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Dedication

To Eva.

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ESSAYS IN INTERNATIONAL CORPORATE FINANCE

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This dissertation consists of three essays in international corporate finance. It studies the impact of aggregate conditions and the institutional environment on the behavior of publicly traded firms from a broad sample of countries. In the first essay I argue that when credit constraints are widespread, as may be the case in countries with poor investor protection, we should not necessarily expect small firms' investment to be more sensitive to monetary contractions or negative aggregate shocks. A simple model of investment with credit constraints shows that for this pattern to occur we need a high enough level of investor protection. The empirical evidence is broadly consistent with the hypothesis. In periods of tight credit conditions, small firms from countries with high creditor protection contract their investment rate more than large firms, while there is no significant difference in the investment contraction of small and large firms in from low creditor protection countries.

In the second essay I explore to what extent the effect of legal origin on payout policy, ownership concentration, and valuation has been stable through time. The results

suggest that previously established results should be taken with caution, and cast doubts on their strength. In particular, it appears that corporate characteristics are converging across countries, and legal origin is no longer an important determinant of them.

In the final essay I study to what extent capital raising in international markets is related to firms' ability to react to financial shocks. I provide a complete descriptive picture of the main patterns in the use of international financing between 1990 and 2009, study how issuers and non-issuers grow during financial crises, and how their growth is related to the aggregate conditions in the economy and their past financing behavior. Firms that raise capital internationally have a lower correlation with the local GDP growth, and grow more during local financial crises; however this relationship depends on the overall degree of development of the country and is highly dependent on the determinants of the issuance decision. The descriptive analysis shows that international capital raising is pervasive in most countries, but the firms doing so differ depending on the development of their country of origin.

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Chapter 1: Investor Protection and the Sensitivity of Investment to Financial Shocks

INTRODUCTION

One of the least systematically explored issues in international finance is whether financial, legal and other institutional problems have the same effect on firms of all types. In particular, with a few exceptions like Beck et al. (2005) who studies the effect of these problems on the growth rates of firms of different sizes, there is little evidence on how firm level characteristics interact with the country level restrictions on growth and other significant firm performance measures.

Beck et al. study of financial and legal constraints to growth documented the differential impact of institutional developments on firms of different sizes. It is the smaller firms who benefit the most from the relaxation of the constraining effects of financial, legal and corruption obstacles to growth. While the previous point is extremely important on its own right it does not speak as to how different firms would react to changes in the aggregate circumstances. In the present study I explore the Beck et al. question further and also study the effects of institutional development on the reaction of firms to financial shocks. Additionally, to circumvent some of the weaknesses inherent in the use of survey data, I rely instead on the financial statements of the largest firms in each country and pool that information with country level data to produce a broad image of the main characteristics of corporate financing across countries.

Over the last few decades economists have studied extensively the effects of information problems in the credit market on the impact of monetary policy and the response of the economy to financial and real shocks. Moreover, the magnitude of these problems has been shown to be related to a series of institutional and financial sector development factors. However, the previous literature does not deal directly with the

effect of investor protection on the transmission of monetary policy and in this paper I present a simple model that considers its effect and present empirical evidence on the issue.

This paper explores how a country's protection of external investors affects the response of investment to interest rate shocks. Institutional factors such as the quality of the legal system, the respect of contracts, etc. are at the root of the information problems that justify the credit channel and create the conditions for the non-perfect substitutability between informed and uninformed financing.

The theoretical grounds of the credit channel view rely on the asymmetry of information that characterizes the credit markets. These information problems lead borrowers to ration the credit extended to financially weaker firms, often thought of as smaller firms. One important implication of the theory has been referred to as Flight to Quality after a credit tightening. It means that a credit tightening will hit more severely the firms with the strongest asymmetries of information (e.g. small firms). Flight to quality during monetary contractions, has been probably the most frequently used mean to identify the existence of a credit channel of monetary policy. To avoid confusion with the literature on international capital flows and investment, I will instead refer to this as the sensitivity of investment to financial shocks.

In Bernanke, Gertler and Gilchrist (1996), Nilsen (2002) and other papers on the credit channel, the higher sensitivity of investment to interest rate shocks arises as a cross sectional implication of the financial accelerator theory. The models presented in Bernanke, Gertler and Gilchrist (1996), Kiyotaki and Moore (1997) and Holmstrom and Tirole (1997) highlight the role of information problems in the credit market in the propagation of shocks (financial accelerator). Due to information asymmetry, small firms

face credit restrictions which worsen after a negative shock, producing a higher sensitivity of investment to interest rate shocks and a further fall in output.

However, after incorporating the level of investor protection into a similar model this prediction no longer holds unconditionally. In this case a higher sensitivity of investment to interest rate shocks for smaller firms will only be observed in the more developed financial markets. Investor protection determines the type of credit restrictions that firms face. Small firms will be more sensitive to interest rates when credit to small (low collateral) firms is reduced disproportionately more compared to large (collateral rich) firms and this happens when credit restrictions are more sensitive to shocks. Therefore, a necessary condition for this higher sensitivity of investment of small firms to exist is for the level of investor protection to be high enough. Firms that do not receive credit at all cannot be affected by credit contractions.

To isolate the effect of investor protection on the transmission of monetary policy, the response to interest rate shocks is studied in a broad international sample of publicly traded firms, and firms are grouped according to country measures of investor protection. This approach allows us to study the differential response of firm investment while varying the institutional factors across countries and controlling for firm level determinants of investment and access to credit. In a way, you can think of a firm's ability to secure financing after a shock as a function of both firm level investor protection (or availability of funds) and country level protection.

A STYLIZED MODEL OF INVESTMENT, INVESTOR PROTECTION AND INTEREST RATES

A simple model of firm financing and investor protection shows that, contrary to what is commonly thought, firms facing tighter credit conditions will not necessarily be

more affected by credit contractions¹. The level of investor protection determines which types of firms are able to obtain financing and therefore which firms are affected the most during monetary contractions.

The models of Bernanke, Gertler and Gilchrist (1996) and Kiyotaki and Moore (1997) only consider fixed assets as good collateral. I allow banks to consider a portion of the expected cash flows from investment as seizable collateral. All fixed assets are seizable, but the portion of seizable cash flows depends on the degree of asymmetric information between lender and borrower. The asymmetric information problem depends in turn of the institutional arrangements intended to protect investors, which are generally weaker in less developed economies (La Porta et al., 1998); it also depends on the degree of monitoring on a firms activity, which is more intense in firms with better access to the credit markets.

Similarly to other papers on the credit channel, I construct the model in the context of small and large firms, or more generally speaking, constrained and unconstrained firms. I focus on the behavior of small, constrained firms, since large, unconstrained firms are supposed to behave according to more standard investment models operating in perfect financial markets.

Small, constrained firms have a level of fixed capital, K_S . As in Bernanke, Gertler and Gilchrist (1996) and Kiyotaki and Moore (1997), fixed capital is seizable and thus, considered good collateral by lenders. In addition, I assume that lenders also consider a fraction $0 < \gamma < 1$ of the expected cash flows from the project as collateral. The value of γ is a proxy for the quality of investor protection, which is related to the level of financial development of the country (La Porta et al., 1998), and to the degree of monitoring on

¹ Braun and Larrain (2005) and Kaplan and Zingales (1997) point out that the possible existence of non-monotonicities in the firm growth-financial frictions relation.

firm's activities. This assumption is similar to that of Jappelli et al (2005), Almeida and Campello (2007), Galindo and Micco (2007), and Troncoso (2010), and can be interpreted as either the extent to which a borrower can appropriate to himself a fraction of the firm's resources, or alternatively as the fraction of firm's resources that may be lost in a costly litigation in case the borrower disputes the payment to the investor.

Assumption 1: *In case of default, lenders can only seize the firm's fixed capital, and a fraction $0 < \gamma < 1$ of the firm's payoff.*

There are also large firms in the economy, with a level of fixed capital K_L which is larger than the minimum required to sustain a first best level of investment. Thus, large firms do not face credit constraints in practice and are able to hire credit until the marginal product of investment equals the marginal cost of the credit. To keep the model simple, I assume that small firms have constant returns to scale in investment.

Assumption 2: *Small firms have constant returns to scale in investment up to the level of capital \bar{K} , after which they have decreasing returns to scale.*

The upper level \bar{K} is not relevant in the solution of the model, but it helps to argue that both large and small firms may have access to the same technology, but $K_L \gg \bar{K}$.

The definition of the partial equilibrium for firms and lenders, for a given interest rate, is given by:

Definition 1 (partial equilibrium): A set $\{K_S, K_L\}$ such that for a given interest rate i :

- i. Large firms' marginal product of investment equals the real interest rate of the credits offered.
- ii. Lenders have the same expected return among all their investment opportunities.

- iii. The lender has no incentives to change the interest rate charged on any of their credits.

It is worth noting that I am not interested in modeling Central Bank's behavior. Instead, my interest is on the behavior of the firms, given the behavior of the Central Bank. The model gives predictions of firms' behavior after monetary policy shocks.²

The Agency Problem and Credit Rationing

As in Stiglitz and Weiss (1981 and 1992) there is credit rationing in equilibrium, in the sense that for the equilibrium interest rate, the firm is will prefer to borrow more, but it is not convenient for the lender either to raise the interest rate, or to extend more credit. The intuition is that if the interest rate is higher or the size of the loan larger, adverse selection worsens (because only firms that do not expect to pay back the loan will be interested in such an expensive credit), and moral hazard increases (because limited liability imply a convex payoff to the firm as a function of the projects payoff, and the firms will act as risk lovers), therefore decreasing the expected return of the credit from the point of view of the lender.

Small firms have perfectly divisible projects with constant return r , at least up to an upper limit I of investment, which by Assumption 2 is:

$$\bar{I} = \bar{K} - K_S$$

Firms use debt to finance their investment projects. Consider that a firm borrows I_S from the lender with an interest rate i . If the small firm pays back the debt, the firm's payoff is:

$$I_S(r - i)$$

² In the empirical section I try to obtain as clean measure of monetary policy shocks. This is done by either focusing on periods of low inflation; periods of extreme interest rate increases; or using the residual interest rate innovation from a VAR model of the interest rate and the GDP.

But the firm can also choose to default the credit, in which case, the firm loses its collateral, and a fraction of the projects payoff. Thus the firm receives:

$$I_S(1 + r)(1 - \gamma) - K_S$$

For a small firm, the incentive condition to pay back a credit is:

$$I_S(r - i) \geq I_S(1 + r)(1 - \gamma) - K_S \quad (1)$$

Condition (1) holds for any positive values of I_S and i if:

$$\gamma \geq \frac{1 + i}{1 + r} \quad (2)$$

It means that, for a high enough level of investor protection γ , it is never convenient for a firm to default. For lower levels of γ , condition (1) can be written as:

$$I_S \leq \frac{K_S}{(1 + i) - \gamma(1 + r)} \quad (3)$$

When $\gamma = 0$, condition (3) becomes the same credit restriction used by Bernanke, Gertler and Gilchrist (1996) and Kiyotaki and Moore (1997). Condition (3) is the credit restriction faced by small firms, with a level K_S of capital for a given credit interest rate i . If condition (3) holds, the lender receives a safe return i for the credit. Competition leads the interest rate of credit extended to small firms to be equal to other safe investment alternatives.

As long as $r > i$, small firms will hire as much credit as possible, thus, the optimal investment of small firms is given by expression (3) holding with equality. Let us consider only the case when $I_S < \bar{I}$ to avoid complex expressions for the credit restriction (3).

Unconstrained Firms Investment

Large firms have enough capital relative to their desired investment, and therefore do not face credit restrictions. Let us consider that the production function of large firms is:

$$F(K_L, I_L) = G(K_L) + AI_L^\alpha$$

Where I_L is the investment of large firms and $0 < \alpha < 1$. The choice of the functional form is for simplicity and implies diminishing returns to scale on investment.

Large firms do not face credit constraints because of their high level of collateral. Similarly to small firms, large firms contract credits to finance their investment. The maximization problem is:

$$\max_{\{I_L\}} F(K_L, I_L) - (1 + i)I_L$$

The solution to which is:

$$I_L = \left(\frac{\alpha A}{1 + i} \right)^{\frac{1}{1-\alpha}} \quad (4)$$

Sensitivity of Investment to the Interest Rate

To consider the effect of a rise in the interest rate in the investment of small and large firms, we use the conditions for the optimal level on investment and compute the semi-elasticity of investment to interest rate:

$$\left| \frac{\partial \ln I_S}{\partial i} \right| = \frac{1}{(1 + i) - \gamma(1 + r)} \quad (5)$$

$$\left| \frac{\partial \ln I_L}{\partial i} \right| = \frac{1}{(1 - \alpha)(1 + i)}$$

Hypothesis: If small firms are credit constrained, and large firms are not, then small firms' investment is more sensitive to an interest rate increase when $\frac{1+i}{1+r} > \gamma > \alpha \frac{1+i}{1+r}$. In words, small firms are more sensitive to interest rate shocks because of credit restrictions only when there is a sufficiently large value of γ .

Proof. Small firms face credit restrictions when $(1 + i)/(1 + r) > \gamma$, otherwise there will not be constrained firms or a credit channel to worry about. The second inequality comes directly from the definition of flight to quality.

The hypothesis states that when investor protection is poor, small firms face tight credit restrictions and they will not be very sensitive to further changes in credit conditions, while if investor protection is outstanding, information problems in the credit market are irrelevant and, indeed there is no credit channel or financial accelerator.

EMPIRICAL EVIDENCE

To gauge the impact of investor protection on the transmission of monetary policy and interest rate shocks I test the model prediction on a dataset of international public companies. While the ideal testing setting will include a broader set of firms, especially smaller, private firms without easy access to the external capital market because of data availability I am constrained to working with a subset of relatively large and less constrained firms, those with publicly traded shares covered by Worldscope. Empirical evidence in favor of the model predictions among this set of possibly less constrained firms will speak strongly about the important effect of institutional factors (investor protection) on the ability of firms to secure financing for their projects.

I focus on investment behavior to identify the role of credit in the transmission mechanism of monetary policy. In particular, the central idea to be tested is whether firms of different credit quality are affected by interest rate changes differently, with safer firms being eventually less sensitive to credit conditions. This pattern has often been called flight to quality in the literature. In all, it refers to investors changing the composition of their investments towards safer alternatives during negative shocks. The literature on contagion and sudden stops studies the flight to quality of international investors moving

away from emerging markets towards safer securities such as U.S. Treasuries bills (Arora and Cerisola, 2001; Kaminsky and Reinhart, 1998). Alfaro et al. (2004); Kashyap and Stein (2000); and Lang and Nakamura (1995) study flight to quality in banks investment by observing the behavior of bank's portfolios. Bernanke and Gilchrist (1996) and Nilsen (2002) study the behavior of firms to identify the existence of flight to quality. In this strand of the literature, large firms are considered safer investments than smaller ones, and thus a negative shock should have a larger negative effect on smaller firms. Throughout this paper I will focus on this later interpretation of flight to quality but will continue calling it sensitivity of investment to the interest rate.

Data and Empirical Approach

I use two main alternative strategies to study the behavior of firms after interest rate shocks.

The first is a semi parametric approach in which I compare the mean investment controlling for individual firm effects across firms sorted into different groups according to firm level variables thought to be correlated with a firm's ease of access to credit. In particular, firms are sorted based on either their size or their net collateral. To do this I need to identify periods of tight credit conditions and then compute the mean value of the variables of interest before and after the shock.

The ideal shock will be one where only credit is affected while investment opportunities remain unchanged (e.g. Russian default and the effect on the investment and financing on firms from countries with limited connections to Russia).

To study the differential ability of firms to invest during a tight credit episode, firms are sorted into size groups according to their total asset value in constant value dollars (the base year is 2000 and the size groupings are made both in terms of the book

value and of the market value of their assets), and also according to net collateral groups, which is defined as the ratio of property plant and equipment plus cash and equivalents minus total debt divided by total assets. This later variable is possibly a closer analog to the size variable in the model.

The second approach is to estimate a dynamic equation of investment on lagged values of itself, firm level controls, and a measure of monetary policy and credit market conditions. The effects of the later variable are allowed to vary with the proxies of credit restrictions (size).

The initial firm-level dataset comprises financial statements for the universe of firms covered in Worldscope for each year between 1980 and 2008. Worldscope covers mostly large publicly traded company. **Error! Reference source not found.** shows the number, mean and median value of book assets of non-financial firms by country for selected years. Through time the coverage has expanded and more countries and firms are included into the database. The total number of non-financial firms with data on their book value of assets grows from 3,833 firms in 33 countries in 1985 to 30,568 firms in 64 countries in 2008 (32,089 firms in 67 countries in 2005). The average book value of assets of the covered firms drops from \$5.1 billion in 1985 to \$4,1 billion in 2008, while the median drop s from \$1.1 billion in 1985 to \$137 millions in 2008. This means that the coverage of smaller firms in the sample has expanded through time.

In addition to the firm level accounting data, the dataset is complemented with country level measures of interest rates, creditor rights, and financial development. The later are obtained from the International Monetary Fund's International Financial Statistics (IFS), the World Bank's Doing Business Reports, and several other academic sources. Details are provided in the following section.

Country Level Characteristics

The voluminous literature on comparative corporate finance has identified a number of country level characteristics and institutions that are correlated with firms' ability to secure the necessary funds for their growth, and in general with a country's overall level of financial development. Different measures of legal protection are associated with a host of aspects of financial systems. More credit (Djankov, et al. (2007)), higher valuations (La Porta, et al., (1997, 1999, 2000), Claessens, et al., (2000, 2002)), lower ownership concentration and benefits of control (La Porta, et al., (1999), Zingales (1994), Claessens, et al., (2000), Nenova (1999)), and higher correlation between investment and investment opportunities (Wurgler (2000)) to name a few.

As previously mentioned, in this study I rely on the measures compiled by the World Bank on their Doing Business Report. The reason for doing this is that, to the best of my knowledge, this appears to be the most comprehensive and up to date source on cross country measures of the quality of the institutions supporting financial markets. The Doing Business Report measures regulations affecting firms at various stages of their life: starting a business, dealing with constructions permits, employing workers, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business.

For the purpose of this study I focus on the measures more closely related to the protections of potential providers of capital, that is, I focus on the Getting Credit and Investor Protection measures.

While the report has been produced for five different years, most of the time series variation across countries has occurred in countries with initially low measures of ease of doing business, which unfortunately also happen to be countries with very poor

(if any) Worldscope coverage. For this reason the bulk of the power in my tests comes from the cross-section of country characteristics rather than their time-series variation.

Getting Credit Indicators

To measure the ease in the access to credit by firms, the Doing Business report collects data on the depth of credit information and on the strength of legal rights. The first set of indicators is intended to measure *"the coverage, scope, quality and accessibility of credit information available through private and public registries."* The second set of indicators *"describes how well collateral and bankruptcy laws facilitate lending."*³ Both dimensions are measured as the total number of creditor friendly regulations or products available in each country. The first is the *Credit Information Index* and the second is the *Legal Rights Index*.

Protecting Investors Indicators

A complementary dimension of the ease of access to capital comes from how well protected are minority shareholders of a firm. Without minority shareholder protection, equity markets have a hard time developing because potential investors will be reluctant to invest in companies that cannot provide them with a reasonable expectation of getting a return for their investment. Since the work of LLSV we know that the poor protection of minority investors is associated with smaller and less active stock markets and with a greater concentration of ownership as investors either take a majority stake or do not invest.

To measure the protection of investors, the Doing Business report collects data on three related dimensions of shareholder protection. The *Disclosure Index*, the *Director Liability Index*, and the *Shareholders Suits Index*.

³ Doing Business report (2009), page 29.

Firm Level

Firms endogenously respond to the challenges of their environment and adapt their financial policies to facilitate their access to funds and allow their growth. In a neoclassical investment model with perfect capital markets the main determinant of optimal investment is a firm's marginal Q. However, if we allow for frictions then other variables may play an important role in determining the optimal investment policy. In particular, if we consider the financing constraints that firms may face due to asymmetric information and agency problems as those outlined in the motivating model, then, the negative effect of these constraints will be related to how dependent is the firm on capital markets. Internally generated funds make a firm less dependent on capital markets and therefore may have an important effect on the optimal investment policy. One of the basic ideas is that firms face an external finance premium and could therefore have a lower cost of capital if they do not require outside financing. A number of variables have been proposed in the literature to capture a firm's financial constraints status, for example age, size, leverage ratio, cash holdings, and bond ratings (Hubbard, 1998).

Identifying Periods of High/Low Credit Restrictions

The first approach I follow to identify periods of widespread credit restrictions is to focus on periods of high or low interest rates. Ideally I will rely solely on the expected real interest rate of each country, however, this data is not available for most countries (inflation indexed debt is not very common) so instead I rely on nominal interest rate series. Using the later has the complication that in many countries nominal interest rates have a downward trend during the analysis period. One reason for this is that many countries (particularly emerging) substantially lowered their inflation rates during the period covered in the sample. Therefore, considering only the absolute value of interest rates may distort the results as inflation expectations may have been going down (in the

model the variable of interest is the real rate as inflation expectations are assumed to be constant) and most years at the beginning of the sample will be mechanically considered high rate years.

As a partial solution to this problem I identify periods of tight credit conditions when there is both a substantial increase in nominal interest rates and a drop in a country's total private credit. Specifically, periods of tight credit conditions are defined as those where the reference nominal interest rates increase significantly and where aggregate private credit drops either the same or the next year (by at least 1% each).⁴ Not all interest rate series are available for all the countries in the sample, in particular, countries with currency boards or dollarized exchange rates don't have data on the federal funds rate (e.g. Argentina in the 90s) and countries with shallow credit markets many times do not have data on money market or bank lending rates that are easy to come by with. To have as broad a sample as possible I use the interest rate series in the following order if available: the monetary policy rate first; the money market rate if there is no monetary policy rate available; and finally the bank lending rate if the previous two series do not have data.

Table 2 shows the periods identified as having tight credit conditions. In total there are 64 different periods from 39 different countries where interest rates rose and aggregate credit diminished, for which firm level data for a sufficient number of firms is available. It is evident from the table that there are periods with a higher number of countries experiencing tight credit conditions, in particular, the period with the highest number corresponds to 1997-1999 when the effects of the Asian and Russian crisis were the strongest. Additionally, there is some clustering of tight credit periods by

⁴ A significant interest rate increase occurs when the change in the Hodrick and Prescott filtered interest rate series is of more than one standard deviation from its mean.

geographical region; South East Asia in 1997-1998; Scandinavia in 1992-1993; South America in 2001-2002.

Investment during Periods of Tight Credit Conditions

Once a particular country-period of tight credit conditions is identified the general specification for the regressions is:

$$y_{it} = \alpha + \sum_{g=1}^G \beta_g \cdot G_{ijt-1} I_{jt-1} + \sum_{\tau=1}^T T_{\tau} \cdot \gamma_{\tau} + \delta' X_{it-1} + \mu_i + v_{it}$$

Where, y_{it} is the dependent variable; G_{ijt-1} is a dummy variable that takes a value of 1 if firm i belongs to size group j the year of the increase in interest rates and 0 otherwise; I_{jt-1} is an indicator variable that takes the value of 1 during period of high rates and 0 otherwise; T_{τ} are time period dummies; X_{it-1} is a vector of firm characteristics; μ_i is a firm effect; and v_{it} is a random shock. The sample period will comprise the period before the credit tightening up to a year after the credit tightening episode. Parameter β_g is interpreted as the average change in the level of variable y for firms in size group g during the credit tightening. The identification assumption is that the behavior of variable y was affected mainly by the credit tightening, rather than any other shocks.

While size is a natural candidate for proxy of credit constraints it is certainly not perfect. Other cuts of the data may help to check the robustness of the potential findings. An alternative is to group firms according to their bank credit dependence/independence. One way to do this would be to classify firms as bank dependent if they do not have a public debt issue.⁵

⁵ In the third chapter of this dissertation I take this approach and study bond financing and firm growth.

Results

As was argued in the simple model of the beginning, the investment of constrained (small firms in the model) is more sensitive to interest rate shocks only if there is a high enough level of investor protection; otherwise, unconstrained firms will adjust their investment more than constrained firms.

To start testing this predictions I look at the behavior of firm level investment in countries with different levels of investor protection and financial development during periods of tight monetary policy. *Investment* is defined as the ratio (times 100) of capital expenditures net of depreciation, depletion and amortization to beginning of period book value of assets.

Table 3 reports the means of the firm level variables the year before the interest rate increase and the change in the investment rate in the year of the increase in the interest rate (the tight credit period). In Panel A firms are grouped by size using a common cutoff for firms from all countries, that is, is a country only has relatively large firms then all of the firms from that country will be classified as being large; while in Panel B firms are grouped into size groups using each country's firm size distribution. The first column shows the change in the investment rate in years of tight credit conditions. The smaller firms have the smaller average contraction in the investment rate in most country groups. While in the High Getting Credit countries the larger firms groups have an average decrease in their net investment rate of 0.28 percentage points (relative to a base net investment rate of 2.38) the smaller firms group do not significantly reduce their investment rate, they only reduce their investment rate by 0.08 percentage points. A similar pattern appears in the other two country groups; small Middle Getting Credit countries reduce their investment rate by 1.77 percentage points while the larger firms reduce it by 1.61 percentage points; and in small firms in Low Getting Credit

countries have an statistically insignificant decrease in their investment rate of 0.11 percentage points while the larger firms reduce their investment rate in 1.12 percentage points. For robustness Panel B of Table 3 reproduces the results but now firms are grouped in size groups at the country level. The results are qualitatively the same.

But what happens on average with the distribution of the investment rate decline across different size groups in the three country groups? Do we observe that investment falls more for smaller firms? The sort results do not show evidence of this, if anything they seem to be showing otherwise. It is the larger firms that suffer the largest drop in investment.

It is important to note that these univariate results only tell a partial story as firm characteristics in the Size and Getting Credit groups differ in many important dimensions. The univariate analysis misses important controls that, while not present in the motivating model, may be important explanatory variables in a more complete setup of investment behavior. To account for some of the heterogeneity among firms and to control for some of these variables I include in the later regression analysis as controls a set of firm level variables that have been shown to be related to optimal investment and firms' ability to secure financing. These include: leverage, individual firm growth opportunities (measure as Tobin's Q)⁶, asset tangibility, firm profitability, debt maturity (short term debt), and amount of financial slack. *Leverage* is defined as the ratio of total debt to total assets; *Tobin's Q* is the ratio of market value of equity plus total debt divided by total assets; *Tangibility* is the ratio of net property, plant and equipment to total assets; *Profitability* is the ratio of income before interest and taxes to assets; *Short Term Debt* is the ratio of current debt plus the current portion of long term debt to total assets; and

⁶ This variable can also be thought of as a proxy for the agency costs of debt.

Financial Slack is the ratio of cash and equivalents to total assets. When using the World size groups (Panel A) we observe that the average investment rate the year before the identified periods of tight credit conditions are decreasing on the Getting Credit rank (GC), firms from countries with low GC scores have a higher investment rate. Also smaller firms have lower investment rates, lower leverage ratios, less tangible assets, and lower profitability.

Table 4 present the results from a modified version of the empirical model explained earlier estimated for all tight credit episodes identified between 1990 and 2007:

$$y_{it} = \alpha + \sum_{g=1}^G \beta_g \cdot G_{ijt-1} I_{jt-1} + \delta' X_{it-1} + \mu_i + v_{it}$$

This regression is performed for the complete sample of firms and for subsets based on the Getting Credit ranking of the country. Again just as in the previous table, Panel A shows the results for the World Size groups and Panel B for the Country Size groups. The first column shows the results for all the firms from country-years that had tight credit conditions. The regressions are performed without a constant but with a full set of size group dummies (T1-T2-T3). T1 is a dummy variable equal to one if the firm is in the bottom third of the size distribution in the year and zero otherwise, while T2 and T# are analogous variables for the middle third and top third of the size distribution. Evidence of a pattern consistent with the paper hypothesis will appear in the differences on the coefficients between these variables; in particular, what one would expect is for T3 to be larger than T1 if the larger firms reduce their investment by a lower amount than the smaller firms after controlling for other firm-level characteristics.

In the group of countries with High Getting Credit Scores (High GC) we observe that the difference between the coefficient on T3 (large firms) and T1 (small firms) is $1.25 - 1.04 = 0.21$ which is positive but statistically insignificant. On the other hand, in

the Middle and Low GC country groups the difference maintains the positive signs and remains statistically insignificant. $T3 - T1 = 0.37$. This pattern is reversed in the Low GC countries. In summary, we observe what can be called flight to quality on the High GC and Middle GC countries but it is not statistically significant. In Low GC countries small firms invest more than large firms during tight credit episodes.

Panel B of Table 4 shows that the previous results are robust to the use of size groups based on the size distribution of each country. Moreover, after controlling for firm-level characteristics, $HT3 - HT1$ is 0.44 and statistically significant, while the sign of these difference changes in the Low GC countries.

Dynamic Regressions

Comparing sample means is robust to specification assumptions, but is prone to identification problems. It is possible that during some of the periods identified as having tight credit there were other aggregate shocks happening simultaneously. For example, it is possible that the effect of monetary tightening episodes identified in 1998 may be the result of international shocks (e.g. Asian Crisis, Russian Default). To overcome this problems and isolate the effect of domestic credit conditions (monetary policy), I estimate a set of dynamic regressions. In particular I estimate for each country the following equation:

$$y_{it} = c + \rho y_{it-1} + \beta_1 R_{t-1} + \beta_2 R_{t-1} \cdot \text{size} + \beta_3 R_{t-1} \cdot \text{size}^2 + x'_{it} \gamma + \mu_i + v_{it}$$

Where size is the natural logarithm of assets, and R is the interest rate. I allow for a quadratic shape of the marginal effect of the interest rate on y_{it} as a function of firm size, because of the hypothesis that the smallest firms may not be very sensitive to interest rate shocks; the marginal effect of the interest rate on large firms depends on the

effect it has on the interest rate they face; and medium size firms are supposedly going to be the more sensitive to monetary policy.

The dynamic regressions are estimated by GMM following Arellano and Bond (1991), using lags of the dependent and explanatory variables. In this setup it is possible to have a better idea of the marginal effect of interest rate changes on firms of different sizes; I compute the partial derivative and evaluate it at the mean value of size for each of the size quintiles.

$$\frac{\partial \widehat{y}_{it}}{\partial R_{t-1}} = \hat{\beta}_1 + \hat{\beta}_2 \text{size} + \hat{\beta}_3 \text{size}^2$$

If the predictions of the model are confirmed we should observe that the marginal effect is stronger for firms in the middle size quintiles, and a plot of this equation would be U-shaped.

The results from these estimations for all countries with valid data for the monetary policy rate and at least 10 firms per year during the period 1992-2007 are presented in Table 5, while Panel A of Figure 1 plots the marginal effects for each country. Each column presents the marginal effect of the interest rate on the investment rate for each size group. Q1 is the quintile of the smaller firms in the country and Q5 the quintile of the largest firms. The marginal effect of the monetary policy rate on the investment rate of the smallest firms is not significant for most countries which is consistent with the idea of these firms being severely constrained and therefore are not specially affected by monetary policy induced changes in the credit market. Puzzling however, most marginal effects of the monetary policy rate are positive which is consistent with credit to these groups of firms increasing after a monetary policy rate increase. The endogenous nature of the monetary policy rate is very important to understand these results. Often at the bottom of the cycle (when investment is deeply

depressed) the monetary policy rate is at its lowest values, and conversely at the peak of the cycle interest rates tend to increase. Additionally, the low frequency of the available data (yearly) does not allow looking more carefully the dynamic of monetary policy shocks and may therefore confound the results.⁷

Interest Rate Innovations

To obtain a cleaner measure of interest rate innovations I estimate for each country a simple structural VAR consisting of the variables, interest rate (i_t) and output growth (g_t) that is driven by two structural shocks, a monetary policy shock ($\varepsilon_{MP,t}$) and a productivity shock ($\varepsilon_{PR,t}$).

This VAR can be written in matrix notation as:

$$\begin{bmatrix} 1 & \psi_{12} \\ \psi_{12} & 1 \end{bmatrix} \begin{bmatrix} g_t \\ i_t \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \end{bmatrix} + \begin{bmatrix} \phi_{11} & \phi_{12} \\ \phi_{21} & \phi_{22} \end{bmatrix} \begin{bmatrix} g_{t-1} \\ i_{t-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{PR,t} \\ \varepsilon_{MP,t} \end{bmatrix}$$

Assuming that the monetary policy innovation has no effect on contemporaneous output growth ($\phi_{12,0} = 0$), that is, there is a lag in the response of output to monetary policy shocks, then the structural moving average representation (SMA) is given by:

$$\begin{bmatrix} g_t \\ i_t \end{bmatrix} = \begin{bmatrix} v_g \\ v_i \end{bmatrix} + \begin{bmatrix} \phi_{11,0} & 0 \\ \phi_{21,0} & \phi_{22,0} \end{bmatrix} \begin{bmatrix} \varepsilon_{PR,t} \\ \varepsilon_{MP,t} \end{bmatrix} + \begin{bmatrix} \phi_{11,1} & \phi_{12,1} \\ \phi_{21,1} & \phi_{22,1} \end{bmatrix} \begin{bmatrix} \varepsilon_{PR,t-1} \\ \varepsilon_{MP,t-1} \end{bmatrix} + \dots$$

Using the SMA, this zero short run effect restriction can be obtained assuming that Ψ is lower triangular, so $\psi_{12} = 0$. With this assumption we can obtain the innovations as:

$$\varepsilon_{PR,t} = e_{1t}$$

$$\varepsilon_{MP,t} = \psi_{12} e_{1t} + e_{2t} = \psi_{12} \varepsilon_{PR,t} + e_{2t}$$

where e are the innovations in the reduce form VAR, $y_t = A_1 y_{t-1} + e_t$.

⁷ There is definitively more work to do accounting for the endogenous nature of the monetary policy rate and different country characteristics. Perhaps higher frequency data and a richer lag structure could help with this issue.

In this simple specification, the restriction implies a causal ordering that can be easily identified using the Choleski decomposition. The system is just identified and the unknowns can be uniquely identified from the elements of the variance covariance matrix of output growth and the interest rate.

The VAR is estimated for each country with available data on a quarterly frequency⁸ and the monetary policy (short term interest rate) innovations are then accumulated over the year to have a sense of how restrictive was the monetary policy stance each year. These innovations are then used instead of R to reproduce the dynamic regression estimations from the previous section, using the residual interest rate instead of the value of each countries interest rate. The marginal effects for firms of different sizes are reported in Table 6 and then plotted in Panel B of Figure 1. While the evidence is not conclusive, it is at least suggestive of a U-shaped relationship between investment and firm size for firms in some of the countries with higher investor protection. The significance of the marginal effects across size groups is at most modest, and there are important deviations from the model predictions for a subset of countries, however, it is still the case that firm investment in a group of countries with high effective creditor rights (most notably Japan, the UK, Sweden, the USA, and Finland) conforms to the model predictions⁹. That is, the firms that are more severely affected by an interest rate shock are those in the intermediate size quintiles, and not the smaller ones.

⁸ To consider possible parameter instability due to the high inflation and interest rates of the early 1980s the estimation period for the VAR is from 1985q1 to 2007q4.

⁹ Allowing the response of investment to the interest rate to vary depending on whether there was an increase or a decrease in the interest rate does not affect these results. In un-tabulated results I run:

$$y_{it} = c + \rho y_{it-1} + \beta_1^{up} R_{t-1}^{up} + \beta_2^{up} R_{t-1}^{up} \cdot size + \beta_3^{up} R_{t-1}^{up} \cdot size^2 + \beta_3^{down} R_{t-1}^{down} + \beta_2^{down} R_{t-1}^{down} \cdot size + \beta_3^{down} R_{t-1}^{down} \cdot size^2 + x_t' \gamma + \mu_i + u_{it}$$

and find similar results.

ROBUSTNESS

Investment during Banking Crises

An alternative approach to identify periods of tight credit conditions is to study how is investment affected when the banking sector of a given country is under stress. In particular I explore whether investment rates change differently for firms sorted on size when there is a banking crisis in the country, and then compare these responses across countries sorted on investor protection. While it is certainly possible that investment opportunities and other factors may change (and could in fact be the cause of) during a crisis period, it is likely the case that bank lending rates may increase substantially during this periods if bank capital becomes scarcer. The data on banking crises is from Laeven and Valencia (2008) “Systemic Banking Crises: A New Database.”

