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ABSTRACT

External Capital Structure: Theory and Evidence*

Recent years have witnessed a change in the composition of capital flows to developing countries, and foreign direct investment (FDI) and equity flows have been playing an increasing role. In this paper we discuss the challenges for international macroeconomics that these developments pose and characterize stylized facts associated with the structure of external liabilities in developing countries, focusing in particular on FDI and equity stocks.

JEL Classification: F21 and F34
Keywords: external debt, foreign direct investment, net foreign assets and portfolio equity

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NON-TECHNICAL SUMMARY

The last three decades have witnessed large changes in the level and composition of capital flows, both among industrial economies and between industrial and developing countries. While syndicated bank lending and official flows were the most common forms of international financing for developing economies during the late 1970s and early 1980s, portfolio flows and FDI (foreign direct investment) have increased substantially during the second part of the 1980s and especially the 1990s.

Understanding the determinants and implications of these shifts in the structure of international capital flows is a major challenge facing international economists. Much theoretical and empirical research has been devoted to issues related to debt flows, such as sovereign risk, optimal maturity structure of debt liabilities, rollover risk, and resolution of debt crises. However, less attention has been devoted to understanding both the driving forces and implications of equity and direct investment flows. In addition, empirical work in this area has been severely hampered by the scarcity of data on equity and FDI stocks.

In this paper, we briefly review the state of the theoretical literature on the subject, and we make use of a new data set we have constructed (extending Lane and Milesi-Ferretti (1999)) to present a series of empirical regularities concerning the composition of the stock of external liabilities in developing countries. The focus of our analysis is medium-term: we characterize broad empirical regularities, rather than attempting to identify the role played by the composition of capital flows in generating financial crises.

The 1990s have been referred to as the ‘age of equity finance’, as opposed to the ‘age of debt finance’ describing the period leading up to the 1982 debt crisis. Indeed, the data show a sizeable increase in portfolio equity flows during the 1990s, due to both supply and demand effects. On the supply side, restrictions on cross-border equity investment have been reduced – for example, pension funds and other institutional investors in industrial countries have been granted more freedom in the allocation of their assets, and improvements in communications have reduced the cost of acquiring information on assets of foreign origin. On the demand side, financial development in both industrial countries and emerging markets has been substantial. As a result, world stock market capitalization and depth has increased dramatically during the 1990s.

In addition to portfolio equity flows, FDI flows have also played a prominent role in external financing during the past decade. These developments are connected with an improvement in the overall macroeconomic policy stance in developing countries (with lower inflation and public deficits); the reduction in barriers to cross-border flows; and the wave of privatizations in both industrial

and developing countries. While portfolio equity investment is strongly connected to the degree of financial development of recipient countries, direct investment flows have also been directed to less-developed economies. Among other issues, this paper examines whether there are systematic differences between the determinants of these two types of flows.

The empirical evidence presented in the Paper focuses primarily on the structure of countries' external liabilities. It examines stocks, rather than flows, for the year 1997. Among industrial countries, countries with more developed financial markets tend to have larger external assets and larger external liabilities, and richer countries tend to be creditors. Income per capita, trade openness and stock market capitalization are important determinants of direct investment liabilities, and stock market capitalization also explains a sizeable fraction of cross-country variation in portfolio equity liabilities.

Among developing countries, those that are more advanced and more open to trade raise the most external liabilities, but this does not lead on average to larger *net* liabilities. Trade openness stimulates all forms of capital inflows but favours equity over debt flows, especially FDI. FDI is also attracted by the presence of natural resources and is positively related to the size of privatization programmes. Country size and stock market capitalization seem to be important in attracting portfolio equity. The data also indicate regional differences in the structure of capital flows to developing countries. For instance, all else being equal, Latin America has a higher share of FDI liabilities in total GDP, while transition economies have lower external liabilities.

The paper shows that much additional research is needed in this area. In addition to understanding the determinants of external capital structure, there has been very little work on the macroeconomic impact of different structures of external liabilities. One important issue, for example, is investigating the degree of risk sharing that equity liabilities can provide. A second related issue has to do with the cost of servicing external liabilities. Insofar as equity and FDI investment require a risk premium with respect to the rate of return on external debt, their servicing will be, *ceteris paribus*, more expensive even though the structure of these pay-outs may have more desirable cyclical properties. Finally, further theoretical and empirical work should provide us with more confidence in evaluating the various policy proposals concerning the reform of the international financial structure.

I. INTRODUCTION

The last three decades have witnessed large changes in the level and composition of capital flows, both among industrial economies and between industrial and developing countries. While syndicated bank lending and official flows were the most common forms of international financing to developing economies during the late 1970s and early 1980s, portfolio flows and foreign direct investment have increased substantially during the second part of the 1980s and especially the 1990s.

Understanding the determinants and implications of these shifts in the structure of international capital flows is a major challenge facing international economists. Much theoretical and empirical research has been devoted to issues related to debt flows, such as sovereign risk, optimal maturity structure of debt liabilities, rollover risk, and resolution of debt crises. However, less attention has been devoted to understanding both the driving forces and implications of equity and direct investment flows. In addition, empirical work in this area has been severely hampered by the paucity of data on equity and FDI stocks, and has mostly focused on "push" vs "pull" factors in driving capital flows and on the relative volatility of different types of flows. [1]

In this paper, we briefly review the state of the theoretical literature on the subject, and we make use of a new dataset we have constructed (extending Lane and Milesi-Ferretti (1999)) to present a series of empirical regularities concerning the composition of the stock of external liabilities in developing countries. Finally, we suggest some challenges for future theoretical and empirical research. The focus of our analysis is medium-term: we

[1] See, for example, Calvo, Leiderman and Reinhart (1993), Dooley, Claessens and Warner (1995) and Sarno and Taylor (1999).

characterize broad empirical regularities, rather than attempting to identify the role played by the composition of capital flows in generating financial crises.

Some authors (see, for example, Eichengreen and Fishlow (1998)) have referred to the 1990s as the "age of equity finance," as opposed to the "age of debt finance" describing the period leading up to the 1982 debt crisis.[2] Indeed, the data show a sizable increase in portfolio equity flows during the 1990s, due to both supply and demand effects. On the supply side, restrictions on cross-border equity investment have been reduced—for example, pension funds and other institutional investors in industrial countries have been granted more freedom in the allocation of their assets, and improvements in communications have reduced the cost of acquiring information on assets of foreign origin. On the demand side, financial development in both industrial countries and emerging markets has been substantial. As a result, world stock market capitalization and depth has increased dramatically during the 1990s (see, for example, Tesar and Werner (1995), Tesar (1999) and Stulz (1999)).

In addition to portfolio equity flows, foreign direct investment flows have also played a prominent role in external financing during the past decade. Foreign direct investment flows were also a net source of external financing during the 1970s and 1980s, in contrast to portfolio equity flows, but have dramatically increased in importance during the 1990s. These developments are connected with an improvement in the overall macroeconomic policy stance in developing countries (with lower inflation and public deficits), the reduction in barriers to cross-border flows, and the wave of privatizations in both industrial and developing countries. While portfolio equity investment is strongly connected to the degree of financial development of recipient countries, direct investment flows have also been

[2] See also the chapters by Buch and Pierdzioch and Hull and Tesar in this volume.

directed to less developed economies.[3] Among other issues, in the remainder of this paper we examine whether there are systematic differences between the determinants of these two types of flows.

The structure of external debt flows has also changed substantially, as already highlighted above: portfolio debt flows have played an increasingly important role, substituting for a decline in the share of syndicated bank lending. While the structure of debt flows is undoubtedly a crucial issue, in this paper we will focus mostly on the choice between debt and equity finance, rather than exploring shifts in the composition of debt finance.

The rest of this paper is organized as follows. Section II summarizes the theoretical literature. Section III briefly discusses existing empirical evidence and presents a broad set of stylized facts concerning the time series behavior of capital flows and the cross-sectional distribution of the stock of external liabilities and its composition. Section IV discusses the research agenda ahead and provides some conclusions.

II. THEORY

Why should the composition of capital flows and external assets and liabilities matter? Different types of capital flows have different properties with regard to features such as risk, liquidity, "lumpiness", tradability, reversibility, expropriability, and tax treatment. In addition, the composition of capital flows may influence productivity growth in the recipient country. For example, direct investment in developing countries can involve a transfer of technology and entrepreneurial skills, as well as a financial operation, while international portfolio equity flows may be useful in stimulating stock market development and improved

[3] See the evidence in Hausmann and Fernández-Arias (2000a) and Albuquerque (2000). See also Borenzstein et al (1998).

corporate governance. A key feature that is especially important for vulnerable developing countries is that foreign direct investment and portfolio equity flows entail different risk-sharing properties between domestic and foreign residents in comparison to external debt flows. For example, if negative shocks to the domestic economy result in a real exchange rate depreciation, the burden of servicing foreign-currency-denominated external debt will be counter-cyclical, while returns on FDI and equity will be pro-cyclical.

