What Drives International Bank Flows?

Politics, Institutions & Other Determinants

Elias Papaioannou*

First Version: March 2003

This Version: September 2005

Abstract

This paper uses a large panel of bilateral bank flow data to assess how institutions and politics affect international capital flows. First, besides standard "gravity" factors, well-functioning institutions are the key driving force for international bank flows. Specifically, banks invest substantially more in countries with: *i*) uncorrupted bureaucracies, *ii*) efficient legal system, and *iii*) non-government controlled banking system. Second, politics exert also a significant and independent impact. These results are robust to various panel methodologies, samples and the endogeneity of institutional characteristics. The institutions/politics-bank flows nexus has implications for international asset trade theories, which have not modelled these relationships explicitly.

1 Introduction

Cross-border capital flows have skyrocketed in the last decades. Such capital movements have been regarded as both an anathema and a panacea to many countries structural problems (Obstfeld, 1998). There is, however, little empirical work on what drives international liquidity. Even less work exists on the role of institutions and politics in explaining cross-border capital movements. This is most likely due to the absence of well-developed theory and data problems regarding both capital flows and institutions. The present study uses newly compiled institutional quality and political risk indicators, merges them with one of the more complete datasets of bilateral capital flows (BIS Locational Banking Statistics) and provides a systematic investigation of how various types of institutional arrangements impact cross-border bank flows.

This paper's contribution is twofold: First, it adds to the fast-growing literature on the determinants of international capital movements (e.g. Wei, 2000; Portes and Rey, *forthcoming;* Wei and Gelos*, forthcoming)*, by studying the driving forces of international banking flows. Most importantly, it provides the first comprehensive empirical study of how the overall institutional and political environment influences the volume of international financial transactions. Recent studies on cross-border capital movements have concentrated on quantifying informational rather than institutional frictions. The results, however, indicate that institutions and political factors are also key factors of international investors' investment decisions.[1] In addition the present work tries to distinguish which exactly types of institutional arrangements are of foremost importance to foreign investors. This paper's evidence advance our knowledge on the institutions-capital flows nexus by providing both fixed-effect and instrumental variable estimates revealing a robust link between both political risk and specific institutions (namely legal system quality, corruption and government control of the banking sector) and international liquidity. Second, it adds to the institutions (law) and finance literature (La Porta *et al.*, 1998). This research project has, however, studied almost exclusively the impact of legal characteristics in explaining *domestic* financial patterns, like IPO's, the breadth of equity and bond markets, etc. (La Porta *et al.*, 1997) .[2] In contrast, the current study provides new evidence on a significant impact of politics, legal institutions

---

[1]Institutions and politics is also absent from the distinct literature that examines US banks' international extension of credit (e.g. Goldberg and Johnson, 1990; Dahl and Shrieves, 1999).

[2]Exceptions are Rossi and Volpin (*forthcoming*) and Esty (*forthcoming*) who assess the impact of legal factors in explaining cross-border mergers and international syndicated loan facilities, respectively.

and corporate governance practices in explaining differences in *international* finance.

In the present study I use quarterly observations on gross bilateral international financial transactions (flows) from banks located in nineteen mature economies to both the banking and the non-banking (public and private) sector in fifty-one (developed, emerging and low income) countries from the mid-eighties until 2002. Employing both panel and instrumental variables cross-sectional methodologies, the estimates show that geography, politics and institutions are key determinants of international banking activities. The "gravity" equation (which models asset flows as function of the distance between the two countries and their "size") that is highly successful in empirical trade studies appears to be a powerful benchmark for analyzing cross-border bank flows as well.[3] The power of the "gravity" specification sharply increases, however, when augmented with a (time-varying) measure of the overall quality of the institutional and political environment (ICRG political risk rating). Not only is the political risk measure highly significant, but the empirical model can explain more than half of gross bilateral bank flows variability, even at the noisy quarterly frequency. The economic magnitude of the results is strong. Controlling for unobserved country characteristics and exploiting the "*within*" country variation, the estimates suggest that a five percent political risk decline in the capital recipient country is associated with an almost two percent rise in bilateral bank lending volume. Other panel methodologies produce even larger effects.

Since it is not crystal-clear which type of institutional or political features this composite institutional indicator exactly captures, I try to "*unbundle*" (Acemoglu and Johnson, *forthcoming*) institutions by quantifying the effect of specific institutional characteristics on international banking activities. This is key, since it is vital for policy recommendations to know exactly which institutional structure attracts foreign capital. Following studies on other types of capital and trade flows as well as recent contributions on the law and finance literature I focus on the following institutional characteristics (besides political risk):

(i) Corruption, which has attracted huge attention in studies of foreign direct investment

---

[3]Buch (2003) studies the determinants of cross-border bank holdings. She likewise documents that the gravity model is a good benchmark for gross asset holdings of financial institutions. Yet following previous studies in FDI, equity and debt flows her focus is on informational rather than institutional frictions. In addition Buch examines stocks (not flows) in a much smaller panel, while the present study exploits flow data in a high-frequency panel covering almost twenty years. Buch also studies primarily the cross-section data variation, since regulation and information asymmetries exhibit very small "*within*" country variation, while the current study documents a significant and robust "*within*" country correlation between bank flows and institutional quality.

and recent policy debates.

(ii) Legal system quality measures that proxy for the quality of contracting institutions.

(iii) Corporate governance indicators that quantify the agency costs on the banking sector.

The analysis reveals new regularities: First, a corrupt bureaucracy acts like a tax and discourages foreign banking investment. Second, banks appear unwilling to invest in countries with inefficient legal systems, most likely because agency costs are amplified. Quantitatively, a 10 percent improvement in the time to complete a simple legal case in the recipient country is followed by an approximate 3 percent rise in the volume of bilateral bank flows. Third, corporate governance practices are also quite important, and government ownership of the banking sector strongly hampers foreign bank investment.

There is, however, an ongoing debate on whether law (La Porta *et al.*, 1998) or politics (Rajan and Zingales, 2003) is the key driving force of financial development. To assess if foreign banks' key consideration when making their capital allocation decisions is political stability or institutional performance, I also estimate specifications including both the political risk and the specific institutional proxies simultaneously. The results suggest that *both* politics and institutions are both key determinants of international capital transactions having thus somewhat independent effects.

Not only do these results survive a series of sensitivity checks, but they most likely represent more than a simple correlation. First employing time-varying measures of institutional quality (political stability) in a fixed-effects econometric model that covers almost twenty years, gives more confidence that the point estimates are not driven by an omitted (or difficult to measure) time-invariant factor (e.g. social capital). In line with this interpretation, major policy reforms that enhance institutional quality (like democratizations, privatization policies, power decentralization) are followed by a significant increase in international liquidity. Second, (cross-sectional) instrumental variable estimates further minimize concerns arising form measurement error or reverse causation. Third, a concern with empirical studies assessing the impact of institutional quality on financial (or economic) development is whether the estimates are mainly driven by the huge differences between industrial and under-developed nations. The present study advances the institutions (law, corruption, government ownership of bans)-financial depth link by showing that the positive and significant correlation between institutional quality and international liquidity applies to both within

the group of developed and within the group of middle income nations.

This new evidence on a strong link between institutions and politics and international bank flows link is significant in a number of dimensions. First, the bank flow dataset employed includes not only international inter-bank activities, but also debt, equity and direct investment flows. The results have thus a broader interpretation and call for more research on the role of institutions in other types of capital flows.

Second, understanding the determinants of financial intermediaries' liquidity in a globalized world can enhance our knowledge about the mechanisms of financial and economic development. Recent work has shown that the banking sector's liquidity has a causal effect on economic growth (see Levine, 2004, for a review). Since foreign lending is required especially by capital-scarce countries to finance domestic investment, it is of great importance to understand what drives foreign bank capital.

Third, capital flows have been at the core of the so-called (original) Washington consensus debate and "*the recent recognition that market-oriented policies may be inadequate without more serious institutional transformation*" (Rodrik, *forthcoming*). In spite of evidence linking capital flows to sizable increases in domestic investment and growth (Bosworth and Collins, 1999; Razin, 2002), their role in generating recent financial crises has cast doubt on the benefits of capital account liberalization. The "crisis leading indicators" studies have revealed a strong connection between the volume of capital (and specifically bank) flows and recent crises.[4] Van Rijckeghem and Weder (2003), for example, demonstrate that contagion spreads primarily through banking centers. Understanding what drives international banking activities can therefore shed light on one of the hottest debates in international economics.

Fourth, analyzing gross international transactions may reveal information about aggregate holdings and net flows. The literature on the "*home bias puzzle*" (see Lewis, 1999) has examined numerous potential explanations. These include transportation costs in the goods market (Obstfeld and Rogoff, 2000), along with information and other frictions in asset trading (Martin and Rey, *forthcoming*). Although the importance of institutions, especially the law and corruption, has also been considered, not much work has been conducted quantifying the importance of institutional quality and political stability in resolving this

---

[4]See, for example, Frankel and Rose (1996) and Aghion, Bacchetta and Banerjee (2001) for empirics and theory linking capital (bank in particular) flows to the likelihood of financial crises.

question. A related puzzle is why capital does not flow from rich to poor countries (Lucas, 1990). Shleifer and Wolfenzon (2002) model how agency costs stemming from inefficient corporate governance and law enforcement mechanisms impede foreign capital flowing to capital-scarce countries. This paper's results suggest that not only do poor countries receive substantially less net inward investment, but they participate less in the international capital market. My results thus not only directly validate Shleifer and Wolfenzon, but also reveal additional institutional and political risk characteristics that explain a big part of this low participation.

Fifth, the results have direct policy implications. Political reforms, such as privatization or democratization (which are associated with a decline in "political risk"), significantly increase the liquidity of domestic financial intermediaries, fostering local investment.

The paper is structured as follows: In the next section I briefly review previous related work and discuss the channels through which institutions and politics affect international financial flows. Section 3 describes the empirical methodology and the data. It also provides a preliminary analysis of the panel descriptives. Section 4 presents the main regression results: It first examines the effect of institutional quality, broadly defined, in explaining gross international bank flows. Second, it quantifies the impact of specific institutional characteristics (legal system quality, corruption, and government ownership of banks). Section 5 gives some further evidence. Section 6 presents sensitivity checks, addressing concerns arising from omitted variables, endogeneity, measurement error and data quality. In the conclusion I summarize, offering directions for future research.

2 Related literature & why institutions matter

2.1 Previous empirical work

This paper relates and adds new evidence to two distinguishable areas of research: First is the literature on the determinants of cross-border capital movements. Studies by Portes and Rey (*forthcoming*) on equity, Mody, Razin, and Sadka (2003) on FDI, and Buch (2003) on bank holdings show that the "gravity" model successfully simulates not only goods, but also asset trade. Following theory on asymmetric information and agency costs, the empirical literature has, however, concentrated almost exclusively on geography's role and other proxies of information costs in explaining asset trade. Although such information costs

could be correlated or magnified with poorly performing institutions, research has to a large extent ignored the role institutional and political characteristics play in international capital movements. A notable exception is Shang-Jin Wei's work. Wei (2000) shows that corruption exerts a distortionary role to FDI. Likewise, Wei and Gelos (*forthcoming*) show that emerging market equity funds invest systematically less in less transparent countries. Since the dataset employed contains not only inter-bank loans, but also substantial amounts of FDI and equity flows, the results hint that a key missing input of previous capital flow studies were politics and other institutional characteristics (legal system quality, government control of financial intermediaries, corporate governance). The evidence given in this paper further advances this literature's main findings in a number of directions: (*i*) (Country-pair) Fixed-effect estimates that isolate the within country variation in international banking activities during the last twenty years clearly reveal a robust positive correlation between improvements in institutional quality and an increase in international lending. (*ii*) Instrumental variable cross-sectional estimates further strengthen a the potential a causal mechanism and address issues or measurement error and reverse causation.[5]

Second is the institutions and finance literature. Starting with the seminal work of La Porta *et al.* (1997, 1998, 1999), numerous studies have established a strong causal effect of the quality of legal system on financial development. Well-defined and protected investors' rights appear to be a prerequisite for liquid capital markets (La Porta *et al.* 1997), merger and acquisition activity (Rossi and Volpin, *forthcoming*), and large project finance deals (Esty and Megginson, *forthcoming*). In a parallel study Qian and Strahan (2004) show that the legal system also explains the design-structure of international bank contracts. Recently, however, alternative to legal system factors have been considered. Stulz and Williamson (2003), for example, show that cultural characteristics (religion, societal composition, language) perform better than legal quality proxies in explaining financial patterns across the world, while Guiso, Sapienza and Zingales (2004a, b) stress the role of social capital and trust. Rajan and Zingales (2003), in contrast, emphasize the role of politics (protectionism, lobbying) in financial development. Not only are my results in accord with these insights, but they also reveal a *synthetic* approach. The panel regressions imply that *both* legal system quality and politics are key driving forces of the volume of international bank flows. Culture

---

[5]While Wei (2000), Gelos and Wei (*forthcoming*) and Portes and Rey (*forthcoming*) do present some fixed-effect models the time-pan of their data is much smaller than that of the present study. In addition none of these studies presents instrumental variable estimates to address issues of (possibly systematic) measurement error (because for example the agencies producing these indicators follow rather than precede the investment decision of international investors) or reverse causation.

plays also an important role, since countries with common historical, colonial, or religious ties engage much more in bilateral banking activities.

2.2   Why institutions matter for gross cross-border bank transaction flows: Channels and theory

Political risk and institutional quality strongly affect foreign investors (banks in the present study) behavior. But where does this effect come from? First, low quality institutions are associated with poor economic performance. Previous studies have documented a negative effect of corruption, inadequate property rights, and investor protection on both GDP growth (e.g. Knack and Keefer, 1995; Mauro, 1995) and volatility (Acemoglu *et al.*, 2003). Likewise, Bai and Wei (2000) present evidence that weak institutions lower government's ability to collect taxes and consequently lead to inefficient macro policies (such as protectionist measures and high inflation).

Second, political instability and corruption can cancel any benefits of international banks arising from higher expected returns. Erb, Harvey and Viskanta (1996a,b) and Perotti and van Oijen (2001) have shown that political instability (reflected in the same composite political risk measure as the one this paper employs) is followed by lower stock returns. Johnson et al. (2000) show that corporate governance measures perform better than standard macro variables in explaining the currency and stock market plunge during the East Asian crisis.

Third, poor institutional performance can amplify asset trade frictions. Du and Wei (2004) and Bhattacharya and Daouk (2003) show that high levels of corruption are correlated with higher insider trading activities. In contrast, a high quality legal system minimizes monitoring costs. Corporate transparency and advanced accounting standards mitigate information costs, while bureaucratic and legal efficiency alleviates agency costs by settling disputes arising from contract incompleteness. Large agency costs make the *effective* production technology less efficient and as a result foreign investors are unwilling to lend to countries marked by a poorly functioning legal system. Therefore international banks might be unwilling to bear these costs in spite of some potential gains from higher returns and increased portfolio diversification opportunities.

Yet little theory exists directly linking foreign investment with political stability and institutional quality. Even less work exists modelling the role of institutions and politics for

international banking specifically. Models of international asset trade have analyzed legal system inefficiencies, corruption, or low transparency in the broad context of "*transaction*" costs.[6] Recent theoretical advances by Martin and Rey (*forthcoming*) and Razin *et al.* (2003) build information asymmetries in asset trading models, but again institutions and politics are absent. The most closely related theoretical work to the present study comes from the corporate finance literature. Shleifer and Wolfenzon (2002) build an agency model in which an entrepreneur has a profitable project and seeks external finance. The entrepreneur maximizes her personal wealth, which is a function of the fraction of the project she decides to maintain, the project's profitability, and the amount she is able to divert. Diversion in turn depends on the efficacy of the legal system; looting becomes costly with well-defined and protected investor's rights. Both domestic and foreign investors, *ex ante,* anticipate the probability of diversion and are thus unwilling to invest in low quality legal environment countries. Consequently, capital does not flow from capital-abundant countries to countries with low levels of investor protection. The present study's results demonstrate a strong causal effect of legal system effectiveness indicators on the volume of cross–border lending activities. The results also indicate that what it really matters for international banks is the actual, de facto, quality of the legal system rather how well the securities legislation or the commercial code protects investors.

3   Methodology, Data and Preliminary Evidence

3.1   Gravity Specification

To quantify the effect of institutions and political conditions on cross-border bank flows, I rely on the "gravity" model. An empirical gravity equation for financial flows arises naturally from international macro models (e.g. Obstfeld and Rogoff, 2000; Lane and Milesi-Ferretti, 2003). Distance captures either transaction costs in the goods market or asymmetric information in the asset market. Following Martin and Rey's representative agent model of asset flows, "size" is proxied by (the logarithms of) real per capita GDP and population.[7] I

---

[6]See, for example, Obstfeld and Rogoff (2000) and the associated discussion, particularly Charles Engel's (2000) comments.

[7]In contrast to Obstfeld and Rogoff, who build a model that generates substantial amounts of home bias by introducing transaction costs *solely* in the goods market, Martin and Rey add frictions in the asset market. In their set-up, demand for country A's assets is separated between domestic and external. External demand from country B for assets in A is inversely related to (asset) transaction costs, like financial intermediaries' fees, hedging expenses, and monitoring costs. Demand from country B for assets in A are a function of the

augment the "gravity" equation with composite institutional quality proxies, specific institutional indicators, along with geographical and cultural variables. The exact specification for my analysis takes the following form:

$$
\begin{aligned}
\ln(F_{i,j,t}) \;=\; & \beta_1 \ln(Y_{i,t}) + \beta_2 \ln(Y_{j,t}) + \beta_3 \ln(POP_{i,t}) + \beta_4 \ln(POP_{j,t}) + \\
& \beta_5 \ln(AREA_i) + \beta_6 \ln(AREA_j) + \beta_7 \ln(DIST_{i,j}) + \beta_8 TIE_{i,j} + \qquad (1) \\
& \gamma INST_{j,t-1} + \Phi_1 OTHER_{i,t} + \Phi_2 OTHER_{j,t} + a_t + \varepsilon_{i,j,t}
\end{aligned}
$$

where i and j indicate the "*source*" and "*recipient*" country respectively and t denotes time (quarter). The variables are defined as:

- $\ln(F_{i,j,t})$ is the natural logarithm of gross asset flows from banks located in country i ("source" country) to all sectors (banking and non-banking) in country j ("recipient" country) in quarter t.

- Y is real GDP.

- POP is total population.

- $\ln(DIST_{i,j})$ is the logarithm of the distance between the two countries.

- $TIE_{i,j}$ is a dummy variable that takes on the value one when i and j have common colonial ties or speak the same language.

- $AREA$ denotes land area in square kilometers.

- $INST_{j,t-1}$ denotes the time-varying ICRG composite institutional indicator (political risk) for the recipient country (j) in the previous quarter $t-1$.[8]

- $OTHER$ includes various other (time invariant and time varying) controls at the source (i) and recipient country (j).

- The specification also includes time fixed-effects (a_t) to capture unobserved time heterogeneity and the upward trend in the volume of cross border activities.

---

size of country A capital markets, since a larger market implies better diversification opportunities.

[8] Using the contemporaneous value does not alter the results. The lagged value is used to (partly) address simultaneity. In the robustness section, I formally address the issue of endogeneity employing IV estimators.

- $\beta, \gamma,$ and ϕ are vectors of parameters to be estimated, while $\varepsilon_{i,j,t}$ is a Gaussian white noise error term.

This specification (3.1) resembles previous studies on other forms of international bilateral capital movements.[9]

3.2 Data

My dataset consists of quarterly observations, starting from the first quarter of 1984 until the end of 2002. The data can be separated into three categories: i) the cross-border bank flow data ($F_{i,j,t}$), ii) institutional performance measures, $INST_{j,t-1}$ (composite and specific), and iii) data on other controls.

3.2.1   The Dependent Variable:Bank Flow Data

Data on bank flows is taken from the Bank of International Settlement's (BIS) International Locational Banking Statistics (IBS). The BIS IBS database reports aggregate assets (and liability) holdings of banks, located in 36 jurisdictions ("the *reporting area*") in almost 100 countries ("*the vis-à-vis countries*"). However, due to the hub nature of international banking activities, the data covers almost all international bank lending.[10] The data are originally collected by domestic Monetary Authorities and cover the international exposure of almost all (99% or 100%) of domestic banking institutions, including both private and state controlled banks. Due to insufficient coverage for many "*host*" countries and 17 (mainly developing and "off-shore" centres) "*source*" countries the present study analyzes flows from 19 to 51 (at maximum) countries. The "*source*" nations are financially developed, while "*vis-a-vis*" nations include both OECD and developing (and some underdeveloped) states. Data includes banks' on-balance sheet exposure. It captures cross-border loans and deposits, debt securities, and other assets. Specifically, the dataset includes standard inter-bank lending activities, such as deposits, loans, bank-to-bank credit lines and trade-related credit. The data

---

[9]I also estimated a model with multiplicative gravity terms (e.g. Rose and Spiegel, 2002; Rose, 2004). Another econometric approach is to standardize bank flows by recipient country GDP. Yet the econometric literature on the gravity model and bilateral flows suggest to use (1) rather than this standardization (which is recommended in studies of non-bilateral flows). The results are quantitatively very similar.

