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Connecting Two Views on Financial Globalization: Can We Make Further Progress?

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1. Introduction and Overview

Financial globalization, or increasing cross-border capital flows, has the potential to bring a variety of benefits to recipient countries. In theory, financial globalization could raise a country's economic growth rate through a number of channels, including augmenting domestic savings for local investment, improving sharing of consumption risks, disciplining national governments into pursuing better policies in macroeconomic and other areas. Yet, a massive body of empirical papers has often found mixed results, suggesting that the benefits are not straightforward. Surveys by Eichengreen (2000) and Prasad, Rogoff, Wei, and Kose (2003) suggest that it is not easy to find a strong and robust causal effect from financial globalization to economic growth, especially for developing countries.

Indeed, one alleged collateral damage of financial globalization is an increased propensity for developing countries to experience currency crises or other types of financial turmoil. For example, while cross-border capital flows had picked up the pace from the 1980s to more recent times, there also appeared to be more financial crises in the last 15 years, including the crises in Mexico in 1994, the Asian financial crisis during 1997-99, the Russian meltdown in 1999, and the Argentinean and Uruguayan crises of 2001-2002. Most of these crises tend to set the countries back in their growth aspirations for a number of years.

These crises do not prove that financial integration is bad. Indeed, looking around the world, one sees that almost all developed countries are financially integrated, and very few developing countries, once embarked on a path of financial integration, would go back to financial isolation. So why do countries aspire to become financial integrated and yet experience so many bumps and potholes along the way? The literature has proposed *independently* two views on financial globalization that could reconcile them: a composition hypothesis and a threshold hypothesis.

The composition hypothesis proposes that not all capital flows are equal. International direct investment, and perhaps international portfolio flows, appear to be robustly associated with a positive effect on economic growth (Bekaert, Harvey, and Lundblad, 2005). In contrast, there is no strong evidence that private foreign debt including international lending has robustly promoted economic growth. Indeed, one sometimes finds evidence that

international lending is negatively associated with economic growth (Reisen and Soto, 2001). Official aid does not robustly support growth either (Rajan and Subramanian, 2005).

Composition of capital flows has also been related to a country's propensity to experience a currency crisis. Frankel and Rose (1996), in their study of all episodes of currency crises in emerging markets during 1971-1992, reported that, while virtually no variable has a strong predictive power for subsequent currency crashes, the composition of capital inflows is one of the very few variables that are robustly related to the probability of a currency crisis. In particular, the share of FDI in a country's total capital inflow is negatively associated with the probability of a currency crisis. This is confirmed in several subsequent studies including Frankel and Wei (2005). Other dimensions of composition are the maturity structure of external debt (the greater the share of the short-term debt, the more likely a crisis), and the currency denomination of external debt (the greater the share of foreign currency debt, the more likely a crisis).

The threshold hypothesis states that certain minimum conditions have to be met before a country can be expected to benefit from financial globalization. Otherwise, the country could experience more crises and lower growth. The threshold effect comes in various versions. Only countries with reasonably good public institutions (e.g., minimum level of rule of law, reasonable control of corruption) and a minimum level of human capital seem to be able to translate exposure to financial globalization into stimulus to investment and growth on a sustained basis (see the surveys by Prasad, Rogoff, Wei, and Kose, 2003; and Kose, Prasad, Rogoff and Wei, 2006). It is not difficult to imagine why countries with bad institutions may not benefit from financial globalization. In a highly corrupt country, for example, more capital inflows are likely to result in more consumption by a few elite families or bigger Swiss bank accounts rather than more productive investment. So more capital flows may not result in higher growth rates. If capital inflows help to enable excessively risky projects backed by the governments, then more capital flows could translate into an increased probability of a financial crisis.

Rather than viewing the threshold effect and the composition effect as two *rival* hypotheses, I have suggested in earlier work (Wei, 2000a and 2000b, 2001; Wei and Wu, 2002) a concrete connection between the two: countries with better public institutions (i.e.,

above an institutional threshold) are likely to attract more international direct investment relative to international bank loans. I derived evidence using data on bilateral foreign direct investment reported by OECD source countries, and bilateral international lending reported by BIS member countries. In the earlier work, I measured quality of public institutions by perception of corruption reported in surveys of firms such as those conducted by the World Economic Forum for its Global Competitiveness Report or by the World Bank for its World Development Report.

Recent evidence on investment by international mutual funds suggests that better institutions measured by a high degree of government and corporate transparency help to attract more international equity investment relative to the prediction of the international capital asset pricing model (ICAPM) (Gelos and Wei, 2006). So, the composition effect and the threshold effect are perhaps just the two sides of the same coin.

Not everyone found the same result. Hausmann and Fernandez-Arias (2000) find no relationship between share of FDI in total capital inflows and good institutions. In a panel of advanced and developing countries, Albuquerque (2003) finds that the share of FDI in total inflows to be negatively related with good credit rating. As I will argue later, their measure is about financial development. And financial development and other public institutions could have different effects on the composition of capital flows. Furthermore, none of these studies employs instrumental variables to correct for possible measurement errors and endogeneity of the corruption or other institutional measures.

In any case, more recent papers with an instrumental variable approach and arguably better data again affirm the earlier conclusion that there may be an intimate relationship between the institutional threshold and the composition effect. Using data from the IMF on balance of payments, Alfaro, Kalemli-Ozcan and Lolosovych (2003) find that good institutional quality is a key determinant of total capital inflows. Papaioannou (2005) reports that foreign asset holdings by BIS banks, including their portfolio assets and direct investments, tend to be higher in destinations with better institutions. Using recently available data from the IMF on member countries' international investment position, Faria and Mauro (2005) show evidence that countries with good institutions are likely to attract more equity-like capital flows (FDI and portfolio equity flows) relative to other types of

capital. Their measure of institutional quality is the average of six indicators, voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption, as computed and reported by Kaufmann, Kraay, and Mastruzzi (2003). An important feature of the study is that the authors address explicitly the possibility that the composite institutional index may be measured with errors and/or endogenous. They employ as instrumental variables settler mortality during the early colonial period as proposed by Acemoglu, Johnson, and Robinson (2003) and ethno linguistic fragmentation first used by Mauro (1995). The IV approach reaffirms their basic conclusion.

The cumulative evidence points to the strong possibility that bad public institutions tilt the composition of capital flows into a country away from FDI and portfolio equity flows and towards debt including bank loans, making the country more vulnerable to a currency crisis and less able to translate a given amount of capital inflow into stimulus for economic growth. If an institutionally deficient country wants to reap the benefit of financial globalization, it would have to work on improving its institutions first to reach some minimum level of acceptance. There are many different institutions. While they are correlated in the available indicators (which is why Faria and Mauro, 2005, use an average of six indicators), they are not identical in practice.

For the purpose of the current paper, it is useful to be able to say something about the relative importance of financial institutions versus other public institutions in affecting the composition of capital inflows (and indirectly a country's vulnerability to currency/BOP crisis). Consider Argentina. By the mid-1990s, the country's banking has been dominated by foreign owned banks. By most accounts (e.g., see Mussa, 2002), the country's regulation of the banking system is sound and follows international best practices. However, its foreign liabilities are dominated by debt rather than FDI. By the end of 2001, the country went into a new round of deep financial crisis; so the sound banking system does not seem to do much to prevent it from falling into the disaster. So, is it possible that less desirable features of Argentina's public institutions outside its financial sector may have something to do with its vulnerability to crises? This is a hard question. A goal of this paper is to make some progress

on this front by investigating potentially separate roles of financial institutions and other dimensions of public governance on the composition of foreign liabilities.