International macroeconomic theory has not fully kept up pace with the evolution of international capital markets during the past decade. In the deterministic current account models of the 1970s and 1980s, the emphasis was on aggregate net flows under perfect or imperfect capital mobility. The debt crisis literature made advances in understanding the role played by sovereign risk and credit rationing in limiting debt flows but had little to say about the alternatives of foreign direct investment and portfolio equity flows.[4] Rather, the foreign direct investment literature has typically abstracted from its financial dimension to focus on industrial organization and trade issues (eg the standard Organization-Location-Internalization paradigm) and international portfolio flows have been analyzed as an extension to the standard optimal portfolio choice problem. Although much has been learned by treating each kind of flow in isolation, existing theory has little to say on the optimal structure of capital flows in terms of the relative balance between debt, foreign direct investment and portfolio equity components.

A natural starting point in thinking about alternative sources of external finance is the corporate finance literature on the optimal capital structure of firms (see the surveys by Harris and Raviv (1991) and Rajan and Zingales (1995)). Under perfect information and no distortions, the Modigliani-Miller Theorem proves the irrelevance of capital structure.

[4] See Eaton and Fernandez (1995), Cline (1995) and Lane (1999) on external debt.

Accordingly, this literature highlights the role of asymmetric information, agency problems, taxation and corporate control considerations in determining the choice between equity and debt financing. The most famous illustration of the problems caused by asymmetric information is the "lemons" problem--equity will be underpriced, since investors will be suspicious of the fundamentals of any firm that is willing to sell an equity share. In addition, the choice of capital structure can be a useful signaling device in revealing information to investors. Agency problems between owners and managers can be ameliorated by appropriate financing choices: for example, a high debt load acts as a disciplining device in reducing managerial discretion. Finally, the fact that equity carries votes but debt does not means that capital structure can be used strategically to influence the outcome of corporate control contests. Overall, the literature has successfully established a small number of general principles governing capital structure decisions. However, their very generality means that a large number of potential determinants of capital structure can be identified as empirical counterparts to the theoretical propositions.

There are, however, a number of issues that limit the applicability of insights from the corporate finance literature to international capital flows. With regard to *informational asymmetries*, the corporate finance literature does not distinguish between domestic and foreign investors. To the extent that it has addressed these issues, the literature on the structure of international capital flows has emphasized asymmetric information problems that are exacerbated for foreign investors. For example, Gordon and Bovenberg (1996) argue that greenfield FDI is attractive because it less prone to asymmetric information problems than other types of investments in which the foreign agent must rely on domestic owners for information. The Gordon-Bovenberg model has been extended by Razin, Sadka and Yuen (1998a, 1998b, 1999) in a series of papers that study how different degrees of informational asymmetries and differences in tax treatment affect the composition of capital flows.

More generally, this literature on international capital flows focuses on two types of informational asymmetries: between foreign and domestic investors and between the controlling owner of the firm and outsiders, be they domestic or foreign. In this environment, FDI may be a way to reduce or eliminate the informational asymmetry which gives rise to the underpricing of equity, insofar as purchasing a controlling interest in a firm allows the foreign investor to eliminate informational problems. Because of the "lemons" problem referred to earlier, a high-productivity firm would prefer to issue debt rather than equity. However, under uncertainty, the existence of bankruptcy costs may lead to a preference for equity finance (a point that generally applies to the whole capital structure literature). With the development of sophisticated stock markets, the adverse selection problem would be mitigated and equity would become a more feasible means of financing.

Another important difference between domestic corporate finance and the external capital structure of countries is related to the *enforceability of claims.* Domestic financial contracts can be enforced by the legal system, whereas this may be more difficult in the case of international investments. A number of studies have emphasized differences in the level of expropriability in explaining the composition of capital flows. For instance, Cole and English (1991, 1992) argue that FDI is more subject to expropriation than is debt. However, they claim that expropriation risk is likely declining in the level of FDI (in contrast to debt), which is an argument in favor of the clustering of FDI in a few locations.[5] Albuquerque (2000)

[5] With higher FDI, domestic consumption is higher with and without expropriation, but the long-run level of consumption under expropriation is unchanged (FDI depreciates). This implies a higher decline in consumption following expropriation and hence a lower probability of expropriation. Cole and English also argue that governments may have an incentive to opportunistically expropriate FDI during good times, whereas external debt repudiation is more likely during crises.

argues instead that it is FDI that is less subject to expropriation risk: it is “inalienable”--useless to domestic agents who are unable to operate the proprietary technology.

The degree to which these theoretical arguments apply depends on the sectoral allocation of foreign direct investment. Foreign direct investment in developing countries has mostly been concentrated in either capital-intensive sectors or in primary commodities. In particular, extractive industries are an important sector for FDI—they are typically very capital-intensive and large scale, and may have proprietary technology. Historically, FDI has been subject to significant expropriation risk (see Sigmund (1980) for several examples relating to Latin America). Albuquerque's theory may apply mostly to FDI in high-tech sectors, which may be sufficiently inalienable to lower expropriation risk.

It is well understood that a desire to share risk provides an important motivation to use equity financing. At the level of a firm, avoiding bankruptcy costs is a powerful motivation to share risk. From the point of view of a country, the desire to smooth consumption is an important additional motivation in pursuing risk-sharing arrangements. Cole and English (1992) note that equity investment by foreign residents has more desirable properties than debt—for example, in the case of debt overhang, external debt may act as a disincentive to domestic investment, given that foreigners would capture (part of) the benefits of increases in output. More generally, equity allows for more favorable risk sharing, given that foreign investors bear part of the country risk in the event of a negative shock (the value of equity declines, while the value of debt often increases with respect to GDP in case the crisis is associated with a real depreciation).[6] However, Gertler and Rogoff (1990), Atkeson (1991) and Lane (1999a) show that moral hazard and repudiation risk limits the

[6] It should be noted that state-contingent debt contracts can replicate quite closely equity arrangements so the "debt/equity" distinction can be murky in some cases. Obstfeld and

(continued…)

scale of state-contingent financing. These problems bedevil the scale of risk-sharing schemes in general. Indeed, a simple debt contract is the solution to the classic "costly state verification" problem studied by Townsend (1979).

Finally, in an interesting recent contribution Hull and Tesar (2000) present a general equilibrium model to study the implications of trade in equity and FDI. FDI improves productive efficiency by allowing countries to better exploit sectoral comparative advantage. In addition, in the absence of portfolio equity markets, FDI provides a mechanism to diversify against country risk. An important point is that it is ambiguous whether FDI and portfolio equity are complements or substitutes. On the one side, portfolio equity flows substitute for FDI by providing more efficient diversification (claims on income can be traded independently of production decisions). On the other, diversification through equity markets increases the risk-adjusted return to FDI and implies that equity and FDI flows are complements. When country-specific risk is large relative to industry-specific risk and the benefits of specialization through FDI are small, the authors find that equity trade may substitute for FDI flows.[7] The impact of portfolio insurance on production decisions has also been studied by Obstfeld (1994) and Feeney (1994), amongst others, and suggests that the structure of capital flows can have significant effects on trade patterns and growth rates.[8]

Rogoff (1996, Chapters 5-6) provide a textbook treatment of imperfections in international financial markets.

[7] However, Kraay et al (2000) provide an alternative explanation regarding the composition of capital flows between debt and equity. They emphasize that foreign equity is a worse hedge against sovereign (default) risk than are foreign loans, supporting the historical predominance of the latter in capital flows to developing countries.

[8] We do not pursue the impact on production decisions in this paper but leave it for future research. Borenzstein et al (1998) study the impact of FDI on growth and highlight the role played by human capital in attracting FDI. Zebregs (1998) also points out that FDI may endogenously alter the production structure. Scheide (1993) finds no correlation between recourse to external capital and growth rates.

A. Empirical Determinants of the External Capital Structure

The papers cited above suggest some key factors in determining the structure of capital flows. As was mentioned above, the generality of the core theoretical principles means that plausible hypotheses can be entertained regarding a large number of potential determinants. We emphasize that it is important not to look at individual types of capital flows in isolation: we want to know whether a given determinant has similar effects on all types of inflow or has a differential effect on the external capital structure. Moreover, an important issue is whether different types of flows are complements or substitutes. For instance, FDI may bring about inflows of debt and portfolio equity, if these are complementary. Conversely, what comes in as FDI could go out as a debt or equity outflow, in particular if foreign investors hedge by borrowing in the country of destination and using the proceeds for capital repatriation.

In thinking about the various factors emphasized by the theoretical literature, the level of development (as proxied by output per capita) plays a multifaceted role. First, financial development likely means that asymmetric information problems are diminished, encouraging equity structures. Second, in less developed countries "family" firms that do not issue outside equity are more prominent. Third, we may expect the development of well-functioning financial markets to stimulate marketed liabilities (debt, portfolio equity and FDI in the form of mergers and acquisitions) over non-marketed liabilities (greenfield FDI): De Gregorio (1998) stresses the complementarities between financial development and financial integration.[9] However, absolute FDI inflows may still be a positive function of output per capita, since FDI is attracted by high levels of human capital and large market size. Finally, with respect to the debt/equity split, firms may grow large enough to be less exposed to

[9] Similarly, the composition of debt should switch from bank loans to bonds.

bankruptcy and risk, promoting debt over equity. Since financial development is not perfectly correlated with output per capita, it is also interesting to examine the correlation between capital inflows and the size of domestic financial markets (holding fixed output per capita). In the empirical work below, we include three measures of domestic financial activity: stock market capitalization, the M2/GDP ratio and the scale of privatization revenues in relation to GDP.