[10]The BIS reports that countries are asked to contribute only "*....when their cross–border banking business becomes substantial*" (p.5. BIS 2003b). The country data (which are collected by domestic Central Banks and Monetary Authorities) cover the international exposure of almost all (99% or 100%) of domestic banking institutions, including both private and state controlled banks.

also "*covers portfolio and direct investment flows*" (BIS, 2003a), like holdings of securities, participations (i.e. permanent holdings of financial interest in other undertakings) in non-resident entities and direct investment in subsidiaries. So these data do reflect the investment decision of big international banks (to lend to other financial institutions or other foreign entities) and are not contaminated by individual investor's cash-flow transactions. Flows are estimated by the BIS as the exchange rate adjusted changes in total assets (and liabilities). A concern with previous versions of the BIS data was how to construct flows from the stock data. Simply taking first differences could be very misleading, since a devaluation either at the "*source*" or at the "*recipient*" country might cause a sharp increase or decrease in total assets, even if no capital movements have taken place. Since reporting countries report the currency in which the assets and liabilities are denominated, the BIS has constructed an estimate of the flows, the dependent variable ($F_{i,j,t}$). Flows are converted in real terms using the US consumer price index. The Data Appendix $B.3$ provides a detailed analysis of the Locational Banking Statistics data-base and gives precise variable definitions.

3.2.2 Composite and Specific Institutional Quality Indicators

I use as institutional environment's proxy, the composite indicator constructed by Political Risk Services (PRS), namely the International Country Risk Guide (ICRG) "political risk" rating.[11] In contrast to most institutional measures that are purely cross-sectional or exhibit limited time-variability, the political risk rating ($INST$) exhibits substantial "*within*" variation.[12] This enables me to address the key policy question: Controlling for unobserved country heterogeneity and time-invariant omitted variables, is an institutional improvement associated with an increased volume of international capital movements? In addition it is reported at a monthly basis and can be directly merged with the BIS quarterly data. $INST$ is a composite index of political, legal, social, and bureaucratic institutions. It is based on

---

[11]PRS is a risk rating corporation. Although measurement error might be present, it is exactly the type of data that institutional investors, like banks, use. In Section 3.6, I address measurement error employing IV techniques.

[12]The high "within" country variations has recently been emphasized by Glaeser, La Porta, Lopez-de-Silanes and Shleifer (2004). Their critique to the institutions and long-run economic development studies (e.g. Acemoglu, Johnson and Robinson, 2001; Acemoglu and Johnson, *forthcoming*) is that (due to this high variation) the political risk indicator (and its sub-components) does not capture permanent institutional characteristics. While this is clearly a fundamental point when examining the impact of institutional quality on long-run economic development, in this paper's context this high variation is particularly desirable. This is because it enables me to identify the response of international investor's on institutional changes that might either be permanent or short-lived (the possibility that reforms and institutional changes might be reversed is in fact a key risk factor that foreign investors bear).

PRS staff subjective assessment of various institutional arrangements and ranges from zero to one hundred (with lower values suggesting poorly performing institutions). Although this measure (and various of its subcomponents) have long been used by the empirical macro literature (e.g. Hall and Jones, 1999; Knack and Keefer, 1995), only recently has it been employed by studies analyzing international investment patterns.[13] Alfaro, *et al.* (2003) use this index to assess institutions' impact on net inward investment, while Gelos and Wei (*forthcoming*) employ it to explain the portfolio allocation choice of emerging market funds.

Yet it is not crystal-clear what such a composite rating captures. Perotti and Van Oijen (2001), for example, show a strong correlation between the political risk rating and privatization policies, while Alfaro *et al.* with democracy. To solve the institutions vs. politics question, which has attracted recently a considerable debate, I will present results with both the political risk rating and with more specific measures of institutional quality.[14] For the latter, I exploit recently compiled datasets on legal and bureaucratic quality. I proxy the quality of laws and corporate governance practices with the widely-used anti-director's rights index (La Porta *et al.*, 1998). For legal system performance I rely on two measures compiled by Djankov *et al.* (2003): A $0 - 10$ contract enforceability index and the time it takes to evict a tenant for non-payment.

3.2.3 Other data

Common language, ethno-linguistic, and geographical variables included in the gravity model originally come from the CIA Factbook and have been retrieved from Rose (2004). GDP, population and other macro variables are taken from the IMF's International Financial Statistics. To control for macroeconomic and financial sector developments, I also utilize the other two risk ratings produced by ICRG, the "economic" and "financial" risk measures. The *Data Appendix* provides the sources and definitions of all variables employed.

---

[13] Hall and Jones decompose the ICRG index and use only the scores on i) law and order, ii) bureaucratic quality, iii) corruption, iv) risk of expropriation, and v) government repudiation of contracts. The index I use is broader since it includes religious tensions, war, ethnic conflict, etc. For more details see the Data Appendix.

[14] See Acemoglu and Johnson (*forthcoming*) for an effort to "*unbundle*" institutions and empirically quantify the impact of specific institutional characteristics on economic development. For such analysis, one would ideally like to use the various sub-indicators of the political-risk indicator. However, PRS does not report the sub-components of these ratings at a quarterly frequency. Thus I rely on other variables that are not the actual sub-components of the political risk rating, but capture the same institutional characteristics. By doing so, I (partly) address the potential measurement error of the political risk rating.

3.3 Preliminary Evidence

Table 1 presents descriptive statistics, while Table 2 provides the correlation matrix of the variables employed in the regression analysis. Cross-country institutional performance differs enormously. For example, Canada, Chile, and the United Kingdom get (a score of) 5 in the $(0-6$ scale) anti-director's rights index, while Belgium gets a 0, and Germany and Italy a disappointing 1. The variability of the *de facto* legal quality indicators (contract enforceability and eviction time) is even higher. For example in ten sample-countries it takes more than a year to enforce one of the simplest legal cases, tenant eviction for non-payment.[15] Likewise, the zero to ten contract enforceability index, which is based on the rigidity and formality of the legal system ranges from 4.29 in Indonesia and Peru to almost 9 in Switzerland.

The composite institutional index ranges from 33 (in the Philippines in 1991) to 97 (in Switzerland and the Netherlands in various periods). The "*within*" country variation, which is particularly desirable in a panel context, is also substantial: The Philippines, for example, begin in 1984 with a low score of 38. After Marcos regime collapse, however, the Philippines experience a notable institutional-political improvement. This is reflected to the political risk measure, which increased to 76 (end of 1997) and then fell to 65 (at the end of 2002). The political risk rating is, in turn, highly correlated with corruption and contract enforceability (0.70), although these variables are taken from alternative sources (not PRS) and enter with just a 4% loading.

The correlation structure suggests a notable association between the composite institutional index and bank flows. The ICRG "*political risk*" index is substantially correlated with flows both in assets and liabilities (correlations of 0.31 and 0.34 respectively). Figure 3.1 plots the cross country scatter of aggregate bank flows against the mean composite institutions index and illustrates a clear positive association. A similar relationship between gross banking flows and corruption and legal system quality is illustrated in Figures 2 and 3 respectively.

---

[15]These countries are: Argentina, Japan, Italy, Poland, Austria, Bulgaria, Colombia, Israel, Norway, and Hungary.

4 Benchmark Results

I begin by estimating the gravity model (equation (1)) using plain OLS (pooling cross-section and time-series). I then show that the results are robust to alternative panel methodologies that correct for unobserved individual characteristics and residual autocorrelation. Since one of the benefits of the large time span of the data is the ability to control for country unobservable characteristics, in many subsequent Tables I will thus focus on country-pair fixed-effect estimates (although to demonstrate the robustness of the results I will also present estimates based on alternative panel-data techniques). Throughout the regression analysis, t statistics based on standard errors adjusted for clustered panel-wise (country pairs) heteroskedasticity are reported.[16] First, I concentrate on the time-varying composite institutions index (ICRG "political risk" indicator). Second, I quantify the effect of particular institutional arrangements on cross-border bank lending.[17]

4.1 Political Risk-Composite Institutional Indicator

4.1.1 Pooled OLS

Table 3 presents OLS estimates. The "gravity" model works well in several dimensions. First, the model fits the data quite well. One can explain more than forty percent of the overall variability in gross bilateral bank flows just with standard gravity factors (namely distance, ethno-linguistic ties, land area, population and per capita GDP). This is lower than in goods' trade studies (where the R^2 is around 0.65), but quite high for (typically noisy) quarterly data. Second, in all perturbations the "gravity" terms consistently enter with stable and well-behaved coefficients. Distance, for example, has a coefficient ranging from -0.6 to -0.8, close to previous estimates in asset flow studies. Although it might be puzzling to interpret a negative effect of distance on asset trade, since transaction fees are typically small, distance

---

[16]Correcting for clustered at the country-pair heteroskedasticity and autocorrelation yields large standard errors (compared to either standard Huber-White or Newey-West standard errors). Thus the reported t-statistics are the most conservative. Clustering standard errors either at the "recipient" or "source" country yields smaller standard errors and hence even larger t-statistics (for a similar approach on clustering by country-pair, see Rose (2004)).

[17]Regression diagnostics indicate no serious mis-specification problems. Box-Cox tests suggest that the usually applied in gravity models logarithmic transformation is quite reasonable ($\lambda = .028$). Although the bank flow data exhibit some inertia, there are also no evidence of non-stationarity. Panel unit-root tests strongly reject the null of hypothesis of non-stationarity.

seems to proxy well for information asymmetries and other non-standard costs.[18] Having linguistic, historical or colonial ties increases bilateral bank flows considerably, suggesting that culture and trust have a role in financial patterns. The coefficients on the "size" measures are positive and significant. Richer and financially developed nations engage more in cross-border lending activities as do larger (in population terms) countries.[19] In spite of the neoclassical prediction, capital is directed towards relatively wealthy countries. Martin and Rey attribute this result to increased diversification opportunities in richer nations, while Gertler and Rogoff (1990) argue that capital market imperfections are mitigated in affluent countries, since wealth can serve as collateral.

Columns (2), (3) and (4) add the composite institutional index (ICRG political risk) to the gravity equation. The coefficient on $INST_{j,t-1}$ is at least three standard errors above zero. Further, the model's fit has substantially increased (the R^2 has jumped from 0.45 to above 0.50). In columns (3) and (4) I control for macroeconomic developments both in the "source" (i) and the "destination" (j) country. Numerous studies (Calvo, Leiderman, Reinhart 1993, 1994; Frankel and Roubini, 2001) have documented a significant negative effect of global interest rates on "*North to South*" capital flows. Consistent with this result, the coefficient on the lending rate ($Rate_{i,t}$) in the "source" country is significantly negative. This implies that high interest rate periods are associated with lower levels of bank lending activities not only to developing but also to industrial countries. In column (4) I add inflation ($Inf_{j,t}$) to control for economic conditions in j. The coefficient on inflation is negative, but statistically insignificant. Although in many of the subsequent specifications $Inf_{j,t}$ enters with a significantly negative coefficient, its magnitude is extremely small.[20]

---

[18]Buch, Kleinert, and Toubal (2004) provide a thorough review of both the theoretical foundations and recent empirical results on the impact of distance on bilateral trade and asset flows. Portes and Rey show that when other factors that more directly capture information costs (telephone traffic, foreign newspapers sales) enter an equity flows gravity specification, the coefficient of distance decreases substantially (although it is still negative and significant). Distance might also be capturing (part of) the effect of trade on capital flows. Aviat and Coeurdacier (2004) present cross-sectional evidence that distance's significance in asset trade studies is partly driven by a strong correlation between asset and trade flows. Their regressions reveal that when bank holdings and trade are simultaneously estimated the effect of distance in the bank holdings regression shrinks.

[19]The only standard gravity variable that does not enter positively and significantly (as it does in trade studies) is a common border dummy, which takes on the value one when the two countries are adjacent. This comes at no surprise though, since we expect adjacency to be much more important in goods trade.

[20]The results are similar if one substitutes inflation with the lending rate in the capital recipient country. The coefficient on lending rate in j is in most specification negative and significant. However, its size and magnitude is very small. The results are also very alike when one uses the interest rate spread between the two countries.

Other macroeconomic controls, such as GDP growth appear insignificant.[21] Note that the coefficient on the composite institutions index has remained stable and is still significantly positive. In columns (5) and (6) I use the natural logarithm of $INST_{j,t-1}$ to directly interpret the coefficient as an elasticity.[22] The specification also includes regional and income level dummies to capture unobserved "recipient" country heterogeneity. Not only has the γ coefficient retained its statistical significance, but its magnitude is economically large. Its scale implies that conditional on geography and economic development (captured both by per capita GDP and the income dummies) a one percent increase (decrease) in institutional efficiency is followed by a rise (decline) of approximately 2 percent in the level of international banking activities.

4.1.2 Alternative Estimators

Table 4 presents estimates based on alternative panel methodologies. Column (1) reports the "*between*" estimator. Although this method removes the time series dimension (by using mean values), it is useful to identify which countries receive on average the bulk of international bank capital. The estimated coefficient implies an even larger institutional effect on international bank lending (elasticity ≈ 4). The R^2 has also jumped to 0.77. This finding is in line with the recent cross-sectional results of Alfaro *et al.*, who show that institutional quality can explain why capital does not move towards poor nations. My estimates suggest that countries with poorly performing institutions not only receive substantially less net foreign inflows, but also engage much less in cross-border lending and borrowing activities.

An important policy question is whether foreign investors actually "reward" structural policies that improve the institutional environment through increased investment. The fixed-effects "*within*" estimates directly answer this enquiry. The model reported in column (2) includes a vector of 850 constants that control for any country-pair unobserved time-invariant characteristics. The estimates, however, should be interpreted cautiously, since this esti-

---

[21]Frankel and Roubini (2001) describe this peculiar finding as follows: "*....(research) came to a surprising conclusion: the most important identifiable factors behind the flows were US interest rates and other macroeconomic variables external to the emerging market countries. Capital was heading South because low rates of return were on offer in the North. This was a surprising conclusion because the more common belief at the time was that domestic factors within the emerging market countries were responsible, particularly pro-market policy reforms..*"

[22]The results are not sensitive to this transformation. In the following Tables I will present estimates employing both the original value of *Inst* or its natural log.

mation ignores time invariant factors, such as distance and ethno-linguistic ties, while we know *ex ante* that these factors are important determinants of cross-border lending. The coefficient on the composite institutional index has decayed but is still positive and highly significant. The estimated elasticity suggests that if a country implements structural policies that improve the institutional and political environment, bilateral bank flows are expected to increase by approximately 3.6% at a quarterly basis. Such improvements are not rare in my sample. Argentina, for example, experienced a substantial decline in political risk after the fall of the military dictatorship and the end of the Falklands War in 1984 (ICRG political risk jumped from 50 to 55). An even greater improvement occurred in Indonesia in 1991, reflecting the radical political power decentralization (political risk jumped from 44 in the first quarter of 1990 to 58 in the first quarter of 1991). Democratizations are also associated with significant declines in political risk: Examples include South Africa after the 1994 elections that ended the "apartheid" or Chile in 1990 when Augusto Pinochet was removed from power.

Another approach, which fully utilizes the panel information, would be to estimate a "*random-effects*" model. This approach introduces country-pair fixed-effects, while allowing for time invariant regressors. Random-effect estimates are typically more efficient, since they use information both "*between*" and "*within*" panels. Their consistency, however, crucially relies on individual effects not being correlated with the disturbances.[23] Random-effect estimates are reported in column (3). The statistical and economic significance of the RHS variables has remained stable. The coefficient on the political risk is still positive and significantly different from zero at any conventional level.

Columns (4) and (5) report estimates of a "*quasi-fixed effects*" model. The specification in column (4) includes a vector of "source" country dummies that control time-invariant characteristics in the lending countries that are difficult to observe, like differences in reporting, accounting or the exact definition of financial institutions' cross-border transactions. Adding "source" country fixed effects also controls for the disproportionately large impact that certain countries have in the international banking system.[24] In column (5) a vector

---

[23]Unfortunately, in this case, a Hausman specification test is not particularly helpful. Many time-invariant factors are significant and one cannot distinguish whether the observed fixed-effects correlation with the error term of the within estimator is due to factors omitted in the within estimation (distance, ethnolinguistic ties, etc.), but included in the random-effects or other truly unobserved factors. Moreover, our sample is not randomly drawn from a larger population and "random-effect" estimation might not be theoretically appropriate (Baltagi (2001) and Wooldridge (2002)).

[24]Wei (2000) provides a more analytical discussion on the merits of the "*quasi-fixed-effects*" model in

of "host" country dummies is included to control for unobserved heterogeneity in the recipient countries. The specification given in column (6) includes both a vector of "source" and a vector of "recipient" country fixed-effects. The elasticity of institutions in the double-fixed effects model is significant at the 95 confidence level and similar in magnitude to the fixed-effects model (column 2). This suggests that controlling for unobserved time-invariant characteristics both of the capital recipient and the capital investing country, an institutional enhancement is associated with a significant increase in bilateral banking activities.

An important econometric consideration concerns the structure of the error term. Since flows are estimated by the BIS as the exchange rate adjusted change in total assets, first-differencing might lead to an autocorrelated error term, which would in turn corrupt inference. Columns (7) and (8) give the Prais-Winsten and random effect GLS estimates, respectively, that correct for first-order residual correlation. Although autocorrelated disturbances are not present if we pool all data together, persistence might occur in specific country-pairs. Feasible GLS estimates that allow for arbitrary panel-specific autocorrelation (and heteroskedasticity) are given in the last column. The point estimates are similar to OLS, suggesting that autocorrelation is not corrupting inference.

4.2   Specific Institutional Characteristics

A drawback of the previous estimates is that it is not always clear exactly which institutions or policies are associated with higher levels of financial development and cross-border lending. In this section I thus "unbundle" the political risk index using specific institutional measures. Moreover to disentangle the role of legal institutions and politics, I present specifications where the political risk rating and the specific institutional measures are jointly entered in the specification.[25] In the rest of the paper I will present results based on various panel techniques, adding either "source" or "recipient" country fixed-effects or both. The

_____

gravity models of asset trade.

[25]The specific institutional indicators are purely cross-sectional. Institutional persistence, however, suggests that this is not a serious drawback. One could argue that estimation and inference in a panel context is, however, problematic. A solution is to estimate cross-section regressions either on mean values or at specific years. Such estimates yield an even larger impact of institutional performance on international banking activities. Another problem arises, because ideally in the specifications that include both the composite institutions-politics ICRG rating and specific institutional measures (like corruption or legal system quality) one would want to exclude from the composite measure the part that the specific index measures. Due to data unavailability on the specific sub-components of the political risk rating at the quarterly basis, however, this is not feasible and if anything avoiding making this correction should bias the results against finding a systematic relationship.

coefficient's statistical significance and magnitude is not particularly sensitive to the exact specification.

4.2.1 Corruption

Theory on FDI has stressed the malignant role of corruption (Shleifer and Vishny, 1994) and transparency (Mody, Razin, and Sadka, 2003) in attracting foreign capital. While there is some empirical evidence supportive to these models linking corruption to FDI (e.g. Wei, 2000), its impact on other types of capital flows has not been examined.

In Table 5 I augment the baseline gravity model with the TI corruption index (lower numbers in the index correspond to higher corruption). The coefficient estimates show a strong and robust negative effect of corruption on international banking activities. The point estimate in column (1) implies that if Peru, which scores 4.7 (in a $0-10$ scale), tackles corruption up to the level of Costa Rica (8.3), then bilateral bank flow transactions will increase by almost 1.5% $[(8.33 - 4.70) * 0.4144 = 1.504]$ at a quarterly basis. Corruption retains both its statistical and economic significance, even when the "political" or "economic" risk measures are included in the specification (columns (2) and (3) respectively). This result contradicts Wei and Wu (2001), who document either an insignificant or even positive effect of corruption on international bank lending activities. The present study, however, differs in many dimensions from the Wei and Wu (2001) study: First, their results are based on cross-sectional regressions, with data averaged for the $1994-1996$ period, while the present study utilizes data for 18 years. Second, their sample covers substantially fewer lending countries (i). Third they study inter-bank loans using another BIS dataset, while the Locational Banking Statistics, I exploit, include also equity and FDI flows. Fourth, and most importantly, their analysis concentrates on how corruption affects the composition of capital flows, not how it impacts bilateral bank lending. My results are, however, in line with their model on corruption's effect on capital flows.

4.2.2 Legal System

To proxy for the quality of the laws in place I introduce the anti-director's rights index into the gravity model ($Anti\_direct_j$). The estimated coefficient reported in columns (4)-(7) of Table 5 is, however, small and in most specifications insignificant. This accords with Portes and Rey who find this crude measure of investor protection to have no systematic impact on

gross equity flows.[26]

International investors do not care so much about how well laws, acts and commercial codes are designed. Rather, they focus on rights actual protection and enforcement. Likewise, theory concentrates on how fast and to what extent legal rights are safeguarded by the judicial system (Djankov *et al.*, 2003). As a proxy for the *de facto* efficacy of the legal system, I use a measure of contract enforceability, which is based on legal system's formality and speed. This variable ($Contract_j$) always enters the specification with a significantly positive coefficient. Even conditioning on the overall institutional quality and political stability (in column (5)), $Contract_j$ has a large economic effect: the point estimate suggests that if Portugal, (which has the lowest level of legal protection in the European Union, scoring 4.54), modernizes its judicial system to Belgium's level (which scores 8.40), the volume of cross-border banking activities will increase by more than 1% on a quarterly basis $[(8.40 - 4.54) * 0.298 = 1.15]$. In the last column I employ the time it takes to evict a tenant for non-payment ($Legal\_time_j$) as an alternative measure of legal efficiency. The estimated coefficient implies that if the judicial process in Chile, where it takes approximately 240 days to evict a tenant for non-payment, becomes as fast as in Brazil, where it takes 120 days, the volume of cross-border banking activities is expected to increase by almost 14% $([(240 - 120)/240] * 0.275 \simeq 0.1375)$.[27]

Jointly, the coefficient estimates suggest that modifying and upgrading anachronistic laws is a necessary yet not sufficient condition to attract foreign (bank) capital. A fast-proceeding judicial process and high quality law enforcement are far more important. Finally, legal system quality indicators retain their significance, even conditioning on corruption and overall economic environment (column (7)), hinting that these two institutional structures play an independent role.

