BANKING CRISES AND THE LENDING CHANNEL: EVIDENCE FROM INDUSTRIAL FIRMS IN DEVELOPING COUNTRIES

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Abstract:

This paper analyzes how banking crises affect firms' debt structure (availability and maturity). The results show that banking crises reduce both the availability and the maturity of firms' debt in developing countries. The negative effect of banking crises on firms' debt structure is, moreover, greater in small firms and in firms with less growth opportunities. However, the higher the bank market concentration, the lower the negative effect of banking crises on firms' debt availability and maturity. This finding suggests that during banking crises there are benefits from concentrated banking systems that foster investment in the creation of close lending relationships. The results also show a reduction in the negative impact of banking crises in countries with stricter restrictions on non-traditional banking activities and stronger official supervisory power.

Resumen:

Este trabajo analiza cómo los episodios de crisis bancarias afectan a la estructura de deuda de las empresas (disponibilidad y vencimiento). Los resultados muestran que las crisis bancarias reducen la disponibilidad y el vencimiento de la deuda en países en vías de desarrollo. El efecto negativo de las crisis en la estructura de deuda es más acusado en el caso de empresas pequeñas y empresas con menores oportunidades de crecimiento. Sin embargo, una mayor concentración en el mercado bancario reduce el efecto negativo de las crisis bancarias sobre la disponibilidad y vencimiento de la deuda. Este resultado sugiere que durante episodios de crisis existen beneficios derivados de la mayor concentración del mercado que fomenta la inversión en la creación de relaciones banca-empresa. Los resultados también evidencian un menor impacto negativo de las crisis en países con más restricciones a las actividades bancarias no tradicionales y con mayor supervisión oficial.

1. INTRODUCTION

The traditional literature analyzing firms' capital structure has focused on the role that firm-level characteristics play in reducing taxes, agency costs, and information asymmetries (Jensen, 1986; Harris and Raviv, 1991). A more recent set of papers argues that, among the determinants of firms' capital structure, it is necessary to consider the importance of country-level characteristics. The Law and Finance literature provides substantial and recent empirical evidence indicating that financial development helps firms to grow faster by supplying more external funds and that a country's financial development is related to its legal and institutional framework (La Porta et al., 1997, 1998; Levine et al., 2000; Rajan and Zingales, 1998). In particular, greater protection of property rights is positively related to greater use of external finance and better protection of creditor rights favors higher availability and maturity of debt for firms (La Porta et al., 1997, 1998, 2000; Demirgüç-Kunt and Maksimovic, 1999).

The literature on firms' capital structure has, however, focused on periods of financial stability and there is no evidence on how firms modify their capital structure during banking crises. Dell'Ariccia et al. (2008) analyze the real effects of banking crises and show a more contractionary impact on economic growth of sectors that are more dependent on the services provided by banks when these intermediaries suffer a sudden negative shock that obliges them to reduce their credit supply. Krozsner et al. (2007), moreover, show that the negative effect of banking crises on economic growth is particularly great in countries with deeper financial systems. The negative real effect of banking crises is associated in the above papers with a reduction in the credit supply (finance effect).

Little empirical work, however, analyzes directly the impact of banking crises on the amount of credit available to firms. Love et al. (2007) focus on the relationship between bank credit and trade credit during and after crises in six emerging economies. They show that the provision of trade credit increases right after a crisis but contracts in the following months and years. The argument they provide is that the decline in aggregate trade credit ratios is driven by the reduced supply of trade credit that arises during a bank credit crunch. Chava and Purnanandam (2011) focus on the causal relationship between adverse shocks to banks and borrowers' performance. They base their analysis on a completely exogenous shock to the US banking system, the Russian crisis in 1998, to separate the effect of borrowers' demand for credit from the supply of credit by banks. Their results support the fact that the banks affected

by the crisis decreased the amount of lending and increased the interest rates. As a consequence, firms that relied more on this financing suffered larger losses during this period.

In our paper we go one step further and directly analyze how banking crises affect firms' debt availability and maturity (debt structure) in countries that have experienced a systemic banking crisis. So far there is no evidence analysing if firms' leverage ratios and debt maturity are different during and after banking crises, or if changes in leverage vary across firms depending on specific characteristics (size, asset structure, profitability, and growth opportunities), or if debt structure varies across countries depending on bank market structure, regulation, and supervision. Our paper aims to provide insights on all these questions and makes several contributions to the literature.

First, we provide direct evidence on the change in the availability and maturity of firms' leverage during periods of banking crises in a sample of 26 mostly developing countries (5 developed and 21 developing) and 27 systemic banking crises over the 1989-2007 period.[1] We analyze potential differential effects between developed and developing countries and how firm size, tangibility, profitability, and growth opportunities shape the effect of banking crises on debt structure.

Second, we consider that the impact of a systemic banking crisis on firms' leverage may be different across countries depending on bank market concentration, regulation, and supervision. We focus on legal restrictions on non-traditional banking activities and on bank ownership of non-financial firms as characteristics of bank regulation, and differentiate between official and private supervision. The availability of an international database allows us to incorporate these cross-country characteristics in the study.

Finally, we account for dynamic processes in firms' capital structure during periods of banking crises. We use a generalized method of moments (GMM) initially developed by Arellano and Bond (1991) for dynamic panel data. This method allows us to handle autoregressive properties in the dependent variable (firms' debt in our model) as lagged values are included in the estimations. The GMM estimator also allows us to control for the potential endogeneity of the explanatory variables and firm-specific effects omitted in our specifications.

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[1] The data available, as a result of merging our firm-level database (COMPUSTAT Global Vantage) with the database on systemic banking crises (Laeven and Valencia, 2008), obliges us to mostly focus our analysis on developing countries.

The results indicate a reduction in both availability and maturity of firms' debt during periods of systemic banking crises and in the years after the crisis in developing countries. We find that the negative effect of banking crises on credit supply is especially strong in small firms and firms with less growth opportunities. The results also show that bank concentration reduces the negative effect of a systemic banking crisis on firms' debt availability and maturity. This finding is consistent with the relevance of lending relationships for mitigating the higher problems of moral hazard and adverse selection during periods of bank financial distress. Finally, we find that stricter restrictions on non-traditional banking activities and more official supervisory power diminish the negative impact of banking crises on firms' debt structure. Our results have important policy implications and reveal the relevance of bank market structure, regulation, and official supervision for minimizing the negative effects of banking crises on credit supply in developing countries.

The rest of the paper is organized as follows. Section 2 presents in more detail the theory behind our empirical study. Section 3 describes the methodology, sample, and variables used. Section 4 presents the empirical results and, finally, Section 5 concludes.

2. THEORETICAL BACKGROUND AND HYPOTHESES

2.1. FIRMS' CAPITAL STRUCTURE AND BANKING CRISES

Our paper is related to several strands of literature. First, it is related to the huge body of literature on firms' capital structure. In particular, it is related to the literature that has extended the traditional analysis of the trade-off theory (TOT) and the pecking-order theory (POT) to a cross-country perspective incorporating the role of regulations and institutions. Initial evidence by Rajan and Zingales (1995) and Booth et al. (2001) suggests that institutional differences are unimportant in both developed and developing countries. More recent studies, however, highlight the relevance of institutions. Giannetti (2003) shows that the influence of institutional variables depends on firm size. She suggests that stronger creditor protection makes loans for investing in intangible assets more available and guarantees access to long-term debt for unlisted firms in sectors with highly volatile returns. Fan et al. (2006) and González and González (2008) highlight the relevance of institutions on a larger international database and show that bank concentration, stronger protection of creditor rights, and weaker protection of property rights favor access to debt. Moreover,

Demirgüç-Kunt and Maksimovic (1999) examine how debt maturity differs across 39 countries according to the levels of development of financial markets and institutions, concluding that debt maturity is shorter in countries in which the quality of enforcement is lower. The results show that active stock markets favor the use of long-term debt for large firms. In countries with a large banking sector, the debt maturity of small firms is longer.

Second, our paper is related to the literature analyzing the real effects of banking crises. Most of this empirical work focuses on estimating the fiscal costs and output losses associated with banking crises. Dell'Ariccia et al. (2008) find that more financially dependent industries perform significantly worse during banking crises than industries that are not so dependent on external funds. Moreover, Kroszner et al. (2007) show that the negative impact of a banking crisis on the growth of sectors that are more dependent on external finance is greater in countries with deeper financial systems. They also find a differential impact of banking crises on growth for industries dominated by young firms and for industries with high levels of intangible assets.

We combine the above two strands of the literature and analyze if there is a reduction in the amount and maturity of firms' bank debt. If the negative real effect associated with a banking crisis is caused by a reduction in the credit supply, as suggested by Kroszner et al. (2007) and Dell'Ariccia et al. (2008), we would expect a reduction of firms' leverage during the banking crisis. Moreover, as informational asymmetries are stronger in long-term than in short-term debt and periods of banking crises intensify conflicts of interest between banks and debtors, we would expect a greater reduction in long-term than in short-term debt. The consequence would be a reduction not only in firms' debt availability but also in debt maturity. Following this argument, our main hypothesis is:

H.1.: Banking crises reduce both availability and maturity of firms' bank debt.

