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Medium-Term Determinants of International Investment Positions: The Role of Structural Policies

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MEDIUM-TERM DETERMINANTS OF INTERNATIONAL INVESTMENT POSITIONS: THE ROLE OF STRUCTURAL POLICIES

ECONOMICS DEPARTMENT WORKING PAPER No.863

by Davide Furceri, Stéphanie Guichard and Elena Rusticelli

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ABSTRACT/RÉSUMÉ

Medium-Term Determinants of International Investment Positions: the Role of Structural Policies

This paper provides an empirical investigation of the medium-term determinants of international investment positions for a large sample of advanced and emerging economies. In addition to the usually considered drivers of foreign assets and liabilities, the analysis focuses on the role of structural policy indicators. Using cross-section and panel regression techniques the results suggest that structural policy settings are important long-term drivers of capital flows, having a relatively large impact on gross and net foreign capital positions and on their composition. In particular, the results suggest that certain kinds of structural policy reform could help to narrow global imbalances, and to modify the composition of international capital flows towards more stable and productive sources.

JEL classification: F21; E6
Keywords: Capital flows; structural policies; global imbalances

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Déterminants à moyen terme des positions étrangères extérieures : le rôle des politiques structurelles

Cet article présente une étude empirique des déterminants à moyen terme de positions de l'investissement international pour un large échantillon des économies avancées et émergentes. En plus des déterminants usuels des engagements et actifs internationaux, l'analyse met l'accent sur le rôle des indicateurs structurels. Les résultats des régressions en coupe transversale et en panel suggèrent que les politiques structurelles en place sont d'importants moteurs à long terme des flux de capitaux, ayant un impact relativement important sur les positions extérieures brutes et nettes et sur leur composition. En particulier, les résultats suggèrent que certains types de réforme des politiques structurelles pourraient aider à réduire les déséquilibres mondiaux et á modifier la composition des flux de capitaux vers des sources plus stables et plus productives.

Classification JEL : F21 ; E6
Mots-Clés : Flux de capitaux ; politiques structurelles ; déséquilibres mondiaux

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MEDIUM-TERM DETERMINANTS OF INVESTMENT POSITIONS: THE ROLE OF STRUCTURAL POLICIES

by

Davide Furceri, Stéphanie Guichard and Elena Rusticelli[1]

1. Introduction

1. The purpose of this paper is to examine the long-term drivers of international investment position and capital flows and to assess how policies can help to make the most of global financial integration in the context of the G20 goal to promote strong, sustainable, and balanced global growth. Particular attention is given to the potential role of structural policies -- broadly defined to include development of financial markets, general regulatory quality, as well as product market regulation that promotes competition and flexible labour markets.

2. In particular, the paper analyses two main channels trough which structural policies can shape financial globalisation and its consequences. The first channel is the effect of structural policies on both gross and net international positions which is particularly relevant in the current context, where the size and the direction of capital flows are key factors behind global imbalances. The second channel is the effect of structural policies on the composition of flows (FDI vs. Debt vs. Portfolio equity) which is important because differences in the composition of foreign assets and liabilities have important effects on real activity (De Mello, 1999; Bosworth and Collins, 1999; Borenzstein *et al.*, 1998) and on the probability of sudden stops (Calvo and Reinhart, 2000; Calvo, 2007, Furceri *et al*., 2011b) and banking and currency crises (Furceri *et al*., 2011a, 2011b).

3. The paper provides an empirical investigation of the medium-term determinants of international investment positions and their composition for a large sample of advanced and emerging economies. The results of cross-section and panel estimations suggest that structural policy settings are important long-term drivers of capital flows, having a relatively large impact on gross and net foreign capital positions. In particular, certain kinds of structural policy reform could help to narrow global imbalances by reducing net capital outflows from countries with large positive net foreign assets positions while also supporting their long-term growth. This is particularly the case in emerging countries where less than fully developed financial markets limit the ability of economies to absorb domestic and foreign capital and in both emerging and advanced countries where domestic policy-driven distortions may lower the risk-adjusted returns to capital.