---

[26]I also experiment with La Porta *et al.* creditor's rights index. This variable might seem a priori more suitable, since international banks are most likely senior creditors. Like the anti-director's measure the $0 - 4$ creditor's rights index enters with an insignificant coefficient. This verifies that actual court enforcement of creditors and shareholders rights is the determining factor rather than what the country commercial law dictates.

[27]I also employed other legal quality measures. Specifically: *i*) a 0 to 7 legal formalism index, *ii*) the time it takes to collect a bounced check, and *iii*) the time it takes to start up a new business. Djankov *et al.* show that these variables are good proxies for the operational performance of the legal system and bureaucratic quality. All these variables are strongly correlated with each other and the results are quantitatively very alike.

4.2.3 Government Ownership of Banks

A somewhat neglected characteristic of financial systems is state control of the banking system. La Porta, Lopez-de-Silanes and Shleifer (2002) document that not only is government ownership of banks pervasive around the globe, but it is also associated with low levels of financial development and weak growth rates. They distinguish between "*development*" theories that stress the beneficial aspects of government ownership and the "*public-choice*" tradition that emphasizes the negative consequences of state's active involvement in the credit market. In her study on the lending practices of Italian banks, Sapienza (2004) offers an intuitive explanation for the pro public-choice evidence given by La Porta *et al.* (2002): Italian state owned banks charge substantially lower interest rates than privately-run banks and lend substantially more in areas where the government has a large clientele. Likewise, Dinc (*forthcoming*) shows that political motivations rather than profit-maximization drives the lending practices of state-owned banks in many developing countries. Government ownership, however, need not have a negative effect for foreign investors. It can actually minimize credit risk, since governments often safeguard their banks' debt. If this "*development*" prediction holds, then one would expect, other things being equal, higher international lending to countries with high levels of state ownership of the banking sector.

To quantify the effect of government control, I augment the baseline specification with a variable representing the share of the top 10 banks in a given country owned by the government of that country (Gov_Own_j). This cross-sectional variable is taken from La Porta *et al.* (2002) and corresponds approximately to the middle of the panel (approx. around 1995). Figure 4 plots the mean of the logarithm of cross-border bank flows against Gov_Own_j. The clear negative association goes against the "*development*" conjecture.

The regression results in Table 6 are not only in line, but also advance the recent pro-"*public-choice*" findings: Foreign banks realize that state-controlled financial institutions promote political rather than profit maximizing objectives; consequently government ownership of banks impedes rather than spurs international lending. This suggests that the agency costs associated with state control by far surpass the benefits gained from implicit or explicit guarantees. The point estimates imply that controlling for the macroeconomic environment, increasing the government's share in the banking system by one percent decreases the level of cross-border bank lending by more than 1.6%.

Previous studies have shown that state ownership is strongly correlated with a poorly

21

performing banking system. To isolate the effect of state ownership, I directly control for the operational performance of the banking system, employing a measure of bank soundness ($Bank\_Sound_j$) and an estimate of banks' overhead costs ($Overhead_j$). Moreover, to assess how the banking system's structure affects inter-bank activities, in columns (4)–(6) I use inter-bank (instead of aggregate) flows as the dependent variable. The health and operational performance of the banking system in the recipient country is a crucial factor driving gross inter-bank international capital flows. International banks invest substantially less in countries with low bank ratings and high operating costs. After controlling for the institutional environment and the health of the banking system, state ownership is still associated with substantially lower levels of international inter-bank lending.

These results offer an intuitive explanation for financial intermediaries' illiquidity in relatively poor countries: government control of the banking system discourages both domestic capital accumulation and foreign lending. Numerous studies point out that a banking system's liquidity has a causal effect on economic growth. The evidence, therefore, suggests that privatizing and liberalizing the banking system will drive foreign bank capital and relax banking system liquidity constraints, fostering in turn growth and investment.

5 Further Evidence

5.1 Developed vs. Developing Countries - EU membership

A major concern regarding most empirical analyses on institutions is whether the estimated effect is driven by the substantial variability between rich and developing (or underdeveloped) countries. Institutions are strongly correlated with other, difficult to observe, economic (or financial) factors that distinguish industrial from underdeveloped countries. Although the "*fixed*" and "*quasi-fixed*" effect estimates address this point, heterogeneity is still a concern. I thus reestimate the basic econometric model distinguishing between high and medium income countries. This also enables me to assess the effect of the ongoing European integration in cross-border banking activities.

Columns (1)–(6) in Table 7 give estimates for the effect of institutional performance in high income countries (as classified by the World Bank) only.[28] The (pooled cross-section

---

[28]I also distinguished between developed and developing countries using OECD membership. The results are almost identical if one uses current OECD member countries, or the pre-1995 OECD members or the

time series) model has retained its explanatory power ($R^2 > 0.50$) and all "gravity" variables (distance, ethno-linguistic ties, per capita GDP, land area, and population) enter with robust coefficients. The coefficients on the political risk rating and the more specific institutional indicators appear not particularly sensitive and remain significant at the 1% confidence level. The most conservative estimate (column (4), where we also control or specific institutional characteristics) for the political risk coefficient, for example, implies that a one percent institutional improvement is followed by an almost two percentage increase in the volume of international bank flow. These results are further strengthened by the fixed-effect estimates presented in columns (5) and (6). Even when we perform the estimation solely on the relatively homogeneous sample of high-income countries and at the same time control for unobserved country heterogeneity, the coefficient on the composite institutional quality indicator remains positive and significant.

Columns (2) to (4) include two dummies for European Union (EU) membership: the first takes a value of one when one of the two counterparts is an EU member (*EU_one*); the second equals one when both countries are EU members (*EU_both*).[29] The EU Single Market and the subsequent Financial Service Action Plan aimed to remove both direct and indirect barriers in cross-border movements of capital by harmonizing banking law and financial services' regulation. Moreover, the single currency has eliminated exchange rate risk. The results suggest that EU membership has led to a substantial expansion of banking activities across member countries. Although the coefficient on the *EU_one* dummy is statistically indistinguishable from zero, joint EU membership has a large effect. The estimates imply that cross border bank flows between member states by approximately 30% ($\exp(0.27) - 1 = 0.31$).[30] This result suggests that substantial integration has taken place not only in equity and debt markets, but in the banking sector as well (Baele *et al.*, 2004). Banking integration has taken the form of increased cross-border lending and borrowing rather than through mergers and acquisitions, as in the United States. This result has direct policy implications, since recent studies show that the U.S. banking sector integration has not only been associated with substantial growth gains (Jayaratne and Strahan, 1996), but also led

G-7 or the G-10 countries. Another approach is to pool all countries together but allow the institutional and political risk measures to differ between rich and middle income countries. Yet this approach assumes similar dynamics in the other control variables. The results, however, are very similar.

[29]See for a similar approach Glick and Rose (2002) and Rose (2004), who quantify the impact of trade agreements on the volume of bilateral trade flows.

[30]Inserting EU member dummies in the full sample of countries yields larger coefficients. I report the most conservative estimates, since I want to avoid EU membership capturing a "high income" countries effect.

to business cycle synchronization across states (Morgan, Rime, and Strahan, 2004).

As shown by the pooled OLS and country-pair fixed-effect estimates presented in columns (7) and (8) institutional quality is a significant determinant of cross-border lending in middle and low income countries as well.

5.2 Political, Economic and Financial Risk

Table 2 shows a strong correlation between the "political risk" measure and the other two ICRG risk ratings: the "economic" and "financial" risk indicators. One could suspect that the previously estimated coefficients actually capture "economic" and/or "financial" risk rather than institutional and/or political conditions. Erb, Harvey and Viskanta (1996a,b), for example, find the "economic" risk to be the key factor with "political" risk being the least informative in predicting future equity and bond returns.

To identify which risk is of most importance for foreign banks when making their international capital allocation decisions, in Table 3.8 I estimate gravity models augmented with each of the three risk ratings. Since cross-border bank flows exhibit some inertia, I estimate dynamic pooled models adding in the set of explanatory (four) lags of the dependent variable to capture the persistence. In the last row of the Table I thus report the long-run multiplier of each of the risk factors (estimated as the short-run coefficient divide by one minus the algebraic sum of the autoregressive terms). The results are not sensitive to this permutation. The long-run coefficient on political risk is very similar to the one reported in the benchmark estimates (see column (3)-Table 3, for example, where the coefficient on $INST_{j,t-1}$ is 0.0581). The models reported in columns (1)-(3) hint that political and economic risk are somewhat more important than financial risk in explaining cross-border banking activities. Although all risk characteristics are significant drivers of foreign (bank) capital, the augmented with political risk specification has the best explanatory power (in terms of overall R^2).

These estimates do not, however, directly address whether institutional or overall economic (or even financial sector) improvements are followed by increased cross-border lending. To address this policy question and also control for unobserved country heterogeneity, I proceed in columns (4)-(6) to dynamic fixed-effect estimates. Although the joint presence of individual effects and the lagged dependent variable terms yields corrupt estimates, recent Monte Carlo studies show that the bias sharply decays when the time horizon exceeds 30

24

periods. Judson and Owen (1999) estimate that the bias on the lagged dependent variable is around 1 to 2 percent of the true coefficient value when T is 30.More importantly, the bias on the other explanatory variables (and consequently the risk factors and the other gravity terms) is found to be less than one percent. Since the time dimension for most country-pairs exceeds 60, I report fixed-effect dynamic estimates, noting however that similar results were obtained with other dynamic panel fixed-effect techniques (Arellano and Bond, 1991; system GMM technique developed by Arellano and Bover and Blundel and Bond, 1998).

The fixed effect estimates strengthen the previous strong and robust institutions-foreign lending nexus. Among the three risk characteristics only "political risk" enters with a significantly positive coefficient (see for a similar finding, Gelos and Wei, *forthcoming*). This clearly suggests that (even temporary) reforms reflected in the ICRG political risk variables foster foreign investment. The insignificant "within" estimates of economic and financial risk also suggest that in spite of the strong association of these indicators with political risk, institutional improvement and political stability are the key requirements for foreign banks in their lending decisions. [31]

Economic risk enters the OLS specifications that primarily utilize the cross-country variation with a significantly positive coefficient, while in the "within" estimates the coefficient becomes indistinguishable from zero. Although this might seem contradictory, in a mean-variance model framework the effect of economic risk not straightforward to sign. High risk is associated with both increased volatility and with higher expected returns. So it depends on the model's parameters which effect dominates. The inconclusive results of Table 3.8 are in line with such an interpretation.[32]

---

[31] I also estimated specifications including the economic and the political risk (and also financial risk) simultaneously. Although multicollinearity seriously plagues these estimates, the coefficient on the political risk indicator in j is always positive and has the largest of the three risk ratings magnitude. The results are quite similar if instead of country-pair fixed effects, I add a vector of recipient country and a vector of source country constants. The results are quantitatively similar when I estimate the model with inter-bank flows as the dependent variable or experiment with other lag lengths (These results are not reported for brevity).

[32] When I restrict estimation in the EU15 subsample, the coefficient on economic risk becomes negative and significant [when the model in column (2) is estimated only on intra-EU flows the estimated elasticity of economic risk is -2.204 ($t = 3.15$).] This implies that EU banks invested more in the relatively riskier countries to realize benefits arising from higher expected returns (foreign institutional investors heavily invested in government securities in the countries of the South just before the adoption of the Euro).

5.3 Liability Flows

In Table 9 the basic specification is re-estimated with the logarithm of liability flows from i to j as the dependent variable. Interestingly the model performs well for liability flows.

The results imply that institutions and/or political risk both at the "*source*" and the "*recipient*" countries (columns (5) and (6)) are important drivers not only of international investment, but also borrowing flows. This results is robust to the inclusion of "source" or/and "recipient" country fixed effects. Since international borrowing is less risky than investing, such that low-quality institutions need not necessarily be such an important factor for the borrower, this result is puzzling. It can be rationalized, however, as follows: First, due to the hub structure of the international banking system, financially developed countries (mainly Germany, the United States, Japan, and the United Kingdom) are simultaneously both the big lenders and borrowers. Second, foreign liabilities of country i, held by residents in j, can serve as collateral for country j borrowing, thus increasing bilateral lending by reducing the riskiness of foreign investment. This finding extends previous results of Moshirian and Van der Laan (1998) and Buch (2003), who examined the international lending behavior of US, UK and German banks. It is also consistent with Ruffin and Rassek (1986), who model and show the complementary nature of the investment and financing decisions of large US multinational corporations. My results, which cover a much wider sample of countries and years, suggest that foreign assets and liabilities are mutually dependent. Institutional performance and political developments can therefore explain both international lending and borrowing.

6   Sensitivity Analysis

In this section I provide some robustness checks, checking for: i) potential omitted variables bias, ii) the BIS data quality and how the results are affected with alternative estimation techniques, iii) endogeneity and measurement error and iv) the stability of the model in various samples.

6.1 Additional Controls

Low levels of human capital reduce the return of foreign capital. Since human capital is highly correlated both with wealth and well-functioning institutions, the previous estimates might be capturing part of education's effect. In addition, Alsan *et al.* (2004) have recently shown that health is an important determinant of FDI, arguing that life expectancy captures labor productivity more adequately than education. Table 10 presents various specifications adding secondary schooling and/or (the log of) life expectancy. The coefficients for both human capital proxies are positive and highly significant. Consistent with a neoclassical production function, more educated societies engage more in international banking activities and have consequently more liquid financial intermediaries. Neither, however, the effect of the aggregate institutions-political risk index nor that of the specific institutional measures has lost its significance. The estimates thus suggest that wealth, human capital, politics and legal institutions *all* contribute explaining the low volume of international capital flows in poor countries.

The exchange rate (ER) regime can also play an important role for foreign investors. Many countries have adopted fixed exchange rate regimes to signal their commitment to sound monetary policy and attract foreign capital. I thus exploit the recent Rogoff and Reinhart (2004) exchange rate regime classification and add in the RHS measures of ER rigidity. The "fine" classification ($ER\_regime1_{j,t}$) ranges from 1 to 15, while the "coarse" classification ($ER\_regime2_{j,t}$) from 0 to 6. For both measures higher levels suggest more liberal exchange rate polices. The estimated coefficients are both at least two standard errors below zero, implying that foreign banks prefer investing in countries with fixed exchange rate regimes. The estimates retain their significance even in the "*within*" specification (column (6)), suggesting that if a country moves towards a less flexible exchange rate arrangement it will receive more foreign bank capital. Even though fixed exchange rate regimes are associated with sharp devaluations, it seems that foreign banks prefer bearing this risk rather than that arising from non credible monetary policy and high exchange rate volatility.

6.2 Data Limitations & Alternative Econometric Techniques

Not all countries receive foreign bank credit in all quarters. Specifically, the BIS dataset includes many zeros, especially in transactions towards emerging and non-developed countries.

Since a log transformation has been applied these observations have not been considered until now. Careful data examination reveals that these zeros represent non reporting gaps rather than actual zero flows. Still, I re-estimated all previous specifications replacing zeros with a value of one, yielding a log value of zero. Table 11 reproduces estimates after this transformation. Column (1) reports OLS estimates. Since the data has now many zero observations, columns (2)–(5) give Tobit estimates. Due to the excess zero observations, the overall model fit has worsened. The sign and statistical significance of all coefficients has, however, remained unchanged. Corruption is still negatively associated with capital inflows, as is state ownership of the banking system. Likewise, a high quality, efficient and fast legal system is particularly attractive to foreign banks.

Santos and Tenreyro (2004) have recently emphasized that in the presence of heteroskedastic residuals, applying a logarithmic transformation can be highly misleading. This is because the expected value of the logarithm of a random-variable depends both on the mean and on higher moments of the distribution. This transformation, however, not only affects the efficiency of the estimator, but also its consistency. Santos and Tenreyro show that this problem has important implications for traditional estimates of the standard gravity terms (namely distance, size and ethnolinguistic ties) in log-linearized gravity equations in trade. Starting from the following general form:

$$y_{i,t} = F_{i,j,t} = \exp(x_{i,,j,t}\beta) + \eta_{i,j,t} \tag{2}$$

Santos and Tenreyro propose to use the Poisson pseudo-maximum likelihood estimator (with heteroskedasticity adjusted standard errors). This method performs very well to their simulations of the "gravity" model, which further indicate that OLS and Tobit can be severely biased. The first order conditions of the PPML takes the following form:

$$\sum_{k=1}^{K} \left[y_{i,j,t} - \exp(x_{i,,j,t}\beta) \right] x_{i,t} = 0 \tag{3}$$

This estimator has the additional benefit of also taking into account the zero observations of the trade and in our case the bank flow data. [33] It is thus quite natural to ask how our

---

[33]Santos Silva and Tenreyro (2004) show that applying non-linear least squares (NLS) not only does not resolve, but may actually accentuate the issues arising form heteroskedasticity. The reason is because NLS assigns larger weight to nosier observations. Santos Silva and Tenreyro show the Poisson PML model is also preferable to the alternative gamma PML, which assigns lower weight to observations with a large conditional

estimates of the institutions-augmented gravity model of financial flows is affected when estimated with PPML. The results are given in columns (5)-(7) of Table 11. The coefficients on the "size" proxies have decayed substantially. The log of GDP of the "source" country has even lost its statistical significance, while the coefficient on distance has dropped in absolute value by almost a half. This is very close to the Santos Tenreyro evidence on the gravity terms decaying significantly in international trade flow models. Most importantly for the focus of the current study, however, the estimated elasticity on the composite institutions (political risk) indicator is even larger jumping from around $2 - 2.5$ to 3.8. The coefficient on $INST_{j,t-1}$ retains both its economic and its statistical significance, even when we add a full set of source and recipient country fixed-effects, to control for any (time) invariant unobserved heterogeneity. In the last column I augment the model with both the time-varying political risk measure and all the specific institutional characteristics. The PPML estimates further validate the results given so far on a joint politics institutions link for the investment behavior of foreign banks.

6.3 Endogeneity and Measurement Error - Cross Sectional Estimates

Institutional quality indicators are plagued by measurement error. This problem is particularly severe in the political risk rating, since it is impossible to summarize in a single variable all dimensions of the institutional and political environment. In addition the use of this measure is far from ideal, since it measures policy outcomes, rather than (relatively long-lasting) institutional characteristics (see on this point, Glaeser *et al.*, 2004).[34] As stated before this is not a serious drawback, since we are interested in quantifying how foreign investor's respond to policy or institutional changes. Whether such changes will prove to be long-lasting or not is clearly a sizable part of the risk they face when making their investment decision. In any case, classical measurement error, however, yields an attenuation bias, suggesting that results so far have been conservative. A more important concern is, thus, reverse causality,

---

mean in estimating the gravity model of international trade. This is because observations from relatively poor countries, which are mostly likely plagued by measurement error will get more weight.

[34] Glaeser *et al.* (2004) point out that the ICRG index (as well as other intitutional quality measures) does not measure the quality of domestic institutional characteristics, but just reflects the policy choices of the "*ruling class*" to protect or not private property rights. Most importantly since these measures are strongly correlated with GDP, Glaeser *et al.* reasonably argue that they reflect "*ex post outcomes, ...,* *rather than political constraints per se*". Since in all specifications we include recipient country GDP in the set of explanatory variables, this concern in our context is not as severe as in studies that GDP is the dependent variable.

which, if present, will produce inflated coefficients. An increased volume of foreign capital may itself lead to institutional improvement. Domestic firms may, for example, adopt stricter accounting standards and apply more transparent corporate governance practices. The government may remove capital account restrictions and privatize state enterprises. Even if no (classical) reverse causality is present, over-stated coefficients can arise if the researchers at PRS assign higher ratings to countries that receive more inward investment (in order for example to saviour their clients).

These problems, however, can be addressed with suitable instruments. Recent important contributions in the literature on the determinants of institutional quality and its role in economic development provide some useful guidance. Table 12 reports cross-sectional estimates of the gravity models in the first quarter of 2000. The need to move to cross-sectional estimates is required, since the "instruments" suggested in the literature are purely cross-sectional. I also control for human capital using life expectancy and the exchange rate regime that have been found to important correlates of cross-border bank flows. In column (1) I instrument the political risk index with measures of linguistic, ethnical and religious fragmentation (column (5)).[35] Aghion, Alesina and Trebbi (2004) argue that fractionalization is a key determinant of political institutions and also show that ethnic and religious polarization is negatively associated with the quality of political institutions (proxied by the constraints on the executive, political freedom, democracy scores, etc.). Clearly the societal structure is as exogenous as one could reasonably hope for to international banking activities. In addition the Sargan-Hansen test of over-identifying restrictions does not cast doubt on the instruments validity (p-value 0.184). Further the first stage diagnostics indicate no problem of weak instruments. The R^2 of the excluded instruments in the first stage equation is greater than the $0.25 - 0.30$ threshold indicated by the weak instrument literature (e.g. Staiger and Stock, 1997).The coefficient on $INST$ retains its statistical significance. Its magnitude is also very close to the benchmark estimates in Table 3.3, where the gravity model was estimated over a twenty year period.