The rest of the paper is organized as follows. Section 2 explains the definitions and sources of the key data, and compares the relative volatility of different types of international capital flows. Section 3 systematically examines whether and how bureaucratic corruption and financial development affect the composition of foreign liabilities. Finally, Section 4 offers some concluding thoughts.

2. Data and Relative Volatility of Different Types of Capital Flows

Data on capital flows

The data on different types of capital inflows (as well as their aggregates) come from the International Monetary Fund's Balance-of-Payments data source. To determine the relative volatility, I use annual flow data. In contrast, in regression analysis where I connect composition of total foreign liabilities to institutional features of the country, I use stock data. The stock data are based on IMF's survey of member countries on their international investment positions, which started in 1995 and by 2003 – the year of my sample – have covered 94 countries.

Data on corruption and financial development

I examine two dimensions of public institution: corruption and financial development. By its very nature (of secrecy and illegality), the level of crony capitalism or corruption is difficult to quantify. There are three types of measures of corruption available, and all are perception-based subjective indexes. The first is a rating given by consulting firms' in-house consultants or 'experts'. Representative indexes are produced by the Business International (BI, now part of the Economist's Economic Intelligence Unit), and by Political Risk Services (which call its product 'International Country Risk Group' or ICRG rating). The second type is based on survey of business executives (or other people in the country in question). The rating for a country is typically the average of the respondent's ratings. Examples of this include indexes in the Global Competitiveness Report (GCR) and World Development

Report (WDR), which will be explained in more detail shortly. The third type is based on an average of existing indexes. The best-known example is the index produced by Transparency International (TI), a Germany-based non-governmental organization devoted to fighting corruption. A drawback of this type of index is that mixing indexes with different country coverage and methodologies could potentially introduce more noise to the measure.

Overall, corruption ratings based on surveys of firms are preferable to those based on the intuition of in-house experts. First, the executives who respond to the GCR or WDR surveys presumably have more direct experience with the corruption problem than the consultants who each typically have to rate many countries. Second, to the extent each individual respondent has idiosyncratic errors in his/her judgment, the averaging process in the WDR or WCR indexes can minimize the influence of such errors. In this paper, I use the indexes from the GCR and WDR surveys as our basic measure of corruption. The *GCR Index* is derived from the *Global Competitiveness Report 1997*, produced jointly by the Geneva-based World Economic Forum and Harvard Institute for International Development. The survey for the report was conducted in late 1996 on 2,827 firms in 58 countries. The GCR Survey asked respondents (in Question 8.03) to rate the level of corruption in their country on a one-to-seven scale, based on the extent of 'irregular, additional payments connected with imports and exports permits, business licenses, exchange controls, tax assessments, police protection or loan applications'. The GCR Corruption Index is based on the country average of the individual ratings.

The *WDR Index* is derived from a World Bank survey in 1996, of 3,866 firms in 73 countries, in preparation for its *World Development Report 1997*. Question 14 of that survey asks: 'Is it common for firms in my line of business to have to pay some irregular "additional" payments to get things done?' The respondents were asked to rate the level of corruption on a one-to-six scale. The WDR corruption index is based on the country average of the individual answers. For both corruption indexes, the original sources are such that a higher number implies lower corruption. To avoid awkwardness in interpretation, they are re-scaled in this paper so that a high number now implies high corruption. Since each index covers only a (different) subset of countries, it makes sense to transform them into a composite index that would cover more countries than each of them individually.

The correlation between the two is 0.83. I follow a simple three-step procedure to construct the composite index:

- Use GCR as the benchmark.
- Compute the average of the individual ratios of GCR to WDR for all countries that are available in both GCR and the WDR.
- For those countries that are covered by WDR but not GCR (which are relatively rare), convert the WDR rating into the GCR scale by using the average ratio in step 2.

Finally, while the article uses an index of corruption as a measure of the degree of 'crony capitalism', I believe that the index captures something broader than just bureaucratic corruption. It may be useful to think of corruption and crony capitalism more broadly as shorthand for 'poor public governance', which can also include deviations from rule of law or excessive and arbitrary government regulations. All the existing measures of public institutions tend to be highly correlated, suggesting that it is very difficult to disentangle their separate effects at this stage. An exception may be financial market development, which, while still correlated with other institutions, appears to be identifiable from other dimensions of the public governance[2].

For a summary measure of a country's financial development, I use the sum of the ratio of the stock market capitalization to GDP and the ratio of the bank system's credit to private sector to GDP. Some countries rely relative more on stock markets than others. For corporations, stock markets and banks are substitutes to a large extent. This observation motivates me to combine the two ratios into a composite measure of financial development.

[2] Acemoglu and Johnson (2005) make a heroic attempt, citing the work of North (1981), to separate what they call "contracting institutions" – institutions that govern transactions between private parties – and "property rights institutions" – institutions to protect investors/households from the government and other powerful elites' expropriations. The main difficulty for me to swallow their thesis is that it is difficult to imagine countries that have terrible property rights institutions and yet have wonderful contracting institutions.

Instrumental variables for corruption and financial development

Acemoglu and Johnson (2005) noted that different instruments appear to forecast different types of institutions. In their case, they argue the mortality of colonial settlers in the 16th century or the population density appear to be good instruments for property rights institutions, whereas legal origins appear to be good instruments for contracting institutions. They reported evidence that legal origin, while not successful in predicting today's per capita income around the world, while being put to compete with other candidates for instruments (i.e., settlers' mortality or population densities in 1500), can nonetheless help to predict the extend of financial market development today.

I use the mortality rate of colonial settlers in the 19th century and legal origin as instruments for corruption and financial development. I will report diagnostic statistics on the appropriateness of these instruments when regression analyses are conducted.

Restrictions on Inward FDI

To capture national authorities' restrictions on FDI in a cross-country comparative context, I make use of the description of the legal FDI regimes for 49 countries in 2000 constructed in an earlier paper (Wei, 2000b), which in turn relied on detailed, textual descriptions prepared by PricewaterhouseCoopers (PwC) in a series of country reports entitled "Doing Business and Investing in China" (or in whichever country that may be the subject of the report). The "Doing Business and Investing in …" series is written for multinational firms intending to do business in a particular country. They are collected in one CD-ROM titled "Doing Business and Investing Worldwide" (PwC, 2000). For each country, the relevant PwC country report covers a variety of legal and regulatory issues of interest to foreign investors, including "Restrictions on foreign investment and investors" (typically Chapter 5), and "Taxation of foreign corporations" (typically Chapter 16).

To convert the textual information in these reports into numerical codes, I (or my research assistant) read through the relevant chapters for all countries that the PwC series covers. PwC (2000) contains information on restrictions for FDI in the following four categories:

(a) Existence of foreign exchange control (this may interfere with foreign firms' ability to import intermediate inputs or repatriate profits abroad);

(b) Exclusion of foreign firms from certain strategic sectors (particularly national defense and mass media);

(c) Exclusion of foreign firms from additional sectors that would otherwise be open in most developed countries; and

(d) Restrictions on foreign ownership (e.g., they may not per permitted 100% ownership).

I generated dummy variables for each category of restrictions and created an overall "FDI restriction" variable that is equal to the sum of those four dummies. This variable takes the value of zero if there is no restriction in any category, and 4 if there are restrictions in all of them. The median number of restrictions is 1 (mean=1.69).