However, this result might not be stable across firms. It is widely known that financial constraints do not equally affect all firms. Based on the evidence provided during normal times by Rajan and Zingales (1995), Booth et al. (2001), Frank and Goyal (2003), or Gaud et al. (2005), firm size is positively related to the leverage ratio. Larger firms tend to be more diversified, and size may be an inverse proxy for the probability of default. Moreover, information asymmetries between insiders and the capital markets are supposed to be lower for larger firms than for smaller ones. If banking crises increase information problems among

shareholders and debtholders, we can expect banking crises to have a more negative effect on smaller firms. Therefore, we can state a sub-hypothesis as follows:

H.1.a: Banking crises have a more negative effect on bank debt availability and maturity for smaller firms.

The finance effect of a banking crisis might also be different across firms depending on firms' tangibility of assets. During normal times, the higher the tangible assets, the higher the availability and maturity of firm's debt (Titman and Wessels, 1988; Rajan and Zingales, 1995). Tangible assets serve as collateral for obtaining finance because they reduce conflicts of interest, information asymmetries, and cost of financial distress. During crisis periods, a higher value of tangible assets can thus be expected to solve the greater informational problems and agency costs between firms and debtholders and provide greater access to external financing. Given this argument, we establish hypothesis H.1.b:

H.1.b: Banking crises have a less negative effect on bank debt availability and maturity for firms with more tangible assets.

In terms of profitability, the TOT theory suggests that firms with higher levels of profitability would have higher availability and maturity of debt because of higher tax benefits, a greater reduction in free cash-flow conflicts, and lower bankruptcy costs. However, following the arguments provided by the POT theory, the higher a firm's profitability, the lower the amount and maturity of firm's debt. The argument is that firms with higher profits could easily retain earnings, so their need to obtain finance from banks is lower. We expect that banking crises have a lower negative impact on debt availability and maturity in firms with higher profitability, given the positive impact of firm's profitability in the reduction of costs associated with bankruptcy and information asymmetries during crisis periods. So we establish hypothesis H.1.c as follows:

H.1.c: Banking crises have a less negative effect on bank debt availability and maturity for firms with higher profitability.

The effect of banking crises on debt structure might also vary depending on firms' growth opportunities. During normal periods, the TOT theory supports that the higher the growth opportunities the lower the availability and the maturity of debt. The reasons are the greater conflicts of interest between the firm and its debtholders and the higher costs of financial

distress. Following the POT theory, higher growth opportunities increase the availability and maturity of debt, because more growth opportunities are also related with higher financing needs. During crisis periods, growth opportunities increase information asymmetries and may lead to a greater reduction in debt availability and maturity. However, growth opportunities may increase the incentive to renegotiate the debt to avoid the loss of such opportunities if the firm is liquidated (Gilson et al., 1990). Given that we can theoretically expect both effects, we do not, a priori, make any forecast about the impact of growth opportunities on the effect of banking crises on debt structure.

2.2. Firms' Capital Structure and Bank Concentration, Regulation, and Supervision during Banking Crises

Our paper is also related to the literature that focuses on the effect of bank market concentration on credit availability and cost of debt. The literature posits that the influence of higher bank concentration on credit access for firms depends on the intensity of information asymmetries. In a market without information asymmetries, higher bank concentration would result in higher prices for credit and lower credit availability (Klein, 1971). In markets with asymmetric information, however, higher bank concentration may increase the benefits for banks of holding close lending relationships with their borrowers and may increase and favor firms' access to debt (Petersen and Rajan, 1994). The empirical evidence is also mixed. Petersen and Rajan (1994, 1995) and Berlin and Mester (1999) show in the US market that firms in less concentrated credit markets are subject to greater financial constraints. However, D'Auria et al. (1999) for Italian firms and Degryse and Ongena (2005) for Belgian firms find that an increase in bank market concentration increases the cost of financing provided by banks. González and González (2008) analyze firms in 39 countries and conclude that bank concentration expands firms' access to long-term debt, especially in countries with weaker protection of creditor rights. Cetorelli and Gambera (2001) find that the effect of bank concentration on economic growth varies across sectors. While bank concentration generally has a negative effect on growth, it also promotes economic growth in the industrial sectors that are most in need of external finance by facilitating credit access for younger firms. The argument is that banking market concentration facilitates the creation of close lending relationships between banks and this type of firm which, in turn, have an enhancing effect on firms' growth. Beck et al. (2006a) analyze a sample of 69 countries to conclude that crises are

less likely in economies with more concentrated banking systems, even after controlling for differences in bank regulation, national institutions affecting competition, macroeconomic conditions and shocks to the economy. Uhde and Heimeshoff (2009) find, however, that national banking market concentration has a negative impact on European banks' financial soundness as measured by the Z-score.

We do not have a clear forecast for the effect of bank market concentration on firms' leverage during periods of banking crises. On the one hand, as informational asymmetries are higher and agency problems are more frequent during periods of banking crises, we would expect lending relationships to be more valuable during these periods in more concentrated markets. In this case, we would forecast a lower reduction of firms' leverage during periods of banking crises in more concentrated markets. On the other hand, close lending relationships between banks and firms originate switching costs for borrowers when changing lenders. If the relationship bank goes bankrupt, some of its borrowers might be obliged to borrow from non-relationship banks. These borrowers would face an adverse selection problem as non-informed banks will prefer to allocate their funds to the better known, but less profitable, projects of relationship firms (Detragiache et al., 2000). As the theory predicts both effects, we do not make an a priori forecast as to how bank concentration influences the availability and maturity of firms' debt during banking crises, and treat it rather as an empirical issue.

Finally, our paper is related to the literature that analyzes the importance of bank regulation and supervision for growth, stability, and functioning of the banking system. Explicitly, we analyze the role of legal restrictions in non-traditional banking activities, restrictions on bank ownership and control of non-financial firms, official supervision, and private monitoring of banks during banking crises.

Empirical evidence for non-crisis periods shows that more strictly regulated banking markets are less developed, less stable, and less competitive (Barth et al., 2004; Claessens and Laeven, 2004). The effects of bank regulation might, however, be different during crisis periods. In countries with higher levels of restrictions on non-traditional banking activities (securities, insurance, and real estate), banks are legally forced to only focus on their traditional activities of lending and deposits. In this case, we would expect banks to have more incentives to invest in the acquisition of soft information from their debtors and to establish close lending relationships with them. The reduction in information asymmetries and agency costs by banks focused on loans and deposits would increase firms' access to bank debt. During periods of

banking crises, this argument might be stronger, given that information asymmetries and agency costs between banks and firms are higher. So, in countries with more stringent restrictions on non-traditional banking activities, we can expect a lower negative impact of banking crises on firms' debt structure, given the higher specialization in lending activity. Therefore, we state the following hypothesis:

H.2.: The stricter the regulation on non-traditional banking activities, the lower the negative impact of banking crises on firms' debt structure.

Different legal restrictions on bank ownership and control of non-financial firms across countries may also shape the effect of banking crises on firms' debt structure. On the one hand, as conflicts of interest and information asymmetries become more relevant to firms during periods of financial distress, even restrictive legislations, such as those in the US and Britain, have allowed banks to temporarily take equity in industrial firms to prevent viable firms from being liquidated (Gilson et al., 1990; James, 1995; Franks and Nyborg, 1996). From this point of view, we would expect the negative effect of banking crises on firms' debt structure to be lower, the less stringent the regulation on bank ownership and control of non-financial firms. On the other hand, bank ownership in industrial firms may intensify the real negative effect of the banking crisis by more drastically reducing debt financing for the owned firm and increasing its switching costs when the bank shareholder goes bankrupt (Saunders, 1994). Legislation limiting affiliation between banking and commerce aims precisely to avoid this "propagation effect". From this point of view, we would expect the negative effect of banking crises on firms' debt structure to be higher, the less stringent the regulation on bank ownership and control of non-financial firms.

As both effects can be forecasted for the influence of legal restrictions on bank ownership, we do not make an explicit hypothesis and treat this influence as an empirical question.

Finally, we analyze how differences in private and official supervision of banks shape the effect of banking crises on debt availability and maturity. International institutions, such us the Bank for International Settlements, the International Monetary Fund, and the World Bank, are encouraging countries to strengthen both official and private bank supervision of banking activities. These recommendations are frequently discussed in the context of increasing bank stability. But, as far as we know, there are no studies analyzing the influence of different supervisory policies on the availability and maturity of firms' debt during banking crises.

Policies based on guidelines that force accurate information disclosure empower private-sector corporate control of banks and favor the development of financial markets. Information asymmetries and agency costs are solved by more developed financial markets and less lending relationships in such environments (Rajan and Zingales, 1998; Levine et al., 2000). Lending relationships are thus less valuable for reducing the potential negative effect on credit supply in case of a systemic banking crisis. However, more developed financial markets facilitate the access of firms to corporate debt financing and make firms less dependent on bank debt. This effect would reduce the negative effect of a banking crisis on firm's debt. As both effects are possible for private monitoring, we do not make an explicit hypothesis on its effect on firms' debt structure during banking crises.