Due to its secrecy and illegality, corruption is likewise difficult to compute. The TI measure I use is a blend of various perception-based measures. Although this minimizes

---

[35] I also experienced with the Acemoglu *et al.* (2001) settler mortality rate and latitude from the equator (used by Hall and Jones, 1999) as an instrument for $INST$. The results are quite robust. I decided not to report IV estimates with the settler mortality measure, since my sample consists mainly of developed countries, where this variable is unavailable.

systematic bias, it introduces noise, which attenuates the coefficient.[36] Thus, in column (2) I follow Mauro (1995) and instrument corruption with measures of fractionalization. The instrumented corruption measure enters the gravity model with a statistically significant and relatively stable coefficient, verifying our previous estimates.

In columns (3) and (4), I focus on the three indicators that measure the de-jure and the de-facto efficiency of the legal system. Following the influential work of La Porta *et al.*, who argued that legal origin has crucially affected the evolution and quality of the legal system, I use legal origin dummies to instrument for anti-director's rights and contract enforceability respectively. The coefficient on the *de facto* legal quality measure ($Contract_j$) is statistically significant and robust suggesting that our previous estimates were neither driven by reverse causality nor by systematic measurement error. In addition the estimate is almost identical to the previously reported panel estimates.[37] In line with the previous results the coefficient on $Anti\_direct_j$ is only marginally significant, validating that actual contract enforcement rather is the key consideration of foreign banks. In the last column I examine the role of government control of the banking system, again using legal origin to instrument Gov_Own_j (La Porta, Lopez-de-Silaens and Shleifer, 2002) verifying that foreign banking institutions appear unwilling to invest in countries that the state controls the banking system.

6.4   Sample

Table 13 provides additional robustness checks. I perturb the model in various ways to check the results' stability in different samples. Each panel reports three gravity specifications: (i) with the political risk rating ($INST_{j,t-1}$) only, (ii) with the specific institutional measures only, and (iii) with both the time-varying political risk rating and the specific cross-country institutional indicators. In Panel A, I have excluded bank flows from the United States to check whether the results are driven by the fundamental role of the U.S. in the international financial system. Likewise Panel B reports estimates excluding all capital flow observations involving U.S., Japan or Germany (G3). In Panel C, I ignore all intra-G7 transactions. In Panels D and E I vary the sample period, splitting the sample into two equally-spaced parts. This twist is interesting since many economies have only recently lifted capital account

---

[36]The corruption measure can not capture whether the bribery can guarantee that the business is going to proceed or not (the "*industrial organization*", Shleifer and Vishny (1994)). Wei (2000) gives an eloquent discussion of the conceptual and measurement issues surrounding the corruption indicators.

[37]A possibility of course that can not been ruled out is that the upward bias arising from reverse causality exactly cancels the attenuation effect.

restrictions. In addition the volume of cross-border capital flows has drastically increased in the late nineties. In Panel F, I exclude from the specification the time nuisance parameters (a_t).

The coefficients on both the political risk-composite institutional rating and the specific institutional variables are not particularly sensitive neither to the sample nor the exact specification. "Political risk", for example, enters in all model permutations with a coefficient close to 0.05 and at least two standard deviations above zero. When the "political risk" enters jointly with the specific institutional variables, its coefficient decays, but retains both its statistical and economic significance. Of the four specific institutional variables, government ownership of banks and contract enforceability appear to be the most important. Both have coefficients that are statistically different than zero in all permutations. Moreover the range of the estimated coefficients for $Contract_j$ and Gov_Own_j is relatively narrow implying that a poorly performing and mis-functioning legal system as well as a state-owned banking system strongly impede foreign capital. Corruption and low *de jure* investor's protection also influence foreign banks, but to lesser extent.

7   Conclusion

Few doubt that institutions to a smaller or greater extent influence financial (and economic) development. An open challenge for empirical research is to quantify which type and through which channels institutions impact economic activity and financial patterns. This paper studies the determinants of gross international bank flows in a large panel of countries and years. Besides identifying the driving forces of international banking, this paper provides the first comprehensive analysis of the role of politics and institutions on cross-border capital movements.

The results are clear-cut with direct policy implications. First, conditioning on "gravity" factors ("size" and distance), countries with high-quality institutions and low political risk engage more in asset trade. Second, foreign banks prefer to allocate credit to uncorrupted countries with well-functioning legal systems. Government ownership of banks amplifies agency costs and is associated with lower levels of international bank lending. Third, financial securities' and banking law harmonization policies that European countries have implemented together with minimizing of exchange rate risk, have spurred cross-border bank

lending activities within the European Union. The results also reveal that foreign banks are especially concerned with political, rather than other risk (economic or/and financial) factors.

These results are robust to a variety of sensitivity checks including: Controlling for omitted variables; addressing problems of the BIS dataset; dealing with measurement error and the potential endogeneity of the institutional ratings; checking the empirical model's stability to different country samples and time-horizons, controlling for "economic" or "financial" risk, and more. The results are also robust to alternative estimation techniques (Poisson PML) that address some recently identified problems of "gravity equations" (Santos and Tenreyro, 2004). Most importantly, the panel regressions yield significant coefficients on *both* the political risk rating and the specific institutional indicators, even when these variables are jointly entered in the specification, offering thus a middle-ground to the ongoing debate on whether the law or politics is the key driving force of financial development. The panel evidence thus suggest that political stability, actual (*de facto*) legal system quality and state involvement in the banking sector are not only key determinants in the investment strategy of international banks, but play somewhat independent roles.

The dataset on bilateral banking activities covers a sizable amount of the overall volume of gross international capital movements, and includes not only inter-bank loans, but also significant amounts of portfolio and direct investment flows. Consequently the empirical results have a more general interpretation.

First from a theoretical standpoint the evidence supports Shleifer and Wolfenzon's (2002) model that stresses the importance of an efficient legal system for financial development. The results also offer a plausible explanation to the Lucas (1990) famous inquiry on "*why capital doesn't flow from rich to poor nations*" and the associated "*home-bias puzzle*". Part of the answer is in poor nations' political instability, corruption, inefficient government policies and low-quality law.

Second, from a policy perspective the evidence implies that improving inefficient bureaucracies, tackling corruption, and enhancing legal system competence are crucial for attracting foreign bank capital. The "fixed-effect" estimates that control for time-invariant omitted variables and exploit the "*within*" country variation also suggest that political liberalizations, privatization and other structural policies (which are followed by a decline in political risk), can enhance domestic liquidity by attracting substantially more foreign capital. This

applies to both developing and industrialized countries.

Third, the results call for additional research. New empirical work has to assess how politics and institutions affect other types of capital flows and asset holdings. Theory on international capital movements and portfolio allocation needs to model explicitly the mechanisms through which institutions influence investors' decisions. Although it is unlikely that institutions alone can explain the large equity home-bias and the low levels of international diversification, institutional performance and politics should be a necessary ingredient for any serious theoretical and empirical effort to analyze cross-border capital movements.

A Data Appendix

A.1 Sample Countries

Source-Reporting countries (19):

Austria (AUT)^{h,eu}, Belgium (BEL)^{h,eu}, Denmark (DNK)^{h,eu}, Finland (FIN)^{h,eu}, France (FRA)^{h,eu}, Germany (DEU)^{h,eu}, Ireland (IRL)^{h,eu}, Italy (ITA)^{h,eu}, Netherlands (NLD)^{h,eu}, Norway (NOR)^{h}, Portugal (start 1997 q4) (PRT)^{h,eu}, Spain (ESP)^{h,eu}, Sweden (SWE)^{h,eu}, Switzerland (CHE)^{h}, United Kingdom (GBR)^{h,eu}, United States (USA)^{h}, Japan (JPN)^{h}, Canada (CAN)^{h}, Australia (AUS)^{h}.

Recipient (vis-a-vis) countries (51):

Argentina (ARG), Australia (AUS)^{h}, Austria (AUT)^{h,eu}, Belgium (BEL)^{h,eu}, Bulgaria (BGR), Brazil (BRA), Botswana (BWA), Canada (CAN)^{h}, Switzerland (CHE)^{h}, Chile (CHL), China (CHN), Colombia (COL), Costa Rica (CRI), Czech Republic (CZE), Germany (DEU)^{h,eu}, Denmark (DNK)^{h,eu}, Ecuador (ECU), Spain (ESP)^{h,eu}, Estonia (EST), Finland (FIN)^{h,eu}, France (FRA)^{h,eu}, United Kingdom (GBR)^{h,eu}, Croatia (HRV), Hungary (HUN), Indonesia (IDN), Ireland (IRL)^{h,eu}, Israel (ISR), Italy (ITA)^{h,eu}, Jordan (JOR), Japan (JPN)^{h}, Korea, Republic of (KOR), Lithuania (LTU), Latvia (LVA), Mexico (MEX), Malaysia (MYS), Namibia (NAM), Netherlands (NLD)^{h,eu}, Norway (NOR)^{h}, New Zealand (NZL)^{h}, Peru (PER), Philippines (PHL), Poland (POL), Portugal (PRT)^{h,eu}, Romania (ROM), Slovak Republic (SVK)^{h}, Slovenia (SVN), Sweden (SWE)^{h,eu}, Tunisia (TUN), Turkey (TUR), United States (USA)^{h}, South Africa (ZAF).

Note: h indicates "High-Income" countries (as classified by the World Bank); eu indicates European Union 15 member (before the 2004 Enlargement).

A.2 Bank flows data

Bank flow data are retrieved form the Bank of International Settlement's (BIS) Locational Banking Statistics. The Locational Banking Statistics in the oldest BIS data-source and it now covers data from banks located in 36 "reporting area" jurisdictions.

However, 17 "source" countries were excluded from the present study due to limited data availability. Specifically the following countries were excluded (year of first available observation in parenthesis): India (start 2001), Guernsey (start 2001), Isle of Man (start 2001), Taiwan (start

2000), Chile (start 2002), Bermuda (start 2002), Brazil (start 2002), Turkey (start 2000), Jersey (start 2001), Panama (start 2002) were excluded because these countries monetary authorities started reporting bank's assets and liabilities in the BIS after 2000. Singapore was excluded because the reported data is not comparable with the other statistics. The off-shore centers, namely the Bahamas, Bahrain, Cayman Islands, the Netherlands Antilles, Hong Kong and Luxembourg were excluded due to data unavailability for GDP and other macroeconomic variables at a quarterly basis (from IMF's International Financial Statistics). Moreover data from off-shores have many gaps and for some countries are not reported at a quarterly basis. For most "reporting area" countries data cover more than 90% of the international assets and liabilities of all banking institutions operating within their jurisdictions.

Assets and liabilities represent exposure both to non-residents in "vis-a-vis" countries as well as exposure to domestic residents in foreign country. Assets include almost all on balance-sheet items (plus some off-balance sheet items in the area of trustee business). Assets include mainly deposits and balances placed with non-resident banks, including bank's own related offices, and loans and advances to banks and non-banks. They also include holdings of securities and participations (i.e. permanent holdings of financial interest in other undertakings) in non-resident entities. Data also include trade-related credit, arrears of interest and principal that have not been written down and holdings of bank's own issues of international securities. They also "cover portfolio and direct investment flows of financial interest in enterprises" (BIS, 2003a).

Banks contributing to the BIS statistical database report only stocks. The BIS estimates flows by the change of stocks, adjusted by exchange rate changes (which is feasible, since individual banks also report the currency of international assets and liabilities) and other differences in valuation. This adjustment is clearly not perfect, since flows might have occurred at different exchange rates (see Wooldridge, 2002). However this is a typical problem of most capital flows data and is by far preferable to a manual adjustment (e.g. Van Rijckeghem and Weder, 2003). There are also many zeros in the data, which makes the logarithmic transformation impossible. Other limitations of the dataset [which are common to capital flows studies] are: i) the data do not capture indirect exposure to recipient countries, and ii) insufficient coverage of "off-balance sheet" exposure.

[Source: Locational Banking Statistics, Bank of International Settlements; Fall 2003 (includes both public and not-yet publicly available data)].

- **Aggregate asset bank flows:** Change of international financial claims of bank offices resident in the "reporting area" ("source" country) to all sectors in "vis-a-vis" countries

("recipient").

- **Inter-bank capital flows:** Change of international financial claims of bank offices resident in the "reporting area" only to banking institutions in vis-a-vis" countries ("recipient").

- **Aggregate liability bank flows:** Change of international financial liabilities of bank offices resident in the "reporting area" only to banking institutions in vis-a-vis" countries ("recipient").

A.3 Risk characteristics data

The International Country Risk Guide (ICRG) rating comprises 22 variables in three subcategories of risk: political, financial, and economic. It is produced by Political Risk Services (PRS) on a monthly basis from 1983. The ICRG staff collects political information and financial and economic data, converting these into risk points for each individual risk component on the basis of a consistent pattern of evaluation. The political risk assessments are made on the basis of subjective analysis of the available information, while the financial and economic risk assessments are made solely on the basis of objective data. After a risk assessment (rating) has been awarded to each of the 22 risk components, the components within each category of risk are added together to provide a risk rating for each risk category.

- **Political Risk:** The Political Risk index ranges from 0 denoting minimum level of institutional quality to 100 indicating a total absence of political risk. "The aim of the political risk rating is to provide a means of assessing the political stability of the countries covered by ICRG on a comparable basis." The Political Risk Rating includes 12 variables covering both political and social attributes (components and weights). (1) : Government Stability, which includes government Unity, legislative strength, an popular support (16%). (2) : Socioeconomic Conditions, which include unemployment, consumer confidence, and poverty (16%). (3) : Investment Profile, which includes assessment in contract viability/expropriation, profits repatriation, and payment delays (16%). (4) : Internal Conflict, which includes civil war, terrorism/political violence, and civil disorder (16%). (5) : External Conflict, which includes war, cross-border conflict, and foreign pressures (16%). (6) : Corruption (8%). (7) : Military in Politics (8%). (8) : Religion in politics (8%). (9) : Law and Order (8%). (10) : Ethnic Tensions (8%). (11) : Democratic Accountability (8%). (12) : Bureaucracy Quality (4%).

- **Economic Risk:** The Economic Risk index ranges from 0 denoting the highest possible risk level to 50 indicating an elimination of economic risk. The variable is rescaled to a $0 - 100$ range. Its purpose is ".... to provide a means of assessing a country's current economic strengths and weaknesses." It includes 5 weighted variables covering macroeconomic developments. (components and weights): (1) : GDP per Head of Population (10%). (2) : Real Annual GDP Growth (20%). (3) : Annual Inflation Rate (20%). (4) : Budget Balance as a Percentage of GDP (20%). (5) : Current Account Balance as a Percentage of GDP (30%)

- **Financial Risk:** The Financial Risk ranges from 0 denoting the highest possible risk level to 50 indicating an elimination of financial risk. The variable is rescaled to a $0 - 100$ range. PRS write "..The overall aim of the Financial Risk Rating is to provide a means of assessing a country's ability to pay its way. In essence this requires a system of measuring a country's ability to finance its official, commercial, and trade debt obligations." The Financial Risk Rating includes 5 weighted variables covering financial and monetary sector developments (components and weights). (1) :Foreign Debt as a Percentage of GDP (20%). (2) : Foreign Debt Service as a Percentage of Exports of Goods and Services (20%). (3) : Current Account as a Percentage of Exports of Goods and Services (30%). (4) : Net Liquidity as Months of Import Cover (10%). (5) : Exchange Rate Stability (20%).

A.4   Other Controls & Instruments

- $Rate_{j,t}-$ Lending rate: Lending rate is the bank rate that usually meets the short and medium term financing needs of the private sector. [Source: IMF IFS line 60P]

- $Inf_{j,t}-$ Inflation Rate: Calculated as the change in CPI. [Source: IMF IFS line 64]

- $\ln(Y)-$ Log real GDP per capita: Logarithm of GDP per capita volume, converted to US dollars and adjusted with local CPI.[Source: IMF IFS 99B]

- $\ln(Area)-$ Log Area: Natural logarithm of land area in square kilometers.[Source: Rose (2002)]

- $Pop-$ Population: Values correspond to mid-year estimates. A linear interpolation is used to fill in missing observations. At the regressions the variable is entered as the natural logarithm of the interpolated series [Source: IMF IFS line 99Z].

- $Tie_{i,j}$– Ethnolinguistic Tie: Dummy variable that equals one if the two countries share a common language or have former colonial relation.[Source: Glick and Rose (2002)]

- $\ln(Dist_{i,j})$– Distance: Natural logarithm of greater circle distance between economic centres in a pair of countries.[Source: Rose (2004)]

- $Anti\_direct_j$– Anti-director rights index: An index aggregating shareholder rights. The index is formed by adding 1 when: (1) the country allows shareholders to mail their proxy vote to the firm; (2) shareholders are not required to deposit their shares prior to the General Shareholders' Meeting; (3) cumulative voting or proportional representation of minorities in the board of directors is allowed; (4) an oppressed minorities mechanism is in place; (5) the minimum percentage of share capital that entitles a shareholder to call for an Extraordinary Shareholders' Meeting is less than or equal to 10 percent (the sample median); or ,(6) shareholders have preemptive rights that can only be waved by a shareholders' vote. The index ranges from 0 to 6.[Source: La Porta et al. (1998)]

- Gov_own_j– Government Ownership of Commercial Banks: Share of the assets of the top 10 banks, excluding development banks, in a given country controlled by the government at the 20 percent level in 1995. A bank is controlled by the government if government banking is larger than 20 percent and the state is the largest shareholder.[Source: La Porta et al. (2002)]

- $Overhead_j$– Bank Overhead Costs: The accounting value of a bank's overhead costs as a share of its total assets. The data is obtained from individual bank's balance sheets. The measure refers to 1995. [Source: La Porta et al. (2002)]

- $Bank\_Sound_j$– Bank Soundness Measure: An index assessing the soundness of banks in terms of their "general health and sound balance sheets." The index ranges from 1 to 7, where higher scores indicate stronger agreement with the statement. The score refers to the index in 1999. [Source: La Porta et al. (2002); originally from the World Economic Forum]

- $Corruption_j$– Corruption: A composite index for the year 2000 that draws on 14 data sources from seven institutions: the World Economic Forum, the World Business Environment Survey of the World Bank, the Institute of Management Development, Pricewaterhouse Coopers, the Political and Economic Risk Consultancy, the Economist Intelligence Unit and Freedom House's Nations in Transit. The score ranges between 0 and 10 with lower values indicating higher levels of corruption. [Source: Djankov et al (2003)]

- $Contract_j-$ Contract Enforceability: "The relative degree to which contractual agreements are honoured and complications presented by language and mentality differences. Scale: $0-10$ (higher scores indicating higher degree of enforceability) [Source: Djankov et al (2003), originally from Business Environmental Risk Intelligence]

- $Legal\_time_j-$ Legal Time: Estimated duration, in calendar days, between the plaintiff files the complaint till the time the landlord repossess the property. [Source: Djankov et al (2003)]

- $Schooling_{j,t}-$ Schooling: Average years of schooling in the population aged 25 and above. The data are reported in five-year averages. [Source: Barro and Lee (2001)]

- $Life\_\exp ect_{j,t}-$ Life Expectancy: Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. The data has some arbitrary gaps. A linear interpolation is used to fill in these gaps. At the regressions the variable is entered as the natural logarithm of the interpolated series. [Source: World Bank World Development Indicators CD-ROM (2004 Edition)].

- ER_reg1- "Fine" Exchange Rate Regime: Fine classification of exchange rate arrangements. Ranges from 1, indicating a "fixed" exchange rate regime to 15, suggesting a freely floating exchange rate. Specifically the variable takes on the following values:(1)=No separate legal tender; (2)=Pre announced peg or currency board arrangement; 3=Pre announced horizontal band that is narrower than or equal to $+/-2\%$; (4)=De facto peg; (5)=Pre announced crawling peg; (6)=Pre announced crawling band that is narrower than or equal to $+/-2\%$; (7)=De factor crawling peg; (8)=De facto crawling band that is narrower than or equal to $+/-2\%$; (9)=Pre announced crawling band that is wider than or equal to $+/-2\%$; (10)= De facto crawling band that is narrower than or equal to $+/-5\%$; (11)=Moving band that is narrower than or equal to $+/-2\%$ (i.e., allows for both appreciation and depreciation over time); (12)=Managed floating; (13)=Freely floating; (14)=Freely falling; (15)=Dual market in which parallel market data is missing. [Source: Reinhart and Rogoff (2004)]

- ER_reg2- "Coarse" Exchange Rate Regime: Coarse classification of exchange rate arrangements. Ranges from 1, indicating a "fixed" exchange rate regime to 5, suggesting a freely floating exchange rate. Specifically the variable takes on the following values: (1): No separate legal tender, or pre announced peg or currency board arrangement, or pre announced horizontal band that is narrower than or equal to $+/-2\%$, or de facto peg; (2): Pre an-

nounced crawling peg, or pre announced crawling band that is narrower than or equal to $+/-2\%$ or De factor crawling peg, or de facto crawling band that is narrower than or equal to $+/-2\%$. (3): Pre announced crawling band that is wider than or equal to $+/-2\%$,or de facto crawling band that is narrower than or equal to $+/-5\%$, or moving band that is narrower than or equal to $+/-2\%$, or managed floating. (4): Freely floating. (5): Freely falling. (6): Dual market in which parallel market data is missing. [Source: Reinhart and Rogoff (2004)]

- **Latitude**: The absolute value of the geographical latitude of the country. Source: La Porta et al. (1999); originally from CIA Factbook]

- **Religious, Ethnic & Linguistic Fragmentation:** Constructed as one minus the Herfindahl index of the share of the largest religious, ethnical, and linguistic groups. It reflects the probability that two randomly selected individuals follow different religious beliefs, belong to different ethnical groups, or do not speak the same language. [Source: Alesina et al. (2003)]

- **Legal Origin:** Identifies the legal origin of the Company Law or Commercial Code of each country. There are five categories: (1) Common law; (2) French civil law; (3) German civil law; (4) Scandinavian civil law; (5) Socialist/Communist law. [Source: La Porta et al. (1998, 1999)]

References

[1] **Acemoglu, Daron and Johnson, Simon**. "Unbundling Institutions." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 9934, September 2003.

