Does Financial Globalization Discipline Politically Connected Firms?

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Abstract

This paper studies the effect of financial globalization on the allocation of capital within countries. We show that, in countries with weak governance, politically connected firms benefit relatively more of financial integration than other firms. They experience a positive differential effect on investment financed by external debt, even though they report a slower growth of profits. These results suggest that, under certain circumstances, financial integration does not improve the allocation of capital. We provide a theoretical explanation for these results emphasizing regulatory forbearance of domestic banks lending to politically connected firms, and the "uninformed" characteristic of foreign capital.

JEL Classification Numbers: G21, G30, F30, O16, O43.

I. Introduction

Over the past decades, financial globalization has advanced at a solid pace in many countries, sometimes motivating bold statements in favor or against the integration of financial markets. A growing body of research suggests however that assessing the trade-offs associated with international financial integration requires a precise understanding of country-specific factors to identify the two-way interactions between the forces of integration on the one hand, and domestic policies and institutional arrangements on the other hand.

While some authors uncover a strong effect on growth (Bekaert, Harvey and Lundblad, 2005), the existing evidence of the direct impact of financial globalization on growth remains mixed. A potential explanation is that direct effects might be difficult to uncover in cross-country regressions precisely because the main benefits of integration are indirect: international financial integration may help develop more efficient and more open domestic financial markets, improve overall institutions and governance, as well as macroeconomic discipline (Kose and al., 2006). Henry (2006) argues that it is not surprising that cross-country regressions have found at best a weak effect of capital account liberalization on long-run growth. Indeed, the neoclassical model predicts that the effect on growth should be temporary, not permanent.

This paper contributes to this debate by exploring both empirically and theoretically the effect of international financial integration on the allocation of capital by domestic financial institutions. Our focus on allocative efficiency *within* countries differs from the more standard allocative efficiency debate that focuses on the allocation of capital *across* countries.

We ask the following questions. Has international financial integration *per se* disciplined domestic financial institutions and led to a better allocation of capital within countries? If not, what country characteristics may prevent/foster an efficient allocation of capital? Stulz (2005) argues that "twin agency problems" can reduce the ability of a country to take advantage of financial globalization. The first agency problem refers to corporate insiders being able to appropriate private benefits of control and expropriating outside investors. The second agency problems refers to the State expropriating investors, or offering favors to specific groups or individuals in the society. Tirole (2003) explores theoretically the implications of dual agency problems on the efficiency of foreign borrowing. In this paper, we focus on debt creating capital flows, for which twin agency problems are likely to be the most severe.

We provide empirical evidence suggesting that the interaction between the two agency problems significantly affects the domestic allocation of capital in financially integrated countries. Our empirical results are consistent with the following mechanism. Assume that some firms have obtained political favors that facilitate access to credit from domestic banks. A fall in the cost of external finance driven by financial integration may not necessarily translate into a better allocation of capital if those politically-connected firms can disproportionately benefit from this lower cost of capital via the domestic banking system.

Our paper provides a theory and empirical evidence consistent with such a mechanism. Specifically, we test the two alternative hypothesis: (i) the "discipline effect": financial integration should unconditionally lead to a better allocation of capital, and political connections should become irrelevant after integration, after controlling for standard firm characteristics; (ii) the "political agency effect": if dual agency problems are relevant,

politically connected firms may benefit relatively more (not less) of abundant capital than other firms. Thus, it is a test of the allocation of capital *within* countries, *between* politically connected firms and non-politically connected firms.

To be able to test whether country characteristics affect the impact of financial globalization on the allocation of capital within countries, it is necessary to have microeconomic data for a large enough sample of countries with sufficiently diverse aggregate characteristics. We use balance sheet and income statement data on publicly listed firms for 42 countries, that are combined with information on firms' political connections from Faccio (2006a).

We find that, in countries with weaker governance, politically-connected firms tend to benefit relatively more from international financial integration than non-connected firms. They invest proportionately more than other firms, and increase their borrowing to finance this investment. This is unlikely to reflect an efficient allocation of resources: we find that rhis disproportional investment is accompanied by a smaller growth in reported profits after taxes (a proxy for the marginal product of capital). This result is robust when using both de jure and de facto measures of international financial integration. We also find that having a large banking system or stock market does not mitigate this effect; interestingly, however, having a more liberalized banking system seems to reduce the disproportional access to credit of politically connected firms, but this result is not always robust. Similarly, we find that overall improvements in corporate governance are associated with weaker benefits of political connections.

In our model, inspired from Holmstrom and Tirole (1997) and Tressel and Verdier (2007), firms establish political connections *ex-ante* to be able to benefit from banking

supervisors' regulatory forbearance *ex-post*: with some probability, they will be able to collude with domestic banks at a low cost. Given the *idiosyncratic* uncertainty in the cost of collusion, politically connected firms and banks will choose financial contracts allowing for collusion to occur in some states of nature. Ex-ante, relaxing the bank's incentive constraint can allow a politically connected firm to borrow more from uninformed lenders. However, when collusion occurs, banks do not monitor the firm and inefficient projects are chosen.

Our model has two main predictions. First, political connections of firms will be more prevalent in countries with weaker overall institutions, weaker corporate governance, and less reformed domestic banking systems. In such environment, financial globalization, seen as an increase in the supply of uninformed capital *relative to* domestic informed capital, will increase the benefits of political connections, and more firms will invest in "crony" relationships. Second, on the intensive margin, a fall in the cost of uninformed finance will allow politically connected firms to borrow proportionately more, even if they are less profitable than other firms on average.

To summarize, financial globalization does not always reduce the benefits of political connections and does not always improve the allocation of capital. This is because it increases the relative supply of uninformed lenders, thus increasing the benefits of bank regulatory forbearance. The model also shows that politically connected firms choosing less efficient projects may experience a faster growth of output precisely because they have privileged access to external finance; this implies that one cannot test empirically the two hypothesis outlined earlier simply by looking at firms' output.

Evidence from the Asian crisis is consistent with our argument emphasizing privileged access to domestic bank credit by politically connected firms. For example,

Johnson et al. (2006) find that, in Malaysia, before the crisis, politically connected firms were growing relatively faster than other firms; Friedman, Johnson and Mitton (2002) find that, in Asian countries open to capital flows before the crisis, corporate debt was higher in firms with weaker governance. This effect was stronger where country-level institutions were weaker. Bongini, Claessens and Ferri (2001) show how connections of East Asian banks with industrial groups or influential families increased the likelihood of distress, suggesting that supervisors had granted forbearance from prudential regulations.

Country specific evidence of past financial crisis is also consistent with this mechanism. In Indonesia, before the crisis, political interference with banking supervision allowed an "easy flow of financial resources to conglomerates through the banking system (which) was facilitated by an international environment that encouraged flows of foreign capital into emerging markets" (IMF IEO, 2003). In Korea, according to Cho (2002), the *chaebols*, which had acquired substantial control over the financial system through the ownership of the merchant banks, obtained access to cheap credit through those financial intermediaries after the liberalization of the capital account. Siegel (2005) argues that access to key outside resources from abroad is more likely to be attained by Korean firms part of a political network. Haber (2004) shows that, in a context of expropriation risks, a mismanaged first privatization of the Mexican banking system led to a banking system dominated by reckless lending, which, in the context of strong capital inflows, contributed to the 1994 crisis.

A growing literature has analyzed the value and consequences of political connections. Fisman (2001) estimates the value of political connections in Indonesia when Suharto's health fluctuated, and find that it is significant. In contrast, in the U.S., Fismal et al.

(2006) find no value of personal connections with Vice President Cheney, and interpret the result as evidence that benefits of rent-seeking through personal connections are limited by the quality of U.S. institutions. Johnson and Mitton (2003) estimate the value of political connections in Malaysia in 1998 when the capital controls were imposed. Faccio and Parsley (2006) estimate the fall in the value of politically-connected firms following the sudden death of politicians. Political connections may provide various benefits in weak institutional environments: politically connected firms enjoy rents when doing business (obtention of licenses, protection from foreign competition, as shown by Mobarak and Purbasari (2006)), have easier access to domestic bank credit ex-ante (Claessens, Feijen and Laeven, 2006), and are more likely to be bailed-out ex-post (Faccio, Masulis, and McConnell 2005). However, Leuz and Oberholzer-Gee (2006) show that, in Indonesia, politically connected firms are less likely to issue publicly traded foreign securities. Bertrand et al. (2007) show that political connections of CEOs affect the hiring and firing decisions of French firms. Recent studies show that corporate political connections are widespread around the world, and are more common in more corrupt countries as predicted by our model (Faccio, 2006a); these firms are more indebted, larger and less profitable than other firms (Faccio, 2006b).

Performance of politically connected loans has often been weak. Khwaja and Mian (2005) show that, in Pakistan, connected firms obtain larger loans at the same cost, but have a much worse track record of repayment. Zia (2006) shows that subsidized export loans in Pakistan were misallocated in favor of politically connected parties. La Porta, Rafael, Lopez-de-Silanes, Florencio, Guilllermo Zamarripa (2003) show that default rate was higher on related lending loans in Mexico in the 1990s. Some evidence from Russia suggests that

connected lending took place after financial liberalization, at a large cost to depositors and the government (Laeven (2001), Gelfer and Perotti (2001), Perotti (2002)).

Our paper is related to the growing literature that analyzes the political economy of financial liberalization. For instance, Rajan and Zingales (2003) argue that capital account liberalization may not, just by itself, improve the access to domestic financial markets by non-incumbent firms. In absence of strong competitive pressures, caused for instance by the liberalization of trade, industrial incumbents will in fact *oppose* improvements in the transparency of the domestic financial system to limit domestic competition, while benefiting from the lower cost of capital induced by financial integration. Feijen and Perotti (2005) model a lobbying game in which, in countries with poor regulation, incumbents choose a level of investor protection so that less established firms exit when hit by shocks. Perotti and Volpin (2006) show that in less accountable political systems, industrial incumbents choose product market regulations that restrict entry. Perotti and Von Thadden (2006) show how the political majority influences both the level of corporate governance and the return to human and physical capital.[2]

Finally, our paper is related to the literature that estimates the impact of capital flows on firms' financing constraints. Harrison, Love and McMillan (2004) find that different measures of capital flows are associated with a reduction in firm-level financing constraints, measured by the sensitivity of investment to cash flow. Schmukler and Vesperoni (2006) find that firms that access international financial markets are able to lengthen the maturity of their debt; in contrast the maturity structure shifts to the short-term for the average firm,

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[2] See Claessens and Perotti (2007) and Haber and Perotti (2007) for recent surveys on the political economy of finance.

suggesting differential effects of financial globalization. Forbes (2003) finds that smaller traded firms suffered from financing constraints under the Chilean capital controls. Chari and Henry (2006) find that firms invest more following a stock market liberalizations; moreover, stock market price changes occuring at liberalization help predict cross-sectional changes in investment after liberalization. However, local conditions are likely to remain important even in integrated markets: using data from Italy, Guiso et al. (2004) find that local financial development significantly favors the entry of new firms, increases competition, and promotes growth. These effects are weaker for larger firms, which can more easily raise funds outside of the local area.

The paper is organized as follows. Section II lays down the model and describes its empirical implications. Section III presents the empirical methodology and the data. Empirical results are described in section IV. Section V concludes.

II. THEORY

This section lays-out a simple model adapted from Holmstrom and Tirole (1997) and Tressel and Verdier (2007) and derives predictions on the impact of financial globalization on politically connected firms' access to capital. Financial globalization is modeled as an increase in the relative supply of uninformed capital (portfolio capital flows, or foreign credit) to informed capital (domestic banks' capital).

A. Structure of the model

The model has three types of agents: entrepreneurs, bankers and uninformed lenders. There is no aggregate uncertainty in the model. A single good can be used for

consumption and investment. The economy lasts for three periods: in the first period, firms decide to establish political connections or not; in the second period, financial contracts are signed and investment decisions are made; in the third period, output is realized, financiers are repaid and agents consume. Investment in period one is financed through internal funds (the entrepreneur's endowment A), and a combination of bank capital and borrowing from uninformed investors.[3]

The model has two key features. First, in the first period, an entrepreneur i can choose to establish political connections at a fixed cost C_i. We assume that political connections are publicly observable. Second, banks and entrepreneurs can collude *ex-post* at the expense of uninformed investors. Political connections allow entrepreneurs to lower the cost of collusion with some probability, which can be interpreted as firm-specific regulatory forbearance (more on this below). The cost of maintaining political connection C_i is firm-specific and is drawn from the uniform distribution [0,1]. A possible interpretation for this heterogeneity is that it is less costly for larger firms to establish political connections.[4]

The production technology is subject to moral hazard, and is linear in all parameters. Entrepreneurs can reduce the probability of success of the project and enjoy greater private benefits of control. The project generates a verifiable financial return equal to R per unit of capital invested (if it succeeds) or to 0 (if it fails), but private benefits of control are not verifiable.

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[3] Uninformed investors can be interpreted as being either depositors, bank creditors or investors in securities markets.

[4] For example, we could assume that the entrepreneur endowment A_i varies over $\left[0, \overline{A}\right]$, and that there is a fixed cost C of political connections. Defining $C_i = \dfrac{C}{A_i}$ would be equivalent to the formulation in the text.

There are three versions of the project. The high return project succeeds with probability p_H, but does not yield any private benefits of control. The entrepreneur has also access to two other versions of the project with a low probability of success p_L, yielding private benefits (per unit of capital invested) of B and b respectively, with $B > b > 0$. Define $\Delta p = p_H - p_L > 0$ and $\Delta B = B - b$. Only the good project is economically viable:

Assumption A: $p_H RI > \gamma I > p_L RI + BI$

where I is the size of the project, and γ uninformed capital.

The banking sector consists of competitive intermediaries who monitor firms to alleviate the moral hazard problem. A financial intermediary can monitor an entrepreneur by paying a nonverifiable cost c per unit of capital invested in the project. This prevents the entrepreneur from undertaking the project with a high level of shirking B, thereby reducing the opportunity cost of choosing the productive project from B to b, as in Holmstrom and Tirole (1997).

We assume that each bank finances projects that are perfectly correlated (typically each bank finances only one project). While this assumption is unrealistic, it however captures, in a highly stylized fashion, some observed characteristics of banks in developing countries, such as large exposures to small numbers of borrowers.

Firms can also levy funds on capital markets at a cost γ. Investors on the capital markets are small and do not monitor firms to which they lend. As mentioned earlier, uninformed investors can also be interpreted as bank creditors or depositors.

B. Collusion and Firm Specific Regulatory Forbearance

After signature of the financial contract, entrepreneurs and banks can write a "side contract" so that the intermediary does not monitor the firm. Specifically, given the characteristics of the official financial contract, the firm can promise to realize a side transfer to the bank ex-post. Given this side-contract, the bank will or will not monitor the firms' project choice.