How can one relate asymmetric information, which is clearly a key financial friction, to "observables"? Asymmetric information problems are likely to be more severe, the greater the "difference" between the investor and the target country. This "difference" may be related to factors such as proximity, language, "cultural" factors, and legal systems.[10] On the other hand, the problem may be mitigated by common and well enforced accounting and legal principles, financial market sophistication and good telecommunications.[11] In the empirical work in this paper, we make a start by considering the role played by country size (in addition to output per capita and financial market development) and leave the investigation of other factors for future research. If fixed costs of acquiring (and providing) information are important, we may expect larger countries to more successfully attract information-intensive forms of finance, such as portfolio equity flows. One important issue that we do not address in this paper is whether the external capital structure of countries reflects their domestic capital structure—namely, whether factors such as the nature of the

[10] On the implications of differences in legal systems for the choice of financing by firms see La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998). On the role of proximity in the determination of capital flows, see Ghosh and Wolf (1998) and Portes and Rey (1999).

[11] On the role of telecommunications in promoting capital flows, see Kim (1999) and Portes and Rey (1999). Large equity issues would make any fixed cost of information more easily paid; in addition, more information may be available.

legal system and protection of minority shareholders, which are known to affect the structure of domestic capital markets, also play a role in shaping the external financing.

Trade openness is an obvious candidate explanatory variable. Similar to the level of GDP per capita, trade openness plausibly has several effects on capital structure. First, trade openness may increase external vulnerability and hence the desire for risk sharing, favoring equity over debt. Second, trade openness may ameliorate asymmetric information problems, since goods trade increases familiarity and provides useful information to overseas investors. Third, trade openness plausibly reduces repudiation risk: more open economies are more vulnerable to trade sanctions and may be better able to post tradable collateral (Lane 2000a). Finally, openness in trade may also reflect a liberal policy environment that generally stimulates asset trade.[12] In the empirical work, we also examine the level of natural resource exports as a determinant of capital inflows, in line with the idea that FDI may be particularly high in the natural resource sector, which is often capital-intensive.

Finally, since capital controls may have a differential impact on specific types of capital flows, we also consider a measure of foreign exchange restrictions in the empirical work below. International taxation is another factor which has been shown to affect the location of foreign direct investment, but because of the lack of comparable data for the large sample of countries we do not consider it explicitly. The composition of liabilities is also heavily influenced by the general (domestic and international) policy environment and incentive structure, as highlighted by Rogoff (1999). Deposit insurance and bailout schemes for debt-holders stack the deck in favor of debt and against equity/FDI. Moreover, if a "fixed" exchange rate encourages foreign currency debt transactions, it may crowd out FDI

[12] Of course, the level of trade is endogenous to FDI in particular. In future work, we plan to address this endogeneity issue.

and equity flows, although a credible peg may also encourage equity inflows by reducing exchange rate risk. We defer the investigation of these other policy measures to future work.

III. EMPIRICAL EVIDENCE

This section provides a broad-brush picture of empirical regularities concerning the composition of external liabilities in industrial and developing countries. Our sample includes 132 countries, of which 22 are classified as industrial (see the Appendix for a country list). We sub-divide developing countries into five groupings: sub-Saharan Africa, Middle-East and North Africa, Asia, Latin America and transition economies. We focus on cross-country heterogeneity and on (gross) stocks rather than flows. We think that from a macroeconomic perspective this is the correct approach. The stock position is the relevant state variable in a macroeconomic model and capital flows arise to close the gap between desired and actual stock positions. From a risk sharing perspective, the benefits of diversification are provided by holding stocks of external assets and liabilities, which generate international investment income flows and capital gains (or losses). Moreover, much of the benefits of asset trade derive from gross, rather than net, stock positions. Finally, focusing on stocks rather than flows helps reduce the “noise” inherent in the year-to-year fluctuations in flows.

Our particular emphasis is on external liabilities, rather than external assets. There are several reasons for this choice. First, the stocks of equity and FDI investment abroad are very limited for most developing countries, with a few exceptions among the high- and middle-income countries such as Singapore and Taiwan province of China. Second, estimates of debt assets held by developing countries are fraught with the problems discussed extensively in the capital flight literature.

Our regressions simply try to establish some broad empirical regularities by exploring which country features are associated with a different composition of gross external liabilities. We divide external liabilities into three categories: external debt, direct investment liabilities and portfolio equity liabilities. For external debt, we use data from the World Bank (Global Development Finance). The methodology for the estimation of FDI and equity stocks is explained in detail in Lane and Milesi-Ferretti (1999). This methodology provides estimates of the stock of FDI calculated at book value and of the stock of equity calculated at market value. We focus on the stock position in 1997, the last year for which we have consistent data availability for the countries in our sample. We chose to use the latest available year, rather than an average over the 1990s, because of the changes in the composition of capital flows during the decade—an average would understate the current importance of equity and FDI. Our results are not significantly affected by the Asian crisis—they remain virtually unchanged when we use data for 1996.

Table 1 and Figures 1 and 2 provide a statistical summary of the variables used in the empirical analysis. Among the most notable features are the higher dispersion of net foreign asset positions in developing countries (the country accounting for the largest NFA position is Kuwait, the lowest the Republic of Congo) and the larger stocks of portfolio equity liabilities in industrial countries.[13] Within developing countries, Figures 1 and 2 show that countries from sub-Saharan Africa have the most negative NFA positions, largely because of their high external debt. Figures 1 and 2 also suggest differences between the cross-country distribution of FDI and equity liabilities—indeed, the correlation between the two stocks is very low (0.07 for developing countries and 0.15 for industrial countries).

[13] Indeed, the median level of portfolio equity liabilities in developing countries is zero (Table 1).

The regressions (presented in Tables 2-8) have the same structure, which is similar to the one used for FDI flows in Hausmann and Fernández-Arias (2000a). In the first table, the dependent variable is the net foreign asset position. Although our focus in this paper is on gross liabilities, it is important to understand the net position as a background for the study of the liability side of the balance sheet. We analyze total external liabilities in Table 3, the stocks of external debt, FDI liabilities and equity liabilities in Tables 4-6. Tables 7-8 examine the ratio of "equity" to "debt" liabilities and at the share of FDI in total external liabilities. We report regression results for industrial and developing countries separately; regression results for the whole sample are available from the authors.

We use as fixed controls the level of GDP per capita in US dollars (in logs), country size (total GDP in US dollars, in logs) and the degree of trade openness (defined as the sum of imports and exports over GDP) as well as continent dummies.[14] We then add a series of additional controls, one by one. The first two extra regressors are the share of exports of ore plus fuel as a ratio of GDP (*nat res*), and the share of privatization revenues in GDP (*privat/GDP*). The former could be a potential determinant of the stock of FDI, if FDI is attracted to resource-rich sectors. The latter captures the release of state-owned assets to private investors, stimulates domestic financial development and may attract both FDI and portfolio equity inflows. The variable *privat/GDP* is available only for developing countries

[14] Our regressions also feature a constant and hence exclude one dummy (the one for Latin America). This implies that the dummy coefficients represent a difference in the constant term between the group of countries in question and Latin America. The inclusion of continent dummies is a difficult choice. On the one side, the dummies control for unobserved fundamentals that differ systematically across regions. On the other, these regional differences may be highly correlated with "interesting" and observable regressors and may wipe out their individual significance. For completeness, we also present results of the basic regression excluding continent dummies.

and that the variable *nat res* is not available for the republics of the former Soviet Union, with the exception of Estonia and Russia.

The next two regressors are the ratio of stock market capitalization to GDP (*stock mkt cap*) and the ratio of M2 to GDP (*M2/GDP*), which proxy for the degree of financial development of a country. As argued above, financial development is plausibly associated with "marketed" financial instruments, such as portfolio equity and debt liabilities, with an ambiguous impact on FDI. Although the level of financial development is correlated with GDP per capita (in our sample, the correlations of GDP per capita with M2/GDP and stock market capitalization are 0.6 and 0.4, respectively), entering these variables may provide some additional information. Finally, we also include a measure of foreign exchange controls (*FX restrictions*), described in the Appendix, to measure the impact of policy restrictions on the level and composition of external liabilities (see Eichengreen et al. (1998) for a discussion).

Results

The results in Table 2 indicate a positive relation between the net foreign asset position and GDP per capita, both in industrial and developing countries: richer countries are larger creditors / smaller debtors. Among industrial countries, the ratio of M2 to GDP and (in most specifications) country size are also positively correlated with the net external position: larger and more financially developed economies have higher net foreign assets. Among developing countries, transition economies have lower external liabilities, after controlling for other NFA determinants. This is of course not surprising, given the fact that most of these economies did not become independent states until the early 1990s. [15]

[15] On determinants of capital flows to transition economies, see Garibaldi, Mora, Sahay and Zettelmeyer (1999).

Results in Table 3 clearly suggest that the ratio of gross external liabilities to GDP is higher in countries that are more open to trade, both among industrial and developing countries. In the former, external liabilities are also higher in the presence of more developed financial markets (as measured by stock market capitalization and the ratio of M2 to GDP). Taken together with the results of Table 1 and Figures 1-2, this suggests that, among industrial countries, greater openness to trade and more developed financial markets lead to more "external diversification"—that is, larger stocks of external assets and external liabilities (see also Lane (2000b)). These results are indeed confirmed by similar regressions for total external assets (not reported, available from the authors). In developing countries, total external liabilities exhibit a strong negative correlation with income per capita, and a positive one with openness to trade. For this group of countries, income per capita therefore seems the crucial variable in explaining the overall net external position and the stock of external liabilities, while the results on trade openness suggests complementarities between trade in goods and trade in assets.