[2] **Acemoglu, Daron; Johnson, Simon and Robinson, James A.** "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review*, December 2001, *91*(5), pp. 1369-1401.

[3] **Acemoglu, Daron; Johnson, Simon; Robinson, James A. and Thaicharoen, Yunyong.** "Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth." *Journal of Monetary Economics*, January 2003, *50*(1), pp. 49-123.

[4] **Aghion, Philippe; Bacchetta, Philippe and Banerjee, Abhijit.** "Currency Crises and Monetary Policy in an Economy with Credit Constraints." *European Economic Review*, July 2001, *45*(7), pp. 1121-1150.

[5] **Alesina, Alberto; Devleeschauer, Arnaud; Easterly, William and Wacziarg, Romain.** "Fractionalization." *Journal of Economic Growth*, 2003, *8*(2), pp. 155-194.

[6] **Alfaro, Laura; Kalemli-Ozkan, Sebnem and Volosovych, Vadym.** "Why Doesn't Capital Flow from Rich to Poor Countries? An Empirical Investigation." Harvard Business School Working Paper, December 2003.

[7] **Alsan, Marcella; Bloom, David E. and Canning, David.** "The Effect of Population Health on Foreign Direct Investment." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 10596, June 2004.

[8] **Arellano, Manuel and Bond, Stephen R.** "Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations." *Review of Economic Studies*, April 1991, *58*(2), pp. 277-297.

[9] **Arellano, Manuel and Bover, Olympia.** "Another Look at the Instrumental Variable Estimation of Error-Components Models." *Journal of Econometrics*, July 1995, *68*(1), pp. 29-51.

[10] **Aristotle.** *Politics.* Translated by H. Rackman, Cambridge, Massachusetts: Harvard University Press.

[11] **Aviat, Antonin and Coeurdacier, Nicolas.** "The Geography of Trade in Goods and Assets." DELTA (Paris, France) Working paper 2004-10, May 2004.

[12] **Baele, Lieven; Ferrando, Annalisa; Hoerdahl, Peter; Krylova, Elizaveta and Monnet, Cyril.** "Measuring Financial Integration in the Euro Area." European Central Bank (Frankfurt, Germany) Occasional Paper No. 14, May 2004.

[13] **Baltagi, Badi**. Econometric Analysis of Panel Data, John Wiley,.West Sussex, England, 2001.

[14] **Bank of International Settlements, Monetary and Economic Department.** Guide to International Financial Statistics. BIS (Basle, Switzerland) Papers No. 14, February 2003.

[15] **Bank of International Settlements, Monetary and Economic Department.** Guide to International Banking Statistics. BIS (Basle, Switzerland) Papers No. 16, April 2003.

[16] **Barro, Robert J. and Lee, Jong Wha.** "International Data on Educational Attainment: Updates and Implications," *Oxford Economic Papers*, 2001, *53*(3), pp. 541-563.

[17] **Bhattacharya, Utpal and Daouk, Hazem.** "The World Price of Insider Trading." *Journal of Finance*, January 2002, *57*(1), pp. 75-108.

[18] **Blundel, Richard and Bond, Stephen.** "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models." *Journal of Econometrics*, August 1998, *87*(1), pp. 115-143.

[19] **Bosworth, Barry P. and Collins, Susan M.** "Capital Flows to Developing Economies: Implications for Savings and Investment." *Brookings Papers on Economic Activity*, January 1999, *1999*(1), pp.143-180.

[20] **Buch, Claudia M.** "Information or Regulation: What is Driving the International Activities of Commercial banks?" *Journal of money, Credit and Banking*, December 2003 ,*36*(6-1),pp. 851-870

[21] **Buch, Claudia M; Kleinert, John and Toubal, Farid.** "The Distance Puzzle: On the Interpretation of the Distance Coefficient in Gravity Equations." *Economic Letters*, June 2004, *83*(3), pp. 293-298.

[22] **Calvo, Guillermo; Leiderman, Leo and Reinhart, Carmen.** "Capital Inflows and Real Exchange Rate Appreciation in Latin America: The Role of External Factors." *International Monetary Fund Staff Papers*, March 1993, *40*(1), pp.108-150.

[23] **Calvo, Guillermo, Leiderman, Leo and Reinhart, Carmen.** "The Capital Inflows Problem: Concepts and Issues." *Contemporary Economic Policy*, July 1994, *12*(1), 54-66.

[24] **Dahl, Drew and Shrieves, Ronald E.** "The Extension of International Credit by US Banks: A Disaggregated Analysis, 1988-1994." *Journal of International Money and Finance*, January 1999, *18*(1), pp. 153-167.

[25] **Djankov, Simeon; Glaeser, Edward; La Porta, Rafael; Lopez-de-Silanes, Florencio and Shleifer, Andrei.** "The Regulation of Entry." *Quarterly Journal of Economics*, February 2002, *117*(1), pp. 1-37.

[26] **Djankov, Simeon; Glaeser, Edward; La Porta, Rafael; Lopez-de-Silanes, Florencio and Shleifer, Andrei.** "Courts." *Quarterly Journal of Economics*, May 2003, *118*(2), pp. 457-522.

[27] **Dinc, Serdar.** "Politicians and Banks: Political Influences on Government-Owned Banks in Emerging Countries"*Journal of Financial Economics, forthcoming.*

[28] **Du, Julan and Shang-Jin Wei.** "Does Insider Trading Raise Market Volatility?" *Economic Journal*, October 2004, *114*(10), 927-956.

[29] **Erb, Claude B.; Harvey, Campbell R. and Viskanta, Tadas E.** "The Influence of Political, Economic, and Financial Risk on Expected Fixed-Income Returns." *Journal of Fixed Income*, September 1996, *6*(1), pp.7-31.

[30] **Erb, Claude B.; Harvey, Campbell R. and Viskanta, Tadas E.** "Political Risk, Economic Risk, and Financial Risk." *Financial Analysts Journal*, November/December 1996, *52*(6), pp. 28-46.

[31] **Esty, Benjamin C. and Megginson, William L.** "Creditor Rights, Enforcement, and Debt Ownership Structure: Evidence from the Global Syndicated Loan Market." *forthcoming Journal of Financial and Quantitative Analysis.*

[32] **Frankel, Jeffrey A. and Roubini, Nouriel.** "The Role of Industrial Country Policies in Emerging Market Crises." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 8634, December 2001.

[33] **Frankel, Jeffrey and Rose, Andrew.** "Currency Crashes in Emerging Markets: An Empirical Treatment." *Journal of International Economics*, November 1996, *41*(3-4), pp. 351-366

[34] **Gelos, Gaston R. and Wei, Shang-Jin.** "Transparency and International Investor Behavior." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 9260, October 2002, *forthcoming Journal of Finance.*

[35] **Gertler, Mark and Rogoff, Kenneth**. "North-South Lending and Endogenous Capital Market Inefficiencies." *Journal of Monetary Economics*, October 1990, *26*(2), pp. 245-266.

[36] **Glaeser, Edward L.; La Porta, Rafael; Lopez-de-Silanes, Florencio and Shleifer, Andrei.** "Do Institutions Cause Growth?" *Journal of Economic Growth*, February 2004, *9*(1), pp. 271-303.

[37] **Glick, Reuven and Rose, Andrew K.** "Does a Currency Union Affect Trade? The Time-series Evidence." *European Economic Review*, June 2002, *46*(6), pp. 1125-1151.

[38] **Golberg, Lawrence G. and Johnson, Denise.** "The Determinants of US banking Activity Abroad." *Journal of International Money and Finance*, January 1990, *9*(1), pp. 123-137.

[39] **Guiso, Luigi; Sapienza, Paola, and Zingales, Luigi.** "The Role of Social Capital in Financial Development." *American Economic Review* , June 2004, *94*(3), pp. 526-556.

[40] **Guiso, Luigi; Sapienza, Paola, and Zingales, Luigi.** "Cultural Biases in Economic Exchange." mimeo Kellog School of Management, December 2004.

[41] **Hall, Robert E., and Jones, Charles I..** "Why Do Some Countries Produce So Much More Output per Worker Than Others?" *Quarterly Journal of Economics*, February 1999, *114*(1), pp. 83-116.

[42] **Jayaratne, Jith and Strahan, Philip E.** "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation." *Quarterly Journal of Economics*, August 1996, *111*(3), pp. 639-670

[43] **Knack, Stephen and Keefer, Philip.** "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics*, Winter 1995, *7*(3), pp. 207-227.

[44] **Lane, Philip R. and Gian Maria Milesi-Ferretti.** "International Investment patterns." Institute for International Integration Studies (Dublin, Ireland) Discussion Paper No. 24, June 2004.

[45] **La Porta, Rafael; Lopez-de-Silanes, Florencio and Shleifer, Andrei.** "Government Ownership of Banks." *Journal of Finance*, February 2002, *57*(1), pp. 256-301.

[46] **La Porta, Rafael; Lopez-de-Silanes, Florencio; Shleifer, Andrei and Vishny, Robert.** "Legal Determinants of External Finance", Journal of Finance, July 1997, *53*(1), pp. 1131-1150.

[47] **La Porta, Rafael; Lopez-de-Silanes, Florencio; Shleifer, Andrei and Vishny, Robert.** "Law and Finance." *Journal of Political Economy*, December 1998, *106*(6), pp. 1113-1155.

[48] **La Porta, Rafael; Lopez-de-Silanes, Florencio; Shleifer, Andrei and Vishny, Robert.** "The Quality of Government." *Journal of Law, Economics and Organization*, January 1999, *15*(1), pp. 222-279.

[49] **Levine Ross.** "Finance and Growth: Theory, Evidence, and Mechanisms," forthcoming in Philippe Aghion and Steve Durlauf, eds. *Handbook of Economic Growth*, Amsterdam, North-Holland, 2004.

[50] **Lewis, Karen K.** "Trying to Explain the Home Bias in Equities and Consumption." *Journal of Economic Literature*, June 1999, *37*(2), pp.571-608.

[51] **Lucas, Robert E.** "Why Doesn't Capital Flow From Rich to Poor Countries?" *American Economic Review*, May 1990, (*Papers and Proceedings*), *80*(2), pp. 92-96.

[52] **Martin, Philippe and Rey, Héléne.** "Financial Super-Markets: Size Matters for Asset Trade." *Journal of International Economics,* December 2004, *64*(2), pp. 335-361.

[53] **Mauro, Paolo.** "Corruption and Growth." *Quarterly Journal of Economics*, August 1995, *110*(3), pp. 681-712.

[54] **Mody, Ashoka; Razin, Assaf and Sadka, Efraim.** "The Role of Information in Driving FDI Flows: Host-Country Transparency and Source-Country Specialization." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 9662, May 2003.

[55] **Morgan, Donald; Rime, Bertrand and Strahan, Philip E.** "Bank Integration and State Business Cycles." *Quarterly Journal of Economics*, November 2004, *119*(4).

[56] **Moshirian, Fariborz and van der Laan, Alex.** "Trade in Financial Services and the Determinants of Banks' Foreign Assets." *Journal of Multinational Financial Management*, January 1998, *8*(1), pp. 23-38

[57] **Obstfeld, Maurice,** "The Global Capital Market: Benefactor or Menace?" *Journal of Economic Perspectives*, Autumn 1998, *12*(4), pp. 9-30

[58] **Obstfeld, Maurice and Rogoff, Kenneth.** "The Six Major Puzzles in International Economics: Is there a Common Cause?", in *NBER Macroeconomics Annual* 2000, University of Chicago Press, Chicago, ILL.

[59] **Pagano, Marco and Volpin, Paolo.** "The Political Economy of Finance." *Oxford Review of Economic Policy*, Winter 2001, *17*(4), 502-519

[60] **Perotti, Enrico C. and van Oijen, Pieter.** "Privatization, Political Risk, and Stock Market Development in Emerging Economies." *Journal of International Money and Finance*, December 2001, *20*(1), pp. 43-69.

[61] **Political Risk Services.** International Country Risk Guide, 2003 edition, http://www.prsgroup.com

[62] **Portes, Richard and Rey, Hélène.** "The Determinants of Cross-border Equity Flows." mineo London Business School and Princeton University, *forthcoming Journal of International Economics.*

[63] **Portes, Richard; Rey, Hélène and Oh, Yonghyup.** "Information and Capital Flows: The Determinants of Transactions in Financial Assets." *European Economic Review*, May 2001*(Papers and Proceedings)*, *45*(4-6), pp. 783-796.

[64] **Qian, Jun and Philip E. Strahan.** "How Laws and Institutions Shape Financial Contracts: The Case of Bank Loans." mimeo Boston College. April 2004.

[65] **Prasad, Eswar; Rogoff, Kenneth; Wei, Shang-Jin and Kose, Ayhan M.** "Effects of Financial Globalization on Developing Countries: Some Empirical Evidence." International Monetary Fund (Washington, DC) Occasional Paper 220, August 2003.

[66] **Rajan, Raghuram G. and Luigi Zingales.** "The Great Reversals: The Politics of Financial Development in the 20th Century." *Journal of Financial Economics,* July 2003*, 69*(1), pp. 5-50

[67] **Razin, Assaf.** "FDI Contribution to Capital Flows and Investment in Capacity." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 9204, September 2002.

[68] **Reinhart, Carmen M. and Rogoff, Kenneth S.** "The Modern History of Exchange Rate Arrangements: A Reinterpretation." *Quarterly Journal of Economics*, February 2004, *119*(1), pp. 1-48..

[69] **Rodrik, Dani.** "Growth Strategies." forthcoming in Philippe Aghion and Steve Durlauf, eds. *Handbook of Economic Growth*, Amsterdam, North-Holland, 2004.

[70] **Rose, Andrew.** "Do We Really Know that the WTO Increases Trade?" *American Economic Review*, March 2004, *94*(1), pp. 98-115.

[71] **Rose, Andrew and Spiegel, Mark M.** "A Gravity Model of Sovereign Lending: Trade, Default, and Credit." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 9285, October 2002.

[72] **Rossi, Stefano and Volpin, Paolo**. "Cross-Country Determinants of Mergers and Acquisitions." *forthcoming Journal of Financial Economics.*

[73] **Ruffin, Roy J. and Rassekh, Farhad.** "The Role of Foreign Direct Investment in U.S. Capital Outflows." *American Economic Review*, December 1986, *76*(5), pp. 1126-1130.

[74] **Santos, Silva, J.M.C. and Tenreyro, Silvana.** "The Log of Gravity." Federal Reserve Bank of Boston Working Paper No. 03-1, revised version December 2004.

[75] **Sapienza, Paola.** "The Effects of Government Ownership on Bank Lending." *Journal of Financial Economics*, May 2004, *72*(2), pp. 357-384

[76] **Shleifer, Andrei and Wolfenzon, Daniel.** "Investor Protection and Equity Markets." *Journal of Financial Economics*, October 2002, *66*(1), pp. 3-27

[77] **Shleifer, Andrei and Vishny, Robert.** "Corruption." *Quarterly Journal of Economics*, August 1993, *108*(3), pp. 599-617.

[78] **Staiger, Douglas and Stock, James H.** "Instrumental Variables Regression with Weak Instruments." *Econometrica*, May 1997, *65*(3), pp 557-586.

[79] **Stulz, Rene and Rohan Williamson.** "Culture, Openness, and Finance." *Journal of Financial Economics*, December 2003, *70*(3), pp. 313-349.

[80] **Van Rijckeghem, Caroline and Weder, Beatrice.** "Spillovers Through Banking Centres: A Panel Data Analysis of Bank Flows." *Journal of International Money and Finance*, August 2003, *22*(4), pp.483-509.

[81] **Wei, Shang-Jin.** "How Taxing is Corruption on International Investors?", *Review of Economics and Statistics*, February 2000, *82*(1), pp. 1-11.

[82] **Wei, Shang-Jin.** "Local Corruption and Global Capital Flows." *Brookings Papers on Economic Activity*, 2000(2), pp. 303-354.

[83] **Wei, Shang-Jin and Wu, Yi.** "Negative Alchemy? Corruption, Composition of Capital Flows, and Currency Crises." National Bureau of Economic Research (Cambridge, MA) Working Paper No. 8187, March 2001.

[84] **Wooldridge, Jeffrey M.** Econometric Analysis of Cross Section and Panel Data. MIT Press: Cambridge, MA, 2002.

[85] **Wooldridge, Philip D.** "Uses of the BIS Statistics: An Introduction." BIS (Basle, Switzerland) Quarterly Review, March 2002.

Figure 1 – Bank Flows and Political Institutions

Bank Flows & Political Institutions
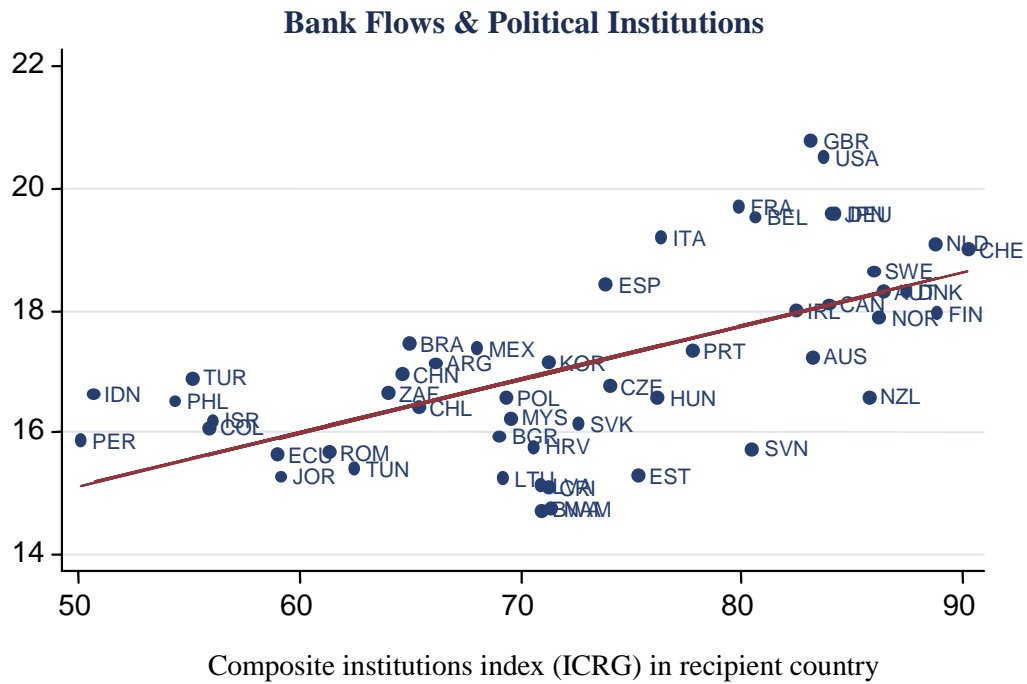
Figure 1 plots the cross-time mean of the natural logarithm of international bank flows (vertical axis) against the mean value of the aggregate institutions index "ICRG political risk" measure in the "recipient" country (horizontal axis). A higher value in the 0-100 composite institutions index corresponds to higher quality institutions and lower political risk. The dashed line gives a linear regression fit. For detailed variable definitions, sources, and country abbreviations see the Data Appendix.