In absence of political connections, this collusion between the bank and the firm is costly with probability 1: for any side payment of 1, the benefit to the bank is only $\bar{k}$, with $0 < \bar{k} < 1$; thus $1 - \bar{k}$ can be seen as the cost of hiding the side payment, and can reflect the efficiency of banking supervision. The banking regulations we have in mind are restrictions on concentration of risks and connected lending.

Under this assumption, collusion will never be observed in equilibrium: financial contracts will always be collusion-proof. Indeed, if the cost of collusion is known with certainty, uninformed investors will never accept *ex-ante* to co-finance a project in which the bank has not sufficient incentives because the project will not break-even (Assumption A).

So, if agents know with certainty the cost of breaching banking regulations, collusion will never be observed in equilibrium.

Now, assume that politically-connected firms (and their related bank) can avoid the costs of breaching banking regulations with some probability *1-q* if they collude. Specifically, we assume that, with probability *1-q*, the cost of collusion is low: $1 - k_H < 1 - \bar{k}$. This lower cost of collusion is firm-specific, e.g. the uncertainty related to regulatory

forbearance is firm-specific and depends for instance of the value of the political connection established *ex-ante*. However, with probability q the cost of collusion $1 - k_L$ will be higher. For simplicity and without loss of generality, we assume that the expected cost of collusion remains the same for politically connected firms and non-connected firms:

$\overline{k} = (1 - q) \cdot k_H + q \cdot k_L$.[5] $\Delta k = k_H - k_L$ is a measure of the dispersion of the cost of collusion, which will be an important parameter in the rest of the paper.

C. Financial contracts: incentive and participation constraints

Consider an entrepreneur with internal funds A who undertakes a project of size I. Overall observable returns if project succeeds are $R.I$. Financial contracts specify the maximum borrowing capacity of entrepreneurs $I - A$, the amount borrowed from bankers (I_m), from uninformed lenders (I_u), as well as the payments R_f, R_m and R_u respectively to the firm, the bank and uninformed investors, where: $R \cdot I = R_f + R_m + R_u$. To induce the choice of the productive project with strictly positive probability, the entrepreneur must receive a payment at least equal to:

$$R_f \geq \frac{bI}{\Delta p}$$

In a contract that prevents collusion, the expected payment on bank loans, net of monitoring costs, must be at least equal to β, the return to bank capital:

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[5] The alternative would be to assume a lower expected cost of collusion for connected firms, e.g. that $\overline{k} < (1 - q) \cdot k_H + q \cdot k_L$. This would strengthen our result (increase the range of parameters within which collusion occurs), at the cost of greater notational complexity.

$$p_H R_m - cI \geq \beta I_m$$

where I_m is the amount of funds invested by the bank in the project. To ensure that there will not be collusion, payments must be large enough to guarantee that the bank monitors given a potential bribe S, where $k \in \left\{ \overline{k}, k_H, k_L \right\}$:

$$p_H R_m - cI \geq p_L R_m + kSI$$

Under the assumption that the bank has all the bargaining power, the maximum side payment S that the firm is willing to transfer to the bank is given by:

$$p_H R_f = p_L R_f + BI - SI$$

Combining with the previous inequality, and given that $k_H > k_L$, the incentive constraint for the bank becomes:

$$\text{(a) } R_m \geq \frac{cI + k_H \left(BI - \Delta p R_f \right)}{\Delta p} \text{ for a politically connected firm;}$$

$$\text{(b) } R_m \geq \frac{cI + \overline{k} \left(BI - \Delta p R_f \right)}{\Delta p} \text{ for a firm that is not politically}$$

connected.

For a non-politically connected firm, the certainty regarding the cost of collusion implies that, ex-ante, financial contracts will always be collusion-proof. On the contrary, for politically connected firm, financial contracts may not always be entirely collusion-proof.

Let us assume that the contract allows for collusion to occur in the state H after the signature of the financial contract. So, the contract is collusion-proof only in the state of nature L in which the cost of collusion $1 - k_L$ is high, so the incentive constraint is:

$$R_m \geq \frac{cI + k_L \left(BI - \Delta p R_f \right)}{\Delta p}$$

Finally, for these two contracts to be feasible, uninformed investors must break even on average:

$$p_j R_u \geq \gamma I_u$$

with $p_j = p_H$ if the contract is collusion-proof, and $p_j = \tilde{p} = q \cdot p_H + (1-q) \cdot p_L$ if the contract allows partial collusion.

The bank must also break even if collusion occurs (when the contract does not prevent collusion in state H):

$$q \cdot (p_H R_m - cI) + (1-q) \cdot (p_L R_M + k_H SI) \geq \beta I_m$$

which simplifies into:

$$\tilde{p} R_m - qcI + (1-q) k_H \Delta BI \geq \beta I_m$$

D. Project size under collusion-proof contracts and partial collusion contracts

Given the rates of return γ and β, an entrepreneur i with initial internal funds 1 will choose a financial contract that solves the following program ($j = NC$ stands for a collusion-proof contract, and $j = C$ for a contract allowing collusion to occur in state H):

Maximize: $U_{E,j} = p_j RI_j - p_j R_{m,j} - p_j R_{u,j}$

where p_j is the probability of success of the project ($j \in \{C, NC\}$), subject to: (i) the resource constraint; (ii) participation constraint of the bank; (iii) incentive constraint of the bank; (iv) participation constraint of the uninformed investors; and (v) incentive constraint of the entrepreneur.

In this type of model, incentive constraints are always binding. First, given that bank capital is more costly than uninformed investors' capital, the entrepreneur will minimize the share of bank capital in external finance given project size I, and the amount repaid to the bank. Therefore the incentive constraint of the bank will be binding. Next, to achieve maximum leverage, the entrepreneur will retain the minimum share of profits necessary to provide incentives to choose the productive project (the "nonpledgeable income"), so the incentive constraint of the entrepreneur will also be binding. By combining the various constraints, one can show that the project sizes are the following:

__Theorem 1:__ (Project sizes) Normalizing the net worth of the entrepreneur to 1, one can show that the project sizes are respectively:

(1) For a non-politically connected firm: $\overline{I} = \dfrac{1}{\overline{V}(\gamma, \beta)} = \left[1 - \dfrac{\overline{\phi}}{\gamma} - \dfrac{\overline{\Lambda}}{\beta} \right]^{-1}$;

(2) for a politically connected firm:

(a) in a collusion-proof contract: $I_{NC} = \dfrac{1}{V_{NC}(\gamma, \beta)} = \left[1 - \dfrac{\phi_{NC}}{\gamma} - \dfrac{\Lambda_{NC}}{\beta} \right]^{-1}$;

(b) in a contract allowing collusion in state H:

$I_C = \dfrac{1}{V_C(\gamma, \beta)} = \left[1 - \dfrac{\phi_C}{\gamma} - \dfrac{\Lambda_C}{\beta} \right]^{-1}.$

The multipliers are defined in the appendix.

The first multiplier, ϕ, is the expected return to uninformed investors per unit of capital invested in the project. The second multiplier, Λ, represents the expected financial return to the bank per unit of capital invested in the project.

E.   When do political connections emerge?

 If all contracts are expected to be collusion-proof, an entrepreneur i decides to

establish political connections if and only if: $U_{connections,NC}(1-C_i) > U_{noconnections}$. One can easily

show that, in this case, no firm will ex-ante choose to establish political connections. The

reason is simply that a collusion-proof contract for a politically-connected firm requires a

larger cofinancement by the bank to ensure that the bank monitors (because $k_H > \bar{k}$). Indeed,

a larger share of politically-connected firms' profits must be pledged to the bank to guarantee

collusion-proofness. Given that bank capital is more costly than uninformed capital,

politically-connected firms can realize a lower leverage than other firms on their internal

funds A. In other words, firms will establish political connections if and only if they expect

to be able to collude with domestic banks and benefit from regulatory forbearance *ex-post*.

On the contrary, if politically connected firms' contracts permit partial collusion, an

entrepreneur i will choose to acquire political connections if and only if:

$$U_{connections,C}(1-C_i) > U_{noconnections}$$

Theorem 2: Entrepreneurs decide to acquire political connections if and only if they

expect to be able to collude with banks and benefit from regulatory forbearance ex-post.

There exists $\Phi(\beta,\gamma,\Delta B,\Delta k,c)$ such that $\Phi \in [0,1[$ and entrepreneurs of type C_i choose to

establish political connections if and only if $C_i \leq \Phi\left(\overset{-}{\beta},\overset{-}{\gamma},\overset{+}{\Delta B},\overset{+}{\Delta k}\right)$.

Proof: see the Appendix.

Equilibrium on the credit market is given by:

(1) If no firm establishes political connections:

$$K_B = A \cdot I_{m,NC}(\beta, \gamma)$$

(2) if a share Φ of firms establishes political connections:

$$K_B = A \left\{ \int_0^\Phi I_{m,C}(\beta,\gamma)(1-C)dC + \int_\Phi^1 I_{m,NC}(\beta,\gamma)dC \right\}$$

Note that, in this model, there always exists firms that are not politically connected as long as the upper bound of the distribution of C is 1, or sufficiently close to 1. Indeed, if a firm with C close to 1 establishes a political connection, it will (almost) not have any internal funds left for investment purposes, and therefore will not be able to invest. This implies that there exists ε such that $\Phi < 1 - \varepsilon$ always.

Theorem 3: Assume that bank capital is scarce ($K_B \ll A$). There exist $\bar{\gamma}$ such that:

(a) if $\gamma > \bar{\gamma}$, no firm establishes political connections and all contracts are collusion-proof;

(b) if $\gamma \leq \bar{\gamma}$, a proportion $\Phi\left(\bar{\gamma}\right)$ of firms establishes political connections and benefit from regulatory forbearance with probability $1 - q$.

Proof. See the Appendix.

Corrrolary 1: There exists $\underline{\gamma}$ such that (a) For all $\gamma > \bar{\gamma}$, the equilibrium return on the bank credit market is a decreasing function $\bar{\beta}(\gamma)$ of the cost of capital γ; (b) if $\gamma \leq \bar{\gamma}$, the equilibrium return on the bank credit market is a non-monotonic function $\beta_C(\gamma)$ of the cost of capital γ; for γ close to $\bar{\gamma}$, $\beta_C(\gamma)$ is increasing with γ; for $\gamma < \underline{\gamma}$, $\beta_C(\gamma)$ is decreasing with γ. Moreover, $\beta_C(\gamma) < \bar{\beta}(\gamma)$ for all γ.

Proof: see the appendix.

Corrolary 2: (Testable Implications) Political connections of firms are more prevalent in environments with (a) less efficient banks (higher cost of monitoring c), (b) worse corporate governance (higher ΔB), (c) worse banking supervision and less costly regulatory forbearance (higher Δk), and (d) lower cost of uninformed capital γ.

Proof. See the appendix.

Figure 1: Equilibrium on the Credit Market
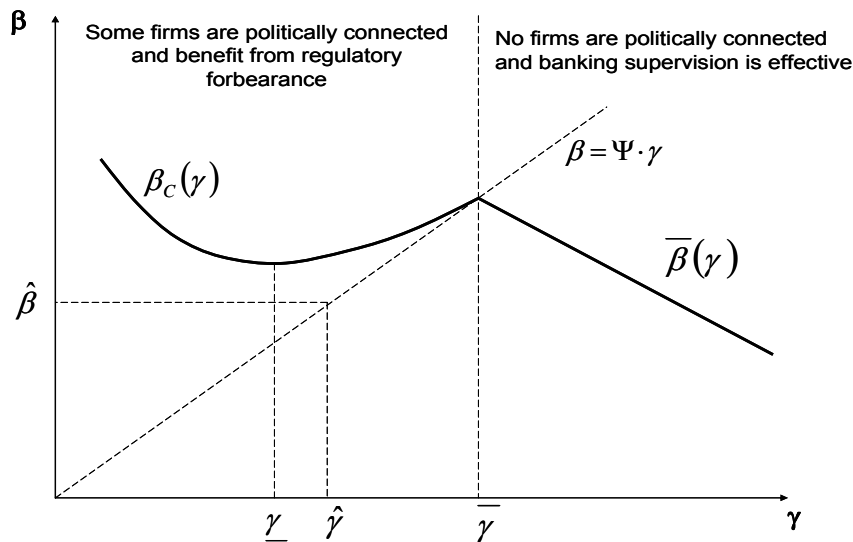
F. How Does Financial Integration Affect the Allocation of Domestic Capital?

In this section, we show that the model predicts a *differential* impact of international financial integration on investment and profitability of politically connected firms *relative to* non-connected firms in certain environments. We focus on the liberalization of portfolio investments and international borrowing by domestic bank, which we model as a downward

shift in the cost of uninformed capital γ, so capital account liberalization is accompanied by capital *inflows*.

Figure 1 suggests that the liberalization of uninformed capital inflows might have different effects depending on the initial conditions in the liberalizing country. If the country is initially in region (A) and remains in that region after liberalization, capital inflows will be unambiguously beneficial by reducing the cost of external finance and enhancing investment for all firms. If, on the contrary, inflows of uninformed capital induce a shift towards region (B) or if the country was initially in region (B), two additional effects will be observed. First, more firms will establish political connections to be able to benefit from regulatory forbearance *ex-post*. Second, on the intensive margin, politically connected firms will benefit *relatively more* from the lower cost of uninformed capital than other firms. In the following theorem we show that this differential effect is larger in countries with lower quality of governance (higher ΔB or Δk) and a less efficient banking system (higher cost of monitoring c).

Theorem 4: As a first order approximation, and assuming small extensive margins effects ($\dfrac{d\Phi}{d\gamma} << 1$), there exist functions g_1, f_1, g_2 and f_2 such that, in equilibrium,

$\Delta \log I = \log(I_C) - \log(\bar{I}) = g_1(\gamma) \cdot f_1(\Delta B, \Delta k, c) + g_2(\beta(\gamma)) \cdot f_2(\Delta k, \Delta B)$ where $\beta(\gamma)$ is the equilibrium return on bank capital, and the first derivatives verify: $g_1' < 0$, $\dfrac{\partial f_1}{\partial \Delta B} > 0$,

$\dfrac{\partial f_1}{\partial \Delta k} > 0$, $\dfrac{\partial f_1}{\partial c} > 0$, $g_2' > 0$, $\beta'(\gamma) < 0$, $\dfrac{\partial f_2}{\partial \Delta B} > 0$ and $\dfrac{\partial f_2}{\partial \Delta k} > 0$.

Proof. See the appendix.

As a first order approximation, international financial integration will disproportionately boost the investment and access to external finance of politically connected firms in countries with lower quality of corporate governance (ΔB), lower quality of banking supervision (Δk), and less efficient banking systems (higher cost of monitoring c). It also implies, that, as a first order effect, the impact of domestic institutions on the differential investment of politically connected firms will depend on the cost of uninformed capital in equilibrium.

More specifically (**Equation (B)**): $\dfrac{\partial \Delta \log I}{\partial z} = H(\gamma)$, where $z = \Delta k$, ΔB or c, and

$\dfrac{\partial H}{\partial \gamma} < 0$.