The results in Table 4 suggest that GDP per capita and trade openness account for an important fraction of cross-country heterogeneity in debt liabilities in developing countries: poorer and more open countries tend to have larger ratios of external debt to GDP.[16] It is important to note that a large fraction of external debt in developing countries is public or publicly guaranteed (see Table 1); in particular, sub-Saharan Africa has high debt liabilities, reflecting dependence on official financing. The same regressions using private non-guaranteed debt as the dependent variable indicate a *positive* correlation with GDP per capita, in addition to the positive relation with openness (results not reported). The fact that external

[16] These results are in line with the findings of Lane (1999, 2000a).

debt is not correlated with domestic financial development may suggest that some degree of substitution is taking place: on the one side, a lack of domestic debt markets prompts borrowers to raise funds on international markets but on the other it hampers external financing. For industrial countries trade openness and the degree of financial development are the most important correlates of debt liabilities; high debt liabilities are typically matched by high debt assets and mostly reflect the internationalization of the debt markets and the banking sector.

Differences between industrial and developing countries are apparent also from the regressions explaining the stock of FDI liabilities in Table 5. In industrial countries, income per capita, trade openness and stock market capitalization explain a significant fraction of cross-country heterogeneity. In particular, the important role of the stock market variable may reflect the high proportion of FDI in industrial countries that takes the form of mergers and acquisitions, rather than greenfield investment.[17] In developing countries, trade openness and both the share of natural resource exports and the share of privatization are positively correlated with the stock of FDI liabilities.[18] It is also apparent from Table 5b that Latin American countries tend to have a larger share of FDI than other developing economies, after controlling for other determinants of FDI stocks, a finding stressed by Hausmann and Fernández-Arias (2000).

Not surprisingly, measures of financial development are strongly correlated with the share of portfolio equity liabilities in GDP, in both industrial and developing countries (see

[17] Regressions with FDI assets as the dependent variable show a similar strong relation with stock market capitalization and trade openness, as well as a *positive* correlation with GDP per capita.

[18] This correlation could in part reflect imports of plant equipment for FDI purposes. Langhammer (1988) highlights the importance of this factor for "in-kind" FDI in Indonesia.

Table 6). These findings confirm those obtained by Portes and Rey (1999) who focus on bilateral portfolio equity flows. For the developing countries group, country size is another important determinant of equity liabilities—the bigger developing countries tend to have larger equity liabilities. This result is probably explained by the fact that on average smaller economies are less likely to have developed stock markets. It is important to note that a significant fraction of the developing countries in our sample have no portfolio equity liabilities (52 among those included in the "basic" regression). If we exclude those countries, regression results are similar but the coefficient on trade openness becomes larger and very significant. Looking at Tables 5 and 6, the fact that privatization stimulates FDI flows to developing countries but not portfolio equity may suggest that foreign investors primarily take controlling stakes in privatized companies.

In Tables 7-8, we turn to the composition of external liabilities. In Table 7, we examine the equity-to-debt ratio, where equity is measured as the sum of FDI and portfolio equity liabilities. The most striking finding for developing countries is the positive and significant relation between this ratio and trade openness, consistent with the notion that exposure to risk leads to a greater reliance on equity financing.[19] For industrial countries, the equity-debt ratio has a strong positive relationship with stock market capitalization, a finding that can be explained by recalling the strong positive relation between stock market capitalization and the stocks of equity and FDI liabilities. In both developing and industrial countries, foreign exchange rate restrictions have a negative impact on the ratio, suggesting that controls have a more severe impact on equity flows than on debt flows. In developing countries, privatization revenues are also strongly associated with the equity-debt share,

[19] This result is not obvious *a priori* since trade openness is positively correlated with both the stock of external debt and the stocks of equity and FDI.

primarily reflecting their impact on the stock of FDI liabilities (see Table 5b). In future work, we plan to examine whether the ratio of foreign-owned equity to external debt reflects the overall domestic "gearing" of economies.

We focus on the share of FDI in total liabilities in Table 8. Some authors (e.g., Rogoff (1999)) have argued that the current policy environment favors debt finance, and that much could be gained by facilitating equity diversification across countries. On the other side, Hausmann and Fernández-Arias (2000a) provocatively ask whether substantial FDI flows are really a sign of good health for a developing country. They argue that FDI flows are particularly high in relation to total private capital inflows in countries with lower GDP per capita and higher credit risk, and hence that a higher share of FDI in total capital flows is not necessarily a sign of good health. A related point is made by Albuquerque (2000) who also highlights that the share of FDI inflows in total private capital inflows is higher for countries with higher credit risk. [20] One has to take into account, however, that while FDI is the dominant fraction of *private* capital inflows to very poor countries, private capital flows are themselves a small fraction of net resource flows. Indeed, the share of private sector liabilities in total private liabilities in 1997 was below 25 percent for developing countries with GDP per capita below 2000 US dollars, and close to 50 percent for those with income per capita above US$2000. Hence the share of FDI in *total* capital inflows is not necessarily larger in such countries. Indeed, the unconditional correlation of GDP per capita with the FDI share in total liabilities is positive (around 0.3), while, as already pointed out by Hausmann and Fernández-Arias (2000a) and Albuquerque (2000), the unconditional correlation with the FDI share in total *private* liabilities is negative (–0.41).

[20] Albuquerque interprets this finding as supporting his theoretical prediction that the inalienability of FDI makes it less susceptible to confiscation risk.

Tables 8 explores this point further by examining the correlates of the stock of FDI liabilities as a ratio of total external liabilities (Table 8a) and of total *private* liabilities (Table 8b). The dominant factor in explaining the share of FDI liabilities in total liabilities is trade openness. Table 8b instead shows that the ratio of FDI in total *private* liabilities is significantly negatively correlated with the size of the economy, while the correlation with trade openness is statistically insignificant. This ratio is very close to unity for most poor countries, which have no access to private capital markets.

We can summarize the evidence for developing countries as follows. More advanced and more open developing countries raise the most external liabilities, but this does not lead on average to larger *net* liabilities. Trade openness stimulates all forms of capital inflows but favors equity over debt flows, especially FDI. FDI is also attracted by the presence of natural resources and is positively related to the size of privatization programs. Although the share of FDI in total liabilities does not vary with the level of development, its share in private liabilities is lower in larger economies. Country size and stock market capitalization seem to be important in attracting portfolio equity. Although foreign exchange restrictions do not reduce total external liabilities, the equity-debt ratio is negatively affected by such controls. Finally, the data indicate regional differences in the structure of capital flows to developing countries. For instance, all else being equal, Latin America has a higher share of FDI liabilities in total GDP, while transition economies have lower external liabilities. Understanding the sources of these regional differences is an item on the research agenda.

IV. Policy Challenges and Conclusions

The previous section has sketched some empirical regularities concerning the cross-sectional distribution of external liabilities and their primary components. This work is very much a first step. In the future, we plan to investigate more potential determinants of the composition of external liabilities. In particular, we are interested in better understanding the roles played

by the legal and regulatory environment; default and expropriation risk; and macroeconomic volatility. The political economy of the external capital structure is also relatively unexplored: what are the attitudes of domestic workers, capital-owners and politicians to different forms of capital inflows? We also plan to examine the asset side of the international balance sheet, in order to obtain a more complete picture of the extent of international financial integration.

As is clear from this agenda, we think that much additional research is needed in this area. In addition to understanding the determinants of external capital structure, there has been very little work on the macroeconomic impact of different structures of external liabilities. One important issue, for example, is investigating the degree of risk sharing that equity liabilities can provide. Some preliminary evidence on this subject is reported in Frankel and Rose (1996) who look at how the composition of external liabilities influences the probability of a currency crisis, and by Hausmann and Fernández-Arias (2000b) who look in more depth at the role of FDI in this respect, but much more work is necessary in this area.

A second, related issue has to do with the cost of servicing external liabilities. Insofar as equity and FDI investment require a risk premium with respect to the rate of return on external debt, their servicing will be, ceteris paribus, more expensive even though the structure of these payouts may have more desirable cyclical properties. Finally, further theoretical and empirical work should provide us with more confidence in evaluating the various policy proposals concerning the reform of the international financial structure. There is much current discussion concerning the relative merits of different forms of capital flows. Understanding the endogenous determination of the external capital structure is a prerequisite for predicting the effects of policy interventions in this area.