Greater official supervisory power may be defined as an alternative to empowering private-sector corporate control of banks. Barth et al. (2004) show that policies that rely excessively on direct government supervision are worse for financial development and stability than those based on private monitoring. Fernandez et al. (2010) argue that official supervision may increase the benefits of bank concentration and lending relationships to solve agency cost and adverse selection problems during normal periods. If this positive effect of bank supervision remains in crisis periods, we would expect stricter official supervision to diminish the negative effect of banking crises on the availability and maturity of firm's debt. We can, therefore, establish the following hypothesis:

H.3.: The stronger the official supervisory power over banks' activity, the lower the negative impact of banking crises on firms' debt structure.

3. DATA, METHODOLOGY, AND VARIABLES

3.1. DATA

We use data from firms' annual balance-sheets and income statements (in American dollars and real prices) taken from COMPUSTAT Global Vantage Database for the 1989-2007 period. COMPUSTAT Global provides data covering publicly traded companies in more than 80 countries, representing over 90% of the world's market capitalization, including coverage of over 96% of European market capitalization and 88% of Asian market capitalization. We exclude firms whose capital decisions may reflect special factors: the financial industry (SIC

codes 60 to 69) and regulated sectors (SIC codes 40 to 49). Therefore, our data covers information on industrial companies (SIC codes 20 to 39).

Initially, we select countries that have experienced at least one systemic banking crisis over the period 1989-2007 using the Laeven and Valencia (2008) Database.[2] This Database contains information on 85 systemic banking crises that occurred in 8 developed and 77 developing countries over the 1989-2007 period. Unfortunately, we have to eliminate several crises because of the limited firm-level data in COMPUSTAT. First, we eliminate 49 crisis-countries that are not available in COMPUSTAT during the required period. Second, we eliminate five countries for which we do not have data on financial debt or controls at firm-level, or data on banking market concentration, regulation, and supervision characteristics. Finally, since we use a GMM estimator with one lag of the dependent variable, firms for which we do not have data for more than three consecutive years have to be excluded from the sample. Most of the countries we have to drop from our sample because of the lack of information, both at firm- and country-level, are developing countries (46 developing countries versus three developed countries). Therefore, our final sample is made up of an incomplete panel of 3,396 industrial firms from 26 countries (five developed and 21 developing) and a total of 27 systemic banking crises that occurred during 1989-2007 (18,589 observations).[3]

3.2. METHODOLOGY

We apply the traditional dynamic model of capital structure widely used in the previous literature.[4] The debt model is based on the existence of a target level of debt and on the firm's movement towards this target level. It assumes that changes in the debt ratio (D_{it}-D_{it-1})

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[2] Laeven and Valencia (2008) define a banking crisis as systemic when the country's corporate and financial sectors experience a large number of defaults, and financial institutions and corporations face great difficulties for repaying contracts on time. In some cases, the crisis is triggered by depositor runs on banks, though in most cases it is a general realization that systemically important financial institutions are in distress.

[3] Outliers at 1% level are eliminated from the sample. We check the robustness of the results considering the relative importance of each country in the global sample. We drop countries that do not represent more than 0.3% of the sample in terms of number of firms. The dropped countries in this case are: Colombia, Czech Republic, Hungary, Jamaica, Jordan, Nigeria, Panama, Sri Lanka, Tunisia, Venezuela, Zambia, and Zimbabwe. The results do not change.

[4] See, for instance, Gaud et al. (2005), Flannery and Rangan (2006), or González and González (2008).

partially absorb the difference between the target leverage (D_{it}^*) and the lagged leverage (D_{it-1}):

$$(D_{it}-D_{it-1}) = \alpha\,(D_{it}^*-D_{it-1}), \quad 0< \alpha <1$$

[1]

Where α is the speed of adjustment to the target leverage. If transaction costs are equal to zero, i.e., α=1, then $D_{it}= D_{it}^*$, and firms automatically adjust their debt level to the target level. If α=0, $D_{it}= D_{it-1}$, indicating that transaction costs are so high that no firms adjust their debt to the target leverage. Given this, we can define the model of firm leverage as:

$$D_{i,t} = \alpha D_{it}^* +(1-\alpha)D_{it-1}$$

[2]

Given that D_{it}^* is an unobservable value, we define an empirical model explaining the target debt that is based on a set of traditional determinants of capital structure indicated in Rajan and Zingales (1995), that is: firm size (SIZE), the level of firms' tangible intensity (PPE), profitability (PROFIT), and growth opportunities (GROWTH). So, the target debt value is defined by the following equation:

$$D^*{}_{i,t} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 PPE_{it} + \beta_3 PROFIT_{it} + \beta_4 GROWTH_{it} + \varepsilon_{it}$$

[3]

We extend this traditional model to capture the change in debt structure during and after a banking crisis. As estimations are carried out with panel data, our basic model is:

$$D_{it} = \alpha\,\beta_0 + (1-\alpha)D_{it-1} + \alpha\,\beta_1 SIZE_{it} + \alpha\,\beta_2 PPE_{it} + \alpha\,\beta_3 PROFIT_{it} + \alpha\,\beta_4 GROWTH_{it} + \alpha\,\beta_5\,CRISIS_{jt} + \alpha\,\beta_6\,POSTCRISIS_{jt} + C_j + I_k + Y_t + \theta_{kj} + \lambda_{jt} + \mu_i + \omega_{it}$$

[4]

Where i indicates the firm, k indicates the industrial sector, j the country, and t the years. $CRISIS_{jt}$ is a dummy variable that takes a value of one for years in the crisis period and zero otherwise. $POSTCRISIS_{jt}$ is a dummy variable that takes a value of one in the post-crisis period and zero otherwise. We define the sub-periods around the banking crisis date following

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Krozsner et al. (2007) and Dell'Ariccia et al. (2008). Since it is difficult to identify the crisis period and, specifically, the end of the banking crisis, we consider the crisis periods as (t, t+2), where t is the inception date of the crisis provided by the Laeven and Valencia (2008) database. In order to guarantee that the pre-crisis period is not affected by crisis years, we separate the crisis period by 3 years from the pre-crisis period. That is, we define the pre-crisis period as (t_0, t-3), t_0 being the first year in our sample period (generally, 1989 or the earliest available), and t the crisis inception year. Finally, the post-crisis period is defined as (t+3, T), t being the inception date of the crisis and T the final year in our sample (generally, 2007 or the latest available).

We include as explanatory variables a set of specific effects. These specific effects should control for most shocks affecting firms' debt. C_j is a country fixed effect, I_k is an industry fixed effect, Y_t is a year fixed effect. θ_{kj} is an industry-country specific effect to control not only for characteristics that are specific to either an industry or a country, but also for characteristics that are specific to an industry when it is located in a particular country, as long as these are persistent over time. These include, for instance, the effect of persistent differences in size, concentration, financial frictions, or institutional characteristics that may generate different firm leverage patterns across industries and countries. φ_{kt} is an industry–year specific effect. It controls for the variation coming from worldwide industry shocks. This approach has the advantage that is less likely to suffer from omitted variable bias or model specification than traditional regressions. Moreover, inclusion of these specific effects avoids the need for the market structure, regulatory, and supervisory variables to enter the regression on their own. It allows us to focus only on the terms of their interaction.[5]

Methodologically, we apply the generalized method of moments (GMM) estimator developed for dynamic models of panel data by Arellano and Bond (1991). In particular, we use the difference-GMM estimator in two steps. This method takes first differences of the variables in order to control for the presence of unobserved firm-specific effects. So, μ_i is a firm-specific effect, which is assumed to be constant for firm i over t, and ω_{it} is a white-noise error term. Moreover, GMM estimations address the autoregressive process in the data regarding the behavior of the debt ratio (i.e. the need to use a lagged-dependent-variables model to capture the dynamic nature of the capital structure decisions). Finally, the GMM estimator controls for the potential endogeneity of the set of explanatory variables. We control for the potential

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[5] Braun and Larrain (2005) use this procedure to control for other factors affecting the relationship between crises and economic growth.

endogeneity of SIZE, PPE, PROFIT, and GROWTH in the GMM estimations using the two to four period lags of the same variables as instruments.

As the consistency of the GMM estimator depends on the validity of the instruments, we consider two specification tests suggested by Arellano and Bond (1991). The first is a Sargan test of over-identifying restrictions, which tests the overall validity of the instruments. This test confirms the absence of correlation between the instruments and the error term in our models. The second test examines the hypothesis of absence of second-order serial correlation in the first-difference residuals (m_2). In our models, this hypothesis of second-order serial correlation is always rejected. Although there is first-order serial correlation (m_1) in the differentiated residuals, it is due to first differences in models.

3.3. VARIABLES

3.3.1. Debt Structure

We use two proxies to measure firms' debt structure: 1) Following previous studies, we measure firms' debt availability by the ratio between the book value of long-term debt and the market value of total assets (Titman and Wessels, 1988; Demirgüç-Kunt and Maksimovic, 1999; Booth et al., 2001; and González and González, 2008, among others). Long-term debt is the most sensitive debt to the typical informational problems of adverse selection and moral hazard between banks and firms. Market value of assets is defined as total assets minus book value of equity plus market value of equity. 2) We measure firms' debt maturity by the ratio between the book values of long-term and total debt. This measure has been used by Demirgüç-Kunt and Maksimovic (1999). Table 1 reports the descriptive statistics by country (mean, median, standard deviation, minimum, maximum, and VIF)[6]. We find a wide variation across countries in the amount of debt and in debt maturity for firms. Mexico has the maximum mean value for our proxies of debt availability (0.3687) and maturity (0.3690) whereas Zambia has the lowest mean values (0.0001 and 0.0002, respectively).