In this model, politically connected firms will on average *choose* projects that are less profitable than the projects chosen by non-politically connected firms *even if they have the same investment opportunities*. The expected *observable* return on a project of a politically connected firm will be lower than the return of a non-politically connected firm: $(qp_H - (1-q)p_L) \cdot R < p_H \cdot R$. Moreover, under assumption (A), the expected social return of a politically connected firm's project (including non-observable private benefits) will also be lower than the one of a non-politically connected firm. The differential effect on output of politically connected firms is ambiguous as it combines a positive effect on investment (positive volume effect) and a negative effect on the average return to physical capital (negative allocation effect). Hence, looking at output does not allow to conclude whether

capital was allocated to the most productive projects or not: output might increase more in politically-connected firms because they have privileged access to external finance.

In the next section, we therefore test the implications of this model on the differential investment and profitability of politically-connected firms relative to non-connected firms. The channels described in this model cannot be identified using macroeconomic data only. Indeed, an increase in overall investment accompanied with a fall in average return on physical capital would be consistent with other mechanisms, for example a growth strategy emphasizing the accumulation of factors of production instead of productivity gains. But such a story would not necessarily imply a misallocation of capital *within* the country considered. Indeed, even if all firms were experiencing decreasing marginal returns to physical capital, capital would still be allocated efficiently domestically if most efficient firms are able to invest relatively more. In contrast, politically connected firms should not be experiencing a disproportional access to capital relative to other firms, after controlling for other firms' characteristics, if capital was allocated efficiently between firms.

III. EMPIRICAL TEST: METHODOLOGY AND DATA

A. Sample

Our sample consists of 42 industrialized countries and emerging markets for which information on balance sheets and income statement of publicly listed firms is available in Worldscope and that are covered in the database of politically connected firms

constructed by Faccio (2006a).[6] Faccio's database is the only existing one that provides information on political connections of publicly listed firms for a large cross-section of countries, and that uses a consistent definition across countries. Political connections are observed between 1997 and 2001. A firm is defined as politically connected if one of the top officers or one of the large shareholders is a member of parliament, a minister or head of state, or closely related to a top official.[7] About 80 politically connected firms in Worldscope have changed their names since then. A search of financial news on the internet allowed us to identified most of these changes as well as the reason for the change.

B. Empirical Models

Based on the predictions of the model, we test whether the liberalization of international borrowing has a differential effect on firms that are politically connected relative to other domestic firms. First, we test whether politically connected firms invest relatively more than other domestic firms following the liberalization of international borrowing. Second, we investigate whether the capital structure of firms (leverage) and maturity of debt evolves differentially for politically connected firms and non connected firms. Third, we test whether the disproportional investment and access to debt finance of those firms is accompanied by better investment opportunities or not. To look into this, we focus on the growth of reported profits after tax, a proxy for the marginal product of capital.

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[6] The United States and the United-Kingdom were excluded from the sample, as they are major financial centers in which a significant proportion of foreign firms are listed. Japan was also dropped as it went through a recession and restructuring process of the banking sector for most of the period for which data are available.

[7] For a more precise definition of political connections, see Faccio (2006a). Note that she uses only publicly available information, as a result some politically connected might not be identified. This error however would bias our estimates towards finding no significant effects of political connections. Other authors (e.g. Claessens, Feijen and Laeven (2006)) define political connections using campaign contributions to political parties.

As discussed earlier, this allows to test the two following competing hypothesis. On the one hand, if international financial markets have a discipline effect on domestic banking sectors, politically connected firms should not behave differently than non-connected firms in more financially integrated countries when controlling for other determinants of firms' investment and leverage. Any differential access to external finance should in fact become insignificant as financial integration increases. On the other hand, if international financial integration does not always discipline domestic banking sectors, politically connected firms may investment disproportionally more, even though their marginal product of capital is lower. In this case, financial integration does not always prevent a misallocation of capital.

The difference-in-difference approach *at the firm level* and within countries allows us to limit endogeneity concerns that could bias other approaches based on aggregate data. Indeed, countries experiencing more investment and growth opportunities may be more likely to open up to foreign capital. If this was the case, one would observe a positive association between investment, or growth on the one hand, and openness to foreign capital on the other hand, even in absence of any causal relationship.

Endogeneity of political connections could also potentially bias our results. Endogeneity could bias our results for two reasons. First, there could be reverse causality: firms with better investment opportunities may be more likely to establish political connections in the first place, which would explain why politically connected firms invest disproportionately more than other firms. However, this argument is not consistent with our results on profitability: if politically connected firms had better investment opportunities, their profitability should be growing faster than that of other firms, not the other way around. Second, other omitted variables could simultaneously affect both the dependent variable and

the decision to establish political connections. For example, larger and more established firms with deeper pockets may be more likely to invest in political connections. To reduce this concern, we show that our results are robust when we control for many different firm characteristics. This concern cannot be entirely eliminated, but we can at least dismiss the most obvious sources of omitted variable bias.

Moreover, we check that our results are robust to the inclusion of two different sets of fixed effects: (a) country-year fixed effects together with industry fixed effects; or (b) industry-year fixed effects together with country fixed effects. This implies for instance that we are able to control for all observable and unobservable country level factors that may simultaneously affect all firms. Industry fixed effects account for all potential observable and unobservable industry level factors that may affect all firms within an industry.[8] Another source of bias could arise owing to mismeasurement of political connections. Indeed, connections are identified only from publicly available source, so it is possible that some political connections were not identified.[9] However, this measurement problem is likely to introduce a downward bias in our estimates.

Finally, in all specifications, standard errors are clustered at the country-event level.[10] So, we correct for all possible sources of cross-firm correlations within countries that might bias the standard errors.

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[8] We use industry fixed effects at the 2 digit SIC level. Country×year fixed effects in particular allow to control for valuation changes that may simultaneously have affected all firms' accounts.

[9] For instance, no firms were identified as politically connected in Latin American and African countries.

[10] By event, we refer to the external liberalization date. So, for countries that were always open, or closed, there is one cluster; and there are two clusters for countries that liberalized during the period of observation.

In each of the following specifications, y_{icst}, the dependent variable for of firm i in country c, sector s and year t, is consecutively: the log of net investment to lagged net fixed assets, the log change in total debt to total lagged fixed assets, the log change in short-term debt to lagged net fixed assets, the log change in long-term debt to lagged net fixed assets, or the log change in returns over total assets (see Table 1a for a precise definition). We estimate various specifications that allow us to gauge the robustness of our results.

First we estimate the differential effect of *de-jure* liberalization on politically connected firms, assuming the within country effect is homogenous across all countries:

$$y_{icst} = \alpha_0 \cdot Connected_i \cdot Liberalized_{ct} + \alpha_1 \cdot Connected_i \cdot NonLiberalized_{ct} + \beta \cdot X_{icst-1} + \Delta_{ct} + \Delta'_s + u_{icst}$$
(Specification 1)

where y_{icst} is the dependent variable, *Connected$_i$* is a dummy variable equal to one if a firm has been identified as politically connected, *Liberalized$_t$* is a dummy variable equal to one if international borrowing by domestic banks is liberalized (see Table 1b), **X$_{icst-1}$** is a matrix of firm level control variables (lagged one year), including the lagged level of the dependent variable y. Δ_{ct} and Δ_s are respectively a full set of country-year fixed effects and 2 digit industry fixed effects in the main set of results. [11]

Next, we allow for heterogeneity of the slope coefficient by splitting the countries into two groups according to the overall quality of governance. We also include additional country splits based on other country characteristics W_{ct} (the country characteristics are defined in the next section). Thus this specification allows to identify which country

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[11] Regressions with industry-year fixed effects and country fixed effects are not reported. They are available upon request.

characteristics interacted with external liberalization lead to a differential effect on politically connected firms. Specifically, we estimate the following specification:

$$y_{icst} = \alpha_{0\,below\_Med\_Gov} \cdot Connected_i \cdot Liberalized_{ct} + \alpha_{1,below\_Med\_Gov} \cdot Connected_i \cdot NonLiberalized_{ct} +$$
$$+ \alpha_{0\,above\_Med\_Gov} \cdot Connected_i \cdot Liberalized_{ct} + \alpha_{1,above\_Med\_Gov} \cdot Connected_i \cdot NonLiberalized_{ct}$$
$$\alpha_{0\,below\_Med\_W} \cdot Connected_i \cdot Liberalized_{ct} + \alpha_{0,above,\_Med\_W} \cdot Connected_i \cdot Liberalized_{ct}$$
$$+ \beta \cdot X_{icst-1} + \Delta_{ct} + \Delta'_s + u_{icst}$$

(Specification 2)

The third specification again uses sample splits based on a *de facto* measure of financial integration, and also controls for splits based on the other country characteristics W_{ct}. Specifically, countries are split in two groups according to their overall governance measured by the World Bank Index. Next, within each group, country-years are split in two groups using the median stock of gross foreign liabilities in percent of GDP (excluding FDI) as a cut-off point. This provides four groups: (1) countries with a higher level of governance and highly dependent on foreign financing; (2) countries with a higher level of governance and less dependent on foreign financing; (3) countries with a lower level of governance and that are highly dependent on foreign financing; and (4) countries with a lower level of governance and that are less dependent on foreign financing. This allows us to test whether, within the group of countries with below median governance, the estimated effect of *de facto* financial integration depends upon other country characteristics.

The specification is the following:

$$y_{icst} = \alpha_0 \cdot Connected_i \cdot above\_Med\_Open_{ct} \cdot below\_Med\_Gov$$
$$+ \alpha_1 \cdot Connected_i \cdot below\_Med\_Open_{ct} \cdot below\_Med\_Gov$$
$$+ \alpha_2 \cdot Connected_i \cdot above\_Med\_Open_{ct} \cdot above\_Med\_Gov$$
$$+ \alpha_3 \cdot Connected_i \cdot below\_Med\_Open_{ct} \cdot above\_Med\_Gov$$
$$+ \alpha_4 \cdot Connected_i \cdot below\_Med\_Gov \cdot below\_Med\_W_{ct}$$
$$+ \alpha_5 \cdot Connected_i \cdot above\_Med\_Gov \cdot below\_Med\_W_{ct}$$
$$+ \beta \cdot X_{icst-1} + \Delta_{ct} + \Delta'_s + u_{icst}$$

(Specification 3)

The fourth specification is a variant of specification 2 in which we allow the slope
coefficient to depend linearly on the quality of corporate governance in the country
considered. Since the corporate governance variable varies over time (see definition in the
next paragraph), we also exploit the fact that the differential effect between politically-
connected firms and non-connected firms can vary over time. In addition, we also introduce
an interaction with other country level characteristics W_{ct} that could affect the differential
effect estimated. Specifically, the specification becomes:

$$y_{icst} = \alpha_0 \cdot Connected_i \cdot Liberalized_{ct} + \alpha_1 \cdot Connected_i \cdot NonLiberalized_{ct} +$$
$$\alpha_2 \cdot Corporate\_Gov_{ct} \cdot Connected_i \cdot Liberalized_{ct} + \alpha_3 \cdot W_{ct} \cdot Connected_i \cdot Liberalized_{ct}$$
$$+ \beta \cdot X_{icst-1} + \Delta_{ct} + \Delta'_s + u_{icst}$$

(Specification 4)

The final specification is a variant of specification 3 with the *de facto* measure of
financial integration in which the slope coefficient depends linearly on the level of corporate
governance. We also allow for a linear effect of W_{ct} on the slope coefficient:

$$y_{icst} = \alpha_0 \cdot Connected_i + \alpha_1 \cdot Connected_i \cdot Financial\_Integration_{ct} +$$
$$\alpha_2 \cdot Corporate\_Gov_{ct} \cdot Connected_i \cdot Financial\_Integration_{ct} +$$
$$\alpha_3 \cdot W_{ct} \cdot Connected_i \cdot Financial\_Integration_{ct}$$
$$+ \beta \cdot X_{icst-1} + \Delta_{ct} + \Delta'_s + u_{icst}$$

(Specification 5)

C. Firm Level Control variables

Economic theory and existing empirical research suggest a number of firm level determinants of investment, capital structure and profitability. Variables are defined in Table 1a.

First, each of our specifications includes a lagged level of the dependent variable to account for any persistence of the explanatory variable. For example, corporate capital structures and investment in fixed assets are well known to be persistent. Profits are also somewhat persistent as they reflect past business decisions, but also provide some information on future investment opportunities.

The first control variable is the size of the firm, measured as the log of total assets (lagged one period). Size is a proxy for the market power of a firm on the product market. Larger firms also have an easier access to external sources of finance, as opposed to retained earnings. An established pattern is that larger firms are typically more indebted than smaller firms in many industrialized countries (Rajan and Zingales, 1995). Finally, larger firms, having more financial power and being more established, are more likely to be political connections than other firms (Faccio, 2006b). Therefore, controlling for size is important to guarantee that our result does not reflect differences in size.

Profitability is likely to be related to investment decisions for two reasons. First, profits are strongly correlated to internal sources of finance, so, in presence of limits on external finance, investment should be positively correlated with past profits. We also ran regressions in which we control directly for retained earnings, but, due to missing observations, the sample drops significantly when we add this variables. Second, profits may

contain information on future business opportunities that are not well captured by standard market based measures, and therefore should be correlated with investment. As usual in the literature, the market-to-book ratio (the ratio of market value of equity plus book value of debt divided by the book value of equity and debt) is used as a proxy for Tobin's marginal Q, even though it is known to be an imperfect proxy. The market-to-book ratio captures markets' participants' views of the futre business opportunities of a firm.

The structure of assets is measured by the following variables. To begin with, the capital-output ratio, as a proxy for capital intensity, should affect investment decisions and profits in presence of decreasing returns to capital. Next, the "current ratio", which is the ratio of current assets to current liabilities, is a proxy for asset-liability mismatches and the liquidity of the firm. Finally, the ratio of net fixed assets to total assets measures the degree of tangibility of assets.

We also control for observable activities of the firms that may not be entirely captured by industry characteristics, and that may reflect business strategies of the firms considered. For example, we control for the degree to which firms are involved in international markets, and measured by the share of sales realized in foreign markets (we also use a dummy for firms reporting foreign sales, to avoid loosing too many observations). We also control for direct access to international securities markets by including a dummy for firms issuing ADRs.

Finally, we control for state-ownership of firms, and whether a firm was formerly state-owned. A publicly listed firm is considered state-owned when more than 50 percent of the capital is owned by the state. We also considered a 20 percent ownership cut-off level. Controlling for state-ownership is important to the extent that state-owned firms may have

privileged access to domestic loans to finance their investments. Any potential privileged access to domestic loans would also affect their capital structure.

D. Country level variables

Country level variables are the following. The size of domestic financial systems is measured by either the bank private credit to GDP ratio or the stock market capitalization to GDP ratio. Activity on the stock market is measured by the turnover ratio. Data are from the 2006 World Bank Financial structure database.