V. APPENDIX

A. Country list

ASIA	SUB SAH. AFRICA	INDUSTRIAL	LATIN AMERICA	M. EAST / N. AFR.	TRANSITION
Bangladesh	Angola	Australia	Argentina	Algeria	Albania
Cambodia	Benin	Austria	Bolivia	Bahrain	Armenia
China	Botswana	Belgium-Lux.	Brazil	Egypt	Azerbaijan
Hong Kong S.A.R.	Burkina Faso	Canada	Chile	Iran	Belarus
India	Cameroon	Denmark	Colombia	Israel	Bulgaria
Indonesia	Cent. Afr. Rep.	Finland	Costa Rica	Jordan	Croatia
Korea	Chad	France	Dominican Rep.	Kuwait	Czech Republic
Lao People's Dem.Rep	Congo, Dem. Rep.	Germany	Ecuador	Lebanon	Estonia
Malaysia	Congo, Rep.	Greece	El Salvador	Morocco	Georgia
Myanmar	Cote d'Ivoire	Iceland	Guatemala	Oman	Hungary
Nepal	Gabon	Ireland	Haiti	Saudi Arabia	Kazakhstan
Pakistan	Gambia, The	Italy	Honduras	Syria	Kyrgyz Republic
Papua New Guinea	Ghana	Japan	Jamaica	Tunisia	Latvia
Philippines	Guinea	Netherlands	Mexico	Turkey	Lithuania
Singapore	Kenya	New Zealand	Nicaragua	Un. Ar. Em.	Macedonia, Fyr
Sri Lanka	Lesotho	Norway	Panama		Moldova
Taiwan Prov. of China	Madagascar	Portugal	Paraguay		Mongolia
Thailand	Mauritania	Spain	Peru		Poland
	Mauritius	Sweden	Trinidad & Tobago		Romania
	Namibia	Switzerland	Uruguay		Russia
	Niger	Un. Kingdom	Venezuela		Slovak Republic
	Nigeria	United States			Slovenia
	Senegal				Tajikistan
	South Africa				Turkmenistan
	Sudan				Ukraine
	Togo				Uzbekistan
	Uganda				
	Zambia				
	Zimbabwe				

B. Data Sources

Net foreign assets: Adjusted cumulative current account balance, 1997 (see Lane and Milesi-Ferretti (1999) for methodology). Source: Lane and Milesi-Ferretti (1999) and authors' calculations.
Debt liabilities: Industrial countries: stock of portfolio debt + other liabilities (International Investment Position). Source: IMF, Balance of Payments Statistics. Developing countries: gross external debt. Source: World Bank, Global Development Finance.
FDI liabilities: Cumulative FDI inflows, adjusted for variations in relative prices (see Lane and Milesi-Ferretti (1999) for methodology). Source: Source: Lane and Milesi-Ferretti (1999) and authors' calculations based on IMF, Balance of Payments Statistics.
Portfolio equity liabilities: cumulative flow of portfolio equity liabilities, adjusted for variations in domestic stock market indices measured in US dollar*s* (see Lane and Milesi-Ferretti (1999) for methodology). Source: Source: Lane and Milesi-Ferretti (1999) and authors' calculations based on IMF, Balance of Payments Statistics.
Total external liabilities: sum of debt, FDI and portfolio equity stocks.
Log GDP per cap: log of GDP per capita in current US dollars, 1997. Source: World Bank, World Development Indicators.
Log GDP: log of GDP in current US dollars, 1997. Source: World Bank, World Dev. Ind.
open: imports plus exports of goods and services over GDP. Source: World Bank, World Development Indicators.
nat res: sum of exports of fuels and ore over GDP (average 1990-1997). Source: World Bank, World Development Indicators.
privat: ratio of privatization revenue to GDP (average 1994-1997). Source: World Bank, World Development Indicators.
Stockmkt cap: ratio of stock market capitalization to GDP (average 1994-97). Source: World Bank, Global Devel. Network growth database.
http://www.worldbank.org/research/growth/GDNdata.htm
M2/GDP: Ratio of M2 liabilities to GDP. Source: World Bank, World Devel.Indicators.
fx res: Index of foreign exchange restrictions (average, 1970-96). The index is constructed by summing yearly dummy variables for the presence of 1) restrictions on capital account transactions; 2) restrictions on current account transactions; 3) multiple exchange rate practices; 4) requirement to surrender export proceeds. Source: IMF, Exchange Arrangements and Exchange Restrictions.

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Table 1. Basic statistics (1997)*

A. Industrial countries

Variable	*Obs*	*Mean*	*Median*	*Std. Dev.*	*Min*	*Max*
Net foreign assets	22	-11.2	-12.4	25.4	-61.1	37.2
External liabilities	19	123.8	101.0	66.5	42.4	273.6
External debt	19	84.0	67.8	42.2	35.1	200.0
FDI liabilities	22	17.3	16.3	11.9	0.4	46.8
Equity liabilities	22	15.8	10.7	20.9	0.0	94.7
FDI+equity/debt	19	0.5	0.4	0.3	0.1	1.0
Nat. resources exp.	22	10.1	5.5	13.1	1.4	58.6
M2	22	70.2	62.0	22.9	35.3	126.5
Stock mkt cap	22	53.4	38.1	35.9	11.0	130.3
FX restrictions index	22	1.3	1.2	0.9	0.0	3.0

B. Developing countries

Variable	*Obs*	*Mean*	*Median*	*Std. Dev.*	*Min*	*Max*
Net foreign assets	87	-31.2	-31.1	67.8	-363.0	368.0
Ext. liabilities	92	77.9	70.1	45.5	6.5	241.9
External debt (total)	100	60.5	51.2	44.5	5.1	223.9
External debt (priv)	91	4.7	1.5	7.5	0	35.9
FDI liabilities	99	20.0	15.4	20.3	0.5	100.9
Equity liabilities	99	1.3	0	2.6	0	12.5
FDI+equity/debt	96	0.5	0.3	0.6	0	4.1
FDI liab/total liab	96	24.9	20.1	17.3	0.9	80.4
FDI liab/tot priv liab	89	77.3	87.1	25.2	15.1	100.0
Nat. Resources exp.	75	26.6	12.8	29.7	0.2	99.7
Privatization	77	1.2	0.6	1.6	0.0	7.6
M2	106	35.2	26.1	26.2	4.6	165.5
Stock mkt capitaliz.	64	32.3	14.5	52.3	0.1	252.8
FX restrictions index	108	2.6	2.9	1.1	0.0	4.0

All variables are ratios of GDP (times 100), unless otherwise specified.

Table 2a. Net foreign assets, industrial countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
log GDP per cap	34.67	35.91	35.99	33.11	41.74
	(2.38)*	(2.31)*	(2.61)*	(3.46)**	(2.93)**
log GDP	6.37	6.01	6.79	3.93	8.63
	(2.14)*	(1.89)$^{+}$	(1.86)$^{+}$	(1.19)	(2.01)$^{+}$
trade openness	0.27	0.26	0.28	0.25	0.32
	(1.42)	(1.32)	(1.36)	(1.19)	(1.41)
Nat. res.		-0.16			
		(0.35)			
Stock mkt cap			-0.05		
			(0.28)		
M2/GDP				0.47	
				(2.83)*	
FX restrictions					6.57
					(0.92)
Constant	-454.01	-459.49	-469.93	-438.59	-564.61
	(3.03)**	(2.94)**	(3.24)**	(4.11)**	(3.41)**
Observations	22	22	22	22	22
Adjusted R^2	0.32	0.28	0.28	0.46	0.31

Table 2b. Net foreign assets, developing countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	26.50	28.93	40.50	13.31	35.78	26.14	23.14
	(1.84)$^{+}$	(1.89)$^{+}$	(2.06)*	(2.34)*	(1.93)$^{+}$	(1.67)$^{+}$	(1.68)$^{+}$
log GDP	4.80	1.17	-2.58	5.51	0.83	0.93	3.87
	(0.82)	(0.17)	(0.36)	(1.75)	(0.09)	(0.12)	(0.63)
trade openness	-0.16	-0.31	-0.49	-0.29	-0.21	-0.36	-0.40
	(0.71)	(1.15)	(1.39)	(2.26)*	(0.64)	(1.04)	(1.24)
Africa		2.00	-17.60	10.30	45.02	-0.55	3.41
		(0.07)	(0.40)	(0.65)	(1.58)	(0.02)	(0.13)
Asia		41.51	64.39	19.16	49.96	33.30	35.16
		(1.87)$^{+}$	(1.96)$^{+}$	(1.39)	(1.74)$^{+}$	(1.44)	(1.59)
Middle East		46.56	41.15	15.64	49.09	38.37	41.99
		(1.45)	(1.48)	(1.13)	(1.24)	(1.41)	(1.46)
Transition		38.52	36.15	38.56	29.24	38.68	46.03
		(3.42)**	(2.87)**	(4.41)**	(2.26)*	(2.95)**	(3.26)**
Nat. res.			0.23				
			(0.37)				
Privat/GDP				-0.52			
				(0.28)			
Stock mkt cap					-0.10		
					(0.71)		
M2/GDP						0.33	
						(0.85)	
FX restrictions							-14.24
							(1.60)
Constant	-268.31	-265.32	-316.32	-190.97	-324.51	-248.61	-206.65
	(4.59)**	(4.77)**	(3.65)**	(5.35)**	(4.90)**	(4.29)**	(4.53)**
Observations	81	81	62	65	55	79	79
Adjusted R^2	0.22	0.25	0.27	0.35	0.23	0.23	0.26

Note: Estimation by OLS. t-statistics (calculated with heteroskedasticity-adjusted standard errors) in parenthesis. $^{+}$(*, **) indicates statistical significance at the 10% (5%, 1%) confidence level.