Relative volatility of different types of capital flows

Using data during 1980-1996, I reported evidence that across countries, international loans are substantially more volatile than either international direct investment or portfolio investment. As the sample was out of date, and the pace of cross-border capital flows has reached a new high, it is useful to check if the earlier result still holds when more recent data are used in the calculation. In this section, I reexamine the relative volatility of different types of capital flows using information on all IMF member countries for which relevant data are available during 1980-2003.

I first measure volatility by the standard deviations of FDI/GDP, portfolio inflow/GDP, and debt/GDP, respectively. The results are reported in the upper panel of Table 1. As one can see, across all 179 countries in the sample, loan/FDI is somewhat more volatile (with an average standard deviation across countries at 4.9 percent) than either FDI/GDP (with an average standard deviation of 3.7 percent) or portfolio/GDP (with an average standard deviation of 2.3 percent). The same picture holds if one looks at the median values across countries. If one restricts the sample to developing countries, then the contrast

becomes larger. Loan/GDP tends to be twice as volatile as FDI/GDP, and more than three to four times as volatile as portfolio/GDP, depending whether one looks at mean or median values of the volatility series.

One disadvantage of standard deviation as a measure of volatility is that it is not scale-invariant. For example, if the FDI series is perfectly and positively correlated with the series on international loans (and so the two are equally volatile in some economic sense), but the FDI in a given year is always half as big as the bank loan, then the standard deviation of (FDI/GDP) will mechanically be only half as big as that of (loan/FDI). In other words, one may mistakenly conclude that FDI is less volatile than bank loan just because FDI/GDP is smaller than loan/GDP on average. One possible correction is to use coefficient of variation (cov) as a measure of the volatility. While it helps to purge the impact of the scale of the series on the measured volatility, the cov method has its own limitations. In particular, if a series has a mean very close zero, its cov can take on an enormous value; if a series has a negative mean, its cov is also negative. In these cases, a higher value of cov does not necessarily correspond to a higher volatility in economic sense. For this reason, I report the cov's for these three types of capital inflows as a complement (rather than as a substitute) to the standard deviation measure.

The results are reported in the lower panel of Table 1. In terms of the mean values of the cov's, loan/FDP continues to be more volatile than FDI/GDP. However, in terms of median values, portfolio flows are more volatile than even the loan/GDP. The apparently high volatility of portfolio/GDP is likely a result of a low level of portfolio flows to begin with. If one restricts the sample to 150 developing countries, one sees broadly similar picture: FDI/GDP is less volatile than loan/GDP both in terms of median and mean values.

To summarize, the evidence suggests that the basic conclusion in Wei (2001) with regard to the relative volatility of various types of capital inflows is still true even with 7 more years of recent data. This lends support to the composition hypothesis that sudden reversals of international capital are more likely to occur to those countries that rely relatively more on bank loans and less on foreign direct investment.

3. Corruption versus Financial Development: Which One Matters More for the Composition of Capital Flows?

I now turn to statistical evidence on whether/how the institutional variables affect the composition of total foreign liabilities. Let "$Composition_j$" be a measure of country j's composition, e.g., the share of the stock of FDI in total foreign liabilities, or the share of the stock of bank loans in total foreign liabilities. The two measures of institutional quality are the level of bureaucratic corruption in country j, or "$Corruption_j$", and the level of financial development in country j, or "$FinDev_j$." The basic specification used in this paper is

$$(1)\ Composition_j = \beta_1\, Corruption_j + \beta_2\, FinDev_j + Z_j\Gamma + e_j$$

where Z_j is a vector of control variables, β_1, β_2, and Γ are parameters (of appropriate dimensions) to be estimated, and e_j is a random error.

One could estimate Equation (1) by Ordinary Least Squares. But there are two problems. First, both corruption and financial development are difficult to measure precisely. The measurement errors are likely to cause a bias towards zero (an attenuation bias). Second, both variables are likely to be endogenous. For example, greater presence of foreign multinational corporations could lead to an increased lobbying by these firms for the local government to reduce corruption and to improve financial market. In this case, one might find a correlation between low corruption and more foreign investment, or a positive correlation between more financial development and more foreign investment, even though more foreign investment is <u>not caused</u> by either low corruption or high financial development (an endogeneity bias).

If one could find good instrumental variables, then one can simultaneously address the endogeneity and the measurement errors problems. What are the appropriate instruments in this context? Here, I will stand on the shoulders of intellectual giants by making use of the work by La Porta et al (1998), Acemoglu, Johnson and Robinson (2001) and Acemoglu and Johnson (forthcoming).

How informative are the instrumental variables?

Table 3 reports a set of "first-stage" regressions that relate either corruption or financial development to the proposed instruments. Column 1 of Table 3 indicates that settler's mortality in the 18-19th century is a good predictor of a country's level of corruption today: the higher the mortality, the higher the level of corruption on average. Column 2 indicates that the local population density in 1500 also helps to forecast today's corruption level. When each of them is put to compete with legal origins (Columns 3 and 4), settler mortality always comes out as a significant predictor, but the population density in 1500 does not. In the regression with settler mortality and legal origins (Column 3), none of the legal origin dummies is significant.

Column 5 regresses financial development on a set of legal origin dummies (the left-out group is English, or common-law origins). Evidently, French and socialist legal origins are associated with lower levels of financial development than English origin. On the other hand, German and Scandinavian origins are associated with higher levels of financial development than English origin. When legal origins are included in the same regression with either settler mortality (Column 6) or population density in 1500 (Column), the sample shrinks considerably. In any case, legal origins continue to retain some explanatory power for today's financial development. In particular, countries with a French legal origin appear to suffer in financial development relative to their peers with an English legal origin. Higher settler mortality rates or higher population densities several centuries ago also help predict lower levels of financial development.

In the last two columns of Table 3, an alternative measure of institutional quality – derived by averaging six governance indicators from the World Bank – is linked to the historical variables. Again, either settler mortality or population density in 1500 appears to forecast a country's institutional quality today. Socialist countries appear to have lower institutional quality, but otherwise there is no difference between common-law versus civil law countries.

To summarize, the data reveal that the economic history of a country influences its institutional development. At the same time, different aspects of the history appear to have differential impact on financial development versus bureaucratic corruption. Legal origins

have a discernible influence on a country's level of financial development today; but legal origins probably do not affect a country's bureaucratic quality, once the impact of historic pattern of settler mortality is accounted for. On the other hand, settler mortality affects both bureaucratic corruption and financial development. These variations in the type of institutions today that can be explained by different historic experiences are crucial to identify the effects of corruption and financial development in the subsequent analyses.

Benchmark Results

I are now ready to examine whether and how the institutional variables affect a country's composition of foreign liabilities. Before I go to the statistical results, let me first note a few features of the basic specification. First, one has to decide whether one focuses on flows or stocks of FDI, portfolio investment and bank loans. As I argued in Wei (2000a, 2000c, and 2001), stock levels are more appropriate than flow levels. For example, when a multi-national firm solves a profit maximization problem to decide on an optimal level of FDI, it decides on an optimal stock of FDI. If the current stock is different from the optimal stock, the firm would use the current flow as an adjustment until the stock reaches the desired level. As a collaboration, Faria and Mauro (2004) also determined that cumulative liabilities, or the stocks of capital inflows, are the appropriate variables to be used to examine composition of capital flows.

Second, the current paper focuses on a cross-section of countries rather than trying to develop panel data. One reason is that both corruption and financial development evolve relatively slowly. A more important reason has to do with the instrumental variable strategy here. Since both legal origin and settler mortality are part of a country's economic history, they are essentially fixed in the modern times. This dictates the focus on cross country comparisons.