We use two different sources for international financial integration. First, *de jure* dates of liberalization of financial credit from non-residents are from Abiad, Detragiache and Tressel (2007). Second, the *de facto* measure of financial integration is from Lane and Milesi-Ferreti (2006) and is defined as the stock of gross foreign debt liabilities to GDP ratio.

Other country level variables are the following. The quality of overall governance is measured as the average over 1996-2004 of the corruption measure in the World Bank Governance database. The degree of banking sector liberalization is from Abiad, Detragiache and Tressel (2007), and is a graded index varying between 0 and 3 measuring reforms in the following areas: (a) credit controls and reserve requirements; (b) interest rate liberalization; (c) banking sector entry; (d) privatization and (e) banking sector supervision. Finally, the corporate governance index is from De Nicolo, Laeven, and Ueda (2006), and is an aggregate of 3 measures: accounting standards indicator, earning smoothing indicator, and stock price synchronicity indicator.

E. Overview of the data

Our sample includes 42 countries, and about 10,000 firms (Table 1b). In countries like Indonesia, Russia and Malaysia, political connections of firms are common, and represent more than 20 percent of corporations. Political connections are also important in countries such as Thailand, Italy, and Mexico. At the other end of the spectrum, few or no political connections were identified in Norway, the Netherlands, Austria and Australia. However, public sources of information did not allow to identify political connections in Argentina, Brazil or Colombia (see Faccio 2006a for more details). On average, about 5 percent of firms are classified as politically connected. Politically connected firms are on average more indebted than other firms (Table 2). They are also more capital intensive, are larger, and are more likely to report R&D expenses.

Many countries in the sample liberalized their capital inflows in the early 1990s, including Austria, Brazil, Finland, France, Italy, Malaysia, Norway, the Philippines, South Africa and Thailand (Table 1b). Overall, 16 countries liberalized financial credits over the period for which we have firm level data. The pre-liberalization sample accounts for about 20 percent of country-year observations.

Another group of 23 countries liberalized financial inflows in the 1970s and early 1980s, before the period of observation. Finally, 3 countries are classified as non-liberalized (India, Sri Lanka and Zimbabwe).

Macroeconomic characteristics vary significantly across countries during the period of observation (Table 3). De facto financial integration, measured by the stock of external debt liabilities to GDP goes from less than 10 percent of GDP (Taiwan) to more than 500 percent of GDP (Hong-Kong and Ireland are the more financially integrated countries

according to this definition). The index of banking sector reforms varies from less than 0.2 (Colombia, India and Mexico have the lower score in the beginning of the period) to the maximum of 3 (most industrialized countries, as well as Mexico or South Africa for recent years). The sample includes country-year observations with extremely low levels and extremely high levels of financial development, measured by the ratio of private credit to GDP, stock market capitalization to GDP or stock market turnover.

These country characteristics are quite correlated as one would expect, but correlations are not extremely high (Table 4). For example, countries that are more financially integrated have better overall governance, deeper financial systems, and have more reformed their banking sectors. However, they do not necessarily have a more liquid stock market or better *de facto* corporate governance. Interestingly, the index of banking reforms is not correlated with the index of corporate governance, suggesting that these two indices are capturing different country characteristics. This suggests that we can hope to be able to identify the specific effects of different types of reforms (corporate governance, and (lack of) restrictions on the banking system) on the allocation of credit between firms.

In Table 5, we split the sample between countries with above median governance and countries with below median governance. As expected, countries with lower quality of institutions are generally less financially integrated with the rest of the world, have less developed domestic financial systems, and have undertaken slightly fewer reforms of their banking systems. However, there is considerable variation within each sub samples for each of the variable considered, suggesting that, in our sample, the "overall" quality of institution is not the only key explanation for variations in the degree of international financial integration, the degree of development of the domestic financial sector, the quality of

corporate governance or the extent to which the domestic banking system is reformed. This also suggests that we may potentially be able to disentangle the effects of governance from those of specific policies (such as financial sector policies, corporate governance, and international financial integration).

IV. EMPIRICAL RESULTS

A. De jure financial integration

Tables 6 present various versions of **specification 1**, where the dependent variable is the log of investment intensity. When we do not control for size, the coefficient of connected firms is not significant either in liberalized or non-liberalized environment. However, when accounting for differences in size, the coefficient becomes significant at the 5 percent confidence level and almost doubles in size in financially liberalized periods.[12] This is consistent with the fact that large firms usually tend to invest less (in proportion to their existing stock of capital) than other firms. So not controlling for size biases the coefficient of connected firms downward. Adding other firm level characteristics does not affect the result significantly, and these characteristics have the expected sign: firms with higher profits, more liquid net assets, or a higher market-to-book ratio tend to invest more. Controlling for capital intensity is also important, as firms may invest less because of decreasing marginal returns to capital, as shown in column (6). Next we control for access to international securities markets by including a dummy variable for firms that report issuance of ADRs. Leuz and Oberholzer-

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[12] In non-liberalized environment, the coefficient is of similar magnitude, but is not significant. Lack of significance may reflect large standard errors in the non liberalized sub-sample.

Gee (2006) show that, in Indonesia, politically connected firms are less likely to issue

publicly traded foreign securities. Omitting direct access to international securities markets

may thus bias our estimate downward, if investments are financed by the issuance of foreign

securities. We find that firms issuing ADRs do invest significantly more than other firms, but

that does not affect the estimated impact of political connections on investment (column (8)).

We also include dummies for firms reporting R&D expenditures and reporting foreign sales.

The magnitude of the effect is not trivial: it implies that, within countries, politically-

connected firms on average invest (relative to their initial stock of capital) 2 percentage

points more than non connected firms of similar characteristics. This effect is large given that

the median investment rate is about 16 percent of a firm's initial stock of capital.

Table 10a of Appendix B shows that this additional investment of politically

connected firms is financed mainly by an increase in borrowing. After controlling for various

firm characteristics, politically connected firms increase their indebtedness significantly more

than other firms in financially liberalized environments, and this increase in leverage seems

to be mainly driven by an increase in short-term borrowing (Table 10b).[13]

In Table 10c, we report regressions showing that there is a robust negative association

between political connections of firms and the growth rate of profits in financially integrated

environments. The result is robust when we control for various firm characteristics, including

the market-to-book ratio, and the capital-output ratio. The estimated effect is also

economically large: within countries having liberalized debt creating capital inflows,

politically-connected firms experience a 0.8 percentage point lower annual growth of profits

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[13] Result for long-term debt are available upon request.

than non-politically connected firms of similar past ROA, size, capital intensity and market-to-book ratio.

Thus, we find that, on average, politically connected firms tend to invest relatively more than other firms of similar characteristics in financially integrated environments. This differential effect on investment is accompanied by a slower growth in reported profits. This is not consistent with an efficient allocation of capital across firms.

One potential explanation for this result could be that politically connected firms tend to distribute a higher share of value-added in the form of wages. This would be the case if, for instance, politically connected firms would have to "pay-back" politicians for an easier access to credit by offering higher wages in politically contested areas. For instance, Bertrand et al. (2007) find that, in France, politically connected firms exhibit lower profits than other firms. In their sample of French firms, this lower performance seems to be mainly driven by higher labor costs. If our results were driven by labor costs, we should expect to obtain similar results for state-owned firms as for politically connected firms. Moreover, the coefficient on politically connected firms should become smaller and less significant when we control for state-ownership. Column (7) shows that state-owned firms invest significant *less* (not more) than other firms, which contrasts the result obtained for politically connected firms. Moreover, The effect of political connections on profit growth remains virtually unchanged when we control for state-ownership (Table 10c, column (4)).

For each specification, a number of robustness tests were performed that did not alter our results. First, the firm sample was balanced in each country. Second, countries in which no-politically connected firms were identified were dropped from the sample. Third, each East Asian emerging market country was dropped one at a time (not reported). Fourth, the

political connection dummy was redefined to be equal to 1 only for the firms for which a start and end date of the connection was identified. In this specification, the dummy was set to zero for years before the identified start date and after the identified end date.

B.   The role of country characteristics

In financially integrated environments, the differential effect of political connections on investment, access to credit and profitability should depend on various country characteristics. Our model suggests that the "overall" governance quality, the quality of corporate governance and the degree of efficiency and liberalization of the domestic banking system should matter. As noticed earlier the banking sector reform index varies significantly within sub-groups of countries when split according to governance level. It is also not strongly correlated with the corporate governance index. This suggests that we may, a priori, be able to disentangle effects associated with overall governance or with corporate governance on the one hand, and effects associated with the degree of liberalization of the domestic banking sector on the other hand.

Note that all the measures considered, with the exception of the World Bank corruption index, are time-varying variables, which implies that the role of the macroeconomic characteristics in shaping the impact of political connections in the allocation of capital domestically is identified not only across different groups of countries, but also within countries over time. In other words, the impact of financial integration on the allocation of capital domestically does not only differ across countries according to some characteristics, but may also evolve over time as a country reforms domestic policies and institutions.

In Tables 7 a-c, we split the sample into two sub samples according to various country characteristics, as described in **specification 2**. In other words, we allow for heterogeneity of the coefficient on the politically-connected firms variable based on country characteristics.

Table 7a shows the results for the investment equation.[14] The first column shows that the differential effect of political connections on investment is significant for the sub-sample of countries with below median quality of institutions, but not among other countries. Columns (2) to (4) explore whether other country characteristics also matter, by performing similar sample splits based on other macroeconomic variables. Columns (2) to (4) show that having a large banking sector or a large stock market does not mitigate the benefits of political connections in countries opened to capital flows. However, columns (3) shows that having a less reformed domestic banking system partially explains the effect attributed to the overall institutional environment. Indeed, the coefficient drop by half to 0.018, and remains significant at the 10 percent level only. In contrast, the coefficient for below median banking reforms is significant at the 5 percent level and is of the same order of magnitude as the one on institutional quality.

Similar specifications for the log change in leverage and ROA are reported in Tables 7b and 7c respectively. Results for leverage are consistent with the ones for investment. Politically connected firms increase their indebtedness relatively more than other firms in countries that opened to capital flows, lower quality of governance, and less reformed domestic banking systems. Again, the size of the credit market or of the stock market are not

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[14] The following firm level control variables (all lagged by one year) are included (but not reported) in the tables: log of total assets, log of ROA and log of current ratio.

associated, one way or another, with the benefits of political connections. Results on institutional quality are broadly similar for the log change of ROA, but become weaker when controlling for other country characteristics (Table 7c).

The same robustness tests as done in Table 6 were performed, and our results are robust to: (a) dropping countries in which no-politically connected firms were identified, (b) dropping each East Asian emerging market one at a time, (c) balancing the sample in each country (results not reported) ,and (d) defining as politically connected only the firms for which a start date and an end-date of the political connection were identified (results not reported).

Tables 8a-c show that we obtain similar results when using a d*e facto* measure of international financial integration, as in **specification 3**. As discussed earlier, our measure of de facto international financial integration is defined as the stock of external debt liabilities to GDP. In this specification, countries are first split into two subgroups according to the overall quality of institutions, and next, within each subsample according to the degree of *de facto* financial integration, the degree of domestic financial reforms, or the size of the stock market, or of the credit market.

The results are consistent with those obtained with the *de jure* measure of financial oppenness. We find that politically connected firms invest relatively more, are relatively more indebted and experience a slower growth of profits in countries that have a lower quality of governance and that are also more financially integrated. We also find some similar, albeit weaker differential effects on investment and leverage in countries with low governance and that are less financially integrated, but no differential effect on profit growth.

In each subset of countries, splitting by the size of the domestic financial sector or by the degree of banking reform does not explain our result away. In other words, for each subset of countries based on overall governance, the impact of international financial integration is not explained for the size of the domestic financial sector, or the degree of financial reforms. We do not find any significant effect of political connections, while the coefficient on the size of the banking system or of the stock market are counter-intuitive.

Robustness tests as in the previous sets of regressions were also performed, and did not affect our main conclusions. Specifically, the results are robust to: (a) excluding countries in which no political connections were identified, (b) dropping East Asian emerging markets one by one, (c) balancing the sample in each country (not reported), and (d) defining as politically connected only the firms for which a start date and an end-date of the political connection were identified (results not reported).

C. **Disentangling the impact of corporate governance and banking sector reforms**

In Tables 9a-c, we explore the respective roles of better corporate governance and banking sector reforms in improving the allocation of capital within countries. As already discussed, these two indices exhibit a significant amount of variation, and are only weakly correlated. This suggests that we might be able to disentangle the effects of these two dimensions on the allocation of capital.

Rather than splitting samples according to country characteristics, we interact the dummy for politically connected firms in countries opened to capital flows with each country characteristic considerered (as in **specification 4**, which is consistent with the equation of

Theorem 4).[15] This amounts to assuming that the differential effect of openness on politically connected firms depends linearly on some country characteristics.

Table 9a shows the investment regressions. The specification again includes the basic firm level control variables identified in Table 6. The findings are the following. Better overall corporate governance practices tends to reduce the disproportional investment of politically connected firms in countries that are financially integrated. At the median value of the corporate governance index, the net effect of political connections on investment is about -0.04. Interestingly, the results are also consistent for banking reforms. Moreover, the size of the coefficient of the corporate governance index is not significantly affected by the inclusion of the banking reform index.

Better corporate governance also tends to reduce the privileged access to credit of politically connected firms in financially integrated environments (Table 9b). At the median value of the corporate governance index, the overall effect of political connections on the log change in leverage is about 0.05. However, the coefficient of the banking reform index is not significant (t stat of 1.37), even though it has the expected sign.

The differential negative association between political connections and the growth of ROA seems also to be mitigated when countries improve their corporate governance. The effect of banking sector reforms is however insignificant. Finally, the size of banking sector or stock market does not seem to matter.

To summarize, we find robust evidence that, in financially integrated environments, politically connected firms invest proportionally more than non-connected

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[15] In appendix B, Tables 11a-b report the regression results when using a *de facto* measure of financial integration instead of the *de jure* liberalization date.

firms of similar characteristics, within countries with weaker governance, and less liberalized banking systems. In such environment, this higher investment seems to be facilitated by easier access to credit, and is associated with a slower growth of profitability.

V. CONCLUSION

In this paper, we empirically test the relevance of microeconomic limits to the macroeconomic benefits of financial integration, as suggested by existing theories of "dual agency". While we do not and cannot test the overall impact of financial integration, we are able to precisely identify a channel that might explain why the benefits of financial integration may be limited in certain environments. Specifically, in countries with weaker institutional environments, international financial integration does not seem to induce a better allocation of capital among domestic firms: firms with political connections seem to benefit disproportionately more than other firms from the reduction in the cost of uninformed capital induced by financial globalization, even though they are less profitable. We suggest an explanation based on the regulatory forbearance of domestic banks when lending to related parties. In this model, international financial integration increases the supply of uninformed capital relative to informed capital which increases collusive behaviors between domestic banks and firms.

