Capital Flows in a Globalized World: The Role of Policies and Institutions*

Laura Alfaro
Harvard Business School

Sebnem Kalemli-Ozcan
University of Houston

Vadym Volosovych
University of Houston

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Abstract

We describe the patterns of international capital flows in the period 1970−2000. We then examine the determinants of capital flows and capital flows volatility during this period. We find that institutional quality is an important determinant of capital flows. Historical determinants of institutional quality, such as legal origin of a country, have a direct effect on today's foreign investment. Policy plays a significant role in explaining the increase in the level of capital flows over time and their volatility.

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1 Introduction

Controversy regarding the costs and benefits of globalization has taken center stage in policy and academic circles. While concerns over the benefits of capital mobility once voiced by John Maynard Keynes during the design of the Bretton-Woods System were almost forgotten in the 1970s and 1980s, the crises of the last decade have revived the debate over the merits of international financial integration.

The most powerful argument in favor of capital mobility, voiced among others by Stanley Fischer, Maurice Obstfeld, Kenneth Rogoff, and Larry Summers, is that it facilitates an efficient global allocation of savings by channelling financial resources into their most productive uses, thereby increasing economic growth and welfare around the world. The skeptics of international financial integration include prominent academic figures as well. For example, Paul Krugman argues that countries that experience full-blown crises should use capital controls. Dani Rodrik claims that international financial liberalization creates higher risk of crises for developing countries. Even Jagdish Bhagwati, a fierce proponent of free trade, claims that risks of international financial integration might outweigh its benefits. As a result, the recent research focuses on how to minimize the instability of international capital markets. Without a better understanding of the determinants of capital flows and their volatility, however, it is hard to evaluate the different proposals that are designed to decrease the instability in the international financial markets and to mitigate the effects of financial crises.

The determinants of capital flows and its consequences for economic growth have been of concern in international macroeconomics and finance.[1] However, there is no consensus on the determinants of capital flows. Mainly, this is due to the fact that different researchers focus on different samples of countries (OECD countries versus emerging markets), different time-periods (1970s versus 1980s), and different forms of capital flows (foreign direct investment/portfolio equity flows versus debt flows or public flows versus private flows). For example, Calvo, Leiderman and Reinhart (1996) focus on the role of external (push) and internal (pull) factors as potential determinants of foreign direct investment (FDI) using a cross-section of developing countries. They find that low interest rates in the U.S. played an important role in accounting for the renewal of foreign investment to these countries in the 1990s. Edwards (1991) shows that government size and openness are important determinants of inward FDI from OECD to developing countries, during the period 1971–1981. Wei (2000) and Wei and Wu (2001) use data on bilateral FDI from 18 industrialized

[1] See Prasad, Rogoff, Wei and Kose (2003) for an extensive review.

source countries to 59 host countries during 1994–1996 and find that corruption reduces the volume of inward FDI and affects the composition of flows by increasing the loan-to-FDI ratio during this period.[2] Using data on bilateral portfolio equity flows from a set of 14 industrialized countries during 1989–1996, Portes and Rey (2005) find evidence that imperfections in the international credit markets can affect the amount and direction of capital flows. Among a set of developing countries, Lane (2004) also finds evidence of credit market frictions as a determinant of debt flows during 1970–1995.

These papers, however, have not paid particular attention to the overall role institutions play in shaping long-term capital flows during 1970–2000 among a cross-section of developed and developing countries combined. This is a task we started investigating in Alfaro, Kalemli-Ozcan, and Volosovych (2003) (henceforth AKV). AKV (2003) find that institutional quality is a causal determinant of capital inflows, where today's institutions are instrumented by their historical determinants. Here we extend our original analysis in significant ways by asking three main questions: Is there any direct effect of historical determinants of institutional quality, such as the legal system, on foreign investments other than their effect on institutions? Is there any role for policy over institutions? Are institutions also important for the volatility of capital flows? We find that historical determinants of institutional quality have a direct effect on capital flows during 1970−2000. Policy has a significant role in explaining changes in the level of flows and capital flows volatility. Local financial development measured as the share of bank credit in total is associated with high volatility of capital flows, whereas the stock market development has no effect. We interpret this to be a sign of the correlation between bank fragility and currency crises and "cronyness" of bank-based financial systems.

A standard way to analyze international capital movements is through saving and investment correlations. Feldstein and Horioka (1980) document high correlations between saving and investment within OECD countries. In a world of highly mobile capital, national savings will seek the highest return independently of local investment demand and the local investment needs will be supplied by the world capital markets independently of the national savings supply. Hence, the correlation between the two should be low. The finding of a high correlation, therefore, constitutes a "puzzle." The treatment of this finding as a "puzzle" has been criticized by some researchers due to the fact that saving and investment are both endogenous and jointly determined variables. Thus, a common determinant of both (or a common shock) can induce a high correlation even

[2] They also investigate the determinants of bilateral bank flows from 13 industrialized source countries to 83 host countries showing similar results.

with perfectly integrated capital markets. There exists extensive empirical research that investigates whether or not this high correlation between investment and saving decreases over time with increasing financial integration. Recent evidence shows that, in particular for the EMU countries, this is the case.[3]

In spite of this increase in capital mobility in the late 1990s, capital flows between countries have been at much lower levels than predicted by the standard neoclassical models. The "puzzles" in the international macroeconomics and finance literature, such as the Feldestain-Horioka puzzle, the home bias puzzle (lack of investment in foreign capital markets by the home country residents), and the risk sharing puzzle (low correlations of consumption growth across countries), are in general manifestations of lower than predicted levels of capital flows.[4] The main question is then: Are these lower than predicted capital flows due to inherent failures of the frictionless neoclassical theory or to frictions associated with the borders? This question is analyzed extensively in the framework of the so-called "Lucas Paradox." Lucas (1990) looks at the question of international capital movements from the perspective of rich and poor countries. He argues that given the implications of the frictionless neoclassical theory, the fact that more capital does not flow from rich countries to poor countries constitutes a "paradox." Under the standard assumptions, such as countries producing the same goods with the same constant returns to scale production function, same factors of production—capital and labor—and same technology, differences in income per capita reflect differences in capital per capita. Thus, if capital were allowed to flow freely, the return to investment in any location should be the same. Lucas' work has generated an extensive theoretical literature. Researchers show that with slight modifications of the basic neoclassical theory, the "paradox" disappears. In general, these modifications are changing the production structure or introducing frictions to the basic model. Thus the main theoretical explanations for the "Lucas paradox" can be broadly grouped into two categories.[5] The first group includes differences in fundamentals that affect the production structure of the economy. These can be omitted factors of production, government policies, institutions, and differences in technology.[6]

[3]Blanchard and Giavazzi (2002) discuss how the current account deficits of Portugal and Greece have increased since 1995 in a manner consistent with systematic net inflows of foreign investment. As documented by Bayoumi and Rose (1993), Bayoumi (1997) and van Wincoop (2000), among others regions within countries do not seem to exhibit high correlations of saving and investment. van Wincoop (2000) reviews the existing literature on Japanese, U.S., U.K., and Canadian regions. He then investigates the correlation between intranational saving and investment rates for these regions using different measures of saving and investment. He argues that low regional level correlations could be due to the measurement error in the data.

[4]See Obstfeld and Rogoff (2000) for an overview of the major puzzles in international economies.

[5]For a recent overview of the different explanations behind the "Lucas Paradox," see Reinhart and Rogoff (2004).

[6]For the role of different production functions, see King and Rebelo (1993); for the role of government policies, see Razin and Yuen (1994); for the role of institutions see Tornell and Velasco (1992); for the role of total factor

The second group of explanations focuses on international capital market imperfections, mainly sovereign risk and asymmetric information. Although capital is potentially productive and has a high return in developing countries, it does not flow there because of market failures.[7]

The empirical research on the "Lucas paradox" is rather limited. As far as the indirect evidence goes, O'Rourke and Williamson (1999) find that before World War I British capital chased European emigrants, when both were seeking cheap land and natural resources. Clemens and Williamson (2004) using data on British investment in 34 countries during 19th century show that two thirds of the historical British capital exports went to the labor-scarce new world and only about one quarter of it went to labor abundant Asia and Africa, because of similar reasons. Direct evidence is provided by AKV (2003), who investigate the role of the different explanations for the lack of inflows of capital (FDI, portfolio equity, and debt) from rich to poor countries—the "paradox." Using cross country regressions, and paying particular attention to endogeneity issues, AKV (2003) show that during 1970−2000 institutional quality is the most important causal variable explaining the "Lucas paradox."

What about pre-1970 capital flows? Obstfeld and Taylor (2004) characterize four different periods in terms of the "U-shaped" evolution of capital mobility.[8] There was an upswing in capital mobility from 1880 to 1914 during the Gold Standard period. Before 1914 capital movements were free and flows reached unprecedented levels. The international financial markets broke up during World War I. Starting in 1920 policymakers around the world tried to reconstruct the international financial markets. Britain returned to the gold standard in 1925 and led the way to restoring the international gold standard for a limited period. This was followed by a brief period of increased capital mobility between 1925 and 1930. As the world economy collapsed into depression in the 1930s, so did the international capital markets. World War II was followed by a period of limited capital mobility. Capital flows began to increase starting in the 1960s, becoming larger in the 1970s after the demise of the Bretton Woods system. Obstfeld and Taylor (2004) also argue that capital

productivity (TFP), see Glick and Rogoff (1995) and Kalemli-Ozcan et al. (2004). Note that it is very hard to differentiate both theoretically and empirically between the effect of institutions and the effect of TFP on investment opportunities, given the fact that institutional quality is also a determinant of TFP. Prescott (1998) argues that the efficient use of the currently operating technology or the resistance to the adoption of new ones depends on the "arrangements" a society employs. Kalemli-Ozcan et al. study capital flows between U.S. states, where there is a common institutional structure. They show that these flows are consistent with a simple neoclassical model with total factor productivity (TFP) that varies across states and over time and where capital freely moves across state borders. In this framework capital flows to states that experience a relative increase in TFP.

[7] Gertler and Rogoff (1990) show asymmetric information problems may cause a reversal in the direction of capital flows relative to the perfect information case. Gordon and Bovenberg (1996) develop a model with asymmetric information that explains the differences in corporate taxes and hence the differences in the real interest rates.

[8] See also Eichengreen (2003), and O'Rourke and Williamson (1999).

was biased towards the rich countries in the first global capital market boom in pre-1914, but it is even more so today. In the pre-1914 boom there was not a big difference between net flows and gross flows because all flows were uni-directional from rich core to colony periphery. After 1970, however, we see a tremendous increase in gross flows with both inflows and outflows of capital increasing. But net flows (inflows minus outflows) have been constant at relatively low levels for the last thirty years. This is consistent with the fact that most flows are between rich countries, so-called north-north flows as opposed to north-south flows. Obstfeld and Taylor (2004) conclude that modern capital flows are mostly "diversification finance" rather than "development finance."

But then the main question is why? If the "Lucas paradox" were alive to a certain extent in the pre-1914 global capital market, boom in the sense that Britain invested in the New World instead of labor abundant Africa and Asia, and if the "paradox" is still there today to an extent that poor countries are receiving even less compared to pre-1914 boom, what is the explanation for this? We will argue that it is the differences in institutional quality. Institutions are the rules of the game in a society. They consist of both informal constraints (traditions, customs) and formal rules (rules, laws, and constitutions). They create the incentive structure of an economy. Institutions are understood to affect economic performance through their effect on investment decisions by protecting the property rights of entrepreneurs against the government and other segments of society and preventing elites from blocking the adoption of new technologies. In general, weak property rights due to poor institutions can lead to lack of productive capacities or uncertainty of returns in an economy.

Lucas (1990) argues that "political risk" cannot be an explanation for the lack of flows before 1945 since during that time all of the third world was subject to European legal arrangements imposed through colonialism. He uses the specific example of India to argue that the investors who were investing in India were facing the same rules and regulations that the investors who were investing in U.K. However the recent work on institutions and growth by Acemoglu, Johnson, and Robinson (2001, 2002) emphasizes how the conditions in the colonies shaped today's institutions. The British institutions in India do not necessarily have the same quality as the British institutions in the U.S. and Australia. They argue that it is not the identity of the colonizer or the legal origin what matters, but whether the European colonialists could safely settle in a particular location. If the European settlement was discouraged by diseases or where the surplus extraction was beneficial via an urbanized and prosperous population, the Europeans set up worse institutions. This is also consistent with the argument of Reinhart and Rogoff (2004), who emphasize the relationship between sovereign risk and historical defaults and conclude that sovereign risk must be the

explanation for the "paradox." Historically, bad institutions are a determinant of sovereign risk and hence historical serial default.

In this paper, we first review our results from AKV (2003) and re-establish them for a slightly different sample using Balance of Payments (BOP) statistics from the IMF.[9] In AKV (2003), in order to deal with endogeneity, we instrument the institutional quality index with the historical determinants of today's institutions such as legal origins and settler mortality rates from the 1800s.[10,11] In this paper, we take a step further and ask whether or not there is any direct effect of legal origin or any of the other historical determinants of institutions on capital flows. If the legal origin of a country affects foreign investment only through its effect on institutional quality then it should be insignificant when used together with institutional quality. Our evidence shows that legal origin of a country and the degree of familiarity with the adopted legal code historically have a direct impact on capital inflows during 1970–2000. More surprisingly, this result is also true for the settler mortality rates from the 1800s. We interpret this as general evidence that all these variables measure different components of institutional quality.[12]

Throughout the analysis, we pay particular attention to the role of institutional weakness versus that of bad fiscal and monetary policies. There is an important distinction between policies and institutions. Institutions are the rules and norms constraining human behavior.[13] Policies are choices made within a political and social structure, i.e., within a set of institutions. When it comes to the level of inflows of capital, institutions have a first order effect over policies. Given this important result, we ask then: Is there any role left for policy? In order to investigate this question, we look at the changes in the level of capital inflows and regress that on the policy changes and

[9] AKV (2003) calculate inflows out of the foreign owned stocks estimated by Lane and Milessi-Feretti (2001) and Kraay, Loayza, Serven, Ventura (2000). These estimations based on IMF BOP data and focus on the valuation effects as explained in the next section. As in here, AKV (2003) also use raw BOP data from IMF, focusing only on inflows (change in liabilities) for the same sample of countries that have the stock data. Compared to AKV (2003), this paper employs a different sample because we want our results to be comparable to the literature in general.

[10] The institutional quality index is a composite political safety index, which is the sum of all the components rated by an independent agency PRS Group, the International Country Risk Guide (ICRG). The components are: government stability, internal conflict, external conflict, no-corruption, militarized politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucratic quality.

[11] See La Porta et al. (1998) and Acemoglu, Johnson and Robinson (2002, 2003). AKV (2003) also use the following instruments: the familiarity with the legal code from Berkowitz, Pistor, and Richard (2003) and early indicators of regime type and political constraints to the executive power from Polity data set by Gurr (1974) and Gurr and Jagers (1996).

[12] Notice that this is not an valid test of exclusion for those historical variables as instruments for institutional quality. For that purpose one has to instrument the institutional quality with another instrument that is different then the one used on the right hand side together with institutional quality. Hence this exercise has nothing to say about the non-validity of these historical variables as instruments for institutional quality.

[13] Institutions include both informal constraints (traditions, customs, etc.) and formal rules (rules, laws, constitutions, etc.); see North (1994).

institutional quality changes from the first half to the second half of the sample period. In those change regressions institutions have an effect together with policy variables such as inflation, capital controls and financial development. This result has important policy implications in the sense that improvement of institutions and domestic policies can increase the inward foreign investment over time.

Finally, we would like to examine the determinants of volatility of capital flows and see if institutions and policies have a role in reducing the instability in the international financial markets. Our preliminary evidence suggests that there is an important role both for good institutions and for bad monetary policies in terms of explaining the high volatility of capital flows during 1970–2000.[14] The theoretical research links capital flows volatility to periods of liberalization. One argument is that the unprecedented globalization of the security markets in the 1990s resulted in high volatility of capital flows.[15] Other researchers model how frictions in the international financial markets together with weak fundamentals lead to excessive volatility of capital flows.[16] The empirical work focuses more on financial crises. That literature shows that bad policies such as fiscal deficits and inflation seem to matter for the financial crises, which may be regarded as episodes of extreme volatility.[17] We show that both institutional quality and policies are important for the long-run volatility of capital flows. We also find that local financial structure measured as the share of bank credit in total is associated with high volatility of capital flows, whereas the equity market development has no effect.

The rest of the paper is organized as follows. Section 2 presents the data and overviews the stylized facts related to capital flows mobility and volatility of these flows during 1970 to 2000. Section 3 presents results on the determinants of capital flows, change in capital flows and capital flows volatility. Section 4 concludes.

[14]Eichengreen, Hausmann and Panizza (2003) examine the relation between original sin (the inability of countries to borrow abroad in their own currencies) and capital flows volatility for 33 countries. The work by Gavin and Hausmann (1999) and Gavin, Hausmann and Leiderman (1997) establish volatility patterns for Latin American countries up to early 1990s and relate them to external shocks and internal policies; see also the IADB Report (1995).

[15]See Calvo and Mendoza (2000a, 2000b) and Bacchetta and van Wincoop (2000).

[16]See Chari and Kehoe (2003).

[17]See Frankel and Rose (1996), Kaminsky and Reinhart (1999), Corsetti, Pesenti and Roubini (2001), Kaminsky (2003), Frankel and Wei (2004). A strand of the literature relates boom and bust cycles and currency crises to bank fragility. Kaminsky and Reinhart (1999) document this fact. McKinnon and Pill (1996) model how financial liberalization together with microeconomic distortions can make boom-bust cycles even more pronounced by fuelling lending booms that lead to the eventual collapse of the banking system. More recently, Aizenman (2004) links financial crises to financial opening. Other researchers found that stabilization programs cause large capital inflows at the early stages of the reforms, followed by high capital flows reversals when the lack of credibility behind the peg fuels an attack against the domestic currency. See Calvo and Vegh (1999).

2 Capital Flows: 1970−2000

2.1 Data

The data on annual capital flows come from *International Financial Statistics* (IFS) issued by the International Monetary Fund (IMF).[18] Although there are other data sources, the IMF provides the most comprehensive and comparable data on capital flows. Data are described in detail in Appendix A.

Inflows of capital correspond to net flows of foreign claims on domestic capital (change in liabilities). Net flows of capital are calculated as the difference of corresponding net flows of foreign claims on domestic capital and net flows of domestic claims on foreign capital (change in assets). Gross flows of capital are calculated as the sum of corresponding absolute value of net flows of foreign claims on domestic capital and absolute value of net flows of domestic claims on foreign capital. Hence they are always positive. From the perspective of the financial account (formerly called the capital account), one usually thinks of liabilities as positive (inflows) and assets as negative (outflows). In practice both liabilities and assets are entered as changes, i.e. they are both net of any disinvestment and can have any sign. Increase (decrease) in liabilities to foreigners is entered as a positive (negative) liability flow. Increase (decrease) in foreign assets held by locals is entered as a negative (positive) asset flow.[19, 20] The main categories of capital flows are foreign direct investment (FDI), portfolio equity flows, and debt flows. In the following sections we describe

[18]The Balance of Payments (BOP) statistics, also issued by the IMF, presents these data in detail. Both IFS and BOP attempt to present detailed data on money authority, general government, banks for other investment assets and liabilities given the data availability. The difference between IFS and BOP is that *only* BOP presents the detailed data for portfolio equity investment and portfolio equity securities. There are two presentations of the BOP data: Analytical and Standard. IFS and BOP Analytical present the same data and report "exceptional financing" as a separate line. BOP Standard, on the other hand, does not report "exceptional financing" as a separate line and instead puts it in the "other investment" category. Items reported under "exceptional financing" vary from country to country and are described in country profiles in corresponding BOP manual.

[19]The balance of payment is a record of a country's transactions with the rest of the world. The financial account within the balance of payments, broadly speaking, keeps track of transactions in financial assets. It reports changes in the asset position (assets and liabilities) of a country vis a vis the rest of the world. For example, if a U.S. firm imports goods from Switzerland for $10M and pays with a check on a U.S. bank, the corresponding transaction in the financial account is recorded as an increase in U.S. liabilities to foreigners (a credit; $10M). If the payment is done against an account the U.S. firm has in a Swiss bank, the corresponding transaction in the financial account is recorded as a reduction in U.S. assets (a credit, $10M). Note that a country's balance of payment record is kept according to the principles of double entry book keeping. The corresponding balancing transaction would be a debit (-$10M) in the current account (import of goods).

[20]A specific example is as follows: On September 1st,1998, as part of a broader set of policies to restrict capital outflows, the Malaysian government eliminated the offshore trading of the Malaysian ringgit by requiring all ringgit offshore to be repatriated within a month. By the end of 1998, the account other investment was -4604 million U.S. dollars. This amount, among other transactions, reflects the repatriation of the ringgit which will show as a reduction in Malaysian liabilities.

the definition and measurement of these categories in great detail.

2.1.1 Total Equity Flows

For FDI, we use direct investment abroad (line 78bdd) and direct investment in reporting economy (line 78bed). These categories include equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. For portfolio equity investment, we use equity security assets (line 78bkd) and equity security liabilities (line 78bmd) which include shares, stock participations, and similar documents (such as American Depository Receipts) that usually denote ownership of equity.

When a foreign investor purchases a local firm's securities without exercising control over the firm, that investment is regarded as a portfolio investment; direct investments include greenfield investments and equity participation giving a controlling stake. The IMF classifies an investment as direct if a foreign investor holds at least 10 percent of a local firm's equity while the remaining equity purchases are classified under portfolio equity investment. We do not distinguish between minority and majority shareholders, as this distinction is not important for our analysis. Also, because of missing portfolio data (some countries do not tend to receive portfolio flows, in part due to the lack of functioning stock markets) we prefer to use total equity flows, which is the sum of flows of FDI and flows of portfolio equity in the analysis.

2.1.2 Debt Flows

For debt flows, we use debt security assets (IFS line 78bld) and debt security liabilities (line 78bnd) as well as other investment assets (line 78bhd) and other investment liabilities (line 78bid). Debt securities include bonds, debentures, notes, and money market or negotiable debt instruments. Other investments include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets. Major categories are trade credits, loans, transactions in currency and deposits and other assets.

Notice that the IMF data includes both private and public issuers and holders of debt securities. Although the IMF presents some data divided by monetary authorities, general government, banks and other sectors, this information is unfortunately not available for most countries for long periods of time. The World Bank's *Global Development Finance* database focuses on the liability side and provides data on official and private creditor but not on the debtor. The data are available only for developing countries. Our analysis, however, would require both a division of debt flows by type of creditor and debtor both for developing and developed countries. As Lane and Milesi-Ferretti

(2001) note, for developing countries there are discrepancies between the loan flows reported in the IMF BOP Statistics and the changes in external debt stocks as reported by the World Bank's Global Development Finance Database.[21]

2.1.3 Data Issues

Although the IMF has the most comprehensive data, there are several issues behind the compilation of the BOP Statistics, as discussed in greater detail by Lane and Milesi-Ferretti (2001). There are substantial missing data for many countries, in particular developing countries. Also, some countries do not report data for all forms of capital flows. Unfortunately, it is hard to verify whether the data are really missing as opposed to simply being zero. For example, portfolio equity data for most countries are negligible until recently. There is also some misreporting. For example several developing countries tend to report data for liabilities only and no data for assets. This is especially the case for foreign direct investment flows. Some of these data, reported in the liability line, seem to correspond to net flows, i.e., liabilities minus assets. However, it is difficult to verify whether this is the case as opposed to the asset data simply being non-available. For the debt data, there are additional issues. Consequent to the debt crisis there are several measurement problems related to different methodologies of recording non-payments, rescheduling, debt forgiveness and reductions.[22] Finally, the time coverage of the data varies substantially from country to country. Most developed countries report data starting in the early 1970s. Then a substantial subset of developing countries report data starting in the mid 1970s. For other countries, data are not available until the mid 1980s or the early 1990s.

2.1.4 Stocks versus Flows and Valuation Effects

The IMF, IFS reports BOP transactions as flows of equity and debt. In 1997, IMF started reporting stock data, i.e., international investment position for each country. One should understand that stock data are not a cumulative of flows. It depends on past flows, capital gains and losses, defaults and etc., i.e., valuation effects. Kraay, Loayza, Serven, and Ventura (2000) (KLSV) and Lane and Milesi-Ferretti (2001) (LM) construct estimates of foreign assets and liabilities and their subcomponents for different countries in the 1970s, 1980s, and 1990s paying particular attention to these valuation effects. Lane and Milesi-Ferretti (2001) estimate stocks of equity and foreign

[21] We thank Gian-Maria Milesi-Ferretti for pointing out this to us and helping us with the data in general.