Figure 2 – Bank Flows and Corruption
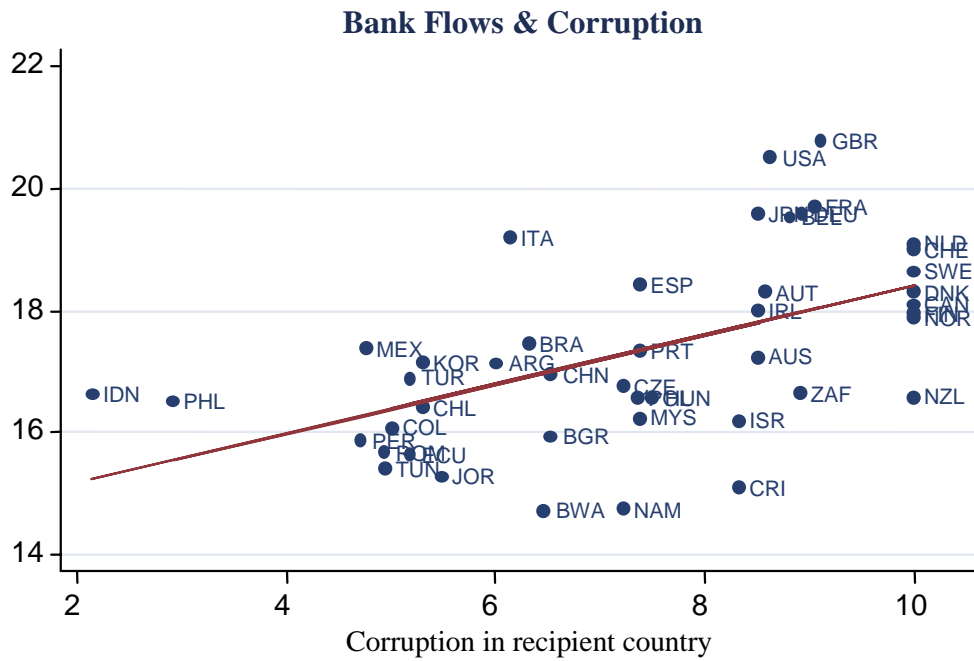
Figure 2 plots the cross-time mean of the natural logarithm of international bank flows (vertical axis) against corruption in the "recipient" country (horizontal axis). A higher value in the 0—10 corruption index implies lower levels of corruption. The dashed line gives a linear regression fit. For detailed variable definitions, sources, and country abbreviations see the Data Appendix.

Figure 3 – Bank Flows and the Legal Environment

Bank Flows & Legal Environment

Contact Enforceability Index in recipient country (0-10)
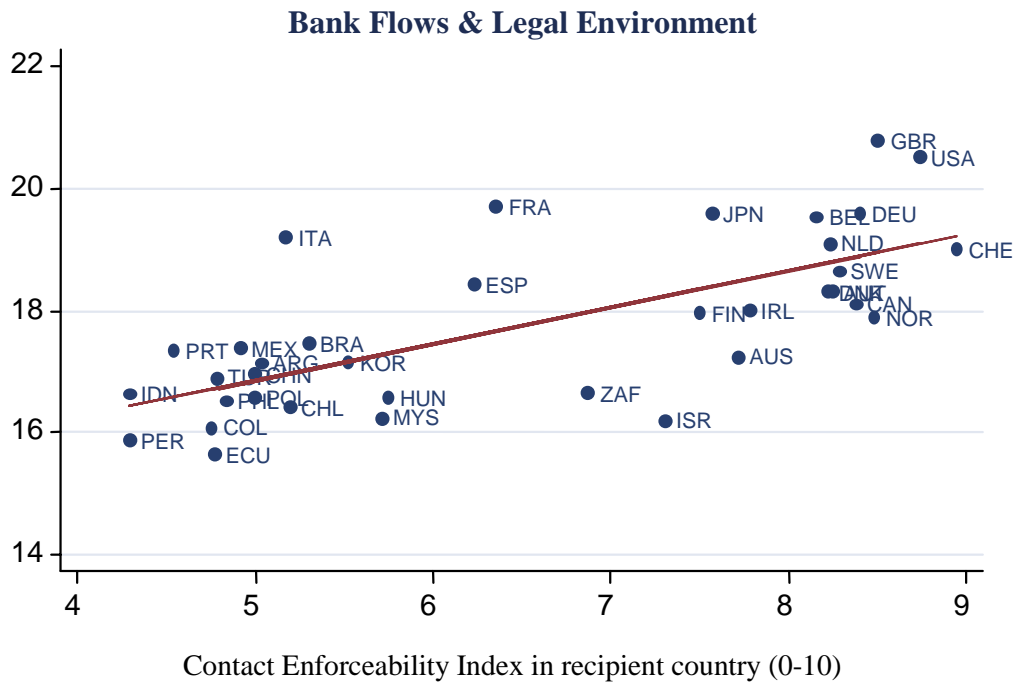
Figure 3 p1ots the cross-time mean of the natural logarithm of cross-border bank flows (vertical axis) against contract enforceability in the recipient country (horizontal axis). A higher value in the 0 to 10 Contract Enforceability index implies higher de facto quality legal system. The dashed line gives a linear regression fit. For detailed variable definitions, sources, and country abbreviations see the Data Appendix.

Figure 4 – Bank Flows and Government Ownership of Banks

Inter-Bank Flows & Government Ownership of Banks

Government ownership of banks in recipient country
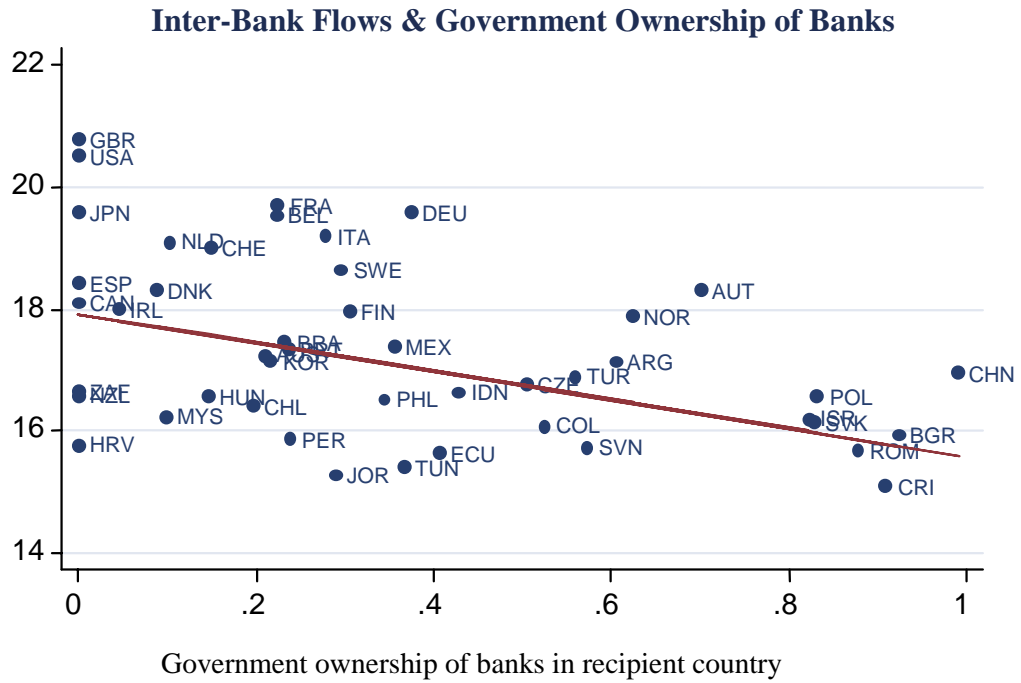
Figure 4 p1ots the cross-time mean of the natural logarithm of cross-border inter-bank bank flows (vertical axis) against government ownership of commercial banks in the recipient country (horizontal axis). The dashed line gives a linear regression fit. For detailed variable definitions, sources, and country abbreviations the Data Appendix.

Table 1 -- Summary Statistics

Variable	Mean	Std. Dev.	Min	Max	Observations	Number of panels
Gravity Variables and Bank Flows						
Logarithm of gross asset flows	17.49	2.27	13.82	24.99	50830	903
Logarithm of gross liability flows	17.56	2.27	13.82	24.93	51443	907
Logarithm distance --[ln Disti,j]	7.79	1.07	4.80	9.42	72200	950
Real per capita GDP in "source" country --[Yi,t]	9654.38	8494.77	12.16	46515.76	69000	950
Real per capita GDP in "recipient" country --[Yj,t]	9101.84	8107.29	0.01	36481.79	50224	931
Population (in millions) in "source" country -[Popi,t]	41.64	59.76	3.50	284.80	17100	950
Population (in millions) in "recipient" country -[Popj,t]	60.06	173.33	1.05	1284.97	16093	950
Logarithm of land area in "source" country --[ln Areai]	12.57	1.77	10.35	16.08	72200	950
Logarithm of land area in "recipient" country --[ln Areaj]	12.53	1.67	9.93	16.08	72200	950
Lending Rate in "source" Country --[Ratei,t]	9.58	4.24	1.85	30.00	67950	950
Inflation rate in "recipient" country -[Infj,t]	78.41	655.47	-92.58	18296.40	66063	950
Institutions, Risk and Other Characteristics in Recipient Country						
ICRG Political Risk -- [Instj,t-1]	72.49	13.24	33.00	97.00	64429	950
ICRG Economic Risk --[Economic_Riskj,t]	71.38	12.18	21.00	99.00	64429	950
ICRG Financial Risk --[Financial_Riskj,t]	74.78	16.58	16.00	100.00	64429	950
Corruption --[Corruptionj]	7.28	2.02	2.14	10.00	63536	836
Antidirector's Rights --[Anti_directj]	2.97	1.32	0.00	5.00	72200	646
Contract Enforceability --[Contractj]	6.49	1.57	4.29	8.94	50540	665
Legal Time -- [Legal_timej]	267.42	217.32	33.00	1080.00	70756	931
Governmnet Ownership of Banks -[Gov_Ownj]	0.41	0.32	0.00	1.00	64980	855
Bank overhead costs --[Overheadj]	0.04	0.03	0.00	0.13	72200	950
Bank soundness measure --[Bank_Soundj]	4.67	1.48	1.74	6.66	59204	779
Schooling --[Schoolingj,t]	7.75	2.35	2.48	12.25	53040	780
Life Excpectancy --[Life_expectj,t]	72.61	5.85	38.10	81.56	46808	950
Exchange Rate Regime -- [ER_reg1j,t]	8.81	3.93	1.00	15.00	62320	931

Table 1 reports the descriptive statistics and the abbreviations of all variables employed in the paper. Columns 1 to 4 report the panel mean, standard deviation the minimum and maximum value respectively. The last two columns give the total number of observations and the number of country pairs (panels). For precise variable definitions and sources see the Data Appendix.

Table 2 -- Pairwise Correlation Matrix

Panel A - Bank Flows, Gravity Factors, & Risk Characteristics

	Gross Asset flows	Inter-bank flows	Log Liability flows	ln Disti,j	Tiei,j	ln Yi,t	ln Yj,t	Popi,t	Popj,t	Political Riskj,t	Economic Riskj,t	Financial Riskj,t
Logarithm of Gross Asset flows	1.00											
Logarithm of Gross Inter-bank flows	0.89	1.00										
Logarithm of Gross Liability flows	0.69	0.68	1.00									
Log Distance	-0.24	-0.27	-0.28	1.00								
Ethnolinguistic Ties	0.14	0.14	0.12	0.05	1.00							
Logarithm of GDP p.c. in "source"	0.09	0.08	0.09	0.24	0.11	1.00						
Logarithm of GDP p.c. in "recipient"	0.35	0.36	0.30	-0.09	0.10	-0.01	1.00					
Log Population in "source"	0.26	0.24	0.25	0.17	0.04	0.31	-0.01	1.00				
Log Population in "recipient"	0.21	0.18	0.21	0.22	-0.04	0.00	0.15	-0.02	1.00			
Political Risk (institutions) in "recipient"	0.41	0.43	0.37	-0.31	0.07	-0.01	0.41	0.01	-0.19	1.00		
Financial Risk in "recipient"	0.38	0.39	0.37	-0.24	0.08	0.01	0.40	0.00	-0.02	0.73	1.00	
Economic Risk in "recipient"	0.35	0.37	0.35	-0.20	0.12	0.01	0.37	0.01	-0.15	0.65	0.70	1.00

Panel B - Risk Characteristics & Institutional Performance in Recipient Country

	Political Risk	Financial Risk	Economic Risk	Corruption	Anti-direct	Contract Enforce	Gov. Own.	Overhead	Bank Sound	Schooling	Life Expect	ER_reg1
Political Risk (composite institutions)	1.00											
Financial Risk	0.73	1.00										
Economic Risk	0.65	0.70	1.00									
Corruption	0.74	0.56	0.51	1.00								
Anti-director's rights	0.09	0.06	0.03	0.24	1.00							
Contract Enforceability Index	0.72	0.62	0.59	0.87	0.14	1.00						
Governmnet Ownership of Banks	-0.30	-0.34	-0.35	-0.31	-0.33	-0.35	1.00					
Bank overhead costs	-0.41	-0.43	-0.52	-0.40	-0.11	-0.49	0.28	1.00				
Bank soundness measure	0.47	0.35	0.36	0.67	0.26	0.70	-0.44	-0.29	1.00			
Schooling	0.60	0.49	0.35	0.64	0.31	0.76	-0.23	-0.32	0.49	1.00		
Life Expectancy	0.53	0.43	0.36	0.51	0.00	0.59	-0.26	-0.35	0.39	0.53	1.00	
Exchange Rate Regime 1	-0.22	-0.23	-0.36	-0.10	0.31	-0.07	0.07	0.05	-0.14	0.06	-0.13	1.00

Table 2 gives the correlation structure of the main variables employed in the empirical analysis. Panel a gives the pairwise correlations of the gravity factors, the bank flows and the country risk characteristics. Panel B gives the pairwise correlation of the country risk indicators and the institutional performance measures. The Data Appendix gives the sources and detailed variable definitions.

Table 3 -- Benchmark Regression Estimates

	(1)	(2)	(3)	(4)	(5)	(6)
$\ln Y_{i,t}$	0.3286[a]	0.2924[a]	0.1851[a]	0.1852[a]	0.1860[a]	0.0915[c]
	(5.12)	(5.33)	(3.45)	(3.45)	(3.75)	(1.73)
$\ln Y_{j,t}$	0.3932[a]	0.2289[a]	0.2314[a]	0.2326[a]	0.1278[a]	0.1171[a]
	(11.01)	(7.86)	(7.57)	(7.51)	(6.71)	(6.03)
$\ln Pop_{i,t}$	0.8631[a]	0.8789[a]	0.8633[a]	0.8633[a]	0.8774[a]	0.7069[a]
	(20.48)	(24.15)	(23.90)	(23.90)	(25.15)	(21.60)
$\ln Pop_{j,t}$	0.7172[a]	0.8292[a]	0.8398[a]	0.8384[a]	0.7841[a]	0.7459[a]
	(16.25)	(20.72)	(20.50)	(20.43)	(18.30)	(21.26)
$\ln Area_i$	-0.2761[a]	-0.3094[a]	-0.2718[a]	-0.2717[a]	-0.2754[a]	—
	(8.15)	(11.03)	(9.72)	(9.71)	(10.34)	
$\ln Area_j$	-0.0699[c]	-0.0957[a]	-0.0916[a]	-0.0906[a]	-0.0328	—
	(1.88)	(2.92)	(2.75)	(2.72)	(0.91)	
$\ln Dist_{i,j}$	-0.8145[a]	-0.6476[a]	-0.6558[a]	-0.6563[a]	-0.7063[a]	-0.7811[a]
	(17.28)	(15.13)	(14.58)	(14.59)	(14.43)	(17.49)
$Tie_{i,j}$	0.6126[a]	0.5939[a]	0.6075[a]	0.6060[a]	0.4493[a]	0.3324[a]
	(5.23)	(5.66)	(5.87)	(5.86)	(4.37)	(3.03)
$Rate_{i,t}$			-0.0683[a]	-0.0683[a]	-0.0703[a]	—
			(5.36)	(5.36)	(5.90)	
$Inf_{j,t}$				-0.0001	-0.00001	—
				(1.32)	(0.17)	
$Inst_{j,t-1}$		0.0569[a]	0.0581[a]	0.0576[a]		
		(16.34)	(16.22)	(15.71)		
$\ln Inst_{j,t-1}$					1.9851[a]	1.8611[a]
					(8.80)	(8.35)
Adj. R^2	0.4610	0.5172	0.5216	0.5228	0.5740	0.5487
Observations	38688	37871	35232	35232	35232	37871
Country-pairs	863	859	855	855	855	859
Regional & Income Dummies	No	No	No	No	Yes	Yes

The dependent variable is the natural logarithm of gross asset flows from country i ("source" country) to county j ("recipient" country) in quarter t. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. Estimation is performed by OLS with period fixed effects (intercepts not reported). The specifications in columns (5) and (6) include regional and income dummies at the recipient country (coefficients not reported). The classification is taken from the World Bank.

Y denotes real GDP, Pop total population, and $Area$ the land area (in square kilometers) in the "source" (i) and capital "recipient" country (j). $Dist$ is the distance between i and j and Tie an indicator variable that equals one if the two countries have colonial or linguistic ties. $Rate_{i,t}$ is the lending rate in the "source" and $Inf_{j,t}$ the inflation rate in the "recipient" country. $Inst_{j,t-1}$ is the 0-100 ICRG index of institutional quality-political risk. The Data Appendix gives the sources and detailed variable definitions.

Table 4 -- Alternative Panel Methodologies

	Between	Within	Random Effects	Semi-Fixed ("source")	Semi-Fixed ("recipient")	Double-Fixed	Prais-Winsten	Random effects autocorr. (ar1)	FGLS autocorr.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$\ln Y_{i,t}$	0.2132[a]	0.0716[a]	0.1222[a]	0.0654	0.1791[a]	0.0548	0.1768[a]	0.1186[a]	0.1748[a]
	(3.66)	(2.68)	(5.35)	(1.50)	(4.31)	(1.39)	(3.71)	(4.73)	(12.29)
$\ln Y_{j,t}$	0.2150[a]	0.0054	0.1122[a]	0.2606[a]	0.0093	0.0089	0.2432[a]	0.1384[a]	0.3085[a]
	(7.49)	(0.59)	(13.91)	(8.39)	(0.55)	(0.53)	(8.02)	(14.85)	(38.42)
$\ln Pop_{i,t}$	0.7353[a]	1.1370[a]	0.8318[a]	2.5067[a]	0.8852[a]	2.1040[a]	0.8856[a]	0.8363[a]	0.8870[a]
	(18.29)	(4.31)	(24.03)	(3.74)	(30.88)	(4.03)	(23.56)	(24.30)	(86.00)
$\ln Pop_{j,t}$	0.8093[a]	-1.7561[a]	0.6998[a]	0.8201[a]	-1.8630[a]	-1.7747[a]	0.8251[a]	0.7384[a]	0.7954[a]
	(17.94)	(9.78)	(19.13)	(23.03)	(4.08)	(3.98)	(19.66)	(20.2)	(74.32)
$\ln Area_i$	-0.2090[a]	—	-0.2001[a]	—	-0.2903[a]	—	-0.2655[a]	-0.2051[a]	-0.2797[a]
	(6.18)		(7.43)		(13.30)		(8.97)	(7.64)	(33.41)
$\ln Area_j$	-0.0455	—	0.1001[a]	-0.0963[a]	—	—	-0.0684[b]	0.0670[b]	-0.0807[a]
	(1.23)		(3.05)	(3.31)			(1.97)	(2.14)	(9.03)
$\ln Dist_{ij}$	-0.6903[a]	—	-0.8718[a]	-0.6631[a]	-0.6616[a]	-0.6306[a]	-0.7138[a]	-0.8519[a]	-0.7035[a]
	(14.32)		(21.5)	(16.34)	(13.64)	(14.37)	(15.34)	(21.12)	(57.34)
$Tie_{i,j}$	0.5691[a]	—	1.0426[a]	0.3931[a]	0.4259[a]	0.1516[c]	0.6501[a]	1.0118[a]	0.5685[a]
	(4.93)		(9.55)	(4.09)	(4.48)	(1.86)	(6.04)	(9.37)	(19.18)
$Rate_{i,t}$	-0.0826[a]	-0.0092[b]	0.0041	-0.0025	-0.0702[a]	-0.0013[a]	-0.0667[a]	0.0021	-0.0604[a]
	(3.48)	(2.02)	(1.03)	(0.22)	(7.26)	(7.26)	(5.49)	(0.42)	(13.73)
$Inf_{j,t}$	0.0002	0.00001	-0.0001	-0.0001	0.0001	0.0003	-0.0001	-0.0001	-0.0001[c]
	(0.36)	(0.80)	(1.05)	(1.58)	(1.01)	(0.98)	(0.24)	(0.96)	(1.81)
$\ln Inst_{j,t-1}$	4.0712[a]	0.3656[a]	0.6354[a]	3.5661[a]	0.3315[b]	0.3431[b]	3.39[a]	0.8375[a]	2.8652[a]
	(11.5)	(4.36)	(8.16)	(16.26)	(1.98)	(2.13)	(15.15)	(9.08)	(37.73)
Adj. R^2	0.7705	0.1138	0.5368	0.5556	0.6266	0.6751	0.5089	0.5626	
Observations	35232	35232	35232	35232	35232	35232	35232	35232	35225
Country-pairs	855	855	855	855	855	855	855	855	848

The dependent variable is the natural logarithm of gross asset flows from country *i* ("source) to county *j* ("recipient") in quarter t. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. All specifications include period fixed effects (not reported). Columns 1, 2, and 3 report the "between", "within" and random effects (GLS) estimates respectively. R^2 is the "within"-R^2 for the fixed effect and the overall R^2 for random effects. The estimations in columns (4) and (5) include "source" and "recipient" country dummies respectively. The specification reported in column (6) includes both "source" and recipient" country dummies. Columns (7)—(9) control for residual auto-correlation. The last row gives the estimated autocorrelation coefficient. Column (6) reports the Prais-Winsten estimator, column (7) random effect GLS that allow for autocorrelation and column (8) gives feasible GLS estimates that allow for panel-specific residual correlation. *Y* denotes real GDP, *Pop* total population, and *Area* the land area (in square kilometers) in the "source" (*i*) and capital "recipient" country (*j*). *Dist* is the distance between *i* and *j* and *Tie* an indicator variable that equals one if the two countries have colonial or linguistic ties. $Rate_{i,t}$ is the lending rate in the "source" and $Inf_{j,t}$ the inflation rate in the "recipient". $Inst_{j,t-1}$ is the 0-100 ICRG index of institutional quality-political risk. The Data Appendix gives the sources and detailed variable definitions.

