N° OBS			45.155	
Developed Capital Markets	5.85%	-0.18%	11.90%	11.77%
N° OBS			145.611	
Emerging vs Developed Capital Markets	0.59%	0.75%	0.56	0.57
p-value	0.00	0.00	0.01	0.01
After Crisis				
Emerging Capital Markets	5.34%	0.39%	8.09%	8.45%
N° OBS			57.617	
Developed Capital Markets	4.89%	-0.25%	11.34%	11.27%
N° OBS			87.935	
Emerging vs Developed Capital Markets	0.45%	0.64%	0.51	0.50
p-value	0.00	0.00	0.01	0.01
Before Crisis				
Civil Law based Countries	5.72%	-0.15%	8.62%	8.53%
N° OBS			84.115	
Common Law based Countries	6.21%	0.12%	12.98%	12.85%
N° OBS			106.651	
Civil Law vs Common Law based Countries	-0.49%	-0.26%	0.44	0.44
p-value	0.00	0.00	0.01	0.01
After Crisis				
Civil Law based Countries	4.84%	-0.24%	8.46%	8.42%
N° OBS			80.501	
Common Law based Countries	5.36%	0.29%	11.96%	11.90%
N° OBS			65.051	
Civil Law vs Common Law based Countries	-0.52%	-0.52%	0.50	0.50
p-value	0.00	0.00	0.01	0.01

Table 4 - Panel Regression of Abnormal Retained Earnings by firm

Panel regressions report random and 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.

VARIABLES	All		Before Crisis		After Crisis	
	FE	RE	FE	RE	FE	RE
CMD _t	-0.0017	-0.0130	-0.0030	-0.0024	0.0021	-0.0011
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
BD _t	0.0003	-0.0014	-0.0048	-0.0169	-0.0029	-0.0114
p-value	(0.77)	(0.00)	(0.00)	(0.00)	(0.12)	(0.00)
GDPGROWTH _t	0.0262	0.0550	0.0181	0.0789	0.0259	0.0535
p-value	(0.00)	(0.00)	(0.16)	(0.16)	(0.00)	(0.00)
IndRisk _t	0.1369	0.0529	0.1457	0.0500	0.2416	0.0550
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Dividend D _t	-0.0030	0.0031	-0.0090	0.0025	-0.0086	0.0010
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.14)
D/A _t	-0.1079	-0.0901	-0.1146	-0.0880	-0.1203	-0.0890
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
SIZE _t	0.0210	0.0176	0.0211	0.0179	0.0248	0.0157
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MtB _t	0.0118	0.0100	0.0126	0.0101	0.0102	0.0088
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
CrisisD _t	-0.0088	-0.0031				
p-value	(0.00)	(0.00)				
Constant	-0.2555	-0.1925	-0.2494	-0.1896	-0.3099	-0.1696
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm Dummy	Yes		Yes		Yes	
Observations	336.318	336.318	190.766	190.766	145.552	145.552
Firms	40.917	40.917	35.327	35.327	28.682	28.682
R ²	0.06	0.06	0.06	0.06	0.05	0.05
Hausman Test	2808.76		1897.81		1605.19	
p-value	(0.00)		(0.00)		(0.00)	

Table 5 - Panel Regression of Abnormal Retained Earnings

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.

VARIABLES	Emerging Markets	Developed Markets	Civil Law based Countries	Common Law based Countries	USA
CMD _t	-0.0102	-0.0015	-0.0153	-0.0012	0.0110
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
BD _t	-0.0084	-0.0036	-0.0084	-0.0023	-0.0436
p-value	(0.00)	(0.00)	(0.00)	(0.14)	(0.00)
GDPGROWTH _t	0.0363	0.0416	0.0366	0.0403	0.0957
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
IndRisk _t	0.2852	0.0718	0.2114	0.0813	0.0237
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.37)
Dividend D _t	-0.0061	-0.0008	-0.0051	-0.0005	-0.0059
p-value	(0.00)	(0.25)	(0.00)	(0.55)	(0.00)
D/A _t	-0.1275	-0.0999	-0.1259	-0.0982	-0.0916
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
SIZE _t	0.0154	0.0243	0.0179	0.0231	0.0378
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
MtB _t	0.0136	0.0119	0.0139	0.0111	0.0144
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
CrisisD _t	-0.0114	-0.0056	-0.0099	-0.0085	0.0012
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.48)
Constant	-0.1732	-0.2911	-0.2348	-0.2664	-0.3861
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm Dummy	Yes	Yes	Yes	Yes	Yes
Observations	102.772	233.546	164.616	171.702	69.420
R ²	0.10	0.05	0.08	0.05	0.07

Table 6 – Dynamic Panel Regression of Abnormal Retained Earnings

All variables are annual means by country. 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 are abnormal retained earnings and 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 countries are the number of observations and countries, respectively. Sample period is from 1995 to 2014. Statistical inference based on cluster-robust standard errors at the country level. AR(2) test is a test for the second-order serial correlation, and is asymptotically distributed as $N(0,1)$ under the null of no serial correlation. Sargan test is a test for the validity of instruments and is asymptotically distributed as χ^2 under the null of valid instruments.

VARIABLES	Crisis	Country	Firm	All
ARE _{t-1}	0.4092	0.4207	0.4089	0.4075
p-value	(0.00)	(0.00)	(0.00)	(0.00)
CMD _t		0.0058		0.0019
p-value		(0.18)		(0.00)
BD _t		0.0071		0.0089
p-value		(0.00)		(0.02)
GDPGROWTH _t		0.0543		0.0241
p-value		(0.00)		(0.08)
IndRisk _t			0.0923	0.1170
p-value			(0.01)	(0.00)
Dividend D _t			-0.0558	-0.0537
p-value			(0.00)	(0.00)
D/A _t			-0.1906	-0.1819
p-value			(0.00)	(0.00)
SIZE _t			0.0142	0.0140
p-value			(0.00)	(0.00)
MtB _t			0.0070	0.0048
p-value			(0.00)	(0.00)
CrisisD _t	-0.0064			-0.0003
p-value	(0.00)			(0.81)
Constant	0.0037	-0.0109	-0.1113	-0.1253
p-value	(0.00)	(0.04)	(0.00)	(0.00)
Observations	760	760	760	760
Number of Countries	50	50	50	50
AR (2) test	0.78	0.98	0.93	1.02
p-value	(0.44)	(0.17)	(0.35)	(0.31)
Sargan test	14.11	18.42	12.20	13.10
p-value	(0.66)	(0.36)	(0.21)	(0.27)