[22] As noted by Lane and Milessi-Feretti (2001) these issues create large discrepancies between debt data reported by different agencies.

direct investment based on the IMF flow data adjusted to reflect changes in financial market prices and exchange rates. In order to estimate FDI stocks, the authors cumulate flows and adjust for the effects of exchange rate changes. For equity stocks, they adjust for changes in the end of year U.S. dollar value of the domestic stock market. Kraay, Loayza, Serven, and Ventura (2000) argue against the valuation of stocks using financial market prices. They argue that capital listed on the stock market and the corresponding share prices—especially in developing countries—are not representative of the stock of capital of a country or of the value of a firm. Instead, they use the price of investment goods in local currency, which is the investment deflator. They also adjust for exchange rate changes. Lane and Milesi-Ferretti (2001) found the correlation between first difference of foreign claims on capital and current account to be generally high but significantly below unity for several countries, confirming the importance of valuation adjustments.

2.2 Some Stylized Facts

We express all flows in 1995 U.S. dollars using the consumer price index (CPI) taken from the World Bank World Development Indicators. Then we divide these flows by population data taken from the same source. We believe that data expressed as real dollars per capita are consistent with the neoclassical theory and provide a better picture of the evolution of the global capital markets over the last three decades. In terms of the sample, we exclude countries with populations of less than half a million. Given their low population, these small countries tend to present a distorted picture of the capital flows per capita and their volatility when compared to the other countries in the sample. We have data on 72 countries for FDI, 68 countries for portfolio equity and 122 for debt flows.[23]

In terms of the data, total inflows of capital per capita as well as each of the components have increased substantially throughout the sample period. Average inflows of capital per capita have grown at a rate of 4.8% per year during the sample period. There is, however, variability in terms of the composition. Figure 1 plots the evolution of the composition of inflows of capital per capita for an average of 122 countries.[24] The increasing role of FDI and portfolio flows is evident. Based on 72 countries, average inflows of FDI per capita have grown at a rate of 6.2% in the last thirty years and have become the main source of private capital for developing countries during the 1990s. Average inflows of portfolio equity per capita have grown at a rate of 9.3% for 68 countries. Finally,

[23] In calculating the total equity flows we treat the missing portfolio equity data as zero and add zero and FDI for that particular country. So we also have 72 countries for the total equity flows. Those 4 countries with FDI data but no portfolio equity data are Bolivia, Central African Republic, Mauritius, and Papua New Guinea.

[24] See Appendix Tables 25 and 26 for the list of the countries.

based on 122 countries average inflows of debt per capita have grown at a rate of 3.3%. Although its role is quite dominant, debt inflows clearly contracted following the 1980s debt crisis. Figure 2 plots the evolution of the composition of the gross flows per capita. The overall patterns are similar to those in Figure 1.

Figures 3, 4, and 5 plot the evolution of FDI, portfolio equity and debt flows per capita respectively. FDI flows have been quite stable for most of the sample period and then start to increase steadily around the mid 1990s. Portfolio equity flows have also been on the rise but these flows fluctuate more. Debt flows also fluctuate to a great extent. Debt flows steadily increased during the 1970s; they crashed following the 1980s debt crisis and revived only in the 1990s. Figure 4 and 5 show that net portfolio flows and debt flows become negative after 1995. This is mainly driven by industrialized countries. With the exception of the U.S., almost all of the developed countries have negative financial accounts such as those of Japan, Norway, Switzerland, Belgium, and Luxembourg. This is consistent with the results of Lane and Milesi-Ferretti (2001) that show on average net foreign asset positions are increasing since 1995 for the developed countries.

Figure 6a shows the total equity liabilities, which is the sum of inflows of FDI and inflows of portfolio equity investment for 20 OECD and 52 developing countries. The stark difference between the two is just a demonstration of north-north flows or the "Lucas Paradox." Figure 6b shows the share of total equity liabilities in total for the same OECD and developing countries. Since 1990 almost half of the total inflows is composed of FDI and portfolio equity investment both for rich and poor countries. Hence total equity flows are an important part of the big picture.

A variety of descriptive statistics are provided in tables 1-10 on various forms of capital flows. Table 1 provides descriptive statistics for inflows of capital per capita for 122 countries in total. Total capital inflows vary from -44.94 to 8320.9 with a mean of 406.29. Debt inflows averaged 284.07 dollars per capita during the sample period; while FDI inflows averaged 169.44 dollars per capita and total equity inflows 232.70 dollars per capita. Table 2 shows the increasing role of FDI and portfolio inflows per capita over debt inflows per capita for all the regions (Sub-Saharan African is the exception, where all type of inflows have a declining trend). Despite these trends however, the bulk of capital flows still go to high income countries. High income countries attract 80% of all capital inflows.

Tables 3 and 4 provide similar descriptive statistics for net flows of capital per capita. Overall, average total net flows of capital per capita (FDI, portfolio and equity) correspond to -4.59 dollars throughout the sample period, which is very small. As seen in Table 4, in the 1990s, the U.S., Japan, and Western Europe have a financial account deficit (negative net flows) and poor countries have

a surplus (current account deficit). Since our data are in per capita terms the negative financial accounts of Japan and West Europe dominate the positive financial account (net debtor position) of the U.S., Sub-Saharan Africa and East Asia Pacific who also have negative net flows due to their debt. East Asia Pacific's negative net flows are driven mostly by Singapore. Since Singapore is so small, per capita is huge. We observe these patterns also in figures 4 and 5. Sub-Saharan Africa is composed of countries that have debt outflows in a systematic way such as Angola, Cote D'Ivorie, Cameroon, Namibia, Niger, Nigeria, and Zambia. Some countries have some particularly high numbers for total equity flows, in particular FDI, for a couple of years but averaging over the decade those equity inflows are very low. Private debt left Africa in the 1980s to be substituted by WB-IMF debt which is not in the data set. Tables 5 and 6 present similar statistics for gross flows of capital per capita. Gross flows are much larger than net but the bulk of them still go to the rich countries.

Table 7 provides information on the volatility of inflows of capital per capita. The volatility of inflows of capital is calculated as the standard deviation of the corresponding inflows per capita over the sample period divided by the mean of gross flows, which is average absolute value of inflows and absolute value of outflows per capita (hence always positive). The normalization is important to prevent spuriously higher volatility in the recent period due to higher volume of the flows. FDI flows are in general less volatile than portfolio flows as they normally tend to be driven by long term considerations. Debt flows also have higher volatility relative to FDI. Table 8 shows that the volatility of the different forms of inflows of capital was lower during the 1990s. Inflows of portfolio and debt experienced higher volatility during the 1980s, consequent to the debt crises and the increasing role of portfolio flows in the aftermath of the crises. As expected, the volatility of each component of inflows of capital is lower for the high income countries than for the developing countries. The volatility of inflows has remained relatively constant for the Asian countries, with a slight increase during the 1990s. This has been driven by an increase in the volatility of inflows of portfolio in the period before and after the Asian Crisis of the late 1990s. Recently opened up countries in Eastern Europe experienced a dramatic increase in the volatility of all forms of inflows of capital during the 1990s. For Latin America, on the other hand, the 1980s were turbulent years, mostly driven by the debt crisis. The volatility of inflows of capital has declined during the 1990s. A similar pattern is observed for Sub-Saharan Africa. The volatility of inflows of capital increased substantially in the 1990s for the Middle-Eastern and North African countries.

Tables 9 and 10 provide similar statistics for the volatility of net flows per capita. The volatility of net flows of capital is calculated as the standard deviation of the corresponding net flows per

capita over the sample period divided by the mean of gross flows over the sample period. The overall observed patterns are very similar to the volatility of inflows.[25]

3 Empirical Analysis

3.1 Determinants of Capital Flows

3.1.1 Main Specification

In terms of the final sample we used in the regressions, we exclude countries with substantial missing data from the sample. Also, there are clearly various outliers in the data in terms of capital flows per capita. This, of course, should be considered in the econometric analysis. The final sample we use in the regression analysis is given in Table 11.[26]

In most of our regressions, the dependent variable is inflows of capital per capita, which is inflows of total equity (FDI and portfolio equity) investment, averaged over the sample period. We believe inflows is a better measure to capture the foreign investor's prospective point of view. We also believe per capita measures are more in line with the theoretical literature. We prefer to abstract our analysis from debt flows for the following concerns. First, as mentioned in Section 2.1, there are measurement issues with the debt data. Second, in general, debt flows tend to be shaped by different decisions than equity flows. Moreover, flows of debt tend to be shaped by government decisions to a greater extent than flows of equity.[27] We, on the other hand, would like to capture

[25]Note that a very volatile form of foreign capital is foreign aid. However aid is driven by all host of factors as shown by Alesina and Dollar (1998) and not the focus of this study.

[26]We keep track of the series of countries that have data throughout the whole sample period as shown in Appendix Table 27. The table provides descriptive statistics for a sub-sample of 47 countries for which there is data for both total equity and debt flows throughout the different decades. This sub-sample shows similar overall patterns but has less variation. The 47 countries in this sub-sample are shown in bold letters in Appendix Table 25. Unfortunately we cannot use this sample in the regressions since there are several outliers. Also some of our independent variables do not exist for this sub-sample. Out of that 47 countries given in bold letters, Bene-Lux and Singapore are outliers in terms of both large inflows and net flows. Bahrain, Botswana, Gabon, Burkina Faso, and Niger do not have human capital data. Central African Republic, Fiji, Libya, Mauritius, Swaziland, and Chad are outliers in terms of other independent variables. This leaves us with a sample of 34 countries. In order to increase the number of observations we add the countries shown in italics-non-bold. Although these countries start later in the sample period, they can be used for our cross-sectional analysis as averages over the period they have data. Out of these 23 late starters we cannot use Burundi, Switzerland, China, Kuwait, Latvia, Mauritania, Namibia, Slovenia, Trinidad and Tobago, and Uruguay. Switzerland and Kuwait are outliers in terms of both large inflows and net flows. China is an outlier in terms of very low levels of GDP per capita. Latvia and Slovenia do not have human capital data. The rest are outliers for the other independent variables. So we add the remaining 13 to our 34 and have our 47 country sample for the regression analysis as shown in table 11. Ending up again with a sample of 47 is pure coincidence.

[27]Up to the mid 1970s—following the close down of the international markets in the 1930s—debt lending to most developing countries was generally restricted to government/international organizations-to-government loans. During the late 1970s, banks replaced governments of industrial countries as lenders to developing countries. After

market decisions.[28] Table 12 provides descriptive statistics for our dependent variables for our regression sample of 47 countries averaged over the sample period 1970–2000. These statistics are similar to the ones we have from the bigger samples with lower variation.

Table 13 provides descriptive statistics on the independent variables. Following AKV (2003), we use initial level of human capital (average years of total schooling in total population) and institutional quality, averaged over the sample period, as independent variables to capture the fundamentals of the economy. We use International Country Risk Guide's (ICRG) political safety variables as our measure of institutional quality. The composite index is the sum of the indices of government stability, internal conflict, external conflict, no-corruption, non-militarized politics, protection from religious tensions, law and order, protection from ethnic tensions, democratic accountability, and bureaucratic quality.

In the capital flows literature, distance has been used as a proxy for the international capital market failures, mainly asymmetric information.[29] We construct a variable called distantness, which is the weighted average of the distances from the capital city of the particular country to the capital cities of the other countries, using the GDP shares of the other countries as weights.[30]

We use additional variables on the right-hand side to capture domestic distortions associated with government policies and also the financial structure of the economy. These are inflation volatility, capital controls, sovereign risk, corporate tax, and bank credit all averaged over the sample period. Inflation volatility captures the macroeconomic instability. It is measured as the standard deviation divided by the mean of the inflation rate over the sample period. Normalization by mean is crucial given the differences in average inflation levels across time for the different countries. Our capital controls measure is the average of four dummy variables constructed using data collected by the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER): exchange arrangements, payments restrictions on current transactions and on capital transactions, and repatriation requirements for export proceeds. Bank Credit is the share of credit provided by deposit money banks, which includes commercial banks and other financial institutions entitled to

1982, following the debt crisis, official creditors once again dominated lending to developing countries. In addition, throughout this period, an important share of debt lending to developing countries was captured by governments.

[28] As explained before debt data includes both private and government debt and it is hard to break the debt data down by private/public lender and recipient. We thank Gian-Maria Milessi-Feretti for bringing this to our attention.

[29] For example, Portes and Rey (2004) use a similar interpretation of distance in the context of bilateral capital flows and Wei and Wu (2002) in analyzing the determinants of FDI and bank lending. See also Coval and Moskowitz (1999, 2001).

[30] We construct this variable following Kalemli-Ozcan, Sorensen, and Yosha (2003). We use Arcview software to get latitude and longitude of each capital city and calculate the great arc distance between each pair. The GDP weights capture the positive relation between trade volume and GDP.

accept deposits from the public, in total.[31]

It is clear that there is extensive cross-sectional variation on these variables. Institutional quality index varies from 3.4 to 7.3 with a mean of 5.5. Human Capital varies from 1 to 10 years with a mean of 4.7 years. Table 14 presents the correlation matrix. Some of our independent variables are highly correlated, such as institutional quality and human capital, and sovereign risk and institutional quality. Hence, it is essential to employ a multiple regression framework.

Table 15 shows the results. Institutional quality, human capital and distantness are all important determinants of capital inflows. Other potential determinants turn out to be insignificant.[32] Sovereign risk is borderline significant when distantness is left out. Obviously, they are both capturing information/market frictions (not shown for space considerations). Figure 7 depicts the partial correlation plot for the Institutional Quality variable in the regression from column (1) of Table 15. The slope of the fitted line is 5.56 as shown in that column.[33] The strong positive relation between the institutional quality index and the inflows of capital per capita is evidently not due to the outliers.

3.1.2 Exogenous determinants of institutions and their direct effect

Theoretically it is possible that capital inflows affect the institutional quality of a country. More inflows can generate incentives to reform and create an investor friendly environment by improving property rights. Moreover most institutional quality measures are constructed ex-post, and the analysts may have had a natural bias in 'assigning' better institutions to countries with higher capital inflows. One way to solve this problem is to find variables that are not subject to reverse causality and can account for the institutional variation.

AKV (2003) instrument institutional quality with various instruments. In particular, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998) emphasize the importance the legal origin on

[31] In AKV (2003) we used a wider range of additional right hand side variables, such as: Inflation, Government consumption, Government budget, Trade Openness (share of exports plus imports in GDP), Restrictions on foreign investment, Incentives on foreign investment, Government Infrastructure (percent of paved roads), Stock Market Capitalization, Reuters (number of times the country's name is mentioned in Reuters), Foreign Banks (share of foreign banks in total), Accounting (an index of accounting standards of corporate firms). In that work out of all these variables only sovereign risk, corporate tax, and bank credit were significant depending on the specification. Hence we check their role here again.

[32] We also investigate the effect of stock market capitalization and the exchange rate regime. The results remain the same.

[33] We first regressed inflows of capital per capita on GDP per capita, human capital, and distantness. We took the residuals and regressed them on the residuals from a regression of institutional quality on the other regressors. Frisch-Waugh theorem says the coefficient from this regression is exactly the same as the one in the multiple regression. The figure plots these two sets of residuals against each other.

the current institutions. They examine the laws governing investor protection, the enforcement of these laws, and the extent of concentration of firm ownership across countries (more popularly known as the LLSV variables). Most countries' legal rules, either through colonialism, conquest, or outright borrowing, can be traced to one of four distinct European legal systems: English common law, French civil law, German civil law, and Scandinavian civil law. These legal origin variables have been increasingly adopted as exogenous determinants of institutional quality in the economic growth literature. On the other hand, as mentioned, Acemoglu, Johnson, and Robinson (2001, 2002) emphasize the conditions in the colonies. These authors argue that the historical mortality rates of European settlers are good instruments for today's institutions since if the European settlement was discouraged by diseases they set up worse institutions.

In order to take into consideration local conditions when creating institutions, AKV (2003) uses settler mortality rates from Acemoglu, Johnson, and Robinson (2002) and also complements legal origins indicators with variables from Berkowitz, Pistor, and Richard (2003). These variables are mainly corrections for the familiarity with the adopted legal origin.[34] Based on Berkowitz, Pistor, and Richard (2003) we construct a variable called "familiarity," which considers whether a country is the origin of the legal family or exhibited familiarity with the imported law. AKV (2003) use this variable as an instrument for institutions together with legal origin variables. They also complement these instruments with indicators of regime type and political constraints to the executive power from the Polity data set and the fraction of the population speaking English.[35]

In this paper we investigate whether or not there is any direct effect of legal origins/legal system and other historical determinants of institutions. Table 16 shows the results. French legal origin has a negative significant effect and British legal origin has a positive significant effect. It seems these effects are first order in addition to institutions. We also investigated the direct effect of the "LLSV" variables, such as, shareholder rights, and found similar results. Familiarity with the legal code also has a first order effect.[36] Table 17 looks at the effect of settler mortality from the 1800s and English language; two popular historical determinants of contemporary institutions. Both of

[34]Berkowitz, Pistor, and Richard (2003) analyze the determinants of effective legal institutions and test the proposition that, the way in which the legal order was transplanted (demand) is more important than the supply of the law (legal origin). They find that countries that developed legal orders or had a population familiar with the law had more effective legality.

[35]Hall and Jones (1999) used this latter variable as an instrument for what they called as social infrastructure. They proxy social infrastructure by combining ICRG rates on (i) law and order, (ii) bureaucratic quality, (iii) corruption, (iv) risk of expropriation, and (v) government repudiation of contracts with a measure of openness to trade. However, note that English language may also be considered as a proxy for asymmetric information.

[36]In the multiple regression familiarity is still significant but the significance of French and British legal origins decrease. Notice that one needs to be careful in interpreting the results due to our limited sample size (35) in these regressions that uses familiarity variable.

them turn out to be important for foreign investment. However English language is insignificant when used together with institutions, implying its only effect is through institutions. The partial correlation plots given in figures 8-11 show that the significant effects of French, British legal origins, familiarity with the legal code and historical settler mortality are not due to the outliers and driven by the countries one would expect, such as Turkey for French origin, Australia for British origin and African and Latin American countries for settler mortality. The fit of figure 11 shows that the historical mortality rates are very good predictor of today's foreign investment.[37]

Table 18 studies the role of political indicators of institutions taken from the Polity data set variables. These variables indicators of political authority for a wide range of countries, are used to proxy the state's autonomy (restrictions to the power of the state) and capacity (effectiveness). We find openness in executive recruitment and institutional independence of the chief executive to be positive and significant. Indicators of the political regime, such as autocracy and democracy, do not seem to play a role in explaining the level of capital inflows per capita.

Overall the results suggest that all of these measures capture some part of institutional quality and historically determined part of institutions also have an effect on foreign investment during 1970–2000.

3.2 Determinants of Changes in Capital Flows

Our results so far suggest that institutional quality is an important explanation for the pattern of capital flows in the period 1970-2000. What about the role of policy? Can a country that improves its institutions or macroeconomic policies expect to receive more inflows? To investigate this question we run change regressions. We calculate the change in inflows per capita as the difference between average capital inflows per capita over $1970-1993$ and average capital inflows per capita over $1994-2000$. We did the same for the independent variables and we regressed changes on changes. At first we cut the sample in the middle and calculated the change from $1970-1985$ to $1986-2000$. However given the time invariant nature of our variables this did not give us much. The visible improvements, if any, in institutional variables occur in the late 1990s as shown in figure 12.

The results are given in table 19. We only consider the 23 developing countries out of our 47 country sample since for the OECD the institutional changes are close to zero and this distorts the picture. The results suggest that a country that improves institutions, decreases capital controls

[37] As noted in the introduction before this exercise is not an valid test of exclusion for those historical variables as instruments for institutional quality.

and increases its growth is going to receive more capital inflows. The change in GDP per capita is of course endogenous. The change in institutions is not always significant. This is not surprising given the small sample size and low time variation in this variable. Another interesting result is the positive significant distantness. The variable enters as level since the change is going to capture only the change in GDP weights. This says having information frictions becomes less important for capital inflows in the 1990s since now even the "remote countries" receive the higher capital inflows in the 1990s, which is exactly what we expect to find. However, we also need to keep in mind that we have 23 countries and thus interpret the results with caution. The significance of the change in institutions, for example, can be a proxy for the changes in some other policy variables, such as improved macroeconomic stability, or can be a result due to reverse causality. Overall, these results suggest that there is a role for the improved policy and to some degree institutions. Improving macroeconomic stability will attract more foreign investment.

3.3 Determinants of Capital Flows Volatility

A natural intermediate step towards understanding the link between capital flows and financial crises is to look at the determinants of volatility of capital flows. We run cross-country regressions for the period 1970−2000. In most of our regressions, the dependent variable is the standard deviation of inflows of equity capital per capita over the sample period divided by the average gross flows. We will also look at the volatility of net equity flows per capita.

Table 20 shows our results. We do find a significant effect of institutional quality on the volatility of the inflows of equity capital, however, this effect is sensitive to inclusion of some other independent variables such as sovereign risk and capital controls. We find the coefficient of inflation volatility to be positive and significant when included on its own or together with other explanatory variables. It appears that countries with lower levels of inflation volatility tend to experience lower levels of uncertainty in terms of the inflows of external capital. Bank credit is positive and significant. This can be due to several reasons. First, the literature has related high volatility of capital flows and currency crisis to bank fragility.[38] Financial liberalization, when not followed by proper regulation and supervision can lead to both greater capital flows intermediated through banks and greater bank credit and later to abrupt reversal in capital flows.[39] Moreover,

[38] Kaminsky and Reinhart (1999) documents this fact and review the relevant theoretical literature. McKinnon and Pill (1996) model how financial liberalization together with microeconomic distortions can make boom-bust cycles even more pronounced by fuelling lending booms that lead to the eventual collapse of the banking system.

[39] Henry and Lorentzen (2003) argue that liberalization of debt flows exposes countries to the risk of crises stemming from sudden changes in investors sentiments. Equity market liberalizations, on the other hand, have promoted growth

the positive correlation between bank credit and capital flows volatility can be due to cronyism in the banking sector.[40] We control for stock market capitalization to see if this is the case. The stock market capitalization comes in negative though insignificant.[41]

Figures 13-15 show the partial correlation plots for institutions, inflation volatility and bank credit with slopes -0.42, 0.24, and 0.37 respectively. It is clear the significant relations are not due to outliers and driven by volatile countries of Latin America and Asia. Table 21 and Table 22 investigate the role of historical determinants of institutions on the right hand side as we did for the levels regressions. In contrast to the levels results, the legal origin variables turn out to be insignificant. This might be due to the fact that they work their effect via institutions. Moreover, the democracy variable has a significant effect in reducing volatility. This results is consistent with the findings in the growth literature. Overall democracy seems to play a role in reducing volatility of flows but not in explaining the level of inflows.

Table 23 looks at the issue of measuring volatility. Our results might be due to the fact that some countries have liberalized their financial accounts over the last 30 years and received huge inflows creating volatility due to this volume. Also, countries like Denmark and Netherlands can have an upward trend which may not be captured by our normalization. We experiment with different ways to deal with these problems; they include standard deviation of inflows, standard deviation of de-trended inflows, and normalized versions of these measures. In columns (1) and (3) volatility is measured as the standard deviation of the corresponding inflows. In (2) and (4) it is normalized standard deviation of the corresponding inflows. Normalization is performed by the average gross flows; In (5) and (7) it is the standard deviation of de-trended corresponding inflows. De-trending is performed by regressing flows on a constant and a linear trend; In (6) and (8) it is normalized standard deviation of de-trended corresponding inflows. Normalization is performed by the average gross flows.[42] As it is clear, detrending does not matter and what matters is the normalization. Columns (3), (4), (7) and (8) control for the level of inflows on the right hand side. The main conclusion is normalization does a good job of controlling the volume and trend effect of the level of flows. Figure 16 plots the partial correlation plot out of column (6), with slope 0.44.

in almost every liberalizing country.

[40] This finding is consistent with Wei (2000) and Wei and Wu (2001), where they show that corruption within a country increases the loan-to-FDI ratio.

[41] Other measures of credit market development in general such as liquid liabilities and stock market development as total value traded come in as insignificant. Market capitalization is the value of all shares issued by domestic companies in the stock market and reflects the market value of all companies in the economy which go public.

[42] We also investigated the effect of a quadratic trend. De-trending is performed by regressing flows on a constant, linear trend, and quadratic trend. The results were similar

Although this is a tighter fit, there is no important difference as far as the countries go compared to figure 13. Figure 17 plots the partial correlation plot from column (1), with slope 11.56. It is clear that Scandinavian countries have high volatility due to volume and our normalization takes care of this.

Table 24 looks at the volatility of net flows per capita. The results are very similar to the ones in Table 20. Here capital controls also have a role. As explained in section 2.1 the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER) codes for four different restrictions (multiple exchange arrangements, payments restrictions on current transactions and on capital transactions, and repatriation requirements for export proceeds) a corresponding dummy variable taking the value of one if the restriction was present in each country each year. Our capital controls measure is the average over the sample period of the summation of the four dummy variables for each country. This measure has been used to proxy for capital account liberalization.[43] The positive significant result here can be capturing the volatility coming from volume due to liberalization or it can be due to reverse causality.

Overall the results suggest that institutional quality and macroeconomic policy play an important role for capital flows volatility. We should note, however, that we are establishing correlations more than causality for the policy variables. For example inflation volatility is probably endogenous to the volatility of capital inflows and to institutional quality. Higher volatility can also cause an increase in the bank credit or capital controls. Finding good instruments for the policy variables is a rather difficult task, which is not the focus of this study.