Table 5 -- Specific Institutional Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln $Y_{i,t}$	0.1896ᵃ	0.1792ᵃ	0.1896ᵃ	0.2435ᵃ	0.2197ᵃ	0.2380ᵃ	0.1985ᵃ
	(3.41)	(3.35)	(3.50)	(4.09)	(4.03)	(4.08)	(3.69)
ln $Y_{j,t}$	0.1689ᵃ	0.1504ᵃ	0.1334ᵃ	0.1381ᵃ	0.0979ᵃ	0.1162ᵃ	0.1480ᵃ
	(6.26)	(5.84)	(5.13)	(6.49)	(5.36)	(5.36)	(6.03)
ln $Pop_{i,t}$	0.8743ᵃ	0.8785ᵃ	0.8774ᵃ	0.8864ᵃ	0.8946ᵃ	0.8896ᵃ	0.8772ᵃ
	(23.20)	(24.28)	(23.69)	(22.54)	(22.67)	(23.00)	(23.96)
ln $Pop_{j,t}$	0.9914ᵃ	0.9777ᵃ	0.9708ᵃ	0.8137ᵃ	0.8459ᵃ	0.8174ᵃ	0.9776ᵃ
	(20.86)	(21.16)	(23.69)	(17.43)	(19.34)	(17.38)	(20.75)
ln $Area_i$	-0.2836ᵃ	-0.2905ᵃ	-0.2842ᵃ	-0.2686ᵃ	-0.2834ᵃ	-0.2717ᵃ	-0.2786ᵃ
	(9.40)	(10.21)	(9.71)	(8.88)	(10.47)	(8.88)	(9.72)
ln $Area_j$	-0.1446ᶜ	-0.1432ᵃ	-0.1063ᵃ	-0.1044ᵃ	-0.1298ᵃ	-0.0770ᵇ	-0.1591ᵃ
	(4.22)	(4.34)	(3.11)	(4.34)	(3.67)	(1.98)	(4.41)
ln $Dist_{i,j}$	-0.6494ᵃ	-0.6113ᵃ	-0.6555ᵃ	-0.8485ᵃ	-0.7676ᵃ	-0.8371ᵃ	-0.6895ᵃ
	(13.54)	(15.13)	(15.13)	(16.12)	(15.64)	(16.30)	(14.27)
$Tie_{i,j}$	0.4848ᵃ	0.5129ᵃ	0.4664ᵃ	0.2038ᶜ	0.2778ᵃ	0.2116ᵇ	0.3780ᵃ
	(4.44)	(4.93)	(4.32)	(1.92)	(2.75)	(2.00)	(3.54)
$Rate_{i,t}$	-0.0677ᵃ	-0.0685ᵃ	-0.0685ᵃ	-0.0759ᵃ	-0.0765ᵃ	-0.0772ᵃ	-0.0715ᵃ
	(5.43)	(5.43)	(5.43)	(6.09)	(6.41)	(6.13)	(5.83)
$Inf_{j,t}$	-0.0002ᵃ	-0.0001	-0.0001	-0.0001ᵇ	-0.0001ᶜ	0.000	0.000
	(3.01)	(0.39)	(0.39)	(2.04)	(1.72)	(1.11)	(0.94)
ln $Inst_{j,t-1}$		1.8453ᵃ			2.4526ᵃ		
		(9.43)			(10.49)		
ln $Economic\_Risk_{j,t-1}$			1.8679ᵃ			1.4058ᵃ	1.814ᵃ
			(7.49)			(4.47)	(7.41)
$Corruption_j$	0.4144ᵃ	0.3136ᵃ	0.3562ᵃ				0.3130ᵃ
	(14.3)	(9.43)	(11.52)				(9.53)
$Anti\_direct_j$				0.0584	0.0707ᶜ	0.0440	
				(1.50)	(1.95)	(1.11)	
$Contract_j$				0.4436ᵃ	0.2983ᵃ	0.3947ᵃ	
				(12.60)	(12.60)	(10.90)	
ln $Legal\_time_j$							0.2747ᵃ
							(4.38)
Adj. R^2	0.5293	0.5394	0.5372	0.5418	0.5632	0.5457	0.5431
Observations	34404	34087	34087	30732	30415	30415	34087
Country-pairs	757	757	757	596	596	596	757

The dependent variable is the natural logarithm of gross asset flows from country i ("source" country) to county j ("recipient" country) in quarter t. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. ᵃ, ᵇ, ᶜ denote significance at the 1%, 5%, and 10% levels, respectively. Estimation is performed by OLS with period fixed effects (intercepts not reported). Y denotes real GDP, Pop total population, and $Area$ the land area (in square kilometers) in the "source" (i) and capital "recipient" country (j). $Dist$ is the distance between i and j and Tie an indicator variable that equals one if the two countries have colonial or linguistic ties. $Rate_{i,t}$ is the lending rate in the "source" and $Inf_{j,t}$ the inflation rate in the "recipient" country. $Inst_{j,t-1}$ is the 0-100 ICRG index of institutional quality-political risk. $Economic\_Risk_{j,t-1}$ is ICRG time-varying measure of economic riskiness. $Corruption_j$ is a 0-10 variable that measures the level of corruption (higher values indicate lower corruption). $Anti\_direct_j$ is a 0-6 measure of the legal protection of shareholders. $Contract_j$ is a 0-10 measure of legal system's quality and $Legal\_time_j$ is a measure of the time it takes to complete a simple legal case (tenant eviction for non-payment). The Data Appendix gives the sources and detailed variable definitions.

Table 6 -- Banking Sector Characteristics & Inter-Bank Flows

	Aggregate Flows			Inter-Bank Flows		
	(1)	(2)	(3)	(4)	(5)	(6)
ln $Y_{i,t}$	0.2405[a]	0.2405[a]	0.2325[a]	0.2034[a]	0.1696[a]	0.1955[a]
	(4.17)	(4.17)	(4.22)	(3.28)	(2.97)	(3.30)
ln $Y_{j,t}$	0.3117[a]	0.3117[a]	0.2335[a]	0.2825[a]	0.2173[a]	0.2398[a]
	(10.17)	(10.17)	(8.11)	(8.06)	(7.25)	(7.45)
ln $Pop_{i,t}$	0.8616[a]	0.8719[a]	0.8685[a]	0.8532[a]	0.8618[a]	0.8560[a]
	(21.50)	(23.65)	(22.70)	(19.73)	(21.48)	(20.55)
ln $Pop_{j,t}$	0.5786[a]	0.6928[a]	0.6182[a]	0.7101[a]	0.8017[a]	0.7155[a]
	(20.86)	(15.67)	(13.96)	(13.10)	(15.48)	(13.32)
ln $Area_i$	-0.2370[a]	-0.2601[a]	-0.2463[a]	-0.2238[a]	-0.2460[a]	-0.2302[a]
	(7.50)	(9.16)	(8.30)	(6.65)	(8.03)	(7.19)
ln $Area_j$	-0.0389	-0.0694[b]	-0.0063	-0.1275[a]	-0.1686[a]	-0.1029[a]
	(1.06)	(2.00)	(0.18)	(3.16)	(4.38)	(2.66)
ln $Dist_{i,j}$	-0.9135[a]	-0.7788[a]	-0.8775[a]	-0.9020[a]	-0.7658[a]	-0.8701[a]
	(20.22)	(20.22)	(20.22)	(18.01)	(15.64)	(18.05)
$Tie_{i,j}$	0.3698[a]	0.4244[a]	0.3556[a]	0.3059[a]	0.3849[a]	0.3156[a]
	(3.30)	(3.95)	(3.20)	(2.61)	(3.39)	(2.70)
$Rate_{i,t}$	-0.0746[a]	-0.0738[a]	-0.0759[a]	-0.0659[a]	-0.0653[a]	-0.0670[a]
	(5.56)	(5.83)	(5.80)	(4.79)	(5.00)	(4.96)
$Inf_{j,t}$	-0.0003[a]	-0.0001[a]	-0.0001	-0.0002[a]	-0.0001	-0.0001
	(6.59)	(1.34)	(0.59)	(4.94)	(1.23)	(0.62)
ln $Inst_{j,t-1}$		2.6800[a]			2.7969[a]	
		(10.39)			(10.20)	
ln $Economic\_Risk_{j,t-1}$			2.5018[a]			2.4933[a]
			(10.16)			(8.32)
Gov_Own_j	-1.9021[a]	-1.5298[a]	-1.6187[a]	-1.5612[a]	-1.2846[a]	-1.4706[a]
	(11.15)	(9.51)	(10.16)	(7.09)	(6.33)	(7.26)
$Bank\_Sound_j$				0.1780[a]	0.1476[a]	0.1349[a]
				(3.91)	(3.55)	(3.05)
$Overhead_j$				-7.0798[a]	-0.7862	-1.3169
				(2.74)	(0.33)	(0.52)
Adj. R^2	0.5041	0.5346	0.5232	0.5182	0.5438	0.5300
Observations	35172	34748	34748	33075	32762	32762
Country-pairs	800	799	799	708	708	708

In columns (1), (2) and (3) the dependent variable is the natural logarithm of gross asset flows from country i ("source" country) to county j ("recipient" country) in quarter t. In columns (4)—(6) the dependent variable is the natural logarithm of gross asset flows from banks located in country i ("source" country) to the banking sector only in country j ("recipient" country) in quarter t. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. Estimation is performed by OLS with period fixed effects (intercepts not reported).

Y denotes real GDP, Pop total population, and $Area$ the land area (in square kilometers) in the "source" (i) and capital "recipient" country (j). $Dist$ is the distance between i and j and Tie an indicator variable that equals one if the two countries have colonial or linguistic ties. $Rate_{i,t}$ is the lending rate in the "source" and $Inf_{i,t}$ the inflation rate in the "recipient" country. $Inst_{j,t-1}$ is the 0-100 ICRG index of institutional quality-political risk. $Economic\_Risk_{j,t-1}$ is ICRG time-varying measure of economic riskiness. Gov_Own_j denotes the percentage that the government owns in the ten largest banks. $Bank\_Sound_j$ is a 1-7 index assessing the soundness of banks in terms of their general health and sound balance sheets. $Overhead_j$ denotes bank's overhead costs as a share of its total assets. The Data Appendix gives the sources and detailed variable definitions.

Table 7 – Developed vs. Middle (& Low) Income Countries – European Union Effect

	Developed (High-Income) Countries						Developing Countries	
	Pooled Cross-Section Time Series				Fixed-Effects		OLS	FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$\ln Y_{i,t}$	0.2893[a]	0.3246[a]	0.3453[a]	0.3291[a]	0.6428	0.6359	0.0298	4.3612[a]
	(4.85)	(4.85)	(5.19)	(5.01)	(0.50)	(0.44)	(0.43)	(4.99)
$\ln Y_{j,t}$	0.3121[a]	0.3362[a]	0.1637[b]	0.1325[b]	-1.2640[a]	-1.1637[a]	0.4415[a]	-0.1987
	(6.13)	(6.33)	(2.49)	(2.45)	(2.08)	(1.93)	(6.13)	(0.26)
$\ln Pop_{i,t}$	0.8955[a]	0.8719[a]	0.8598[a]	0.8772[a]	0.1104[a]	0.1060[a]	0.8307[a]	-0.0415
	(20.66)	(18.51)	(18.51)	(18.68)	(2.15)	(2.08)	(17.33)	(0.70)
$\ln Pop_{j,t}$	0.8272[a]	0.8072[a]	0.9093[a]	0.8105[a]	-0.0275	-0.0239	0.4415[a]	-0.0302
	(18.17)	(16.62)	(17.37)	(13.55)	(1.28)	(1.10)	(6.13)	(1.30)
$\ln Area_i$	-0.3020[a]	-0.2960[a]	-0.2914[a]	-0.2946[a]	—	—	-0.2409[a]	-0.0100
	(-8.98)	(8.46)	(8.28)	(8.44)			(6.77)	(0.69)
$\ln Area_j$	-0.1112[a]	-0.1100[a]	-0.1540[b]	-0.1215[a]	—	—	0.3501[a]	0.0000
	(2.95)	(2.85)	(3.33)	(2.55)			(4.93)	(1.04)
$\ln Dist_{i,j}$	-0.7075[a]	-0.6530[a]	-0.6620[a]	-0.7078[a]	—	—	-0.5313[a]	—
	(12.92)	(11.10)	(10.47)	(11.10)			(7.52)	
$Tie_{i,j}$	0.3884[a]	0.4069[a]	0.2794[b]	0.2061[c]	—	—	0.5325[a]	—
	(3.21)	(3.34)	(2.43)	(1.74)			(12.65)	
$Rate_{i,t}$	-0.0647[a]	-0.0647[a]	-0.0694[a]	-0.0690[a]	0.0150	0.0146	-0.0789[a]	—
	(4.75)	(4.75)	(5.20)	(5.19)	(1.55)	(1.52)	(3.93)	
$Inf_{j,t}$	0.0038[a]	0.0038[a]	0.0035[a]	0.0037[a]	0.0039[a]	0.0039[a]	-0.0011	—
	(5.17)	(5.17)	(5.43)	(5.55)	(6.29)	(6.25)	(1.57)	
$\ln Inst_{j,t-1}$	3.3658[a]	3.3416[a]	2.4383[a]	1.9250[a]			1.0574[b]	
	(9.70)	(9.67)	(6.91)	(5.20)			(3.73)	
$Inst_{j,t-1}$					0.0083[b]	0.0075[c]		0.0071[c]
					(1.99)	(1.82)		(1.92)
EU_one		0.0118	0.0565	-0.0160		-0.3665[a]		
		(0.09)	(0.42)	(0.12)		(3.01)		
EU_both		0.2694[b]	0.2963[a]	0.1798[c]		0.1383[c]		
		(2.48)	(2.86)	(1.67)		(1.69)		
$Corruption_j$			0.0778	0.0197				
			(1.20)	(0.29)				
$Anti\_direct_j$			0.0956[b]	0.0610				
			(2.43)	(1.41)				
$Contract_j$			0.1792[a]	0.2308[a]				
			(3.18)	(3.99)				
Gov_Own_j				-0.8293[a]				
				(3.73)				
Adj. R^2	0.5332	0.5349	0.5398	0.5428	0.6978	0.6987	0.3687	0.6045
Observations	22870	22870	21836	21836	22870	22870	12362	12499
Country-pairs	413	413	377	377	413	413	442	454

The dependent variable is the natural logarithm of gross asset flows from country *i* ("source" country) to county *j* ("recipient" country) in quarter *t*. Absolute value of *t*-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. Estimation is performed by OLS with period fixed effects (intercepts not reported). In columns (1)—(6) estimation is performed only to high income countries, while in columns (7) and (8) only to low and middle income countries. Classification is taken from the World Bank. The specifications in columns (5), (6) and (8) beside the time intercepts also include country-pair fixed effects.

EU_one is an indicator variable that equals one if one country is a member of the European Union (before the 2004 Enlargement). *EU_both* is an indicator variable that equal one if both countries are members of the EU. For other variable abbreviations, see previous Tables. The Data Appendix gives the sources and detailed variable definitions.

Table 8 -- Political, Economic and Financial Risk (Dynamic AR(4) Specifications)

	Pooled Cross-Section Time Series			Country-Pair Fixed-Effects		
	(1)	(2)	(3)	(4)	(5)	(6)
ln $Y_{i,t}$	0.0403[a]	0.0473[a]	0.0441[a]	0.4393[a]	0.4446[a]	0.4450[a]
	(2.08)	(2.41)	(2.29)	(4.70)	(4.77)	(4.78)
ln $Y_{j,t}$	0.0531[a]	0.0523[a]	0.0633[a]	-0.0066	-0.0049	-0.0068
	(6.92)	(6.42)	(7.58)	(0.55)	(0.42)	(0.59)
ln $Pop_{i,t}$	0.1848[a]	0.1732[a]	0.1688[a]	1.0783[a]	1.0823[a]	1.0868[a]
	(16.56)	(15.7)	(15.68)	(3.01)	(2.99)	(3.00)
ln $Pop_{j,t}$	0.1817[a]	0.1520[a]	0.1341[a]	-1.0539[a]	-0.8784[a]	-0.8062[a]
	(15.35)	(13.10)	(12.31)	(3.4)	(2.95)	(2.53)
ln $Area_i$	-0.0558[a]	-0.0492[a]	-0.0486[a]	—	—	—
	(7.35)	(6.40)	(6.47)			
ln $Area_j$	-0.0205[a]	0.0008	-0.0048	—	—	—
	(2.68)	(0.10)	(0.64)			
ln $Dist_{i,j}$	-0.1445[a]	-0.1631[a]	-0.1519[a]	—	—	—
	(11.82)	(12.99)	(12.63)			
$Tie_{i,j}$	0.1171[a]	0.0935[a]	0.1005[a]	—	—	—
	(4.94)	(3.82)	(4.32)			
$Rate_{i,t}$	-0.0134[a]	-0.0124[a]	-0.0124[a]	-0.0045	-0.0041	-0.0039
	(3.81)	(3.58)	(3.64)	(0.77)	(0.69)	(0.67)
$Inf_{j,t}$	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.41)	(0.55)	(0.69)	(0.65)	(0.41)	(0.26)
$Inst_{j,t-1}$ [$Political\_Risk_{j,t-1}$]	0.0134[a]			0.0066[a]		
	(14.50)			(3.45)		
$Economic\_Risk_{j,t-1}$		0.0136[a]			0.0003	
		(14.57)			(0.14)	
$Financial\_Risk_{j,t-1}$			0.0081[a]			-0.0013
			(12.89)			(0.87)
				0.1507	0.1501	0.1501
Adj. R^2	0.680	0.679	0.678	—	—	—
"$Within$" R^2	—	—	—			
Observations	30,521	30,521	30,521	30,521	30,521	30,521
Country-pairs	770	770	770	770	770	770
Long-Run Effect of Relevant Risk Factor	0.0611[a]	0.0657[a]	0.0403[a]	0.010[a]	0.000	-0.002

The dependent variable is the natural logarithm of gross asset flows from country *i* ("source" country) to county *j* ("recipient" country) in quarter *t*. Absolute value of *t*-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. Estimation is performed by OLS with period fixed effects in columns (1)-(4) and with both period and country-pair fixed effects in columns (5)-(8) (intercepts not reported).
Y denotes real GDP, *Pop* total population, and *Area* the land area (in square kilometers) in the "source" (*i*) and capital "recipient" country (*j*). *Dist* is the distance between *i* and *j* and *Tie* an indicator variable that equals one if the two countries have colonial or linguistic ties. $Rate_{i,t}$ is the lending rate in the "source" and $Inf_{j,t}$ the inflation rate in the "recipient" country. $Inst_{j,t-1}$ is the 0-100 ICRG index of institutional quality-political risk. $Economic\_Risk_{j,t-1}$ is ICRG time-varying measure of economic riskiness and $Financial\_Risk_{j,t-1}$ is ICRG time-varying measure that quantifies the health of the financial sector. The specifications also include 4 lags of the dependent variable (coefficients not reported; coeffcinets positive and significant). The last row tabulates the long-run effect of political, economic and financial risk on cross-border bank flows. The long-run multiplier is estimated as the point estimate divided by 1 minus the algebraic sum of the autoregressive terms. The Data Appendix gives the sources and detailed variable definitions.