I estimate the following model for the difference in the investment rate between the first year of the banking crisis and the previous period.

$$y_{it} = \alpha + \sum_{g=1}^G \beta_g \cdot G_{ij,t-1} I_{j,t-1} + \delta' X_{it-1} + \mu_i + v_{it}$$

The results are reported in the four rightmost columns of Table 4. When using size terciles based on the World size distribution (Panel A) the difference between the investment rate of large and small firms is of 2.21 percentage points in High Getting Credit countries that had a banking crisis (p-value of 0.03) and of 2.17 and 1.70 percentage points for Middle and Low Getting Credit Countries, however none of these later two differences are statistically significant at conventional levels.

To account for the differences in the size distribution across countries, in Panel B of Table 4, the estimation is repeated but not using country-level size groups. This ensures that for all country-years with a banking crisis we have the same number of observations in each of the three size groups. The results show that the difference

between T3 and T1, the coefficients on the larger and smaller firms respectively, is positive and significant for High and Middle Getting Credit scores countries. For Low Getting Credit countries the difference is 0.41 percentage points but statistically insignificant. As we go up on Getting Credit groups the difference remains positive but increases in magnitude and statistical significance. MT3 – MT1 is 3.37 percentage points and HT3 – HT1 is 2.49 percentage points.

In summary, we observe that during banking crisis smaller firms contract (or do not expand by as much) their investment rate more than large firms in countries with higher protection of creditors than in countries with a low protection of creditors.

Investment and Interest Rate Volatility

An alternative approach to identifying the relationship between Investor Protection and the Investment/Interest Rate sensitivity is to test whether the relation between the volatility of investment and the volatility of interest rates differs in countries with different levels of investor protection. If the investment of constrained firms is more sensitive to the interest rate than the investment of unconstrained firms (Flight to Quality), then it should be the case that ceteris paribus the volatility of investment will be more sensitive to the volatility of the interest rate in countries with higher levels of investor protection. More generally, if no other factors are related to size and investment volatility in a way that could cancel the effect of investor protection, then we would expect the volatility of investment to show a pattern analogous to that of the investment elasticity with respect to the interest rate.

Figure 2 presents evidence consistent with this hypothesis. The different figures plot the average investment volatility across groups of countries based on a number of investor protection measures. In each panel, the countries with Worldscope coverage are

grouped into terciles (Low, Medium and High) and within each group of countries the average of their mean investment volatility by size groups is computed. The measure of investment volatility is the average of the investment standard deviation of all firms in each country with at least five years of valid investment data. Firms are assigned to size groups according to the mean size group they belonged to between 1990 and 2007.

The blue line shows the volatility of investment for countries with a Low measure of investor protection, the red line for countries with a Medium measure of investor protection, and finally the blue line shows the volatility of investment for countries with a High measure of investor protection. Across these country groups the volatility of investment rates shows quite different patterns. In particular, we observe an increasing relation between investment volatility and size among the group of countries with the lowest indicators of investor protection, a decreasing relation for the highest investor protection countries, and a flat or inverted U shaped relation for the countries with intermediate measures of investor protection.. These patterns are consistent with the prediction of higher interest rate sensitivity of the smaller firms when investor protection is high (what we referred to as flight to quality) and lower interest rate sensitivity of the smaller firms when investor protection is poor.

Eurozone interest rate increases

Another way of partially circumventing the challenge presented by the endogeneity of interest rates and investment opportunities (and investment) is to focus on a set of countries for which the monetary policy is arguably more exogenous. One subsample for which this may hold is the countries in the Eurozone. Since the adoption of the EURO these countries gave up their monetary policy to the unified European Central Bank (ECB). The ECB's policies are determined not by any one particular country's

situation but by that of all member countries, however, many argue they are mostly a manifestation of the situation of the largest economy, Germany. The Euro was initially introduced as the legal circulation currency on January 1, 2002, but the initial member countries had already pegged their previous currency to it on December 31, 1998. The initial twelve countries, were later joined by Greece (June, 2000), Slovenia (July, 2006), Cyprus and Malta (July, 2007) and recently Slovakia (July, 2008).

Figure 3 plots the monthly series of the ECB's marginal lending facility. In this 10 year period there are two clear episodes of higher monetary policy rates; the first in 2000, and the second in 2007. Both episodes preceded subsequent slowdowns in activity, however, to the extent that member countries' economies do not move perfectly together we can claim that these periods of monetary tightening were somewhat exogenous at least for the smaller economies in the area.

In untabulated results I computed the quarterly GDP growth correlation of the Eurozone countries with Germany's GDP, both for the period 1990-1998 (before EURO) and 1999-2009 (after EURO). It is worth noting that after the adoption of the EURO the GDP growth correlations with Germany increase significantly from an average of about 33% to more than 60%, while this could be due to other factors such as the nature of external shocks in both periods, it is certainly possible that an important explanation for this increase in the co movement of these economies is the use of a common monetary policy, or put differently, a bigger exposure to the same type of shocks.

Similar to the analysis of the country-level tight credit periods in the previous section I compute the average change in the firm-level investment rate in each of these countries for the periods 2000 vs. 1999 and 2007 vs. 2006. For each country in this sample I compute the average and then I average these changes across all countries in the same Getting Credit group. The results are presented in Figure 4, the first panel shows the

2000 – 1999 change in the investment rate and the second the 2007 – 2006 change in the investment rate. No clear patterns arise. For example, in low Getting Credit Eurozone countries, small firms barely change their investment rates in 2000-1999 but contracted them significantly in 2007-2006, if anything it seems that the investment rate change for the 2000 and 2007 interest rate increases were completely different. In High Getting Credit countries small firms did not change their investment rates in either interest rate increase period, but the larger firms increased it in 2000 but decrease it in 2007.

CONCLUSION

A simple model of investment highlights the role of investor protection (or more generally the extent to which the insider incentives are aligned with his investors) in the propagation of monetary policy shocks.

The main empirical implication of the model is that the investment of constrained (small) firms will be more sensitive to interest rate shocks than that of unconstrained (large) firms only in the countries with a sufficiently high level of investor protection.

I find some suggestive evidence in favor of the hypotheses. Univariate analysis of investment rate changes in periods of tight credit conditions show that the smaller firms suffer the lowest average contraction in the investment rate in all country groups. After controlling for firm level characteristics I find evidence that the difference between the investment rate change of large relative to small firms is economically and statistically significant in High Getting Credit countries, while smaller and insignificant in Low Getting Credit countries. I interpret this as evidence of flight to quality in the former group of countries but not the latter during tight credit periods. The analysis of banking crisis episodes shows results that are also consistent with the previous finding.

Additionally, the dynamic regressions show that, while weak and not true for all countries, there is some evidence of a U-shaped pattern in the change of the investment rate when the monetary policy rate is increased, and this effect appears to be stronger in countries with better Getting Credit scores (proxy for investor protection).

The results are subject to a number of criticisms with respect to the identification of period of tight monetary policy, and the potential effect of country level and contractionary episode omitted variables that may be clouding the results. One approach that was meant to partially circumvent these challenges was to focus on Eurozone. However in the two high interest rate episodes identifies since the adoption of the common monetary policy the predictions do not seem to hold for the subset of countries in the Eurozone.

In all, while the empirical results should be interpreted with caution they highlight the importance of country level investor protection on the cross section of firm level responses to macroeconomic shocks. Further work identifying more exogenous variation in macro conditions and more comprehensive datasets including smaller firms could perhaps show cleaner evidence on this topic.

Table 1: Worldscope Coverage

This table shows the number of firms, the mean and median value of assets in 2000 US\$ for non-financial firms covered in the sample. The second column shows the time period with valid observations in any given country, while the following columns show how the breadth of the coverage varies across the sample period.

Country	Obs	1985 Mean	Median	Obs	1990 Mean	Median	Obs	1995 Mean	Median	Obs	2000 Mean	Median	Obs	2005 Mean	Median	Obs	2008 Mean	Median
Argentina				1	578	578	8	875	641	28	1,632	820	61	1,567	219	52	1,198	140
Australia	70	2,636	730	97	2,560	764	210	2,940	280	330	2,166	212	1,283	618	11	1,716	842	15
Austria	14	3,180	747	34	1,802	254	68	3,625	391	79	4,399	727	119	2,996	167	102	5,990	251
Bahrain																7	4,375	729
Belgium	25	8,998	1,511	31	6,421	1,062	103	4,814	276	115	8,837	346	165	7,536	160	167	11,415	138
Bermuda	0			1	12,713	12,713	3	7,380	5,395	8	2,700	1,605	31	2,608	161	72	2,533	387
Brazil							64	5,020	593	150	6,620	918	407	1,937	255	397	2,523	246
British Virgin													1	440	440	10	161	30
Canada	152	4,894	864	248	3,488	526	387	3,645	404	475	3,123	255	1,102	1,695	46	1,666	1,704	45
Cayman Islands	1	217	217	1	422	422	1	711	711	1	881	881	4	471	378	16	115	52
Channel Islands										1	253	253	1	103	103	1	207	207
Chile				1	178	178	24	629	327	75	692	304	180	750	149	196	995	139
China	1	23	23	1	18	18	10	21,466	39	98	3,509	209	1,277	628	123	1,871	1,750	146
Colombia							16	471	369	29	1,014	466	34	662	301	32	2,170	720
Czech Republic							17	500	144	54	727	224	27	727	224	27	1,551	158
Denmark	26	1,391	533	37	1,461	415	158	2,087	194	179	1,587	199	214	1,319	104	185	2,969	183
Egypt, Arab Rep.													20	1,173	978	68	752	294
Estonia																3	197	148
Finland	27	2,361	1,086	39	2,821	1,273	91	3,382	318	97	2,230	369	151	1,241	96	143	1,606	121
France	96	11,960	1,625	122	10,052	1,050	474	7,224	342	470	8,973	331	762	5,072	68	683	8,594	72
Germany	68	12,346	2,560	91	9,143	1,011	220	8,450	320	321	10,877	230	694	7,260	79	830	7,084	54
Ghana													1	950	950			
Greece				14	2,572	358	47	2,442	90	125	1,320	69	318	708	75	320	1,151	106
Hong Kong, China	26	1,785	1,102	71	921	228	109	1,626	430	342	1,459	275	791	818	86	1,026	938	87
Hungary										15	287	64	43	440	112	36	1,203	89
Iceland																17	5,553	1,611
India							22	332	239	259	709	142	409	968	139	1,041	842	82
Indonesia							8	131	73	73	781	330	131	507	79	121	871	112
Ireland	14	1,696	129	33	1,261	71	55	1,921	154	59	2,439	136	74	3,092	181	88	5,226	74
Israel										38	1,375	381	108	2,701	273	191	1,740	132
Italy	47	12,778	1,516	75	9,845	1,340	223	9,037	1,272	214	10,050	1,176	301	8,894	377	320	11,519	442
Japan	359	8,616	2,073	988	6,316	775	2,059	6,074	565	2,436	5,933	596	3,670	3,201	244	4,069	3,211	197
Jordan													9	3,252	1,202	36	1,237	316
Korea, Rep.	21	5,680	1,120	27	5,580	864	111	3,831	778	263	4,147	1,035	776	1,735	158	1,106	1,751	112
Kuwait																131	891	222
Liechtenstein				1	2,863	2,863	4	4,879	5,294	4	6,935	7,716	3	5,399	6,732	2	7,180	7,180
Lithuania																5	235	36
Luxembourg							14	5,604	320	17	7,885	377	40	3,299	292	46	2,704	347

Country	Obs	1985 Mean	Median	Obs	1990 Mean	Median	Obs	1995 Mean	Median	Obs	2000 Mean	Median	Obs	2005 Mean	Median	Obs	2008 Mean	Median
Malaysia	31	492	186	48	865	303	109	760	253	352	879	224	718	478	67	926	481	65
Mexico	15	1	1	24	1,038	539	33	2,357	1,026	98	1,909	786	162	2,238	411	139	2,375	710
Morocco													18	1,408	404	32	1,562	386
Netherlands	46	8,638	1,106	59	9,632	692	159	6,550	271	180	7,917	324	220	10,401	367	184	17,515	398
New Zealand	11	1,362	274	14	1,988	650	29	1,927	287	56	711	206	106	243	54	139	298	64
Nigeria																15	1,289	717
Norway	20	2,181	916	31	2,647	980	102	2,017	267	111	1,805	313	192	1,175	124	222	1,745	152
Pakistan							6	137	44	59	163	50	91	266	66	118	515	132
Peru							4	64	25	24	600	122	91	415	57	90	488	60
Philippines							11	277	114	107	730	218	219	368	55	238	389	38
Poland										50	328	83	92	884	104	326	526	27
Portugal				14	494	118	53	1,182	210	75	3,113	295	82	2,491	138	61	4,362	297
Russian Federation										1	2,431	2,431	36	4,391	1,118	184	3,202	480
Saudi Arabia																78	3,036	351
Singapore	27	1,046	257	39	1,839	337	67	2,238	357	220	1,491	223	442	855	71	615	743	54
Slovak Republic													10	196	140	5	145	29
Slovenia																3	254	67
South Africa	56	2,370	681	76	1,126	282	134	1,195	351	187	1,488	359	483	711	41	376	1,590	81
Spain	24	13,065	4,504	32	7,777	1,926	114	6,569	712	128	8,130	676	165	6,940	475	149	14,754	869
Sri Lanka										18	165	89	29	203	60	31	278	135
Sweden	40	5,675	2,215	48	4,209	1,775	148	3,781	516	179	3,501	354	352	2,406	79	427	2,839	40
Switzerland	36	12,166	3,239	75	6,866	675	182	6,692	754	195	16,472	810	294	10,192	327	275	16,379	334
Taiwan							7	1,525	742	203	1,332	338	535	1,237	242	1,352	911	83
Thailand							40	2,371	187	257	1,273	191	377	532	53	535	503	48
Turkey							26	1,031	268	47	952	175	148	893	88	226	1,770	144
United Arab Emirates																2	216	216
United Kingdom	282	4,108	1,025	510	2,854	366	1,380	2,287	115	1,532	2,526	97	1,748	3,425	69	2,085	4,657	40
United States	753	5,297	730	950	5,504	624	1,345	5,394	548	2,862	3,700	216	5,606	3,170	111	6,392	3,837	113
Venezuela, RB							7	763	488	13	933	427	44	843	158	34	1,200	237
Zimbabwe										5	232	115	18	1,656	65	31	140,344	246

Table 2: Periods of Tight Credit Conditions (1980 – 2007)

The following tables show the periods identified as having tight credit conditions for the countries in the sample. Tight credit conditions periods are those where the reference interest rates (monetary policy rate, money market rate or bank lending rate) increase significantly, and aggregate private credit decreases either in the same or the subsequent year. The data on interest rates is from the IMF's International Financial Statistics and the countries Central Banks. Money Market, is the rate on short-term lending between financial institutions (line 60b); Discount, is the rate at which the central bank lend or discount eligible paper for deposit money banks (line 60); and Lending, is the bank rate that usually meets the short- and medium- term financing needs of the private sector (line 60p). The data on private credit is from the 2006 update of Thorsten Beck, Asli Demirgüç-Kunt and Ross Levine, (2000), "A New Database on Financial Development and Structure".

Panel A: All episodes

Country	Period 1	Period 2	Period 3	Period 4
Argentina	1996	2001-2002		
Australia	1981			
Belgium	1982	1984-1985	2001	
Brazil	1998-1999	2001-2002		
Canada	1999-2000			
Colombia	1999	2003-2004		
Czech Republic	1998	1998		
Denmark	1991-1992			
Finland	1993			
France	1982			
Germany	1988-1989	2006		
Greece	1988	1991		
Hong Kong, China	1999-2000	2004-2005		
India	1995-1996			
Indonesia	1998-1999			
Ireland	1981	1985-1986		
Israel	1995	2003		
Italy	1995-1996			
Korea (South)	1999-2000			
Kuwait	2004			
Malaysia	1990-1991	1999		
Mexico	1983-1984	1986-1987	1995-1996	1999
Netherlands	1998-1999			
New Zealand	1994	2001		
Norway	1999-2000			
Pakistan	1994-1995	2006		
Peru	2000	2004		
Philippines	1998-2001	2003-2005		
Poland	2004			
Portugal	1989-1990			
Singapore	2005-2006			
South Africa	1988	1998	2002-2003	2006
Spain	1983-1984	1995		
Sri Lanka	2000			
Sweden	1993-1995			
Thailand	2006			
United Kingdom	1994	1998		
United States	1981			
Venezuela	1999	2002-2003		

Panel B: By Getting Credit Ranking and Period. Groups based on all countries in Doing Business with Worldscope coverage.

	1981-1985	1986-1990	1991-1995	1996-2000	2001-2006
<i>High Getting Credit Rank</i>					
	Australia Ireland United States	Germany Ireland	Denmark Finland Malaysia New Zealand United Kingdom	Canada Hong Kong Korea Malaysia United Kingdom	Germany Hong Kong Israel Singapore
<i>Middle Getting Credit Rank</i>					
	Belgium France Mexico Spain	Mexico	Israel Mexico Spain Sweden	Argentina Mexico Netherlands Norway Peru South Africa	Argentina Belgium New Zealand Peru South Africa Thailand
<i>Low Getting Credit Rank</i>					
		Greece	Greece India Italy Pakistan	Colombia Brazil Sri Lanka Indonesia Philippines Venezuela	Brazil Pakistan Philippines Venezuela

Table 3: Summary Statistics

The following tables present the summary statistics for selected variables in countries during either a tight credit period of a bank crisis. All variables but Investment Change are end of period values the year before the period of tight credit conditions, Investment Change is the difference between the investment rate during the tight credit conditions period and the year before. *Investment1* is the ratio (times 100) of capital expenditures net of depreciation, depletion and amortization to beginning of period book value of assets; *Investment2* is the ratio (times 100) of capital expenditures net of depreciation, depletion and amortization to beginning of period property, plant and equipment; *Assets* is the book value of assets in December 2000 millions of US\$; *Leverage* is the ratio of total debt to total assets; *Tobin's Q* is the ratio of market value of equity plus total debt to total assets; *Tangibility* is the ratio of net property, plant and equipment to total assets; *Profitability* is the ratio of income before interest and taxes to assets; *Short Term Debt* is the ratio of current debt plus the current portion of long term debt to total assets; *Financial Slack* is the ratio of cash and equivalents to total assets; *Net Collateral* is the ratio of property, plant and equipment plus cash and equivalents minus total debt to total assets. Panels A, shows the values for quintiles based on total assets in December 2000 US\$, where the cutoffs consider all the firms covered by Worldscope (world based quintiles). Panel B, shows the values for size quintiles based on country level cutoffs. For *Investment Change* bolded values are statistically different than zero at the 5% level and *italized* values at the 10% level.

Panel A: World Size Terciles. Tight Credit Periods 1990-2007. Getting Credit groups based on all countries covered in Doing Business with Worldscope coverage.

	Inv.1 Change	Inv.1	Assets	Lev.	Tobin Q	Tan.	Prof.	ST Debt	Fin. Slack	Obs
High Getting Credit Rank										
Small	-0.08	1.33	26	0.17	1.68	0.29	0.00	0.10	0.18	1,602
T-2	-0.14	2.77	140	0.20	1.50	0.36	0.07	0.10	0.14	1,965
Large	<i>-0.28</i>	3.00	3,554	0.25	1.54	0.41	0.09	0.10	0.12	1,469
Total	<i>-0.16</i>	2.38	1,100	0.21	1.57	0.35	0.05	0.10	0.15	5,036
Middle Getting Credit Rank										
Small	-1.77	3.66	28	0.21	1.54	0.37	0.01	0.12	0.12	426
T-2	-1.37	5.63	148	0.25	1.47	0.43	0.07	0.10	0.10	613
Large	-1.61	5.10	2,403	0.32	1.42	0.50	0.07	0.08	0.08	753
Total	-1.57	4.94	1,067	0.27	1.46	0.45	0.06	0.10	0.10	1,792
Low Getting Credit Rank										
Small	-0.11	-0.12	34	0.18	1.13	0.41	-0.03	0.12	0.09	103
T-2	-1.71	3.24	197	0.30	1.05	0.42	0.06	0.16	0.10	190
Large	-1.12	4.17	4,478	0.31	1.02	0.48	0.07	0.13	0.11	289
Total	-1.13	3.10	2,294	0.28	1.05	0.45	0.05	0.14	0.10	582

Panel B: Country Size Terciles. Tight Credit Periods 1990-2007. Getting Credit groups based on all countries covered in Doing Business with Worldscope coverage.

	Inv.1 Change	Inv.1	Assets	Lev.	Tobin Q	Tan.	Prof.	ST Debt	Fin. Slack	Obs
High Getting Credit Rank										
Small	0.06	0.83	21	0.17	1.72	0.27	-0.03	0.10	0.20	1,193
T-2	-0.18	2.61	99	0.19	1.51	0.34	0.07	0.10	0.14	1,948
Large	-0.29	3.12	2,808	0.25	1.53	0.41	0.09	0.10	0.12	1,895
Total	<i>-0.16</i>	2.38	1,100	0.21	1.57	0.35	0.05	0.10	0.15	5,036
Middle Getting Credit Rank										
Small	-1.49	3.42	37	0.21	1.57	0.37	0.01	0.12	0.12	335
T-2	-1.93	5.44	192	0.24	1.47	0.43	0.06	0.11	0.10	631
Large	-1.32	5.17	2,153	0.32	1.42	0.49	0.07	0.08	0.08	826
Total	-1.57	4.94	1,067	0.27	1.46	0.45	0.06	0.10	0.10	1,792
Low Getting Credit Rank										
Small	0.14	0.16	70	0.18	1.16	0.37	0.03	0.12	0.11	124
T-2	-0.39	1.51	324	0.29	1.01	0.42	0.04	0.15	0.10	212
Large	-2.42	5.96	5,113	0.33	1.03	0.51	0.07	0.14	0.10	246
Total	-1.13	3.10	2,294	0.28	1.05	0.45	0.05	0.14	0.10	582

Table 4: Change in Investment Rate in the Year of a Credit Tightening

This table reports the results of a pooled OLS regression of the change in the investment rate during periods identified as having tight credit conditions. Tight credit conditions periods are those where the reference interest rates (monetary policy rate, money market rate or bank lending rate) increase significantly, and aggregate private credit decreases either in the same or the subsequent year. All variables but Investment Change are end of period values the year before the period of tight credit conditions, Investment Change is the difference between the investment rate during the tight credit conditions period and the year before. *Investment1* is the ratio (times 100) of capital expenditures net of depreciation, depletion and amortization to beginning of period book value of assets; *Assets* is the logarithm of the book value of assets in December 2000 millions of US\$; *Leverage* is the ratio of total debt to total assets; *Tobin's Q* is the ratio of market value of equity plus total debt to total assets; *Tangibility* is the ratio of net property, plant and equipment to total assets; *Profitability* is the ratio of income before interest and taxes to assets; *Short Term Debt* is the ratio of current debt plus the current portion of long term debt to total assets; *Financial Slack* is the ratio of cash and equivalents to total assets; *Net Collateral* is the ratio of property, plant and equipment plus cash and equivalents minus total debt to total assets. The regressions have a full set of size dummies, T1, T2 and T3, and no constant term. Standard errors are clustered at the country level. T-statistics are reported below the coefficient estimates.

<i>Investment1 Change</i>	Tight Credit Periods 1990 - 2007				Systemic Banking Crises 1990 - 2002			
	All Countries	High GC	Middle GC	Low GC	All Countries	High GC	Middle GC	Low GC
T1	1.68 (4.75)	1.04 (2.31)	2.43 (4.79)	4.01 (2.93)	-0.79 (-0.51)	-4.15 (-1.16)	-0.55 (-0.47)	1.35 (0.91)
T2	1.67 (4.80)	1.17 (3.63)	2.48 (3.38)	3.01 (1.84)	1.20 (0.90)	-1.47 (-0.67)	1.40 (1.11)	4.17 (2.36)
T3	1.84 (4.43)	1.25 (4.16)	2.80 (2.58)	3.53 (3.23)	0.96 (0.68)	-1.93 (-0.88)	1.62 (1.07)	3.06 (1.18)
Leverage	-5.33 (-4.75)	-3.26 (-3.11)	-9.45 (-5.06)	-6.58 (-1.76)	-9.23 (-2.73)	-5.60 (-1.56)	-14.42 (-2.72)	-10.25 (-1.15)
Tobin's Q	-0.03 (-0.24)	-0.03 (-0.14)	-0.42 (-1.94)	0.25 (1.06)	0.02 (0.05)	0.04 (0.06)	1.11 (2.40)	0.00 (0.0)
Tangibility	-2.75 (-3.83)	-1.86 (-3.53)	-4.62 (-2.92)	-4.81 (-2.11)	-3.29 (-1.84)	-2.14 (-0.94)	-2.68 (-1.85)	-5.23 (-1.23)
Profitability	-0.38 (-0.42)	-0.89 (-0.87)	0.92 (0.37)	3.45 (0.84)	-1.14 (-0.24)	10.77 (1.93)	0.01 (0.0)	-11.53 (-2.34)
Short Term Debt	1.64 (1.32)	0.26 (0.17)	6.89 (2.15)	-1.83 (-0.27)	8.40 (2.23)	10.01 (1.50)	13.76 (1.79)	0.86 (0.15)
Financial Slack	0.13 (0.20)	1.08 (2.38)	-1.13 (-0.92)	-2.44 (-1.26)	5.34 (2.54)	7.52 (2.06)	0.02 (0.0)	5.02 (1.53)
Observations	7658	5175	1618	865	1511	677	324	510
R-squared	0.03	0.01	0.08	0.05	0.05	0.05	0.09	0.06
S.E. clustered by country								
Year dummies	no	no	no	no	no	no	no	no
	diff	F	p-value		diff	F	p-value	
HT3 - HT1	0.21	2.11	0.18		2.21	5.70	0.03	
MT3 - MT1	0.37	0.04	0.85		2.18	2.22	0.19	
LT3 - LT1	-0.48	0.38	0.56		1.70	0.99	0.36	

Panel B: Country Size Terciles, Within Sample Getting Credit (GC) Groups, Time effects

<i>Investment Change</i>	Tight Credit Periods 1990 - 2007				Systemic Banking Crises 1990 - 2002			
	All Countries	High GC	Middle GC	Low GC	All Countries	High GC	Middle GC	Low GC
T1	0.41 (0.70)	-0.53 (-1.13)	0.57 (0.71)	1.58 (1.03)	15.34 (8.84)	-4.82 (-1.33)	2.34 (2.98)	19.19 (6.46)
T2	0.50 (1.04)	-0.19 (-0.55)	0.53 (0.54)	0.79 (0.50)	17.51 (11.86)	-2.40 (-0.83)	4.57 (3.26)	21.67 (10.34)
T3	0.67 (1.20)	-0.09 (-0.23)	0.96 (0.79)	1.51 (1.16)	17.11 (12.19)	-2.34 (-1.0)	5.71 (3.38)	19.60 (6.60)
Leverage	-4.87 (-3.22)	-2.64 (-2.45)	-8.73 (-4.80)	-6.70 (-2.94)	-9.77 (-3.56)	-4.70 (-1.87)	-13.99 (-2.64)	-11.33 (-1.71)
Tobin's Q	-0.06 (-0.34)	-0.06 (-0.53)	-0.54 (-2.26)	-0.08 (-0.15)	-0.07 (-0.22)	0.00 (0.01)	-0.18 (-0.22)	-0.41 (-0.69)
Tangibility	-2.83 (-3.93)	-1.84 (-3.98)	-4.65 (-3.28)	-2.50 (-1.22)	-4.07 (-3.40)	-3.06 (-3.15)	-4.43 (-3.35)	-4.22 (-1.25)
Profitability	-0.39 (-0.42)	-1.01 (-0.97)	1.09 (0.41)	2.14 (0.60)	-1.90 (-0.49)	8.82 (2.40)	4.59 (0.52)	-10.68 (-2.30)
Short Term Debt	1.27 (0.66)	0.42 (0.23)	5.80 (1.94)	0.90 (0.28)	8.88 (3.45)	7.47 (2.88)	12.72 (2.13)	4.28 (0.90)
Financial Slack	0.32 (0.67)	1.46 (4.76)	-0.13 (-0.11)	0.65 (0.43)	8.57 (3.29)	9.47 (1.55)	4.94 (0.59)	7.12 (1.86)
Observations	7658	5175	1618	865	1511	677	324	510
R-squared	0.04	0.02	0.09	0.10	0.08	0.06	0.13	0.11
S.E. clustered by country								
Year dummies	yes	yes	yes	yes	yes	yes	yes	yes
	diff	F	p-value		diff	F	p-value	
HT3 - HT1	0.44	6.14	0.03		2.49	6.89	0.02	
MT3 - MT1	0.39	0.21	0.66		3.37	5.29	0.06	
LT3 - LT3	-0.06	0.35	0.58		0.41	0.03	0.87	

Table 5: Dynamic Regressions – Raw Rate

This table reports the results of country by country fixed effects regressions of investment rate. The dependent variable y_{it} is the investment rate, defined as capital expenditures divided by property, plant and equipment. Size is the natural logarithm of assets in common Dec 2006 US\$, R is the monetary policy rate. x'_t are firm characteristics. Size quintiles are defined at the country level. Each country's sample starts at most in 1992. All firm level controls are lagged values. T-statistics are presented below the coefficients. The general regression specification is:

$$y_{it} = c + \rho y_{it-1} + \beta_1 R_{t-1} + \beta_2 R_{t-1} \cdot size + \beta_3 R_{t-1} \cdot size^2 + x'_t \gamma + \mu_i + v_{it}$$

And the values below the Q's are the average marginal effects of the monetary policy rate evaluated at the mean values of size within each firm size quintile.

$$\frac{\partial \widehat{y}_{it}}{\partial R} = \beta_1 + \beta_2 size + \beta_3 size^2$$

Panel A: Low Effective Creditor Rights

Country	Q1	Q2	Q3	Q4	Q5	Inv	Obs	Firms
Colombia	0.0002	0.0001	0.0000	-0.0002	-0.0006	0.0746	201	32
	0.15	0.18	-0.15	-1.06	-1.66	0.83		
France	-0.0008	-0.0008	-0.0006	-0.0004	0.0006	0.2245	6124	866
	-1.43	-2.35	-2.34	-1.53	2.32	11.34		
Peru	-0.0009	-0.0002	0.0002	0.0005	0.0007	0.2438	469	77
	-1.76	-0.66	0.73	1.52	1.02	3.99		
Philippines	0.0004	0.0009	0.0012	0.0014	0.0017	0.3359	902	126
	0.39	1.59	2.13	2.33	1.79	6.97		
Brazil	0.0004	0.0004	0.0004	0.0003	0.0000	0.3099	1568	270
	0.99	1.57	1.86	1.73	0.05	8.59		
Argentina	0.0005	0.0004	0.0006	0.0015	0.0035	0.0515	313	45
	0.31	0.39	0.85	1.85	3.90	0.64		
Greece	-0.0010	0.0026	0.0034	0.0011	-0.0023	0.0930	72	37
	-0.11	0.33	0.73	0.36	-0.47	0.34		
Venezuela, RB	-0.0011	-0.0007	-0.0005	-0.0003	-0.0003	0.2657	69	15
	-0.70	-1.02	-1.51	-1.06	-0.57	1.23		

Panel B: Intermediate Effective Creditor Rights

Country	Q1	Q2	Q3	Q4	Q5	Inv	Obs	Firms
Chile	0.0011	0.0017	0.0018	0.0014	0.0004	0.3052	1107	125
	0.95	2.93	3.30	2.93	0.58	7.52		
Portugal	0.0037	0.0012	0.0005	0.0014	0.0056	0.2369	345	40
	1.65	1.04	0.59	1.74	3.79	3.34		
Un States	0.0000	0.0010	0.0014	0.0018	0.0012	0.3596	12293	1302
	0.00	3.91	6.78	8.92	10.90	23.81		
Ireland	-0.0005	0.0009	0.0009	0.0003	-0.0015	0.2425	610	86
	-0.23	0.60	0.72	0.31	-1.03	3.23		
Canada	<i>-0.0028</i>	0.0003	0.0011	<i>0.0011</i>	-0.0002	0.1944	6549	1182
	-1.83	0.36	1.48	1.86	-0.36	8.89		
Australia	-0.0001	-0.0004	-0.0007	-0.0011	-0.0020	0.2227	1350	242
	-0.02	-0.21	-0.47	-0.96	-1.42	5.12		
Finland	-0.0019	-0.0008	0.0000	0.0006	0.0011	0.1611	1347	154
	-1.24	-0.65	0.01	0.55	0.98	4.52		
Turkey	<i>0.0006</i>	0.0007	<i>0.0005</i>	0.0000	-0.0011	0.2257	939	150
	1.74	2.16	1.70	-0.08	-2.92	4.85		
Indonesia	0.0001	-0.0003	-0.0005	-0.0007	-0.0010	0.3565	1197	146
	0.53	-1.27	-2.60	-3.83	-2.92	10.29		
Korea, Rep.	-0.0057	<i>-0.0025</i>	0.0007	0.0040	0.0090	0.1711	5921	920
	-2.52	-1.69	0.67	5.24	10.76	9.21		
Sri Lanka	-0.0014	0.0001	0.0013	0.0027	0.0036	0.1807	150	24
	-0.65	0.05	0.71	0.94	0.98	1.57		
Pakistan	-0.0015	-0.0026	-0.0021	-0.0007	0.0010	0.2813	317	41
	-1.42	-3.16	-2.31	-0.52	0.53	3.33		
Belgium	0.0027	<i>0.0024</i>	<i>0.0020</i>	0.0012	-0.0010	0.2266	988	121
	1.33	1.86	1.84	1.14	-0.94	4.29		
Italy	0.0013	<i>0.0010</i>	<i>0.0007</i>	0.0005	0.0004	0.2289	1922	280
	1.46	1.67	1.76	1.39	1.11	6.77		
Taiwan	0.0044	0.0022	0.0008	0.0007	0.0022	0.1927	6432	1221
	2.12	1.99	1.49	1.27	2.76	10.20		

Panel C: High Effective Creditor Rights

Country	Q1	Q2	Q3	Q4	Q5	Inv	Obs	Firms
Spain	-0.0012	-0.0013	-0.0012	-0.0009	0.0002	0.2702	1196	133
	-1.26	-1.98	-2.84	-2.49	0.57	7.35		
Japan	0.0025	0.0025	0.0025	0.0023	0.0017	0.1959	26390	3568
	1.16	1.58	2.72	4.96	5.79	21.27		
Netherlands	-0.0009	<i>-0.0009</i>	<i>-0.0008</i>	-0.0005	0.0001	0.2398	2027	234
	-1.15	-1.88	-1.83	-1.32	0.30	7.36		
Thailand	-0.0006	-0.0001	0.0001	0.0002	0.0001	0.3171	3025	416
	-1.41	-0.31	0.31	0.45	0.13	12.68		
Sweden	<i>0.0025</i>	<i>0.0011</i>	0.0006	0.0004	0.0007	0.2467	2443	361
	2.84	2.02	1.21	0.78	1.42	7.47		
Norway	0.0030	0.0023	0.0014	0.0005	-0.0016	0.2106	792	126
	1.48	1.39	0.87	0.30	-0.83	3.71		
India	0.0031	0.0038	0.0040	0.0040	0.0036	0.2619	3802	768
	2.83	4.55	5.35	5.53	3.24	9.88		
South Africa	0.0008	<i>0.0007</i>	0.0005	0.0003	0.0000	0.2472	1375	215
	1.33	1.67	1.46	0.98	0.00	5.28		
Germany	0.0003	0.0025	0.0033	0.0036	0.0023	0.2646	5085	624
	0.30	4.06	6.05	6.77	4.08	12.15		
Denmark	-0.0018	<i>-0.0012</i>	-0.0006	0.0000	0.0007	0.2109	1363	146
	-1.59	-1.67	-0.93	-0.06	0.89	5.22		
Austria	-0.0027	-0.0005	0.0000	0.0001	-0.0011	0.2256	728	101
	-0.98	-0.42	-0.05	0.09	-0.88	4.66		
New Zealand	0.0030	0.0030	0.0024	0.0012	-0.0026	0.1976	292	55
	0.78	1.39	1.17	0.61	-0.81	2.16		
Israel	<i>0.0018</i>	0.0013	0.0012	0.0014	0.0023	0.2508	676	120
	1.91	2.33	2.52	3.01	5.42	3.35		
Hong Kong, China	0.0003	0.0003	0.0003	0.0003	0.0003	0.1843	4753	734
	0.39	0.91	1.02	0.92	0.46	8.54		
Un Kingdom	0.0009	0.0008	0.0007	0.0007	0.0006	0.2357	13654	2067
	2.44	3.17	3.24	3.05	2.04	16.43		