4. The results also suggest that growth supportive structural policies, while attracting more net inflows, can modify their composition towards sources of financing that are usually seen as more stable

1. The authors are members of the Macroeconomic Analysis Division of the OECD Economics Department. They would like to thank colleagues of the OECD Economic Department and in particular Rudiger Ahrend, Jens Arnold, Romain Duval, Jorgen Elmeskov, Jean-Luc Schneider, Cyrille Schwellnus and Dave Turner for helpful discussions, suggestions and support and to Diane Scott for assistance in preparing the document. The views expressed in this paper are those of the authors and do not necessarily represent those of the OECD or its member countries.

and productive. For example, more competition-friendly product market regulation, less stringent job protection, higher institutional quality and greater capital account openness are associated with a larger component of foreign direct investment (FDI) inflows and a smaller share of debt.

5. The remainder of the paper is organised as follows. Section 2 reviews recent trends in international capital flows. Section 3 presents a cross-country analysis of foreign assets and liabilities. Section 4 extends the analysis to a panel framework. Section 5 concludes summarising the main findings.

2. Trends in international investment positions

6. International financial integration accelerated in the decade prior to the financial crisis. The size of annual gross cross-border flows increased considerably from about 5% of world GDP in the mid-1990s to about 20% in 2007 (Figure 1).[2] As a result, international financial openness (measured by the sum of countries' external assets and liabilities as a share of GDP) more than doubled over that period from 150% of world GDP to 350% in 2007, with a substantial acceleration during the 2000s (Figure 2).

7. Emerging markets started to contribute more to global financial integration in the past decade and their share in world capital flows increased from 7% to 17% between 2000 and 2007. Over that period, rising outflows from emerging and developing economies were mainly driven by reserve accumulation and invested in advanced economies sovereign debt securities or close substitutes.[3] This re-cycling of current-account surplus and/or capital inflows into reserve assets, which contributed to sustaining current-account surpluses, reflects several factors including exchange rate policies, self-insurance strategies by emerging markets partly due to some mistrust in the current system of financial safety nets (Mateos y Lago *et al*., 2009). Inflows to emerging and developing countries increased less that outflows and FDI remained the main overall source of international financing for these countries until 2007 when debt inflows became more important.

8. While overall financial globalisation has been associated with advanced countries becoming net debtors to the rest of the world, the evolution of net foreign assets has been very heterogeneous across countries (Figure 5). A common feature is, nevertheless, the widening of net international investment positions in the main regions with a strengthening of the creditor positions of Germany, Japan, major oil producers and China and an increase in indebtedness of the United States, France, Italy and the United Kingdom.

9. After reaching historical highs in mid-2007, international capital flows collapsed during the financial crisis. From mid-2007 to September 2008, the contraction concerned mainly OECD countries' international banking flows (see Milesi-Ferretti and Tille, 2010 for more details). However, the bankruptcy

2. Cross-border flows series used in this paper are from the financial account of the IMF Balance of Payments Statistics (BOPS). Strictly speaking, according to the IMF Balance of Payments manual what are referred to throughout the paper as capital flows should instead be referred to as financial flows. Annual cross-border flows are measured by the acquisition of assets abroad [foreign purchases of equity and debt securities, cross-border lending and deposits, and foreign direct investment (FDI)] where transactions are recorded in net terms and shown separately for financial assets and liabilities (*i.e.* net transactions in financial assets is acquisitions of assets less reductions of assets, not assets less liabilities). FDI is defined according to the *OECD Benchmark Definition of Foreign Direct Investment.* In this paper gross capital inflows or outflows refers to either the credit (gross inflows, *i.e.* net increase in liabilities) or debit (gross outflows, *i.e.* net purchase of assets) while "net" capital flows refers to the difference between gross inflows and gross outflows. Stocks of assets and liabilities used in this paper are from Milesi-Ferretti (2007) before 2004 and the IMF BOPS International Investment Positions after 2004. They reflect both the cumulated annual flows in assets and liabilities and valuation effects, including exchange rate movements.

3. One-fifth of the increase corresponds to higher outflows from oil-exporting countries.

of Lehman Brothers in September 2008 precipitated a broader reversal of international capital flows. Capital flows have partially rebounded since spring 2009, but in a very heterogeneous way. They have mainly been driven by a bounce back in portfolio investment from advanced to emerging countries, which have proven quite resilient to the global crisis and have been seen as underweighted in international portfolios (see especially Suttle *et al*., 2010). As a result in 2010, although overall cross-border flows remained well below pre-crisis levels, several countries including Korea, Chile, Turkey and Mexico in the OECD and Brazil and other large emerging markets have faced large capital inflows.[4]

10. In the past two years most countries and jurisdictions have undertaken initiatives to reform financial regulation and tackle the failures that led to the financial crisis. Such reforms are likely to have some impact on capital flows, which overall may not go back to pre-crisis levels, especially between advanced countries. In particular, higher liquidity requirements, tighter funding rules and regulations to limit leverage of banks and their foreign exchange exposure (resulting notably from Basel III) may constrain the recovery in cross-border bank flows.