Third, because the settler mortality (of the European colonizers), by definition, is only available for countries that once were colonized by the Europeans, the sample of countries that can take advantage of this instrument is limited (up to 70 countries, and less when missing values of other variables in a regression further shrink the sample size). This

limitation on the sample size also implies that only a relatively parsimonious list of determinants of the composition of foreign liabilities can be examined.

While both the second and third features illustrate the limitations of the IV approach, it is worth bearing in mind that the gains associated with this IV approach are also considerable. Most importantly, the history-based instrumental variables can be said to be truly exogenous to modern-day levels of corruption and financial development.

Table 4a presents a series of regressions on the determinants of the share of cumulative FDI in total foreign liabilities. The table first reports four OLS regressions, entering corruption by itself, financial development by itself, both institutions jointly, and then both institutions plus a measure of the dominance of national resources in the economy, and trade openness. The table then reports four corresponding instrumental variable regressions. Since the OLS regressions suffer from the attenuation bias due to measurement errors and potential reverse causality due to endogeneity of the institution variables, let me go straight to the IV results. Individually, both corruption and financial development are significant (Columns 5 and 6): More corrupt countries tend to receive relatively less FDI (consistent with a result first shown in Hines, 1995, and Wei, 2000a), and more financially developed countries tend to receive more FDI. These patterns perhaps are not surprising. When the two are included jointly (Column 7), more corruption still discourages FDI (relative to other forms of capital inflows). However, the financial development variable switches the sign: more financial development is now associated with less FDI. When the share of national resource in total exports and trade openness are included in the regression (Column 8 of Table 4a), the same pattern continues to hold. In addition, trade openness produces a positive and significant coefficient: greater trade openness is associated with more FDI.

The negative coefficient on financial development may appear unintuitive. Indeed, this may underline why Hausmann and Fernandez-Arias (2000) and Albuquerque (2003) reported the seemingly contradictory results from my earlier work. In fact, this negative sign on financial development makes sense. Using different models, both Caballero, Farhi, and Gourinchas (2005) and Ju and Wei (2005) show that FDI may go to countries with low capital-labor ratios and low financial efficiency. The intuition for the Ju-Wei model goes as

follows: Low capital-labor ratio implies that the returns to physical capital is high, hence attracting foreign (and domestic) investment. However, low financial efficiency implies that domestic household find it difficult to reap the benefits of high domestic marginal returns to physical capital through the domestic financial system, and so are eager to send the money abroad. This raises the return to FDIs that do not rely on domestic financial system. Hence, low level of financial development and high volume of FDI can go hand in hand. FDI effectively works as a substitute for domestic financial system. Conversely, higher levels of financial development, other things equal, would translate into relatively less FDIs. Since the returns to physical capital determines total capital inflows, financial development may affect the relative attractiveness of FDI as compared to other forms of capital inflows.

Table 4b reports a similar set of regressions for portfolio equities as a share of total foreign liabilities. For this type of capital flows, there is some evidence that higher levels of domestic financial development are conducive to more portfolio equity investment. In comparison, corruption does not matter once financial development is controlled for.

Table 4c reports the results for portfolio debt as a share of total foreign liabilities. Similar to the FDI case, corruption is consistently found to discourage debt/total foreign liabilities. There is also some modest evidence that financial development may affect this ratio negatively.

Table 4d reports evidence on foreign loans as a share of total liabilities. The results are strikingly different from those for the FDI share. In particular, a higher level of corruption is associated with a higher share of loans. This pattern was first reported in Wei (2000b and 2001) but with a different sample and without the use of historical instrumental variables. Wei (2001) explained this as a possible substitution effect. For a given amount of capital inflows, if corruption discourages FDI (and other equity-like investment), then it may indirectly encourage bank loans to take their place. Thus, a higher level of corruption could tilt the composition of a country's capital inflows away from FDI and towards foreign bank

loans. The current result shows that the early result (in Wei, 2001) is not an idiosyncratic consequence of a special sample and survives an endogeneity correction[3].

On the other hand, more financial development leads to more foreign loans once corruption is accounted for (Column 7 of Table 4b). This further corroborates the possibility that FDI and loans are substitutes.

So far, I have discussed how corruption and financial development may alter the relative prominence of various types of inward capital flows in a country's total foreign liabilities. It is useful and natural to ask whether and how these institutional factors affect a country's total foreign liabilities. Conceptually, based on a neo-classic one-sector model of the economy, total foreign liabilities per capita should be a function of the country's physical capital per capita, human capital per capita, and level of total factor productivity (TFPs). One could view corruption and financial development as factors that affect the country's TFP. In a neo-classical two-sector (or multi-sector) model in which factor price equalization holds, total foreign liabilities per capita would still be responsive to factors that affect the TFP (which may include corruption and financial development), but would not be linked to either physical capital or human capital except when they also reflect factors affecting the TFP.

In any case, I conduct a series of regressions linking total foreign liabilities per capita and the two institutional variables (and physical and human capital per capita), by both OLS and instrumental variable approaches. The results are reported in Table 5. There is some evidence that more corruption would lead to less total capital inflows. This holds both in IV regressions and in OLS, as long as physical capital per capita is not included. However, this effect is not strong: Capital stock per capita is a clear predictor of total capital flows. Once it is included in the regressions, the corruption variable, while still negative and significant in OLS regressions, becomes indifferent from zero in IV regressions. Financial development becomes insignificant in both OLS and IV regressions.

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[3] Using data on total foreign asset holdings by BIS reported banks in 36 jurisdictions, Papaioannou (2005) finds that higher institutional quality in a destination leads to a higher level of asset holdings by BIS banks. Citing BIS sources, the author noted (p11) that his data also covers portfolio and direct investment flows, such as holdings of securities, and direct investment in subsidiaries. Thus, the result in that paper is in principle consistent with those in this paper.

The results so far can be summarized in the following way:

- Corruption does not appear to have a strong effect on a country's total foreign liabilities. However, it affects the composition significantly. As FDI and portfolio debt are strongly discouraged by corruption, foreign loans are encouraged to take their places. To the extent that a higher ratio of loan/FDI increases a country's vulnerability to a currency and balance-of-payments crisis, corruption alters a country's composition of capital inflows in an unfavorable direction.

- Financial development does not appear to have a strong effect on a country's total foreign liabilities. However, a weaker financial system appears to induce more FDI (to partially remedy the inadequacy of the domestic financial system) but is likely to discourage the inflows of portfolio equity and portfolio debt. It is less clear how this change in the composition of capital inflows affects a country's propensity to run into a financial crisis.

Robustness Checks and Extensions

I now turn to robustness checks and extensions. I will first consider an alternative measure of the quality of public institutions other than corruption. In fact, I will look at a composite measure of institutional quality that is the average of six public governance indicators (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption) developed by Kaufmann, Kraay, and Mastruzzi (2003), a team of World Bank researchers. The index is scaled so that almost all values are between -2.5 and 2.5. A higher level means higher quality of public institutions.

The regression results using the new composite index of institutional quality (rather than corruption) are reported in Table 6. As with the corruption measure, the new index can also be measured with errors and endogenous. Therefore, I will focus my discussion on the results from the two-stage least squares. The results are reasonably similar to those in Tables 4a-4d. In particular, better institutional quality leads to a higher share of FDI and portfolio debt in total capital inflows, but a lower share of foreign loans. Better financial development, on the other hand, leads to an increase in the share of portfolio equity inflows in total foreign liabilities, but a decrease in the share of FDI.