Table 6: Dynamic Regressions – Rate Innovation

This table reports the results of country by country fixed effects regressions of investment rate. The dependent variable y_{it} is the investment rate, defined as capital expenditures divided by property, plant and equipment. Size is the natural logarithm of assets in common Dec 2006 US\$, R is the innovation in the monetary policy rate from the GDP-Rate VAR. x'_i are firm characteristics. Size quintiles are defined at the country level. Each country's sample starts at most in 1992 at the earliest. All firm level controls are lagged values. T-statistics are presented below the coefficients. The general regression specification is:

$$y_{it} = c + \rho y_{it-1} + \beta_1 R_{t-1} + \beta_2 R_{t-1} \cdot size + \beta_3 R_{t-1} \cdot size^2 + x'_i \gamma + \mu_i + v_{it}$$

And the values below the Q's are the average marginal effects of the monetary policy rate evaluated at the mean values of size within each firm size quintile.

$$\frac{\partial \widehat{y}_{it}}{\partial R} = \beta_1 + \beta_2 size + \beta_3 size^2$$

Panel A: Low Effective Creditor Rights

Country	Q1	Q2	Q3	Q4	Q5	Inv	Obs	Firms
Brazil	0.0002	0.0002	0.0001	-0.0001	-0.0001	0.3191	1664	281
	0.71	1.10	0.93	0.35	-0.98	9.55		

Panel B: Intermediate Effective Creditor Rights

Country	Q1	Q2	Q3	Q4	Q5	Inv	Obs	Firms
Un States	-0.0006	-0.0010	-0.0010	-0.0009	0.0001	0.3678	12293	1302
	-0.68	-2.02	-2.44	-2.09	0.31	22.01		
Canada	0.0017	0.0003	-0.0005	-0.0014	-0.0027	0.1971	6549	1182
	0.83	0.26	-0.42	-1.27	-2.86	9.50		
Australia	0.0093	-0.0032	-0.0058	-0.0058	-0.0001	0.1300	1014	217
	1.54	-0.53	-0.95	-1.07	-0.02	2.43		
Finland	0.0020	0.0011	0.0007	0.0008	<i>0.0020</i>	0.1578	1347	154
	0.87	0.65	0.42	0.51	1.74	4.26		
Turkey	0.0002	0.0003	0.0002	0.0001	-0.0001	<i>0.0857</i>	771	150
	1.48	2.86	1.98	1.03	-1.17	1.71		
Indonesia	0.0002	0.0002	0.0002	0.0002	0.0003	0.3395	1103	145
	0.91	1.00	0.99	1.19	0.84	6.97		
Korea, Rep.	-0.0009	-0.0007	-0.0004	-0.0002	0.0002	0.2108	5921	920
	-1.04	-1.46	-1.42	-0.58	0.51	10.08		
Italy	-0.0004	-0.0002	0.0001	0.0004	0.0012	0.2312	1922	280
	-0.21	-0.15	0.10	0.48	1.45	5.76		

Panel C: High Effective Creditor Rights

Country	Q1	Q2	Q3	Q4	Q5	Inv	Obs	Firms
Spain	-0.0096	-0.0070	-0.0018	0.0024	0.0075	0.2695	856	127
	-2.80	-2.72	-0.99	1.16	3.74	6.36		
Japan	-0.0005	-0.0008	-0.0010	-0.0009	0.0003	0.1773	24925	3566
	-0.25	-0.60	-1.31	-1.12	0.37	17.13		
Netherlands	0.0052	<i>0.0049</i>	<i>0.0045</i>	0.0041	0.0029	0.0448	903	163
	1.15	1.78	1.78	1.59	0.91	0.98		
Sweden	0.0014	-0.0007	-0.0012	-0.0011	0.0005	0.2514	2443	361
	1.16	-0.95	-1.52	-1.47	0.57	7.03		
Norway	0.0040	0.0022	0.0013	0.0010	0.0012	0.2024	792	126
	2.00	1.33	0.76	0.60	0.68	3.39		
India	0.0117	-0.0042	-0.0123	-0.0176	-0.0182	0.2496	2893	742
	1.52	-1.15	-3.36	-4.49	-3.17	7.02		
South Africa	-0.0002	0.0005	0.00052	0.0003	-0.0003	0.2495	1375	215
	-0.19	0.70	0.82	0.59	-0.37	5.18		
Denmark	0.0035	<i>0.0028</i>	0.0020	0.0010	-0.0005	0.2052	1363	146
	1.24	1.81	1.27	0.66	-0.33	4.58		
Austria	0.0021	0.0046	0.0046	0.0033	-0.0034	0.2428	504	91
	0.30	1.15	1.31	0.98	-1.18	3.22		
New Zea	-0.0013	-0.0005	-0.0005	-0.0006	-0.0017	0.2123	292	55
	-0.21	-0.18	-0.19	-0.29	-0.84	2.67		
Un Kingdom	-0.0003	-0.0007	-0.0007	-0.0007	-0.0002	0.2394	13654	2067
	-0.73	-2.40	-2.46	-2.35	-0.66	14.96		

Figure 1: Dynamic Regressions Marginal Effects

These figures show the marginal effect of the monetary policy rate on the investment rate in country by country dynamic regressions from Table 5.

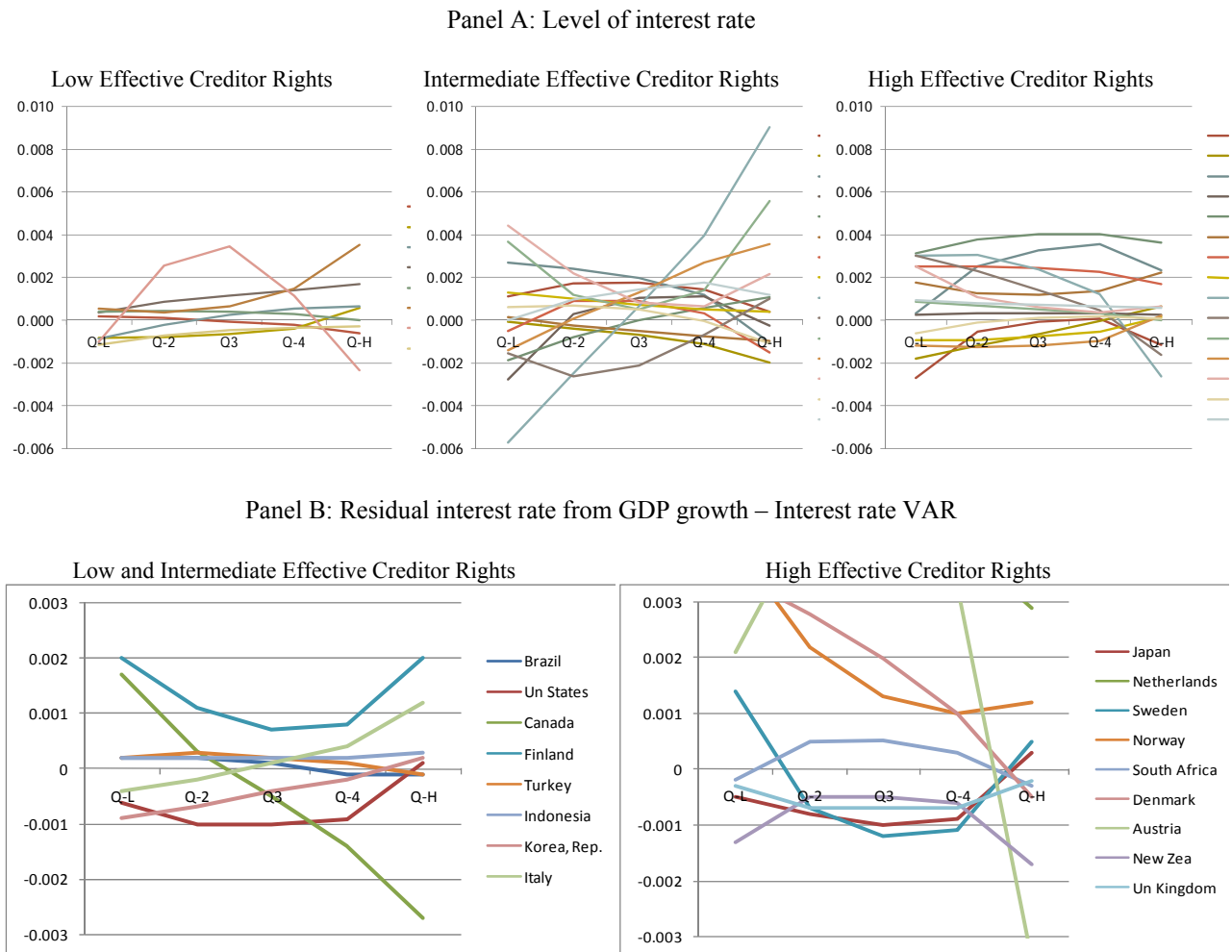


Figure 2: Average Investment Volatility

The following figures show the average investment volatility across groups of countries of varying investor protection measures. In each panel, the countries with Worldscope coverage are grouped into terciles (Low, Medium and High) and within each country group the average of their mean investment volatility by size groups is also calculated. The measure of investment volatility is the average of the investment standard deviation of all firms in each country with at least five years of valid investment data. Firms are assigned to size groups according to the mean size group they belonged to between 1990 and 2007

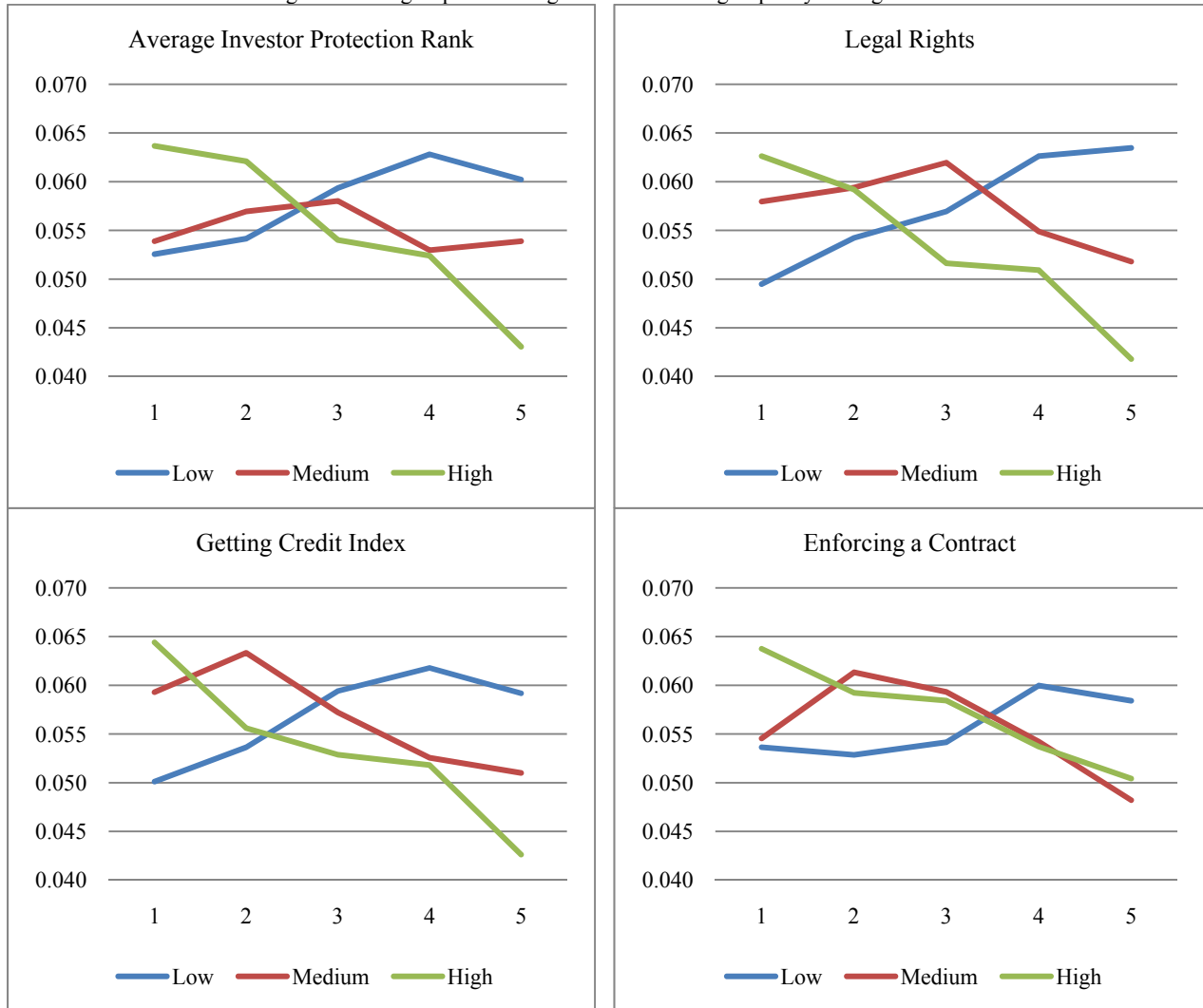


Figure 3: ECB Marginal Lending Facility Rate, and GDP growth

The first figure plots the monthly Marginal Lending Facility Rate of the ECB for the period 1999:M1 to 2009:M7. The second figure plots the year-over-year GDP growth rate of the Euro Area for the period 1999:Q1 to 2009:Q2.

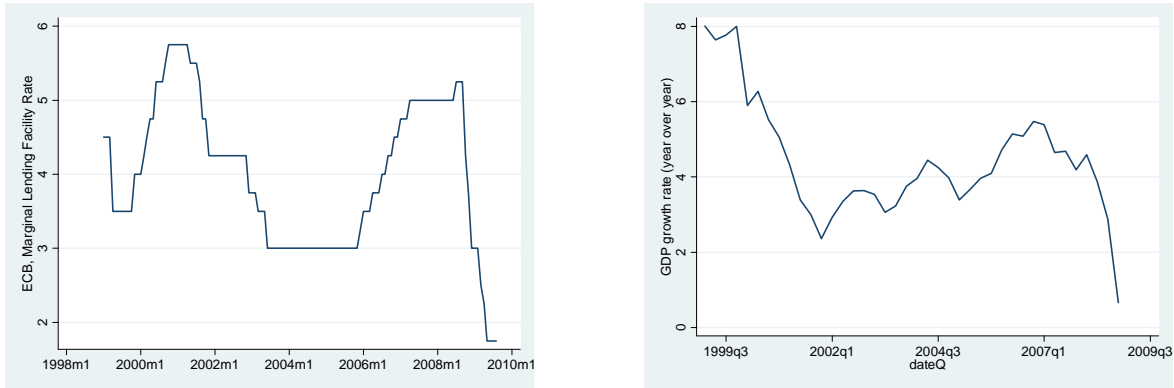
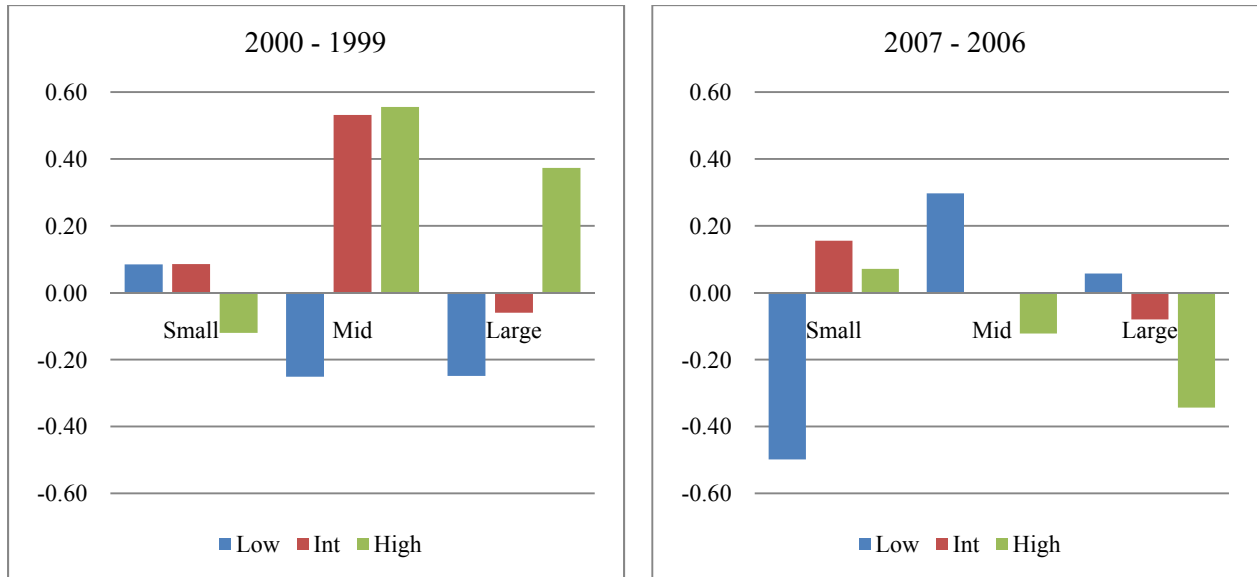


Figure 4: Investment Rate Change around ECB Monetary Tightening

These figures show the cross-country median of Euro Zone country firms of the mean change in the investment rate (Investment1) for firms grouped according to their size.



Chapter 2: Legal Origin, Investor Protection, and Corporate Policies through Time

INTRODUCTION

There is abundant evidence that companies incorporated in English origin countries distributed significantly more dividends than their French and German origin counterparts (La Porta et al., 2000), also there is evidence that legal origin is associated with a host of other country and firm level characteristics such as the size of the financial sector, corporate ownership, and firm valuation to name a few. La Porta, et al., (2008) provide a unified explanation to these differences based on the idea that legal origin reflects alternative modes of social control of economic life. In particular, common law (English) is a strategy that seeks to facilitate private market outcomes, while civil law (French) seeks to implement those outcomes with the allocations desired by the state. The legal origins theory claims that these alternative strategies were eventually incorporated into the specific legal rules of each country, the organization of legal systems, and the beliefs and human capital of its participants. Their argument suggests that the differences between countries with different legal origin should persist as long as countries keep favoring one approach over the other. To explore if this is indeed the case, in this paper we study how the relationship between legal origin and corporate finance outcomes has evolved over time. I focus on the more widely known firm level results that have been described in the literature, and focus on the time series of these relations to gauge their stability and robustness. Doing this sheds additional light on the channels through which legal origin matters. I use weighted OLS estimation, where the weights are chosen so that each country has the same weight in the estimation.

In addition to LLSV's interpretation of the importance of legal origin there are alternative explanations of the channels through which legal origin may influence economic outcomes. For example, Beck et al., (2003) assess two alternative theories of why legal origin influences financial development, the "political channel" and the "adaptability channel."¹⁰ The first one is

¹⁰ Hayek (1960).

similar to that advanced by LLSV, but the second one stresses the differential ability of legal traditions to adjust to changing circumstances. The later theory posits that more adaptable legal systems will foster financial development. According to some proponents of this view, common law has a faster ability to evolve as conditions change, while legal systems that rely heavily on statutes, such as civil law, will tend to evolve more slowly with negative effects on financial development. While these alternative views are not mutually exclusive, Beck et al., (2003) find evidence that supports the later view. According to the later view, one possible interpretation of cross-country differences is that they represent the temporary gap between the positions of countries with slowly adapting systems relative to countries with more adaptable systems. However, as long as conditions remain somewhat constant we could expect slowly adapting countries to eventually catch up with the fast adapting countries.

In the first part of the analysis I make a comprehensive analysis of the dividend payments observed in English, French, German and Scandinavian countries in the past 15 years. The main finding is that the difference in the dividend payments between English and French legal origin countries has gradually decreased over time,¹¹ starting from a highly economically and statistically significant difference of more than 15% in 1995 and reaching only 2.6% in year 2008, furthermore starting in year 2001 the difference is not statistically different from zero in most years. I also divide the sample into high growing firms and low growing firms, finding that the majority of the difference in dividend payment comes from firms with a low growth rate.

A natural explanation for the lower dividend payment ratio in French origin countries in the first part of the sample would be if the French origin countries needed more cash for future investments. In order to study this hypothesis I estimate the evolution through time of Tobin's Q. The results of this estimation give evidence that investment opportunities differences are an unlikely candidate to explain the difference in dividend payment. In fact, companies in French origin countries had lower Tobin's Q than their English origin counterparts, giving evidence that

¹¹ This is after controlling for other firm level characteristics such as size, profitability, and growth. The results are similar if we consider the entire payout to shareholders, that is, the sum of dividend payments and share repurchases.

the profitability of investment opportunities was lower in French origin companies. A natural question to ask then is why these low growing companies in French origin countries were holding cash if they did not have good investment opportunities.

To complement the previous analysis further I study if the evolution of the equity concentration can help us to understand the reduction in the dividend payment GAP. In the second part of the results we estimate the evolution in the equity concentration. I do not find a significant difference in equity concentration between companies incorporated in English origin countries compared to companies incorporated in French origin countries. However, I do find a significant difference between companies incorporated in English (or French) origin countries and companies incorporated in German origin countries. This difference is mainly explained by a sharp increase in the equity concentration of companies incorporated in English and French origin countries in the later part of our sample. I do not find a good explanation for the increase in equity concentration. One possibility is that the increase in number and size of mutual funds has replaced some of the small equity holders. This change in concentration can have a significant impact in corporations' governance.

The firm level data used in this study was obtained from Worldscope. The number of firms in each country covered by Worldscope varies substantially, with a few countries having thousands of firms with available data, while most countries only have a few hundred or even less firms in the sample. To emphasize the effect of cross-country characteristics and avoid having a few countries with a large number of firms driving our results I estimate the models using weighted OLS where the weights were constructed as $1/N(\text{country}_{it})$ where $N(\text{country}_{it})$ is the number of companies in country i in year t . By doing this each country-year is equally represented in the estimation. I also controlled for differences in the industry composition of each country by expressing the firm level data as deviations with respect to the world median of the industry, subtracting the world median in each industry-year from each firm's value. I also controlled for growth, size and profitability to reduce the possibility that the results are simply

driven by significant differences in firms characteristics. These adjustments do not change the results.

The main findings of the study can be summarized as follows. The effect of legal origin on dividend policy has decreased in the last 20 years, completely disappearing by year 2005. I do not find any significant difference in ownership concentration between companies incorporated in English origin countries compared to companies incorporated in and French origin countries. I do find a difference in ownership concentration between companies incorporated in English origin countries compared to companies incorporated in German origin countries, however this difference is only present for the last years of the period under analysis. The difference in ownership concentration between companies incorporated in English origin countries and companies incorporated in German origin countries is mainly explained by a sharp increase in ownership concentration experienced in the last 5 years by companies incorporated in English origin countries.

DATA DESCRIPTION

The sample includes firms from up to 48 countries depending on the year and the variable of interest. Additionally, to make the results comparable to previous related studies, I conduct the analysis in both a maximum breadth and a restricted subsample of countries. In the former I use all country-years with at least 5 firms with a sales growth above the world median sales growth and 5 firms whose sales growth was below the world median and valid data for all the variables of interest and controls. For ease of comparability with previous studies, in the restricted subsample I exclude socialist countries (current and former), countries with mandatory dividend laws, and Luxembourg.¹² After imposing these restrictions I am left with a maximum breadth sample of 142,972 firm-years from 22,595 different firms, and 134,757 firm-years from 20,462 different firms in the restricted subsample.

¹² These are the same filters used in LLSV (2000).

Throughout the paper I use the following firm level variables. *Dividend to Cash Flow* is the ratio of total cash dividends to funds from operations minus the net cash flow from discontinued operations, times 100; *Dividend to Sales* is the ratio of total cash dividends to sales, times 100; *Dividend to Income* is the ratio of total cash dividends to income before extraordinary items, times 100; *Closely Held Shares* is the ratio of closely held shares to shares outstanding; *Tobin's Q* is the ratio of the book value of assets minus the book value of equity plus the market value of equity, dividend by the book value of assets; *Return on Equity* is the ratio of income before extraordinary items divided by the book value of equity; *Sales Growth* is the geometric average growth rate in real sales in the previous 5 years; *Size* is the value in December 2008 dollars of the book value of assets, using the Gross National Product deflator. All the ratio variables are winsorized at the 1% and 99% percent to limit the influence of outliers.¹³

Industry-adjusted variables subtract from each variable the World median in the industry. The nine broad industries are mostly consistent with those used in La Porta et al., (2000) but I add a few more. The industries and their definitions are: (1) Agriculture, Forestry, and Fishing (SIC codes 100-999); (2) Mining (SIC codes 1000-1499); (3) Construction (SIC codes 1500-1799); (4) Light Manufacturing (SIC codes 2000-2999); (5) Heavy Manufacturing (SIC codes 3000-3999); (6) Transportation, Communications, Electricity, Gas, and Sanitary Services (SIC codes 4000-4999); (7) Wholesale Trade (SIC codes 5000-5199); (8) Retail Trade (SIC codes 5200-5999); and (9) Services (SIC codes 7000-8999). Public Administration and Finance, Insurance and Real Estate firms are excluded.

The legal origin and the anti director index are taken from Djankov et al., (2008). The later is a revised version of the original ADRI index proposed in La Porta et al., (1998).

Dividend Payout

La Porta et al., (2000) test two agency models of dividends, finding evidence consistent with the “outcome model”, according to which firms pay dividends because minority shareholder

¹³ Ratios are very sensitive to outliers, particularly when the denominator is close to zero.

pressure insiders and are able to force them to pay out cash. They perform their tests in a cross-section of 4,000 firms from 33 countries finding that firms in countries with a higher measure of protection of minority shareholders, and countries with common law pay on average higher dividends than firms in low minority shareholder protection countries, and countries with civil law. Faccio et al., (2001) study the differences in dividend policies between Asian and Western European companies in a period similar to La Porta et al., (2000); they find that group affiliated corporations in Europe pay higher dividends than similar Asian corporations, suggesting that insiders are less successful at keeping resources away of minority shareholders in the former.

To check the robustness of the above mentioned results I replicate and extend the analysis both in the cross-section and in the time series, studying the dividend payout policies of corporations from up to 48 countries between 1990 and 2008. I split the sample according to firm level growth in sales, legal origin, legal protection of minority shareholders (ADRI), and the economic development of the country.

Moreover, as differences in dividend payouts may due to changes in the way firms are paying their shareholders (e.g., dividends or share repurchases), for all the measures of dividend payout I also compute an analogous analysis for the total payout to shareholders. That is, I use the sum of dividends and repurchases in the numerator instead of just the numerator. The results from this analysis is broadly consistent with the “only dividend” results so it is omitted for brevity.¹⁴

The first three panels in Figure 6 plot the mean of country means for our alternative definitions of the dividend payout ratio. The included countries are required to have at least 5 firms above and 5 firms below the world industry-adjusted sales growth in the previous five years. In all these plots the blue line represents the mean dividend payout in English legal origin countries, the red line the corresponding measure for French legal origin countries and the black line the difference in the mean payout ratio between English and French legal origin countries,

¹⁴ This results are available upon request from the author.

with the black dotted lines representing a 95% confidence interval about it. The difference in the dividend to cash flow ratio is always positive, however, it decreases in magnitude as we move forward in time and is not significant every year. Our two alternative dividend payout definitions show an inconsistent pattern as well. The difference in the dividend to earnings ratio is not significantly different from zero in most of the sample, and is consistently positive only during the middle part of the 90's. Finally, the difference in the dividend to sales payout is only significantly higher than zero in two periods (1995 and 2004) but is low and insignificant in most periods, the only exception being the first five years of the 90s when though mostly insignificant it was positive and large in magnitude.

I complement the univariate analysis with multivariate regressions that control for other firm level characteristics that could be related to the dividend payout policy. The first three panels of Table 7 present the results from cross-country regressions of our alternative dividend payout definitions for three selected years (1995, 2000, and 2005) where the dividend payout is regressed on a full set of legal origin dummy variables (the omitted dummy is for the English legal origin countries), a variable indicating the size decile to which the firm belongs, and variables indicating the growth in sales decile in the previous five years, and the return on equity of the firm. All the models are estimated with equal weighting of each country to account for the disparity in the number of firms from each country. In the first three columns from each panel we have the results for the 1995 cross-section. These results generally confirm the results from the previous literature showing that firms from English legal origin countries have a higher dividend payout. In 1995, after controlling for size, growth in sales and return on equity, firms in French legal origin countries had a dividend to cash flow payout 15.5% lower than firms in English legal origin countries, similarly, firms in German and Scandinavian legal origin countries had a dividend to cash flow ratio 13.5% and 16.2% lower than English legal origin firms. As we move forward in time we observe that these differences decrease substantially, becoming insignificant all country groups but the German legal origin ones in the 2005 cross-section.

To control for differences in the industry composition of firms in the different countries, in Table 8 I subtract from all firm level variables the corresponding median of all firms in the same industry. Firms in French legal origin countries had a 15.4% lower dividend to cash flow payout in 1995, but only an insignificant 3.4% lower dividend payout in 2005 than their English legal origin counterparts¹⁵ once we account for these cross-industry differences.

Alternatively, I run similar regressions for the dividend payout but now separating firms not only according to the legal origin of their country, but according to the protection of minority shareholders in their country. Now, instead of legal origin dummies, all the regression have a dummy variable equal to one if the firm is located in a country with an anti-director rights index (ADRI) below the World median. The first three panels of Table 10 present the results from cross-country regressions of the dividend payout for three selected years (1995, 2000, and 2005). In 1995, after controlling for size, growth in sales and return on equity, firms in low ADRI countries had a dividend to cash flow payout 8.3% lower than firms in high ADRI countries. As we move forward in time we observe that these differences decrease substantially, becoming insignificant for high growth firms in 2000 and 2005.

To control for the possibility of differences in the industry composition of firms in the different countries, in Table 11 I subtract from all firm level variables the corresponding median of all firms in the same industry. Firms in low ADRI countries had an 8.3% lower dividend to cash flow payout in 1995, but a much lower but still significant 4.3% lower dividend payout in 2005 than their high ADRI counterparts.¹⁶

The main takeout from this section is that while during the first part of the 90's firms from English legal origin countries and high ADRI countries had higher dividend payouts, this difference tended to disappear as we move forward in time and the number of countries with available data increased. Therefore, this section casts some doubts on some results in the

¹⁵ In the case of Dividends to Earnings the difference goes from 12.64% in 1995 to an insignificant 1.45% in 2005. In the case of Dividends to Sales the difference goes from 2.06% in 1995 to an insignificant 0.42% in 2005.

¹⁶ In the case of Dividends to Earnings the difference goes from 6.84% in 1995 to an insignificant 2.24% in 2005. In the case of Dividends to Sales the difference goes from 1.19% in 1995 to an insignificant 0.51% in 2005.

international comparative corporate governance literature that stressed the existence of fundamental differences between countries with different institutions. In particular, the results seem to be more consistent with the alternative to LLSV's interpretation of the importance of legal origin advanced in Beck et al., (2003). The "adaptability channel"¹⁷ hypothesis stresses the differential ability of legal traditions to adjust to changing circumstances. In light of it we could argue that temporary differences between countries of difference legal origin and institutions may exist but they will tend to disappear over time as the slow moving countries catch up with the more flexible ones.

Ownership Concentration

La Porta et al., (1999) find that except in economies with very good shareholder protection, the Berle and Means' image of dispersed corporate ownership does not reflect how corporations are owned. In particular, they study in great detail the ultimate ownership structure of large corporations in 27 wealthy economies. They find that, in the single cross-section they study (year 1995), in high anti-director rights countries a larger fraction of corporations are widely held, as opposed to being controlled by a large shareholder, most times a family.

I complement and check the robustness of the above mentioned results extending the analysis both in the cross-section and the time series, studying the fraction of closely held shares in corporations from up to 48 countries in 1990 to 2008. I split the sample in according to firm level growth in sales, legal origin, legal protection of minority shareholders (ADRI), and the economic development of the country.

The fifth panel in Figure 5 plots the median of country medians closely held shares ratio for countries grouped by their legal origin. The difference in ownership concentration between French and English legal origin countries is only positive in the second part of the 90s. This is consistent with LLSV's observation. If instead of the median we focus on the mean of country means (Figure 6) this difference is no longer apparent, in this case only in the later part of the

¹⁷ Hayek (1960).

sample we observe French legal origin firms ownership to be more concentrated than that of English legal origin countries. It is very important to keep in mind that the sample I am using is quite different to the one used in LLSV's original study. The dependent variable is not the percentage ownership stake of the controlling shareholder but the fraction of closely held shares, and my sample includes a much larger number of firms of various sizes and characteristics. However, these sample differences do not invalidate the observation that on average it seems that firms in both French and English legal origin countries seem to have a rather similar fraction of closely held shares for most of the past 20 years.

I complement this univariate analysis with multivariate regressions that control for other firm level characteristics that may be related to the ownership structure. The fourth panel of Table 7 present the results from cross-country regressions of the closely held shares ratio for three selected years (1995, 2000, and 2005) where the closely held shares ratio is regressed on a full set of legal origin dummy variables, a variable indicating the size decile to which the firm belongs, and variables indicating the growth in sales decile in the previous five years, and the return on equity of the firm. All the models are estimated with equal weighting of each country to account for the disparity in the number of firms from each country with enough data on Worldscope. In 1995, after controlling for size, growth in sales and return on equity, firms in French legal origin countries had a closely held shares ratio 1.9% higher than firms in English legal origin countries; similarly, firms in German and Scandinavian legal origin countries had a closely held shares ratio 2.5% and 0.8% higher than English legal origin firms. None of these differences is statistically significant. Of the other controls, only size seems to be related to the closely held shares ratio. A one position movement in the size decile is related to a 0.1% decrease in the closely held shares ratio. As we move forward in time we observe that the differences between legal origin groups remain largely insignificant, with the sole exception (in these three years) of German and Scandinavian legal origin countries which have a lower fraction of closely held shares in the later part of the sample. In 2005, firms from German legal origin countries have a closely held shares ratio 9.8% lower, and firms from Scandinavian

countries have a closely held shares ratio 12.5% lower than firms from English legal origin countries.

After controlling for differences in the industry composition (see Table 8) the results do not change significantly. In 1995, firms in French legal origin countries had a closely held shares ratio 2.1% higher than firms in English legal origin countries; similarly, firms in German and Scandinavian legal origin countries had a closely held shares ratio 2.7% and 0.9% higher than English legal origin firms. None of these differences is statistically significant. In 2005, firms from German legal origin countries have a closely held shares ratio 10.0% lower, and firms from Scandinavian countries have a closely held shares ratio 12.4% lower than firms from English legal origin countries.

Alternatively, I run similar regressions for the closely held shares ratio but now separating firms not only according to the legal origin of their country, but according to the protection of minority shareholders in their country. In 1995, after controlling for size, growth in sales and return on equity, firms in low ADRI countries had a closely held shares ratio 9% lower than firms in high ADRI countries. This difference is not significant. As we move forward in time we observe that this difference decreases substantially, remaining insignificant but coming down to only a 2.5% lower fraction of closely held shares in 2005. The results are very similar when using industry-adjusted data.

Valuation

The most natural explanation for the lower dividend payment ratio in French origin countries in the first part of the sample would be if the French origin countries needed more cash for future investments. In order to study this hypothesis I scrutinize in detail the evolution through time of Tobin's Q. The results on these estimations give evidence that the investment opportunities differences do not explain the change in the difference in dividend payment between firms from countries of different legal origin. In fact, companies in French origin countries had lower Tobin's Q than their English origin counterparts, giving evidence that

investment opportunities were smaller in French origin companies. A natural question to ask then is why this low growing companies in French origin countries were holding cash if they did not have good investment opportunities.

The sixth panel in Figure 6 plots the mean of country means of the Tobin's Q of firms in English and French legal origin countries, and their difference. This difference is positive in the earlier and later part of the sample, but is negligible in the second third of the sample. This is an important observation as we do not observe consistently higher/lower valuations, and to the extent that Tobin Q is a proxy for investment opportunities, higher/lower investment opportunities for either group of countries.