4 Conclusions

Over the last thirty years, international capital flows have witnessed tremendous growth. The surge in capital flows, and in particular, the crises of the last decade have revived the debate over the merits of international capital mobility. Although international financial integration allows for the efficient allocation of savings and investment thereby promoting growth, international financial liberalization can also increase the risk of crises for countries.

Our objective in this paper has been to overview the main stylized facts behind capital flows mobility in the last thirty years and the empirical determinants of capital flows and capital flows

[43] Note however, that the IMF measure does not control for the fact that legal restrictions are sometimes circumvented. In addition, the way the IMF index is constructed results in a general indicator that distinguishes in a very limited way between different intensities of capital restrictions. See Edwards (2001) for criticisms to the use of this index.

volatility. We find that institutional quality is an important determinant of capital flows. Historical determinants of institutional quality have a direct effect on capital flows during 1970−2000. Policy has a significant role in explaining changes in the level of the flows and capital flows volatility.

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Appendix A: Data

Foreign Direct Investment: Direct Investment abroad (line 78bdd) and Direct Investment in Reporting Economy, n.i.e (line 78bed) include equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Excluded are inflows of direct investment capital into the reporting economy for exceptional financing, such as debt-for-equity swaps. We include only countries with data for both direct investment abroad and direct investment in the reporting economy.

Portfolio Equity Investment: Equity Security Assets (line 78bkd) and Equity Securities Liabilities (line 78bmd) include shares, stock participations, and similar documents (such as American depository receipts) that usually denote ownership of equity. These are divided in monetary authorities, general government, banks and other sectors. We calculate net portfolio equity flows only for countries with data both for equity security assets and debt security liabilities.

Debt Flows: Debt Securities Assets (line 78bld) and Debt Securities Liabilities (line 78bnd) cover (i) bonds, debentures, notes, etc (divided into monetary authorities, general government, banks and other sectors) and (ii) money market or negotiable debt instruments (divided into monetary authorities, general government, banks and other sectors). Other investment assets (line 78bhd) and other investment liabilities (line 78bid) include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets. Major categories are trade credits, loans (divided in monetary authorities, general government, and banks), transactions in currency and deposits (monetary authorities, general government and banks) and other assets (monetary authorities, general government and banks). We first calculate total debt assets as the sum of debt securities assets and other investment assets; total debt liabilities correspond to the sum of debt securities liabilities and other investment liabilities. We calculate net total debt flows only for countries that had information for both total debt liabilities and total debt assets.

Equity Flows: Sum of foreign direct investment and portfolio equity flows.

Net Flows: Difference of the corresponding flows of foreign claims on domestic capital (liability) and domestic claims of foreign capital (asset), divided by population.

Gross flows: Sum of of the absolute value of the corresponding assets (outflows) and liabilities (inflows).

Volatility of Inflows: Standard deviation of the corresponding inflows per capita divided by the average of the absolute value of the inflows and outflows of capital per capita.

Volatility of net flows: Standard deviation of the corresponding net flows per capita divided by the average of the absolute value of the inflows and outflows of capital per capita.

Independent Variables

Bank Credit: 1970 to 2000, Average value of claims of deposit money banks on nonfinancial domestic sectors as share of claims of central bank and deposit money banks on nonfinancial domestic sectors, in percent.

Capital controls: 1971-97, The mean value of four dummy variables: 1) Exchange Arrangements: separate exchange rates for some or all capital transactions and/or some or all invisibles; 2) Payments Restrictions: restrictions on payments for current transactions; 3) Payments Restrictions: restrictions on payments for capital transactions; 4) Surrender or Repatriation Requirements for Export Proceeds. From International Monetary Fund, Annual Report on Exchange Arrangements and Exchange Restrictions.

Distance: Km., from Arcview 3.x software.

English Language: Fraction of the population speaking English as a mother tongue, from Hall and Jones (1999).

GDP per capita: 1971-97, Purchasing Power Parity Basis 1990 U.S. dollars, from Kraay, Loayza, Serven, and Ventura (2000) and World Bank, World Development Indicators (2002).

Human Capital: 1970,75,80,85,90,95, Average years of secondary, higher and total schooling in the total population over 25 years old, from World Bank, World Development Indicators (2002).

Legal origin: Origin of formal legal code in the country: English common-law, French civil law, German civil law, and Scandinavian civil law from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998).

Familiarity with the legal code: Variable taking a value of 1 - if country is origin of legal family or exhibited familiarity with imported law; 0 - otherwise. Berkowitz, Pistor, and Richard (2003).

Settler Mortality: Log of the historical European settlers mortality from Acemoglu, Johnson, and Robinson (2001). (Data are available for 20 countries of former colonies: Argentina, Australia, Bolivia, Brazil, Canada, Chile, Cameroon, Colombia, Costa Rica, Egypt, India, Kenya, Morocco, New Zealand, Pakistan, Paraguay, Senegal, Sri Lanka, Tunisia, and the United States).

Institutional Quality: Composite political safety: 1984-98, Sum of all the rating components from International Country Risk Guide except for Socioeconomic Conditions and Investment Profile. Average yearly rating from 0 to 76, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Government Stability: 1984-98, The government's ability to carry out its declared program(s), and its ability to stay in office. Average yearly rating from 0 to 12, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Internal Conflict: 1984-98, Political violence in the country and its actual or potential impact on governance. Average yearly rating from 0 to 12, where a higher score means lower risk. Data from

International Country Risk Guide, the PRS Group.
External Conflict: 1984-98, Assessment both of the risk to the incumbent government from foreign action, ranging from non-violent external pressure (diplomatic pressures, withholding of aid, trade restrictions, territorial disputes, sanctions, etc) to violent external pressure (cross-border conflicts to all-out war). Average yearly rating from 0 to 12, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Non-corruption index: 1984-98, Assessment of corruption within the political system. Average yearly rating from 0 to 6, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Non-militarized politics: 1984-98, Protection from the military involvement in politics. Average yearly rating from 0 to 6, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Protection from religious tensions: 1984-98, Protection from the religious tensions in society. Average yearly rating from 0 to 6, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Law and Order: 1984-98, The Law sub-component is an assessment of the strength and impartiality of the legal system; the Order sub-component is an assessment of popular observance of the law. Average yearly rating from 0 to 6, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Protection from Ethnic Tensions: 1984-98, Assessment of the degree of tension within a country attributable to racial, nationality, or language divisions. Average yearly rating from 0 to 12, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Democratic Accountability: 1984-98, Average yearly rating from 0 to 6, where a higher score means lower risk. In general, the highest number of risk points is assigned to Alternating Democracies, while the lowest number of risk points is assigned to autarchies. Data from International Country Risk Guide, the PRS Group.
Quality of Bureaucracy: 1984-98, Institutional strength and quality of the bureaucracy is another shock absorber that tends to minimize revisions of policy when governments change Average yearly rating from 0 to 4, where a higher score means lower risk. Data from International Country Risk Guide, the PRS Group.
Protection from Government repudiation of contracts: 1982-95, Average yearly rating from 0 to 10, where a higher score means lower risk. Data from IRIS Time-Series of International Country Risk Guide, the PRS Group.
Protection from Expropriation: 1984-98, Average yearly rating from 0 to 10, where a higher score means lower risk. Data from IRIS Time-Series of International Country Risk Guide, the PRS Group.

Polity Data:
The dataset focuses on indicators of both regime type and political authority.
Democracy Score: Variable taking values from 0 to 10; with 0 denoting low democracy and 10 high democracy. Data for 1900 and 1970-2002 from Polity IV, Gurr, Marshall and Jaggers (2003).
Monocratism: Independence of the chief executive. Data for 1900 and 1970-2002 from Polity IV, Gurr, Marshall and Jaggers (2003).
Executive Recruitment Competition: Extent to which executives are chosen through competitive elections; (0) = Unregulated; (1) = Selection; (2) = Dual/Transitional; (3) = Election. Data for 1900 and 1970-2002 from Polity IV, Gurr, Marshall and Jaggers (2003).

Executive Recruitment Openness: Opportunity for non-elites to attain executive office; (0) = Unregulated; (1) = Closed; (2) = Dual/Designation; (3) = Dual/Election; (4) = Open. Data for 1900 and 1970-2002 from Polity IV, Gurr, Marshall and Jaggers (2003).
Executive Constraints: Variable reflecting operational (de facto) independence of chief executive: taking values of (1) = Unlimited authority; (2) = Intermediate category; (3) = Slight to moderate limitations; (4) = Intermediate category; (5) = Substantial limitations; (6) = Intermediate category. Data for 1900 and 1970-2002 from Polity IV, Gurr, Marshall and Jaggers (2003).
Regulation of Participation: Variable reflecting development of institutional structures for political expression; taking values of (1) = Unregulated; (2) = Factional/Transitional; (3) = Factional/Restricted; (4) = Restricted; (5) = Institutionalized. Data for 1900 and 1970-2002 from Polity IV, Gurr, Marshall and Jaggers (2003).
Competitiveness of Participation: Extent to which non-elites are able to access institutional structures of political expression; (0) = Unregulated; (1) = Suppressed; (2) = Restricted/Transitional; (3) = Factional; (4) = Transitional; (5) = Competitive. Data for 1900 and 1970-2002 from Polity IV, Gurr, Marshall and Jaggers (2003).

Inflation rate: Annual CPI inflation (*World Bank*, World Development Indicators).

Inflation Volatility: Standard deviation of inflation rate over the sample period divided by the corresponding mean.

Trade Openness: Sum of exports and imports of goods and services measured as a share of gross domestic product, World Bank.

Sovereign Risk: Index based on Standard and Poors long term foreign currency denominated sovereign debt ratings, average from 1971 to 1997. Index ranges from 1 (an obligor rated AAA) to 23 (an obligor rated SD (Selective Default)).Sovereign Risk: Sovereign risk is an index based on Standard and Poors long term foreign currency denominated sovereign debt ratings, average from 1971 to 1997. Index ranges from 1 (an obligor rated AAA) to 23 (an obligor rated SD (Selective Default)).

Corporate Taxes: Corporate tax rates from PricewaterhouseCoopers (PwC) for 1990-97, taken from Wei (2000).

Table 1: **Descriptive Statistics - Inflows of Capital (per Capita U.S. dollars)**

Sample: 123 countries (1970–2000)

	Mean	Std. Dev.	Min.	Max.
FDI Inflows	169.44	292.44	-122.51	1723.78
Portfolio Equity Inflows	104.82	273.12	-2.17	1769.21
Debt Inflows	284.07	656.00	-83.56	4827.94
Equity Inflows	232.70	487.09	-122.51	3492.99
Capital Inflows	406.29	1012.32	-44.94	8320.92

Notes: Inflows represent flows of foreign claims on domestic capital (liability), divided by population based on IMF data in 1995 U.S. dollars. FDI inflows correspond to Direct Investment in Reporting Economy (line 78bed) which includes equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Portfolio equity inflows correspond to Equity Liabilities (line 78bmd) which include shares, stock participations, and similar documents that usually denote ownership of equity. Data on inflows of debt include Debt Securities Liabilities (line 78bnd) which cover bonds, notes, and money market or negotiable debt instruments; and Other Investment Liabilities (line 78bid) which include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets. Flows of Equity are the sum of FDI and port. equity investments. Flows of capital are the sum of equity and debt. Equity data are available for 72 countries; debt data for 122 countries. See Appendix Tables 25 and 26 for countries in the sample.

Table 2: **Inflows of Capital by Decade and Region (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	1970-2000	1970-1980	1981-1990	1991-2000
FDI Inflows				
US, Japan, Western Europe	348.93	115.73	170.23	684.52
Latin America and Caribbean	92.67	60.18	44.26	158.93
East Asia Pacific	247.90	115.38	208.70	419.82
South Asia	1.96	0.45	1.73	2.87
Europe and Central Asia	109.70	2.03	3.26	116.83
Sub-Saharan Africa	19.67	32.86	22.88	6.49
Middle East and North Africa	55.31	-114.64	29.13	128.67
Portfolio Equity Inflows				
US, Japan, Western Europe	223.24	11.55	92.02	442.02
Latin America and Caribbean	9.06	-0.10	4.99	15.69
East Asia Pacific	33.93	24.72	54.59	53.98
South Asia	1.08	0.06	0.14	1.19
Europe and Central Asia	22.19	n.a.	1.11	22.26
Sub-Saharan Africa	7.91	3.49	-1.15	10.77
Middle East and North Africa	150.73	329.64	113.75	2.62
Debt Inflows				
US, Japan, Western Europe	1136.02	845.29	1048.38	1462.65
Latin America and Caribbean	50.30	331.71	-62.97	39.55
East Asia Pacific	214.92	219.90	233.03	272.45
South Asia	12.05	11.14	15.19	9.59
Europe and Central Asia	124.95	30.83	-1.73	127.13
Sub-Saharan Africa	20.65	44.17	33.10	-5.29
Middle East and North Africa	204.00	382.60	-138.69	435.74
Equity Inflows				
US, Japan, Western Europe	546.75	123.11	247.70	1114.20
Latin America and Caribbean	84.05	65.86	38.08	139.61
East Asia Pacific	269.07	125.27	226.90	454.84
South Asia	4.00	1.00	2.80	6.39
Europe and Central Asia	128.01	2.03	3.37	136.07
Sub-Saharan Africa	23.99	33.21	22.61	13.16
Middle East and North Africa	77.86	54.20	32.59	129.51
Capital Inflows				
US, Japan, Western Europe	1636.23	943.80	1277.15	2501.27
Latin America and Caribbean	82.66	348.16	-41.51	92.47
East Asia Pacific	376.36	324.29	384.29	545.35
South Asia	14.12	11.74	16.31	13.43
Europe and Central Asia	209.95	31.64	-0.60	229.18
Sub-Saharan Africa	30.23	56.37	42.61	0.17
Middle East and North Africa	258.08	417.04	-117.95	528.89

Notes: Inflows of each category correspond to foreign claims on domestic capital (liability) divided by population. Data are from IMF in 1995 U.S. dollars. Flows of Equity represent the sum of FDI and portfolio equity investment. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See notes to Table 10 for detailed description of the data.

Table 3: **Descriptive Statistics - Net Flows of Capital (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	Mean	Std. Dev.	Min.	Max.
Net FDI Flows	25.52	209.14	-999.97	902.36
Net Portfolio Equity Flows	4.27	180.76	-597.76	951.87
Net Debt Flows	-10.48	454.26	-3957.53	527.74
Net Equity Flows	23.81	230.99	-1050.67	1165.64
Net Capital Flows	-4.59	533.40	-4036.38	1112.62

Notes: Net Flows are the difference of the corresponding flows of foreign claims on domestic capital (liability) and domestic claims of foreign capital (asset), divided by population. Data are from IMF in 1995 U.S. dollars. FDI data correspond to Direct Investments Abroad (line 78bdd) and Direct Investments in Rep. Economy (line 78bed) and include equity capital, reinvested earnings, other capital and financial derivatives associated with intercompany transactions between affiliated enterprises. Portfolio Equity Investments data correspond to Equity Securities Assets (line 78bkd) and Equity Securities Liabilities (line 78bmd) and include shares, stock participations, and similar documents that denote ownership of equity. Debt data include Debt Securities Assets (line 78bld) and Debt Securities Liabilities (line 78bnd) which cover bonds, notes, and money market; and other investments assets (line 78bhd) and other investments Liabilities (line 78bid) which include all financial transactions not covered in direct investments, portfolio investments, fin. derivatives or other assets. Flows of Equity are the sum of FDI and portfolio equity investments. Flows of capital are the sum of equity and debt. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See Appendix Tables 25 and 26 for countries in the sample.

Table 4: **Net Flows of Capital by Decade and Region (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	1970-2000	1970-1980	1981-1990	1991-2000
Net FDI Flows				
US, Japan, Western Europe	-75.2	15.9	-65.9	-114.2
Latin America and Caribbean	70.3	28.2	31.6	126.7
East Asia Pacific	174.4	131.9	210.6	288.4
South Asia	3.4	n.a.	2.4	4.7
Europe and Central Asia	104.6	-0.1	4.4	110.9
Sub-Saharan Africa	13.9	31.1	22.3	-1.5
Middle East and North Africa	85.9	-92.9	-83.6	117.0
Net Portfolio Equity Flows				
US, Japan, Western Europe	24.73	5.60	43.73	13.02
Latin America and Caribbean	-2.71	-0.13	0.00	-0.40
East Asia Pacific	-188.57	26.21	-2.79	-574.08
South Asia	2.27	n.a.	n.a.	2.27
Europe and Central Asia	15.15	n.a.	-0.94	15.24
Sub-Saharan Africa	3.08	0.50	-3.09	4.67
Middle East and North Africa	27.20	31.69	131.49	5.88
Net Debt Flows				
US, Japan, Western Europe	74.20	104.66	150.07	-1.46
Latin America and Caribbean	13.64	115.90	-24.18	-3.92
East Asia Pacific	-16.95	124.08	55.80	-114.93
South Asia	11.35	9.55	13.96	9.88
Europe and Central Asia	54.89	26.08	-35.43	59.81
Sub-Saharan Africa	-0.16	21.04	5.10	-19.21
Middle East and North Africa	-340.14	-1241.78	-348.39	188.50
Net Equity Flows				
US, Japan, Western Europe	-45.73	20.12	-26.59	-83.44
Latin America and Caribbean	69.56	24.71	30.92	117.55
East Asia Pacific	77.64	138.65	211.47	-57.31
South Asia	4.61	n.a.	2.46	6.19
Europe and Central Asia	117.08	-0.06	4.87	124.13
Sub-Saharan Africa	16.65	31.30	21.37	4.10
Middle East and North Africa	38.01	-151.63	-16.05	111.02
Net Capital Flows				
US, Japan, Western Europe	73.80	187.40	155.60	-85.60
Latin America and Caribbean	29.30	140.14	-12.18	17.76
East Asia Pacific	31.32	211.71	161.82	-140.16
South Asia	13.38	10.15	15.05	13.66
Europe and Central Asia	-46.97	26.56	-34.17	-25.49
Sub-Saharan Africa	6.18	34.18	12.48	-18.91
Middle East and North Africa	-373.68	-1519.47	-361.80	281.66

Notes: Net Flows of each category is calculated as the difference of corresponding flows of foreign claims on domestic capital (liability) and domestic claims of foreign capital (asset), divided by population. Data are from IMF in 1995 U.S. dollars. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See notes to Table 3 for detailed description of the data.

Table 5: **Descriptive Statistics - Gross Flows of Capital (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	Mean	Std. Dev.	Min.	Max.
Gross FDI Flows	343.85	586.05	0.81	3234.60
Gross Portfolio Equity Flows	248.88	463.69	0.15	2615.15
Gross Debt Flows	794.86	1993.37	5.69	12252.17
Gross Equity Flows	462.26	925.33	0.88	5823.21
Gross Capital Flows	1012.08	2540.75	5.14	16909.90

Notes: Gross flows represent gross flows of FDI, portfolio equity investment and debt, divided by population based on IMF data in 1995 U.S. dollars and correspond to the sum of the absolute value of assets (outflows) and liabilities (inflows). FDI data correspond to Direct Investments Abroad (line 78bdd) and Direct Investments in Rep. Econ. (line 78bed) and include equity capital, reinvested earnings, other derivatives associated with intercompany transactions between affiliated enterprises. Portfolio Equity Investments data correspond to Equity Sec. Assets (line 78bkd) and Equity Sec. Liabilities (line 78bmd) and include shares, stock participations, and similar documents that denote ownership of equity. Debt data include Debt Sec. Assets (line 78bld) and Debt Sec. Liabilities (line 78bnd) which cover bonds and money market instruments; and other investment assets (line 78bhd) and other Investments Liabilities (line 78bid) which include all fin. transactions not covered in direct investment, portfolio investments, financial derivatives or other assets. Flows of Equity are the sum of FDI and portfolio equity investments. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See Appendix Tables 25 and 26 for countries in the sample.

Table 6: **Gross Flows of Capital by Decade and Region (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	1970-2000	1970-1980	1981-1990	1991-2000
Gross FDI Flows				
US, Japan, Western Europe	776.97	206.90	408.01	1495.67
Latin America and Caribbean	108.08	31.17	38.18	208.86
East Asia Pacific	329.21	172.66	289.05	710.41
South Asia	2.76	n.a.	2.10	3.17
Europe and Central Asia	121.73	1.98	4.92	128.31
Sub-Saharan Africa	37.65	41.59	30.82	44.07
Middle East and North Africa	241.08	132.86	118.30	232.50
Gross Portfolio Equity Flows				
US, Japan, Western Europe	475.35	40.87	181.85	940.42
Latin America and Caribbean	63.18	0.13	0.16	66.81
East Asia Pacific	308.72	71.82	226.69	772.67
South Asia	2.57	n.a.	n.a.	2.57
Europe and Central Asia	37.18	n.a.	3.17	37.25
Sub-Saharan Africa	20.20	0.75	7.01	24.41
Middle East and North Africa	253.24	1177.44	212.90	6.82
Gross Debt Flows				
US, Japan, Western Europe	2316.13	1606.50	2040.62	3128.11
Latin America and Caribbean	355.52	600.53	438.75	182.55
East Asia Pacific	446.71	326.68	376.99	796.30
South Asia	16.06	12.99	17.33	16.59
Europe and Central Asia	252.45	143.24	130.57	250.70
Sub-Saharan Africa	76.08	94.08	83.52	61.37
Middle East and North Africa	2035.03	2067.75	1134.96	2911.98
Gross Equity Flows				
US, Japan, Western Europe	1146.60	222.45	532.07	2320.68
Latin America and Caribbean	100.40	31.87	36.36	177.21
East Asia Pacific	469.76	190.82	331.48	1140.52
South Asia	4.90	n.a.	2.71	6.55
Europe and Central Asia	149.02	1.98	6.44	156.41
Sub-Saharan Africa	46.62	41.70	32.67	58.78
Middle East and North Africa	233.08	437.49	116.62	240.53
Gross Capital Flows				
US, Japan, Western Europe	3473.62	1813.75	2425.07	5118.82
Latin America and Caribbean	368.68	673.65	404.03	236.71
East Asia Pacific	683.29	513.74	473.77	1272.97
South Asia	17.74	14.50	18.69	18.67
Europe and Central Asia	421.64	103.91	133.45	429.59
Sub-Saharan Africa	80.12	104.87	91.79	68.91
Middle East and North Africa	1953.52	2160.63	1270.39	2891.71

Notes: Gross flows represent gross flows of FDI, portfolio equity investment and debt, divided by population based on IMF data in 1995 U.S. dollars and correspond to the sum of the absolute value of assets (outflows) and liabilities (inflows). FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See notes to Table 5 for detailed description of the data.

Table 7: **Volatility of Inflows of Capital (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	Mean	Std. Dev.	Min.	Max.
Volatility of FDI Inflows	1.03	2.64	0.12	22.35
Volatility of Portfolio Equity Inflows	0.78	0.43	0.16	4.29
Volatility of Debt Inflows	0.74	0.43	0.14	4.42
Volatility of Equity Inflows	1.02	2.58	0.12	22.35
Volatility of Capital Inflows	0.75	0.68	0.07	7.26

Notes: Volatility of Inflows is the standard deviation of the corresponding inflows per capita divided by the average of the absolute value of the inflows and outflows of capital per capita. Flows Data are from IMF in 1995 U.S. dollars. FDI inflows correspond to Direct Investment in Reporting Economy (line 78bed) which includes equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Portfolio equity inflows correspond to Equity Liabilities (line 78bmd) which includes shares, stock participations, and similar documents that usually denote ownership of equity. Data on inflows of debt include Debt Securities Liabilities (line 78bnd) which cover bonds, notes, and money market or negotiable debt instruments; and Other Investment Liabilities (line 78bid) which include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets. Flows of Equity are the sum of FDI and portfolio equity investments. Flows of capital are the sum of equity and debt. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See Appendix Tables 25 and 26 for countries in the sample.