Table 9 -- Liability Flows, Institutional Quality and Political Risk

	(1)	(2)	(3)	(4)	(5)	(6)
ln $Y_{i,t}$	0.2634[a]	0.0461	0.2962[a]	0.2905[a]	-0.0741	0.0416
	(4.02)	(1.13)	(4.32)	(4.26)	(1.24)	(1.08)
ln $Y_{j,t}$	0.2328[a]	0.1216[a]	0.0692[a]	0.0608[b]	0.2270[a]	0.0118[a]
	(7.15)	(4.93)	(2.75)	(2.40)	(7.06)	(0.61)
ln $Pop_{i,t}$	0.7986[a]	2.0331[a]	0.8124[a]	0.8137[a]	0.7673[a]	1.8668[a]
	(19.10)	(3.29)	(19.29)	(19.30)	(20.04)	(3.44)
ln $Pop_{j,t}$	0.7908[a]	0.9624[a]	0.8507[a]	0.8902[a]	0.7766[a]	-1.1970[a]
	(17.20)	(21.22)	(17.40)	(16.10)	(16.49)	(3.02)
ln $Area_i$	-0.2508[a]	—	-0.2409[a]	-0.2539[a]	-0.1603[a]	—
	(7.45)		(7.45)	(7.39)	(4.07)	
ln $Area_j$	-0.1868[a]	-0.2446[a]	-0.0602[a]	-0.2537[a]	-0.0674[a]	—
	(4.76)	(4.76)	(4.59)	(6.23)	(4.68)	
ln $Dist_{i,j}$	-0.7318[a]	-0.6461[a]	-0.7777[a]	-0.7523[a]	-0.7842[a]	-0.6663[a]
	(14.37)	(14.52)	(14.33)	(13.30)	(15.88)	(12.27)
$Tie_{i,j}$	0.5771[a]	0.5771[a]	0.2447[b]	0.2650[b]	0.4779[a]	0.0787
	(4.82)	(4.82)	(2.11)	(2.26)	(3.96)	(0.83)
$Rate_{i,t}$	-0.0516[a]	0.0157	-0.0516[a]	-0.0593[a]	-0.0674[a]	0.0154[c]
	(3.77)	(1.65)	(3.77)	(4.54)	(4.68)	(1.86)
$Inf_{j,t}$	-0.002[a]	-0.002[a]	-0.0001	-0.0001	-0.0002[a]	-0.0001[a]
	(3.05)	(2.78)	(0.94)	(0.98)	(3.27)	(2.60)
ln $Inst_{j,t-1}$	2.7482[a]	1.0507[a]	1.5642[a]	1.3776[a]	2.6572[a]	0.3099[b]
	(9.13)	(3.87)	(6.07)	(4.75)	(8.99)	(2.17)
$Corruption_j$		0.3407[a]		0.0915[a]		
		(9.70)		(1.63)		
$Anti\_direct_j$			0.1268[a]	0.1051[a]		
			(3.09)	(2.62)		
$Contract_j$			0.3622[a]	0.2935[a]		
			(9.19)	(5.36)		
ln $Inst_{i,t-1}$					4.4664[a]	1.7398[a]
					(7.54)	(5.30)
Adj. R^2	0.4655	0.5496	0.5057	0.5067	0.4743	0.6349
Observations	35257	33967	29964	29964	35457	35457
Country-pairs	861	760	589	589	861	861
Fixed effects	No	"Source"	No	No	No	"Source" & "Recipient"

The dependent variable is the natural logarithm of gross liability flows from country i ("source" country) to county j ("recipient" country) in quarter t. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. Estimation is performed by OLS with period fixed effects (intercepts not reported). The specification in column (2) includes "source" country fixed-effects (intercepts not reported). The specification in column (6) includes both "source" and "recipient" country dummies (intercepts not reported).

Y denotes real GDP, Pop total population, and $Area$ the land area (in square kilometers) in the "source" (i) and capital "recipient" country (j). $Dist$ is the distance between i and j and Tie an indicator variable that equals one if the two countries have colonial or linguistic ties. $Rate_{i,t}$ is the lending rate in the "source" and $Inf_{j,t}$ the inflation rate in the "recipient" country. $Inst_{j,t-1}$ is the 0-100 ICRG index of institutional quality-political risk. $Economic\_Risk_{j,t-1}$ is a measure of economic riskiness. $Corruption_j$ is a 0-10 variable that measures the level of corruption (higher values indicate lower corruption). $Anti\_direct_j$ is a 0-6 measure of the legal protection of shareholders. $Contract_j$ is a 0-10 measure of legal system's quality. The Data Appendix gives the sources and detailed variable definitions.

Table 10 -- Sensitivity Analysis: Additional Controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln $Y_{i,t}$	0.1964[a]	0.0659	0.1972[a]	0.1968[a]	0.1968[a]	0.2247[a]	0.1047[b]
	(3.67)	(1.51)	(4.03)	(4.82)	(3.94)	(9.31)	(2.34)
ln $Y_{j,t}$	0.2084[b]	0.1807[b]	0.0386[b]	0.0725[a]	0.0574[a]	0.0325[a]	0.0593[a]
	(7.25)	(7.14)	(2.44)	(3.09)	(3.57)	(3.41)	(4.35)
ln $Pop_{i,t}$	0.8770[a]	1.8032[a]	0.8980[a]	0.8761[a]	0.8946[a]	5.7873[a]	1.4637[b]
	(23.42)	(2.87))	(25.48)	(23.20)	(25.45)	(27.12)	(2.47)
ln $Pop_{j,t}$	0.8432[a]	0.8459[a]	0.9138[a]	0.8396[a]	0.8510[a]	1.0452[a]	0.8541[a]
	(18.06)	(22.08)	(17.30)	(15.07)	(16.94)	(6.12)	(10.15)
ln $Area_i$	-0.2732[a]	—	-0.2902[a]	-0.2369[a]	-0.2879[a]	—	—
	(9.52)		(11.16)	(7.98)	(10.98)		
ln $Area_j$	-0.1295[a]	-0.1098[a]	-0.0931[b]	-0.0616[c]	-0.0914[b]	—	-0.0966[b]
	(3.76)	(3.82)	(2.51)	(1.69)	(2.40)		(2.40)
ln $Dist_{i,j}$	-0.7514[a]	-0.6940[a]	-0.7276[a]	-0.9361[a]	-0.7034[a]	—	-0.6768[a]
	(15.73)	(17.02)	(13.80)	(18.16)	(15.92)		(3.20)
$Tie_{i,j}$	0.4747[a]	0.3079[a]	0.2916[a]	0.1579	0.2788[a]	—	0.0417
	(4.57)	(3.33)	(2.88)	(1.45)	(2.77)		(0.45)
$Rate_{i,t}$	-0.0782[a]	-0.0070	-0.0787[a]	-0.1763[a]	-0.0762[a]	0.0567[a]	0.0105
	(6.18)	(0.69)	(6.77)	(10.19)	(6.56)	(18.99)	(1.19)
$Inf_{j,t}$	0.0000	-0.0002	0.0001[b]	-0.0001	0.0001[b]	0.0000[a]	0.0001
	(0.87)	(0.45)	(2.27)	(0.33)	(2.38)	(2.08)	(0.00)
ln $Inst_{j,t-1}$	2.7401[a]	2.2776[a]	1.2368[a]	—	1.1925[a]	0.1401[c]	1.1533[a]
	(12.09)	(12.92)	(5.41)		(5.03)	(1.67)	(5.93)
$Schooling_{j,t}$	0.1250[a]	0.0942[a]	0.0141	0.1124[a]	0.0897[b]		0.0897[b]
	(5.57)	(4.87)	(0.42)	(3.23)	(2.06)		(2.06)
ln $Life\_expect_{j,t}$		4.3397[a]	4.3609[a]	—	4.1834[a]		4.1834[a]
		(6.96)	(5.93)		(6.14)		(6.14)
$Corruption_j$			0.0897[b]	0.1433[a]	0.0586		0.0645[b]
			(2.06)	(3.13)	(1.38)		(1.92)
$Anti\_direct_j$			-0.0284	0.0546	0.0398		0.0277
			(0.77)	(1.39)	(1.10)		(0.83)
$Contract_j$			0.2512[a]	0.1977[a]	0.2606[a]		0.2791[a]
			(4.11)	(2.81)	(5.73)		(7.58)
Gov_Own_j			-0.6092[a]	-0.8626[a]	-0.6795[a]		-0.7316[a]
			(3.48)	(4.58)	(3.83)		(4.89)
$ER\_reg1_{j,t}$					-0.0238[a]	-0.0290[a]	
					(2.79)	(9.23)	
$ER\_reg2_{j,t}$							-0.0734[a]
							(3.03)
Adj. R^2	0.5246	0.5814	0.5824	0.7853	0.5824	0.0865	0.6272
Observations	28269	28269	25762	26067	28651	32884	28651
Fixed-effects	No	"Source"	No	"Between"	No	"Source" & "Recipient"	"Source"

The dependent variable is the natural logarithm of gross asset flows from country *i* ("source" country) to county *j* ("recipient" country) in quarter *t*. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. Estimation is performed by OLS with period fixed effects (intercepts not reported). The specifications given in columns (2) and (7) include "source" country fixed-effects (intercepts not reported). In column (4) results from the cross-section of country-pairs is reported ("between"). Column (6) reports "fixed-effect" estimates (within). The R^2 in column (4) and (5) is the between and the within R^2, respectively.

$Schooling_{j,t}$ denotes the average years of schooling. $Life\_expect_{j,t}$ is the life expectancy at birth. *ERreg1* and *ER_reg2* denote a "fine" and a "coarse" classification of the exchange rate regime (higher values indicate more flexible regime). For other variable abbreviations see Notes in previous Tables. The Data Appendix gives the sources and variable definitions.

Table 11 -- Sensitivity Analysis: Data Quality and Alternative Econometric Techniques

	OLS	Tobit			Poisson Pseudo Maximum Likelihood (PPML)		
	(1)	(2)	(3)		(4)	(5)	(6)
$\ln Y_{i,t}$	0.4611[a]	0.3769[a]	0.4604[a]	0.4406[a]	0.1262	0.0387	0.1143
	(4.10)	(4.26)	(12.48)	(5.49)	(1.38)	(0.41)	(1.33)
$\ln Y_{j,t}$	0.2408[a]	0.4627[a]	0.2869[a]	0.2583[a]	0.4786[a]	0.0079	0.088
	(3.32)	(33.21)	(21.21)	(19.66)	(7.86)	(0.22)	(1.52)
$\ln Pop_{i,t}$	1.7571[a]	1.2426	1.8321[a]	3.3917[a]	0.8737[a]	1.7348	0.8670[a]
	(18.11)	(1.26)	(82.87)	(4.03)	(11.67)	(1.36)	(12.18)
$\ln Pop_{j,t}$	1.1354[a]	1.5177[a]	1.1644[a]	1.2079[a]	0.9065[a]	1.5817	0.8622[a]
	(9.84)	(58.71)	(40.24)	(38.78)	(13.27)	(1.59)	(10.83)
$\ln Area_i$	-0.6048[a]	—	-0.6318[a]	—	-0.2847[a]	—	-0.2888[a]
	(8.11)		(39.99)		(6.63)		(7.39)
$\ln Area_j$	-0.0199	0.0115	-0.0750[a]	-0.1069[a]	-0.2649[a]	—	-0.2349[a]
	(0.25)	(0.53)	(3.65)	(5.28)	(5.47)		(4.81)
$\ln Dist_{i,j}$	-1.4625[a]	-1.2267[a]	-1.5199[a]	-1.2455[a]	-0.44078[a]	-0.3376[a]	-0.4335[a]
	(12.99)	(40.90)	(50.26)	(41.04)	(6.54)	(6.23)	(6.56)
$Tie_{i,j}$	0.2328	0.8359[a]	0.2395[a]	0.0325	0.3433[b]	-0.1031	0.2459
	(0.92)	(3.72)	(3.72)	(0.49)	(2.04)	(1.14)	(1.50)
$Rate_{i,t}$	-0.1788[a]	0.0374[b]	-0.1908[a]	-0.0160	-0.0637[a]	-0.0113.	-0.0699[a]
	(5.98)	(2.21)	(18.97)	(1.08)	(3.19)	(0.82)	(3.91)
$Inf_{j,t}$	-0.0003[c]	-0.0003[a]	-0.0002[a]	-0.0002[a]	-0.0006[a]	0.0001	0.0001[c]
	(1.86)	(4.27)	(3.48)	(3.21)	(3.47)	(1.18)	(1.77)
$\ln Life\_expect_{j,t}$	7.0688[a]	11.4577[a]		5.060[a]			7.338
	(4.85)	(31.41)		(13.75)			(4.02)
$\ln Inst_{j,t-1}$		4.4113[a]	4.1016[a]	3.3286[a]	3.8592[a]	1.1169[b]	1.3027[a]
		(24.73)	(23.31)	(17.71)	(7.82)	(2.05)	(2.70)
$Corruption_j$	0.1970[a]		0.0742[a]	0.1397[a]			0.0081
	(2.58)		(2.58)	(4.90)			(0.11)
$Anti\_direct_j$	0.0229		0.0791[b]	0.0311			0.1057[b]
	(0.26)		(2.06)	(1.40)			(2.16)
$Contract_j$	0.2964[b]		0.2841[a]	0.2668[a]			0.2047[b]
	(2.44)		(2.58)	(8.50)			(2.36)
Gov_Own_j	-0.8744[b]		-0.6092[a]	-0.3541[a]			-0.9058[a]
	(2.06)		(3.48)	(3.05)			(3.10)
R^2	0.4036	0.0901	0.0834	0.1000			
Wald χ^2					9420.19	43138.35	12503.26
Observations	32862	39123	32521	32541	39123	39123	32541
Left-censored Obs.	2130	3891	2106	2106	3891	3891	2106
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed-effects	No	"Source"	No	"Source"	No	"Source" & "Recipient"	No

The dependent variable is the natural logarithm of gross asset flows from country i ("source" country) to county j ("recipient" country) in quarter t. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a], [b], [c] denote significance at the 1%, 5%, and 10% levels, respectively. In column (1) estimation is performed by OLS with period fixed effects (intercepts not reported). In columns (2), (3) and (4) estimation is performed with Tobit (maximum likelihood). The pseudo-R^2. (defined as one minus the ratio of the full model to the constant-only log-likelihoods) is reported. Columns (5)-- (7) report estimates of a Poisson pseudo-maximum likelihood estimation. The specifications in columns (2) and (4) include a vector of source country fixed effect. The model in column (5) includes a vector of source and a vector of recipient country fixed effects (Intercepts not reported).
For other variable abbreviations see Notes in Tables 4-10. The Data Appendix gives the sources and variable definitions.

Table 12 –Instrumental Variables Cross-Sectional Results

	(1)	(2)	(3)	(4)	(5)
ln Y_t	0.2285[b]	0.25098[a]	0.3244[a]	0.2561b	0.3483[a]
	(2.27)	(2.04)	(2.70)	(2.29)	(2.85)
ln Y_t	0.3095[a]	0.2484[a]	0.301[a]	0.1813[b]	0.1754[b]
	(5.51)	(4.03)	(3.27)	(2.51)	(2.18)
ln Pop_t	0.8900[a]	0.9356[a]	0.975[a]	0.9670[a]	0.9560[a]
	(15.79)	(15.12)	(16.62)	(16.36)	(16.94)
ln Pop_j	0.9297[a]	0.9179[a]	0.8095[a]	0.7924[a]	0.6328[a]
	(7.82)	(11.06)	(6.36)	(6.54)	(4.20)
ln $Area_i$	0.2958[a]	-0.3248[a]	-0.3006[a]	-0.3231[a]	-0.2739[a]
	(5.03)	(5.70)	(4.38)	(4.61)	(4.35)
ln $Area_j$	0.0408	-0.0077	-0.1825	0.0113	0.0819
	(0.45)	(0.14)	(1.13)	(0.17)	(0.65)
ln $Dist_{i,j}$	-0.7924[a]	-0.8147[a]	-1.1684[a]	-0.8954[a]	-1.18497[a]
	(7.20)	(11.38)	(12.07)	(7.98)	(8.94)
$Tie_{i,j}$	0.8829[a]	0.7723[a]	0.580[a]	0.455[b]	0.4088[c]
	(5.02)	(4.58)	(3.13)	(2.44)	(1.71)
$Rate_{i,}$	-0.0228	-0.0389	-0.0603[c]	-0.035	-0.0606[c]
	(0.76)	(1.00)	(1.73)	(1.06)	(1.93)
Inf_j	0.0211[b]	0.0102	0.0218	0.0078	0.0130[c]
	(2.18)	(1.54)	(1.58)	(1.19)	(1.66)
ln $Life\_expect_{j,t}$	2.4534[b]	3.0261[a]	4.291[a]	2.831[a]	5.4852[a]
	(1.96)	(4.53)	(4.16)	(4.01)	(5.60)
ER_reg1_j	-0.0777[a]	-0.0676[a]	-0.0453	-0.0683[a]	-0.0129
	(2.66)	(4.93)	(1.56)	(2.70)	(0.37)
$Inst_{j,}$ [$Political\_Risk_{j,t}$]	0.0488[b]				
	(2.05)				
$Corruption_j$		0.3057[a]			
		(4.31)			
$Anti\_direct_j$			0.4466[c]		
			(1.69)		
$Contract_j$				04398[a]	
				(2.79)	
Gov_Own_j					-4.276[a]
					(3.75)
Adj. R^2	0.594	0.597	0.5891	0.587	0.5345
Observations	753	682	584	589	717
Over-identification Test	0.367	2.35	0.784	4.154	3.16
Sargan-Hansen J statistic	(0.83)	(0.31)	(0676)	(0.245)	(0.368)
	Religious, Linguistic and Ethnical Fractionalization			Legal Origin Dummies	
First-stage . R^2 of excluded instruments	0.3504	0.417	0.2361	0.464	0.2175

The Table reports instrumental variables estimates. The dependent variable is the natural logarithm of gross asset flows from country i ("source" country) to county j ("recipient" country) in the first quarter of 2000. Absolute values of t-statistics based on robust standard errors (clustered at the recipient country) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively

The table reports a Sargan-Hansen test of overidentifying assumptions (the J statistic and the p value in parenthesis). Under the null the excluded instruments are valid instruments. The last row gives the R squared in the first stage of the excluded instruments. In columns (1) and (2) the instruments for the composite institutions (political risk) and the corruption index [$Corruption_j$] are measures of linguistic, ethnical and religious fragmentation. In column (3), (4) and (5) the instruments for the antidirector's rights measure [$Anti\_direct_j$], the contract enforceability index [$Contract_j$] and the percentage that the government owns in the ten largest banks [Gov_Own_j] are legal origin dummy variables. For variable abbreviations see Notes in Tables 4-10. The Data Appendix gives the sources and variable definitions.

Table 13 -- Sample Sensitivity Analysis

		$Inst_{j,t-1}$	$Corruption_j$	$Contract_j$	$Anti\_directs_j$	Gov_Own_j
		Panel A				
	(a)	0.0574[a]	—	—	—	—
		(15.73)				
Excluding USA	(b)	—	-0.0280	0.2984[a]	0.1317[a]	-0.9014[a]
			(0.73)	(5.81)	(2.74)	(4.72)
	(c)	0.0339[a]	0.0227	0.2285[a]	0.0580	-0.5407[a]
		(8.01)	(0.61)	(4.83)	(1.23)	(2.99)
		Panel B				
	(a)	0.0555[a]	—	—	—	—
		(15.51)				
Excluding G3	(b)	—	-0.0497	0.2855[a]	0.1258[a]	-0.9021[a]
			(1.28)	(5.54)	(2.64)	(4.77)
	(c)	0.0327[a]	0.0010	0.2194[a]	0.0556	-0.5550[a]
		(7.87)	(0.03)	(4.58)	(1.18)	(3.10)
		Panel C				
	(a)	0.0436[a]	—	—	—	—
		(10.35)				
Excluding intra-G7	(b)	—	-0.1982[a]	0.3013[a]	0.0508	-1.0852[a]
			(3.58)	(4.98)	(0.88)	(5.06)
	(c)	0.0212[a]	-0.1634[a]	0.2571[a]	-0.0711	-0.8314[a]
		(4.85)	(2.96)	(4.49)	(1.28)	(3.96)
		Panel D				
	(a)	0.0529[a]	—	—	—	—
		(14.13)				
Data before 1994	(b)	—	-0.0610	0.3809[a]	0.1143[b]	-0.8519[a]
			(1.33)	(6.71)	(1.92)	(3.89)
	(c)	0.0316[a]	0.0495	0.3037[a]	-0.0215	-0.6226[a]
		(5.88)	(1.05)	(5.33)	(0.34)	(2.99)
		Panel E				
	(a)	0.0677[a]	—	—	—	—
		(13.18)				
Data after 1993	(b)	—	0.020	0.2142[a]	0.1477[a]	-0.9398[a]
			(0.05)	(3.69)	(2.87)	(4.39)
	(c)	0.0457[a]	0.0173	0.1652[a]	0.0854[c]	-0.4423[b]
		(8.96)	(0.43)	(3.11)	(1.67)	(2.19)
		Panel F				
	(a)	0.05587[a]	—	—	—	—
		(16.43)				
Without year intercepts	(b)	—	-0.0189	0.2996[a]	0.1258[a]	-0.9100[a]
			(0.50)	(5.88)	(2.59)	(4.75)
	(c)	0.0354[a]	0.0306	0.2263[a]	0.0480	-0.5332[a]
		(8.70)	(0.83)	(4.81)	(1.01)	(2.94)

The dependent variable is the natural logarithm of gross asset flows from country i ("source" country) to county j ("recipient" country) in quarter t. Absolute value of t-statistics based on robust standard errors (clustering by country pairs) are given in italics. [a, b, c] denote significance at the 1%, 5%, and 10% levels, respectively. Not recorded independent variables: $\ln Y_{i,t}$; $\ln Y_{j,t}$; $\ln Pop_{i,t}$; $\ln Pop_{j,t}$; $\ln Area_i$; $\ln Area_j$; $\ln Dist_{i,j}$; $Tie_{i,j}$; $Rate_{i,t}$; $Inf_{j,t}$

$Inst_{j,t-1}$ is the 0-100 ICRG index of institutional quality-political risk. $Corruption_j$ is a 0-10 variable that measures the level of corruption (higher values indicate lower corruption). $Anti\_direct_j$ is a 0-6 measure of the legal protection of shareholders. $Contract_j$ is a 0-10 measure of legal system's quality. Gov_Own_j denotes the percentage that the government owns in the ten largest banks. Appendix gives the sources and detailed variable definitions.