We also find that this "political agency" effects seems to be somewhat mitigated when countries improve the efficiency of their domestic banking systems, or when the overall corporate governance environment improves. This suggests that, while short-term effects of financial globalization may exacerbate the (mis)allocation of capital between

domestic firms, over time, in the long-term, successful reforms (of corporate governance, of

domestic financial institutions) help mitigate these adverse effects.

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Table 1a. Definition of variables

Variable Name	Definition
log IK	log (1 + Net Investment / lagged Net Property Plant and Equipment)
Connected (after/before liberalization)	Interaction dummies for politically connected firms and post/pre- liberalization
logTA	log (Total Assets)
log ROA	log (1+ Earnings Before Interest and Taxes / Total Assets)
log CR	log (1 + Current Assets / Current Liabilities)
log TD/K	log (total debt / lagged net property, plant and equipment)
log STD/K	log (short-term debt / lagged net property, plant and equipment)
log LTD	log (long-term debt / lagged net property, plant and equipment)
log K/TA	log(Net Property, Plant and Equipment / Total Assets)
log K/Y	log(Net Property, Plant and Equipment / Sales)
dummy SOE	dummy for state-owned firms
dummy R&D	dummy for firms reporting R&D expenditures
dummy foreign sales	dummy for firms reporting foreign sales
Dummy ADR	dummy for firms issuing ADRs
log market-to-book	log ((average of end-year market capitalization t and t-1 + book value of debt) / (book value of debt and total common equity))
Banking reform index	Index of banking reform (Abiad, Detragiache and Tressel (forthcoming))
Corporate governance index	Index of corporate governance (De Nicolo, Laeven and Ueda (2006))
external debt liabilities	Stock of gross external debt liabilities to GDP (Lane and Milesi-Ferretti (2006))
Connected (before liberalization) High/low governance	Interaction dummyfor politically connected firms and pre - liberalization dummy interacted with dummy for above/below median World Bank corruption index (averaged over 1996-2004)
Connected (after liberalization) High/low governance	Interaction dummyfor politically connected firms and post - liberalization dummy interacted with dummy for above/below median World Bank corruption index (averaged over 1996-2004)
Connected (after liberalization) below median banking reform index	Interaction dummies for politically connected firms and post - liberalization interacted with dummy for below median annual banking reform index
Connected (after liberalization) Below median private credit	Interaction dummies for politically connected firms and post - liberalization interacted with dummy for below median annual ratio of private credit to GDP (source: World Bank financial structure database)
Connected (after liberalization) below median stock market cap.	Interaction dummies for politically connected firms and post - liberalization interacted with dummy for below median annual stock market market capitalization to GDP ratio (source: WB financial structure database)
Connected (de facto integration above median) low/high governance	Interaction dummy for politically connected firms and dummy for above median annual de facto financial integration computed on the sample of countries with below/above median governance
Connected (de facto integration below median) low/high governance	Interaction dummy for politically connected firms and dummy for below median annual de facto financial integration computed on the sample of countries with below/above median governance
Connected (below median bank reforms) low/high governance	Interaction dummy for politically connected firms and dummy for below median annual banking reform index computed on the sample of countries with below/above median governance
Connected (below median stock market cap.) low/high governance	Interaction dummy for politically connected firms and dummy for below annual stock market capitalization to GDP ratio computed on the sample of countries with below/above median governance
Connected (below median private credit) low/high governance	Interaction dummy for politically connected firms and dummy for below median annual private credit to GDP ratio computed on the sample of countries with below/above median governance
Connected (after liberalization) × Index Corporate Governance × Index banking reforms × stock market cap. × private credit	dummy for connected firm after liberalization interacted with : corporate governance index index banking reforms stock market capitalization private credit to GDP ratio
Connected × external debt liabilities (t-1)	dummy for politically connected firms × stock of gross external debt liabilities / GDP
Connected × external debt liabilities (t-1) × corporate governance index (t-1) × banking reforms index (t-1) × private credit (t-1) × stock market cap. (t-1)	dummy for politically connected firms × stock of gross external debt liabilities / GDP, interacted with: corporate governance index banking reform index private credit to GDP ratio stock market capitalization to GDP ratio

Sources: firm balance sheets and income statements are from Worldscope, Information on political connections of firms is from Faccio (2006a)

Table 1b. The Sample

country	Period 1/	Nb. Firms 2/	% connected 3/	Dates Liberalization	Dates Capital Control	Lib 4/	Governance
ARGENTINA	1992-2005	47	0.0%	1989			L
AUSTRALIA	1986-2005	230	0.7%	1984			H
AUSTRIA	1987-2005	71	0.9%	1990		X	H
BELGIUM	1987-2005	81	3.8%	1977			H
BRAZIL	1990-2005	256	0.0%	1990, 1997	1996	X	L
CANADA	1986-2006	482	1.3%	1974			H
CHILE	1990-2005	117	2.2%	1979, 1985, 1999	1982, 1991	X	H
COLOMBIA	1992-2005	17	0.0%	1991, 1998	1992	X	L
CZECH REPUBLIC	1997-2005	30	0.0%	1996			L
DENMARK	1988-2005	109	3.1%	1989			H
FINLAND	1987-2005	92	1.5%	1992		X	H
FRANCE	1987-2005	473	2.2%	1990		X	H
GERMANY	1986-2005	452	1.5%	1974			H
GREECE	2000-2005	33	0.7%	1993			L
HONG KONG	1987-2005	254	2.0%	1973			H
HUNGARY	1999-2005	23	3.7%	1991			L
INDIA	1993-2005	220	2.8%	non liberalized			L
INDONESIA	1992-2005	133	22.1%	1988			L
IRELAND	1985-2005	43	2.4%	1988		X	H
ISRAEL	1995-2005	43	3.6%	1977, 1990	1979		H
ITALY	1987-2005	170	10.3%	1992		X	L
MALAYSIA	1987-2005	286	19.8%	1979, 1995	1994, 1998	X	L
MEXICO	1987-2005	95	8.5%	1989		X	L
NETHERLANDS	1987-2005	116	0.4%	1980			H
NEW ZEALAND	1988-2005	38	0.0%	1984			H
NORWAY	1987-2005	81	0.0%	1990		X	H
PERU	1993-2005	46	0.0%	1991			L
PHILIPPINES	1992-2005	65	4.4%	1976, 1994	1979	X	L
POLAND	1996-2005	19	0.0%	1996			L
PORTUGAL	1993-2005	41	3.0%	1986			H
RUSSIAN FEDERATI	2000-2005	12	20.0%	1993			L
SINGAPORE	1987-2005	167	7.9%	1973			H
SOUTH AFRICA	1987-2005	202	0.0%	1979, 1995	1985	X	L
KOREA (SOUTH)	1989-2005	570	2.6%	1994		X	L
SPAIN	1987-2005	104	1.5%	1987			H
SRI LANKA	1998-2005	12	0.0%	non liberalized			L
SWEDEN	1987-2005	128	1.1%	1981			H
TAIWAN	1992-2005	331	3.4%	1997		X	L
THAILAND	1991-2005	177	15.1%	1993		X	L
TURKEY	1996-2005	76	1.2%	1989			L
VENEZUELA	1997-2005	13	0.0%	1996			L
ZIMBABWE	2000-2005	11	0.0%	non liberalized			L

1/ observations for key variables covering at least 20 firms (10 firms if country sample covers less than 20 firms)
2/ number of firms with observations for key variables in 2000
3/ source: Faccio (2006)
4/ countries with at least 2 years of observations before liberalization date

Table 2. Firm Level Summary Statistics

	I/K		STD / K		LTD / K		ROA		MV / BV	
	Median	Std Dev	Median	Std Dev	Median	Std Dev	Median	Std Dev	Median	Std Dev
Connected	16%	0.32	**35%**	2.02	**43%**	2.24	6.7%	0.09	1.175	1.09
Not connected	17%	0.34	26%	36.66	33%	102.36	7.1%	0.12	1.172	1.05

	K / Y		Rel. TA [1]		R&D	ADR	Foreign Sales
	Median	Std Dev	Median	Std Dev	proportion of firms	proportion of firms	proportion of firms
Connected	**43%**	1.74	**0.71%**	0.03	**43%**	11%	92%
Not connected	35%	38.62	0.29%	0.03	7%	9%	79%

Table 3. Country Level Summary Statistics

	Min	25th percentile	Median	75th percentile	Max
Debt Liabilities / GDP	8.7%	39.1%	**56.6%**	82.3%	537.0%
WB Corruption Index	-0.86	0.25	**1.23**	1.90	2.04
Index Banking Reform	0.2	1.8	**2.2**	2.6	3
Private Credit / GDP	6.4%	29.2%	**55.4%**	79.7%	178.5%
Stock Mkt Cap. / GDP	1.4%	20.7%	**38.1%**	75.8%	486.3%
Stock Mkt Turnover	0.9%	24.9%	**44.1%**	73.4%	989.6%
Index Corporate Governance	0.286	0.57	**0.61**	0.644	0.759

Table 4. Pairwise correlations (country level variables)

	Gross External Debt Liabilities / GDP	WB Corruption Index	Private Credit / GDP	Stock Mkt Cap. / GDP	Stock Mkt Turnover	Index Banking Reform	Index Corporate Governance
Gross External Debt Liabilities / GDP	1						
WB Corruption Index	**0.4936** *0.0009*	1					
Private Credit / GDP	**0.533** *0.0003*	0.7706 *0*	1				
Stock Mkt Cap. / GDP	**0.4508** *0.0027*	0.3445 *0.0255*	0.6322 *0*	1			
Stock Mkt Turnover	-0.1586 *0.3157*	0.1121 *0.4797*	0.1646 *0.3038*	0.0027 *0.9865*	1		
Index Banking Reform	**0.4385** *0.0041*	**0.5344** *0.0003*	**0.4485** *0.0037*	0.3141 *0.0455*	-0.2297 *0.1486*	1	
Index Corporate Governance	0.2404 *0.1643*	**0.5744** *0.0003*	0.4355 *0.0089*	0.3481 *0.0405*	0.1519 *0.3836*	0.2814 *0.1069*	1

Table 5. Country Summary Statistics by Governance Level

	Below median governance					Above median governance				
	Min	25th percentile	Median	75th percentile	Max	Min	25th percentile	Median	75th percentile	Max
Gross External Debt Liabilities / GDP	8.7%	30.4%	42.5%	57.7%	158.5%	21.2%	52.7%	72.1%	105.8%	537.0%
Index Banking Reform	0.2	1.4	2	2.2	2.8	0.6	2.2	2.4	2.8	3
Private Credit / GDP	6.4%	18.5%	28.1%	53.5%	121.6%	25.9%	54.0%	75.1%	92.6%	178.5%
Stock Mkt Cap. / GDP	1.4%	15.3%	27.3%	51.3%	282.4%	5.7%	32.2%	51.3%	88.6%	486.3%
Stock Mkt Turnover	0.9%	18.1%	37.4%	77.4%	989.6%	5.9%	31.0%	49.6%	71.6%	215.8%

Table 6. Average Effect of Liberalization on Investment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
log I/K (t-1)	0.194	0.187	0.186	0.189	0.181	0.196	0.189	0.189	0.193	0.189	0.192
	[15.12]***	[14.86]***	[15.64]***	[14.79]***	[13.35]***	[15.20]***	[14.80]***	[14.84]***	[12.94]***	[14.76]***	[13.39]***
Connected (after liberalization)	**0.012**	**0.023**	**0.024**	**0.022**	**0.02**	**0.021**	**0.022**	**0.022**	**0.028**	**0.024**	**0.022**
	[1.32]	**[2.14]****	**[2.30]****	**[2.26]****	**[2.49]****	**[2.19]****	**[2.27]****	**[2.30]****	**[3.78]*****	**[2.26]****	**[2.23]****
Connected (before liberalization)	0.016	0.024	0.025	0.021	0.028	0.02	0.021	0.022	0.025	0.087	0.022
	[1.03]	[1.42]	[1.49]	[1.27]	[1.64]	[1.27]	[1.22]	[1.28]	[1.34]	[4.51]***	[1.32]
logTA (t-1)		-0.014	-0.015	-0.013	-0.011	-0.012	-0.013	-0.014	-0.013	-0.013	-0.013
		[7.01]***	[7.92]***	[7.55]***	[5.96]***	[5.49]***	[7.30]***	[7.41]***	[6.65]***	[7.56]***	[6.99]***
log ROA (t-1)			0.093	0.082	0.074	0.064	0.082	0.083	0.065	0.082	0.078
			[3.34]***	[3.20]***	[3.72]***	[2.70]***	[3.20]***	[3.30]***	[1.92]*	[3.20]***	[2.89]***
log CR (t-1)				0.049	0.049	0.051	0.049	0.048	0.064	0.049	0.048
				[8.20]***	[8.81]***	[5.28]***	[8.20]***	[8.26]***	[8.99]***	[8.19]***	[7.88]***
log market-to-book (t-1)					0.052						
					[8.55]***						
log K/Y (t-1)						-0.053					
						[3.17]***					
dummy SOE							-0.016				
							[2.40]**				
Dummy ADR								0.013			
								[2.06]**			
dummy foreign sales								0.001			
								[0.19]			
dummy R&D								0.01			
								[4.58]***			
Observations	73226	73225	72673	72090	63459	70716	72090	72090	49775	72090	64914
R-squared	0.12	0.13	0.14	0.15	0.16	0.17	0.15	0.15	0.16	0.15	0.16
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sample	full	full	full	full	full	full	full	full	Balanced panel	Date established	excl. no connections

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Balanced panel: sample balanced in each country

Date established: firm considered connected if and only if information is known on date in which connection is established, and until last year for which the connection is observed

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Table 7. De jure liberalization and governance

Panel A: impact on investment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log I/K (t-1)	0.189	0.189	0.189	0.189	0.192	0.19	0.186	0.187
	[14.78]***	[14.77]***	[14.79]***	[14.78]***	[13.38]***	[14.51]***	[14.36]***	[14.44]***
Connected (before liberalization)	0.041							
High governance	[1.02]							
Connected (after liberalization)	0.001							
High governance	[0.12]							
Connected (before liberalization)	0.019	0.019	0.019	0.019	0.02	0.02	0.024	0.006
Low governance	[1.07]	[1.07]	[1.07]	[1.07]	[1.12]	[1.10]	[1.29]	[0.48]
Connected (after liberalization)	**0.033**	**0.037**	**0.018**	**0.037**	**0.033**	**0.042**	**0.035**	**0.021**
Low governance	**[2.78]***	**[4.23]***	**[1.75]***	**[3.05]***	**[2.73]***	**[4.04]***	**[2.83]***	**[1.89]***
Connected (after liberalization)		-0.007						
Below median private credit		[0.63]						
Connected (after liberalization)			**0.024**					
below median banking reform index			**[2.29]***					
Connected (after liberalization)				-0.008				
below median stock market cap.				[0.67]				
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	72090	72090	72090	72090	64914	70597	67773	68350
R-squared	0.15	0.15	0.15	0.15	0.16	0.15	0.15	0.15
Sample	full	full	full	full	excl. no connections	Indonesia dropped	Korea dropped	Malaysia dropped

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables include: size, Return on Assets, and the Current Ratio.