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[6] A common rule of thumb is that if VIF > 10 then multicollinearity is high (See Gujarati, 2003; Beck et al., 2006b). Studenmund (2006) states that if VIF exceeds the value of 5, then multicollinearity problems exist. In our case, we observe that VIF always takes values below 5. This result indicates that there are no multicollinearity problems among the explanatory variables.

3.3.2. Firm-level Control Variables

We define the set of firm-level control variables following previous studies (Rajan and Zingales, 1995). We use the natural logarithm of total sales (SIZE) as the measure of firm's size. The size of the firm is related to the level of diversification and may be an inverse proxy for the probability of default. We proxy the tangibility of assets by the percentage of property, plant and equipment in total assets (PPE). This variable was used by Titman and Wessels (1988) as an indicator that is positively related to the collateral value. Following Gaud et al. (2005), we measure profitability (PROFIT) as earnings before interest and taxes plus depreciation expenses and provisions (non-cash deductions from earnings) divided by total assets. We measure growth opportunities (GROWTH) using the market-to-book ratio as in Rajan and Zingales (1995), Gaud et al. (2005), Flannery and Rangan (2006).

3.3.3. Country-Level Variables

We measure bank market concentration (CONC) as the annual fraction of bank assets held by the three largest commercial banks in each country. This measure has been widely used in previous papers such as Cetorelli and Gambera (2001), Demirgüç-Kunt et al. (2004), and Beck et al. (2006a). Table 1 shows a wide variation of bank market concentration across countries. This variable ranges from the minimum average value found in India (0.3425) to the maximum in Finland (0.9556).

We include two regulatory variables. The first is whether banks are allowed to take part in activities that generate non-interest income. This variable indicates whether bank activities in the securities, insurance, and real estate markets are: (1) unrestricted, (2) permitted, (3) restricted, or (4) prohibited. This indicator, theoretically, can range from a minimum value of 1 to a maximum value of 12, where higher values indicate more restrictions on bank activities (RESTRICT). In our sample, this variable goes from a minimum value of 4 in Sri Lanka to a maximum value of 10 in Colombia, Indonesia, and Japan. We consider in a single variable the specific legal restrictions on bank ownership and control of non-financial firms (PART). We consider this legal restriction separately from restrictions on non-traditional banking activities in order to analyze the influence of mixing banking and commerce on the impact of banking crises on capital structure. This variable can range, in theory, from a minimum value of 1 to a maximum value of 4. It is constructed giving value 1, 2, 3, or 4 if the participation of banks in the capital of non-financial firms is (1) unrestricted, (2) permitted, (3) restricted, or (4)

prohibited. Therefore, higher values in this variable indicate more stringent regulation on bank participation in the ownership and control of non-financial firms. In our sample, this variable receives the lowest value in India (1) and the highest in Indonesia and Zambia (4). Information on RESTRICT and PART comes from the World Bank's Bank Regulation and Supervision Database described in Barth et al. (2004).

Second, we also analyze if the impact of banking crises on firms' debt and maturity differs among countries depending on private monitoring and official supervisory power of banks. We measure private monitoring using the private monitoring index from Barth et al. (2004) (MONITOR). This variable can range from 0 to 10, where a higher value indicates more private oversight. Japan, South Korea, and Norway present the highest value of private monitoring of banks (10). Panama and Tunisia are the countries with the lowest value for this index in our sample (6). A country's official supervisory power (OFFICIAL) is a variable calculated by Barth et al. (2004) and measured by adding a value of 1 for each affirmative answer to 14 questions intended to gauge the power of supervisors to undertake prompt corrective action, to restructure and reorganize troubled banks and to declare a deeply troubled bank insolvent. This variable can in theory range from 0 to 14, where a higher value indicates more official supervisory power. In our sample the highest value is found in Jordan, Turkey, and Zimbabwe (14), whereas Finland has the lowest one (6).

We consider a dummy variable named DEVELOP that takes value 1 if the country is developed and 0 otherwise. Countries are classified as developed if they are on the "High Income" group of the World Bank classification. Countries in any other classification group are considered as developing countries.

We only consider the exogenous component of all these variables at country level using instruments for them and thus controlling for potential simultaneity bias. Each proxy of the regulatory and supervisory environment is regressed on the instruments proposed by Barth et al. (2004): five legal origin dummy variables (English, French, German, Scandinavian, and Socialist); the latitudinal distance from the equator; and the religious composition of the population in each country (Catholic, Protestant, Muslim, other).

Table 2 reports the correlation matrix. We observe that the measure of debt availability is highly correlated to debt maturity. As most of the previous empirical evidence has shown, debt ratios are positively related to firm size. We also find a positive correlation between

firms' capital structure and their asset tangibility and profitability, suggesting the greater value of tangible assets as collateral. Debt availability and maturity correlate positively with growth opportunities, indicating the existence of higher financing needs in firms with more growth opportunities. Bank concentration is negatively correlated to leverage and maturity. This relationship may be explained by the global reduction in credit availability and maturity that occurs in countries with more concentrated banking systems. The correlation matrix also shows a positive relationship between the level of restrictions on non-traditional banking activities (RESTRICT) and firms' debt structure. This result is consistent with a stronger legal obligation of banks to focus on credits and deposits fostering lending relationships and the access of firms to debt. However, restrictions on the ownership and control of non-financial firms (PART) are negatively related to firms' capital structure. We also find a negative correlation between the index of official supervision (OFFICIAL) and the measure of firms' debt maturity. This result may be related to the fact that the stronger the official supervisory power enforced by the legal authorities, the more demanding the credit conditions required by banks. Our proxy of private supervision of banks (MONITOR) is positively related to both availability and maturity of debt. DEVELOP presents a positive and significant correlation to our two dependent variables, indicating the greater availability and maturity of firms' debt in more developed countries.

INSERT TABLE 2 ABOUT HERE

4. EMPIRICAL RESULTS

4.1. BANKING CRISES AND FIRMS' DEBT STRUCTURE

In this section we present the results on the effects of banking crises on firms' debt structure. Table 3 reports the results of the partial-adjustment model. The non-significant values of the Sargan test confirm the validity of the instruments in all the estimations except for column (4), where the Sargan test is significant at the 10% level.

Columns (1) and (6) replicate the traditional model of Rajan and Zingales (1995) to explain firm leverage during normal periods. In the subsequent estimations, we incorporate the effects of banking crises on firms' capital structure, both debt availability and maturity. In columns (2) and (7) we incorporate a dummy variable (CRIS-POSTCRIS) that takes a value of one for

years within both the crisis and the post-crisis periods. This variable would indicate how firms' debt structure changes during these periods compared to the pre-crisis period. We separate crisis and post-crisis periods in columns (3) and (8) including the dummy variable CRISIS, which takes a value of 1 only during the crisis period, and 0 otherwise; and the dummy variable POSTCRISIS, which takes a value of 1 only during the post-crisis years.

The negative and statistically significant coefficients of CRIS-POSTCRIS in columns (2) and (7) indicate, respectively, that banking crises reduce both the availability and the maturity of firms' debt. The negative coefficients of the CRISIS and POSTCRISIS variables in columns (3) and (8) indicate that this reduction does not only take place during crisis periods, but also persists after the crisis years. This result implies that the level and maturity of firms' debt is lower during the crisis and post-crisis period than before the crisis. It suggests that banking crises have an independent negative effect on firms' leverage and firms' debt maturity that persists even after the crisis years.

In columns (4), (5), (9), and (10), we analyze potential differences between developed and developing countries. We add an interaction term between our proxies of the crisis and post-crisis periods (CRIS-POSTCRIS, CRISIS, and POSTCRISIS) and DEVELOP. The negative and significant coefficients of the CRIS-POSTCRIS dummy variable in columns (4) and (9) indicate a negative effect in developing countries of the crisis and post-crisis years on firms' debt structure. We observe in columns (5) and (9) that this negative effect on firm's debt structure in developing countries exists in both crisis and post-crisis periods. The coefficients of both CRISIS and POSTCRISIS are significant and negative when they are simultaneously included in the regressions. These results indicate a global negative effect of banking crises on capital structure in developing countries. Moreover, the non-significant coefficients of the interaction term CRIS-POSTCRIS+DEVELOP in columns (4) and (9) suggest that there are no differences in the negative effect on firms' debt structure between developing and developed countries when we compare the crisis and post-crisis period versus the pre-crisis period. This conclusion remains when we analyze separately the three sub-periods (pre-crisis, crisis, and post-crisis) in column (5). Only the positive and significant coefficient of CRISIS*DEVELOP in column (10) suggests that the negative effect on firms' debt maturity during the crisis years is lower in developed than in developing countries.

The negative effects on firm's debt structure that we find in our sample, mostly made up of developing countries, are consistent with the arguments provided by Dell Ariccia et al. (2008)

and Krozsner et al. (2007). These authors find a stronger negative impact of banking crises on economic growth of industries that depend more on external finance. They argue that this negative effect on economic growth is caused by the reduction in the credit supply during periods of banking crises, which mostly impacts on industries that depend largely on external finance. In this paper, we provide direct evidence on the negative effect of banking crises on the lending channel through the reduction in both credit availability and maturity. This negative effect occurs during crisis years and persists during the post-crisis period.