Table 8: **Volatility of Inflows of Capital by Decade and Region (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	1970-2000	1970-1980	1981-1990	1991-2000
Volatility of FDI Inflows				
US, Japan, Western Europe	0.58	0.30	0.33	0.39
Latin America and Caribbean	0.82	0.41	0.78	0.55
East Asia Pacific	0.61	0.41	0.48	0.41
South Asia	0.53	n.a.	0.34	0.44
Europe and Central Asia	0.69	0.35	0.63	0.57
Sub-Saharan Africa	2.41	0.63	0.78	0.78
Middle East and North Africa	0.86	0.64	0.83	0.66
Volatility of Portfolio Equity Inflows				
US, Japan, Western Europe	0.70	0.62	0.83	0.48
Latin America and Caribbean	0.92	0.70	3.85	0.74
East Asia Pacific	0.68	0.42	0.49	0.72
South Asia	0.77	n.a.	n.a.	0.77
Europe and Central Asia	0.75	n.a.	0.33	0.74
Sub-Saharan Africa	1.04	0.93	2.12	0.74
Middle East and North Africa	0.64	0.43	0.56	0.69
Volatility of Debt Inflows				
US, Japan, Western Europe	0.57	0.41	0.50	0.43
Latin America and Caribbean	0.86	0.52	0.85	0.63
East Asia Pacific	1.04	0.35	0.64	0.53
South Asia	0.47	0.32	0.32	0.45
Europe and Central Asia	0.68	0.57	0.67	0.60
Sub-Saharan Africa	0.77	0.52	0.72	0.51
Middle East and North Africa	0.72	0.49	0.64	0.67
Volatility of Equity Inflows				
US, Japan, Western Europe	0.62	0.32	0.42	0.38
Latin America and Caribbean	0.79	0.38	0.71	0.44
East Asia Pacific	0.60	0.42	0.48	0.42
South Asia	0.73	n.a.	0.41	0.58
Europe and Central Asia	0.64	0.35	0.58	0.53
Sub-Saharan Africa	2.39	0.62	0.77	0.71
Middle East and North Africa	0.81	0.65	0.79	0.64
Volatility of Capital Inflows				
US, Japan, Western Europe	0.51	0.34	0.44	0.37
Latin America and Caribbean	0.86	0.44	0.98	0.62
East Asia Pacific	1.31	0.26	3.14	0.55
South Asia	0.46	0.31	0.31	0.44
Europe and Central Asia	0.63	0.72	0.66	0.52
Sub-Saharan Africa	0.76	0.45	0.79	0.52
Middle East and North Africa	0.76	0.48	0.62	0.68

Notes: Volatility of Inflows is the standard deviation of the corresponding inflows per capita divided by the average of the absolute value of the inflows and outflows of capital per capita. Inflow Data are from IMF in 1995 U.S. dollars. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See notes to Table 7 for detailed description of the data.

Table 9: **Volatility of Net Flows of Capital (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)

	Mean	Std. Dev.	Min.	Max.
Volatility of Net FDI Flows	0.68	0.33	0.10	1.57
Volatility of Net Portfolio Equity Flows	0.89	0.34	0.12	1.67
Volatility of Net Debt Flows	0.70	0.32	0.06	1.55
Volatility of Net Equity Flows	0.66	0.32	0.17	1.67
Volatility of Net Capital Flows	0.68	0.36	0.04	2.03

Notes: Volatility of Net Flows is the standard deviation of the corresponding net flows per capita divided by the average of the absolute value of the inflows and outflows of capital per capita. Flows Data are from IM Fin 1995 U.S. dollars. FDI data correspond to Direct Investments Abroad (line 78bdd) and Direct Investments in Rep. Econ. (line 78bed) and include equity capital, reinvested earnings, other derivatives associated with intercompany transactions between affiliated enterprises. Port. Equity Investments data correspond to Equity Sec. Assets (line 78bkd) and Equity Sec. Liabilities (line 78bmd) and include shares, stock participations, and similar documents that denote ownership of equity. Debt data include Debt Sec. Assets (line 78bld) and Debt Sec. Liabilities (line 78bnd) which cover bonds and money market instruments; and other inv. assets (line 78bhd) and other investment Liabilities (line 78bid) which include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets. Flows of Equity are the sum of FDI and portfolio equity investments. Flows of capital are the sum of equity and debt. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See Appendix Tables 25 and 26 for countries in the sample.

Table 10: **Volatility of Net Flows of Capital by Decade and Region (per Capita U.S. dollars)**

Sample: 122 countries (1970–2000)				
	1970-2000	1970-1980	1981-1990	1991-2000
Volatility of Net FDI Flows				
US, Japan, Western Europe	0.45	0.33	0.41	0.32
Latin America and Caribbean	0.78	0.37	0.76	0.50
East Asia Pacific	0.52	0.43	0.46	0.39
South Asia	0.45	n.a.	0.26	0.39
Europe and Central Asia	0.71	0.41	0.68	0.61
Sub-Saharan Africa	0.87	0.65	0.67	0.69
Middle East and North Africa	1.02	0.62	0.93	0.89
Volatility of Net Portfolio Equity Flows				
US, Japan, Western Europe	0.91	0.86	0.79	0.65
Latin America and Caribbean	1.03	0.67	0.88	0.86
East Asia Pacific	1.09	0.53	0.39	0.85
South Asia	n.a.	n.a.	n.a.	n.a.
Europe and Central Asia	0.81	n.a.	0.00	0.81
Sub-Saharan Africa	0.83	0.82	0.76	0.71
Middle East and North Africa	0.75	0.44	0.60	0.88
Volatility of Net Debt Flows				
US, Japan, Western Europe	0.37	0.33	0.43	0.26
Latin America and Caribbean	0.79	0.54	0.75	0.63
East Asia Pacific	0.80	0.31	0.71	0.60
South Asia	0.54	0.37	0.34	0.53
Europe and Central Asia	0.67	0.65	0.71	0.62
Sub-Saharan Africa	0.81	0.60	0.77	0.60
Middle East and North Africa	0.83	0.53	0.73	0.68
Volatility of Net Equity Flows				
US, Japan, Western Europe	0.47	0.38	0.43	0.31
Latin America and Caribbean	0.67	0.30	0.70	0.41
East Asia Pacific	0.57	0.45	0.46	0.43
South Asia	0.60	n.a.	0.31	0.47
Europe and Central Asia	0.64	0.41	0.44	0.54
Sub-Saharan Africa	0.82	0.63	0.64	0.75
Middle East and North Africa	1.01	0.62	0.93	0.89
Volatility of Net Capital Flows				
US, Japan, Western Europe	0.28	0.29	0.35	0.18
Latin America and Caribbean	0.81	0.43	0.91	0.65
East Asia Pacific	0.79	0.21	0.67	0.59
South Asia	0.52	0.35	0.33	0.52
Europe and Central Asia	0.64	0.86	0.70	0.57
Sub-Saharan Africa	0.78	0.54	0.82	0.58
Middle East and North Africa	0.94	0.53	0.74	0.89

Notes: Volatility of Net Flows is calculated as the standard deviation of the corresponding net flows per capita over the sample period divided by the average of the absolute values of the inflows and outflows of capital per capita over the sample period. Flow Data are from IMF in 1995 U.S. dollars. FDI data are for 72 countries; portfolio for 68 countries and debt data for 122 countries. See notes to Table 9 for detailed description of the data.

Table 11: **Sample of Countries for the Regression Analysis**

(1970–2000)

Argentina	Cyprus	Israel	Pakistan	Sri Lanka
Australia^{O}	Czech Rep.^{O}	Italy^{O}	Papua New Guinea	Sweden^{O}
Austria^{O}	Denmark^{O}	Japan^{O}	Paraguay	Thailand
Bolivia	Egypt	Jordan	Philippines	Tunisia
Brazil	Estonia	Kenya	Poland^{O}	Turkey^{O}
Cameroon	Finland^{O}	Korea^{O}	Portugal^{O}	United States^{O}
Canada^{O}	France^{O}	Morocco	Romania	United Kingdom^{O}
Chile	Germany^{O}	Netherlands^{O}	Senegal	
Colombia	Hungary^{O}	New Zealand^{O}	South Africa	
Costa Rica	India	Norway^{O}	Spain^{O}	

Notes: Full sample of 47 countries. ^{O}OECD member countries.

Table 12: **Descriptive Statistics: Dependent Variables**

(1970–2000)

	Mean	Std. dev.	Min	Max
Inflows of Capital per capita				
FDI	140.86	165.13	1.43	590.10
Total Equity Investment	173.81	199.93	1.68	697.97
Vol. of Inflows of Capital per capita				
FDI	1.32	0.55	0.24	3.02
Total Equity Investment	1.50	0.57	0.71	3.14
Vol. of Net Flows of Capital per capita				
FDI	0.61	0.28	0.15	1.52
Total Equity Investment	0.64	0.32	0.17	1.57

Notes: Inflows are calculated as net change in investment liabilities in a reporting economy. Net flows are calculated as the difference of the net change in liabilities (inflow) and assets (outflow) of a reporting economy. Gross flows are calculated as the sum of the absolute values of the net changes in liabilities (inflow) and assets (outflow) of a reporting economy. Volatility is calculated as normalized standard deviation of the corresponding capital flows. Normalization is performed by average gross flows.

Table 13: **Descriptive Statistics: Explanatory Variables, 1970–2000**

	Sample	Mean	Std. dev.	Min	Max
Institutional Quality†	47	5.56	1.11	3.41	7.27
Human Capital	47	4.65	2.64	0.54	9.55
Distantness (thousand km)	47	7.64	2.48	5.13	14.06
Inflation Volatility	47	0.90	0.71	0.30	4.64
Trade Openness (% GDP)	47	59.92	28.21	16.00	156.30
Capital Controls†	47	1.53	0.26	1.00	1.96
GDP per capita (initial, thousand)	47	6.72	6.99	0.21	23.46
Bank Credit (% total credit)	45	83.49	11.95	54.34	98.50
Sovereign Risk†	36	6.69	5.06	1.00	13.86
Corporate Taxes (%)	34	33.76	4.83	18.00	42.00
French Legal Origin†	35	0.46	0.51	0.00	1.00
British Legal Origin†	35	0.31	0.47	0.00	1.00
Familiarity with Legal Code†	35	0.40	0.50	0.00	1.00
Settler Mortality	20	75.46	62.14	8.55	280.00
English Language	46	0.10	0.27	0.00	0.97

Notes: †Index number. *Institutional Quality* is represented by the composite political safety index calculated as the sum of all the rating components from International Country Risk Guide (ICRG), average from 1984 to 2000, divided by 10. The index takes values from 0 to 76 for each country, where a higher score means lower risk. *Human Capital* is measured as the average years of total schooling over 25 years old in the total population, in 1970. *Distantness* is the weighted average of the distances in thousands of `km` from the capital city of the particular country to the capital cities of the other countries, using the GDP shares of the other countries as weights, average from 1970 to 2000. *Inflation Volatility* is the standard deviation of the annual CPI inflation over the 1970–2000 normalized by the average inflation for that period. *Trade Openness* is measured as the sum of exports and imports as percentage of GDP, average from 1970 to 2000. *Capital Controls* is an index calculated as the mean value of the four dummy variables— exchange arrangements, payments restrictions on current transactions, and capital transactions, repatriation requirements for export proceeds, average from 1971 to 2000; it takes value between 1 and 2. *GDP per capita* is measured in per capita 1995 U.S.dollars. *Bank Credit* is claims of deposit money banks on nonfinancial domestic sectors as share of claims of central bank and deposit money banks on nonfinancial domestic sectors, in percent, average from 1970 to 2000 (without outliers Bolivia and Hungary with abnormally low values of this variable). *Sovereign Risk* is an index based on Standard&Poor's long term foreign currency denominated sovereign debt ratings. Index ranges from 1, an obligor rated "AAA", to 23, an obligor rated "SD"—Selective Default (Data are available for Argentina, Australia, Austria, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Denmark, Egypt, Finland, France, Germany, Great Britain, India, Israel, Italy, Jordan, Japan, Korea, Morocco, the Netherlands, Norway, New Zealand, Pakistan, Philippines, Portugal, Paraguay, South Africa, Spain, Sweden, Thailand, Tunisia, Turkey, and the United States). *Corporate Taxes* represents the corporate income tax rate, single year value varying by country (Data are available for Argentina, Australia, Austria, Brazil, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Egypt, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Korea, Morocco, the Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, South Africa, Spain, Sweden, Thailand, Tunisia, and the United States). *French and British Legal Origin* are dummy variables taking value of 1 if a country's legal code can be traced to the French civil law or British common law legal tradition. *Familiarity with Legal Code* is a dummy variable taking the value of one if a country was the origin of one of the four major legal families (French, British, German, or Scandinavian) or expressed familiarity with the imported law (For these variables data are available for 35 countries: Argentina, Australia, Austria, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Germany, Denmark, Egypt, Spain, Finland, France, Great Britain, India, Israel, Italy, Jordan, Japan, Kenya, Korea, Sri Lanka, the Netherlands, Norway, New Zealand, Pakistan, Philippines, Portugal, Sweden, Thailand, Tunisia, Turkey, and the United States). *Settler Mortality* represents log of the historical European settlers mortality from Acemoglu, Johnson, and Robinson (2001). (Data are available for 20 countries of former colonies: Argentina, Australia, Bolivia, Brazil, Canada, Chile, Cameroon, Colombia, Costa Rica, Egypt, India, Kenya, Morocco, New Zealand, Pakistan, Paraguay, Senegal, Sri Lanka, Tunisia, and the United States; *English Language* is the fraction of the population speaking English as the mother tongue. Data are available for 46 countries, excluding Estonia due to missing language data).

Table 14: **Correlation Matrices I**

47 country sample
Main explanatory variables

	HK	Dist
Inst.	0.69	–0.41
HK		–0.19

Other explanatory variables

	Infl.V	Trade	CCont.	GDPpc	Bank
Obs.	47	47	47	47	45
Inst	–0.09	0.07	–0.64	0.89	0.61
HK	0.17	0.03	–0.51	0.78	0.37
Dist	0.24	–0.31	0.30	–0.41	–0.43

	SRisk	CTax	Famil	Mort.	Engl.
Obs.	36	34	35	20	46
Inst	–0.85	–0.20	0.78	–0.67	0.37
HK	–0.68	–0.18	0.67	–0.61	0.40
Dist	0.53	0.16	–0.47	–0.18	0.15

Notes: Correlations for the logarithm of the variables. Upper panel shows the correlation matrix for the main regressions with the 47 country sample. Lower Panel reports the correlation between the main explanatory variables and the other independent variables. Sample sizes vary for these variables. In the tables Trade represents Trade Openness; Inst—Institutional Quality; GDPpc—GDP per capita; HK—Human Capital; Dist.—Distantness; Infl.V—Inflation Volatility; CCon.—Capital Controls; Bank—bank credit as share of total credit; SRisk—Sovereign Risk ratings; CTax–Corporate Tax; Famil—Familiarity with Legal Code; Mort.—Historical Mortality rate; Engl.—English Language. See notes to Table 13 for the detailed explanations of these variables and samples.

Table 15: **Determinants of Capital Inflows**

Dependent Variable: Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)	(6)
Countries	47	47	47	45	36	34
Institutional	5.56***	5.29***	4.83***	5.83***	4.10**	6.30***
Quality	(4.74)	(4.57)	(4.57)	(4.48)	(2.22)	(3.95)
Human	0.47**	0.57**	0.42*	0.46*	0.70*	0.66**
Capital	(2.00)	(2.40)	(1.85)	(1.81)	(1.88)	(2.00)
Distantness	–1.16**	–1.04*	–1.11**	–1.27**	–1.56	–1.37**
	(–2.07)	(–1.92)	(–2.03)	(–2.03)	(–1.54)	(–2.06)
Inflation	–	–0.36	–	–	–	–
Volatility	–	(–1.29)	–	–	–	–
Capital	–	–	–1.58	–	–	–
Controls	–	–	(–1.23)	–	–	–
Bank	–	–	–	–0.36	–	–
Credit	–	–	–	(–0.36)	–	–
Sovereign Risk	–	–	–	–	–0.25	–
	–	–	–	–	(–0.46)	–
Corporate Taxes	–	–	–	–	–	–0.75
	–	–	–	–	–	(–0.49)
R^2	0.63	0.64	0.64	0.63	0.66	0.62

Notes: Dependent variable is inflows of total equity investment (foreign direct investment and portfolio equity investment) of the reporting economy per capita, in 1995 U.S. dollars. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance. All variables are in logs. All variables are sample averages except Human Capital, which is the initial value. See notes to Table 13 for the description of the variables. *Samples:* 45-country sample excludes outliers Bolivia and Hungary in terms of Bank Credit. 36-country sample includes Argentina, Australia, Austria, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Denmark, Egypt, Finland, France, Germany, Great Britain, India, Israel, Italy, Jordan, Japan, Korea, Morocco, the Netherlands, Norway, New Zealand, Pakistan, Philippines, Portugal, Paraguay, Spain, Sweden, Thailand, Tunisia, Turkey, the United States, and South Africa. The rest if the countries do not have data on Sovereign Risk. 34-country sample includes Argentina, Australia, Austria, Brazil, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Egypt, Finland, France, Germany, Great Britain, Hungary, India, Israel, Italy, Japan, Korea, Morocco, the Netherlands, Norway, New Zealand, Philippines, Poland, Portugal, Spain, Sweden, Thailand, Tunisia, the United States, and South Africa. The rest of the countries do not have data on Corporate Taxes.

Table 16: **Determinants of Capital Inflows: Historical Institutions I**

Dependent Variable: Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Countries	46	46	35	35	46	46	35
Institutional	5.04***	5.39***	4.39***	2.65***	–	–	–
Quality	(5.01)	(5.69)	(4.41)	(3.01)	–	–	–
Human	0.39*	0.45**	0.83***	0.43*	1.26***	1.39***	0.72***
Capital	(1.90)	(2.32)	(3.32)	(1.72)	(5.96)	(5.99)	(3.28)
Distantness	–0.97*	–1.44***	–1.81**	–1.07**	–1.90***	–2.31***	–1.37**
	(–1.81)	(–2.77)	(–2.43)	(–2.07)	(–2.64)	(–3.34)	(–2.50)
French Legal	–0.56**	–	–	–	–0.57*	–	–
Origin	(–1.97)	–	–	–	(–1.95)	–	–
British Legal	–	0.84**	–	–	–	0.63*	–
Origin	–	(2.51)	–	–	–	(1.64)	–
Familiarity	–	–	–	1.79***	–	–	2.33**
Legal Code	–	–	–	(2.98)	–	–	(4.49)
R^2	0.64	0.66	0.65	0.70	0.51	0.51	0.68

Notes: Dependent variable is inflows of direct investment and equity securities liabilities of the reporting economy per capita, in 1995 U.S. dollars. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance.
Samples: 46-country sample excludes the Netherlands with abnormally large inflows. 35-country sample includes Argentina, Australia, Austria, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Germany, Denmark, Egypt, Spain, Finland, France, Great Britain, India, Israel, Italy, Jordan, Japan, Kenya, Korea, Sri Lanka, the Netherlands, Norway, New Zealand, Pakistan, Philippines, Portugal, Sweden, Thailand, Tunisia, Turkey, and the United States. South Africa is an outlier and dropped in all regressions in this table. See notes to Table 13 for the description of the variables.

Table 17: **Determinants of Capital Inflows: Historical Institutions II**

Dependent Variable: Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)
Countries	20	20	20	46	46
Institutional	3.83***	2.40***	–	4.90***	–
Quality	(4.55)	(5.51)	–	(3.75)	–
Human	0.50***	0.30**	0.64***	0.40*	1.14***
Capital	(2.75)	(2.44)	(3.92)	(1.66)	(4.65)
Distantness	–0.13	–0.06	–0.40	–1.60***	–2.72***
	(–0.21)	(–0.14)	(–0.85)	(–3.01)	(–4.45)
Settler	–	–0.70***	–0.89***	–	–
Mortality	–	(–4.40)	(–4.96)	–	–
English	–	–	–	1.31	2.04**
Language	–	–	–	(1.54)	(2.54)
R^2	0.78	0.91	0.85	0.66	0.55

Notes: Dependent variable is inflows of direct investment and equity securities liabilities of the reporting economy per capita, in 1995 U.S. dollars. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance. Mortality represents log of the historical European settlers mortality from Acemoglu, Johnson, and Robinson (2001). English Language is the fraction of the population speaking English as the mother tongue. European Language is the fraction of the population speaking one of the four major European languages (English, French, Spanish, or German) as the mother tongue. *Samples:* 20-country sample includes former colonies: Argentina, Australia, Bolivia, Brazil, Canada, Chile, Cameroon, Colombia, Costa Rica, Egypt, India, Kenya, Morocco, New Zealand, Pakistan, Paraguay, Senegal, Sri Lanka, Tunisia, and the United States (South Africa is an outlier and dropped). 46-country sample excludes Estonia as compared to the main sample due to missing data on English language.

Table 18: **Determinants of Capital Inflows: Historical Institutions III**

Dependent Variable: Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)
Countries	47	47	47	47	47
Institutional	5.52***	5.64***	5.57***	5.82***	5.38***
Quality	(4.85)	(5.10)	(4.95)	(5.37)	(4.37)
Human	0.40	0.36	0.38	0.37	0.40*
Capital	(1.63)	(1.34)	(1.48)	(1.55)	(1.76)
Distantness	–1.26**	–1.25**	–1.26**	–1.44**	–0.97*
	(–2.41)	(–2.29)	(–2.37)	(–2.54)	(–1.84)
Democracy	0.40	–	–	–	–
	(0.77)	–	–	–	–
Autocracy	–	–0.52	–	–	–
	–	(–0.83)	–	–	–
Composite	–	–	0.24	–	–
Polity	–	–	(0.81)	–	–
XROPEN	–	–	–	0.24*	–
	–	–	–	(1.81)	–
Monocratism	–	–	–	–	0.21**
	–	–	–	–	(2.10)
R^2	0.64	0.64	0.64	0.65	0.64

Notes: Dependent variable is inflows of direct investment and equity securities liabilities of the reporting economy per capita, in 1995 U.S. dollars. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance. *Democracy* and *Autocracy* are additive eleven-point scores, normalized to range from 0 to 1, reflecting regime type. They are derived from several Polity IV individual scores using specific weights. In 47-country sample, descriptive statistics for Autocracy are: mean 0.30, std. dev. 0.31, min 0.00, max 1.00; for Democracy mean 0.49, std. dev. 0.35, min 0.00, max 1.00. *Composite Polity* is combined regime type score calculated as the difference between Institutionalized Democracy and Institutionalized Autocracy ratings (for normalized score, mean 0.19, std. dev. 0.64, min −1.00 (strongly autocratic regime), max 1.00 (strongly democratic regime) in this sample). XROPEN is executive recruitment openness, four-point score representing opportunity for non-elites to attain executive office (mean 3.19, std. dev. 1.17, min 1.00 (closed), max 4.00 (open) in this sample). *Monocratism* is five-point score representing institutional (de jure) independence of chief executive (mean 2.23, std. dev. 0.98, min 1.00 (pure individual), max 3.00 (qualified individual) in this sample). All variables are in logs except for Polity indices. All variables are sample averages except for Human Capital, which is initial value. See notes to Table 13 for the description of the variables.

Table 19: **Determinants of Changes in Capital Inflows: Developing countries**

Dependent Variable: Change in Inflows of Capital per capita between the periods of 1994–2000 and 1970–1993

	(1)	(2)	(3)	(4)	(5)
Countries	23	23	23	23	23
ΔInstitutional Quality	1.58*	2.27*	0.45	2.06**	1.25
	(1.70)	(1.61)	(0.33)	(2.45)	(1.52)
Distantness	0.21***	0.21***	0.20***	0.19**	0.21***
	(3.34)	(3.40)	(3.80)	(3.50)	(3.60)
ΔCapital Controls	–0.19***	–0.21***	–0.22***	–0.16***	–0.20***
	(–4.73)	(–4.20)	(–4.41)	(–4.53)	(–4.90)
ΔGDP per capita	0.81***	0.91***	0.84***	0.91***	0.75***
	(3.68)	(3.14)	(4.18)	(5.25)	(3.19)
ΔInflation Volatility	–	0.17	–	–	–
	–	(0.65)	–	–	–
ΔHuman Capital	–	–	0.22	–	–
	–	–	(1.27)	–	–
ΔTrade Openness	–	–	–	–1.36	–
	–	–	–	(–1.44)	–
ΔBank Credit	–	–	–	–	0.87
	–	–	–	–	(1.49)
R^2	0.71	0.75	0.75	0.75	0.79

Notes: Dependent variable is difference of average net inflow of direct investment and equity securities liabilities of the reporting economy per capita, in thousands of 1995 U.S. dollars between the periods of 1994–2000 and 1970–1993. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are parentheses denoting *** 1%, ** 5%, and * 10% significance. *Sample:* 23 developing countries includes Argentina, Brazil, Chile, Cameroon, Colombia, Costa Rica, Egypt, Hungary, India, Jordan, Kenya, Sri Lanka, Morocco, Pakistan, Paraguay, Philippines, Poland, Romania, Senegal, Thailand, Tunisia, Turkey, and South Africa (Bolivia, Cyprus, Israel, and South Korea are outliers and dropped). Δ represents the difference of average value of the corresponding variable between the periods of 1994–2000 and 1970–1993. The following adjustments of the original variables were made for the ease of exposition: Institutional Quality—multiplied by 10; Human Capital—multiplied by 100; Distantness—divided by 10; Inflation Volatility—multiplied by 100; Capital Controls—multiplied by 10^4; GDP per capita—divided by 10. See notes to Table 13 for the description of the original variables.