Table 3a. Total external liabilities, industrial countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
log GDP per cap	32.91	32.70	-5.93	34.60	11.06
	(0.68)	(0.68)	(0.21)	(1.09)	(0.29)
log GDP	3.94	3.89	-5.21	-2.27	-2.04
	(0.46)	(0.43)	(1.07)	(0.45)	(0.20)
trade openness	1.50	1.50	1.46	1.36	1.33
	(4.89)**	(4.68)**	(6.12)**	(3.94)**	(6.56)**
Nat. res.		-0.07			
		(0.08)			
Stock mkt cap			1.29		
			(3.53)**		
M2/GDP				1.47	
				(2.10)$^{+}$	
FX restrictions					-19.41
					(1.06)
Constant	-335.94	-332.62	99.55	-374.01	-8.72
	(0.77)	(0.79)	(0.36)	(1.14)	(0.03)
Observations	19	19	19	19	19
Adjusted R^2	0.20	0.14	0.67	0.44	0.18

Table 3b. Total external liabilities, developing countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	-8.73	-9.89	-13.85	-1.88	-14.61	-9.16	-5.28
	(2.03)*	(2.12)*	(2.38)*	(0.28)	(3.40)**	(1.82)$^{+}$	(0.98)
log GDP	-6.06	-4.08	-1.66	-7.23	0.78	-4.03	-6.00
	(2.56)*	(1.26)	(0.53)	(1.74)$^{+}$	(0.26)	(1.19)	(1.72)$^{+}$
trade openness	0.36	0.49	0.49	0.47	0.54	0.47	0.51
	(3.13)**	(4.01)**	(4.12)**	(2.79)**	(4.77)**	(3.56)**	(4.08)**
Africa		19.48	15.72	21.28	-19.23	20.96	20.91
		(1.41)	(0.99)	(0.97)	(1.60)	(1.48)	(1.47)
Asia		-14.13	-21.87	-6.86	-40.89	-12.10	-7.66
		(1.05)	(2.08)*	(0.44)	(4.39)**	(0.79)	(0.55)
Middle East		4.27	-4.32	-1.19	-8.88	2.98	5.44
		(0.42)	(0.39)	(0.11)	(0.81)	(0.24)	(0.56)
Transition		-39.44	-36.38	-44.95	-33.96	-38.43	-42.57
		(4.04)**	(3.45)**	(4.37)**	(3.10)**	(3.84)**	(4.33)**
Nat. res.			0.22				
			(1.18)				
Privat/GDP				1.33			
				(0.65)			
Stock mkt cap					0.06		
					(0.64)		
M2/GDP						0.04	
						(0.18)	
FX restrictions							7.21
							(1.50)
Constant	177.62	166.07	170.07	141.94	155.67	159.55	130.58
	(6.56)**	(5.46)**	(5.56)**	(3.35)**	(5.17)**	(5.16)**	(3.74)**
Observations	87	87	64	66	53	84	85
Adjusted R^2	0.22	0.43	0.41	0.41	0.43	0.40	0.44

Note: Estimation by OLS. t-statistics (calculated with heteroskedasticity-adjusted standard errors) in parenthesis. $^{+}$(*, **) indicates statistical significance at the 10% (5%, 1%) confidence level.

Table 4a. External debt, industrial countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
log GDP per cap	18.22	17.11	0.04	19.10	18.26
	(0.80)	(0.77)	(0.00)	(1.15)	(0.94)
log GDP	2.85	2.61	-1.43	-0.38	2.86
	(0.63)	(0.53)	(0.47)	(0.15)	(0.46)
trade openness	0.94	0.94	0.92	0.87	0.94
	(6.67)**	(6.68)**	(3.94)**	(4.38)**	(7.42)**
Nat. res.		-0.39			
		(0.77)			
Stock mkt cap			0.60		
			(1.66)		
M2/GDP				0.77	
				(1.81)$^{+}$	
FX restrictions					0.03
					(0.00)
Constant	-185.15	-167.57	18.73	-204.98	-185.72
	(0.89)	(0.85)	(0.08)	(1.21)	(1.05)
Observations	19	19	19	19	19
Adjusted R^2	0.18	0.13	0.41	0.33	0.12

Table 4b. External debt, developing countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	-13.89	-14.00	-14.79	-9.40	-10.37	-13.44	-10.81
	(3.48)**	(3.27)**	(3.15)**	(1.76)$^{+}$	(3.19)**	(2.81)**	(2.07)*
log GDP	-5.62	-2.32	-2.00	-4.39	-2.52	-1.72	-4.28
	(2.46)*	(0.80)	(0.82)	(1.21)	(1.11)	(0.59)	(1.32)
trade openness	0.17	0.27	0.22	0.31	0.22	0.30	0.30
	(2.03)*	(2.69)**	(2.27)*	(2.24)*	(2.61)*	(2.71)**	(2.92)**
Africa		32.92	29.33	21.73	10.81	33.59	32.18
		(2.75)**	(2.08)*	(1.28)	(0.69)	(2.81)**	(2.64)**
Asia		-11.08	-13.22	-7.29	-14.13	-8.74	-6.84
		(1.02)	(1.47)	(0.57)	(1.80)$^{+}$	(0.70)	(0.59)
Middle East		12.20	6.94	4.48	6.04	16.30	15.15
		(1.41)	(0.66)	(0.45)	(0.61)	(1.61)	(1.80)$^{+}$
Transition		-22.17	-15.97	-24.58	-12.00	-23.13	-23.45
		(2.95)**	(2.00)*	(2.98)**	(1.40)	(2.89)**	(3.06)**
Nat. res.			0.19				
			(1.22)				
Privat/GDP				-0.96			
				(0.53)			
Stock mkt cap					-0.05		
					(0.57)		
M2/GDP						-0.14	
						(0.83)	
FX restrictions							7.20
							(1.92)$^{+}$
Constant	204.87	164.61	167.96	153.21	145.79	156.94	140.07
	(7.21)**	(6.14)**	(6.19)**	(4.13)**	(5.19)**	(5.65)**	(4.64)**
Observations	95	95	68	70	57	92	93
Adjusted R^2	0.25	0.43	0.44	0.34	0.30	0.41	0.44

Note: Estimation by OLS. t-statistics (calculated with heteroskedasticity-adjusted standard errors) in parenthesis. $^{+}$(*, **) indicates statistical significance at the 10% (5%, 1%) confidence level.

Table 5a. Foreign direct investment liabilities, industrial countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
log GDP per cap	-10.64	-11.68	-16.12	-11.06	-16.90
	(2.33)*	(2.46)*	(3.58)**	(2.00)$^{+}$	(2.40)*
log GDP	0.32	0.62	-1.39	-0.33	-1.68
	(0.18)	(0.33)	(0.85)	(0.18)	(0.65)
trade openness	0.23	0.24	0.22	0.22	0.18
	(2.43)*	(2.53)*	(2.39)*	(2.45)*	(1.63)
Nat. res.		0.13			
		(1.02)			
Stock mkt cap			0.21		
			(4.07)**		
M2/GDP				0.13	
				(1.31)	
FX restrictions					-5.82
					(1.42)
Constant	107.63	112.18	173.55	111.76	205.45
	(1.85)$^{+}$	(1.85)$^{+}$	(2.97)**	(1.65)	(1.91)$^{+}$
Observations	22	22	22	22	22
Adjusted R^2	0.23	0.21	0.55	0.25	0.30

Table 5b. Foreign direct investment liabilities, developing countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	1.32	-0.19	0.36	3.29	-3.10	0.46	0.74
	(0.49)	(0.06)	(0.10)	(0.79)	(0.87)	(0.15)	(0.23)
log GDP	-1.50	-1.47	-1.62	-2.27	1.34	-1.76	-1.30
	(1.00)	(0.84)	(0.88)	(1.18)	(0.56)	(0.95)	(0.75)
trade openness	0.21	0.26	0.27	0.22	0.31	0.25	0.26
	(4.21)**	(3.96)**	(3.70)**	(2.61)*	(3.07)**	(3.42)**	(3.88)**
Asia		-10.32	-14.47	-6.52	-19.05	-9.60	-8.49
		(1.62)	(2.11)*	(0.80)	(2.43)*	(1.49)	(1.34)
Africa		-10.26	-7.86	-5.34	-23.31	-8.73	-8.62
		(1.53)	(1.08)	(0.70)	(3.26)**	(1.24)	(1.23)
Middle East		-9.84	-17.14	-6.44	-15.50	-10.75	-10.36
		(1.51)	(2.49)*	(0.88)	(2.72)**	(1.51)	(1.62)
Transition		-20.40	-22.95	-22.53	-25.31	-19.45	-22.00
		(3.38)**	(3.64)**	(3.48)**	(3.38)**	(3.13)**	(3.83)**
Nat. res.			0.21				
			(2.22)*				
Privat/GDP				2.56			
				(2.08)*			
Stock mkt cap					0.02		
					(0.54)		
M2/GDP						0.03	
						(0.33)	
FX restrictions							-0.41
							(0.22)
Constant	11.44	29.75	22.60	12.02	23.24	27.42	21.97
	(1.18)	(2.08)*	(1.35)	(0.51)	(1.57)	(1.85)	(1.42)
Observations	92	92	67	71	57	89	90
Adjusted R^2	0.21	0.30	0.45	0.30	0.41	0.28	0.35

Note: Estimation by OLS. t-statistics (calculated with heteroskedasticity-adjusted standard errors) in parenthesis. $^{+}$(*, **) indicates statistical significance at the 10% (5%, 1%) confidence level.