The positive and statistically significant coefficients of the lagged value of leverage and maturity of debt suggest that firms have a target point of debt and maturity to which they partially adjust in each period. Coefficients for these lagged variables take values between 0.31-0.33, which implies a value of α of approximately 0.69-0.67. Previous papers also find different values for α. Flannery and Rangan (2006), for example, find values of α ranging between 0.30 and 0.70 for the US.

Among the firm variables, we obtain a positive and statistically significant coefficient for firm size in columns (1), (2), (8), (9), and (10), indicating that larger firms have greater access to bank financing. The positive and statistically significant coefficients of PPE in all the estimations are consistent with tangible assets being useful as collateral to reduce agency costs and adverse selection problems between firms and banks. We obtain negative and significant coefficients for our proxy of firm's growth opportunities (GROWTH) in all the estimations. These negative coefficients may reflect the existence of higher agency costs between shareholders and debtholders that make access to external sources of financing for firms more difficult. We do not, however, obtain significant coefficients at conventional levels for firm profitability.

INSERT TABLE 3 ABOUT HERE

4.2. BANKING CRISES AND FIRMS' DEBT STRUCTURE: FIRM-LEVEL CHARACTERISTICS

In this section we examine if the effects of banking crises on firms' debt structure vary across firms depending on their specific characteristics. In particular, we analyze potential differential effects of banking crises on debt availability and maturity depending on size, tangibility of assets, profitability, and growth opportunities of firms. In Table 4 we include

interaction terms between the dummy variable that indicates the crisis and post-crisis years (CRIS-POSTCRIS) and dummy variables for each firm-level characteristic (D_SIZE, D_PPE, D_PROFIT, and D_GROWTH). These firm-level dummy variables take value 1 if the firm is above the median value of each characteristic, and 0 otherwise. In Table 4 we report the results on the effect of banking crises on both firms' debt availability and maturity. The results obtained are closely similar for the two dependent variables.

We find that the CRIS-POSTCRIS dummy variable has a negative and statistically significant coefficient in all the estimations in Table 4, indicating that the negative effect of banking crises on capital structure persists after controlling for different firm-level characteristics. We also observe that the effect of banking crises on firms' capital structure varies across firms depending on some of these firm-level characteristics. Specifically, we obtain a positive and significant coefficient for the interaction term CRIS-POSTCRIS*D_SIZE. This result is consistent with our hypothesis H.1.a and suggests that, although banking crises have a negative impact on capital structure, this negative effect is reduced for larger firms. Smaller firms find greater financial constraints that become more relevant during periods of banking crises because of the higher restrictions on access to credit during these periods. Smaller firms, therefore, experience a greater reduction in both availability and maturity of bank debt.

Our results also show a positive and statistically significant coefficient for the interaction variable CRIS-POSTCRIS*D_GROWTH. This indicates that banking crises affect debt structure more negatively in firms with less growth opportunities. This result is consistent with the idea developed in Gilson et al. (1990) that growth opportunities place firms in a better position to negotiate with banks to reduce conflicts of interest and guarantee access to bank financing.

Finally, the non-significant coefficients of CRIS-POSTCRIS*D_PPE and CRIS-POSTCRIS*D_PROFIT do not suggest different effects among firms depending on their tangible intensity or profitability. Results do not vary in columns (5) and (10) when we simultaneously include all the interaction terms in a single model. The non-significant values of the Sargan test confirm the validity of the instruments in all the estimations except for column (3), where the Sargan test is significant at the 10% level.

INSERT TABLE 4 ABOUT HERE

4.3. BANKING CRISES AND FIRMS' DEBT STRUCTURE: INFLUENCE OF BANK CONCENTRATION, REGULATION, AND SUPERVISION

We now empirically explore if the impact of banking crises on firms' debt structure may be different among countries depending on bank market concentration, regulation, and supervision. In the estimations, we sequentially include an interaction term between the crisis dummy variable and the particular country-level variable. The limited number of instruments, the extensive number of country variables, and the need to use interaction terms with the crisis dummy variable all support separate rather than simultaneous incorporation of the interaction terms. Barth et al. (2004) use a similar sequential procedure to analyze the influence of regulatory and supervisory practices on bank development. Table 5 reports the results.

The positive coefficients of the interaction CRIS-POSTCRIS*CONC in all the estimations suggest that the negative impact of banking crises on debt availability and maturity is lower in countries with higher levels of banking market concentration. This result is consistent with previous literature on relationship banking, finding that higher market concentration increases the benefits for banks of lending relationships and promotes access to bank financing for firms (Petersen and Rajan, 1995). Although more concentrated banking markets might be related to less competition (and, therefore, lower credit supply and higher cost of financing), the results suggest that bank concentration has more benefits than costs during periods of banking crises in terms of debt availability and maturity. During banking crises, moral hazard and adverse selection problems between banks and firms are even stronger than during non-crisis periods. Our results suggest that bank concentration and lending relationships become more valuable for lifting constraints on firms' external financing during periods of banking crises.

We check if the results of the impact of bank concentration on credit availability and maturity persist after controlling for bank regulation and supervision. In columns (2) to (5) and (7) to (10) we add, sequentially, interaction terms between the CRIS-POSTCRIS dummy variable and each regulatory and supervisory variable. We observe that the coefficient of CRIS-POSTCRIS and the interaction coefficients of CRIS-POSTCRIS*CONC do not vary after including the effect of bank regulation and supervision.

Regulatory and supervisory variables, however, have additional effects to those of bank concentration. The results in columns (2) and (7) show that a marginal increase in the restrictions on non-traditional banking activities diminishes the negative impact of banking crises on the availability and maturity of firms' debt. The result is consistent with the higher probability of establishing lending relationships between banks and firms in countries where banks are legally forced to only focus on their traditional activities of credits and deposits. In environments where non-traditional activities are legally restricted, banks are more likely to invest in the acquisition of soft information from firms by creating close lending relationships with them. Therefore, the results suggest that relationship banking makes it easier for firms to access external sources of financing during periods of banking crises in more regulated banking markets.

The results in columns (5) and (10) of Table 5 show a positive and statistically significant coefficient of the interaction term CRIS-POSTCRIS*OFFICIAL. This result indicates that a marginal increase in the official supervisory power diminishes the negative effect of banking crises on firms' debt structure. We corroborate the importance of banking supervision performed by official authorities to avoid the more negative impact of banking crises on the availability and maturity of debt for firms.

The interaction terms of CRIS-POSTCRIS*PART and CRIS-POSTCRIS*MONITOR do not have statistically significant coefficients at conventional levels. The non-significant coefficients of CRIS-POSTCRIS*PART may be the consequence of two opposite effects. On the one hand, restrictions on bank ownership and control of non-financial firms eliminate a source of connection between banks and firms, and may reduce the benefits of lending relationships. On the other hand, these restrictions may avoid a propagation effect from banks to firms through the ownership channel in case of a banking crisis. The non-significant coefficients of CRIS-POSTCRIS*MONITOR are consistent with a counterbalancing effect between the lower benefits of lending relationships in environments where private monitoring facilitates financial development (negative effect) and easier access to corporate debt financing in such environments (positive effect).

INSERT TABLE 5 ABOUT HERE

5. CONCLUSIONS

This paper analyzes how banking crises affect the availability and maturity of firms' debt. We use a sample of 3,396 industrial firms from 26 countries (5 developed and 21 developing countries) experiencing a total of 27 episodes of systemic banking crises. The results show a reduction in both availability and maturity of firms' debt during periods of banking distress and in the post-crisis years in developing countries. We also test the importance of firm-level characteristics on the impact of banking crises on firms' debt structure. Our results show that the negative effect of banking crises on credit supply is especially strong in small firms and in firms with less growth opportunities.

The results also show that the higher the bank concentration, the lower the negative effect of banking crises on firms' debt availability and maturity. This finding suggests that close lending relationships between banks and firms are especially valuable during periods of banking crises. The greater moral hazard and adverse selection problems during banking crises increase the value of lending relationships for minimizing the impact of the reduced bank credit supply on firms' leverage.

Our study reveals the relevance of bank regulation and supervision for changes in credit supply during banking crises. We find that the stricter the restrictions on non-traditional banking activities, the lower the negative impact of banking crises on firms' debt structure. This result supports the idea that the legal obligation for banks to only focus on their traditional activities of credits and deposits fosters the creation of close lending relationships between banks and firms, thus guaranteeing access for firms to external sources of financing even during periods of banking crises. Our results also corroborate the importance of official supervision to avoid the more negative effects of banking crises on credit supply.

The results have important policy implications for periods of banking crises in developing countries. First, they suggest that optimal antitrust legislation must take into account the relevance of bank concentration for mitigating the negative impact of banking crises on firms' credit availability and maturity. This result provides additional empirical evidence on the relevance of bank concentration for financial stability. Beck et al. (2006a) find that the probability of banking crises is lower in more concentrated bank markets. We now show that a more concentrated banking market also diminishes the negative consequences on credit availability and maturity when a banking crisis occurs in developing countries.