3. Cross-country analysis explaining foreign asset and liability positions

11. Cross-country differences in the size and evolution of foreign asset and liability positions can be accounted for by several factors including the level of economic and financial development, capital account restrictions, trade openness and the size of the market, and differences in institutional quality (Lane and Milesi-Ferretti, 2008; Alfaro *et al*. 2008). This section analyses these determinants of foreign assets and liabilities, with a special attention to the role of structural policies. Initially a "baseline" equation is estimated to check for consistency with existing results in the theoretical and empirical literature. This analysis is then extended to include structural variables to see if they have an additional impact on the cross-country pattern of foreign assets and liabilities.

3.1. A baseline equation

12. The baseline equation consists of regressing both foreign assets and liabilities as a share of GDP for a base year (in this case 2007) against a set of explanatory variables highlighted in the literature as key determinants of financial globalisation for a sample of 70 countries, where the sample is constrained by the availability of data for the financial development variable. Specifically, the explanatory variables used in the initial analysis, are as follows (descriptive statistics and sources are reported in Table 1 and frequency distribution of some variables is presented in Figure 6):

- Trade openness (Openness): previous studies in the literature have argued that trade and financial openness tend to follow a similar pattern (Obstfeld and Rogoff, 2001; Obstfeld, 2007). In addition, trade transactions are increasingly generating cross-border financial flows such as trade credits and export insurance. Trade openness is measured as the share of exports and imports in GDP.

- Financial development (Fin_dev): the development of the financial system facilitates cross-border financial flows and the demand for domestic liabilities. At the same time, if the domestic financial sector is unable to meet a higher demand for finance, greater international financial integration may serve as a substitute for limited domestic financial markets. Conversely, a higher level of financial integration may increase competition in domestic markets and stimulate the

4. While consistent data is only available up to the third quarter of 2010, gross inflows seems to be back to, or above, their pre-crisis levels in several countries including Argentina, Brazil, Colombia, Indonesia, Mexico, South Africa, and Turkey where they already represent around 5% of GDP and Chile where they have reached about 15% of GDP.

development of domestic financial institutions. Following, Lane and Milesi-Ferreti (2008), financial development is measured as stock market capitalisation and private credit relative to GDP.

- Economic development (GDP per capita): an increase in the level of economic development, here measured in terms of real GDP per capita, tends to raise the propensity to engage in cross-border flows. In addition, country risk is generally seen to be reduced at higher levels of economic development.

- Size of the country (Pop): smaller countries tend to be relatively more open both to trade and financial flows. At the same time, the size of the market of host countries is expected to boost foreign direct investment. Size is proxied by the log of total population.

- Capital account openness (Kaopen): capital account restrictions tend to generally reduce cross-border flows and have a negative impact on the accumulated stocks of foreign assets and liabilities. The measure of capital account openness used in the analysis is the one proposed by Chinn and Ito (2006, 2008), which is based on principal components extracted from disaggregated capital account restriction measures reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions. An increase in the index implies an increase in capital account openness.

- Financial and off-shore centres[5] (fin_centre and Off-shore): financial and offshore centres have a major role in the global financial system, and are characterised by significantly higher shares of foreign assets and liabilities which have to be controlled for in the analysis.

- European integration (EU15): the integration of credit markets across EU countries and the creation of the euro have been crucial factors driving the rise in total assets and liabilities. Following Lane and Milesi-Ferretti (2008), a dummy variable that takes a value of unity for EU12 and neighbouring countries strongly integrated with the EU12 (Iceland, Norway and Switzerland) has been included in the analysis.