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Panel B: impact on leverage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log TD/K (t-1)	-0.234	-0.234	-0.234	-0.234	-0.232	-0.234	-0.234	-0.238
	[20.48]***	[20.47]***	[20.48]***	[20.47]***	[18.55]***	[20.07]***	[19.74]***	[20.27]***
Connected (before liberalization)	0.082							
High governance	[1.76]*							
Connected (after liberalization)	0.041							
High governance	[1.37]							
Connected (before liberalization)	0.104	0.104	0.104	0.104	0.105	0.104	0.105	0.146
Low governance	[1.08]	[1.07]	[1.07]	[1.07]	[1.09]	[1.08]	[1.05]	[1.47]
Connected (after liberalization)	**0.094**	**0.12**	**0.054**	**0.079**	**0.092**	**0.114**	**0.099**	**0.075**
Low governance	**[2.98]***	**[3.62]***	**[1.77]***	**[2.49]***	**[2.93]***	**[3.89]***	**[3.06]***	**[1.75]***
Connected (below median private credit)		-0.052						
		[1.28]						
Connected (below median bank reforms)			**0.063**					
			[2.29]*					
Connected (below median stock market cap.)				0.03				
				[0.87]				
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	70379	70379	70379	70379	63302	68992	66047	66886
R-squared	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
sample	full	full	full	full	excl. no connections	Indonesia dropped	Korea dropped	Malaysia dropped

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables include: size, Return on Assets, and the Current Ratio.

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Panel C: impact on profitability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log ROA (t-1)	-0.621	-0.621	-0.621	-0.621	-0.619	-0.62	-0.605	-0.621
	[22.91]***	[22.91]***	[22.91]***	[22.91]***	[20.83]***	[22.42]***	[23.45]***	[22.18]***
Connected (before liberalization)	-0.009							
High governance	[1.33]							
Connected (after liberalization)	-0.007							
High governance	[1.63]							
Connected (before liberalization)	-0.006	-0.006	-0.006	-0.006	-0.007	-0.006	-0.006	-0.007
Low governance	[1.49]	[1.49]	[1.49]	[1.49]	[1.54]	[1.47]	[1.33]	[1.48]
Connected (after liberalization)	**-0.009**	**-0.01**	**-0.007**	**-0.007**	**-0.009**	**-0.01**	**-0.008**	**-0.009**
Low governance	**[2.18]****	**[2.65]****	**[1.26]**	**[1.75]***	**[2.12]****	**[2.27]****	**[1.99]***	**[1.76]***
Connected (below median bank depth)		0.002						
		[0.74]						
Connected (below median bank reforms)			-0.003					
			[0.76]					
Connected (below median stock market cap.)				-0.004				
				[1.11]				
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	63653	63653	63653	63653	57194	62299	59649	60019
R-squared	0.34	0.34	0.34	0.34	0.34	0.34	0.33	0.35
sample	full	full	full	full	excl. no connections	Indonesia dropped	Korea dropped	Malaysia dropped

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables: size, log(market-to-book), log(capital-output ratio)

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Table 8. De facto financial integration and governance

Panel A. impact on investment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log I/K (t-1)	0.189	0.189	0.189	0.189	0.192	0.187	0.186	0.19
	[13.84]***	[13.84]***	[13.84]***	[13.84]***	[12.76]***	[13.55]***	[13.51]***	[13.62]***
Connected (de facto integration above median)	**0.035**	**0.034**	**0.051**	**0.049**	**0.035**	**0.019**	**0.036**	**0.044**
low governance	**[2.84]***	**[2.21]**	**[5.93]***	**[5.75]***	**[2.84]***	**[2.01]**	**[2.91]***	**[4.12]***
Connected (de facto integration below median)	**0.022**	**0.021**	**0.032**	**0.036**	**0.022**	**0.02**	**0.026**	**0.025**
low governance	**[1.73]***	**[1.71]***	**[2.81]***	**[3.09]***	**[1.73]***	**[1.40]**	**[1.85]***	**[1.92]***
Connected (de facto integration above median)	-0.003				-0.003	-0.003	-0.002	-0.003
High governance	[0.31]				[0.32]	[0.27]	[0.23]	[0.28]
Connected (de facto integration below median)	0.008				0.008	0.008	0.008	0.008
High governance	[0.58]				[0.57]	[0.62]	[0.62]	[0.61]
Connected (below median bank reforms)		0.006						
High governance		[0.65]						
Connected (below median bank reforms)		0.001						
Low governance		[0.11]						
Connected (below median stock market cap.)			0.013					
High governance			[1.22]					
Connected (below median stock market cap.)			-0.032					
Low governance			[2.90]***					
Connected (below median bank depth)				0.001				
High governance				[0.08]				
Connected (below median bank depth)				-0.038				
Low governance				[3.51]***				
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	72090	72090	72090	72090	64914	68350	67773	70597
R-squared	0.15	0.15	0.15	0.15	0.16	0.15	0.15	0.15
sample	full	full	full	full	excl. no connections	Malaysia dropped	Korea dropped	Indonesia dropped

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables include: size, Return on Assets, and the Current Ratio.

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Panel B. Impact on leverage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log TD/K (t-1)	-0.234	-0.234	-0.234	-0.234	-0.232	-0.238	-0.234	-0.234
	[24.12]***	[24.11]***	[24.11]***	[24.11]***	[21.78]***	[24.59]***	[23.25]***	[23.71]***
Connected (de facto integration above median)	**0.089**	**0.058**	**0.096**	**0.126**	**0.088**	**0.071**	**0.09**	**0.114**
low governance	**[3.28]***	**[1.44]**	**[4.31]***	**[5.30]***	**[3.26]***	**[1.77]***	**[3.30]***	**[4.31]***
Connected (de facto integration below median)	**0.113**	**0.087**	**0.117**	**0.152**	**0.111**	**0.116**	**0.137**	**0.112**
low governance	**[2.36]**	**[1.73]***	**[2.46]**	**[3.07]***	**[2.35]**	**[2.10]**	**[2.72]***	**[2.22]**
Connected (de facto integration above median)	0.013				0.011	0.012	0.014	0.013
High governance	[0.30]				[0.25]	[0.28]	[0.32]	[0.29]
Connected (de facto integration below median)	0.071				0.074	0.07	0.072	0.071
High governance	[2.52]**				[2.72]***	[2.52]**	[2.52]**	[2.52]**
Connected (below median bank reforms)		0.032						
High governance		[0.85]						
Connected (below median bank reforms)		0.059						
Low governance		[1.51]						
Connected (below median stock market cap.)			0.114					
High governance			[4.88]***					
Connected (below median stock market cap.)			-0.013					
Low governance			[0.30]					
Connected (below median bank depth)				0.072				
High governance				[2.49]**				
Connected (below median bank depth)				-0.099				
Low governance				[2.25]**				
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	70379	70379	70379	70379	63302	66886	66047	68992
R-squared	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
sample	full	full	full	full	excl. no connections	Malaysia dropped	Korea dropped	Indonesia dropped

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables include: size, Return on Assets, and the Current Ratio.

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Panel C. Impact on profitability

	(1)	(2)	(4)	(3)	(5)	(6)	(7)	(8)
log ROA (t-1)	-0.621	-0.621	-0.621	-0.621	-0.619	-0.621	-0.606	-0.62
	[22.57]***	[22.57]***	[22.57]***	[22.57]***	[20.48]***	[21.84]***	[22.60]***	[22.08]***
Connected (de facto integration above median)	**-0.009**	**-0.009**	**-0.007**	**-0.011**	**-0.009**	**-0.009**	**-0.009**	**-0.011**
low governance	**[2.75]***	**[1.88]***	**[1.70]***	**[3.05]***	**[2.71]***	**[2.09]***	**[2.72]***	**[2.88]***
Connected (de facto integration below median)	**-0.006**	**-0.006**	**-0.005**	**-0.008**	**-0.007**	**-0.007**	**-0.003**	**-0.007**
low governance	**[1.23]**	**[1.17]**	**[0.95]**	**[1.42]**	**[1.26]**	**[1.23]**	**[0.64]**	**[1.24]**
Connected (de facto integration above median)	-0.005				-0.005	-0.006	-0.006	-0.005
High governance	[0.94]				[0.88]	[0.97]	[0.98]	[0.92]
Connected (de facto integration below median)	-0.008				-0.008	-0.008	-0.008	-0.008
High governance	[2.39]**				[2.26]**	[2.40]**	[2.34]**	[2.34]**
Connected (below median bank reforms)		-0.01						
High governance		[2.11]**						
Connected (below median bank reforms)		0						
Low governance		[0.08]						
Connected (below median stock market cap.)			-0.007					
High governance			[1.45]					
Connected (below median stock market cap.)			-0.004					
Low governance			[1.10]					
Connected (below median bank depth)				-0.006				
High governance				[1.22]				
Connected (below median bank depth)				0.006				
Low governance				[1.50]				
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Observations	63653	63653	63653	63653	57194	60019	59649	62299
R-squared	0.34	0.34	0.34	0.34	0.34	0.35	0.33	0.34
sample	full	full	full	full	excl. no connections	Malaysia dropped	Korea dropped	Indonesia dropped

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables: size, log(market-to-book), log(capital-output ratio)

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Table 9. Financial liberalization and corporate governance

Panel A. Impact on investment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
log I/K (t-1)	0.186	0.183	0.186	0.19	0.188	0.196	0.186
	[11.02]***	[11.32]***	[11.01]***	[9.77]***	[10.09]***	[9.41]***	[11.03]***
Connected (before liberalization)	0.007	0.006	0.007	0.007	0.007	0.013	0.046
	[1.66]	[1.84]*	[1.66]	[1.68]	[1.65]	[2.20]**	[7.69]***
Connected (after liberalization)	**0.263**	**0.282**	**0.201**	**0.247**	**0.263**	**0.175**	**0.24**
	[2.62]**	**[2.89]*****	**[2.39]****	**[2.40]****	**[2.63]****	**[2.31]****	**[2.54]****
Connected (after liberalization) × Index Corporate Governance	**-0.408**	**-0.327**	**-0.33**	**-0.393**	**-0.409**	**-0.252**	**-0.368**
	[2.53]**	**[2.23]****	**[2.45]****	**[2.41]****	**[2.54]****	**[2.06]****	**[2.48]****
Connected (after liberalization) × Index Banking Reforms		**-0.031**					
		[2.03]**					
Connected (after liberalization) × stock market cap.			0.017				
			[1.67]				
Connected (after liberalization) × private credit				0.009			
				[0.58]			
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes
Observations	39112	33377	39070	37748	35069	26176	39112
R-squared	0.16	0.16	0.16	0.16	0.16	0.17	0.16
sample	full	full	full	full	excl. no connections	balanced	date est.

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables include: size, Return on Assets, and the Current Ratio.

Excluding no connections: countries in which no-connections are observed are dropped from the sample.

Balanced panel: sample balanced in each country.

Date established: firm considered connected if and only if information is known on date in which connection is established,
and until last year for which the connection is observed.

Panel B. Impact on leverage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
log TD/K (t-1)	-0.223	-0.229	-0.223	-0.222	-0.22	-0.239	-0.223
	[14.47]***	[16.39]***	[14.48]***	[13.77]***	[13.01]***	[12.95]***	[14.42]***
Connected (before liberalization)	0.319	0.227	0.319	0.319	0.316	0.243	0.59
	[33.98]***	[25.75]***	[34.09]***	[32.69]***	[30.33]***	[17.08]***	[32.45]***
Connected (after liberalization)	**0.866**	**0.956**	**1.04**	**0.78**	**0.853**	**0.561**	**0.749**
	[3.37]*	**[3.81]***	**[2.81]***	**[2.46]**	**[3.34]***	**[3.47]***	**[2.73]***
Connected (after liberalization)	**-1.332**	**-1.213**	**-1.551**	**-1.216**	**-1.311**	**-0.783**	**-1.133**
× Index Corporate Governance	**[3.11]***	**[2.52]**	**[2.76]***	**[2.56]**	**[3.08]***	**[2.83]***	**[2.47]**
Connected (after liberalization)		**-0.075**					
× Index Banking Reforms		**[1.37]**					
Connected (after liberalization)			-0.05				
× stock market cap.			[1.20]				
Connected (after liberalization)				0.027			
× private credit				[0.37]			
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes
Observations	38285	32859	38249	36899	34333	26174	38285
R-squared	0.1	0.11	0.1	0.1	0.1	0.12	0.1
sample	full	full	full	full	excl. no connections	balanced	date est.

Method of estimation: OLS with robust standar errors clustered by country-liberalization
* significant at 10%; ** significant at 5%; *** significant at 1%
Control variables include: size, Return on Assets, and the Current Ratio.
Excluding no connections: countries in which no-connections are observed are dropped from the sample.
Balanced panel: sample balanced in each country.
Date established: firm considered connected if and only if information is known on date in which connection is established,
and until last year for which the connection is observed.

Panel C. Impact on profitability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
log ROA (t-1)	-0.639	-0.632	-0.639	-0.642	-0.643	-0.683	-0.639
	[17.20]***	[16.78]***	[17.20]***	[17.51]***	[15.98]***	[18.95]***	[17.20]***
Connected (before liberalization)	-0.009	-0.008	-0.009	-0.009	-0.01	-0.012	0.011
	[2.94]***	[2.45]**	[2.93]***	[3.03]***	[2.70]**	[2.45]**	[1.87]*
Connected (after liberalization)	**-0.08**	**-0.063**	**-0.099**	**-0.076**	**-0.079**	**-0.11**	**-0.092**
	[3.17]***	**[1.84]***	**[2.56]****	**[2.01]***	**[3.20]*****	**[3.46]*****	**[3.51]*****
Connected (after liberalization)	**0.115**	**0.115**	**0.139**	**0.111**	**0.115**	**0.16**	**0.135**
× Index Corporate Governance	**[2.68]****	**[1.47]**	**[2.27]****	**[2.11]****	**[2.72]****	**[2.90]*****	**[2.91]*****
Connected (after liberalization)		**-0.008**					
× Index Banking Reforms		**[0.78]**					
Connected (after liberalization)			0.005				
× stock market cap.			[1.48]				
Connected (after liberalization)				-0.003			
× private credit				[0.23]			
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes
Observations	35594	30439	35556	34458	31917	23933	35594
R-squared	0.35	0.35	0.35	0.36	0.36	0.38	0.35
sample	full	full	full	full	excl. no connections	balanced	date est.

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Control variables: size, log(market-to-book), log(capital-output ratio)

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Balanced panel: sample balanced in each country.

Date established: firm considered connected if and only if information is known on date in which connection is established,
and until last year for which the connection is observed.