Table 20: **Determinants of Volatility of Capital Inflows**

Dependent Variable: Volatility of Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Countries	47	44	47	47	47	47	36	34
Institutional	–0.42**	–0.37*	–0.50*	–0.47**	–0.33	–0.42**	0.04	–0.47
Quality	(–2.29)	(–1.81)	(–1.76)	(–2.55)	(–1.55)	(–2.30)	(0.14)	(–1.53)
Inflation	0.24**	0.21***	0.23**	0.25**	0.26**	0.25**	0.19	0.26**
Volatility	(2.41)	(3.33)	(2.19)	(2.45)	(2.48)	(2.40)	(1.57)	(2.09)
Bank	0.37**	0.42**	0.38**	0.36**	0.43**	0.36**	0.42	0.62***
Credit	(2.22)	(2.29)	(2.29)	(2.23)	(2.08)	(2.23)	(1.27)	(2.64)
Stock Mkt.	–	–0.00	–	–	–	–	–	–
Capitalization	–	(–0.07)	–	–	–	–	–	–
Human	–	–	0.03	–	–	–	–	–
Capital	–	–	(0.44)	–	–	–	–	–
Distantness	–	–	–	–0.10	–	–	–	–
	–	–	–	(–0.87)	–	–	–	–
Capital	–	–	–	–	0.21	–	–	–
Controls	–	–	–	–	(0.80)	–	–	–
Trade	–	–	–	–	–	0.04	–	–
Openness	–	–	–	–	–	(0.46)	–	–
Sovereign	–	–	–	–	–	–	0.10	–
Risk	–	–	–	–	–	–	(1.53)	–
Corporate	–	–	–	–	–	–	–	–0.35
Taxes	–	–	–	–	–	–	–	(–1.31)
R^2	0.20	0.27	0.21	0.21	0.21	0.21	0.14	0.26

Notes: Dependent variable is volatility of inflow of direct investment and equity securities liabilities of the reporting economy per capita, in 1995 U.S. dollars. Volatility is calculated as normalized standard deviation of the corresponding inflows. Normalization is performed by the average gross flows. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance. All variables are sample averages except Human Capital, which are initial values. Stock Market is represented by market capitalization of listed companies, as percentage of GDP and averages for the 1970–2000. See notes to Table 13 for the description of the original variables. *Samples:* 36-country sample includes Argentina, Australia, Austria, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Denmark, Egypt, Finland, France, Germany, Great Britain, India, Israel, Italy, Jordan, Japan, Korea, Morocco, the Netherlands, Norway, New Zealand, Pakistan, Philippines, Portugal, Paraguay, South Africa, Spain, Sweden, Thailand, Tunisia, Turkey, and the United States. 34-country sample includes Argentina, Australia, Austria, Brazil, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Egypt, Finland, France, Germany, Great Britain, India, Israel, Italy, Japan, Hungary, Korea, Morocco, the Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, South Africa, Spain, Sweden, Thailand, Tunisia, and the United States. 42-country sample excludes Cameroon, Costa Rica, Papua New Guinea, Paraguay, and Senegal as compared to the main sample. 44-country sample excludes Colombia, Papua New Guinea, and Senegal as compared to the main sample.

Table 21: **Determinants of Volatility of Capital Inflows: Historical Institutions I**

Dependent Variable: Volatility of Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)	(6)
Countries	47	47	47	36	21	46
Institutional	–0.42**	–0.50*	–0.44**	–0.21	–0.42	–0.39**
Quality	(–2.29)	(–1.76)	(–2.25)	(–0.63)	(–1.43)	(–2.01)
Inflation	0.24**	0.23**	0.24**	0.12	0.11	0.26***
Volatility	(2.41)	(2.19)	(2.35)	(0.94)	(0.79)	(2.58)
Bank	0.37**	0.38**	0.38**	0.14	0.14	0.40**
Credit	(2.22)	(2.29)	(2.19)	(0.41)	(0.50)	(2.45)
French Legal	–	–0.07	–	–	–	–
Origin	–	(–0.91)	–	–	–	–
British Legal	–	–	–0.04	–	–	–
Origin	–	–	(–0.48)	–	–	–
Familiarity	–	–	–	–0.06	–	–
Legal Code	–	–	–	(–0.60)	–	–
Settler	–	–	–	–	0.02	–
Mortality	–	–	–	–	(0.33)	–
English	–	–	–	–	–	–0.04
Language	–	–	–	–	–	(–0.41)
R^2	0.20	0.22	0.21	0.10	0.21	0.22

Notes: Dependent variable is inflows of direct investment and equity securities liabilities of the reporting economy per capita, in 1995 U.S. dollars. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance.
Samples: 46-country sample excludes the Netherlands with abnormally large inflows. 35-country sample includes Argentina, Australia, Austria, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Germany, Denmark, Egypt, Spain, Finland, France, Great Britain, India, Israel, Italy, Jordan, Japan, Kenya, Korea, Sri Lanka, the Netherlands, Norway, New Zealand, Pakistan, Philippines, Portugal, Sweden, Thailand, Tunisia, Turkey, and the United States (South Africa is an outlier and dropped). All variables are in logs. All variables are sample averages except for Human Capital, which is initial value. See notes to Table 13 for the description of the variables.

Table 22: **Determinants of Volatility of Capital Inflows: Historical Institutions II**

Dependent Variable: Volatility of Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)	(6)
Countries	47	47	47	47	47	47
Institutional	–0.37**	–0.37**	–0.37**	–0.44***	–0.45***	–0.34**
Quality	(–2.03)	(–1.99)	(–2.00)	(–2.58)	(–2.59)	(–2.02)
Inflation	0.25**	0.26**	0.26**	0.27**	0.27***	0.25**
Volatility	(2.40)	(2.42)	(2.42)	(2.62)	(2.58)	(2.47)
Bank	0.42**	0.39**	0.41**	0.44**	0.44**	0.34**
Credit	(2.38)	(2.22)	(2.30)	(2.47)	(2.47)	(2.11)
Democracy	–0.18*	–	–	–	–	–
	(–1.76)	–	–	–	–	–
Autocracy	–	0.17	–	–	–	–
	–	(1.18)	–	–	–	–
Composite	–	–	–0.09	–	–	–
Polity	–	–	(–1.48)	–	–	–
EXREC	–	–	–	–0.21*	–	–
	–	–	–	(–1.72)	–	–
XRCOMP	–	–	–	–	–0.06*	–
	–	–	–	–	(–1.69)	–
PARCOMP	–	–	–	–	–	–0.04*
	–	–	–	–	–	(–1.70)
R^2	0.25	0.23	0.24	0.25	0.25	0.24

Notes: Dependent variable is volatility of inflow of direct investment and equity securities liabilities of the reporting economy per capita, in 1995 U.S. dollars. Volatility is calculated as normalized standard deviation of the corresponding inflows. Normalization is performed by the average gross flows. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance. *Democracy* and *Autocracy* are additive eleven-point scores, normalized to range from 0 to 1, reflecting regime type. They are derived from several Polity IV individual scores using specific weights. In 47-country sample, descriptive statistics for Autocracy are: mean 0.30, std. dev. 0.31, min 0.00, max 1.00; for Democracy mean 0.49, std. dev. 0.35, min 0.00, max 1.00. *Composite Polity* is combined regime type score calculated as the difference between Institutionalized Democracy and Institutionalized Autocracy ratings (for normalized score, mean 0.19, std. dev. 0.64, min −1.00 (strongly autocratic regime), max 1.00 (strongly democratic regime) in this sample). EXREC is executive recruitment regulation composite variable combining information in three component variables XRREG (Executive Recruitment Regulation), XRCOMP (Executive Recruitment Competition), and XROPEN (Executive Recruitment Openness) (for normalized score, mean 0.51, std. dev. 0.30, min 0.10, max 0.80 in this sample). XRCOMP is executive recruitment competition, four-point score representing extent to which executives are chosen through competitive elections (mean 1.98, std. dev. 0.98, min 1.00 (selection), max 3.00 (election) in this sample). PARCOMP is competitiveness of participation, six-point score representing extent to which non-elites are able to access institutional structures of political expression (mean 2.94, std. dev. 1.42, min 0.00 (unregulated), max 5.00 (competitive) in this sample). All variables are in logs except for Polity indices. All variables are sample averages except GDP per capita and Human Capital, which are initial values. See notes to Table 13 for the description of the original variables.

Table 23: **Determinants of Volatility of Capital Inflows: Measurement Issues**

Dependent Variable: Various Estimates for Volatility
of Inflows of Capital per capita

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Volatility	$\frac{St.Dev.}{}$	$\frac{St.Dev.}{Mean}$	$\frac{St.Dev.}{}$	$\frac{St.Dev.}{Mean}$	$\frac{St.Dev.(dt1)}{}$	$\frac{St.Dev.(dt1)}{Mean}$	$\frac{St.Dev.(dt1)}{}$	$\frac{St.Dev.(dt1)}{Mean}$
Countries	47	47	47	47	47	47	47	47
Institutional	11.56***	–0.42**	–3.37***	–0.63***	8.54***	–0.44**	–2.81***	–0.69***
Quality	(4.26)	(–2.29)	(–2.77)	(–2.99)	(4.01)	(–2.54)	(–2.68)	(–3.74)
Inflation	–0.22	0.24**	0.46*	0.25**	–0.21	0.13**	0.30	–0.15**
Volatility	(–0.33)	(2.41)	(1.77)	(2.51)	(–0.43)	(2.03)	(1.45)	(–2.20)
Bank	0.61	0.37**	1.26	0.38**	0.30	0.29**	0.79	0.30**
Credit	(0.30)	(2.22)	(1.45)	(2.30)	(0.21)	(2.15)	(1.32)	(2.18)
Inflows of	–	–	19.77***	0.28	–	–	15.04***	0.33*
Capital	–	–	(11.26)	(1.15)	–	–	(9.42)	(1.72)
R^2	0.44	0.20	0.89	0.22	0.40	0.16	0.85	0.19

Notes: Dependent variable is volatility of inflow of direct investment and equity securities liabilities of the reporting economy per capita, in 1995 U.S. dollars. Volatility is calculated as (1), (3) standard deviation of the corresponding inflows; (2), (4) normalized standard deviation of the corresponding inflows. Normalization is performed by the average gross flows; (5), (7) standard deviation of de-trended corresponding inflows divided by 100. De-trending is performed by regressing flows on the constant and linear trend; (6), (8) normalized standard deviation of de-trended corresponding inflows divided by 100. De-trending is performed by regressing flows on the constant and linear trend; normalization is performed by the average gross flows. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance. All variables are in logs except for Inflows of Capital. All variables are sample averages except GDP per capita and Human Capital, which are initial values. Inflows of Capital is inflows of direct investment and equity securities liabilities of the reporting economy per capita, in thousands of 1995 U.S. dollars. See notes to Table 13 for the description of the original variables.

Table 24: **Determinants of Volatility of Net Capital Flows**

Dependent Variable: Volatility of Net Flows of Capital per capita

	(1)	(2)	(3)	(4)	(5)
Countries	47	47	47	36	34
Institutional	–0.36*	–0.43**	–0.36*	–0.32	0.06
Quality	(–1.91)	(–2.14)	(–1.91)	(–1.17)	(0.15)
Inflation	0.31***	0.33***	0.31***	0.19*	0.26**
Volatility	(2.90)	(3.18)	(2.91)	(1.78)	(2.10)
Bank	0.45**	0.43**	0.45**	0.32	0.81**
Credit	(1.97)	(2.02)	(1.99)	(0.90)	(2.70)
Capital	0.63**	0.64***	0.64**	0.27	1.06***
Controls	(2.39)	(2.58)	(2.41)	(0.66)	(2.77)
Distantness	–	–0.15	–	–	–
	–	(–1.23)	–	–	–
Trade	–	–	0.03	–	–
Openness	–	–	(0.31)	–	–
Sovereign	–	–	–	0.05	–
Risk	–	–	–	(0.55)	–
Corporate	–	–	–	–	0.01
Taxes	–	–	–	–	(0.04)
R^2	0.35	0.37	0.35	0.26	0.39

Notes: Dependent variable is volatility of net flow of direct and equity securities investment of the reporting economy per capita, in 1995 U.S. dollars. Net flow is calculated as the difference of the net change in liabilities (inflow) and assets (outflow). Volatility is calculated as normalized standard deviation of the net flows. Normalization is performed by the average gross flows. All regressions include a constant and are estimated by OLS with White's correction of heteroskedasticity. t-statistics are in parentheses denoting *** 1%, ** 5%, and * 10% significance. *Samples:* 36-country sample includes Argentina, Australia, Austria, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Denmark, Egypt, Finland, France, Germany, Great Britain, India, Israel, Italy, Jordan, Japan, Korea, Morocco, the Netherlands, Norway, New Zealand, Pakistan, Philippines, Portugal, Paraguay, South Africa, Spain, Sweden, Thailand, Tunisia, Turkey, and the United States. 34-country sample includes Argentina, Australia, Austria, Brazil, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Egypt, Finland, France, Germany, Great Britain, India, Israel, Italy, Japan, Hungary, Korea, Morocco, the Netherlands, New Zealand, Norway, Philippines, Poland, Portugal, South Africa, Spain, Sweden, Thailand, Tunisia, and the United States. 42-country sample excludes Cameroon, Costa Rica, Papua New Guinea, Paraguay, and Senegal as compared to the main sample. 44-country sample excludes Colombia, Papua New Guinea, and Senegal as compared to the main sample. All variables are in logs. All variables are sample averages except GDP per capita and Human Capital, which are initial values. See notes to Table 13 for the description of the original variables.

Table 25: **Appendix Table: Sample Countries – Equity Data**

Sample Equity		Sample Equity by Decades		
All Countries		1970-1980	1981-1990	1991-2000
Algeria		Algeria	Algeria	Algeria
Argentina		**Argentina**	**Argentina**	**Argentina**
Australia		**Australia**	**Australia**	**Australia**
Austria		**Austria**	**Austria**	**Austria**
Bahrain		**Bahrain**	**Bahrain**	**Bahrain**
Bene-Lux		**Bene-Lux**	**Bene-Lux**	**Bene-Lux**
Bolivia		**Bolivia**	**Bolivia**	**Bolivia**
Botswana		**Botswana**	**Botswana**	**Botswana**
Brazil		**Brazil**	**Brazil**	**Brazil**
Burkina Faso		**Burkina Faso**		**Burkina Faso**
Burundi	*starts 1989*			*Burundi*
Cameroon		**Cameroon**	**Cameroon**	**Cameroon**
Canada		**Canada**	**Canada**	**Canada**
Cent. Afri. Rep.		**Cent. Afri. Rep.**	**Cent. Afri. Rep.**	**Cent. Afri. Rep.**
Chad		**Chad**	**Chad**	**Chad**
Chile		**Chile**	**Chile**	**Chile**
China	*starts 1982*		*China*	*China*
Colombia		**Colombia**	**Colombia**	**Colombia**
Costa Rica		**Costa Rica**	**Costa Rica**	**Costa Rica**
Cyprus	*starts 1985*		*Cyprus*	*Cyprus*
Czech Republic	*starts 1993*			*Czech Republic*
Denmark		**Denmark**	**Denmark**	**Denmark**
Egypt, Arab Rep.		**Egypt, Arab Rep.**	**Egypt, Arab Rep.**	**Egypt, Arab Rep.**
Estonia	*starts 1993*			*Estonia*
Fiji		**Fiji**	**Fiji**	**Fiji**
Finland		**Finland**	**Finland**	**Finland**
France		**France**	**France**	**France**
Gabon		**Gabon**	**Gabon**	**Gabon**
Germany		**Germany**	**Germany**	**Germany**
Hungary	*starts 1992*		*Hungary*	*Hungary*
India	*starts 1993*			*India*
Israel		**Israel**	**Israel**	**Israel**
Italy		**Italy**	**Italy**	**Italy**
Japan		**Japan**	**Japan**	**Japan**
Jordan		**Jordan**	**Jordan**	**Jordan**
Kenya		**Kenya**	**Kenya**	**Kenya**
Korea, Rep.		**Korea, Rep.**	**Korea, Rep.**	**Korea, Rep.**
Kuwait	*starts 1993*			*Kuwait*
Latvia	*starts 1992*			*Latvia*

Appendix Table : Sample Countries – Equity Data (Cont.)

Sample Equity		Sample Equity by Decades		
All Countries		1970-1980	1981-1990	1991-2000
Libya		**Libya**	**Libya**	**Libya**
Mauritania	*non available 1990s*	*Mauritania*	*Mauritania*	
Mauritius		**Mauritius**	**Mauritius**	**Mauritius**
Morocco	*starts 1991*			*Morocco*
Namibia	*starts 1989*			*Namibia*
Netherlands		**Netherlands**	**Netherlands**	**Netherlands**
New Zealand		**New Zealand**	**New Zealand**	**New Zealand**
Niger		**Niger**	**Niger**	**Niger**
Norway		**Norway**	**Norway**	**Norway**
Pakistan	*starts 1984*		*Pakistan*	*Pakistan*
Papua New Guinea	*n.a. after 1991*	*Papua New Guinea*	*Papua New Guinea*	
Paraguay		**Paraguay**	**Paraguay**	**Paraguay**
Phillipines	*starts 1993*			*Phillipines*
Poland		**Poland**	**Poland**	**Poland**
Portugal		**Portugal**	**Portugal**	**Portugal**
Romania	*starts 1991*	*Romania*	*Romania*	*Romania*
Senegal		**Senegal**	**Senegal**	**Senegal**
Singapore		**Singapore**	**Singapore**	**Singapore**
Slovak Republic	*starts 1992*			*Slovak Republic*
Slovenia	*starts 1992*			*Slovenia*
South Africa	*starts 1985*	*South Africa*	*South Africa*	*South Africa*
Spain		**Spain**	**Spain**	**Spain**
Sri Lanka	*starts 1985*		*Sri Lanka*	*Sri Lanka*
Swaziland		**Swaziland**	**Swaziland**	**Swaziland**
Sweden		**Sweden**	**Sweden**	**Sweden**
Switzerland	*starts 1982*		*Switzerland*	*Switzerland*
Thailand		**Thailand**	**Thailand**	**Thailand**
Trin. and Tobago	*starts 1983*		*Trin. and Tobago*	*Trin. and Tobago*
Tunisia		**Tunisia**	**Tunisia**	**Tunisia**
Turkey	*starts 1987*		*Turkey*	*Turkey*
U.K.		**U.K.**	**U.K.**	**U.K.**
U.S.		**U.S.**	**U.S.**	**U.S.**
Uruguay	*starts 1986*	*Uruguay*	*Uruguay*	*Uruguay*

Notes: Equity data are the sum of Foreign Direct Investment (FDI) and Portfolio Equity Investment data. Countries for which either FDI or portfolio equity investment data are available are included in the sample. Countries in italics have data only for certain periods as indicated in the table. Countries in bold have data for both equity and debt flows throughout the whole sample period. FDI data corresponds to Direct Investments Abroad (line 78bdd) and Direct Investments in Reporting Economy, n.i.e (line 78bed) and include equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Portfolio Equity Investments corresponds to Equity Security Assets (line 78bkd) and Equity Securities Liabilities (line 78bmd) and include shares, stock participations, and similar documents that usually denote ownership of equity. Data taken from IMF, IFS.

Table 26: **Appendix Table: Sample Countries – Debt Data**

Sample Debt		Sample Debt by Decades		
All Countries		1970-1980	1981-1990	1991-2000
Albania	*starts 1992*			*Albania*
Algeria	*1977-1991*	*Algeria*	*Algeria*	
Angola		Angola	Angola	Angola
Argentina		**Argentina**	**Argentina**	**Argentina**
Australia		**Australia**	**Australia**	**Australia**
Austria		**Austria**	**Austria**	**Austria**
Bahrain		**Bahrain**	**Bahrain**	**Bahrain**
Bangladesh		*Bangladesh*	*Bangladesh*	*Bangladesh*
Belarus	*starts 1993*			*Belarus*
Bene-Lux		**Bene-Lux**	**Bene-Lux**	**Bene-Lux**
Benin		Benin	Benin	Benin
Bolivia		**Bolivia**	**Bolivia**	**Bolivia**
Botswana		**Botswana**	**Botswana**	**Botswana**
Brazil		**Brazil**	**Brazil**	**Brazil**
Bulgaria	*starts 1980*		*Bulgaria*	*Bulgaria*
Burkina Faso			**Burkina Faso**	**Burkina Faso**
Cambodia		Cambodia	Cambodia	Cambodia
Cameroon		**Cameroon**	**Cameroon**	**Cameroon**
Canada		**Canada**	**Canada**	**Canada**
Cent. Afri. Rep.		**Cent. Afri. Rep.**	**Cent. Afri. Rep.**	
Chad		**Chad**	**Chad**	**Chad**
Chile		**Chile**	**Chile**	
China	*starts 1982*		*China*	*China*
Colombia		**Colombia**	**Colombia**	**Colombia**
Comoros	*starts 1983*		*Comoros*	*Comoros*
Congo, Rep.		**Congo, Rep.**	**Congo, Rep.**	**Congo, Rep.**
Costa Rica		**Costa Rica**	**Costa Rica**	**Costa Rica**
Cote d'Ivoire		Cote d'Ivoire	Cote d'Ivoire	Cote d'Ivoire
Croatia	*starts 1993*			*Croatia*
Cyprus		*Cyprus*	*Cyprus*	*Cyprus*
Czech Republic	*starts 1993*			*Czech Republic*
Denmark		**Denmark**	**Denmark**	**Denmark**
Dominican Republic		Dominican Republic	Dominican Republic	Dominican Republic
Ecuador		Ecuador	Ecuador	Ecuador
Egypt, Arab Rep.		**Egypt, Arab Rep.**	**Egypt, Arab Rep.**	**Egypt, Arab Rep.**
El Salvador		El Salvador	El Salvador	El Salvador
Eritrea	*starts 1992*			*Eritrea 1992*
Estonia 1992	*starts 1992*			*Estonia 1992*
Ethiopia		Ethiopia	Ethiopia	Ethiopia
Fiji		**Fiji**	**Fiji**	**Fiji**
Finland		**Finland**	**Finland**	**Finland**
France		**France**	**France**	**France**
Gabon		**Gabon**	**Gabon**	**Gabon**

Appendix Table: Sample Countries – Debt Data (Cont.)

Sample Debt		Sample Debt by Decades		
All Countries		1970-1980	1981-1990	1991-2000
Gambia		Gambia	Gambia	Gambia
Germany		**Germany**	**Germany**	**Germany**
Ghana		Ghana	Ghana	Ghana
Guatemala		Guatemala	Guatemala	Guatemala
Guinea	*starts 1987*		*Guinea*	*Guinea*
Guyana	*starts 1992*			*Guyana*
Haiti		Haiti	Haiti	Haiti
Honduras		Honduras	Honduras	Honduras
Hungary	*starts 1982*		*Hungary*	*Hungary*
India		India	India	India
Iran, Islamic Rep.		Iran, Islamic Rep.	Iran, Islamic Rep.	Iran, Islamic Rep.
Ireland		Ireland	Ireland	Ireland
Israel		**Israel**	**Israel**	**Israel**
Italy		**Italy**	**Italy**	**Italy**
Jamaica		Jamaica	Jamaica	Jamaica
Japan		**Japan**	**Japan**	**Japan**
Jordan		**Jordan**	**Jordan**	**Jordan**
Kenya		**Kenya**	**Kenya**	**Kenya**
Korea, Rep.		**Korea, Rep.**	**Korea, Rep.**	**Korea, Rep.**
Kuwait		Kuwait	Kuwait	Kuwait
Lao PDR	*starts 1989*			*Lao PDR*
Latvia		Latvia	Latvia	Latvia
Lesotho		Lesotho	Lesotho	Lesotho
Libya		**Libya**	**Libya**	**Libya**
Lithuania	*starts 1993*			*Lithuania*
Madagascar		Madagascar	Madagascar	Madagascar
Malawi		Malawi	Malawi	Malawi
Malaysia		Malaysia	Malaysia	Malaysia
Mali		Mali	Mali	Mali
Mauritania		Mauritania	Mauritania	Mauritania
Mauritius		**Mauritius**	**Mauritius**	**Mauritius**
Mexico		Mexico	Mexico	Mexico
Mongolia	*starts 1990*			*Mongolia*
Morocco		Morocco	Morocco	Morocco
Namibia	*starts 1990*	*Namibia*	*Namibia*	*Namibia*
Nepal		**Nepal**	**Nepal**	**Nepal**
Netherlands		**Netherlands**	**Netherlands**	**Netherlands**
New Zealand		New Zealand	New Zealand	New Zealand
Nicaragua	*starts 1991*			*Nicaragua*
Niger		**Niger**	**Niger**	**Niger**
Nigeria		Nigeria	Nigeria	Nigeria
Norway		**Norway**	**Norway**	**Norway**
Oman		Oman	Oman	Oman

Appendix Table: Sample Countries – Debt Data (Cont.)