Second, more stringent restrictions on non-traditional banking activities and greater official supervisory power are useful for mitigating the negative effects on credit availability and maturity during banking crises. This result indicates that optimal bank regulation and supervision should not only consider their effect on the probability of a banking crisis but also on the credit supply when a banking crisis occurs.

Finally, as the effect on credit supply depends on firms' characteristics (basically, size and growth opportunities), optimal regulation should also depend on the characteristics of the predominant "type of firm" in a country.

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APPENDIX
Variable Definition and Sources

Variable	Definition	Source
Dependent Variables: Firm's Debt Structure		
Debt Availability	Annual ratio between the book value of long-term debt and the market value of total assets.	COMPUSTAT Global Vantage Database
Debt Maturity	Annual ratio between the book value of long-term debt and the book value of total debt.	COMPUSTAT Global Vantage Database
Firm-Level Control Variables		
SIZE	Measured as the natural logarithm of firm's total sales.	COMPUSTAT Global Vantage Database
PPE	Refers to the tangibility of assets approximated by the percentage of property, plant and equipment in total assets.	COMPUSTAT Global Vantage Database
PROFIT	Defined as earnings before interest and taxes plus depreciation expenses and provisions (non-cash deductions from earnings) divided by total assets.	COMPUSTAT Global Vantage Database
GROWTH	Refers to the growth opportunities of the firm measured as the market-to-book ratio.	COMPUSTAT Global Vantage Database

Country-Level Variables

CONC	Is the annual ratio between the assets of the three largest banks and the total amount of assets of the banking industry in each country.	Financial Structure Dataset (World Bank)
RESTRICT	This variable indicates whether bank activities in the securities, insurance, and real estate markets are: (1) unrestricted, (2) permitted, (3) restricted, or (4) prohibited. This indicator can range from 1 to 12, where higher values indicate more restrictions on non-traditional bank activities.	World Bank Regulation and Supervision Database (2004)
PART	Refers to the regulatory restrictions on bank ownership and control of non-financial firms. This variable ranges from 1 to 4, and higher values of this variable indicate more restrictions on bank ownership of non-financial firms.	World Bank Regulation and Supervision Database (2004)
OFFICIAL	Index of official supervisory power. Adds one for an affirmative response to each of the following 14 questions: 1. Does the supervisory agency have the right to meet with external auditors to discuss their report without the approval of the bank? 2. Are auditors required by law to communicate directly to the supervisory agency any presumed involvement of bank directors or senior managers in illicit activities, fraud or insider abuse? 3. Can supervisors take legal actions against external auditors for negligence? 4. Can the supervisory authority force a bank to change its internal organizational structure? 5. Are off-balance sheet items disclosed to supervisors? 6. Can the supervisory agency order the bank's directors or management to constitute provisions to cover actual or potential losses? 7. Can the supervisory agency suspend the directors' decision to distribute: a) Dividends? b) Bonuses? c) Management fees? 8. Can the supervisory agency legally declare – such that this declaration supersedes the rights of bank shareholders – that a bank is insolvent? 9. Does the banking law give authority to the supervisory agency to intervene in a problem bank, i.e. suspend some or all ownership rights? 10. Regarding bank restructuring and reorganization, can the supervisory agency or any other government agency do the following: a) Supersede shareholder rights? b) Remove and replace management? c) Remove and replace directors?. Higher values of this variable indicate stronger official supervisory power.	World Bank Regulation and Supervision Database (2004)
MONITOR	This variable increases by a value of one for each of the following characteristics for a country: 1) if the income statement contains accrued, but unpaid interest/principal while the loan is performing; 2) if the income statement contains accrued, but unpaid interest/principal while the loan is non-performing; 3) the number of days in arrears after which interest income ceases to accrue; 4) if consolidated accounts covering bank and any non-bank financial subsidiaries are required; 5) if off-balance sheet items disclosed are disclosed to supervisors; 6) if off-balance sheet items are disclosed to public; 7) if banks must disclose risk management procedures to public; 8) if directors are legally liable for erroneous/misleading information; 9) if there have been penalties enforced and 10) if regulations require credit ratings for commercial banks. This variable therefore ranges from 0 to 10, with higher values indicating greater private oversight.	World Bank Regulation and Supervision Database (2004)
DEVELOP	This is a dummy variable that takes value 1 if the country is a developed country and 0 otherwise. Countries are classified as developed if they are on the "High Income" group of the World Bank classification. Countries on any other classification group are considered as not developed.	Financial Structure Dataset (World Bank)

Table 1
Descriptive Statistics

The table shows the basic descriptive statistics of the main variables. We use two leverage variables to capture debt structure: The ratio between the book value of long-term debt and the market value of total assets measures debt availability. The ratio between the book value of long-term debt and the book value of total debt measures debt maturity. SIZE is the natural logarithm of sales. PPE is the ratio between the tangible assets (property, plant and equipment) and total assets. PROFIT is estimated as EBIT plus depreciation expenses and provisions (non-cash deductions from earnings) divided by total assets. GROWTH is growth opportunities and is measured by Tobin's Q. CONC is the measure of banking market concentration calculated as the ratio of the assets of the three largest banks to total assets of the banking industry. RESTRICT indicates the level of restrictions on non-traditional banking activities on securities, insurance, and real state activities. PART is a variable indicating the legal restrictions on the ownership of non-financial firms. OFFICIAL is an index of the supervisory power of banks. MONITOR is an index of the private monitoring of banks. DEVELOP indicates if the countries are developed or not.

Country	% Firms	Banking Crises	BOOK VALUE OF LONG-TERM DEBT/MARKET VALUE OF TOTAL ASSETS	BOOK VALUE OF LONG-TERM DEBT/BOOK VALUE OF TOTAL DEBT	SIZE	PPE	PROFIT	GROWTH	CONC	RESTRICT	PART	OFFICIAL	MONITOR	DEVELOP
Argentina	0.33%	1995,2001	0.1836	0.1846	6.9696	0.7399	0.1460	0.4721	0.4003	8	3	7	9	0
Colombia	0.30%	1998	0.2370	0.2374	7.8230	0.6186	0.0978	0.3582	0.4026	10	3	13	7	0
Czech Rep.	0.09%	1996	0.2772	0.2797	8.0334	0.6029	0.2555	0.4035	0.6510	9	3	7	8	0
Finland	1.88%	1991	0.2897	0.2902	7.8331	0.5208	0.1547	0.5748	0.9556	5	2	6	9	1
Hungary	0.21%	1991	0.2410	0.2414	7.8365	0.6928	0.1669	0.4011	0.6257	8	3	7	8	0
India	11.41%	1993	0.3593	0.3598	6.9022	0.5630	0.1677	0.5776	0.3425	9	1	10	7	0
Indonesia	3.03%	1997	0.3457	0.3461	6.4854	0.5904	0.1664	0.6382	0.5295	10	4	13	9	0
Jamaica	0.12%	1996	0.1162	0.1167	6.4252	0.4385	0.2017	0.3146	0.8443	9	3	11	9	0
Japan	44.15%	1997	0.1797	0.1800	8.0338	0.5913	0.1052	0.5240	0.3720	10	3	12	10	1
Jordan	0.09%	1989	0.2344	0.2354	7.4887	0.4678	0.1497	0.4288	0.8597	8	3	14	7	0
South Korea	16.21%	1997	0.2181	0.2184	6.8208	0.5300	0.1163	0.5242	0.4414	6	3	11	10	1
Malaysia	10.32%	1997	0.1868	0.1880	6.0511	0.5728	0.1112	0.4664	0.4408	7	3	11	8	0
Mexico	0.77%	1994	0.3687	0.3690	8.6365	0.7010	0.1635	0.5309	0.6337	9	3	8	8	0
Nigeria	0.06%	1991	0.1472	0.1475	7.2342	0.6178	0.2512	0.6261	0.4078	6	3	13	7	0
Norway	1.33%	1991	0.2971	0.2976	7.1819	0.4488	0.1089	0.5435	0.9144	5	2	9	10	1
Panama	0.03%	1988	0.1781	0.1783	9.9632	0.6239	0.1137	0.8757	0.4723	6	2	11	6	0
Philippines	0.65%	1997	0.2824	0.2828	6.6641	0.5911	0.1122	0.4876	0.7049	5	2	11	9	0
Poland	0.39%	1992	0.2190	0.2202	7.3005	0.5534	0.1816	0.4249	0.5767	5	2	7	7	0
Sri Lanka	0.24%	1989	0.1656	0.1657	5.4265	0.5932	0.1604	0.5921	0.6436	4	3	7	8	0
Sweden	2.56%	1991	0.2870	0.2886	6.8732	0.4589	0.0998	0.5185	0.9504	6	3	8	7	1
Thailand	4.53%	1997	0.2408	0.2412	6.2723	0.6260	0.1451	0.5102	0.4929	6	3	8	8	0
Tunisia	0.03%	1991	0.1612	0.1635	13.432	0.8166	0.1743	0.4254	0.4603	8	3	13	6	0
Turkey	1.00%	2000	0.2114	0.2148	7.9213	0.6268	0.2764	0.4958	0.6404	9	3	14	9	0
Venezuela	0.15%	1994	0.2712	0.2716	8.2829	0.5629	0.1277	0.3157	0.4467	7	3	11	7	0
Zambia	0.03%	1995	0.0001	0.0002	5.8766	0.6281	0.3053	0.3899	0.5830	9	4	-	-	0
Zimbabwe	0.09%	1995	0.0112	0.0113	6.0200	0.4797	0.4405	0.4922	0.7605	7	3	14	7	0
Mean			0.2287	0.2292	7.2220	0.5690	0.1226	0.5264	0.4446	8.1699	2.7745	11.0062	9.1451	0.6548
Median			0.1914	0.1919	7.1665	0.5796	0.1189	0.5274	0.3985	9	3	11	10	1
Standard Deviation			0.1856	0.1858	1.7754	0.2444	0.1237	0.2948	0.1554	1.8651	0.6878	1.4322	1.1630	0.4754
Maximum			0.9921	0.9945	14.612	1.0000	0.9964	9.6223	1	10	4	14	10	1
Minimum			0.0001	0.0002	-7.5656	0	-5.6522	0.0006	0.2425	4	1	6	6	0
VIF			-	-	1.3551	1.1170	1.1310	1.1204	1.6152	2.1781	1.9116	2.9940	2.1048	1.57