As in the previous sections, I complement the univariate analysis with multivariate regressions that control for other firm level characteristics that may be related to the ownership structure. The fifth panel of Table 7 present the results from cross-country regressions of Tobin Q for three selected years (1995, 2000, and 2005) where Tobin Q is regressed on a full set of legal origin dummy variables, a variable indicating the size decile to which the firm belongs, and variables indicating the growth in sales decile in the previous five years, and the return on equity of the firm. All the models are estimated with equal weighting of each country to account for the disparity in the number of firms from each country with enough data on Worldscope. In 1995, after controlling for size, growth in sales and return on equity, firms in French legal origin countries had a Tobin Q 0.34 lower than firms in English legal origin countries; similarly, firms in German and Scandinavian legal origin countries had a Tobin Q 0.28 and 0.27 lower than English legal origin firms. All of these differences are statistically significant and are quite large in magnitude. Of the other controls, sales growth is positively related to Tobin Q. A one position increase in the sales growth decile is associated with a 0.03 increase in Tobin Q. A one position increase in the size decile is related to a 0.02 decrease in Tobin Q. And a 1 percent increase in the return on equity is associated with a 0.004 increase in Tobin Q. As we move forward in time we observe that the differences in Tobin Q between legal origin groups remain largely significant, with a sign change in the case of Scandinavian legal origin countries who in the later

part of the sample have higher valuations than their English legal origin counterparts. In 2000 however, neither group had a significantly different Tobin Q. In 2005, firms from French legal origin countries had a Tobin Q 0.25 lower, firms from German legal origin countries had a Tobin Q 0.31 lower, and firms from Scandinavian countries had a Tobin Q 0.27 higher than firms from English legal origin countries.

Controlling for differences in the industry composition the results do not change significantly. In 1995, firms in French legal origin countries had a Tobin Q 0.33 lower than firms in English legal origin countries; similarly, firms in German and Scandinavian legal origin countries had a Tobin Q 0.28 and 0.27 lower than English legal origin firms. All of these differences is statistically significant. In 2005, firms from French legal origin countries had a Tobin Q 0.25 lower, firms from German legal origin countries had a Tobin Q 0.30 lower, and firms from Scandinavian countries had a Tobin Q 0.26 higher than firms from English legal origin countries.

Alternatively, I run similar regressions but now separating firms not only according to the legal origin of their country, but according to the protection of minority shareholders in their country. In 1995, after controlling for size, growth in sales and return on equity, firms in low ADRI countries had a Tobin Q 0.10% lower than firms in high ADRI countries. This difference is not significant. As we move forward in time we observe that this difference first decreases (it is actually positive) in 2000 and then increases, remaining insignificant but coming down to only a 0.05 lower Tobin Q for firms from low ADRI countries in 2005. The results are very similar when using industry-adjusted data.

ROBUSTNESS CHECKS

Economic Development

To the extent that economic development and legal origin may be related, either causally or because of some other reason, it is important to isolate the effect of legal protection from the effect that the overall development of the country may have on the dividend payout ratio. To

address this I separate the sample according to the per capita GDP of each country. In Table 9 I present the coefficients on the legal origin dummies for equal-weighted regressions of the dividend payout on legal origin indicators, and firm level controls (size, growth, and ROE). The results are similar across both samples (High and Low Income Countries), with the dividend to cash flow payout in 1995 of firms in French legal origin countries being 16.4% lower in low income countries and 15.2% lower in high income countries that for firms in English legal origin countries. These differences are reduced significantly to a 4.7% and 2.5% lower but insignificant difference in 2005.¹⁸

In Table 12 I present the coefficients on the low ADRI dummy for equal-weighted regression of the dividend payout on legal origin indicators, and firm level controls (size, growth, and ROE). This separation generates important differences in the magnitude of the difference for some cross-sections. In 1995, firms in low ADRI and low income countries had a 13.5% lower dividend to cash flow payout ratio than firms in high ADRI and low income countries. This difference was almost half among firms in high income countries, with low ADRI-high income firms having a dividend payout 6.7% lower than high ADRI-high income firms. However, this difference is not stable through time. In 2000, there was almost no difference in the dividend payout of low ADRI firms in low income countries, but firms in low ADRI-high income countries again had a lower dividend payout, 5.3% lower, than their high income counterparts in countries with a high ADRI. While in 2005 there are no big differences

The results are quite similar across both samples (High and Low Income Countries), with the dividend to cash flow payout in 1995 of firms in French legal origin countries being 16.4% lower in low income countries and 15.2% lower in high income countries that for firms in

¹⁸ In the case of Dividends to Earnings the difference goes from 10.4% and 13.6% for low and high income countries in 1995 to an insignificant 0.2 and 2.4% in 2005. In the case of Dividends to Sales the difference goes from 2.7% and 1.8% for low and high income countries in 1995 to an insignificant 0.4 and 0.6% in 2005.

English legal origin countries. These differences are reduced significantly to a 4.7% and 2.5% lower but insignificant difference in 2005.¹⁹

Firm Growth

A very important determinant of corporate policies is the investment opportunities of each firm. For example, with asymmetric information problems, firms with attractive investment projects may find it more expensive to fund them with outside resources and prefer to use internal resources (have a low dividend payout) instead. Moreover, it is also possible that high growth firms may differ in a number of other dimensions from low growth firms, such as size, profitability, capital structure, to name a few. Therefore, to account for these potential differences we split our sample of firms between low (“mature”) and high (“growth”) growth firms. In all of the regressions, and for each cross-section, the second and third results columns present the results for the sample of “mature” and “growth” firms respectively. “Growth” firms are those whose average real sales growth in the previous five years is above the World median, and “mature” firms are those whose average real sales growth is below the World median. Again, to be included in the sample, each country is required to have at least five firms in either group.

For brevity, I only discuss here the industry-adjusted results. In Table 8 we can see that the differences between English and the other legal origin groups are stronger for “mature” firms. In addition, the relationship between the dividend payout measures and some of our firm-level controls show important interactions with sales growth. In 1995, French legal origin firms had a dividend to cash flow payout ratio 19.9% lower in the case of mature firms and only 12.6% lower in the case of growth firms. The other country groups show a similar pattern, mature German origin countries had a dividend to cash flow payout ratio 21.6% lower while their growth firms has a dividend to cash flow payout just 6.9% lower. These differences are present

¹⁹ In the case of Dividends to Earnings the difference goes from 10.4% and 13.6% for low and high income countries in 1995 to an insignificant 0.2 and 2.4% in 2005. In the case of Dividends to Sales the difference goes from 2.7% and 1.8% for low and high income countries in 1995 to an insignificant 0.4 and 0.6% in 2005.

also in our alternative definitions of the dividend payout ratio and are present also in most cross-sections, with some inconsistencies in a few periods. In 2005, French legal origin firms had a dividend to cash flow payout ratio 2.1% higher in the case of mature firms and only 3.7% lower in the case of growth firms; however, both of these differences are statistically insignificant. Mature German origin countries had a dividend to cash flow payout ratio 5.9% lower while their growth firms has a dividend to cash flow payout just 0.1% higher. At the end of the sample period, firms from Scandinavian legal origin countries are the ones with the highest dividend payout of all groups, with their low dividend payout ratios in the first part of the sample period possibly being highly influenced by the troubles these economies faced in the early part of the 90s. These differences are present also in our alternative definitions of the dividend payout ratio and are present also in most cross-sections, with some inconsistencies in a few periods.

Of interest is the U shaped relationship that seems to exist between sales growth and the dividend to cash flow payout ratio. High growth firms' dividend to cash flow ratio is negatively related to the sales growth decile, while mature firms' dividend to cash flow ratio is positively related to the sales growth decile. We have not explored the reasons for this.

CONCLUSION

In estimated the relationship of legal origin with dividend policy, equity concentration, and valuation from 1990 until 2008, and found that the relationship between them and legal origin and minority shareholder protection has not been stable through time. I find that the effect of legal origin on dividend policy has decreased in the past 20 years, completely disappearing by year 2005. I do not find any significant difference in ownership concentration between companies incorporated in English origin countries compared to companies incorporated in and French origin countries. I do find a difference in ownership concentration between companies incorporated in English origin countries compared to companies incorporated in German origin countries, however this difference is only present for the last years of the period under analysis. The difference in ownership concentration between companies incorporated in English origin

countries and companies incorporated in German origin countries is mainly explained by a sharp increase in ownership concentration experienced in the last 5 years by companies incorporated in English origin countries.

These results suggest that previously established results should be taken with caution, and cast some doubt on the strength of them. In particular, it appears that corporate characteristics are converging across countries, and legal origin is not longer an important determinant of them. More work into the possible causes of this convergence is left for future work. One possible channel would be to explore whether increased integration between markets can explain in part this convergence.

Table 7: Raw Data by Legal Origin

Cross-sectional weighted regressions of corporate characteristics around the world, where each country is weighted equally. The dependent variables are: (1) dividend-to-cash-flow; (2) dividend-to-earnings; and (3) dividend-to-sales; (4) closely-held-shares; and (5) Tobin's Q. French, German, Scandinavian are a dummy variables indicating the legal origin of the country in which the firm is incorporated. For each year, the first column present the results for the entire sample, while the next two present the results for subsamples based on growth in sales in the last five years (GS) relative to the world median growth in sales. "Growth" firms are firms whose GS is higher than the world median, and "mature" firms are firms whose GS is lower than the world median. The control variables include: *gs_decile*, which indicates the GS decile in the world; *size_decile*, which indicates the size decile in the world, size is measured as the book value of assets in Dec 2008 US\$, where the deflation is used the US GNP deflator; finally, *roe* is the return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity. Countries are required to have at least five valid observations (firms) with growth in sales below the world median and five observations with growth in sales above the world median to be included. T-stats are presented below the coefficients. Standard errors are clustered at the country level.

Panel 1:

<i>Dividend to Cash Flow</i>	1995			2000			2005		
	All	"mature"	"growth"	All	"mature"	"growth"	All	"mature"	"growth"
		GS < World GS	GS > World GS		GS < World GS	GS > World GS		GS < World GS	GS > World GS
French	-15.560	-19.840	-13.130	-6.190	-7.260	-4.660	-4.073	-4.341	-3.562
	-3.921	-4.576	-2.908	-2.410	-2.504	-1.078	-1.746	-1.843	-1.078
German	-13.430	-21.730	-7.168	-6.162	-7.311	-2.377	-6.482	-9.134	-3.325
	-3.252	-4.988	-1.457	-1.745	-2.208	-0.530	-3.117	-4.689	-1.083
Scandinavian	-16.210	-21.920	-11.29	-1.444	1.202	-4.610	3.716	3.542	4.675
	-4.159	-5.611	-2.147	-0.380	0.255	-1.061	1.084	1.194	0.868
<i>gs_decile</i>	-0.357	-0.822	-2.578	-0.324	1.288	-2.889	-0.055	1.226	-1.628
	-1.332	-1.051	-3.080	-1.187	2.348	-4.094	-0.213	1.594	-3.998
<i>size_decile</i>	-0.395	0.589	-1.203	0.343	0.391	-0.145	1.196	1.667	0.701
	-1.276	1.342	-2.602	1.198	1.117	-0.336	5.153	4.224	2.725
<i>roe</i>	10.320	11.230	8.447	5.806	5.710	1.623	7.655	6.686	7.769
	3.429	2.401	1.561	5.013	5.000	0.552	6.281	5.181	4.279
Constant	31.440	31.060	52.58	20.340	15.030	44.140	13.490	7.774	27.290
	7.013	6.086	4.475	8.424	5.723	5.664	6.428	3.379	6.386
Observations	5,701	2,884	2,817	8,183	4,127	4,056	14,262	7,458	6,804
R-squared	0.078	0.124	0.071	0.021	0.030	0.043	0.037	0.053	0.033

Panel 2:

<i>Dividend to Earnings</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
French	-12.840	-21.560	-11.720	-6.586	-14.420	-2.717	-3.080	-2.874	-3.179
	-2.236	-2.213	-1.463	-1.128	-2.186	-0.343	-0.626	-0.742	-0.440
German	-11.310	-34.850	4.926	-5.876	-9.977	-2.939	-3.711	-11.380	2.111
	-1.709	-3.492	0.564	-0.956	-1.462	-0.359	-0.925	-3.112	0.362
Scandinavian	-16.490	-26.490	-8.815	-4.350	-1.159	-6.866	1.393	3.157	1.335
	-2.480	-3.136	-0.718	-0.621	-0.169	-0.794	0.383	0.599	0.247
gs_decile	-1.058	1.011	-5.424	-1.188	2.421	-3.793	0.296	4.315	-3.238
	-1.332	0.383	-2.967	-1.736	1.780	-2.051	0.617	3.940	-4.847
size_decile	-0.050	0.628	-1.435	0.989	0.884	0.350	1.899	2.616	1.029
	-0.090	0.763	-1.763	2.420	1.372	0.463	4.066	4.291	1.828
roe	12.600	12.130	5.060	11.300	10.670	9.261	10.290	8.502	10.500
	3.950	2.973	0.557	5.379	4.918	3.358	6.305	5.543	4.040
Constant	50.430	50.560	91.060	37.000	29.560	60.030	18.430	4.173	48.720
	6.076	4.502	3.902	5.114	3.440	4.094	4.259	1.085	6.418
Observations	5,701	2,884	2,817	8,183	4,127	4,056	14,262	7,458	6,804
R-squared	0.014	0.035	0.026	0.011	0.019	0.017	0.016	0.039	0.015

Panel 3:

<i>Dividend to Sales</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
French	-2.051	-2.185	-1.876	-0.566	-0.547	-0.638	-0.506	-0.937	-0.219
	-3.379	-3.571	-2.709	-1.278	-1.192	-0.877	-1.058	-1.867	-0.403
German	-2.644	-3.137	-2.167	-1.525	-1.380	-1.206	-1.426	-1.864	-0.962
	-4.565	-5.917	-3.361	-3.279	-2.675	-2.435	-3.205	-4.487	-1.777
Scandinavian	-2.320	-2.607	-1.763	-0.540	0.371	-1.263	-0.239	-0.277	-0.280
	-3.949	-5.288	-2.323	-0.897	0.403	-2.338	-0.511	-0.518	-0.532
gs_decile	-0.085	-0.445	-0.305	-0.134	-0.072	-0.462	-0.042	-0.159	-0.188
	-2.784	-2.906	-2.317	-3.717	-0.662	-2.581	-1.175	-0.980	-2.782
size_decile	0.094	0.121	0.096	0.100	0.102	0.050	0.231	0.322	0.166
	1.630	1.922	1.400	2.878	2.337	1.084	6.472	4.459	3.433
roe	1.398	1.398	2.454	1.041	0.988	0.833	1.306	1.179	1.514
	3.424	2.505	3.165	5.490	4.719	2.627	6.026	4.344	4.743
Constant	3.698	4.776	5.197	3.018	2.558	6.179	1.877	2.017	3.176
	6.733	6.427	3.995	7.145	5.968	3.776	5.647	4.507	4.236
Observations	5,701	2,884	2,817	8,183	4,127	4,056	14,262	7,458	6,804
R-squared	0.088	0.116	0.093	0.040	0.039	0.070	0.048	0.064	0.041

Panel 4:

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
French	0.020	0.011	0.045	0.030	0.023	0.029	-0.008	-0.030	-0.008
	0.229	0.131	0.503	0.409	0.301	0.400	-0.135	-0.497	-0.132
German	0.023	0.029	0.025	-0.036	-0.022	-0.052	-0.106	-0.140	-0.084
	0.298	0.391	0.302	-0.569	-0.340	-0.759	-2.364	-3.550	-1.705
Scandinavian	0.008	0.046	-0.020	-0.034	-0.024	-0.050	-0.132	-0.139	-0.123
	0.096	0.512	-0.258	-0.696	-0.410	-1.027	-2.949	-2.803	-2.801
gs_decile	0.000	-0.001	0.002	-0.008	-0.012	-0.002	0.004	0.005	0.005
	-0.092	-0.103	0.355	-1.996	-1.750	-0.272	1.650	0.718	0.731
size_decile	-0.010	-0.014	-0.011	0.002	0.004	0.002	0.011	0.008	0.014
	-1.919	-2.464	-1.958	0.399	0.543	0.485	1.983	1.182	2.806
roe	0.024	0.024	0.026	0.010	0.028	0.009	0.028	0.031	0.022
	1.067	0.909	0.439	0.559	1.504	0.316	2.267	2.326	1.121
Constant	0.406	0.429	0.373	0.352	0.334	0.333	0.319	0.346	0.285
	7.289	6.801	4.642	5.885	5.792	3.701	7.950	8.605	4.232
Observations	5,701	2,884	2,817	8,183	4,127	4,056	14,262	7,458	6,804
R-squared	0.012	0.022	0.017	0.012	0.009	0.013	0.045	0.046	0.039

Panel 5:

<i>Tobin's Q</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
French	-0.334	-0.310	-0.350	-0.103	-0.093	-0.180	-0.234	-0.402	-0.137
	-3.174	-1.958	-3.206	-0.889	-1.060	-1.139	-1.608	-2.909	-0.878
German	-0.283	-0.217	-0.302	-0.238	-0.102	-0.412	-0.276	-0.296	-0.161
	-2.406	-1.335	-2.354	-1.794	-0.932	-2.259	-1.804	-1.882	-0.868
Scandinavian	-0.272	-0.288	-0.258	0.005	-0.047	0.028	0.303	0.046	0.459
	-2.900	-2.089	-2.352	0.055	-0.813	0.196	2.060	0.284	2.955
gs_decile	0.030	0.014	0.030	0.077	-0.006	0.120	0.050	-0.131	0.117
	3.956	1.093	1.894	5.859	-0.445	3.959	5.528	-3.593	5.033
size_decile	-0.022	-0.035	-0.021	-0.012	-0.005	-0.014	-0.065	-0.051	-0.065
	-1.814	-1.389	-1.726	-1.379	-0.585	-1.025	-4.238	-3.696	-3.796
roe	0.355	0.181	1.181	0.171	0.073	0.333	0.242	0.195	0.449
	3.466	2.496	3.683	4.602	3.034	3.699	3.046	1.932	3.595
Constant	1.475	1.564	1.395	1.064	1.244	0.766	1.826	2.362	1.241
	10.830	5.537	8.252	11.900	13.170	2.559	9.984	10.950	5.458
Observations	5,701	2,884	2,817	8,183	4,127	4,056	14,262	7,458	6,804
R-squared	0.073	0.059	0.097	0.060	0.009	0.043	0.057	0.068	0.073

Table 8: Industry Adjusted Data by Legal Origin

Cross-sectional weighted regressions of corporate characteristics around the world, where each country is weighted equally. The dependent variables are: (1) dividend-to-cash-flow; (2) dividend-to-earnings; and (3) dividend-to-sales; (4) closely-held-shares; and (5) Tobin's Q. French, German, Scandinavian are a dummy variables indicating the legal origin of the country in which the firm is incorporated. For each year, the first column present the results for the entire sample, while the next two present the results for subsamples based on growth in sales in the last five years (GS) relative to the world median growth in sales. "Growth" firms are firms whose GS is higher than the world median, and "mature" firms are firms whose GS is lower than the world median. The control variables include: IA_gs_decile, which indicates the industry adjusted GS decile in the world; IA_size_decile, which indicates the industry adjusted size decile in the world, IA_size is measured as the book value of assets in Dec 2008 US\$ minus the median book value of assets of all firms in the same industry, where the deflation is done using the US GNP deflator; finally, IA_roe is the industry adjusted return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity minus the median roe of all firms in the same industry. Countries are required to have at least five valid observations (firms) with industry adjusted growth in sales below the world median and five observations with industry adjusted growth in sales above the world median to be included. T-stats are presented below the coefficients. Standard errors are clustered at the country level.

Panel 1:

	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
French	-15.450	-20.110	-12.490	-6.278	-8.324	-5.151	-4.083	-3.116	-4.450
	-3.909	-4.529	-2.925	-2.442	-2.803	-1.384	-1.740	-1.429	-1.335
German	-13.310	-21.450	-6.760	-6.263	-7.849	-3.860	-6.862	-8.523	-4.389
	-3.249	-4.946	-1.446	-1.776	-2.252	-0.974	-3.266	-5.012	-1.422
Scandinavian	-16.180	-22.290	-11.140	-1.567	-0.145	-3.573	3.704	6.279	3.334
	-4.156	-5.535	-2.258	-0.411	-0.030	-0.936	1.068	1.884	0.636
IA_gs_decile	-0.345	0.005	-2.366	-0.198	1.689	-2.217	0.063	1.840	-1.685
	-1.285	0.007	-2.793	-0.728	2.932	-3.946	0.254	2.693	-3.633
IA_size_decile	-0.457	0.925	-1.421	0.243	0.312	-0.038	0.882	1.360	0.358
	-1.487	2.728	-2.952	0.779	0.772	-0.103	3.351	3.982	1.154
IA_roe	10.350	9.767	9.482	5.716	5.459	2.251	7.972	6.807	8.157
	3.388	2.601	1.745	5.045	4.888	0.881	6.345	5.207	4.334
Constant	32.610	27.940	52.350	20.780	15.290	38.340	15.500	7.266	31.310
	6.554	6.611	4.382	7.613	5.266	6.297	6.713	3.338	5.763
Observations	5,701	2,884	2,817	8,182	4,126	4,056	14,263	7,446	6,817
R-squared	0.079	0.133	0.078	0.020	0.033	0.032	0.033	0.050	0.031

Panel 2:

<i>Dividend to Earnings</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
French	-12.670	-19.780	-12.110	-6.691	-15.200	-2.084	-3.037	-0.512	-4.324
	-2.242	-2.089	-1.563	-1.150	-2.297	-0.283	-0.617	-0.121	-0.573
German	-11.300	-32.920	5.094	-6.005	-8.330	-2.502	-4.281	-8.136	-0.086
	-1.735	-3.457	0.606	-0.999	-1.259	-0.336	-1.091	-2.147	-0.014
Scandinavian	-16.590	-25.280	-10.090	-4.460	-2.169	-4.615	1.415	6.271	1.068
	-2.478	-3.065	-0.855	-0.636	-0.277	-0.544	0.374	0.890	0.180
IA_gs_decile	-0.913	1.932	-5.940	-0.955	2.345	-4.400	0.553	3.942	-2.774
	-1.186	0.817	-3.437	-1.484	1.639	-2.288	1.040	3.368	-2.999
IA_size_decile	-0.321	1.033	-2.052	0.480	-0.061	0.561	1.357	1.746	0.700
	-0.548	1.333	-2.464	0.797	-0.074	0.712	2.435	2.538	0.988
IA_roe	12.290	10.280	5.799	11.360	10.350	9.643	10.740	10.400	9.962
	3.902	2.565	0.650	5.297	4.782	3.032	6.132	4.682	4.258
Constant	52.270	44.990	99.610	39.590	34.380	64.300	21.260	8.003	49.520
	6.478	5.066	4.684	4.671	3.472	4.308	4.092	1.801	4.282
Observations	5,701	2,884	2,817	8,182	4,126	4,056	14,263	7,446	6,817
R-squared	0.013	0.035	0.034	0.010	0.018	0.019	0.013	0.029	0.011

Panel 3:

<i>Dividend to Sales</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
French	-2.065	-2.426	-1.865	-0.572	-0.784	-0.558	-0.523	-0.771	-0.387
	-3.376	-3.526	-2.822	-1.292	-1.577	-0.902	-1.096	-1.412	-0.763
German	-2.661	-3.267	-2.197	-1.525	-1.482	-1.224	-1.494	-1.966	-1.057
	-4.584	-5.519	-3.609	-3.291	-2.548	-2.790	-3.323	-4.556	-1.956
Scandinavian	-2.334	-2.833	-1.888	-0.560	0.112	-1.074	-0.248	-0.176	-0.285
	-3.892	-4.699	-2.606	-0.922	0.126	-2.280	-0.510	-0.300	-0.546
IA_gs_decile	-0.081	-0.319	-0.287	-0.127	-0.041	-0.378	-0.046	0.051	-0.186
	-2.785	-1.981	-2.090	-3.632	-0.352	-2.757	-1.383	0.362	-2.855
IA_size_decile	0.082	0.196	0.035	0.079	0.082	0.068	0.161	0.248	0.090
	1.484	2.647	0.570	1.777	1.491	1.350	3.809	3.349	1.704
IA_roe	1.427	1.194	2.543	1.061	0.987	0.908	1.378	1.189	1.574
	3.376	2.797	3.073	5.435	4.695	2.812	6.141	4.267	4.855
Constant	3.899	4.324	5.648	3.199	2.780	5.355	2.458	1.961	3.759
	6.828	6.238	4.100	6.644	5.524	4.618	6.035	4.110	4.436
Observations	5,701	2,884	2,817	8,182	4,126	4,056	14,263	7,446	6,817
R-squared	0.088	0.121	0.091	0.039	0.037	0.062	0.039	0.051	0.036

Panel 4:

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
French	0.021	0.006	0.050	0.030	0.017	0.023	-0.008	-0.032	-0.009
	0.248	0.067	0.598	0.414	0.220	0.320	-0.140	-0.553	-0.135
German	0.025	0.023	0.029	-0.037	-0.020	-0.058	-0.108	-0.149	-0.083
	0.327	0.306	0.351	-0.582	-0.300	-0.893	-2.420	-3.828	-1.672
Scandinavian	0.008	0.038	-0.022	-0.036	-0.015	-0.066	-0.131	-0.136	-0.126
	0.098	0.420	-0.288	-0.724	-0.281	-1.337	-2.861	-2.884	-2.707
IA_gs_decile	-0.001	0.002	0.000	-0.007	-0.007	-0.004	0.005	0.010	0.004
	-0.299	0.206	-0.009	-1.953	-1.118	-0.460	1.936	1.752	0.657
IA_size_decile	-0.010	-0.014	-0.011	0.000	0.002	-0.003	0.005	0.001	0.009
	-1.913	-2.342	-2.057	-0.068	0.311	-0.552	1.108	0.224	1.642
IA_roe	0.025	0.018	0.050	0.012	0.029	0.005	0.033	0.030	0.032
	1.148	0.705	0.929	0.666	1.711	0.158	2.548	2.172	1.528
Constant	0.408	0.427	0.397	0.364	0.330	0.382	0.350	0.375	0.323
	7.319	7.014	4.935	6.017	5.463	4.140	9.148	9.805	4.699
Observations	5,701	2,884	2,817	8,182	4,126	4,056	14,263	7,446	6,817
R-squared	0.012	0.021	0.019	0.013	0.006	0.015	0.037	0.042	0.03

Panel 5:

<i>Tobin's Q</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS < World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
French	-0.331	-0.302	-0.356	-0.097	-0.088	-0.165	-0.242	-0.425	-0.130
	-3.220	-1.897	-3.384	-0.835	-0.987	-1.059	-1.728	-3.103	-0.861
German	-0.277	-0.205	-0.315	-0.236	-0.103	-0.367	-0.266	-0.282	-0.161
	-2.354	-1.230	-2.552	-1.754	-0.989	-1.928	-1.783	-1.767	-0.878
Scandinavian	-0.267	-0.286	-0.264	0.011	-0.045	0.062	0.295	0.017	0.460
	-2.919	-1.960	-2.538	0.117	-0.703	0.461	1.955	0.103	3.021
IA_gs_decile	0.030	0.003	0.025	0.072	-0.014	0.110	0.042	-0.132	0.130
	3.853	0.172	1.551	5.510	-1.036	2.688	4.500	-3.868	6.182
IA_size_decile	-0.011	-0.027	-0.008	-0.002	0.001	0.001	-0.023	-0.017	-0.023
	-1.041	-1.411	-0.695	-0.371	0.117	0.097	-2.208	-1.566	-2.004
IA_roe	0.351	0.167	1.182	0.175	0.068	0.361	0.214	0.152	0.441
	3.480	2.481	3.960	4.637	2.717	3.944	2.541	1.588	3.481
Constant	1.445	1.563	1.490	1.050	1.247	0.765	1.662	2.224	0.927
	11.230	5.904	10.130	12.040	14.040	2.188	10.040	10.610	4.685
Observations	5,701	2,884	2,817	8,182	4,126	4,056	14,263	7,446	6,817
R-squared	0.071	0.050	0.096	0.057	0.009	0.041	0.039	0.052	0.062

Table 9: Industry Adjusted Data by Legal Origin and Development

Cross-sectional weighted regressions of dividend payout around the world, where each country is weighted equally. The dependent variables are: (1) dividend-to-cash-flow; (2) dividend-to-earnings; and (3) dividend-to-sales; (4) closely-held-shares; and (5) Tobin's Q. French, German, Scandinavian are dummy variables indicating the legal origin of the country in which the firm is incorporated. For each year, the first column present the results for the entire sample, while the next two present the results for subsamples based on growth in sales in the last five years (GS) relative to the world median growth in sales. "Growth" firms are firms whose GS is higher than the world median, and "mature" firms are firms whose GS is lower than the world median. The control variables include: IA_gs_decile, which indicates the industry adjusted GS decile in the world; IA_size_decile, which indicates the industry adjusted size decile in the world, IA_size is measured as the book value of assets in Dec 2008 US\$ minus the median book value of assets of all firms in the same industry, where the deflation is done using the US GNP deflator; finally, IA_roe is the industry adjusted return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity minus the median roe of all firms in the same industry. Countries are required to have at least five valid observations (firms) with industry adjusted growth in sales below the world median and five observations with industry adjusted growth in sales above the world median to be included. Only the coefficients of the legal origin dummies are reported. T-stats are presented below the coefficients. Standard errors are clustered at the country level.

Panel 1:

	1995			2000			2005		
	All	"mature"	"growth"	All	"mature"	"growth"	All	"mature"	"growth"
		IA_GS < World	IA_GS > World		IA_GS < World	IA_GS > World		IA_GS < World	IA_GS > World
Dividend to Cash Flow									
Low Income									
French	-16.530	-24.050	-12.450	-6.717	-10.720	-1.667	-5.924	-5.971	-7.022
	-4.014	-4.416	-2.446	-2.346	-3.220	-0.328	-1.838	-1.813	-1.648
German	-16.120	-28.660	-7.279	-15.410	-17.210	-6.772	-3.523	-8.362	1.316
	-5.008	-5.561	-3.015	-5.965	-6.236	-1.544	-2.712	-7.651	0.546
Scandinavian									
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.128	0.188	0.161	0.031	0.053	0.039	0.037	0.064	0.025
High Income									
French	-15.150	-18.920	-12.810	-5.928	-5.710	-7.344	-2.502	-0.603	-2.551
	-2.881	-3.341	-2.222	-1.569	-1.200	-1.575	-0.866	-0.225	-0.630
German	-12.940	-20.570	-6.963	-4.495	-5.811	-4.237	-6.663	-6.854	-4.698
	-2.454	-3.853	-1.089	-1.101	-1.522	-0.826	-2.278	-2.967	-1.155
Scandinavian	-17.740	-23.540	-12.880	-1.949	-0.483	-5.102	4.940	8.065	4.505
	-3.335	-4.310	-2.007	-0.431	-0.090	-0.986	1.199	2.172	0.737
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.076	0.132	0.066	0.019	0.025	0.035	0.034	0.048	0.042

Panel 2:

<i>Dividend to Earnings</i>	1995			2000			2005		
	All	"mature"	"growth"	All	"mature"	"growth"	All	"mature"	"growth"
		IA_GS < World	IA_GS > World		IA_GS < World	IA_GS > World		IA_GS < World	IA_GS > World
Low Income									
French	-10.180	-15.430	-13.240	-7.831	-18.840	0.395	-4.241	-5.148	-5.601
	-1.097	-0.753	-1.806	-1.269	-2.389	0.037	-0.514	-0.749	-0.499
German	-19.890	-68.260	-6.294	-15.230	-17.910	-6.861	-0.331	-10.930	9.078
	-2.706	-3.133	-1.207	-3.326	-2.856	-0.748	-0.109	-1.978	1.605
Scandinavian									
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.060	0.055	0.113	0.017	0.039	0.011	0.019	0.046	0.009
High Income									
French	-13.680	-19.960	-12.230	-6.591	-9.040	-5.549	-2.398	3.963	-4.813
	-1.966	-2.754	-1.199	-0.840	-1.029	-0.628	-0.477	0.699	-0.665
German	-6.807	-22.940	7.093	-5.774	-7.779	-2.769	-3.945	-4.984	-1.123
	-0.970	-2.808	0.678	-0.720	-0.967	-0.261	-0.722	-1.162	-0.147
Scandinavian	-16.190	-19.290	-12.500	-6.964	-5.743	-6.514	3.237	9.115	2.458
	-2.034	-2.997	-0.934	-0.785	-0.594	-0.599	0.601	1.249	0.303
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.015	0.038	0.033	0.019	0.011	0.028	0.013	0.024	0.023

Panel 3:

<i>Dividend to Sales</i>	1995			2000			2005		
	All	"mature"	"growth"	All	"mature"	"growth"	All	"mature"	"growth"
		IA_GS < World	IA_GS > World		IA_GS < World	IA_GS > World		IA_GS < World	IA_GS > World
Low Income									
French	-2.716	-4.189	-1.841	-0.742	-1.313	-0.438	-0.625	-1.069	-0.523
	-2.878	-3.708	-1.826	-1.129	-1.946	-0.411	-0.985	-1.233	-0.811
German	-3.291	-4.859	-2.648	-2.913	-2.914	-2.126	-0.341	-1.710	0.642
	-4.618	-4.025	-3.885	-5.860	-5.398	-2.340	-1.062	-3.401	1.563
Scandinavian									
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.124	0.259	0.106	0.047	0.059	0.069	0.042	0.058	0.032
High Income									
French	-1.783	-1.770	-1.877	-0.626	-0.296	-0.872	-0.578	-0.728	-0.329
	-2.325	-2.332	-2.140	-1.066	-0.428	-1.420	-0.985	-1.336	-0.493
German	-2.478	-2.893	-2.084	-1.230	-1.076	-1.043	-1.568	-1.567	-1.291
	-3.429	-4.329	-2.578	-2.270	-1.542	-2.258	-2.926	-3.521	-2.117
Scandinavian	-2.299	-2.644	-1.883	-0.516	0.093	-0.965	-0.020	0.345	-0.174
	-3.080	-3.813	-2.091	-0.754	0.097	-1.680	-0.032	0.559	-0.246
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.080	0.100	0.086	0.049	0.039	0.056	0.043	0.055	0.048

Panel 4:

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low Income									
French	-0.110	-0.130	-0.068	0.011	-0.012	-0.009	-0.024	-0.024	-0.060
	-0.754	-0.790	-0.518	0.086	-0.089	-0.071	-0.264	-0.256	-0.569
German	0.004	-0.061	0.045	-0.046	-0.067	-0.020	-0.226	-0.225	-0.248
	0.029	-0.461	0.357	-0.540	-0.765	-0.204	-8.846	-8.294	-8.120
Scandinavian									
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.068	0.139	0.054	0.011	0.020	0.019	0.044	0.036	0.052
High Income									
French	0.074	0.064	0.093	0.095	0.097	0.090	-0.003	-0.050	0.030
	0.920	0.795	1.098	1.732	1.737	1.442	-0.060	-0.981	0.621
German	0.022	0.036	0.017	-0.049	-0.028	-0.060	-0.065	-0.122	-0.026
	0.250	0.473	0.178	-0.684	-0.390	-0.791	-1.158	-2.328	-0.427
Scandinavian	-0.014	0.019	-0.046	-0.057	-0.034	-0.080	-0.106	-0.125	-0.092
	-0.171	0.213	-0.567	-1.101	-0.606	-1.450	-1.890	-2.182	-1.633
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.020	0.019	0.038	0.042	0.028	0.058	0.038	0.044	0.044

Panel 5:

<i>Tobin's Q</i>	1995			2000			2005		
	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low Income									
French	-0.453	-0.486	-0.480	0.008	0.031	-0.104	-0.112	-0.178	-0.076
	-1.746	-1.000	-2.629	0.047	0.255	-0.456	-0.591	-1.261	-0.354
German	-0.504	-0.570	-0.461	-0.303	-0.112	-0.601	-0.282	-0.358	-0.172
	-3.649	-1.265	-5.264	-4.769	-2.893	-5.206	-1.662	-2.866	-0.900
Scandinavian									
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.122	0.097	0.185	0.053	0.017	0.056	0.119	0.086	0.169
High Income									
French	-0.267	-0.181	-0.302	-0.104	-0.106	-0.118	-0.229	-0.445	-0.095
	-3.111	-2.057	-2.526	-0.929	-1.301	-0.758	-1.472	-2.996	-0.521
German	-0.183	-0.046	-0.264	-0.283	-0.182	-0.378	-0.357	-0.364	-0.218
	-1.714	-0.443	-1.887	-1.793	-1.525	-1.775	-2.209	-2.228	-1.031
Scandinavian	-0.232	-0.175	-0.256	-0.081	-0.148	-0.038	0.146	-0.161	0.342
	-2.760	-2.063	-2.171	-0.753	-1.907	-0.235	0.925	-0.884	2.046
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.064	0.034	0.076	0.059	0.015	0.039	0.039	0.070	0.060

Table 10: Raw Data by ADRI

Cross-sectional weighted regressions of dividend payout around the world, where each country is weighted equally. The dependent variables are: (1) dividend-to-cash-flow; (2) dividend-to-earnings; and (3) dividend-to-sales; (4) closely-held-shares; and (5) Tobin's Q. Low ADRI is a dummy variable equal to one if the ADRI index in the country in which the firm is incorporated is below the median ADRI index in the sample. For each year, the first column present the results for the entire sample, while the next two present the results for subsamples based on growth in sales in the last five years (GS) relative to the world median growth in sales. "Growth" firms are firms whose GS is higher than the world median, and "mature" firms are firms whose GS is lower than the world median. The control variables include: *gs_decile*, which indicates the GS decile in the world; *size_decile*, which indicates the size decile in the world, size is measured as the book value of assets in Dec 2008 US\$, where the deflation is used the US GNP deflator; finally, *roe* is the return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity. Countries are required to have at least five valid observations (firms) with growth in sales below the world median and five observations with growth in sales above the world median to be included. T-stats are presented below the coefficients. Standard errors are clustered at the country level.