13. The results for total foreign assets and liabilities relative to the full sample are reported in the first three columns of Tables 2 and 3, respectively. As well as being mostly statistical significant, the sign and magnitude of the estimated coefficients are broadly in line with the results in Lane and Milesi-Ferretti (2008) for a different base year (2006). In particular, gross foreign assets as a share of GDP are positively correlated with trade openness, the level of economic and financial development and the level of capital account openness,[6] and negatively correlated with country size. Foreign liabilities are also positively

5. Following Lane and Milesi-Ferretti (2008), financial centres are: Hong-Kong, Luxembourg, Switzerland, the United Kingdom, Ireland and Singapore. Following Rose and Spiegel (2007), offshore centres are considered to be: Aruba, Bahrain, Belize, Costa Rica, Cyprus, Dominica, Hong Kong, Israel, Kuwait, Lebanon, Liberia, Macao, Malaysia, Mauritius, Morocco, Omar, Panama, Philippines, Russian Federation and Uruguay. Classification of offshore centres is based on information from the Report of the Working Group on Offshore Centres of the Financial Stability Forum, "Countries and Territories with Offshore Financial Centers" from Errico and Musalem (1999), and "International and Offshore Financial Centers" from IMF (2004).

6. The level of financial development, economic development and capital account openness are strongly correlated with each other. The first column of Table 2 shows that controlling for the level of financial development, economic development and capital account openness are not statistically significant. In contrast, when financial development is omitted, GDP per capita is statistically significant while the marginal contribution of capital account openness is not.

correlated with the level of capital account openness and financial development, negatively correlated with country size, but appear not to be correlated with the level of economic development. European countries and countries with a financial centre are also associated with a significantly larger total foreign assets and liabilities in relation to their GDP. The results are broadly similar between advanced and emerging economies (comparing columns VIII and IX of Tables 2 and 3). Robustness of the results has been checked for the presence of outliers. Using the method proposed by Hadi and Simonoff (1993) outliers tend to coincide with financial and off-shore centres. Therefore, controlling for them has the advantage of controlling for outliers without dropping these observations (which could be problematic in the cross-section analysis, given the limited number of observations for some of the specifications). In addition the results are robust to LAD (Least Absolute Deviation) estimates.

3.2 Extending the analysis to include structural variables

14. The baseline analysis is extended (columns IV-VII of Table 2 for assets and Table 3 for liabilities) to consider the following additional structural factors that may have an impact on holdings of both assets and liabilities (see Figure 6 for the distribution of these indicators across countries and its evolution over time):

- The level of financial liberalisation (Financial liberalisation): can affect financial development and through this channel foreign external positions. The measure of financial liberalisation is the one proposed by Abiad *et al*. (2008), who constructs an index based on seven different dimensions of financial sector policy: *i)* credit controls and excessively high reserve requirements; *ii)* interest rate controls; *iii)* entry barriers; *iv)* state ownership in the banking sector; *v)* capital account restrictions; *vi)* prudential regulations and supervision of the banking sector; *vii)* securities market policy. An increase in the index implies an increase in financial liberalisation.

- Institutional /regulatory quality (Regulatory quality):[7] one explanation for the Lucas paradox of capital flowing "uphill" from emerging to advanced countries is that weak institutions lower the risk-adjusted return to capital in developing countries (Alfaro *et al.*, 2005). In addition, the quality of legal and regulatory systems may also affect a country's level of financial development (Levine *et al*., 2000). Regulatory quality is taken from the World Bank Governance Indicators (2010) and captures perceptions of the government ability to formulate and implement sound policies and regulations that permit and promote private sector development. An increase in the index implies an increase in the quality of regulation.

- Product market regulation and employment protection legislation (PMR and EPL): are proxies for the business climate and can affect foreign direct investments and therefore both total assets and liabilities and their composition. More generally, they can also affect the attractiveness of investment in countries via their impact on the resilience of the economy to withstand shocks (see previous OECD work, Hajkova *et al.*, 2006). An increase in PMR and EPL implies stricter product and labour market regulation.

7. Additional variables tested are World Bank Governance Indicators measures of: *i)* corruption; *ii)* political risk; *iii)* polity (democracy) score; *iv)* voice and accountability; *v)* political stability; *vi)* government effectiveness; *viii)* rule of law; *ix)* control of corruption; *x)* financial freedom; and *xi)* investment freedom. The results with these indicators are qualitatively similar to those obtained for regulatory quality, although less statistically significant. More details on the World Bank Governance Indicators are provided in Kaufman *et al.* (2010).

15. In interpreting the results it is important to bear in mind that the sample size (shown in the penultimate row of each table of estimation results) varies, sometimes considerably, between estimations depending on country coverage for key indicators. Bearing this in mind, the key findings are as follows (Tables 2 and 3):

- An increase of one standard deviation in regulatory quality is associated with a reduction in foreign assets of about 36 percentage points of GDP, reflecting increased opportunities for profitable domestic investment.