APPENDIX A

Proof of Theorem 1

Consider first a non-politically connected firm with initial capital 1. By combining the participation and incentive constraints of a bank, one obtains the size of bank loans $I_m = \frac{1}{\beta} \cdot \overline{\Lambda} \cdot I$, where: $\overline{\Lambda} = \frac{1}{\Delta p} \cdot \left(p_L c + p_H \overline{k} \Delta B \right)$. From the participation constraint of uninformed investors, combined with participation constraints, one shows that the size of uninformed debt contracts is: $I_u = \frac{\overline{\phi}}{\gamma} \cdot I$, where: $\overline{\phi} = p_H \cdot \left(R - \frac{c + b + \overline{k} \Delta B}{\Delta p} \right)$. Hence the size of the project financed is: $\overline{I} = 1 + I_u + I_m = \cfrac{1}{1 - \cfrac{\overline{\phi}}{\gamma} - \cfrac{\overline{\Lambda}}{\beta}} \equiv \frac{1}{\overline{V}(\gamma, \beta)}$.

The same reasoning provides the size of the project financed for a politically connected firm when collusion occurs ex-post: $I_C = 1 + I_{u,C} + I_{m,C} = \cfrac{1}{1 - \cfrac{\phi_C}{\gamma} - \cfrac{\Lambda_C}{\beta}} \equiv \frac{1}{V_C(\gamma, \beta)}$

with: $\phi_C = \tilde{p} \left(R - \frac{c + b + k_L \Delta B}{\Delta p} \right)$ and $\Lambda_C = \frac{1}{\Delta p} \left(p_L c + (1 - q) \Delta p \Delta k \Delta B \right)$.

Similarly, in a collusion-proof contract, the two parameters are:

$\phi_{NC} = p_H \left(R - \frac{c + b + k_H \Delta B}{\Delta p} \right)$ and $\Lambda_{NC} = \frac{1}{\Delta p} \cdot \left(p_L c + p_H k_H \Delta B \right)$.

Proof of Theorem 2, Theorem 3 and Corrolary 1:

In absence of politically connected firms, the equilibrium on the domestic credit market is given by:

$$v = \frac{K_B}{A} = \int_0^1 \overline{I}_m(\beta, \gamma) dC = \frac{1}{\beta} \cdot \frac{\overline{\Lambda}}{\overline{V}(\beta, \gamma)},$$ hence the equilibrium cost of bank capital

is: $\overline{\beta} \left(\overset{-}{\gamma} \right) = \overline{\Lambda} \cdot \left(\frac{1 + v}{v} \right) \cdot \left(1 - \frac{\overline{\phi}}{\gamma} \right)^{-1}$.

If a proportion Φ firms are politically connected, equilibrium on the credit market is given by:

$$v = \frac{K_B}{A} = \int_0^\Phi I_{m,C}(\beta, \gamma)(1 - C) dC + \int_\Phi^1 \overline{I}_m(\beta, \gamma) dC$$

Or: $\beta v = \frac{\Lambda_C}{V_C(\beta, \gamma)} \cdot \Phi \left(1 - \frac{\Phi}{2} \right) + \frac{\overline{\Lambda}}{\overline{V}(\beta, \gamma)} \cdot (1 - \Phi)$

Moreover, the marginal firm choosing to establish political connections is given by: $\frac{1-\Phi}{V_C(\beta,\gamma)} = \frac{1}{\overline{V}(\beta,\gamma)}$. Substituting this relation in the credit market equilibrium condition, one obtains:

$$\beta v \cdot V_C(\beta,\gamma) = F(\Phi) = \Lambda_C \Phi\left(1 - \frac{\Phi}{2}\right) + \overline{\Lambda}(1-\Phi)^2 \textbf{ (equation A)}$$

While the choice to establish political connections is given by:

$$1 - \Phi = \frac{V_C(\beta,\gamma)}{\overline{V}(\beta,\gamma)} = G(\beta,\gamma) \quad \textbf{(equation B)}$$

First, we establish that there exists a threshold value $\overline{\gamma}$ such that some firms establish political connections if and only if $\gamma \leq \overline{\gamma}$.

The first firm to establish political connections will do so if and only if:

$$\frac{1}{V_C(\beta,\gamma)} \geq \frac{1}{\overline{V}(\beta,\gamma)},$$ which is equivalent to: $\frac{\beta}{\gamma} \geq \Psi = \frac{\overline{\Lambda} - \Lambda_C}{\phi_C - \overline{\phi}}$. The credit market equilibrium condition when no firm has political connections shows that β is a decreasing function of γ. Combining with the previous condition, one shows that the threshold value $\overline{\gamma}$ under which firms start establishing political connections is given by: $\overline{\gamma} = \overline{\phi} + \frac{\overline{\Lambda}}{\Psi} \cdot \left(1 + \frac{1}{v}\right)$.

One can show that $\Psi = \Psi\left(\overline{\Delta B}, \overline{\Delta k}, \overline{c}\right)$. [how does $\overline{\gamma}$ depend on various parameters?]

Next, one can show that, at $\gamma = \gamma^{(-)}$, the demand for bank credit necessarily falls as the first firm establishes political connections. Indeed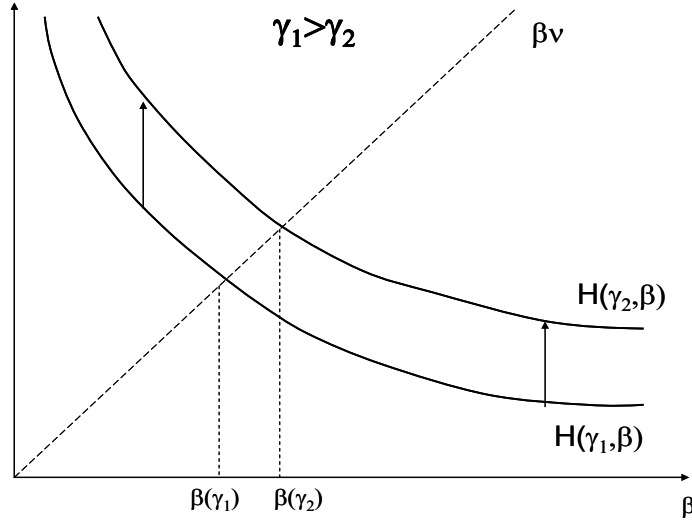, at $\gamma = \gamma^{(-)}$, by definition, $\frac{1}{\overline{V}(\beta,\gamma)} = \frac{1}{V_C(\beta,\gamma)}$. This implies that $\frac{\overline{\Lambda}}{\overline{V}(\overline{\beta(\gamma)},\gamma)} = \frac{\overline{\Lambda}}{V_C(\overline{\beta(\gamma)},\gamma)} > \frac{\Lambda_C}{V_C(\overline{\beta(\gamma)},\gamma)}$. Therefore the demand for capital falls as the first firm establishes political connections. By continuity, and given that the marginal financial cost of political connections rises as more and more firms choose to do so, there necessarily exists an interval $\left[\overline{\gamma} - \varphi, \overline{\gamma}\right]$ over which β falls as the cost of uninformed finance γ falls.

However, the relationship between β and γ is necessarily monotonic for $\gamma \leq \overline{\gamma}$. To see why, assume for the moment that Φ is a decreasing function of γ (more and more firms become politically connected as γ falls further below $\overline{\gamma}$). We will show that this is indeed the case. However, there must always remain a strictly positive fraction of firms that are not politically connected. Indeed, if $\Phi \to 1$, then the utility of the (marginal) firm tends to zero, which is not possible, given that the utility of a non-politically connected firm increases as γ falls. Therefore, there exists $\underline{\gamma}$ such that $\Phi \approx \widetilde{\Phi}$ (constant) for all $\gamma < \underline{\gamma}$. Formally, there exists $\underline{\gamma}$ and σ such that for all $\gamma < \underline{\gamma}$, $\Phi'(\gamma) < \sigma << 1$. So, as a first order approximation, the equilibrium condition on the credit market becomes:

$$\beta v = \frac{\Lambda_C}{V_C(\beta,\gamma)}\tilde{\Phi}\left(1-\frac{\tilde{\Phi}}{2}\right)+\frac{\overline{\Lambda}}{\overline{V}(\beta,\gamma)}\left(1-\tilde{\Phi}\right)^2 = H(\beta,\gamma), \text{ where } \frac{\partial H}{\partial \beta}<0 \text{ and } \frac{\partial H}{\partial \gamma}<0.$$

From the chart below, one can easily see that the equilibrium cost of bank capital β is a decreasing function of γ.

Chart A1

Let us show now that Φ is a decreasing function of γ in equilibrium. Consider the marginal firm choosing to establish political connections at γ_1. By definition:

$$\frac{1-\Phi}{V_C(\gamma_1,\beta(\gamma_1))} = \frac{1}{\overline{V}(\gamma_1,\beta(\gamma_1))}.$$ Consider a marginal reduction in the cost of uninformed

capital: $\gamma_2 = \gamma_1 - \partial\gamma_1$. Is it possible that: $\frac{1-\Phi}{V_C(\gamma_2,\beta(\gamma_2))} < \frac{1}{\overline{V}(\gamma_2,\beta(\gamma_2))}$? Assume it is the

case. Since $1-\Phi = \frac{V_C(\gamma_1,\beta(\gamma_1))}{\overline{V}(\gamma_1,\beta(\gamma_1))}$, this implies that: $\frac{V_C(\gamma_1,\beta(\gamma_1))}{V_C(\gamma_2,\beta(\gamma_2))} < \frac{\overline{V}(\gamma_1,\beta(\gamma_1))}{\overline{V}(\gamma_2,\beta(\gamma_2))}$, or:

$$\frac{\overline{V}(\gamma_2,\beta(\gamma_2))}{V_C(\gamma_2,\beta(\gamma_2))} < \frac{\overline{V}(\gamma_1,\beta(\gamma_1))}{V_C(\gamma_1,\beta(\gamma_1))}, \text{ hence: } \frac{d}{d\gamma}\left(\frac{V_C}{\overline{V}}\right)_{|\gamma=\gamma_1} < 0$$

Next, $\frac{d}{d\gamma}\left(\frac{V_C}{\overline{V}}\right)_{|\gamma=\gamma_1} = \frac{\partial}{\partial\gamma}\left(\frac{V_C}{\overline{V}}\right)+\frac{\partial}{\partial\beta}\left(\frac{V_C}{\overline{V}}\right)\cdot\frac{\partial\beta}{\partial\gamma}$

First, $\frac{\partial}{\partial\gamma}\left(\frac{V_C}{\overline{V}}\right) = \frac{1}{\gamma^2}\cdot\frac{1}{\overline{V}^2}\cdot\left[\left(\phi_C-\overline{\phi}\right)-\frac{\left(\phi_C\overline{\Lambda}-\overline{\phi}\Lambda_C\right)}{\beta}\right].$

Hence $\frac{\partial}{\partial\gamma}\left(\frac{V_C}{\overline{V}}\right)<0 \Leftrightarrow \beta < \frac{\phi_C\overline{\Lambda}-\Lambda_C\overline{\phi}}{\phi_C-\overline{\phi}} = \hat{\beta}$

Similarly, one can show that:

$$\frac{\partial}{\partial \beta}\left(\frac{V_C}{\overline{V}}\right) = \frac{1}{\beta^2} \cdot \frac{1}{\overline{V}^2} \cdot \left[\left(\Lambda_C - \overline{\Lambda}\right) + \frac{\left(\phi_C \overline{\Lambda} - \overline{\phi}\Lambda_C\right)}{\gamma}\right].$$

Hence $\frac{\partial}{\partial \beta}\left(\frac{V_C}{\overline{V}}\right) < 0 \Leftrightarrow \gamma > \frac{\phi_C \overline{\Lambda} - \Lambda_C \overline{\phi}}{\overline{\Lambda} - \Lambda_C} = \hat{\gamma}$.

Finally, note that $\hat{\beta} = \Psi \cdot \hat{\gamma}$, which implies that the equilibrium cost of bank capital is always greater or equal to $\hat{\beta}$ as long as $\gamma > \hat{\gamma}$. In other words, $\beta(\hat{\gamma}) > \hat{\beta}$.

Next, we need to determine the sign of $\frac{d\beta}{d\gamma}$.

Combining equations (A) and equations (B), one shows that:
$$F\left(1 - G(\beta,\gamma)\right) = \beta V_C(\beta,\gamma) \cdot v = Z(\beta,\gamma).$$

Therefore:
$$d\beta\left(-\frac{G'(\beta)}{F'(\Phi)}\right) + d\gamma\left(\frac{-G'(\gamma)}{F'(\Phi)}\right) = d\beta \cdot \frac{\partial Z}{\partial \beta} + d\gamma \cdot \frac{\partial Z}{\partial \gamma}, \text{ and:}$$

$$\frac{d\beta}{d\gamma} = -\frac{\dfrac{\partial Z}{\partial \gamma} \cdot F'(\Phi) + G'(\gamma)}{\dfrac{\partial Z}{\partial \beta} \cdot F'(\Phi) + G'(\beta)}$$

Where: $\begin{cases} \dfrac{\partial Z}{\partial \gamma} = \dfrac{\beta \phi_C}{\gamma^2} v \\ \dfrac{\partial Z}{\partial \beta} = \left(1 - \dfrac{\phi_C}{\gamma}\right) v \end{cases}$ and: $F'(\Phi) = (1 - \Phi) \cdot \left(\Lambda_C - 2\overline{\Lambda}\right) < 0$

Therefore:
$$\frac{d\beta}{d\gamma} = -\frac{\dfrac{\beta \phi_C}{\gamma^2} v F'(\Phi) + G'(\gamma)}{\left(1 - \dfrac{\phi_C}{\gamma}\right) v F'(\Phi) + G'(\beta)}.$$ Assume that banking capital is scarce relative to entrepreneurial capital: $v \ll 1$.

In this limit case, $\frac{d\beta}{d\gamma} = -\frac{G'(\gamma)}{G'(\beta)}$.

Hence $\frac{d\beta}{d\gamma} > 0$ if $\overline{\gamma} > \gamma > \hat{\gamma}$, and the condition $\frac{d}{d\gamma}\left(\frac{V_C}{\overline{V}}\right)\Big|_{\gamma=\gamma_1} < 0$ becomes:

$$G'(\gamma) < -G'(\beta) \cdot \frac{G'(\gamma)}{G'(\beta)} \Leftrightarrow 1 < -1, \text{ which is impossible. Hence: } \frac{d}{d\gamma}\left(\frac{V_C}{\overline{V}}\right)\Big|_{\gamma=\gamma_1} > 0$$

always.