Panel 1:

<i>Dividend to Cash Flow</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
		GS	GS		GS	GS		GS	GS
Low ADRI	-8.332	-10.470	-7.897	-3.710	-7.485	-0.722	-4.452	-5.727	-3.308
	-2.613	-2.703	-2.308	-1.824	-3.158	-0.235	-2.031	-2.726	-1.084
<i>gs_decile</i>	-0.212	-0.638	-2.446	-0.507	0.908	-2.665	-0.104	0.782	-1.721
	-0.652	-0.843	-2.623	-2.336	1.545	-3.770	-0.388	1.016	-4.128
<i>size_decile</i>	-0.365	0.463	-1.102	0.463	0.565	0.142	1.261	1.909	0.682
	-1.088	0.969	-2.340	1.568	1.592	0.401	5.918	4.957	2.743
<i>roe</i>	10.590	11.460	10.090	6.464	6.052	3.468	7.511	6.422	7.534
	3.367	2.442	1.789	5.324	4.556	1.305	6.131	5.214	3.987
Constant	24.220	22.210	46.800	18.630	14.550	37.710	12.970	7.299	28.020
	6.662	4.525	4.196	9.277	6.657	5.342	7.566	3.089	6.696
Observations	5,740	2,903	2,837	8,191	4,128	4,063	14,281	7,480	6,801
R-squared	0.029	0.041	0.046	0.018	0.030	0.033	0.031	0.046	0.028

Panel 2:

<i>Dividend to Earnings</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
Low ADRI	-6.909	-12.940	-7.505	-2.669	-11.650	0.992	-2.616	-7.043	-0.020
	-1.611	-1.600	-1.039	-0.699	-2.469	0.165	-0.561	-2.186	-0.003
gs_decile	-0.911	1.455	-4.954	-1.543	1.670	-4.322	0.341	3.252	-3.101
	-1.123	0.554	-2.648	-2.342	1.236	-2.494	0.684	3.305	-4.444
size_decile	0.023	0.511	-1.330	1.093	1.087	0.558	1.965	3.009	1.037
	0.041	0.571	-1.527	2.646	1.698	0.742	4.463	5.217	1.932
roe	12.610	12.870	4.705	12.360	11.330	11.420	10.270	8.316	10.490
	3.800	3.237	0.533	5.807	4.796	5.525	6.432	5.512	4.238
Constant	43.570	38.100	85.500	35.860	28.430	60.740	17.130	4.542	47.130
	6.445	3.830	3.774	5.978	3.910	4.160	5.108	1.268	6.754
Observations	5,740	2,903	2,837	8,191	4,128	4,063	14,281	7,480	6,801
R-squared	0.006	0.010	0.018	0.012	0.018	0.019	0.016	0.035	0.014

Panel 3:

<i>Dividend to Sales</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
Low ADRI	-1.189	-1.277	-1.100	-0.416	-0.858	-0.038	-0.539	-0.876	-0.284
	-2.551	-2.428	-2.224	-1.183	-2.356	-0.057	-1.212	-1.917	-0.605
gs_decile	-0.073	-0.415	-0.317	-0.161	-0.150	-0.530	-0.044	-0.262	-0.224
	-1.764	-2.540	-2.161	-5.725	-1.403	-2.690	-1.207	-1.637	-3.196
size_decile	0.103	0.108	0.119	0.105	0.101	0.085	0.239	0.351	0.162
	1.675	1.561	1.633	2.912	2.467	1.786	7.147	5.441	3.195
roe	1.501	1.460	2.865	1.129	1.033	1.038	1.266	1.063	1.520
	3.488	2.608	3.185	5.694	4.308	4.204	5.973	4.820	4.387
Constant	2.603	3.645	4.312	2.775	2.717	5.924	1.624	1.789	3.340
	6.402	4.909	3.388	7.251	5.814	3.480	6.251	4.533	4.664
Observations	5,740	2,903	2,837	8,191	4,128	4,063	14,281	7,480	6,801
R-squared	0.032	0.048	0.052	0.031	0.034	0.059	0.039	0.053	0.037

Panel 4:

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
Low ADRI	-0.090	-0.081	-0.083	-0.022	-0.035	-0.018	-0.025	-0.043	-0.030
	-1.389	-1.278	-1.251	-0.372	-0.587	-0.285	-0.537	-0.955	-0.549
gs_decile	-0.001	-0.002	0.001	-0.005	-0.004	-0.003	0.003	-0.004	0.003
	-0.408	-0.251	0.102	-1.559	-0.726	-0.445	0.912	-0.666	0.352
size_decile	-0.010	-0.013	-0.011	0.003	0.005	0.003	0.014	0.011	0.017
	-2.021	-2.577	-1.859	0.606	0.741	0.498	2.684	1.669	3.797
roe	0.026	0.025	0.019	0.011	0.025	0.001	0.022	0.027	0.014
	1.178	0.962	0.334	0.584	1.468	0.033	2.052	2.192	0.773
Constant	0.447	0.463	0.425	0.329	0.311	0.334	0.276	0.312	0.253
	9.434	8.938	5.833	6.276	6.035	3.710	5.513	6.601	3.203
Observations	5,740	2,903	2,837	8,191	4,128	4,063	14,281	7,480	6,801
R-squared	0.031	0.034	0.029	0.004	0.008	0.002	0.022	0.017	0.026

Panel 5:

<i>Tobin's Q</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
Low ADRI	-0.104	-0.126	-0.102	0.056	0.039	0.079	-0.049	-0.130	0.011
	-0.883	-1.063	-0.751	0.454	0.446	0.468	-0.333	-0.909	0.067
gs_decile	0.034	0.014	0.031	0.076	-0.010	0.082	0.056	-0.124	0.117
	3.779	0.995	1.772	6.559	-0.634	2.423	5.466	-3.359	4.530
size_decile	-0.021	-0.037	-0.018	-0.010	-0.003	-0.015	-0.069	-0.054	-0.074
	-1.750	-1.425	-1.419	-1.139	-0.407	-1.066	-4.192	-3.424	-4.133
roe	0.361	0.181	1.236	0.162	0.061	0.356	0.227	0.180	0.410
	3.427	2.341	3.940	3.971	2.911	3.570	2.718	1.704	2.920
Constant	1.307	1.454	1.213	0.971	1.175	0.926	1.765	2.237	1.301
	11.890	6.119	7.296	13.980	13.830	2.976	11.890	11.660	5.435
Observations	5,740	2,903	2,837	8,191	4,128	4,063	14,281	7,480	6,801
R-squared	0.042	0.031	0.069	0.057	0.004	0.031	0.039	0.045	0.054

Table 11: Industry Adjusted Data by ADRI

Cross-sectional weighted regressions of dividend payout around the world, where each country is weighted equally. The dependent variables are: (1) dividend-to-cash-flow; (2) dividend-to-earnings; and (3) dividend-to-sales; (4) closely-held-shares; and (5) Tobin's Q. Low ADRI is a dummy variable equal to one if the ADRI index in the country in which the firm is incorporated is below the median ADRI index in the sample. For each year, the first column present the results for the entire sample, while the next two present the results for subsamples based on growth in sales in the last five years (GS) relative to the world median growth in sales. "Growth" firms are firms whose GS is higher than the world median, and "mature" firms are firms whose GS is lower than the world median. The control variables include: IA_gs_decile, which indicates the industry adjusted GS decile in the world; IA_size_decile, which indicates the industry adjusted size decile in the world, IA_size is measured as the book value of assets in Dec 2008 US\$ minus the median book value of assets of all firms in the same industry, where the deflation is done using the US GNP deflator; finally, IA_roe is the industry adjusted return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity minus the median roe of all firms in the same industry. Countries are required to have at least five valid observations (firms) with industry adjusted growth in sales below the world median and five observations with industry adjusted growth in sales above the world median to be included. T-stats are presented below the coefficients. Standard errors are clustered at the country level.

Panel 1:

	1995			2000			2005		
	All	"mature" IA_GS < World IA GS	"growth" IA_GS > World IA GS	All	"mature" IA_GS < World IA GS	"growth" IA_GS > World IA GS	All	"mature" IA_GS < World IA GS	"growth" IA_GS > World IA GS
		IA GS	IA GS		IA GS	IA GS		IA GS	IA GS
<i>Dividend to Cash Flow</i>									
Low ADRI	-8.287	-10.620	-7.578	-3.763	-8.720	-1.103	-4.316	-5.244	-3.496
	-2.599	-2.700	-2.290	-1.898	-3.336	-0.411	-1.961	-2.549	-1.144
IA_gs_decile	-0.209	0.255	-2.261	-0.449	1.322	-2.519	0.040	1.381	-1.682
	-0.646	0.316	-2.403	-2.013	2.136	-4.250	0.154	2.186	-3.779
IA_size_decile	-0.428	0.884	-1.320	0.295	0.647	-0.024	0.932	1.644	0.296
	-1.225	2.097	-2.792	0.952	1.448	-0.069	3.844	4.892	1.063
IA_roe	10.690	10.040	10.880	6.476	5.618	4.040	7.882	6.641	7.950
	3.328	2.710	1.945	5.616	4.559	1.806	6.235	5.373	4.061
Constant	25.540	18.420	47.130	19.930	14.260	37.840	14.800	7.312	30.960
	6.177	4.779	4.163	8.415	5.533	6.175	7.526	3.471	6.400
Observations	5,740	2,903	2,837	8,221	4,133	4,088	14,280	7,467	6,813
R-squared	0.030	0.046	0.051	0.017	0.035	0.033	0.026	0.043	0.025

Panel 2:

<i>Dividend to Earnings</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low ADRI	-6.838	-11.900	-7.608	-1.545	-9.488	1.523	-2.240	-5.368	-0.253
	-1.616	-1.527	-1.082	-0.417	-1.841	0.270	-0.479	-1.473	-0.034
IA_gs_decile	-0.789	2.538	-5.436	-1.323	1.631	-4.814	0.650	2.883	-2.394
	-1.001	1.039	-3.054	-2.018	1.115	-2.395	1.152	2.867	-2.805
IA_size_decile	-0.357	0.595	-1.888	0.303	-0.315	0.240	1.282	2.096	0.428
	-0.590	0.727	-2.232	0.466	-0.321	0.266	2.625	3.011	0.799
IA_roe	12.650	11.500	5.767	12.570	11.230	11.780	10.910	10.570	10.210
	3.794	2.932	0.671	5.946	4.674	4.819	6.306	4.431	4.672
Constant	46.170	34.470	93.110	39.100	33.210	67.310	20.250	9.742	46.940
	6.751	4.016	4.650	5.238	3.744	4.058	4.974	2.156	5.110
Observations	5,740	2,903	2,837	8,221	4,133	4,088	14,280	7,467	6,813
R-squared	0.006	0.011	0.025	0.010	0.014	0.022	0.013	0.026	0.009

Panel 3:

<i>Dividend to Sales</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low ADRI	-1.195	-1.418	-1.102	-0.371	-0.906	-0.072	-0.514	-0.870	-0.256
	-2.534	-2.489	-2.307	-1.062	-2.380	-0.128	-1.157	-1.775	-0.560
IA_gs_decile	-0.070	-0.257	-0.309	-0.162	-0.143	-0.499	-0.046	-0.048	-0.181
	-1.751	-1.489	-2.051	-5.593	-1.375	-3.460	-1.293	-0.350	-2.948
IA_size_decile	0.085	0.190	0.050	0.061	0.081	0.045	0.164	0.300	0.074
	1.385	2.397	0.755	1.294	1.411	0.875	4.443	4.489	1.395
IA_roe	1.537	1.251	2.908	1.158	1.015	1.100	1.348	1.090	1.580
	3.447	2.971	3.162	5.856	4.316	4.375	6.141	4.614	4.583
Constant	2.841	2.998	4.912	3.098	2.869	5.941	2.180	1.686	3.577
	7.025	4.626	3.675	6.856	5.807	4.882	6.409	4.014	4.875
Observations	5,740	2,903	2,837	8,221	4,133	4,088	14,280	7,467	6,813
R-squared	0.030	0.054	0.039	0.032	0.038	0.057	0.036	0.045	0.039

Panel 4:

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low ADRI	-0.089	-0.086	-0.079	-0.021	-0.034	-0.019	-0.022	-0.040	-0.028
	-1.377	-1.282	-1.268	-0.362	-0.585	-0.315	-0.478	-0.907	-0.510
IA_gs_decile	-0.002	0.000	-0.003	-0.005	-0.003	-0.004	0.004	0.004	0.004
	-0.665	0.016	-0.395	-1.437	-0.474	-0.492	1.350	0.684	0.446
IA_size_decile	-0.009	-0.012	-0.010	0.000	0.002	-0.001	0.007	0.004	0.011
	-1.873	-2.152	-1.952	0.023	0.305	-0.236	1.605	0.618	2.344
IA_roe	0.027	0.018	0.042	0.011	0.028	-0.006	0.028	0.025	0.027
	1.248	0.751	0.830	0.596	1.704	-0.194	2.477	1.992	1.409
Constant	0.447	0.454	0.453	0.344	0.319	0.364	0.308	0.334	0.283
	9.453	8.789	6.456	6.593	6.057	3.958	6.303	7.278	3.289
Observations	5,740	2,903	2,837	8,221	4,133	4,088	14,280	7,467	6,813
R-squared	0.029	0.032	0.028	0.004	0.007	0.002	0.011	0.008	0.013

Panel 5:

<i>Tobin's Q</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low ADRI	-0.100	-0.123	-0.096	0.053	0.040	0.075	-0.074	-0.155	-0.006
	-0.862	-1.045	-0.706	0.420	0.477	0.437	-0.506	-1.070	-0.034
IA_gs_decile	0.033	0.001	0.023	0.072	-0.021	0.079	0.047	-0.122	0.128
	3.602	0.074	1.264	6.447	-1.353	1.980	4.601	-3.496	5.329
IA_size_decile	-0.011	-0.026	-0.008	-0.004	0.003	-0.005	-0.027	-0.016	-0.033
	-1.057	-1.410	-0.682	-0.490	0.478	-0.487	-2.236	-1.218	-2.484
IA_roe	0.356	0.166	1.216	0.112	0.057	0.279	0.196	0.131	0.402
	3.418	2.345	4.119	1.693	2.622	2.178	2.215	1.296	2.828
Constant	1.286	1.445	1.346	0.960	1.175	0.918	1.605	2.069	0.998
	12.100	6.795	8.059	13.970	15.090	2.750	12.240	11.310	5.041
Observations	5,740	2,903	2,837	8,221	4,133	4,088	14,280	7,467	6,813
R-squared	0.039	0.021	0.065	0.050	0.004	0.024	0.020	0.027	0.040

Table 12: Industry Adjusted Data by ADRI and Development

Cross-sectional weighted regressions of dividend payout around the world, where each country is weighted equally. The dependent variables are: (1) dividend-to-cash-flow; (2) dividend-to-earnings; and (3) dividend-to-sales; (4) closely-held-shares; and (5) Tobin's Q. Low ADRI is a dummy variable equal to one if the ADRI index in the country in which the firm is incorporated is below the median ADRI index in the sample. For each year, the first column present the results for the entire sample, while the next two present the results for subsamples based on growth in sales in the last five years (GS) relative to the world median growth in sales. "Growth" firms are firms whose GS is higher than the world median, and "mature" firms are firms whose GS is lower than the world median. The control variables include: IA_gs_decile, which indicates the industry adjusted GS decile in the world; IA_size_decile, which indicates the industry adjusted size decile in the world, IA_size is measured as the book value of assets in Dec 2008 US\$ minus the median book value of assets of all firms in the same industry, where the deflation is done using the US GNP deflator; finally, IA_roe is the industry adjusted return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity minus the median roe of all firms in the same industry. Countries are required to have at least five valid observations (firms) with industry adjusted growth in sales below the world median and five observations with industry adjusted growth in sales above the world median to be included. Only the coefficients of the legal origin dummies are reported. T-stats are presented below the coefficients. Standard errors are clustered at the country level.

Panel 1:

	1995			2000			2005		
	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Dividend to Cash Flow									
Low Income									
Low ADRI	-13.600 -2.872	-18.440 -2.564	-11.230 -2.294	-0.917 -0.295	-10.140 -2.569	5.653 1.282	-3.780 -1.004	-6.118 -2.036	-2.828 -0.510
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.092	0.087	0.153	0.011	0.038	0.044	0.032	0.063	0.009
High Income									
Low ADRI	-6.801 -1.861	-8.374 -1.879	-6.735 -1.747	-5.105 -1.909	-6.491 -2.103	-4.748 -1.483	-4.598 -1.989	-4.168 -1.497	-4.408 -1.574
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.022	0.044	0.036	0.019	0.027	0.030	0.025	0.035	0.036

Panel 2:

	1995			2000			2005		
	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World	All	"mature" IA_GS < World	"growth" IA_GS > World
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Dividend to Earnings									
Low Income									
Low ADRI	-6.558 -0.709	-2.062 -0.100	-12.180 -1.794	5.099 0.860	-15.610 -2.242	21.410 2.337	1.412 0.155	-7.596 -1.352	6.774 0.485
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.053	0.006	0.111	0.013	0.030	0.033	0.018	0.047	0.007
High Income									
Low ADRI	-8.028 -1.711	-14.220 -2.384	-6.216 -0.724	-8.211 -1.743	-10.280 -1.860	-9.599 -1.717	-5.335 -1.442	-4.126 -0.818	-6.319 -1.207
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.008	0.026	0.021	0.020	0.012	0.030	0.014	0.021	0.024

Panel 3:

<i>Dividend to Sales</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low Income									
Low ADRI	-2.117 -2.081	-3.238 -2.465	-1.396 -1.409	-0.152 -0.189	-1.739 -2.645	1.107 0.898	-0.474 -0.657	-1.059 -1.358	-0.132 -0.170
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.064	0.147	0.066	0.021	0.053	0.069	0.040	0.055	0.026
High Income									
Low ADRI	-0.915 -1.724	-0.853 -1.480	-1.049 -1.890	-0.639 -1.745	-0.589 -1.260	-0.735 -2.180	-0.680 -1.638	-0.875 -2.051	-0.416 -0.944
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.028	0.035	0.044	0.042	0.035	0.050	0.030	0.043	0.036

Panel 4:

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low Income									
Low ADRI	-0.111 -0.868	-0.118 -0.827	-0.076 -0.669	-0.055 -0.431	-0.126 -1.044	-0.043 -0.336	-0.130 -1.277	-0.145 -1.504	-0.170 -1.438
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.068	0.134	0.051	0.014	0.047	0.023	0.048	0.048	0.074
High Income									
Low ADRI	-0.077 -1.161	-0.070 -1.109	-0.078 -1.104	-0.013 -0.223	-0.008 -0.151	-0.015 -0.230	0.014 0.408	-0.014 -0.367	0.034 0.912
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.022	0.023	0.024	0.007	0.002	0.017	0.017	0.010	0.027

Panel 5:

<i>Tobin's Q</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		IA_GS	IA_GS		IA_GS	IA_GS		IA_GS	IA_GS
Low Income									
Low ADRI	-0.362 -1.398	-0.375 -0.894	-0.403 -2.145	0.172 0.661	0.041 0.277	0.302 0.850	-0.092 -0.543	-0.148 -1.074	-0.032 -0.156
Observations	357	110	247	1,213	739	474	2,285	950	1,335
R-squared	0.092	0.072	0.159	0.052	0.014	0.054	0.115	0.076	0.167
High Income									
Low ADRI	-0.018 -0.152	-0.017 -0.194	-0.010 -0.063	0.000 0.000	0.020 0.213	-0.018 -0.108	0.024 0.134	-0.002 -0.011	0.080 0.392
Observations	5,344	2,774	2,570	6,969	3,387	3,582	11,978	6,496	5,482
R-squared	0.042	0.009	0.055	0.049	0.005	0.028	0.021	0.051	0.043

Table 13: Closely Held Shares, Survivors

Cross-sectional weighted regressions the fraction of closely held shares around the world, where each country is weighted equally.. French, German, Scandinavian are a dummy variables indicating the legal origin of the country in which the firm is incorporated. For each year, the first column present the results for the entire sample, while the next two present the results for subsamples based on growth in sales in the last five years (GS) relative to the world median growth in sales. “Growth” firms are firms whose GS is higher than the world median, and “mature” firms are firms whose GS is lower than the world median. In panel A, the control variables include: *gs_decile*, which indicates the GS decile in the world; *size_decile*, which indicates the size decile in the world, size is measured as the book value of assets in Dec 2008 US\$, where the deflation is used the US GNP deflator; finally, *roe* is the return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity. In panel B the control variables include: *IA_gs_decile*, which indicates the industry adjusted GS decile in the world; *IA_size_decile*, which indicates the industry adjusted size decile in the world, *IA_size* is measured as the book value of assets in Dec 2008 US\$ minus the median book value of assets of all firms in the same industry, where the deflation is done using the US GNP deflator; finally, *IA_roe* is the industry adjusted return over equity, measured as the ratio of income before extraordinary items divided by the book value of equity minus the median *roe* of all firms in the same industry. Countries are required to have at least five valid observations (firms) with industry adjusted growth in sales below the world median and five observations with industry adjusted growth in sales above the world median to be included. T-stats are presented below the coefficients. Standard errors are clustered at the country level.

Panel A: Raw Data

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS	All	"mature" GS < World GS	"growth" GS > World GS
		GS	GS		GS	GS		GS	
French	-0.013	0.066	-0.001	-0.014	0.070	-0.102	-0.013	-0.091	0.064
	-0.147	0.593	-0.011	-0.194	0.935	-1.045	-0.164	-1.241	0.804
German	0.048	0.045	0.038	-0.014	0.044	-0.105	0.012	-0.130	0.066
	0.672	0.589	0.508	-0.207	0.577	-1.231	0.237	-1.623	1.104
Scandinavian	0.001	0.044	-0.032	-0.046	0.016	-0.130	-0.068	-0.139	-0.039
	0.014	0.457	-0.459	-0.850	0.221	-1.790	-1.267	-2.167	-0.761
<i>gs_decile</i>	0.000	-0.029	-0.001	-0.012	-0.024	-0.008	0.010	0.003	-0.014
	0.042	-1.992	-0.081	-2.463	-1.828	-0.546	1.114	0.195	-1.180
<i>size_decile</i>	-0.011	-0.009	-0.014	-0.003	-0.005	-0.005	-0.007	-0.010	-0.010
	-1.794	-0.999	-2.215	-0.492	-0.566	-0.741	-0.948	-0.960	-1.091
<i>roe</i>	0.031	0.040	0.021	-0.012	0.029	-0.090	0.010	0.048	0.026
	1.352	1.677	0.342	-0.264	1.013	-1.930	0.249	1.341	0.260
Constant	0.391	0.468	0.418	0.406	0.391	0.491	0.383	0.480	0.539
	6.144	6.291	4.246	6.218	4.895	3.088	5.888	6.103	5.452
Observations	3,641	1,749	1,892	3,659	1,994	1,665	3,674	2,407	1,267
R-squared	0.017	0.039	0.024	0.018	0.026	0.077	0.015	0.046	0.026

Panel B: Industry Adjusted

<i>Closely Held Shares</i>	1995			2000			2005		
	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS	All	"mature" IA_GS < World IA_GS	"growth" IA_GS > World IA_GS
		World IA_GS	World IA_GS		World IA_GS	World IA_GS			
		World IA_GS	World IA_GS		World IA_GS	World IA_GS			
French	-0.010	0.051	0.015	-0.025	0.054	-0.102	-0.011	-0.081	0.061
	-0.115	0.432	0.189	-0.349	0.755	-1.078	-0.140	-1.201	0.699
German	0.050	0.029	0.051	-0.014	0.027	-0.100	0.015	-0.095	0.068
	0.688	0.367	0.681	-0.226	0.363	-1.265	0.298	-1.489	1.034
Scandinavian	0.004	0.018	-0.013	-0.052	0.008	-0.137	-0.070	-0.126	-0.053
	0.050	0.186	-0.177	-1.058	0.124	-2.041	-1.307	-2.369	-0.943
IA_gs_decile	-0.001	-0.022	-0.003	-0.012	-0.011	-0.003	0.011	0.005	-0.011
	-0.154	-1.313	-0.344	-2.461	-1.014	-0.230	1.300	0.370	-0.676
IA_size_decile	-0.008	-0.008	-0.009	-0.010	-0.013	-0.009	-0.008	-0.010	-0.014
	-1.423	-0.893	-1.506	-1.556	-1.477	-1.530	-1.386	-1.662	-1.708
IA_roe	0.030	0.029	0.045	-0.009	0.046	-0.100	0.012	0.060	-0.013
	1.293	1.218	0.776	-0.185	1.419	-2.219	0.301	1.786	-0.167
Constant	0.381	0.457	0.402	0.443	0.415	0.460	0.380	0.471	0.551
	5.908	6.285	4.048	7.266	5.147	3.083	6.071	7.624	3.830
Observations	3,643	1,760	1,883	3,672	1,975	1,697	3,674	2,388	1,286
R-squared	0.013	0.025	0.015	0.029	0.029	0.082	0.019	0.041	0.034

Figure 5: Medians of Country Medians

Countries are classified by legal origin. Medians of country medians. Countries are required to have at least five valid observations (firms) with industry adjusted growth in sales below the world median and five observations with industry adjusted growth in sales above the world median to be included.

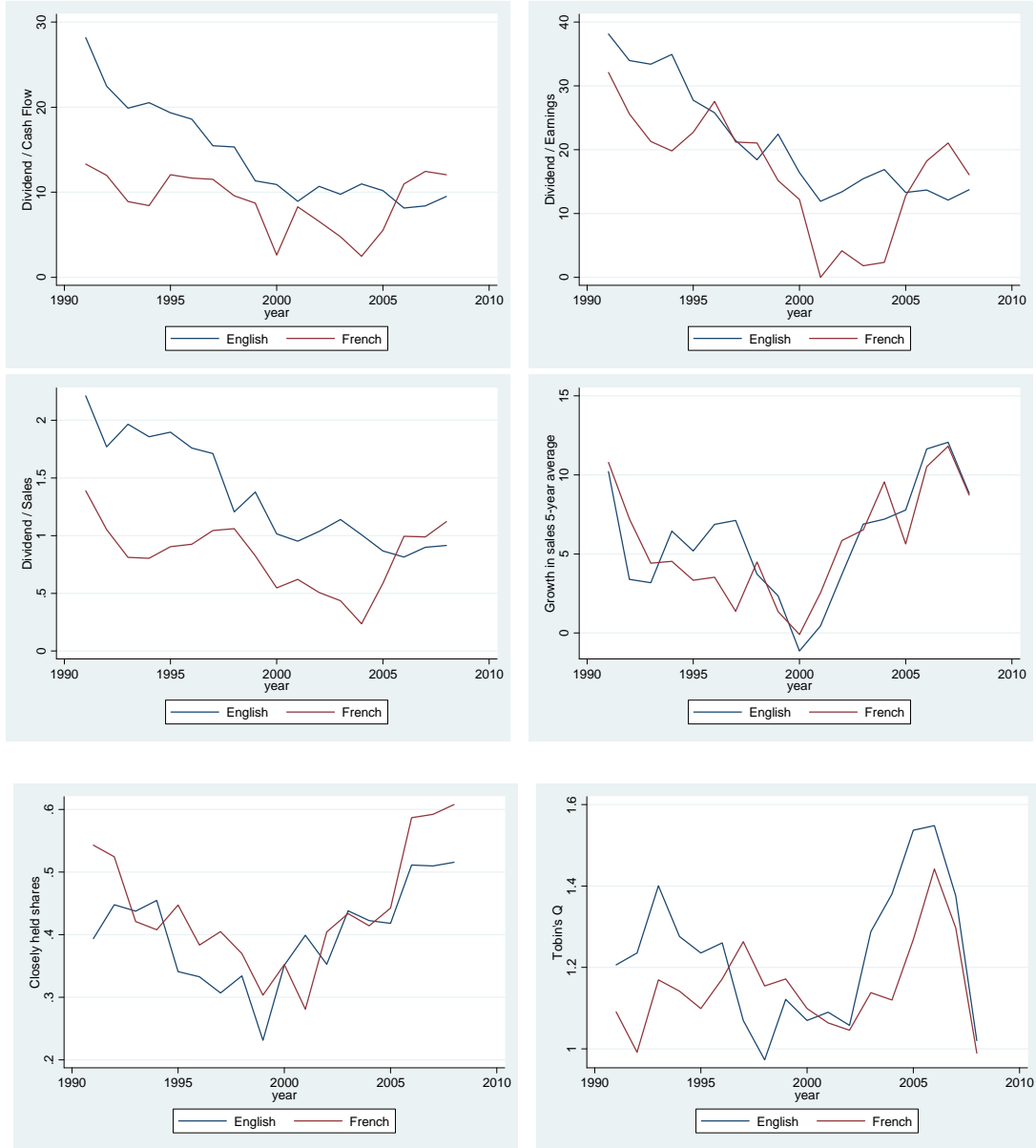
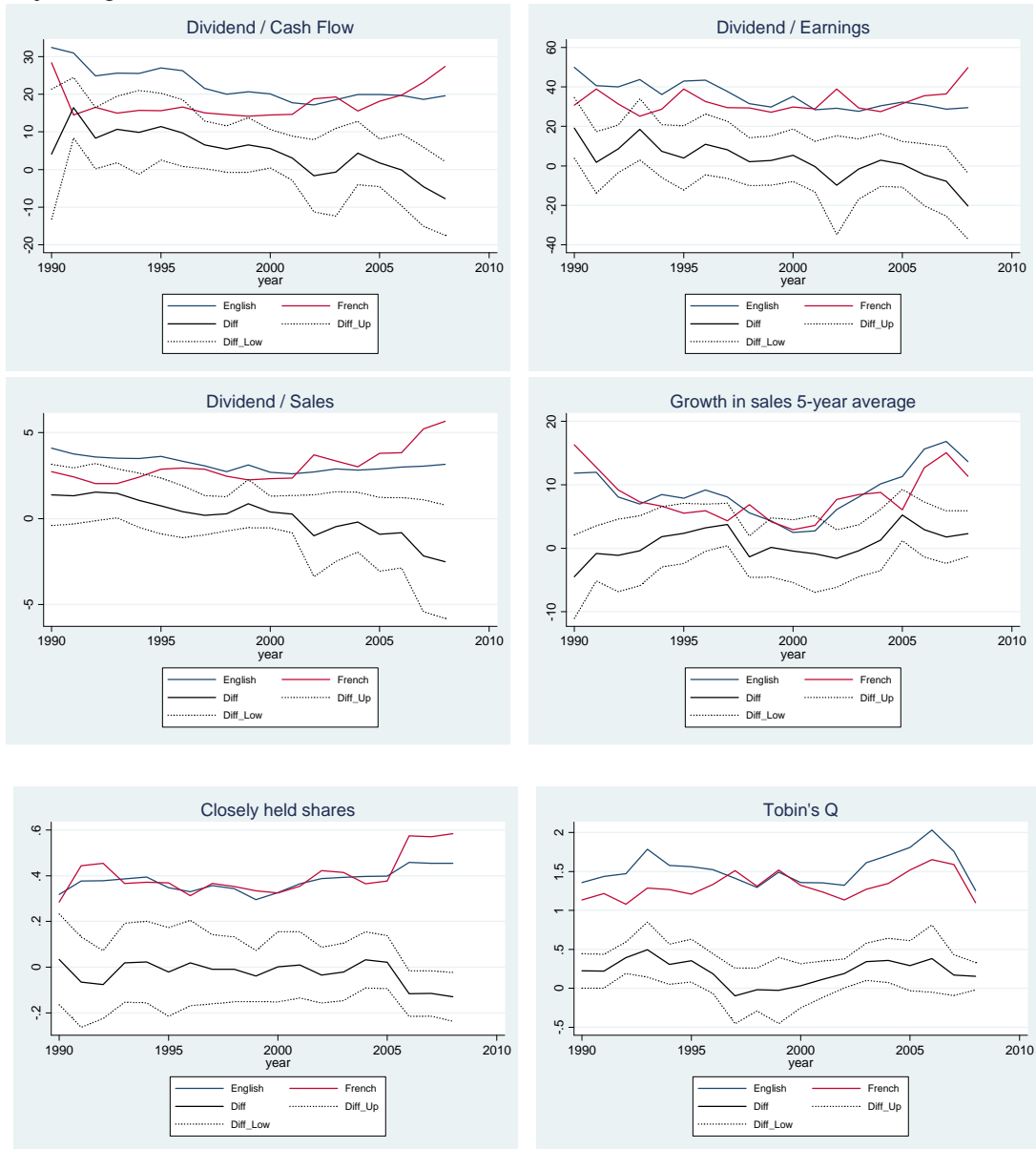


Figure 6: Means of Country Means

Countries are classified by legal origin. Mean of country means. Countries are required to have at least five valid observations (firms) with industry adjusted growth in sales below the world median and five observations with industry adjusted growth in sales above the world median to be included.



Chapter 3: International Financing and Firm Growth

INTRODUCTION

International securities issuance is an important source of financing for publicly traded firms. Raising capital outside the country where a company has most of its operations is fairly common; furthermore, this type of fund raising represents a large share of corporate sources of funds. Between 1990 and 2009, 13% of the equity (\$1.22 trillion) and 32% of public debt (\$5.56 trillion) raised by non-financial public companies²⁰ were raised in countries other than the country of origin of the firm. While the amounts and distribution of cross country capital raising has been well documented in Pagano et al. (2002), Henderson et al. (2006), and Gozzi et al. (2009), the reasons and implications of issuing securities abroad has not received much attention.

Relying on funds raised in foreign countries has costs and benefits. We know that in the absence of transaction costs or information problems a firm should raise funds wherever is cheaper at the time of the issuance, however, we know that in practice firms issue most of their debt and equity locally. What drives some companies to raise capital abroad? And what are the implications of issuing debt or equity in foreign markets? Are foreign and domestic issuers impacted differently by changes in local and international market condition? Are local and international financing affected similarly by the political situation? In this paper I try to address these questions using a panel data of companies that issue capital in both local and foreign markets.

While there is an important literature on the determinants of foreign stock listing and borrowing but there is comparatively little research on the implications of cross country capital raising²¹ on firms' behavior after accessing international capital markets, particularly international debt financing. In this study I use a large panel dataset of publicly traded firms to explore the implications of issuing capital in foreign markets for firm growth. Additionally I take

²⁰ Own calculations based on SDC data.

²¹ Huizinga et al. (2008) study a multinational firm's optimal debt policy considering international taxation factors.

advantage of the size of the dataset to provide a more accurate and up to date description of the characteristics of companies that issue capital abroad.