Table 2
Correlations

The table presents the correlation matrix. The ratio between the book value of long-term debt and the market value of total assets measures debt availability. The ratio between the book value of long-term debt and the book value of total debt measures debt maturity. SIZE is the natural logarithm of sales. PPE is the ratio between the tangible assets (property, plant and equipment) and total assets. PROFIT is estimated as EBIT plus depreciation expenses and provisions (non-cash deductions from earnings) divided by total assets. GROWTH is growth opportunities and is measured by Tobin's Q. CONC is the measure of banking market concentration calculated as the ratio of the assets of the three largest banks to total assets of the banking industry. RESTRICT indicates the level of restrictions on non-traditional banking activities on securities, insurance, and real estate activities. PART is a variable indicating the legal restrictions on the ownership of non-financial firms. OFFICIAL is an index of the supervisory power of banks. MONITOR is an index of the private monitoring of banks. DEVELOP indicates if the countries are developed or not. ***, and ** represent the significance at the 1%, and 5% levels, respectively.

	BOOK VALUE OF LONG-TERM DEBT/MARKET VALUE OF TOTAL ASSETS	BOOK VALUE OF LONG-TERM DEBT/BOOK VALUE OF TOTAL DEBT	SIZE	PPE	PROFIT	GROWTH	CONC	RESTRICT	PART	OFFICIAL	MONITOR	DEVELOP
BOOK VALUE OF LONG-TERM DEBT/MARKET VALUE OF TOTAL ASSETS	1.0000											
BOOK VALUE OF LONG-TERM DEBT/BOOK VALUE OF TOTAL DEBT	0.9992***	1.0000										
SIZE	0.2243***	0.2206***	1.0000									
PPE	0.1138***	0.1111***	0.2148***	1.0000								
PROFIT	0.0731***	0.0709***	0.2566***	0.2137***	1.0000							
GROWTH	0.1928***	0.1847***	0.2562***	0.2749***	0.0898***	1.0000						
CONC	-0.0273***	-0.0259***	-0.1394***	-0.1173***	0.0259***	-0.0799***	1.0000					
RESTRICT	0.0917***	0.0911***	0.3261***	0.1086***	0.0058	0.1093***	-0.5559***	1.0000				
PART	-0.0875***	-0.0872***	0.0606***	0.0218***	-0.0677***	-0.0399***	0.0252***	0.0829***	1.0000			
OFFICIAL	-0.0070	-0.0081*	0.2007***	0.0653***	-0.0509***	0.0500***	-0.5291***	0.6679***	0.4139***	1.0000		
MONITOR	0.0293***	0.0280***	0.2770***	0.0431****	-0.0378***	0.0597***	-0.2678***	0.3230***	0.5795***	0.5897***	1.0000	
DEVELOP	0.0970***	0.1010***	0.3762***	0.0321***	0.0180***	0.0892***	0.0096***	0.5624***	0.2765***	0.2225***	0.4806***	1.000

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Table 3
Banking Crises and Firms' Debt Structure

Regressions are estimated using the Arellano and Bond (1991) two-step GMM difference estimator for panel data with two to four lags of the explanatory variables. We use two dependent variables: 1) the ratio between the book value of long-term debt and the market value of total assets as measure of debt availability; 2) the ratio between the book value of long-term debt and the book value of total debt as measure of debt maturity. As explanatory variables, we include one lag of the dependent variable (DEBTt-1). SIZE is the natural logarithm of sales. PPE is the ratio between the tangible assets (property, plant, and equipment) and total assets. PROFIT is estimated as EBIT plus depreciation expenses and provisions (non-cash deductions from earnings) divided by total assets. GROWTH is growth opportunities and is measured by Tobin's Q. CRIS-POSTCRIS is a dummy variable that takes value 1 for the crisis and post-crisis periods and 0 for the pre-crisis. CRISIS is a dummy variable that takes value 1 for the crisis period and 0 otherwise. POSTCRISIS is a dummy variable that takes value 1 for the post-crisis period and 0 otherwise. The crisis period goes from t to t+2, where t is the inception date of the crisis. The post-crisis period goes from t+3 to T, where t is the crisis inception date and T is the final year in our sample period. DEVELOP is a dummy variable that takes value 1 if it is a developed country and 0 otherwise. T-statistics are between brackets. ***, ** and * represent the significance at the 1%, 5% and 10% levels, respectively.

Explanatory Variables	Book Value of Long-Term Debt / Market Value of Total Assets					Book Value of Long-Term Debt / Book Value of Total Debt				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$DEBT_{t-1}$	0.3285***	0.3300***	0.3312***	0.3272***	0.3298***	0.3292***	0.3254***	0.3156***	0.3138***	0.3136***
	(20.02)	(20.15)	(20.06)	(19.84)	(19.96)	(19.61)	(19.24)	(17.74)	(17.37)	(17.58)
SIZE	0.1671***	0.1526**	0.0150	0.0489	0.0145	-0.0714	-0.0496	0.0307***	0.0283***	0.0281***
	(2.73)	(2.43)	(0.28)	(0.94)	(0.26)	(-1.49)	(-0.93)	(5.49)	(4.90)	(4.83)
PPE	0.1035**	0.0913**	0.2152***	0.1759***	0.1988***	0.1544***	0.1142***	0.2295***	0.2298***	0.2231***
	(2.57)	(2.28)	(5.11)	(4.39)	(4.71)	(3.73)	(2.68)	(4.54)	(4.44)	(4.36)
PROFIT	0.0557	0.0500	-0.0106	-0.0390	-0.0070	-0.0017	-0.0214	-0.0419	-0.0531	-0.0382
	(1.28)	(1.15)	(-0.26)	(-0.96)	(-0.16)	(-0.05)	(-0.56)	(-1.00)	(-1.27)	(-0.91)
GROWTH	-0.5893***	-0.5909***	-0.6982***	-0.6361***	-0.6794***	-0.5484***	-0.5349***	-0.7010***	-0.6808***	-0.6726***
	(-10.35)	(-10.44)	(-12.77)	(-11.74)	(-12.27)	(-10.04)	(-9.44)	(-9.58)	(-9.62)	(-9.21)
CRIS-POSTCRIS		-0.0966*		-0.1864***			-0.2831***		-0.2253***	
		(-1.70)		(-4.20)			(-3.95)		(-3.18)	
CRISIS			-0.2401***		-0.2473***			-0.2328***		-0.3307***
			(-7.12)		(-4.38)			(-3.78)		(-4.35)
POSTCRISIS			-0.2576***		-0.2806***			-0.2146***		-0.2414***
			(-6.69)		(-6.33)			(-3.65)		(-3.85)
CRIS-POSTCRIS * DEVELOP				0.0297					0.0316	
				(1.36)					(1.25)	
CRISIS* DEVELOP					0.0240					0.1458*
					(0.45)					(1.88)
POSTCRISIS * DEVELOP					0.0392					0.0160
					(1.51)					(0.55)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
m_1	-14.84***	-14.86***	-14.71***	-14.71***	-14.69***	-14.85***	-14.73***	-14.41***	-14.37***	-14.37***
m_2	0.82	0.84	0.84	0.80	0.83	0.81	0.81	0.70	0.69	0.68
Sargan Test	404.47	402.80	414.08	424.79*	413.17	405.23	404.12	338.23	337.19	332.31
F-Test	43.63***	42.80***	70.15***	67.35***	64.19***	19.46***	16.13***	17.97***	17.83***	17.18***
# Observations	18,589	18,589	18,589	18,589	18,589	18,589	18,589	18,589	18,589	18,589
# Firms	3,396	3,396	3,396	3,396	3,396	3,396	3,396	3,396	3,396	3,396

Table 4
Banking Crises and Firms' Debt Structure

Regressions are estimated using the Arellano and Bond (1991) two-step GMM difference estimator for panel data with two to four lags of the explanatory variables. We use two dependent variables: 1) the ratio between the book value of long-term debt and the market value of total assets as measure of debt availability; 2) the ratio between the book value of long-term debt and the book value of total debt as measure of debt maturity. As explanatory variables, we include one lag of the dependent variable ($DEBT_{t-1}$). SIZE is the natural logarithm of sales. PPE is the ratio between the tangible assets (property, plant, and equipment) and total assets. PROFIT is estimated as EBIT plus depreciation expenses and provisions (non-cash deductions from earnings) divided by total assets. GROWTH is growth opportunities and is measured by Tobin's Q. CRIS-POSTCRIS is a dummy variable that takes value 1 for the crisis and post-crisis periods and 0 for the pre-crisis. The crisis period goes from t to t+2, where t is the inception date of the crisis. The post-crisis period goes from t+3 to T, where t is the crisis inception date and T is the final year in our sample period. T-statistics are between brackets. ***, ** and * represent the significance at the 1%, 5% and 10% levels, respectively.