- An increase of one standard deviation in financial liberalisation is associated with an increase in foreign liabilities of about 17 percentage points of GDP. This result is consistent with views that weak institutions lower the risk-adjusted return to capital in developing countries and so contribute to higher investment in "safer" markets (Alfaro *et al*., 2005), and that financial liberalisation by increasing financial development may have positive effects on foreign positions.

- The effect of PMR and EPL were found to be statistically insignificant, although this finding needs to be qualified by the fact that the set of countries for which these indicators are available greatly reduces the sample size, to only 26 and 20 countries respectively.[8]

3.3 Financial integration and imbalances

16. This section extends the previous analysis by considering two combinations of total foreign assets and liabilities: *i)* a measure of international financial integration defined as the total stocks of external assets and liabilities expressed as a share of GDP); *ii)* net foreign assets as a share of GDP which under some circumstances might be considered to be a measure of imbalances.

17. Unsurprisingly, all the variables that have been found to be statistically significant for separately explaining both assets and liabilities are also statistically significant in explaining financial integration (Table 4, columns I-V). In particular, among the "baseline" variables, financial integration is positively and significantly correlated with trade openness, capital account openness and financial and economic development. In addition, smaller countries, financial and off-shore centres, and European Union countries tend to be more financially integrated. Among the set of explanatory structural variables, an increase in financial liberalisation is found to be positively associated with an increase in financial integration, although the effect of other structural variables is found to be statistically insignificant.[9]

18. Replicating the analysis for net foreign assets (Table 4, columns VI-X) suggests that once other factors are controlled for, net foreign external positions are positively correlated with the level of economic development. This is consistent with the standard neo-classical theory suggests that developing countries with low capital-labour ratios will import capital from advanced economies. At the same time, countries with higher financial development tend to be characterised by lower net foreign assets positions. This result is consistent with previous studies that suggest that under-developed financial markets considerably limit the ability of emerging economies to absorb foreign capital (Prasad *et al.*, 2007; Cheung *et al.*, 2010).

8. Additionally, for 2007 the EPL indicators are only available for OECD countries and the PMR indicators are available for OECD countries plus Russia and China (Wölfl *et al.*, 2010). The EPL indicators are available starting in 2008 for several non-OECD countries and the PMR database is being extended to more non-OECD countries.

9. The regressions for which the institutional variables are found to be not statistically significant are not reported.

19. Another factor which significantly contributes to cross-country variations in net foreign assets positions is the quality of domestic institutions. In particular, in line with Lucas's (1990) theory,[10] countries with higher regulatory quality, financial liberalisation and lower levels of product and labour market distortions are in general characterised by a lower level of net foreign assets. In particular, while an increase of one standard deviation in regulatory quality and financial liberalisation is respectively associated with a reduction in net foreign assets of 16 and 11 percentage points of GDP, a decrease of one standard deviation in product market and labour market regulation respectively is associated with a reduction in net foreign assets of 15 and 20 percentage points of GDP.[11] This result suggests that growth enhancing structural reforms in surplus-emerging economies may contribute to reduce surpluses and so attenuate global imbalances at least for a while.

3.4 Composition of foreign assets and liabilities

20. Differences in the composition of foreign assets and liabilities have important effects on real activity. Thus, while foreign direct investments have been generally found to foster growth (De Mello, 1999), the relation between debt and portfolio flows and growth appears to be smaller and less robust (Bosworth and Collins, 1999; Borenzstein *et al.*, 1998). In addition, debt and portfolio flows are in general more volatile and therefore more susceptible to sudden stops (Calvo and Reinhart, 2000; Calvo, 2006). Based on these considerations, the theoretical literature yields a preferential order of capital flows, in decreasing order of riskiness: firstly, debt; secondly, portfolio equity; and finally, FDI.[12] Also FDI inflows are less volatile than debt and equity inflows and may be associated with lower risks of misallocation of capital compared with equity or debt inflows because they reduce asymmetries of information between foreigners and locals (see for instance Kirabaeva and Razin, 2010).