Sample Debt		Sample Debt by Decades		
All Countries		1970-1980	1981-1990	1991-2000
Pakistan		Pakistan	Pakistan	Pakistan
Panama		Panama	Panama	Panama
P. N. Guinea		P. N. Guinea	P. N. Guinea	P. N. Guinea
Paraguay		**Paraguay**	**Paraguay**	**Paraguay**
Peru	*starts 1985*		*Peru*	*Peru*
Philippines		Philippines	Philippines	Philippines
Poland		**Poland**	**Poland**	**Poland**
Portugal		**Portugal**	**Portugal**	**Portugal**
Romania		Romania	Romania	Romania
Rwanda		Rwanda	Rwanda	Rwanda
Saudi Arabia		Saudi Arabia	Saudi Arabia	Saudi Arabia
Senegal		**Senegal**	**Senegal**	**Senegal**
Sierra Leone		Sierra Leone	Sierra Leone	Sierra Leone
Singapore		**Singapore**	**Singapore**	**Singapore**
Slovak Republic	*starts 1993*			*Slovak Republic*
Slovenia	*starts 1992*			*Slovenia*
South Africa		South Africa	South Africa	South Africa
Spain		**Spain**	**Spain**	**Spain**
Sri Lanka		Sri Lanka	Sri Lanka	Sri Lanka
Sudan		Sudan	Sudan	Sudan
Swaziland		**Swaziland**	**Swaziland**	**Swaziland**
Sweden		**Sweden**	**Sweden**	**Sweden**
Switzerland		Switzerland	Switzerland	Switzerland
Syria		Syria	Syria	Syria
Tanzania	*starts 1993*			*Tanzania*
Thailand		**Thailand**	**Thailand**	**Thailand**
Togo		Togo	Togo	Togo
Trin. and Tobago		Trin. and Tobago	Trin. and Tobago	Trin. and Tobago
Tunisia		**Tunisia**	**Tunisia**	**Tunisia**
Turkey		Turkey	Turkey	Turkey
Uganda		Uganda	Uganda	Uganda
U.K.		**U.K.**	**U.K.**	**U.K.**
U.S.		**U.S.**	**U.S.**	**U.S.**
Uruguay		Uruguay	Uruguay	Uruguay
Zambia		Zambia	Zambia	Zambia
Zimbabwe		Zimbabwe	Zimbabwe	Zimbabwe

Notes: Countries in italics have data only for certain periods as indicated in the table. Countries in bold have data for both equity (foreign direct investment and portfolio equity investments) and debt flows throughout the whole sample period. Data taken from IMF, IFS. Debt data corresponds to Debt Securities Assets (line 78bld) and Debt Securities Liabilities (line 78bnd) which cover bonds, notes, and money market or negotiable debt instruments; and other investment assets (line 78bhd) and other investments liabilities (line 78bid) which include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets. Data taken from IMF, IFS.

Table 27: **Appendix Table: Descriptive Statistics - Inflows of Capital and Volatility (per Capita US$)**

Sample: 47 countries (1970–2000)

Capital Inflows

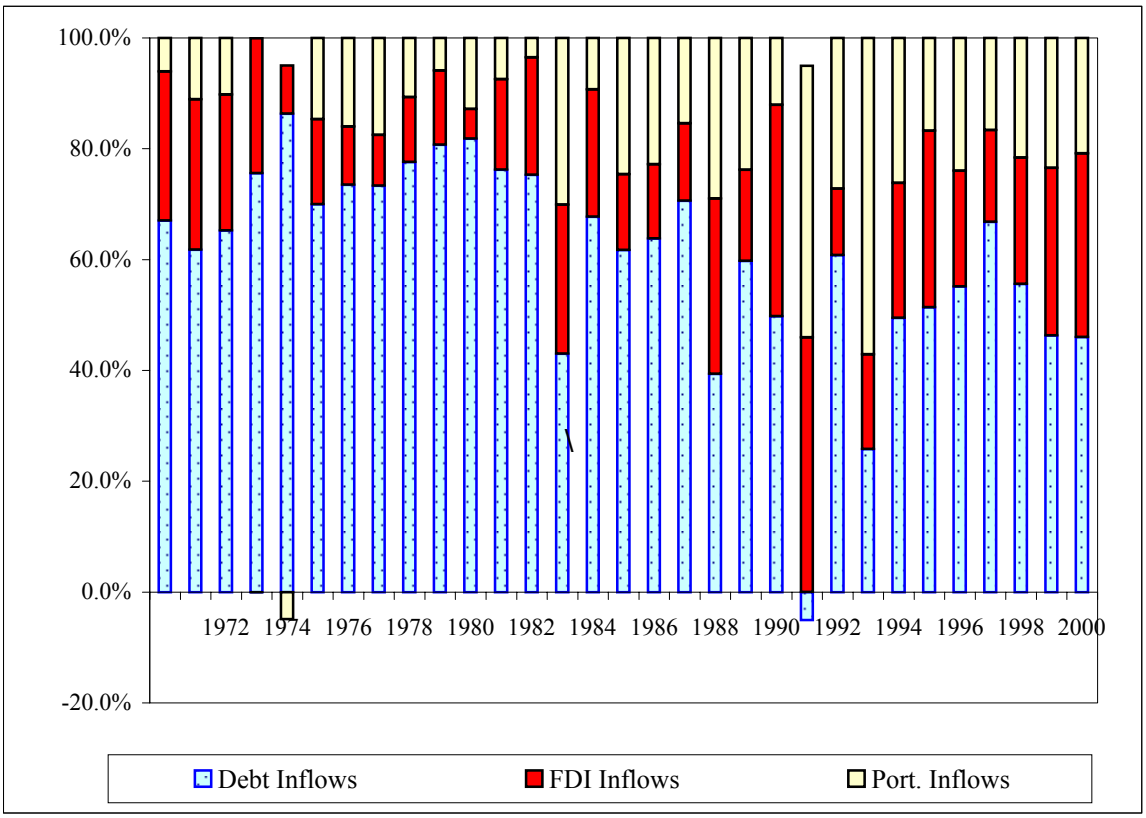
	Mean	Std. Dev.	Min.	Max.
FDI Inflows	166.92	307.64	-122.51	1723.78
Portfolio Equity Inflows	129.44	310.90	-2.17	1769.21
Debt Inflows	501.33	821.60	-84.65	4827.94
Equity Inflows	287.47	562.50	-122.51	3492.99
Capital Inflows	795.40	1363.66	-84.65	8320.92

Volatility of Inflows

	Mean	Std. Dev.	Min.	Max.
Volatility of FDI Inflows	0.78	0.32	0.12	1.63
Volatility of Portfolio Equity Inflows	0.80	0.47	0.16	2.29
Volatility of Debt Inflows	0.70	0.24	0.32	1.40
Volatility of Equity Inflows	0.93	0.38	0.34	2.01
Volatility of Capital Inflows	0.62	0.24	0.13	1.38

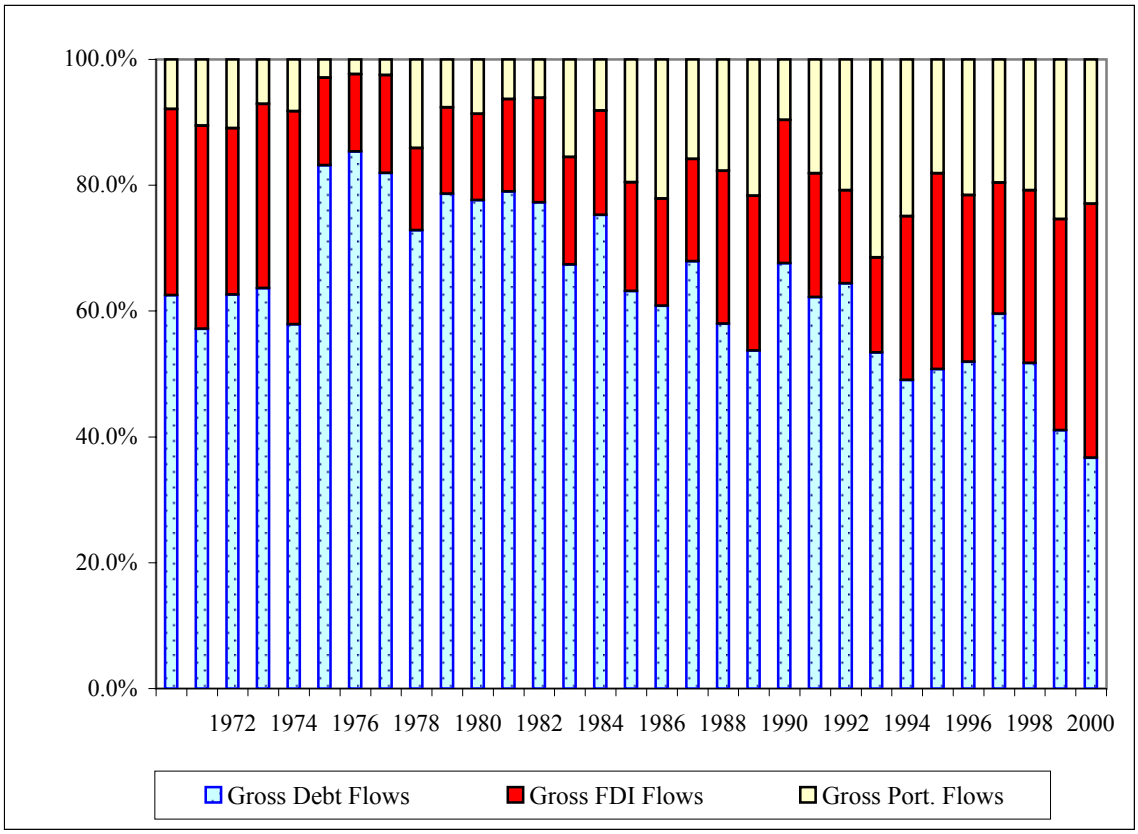
Notes: Inflows represent flows of foreign claims on domestic capital (liability), divided by population based on IMF data in 1995 U.S. dollars. Volatility of Inflows is the standard deviation of the corresponding inflows per capita divided by the average of the absolute value of the inflows and outflows of capital per capita. Data for 47 countries out of the 122 countries sample for which both equity and debt flows data are available throughout the whole sample period. FDI inflows correspond to Direct Investments in Reporting Economy (line 78bed) which includes equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Port. equity inflows correspond to Equity Liabilities (line 78bmd) which include shares, stock participations, and similar documents that usually denote ownership of equity. Data on inflows of debt include Debt Securities Liabilities (line 78bnd) which cover bonds and money market or negotiable debt instruments; and Other Investments Liabilities (line 78bid) which include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets. Flows of Equity are the sum of FDI and portfolio equity investments. Flows of capital are the sum of equity and debt.

Figure 1: **Capital Inflows per Capita by Type of Flow, 1970-2000**



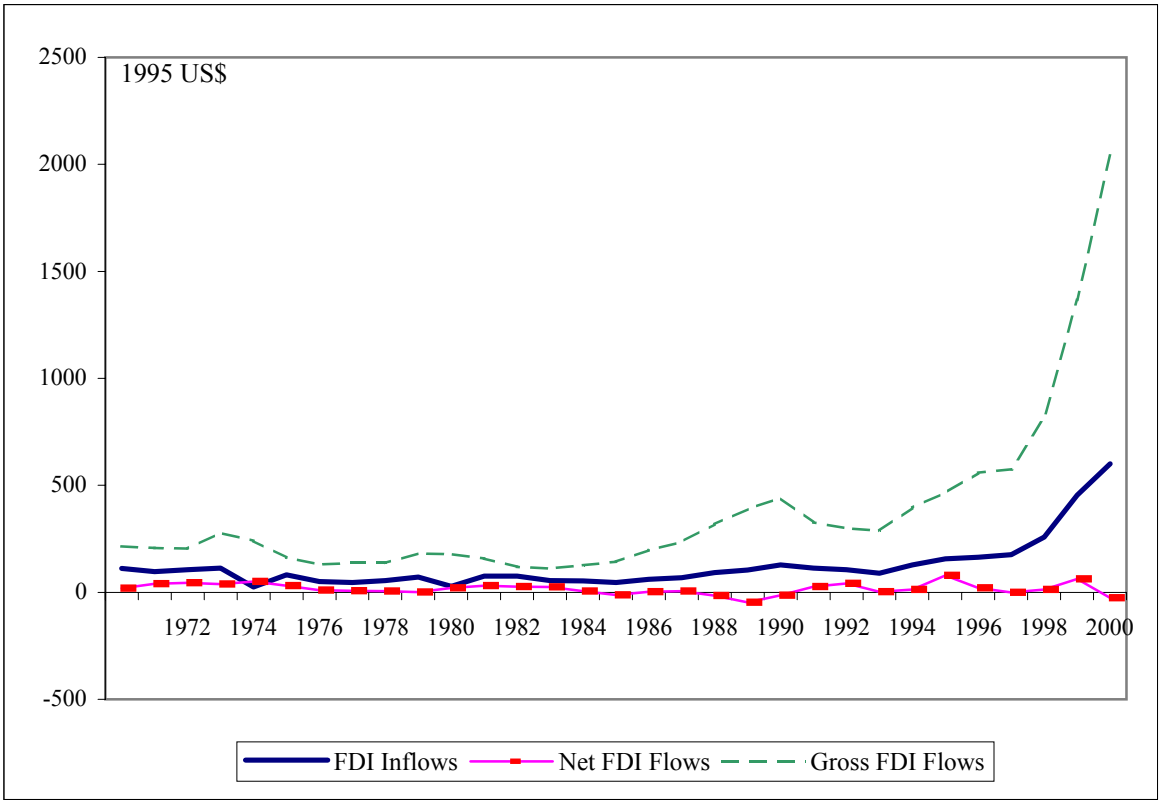
Notes : Inflows represent inflows of FDI, portfolio equity investment and debt, divided by population based on IMF data in 1995 US$. FDI data are available for 72 countries, port. for 68 countries and debt data for 122 countries. Inflows represent flows of foreign claims on domestic capital (liability). FDI inflows correspond to Direct Investment in Reporting Economy (line 78bed) which includes equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Portfolio equity inflows correspond to Equity Liabilities (line 78bmd) which includes shares, stock participations, and similar documents that usually denote ownership of equity. Data on inflows of debt include Debt Securities Liabilities (line 78bnd) which cover bonds, notes, and money market or negotiable debt instruments; and Other Investment Liabilities (line 78bid) which include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets.

Figure 2: **Gross Flows per Capita by Type of Flow, 1970-2000**



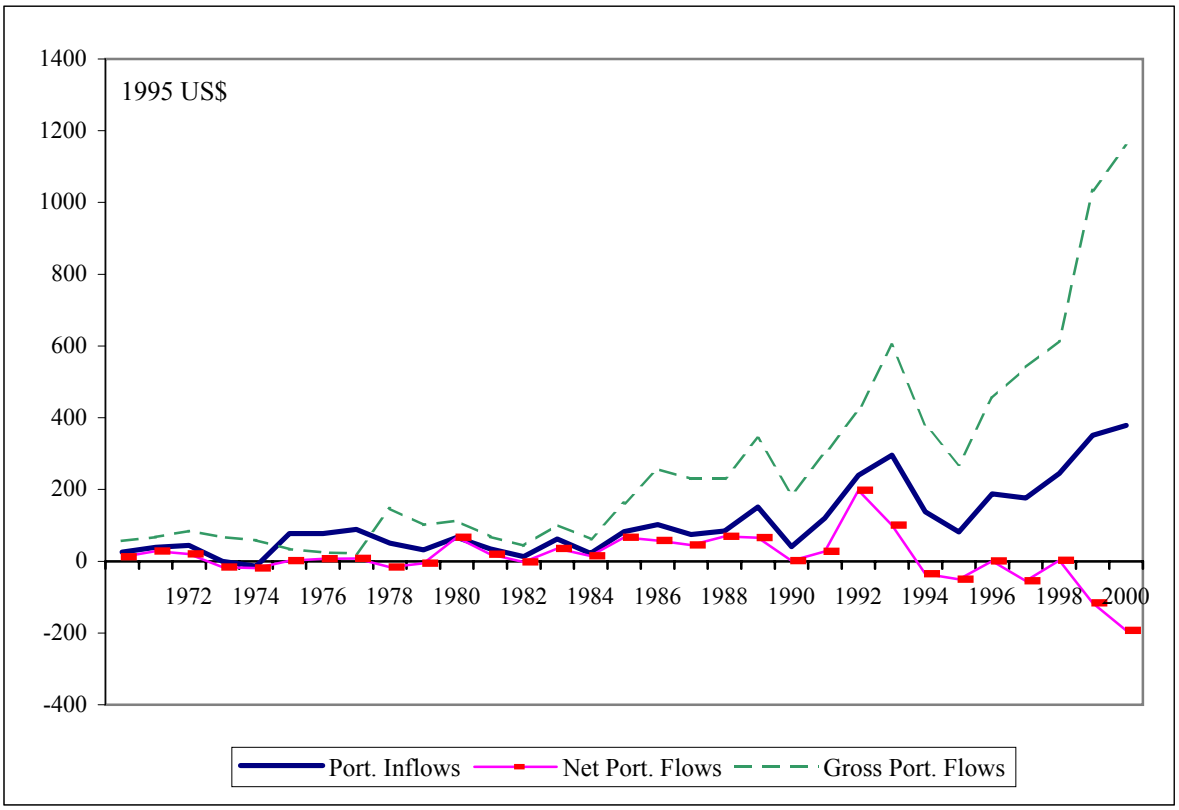
Notes : Gross flows represent gross flows of FDI, portf. equity inv. and debt, divided by population based on IMF data in 1995 US$ and correspond to the sum of the absolute value of assets (outflows) and liabilities (inflows). FDI data are available for 72 countries, port. for 68 countries and debt for 122 countries. FDI assets and liabilities correspond respectively to Direct Inv. Abroad (line 78bdd) and Direct Inv. in Reporting Econ., (line 78bed) and include equity capital, reinvested earnings, other capital and fin. derivatives associated with various intercompany transactions between affiliated enterprises. Port. Equity Inv. assets and liab. correspond to Equity Sec. Assets (line 78bkd) and Equity Sec. Liabilities (line 78bmd) and include shares, stock participations, and similar documents that usually denote ownership of equity. Debt assets and liab. include Debt Sec. Assets (line 78bld) and Debt Sec. Liab. (line 78bnd) which cover bonds and money market or negotiable debt instruments; and other inv. assets (line 78bhd) and other inv. liab. (line 78bid) which include all financial transactions not covered in direct inv., portfolio inv., fin. derivatives or other assets.

Figure 3: **FDI Flows per Capita, 1970-2000**



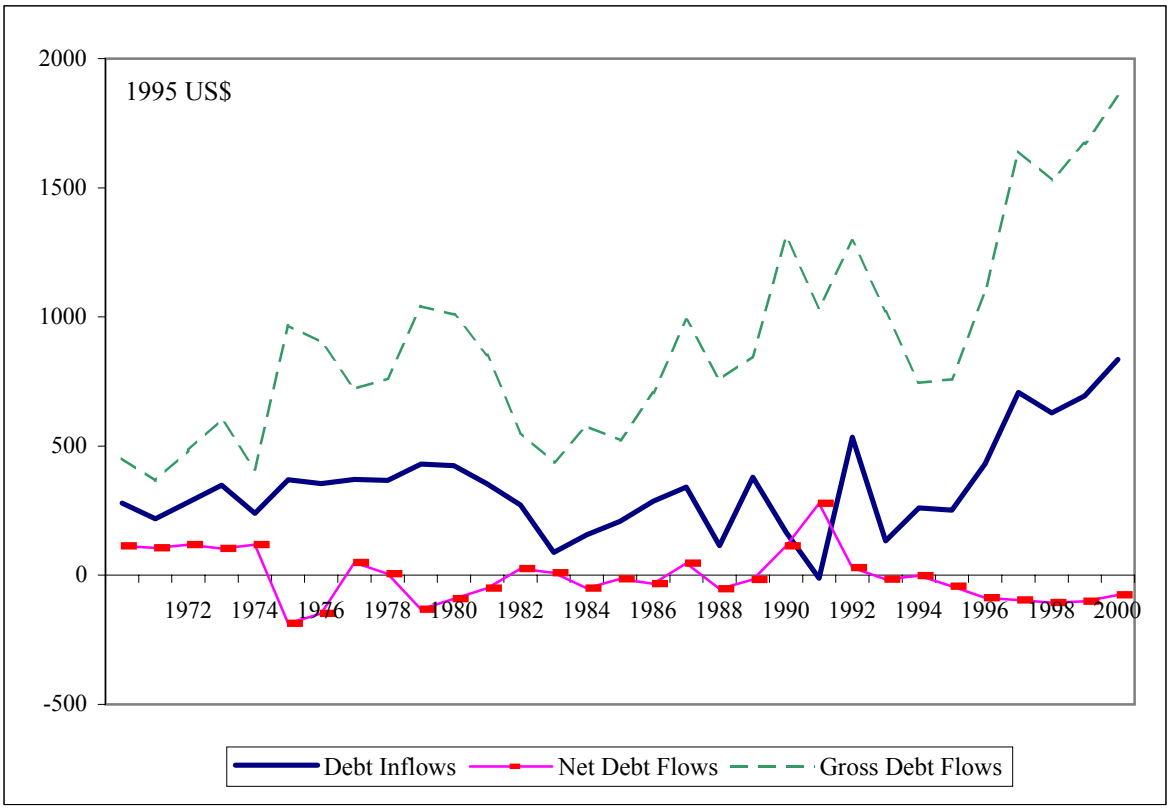
Notes : Flows represent flows of FDI divided by population based on IMF data in 1995 US$. Data for 72 countries. Inflows represent flows of foreign claims on domestic capital (liability). Net flows are calculated as the difference of corresponding inflows (liability) and outflows (asset). Gross flows correspond to the sum of the absolute value of assets and liabilities. FDI assets and liabilities correspond respectively to Direct Investment Abroad (line 78bdd) and Direct Investment in Reporting Economy (line 78bed) and include equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises.

Figure 4: **Portfolio Flows per Capita, 1970-2000**



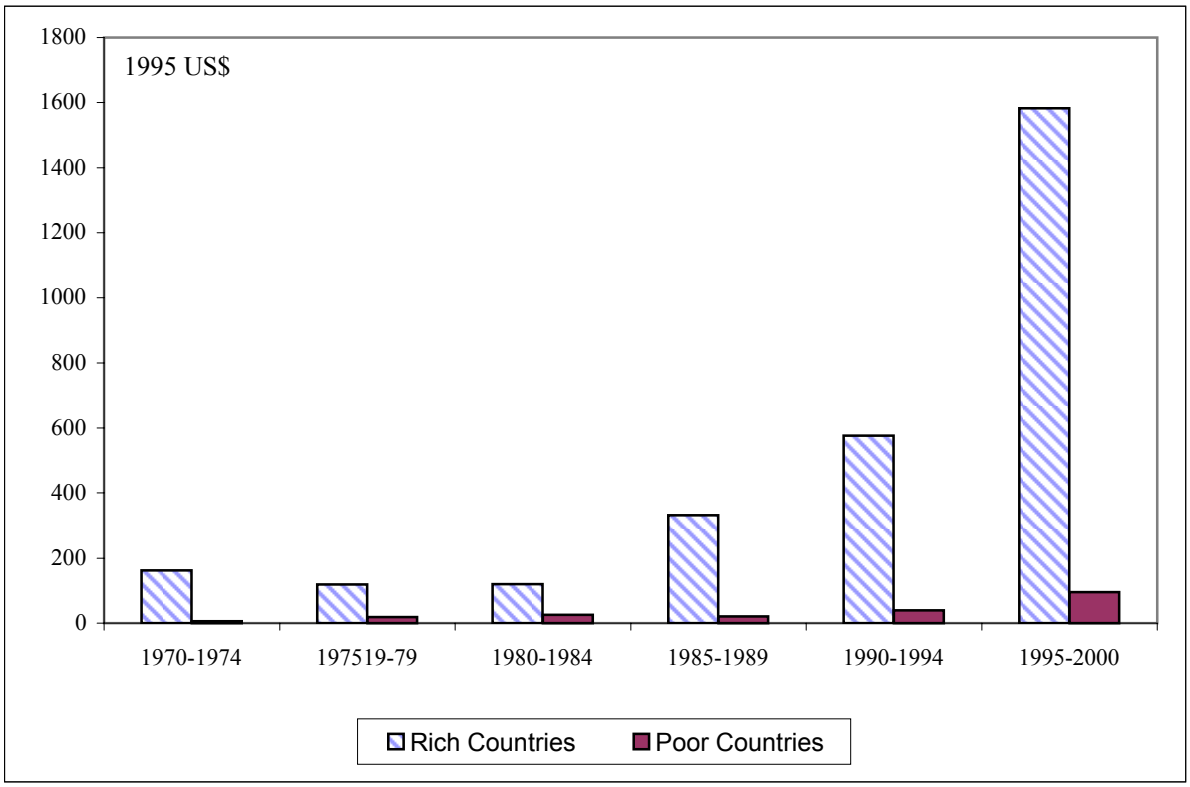
Notes: Flows represent flows of portfolio equity investment divided by population based on IMF data in 1995 US$. Data for 68 countries. Inflows represent flows of foreign claims on domestic capital (liability). Net flows are calculated as the difference of corresponding inflows (liability) and outflows (asset). Gross flows correspond to the sum of the absolute value of assets and liabilities. Portfolio Equity Investment assets and liabilities correspond respectively to Equity Security Assets (line 78bkd) and Equity Securities Liabilities (line 78bmd) and include shares, stock participations, and similar documents that usually denote ownership of equity.