Because settler mortality and legal origin measures are available for a relatively small set of countries, many countries in the OLS sample have to be dropped in the IV sample. On the other hand, there is one country for which the IV variables are available but the

institutional quality measure is not. To make direct comparisons between the OLS and IV estimates, it may be useful to perform OLS and IV regressions on the largest possible common sample. This yields a sample of 33 countries for the first three dependent variables (FDI, portfolio equity, and portfolio debt as a share of total foreign liabilities) and 32 countries for the last dependent variable (Loans/Total foreign liabilities). The regression results are reported in Table 6b. While there are some small variations in the OLS estimates - five statistically significant coefficients in the larger sample become insignificant in the reduced sample, the IV estimates are virtually the same as before[4].

The intersection of the set of countries for which historical data on settler mortality are available and the set of countries that are covered by the IMF's International Investment Positions survey is relatively small (no more than 40 countries). This restricts the feasible number of parameters that can be estimated. Nonetheless, it may be useful to get an idea about how sensitive the key point estimates are to adding a few more control variables. Since a central interest of the paper is on the composition of capital inflows, it makes sense to investigate if regulatory restrictions alter the composition significantly. In addition, it may be of some interest to see if country size – proxied by log (GDP) – affects the composition.

Table 7 reports a set of IV regressions that add these two new regressors sequentially to the benchmark specification. FDI restrictions appear to discourage the shares of FDI and portfolio equity, and encourages the share of portfolio debt, though the effect is only statistically significant for the share of portfolio equity. Log(GDP), somewhat surprisingly, is always significant. Larger countries tend to have higher shares of FDI, portfolio equity and portfolio debt, but lower share of loans. With the addition of these new regressors, more corruption continues to lead to a reduction in the shares of FDI and of portfolio debt and a rise in the share of bank loans. A higher level of financial development still encourages a

[4] I have also attempted to do the same thing for Tables 4 and 5, i.e., restricting the sample to be common to the two specifications. This leads to a tiny sample of 24 observations, and mostly insignificant coefficients. As the regression results are not very informative due to the low statistical powers, I have chosen not to report them.

higher share of portfolio equity investment, but its (negative) effect on the share of FDI is marginally insignificant.

4. Conclusion

Financial globalization does not lead to an automatic improvement in many developing countries. A part of the literature has emphasized a threshold effect: only countries that have met a minimum set of conditions such as having attained a reasonable control of corruption and a certain level of rule of law, can expect to benefit significantly from financial globalization. A different part of the literature has stressed a composition effect: foreign direct investment, and perhaps portfolio inflows, are likely to be more beneficial and less volatile than international bank lending, while total capital flows - summing up all types of capital flows - may not exhibit a strong positive effect on the recipient countries' rate of growth and their consumption risk sharing.

It has been pointed out that the threshold and composition effects can be closely relatd (two sides of the same coin?). This is not to say that the two effects are identical in every respect. But recent evidence suggests that better institutional quality in a capital-importing country may lead to a more favorable composition of capital inflows for that country (Wei, 2000b, 2001; Wei and Wu, 2002; and Faria and Mauro, 2004).

The earlier literature did not disentangle possibly different effects of financial development and quality of bureaucratic institutions. Indeed, by not separating the two types of institutions, the earlier literature reported mixed evidence on the relationship between quality of institutions and the composition of capital inflows. This paper furnishes evidence that these two types of institutions can indeed have different effects on the structure of capital inflows. In particular, bad public institutions (reflecting in, for example, a higher level of bureaucratic corruption) strongly discourages foreign direct investment, and possibly foreign debt, in shares of a country's total foreign liabilities, but appear to encourage the relative prominence of borrowing from foreign banks. In comparison, low financial sector development discourages inward portfolio equity flows but encourages inward foreign direct

investment. Therefore, views on the connection between domestic institutions and the structure of international capital flows have to be nuanced.

To gain confidence that the documented data patterns reflect causal relations, the paper employs instrumental variables for the institutional measures based the economic histories of the countries in the sample (in particular, the mortality rate of earlier European settlers and the origin of legal systems). The instrumental variable approach bolsters the case that bad institutions are a cause for unfavorable composition of capital inflows.

The use of the history-based instruments severely restricts the sample size, which reduces the set of control variables one could meaningful have, making it infeasible to check whether/how bad institutions may affect the composition of capital inflows indirectly through some of these variables. It will be useful for future work to tackle this problem in some creative way.

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Table 1: Volatility of FDI/GDP, Bank Loan/GDP, and Portfolio Flow/GDP as Measured by Standard Deviation or Coefficient of Variation: 1980-2003

	FDI/GDP	Loan/GDP	Portfolio/GDP
Standard deviations:			
Whole sample: 179 countries			
Mean	0.037	0.049	0.023
Median	0.018	0.033	0.011
Emerging markets: 150 countries			
Mean	0.029	0.047	0.013
Median	0.018	0.035	0.007
Coefficient of variations:			
Whole sample: 179 countries			
Mean	0.818	4.944	-0.759
Median	0.939	1.228	1.817
Emerging markets: 150 countries			
Mean	0.788	5.691	-1.198
Median	0.946	1.261	2.129

Source: FDI, Loan and Portfolio are net capital inflows, from Standard Presentation, Balance of Payments Statistics, the IMF.

Table 2a: Summary Statistics

	Obs	Mean	Median	Std. Dev.	Min	Max
Total capital inflow per capita (thousand USD)	94	74.2	2.9	532.0	0.13	5164
FDI/Total capital inflow	94	0.28	0.25	0.16	0.00	0.76
Portfolio Equity/Total capital inflow	93	0.07	0.02	0.09	0.00	0.43
Portfolio Debt/Total capital inflow	94	0.13	0.10	0.13	0.00	0.52
Loan/Total capital inflow	91	0.39	0.37	0.24	0.00	0.99
Corruption(GCR/WDR)	93	0.00	0.18	0.99	-1.92	1.48
Institutional quality	174	0.00	-0.17	0.90	-2.18	1.95
Financial development	167	0.54	0.30	0.62	0.00	3.82
Settler mortality	70	233	78	452	9	2940
Population density in 1500(per square kilometer)	88	5	2	12	0	100
Legal origin (French)	127	0.49	0	0.50	0	1
Legal origin (Socialist)	127	0.19	0	0.39	0	1
Legal origin (German)	127	0.01	0	0.09	0	1
Legal origin (Scandinavian)	127	0.01	0	0.09	0	1
Human capital stock(years of schooling)	82	5.8	6.0	2.7	1.0	13.0
Capital stock per capita (thousand USD)	140	17.72	7.45	23.18	0.24	91.41
Resource(exports on ores, metal and fuel/total exports)	160	22	9	28	0	97
Openness(Total Trade/GDP)	174	86	78	45	2	281
FDI restriction dummy	174	0.64	1	0.48	0	1
GDP(Billion USD)	172	222	9	991	0	10061
Per capita GDP(USD)	171	6126	1782	9328	102	45611

Table 2b: Pairwise Correlation

	Total capital inflow per capita	FDI/Total capital inflow	Portfolio Equity/Total capital inflow	Portfolio Debt/Total capital inflow	Loan/Total capital inflow	Corruption (GCR/WDR)	Institutional quality	Financial development
Total capital inflow per capita	1.00							
FDI/Total capital inflow	-0.02	1.00						
Portfolio Equity/Total capital inflow	0.44*	-0.15	1.00					
Portfolio Debt/Total capital inflow	-0.03	-0.22*	0.23*	1.00				
Loan/Total capital inflow	-0.36*	-0.45*	-0.41*	-0.46*	1.00			
Corruption(GCR/WDR)	-0.63*	0.08	-0.59*	-0.40*	0.58*	1.00		
Institutional quality	0.21*	-0.10	0.57*	0.58*	-0.59*	-0.82*	1.00	
Financial development	0.29*	-0.20*	0.72*	0.40*	-0.48*	-0.75*	0.78*	1.00