Explanatory Variables	Book Value of Long-Term Debt / Market Value of Total Assets					Book Value of Long-Term Debt / Book Value of Total Debt				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$DEBT_{t-1}$	0.3244***	0.3245***	0.3250***	0.3367***	0.3381***	0.3207***	0.3293***	0.3276***	0.3390***	0.3322***
	(19.77)	(19.16)	(20.78)	(20.37)	(21.11)	(18.82)	(19.46)	(19.46)	(20.26)	(19.70)
SIZE	0.0686	0.2154***	0.0105	0.2171***	0.0490	-0.0890	-0.0482	-0.0549	-0.0682	-0.1043**
	(1.22)	(3.48)	(0.21)	(3.77)	(0.86)	(-1.63)	(-0.87)	(-1.06)	(-1.35)	(-1.98)
PPE	0.0718*	0.1386***	0.1887***	0.0328	0.1031***	0.1302***	0.1811***	0.1258***	0.0841**	0.1411***
	(1.72)	(3.46)	(4.93)	(0.80)	(2.63)	(2.99)	(4.11)	(2.99)	(1.98)	(3.45)
PROFIT	0.0287	0.0193	-0.0386	0.0201	0.0395	-0.0268	-0.0229	-0.0122	-0.0177	0.0067
	(0.67)	(0.45)	(-1.08)	(0.47)	(0.97)	(-0.72)	(-0.60)	(-0.34)	(-0.47)	(0.18)
GROWTH	-0.5575***	-0.5390***	-0.6776***	-0.5229***	-0.5189***	-0.5452***	-0.5287***	-0.5246***	-0.5218***	-0.5088***
	(-9.76)	(-9.26)	(-13.40)	(-9.20)	(-9.06)	(-9.45)	(-9.26)	(-9.31)	(-9.37)	(-9.04)
CRIS-POSTCRIS	-0.2758***	-0.2202***	-0.2465***	-0.2974***	-0.3247***	-0.3439***	-0.2841***	-0.2727***	-0.3474***	-0.3701***
	(-3.73)	(-3.09)	(-6.43)	(-4.53)	(-4.60)	(-4.68)	(-3.93)	(-3.83)	(-5.14)	(-5.19)
CRIS-POSTCRIS * D_SIZE	0.0507**				0.0437*	0.0727***				0.0632***
	(2.26)				(1.94)	(3.27)				(2.84)
CRIS-POSTCRIS * D_PPE		0.0186			0.0237		0.0029			0.0211
		(0.75)			(0.92)		(0.12)			(0.83)
CRIS-POSTCRIS * D_PROFIT			-0.0101		-0.0240			-0.0274		-0.0165
			(-0.49)		(-0.90)			(-1.12)		(-0.62)
CRIS-POSTCRIS * D_GROWTH				0.1981***	0.1903***				0.1957***	0.1851***
				(8.33)	(7.95)				(8.37)	(7.84)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
m_1	-14.73***	-14.69***	-14.77***	-14.86***	-14.88***	-14.68***	-14.84***	-14.82***	-14.89***	-14.78***
m_2	0.79	0.89	0.80	0.89	0.90	0.75	0.82	0.80	0.89	0.88
Sargan Test	402.16	395.43	421.92*	382.08	381.16	393.96	405.57	405.22	383.66	375.34
F-Test	38.54***	35.66***	44.88***	30.23***	34.72***	20.40***	15.58***	15.20***	20.71***	38.56***
# Observations	18,589	18,589	18,589	18,589	18,589	18,589	18,589	18,589	18,589	18,589
# Firms	3,396	3,396	3,396	3,396	3,396	3,396	3,396	3,396	3,396	3,396

Table 5
Banking Crises and Firms' Debt Structure: Influence of Bank Concentration, Regulation, Supervision, and Development

Regressions are estimated using the Arellano and Bond (1991) two-step GMM difference estimator for panel data with two to four lags of the explanatory variables. We use two dependent variables: 1) the ratio between the book value of long-term debt and the market value of total assets as measure of debt availability; 2) the ratio between the book value of long-term debt and the book value of total debt as measure of debt maturity. As explanatory variables, we include one lag of the dependent variable (DEBTt-1). SIZE is the natural logarithm of sales. PPE is the ratio between the tangible assets (property, plant, and equipment) and total assets. PROFIT is estimated as EBIT plus depreciation expenses and provisions (non-cash deductions from earnings) divided by total assets. GROWTH is growth opportunities and is measured by Tobin's Q. CRIS-POSTCRIS is a dummy variable that takes value 1 for the crisis and post-crisis periods and 0 for the pre-crisis. The crisis period goes from t to t+2, where t is the inception date of the crisis. The post-crisis period goes from t+3 to T, where t is the crisis inception date and T is the final year in our sample period. RESTRICT indicates the level of restrictions on non-traditional banking activities. PART is a variable indicating the legal restrictions on the ownership of non-financial firms. MONITOR is an index of the private monitoring of banks. OFFICIAL is an index of the supervisory power of banks. T-statistics are between brackets. ***, ** and * represent the significance at the 1%, 5% and 10% levels, respectively.

Explanatory Variables	Book Value of Long-Term Debt/Market Value of Total Assets					Book Value of Long-Term Debt/Book Value of Total Debt				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
$DEBT_{t-1}$	0.3126***	0.3103***	0.3130***	0.3124***	0.3108***	0.3177***	0.3139***	0.3183***	0.3178***	0.3155***
	(18.56)	(18.30)	(18.57)	(18.55)	(18.26)	(18.98)	(18.73)	(19.04)	(19.02)	(18.79)
SIZE	0.2033***	0.2246***	0.2071***	0.2176***	0.2210***	-0.0517	-0.0319	-0.0494	-0.0353	-0.0266
	(3.25)	(3.64)	(3.32)	(3.48)	(3.64)	(-1.16)	(-0.68)	(-1.11)	(-0.81)	(-0.59)
PPE	0.1200***	0.1358***	0.1159***	0.1135***	0.1350***	0.1769***	0.1984***	0.1727***	0.1701***	0.1861***
	(2.83)	(3.14)	(2.75)	(2.69)	(3.17)	(4.01)	(4.36)	(3.93)	(3.88)	(4.17)
PROFIT	0.0814*	0.0479	0.0832*	0.0763	0.0661	0.0048	-0.0255	0.0058	-0.0014	-0.0065
	(1.71)	(1.01)	(1.74)	(1.60)	(1.39)	(0.12)	(-0.63)	(0.14)	(-0.04)	(-0.16)
GROWTH	-0.6362***	-0.6289***	-0.6349***	-0.6239***	-0.6324***	-0.5520***	-0.5573***	-0.5491***	-0.5376***	-0.5533***
	(-11.15)	(-11.09)	(-11.13)	(-10.92)	(-11.15)	(-10.40)	(-10.46)	(-10.34)	(-10.18)	(-10.57)
CRIS-POSTCRIS	-0.2290***	-0.5469***	-0.2097***	-0.2971**	-0.5919***	-0.2876***	-0.5675***	-0.2662***	-0.3694***	-0.6317***
	(-3.33)	(-4.68)	(-2.70)	(-2.67)	(-4.47)	(-4.01)	(-4.77)	(-3.31)	(-3.21)	(-4.72)
CRIS-POSTCRIS * CONC	0.2234***	0.3567***	0.2320***	0.2378***	0.3666***	0.1837***	0.3184***	0.1944***	0.1989***	0.3319***
	(3.66)	(4.92)	(3.78)	(3.94)	(4.66)	(3.02)	(4.44)	(3.16)	(3.32)	(4.28)
CRIS-POSTCRIS * RESTRICT		0.0298***					0.0273***			
		(3.29)					(3.05)			
CRIS-POSTCRIS * PART			-0.0090					-0.0112		
			(-0.50)					(-0.62)		
CRIS-POSTCRIS * MONITOR				0.0075					0.0090	
				(0.76)					(0.90)	
CRIS-POSTCRIS * OFFICIAL					0.0286***					0.0273***
					(3.86)					(3.27)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
m_1	-14.14***	-14.08***	-14.15***	-14.14***	-14.08***	-14.20***	-14.15***	-14.22***	-14.21***	-14.18***
m_2	0.90	0.87	0.90	0.90	0.88	0.91	0.88	0.91	0.91	0.89
Sargan Test	364.16	363.85	364.17	363.39	363.41	368.72	366.94	368.87	367.53	366.18
F-Test	65.66***	62.26***	63.14***	63.56***	60.03***	30.32***	28.71***	29.26***	29.37***	29.13***
# Observations	17,679	17,679	17,679	17,679	17,679	17,679	17,679	17,679	17,679	17,679
# Firms	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290