Table 6a. Portfolio equity liabilities, industrial countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
log GDP per cap	17.59	19.12	6.37	15.77	2.66
	(0.94)	(0.93)	(0.59)	(1.36)	(0.21)
log GDP	0.99	0.55	-2.52	-1.88	-3.78
	(0.38)	(0.17)	(0.86)	(0.68)	(0.87)
trade openness	0.08	0.06	0.07	0.04	-0.02
	(0.47)	(0.34)	(0.65)	(0.27)	(0.19)
Nat. res.		-0.20			
		(0.62)			
Stock mkt cap			0.42		
			(2.49)*		
M2/GDP				0.55	
				(1.83)$^{+}$	
FX restrictions					-13.88
					(1.64)
Constant	-177.32	-184.03	-42.32	-159.26	56.09
	(1.07)	(1.06)	(0.41)	(1.40)	(0.43)
Observations	22	22	22	22	22
Adjusted R^2	-.05	-.10	0.39	0.28	0.11

Table 6b. Portfolio equity liabilities, developing countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	0.38	0.46	0.30	0.75	-0.08	0.48	0.55
	(1.48)	(1.41)	(0.66)	(1.81)$^{+}$	(0.18)	(1.37)	(1.38)
log GDP	0.68	0.81	1.16	0.80	1.05	0.81	0.78
	(3.41)**	(3.48)**	(3.66)**	(2.93)**	(2.90)**	(3.38)**	(2.87)**
trade openness	0.02	0.02	0.03	0.01	0.02	0.02	0.02
	(1.72)$^{+}$	(1.96)$^{+}$	(2.43)*	(0.94)	(1.49)	(1.86)$^{+}$	(2.06)*
Africa		0.40	0.87	0.68	-1.71	0.47	0.47
		(0.51)	(0.90)	(0.67)	(1.48)	(0.59)	(0.59)
Asia		-1.11	-1.97	-0.80	-3.07	-1.02	-0.93
		(1.09)	(1.48)	(0.74)	(2.24)*	(0.98)	(0.84)
Middle East		-1.63	-1.23	-1.36	-1.77	-1.72	-1.62
		(1.91)$^{+}$	(1.25)	(1.45)	(1.74)$^{+}$	(1.90)$^{+}$	(1.85)$^{+}$
Transition		-0.65	-0.42	-0.62	-0.34	-0.60	-0.69
		(0.83)	(0.43)	(0.70)	(0.36)	(0.73)	(0.89)
Nat. res.			-0.01				
			(1.18)				
Privat/GDP				0.14			
				(1.17)			
Stock mkt cap					0.04		
					(4.26)**		
M2/GDP						0.00	
						(0.22)	
FX restrictions							0.09
							(0.32)
Constant	-9.04	-10.45	-13.16	-12.14	-9.25	-10.75	-11.16
	(5.24)**	(4.97)**	(4.52)**	(4.31)**	(3.04)**	(4.76)**	(4.68)**
Observations	92	92	65	68	53	89	90
Adjusted R^2	0.37	0.40	0.41	0.34	0.50	0.39	0.39

Note: Estimation by OLS. t-statistics (calculated with heteroskedasticity-adjusted standard errors) in parenthesis. $^{+}$(*, **) indicates statistical significance at the 10% (5%, 1%) confidence level.

Table 7a. Equity to debt liabilities ratio, industrial countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
log GDP per cap	-0.08	-0.05	-0.25	-0.08	-0.35
	(0.41)	(0.24)	(1.57)	(0.41)	(1.74)
log GDP	0.01	0.01	-0.03	0.00	-0.06
	(0.13)	(0.24)	(0.85)	(0.06)	(1.46)
trade openness	0.00	0.00	0.00	0.00	0.00
	(0.42)	(0.48)	(0.58)	(0.33)	(0.43)
Nat. res.		0.01			
		(2.40)*			
Stock mkt cap			0.01		
			(2.42)*		
M2/GDP				0.00	
				(0.80)	
FX restrictions					-0.23
					(2.34)*
Constant	1.15	0.63	3.04	1.09	5.08
	(0.55)	(0.30)	(1.85)$^{+}$	(0.51)	(2.14)$^{+}$
Observations	19	19	19	19	19
Adjusted R^2	-.18	-.13	0.33	-.21	0.11

Table 7b. Equity to debt liabilities ratio, developing countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	0.07	0.05	0.03	0.18	-0.04	0.05	0.01
	(1.18)	(0.67)	(0.35)	(1.89)$^{+}$	(0.50)	(0.65)	(0.18)
log GDP	0.05	0.05	0.06	0.02	0.14	0.05	0.07
	(1.14)	(1.22)	(1.17)	(0.47)	(2.58)*	(1.14)	(1.65)
trade openness	0.01	0.01	0.01	0.00	0.01	0.01	0.01
	(3.73)**	(3.38)**	(3.10)**	(1.97)$^{+}$	(2.59)*	(3.09)**	(3.21)**
Africa		-0.15	-0.24	0.03	-0.27	-0.15	-0.14
		(1.20)	(1.59)	(0.21)	(1.92)	(1.13)	(1.10)
Asia		-0.17	-0.20	0.04	-0.43	-0.16	-0.20
		(1.11)	(0.97)	(0.22)	(2.55)*	(0.94)	(1.17)
Middle East		-0.16	-0.22	-0.07	-0.22	-0.16	-0.18
		(1.06)	(1.80)$^{+}$	(0.46)	(1.59)	(0.91)	(1.28)
Transition		-0.25	-0.24	-0.24	-0.39	-0.24	-0.21
		(2.09)*	(1.47)	(2.04)*	(2.69)*	(1.83)$^{+}$	(1.65)
Nat. res.			0.00				
			(1.06)				
Privat/GDP				0.06			
				(2.99)**			
Stock mkt cap					0.00		
					(0.60)		
M2/GDP						0.00	
						(0.04)	
FX restrictions							-0.08
							(1.72)$^{+}$
Constant	-0.87	-0.64	-0.68	-1.32	-0.94	-0.64	-0.34
	(3.84)**	(2.00)*	(1.46)	(2.97)**	(2.03)*	(1.81)$^{+}$	(0.91)
Observations	86	86	64	65	53	83	85
Adjusted R^2	0.37	0.38	0.36	0.33	0.45	0.35	0.39

Note: Estimation by OLS. t-statistics (calculated with heteroskedasticity-adjusted standard errors) in parenthesis. $^{+}$(*, **) indicates statistical significance at the 10% (5%, 1%) confidence level.