	Corruption (GCR/WDR)	Institutional quality	Financial development	Settler mortality	Population density in 1500	Legal origin (French)	Legal origin (Socialist)	Legal origin (German)	Legal origin (Scandinavian)
Corruption(GCR/WDR)	1.00								
Institutional quality	-0.82*	1.00							
Financial development	-0.75*	0.78*	1.00						
Settler mortality	0.21	-0.22*	-0.25*	1.00					
Population density in 1500	-0.19	-0.16	-0.06	-0.06	1.00				
Legal origin (French)	0.15	-0.13	-0.13	-0.02	0.01	1.00			
Legal origin (Socialist)	0.20*	-0.06	-0.16*	-0.07	-0.02	-0.48*	1.00		
Legal origin (German)	-0.03	0.10	0.20*	0.00	0.00	-0.09	-0.04	1.00	
Legal origin (Scandinavian)	-0.03	0.25*	0.19*	0.00	0.00	-0.09	-0.04	-0.01	1.00

Table 3: First Stage Regression, Using Histories to Instrument Modern-day Institutions

	Corruption(GCR/WDR)				Financial development			Institutional Quality	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Log(settler mortality)	0.46**		0.31**			-0.21**		-0.38**	-0.29**
	(0.08)		(0.08)			(0.03)		(0.07)	(0.07)
Log(Population density in 1500)		0.27**		0.10			-0.07**		
		(0.07)		(0.08)			(0.03)		
Legal origin (French)			0.37	0.62**	-0.18**	-0.14*	-0.18**		-0.06
			(0.23)	(0.22)	(0.08)	(0.08)	(0.08)		(0.17)
Legal origin (German)			0.00	0.00	0.74*	0.00	0.00		0.00
			(0.00)	(0.00)	(0.38)	(0.00)	(0.00)		(0.00)
Legal origin (Scandinavian)			0.00	0.00	0.70*	0.00	0.00		0.00
			(0.00)	(0.00)	(0.38)	(0.00)	(0.00)		(0.00)
Legal origin (Socialist)			0.71	0.79	-0.25**	-0.29	-0.14		-0.98**
			(0.66)	(0.72)	(0.10)	(0.21)	(0.25)		(0.45)
Observations	44	48	40	44	120	60	73	70	61
R-squared	0.44	0.24	0.36	0.20	0.14	0.47	0.14	0.33	0.29

Note: Standard errors in parentheses, * and ** denote significant at 10% and 5% levels, respectively.

Table 4a: Explaining the Ratio of FDI/ Total Foreign Liabilities in 2003

	OLS				IV regressions			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Corruption(GCR/WDR)	0.01		-0.03	-0.04*	-0.10**		-0.65**	-0.56**
	(0.02)		(0.03)	(0.02)	(0.04)		(0.23)	(0.24)
Financial development		-0.04*	-0.07**	-0.07**		0.17*	-1.07**	-0.88*
		(0.02)	(0.04)	(0.03)		(0.09)	(0.44)	(0.46)
Resource [a]				0.37**				0.13
				(0.09)				(0.13)
Openness [a]				0.11**				0.12*
				(0.03)				(0.07)
Observations	68	91	67	65	40	34	34	34
R-squared	0.01	0.04	0.06	0.36	0.15	0.09	0.28	0.36

Table 4b: Explaining the Ratio of Portfolio Equity/Total Foreign Liabilities in 2003

	OLS				IV regressions			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Corruption(GCR/WDR)	-0.05**		-0.01	-0.01	-0.07**		0.06	0.09
	(0.01)		(0.01)	(0.01)	(0.01)		(0.09)	(0.09)
Financial development		0.09**	0.07**	0.07**		0.14**	0.25	0.31*
		(0.01)	(0.02)	(0.02)		(0.03)	(0.17)	(0.18)
Resource [a]				-0.01				0.04
				(0.06)				(0.05)
Openness [a]				-0.00				0.01
				(0.02)				(0.03)
Observations	68	90	67	65	40	34	34	34
R-squared	0.35	0.51	0.48	0.49	0.37	0.37	0.38	0.40

Note: a) All coefficients and standard errors are multiplied by 100.
b) The IV for Corruption(GCR/WDR) is Log(Settler Mortality), and the IV s for financial development are legal origin and Log(Settler Mortality) .
c) Standard errors in parentheses; * and ** denote significant at 10% and 5% levels, respectively.

Table 4c: Explaining the Ratio of Portfolio Debt/ Total Foreign Liabilities in 2003

	OLS				IV regressions			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Corruption(GCR/WDR)	-0.06**		-0.04*	-0.05**	-0.10**		-0.34**	-0.31**
	(0.02)		(0.02)	(0.02)	(0.03)		(0.14)	(0.14)
Financial development		0.07**	0.02	0.02		0.19**	-0.45*	-0.40
		(0.02)	(0.03)	(0.03)		(0.05)	(0.26)	(0.27)
Resource [a]				-0.01				0.05
				(0.10)				(0.08)
Openness [a]				-0.08**				-0.08*
				(0.04)				(0.04)
Observations	68	91	67	65	40	34	34	34
R-squared	0.16	0.16	0.17	0.27	0.26	0.27	0.39	0.47

Table 4d: Explaining the Ratio of Outstanding Foreign Loans/ Total Foreign Liabilities in 2003

	OLS				IV regressions			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Corruption(GCR/WDR)	0.13**		0.11**	0.11**	0.36**		0.87**	0.67*
	(0.02)		(0.04)	(0.03)	(0.06)		(0.30)	(0.33)
Financial development		-0.17**	-0.03	-0.03		-0.57**	1.10*	0.65
		(0.03)	(0.05)	(0.04)		(0.13)	(0.60)	(0.66)
Resource [a]				-0.26*				-0.15
				(0.13)				(0.18)
Openness [a]				-0.11**				-0.23
				(0.05)				(0.14)
Observations	66	88	65	64	38	33	33	33
R-squared	0.34	0.23	0.34	0.44	0.53	0.38	0.52	0.56

Note: a) coefficients are multiplied by 100.

b) IV for Corruption(GCR/WDR) is Log(Settler Mortality) and IV for financial development are legal origin and Log(Settler Mortality)

c) Standard errors in parentheses, * significant at 10%; ** significant at 5%

Table 5: Total Capital Inflows Per Capita in Logarithm (2003)

	OLS					IV regression				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Corruption	-1.60**		-1.09**	-0.65**	-0.66**	-2.15**		-6.48**	0.79	0.88
(GCR/WDR)	(0.12)		(0.18)	(0.17)	(0.17)	(0.36)		(1.56)	(1.69)	(1.79)
Financial		2.22**	0.86**	0.35	0.32		2.57**	-9.74**	0.68	0.87
development		(0.18)	(0.23)	(0.21)	(0.21)		(0.71)	(3.01)	(2.80)	(3.00)
Log(Human				0.10	0.09				0.32	0.31
Capital Stock)				(0.35)	(0.34)				(0.38)	(0.40)
Log(Capital				0.68**	0.66**				0.95**	0.92**
Stock per capita)				(0.16)	(0.15)				(0.18)	(0.19)
Resource [a]					0.05					0.33
					(0.66)					(0.74)
Openness [a]					0.63**					0.22
					(0.29)					(0.39)
Observations	68	90	67	46	46	40	34	34	28	28
R-squared	0.73	0.64	0.78	0.89	0.90	0.48	0.29	0.54	0.82	0.82

Note: See footnotes to Table 4.