The issuances dataset covers 25,042 publicly traded firms from 63 countries, who issued public securities (equity, bonds or both) at least once during the sample period, and it contains information on: the proceeds and number of equity and debt issues; the country where the securities were placed and the nationality of the firm; as well as a number of firm and country characteristics. The data was constructed by first collecting information on all the publicly traded securities issued since 1970 covered in SDC New Issues database, for these issuers I then identified the nationality of the firm and the country in which the issuance took place, and finally I merged the security level information with firm level characteristics obtained from Worldscope and country level characteristics obtained from a number of sources.

I first study the characteristics of firms issuing capital in foreign countries and explore whether there are any differences in the characteristics of firms from countries with developed financial markets economies who issue foreign capital compared to similar firms countries with less developed capital markets who issue capital in foreign markets. While firms from financially developed countries that raise capital internationally have above average growth rates, international issuer from developing countries tend to grow slower than similar firms that do not raise funds abroad.²²

To study the effects of international issuance on firms' behavior I identify periods of severe financial crises and study to what extent the reliance on foreign debt affected the capacity of firms to react to these shocks. The financial crises data is taken from Luc Laeven and Fabian Valencia (2008) "Systemic Banking Crises: A New Database". This is one of the most complete and detailed databases in banking crises to date and covers and documents systemic banking crises in the period from 1970 to 2007. This database extends Caprio, Klingebiel, Laeven, and Noguera (2005). I find that during domestic financial crisis episodes, companies who have

²² Pagano et al. (2002) find that European firms cross-listing in the U.S. expand rapidly while European companies cross-listing in Europe do not grow unusually fast.

issued foreign debt in the previous three years have a sales growth 4.0% higher than companies who did not issue bonds internationally. This result depends crucially on the overall development of the country of origin of the firm. International bond issuers grow less in low income countries during financial crises. This finding is puzzling; one would think that if any, the firms better suited to cope with a disruption in the local financial market are the ones with better access to foreign markets and not the contrary. A potential explanation is that increased reliance on or access to international capital markets makes a firm more vulnerable to shocks, because foreign lenders are more likely to take their funds elsewhere when things go awry. This, combined with an imperfect (or slow) ability to substitute international for domestic financing may result in firms with international capital market access being more vulnerable to shocks. But if that is the case, then why do companies still rely on foreign debt?

In summary, I find that issuing debt abroad is not necessarily positively related to the ability of the firm to react to financial shocks for firms from low income countries. Furthermore I find that firms in high income countries tend to issue foreign debt when they are in their growing fast while firms in developing economies tend to issue foreign debt when they mature. Regardless of the reason for foreign capital rising, I find that the ability of local and international issuers to react to shocks is crucially dependent on the degree of economic development of the country. With international issuers performing relatively better in high income countries and no better in low and middle income countries.

INTERNATIONAL FINANCING, ISSUES AND PREVIOUS RESEARCH

There are many elements to the international financing decision and there is a large body of literature that has studied this topic from a variety of angles. International financing is related to a number of areas of corporate finance research, particularly so in corporate governance, asymmetric information, and transaction costs.

Internationally capital raising can improve the monitoring of the firm. One channel for this is the legal system, when firms from a country with a weak legal system decide to cross-list

and comply with the legal requirements of a country with a legal system that better protects investors they are improving the protection to all of their investors. Additionally, by cross-listing, firms from countries with minimal disclosure requirements can commit themselves to have better disclosure if they choose to do so in a country with stronger requirements. Cross-listing can mitigate the information asymmetry between foreign and domestic investors. This goes from total ignorance of foreign investment opportunities (Merton (1987), Foerster and Karolyi (1999)), to an informational disadvantage in trading foreign stocks (Gehrig (1993), Brennan and Cao (1997), Kang and Stulz (1997)), a cross-listing may supply international investors with more abundant, timely, and transparent information. The increase in available information to foreign investors may also allow cross-listing firms to gain access to cheaper funds in the bond and credit markets.

Of course the ultimate impact of the new, or at least more transparent, information that cross-listing firms need to produce depends on how well informed their local and international investors are to start with. The evidence of the literature trying to identify whether local investors have an information advantage over foreign investors is at best mixed.²³ Hau (2001), Choe, Kho, and Stulz (2005), Dvorák (2005), and Kalev, Nguyen and Oh (2008) find evidence that local investors perform better than foreign investors. On a related strand, Grinblatt and Keloharju (2000) and Seasholes (2000) argue that because of better resources and access to expertise, foreign institutions can perform better than domestic institutions.²⁴ In a cross-country study of analysts' performance, Bae, Stulz and Tan (2008) find a significant local analyst advantage. This advantage is higher in countries where earnings are smoothed more, firms disclose less information, and idiosyncratic information explains a larger fraction of stock returns. A larger

²³ A closely related strand of literature refers to the geographic proximity of investors. Chan et al, (2005), Coval and Moskowitz (1999, 2001), present evidence that local investors, both individual and institutional, tend to overweight local stocks in their portfolios. Also, Butler (2008) and Sarkissian and Schill (2004) show that in new equity and bond issues, issuers show a similar pattern. Lau and Yu (2010) show, in a sample of corporate bond issue from 31 countries, that riskier or non-rated bonds tend to be underwritten by more proximate banks.

²⁴ This assumes that most foreign ownership comes from institutions from countries with more sophisticated institutions.

fraction of foreign assets and more participation by foreign investors is related to a lower advantage of local analysts. One explanation for this is that local analysts have access to better information as they can talk to firm officials and can observe their operations directly. For the purposes of the present paper however, the question of how the reliance on local or international sources of funds impacts a firm's ability to cope with a country shock is ultimately an empirical one, and not one of how much or less informed are local versus international investors. If a negative shock to an economy hits locally biased local investors, then it is possible that firms relying on better informed local investors could fare worse if these investors ability to lend is lowered by their exposure to the initial shock.

Related to the above point, another situation in which international capital raising can have an impact on firms' decisions and performance arises when investors are limited in their ability to diversify risk internationally. In this case we can expect to observe higher required rates of returns because investors are forced to hold more risk. According to this view, a firm who reduces the restrictions to foreign ownership can expect to lower its cost of capital. Direct (ownership restrictions and taxes) and indirect (information restrictions, differences in accounting standards) barriers to international investment are at the root of most explanations for the cross-listing decision. Stapleton and Subrahmanyam (1977) for example, show that segmentation caused by investment restrictions produces incentives for international mergers and cross-listing. In most cases, segmentation depresses asset values and gives corporations an incentive to increase the diversification opportunities of investors. If the restrictions are at the individual investor level, then firms will try to engage in foreign portfolio or direct investment, merge with foreign firms or cross-list their securities. In a similar setup, Alexander et al. (1987) show that the expected return on a cross-listed domestic security, when none of the foreign securities is cross-listed in the domestic market,²⁵ will depend on its covariances with both the domestic and the foreign market portfolios. Moreover, even the expected return of purely

²⁵ This situation will represent for example the case of a country who allows some of its firms to list abroad while forbidding its citizens to invest in foreign stocks.

domestic firms who do not cross-list will depend on its covariances with the foreign market portfolio. This is so because the two markets become indirectly integrated via the dual listing. Of course, this effect depends on the correlations of the purely domestic firms with the cross-listed firm. Miller (1999) finds that the market reaction to the announcement of a depositary receipt program (DR) is related to exchange choice (emerging, developed), and the mechanism chosen for raising equity capital (public, private placement). In particular, firms listing in the major U.S. exchanges have the largest abnormal returns while the announcement returns of private DR programs are negative. Using a sample of 459 internationally traded MNCs, Saudagaran and Biddle (1995) find evidence that firm listing location decisions are related to financial disclosure levels and the level of exports to a given foreign country.²⁶

The previously described aspects of international capital raising apply mainly to the more information sensitive claims such as equity. When thinking about the implications of international capital raising it is important to distinguish between the different types of securities a firm may decide to issue, for example, equity, bonds, or bank debt. The debt or equity choice in an international framework is crucial. Firms relying on foreign debt may be exposed to currency risk, if they cannot or do not hedge this exposure, and face the prospect of an increase in their debt commitments if the local currency depreciates significantly relative to the currency of denomination of the debt. Depreciation and the concurrent deterioration of firms' balance sheets harm their ability to obtain further financing to fund investment. This view is proposed by Krugman (1999), Aghion, Bachetta and Banerjee (2001), and by Céspedes, Chang, and Velasco (2004). However, currency depreciation may not always work against a firm's prospects; Bleakley and Cowan (2008) find that in a sample of Latin American firms, those with dollar debt do not invest less than their local currency debt counterparts. They posit this is because the balance sheet effect is counter balanced by a positive competitive effect because of the currency depreciation and because of foreign currency hedging. On the other hand, considering more

²⁶ This is confirmed in the data used in the current study, the fraction of foreign sales is positively correlated with international capital raising.

directly the relation between local and foreign banks, Schnabl (2007) finds that international lenders with equity holdings increase their financing of Peruvian banks after the 1998 Russian debt default, while international lenders without equity holdings decrease their funding of Peruvian banks. Keller and Mody (2010) find that country factors play little role on the spreads of emerging market corporate bonds, except during periods of financial crises.

Beyond the impact of currency variations on the financial position of a firm, it is also possible that from the point of view of the investor local or foreign debt may not be perfect substitutes. In the case of sovereign borrowing, Gelpern and Setser (2004) show for three major cases that in sovereign default domestic and international lenders are treated differently, with local debt holder being typically favored. The question here is whether or not a similar situation applies to corporate borrowers. Further, Gelper and Setser (2004) present evidence that the old dichotomy between ownership composition and the place and currency of sovereign debt does not hold anymore. Local and international investors hold both domestic-local currency sovereign debt and external-foreign currency sovereign debt. Additionally, there is an important related literature on financial development that studies how local institutional factors and financial sector development influence firm access to finance.²⁷ This literature relies mostly on industry level evidence and does not speak directly on the issue of the impact of financing source (domestic or international debt) on firms' ability to grow.

Among the empirical papers closer to this study Allayannis et al., (2003) examines the choice between local, foreign, and synthetic local currency debt of East Asian firms, and find that during the Asian financial crisis, firms having synthetic local currency debt had the largest drop in market value. Gozzi, Levine, and Schmukler (2009) and Henderson, Jegadeesh, and Weisbach (2006) show firm and country level evidence on the use of international financing and describe its evolution over the past 15 years. These studies are both mostly descriptive and in addition to describing the main differences between firms deciding to issue internationally they

²⁷ Djankov et al., (2007), Agca et al., (2007), Djankov et al., (2008), Beck and Demirguc-Kunt (2009)

focus on different questions than this paper. How firm performance is affected after international and local issuances (Gozzi et al.), and the relevance of market timing as the motivation for international issues (Henderson et al.).

While there are other papers that study the causes and effects of international capital raisings, those who utilize firm level data focus for the most part on equity financing. That literature therefore speaks more directly on how firms may be circumventing domestic market factors that prevent investors from purchasing their shares, or how firms may be internationalizing to bond themselves to better corporate governance frameworks. However, the descriptive evidence of Gozzi et al. and Henderson et al. shows that the most important internationalization vehicle is debt financing. I complement this literature by focusing on the use of publicly traded debt.

On the theory side, Iacoviello and Minetti (2006) show in a model of imperfect enforceability that if domestic and foreign lenders differ in their ability to recover value then their relative importance will vary through the cycle. If foreign lenders have diseconomies of scale when liquidating assets (say because of less experience or knowledge managing local assets), then the model predicts that local borrowing will be increasing on the value of collateral. As shown in Rajan (1992) hold-up problems for bank dependent borrowers can allow banks to extract rents from them when their risk is high. Consistent with this insight, Santos and Winton (2008) finds that, during recessions firms with access to the bond market pay lower spreads than bank dependent firms.

DATA DESCRIPTION

Securities Issuances

I assemble a comprehensive dataset of securities issuances by public firms in capital markets around the world and complement it with the corresponding financial statements data. The sample construction follows closely that of Gozzi et al. (2009).

The sample is limited in their coverage of financing to only those carried out in public markets; I do not cover financing obtained in private transactions, such as bank and syndicated loans. While these sources of financing are significant, I focus on the former because of data availability.

The starting point for the data on securities issuances is SDC's New Issues database. This database provides transaction-level information on new issues of common and preferred stocks and public debt issues with maturities of more than one year, starting in 1970. While for a few countries the coverage starts in 1970, the coverage of most countries starts on or about 1990. To ensure a balanced sample in terms of the type and the number of covered countries for the most part of this study I restrict the sample to the period 1990-2009.

While SDC collects data on issuances by public sector entities such as local, regional, national governments, government agencies, regional agencies, and multilateral organizations, I exclude them from the analysis and focus on the issuance activities of publicly traded corporations only. Also, issuances by investment funds, investment companies, real estate investment funds, and mortgage-backed and asset-backed securities are excluded. After these exclusions I am left with an initial sample of 148,204 issuances by 52,689 firms from 126 different countries for which I can identify both the domicile of the issuing firm and the country where the security was placed.

Issues are classified as domestic if the main exchange where the securities are placed is located in the same country as the country of domicile of the firm.²⁸ The sample is further restricted to include only the non-financial and non-public-sector firms²⁹ for which I can collect financial data from Worldscope and from countries with at least 20 different public securities issuers during the 1990-2010 period.

²⁸ Gozzi et al., 2009 report that their results are qualitatively similar when using alternative classification schemes such as considering the nationality of the parent company for the case of multinationals.

²⁹ firms with SIC codes between 6000-6699 (financial) and 9000-9999 (public sector) are excluded.

A few relevant features of my sample are worth pointing out. Table 14 shows the total proceeds in December 2009 dollars according to the region of domicile of the firm, and whether they placed their securities domestically or internationally. Between 1990 and 2009 firms in the sample placed equity for a total value of 7.5 trillion dollars³⁰ of which 11.2% was placed in countries other than the country of origin of the firm. The fraction of debt placed internationally is much higher. Of the 13.7 trillion dollars of debt raised in public markets by firms in the sample, 25.8% was placed in countries other than the country of domicile of the issuer. These broad patterns only consider the issuances from firms with data from both SDC and Worldscope; Gozzi et al. (2009) describe the financing patterns of a less restrictive sample that does not require the issuers to have financial statements data.

The bulk of the placements are made in the currency of the country where the issue is placed. There are a few exceptions as the important fraction of the proceeds that firms from East Asia (Japan) raise in international markets are in Yen, while also many European firms raise Euro denominated debt in other countries. Firms in Latin America and Europe also show a relatively important fraction of foreign currency placements in their local markets, 3.1% of the total proceeds from debt issues by Latin American firms are from domestic debt issues in foreign currency (mostly US\$ and Euro), and 7.6% of the total proceeds from Western European firms are from domestic debt issues in foreign currency.

Another noteworthy aspect of securities placements around the World is the significant difference in the degree of internationalization (at least relative) between firms from developed and developing countries.³¹ Perhaps due to their own countries narrower financial sectors, firms from developing countries raise a much larger fraction of their issues abroad. In the sample, 28.9% of the total proceeds from equity issues by firms from developing countries are raised abroad, while this number is only 8.3% for firms from developed countries. In the public debt

³⁰ In December 2009 dollars (adjusted with the US CPI).

³¹ Countries are classified as developed or developing based on their 2008 per capita GDP. Developed economies correspond to high-income countries according to the World Bank classification. Developing economies correspond to low- and middle-income countries.

market the story is no different, 41.8% and 25% of the total proceeds are raised abroad by firms from developing and developed countries respectively.

Despite their lower fraction of international debt placements, firms from developed countries are able to raise capital in their own currency in foreign markets. Japanese and Western European firms place almost as much international debt in their own as in foreign currency, while the fraction of international debt in local currency by firms from low income countries is negligible. Therefore, the nature of debt placed in international markets varies significantly depending on the type of country, with international debt being almost a synonym for foreign currency debt in low income countries.

Table 15 shows, for each region of firm origin, how the total proceeds of each type of instrument (debt and equity) are distributed across geographic regions. For each region of origin (rows) the fraction of total proceeds from placements in each region (columns) is displayed. In Panel A we can see that regions other than the United States and Western Europe account for a very small fraction of international debt placements. The diagonal, placing debt in the region of origin of the firm, represents an important fraction of debt proceeds but not for all countries. Eastern European and South African firms in the sample place most of their debt abroad. The only regions where the off diagonal values are economically significant are the United States and Western Europe. In total, the United States and Western Europe are the markets for 67.7% and 23.2% of the total proceeds respectively. In Panel B we can see that this picture is similar for equity issues, but in this case the diagonal (issuing in the same region) represents a much larger fraction of the proceeds. The latter fact is consistent with equity being more information sensitive and distance being a hard to circumvent barrier for foreign investors.

To complete this brief description of the geographic patterns of capital raising across the world, Table 16 shows for each geographic region (rows) the fraction of the proceeds in the region accounted for by firms from the other geographic regions (columns). This table complements the previous table by showing how important are issues by foreign issuers in each market, and helps to disentangle the impact of market size that clouds the previous comparisons as some

markets are much larger than others. In Panel A we can see that in most regions the majority of debt proceeds are coming from the same region, and only in South Africa and Western Europe do issuers from other regions represent more than 30% of total proceeds. The high fraction of debt issues by foreign firms in Western Europe is explained in large part by Eurobond issues in Luxembourg by firms from other European countries.³² On the other hand in Panel B we observe that only in the United States and Western Europe equity issues by foreign firms account for more than 10% of total proceeds from equity issues in the market.

Foreign and Domestic Issuance in 1990-2009

Before studying the relation between the country where firms obtain their financing and firm growth, this and the next subsection describe the main patterns in securities issuances through time and the main differences and similarities between firms that issue in international markets and their same nationality counterparts who only issue domestically, and those who do not issue securities in public markets at all.³³

Funds raised in capital markets have grown substantially over the past twenty years. According to SDC's data, the total amount raised in international capital markets by firms from high income countries grew from \$626 billion in 1990 to more than \$2.5 trillion in 2009. At the same time, the total amount issued in international capital markets by firms from middle and low income countries went from just below \$13 billion in 1990 to over \$462 billion in 2009.³⁴ These increases have not been smooth. Capital raised by firms from high income countries dropped in 1994, 2001-2002, 2004-2005 and 2008, while the capital raised by firms from middle and low income countries went down in 1992, 1995, 1998, 2001 and 2008.

The different panels of Figure 7 show how the total proceeds from equity and debt issues by firms from high, and low and middle income countries have evolved through time.

³² Luxembourg is second in the World in number of debt issues between 1990 and 2009 with 4,449. Of these, 98% correspond to issues by firms from outside of Luxembourg. The country where more debt issues took place over this period was the United States with 25,844 of which 17.1% correspond to issues by firms outside of the United States.

³³ This section follows closely the characterization of foreign issuers of Gozzi et al, 2009.

³⁴ In December 2009 US\$.

Additionally, the third panel for each type of security shows the evolution of the fraction of proceeds accounted by issues in foreign markets. The fraction of abroad equity issues by firms from high income countries has hovered around 10% of total proceeds for the most part of the last twenty years, with a spike in 1997 and a drop in 2008-2009 where foreign issues accounted for only about 5% of total equity raised. On the other hand, the fraction of equity proceeds from abroad is much larger and volatile in the case of firms from middle and low income countries. In the case of debt issues abroad, high income countries abroad share went down for most of the 1990s and eventually change directions to have a steady increase from about 20 percent in 1998 to almost 50 percent in 2009. In middle and low income countries this figure is more chaotic, with large up and down swings that eventually lead to a relatively low share of international debt issuance in the later part of the sample, particularly 2008 when it came down to almost 10 percent.

After reviewing these aggregate patterns, in the following section I further explore the firm-level characteristics of foreign, domestic, and non-issuers.

Firm Level Characteristics

To understand the main differences between firms who issue domestically or internationally I obtain firm-level financial statements data from Worldscope and merge it with the issuances database. Unfortunately, the coverage of Worldscope is not as broad as that of SDC in terms on the number of countries whose firms are covered and in terms of the size of the covered firms. In any case, to have a better grasp of the differences between the different types of issuers I discuss some firm-level characteristics for the firms with available data.

Table 17 summarizes firm-level characteristics, the year before an issuance, for firms classified according to their securities issuance activity in public markets.³⁵ The first group consists of firms that did not have any issuance activity during the year, the second group consists of firms that issued only in home country, and the third consists of firms who issued in a

³⁵ Bae and Goyal (2009) study international bank loans and describe the main differences between firms obtaining loans from local and international banks.

foreign country.³⁶ The two rightmost columns report the coefficient of a dummy variable equal to one if the firm issued in a foreign country regressions for regressions of firm characteristics on this dummy, and a full set of country and industry dummies (2 digit SIC).

The sample in column (a) compares the characteristics of firms that did not issue any securities with the group of firm who issued securities in a foreign country. Foreign issuers are: larger, growing faster, invest more, more profitable, have higher leverage (particularly long-term debt), have higher average Tobin Q, have more fixed assets, have lower cash balances, and have a higher fraction of international sales than non issuers.

The sample in column (b) compares the characteristics of firms who only issued domestically with the group of firms who issued securities in a foreign country. Foreign issuers are: larger, more profitable, have higher leverage (particularly long-term debt), have more fixed assets, and a higher fraction of international sales than only domestic.

These differences are broadly consistent with what theory says, for example, firms with a high fraction of foreign sales may use foreign currency denominated debt to hedge their foreign currency assets. Additionally, if issuing abroad has higher fixed costs (e.g. firms are required to reveal more information) then we would expect larger firms to be more likely to use international financing, moreover, if firms face an upward sloping demand for their securities in the domestic market (because of home bias and imperfect diversification of domestic investors) then, we would expect larger issues to be more likely to be placed globally. More profitable firms have a lower probability of distress and are subject to lower moral hazard problems, therefore it is easier for them to obtain external funds. While levered firms have higher agency costs of debt and this may reduce their ability to raise extra funds, it is also possible that highly levered firms are those who have established a reputation that reduces these costs, or have better information available (Faulkender and Petersen (2006)). More tangible assets may reduce contracting costs for a number of reasons and therefore make it easier for firms to raise external funds. They can be

³⁶ This group of firms includes both firm that only issued internationally, and firms that issues both internationally and domestically.

easier to use as collateral, they may be harder to substitute for riskier assets, and there may be lower information asymmetry about them. For these reasons we expect that firms with a higher fraction of fixed assets may be more likely to raise external funds.

To control for the type of issuance activity, Table 18 presents the same descriptive statistics in period $t-1$ for those firms who issued public debt in period t . Again, after controlling for country and industry (2 digit SIC) fixed effects, the group of firms with international debt issuance activity in t , relative to the group of firms that did not issue debt in t are: larger, invest more, more profitable, have higher leverage, have more fixed assets, have lower cash balances, and a higher fraction of international sales. Relative to firms who only issued debt domestically, the firms in the group who issued debt internationally are: larger, more profitable, have higher Tobin Q, and have a higher fraction of international sales.

The previous analysis highlights the need to disentangle whether these differences are the result of firms' financing choices, whether these differences explain different financing choices, or whether both firms' characteristics and financing choices are explained by some other factors. Clearly the decision to issue abroad is related to some of these characteristics, and in the following regression analysis I take this into account.

So far, we have evidence that firms with international issuance activity differ from their "only domestic" and "no issuance" counterparts in a number of dimensions. In the next section, I study how the relationship between a set of firm level outcome variables is related to the conditions of the domestic and international market, and how this relationships are related to a firm's past issuance activity. In particular the focus is on periods where domestic credit conditions could be relatively weaker, and in period when international credit conditions could be relatively weaker.

PAST FINANCING AND THE RELATIONSHIP BETWEEN CREDIT CONDITIONS AND FIRM OUTCOMES

The purpose of this section is to study how past financing activity is related to a firm's ability to cope with changes in the credit market conditions. Ultimately, the answer to this

question is an empirical one as there are conditions under which it could go either way. With perfect capital markets, domestic and international financing are perfect substitutes, therefore the use of one or the other is just a matter of chance and we should not expect major differences in firm responses to shocks once we control for other firm characteristics. Second, if markets are imperfect and for example there are information differences between local and international investors, or there are costs associated with foreign investments, then past financing decisions may be related to a firm's ability to cope with a change in credit conditions. If firms with past international issuance activity have expanded their base of potential investors as a result of it, say by lowering the information barriers to international investors who are now better able to analyze its prospects, then we could expect them to be more resilient to adverse shocks (or be in a better position to take advantage of positive shocks) than other firms, as they can possibly obtain funds in better terms from these international investors. However, it is also possible that when issuing abroad firms may face a trade-off. In particular, if by prioritizing international sources of capital a firm sacrifices a local base of potential investor then, we could expect a differential impact of domestic and international shocks.

In what follows I focus on the following measure of a firm's past financing choices in public markets, this variable is going to be used as a proxy for a firm's reliance in local and international public securities markets:

Issuance in the past 3 years: 1 if the total proceeds from public securities issuances in the past 3 calendar years is positive and 0 otherwise.³⁷

It is important to note that issuances in public markets are a rather rare event, with most firm-year observations having no issuances reported on SDC. In we include the IPO year, then less than 5 percent of firms issue publicly traded debt (bonds) on any given year, while in the case of equity about 10 percent of firms raise equity on any given year. If we exclude the IPO year, then the fraction of firms issuing debt or equity in any given year is less than 5 percent. A

³⁷ For brevity the results presented are for issues in the previous three years. The results are similar if we use a longer period such as 5 years. The corresponding tables are available from the author.

few firms have multiple securities issuance in any given year, the top 1 percent of issuers have 3 public securities issue in the year of which about 1 is in a foreign country. It is for this reason and because a typical bond has a maturity of more than six years that I proxy a firm's access to the domestic and international markets by whether it has issued a bond in the past 3 years.

The Persistence of Issuance Activity

While a rare event, securities issuance in public markets is quite persistent at the firm level. The number of issuances in the year is positively related to its lagged value.

In the case of debt issues, past and current issuances are positively related. However, inclusion of a firm level fixed effect in a regression of current issuance activity on its lagged value brings down the coefficient on the lagged issuance variable by almost 60%, pointing out the importance of some firm characteristics in explaining the use of public securities in firm financing. At a first glance it does not seem that domestic and international issues behave remarkably different in this dimension. In unreported results only the pooled OLS and Tobit specification reject the null that the coefficients on lagged domestic and lagged abroad debt issues are the same when the dependent variable is the number of yearly issues. This hypothesis is not rejected for any specification when the dependent variable is the log of the number of issues. Equity issues show a similar pattern. However, in this case the fixed effects specification renders an insignificant relation between lagged and current equity issuance activity.

The persistence of public securities issuances is stable through time. Year-by year regressions of current public securities issuance on its lagged value (either total or decomposed between domestic and international), show that the relationship between current and past financing has been rather stable over the past twenty years.

Past Financing and Firm Growth

To measure the effect of the interaction between a country's characteristics (development, institutions) and firms' reliance on local and international markets, on firm level responses to shocks I initially study a simple setup in which I regress a firm's measure of

performance or growth (e.g. sales growth and capital expenditures) on a measure of overall economic activity (GDP growth) in the country of origin of the firm, and the interaction between the firm's local and international financing and GDP growth.

If a higher reliance on or access to international capital markets increases a firm's vulnerability to shocks, as their foreign providers of capital may run for an exit when an adverse shock impacts the country of domicile of the firm then we would expect the domestic GDP growth and international financing indicator interaction to be negative, this would be consistent with a setup in which it is costly to switch between financing sources, and access to foreign sources is positively correlated with the overall health of the domestic country (for example if foreign investors are on average less informed than local investors). On the other hand, it is also possible that firms with access to foreign sources of funds could be better prepared to cope with a shock to their own country as they could potentially rely on foreign sources of capital while domestic conditions are weak. This is what one could expect if the shock to the domestic economy diminishes the supply of funds from local investors by a larger amount than that of international investors (if for example local investors show a domestic bias). In this case we would expect the coefficient on the interaction between GDP growth and the international financing variable to be positive. Foreign financing can help a firm circumvent domestic problems.

An obvious caveat of this analysis is the observation that a firm's choice of markets when obtaining financing is not exogenous. For example, a firm whose operations or sales are mostly international (e.g. export companies) may prefer to use international (or at least foreign currency denominated) debt to hedge its cash flows, in this case too, a local shock may not be particularly harmful to the firm as most of its sales are to customers in other countries. To account for this issue I control for any non-time varying unobserved firm level characteristics by the use of firm fixed effects in some of the specifications. Additionally, the international and domestic bond issuance indicators are predetermined, I do not use current issuance activity but its lagged value,

and I include a number of firm-level characteristics that are thought to be related to a firms financing choices and its vulnerability to changes in the domestic and international conditions.

To document the relationship between past financing choices and firm growth I run the basic regression:

$$Y_{i,t} = \alpha + \beta_{\text{dom}} \cdot D_{\text{dom},i,t} + \beta_{\text{int}} \cdot D_{\text{int},i,t} + \delta' \cdot Z_{i,t} + \varepsilon_{i,t}$$

Where Y is either sales growth or investment (capital expenditures), D_{dom} and D_{int} are dummy variables equal to one if the firm has issued securities domestically or internationally, and Z is a vector of firm level time varying controls. The firm level controls are lagged one period.

Furthermore, to capture any interactions that may exist between the past financing variables and how strong the overall economy is growing I expand the model to include both GDP growth, and its interaction with the domestic and international debt issuance variables. This model is as follows:

$$Y_{i,t} = \alpha + \beta_{\text{dom}} \cdot D_{\text{dom},i,t} + \beta_{\text{int}} \cdot D_{\text{int},i,t} + \beta_{\text{ml}} \cdot \text{ML}_{i,t} + \beta_{\text{ml,dom}} \cdot D_{\text{dom},i,t} \cdot \text{ML}_{i,t} + \beta_{\text{ml,int}} \cdot D_{\text{int},i,t} \cdot \text{ML}_{i,t} + \beta_{\text{mh}} \cdot \text{MH}_{i,t} + \beta_{\text{mh,dom}} \cdot D_{\text{dom},i,t} \cdot \text{MH}_{i,t} + \beta_{\text{mh,int}} \cdot D_{\text{int},i,t} \cdot \text{MH}_{i,t} + \delta' \cdot Z_{i,t} + \varepsilon_{i,t}$$

Where ML is the domestic country value of GDP growth and MH is the growth rate in the group of high income countries where most of the international bond issues took place. The former is used as a proxy for the availability of funds in the country of domicile of the firm, and the later as a proxy for the availability of funds in the foreign markets.

The reason for using two alternative measures of firm growth is to capture different aspects of firm growth. On one hand, sales growth will capture the short term influence of past financing and the growth of the economy, while on the other hand capital expenditures (investment) will captures a firm's ability to secure the resources to sustain growth in the longer run and its relationship to past financing.

The above mentioned models are estimated in two main ways. First, I estimate them by pooled OLS including country effects, industry effects and year effects; and then, to control for

any time invariant omitted variable that could be related to a firm's choices between domestic or international debt I estimate the model using firm-level fixed effects.

To be included in the estimation, a country-year has to have at least ten firms with valid data for all the relevant variables.

Unconditional results

Table 19 present the results from the first set of regressions for the entire sample period for financing variables computed using the issuance activity of the previous three years.³⁸ Here Dom_d is equal to one if the firm issued bonds in the domestic market at least once in the previous three years and zero otherwise, while Int_d is equal to one if the firm issued bonds in an international market at least once in the previous three years and zero otherwise. For all the firms in the sample and the entire time period (the Full Sample), the OLS results of the sales growth regression show a positive and significant coefficient on the dummy variables indicating domestic and international bond issuance in the previous three years. The coefficients of 0.025 and 0.027 indicate that after controlling for firm characteristics such as size, the fraction of foreign sales, asset tangibility, growth opportunities, leverage, and industry, country and year fixed effects, firms who issued bonds in the local and international markets grew on average 2.5% and 2.7% more than firms who did not issue any bonds in the previous three years. If we add up the coefficient, firms who issued bonds in both the local and international markets grew on average 5.2% more than firms who did not issue any bonds in the previous three years. When splitting the sample based on the GDP per capita of the country of domicile of the firms we observe that the previous result is driven by firms from high income countries who place bonds abroad. In the high income countries group, firms who issue domestic bonds have a sales growth of 2.4% more on average, while firms who issue bonds internationally grow an additional 3.2% more. On the other hand, in the low and middle income countries group, firms who issue

³⁸ I obtain similar results using the previous 5 years.

domestic bonds grow 4.3% more than non issuers while international bond issuers grow a statistically insignificant 2.2% less than non international issuers.

Looking at fixed capital expenditures (Investment) we find a relatively similar pattern. Domestic bond issuers on average invest more than non issuers, but international bond issuer do not invest significantly more than non-issuers. Domestic bond issuers invest 0.5% more as a fraction of their lagged assets than non issuing firms. This higher investment rate compares to an average investment rate over the sample of 6.6% of lagged assets. When splitting the sample by income group, we observe that while domestic bond issuers invest more in both groups of countries (the magnitudes differ though) the international bond issuers actually invest less in the low and middle income countries group.

One concern with simple OLS estimation of the previous model is that both sales growth and the decision to issue bonds may be related to some omitted firm characteristic. To account for any kind of firm level time-invariant heterogeneity I estimate the models with firm fixed effects. The results of these estimations are presented in the second column of each subsample set of regressions (FE column). Adding the firm fixed effect does not change the general results on the relationship between sales growth and international debt issuance, but brings down the coefficient on domestic bond issuance and sales growth. After controlling for fixed effects, international bond issuers sales growth is 2.4% more than non issuers, and local bond issuers grow 0.9% more,³⁹ while the investment rate of domestic bond issuers is 0.4% of lagged assets higher than that of non issuers, and the investment rate of international bond issuers is indistinguishable from that of non issuers.

Local and International GDP growth

The results for the estimations of the second model are presented in Table 21. For each dependent variable (Sales Growth and Investment) the first column presents the results for the

³⁹ Adding the intensity of bond issuance activity to these models does not change the results qualitatively. In unreported result adding two extra variables measuring the total proceeds from bond issuances in the previous three years in the local and international market, both scaled by lagged assets, does not change the main results.

entire sample, and the following columns present the results for subgroups based on country income and firm size. For brevity the presented results are only for the regressions with firm level fixed effects, and omit the coefficients on the firm level control variables.

In the full sample (Full Sample – FE) sales growth is positively correlated with past bond issuance activity in the local and international market, the coefficients of 0.017 and 0.035 on Dom_d and Ind_d mean that the sales growth of firms that have issued bonds in the previous three years are 1.7% and 3.5% higher than that of non-bond issuers. The investment rate of domestic and international bond issuers is 0.5% higher than that of non issuers, and 0.1% higher for international bond issuers; however this difference is only statistically significant for domestic bond issuers. Both the growth in the GDP of the local market (gdpG) and the growth in the GDP of the high income economies (gdpG_HIGH) are positively and significantly correlated with sales growth and the investment rate, that is, firms on average sale and invest more when the domestic and international economies are doing well. A one percent increase in gdpG is associated with a 1.1% higher sales growth rate and a 0.2% higher investment rate,⁴⁰ while a one percent increase in gdpG_HIGH is associated with a 1.2% higher sales growth rate and a 0.3% higher investment rate.

In the case of sales growth, the past international bond financing and domestic GDP growth interaction (gdpG_Int_d) is statistically significant. Its -0.009 coefficient means that firms that have issued international bonds in the past are less sensitive to the domestic cycle. In the full sample the magnitude of this relationship almost completely cancels out the domestic GDP growth relationship with sales growth, but this is driven mainly by firms from High Income countries (third column, High Income – FE). Firms from Low and Middle countries do not have this significant interaction, in this case the unconditional sales growth and domestic GDP growth relationship is stronger and is not significantly related to a firms past bond financing. The other

⁴⁰ The sample average growth in sales is 18.8% (median 5.9%) and the sample average investment rate is 7.8% (median 4.0%).

GDP-past financing interactions do not show any significant relations with either sales growth or the investment rate.

To summarize, firms that have issued bonds abroad in the near past have a lower sales growth and investment sensitivity to the domestic business cycle. This result is however present only for firms from high income countries. In low and middle income countries, issuing abroad is not correlated with a subsequent dampening of the firm growth/gdp growth relationship.