Proof of Corollary 2

We need to show that $\dfrac{\partial \bar{\gamma}}{\partial y} > 0$ with $y = \Delta B$, Δk or c. In Theorem 1, we showed that

$\bar{\gamma} = \bar{\phi} + \dfrac{\bar{\Lambda}}{\Psi}\left(1 + \dfrac{1}{v}\right)$. Consider the case in which bank capital is scarce: $v \ll 1$. In this case, as

a first order approximation, $\bar{\gamma} = \dfrac{\bar{\Lambda}}{\Psi} \cdot \dfrac{1}{v}$. Therefore: $\dfrac{\partial \bar{\gamma}}{\partial y} = \dfrac{\dfrac{\partial \bar{\gamma}}{\partial y}\Psi - \bar{\Lambda}\dfrac{\partial \Psi}{\partial y}}{\Psi^2}$ where again $y = \Delta B$,

Δk or c.

First, note that $\bar{\Lambda} = \dfrac{1}{\Delta p}\left[p_L c + p_H\left((1-q)\Delta k + k_L\right)\Delta B\right]$, therefore it is obvious that, for

$y = \Delta B$, Δk or c, $\dfrac{\partial \bar{\Lambda}}{\partial y} > 0$.

Second, we can show that after simplifications,

$$\Psi = \dfrac{\left(\dfrac{p_H k_L}{1-q}\right) + p_L \Delta k}{p_H \Delta k + \Delta p k_L - \dfrac{\Delta p\left(R - \dfrac{c+b}{\Delta p}\right)}{\Delta B \Big/ \Delta p}} = \dfrac{A}{B}$$

Clearly, $\dfrac{\partial \Psi}{\partial \Delta B} < 0$ and $\dfrac{\partial \Psi}{\partial c} < 0$.

Moreover, $\dfrac{\partial \Psi}{\partial \Delta k} = \dfrac{1}{B^2} \cdot \left[p_L \Delta p k_L - p_L \dfrac{\Delta p\left(R - \dfrac{c+b}{\Delta p}\right)}{\Delta B \Big/ \Delta p} - \dfrac{p_H^2 k_L}{1-q}\right] < 0$ as well.

Indeed, $p_l(p_H - p_L)(1-q) < p_H^2$.

Therefore, for $y = \Delta B$, Δk or c, $\dfrac{\partial \bar{\gamma}}{\partial y} = \dfrac{\underbrace{\dfrac{\partial \bar{\gamma}}{\partial y}}_{>0}\Psi - \bar{\Lambda}\underbrace{\dfrac{\partial \Psi}{\partial y}}_{<0}}{\Psi^2} > 0$.

Finally, point (d) comes directly from Theorem 3.

Proof of Theorem 4

$$\log\left(\frac{I_C}{\bar{I}}\right) = \log\left(1 - \frac{\bar{\phi}}{\gamma} - \frac{\bar{\Lambda}}{\beta}\right) - \log\left(1 - \frac{\phi_C}{\gamma} - \frac{\Lambda_C}{\beta}\right)$$

$$\approx \frac{\phi_C}{\gamma} + \frac{\Lambda_C}{\beta} - \frac{\bar{\phi}}{\gamma} - \frac{\bar{\Lambda}}{\beta}$$

$$= \frac{1-q}{\gamma}\left[\frac{\Delta B}{\Delta p}(p_H \Delta k - \Delta p k_L) - \Delta p\left(R - \frac{c+b}{\Delta p}\right)\right] - \frac{1}{\beta} \cdot \frac{\Delta B}{\Delta p} \cdot [p_L(1-q)\Delta k - p_H q k_L]$$

This can be written as:

$$\log\left(\frac{I_C}{\bar{I}}\right) = g_1(\gamma) \cdot f_1(\Delta B, \Delta k, c) + g_2(\gamma) \cdot f_2(\Delta k, \Delta B), \text{ where: } g_1{}' < 0, \frac{\partial f_1}{\partial \Delta B} > 0, \frac{\partial f_1}{\partial \Delta k} > 0,$$

$\frac{\partial f_1}{\partial c} > 0$, $g_2{}' > 0$, $\beta'(\gamma) < 0$, $\frac{\partial f_2}{\partial \Delta B} > 0$ and $\frac{\partial f_2}{\partial \Delta k} > 0$.

Indeed, if $\frac{d\Phi}{d\gamma} << 1$, as shown earlier, $\beta'(\gamma) < 0$.

Appendix B

Table 10a. Average effect of liberalization on leverage

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
log TD/K (t-1)	-0.232 [21.95]***	-0.232 [21.43]***	-0.231 [21.55]***	-0.234 [20.47]***	-0.221 [19.97]***	-0.242 [20.68]***	-0.234 [20.43]***	-0.234 [20.58]***	-0.246 [17.92]***	-0.232 [18.55]***	-0.234 [20.40]***
Connected (after liberalization)	**0.087 [3.39]***	**0.084 [3.23]***	**0.083 [3.16]***	**0.075 [3.09]***	**0.065 [2.89]***	**0.072 [3.08]***	**0.075 [3.10]***	**0.074 [2.96]***	**0.104 [4.98]***	**0.074 [3.10]***	**0.068 [2.93]***
Connected (before liberalization)	0.045 [0.40]	0.043 [0.39]	0.044 [0.40]	0.102 [1.17]	0.084 [0.96]	0.099 [1.13]	0.1 [1.16]	0.102 [1.15]	0.069 [1.20]	0.101 [1.18]	0.169 [1.13]
logTA (t-1)		0.004 [0.81]	0.003 [0.81]	0.002 [0.60]	0.002 [0.69]	0.006 [1.60]	0.003 [0.67]	-0.001 [0.22]	-0.003 [0.65]	0.004 [0.93]	0.002 [0.64]
log ROA (t-1)			0.046 [0.97]	0.042 [0.84]	0.021 [0.40]	-0.059 [1.18]	0.041 [0.84]	0.043 [0.87]	0.078 [1.64]	0.047 [0.91]	0.041 [0.84]
log CR (t-1)				-0.049 [2.66]***	-0.046 [2.49]**	-0.063 [3.47]***	-0.049 [2.67]***	-0.051 [2.75]***	-0.023 [1.23]	-0.059 [3.27]***	-0.049 [2.64]**
log market-to-book (t-1)					0.013 [0.73]						
log K/Y (t-1)						-0.217 [10.74]***					
dummy SOE							-0.032 [1.23]				
Dummy ADR								0.028 [1.95]*			
dummy foreign sales								0.022 [1.71]*			
dummy R&D								0.007 [0.91]			
Observations	71316	71315	70941	70379	61906	69990	70379	70379	49782	63302	70379
R-squared	0.11	0.11	0.11	0.11	0.1	0.12	0.11	0.11	0.12	0.11	0.11
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sample	full	full	full	full	full	full	full	full	Balanced panel	excl. no connections	Date established

Method of estimation: OLS with robust standar errors clustered by country-liberalization
* significant at 10%; ** significant at 5%; *** significant at 1%
Balanced panel: sample balanced in each country
Date established: firm considered connected if and only if information is known on date in which connection is established, and until last year for which the connection is observed
Excluding no connections: countries in which no-connections are observed are dropped from the sample

Table 10b. Average effect of liberalization on short-term debt

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
log STD/K (t-1)	-0.296	-0.298	-0.298	-0.298	-0.289	-0.319	-0.298	-0.298	-0.31	-0.298	-0.298
	[24.43]***	[23.63]***	[23.61]***	[22.57]***	[19.86]***	[26.59]***	[22.57]***	[22.62]***	[20.56]***	[20.80]***	[22.55]***
Connected (after liberalization)	**0.085**	**0.108**	**0.108**	**0.097**	**0.091**	**0.096**	**0.097**	**0.097**	**0.128**	**0.099**	**0.098**
	[3.15]*	**[3.74]***	**[3.70]***	**[3.80]***	**[3.63]***	**[3.76]***	**[3.81]***	**[3.68]***	**[4.22]***	**[3.80]***	**[3.74]***
Connected (before liberalization)	-0.017	-0.002	-0.001	0.037	0.009	0.033	0.037	0.037	-0.019	0.039	0.194
	[0.10]	[0.01]	[0.00]	[0.23]	[0.06]	[0.20]	[0.23]	[0.23]	[0.17]	[0.24]	[0.92]
logTA (t-1)		-0.03	-0.03	-0.029	-0.03	-0.025	-0.029	-0.032	-0.038	-0.028	-0.029
		[4.32]***	[4.36]***	[4.42]***	[4.71]***	[3.17]***	[4.45]***	[4.53]***	[5.02]***	[3.89]***	[4.40]***
log ROA (t-1)			0.027	0.013	0.003	-0.138	0.013	0.015	0.043	0.003	0.012
			[0.79]	[0.29]	[0.06]	[2.77]***	[0.29]	[0.34]	[0.98]	[0.05]	[0.28]
log CR (t-1)				0.013	0.023	-0.039	0.013	0.01	0.05	-0.001	0.013
				[0.49]	[0.81]	[1.65]	[0.49]	[0.38]	[2.31]**	[0.05]	[0.51]
log market-to-book (t-1)					-0.006						
					[0.26]						
log K/Y (t-1)						-0.342					
						[12.13]***					
dummy SOE							-0.004				
							[0.12]				
Dummy ADR								0.025			
								[1.12]			
dummy foreign sales								0.014			
								[1.18]			
dummy R&D								0.015			
								[1.20]			
Observations	69656	69655	69327	68794	60557	68443	68794	68794	49750	62056	68794
R-squared	0.15	0.15	0.15	0.15	0.14	0.16	0.15	0.15	0.16	0.15	0.15
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Sample	full	full	full	full	full	full	full	full	Balanced panel	excl. no connections	Date established

Method of estimation: OLS with robust standar errors clustered by country-liberalization
* significant at 10%; ** significant at 5%; *** significant at 1%
Balanced panel: sample balanced in each country
Date established: firm considered connected if and only if information is known on date in which connection is established, and until last year for which the connection is observed
Excluding no connections: countries in which no-connections are observed are dropped from the sample

Table 10c. Average effect of liberalization on profitability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log ROA (t-1)	-0.632	-0.622	-0.621	-0.621	-0.622	-0.643	-0.621	-0.619
	[24.35]***	[26.72]***	[22.92]***	[22.90]***	[23.06]***	[21.10]***	[22.91]***	[20.84]***
Connected (after liberalization)	**-0.007**	**-0.007**	**-0.008**	**-0.008**	**-0.008**	**-0.01**	**-0.009**	**-0.008**
	[1.74]*	**[1.87]***	**[2.28]****	**[2.26]****	**[2.38]****	**[2.43]****	**[2.16]****	**[2.16]****
Connected (before liberalization)	-0.007	-0.006	-0.007	-0.007	-0.007	-0.01	-0.004	-0.007
	[1.43]	[1.28]	[1.63]	[1.68]*	[1.77]*	[2.38]**	[1.00]	[1.67]
logTA (t-1)	0.008	0.009	0.009	0.009	0.009	0.009	0.009	0.009
	[3.14]***	[3.70]***	[4.08]***	[4.04]***	[3.76]***	[4.50]***	[4.07]***	[3.83]***
log market-to-book (t-1)		0.018	0.017	0.017	0.017	0.016	0.017	0.017
		[5.93]***	[6.47]***	[6.42]***	[6.71]***	[6.73]***	[6.44]***	[6.03]***
log K/Y (t-1)			-0.037	-0.037	-0.036	-0.041	-0.037	-0.037
			[5.83]***	[5.84]***	[5.84]***	[5.06]***	[5.83]***	[5.28]***
dummy SOE				-0.006				
				[1.01]				
Dummy ADR					-0.004			
					[0.89]			
dummy foreign sales					0.007			
					[3.28]***			
dummy R&D					0			
					[0.05]			
Observations	76362	64245	63653	63653	63653	44213	63653	57194
R-squared	0.37	0.35	0.34	0.34	0.34	0.34	0.34	0.34
country-year fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Sample	full	full	full	full	full	Balanced panel	Date established	excl. no connections

Method of estimation: OLS with robust standar errors clustered by country-liberalization

* significant at 10%; ** significant at 5%; *** significant at 1%

Balanced panel: sample balanced in each country

Date established: firm considered connected if and only if information is known on date in which connection is established, and until last year for which the connection is observed

Excluding no connections: countries in which no-connections are observed are dropped from the sample

Table 11. Corporate governance and de facto financial integration:

Impact on investment

	(1)	(2)	(3)	(4)	(5)	(6)
log I/K (t-1)	0.186	0.184	0.19	0.186	0.188	0.196
	[14.56]***	[13.31]***	[14.49]***	[14.55]***	[13.70]***	[11.09]***
Connected	0.017	0.007	0.019	0.022	0.018	0.023
	[1.92]*	[0.67]	[1.66]*	[2.10]**	[1.97]**	[2.70]***
Connected × external debt liabilities (t-1)	0.193	0.301	0.176	0.153	0.192	0.103
	[2.15]**	[3.56]***	[1.96]*	[1.74]*	[2.15]**	[1.08]
Connected × external debt liabilities (t-1) × corporate governance index (t-1)	-0.318	-0.33	-0.302	-0.275	-0.318	-0.17
	[2.18]**	[2.43]**	[2.16]**	[1.93]*	[2.20]**	[1.10]
Connected × external debt liabilities (t-1) × banking reforms index (t-1)		-0.039				
		[2.90]***				
Connected × external debt liabilities (t-1) × private credit (t-1)			0.006			
			[0.39]			
Connected × external debt liabilities (t-1) × stock market cap. (t-1)				0.009		
				[1.15]		
country-year fixed effects	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes
Observations	39112	33377	37748	39070	35069	26176
R-squared	0.16	0.16	0.16	0.16	0.16	0.17
sample	full	full	full	full	excl. no connections	balanced

Impact on leverage

	(1)	(2)	(3)	(4)	(5)	(6)
log TD/K (t-1)	-0.223	-0.229	-0.222	-0.223	-0.22	-0.238
	[20.62]***	[19.70]***	[20.14]***	[20.61]***	[18.78]***	[19.34]***
Connected	0.077	0.082	0.089	0.048	0.078	0.084
	[1.71]*	[1.55]	[1.66]*	[1.02]	[1.72]*	[2.05]**
Connected × external debt liabilities (t-1)	1.035	1.427	0.933	1.303	1.024	0.565
	[2.80]***	[3.11]***	[2.09]**	[3.02]***	[2.76]***	[1.48]
Connected × external debt liabilities (t-1) × corporate governance index (t-1)	-1.703	-2.082	-1.575	-1.993	-1.688	-0.905
	[2.92]***	[3.45]***	[2.48]**	[3.07]***	[2.89]***	[1.49]
Connected × external debt liabilities (t-1) × banking reforms index (t-1)		-0.081				
		[1.30]				
Connected × external debt liabilities (t-1) × private credit (t-1)			0.017			
			[0.23]			
Connected × external debt liabilities (t-1) × stock market cap. (t-1)				-0.061		
				[1.76]*		
country-year fixed effects	yes	yes	yes	yes	yes	yes
industry fixed effects	yes	yes	yes	yes	yes	yes
Observations	38285	32859	36899	38249	34333	26174
R-squared	0.1	0.11	0.1	0.1	0.1	0.12
sample	full	full	full	full	excl. no connections	balanced