Figure 5: **Debt Flows per Capita, 1970-2000**



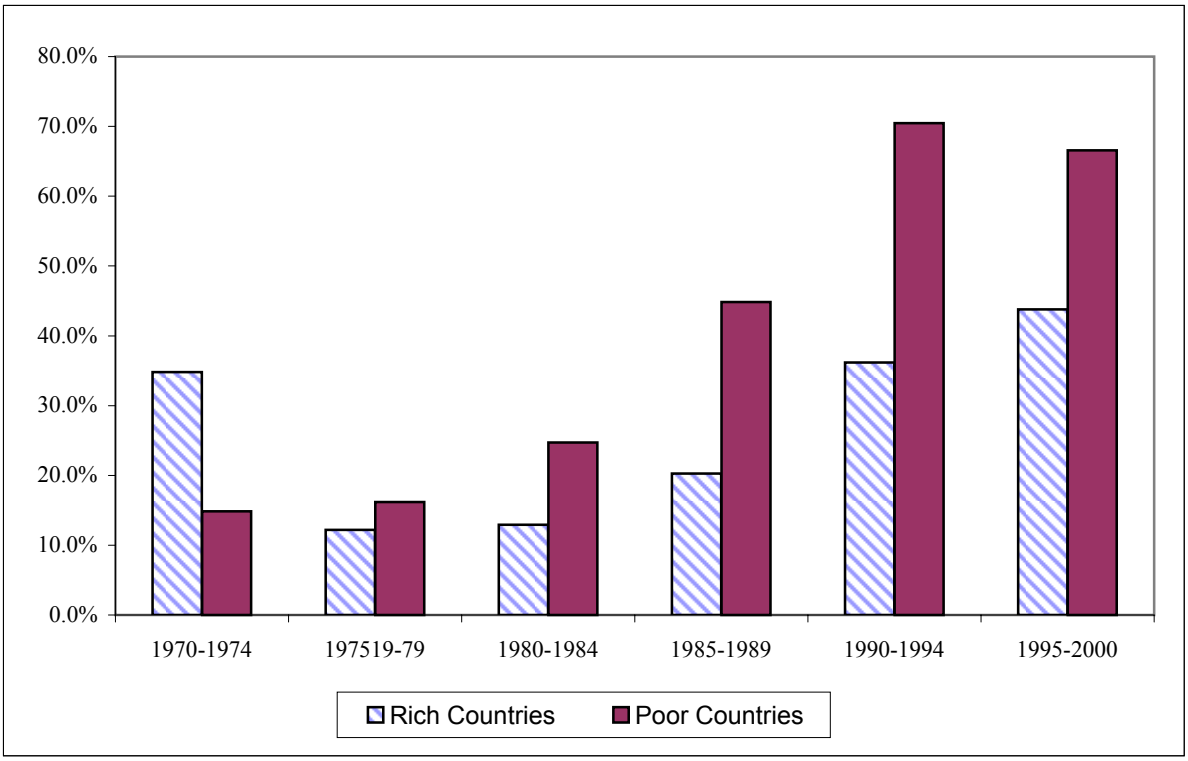
Notes : Flows represent flows of debt divided by population based on IMF data in 1995 US$. Data for 122 countries. Inflows represent flows of foreign claims on domestic capital (liability). Net flows are calculated as the difference of corresponding inflows (liability) and outflows (asset). Gross flows correspond to the sum of the absolute value of assets and liabilities. Debt assets and liabilities include respectively Debt Securities Assets (line 78bld) and Debt Securities Liabilities (line 78bnd) which cover bonds, notes, and money market or negotiable debt instruments; and other investment assets (line 78bhd); and Other Investment Liabilities (line 78bid) which include all financial transactions not covered in direct investment, portfolio investment, financial derivatives or other assets.

Figure 6a: **Equity Inflows for Rich and Poor Countries, 1970-2000**



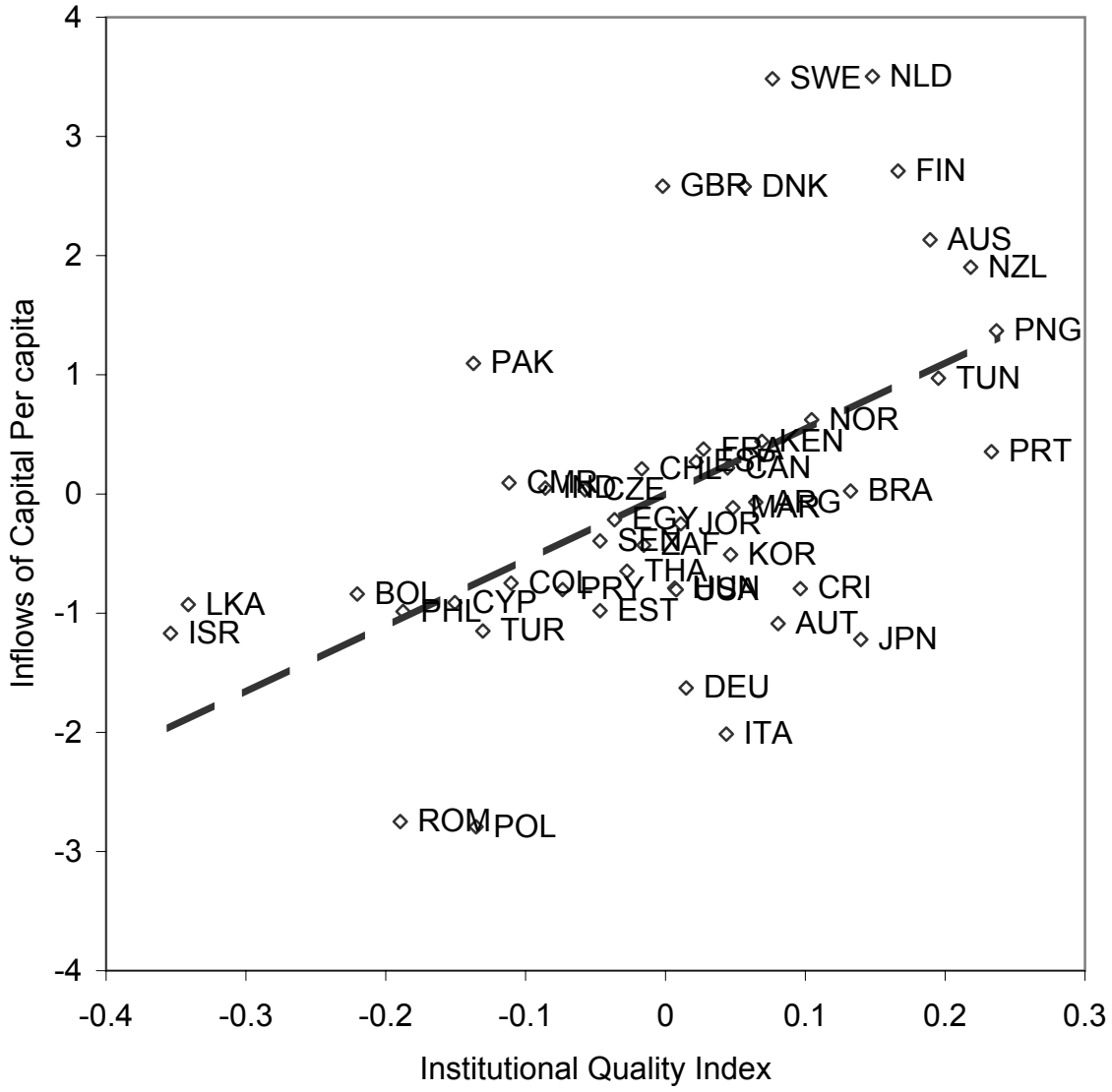
Notes : Inflows represent inflows of equity (FDI and portfolio equity investment), divided by population based on IMF data in 1995 US$. Data are for 72 countries for which equity data are avaliable averaged over 5 year periods. FDI inflows correspond to Direct Investment in Reporting Economy (line 78bed) which includes equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Portfolio equity inflows correspond to Equity Liabilities (line 78bmd) which includes shares, stock participations, and similar documents that usually denote ownership of equity. Rich countries denotes high-income OECD countries; and poor countries the remaining ones; income group 1 (high-income non-oecd) not included in graph. See Appendix 3 for coding of countries by income.

Figure 6b: **Ratio of Equity Inflows to Total Capital Inflows**
for Rich and Poor Countries, 1970-2000



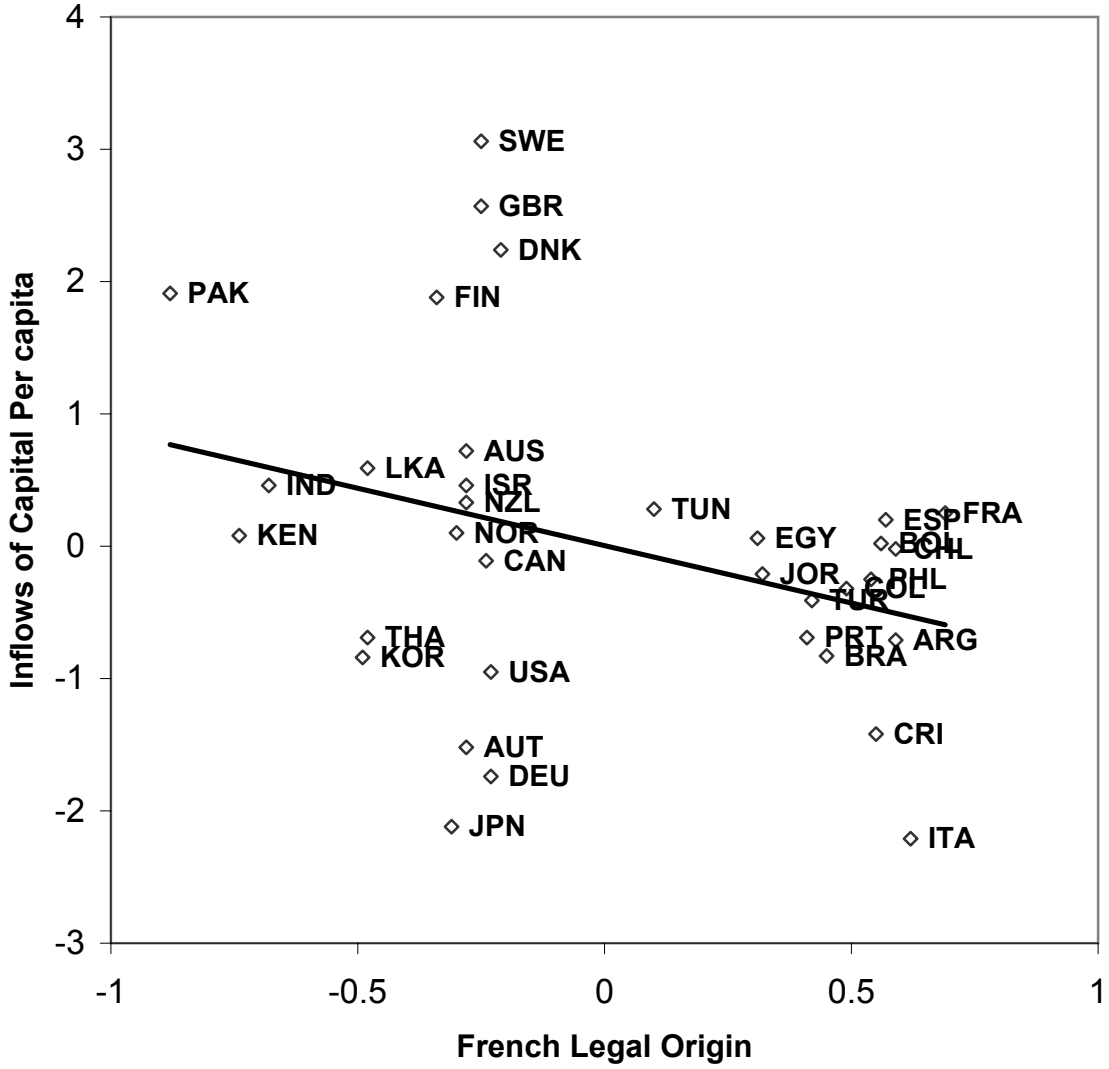
Notes : Inflows represent inflows of equity (FDI and portfolio equity inv.) to total inflows (equity plus debt), divided by population based on IMF data in 1995 US$. Data are for 72 countries for which equity data are avaliable averaged over 5 year periods. FDI inflows correspond to Direct Inv. in Reporting Econ. (line 78bed) which includes equity capital, reinvested earnings, other capital and financial derivatives associated with various intercompany transactions between affiliated enterprises. Portfolio equity inflows correspond to Equity Liabilities (line 78bmd) which includes shares, stock participations, and similar documents that usually denote ownership of equity. Data on inflows of debt include Debt Securities Liab. (line 78bnd) which cover bonds or negotiable debt instruments; and Other Inv. Liab. (line 78bid) which include all financial transactions not covered in direct inv., portfolio inv., financial derivatives or other assets. Rich countries denotes high-income OECD countries; and poor countries the remaining ones; income group 1(high-income non-oecd) not included in graph. See Appendix 3 for coding of countries by income.

Figure 7: Regression of Inflows of capital per capita on Institutional Quality after controlling for other regressors



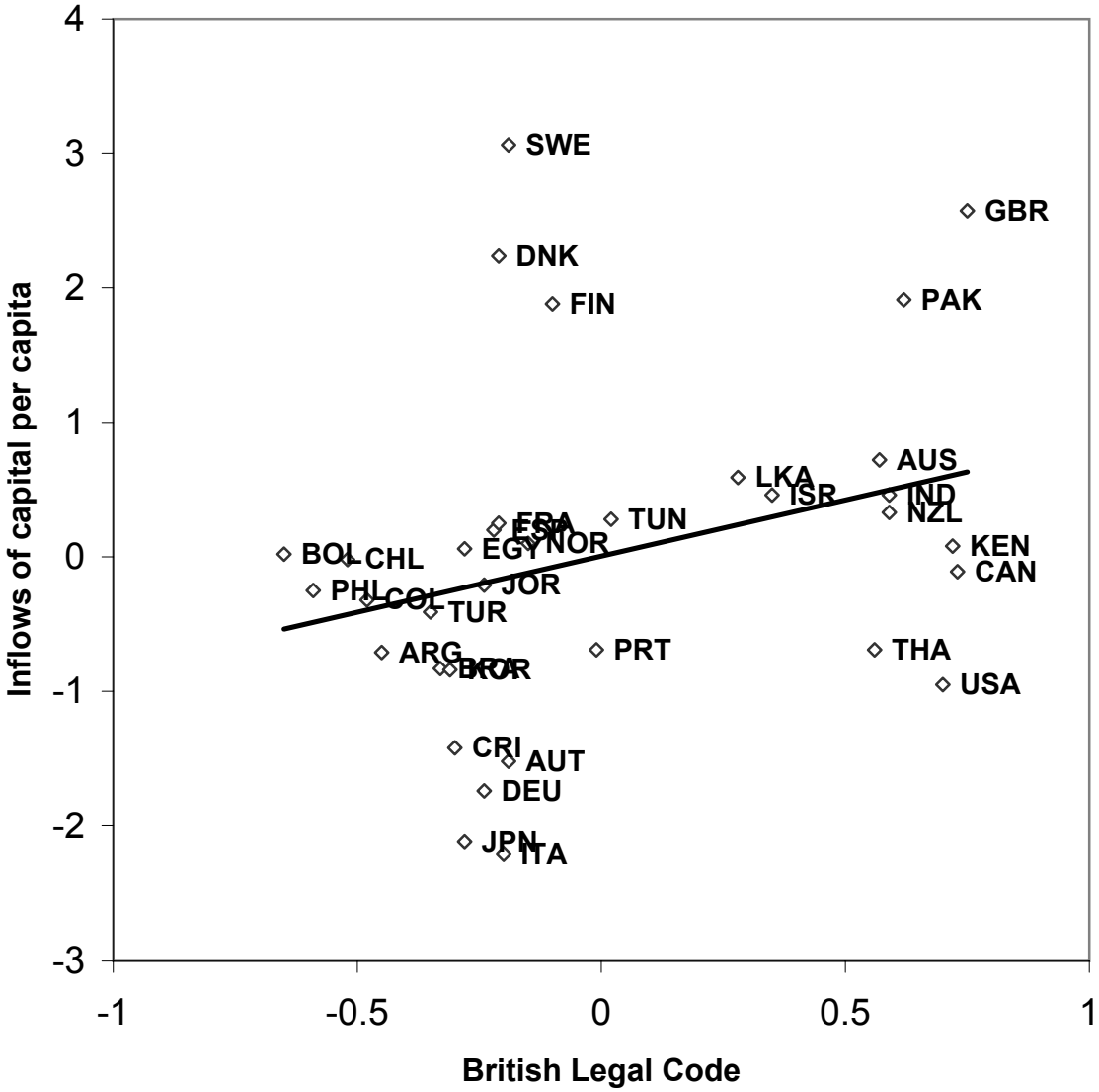
Notes: We first regressed the inflows of capital per capita on the regressors other than institutional quality and took the residuals,which we then regressed on the residuals from a regression of institutional quality on the other rergressors (including a constant in both regressions). The coefficient on institutional quality is then exactly the same as the coefficient in the multiple regression.We plot the first set of residuals against the second set in the figure.

Figure 8: Regression of Inflows of capital per capita on French Legal origin controlling for other regressors



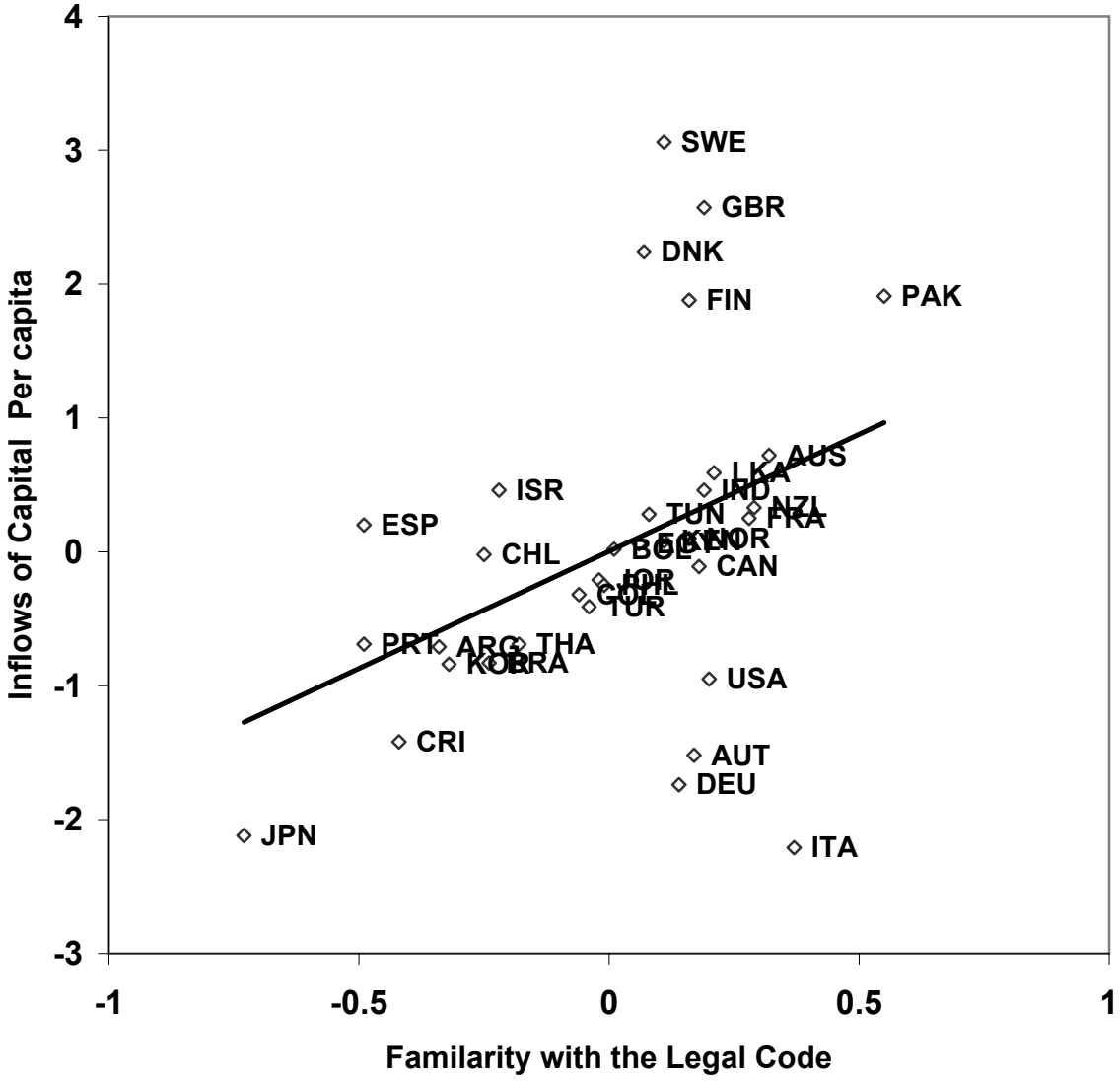
Notes: We first regressed the inflows of capital per capita on the regressors other than French legal origin and took the residuals, which we then regressed on the residuals from a regression of French legal origin on the other regressors (including a constant in both regressions). The coefficient on the French legal origin is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 9: Regression of Inflows of capital per capita on British Legal code controlling for other regressors



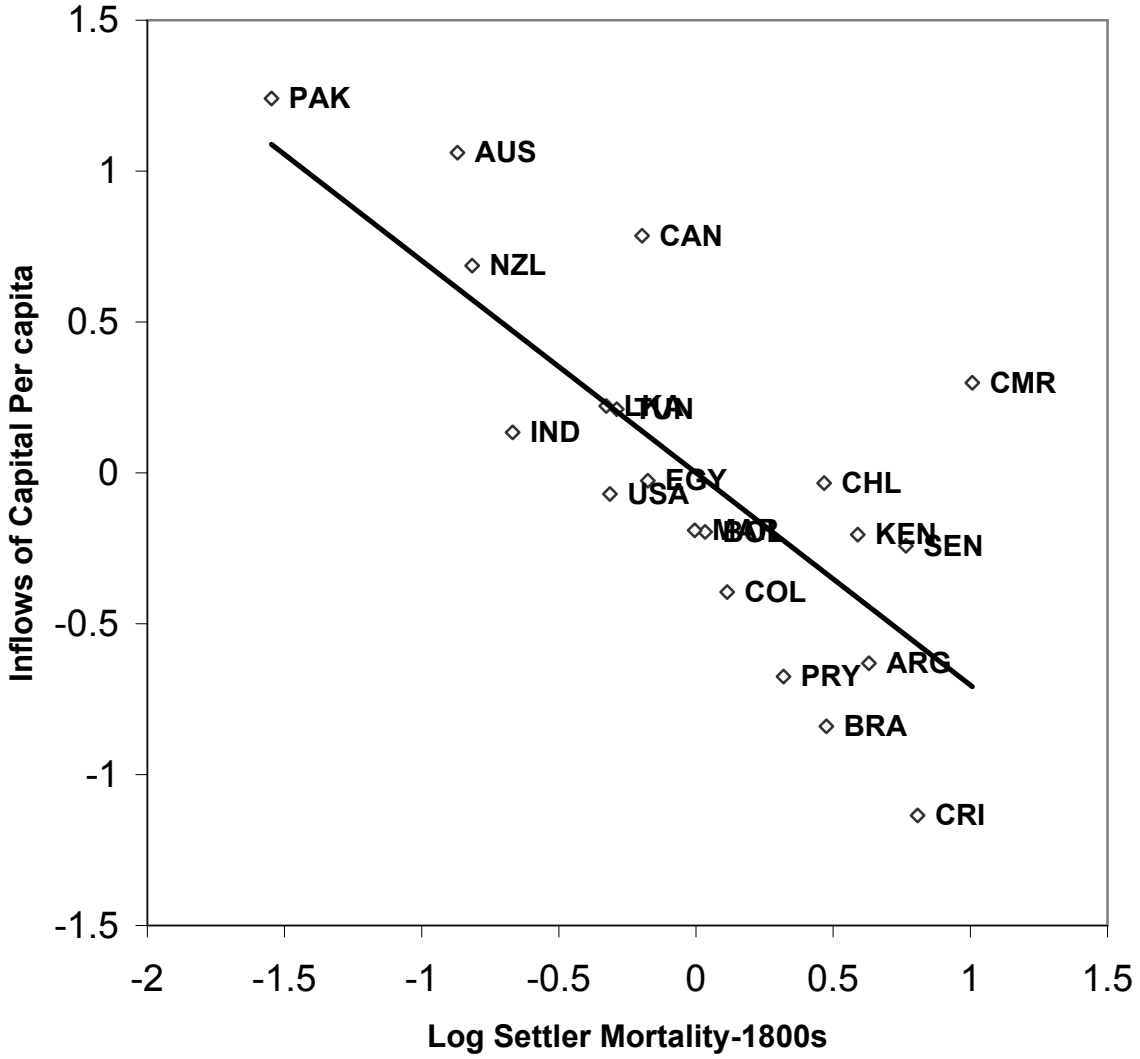
Notes: We first regressed the inflows of capital per capita on the regressors other than British legal code and took the residuals, which we then regressed on the residuals from a regression of British legal code on the other regressors (including a constant in both regressions). The coefficient on the British legal code is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 10: Regression of Inflows of capital per capita on Familiarity with Legal code controlling for other regressors