Firm Specific International GDP growth

The previous section uses the gdp growth in High Income countries as a proxy of the business cycle in the markets where firms can place international bonds. The use of this measure does not consider that different firms issue in different countries. To account for this heterogeneity I construct a new measure of gdp growth that takes into account this firm specific information. In particular.

$$\text{gdpG_WFI}_{i,t} = \sum_{c=1}^C W_{c,i,t} \times \text{gdpG}_{c,t}$$

Where, $W_{c,i,t}$ is the fraction of the total proceeds from bond placements by firm i accounted for placements in country c in the previous three years.

$$W_{c,i,t} = \frac{\sum_{j=1}^3 \text{Proceeds}_{c,i,t-j}}{\sum_{cp=1}^C (\sum_{j=1}^3 \text{Proceeds}_{cp,i,t-j})}$$

The numerator are the total proceeds obtained by firm i in country c over the previous three years. And the denominator are the total proceeds obtained by firm i in all the countries but its country of domicile.

This variable is set to be equal to zero for the firms that did not issue internationally in the previous three years. The results in Table 25 from regressions using this measure show that this variable has a positive and significant coefficient for all but the firms from low income countries (insignificant). The coefficient however is not very large in magnitude and is only one third of the coefficient on WORLD gdp growth. Perhaps more important, the result that

international issuers are less sensitive to the domestic gdp growth remains after including this variable instead of the gdp growth of High income countries.

Local Banking Crisis Years

While the previous regressions characterize the relation between local and international bond issuance and firm growth, they do not say much about the trade-off or fundamental differences between one form of financing and the other during times where one possible source of financing is particularly depressed (other than the past financing and GDP growth interactions). If local and international investors differ in meaningful ways in the way they for example react to problems in the country of origin of the firm, or if local and international investors differ in their ability to analyze the risks or monitor firms, or perhaps more importantly, if local and international investors are impacted in different ways by local market shocks, then a potentially cleaner and more informative experiment will be to study how a firm's reliance in local or international markets is related to its ability to grow in adverse local or international market conditions.

I estimate the previous models for country years with a local banking crisis⁴¹ that did not coincided with a currency crises.⁴² Doing this decreases significantly the size of the sample but has the benefit of being a cleaner experiment. Table 22 shows these results. The model is estimated in the same year of the domestic banking crisis, and in addition to the usual set of firm level controls, the regressions include industry, country, and year fixed effects.

For the full sample (first column) in the year of the crisis, firms who issued bonds internationally in the previous three years are able to sustain sales growth rates 4.0% higher than non international issuers. Domestic bond issuers sales growth is on average 1.8% more than that of non issuers. If we focus on the investment rate we observe that firms who have issued bonds domestically in the near past are able to invest more than non issuers, while we do not observe

⁴¹ The data on the timing of banking crisis is from Laeven and Valencia (2008).

⁴² To avoid confounding the domestic financial sector health with the impact of the currency depreciation on firms balance sheets.

any significant differences between international issuers and non-issuers. Therefore, the aforementioned results if anything are supportive of the hypothesis of a higher ability to cope with domestic financial troubles for firms who have accessed financial markets and this relationship is stronger when focusing on sales growth.

It is important to note that the previous result is driven by the high income countries group. In the low and middle income countries group we do not observe international bond issuers or domestic bond issuers growing relatively more.

The Global Financial Crisis

The disruption in capital markets that started in 2007 and prolonged throughout 2008 and 2009 provide us with a nice experiment to study the relation between financial choices and firm growth. The problems started in the high income economies, which is where most bond issuance takes place, so to some extent we can think of them as a domestic shock in the high income economies but as an international shock in the middle and low income economies Table 23 presents the results of both pooled OLS and first difference estimations of the baseline model. For the full sample of firms the OLS results for the Sales Growth model show that firms who had issued domestic bonds (Dom_d) in the previous three years had a growth rate 4.2 percent lower than non issuers, while firms who issued international bonds in the previous three years (Int_d) has sales growth rate 2.7 percent higher than non issuers. The results are not consistent when we look at investment; in this case domestic issuers had an investment rate 0.7 percent higher in 2008 than non issuers, while international issuers had an investment rate 0.7 lower in 2008 relative to non issuers.

The second column in Table 23 shows the results when we control, using firm fixed effects, for time invariant unobserved firm level characteristics that may be correlated with both the where to issue decision and firm growth in financial crisis periods by first differencing the data. Doing this renders all past bond issuance indicators statistically insignificant. It is possible however that this is due to lack of power because the past financing variables are highly

persistent so there are very few firms whose past financing indicators changed between 2007 and 2008.

DISCUSSION AND FURTHER REFINEMENTS

High and Low Income Countries

As shown in the descriptive section on public securities issuance around the World, firms from high and low income countries differ significantly in the degree in which they rely on domestic relative to international markets. To take this into account all the models of the domestic/international financing relationship with firm growth are estimated separately for firms from high income and for firms from low and middle income countries.

This separation highlights important differences in the relationship between firm growth and the country where bonds are placed according to the degree of economic development of the country of origin of the firm. Columns 3-4 and 5-6 in Table 19 show the results of the baseline model for the High Income country firms and the Low and Middle Income country firms respectively. The OLS results show that, in High Income countries, firms who issue bonds in the domestic have a Sales Growth rate 2.4% higher on average than non-issuing firms, and if they also issue bonds internationally they grow an extra 3.2% more. After accounting for firm level fixed effects (FE) the former relationship vanishes but the second one remains, international bond issuers from high income countries grow 2.6% per year more on average than the rest of firms. On the other hand, firms from Low and Middle income countries who issue bonds domestically grow 4.3% more and those who issue bonds internationally grow an statistically insignificantly 2.2% less than those who do not. These results are not affected to a great degree by the inclusion of firm fixed effects.

The results for the Investment rate are similar. In High Income countries domestic bond issuers have an investment rate 0.4% higher than non issuers but international bond issuers investment rate is not related to international bond issuance. Fixed effects regressions render similar results. On the other hand, in Low and Middle Income countries, domestic bond issuers

have an investment rate 1.9% higher on average than non issuers, while international issuers have an investment rate 2.0% lower than non issuers. These results are mitigated by the inclusion of firm fixed effects but the signs remain the same.

Overall, it seems that while bond issuers are fast growing firms in all countries, those who issue bonds internationally are even faster growing firms in High income countries but not quite fast growing firms in Low and Middle income countries.

The bond financing and GDP growth relation with sales growth also varies across country groups. Table 21 presents the results from the augmented model for fixed effects regressions of both Sales Growth and Investment for subsamples based in country income. The estimated model is:

$$Y_{i,t} = \alpha + \beta_{\text{dom}} \cdot D_{\text{dom},i,t} + \beta_{\text{int}} \cdot D_{\text{int},i,t} + \beta_{\text{ml}} \cdot \text{ML}_{i,t} + \beta_{\text{ml,dom}} \cdot D_{\text{dom},i,t} \cdot \text{ML}_{i,t} + \beta_{\text{ml,int}} \cdot D_{\text{int},i,t} \cdot \text{ML}_{i,t} + \beta_{\text{mh}} \cdot \text{ML}_{i,t} + \beta_{\text{mh,dom}} \cdot D_{\text{dom},i,t} \cdot \text{MH}_{i,t} + \beta_{\text{mh,int}} \cdot D_{\text{int},i,t} \cdot \text{MH}_{i,t} + \delta' \cdot Z_{i,t} + \varepsilon_{i,t}$$

For each subpanel (Sales Growth and Investment), the third and fourth result columns present the results for the High Income and the Low and Middle Income countries subsamples.⁴³

Domestic GDP growth (gdpG) is positively related to Sales Growth for both subsamples of firms but its coefficient is twice the size in Low and Middle Income countries (0.008 and 0.013 respectively). On the other hand while local GDP growth is positively related to sales growth for both groups of countries, GDP growth in high income countries (gdpG_HIGH) is only positively related to firm growth in High income countries⁴⁴ (0.019 and -0.017 respectively). Perhaps more interestingly, both domestic and international bond issuance are negatively related to the sales/GDP elasticity in High income countries (coefficients of -0.003 and -0.007 on the gdpG bond financing interactions) implying that the sales growth of bond issuers in these countries is not as sensitive to the conditions of the local economy as that of non

⁴³ Results columns 5 and 6 refine the subsamples further estimating the model only for large firms.

⁴⁴ This result could be somewhat mechanical however as by construction the correlation between gdpG and gdpG_HIGH is much higher for High Income countries.

issuers, on the other hand the sales/GDP growth elasticity of bond issuers from Low and Middle income countries is no different than that of non issuers. In High Income countries, if a firm has issued bonds in the domestic market then the combined coefficient on gdpG (gdpG plus gdpG_Dom_d) is 0.005 and if it has issued bonds internationally it is just -0.002.

But what is the relationship between the place where firms issue bonds and the effect of international GDP growth? The coefficients on gdpG_HIGH_Dom_d and gdpG_HIGH_Int_d try to capture this. The results are mostly statistically insignificant across both samples with the sole exception of gdpG_HIGH_Dom_d in the Low and Middle Income countries sample. In this later sample domestic bond issuers are not as sensitive to the High Income countries GDP growth as non issuers (the interaction has a coefficient of -0.024) but international bond issuers are more sensitive to the GDP growth rate of High Income countries (coefficient of 0.035), that is, the sales growth of domestic issuers from Low income countries are less sensitive to the business cycle of High Income countries but firms from Low income countries who issue bonds internationally have a higher correlation between their sales growth and the business cycle in High income countries. Finally, the relationship between sales growth and GDP growth in the High income countries is not significantly related to the market where firms issue bonds for all but the international bond issuing firms from Low and Middle income countries. The results for the Investment rate are mostly insignificant.

Firm Size

Bond issuers are much larger on average than non issuers. Firms in the first 5 firm size deciles in the sample (assets < \$160 millions) only account for 5.6% and 1.3% of domestic and international bond issuances respectively, firms in the following 3 size deciles (\$160 millions < assets < \$883 millions) account for 18.2% and 7.5% respectively, while firms in the largest two size deciles (\$883 millions < assets) account for 76.2% and 91.2% of all the firm years with domestic and international bond issues respectively (liquidity, fixed costs). Moreover, international issues tend to be much larger than domestic issues. The median international bond

in the sample raised \$191 million (in \$ of Dec. 2009), while the median domestic bond raised only \$60 million.

The previous facts presents an important challenge in terms of the generality of the results and how meaningful are the comparisons between the behavior of bond issuing firms and non issuing firms. Firm size is related to a number of firm characteristics related to its growth potential and its vulnerability to changes in the environment it operates in. As a way of ameliorating this drawback and having a more homogenous pool of firms I perform the analysis for firms of similar size only. In particular I focus on the group of firms in the largest two deciles of all firms in the initial sample because that is where most bond issuance takes place. If the fixed costs of issuing publicly traded bonds (uninformed debt) are high then we would expect that only for relatively larger firms bond issuance is a convenient financing option.

Table 20 presents the results of the first specification for firms grouped based on the income of their country of domicile and firm size. After controlling for firm fixed effects, firm level characteristics and year effects, large firms from high income countries have a sales growth that is 1.4% higher for domestic bond issuers and 3% higher for international bond issuers. In the case of large firms from low and middle income countries domestic bond issuers have a sales growth 6.5% higher on average, and international bond issuers grow a statistically insignificant 0.2% less. The results are similar if we consider the investment rate of large firms. In high income countries both domestic and international bond issuers invest more, while in low and middle income countries only the domestic bond issuers invest significantly more.

Euro adoption

If anything the biggest challenge to identifying a causal relation between the countries where firms decide to obtain funds and their ability to grow and invest comes from the endogenous nature of this decision. It is possible that international / domestic / and non bond issuers differ in many dimensions that also affect their ability to grow when local or international conditions change. So far I have partially accounted for this by using predetermined financing

choices, firm-level controls, and fixed effects or first differencing. In this sub-section I take a different approach. For some firms, particularly those with a low ability to come by with foreign currency, one of the barriers to using international debt is the currency exposure they may be taking if they take on an unhedged liability. If the swap market is not very deep, a firm who issues debt in a currency other than the currency in which it produces most of its cash flow may find it hard to hedge its currency exposure. However, in the past decade we have one important case in which this barrier was lowered. The adoption of the EURO by the countries in the Eurozone can be interpreted as a lowering of this barrier to issuing debt abroad, particularly for the countries that adopted this new currency.

Table 26 and Table 27 show the results from the estimation of the two baseline models for different subsamples of firms and time period for firms from Eurozone countries. The first important finding is that the ratio of firms issuing internationally relative to domestically for the firms from these countries with sufficient data on all the required firm-level controls grew substantially from 27.5% (195/709) in the pre EURO period to 77.4% (678/876) in the EURO period.

But what about the relation between firm growth and investment and financing choices? Before the adoption of the EURO (1990-1998) and controlling for firm level fixed effects, firms who had issued domestic bonds in the previous three years were fast growing firms (2% higher sales growth and 0.7% higher investment rate) but international issuers did not grow as much (2.7% lower sales growth and 0.4% lower investment rate). After the adoption of the EURO these relationships did not change much, if anything international bond issuance lost statistical significance. When looking at the past financing and GDP growth interactions, in Table 27, neither the domestic GDP growth interactions with past financing nor the High Income countries GDP growth interactions with past financing change significantly between periods. However there is some evidence that the relationship between Investment and domestic GDP growth is now increasing in past domestic bond issuance, and the relationship between Investment and High Income countries GDP growth is decreasing in past domestic bond issuance in the post

EURO subsample. Before the adoption of the EURO this relationships were insignificant. This result means that the investment rate of Eurozone firms who chose to issue domestically are now more sensitive to the performance of their country of domicile but less sensitive to the performance of other High Income countries.

POLITICAL UNCERTAINTY, SECURITIES ISSUANCE AND CORPORATE INVESTMENT

To conclude this study the effects of international financing and corporate growth I study periods of temporarily high uncertainty. In particular I study the behavior of bond financing, both domestic and international, in the period leading up to a national election and its relationship with corporate financing. Julio and Yook (2010) and Durnev (2010) study corporate investment during election years and find that corporate investment is temporarily lower and less sensitive to price in these periods. To complement the findings of these papers I study whether, as with investment, there is a cycle in corporate financing related to the political cycle.

I assemble a dataset of national elections for the countries with firm coverage on Worldscope between 1980 and 2010. The main data sources are the “Institutions and Elections Project” of the University of Binghamton, the “Database of Political Institutions” of the World Bank, the “Polity IV Project” of the Center for Systemic Peace, these sources are checked for consistency and complemented in the later part of the sample with elections dates and results data from www.electionguide.org. Following the previous literature, for each country, I identify the election that determines the head of government, which in the case of countries with a parliamentary system is the legislative election, and for countries with a presidential system is the presidential election. Monarchies where the monarch is the head of government, countries with an authoritarian ruler, and countries with a single party system are not considered in this analysis. Also, all elections that occurred in years where the World Bank’s Executive Index of Electoral Competitiveness is less than or equal to six are dropped from the analysis.⁴⁵

⁴⁵ This filter excludes the first democratic elections after a dictatorship, single party systems, and multiparty systems where the dominant party accounts for more than 75% of the vote.

To study whether there is also a bond issuance cycle related to the political cycle I first study bond issuance activity in the period around national head of government elections. Figure 9 presents the average daily proceeds from bond issuance in the quarters around a head of government election. The first figure shows the daily proceeds of bond issuances by firms from countries that had an election, while the second figure shows the daily proceeds from bond issuances that took place in countries that had an election. It is apparent from both figures that issuance activity is lower in the quarters leading up to an election. In particular, if we compare the proceeds from firms in countries having an election in the year starting three quarters before and ending one quarter after the election, then we have an average daily issuance of \$233.62 million less than in the non-election year (p-value = 0.0103). Similarly, the difference in the average daily proceeds from bond issuances in countries having an election is of \$258.34 million less in the election year (p-value = 0.0030). These results are broadly consistent with the findings on the investment rate in election years of Julio and Yook (2010), the main difference being that the drop in issuance activity seems to precede in time the investment drop found in that paper.

In subsample analysis however, it seems that these differences are mainly driven by issuance by firms from and in the United States. For firms from countries with an election the difference is \$14.01 million (p-value = 0.8113) in the non-US sample and \$219.61 million (p-value = 0.0031) in the US. While for issuances in countries with an election the difference is \$62.10 million (p-value = 0.1403) in the non-US subsample and \$196.23 million (p-value = 0.0154) in the US.

This political cycle in corporate securities issuance provides another plausibly exogenous source of variation in the ease of issuing debt in public markets that could be used to identify the relationship between financing choices and firm growth and their ability to cope with changes in their environment.

CONCLUSION

Capital raising is highly internationalized, more than 13% of the proceeds from equity and more than 32% of the proceeds from bonds issues are accounted by issues in countries other than the firm's country of origin. In this paper I study this pattern more closely, characterizing the main differences and similarities between non-issuers, domestic, and international issuers, and perhaps more importantly, I study the implications of these financing choices in firms' ability to grow.

In the year before an issue international issuers are larger, are growing faster; are investing more, are more profitable, rely more intensely on long term debt, fixed assets represent a higher fraction of assets, and international sales represent a much larger fraction of the total sales of international issuers.

While overall domestic and international bond financing are positively correlated to firm growth, this relationship depends on the degree of development of the country. In High Income countries both domestic and international firms grow faster than non issuers but in Low Income countries it is only the case that domestic issuers grow faster. During domestic banking crisis, domestic and international bond issuers do not appear to differ significantly from non issuers, particularly after first differencing the data.

High Income country issuers who issue public debt are not as sensitive to the domestic business cycle as non issuers, that is, having accessed the uninformed debt market to some extent protects them from domestic volatility, this is not the case for public debt issuers from Low and Middle Income countries. For firms from High Income countries issuing domestic or international bonds does not affect the relationship between firm growth and the business cycle in the High Income countries (where most international bonds are placed), however firms from Low and Middle income countries who chose to issue bonds domestically are less sensitive to the business cycle of High Income countries.

To circumvent some of the endogeneity problems I studied these relations in the subsample of countries that adopted the EURO. After the adoption of this common currency the

share of firms from these countries issuing bonds internationally increase almost three fold, there is some evidence that the relationship between Investment and the domestic GDP growth interaction with past domestic bond issuance increased in magnitude, and that the relationship between Investment and High Income countries GDP growth interaction with bond issuance decrease in magnitude in the post EURO subsample. Before the adoption of the EURO this relationships were insignificant. This result means that the investment rate of Eurozone firms who choose to issue domestically are now more sensitive to the performance of their country of domicile but less sensitive to the performance of other High Income countries.

There are certainly challenges in finding a causal relation between financing choices and firm performance so more work in identifying exogenous variations in financing choices is necessary. One possible channel is to use national elections as a source of variation in the ease of access to bond markets. Preliminary evidence shows that during these periods bond issuance is temporarily depressed.

Overall, the results show some evidence of tradeoffs when deciding where to issue debt; however, these tradeoffs are related to the financial development of the country of domicile of the issuing firm (the country income).

Table 14: Proceeds by Region of Firm Nationality and Type of Issue

This table shows the aggregate amount of capital raised by firms from each country/region through different types of security issues in public markets over the 1990-2009 period. Issues at home are those carried out in a public market in the firm's home country. Issues abroad are those carried out in a public market outside of the firm's home country. Equity issues include both IPOs and SEOs. Debt issues include convertible and non-convertible debt issues and preferred shares issues. Data is in constant December 2009 U.S. dollars. Issues by financial and public sector firms are excluded (SIC 6000-6799 and 9000-9999). Economies are classified as developed or developing based on their 2008 income level. Developed economies correspond to high-income economies according to the World Bank classification. Developing economies correspond to low- and middle-income economies according to the World Bank classification.

	Equity				Debt								
	Home	Abroad	Total	% abroad	Home Local	Home Foreign	Abroad Local	Abroad Foreign	Total	% home local	% home foreign	% abroadlocal	% abroadforeign
Australia & New Zealand	278,296	28,460	306,756	8.1%	14,841	1,693	1,141	84,416	102,092	14.5%	1.7%	1.1%	82.7%
East Asia & Pacific	1,734,690	399,650	2,134,340	16.4%	2,347,973	4,739	361,232	455,091	3,169,035	74.1%	0.1%	11.4%	14.4%
Eastern Europe & Central Asia	61,213	30,989	92,202	31.5%	710	-	-	16,021	16,730	4.2%	0.0%	0.0%	95.8%
Latin America & Caribbean	144,710	62,958	207,667	28.7%	133,537	9,093	576	153,636	296,842	45.0%	3.1%	0.2%	51.8%
Middle East & North Africa	30,380	18,186	48,566	37.1%	3,748	-	-	10,519	14,267	26.3%	0.0%	0.0%	73.7%
South Asia	128,891	62,926	191,817	25.2%	35,286	-	-	11,536	46,822	75.4%	0.0%	0.0%	24.6%
Sub-Saharan Africa	17,427	8,364	25,791	32.2%	714	-	-	5,552	6,266	11.4%	0.0%	0.0%	88.6%
United States & Canada	2,378,495	79,411	2,457,906	3.6%	6,812,961	73,099	195,828	604,845	7,686,732	88.6%	1.0%	2.5%	7.9%
Western Europe	1,837,185	206,427	2,043,613	9.4%	591,937	182,911	755,461	879,151	2,409,460	24.6%	7.6%	31.4%	36.5%
Total	6,611,287	897,371	7,508,658	11.2%	9,941,707	271,535	1,314,238	2,220,766	13,748,246	72.3%	2.0%	9.6%	16.2%
Developed economies	5,904,586	578,199	6,482,785	8.3%	9,638,271	262,291	1,309,756	1,999,953	13,210,270	73.0%	2.0%	9.9%	15.1%
Developing Economies	706,702	319,172	1,025,874	28.9%	303,436	9,244	4,481	220,813	537,975	56.4%	1.7%	0.8%	41.0%
United States	2,292,792	12,335	2,305,128	0.7%	6,799,982	23,988	181,611	176,083	7,181,665	94.7%	0.3%	2.5%	2.5%
Japan	711,321	80,073	791,394	7.4%	2,179,847	-	346,857	312,563	2,839,266	76.8%	0.0%	12.2%	11.0%
United Kingdom	385,014	16,535	401,549	3.2%	179,210	137,111	5,757	251,251	573,328	31.3%	23.9%	1.0%	43.8%
France	334,066	39,847	373,913	10.1%	124,979	5,254	290,725	94,038	514,996	24.3%	1.0%	56.5%	18.3%
Canada	85,702	67,076	152,778	39.6%	12,979	49,111	14,217	428,761	505,067	2.6%	9.7%	2.8%	84.9%

Table 15: Proceeds by Region of Firm Nationality

These tables show the percentage of proceeds according to the country/region in which the abroad issue took place for each country/region conducting security issues in public markets over the 1990-2009 period. Equity issues include both IPOs and SEOs. Debt issues include convertible and non-convertible debt issues and preferred shares issues. Data is in constant December 2009 U.S. dollars. Issues by financial and public sector firms are excluded (SIC 6000-6799 and 9000-9999). Economies are classified as developed or developing based on their 2008 income level. Developed economies correspond to high-income economies according to the World Bank classification. Developing economies correspond to low- and middle-income economies according to the World Bank classification. The rows identify the region of origin of the firm and the columns identify the region where the securities were placed.

Panel A: Debt Issues

	Austr. & New Zea	E. Asia & Pacific	E. Europe & C. Asia	Lat Am & Caribbean	M. East & N. Africa	S. Asia	Sub-Saharan Africa	Utd States & Canada	W. Europe
Australia & New Zealand	13.56	0.35	-	-	-	-	-	19.52	66.56
East Asia & Pacific	0.01	52.03	-	-	-	-	-	22.29	25.67
Eastern Europe & Central Asia	-	-	1.50	-	-	-	-	2.96	95.53
Latin America & Caribbean	-	0.30	-	57.46	-	-	-	21.65	20.59
Middle East & North Africa	-	-	-	-	26.06	-	-	55.34	18.61
South Asia	-	2.49	-	-	-	70.15	-	18.69	8.66
Sub-Saharan Africa	-	-	-	-	-	-	5.89	15.89	78.22
United States & Canada	-	0.03	-	0.00	-	0.00	-	94.73	5.24
Western Europe	0.02	0.25	-	0.01	-	-	0.01	20.54	79.17
Total	0.08	7.53	0.00	1.28	0.02	0.16	0.00	67.69	23.24
Developed Economies	0.08	7.29	0.00	0.00	0.02	0.00	0.00	69.26	23.34
Developing Economies	-	14.95	0.00	40.28	-	4.97	0.09	19.49	20.22
United States	-	0.03	-	0.00	-	0.00	-	94.77	5.19
Japan	-	52.21	-	-	-	-	-	21.18	26.62
United Kingdom	0.09	0.27	-	-	-	-	-	33.95	65.69
France	-	0.16	-	0.01	-	-	-	4.10	95.73
Canada	-	-	-	-	-	-	-	94.07	5.93

Panel B: Equity Issues

	Austr. & New Zea	E. Asia & Pacific	E. Europe & C. Asia	Lat Am & Caribbean	M. East & N. Africa	S. Asia	Sub-Saharan Africa	Utd States & Canada	W. Europe
Australia & New Zealand	93.37	2.30	-	-	-	-	-	3.93	0.40
East Asia & Pacific	0.01	90.51	-	-	-	0.01	-	4.08	5.39
Eastern Europe & Central Asia	-	-	69.16	-	-	-	-	7.11	23.73
Latin America & Caribbean	0.09	-	-	71.33	-	-	-	26.62	1.96
Middle East & North Africa	-	0.03	-	-	63.04	-	-	29.92	7.00
South Asia	-	9.87	-	-	0.02	74.85	-	4.44	10.82
Sub-Saharan Africa	0.01	1.67	-	-	-	-	67.76	15.29	15.27
United States & Canada	0.05	0.01	-	0.01	0.00	0.00	-	99.27	0.66
Western Europe	0.03	0.00	0.13	0.00	-	-	0.00	5.23	94.58
Total	4.19	27.08	0.96	2.06	0.40	1.79	0.26	32.49	30.76
Developed Economies	4.87	23.55	0.15	0.00	0.47	0.00	0.00	36.14	34.81
Developing Economies	0.02	48.73	5.98	14.66	0.02	12.78	1.86	10.10	5.84
United States	0.05	0.00	-	0.01	0.00	0.00	-	99.34	0.60
Japan	-	94.29	-	-	-	-	-	0.68	5.04
South Korea	-	93.41	-	-	-	-	-	3.38	3.21
United Kingdom	0.15	0.00	-	-	-	-	0.01	2.75	96.99
France	-	0.00	-	-	-	-	-	3.70	96.30

Table 16: Proceeds by Region of Placement

These tables show the percentage of proceeds according to the country/region in which the abroad issue took place for each country/region conducting security issues in public markets over the 1990-2009 period. Equity issues include both IPOs and SEOs. Debt issues include convertible and non-convertible debt issues and preferred shares issues. Data is in constant December 2009 U.S. dollars. Issues by financial and public sector firms are excluded (SIC 6000-6799 and 9000-9999). Economies are classified as developed or developing based on their 2008 income level. Developed economies correspond to high-income economies according to the World Bank classification. Developing economies correspond to low- and middle-income economies according to the World Bank classification. The rows identify the region in which the securities were issued and the columns identify the region of origin of the firms.

Panel A: Debt Issues

	Austr. & New Zea	E. Asia & Pacific	E. Europe & C. Asia	Lat Am & Caribbean	M. East & N. Africa	S. Asia	Sub-Saharan Africa	Utd States & Canada	W. Europe
Australia & New Zealand	93.64	0.98	-	-	-	-	-	-	5.39
East Asia & Pacific	0.02	98.95	-	0.09	-	0.07	-	0.22	0.65
Eastern Europe & Central Asia	-	-	100.00	-	-	-	-	-	-
Latin America & Caribbean	-	-	-	99.81	-	-	-	0.05	0.14
Middle East & North Africa	-	-	-	-	100.00	-	-	-	-
South Asia	-	-	-	-	-	98.33	-	1.67	-
Sub-Saharan Africa	-	-	-	-	-	-	65.22	-	34.78
United States & Canada	0.15	4.72	0.00	0.71	0.07	0.06	0.01	88.42	5.86
Western Europe	1.49	15.82	0.38	1.96	0.07	0.08	0.16	14.25	65.79
Total	0.52	14.32	0.09	2.22	0.09	0.22	0.05	63.18	19.31
Developed Economies	0.53	14.17	0.09	0.96	0.09	0.07	0.04	64.37	19.67
Developing Economies	-	21.99	0.01	68.74	-	8.49	0.15	0.18	0.45
United States	0.15	4.76	0.00	0.72	0.07	0.06	0.01	88.31	5.91
Luxembourg	0.65	13.56	0.19	3.42	0.14	0.10	0.03	19.58	62.32
United Kingdom	3.59	24.84	0.43	0.44	-	0.08	0.08	8.29	62.25
Japan	-	99.33	-	-	-	-	-	0.25	0.42
France	-	1.55	-	-	-	-	-	0.66	97.79

Panel B: Equity Issues

	Austr. & New Zea	E. Asia & Pacific	E. Europe & C. Asia	Lat Am & Caribbean	M. East & N. Africa	S. Asia	Sub-Saharan Africa	Utd States & Canada	W. Europe
Australia & New Zealand	99.32	0.08	-	0.06	-	-	0.00	0.32	0.22
East Asia & Pacific	0.38	98.71	-	-	0.00	0.87	0.02	0.01	0.00
Eastern Europe & Central Asia	-	-	95.81	-	-	-	-	-	4.19
Latin America & Caribbean	-	-	-	99.86	-	-	-	0.13	0.00
Middle East & North Africa	-	-	-	-	99.85	0.14	-	0.01	-
South Asia	-	0.17	-	-	-	99.83	-	0.00	-
Sub-Saharan Africa	-	-	-	-	-	-	99.80	-	0.20
United States & Canada	0.54	3.71	0.29	2.36	0.59	0.33	0.18	87.20	4.80
Western Europe	0.06	5.17	1.03	0.18	0.15	0.84	0.19	0.61	91.77
Total	4.46	29.53	1.33	2.88	0.64	2.39	0.39	28.54	29.84
Developed Economies	4.95	27.23	0.54	0.92	0.71	0.67	0.14	31.71	33.14
Developing Economies	-	50.30	8.47	20.56	0.02	17.92	2.61	0.03	0.08
United States	0.48	3.87	0.30	2.45	0.61	0.34	0.19	86.79	4.97
Japan	-	99.97	-	-	-	-	-	0.03	0.00
United Kingdom	0.18	7.35	4.20	0.50	0.45	1.36	0.74	0.96	84.25
South Korea	-	100.00	-	-	-	-	-	-	-
France	-	-	-	-	0.00	-	-	0.21	99.79

Table 17: Firm Characteristics the Year before an Issuance

This table reports the mean and median of a set of firm level characteristics for different groups of firms based on their capital raising activity in public markets during the 1990-2009 period. Equity issues include both IPOs and SEOs. Debt issues include convertible and non-convertible debt issues and preferred shares issues. Data is in constant December 2009 U.S. dollars. Issues by financial and public sector firms are excluded (SIC 6000-6799 and 9000-9999). The number below the mean is the number of observations used to compute the mean and median. Columns (a) and (b) report the coefficient on a dummy variable equal to 1 if the firm issued abroad in a regression of the different firm characteristics on the abroad dummy, country dummies and industry (2 digit SIC) dummies. Below the coefficient is the t-stat computed with clustering at the country level. *, **, *** mean significance at ten, five, and one percent, respectively.

	Firms with no capital raising activity		Firms that only raised capital at home		Firms that raised capital abroad					
	Mean	Median	Mean	Median	Mean	Median	Coefficient on Abroad			
							(a) no issuance	(b) only domestic		
Size										
Total assets in million US\$	1,233	144	3,117	165	13,099	2,504	11,206	***	9,912	***
	309,060		45,359		5,114		4.23		4.29	
Growth										
Sales US\$	0.168	0.052	0.332	0.104	0.266	0.119	0.106	***	(0.022)	
	272,998		37,569		4,606		2.86		(0.63)	
Investment										
Capital expenditures / total assets	0.074	0.038	0.101	0.049	0.111	0.066	0.031	***	0.005	
	264,374		38,666		4,494		4.01		0.67	
Profitability										
Operating Income / total assets	(0.052)	0.055	(0.116)	0.051	0.030	0.066	0.043	**	0.039	**
	299,263		43,827		5,005		2.11		2.49	
Net income / equity	0.019	0.070	(0.069)	0.071	0.078	0.094	0.063	***	0.079	***
	308,547		45,168		5,109		3.95		3.57	
Capital structure										
Total debt / total assets	0.252	0.197	0.269	0.233	0.312	0.305	0.059	**	0.025	*
	306,284		45,039		5,083		2.67		1.87	
Long-term debt / total assets	0.122	0.061	0.158	0.102	0.200	0.179	0.070	***	0.036	***
	298,678		44,097		5,031		5.13		3.94	
Short-term debt / total assets	0.125	0.062	0.107	0.049	0.111	0.085	(0.010)		(0.013)	**
	298,879		44,131		5,037		(1.28)		(2.03)	
Valuation										
Tobin's q	2.090	1.221	2.631	1.475	1.962	1.334	0.184	**	(0.067)	
	280,610		38,029		4,434		2.47		(1.05)	
Other										
Net property, plant and equipment / total assets	0.318	0.280	0.318	0.265	0.382	0.345	0.028	***	0.019	**
	305,784		45,086		5,091		3.63		2.11	
Cash and equivalents / total assets	0.168	0.103	0.196	0.108	0.145	0.092	(0.018)	**	(0.016)	
	307,026		45,231		5,112		(2.03)		(1.54)	
International Sales / total sales	0.229	0.037	0.238	0.087	0.328	0.243	0.096	***	0.068	***
	169,235		26,039		3,504		6.20		4.44	

Table 18: Firm Characteristics of Bond Issuers the Year before an Issuance

This table reports the mean and median of a set of firm level characteristics for different groups of firms based on their debt raising activity in public markets over the 1990-2009 period. Debt issues include convertible and non-convertible debt issues and preferred shares issues. Data is in constant December 2009 U.S. dollars. Issues by financial and public sector firms are excluded (SIC 6000-6799 and 9000-9999). The number below the mean is the number of observations used to compute the mean and median. Column (a) and (b) report the coefficient on a dummy variable equal to 1 if the firm issued abroad in a regression of the different firm characteristics on the abroad dummy, country dummies and industry (2 digit SIC) dummies. Below the coefficient is the t-stat computed with clustering at the country level. *, **, *** mean significance at ten, five, and one percent, respectively.

	Firms with no capital raising activity		Firms that only raised capital at home		Firms that raised capital abroad					
	Mean	Median	Mean	Median	Mean	Median	Coefficient on Abroad			
							(a) no issuance	(b) only domestic		
Size										
Total assets in million US\$	1,216	136	9,336	2,530	21,948	8,667	19,380	***	11,765	***
	345,042		11,740		2,751		4.86		2.83	
Growth										
Sales US\$	0.191	0.058	0.156	0.061	0.140	0.082	(0.003)		0.026	
	301,112		11,367		2,694		(0.09)		0.92	
Investment										
Capital expenditures / total assets	0.078	0.039	0.089	0.058	0.087	0.061	0.012	*	0.003	
	294,258		10,792		2,484		1.84		0.62	
Profitability										
Operating Income / total assets	(0.064)	0.054	0.046	0.069	0.067	0.063	0.072	*	0.019	*
	333,858		11,537		2,700		1.77		1.80	
Net income / equity	0.007	0.069	0.054	0.089	0.088	0.086	0.078	***	0.045	***
	344,350		11,726		2,748		4.85		3.29	
Capital structure										
Total debt / total assets	0.252	0.195	0.338	0.320	0.355	0.338	0.093	***	0.003	
	342,061		11,607		2,738		4.87		0.57	
Long-term debt / total assets	0.123	0.060	0.243	0.223	0.238	0.216	0.095	***	0.009	
	333,578		11,500		2,728		7.64		1.08	
Short-term debt / total assets	0.124	0.060	0.092	0.058	0.117	0.097	(0.002)		(0.004)	
	333,796		11,519		2,732		(0.28)		(0.73)	
Valuation										
Tobin's q	2.176	1.246	1.667	1.299	1.470	1.246	(0.193)		0.046	*
	309,191		11,255		2,627		(1.00)		1.76	
Other										
Net property, plant and equipment / total assets	0.315	0.275	0.407	0.378	0.416	0.371	0.054	***	(0.008)	
	341,537		11,683		2,741		4.60		(1.41)	
Cash and equivalents / total assets	0.174	0.106	0.106	0.057	0.102	0.071	(0.054)	***	(0.008)	
	342,898		11,719		2,752		(5.11)		(0.93)	
International Sales / total sales	0.232	0.040	0.213	0.116	0.318	0.250	0.104	***	0.055	***
	187,348		9,257		2,173		5.05		3.20	

Table 19: Firm Growth and Past Bond Issuance

The following table presents the results from regressions of sales growth and investment on measures of past financing and firm level controls. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. Firm level controls included are the lagged values of: *Assets*, *International Sales*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Their coefficients are omitted for brevity. T-stats are presented below the corresponding coefficients and standard errors are clustered by country.