Table 6: Alternative Measure of Institutions – Average of Six World Bank Indicators

	FDI/total foreign liability		Portfolio equity /total foreign liability		Portfolio debt /total foreign liability		Loan/total foreign liability	
	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)	IV (6)	OLS (7)	IV (8)
Institutional Quality	0.04 (0.03)	0.67** (0.29)	-0.01 (0.01)	-0.11 (0.11)	0.12** (0.02)	0.38** (0.17)	-0.15** (0.03)	-0.81* (0.40)
Financial Development	-0.09** (0.04)	-0.88* (0.46)	0.10** (0.02)	0.31* (0.18)	-0.03 (0.02)	-0.40 (0.27)	-0.02 (0.04)	0.65 (0.66)
Resource [a]	0.22** (0.09)	0.13 (0.13)	-0.01 (0.04)	0.04 (0.05)	0.04 (0.06)	0.05 (0.08)	-0.33** (0.10)	-0.15 (0.18)
Openness [a]	0.13** (0.03)	0.12* (0.07)	0.01 (0.02)	0.01 (0.03)	-0.08** (0.02)	-0.08* (0.04)	-0.20** (0.04)	-0.23 (0.14)
Observations	88	34	87	34	88	34	86	33
R-squared	0.25	0.36	0.52	0.40	0.46	0.47	0.50	0.56

Table 6b: Alternative Measure of Institutions – Average of Six World Bank Indicators
(restricting to a common set of countries for OLS and IV)

	FDI/total foreign liability		Portfolio equity /total foreign liability		Portfolio debt /total foreign liability		Loan/total foreign liability	
	OLS (1)	IV (2)	OLS (3)	IV (4)	OLS (5)	IV (6)	OLS (7)	IV (8)
Institutional Quality	0.07 (0.06)	0.67** (0.30)	-0.03* (0.02)	-0.10 (0.12)	0.05 (0.03)	0.37** (0.17)	-0.13 (0.08)	-0.81* (0.41)
Financial Development	-0.04 (0.10)	-0.88* (0.47)	0.14** (0.03)	0.29 (0.18)	0.06 (0.05)	-0.40 (0.28)	-0.17 (0.14)	0.65 (0.67)
Resource [a]	0.24* (0.14)	0.13 (0.13)	-0.00 (0.04)	0.05 (0.05)	0.10 (0.07)	0.05 (0.08)	-0.25 (0.19)	-0.15 (0.18)
Openness [a]	0.16* (0.08)	0.12* (0.07)	-0.04 (0.03)	0.01 (0.03)	-0.08* (0.04)	-0.08* (0.04)	-0.20 (0.15)	-0.23 (0.14)
Observations	33	33	33	33	33	33	32	32
R-squared	0.21	0.36	0.54	0.40	0.48	0.47	0.45	0.56

Notes: a) All coefficients and standard errors are multiplied by 100.
b) The IV for Institutional Quality is Log(Settler Mortality), and the IVs for financial development are legal origin and Log(Settler Mortality)
c) Standard errors in parentheses; * and ** denote significant at 10% and 5% levels, respectively.

Table 7: Adding more control variables (IV Regressions)

	FDI/total foreign liability		Portfolio equity/total foreign liability		Portfolio debt /total foreign liability		Loan/total foreign liability	
	(1)	(2)	(4)	(5)	(7)	(8)	(10)	(11)
Corruption(GCR/WDR)	-0.55**	-0.42*	0.09	0.17*	-0.34**	-0.27*	0.69*	0.29
	(0.24)	(0.25)	(0.10)	(0.09)	(0.14)	(0.13)	(0.34)	(0.28)
Financial development	-0.87*	-0.76	0.31*	0.38**	-0.48*	-0.42*	0.72	0.28
	(0.48)	(0.46)	(0.19)	(0.16)	(0.26)	(0.25)	(0.68)	(0.54)
Resource [a]	0.13	0.12	0.04	0.04	0.05	0.05	-0.15	-0.16
	(0.13)	(0.13)	(0.05)	(0.04)	(0.07)	(0.07)	(0.18)	(0.14)
Openness [a]	0.13*	0.17**	0.01	0.04	-0.09**	-0.07*	-0.22	-0.39**
	(0.07)	(0.07)	(0.03)	(0.02)	(0.04)	(0.04)	(0.15)	(0.12)
FDI restriction Dummy	-0.01	-0.06	-0.00	-0.03*	0.05*	0.02	-0.04	0.09
	(0.05)	(0.06)	(0.02)	(0.02)	(0.03)	(0.03)	(0.07)	(0.06)
Log(GDP)		0.04*		0.03**		0.02*		-0.10**
		(0.02)		(0.01)		(0.01)		(0.02)
Observations	34	34	34	34	34	34	33	33
R-squared	0.36	0.43	0.40	0.58	0.53	0.59	0.57	0.74

Note: Same as Table 4.

Figure 1: Volatility of (FDI/GDP) and (Loan/GDP)
(1980-2003, Measured by Standard Deviation)

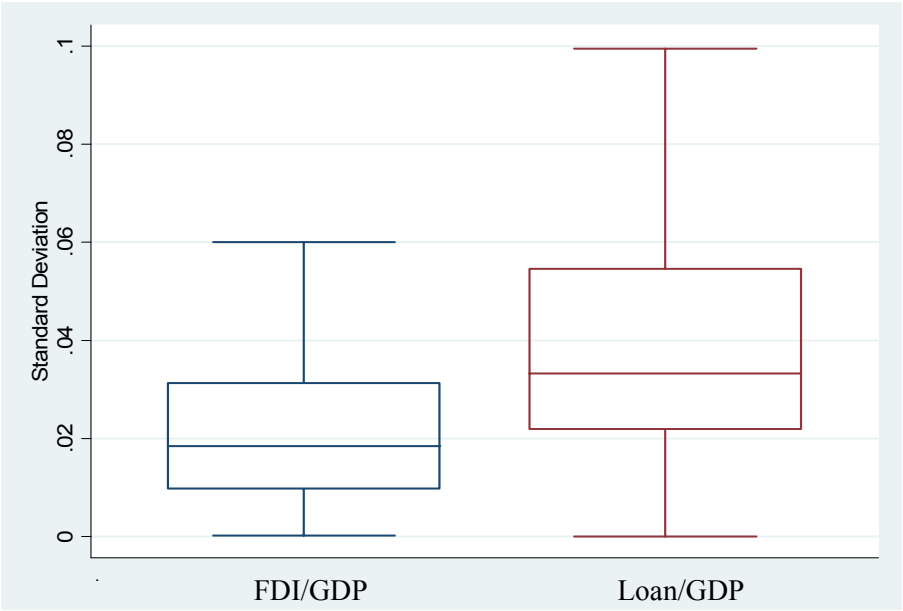


Figure 2: Volatility of (FDI/GDP) and (Loan/GDP)
(1980-2003, Measured by Standard Deviation)
Only countries that have non-missing data on both FDI and loans, and excluding 10% extreme values from both ends