21. Figure 4 shows the composition of foreign assets and liabilities in: *i)* debt (portfolio debt; *ii)* portfolio equity; and *iii)* foreign direct investments, and describes the pattern of these variables over time and in terms of difference between advanced and emerging economies, highlighting that there are important differences across countries in the relative importance of different types of assets and liabilities.[13]

10. Lucas (1990) explains that capital flows to emerging economies have been lower than expected because of domestic distortions that lower the risk-adjusted returns to capital. These distortions may include under-developed financial markets or weak institutions and may explain why financial capital tends to flow "uphill". Alfaro *et al.* (2008) show that institutional quality is the main explanation of why capital doesn't flow from advanced to emerging economies (Lucas's paradox). In China, for example, large FDI inflows have been largely offset by significant financial outflows towards predominantly industrial economies outside of Asia (Andersen and Johnson, 2004).

11. This finding needs to be qualified by the fact that the set of countries for which these indicators are available greatly reduces the sample size. On the other hand, the fact that the standard deviation of the change in PMR and EPL relates to a sample of essentially OECD countries (although the equation with PMR also includes India and China) implies that one standard deviation may represent a smaller policy change compared to a one standard deviation change in regulatory quality which is measured across a much wider range of developed and developing countries.

12. As argued by Bird and Rajan (2001), a potential criticism of the conventional view regarding differing degrees of stability of various capital flows is that it fails to take into account the complex interactions between FDI and other flows. For instance, a firm may hedge its FDI exposure by borrowing domestically and then taking short-term capital out of the country. Hence, a firm may be doing one thing with its assets and a different thing in terms of the manner in which it finances them.

13. Given that these share sum up to 1, the best estimations approach would be to estimate the three shares as a system of simultaneous equations. Unfortunately, the impossibility to find strongly exogenous

22. The previous analysis is repeated in order to analyse the drivers of the composition in assets and liabilities. The dependent variables considered in turn are: *i)* the share of foreign direct investment in total assets and in total liabilities; *ii)* the share of portfolio equity in total assets and in total liabilities; *iii)* the share of external debt (measured as portfolio debt plus other investments) in total assets and in total liabilities.[14]

23. The results (Table 5) suggest that the level of financial development plays an important role in explaining the composition of foreign assets across countries. In particular, countries with more developed financial systems tend to hold a higher share of their foreign assets in FDI and portfolio equity and less in debt. Among the structural variables, an increase in financial liberalisation is associated with an increase in the share of FDI abroad, while better regulatory quality with a reduction in the share of debt assets.

24. As for the assets, a higher level of financial development is associated with a reduction of the share of debt to total liabilities and an increase in the share of portfolio equity (Table 6). Capital account openness is associated with a higher share of FDI and a lower share of debt liabilities. Finally, product market regulation is associated with a higher share of FDI liabilities and a lower share of portfolio equities. In particular, an increase of one standard deviation in product market regulation is associated with an increase of FDI of about 12 percentage points of total liabilities, and with a reduction in portfolio liabilities of about 11 percentage points of total liabilities.[15] These results are consistent with previous OECD studies (Hajkova *et al.*, 2006) which find a positive relationship between trade flows and FDI inflows and suggests that product market regulation not conducive to competition is an impediment to foreign direct investment inflows.[16]

4. Panel analysis explaining foreign asset and liability positions

25. This section examines many of the same issues as the previous section, but the estimation includes a time dimension using a panel estimation approach. This has particular importance when trying to estimate the effect of structural variables for which the country coverage is small. In addition, extending the estimation to the time dimension enables some additional explanatory variables, such as exchange rate volatility and time dummies, to be considered.

-- identifying -- instruments prevents this exercise to be carried out. Similarly, given that the same set of regressors enter in each equation, OLS estimates coincide with SURE estimates.

14. The regressions for which the institutional variables are found to be not statistically significant are not reported.

15. This finding needs to be qualified by the fact that the set of countries for which these indicators are available greatly reduces the sample size. On the other hand, the fact that the standard deviation of the change in PMR and EPL relates to a sample of essentially OECD countries (although the equation with PMR also includes India and China) implies that one standard deviation may represent a smaller policy change compared to a one standard deviation change in regulatory quality which is measured across a much wider range of developed and developing countries.

16. The fitted values of the regressions for the different types of share of assets and liabilities are always below 100 and for nearly all cases and specifications higher than zero. For a very few observations the fitted value is negative, which in principle could be the case as for a small number of actual data observations the value, and therefore the share of FDI or portfolio investment in assets or liabilities, is negative. One example of why stocks of assets and liabilities positions could be negative taken from Lane and Milesi-Ferretti (2007) is the following: if a company invests $100 in equity of a firm overseas and borrows $110 from that firm via an intra-company loan, the stock of FDI abroad would be −$10.