	Full Sample		High Income		Low and Middle Income		Large Firms	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE
<i>Sales Growth</i>								
Dom_d	0.025	0.010	0.024	0.006	0.043	0.043	0.015	0.014
	4.20	1.68	3.78	1.03	5.23	1.95	3.25	2.58
Int_d	0.027	0.024	0.032	0.026	-0.022	-0.032	0.020	0.029
	1.55	4.43	1.77	4.89	-0.60	-0.73	2.44	4.92
Observations	168,506	168,506	145,165	145,165	23,341	23,341	36,197	36,197
R-squared	0.060	0.044	0.063	0.044	0.056	0.066	0.094	0.102
Firms		21,411		17,761		3,650		4,823
No Bond Issuance	151,052	151,052	128,638	128,638	22,414	22,414	23,531	23,531
Only Domestic	13,258	13,258	12,492	12,492	766	766	9,080	9,080
Domestic and International	2,138	2,138	2,047	2,047	91	91	1,997	1,997
Only International	2,058	2,058	1,988	1,988	70	70	1,589	1,589
<i>Investment</i>								
Dom_d	0.005	0.004	0.004	0.004	0.019	0.008	0.006	0.004
	2.89	3.69	2.90	3.15	2.41	1.31	4.14	3.96
Int_d	-0.001	0.000	0.000	0.001	-0.020	-0.018	0.004	0.003
	-1.78	0.11	0.06	1.07	-1.56	-1.07	2.47	2.69
Observations	156,838	156,712	134,093	134,093	22,745	22,745	34,195	34,195
R-squared	0.210	0.092	0.233	0.095	0.131	0.115	0.305	0.124
Firms		21,100		17,477		3,620		4,518
No Bond Issuance	140,464	140,464	118,644	118,644	21,820	21,820	22,005	22,005
Only Domestic	12,658	12,658	11,894	11,894	764	764	8,897	8,897
Domestic and International	2,037	2,037	1,946	1,946	91	91	1,927	1,927
Only International	1,679	1,679	1,609	1,609	70	70	1,366	1,366
Industry	yes	no	yes	no	yes	no	yes	No
Year	yes	yes	yes	yes	yes	yes	yes	yes
Country	yes	no	yes	no	yes	no	yes	no

Table 20: Firm Growth and Past Bond Issuance by Country Income

The following table presents the results from regressions of sales growth and investment on measures of past financing and firm level controls. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. Firm level controls included are the lagged values of: *Assets*, *International Sales*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Their coefficients are omitted for brevity. Robust T-stats are presented below the corresponding coefficients.

	High Income Countries						Low and Middle Income Countries					
	Small		Medium		Large		Small		Medium		Large	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE
<i>Sales Growth</i>												
Dom_d	0.062	-0.053	0.022	0.008	0.014	0.014	-0.072	-0.136	0.059	0.038	0.024	0.065
	3.55	-0.91	2.70	0.86	2.52	2.72	-1.19	-1.52	2.58	0.86	3.00	2.38
Int_d	0.031	-0.026	0.064	0.042	0.018	0.030			-0.061	0.083	0.015	-0.002
	0.14	-0.27	6.07	3.26	2.01	4.93			-0.54	0.91	0.49	-0.03
Observations	61,877	61,877	51,235	51,235	30,943	30,943	10,721	10,721	7,042	7,042	4,558	4,558
R-squared	0.056	0.037	0.124	0.119	0.095	0.110	0.062	0.070	0.113	0.139	0.089	0.112
Firms		11,066		7,916		3,804		2,128		1,686		1,058
No Bond Issuance	61,228	61,228	47,335	47,335	19,108	19,108	10,666	10,666	6,865	6,865	3,964	3,964
Only Domestic	631	631	3,338	3,338	8,421	8,421	55	55	166	166	480	480
Domestic and International	4	4	98	98	1,920	1,920	0	0	4	4	71	71
Only International	14	14	444	444	1,494	1,494	0	0	7	7	43	43
<i>Investment</i>												
Dom_d	0.001	-0.002	0.007	0.004	0.005	0.003	0.038	-0.023	0.023	0.007	0.015	0.010
	0.37	-0.25	5.06	1.94	3.44	3.22	3.05	-1.04	5.57	0.72	1.37	1.79
Int_d	0.011	0.01	0.014	0.001	0.004	0.003			-0.017	0.010	-0.011	-0.003
	0.97	0.70	6.76	0.14	3.40	2.80			-1.07	0.77	-0.74	-0.20
Observations	58,422	58,422	45,049	45,049	29,290	29,290	10,369	10,369	6,838	6,838	4,402	4,402
R-squared	0.204	0.083	0.328	0.144	0.322	0.128	0.124	0.097	0.189	0.215	0.190	0.155
Firms		10,738		7,581		3,599		2,083		1,615		968
No Bond Issuance	57,815	57,815	41,769	41,769	17,886	17,886	10,314	10,314	6,662	6,662	3,809	3,809
Only Domestic	593	593	2,943	2,943	8,256	8,256	55	55	165	165	479	479
Domestic and International	2	2	63	63	1,857	1,857	0	0	4	4	71	71
Only International	12	12	274	274	1,291	1,291	0	0	7	7	43	43
Industry	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
Year	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no

Table 21: Firm Growth and Past Bond Issuance over the Business Cycle

The following table presents the results from regressions of sales growth and investment on measures of past financing, firm level controls and GDP growth. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. The set of firm level controls included are the lagged values of: *Assets*, *International Sales*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Their coefficients are omitted for brevity. Robust T-stats are presented below the corresponding coefficients.

	<i>Sales Growth</i>						<i>Investment</i>					
	Full Sample	Large	High Income	Lo-Mi Income	High Large	Lo-Mi Large	Full Sample	Large	High Income	Lo-Mi Income	High Large	Lo-Mi Large
	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
<i>Dom_d</i>	0.017	0.017	0.013	0.076	0.015	0.127	0.005	0.004	0.005	-0.001	0.003	-
	1.83	2.15	1.26	2.98	1.87	3.83	3.63	2.75	3.17	-0.14	2.09	-0.11
<i>Int_d</i>	0.035	0.036	0.042	-0.119	0.041	-0.091	0.001	0.003	0.002	-0.010	0.004	0.001
	3.77	4.18	4.59	-1.89	4.99	-1.32	0.47	1.66	0.83	-0.47	2.01	0.07
<i>gdpG</i>	0.011	0.007	0.008	0.013	0.004	0.013	0.002	0.001	0.002	0.001	0.001	0.002
	12.89	3.45	7.24	8.33	1.76	3.33	10.99	4.09	9.50	3.20	1.94	3.96
<i>gdpG_Dom_d</i>	-0.000	0.002	-0.003	0.002	0.006	-0.007	0.000	0.001	-0.000	0.003	0.001	0.002
	-0.15	0.83	-1.31	0.50	1.99	-1.22	0.70	1.37	-0.51	2.24	1.60	1.43
<i>gdpG_Int_d</i>	-0.009	-0.009	-0.007	0.003	-0.008	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-
	-3.03	-2.46	-2.75	0.33	-2.65	-0.11	-1.24	-1.50	-1.42	-0.57	-0.75	-0.69
<i>gdpG_HIGH</i>	0.012	0.011	0.019	-0.017	0.017	-0.011	0.003	0.001	0.003	0.000	0.002	0.006
	6.16	3.57	8.50	-4.78	5.23	-0.76	10.43	2.46	8.71	-0.48	4.11	1.89
<i>gdpG_HIGH_Dom_d</i>	-0.003	-0.004	0.000	-0.024	-0.006	-0.017	-0.001	-0.001	-0.000	-0.004	-0.001	-
	-0.84	-1.07	0.01	-3.44	-1.41	-2.02	-1.42	-0.92	-0.41	-1.56	-0.88	0.000
<i>gdpG_HIGH_Int_d</i>	0.001	0.003	-0.003	0.035	0.000	0.043	0.000	0.001	0.000	-0.001	0.000	-0.14
	0.29	0.64	-0.69	1.34	0.08	1.50	0.16	0.80	0.33	-0.14	0.14	0.31
Observations	168,506	36,197	145,165	23,341	30,943	4,558	156,838	34,195	134,093	22,745	29,290	4,402
R-squared	0.036	0.102	0.045	0.069	0.110	0.116	0.093	0.125	0.096	0.117	0.129	0.160
Firms	21,411	4,823	17,761	3,650	3,804	1,058	21,100	4,518	17,477	3,623	3,599	968
No Bond Issuance	151,052	23,531	128,638	22,414	19,108	3,964	140,464	22,005	118,644	21,820	17,886	3,809
Only Domestic	13,258	9,080	12,492	766	8,421	480	12,658	8,897	11,894	764	8,256	479
Domestic and Int'l	2,138	1,997	2,047	91	1,920	71	2,037	1,927	1,946	91	1,857	71
Only International	2,058	1,589	1,988	70	1,494	43	1,679	1,366	1,609	70	1,291	43

Table 22: Firm Growth and Past Bond Issuance in Financial Crises

The following table presents the results from regressions of sales growth and investment on measures of past financing and firm level controls. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. The set of firm level controls included are the lagged values of: *Assets*, *International Sales*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Their coefficients are omitted for brevity. Robust T-stats are presented below the corresponding coefficients.

	Full Sample		High Income		Lo-Mi Income		High Income Large Firms		Lo-Mi Income Large Firms	
	OLS	FD	OLS	FD	OLS	FD	OLS	FD	OLS	FD
<i>Sales Growth</i>										
Dom_d	0.018	-0.012	0.020	-0.012	0.007	-0.005	0.028	0.032	-0.239	-0.231
	1.79	-0.50	1.93	-0.54	0.09	-0.03	1.88	1.81	-0.38	-0.85
Int_d	0.040	-0.033	0.038	0.003	-0.012	-0.284	0.024	0.002	-0.037	-0.528
	2.39	-0.99	2.33	0.22	-0.46	-3.84	2.73	0.17	-0.53	-3.90
Observations	8,415	7,544	7,697	6,966	718	578	1,764	1,690	118	97
R-squared	0.115	0.061	0.103	0.055	0.355	0.281	0.176	0.226	0.501	0.363
No Bond Issuance	7,513	6,680	6,827	6,130	683	550	1,165	1,109	104	85
Only Domestic	743	710	722	691	21	19	470	454	12	10
Domestic and International	90	88	86	84	4	4	81	79	1	1
Only International	69	66	62	61	7	5	48	48	1	1
<i>Investment</i>										
Dom_d	0.003	0.000	0.005	0.003	-0.018	-0.055	-0.001	-0.005	0.030	-0.012
	2.24	0.16	4.38	2.05	-0.99	-2.90	-0.55	-1.26	0.57	-0.42
Int_d	-0.000	0.002	-0.000	0.003	0.002	-0.001	0.007	0.006	-0.188	0.044
	-0.01	0.62	-0.10	1.37	0.03	-0.02	1.18	2.32	-3.22	0.76
Observations	7,491	6,625	6,800	6,083	691	542	1,675	1,599	115	94
R-squared	0.285	0.132	0.267	0.122	0.354	0.203	0.479	0.217	0.756	0.150
No Bond Issuance	6,657	5,832	5,998	5,318	659	514	1,094	1,037	101	82
Only Domestic	690	656	669	637	21	19	459	443	12	10
Domestic and International	82	79	78	75	4	4	77	74	1	1
Only International	62	58	55	53	7	5	45	45	1	1
Firm-Level Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry	yes	no	yes	no	yes	no	yes	no	yes	no
Year	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country	yes	no	yes	no	yes	no	yes	no	yes	no

Table 23: Firm Growth and Past Bond Issuance - 2008

The following table presents the results from regressions of sales growth and investment on measures of past financing and firm level controls. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. The set of firm level controls included are the lagged values of: *Assets*, *International Sales*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Their coefficients are omitted for brevity. Robust T-stats are presented below the corresponding coefficients.

	All Firms		High Income				Low and Middle Income			
			All		Large		All		Large	
	OLS	FD	OLS	FD	OLS	FD	OLS	FD	OLS	FD
<i>Sales Growth</i>										
Dom_d	-0.042	-0.021	-0.042	-0.026	0.014	0.064	-0.062	0.011	-0.128	0.027
	-2.91	-0.89	-2.56	-1.26	0.76	2.75	-2.80	0.24	-3.54	0.53
Int_d	0.027	-0.012	0.032	-0.020	0.005	-0.009	0.065	0.183	0.134	-0.007
	1.37	-0.37	1.55	-0.61	0.27	-0.17	0.74	1.38	1.07	-0.05
Observations	11,679	10,360	9,319	8,332	2,10	2,003	2,360	2,028	592	505
R-squared	0.063	0.045	0.060	0.041	0.205	0.109	0.137	0.085	0.289	0.186
No Bond Issuance	10,793	9,510	8,521	7,556	1,476	1,385	2,272	1,954	522	447
Only Domestic	658	627	579	561	423	413	79	66	62	51
Domestic and International	155	152	150	148	146	144	5	4	5	4
Only International	73	71	69	67	63	61	4	4	3	3
<i>Investment</i>										
Dom_d	0.007	-0.003	0.005	-0.005	0.006	-0.005	0.022	0.009	0.020	0.004
	2.26	-0.81	2.91	-1.73	3.59	-1.26	1.03	0.60	0.79	0.23
Int_d	-0.007	-0.005	-0.005	-0.007	0.006	0.000	-0.015	0.044	0.010	0.034
	-1.86	-1.00	-1.43	-1.34	1.40	0.04	-1.00	1.29	0.50	0.96
Observations	11,637	10,308	9,296	8,305	2,104	1,997	2,341	2,003	584	500
R-squared	0.275	0.125	0.308	0.120	0.483	0.225	0.183	0.184	0.282	0.240
No Bond Issuance	10,755	9,462	8,501	7,532	1,474	1,381	2,254	1,930	514	442
Only Domestic	654	623	576	558	421	411	78	65	62	51
Domestic and International	155	152	150	148	146	144	5	4	5	4
Only International	73	71	69	67	63	61	4	4	3	3
Industry	yes	No	yes	no	yes	no	yes	no	yes	no
Country	yes	no	yes	no	yes	no	yes	no	yes	no

Table 24: Firm Growth and Past Bond Issuance over the Business Cycle – International Sales

The following table presents the results from regressions of sales growth and investment on measures of past financing, firm level controls and GDP growth. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. The set of firm level controls included are the lagged values of: *Assets*, *International Sales*, *International Sales* times *World GDP growth*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Their coefficients are omitted for brevity. Robust T-stats are presented below the corresponding coefficients.

	<i>Sales Growth</i>						<i>Investment</i>						
	Full Sample	Large	High Income	Lo-Mi Income	High Large	Lo-Mi Large	Full Sample	Large	High Income	Lo-Mi Income	High Large	Lo-Mi Large	
	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	
<i>Dom_d</i>	0.017	0.015	0.013	0.076	0.015	0.125	0.006	0.004	0.005	-0.001	0.003	-	0.001
	1.79	1.93	1.25	2.97	1.68	3.70	3.65	2.97	3.23	-0.13	2.34	-	-0.17
<i>Int_d</i>	0.035	0.037	0.043	-0.113	0.042	-0.085	0.001	0.003	0.002	-0.009	0.004	0.004	0.002
	3.86	4.28	4.61	-1.80	5.04	-1.24	0.45	1.58	0.79	-0.41	1.94	0.13	0.13
<i>gdpG</i>	0.011	0.007	0.008	0.013	0.004	0.012	0.002	0.001	0.002	0.001	0.001	0.001	0.002
	12.74	3.38	7.20	8.26	1.71	3.24	10.99	4.17	9.55	3.7	2.01	3.87	3.87
<i>gdpG_Dom_d</i>	-0.000	0.002	-0.003	0.002	0.006	-0.007	0.000	0.001	-0.000	0.003	0.001	0.001	0.002
	-0.15	0.84	-1.31	0.48	2.00	-1.20	0.70	1.37	-0.51	2.23	1.59	1.45	1.45
<i>gdpG_Int_d</i>	-0.009	-0.009	-0.007	0.003	-0.008	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-	0.002
	-3.01	-2.46	-2.75	0.34	-2.64	-0.09	-1.25	-1.51	-1.43	-0.56	-0.77	-	-0.69
<i>gdpG_HIGH</i>	0.011	0.008	0.019	-0.019	0.015	-0.013	0.003	0.001	0.003	-0.000	0.002	0.002	0.006
	5.10	2.40	7.50	-5.15	3.95	-0.89	10.12	3.07	8.59	-0.99	4.58	1.78	1.78
<i>gdpG_HIGH_Dom_d</i>	-0.003	-0.003	0.000	-0.024	-0.005	-0.016	-0.001	-0.001	-0.000	-0.004	-0.001	-	0.000
	-0.80	-0.86	0.02	-3.47	-1.24	-1.94	-1.43	-1.13	-0.46	-1.57	-1.13	-	-0.09
<i>gdpG_HIGH_Int_d</i>	0.001	0.003	-0.003	0.033	-0.000	0.040	0.000	0.001	0.000	-0.001	0.000	0.000	0.002
	0.18	0.53	-0.70	1.26	0.00	1.43	0.19	0.88	0.39	-0.23	0.23	0.23	0.23
Observations	168,506	36,197	145,165	23,341	30,943	4,558	156,838	34,195	134,093	22,745	29,290	4,402	4,402
R-squared	0.045	0.103	0.045	0.069	0.110	0.117	0.094	0.125	0.096	0.117	0.129	0.161	0.161
Firms	21,411	4,823	17,761	3,650	3,804	1,058	21,100	4,518	17,477	3,623	3,599	968	968
No Bond Issuance	151,052	23,531	128,638	22,414	19,108	3,964	140,464	22,005	118,644	21,820	17,886	3,809	3,809
Only Domestic	13,258	9,080	12,492	766	8,421	480	12,658	8,897	11,894	764	8,256	479	479
Domestic and Int'l	2,138	1,997	2,047	91	1,920	71	2,037	1,927	1,946	91	1,857	71	71
Only International	2,058	1,589	1,988	70	1,494	43	1,679	1,366	1,609	70	1,291	43	43

Table 25: Firm Growth and Past Bond Issuance over the Business Cycle – Firm Specific International GDP Growth

The following table presents the results from regressions of sales growth and investment on measures of past financing, firm level controls and GDP growth. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. The set of firm level controls included are the lagged values of: *Assets*, *International Sales*, *International Sales* times *World GDP growth*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Their coefficients are omitted for brevity. Robust T-stats are presented below the corresponding coefficients.

	<i>Sales Growth</i>						<i>Investment</i>					
	Full Sample	Large	High Income	Lo-Mi Income	High Large	Lo-Mi Large	Full Sample	Large	High Income	Lo-Mi Income	High Large	Lo-Mi Large
	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
Dom_d	0.014	0.012	0.013	0.053	0.009	0.118	0.004	0.003	0.005	-0.005	0.003	-
	1.96	1.93	1.81	2.09	1.42	3.57	3.45	2.88	3.61	-0.53	2.28	-0.12
Int_d	0.033	0.036	0.034	-0.055	0.039	-0.023	0.001	0.004	0.002	-0.011	0.003	0.006
	5.01	5.30	5.20	-1.28	5.52	-0.46	0.70	2.81	1.00	-0.62	2.32	0.43
gdpG	0.011	0.007	0.008	0.013	0.004	0.013	0.002	0.001	0.002	0.001	0.001	0.002
	13.10	3.90	7.52	8.38	2.35	3.35	11.43	4.82	9.92	3.28	2.66	3.92
gdpG_Dom_d	-0.002	0.001	-0.003	-0.002	0.003	-0.010	-0.000	0.000	-0.000	0.002	0.000	0.002
	-0.88	0.41	-1.52	-0.48	1.46	-1.91	-0.26	0.95	-1.18	1.90	1.05	1.62
gdpG_Int_d	-0.010	-0.009	-0.010	0.008	-0.009	0.006	-0.001	-0.001	-0.001	-0.001	-0.001	-
	-4.67	-4.07	-4.84	1.07	-4.49	0.60	-1.90	-1.93	-1.97	-0.61	-1.28	-0.66
gdpG_WORLD	0.012	0.017	0.025	-0.024	0.022	-0.041	0.002	0.002	0.002	-0.001	0.002	-
	5.12	5.63	9.35	-5.40	6.47	-4.49	6.62	3.17	5.89	-1.22	4.75	-3.21
gdpG_WFI_Int_d	0.004	0.004	0.004	-0.004	0.004	-0.005	0.000	0.001	0.001	-0.001	0.001	-
	2.40	2.43	2.67	-0.46	1.96	-0.43	0.67	1.14	1.56	-0.42	1.39	-0.75
Observations	168,506	36,197	145,165	23,341	30,943	4,558	156,838	34,195	134,093	22,745	29,290	4,402
R-squared	0.045	0.103	0.045	0.069	0.110	0.116	0.093	0.125	0.096	0.117	0.129	0.161
Firms	21,411	4,823	17,761	3,650	3,804	1,058	21,100	4,518	17,477	3,623	3,599	968
No Bond Issuance	151,052	23,531	128,638	22,414	19,108	3,964	140,464	22,005	118,644	21,820	17,886	3,809
Only Domestic	13,258	9,080	12,492	766	8,421	480	12,658	8,897	11,894	764	8,256	479
Domestic and Int'l	2,138	1,997	2,047	91	1,920	71	2,037	1,927	1,946	91	1,857	71
Only International	2,058	1,589	1,988	70	1,494	43	1,679	1,366	1,609	70	1,291	43

Table 26: Firm Growth and Past Bond Issuance - Eurozone

The following table presents the results from regressions of sales growth and investment on measures of past financing and firm level controls. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. Firm level controls included are the lagged values of: *Assets*, *International Sales*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Robust T-stats are presented below the corresponding coefficients.

	Full Sample		90-98		99-09		90-98 Large Firms		99-09 Large Firms	
	OLS	FE	OLS	FE	OLS	FE	OLS	FE	OLS	FE
<i>Sales Growth</i>										
Dom_d	0.034	0.019	0.039	0.020	0.027	0.020	0.020	0.024	0.017	0.021
	4.42	2.23	3.32	1.28	2.67	1.52	1.80	1.67	1.41	1.39
Int_d	0.025	0.001	-0.019	-0.027	0.037	-0.018	-0.024	-0.034	0.012	-0.017
	2.57	0.10	-1.11	-1.62	2.90	-0.76	-1.41	-1.76	0.82	-0.69
Observations	43,580	43,580	17,118	17,118	26,462	26,462	3,625	3,625	6,094	6,094
R-squared	0.078	0.065	0.095	0.081	0.079	0.066	0.150	0.132	0.116	0.149
Firms		5,501		2,994		4,558		705		1,085
No Bond Issuance	41,122	41,122	16,214	16,214	24,908	24,908	2,944	2,944	4,721	4,721
Only Domestic	1,585	1,585	709	709	876	876	507	507	751	751
International	873	873	195	195	678	678	174	174	622	622
<i>Investment</i>										
Dom_d	0.002	0.006	0.005	0.007	-0.002	0.002	-0.001	0.002	0.003	0.002
	1.36	3.37	1.80	2.09	-1.14	0.80	-0.25	0.78	1.41	0.89
Int_d	-0.004	0.003	-0.006	-0.004	-0.005	0.002	0.002	-0.001	0.001	0.003
	-2.14	1.12	-1.74	-0.69	-2.30	0.59	0.43	-0.12	0.39	1.02
Observations	42,288	42,288	16,409	16,409	25,879	25,879	3,555	3,555	5,995	5,995
R-squared	0.204	0.100	0.207	0.107	0.209	0.089	0.343	0.149	0.318	0.116
Firms		5,418		2,882		4,472		668		1,025
No Bond Issuance	39,844	39,844	15,514	15,514	24,330	24,330	2,876	2,876	4,625	4,625
Only Domestic	1,572	1,572	701	701	871	871	505	505	747	747
International	872	872	194	194	678	678	174	174	623	623
Firm-Level Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry	yes	no	yes	no	yes	no	yes	no	yes	No
Year	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Country	yes	no	yes	no	yes	no	yes	no	yes	no

Table 27: Firm Growth and Past Bond Issuance over the Business Cycle - Eurozone

The following table presents the results from regressions of sales growth and investment on measures of past financing, firm level controls and GDP growth. *Sales Growth* is the yearly percentage sales in sales, and *Investment* is the yearly value of capital expenditures divided by the lagged value of total assets. *Dom_d* is a dummy variable equal to one if the firm issued bonds in the local market. *Int_d* is a dummy variable equal to one if the firm issued bonds in an international market. The set of firm level controls included are the lagged values of: *Assets*, *International Sales*, *Asset Tangibility*, *Tobin's Q*, and *Leverage*. Robust T-stats are presented below the corresponding coefficients.

	<i>Sales Growth</i>					<i>Investment</i>				
	Full Sample	90-98	99-09	90-98 Large Firms	99-09 Large Firms	Full Sample	90-98	99-09	90-98 Large Firms	99-09 Large Firms
	FE	FE	FE	FE	FE	FE	FE	FE	FE	FE
Dom_d	0.051 4.03	-0.045 -1.17	0.053 3.37	-0.040 -1.19	0.045 2.46	0.007 2.76	0.002 0.28	0.003 1.21	-0.017 -2.42	0.002 0.75
Int_d	0.043 2.71	0.013 0.18	0.022 0.88	0.004 0.05	0.009 0.38	-0.001 -0.47	-0.008 -0.62	-0.001 -0.28	0.003 0.34	0.000 0.06
gdpG	0.024 11.09	0.024 7.27	0.021 6.07	0.018 5.01	0.013 2.42	0.001 2.58	0.000 0.11	0.002 3.97	-0.001 -0.75	0.001 0.63
gdpG_Dom_d	-0.004 -0.91	-0.003 -0.45	-0.011 -1.35	0.010 1.60	0.015 1.20	0.000 -0.21	-0.001 -1.06	0.002 1.91	-0.002 -1.09	0.004 2.08
gdpG_Int_d	0.003 0.37	0.010 0.64	0.006 0.36	0.008 0.47	0.003 0.21	-0.001 -0.42	-0.002 -0.77	0.001 0.41	-0.001 -0.49	0.001 0.24
gdpG_HIGH	0.003 1.00	0.022 3.44	0.005 1.14	0.017 2.04	0.014 2.23	0.001 3.15	0.000 -0.06	0.001 1.28	-0.002 -1.66	0.001 0.53
gdpG_HIGH_Dom_d	-0.011 -1.52	0.027 1.53	-0.006 -0.65	0.017 1.23	-0.029 -2.15	0.000 -0.25	0.002 0.52	-0.003 -1.79	0.008 2.60	-0.004 -1.87
gdpG_HIGH_Int_d	-0.011 -1.07	-0.014 -0.40	-0.013 -0.80	-0.011 -0.28	-0.008 -0.49	0.001 0.33	0.003 0.51	-0.001 -0.27	-0.001 -0.31	0.000 -0.12
Observations	43,580	17,118	26,462	3,625	6,094	42,288	16,409	25,879	3,555	5,995
R-squared	0.043	0.068	0.043	0.093	0.101	0.083	0.091	0.077	0.097	0.105
Firms	5,501	2,994	4,558	705	1,085	5,418	2,882	4,472	668	1,025
No Bond Issuance	41,122	16,214	24,908	2,944	4,721	39,844	15,514	24,330	2,876	4,625
Only Domestic	1,585	709	876	507	751	1,572	701	871	505	747
International	873	195	678	174	622	872	194	678	174	623
Firm-Level Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

Figure 7: Evolution of Capital Raising Activity in the World

These figures show the evolution of the aggregate amount of capital raised by firms from developed and developing economies through security issues in public markets in each year over the 1990-2009 period. Issues at home are those carried out in a public market in the issuer's home country. Issues abroad are those carried out in a public market outside the issuer's home country. Data are in constant December 2009 U.S. dollars. Issues by financial and public sector firms are excluded (SIC 6000-6799 and 9000-9999). Economies are classified as developed or developing based on their income level in 2008. Developed economies correspond to high-income economies according to the World Bank classification. Developing economies correspond to low- and middle-income economies according to the World Bank classification.

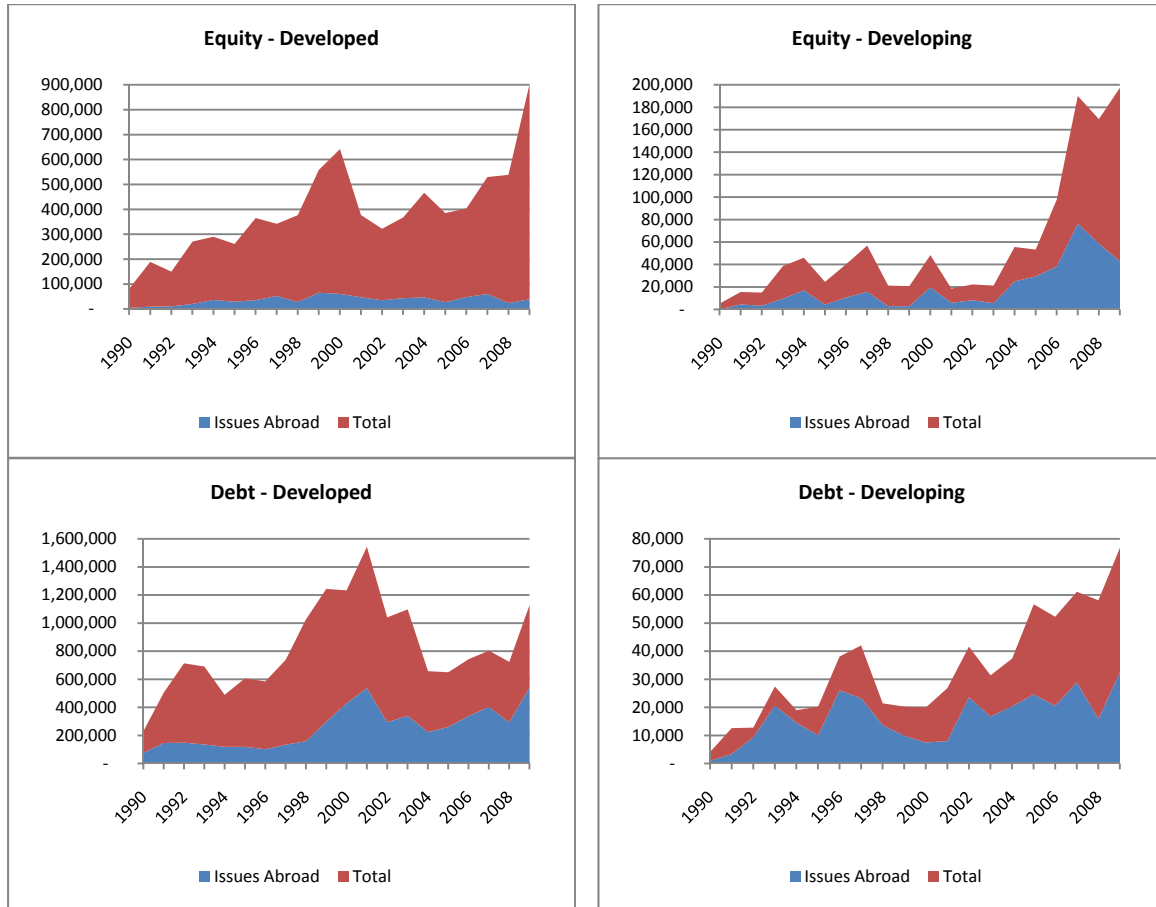


Figure 8: Cumulative Distribution of Firm Years

This figure shows the distribution of firm year observations over the 1990-2009 period sorting on the size of the firm (in December 2009 \$.U.S.).

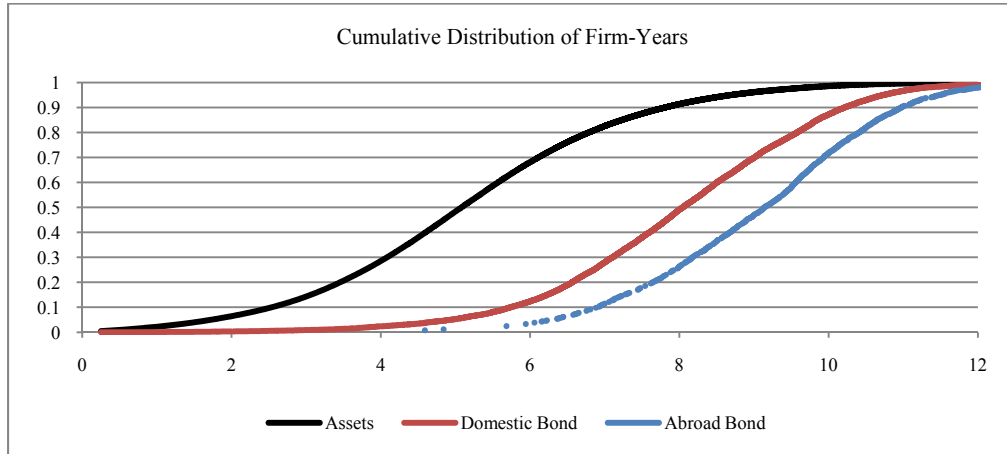
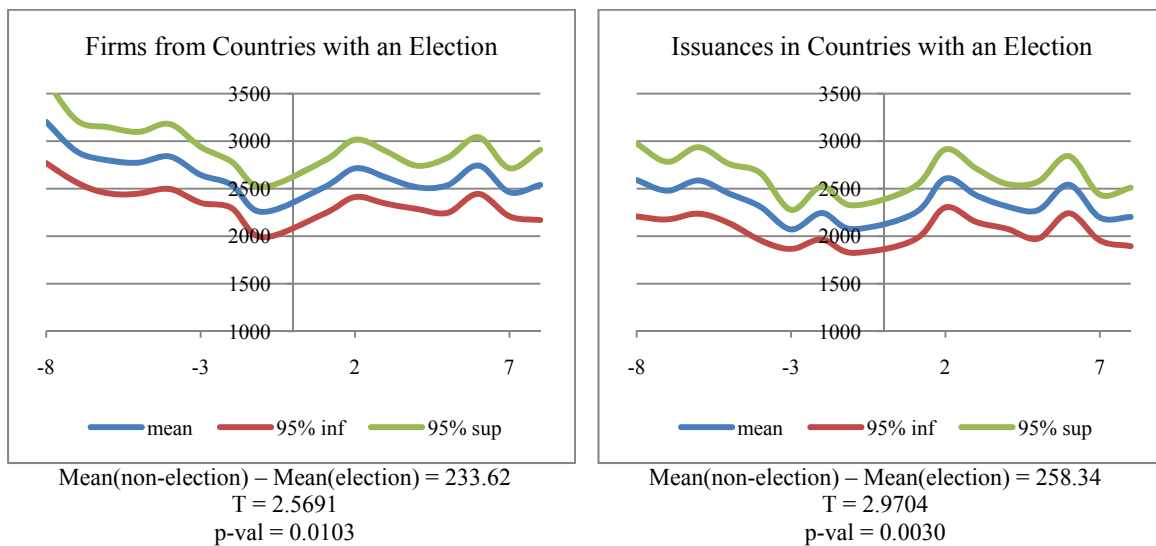


Figure 9: Bond Issuance around Head of Government Elections

These figures show the average daily proceeds from corporate bond issuances in the quarters around a head of government election. Only elections with an EIEC above six are considered. Bond Issuances by financial firms and public sector firms are dropped (SIC codes 6000-6999 and 9000-9999). Only country years with at least 20 firms with WORLDSCOPE financial data are considered. Below each figure are the results from a test of equality in the average daily proceeds from corporate bond issuance in the year around the election (-3 to +1 quarters from the election date) and the non-election quarters. The proceeds are in December 2009 \$.U.S. millions.



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Vita

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