Table 8a. FDI liabilities to total liabilities, developing countries

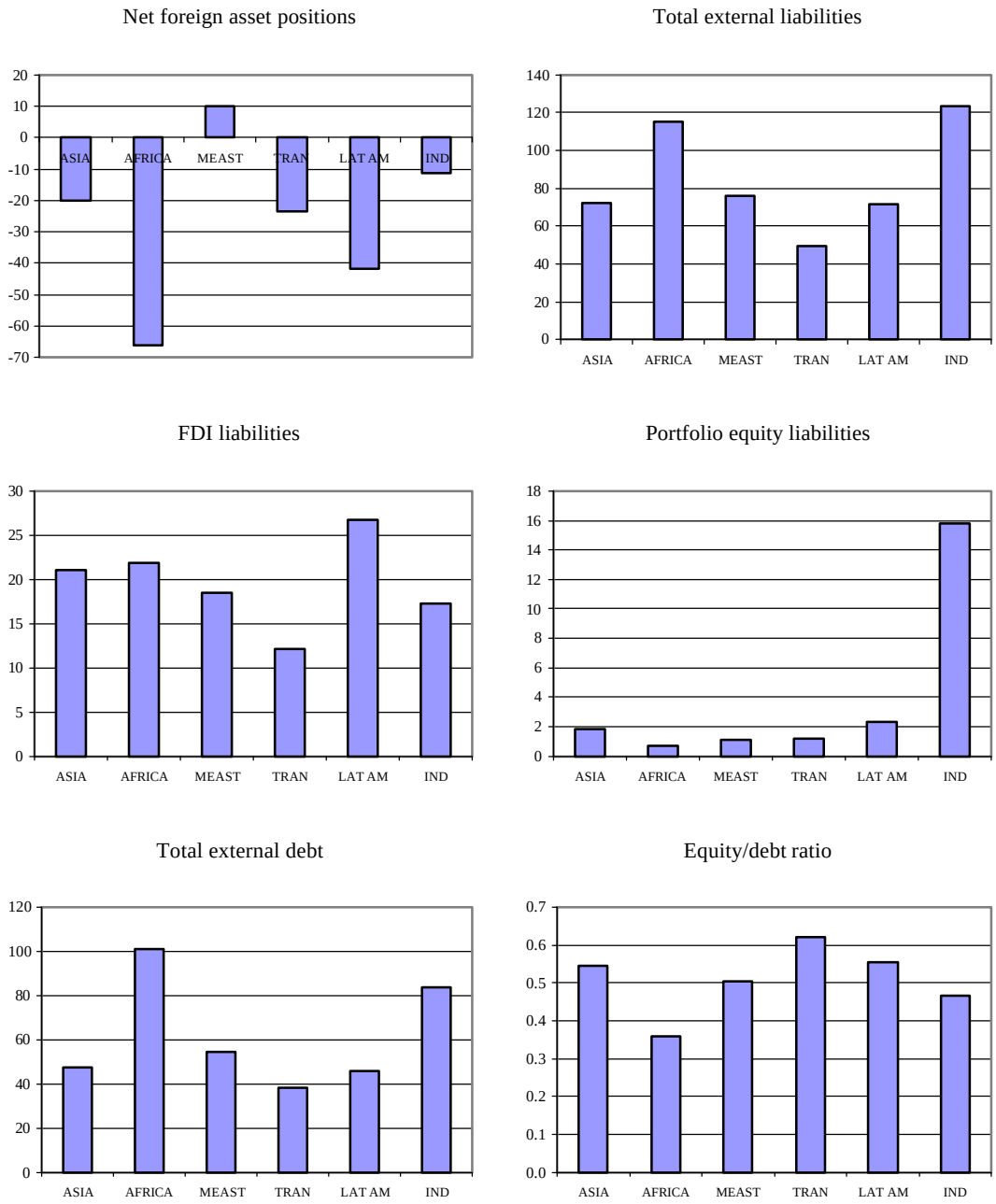
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	2.44	0.64	1.06	4.05	-2.25	1.05	-0.04
	(1.01)	(0.23)	(0.32)	(1.07)	(0.72)	(0.34)	(0.01)
log GDP	0.36	0.54	0.29	-0.59	3.76	0.24	1.45
	(0.24)	(0.32)	(0.15)	(0.28)	(1.64)	(0.14)	(0.85)
trade openness	0.12	0.15	0.17	0.11	0.21	0.15	0.15
	(3.09)**	(2.75)**	(2.50)*	(1.49)	(2.47)*	(2.38)*	(2.71)**
Africa		-11.78	-16.27	-7.45	-14.74	-11.73	-10.35
		(2.52)*	(3.37)**	(1.15)	(2.31)*	(2.42)*	(2.17)*
Asia		-9.14	-7.76	-3.56	-19.34	-8.31	-10.26
		(1.62)	(1.08)	(0.55)	(2.93)**	(1.35)	(1.61)
Middle East		-8.38	-12.29	-5.58	-9.14	-8.29	-9.33
		(1.40)	(2.42)*	(0.95)	(1.44)	(1.20)	(1.68)
Transition		-9.74	-13.12	-9.17	-17.08	-8.40	-11.40
		(1.84)$^{+}$	(2.25)*	(1.60)	(2.94)**	(1.48)	(2.37)*
Nat. res.			0.10				
			(1.53)				
Privat/GDP				1.65			
				(1.30)			
Stock mkt cap					0.01		
					(0.21)		
M2/GDP						0.00	
						(0.03)	
FX restrictions							-2.72
							(1.65)
Constant	-4.45	12.78	9.84	-0.83	0.02	13.27	15.81
	(0.43)	(0.95)	(0.58)	(0.03)	(0.00)	(0.90)	(1.21)
Observations	87	87	64	66	53	84	85
Adjusted R^2	0.13	0.15	0.27	0.11	0.25	0.13	0.26

Table 8b. FDI liabilities to total private liabilities, developing countries

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
log GDP per cap	-2.08	-6.83	-5.53	-7.06	-10.14	-5.71	-6.85
	(0.55)	(1.41)	(1.14)	(1.47)	(1.73)$^{+}$	(1.15)	(1.34)
log GDP	-7.33	-7.13	-7.48	-7.27	-6.21	-7.85	-7.02
	(3.09)**	(2.79)**	(2.58)*	(2.61)*	(1.72)$^{+}$	(3.18)**	(2.60)*
trade openness	-0.08	-0.02	-0.03	-0.03	-0.04	-0.05	-0.02
	(1.20)	(0.32)	(0.29)	(0.42)	(0.35)	(0.70)	(0.31)
Africa		-19.68	-29.72	-10.37	-27.46	-19.64	-19.40
		(2.31)*	(3.04)**	(1.34)	(1.90)$^{+}$	(2.34)*	(2.27)*
Asia		-12.13	-10.42	-10.35	-15.77	-9.72	-12.21
		(1.57)	(1.18)	(1.27)	(1.46)	(1.31)	(1.54)
Middle East		5.85	-1.03	5.01	1.83	7.35	5.96
		(0.72)	(0.12)	(0.53)	(0.16)	(0.67)	(0.72)
Transition		-11.54	-15.05	-10.29	-11.75	-7.65	-11.79
		(2.05)*	(1.89)$^{+}$	(1.50)	(1.72)$^{+}$	(1.61)	(2.06)*
Nat. res.			0.28				
			(2.44)*				
Privat/GDP				-0.24			
				(0.22)			
Stock mkt cap					0.00		
					(0.02)		
M2/GDP						-0.05	
						(0.26)	
FX restrictions							-0.37
							(0.16)
Constant	166.14	204.26	192.65	207.60	221.19	205.74	204.18
	(11.13)**	(9.77)**	(7.05)**	(9.14)**	(7.04)**	(9.94)**	(8.51)**
Observations	80	80	58	64	47	78	79
Adjusted R^2	0.31	0.36	0.36	0.40	0.35	0.40	0.35

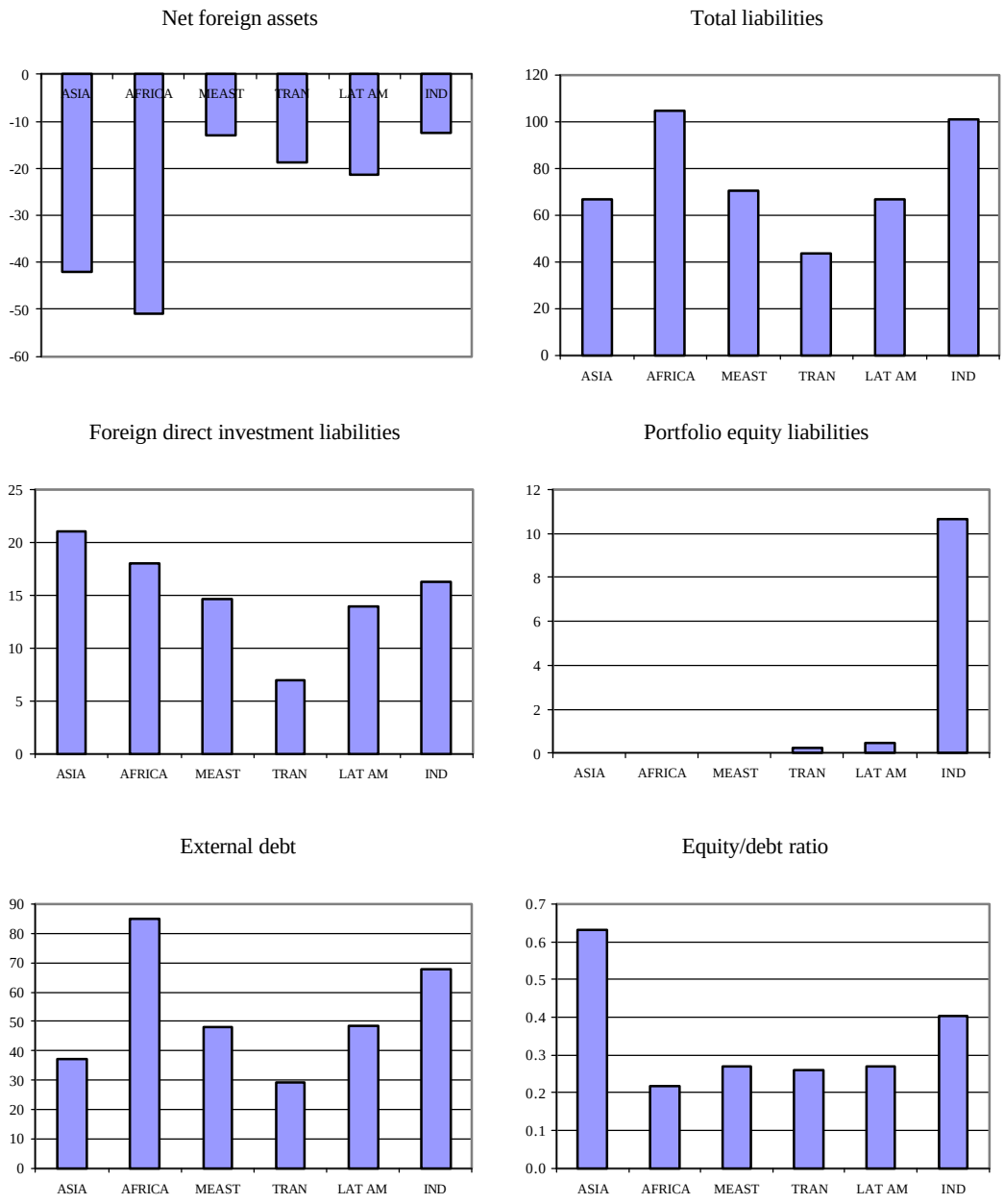
Note: Estimation by OLS. t-statistics (calculated with heteroskedasticity-adjusted standard errors) in parenthesis. $^{+}$ (*, **) indicates statistical significance at the 10% (5%, 1%) confidence level.

Figure 1. External position: regional means, 1997



Note: all variables except equity/debt ratio are expressed as ratio to GDP (times 100).

Figure 2. External position: regional medians, 1997



Note: all variables except equity/debt ratio are ratios of GDP (times 100).