4.1 Stocks of foreign assets and liabilities

26. The following equation is estimated to examine the determinants of foreign assets and liabilities using a panel approach:

$$\bar{F}_{i,[t,t+4]} = \alpha_t + \gamma' \boldsymbol{X}_{it} + \varepsilon_{i,t} \quad (1)$$

where $\bar{F}_{i,[t,t+4]}$ denotes the five-year average of the stock of foreign assets as a per cent of GDP (alternatively foreign liabilities, financial integration and net foreign assets) between time t and t+4, X is the same set of explanatory variables used in the cross-section analysis and α_t are time fixed effects. No country fixed effects are included in the estimation because a large part of the sample variation of asset and liability positions, and especially of net foreign assets, is attributable to the cross-country rather than times-series variation. For example, for net foreign asset positions the cross-country variability is more than 70% of the sample variation. Therefore, using country fixed effects would drastically reduce the sample variation. In addition, the use of country fixed effects would imply to drop those variables that have time variation, such as institutional variables, that are the focus of this study.[17] This approach has also been followed in the empirical literature examining the medium-term determinants of current account balance (Chinn and Prasad, 2003; Chinn and Ito, 2008; Cheung *et al*. 2010). Given that the purpose of this analysis is to assess the drivers of international investment positions in the medium-term, to iron out cyclical fluctuations in international asset positions, equation (1) is estimated over successive non-overlapping five-year periods beginning in 1970-74 and ending in 2000-04.This approach also has the advantage of reducing serial correlation.[18] Reverse causality is addressed by only using the value of the explanatory variables in the initial year (rather than the five-year average).

27. The results for foreign assets, liabilities, financial integration and net foreign assets positions are broadly in line with those obtained in the static analysis (Table 7). In particular, trade and capital account openness, as well as financial and economic development are positively associated with higher assets and liabilities, and therefore greater financial integration.[19] The inclusion of a time dimension in estimation also enables some of the structural policy effects to be better identified. Countries with stricter employment and product market regulation which are not conducive to competition are found to be associated with higher foreign assets positions in both gross and net terms. Similarly, countries with lower regulatory quality tend to have larger net foreign assets. In addition, greater real exchange rate flexibility[20] is negatively associated with net foreign surpluses (but not with gross positions) which suggests that a more flexible exchange rate may help surplus-emerging economies to rebalance. Finally, time dummies for the last two five-year periods are found to be statistically significant supporting the evidence that there has been a surge in foreign assets and liabilities over the last decade which is not entirely captured by the other explanatory variables.

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17. Alternatively, equation (1) could be estimated using country fixed effects and then regressing country fixed effects on institutional variables. This exercise has been carried out and has confirmed a significant relation between countries fixed effects and institutional variables.

18. The issue of possible autocorrelation has been also checked by clustering standard errors at country level, and as expected the results are unchanged.

19. As already reported in the previous section, the level of financial development, economic development and capital account openness are strongly correlated with each other, which prevents the coefficients associated with some of these variables being statistically significant when all of them are simultaneously included as explanatory variables. For example, although the coefficient associated with financial development is not statistically significant in Table 6, it becomes significant when GDP per capita is omitted from the analysis.

20. Exchange rate flexibility is measured as the standard deviation of the month-to-month changes of the real exchange rate. This measure tends be strongly correlated with other measures of *de facto* exchange rate flexibility such as the *z-score* measure proposed by Ghosh *et al.* (2003).

4.2 Composition of foreign assets and liabilities

28. The results for the composition of assets and liabilities (Tables 8 and 9) are also in line with the findings of the previous section, with many of the results statistically better determined.[21] In particular, the evidence based on the panel regression continues to suggest that structural reforms that promote flexibility in labour markets and competition in product markets, as well as increase regulatory quality and financial liberalisation, may have a significant impact on the composition of foreign assets and liabilities, by increasing the share of FDI and portfolio investment while reducing the share of debt in both total assets and liabilities.