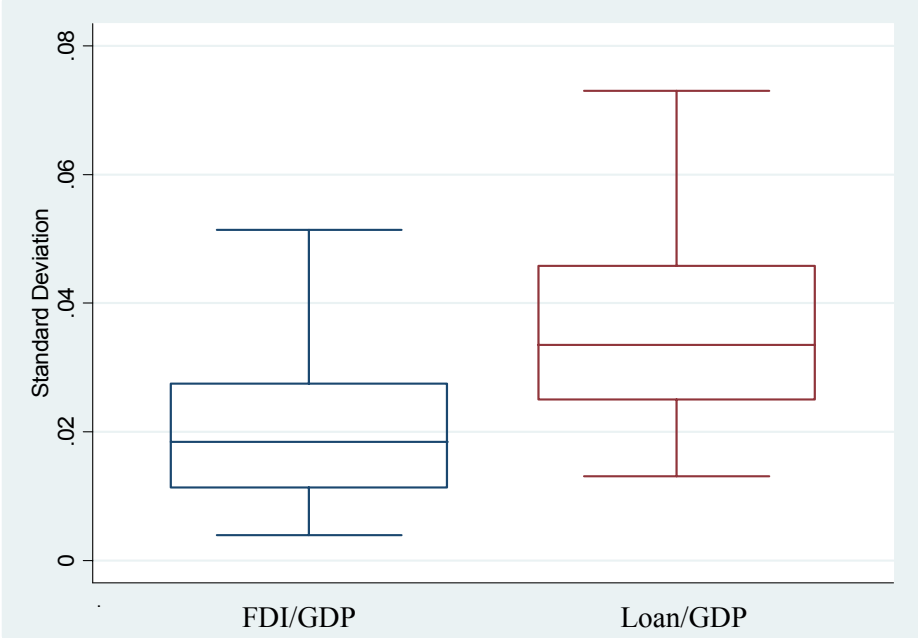


Figure 3: Volatility of (FDI/GDP) and (Loan/GDP)
(1980-2003, Measured by Coefficient of Variation)

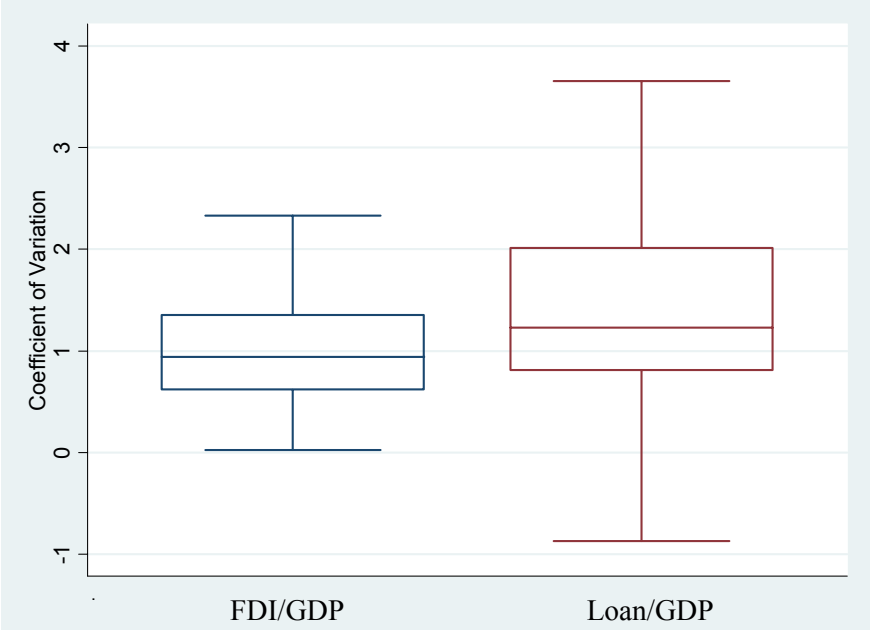
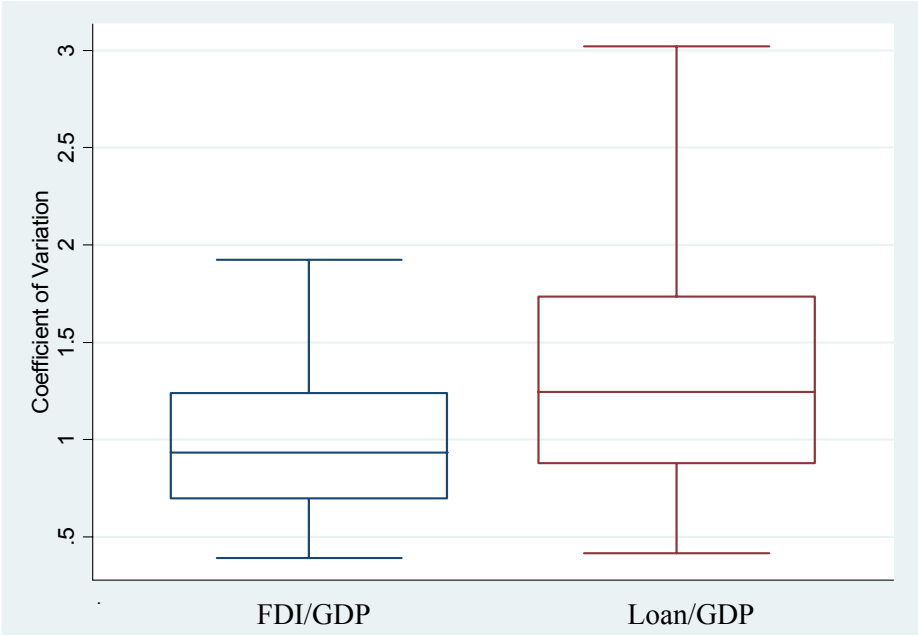


Figure 4: Volatility of (FDI/GDP) and (Loan/GDP)
(1980-2003, Measured by Coefficient of Variation)
Only countries that have non-missing data on both FDI and loans, and excluding 10% extreme values from both ends



Appendix: Variable Definitions and Sources:

Dependent Variables:

Capital inflow and its compositions: International Investment Position (end of period stocks), Balance of Payments Statistics from the IMF.

Institutional Variable and IV variables:

Corruption – GCR index: Source is Global Competitiveness Report 1997. Transformation: values in this paper = 8-original values.

Corruption – WDR index: Original source is World Development Report 1997. Data are from Kaufmann and Wei (1999). Transformation: values in this paper = 8-original values.

Institutional quality: Simple average for 2000 of six institutional indicators (Voice of Accountability, Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption). Source: World Bank Governance data, http://www.worldbank.org/wbi/governance/govdata/

Financial development: The sum of banking system's claims on private sectors to GDP ratio and stock capitalization to GDP ratio. The bank claims on private sectors are from International Financial Statistics, IMF, line 32d. The stock market capitalization are from S & P Emerging Market Database for developing countries and World Federation of Exchange for Advanced countries.

Mortality Rate: Estimated mortality for European settlers during the early period of European colonization before 1850. Settler mortality is calculated from the mortality rates of European-born soldiers, sailors and bishops when stationed in colonies. It measures the effects of local diseases on people without inherited or acquired immunities. Source: Acemoglu, Johnson and Robinson (2001)

Population density in 1500 : total population divided by arable land area from McEvedy and Jones [1978]. Source: Acemoglu, Johnson and Robinson (2002)

Legal origin: La Porta et al. (1998).

Protection of property rights: Source: Acemoglu, Johnson and Robinson (2001), originally from ICRG

Other control variables:

Population, GDP and GDP per capita: World Development Indicator database

Human capital stock: Nehru and Dhareshwa Data Set, World Bank, "A New Database on Physical Capital Stock: Sources, Methodology and Results"

Capital stock per capita: Dollar and Kraay (2005)

Resource/Total Exports: The rate of exports on ores, metal and fuel to total exports, World Development Indicator.

Openness: The rate of total trade to GDP, World Development Indicator.

FDI restrictions: AERARE dataset, IMF.