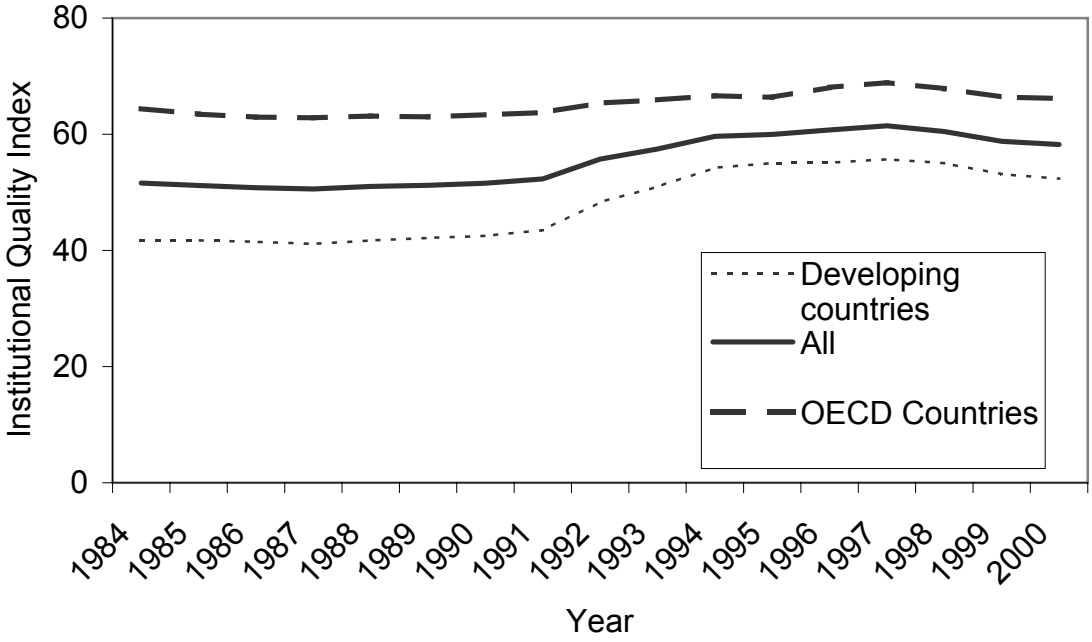
Notes: We first regressed the inflows of capital per capita on the regressors other than Familarity with the legal code and took the residuals, which we then regressed on the residuals from a regression of Familarity with the legal code on the other regressors (including a constant in both regressions). The coefficient on the Familarity with the legal code is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 11: Regression of Inflows of Capital Per capita on Settler Mortality controlling for other regressors



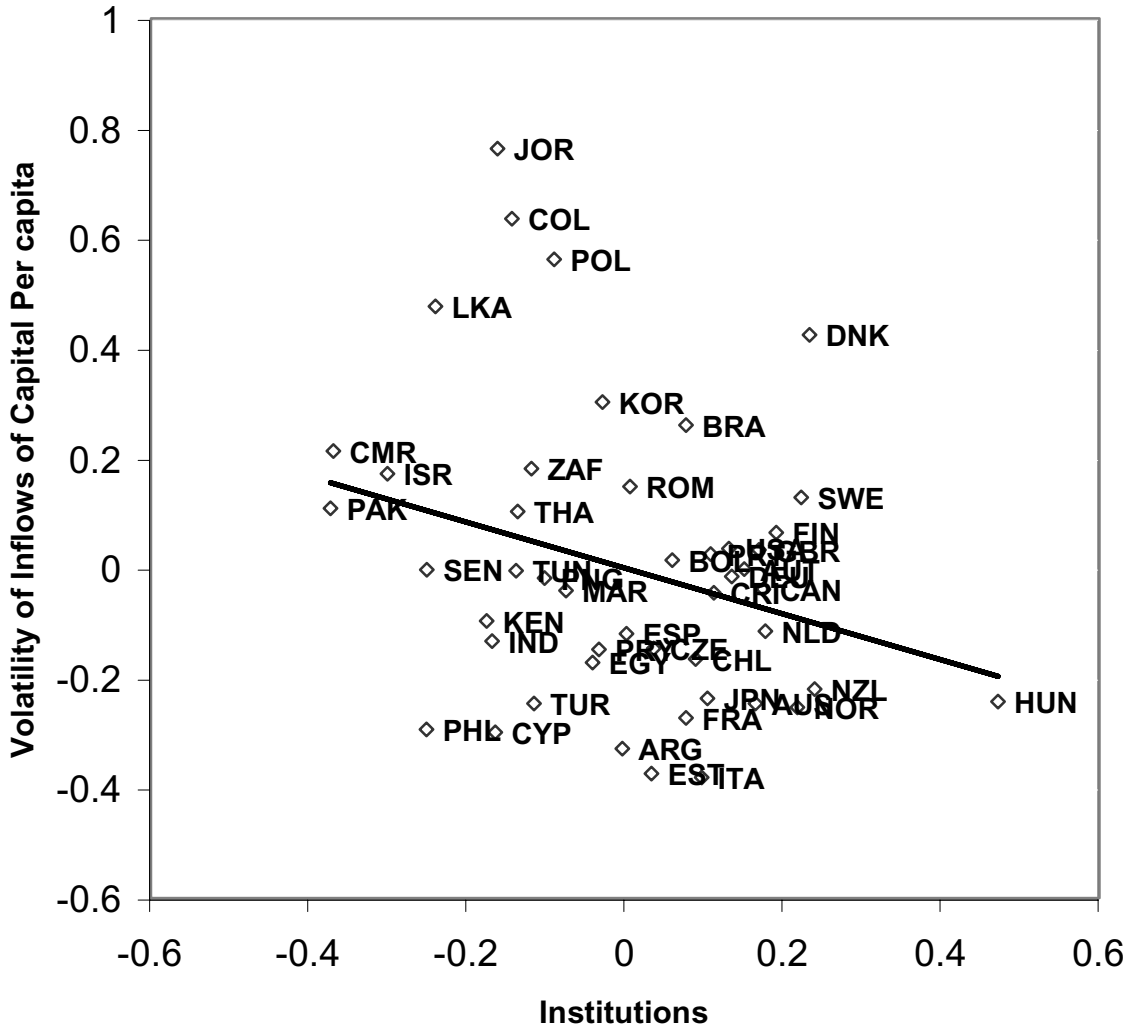
Notes: We first regressed the inflows of capital per capita on the regressors other than Settler Mortality and took the residuals, which we then regressed on the residuals from a regression of Settler Mortality on the other regressors (including a constant in both regressions). The coefficient on the Settler Mortality is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 12: Evolution Of Institutional Quality
(Average of 47 Countries)



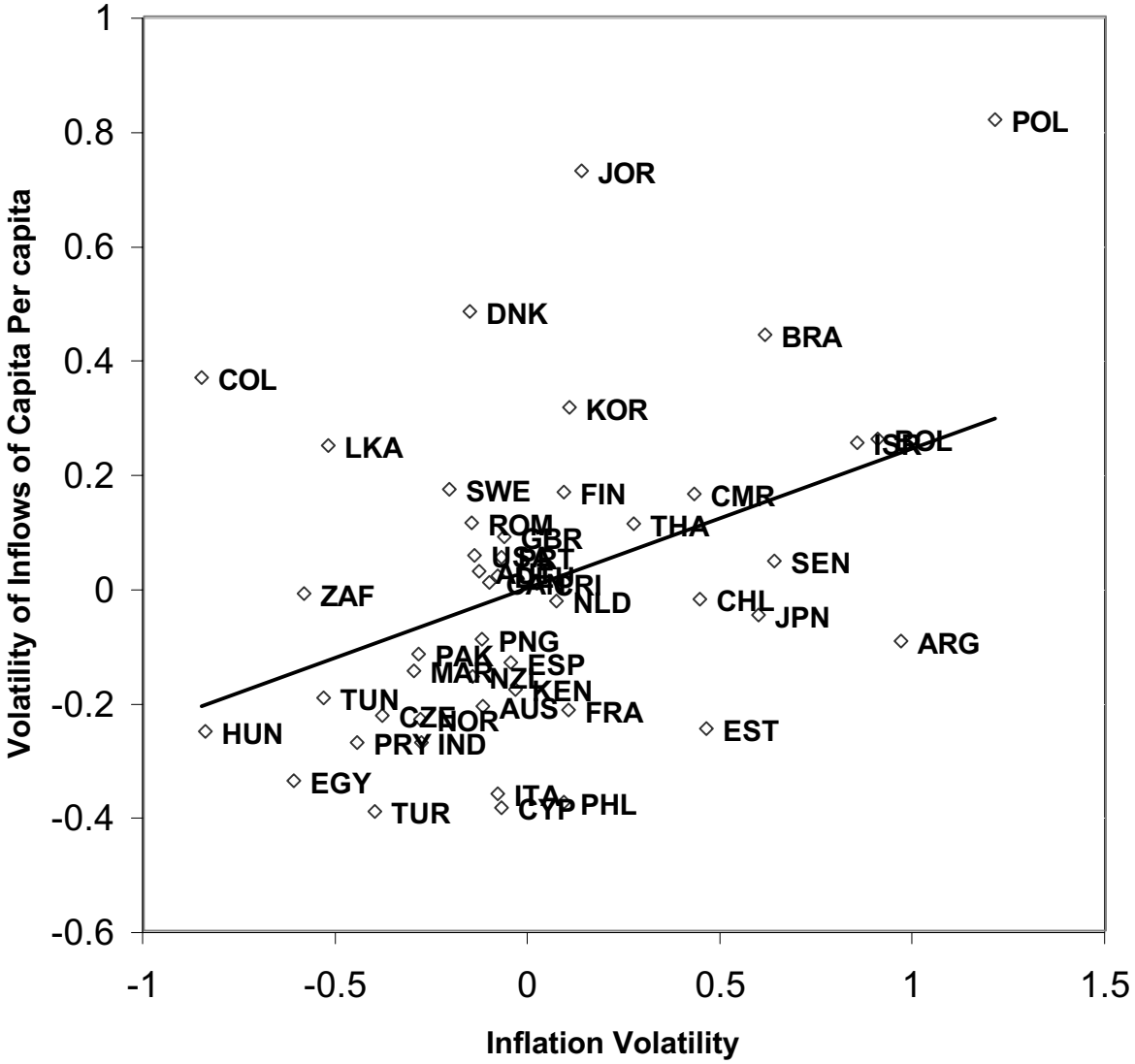
Notes: Institutional Quality Index is a composite political safety index, which is sum of all the rating components from International Country Risk Guide (ICRG). The components are as follows: Government stability is defined as the government's ability to carry out its declared programs and its ability to stay in office. It ranges from 0 to12. Internal conflict is defined as the political violence in the country and its actual or potential impact on governance. It ranges from 0 to 12.External conflict is the risk to the incumbent government from foreign action, ranging from non-violent external pressure to violent external pressure. It ranges from 0 to 12.No-corruption is an index of the degree of the non-corruption within the political system. It ranges from 0 to 6. Militarized politics is the degree of protection from the military involvement in politics. It ranges from 0 to 6. A religious tension is the degree of the protection from religious tensions in the society. It ranges from 0 to 6. The law component of the law and order index is an assessment of the strength and impartiality of the legal system; the order component is the assessment of the popular observance of the law. It ranges from 0 to 6. Ethnic tensions are the degree of protection from the tensions attributable to racial, nationality or language divisions in the society. It ranges from 0 to 12.Democratic Accountability ranges from 0 to 6, where a higher score represents stable democracies and lower scores represents autocracies. Bureaucratic Quality ranges from 0 to 4 and represents institutional strength and quality of the bureaucracy. See Appendix Table 2 for the grouping of the countries.

Figure 13: Regression of Volatility of Inflows of Capital Per capita on Institutions controlling for other regressors



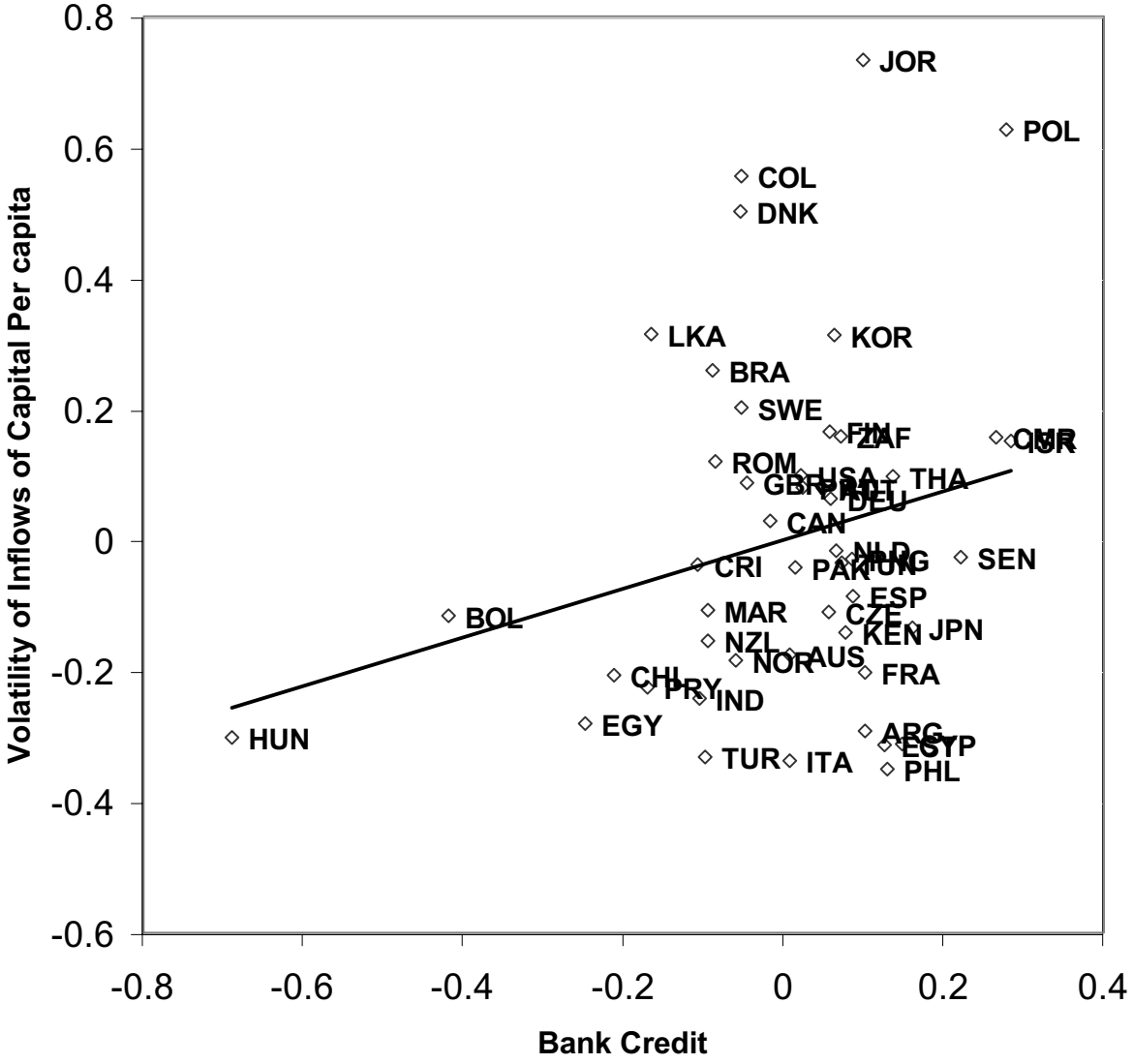
Notes: We first regressed the Volatilitly of inflows of capital per capita on the regressors other than Institutions and took the residuals, which we then regressed on the residuals from a regression of Institutions on the other regressors (including a constant in both regressions). The coefficient on the Institutions is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 14: Regression of Volatility of Inflows of Capital Per capita on Inflation Volatility controlling for other regressors



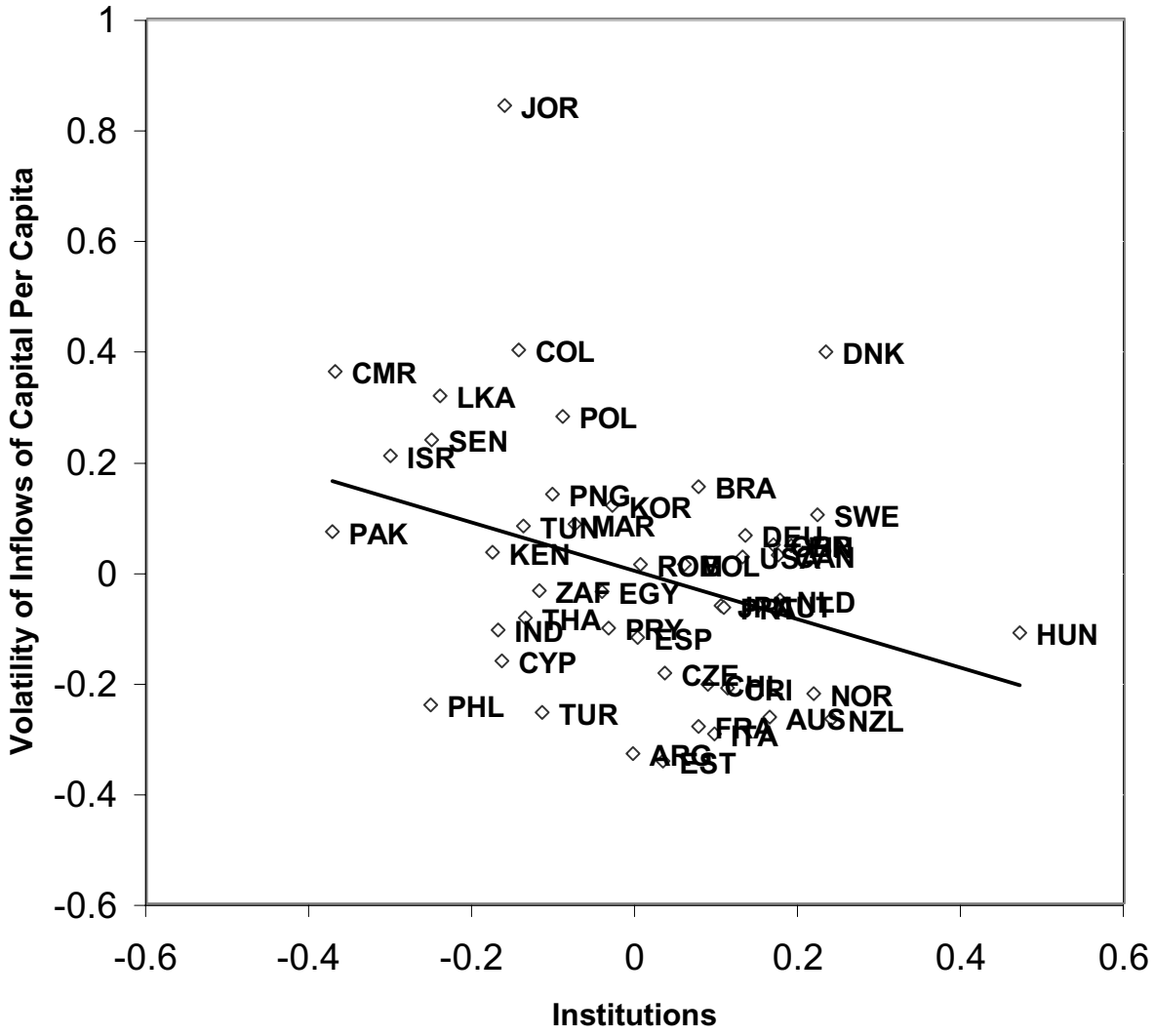
Notes: We first regressed the Volatility of inflows of capital per capita on the regressors other than Inflation Volatility and took the residuals, which we then regressed on the residuals from a regression of Inflation Volatility on the other regressors (including a constant in both regressions). The coefficient on Inflation Volatility is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 15: Regression of Volatility of Inflows of Capital Per capita on Bank Credit controlling for other regressors



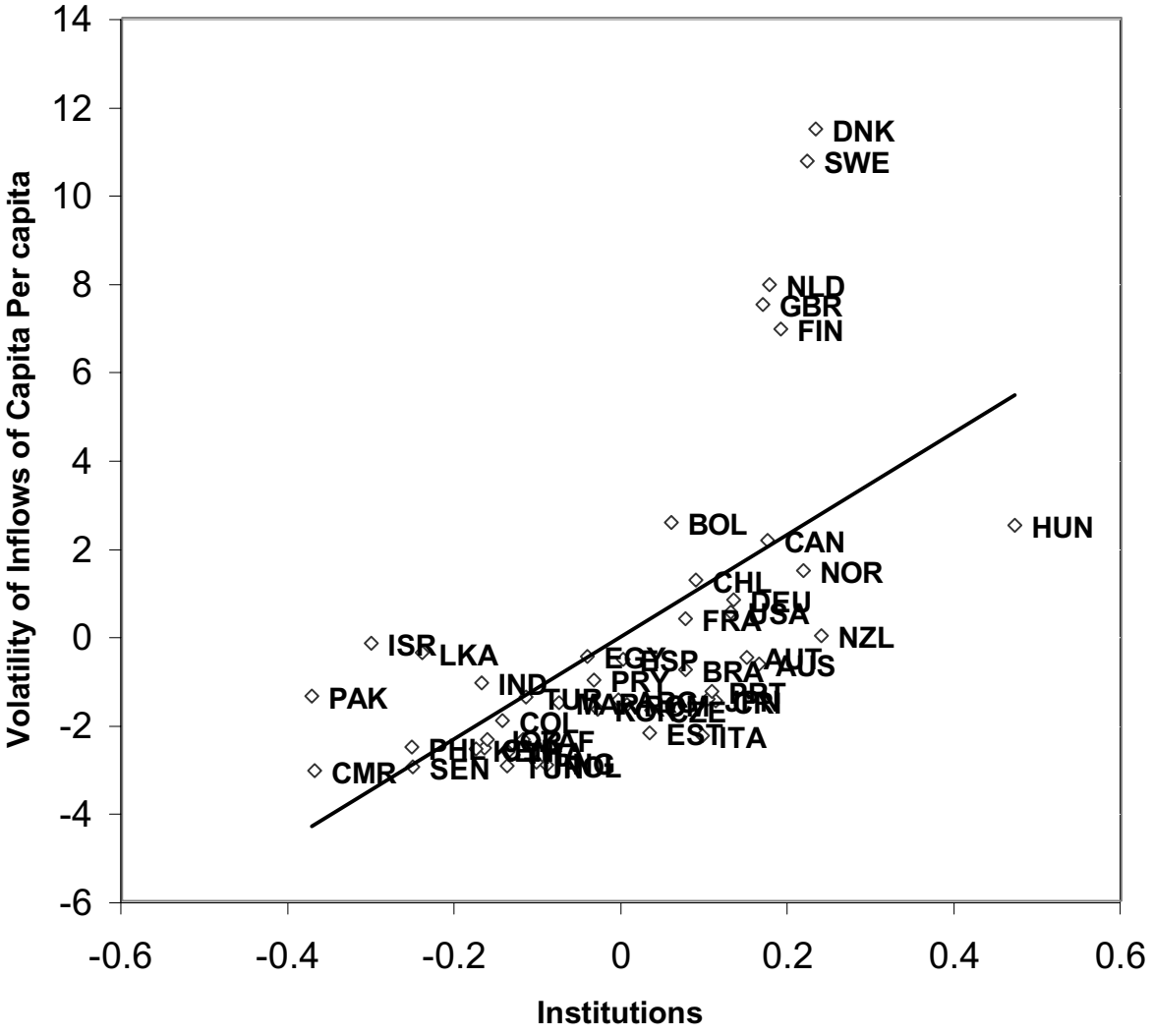
Notes: We first regressed the Volatility of inflows of capital per capita on the regressors other than Bank Credit and took the residuals, which we then regressed on the residuals from a regression of Bank Credit on the other regressors (including a constant in both regressions). The coefficient on the Bank Credit is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 16: Regression of Volatility (deviation from the trend) of Inflows of Capital Per capita on Institutions controlling for other regressors



Notes: We first regressed the Volatility of net inflows of capital per capita on the regressors other than Institutions and took the residuals, which we then regressed on the residuals from a regression of Institutions on the other regressors (including a constant in both regressions). The coefficient on the Institutions is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.

Figure 17: Regression of Volatility (not normalized) of Inflows of Capital Per capita on Institutions controlling for other regressors



Notes: We first regressed the Volatility of net inflows of capital per capita on the regressors other than Institutions and took the residuals, which we then regressed on the residuals from a regression of Institutions on the other regressors (including a constant in both regressions). The coefficient on the Institutions is then exactly the same as the coefficient in the multiple regression. We plot the first set of residuals against the second set in the figure.