29. Finally, the empirical analysis has been extended to foreign inflows (outflows) defined as the first difference of foreign liabilities (assets).[22] However, the explanatory power of these regressions as measured by the R2 is generally much lower than those for the previous analysis for which assets and liabilities are expressed in stocks, and so the results are not reported here. Nevertheless, these flow regressions do find a significant role for structural variables in explaining the composition of capital flows, but not in explaining aggregate inflows and outflows. The weaker fit of these regressions is likely to be due to the higher cyclical variability of capital flows, but it is also unsurprising given that it is more reasonable to expect a long-run relationship between structural variables and asset and liability stocks than with the corresponding flow variables.[23]

5. Conclusions

30. The aim of this paper was to investigate the medium-term relationship between international investment positions and structural policies.

31. Firstly, using cross-section and panel regression techniques the paper suggests that structural policy settings are important long-term drivers on gross and net foreign capital positions, implying that structural reforms could affect capital flows. Given that there is great scope for improving structural policies in surplus countries, better structural policies may help to reduce net capital outflows from surplus countries while also supporting long-term global growth:

- Both foreign assets and liabilities tend to increase with financial development and capital account openness, but with an overall net effect of reducing net foreign assets. Financial liberalisation tends to support gross capital inflows and also reduce net foreign asset positions;

- Improvements in institutional quality, by increasing the risk-adjusted return to capital, increase capital inflows and reduce capital outflows, thus reducing net foreign asset positions;

- There is also some evidence that product market regulation that promotes competition tend to reduce gross foreign assets and capital outflows as domestic investment becomes more attractive. Less stringent employment protection legislation is also associated with lower outflows and a reduction in net foreign assets. These results may however be a bit more fragile that the results on

21. The regressions for which the institutional variables are found to be not statistically significant are not reported.

22. This measure, which is also used by Binici *et al.* (2010) among others, includes valuation effects and is arguably more appropriate than using just flow variables since valuation changes can affect investors' behaviour and may substitute for actual transactions.

23. Arguably, a better specification to estimate international capital flows is to estimate a dynamic version of equation (1) in an explicit error correction framework, but this goes beyond the scope of the present paper.

the other structural settings as the cross-section analysis found only an impact on net foreign assets and liabilities and not on gross position (while the panel estimation finds an impact for both gross and net positions).

32. As a result reforms could induce a reduction in current account balances over a long period of time during which net foreign asset positions adjust to their new levels, and therefore a reduction of global imbalances. Individual country situations have to be taken into account. While reforms would have the double benefit of supporting welfare and long-term growth and reducing imbalances if implemented in surplus countries, in deficit countries, notably emerging ones, where there is room for such policies, growth-enhancing reforms will not help reduce the current account deficits and if wider deficits are deemed undesirable growth-enhancing reforms would have to be complemented by other measures to help increase net savings or at least limit their deterioration

33. Secondly, improved structural policies can help to modify the composition of capital flows towards more stable and productive sources of financing. In particular, more competition-friendly product market regulation, less stringent EPL, improved institutional quality and greater capital account openness in host countries tend to modify the composition of foreign liabilities towards higher FDI and less debt.

34. The main contribution to the acceleration of world financial integration came more from advanced countries (Figure 3) and particularly from banking operations (recorded in "other investment" in Figure 4) reflecting the rise of cross-border ownership of financial institutions and an increase of their funding on international markets mentioned above. In the wake of the crisis, those countries with large asset and liability positions in which banks played a large role were the most affected by the financial crisis.

Table 1. Descriptive statistics

Variables	Number of observations	Mean	S.D.	Maximum number of countries	Source
Dependent variable					
Assets					
Total (% of GDP)	5643	86.5	438.4	126	L&MF
FDI (% of GDP)	5693	28.9	107.4	126	L&MF
Portfolio equity(% of GDP)	5624	8.0	86.2	126	L&MF
Debt (% of GDP)	5667	56.9	280.4	126	L&MF
Liabilities					
Total (% of GDP)	5650	122.4	437.0	126	L&MF
FDI (% of GDP)	5693	28.9	107.4	126	L&MF
Portfolio equity (% of GDP)	5642	13.7	191.9	126	L&MF
Debt (% of GDP)	5681	79.5	175.8	126	L&MF
Financial integration (% of GDP)	5643	208.9	864.3	126	L&MF
Net foreign assets (% of GDP)	5643	-36.0	140.9	126	L&MF
Determinants					
Openness (% of GDP)	5453	78.2	47.1	122	WDI
GDP per capita (log)	6030	-6.5	1.6	126	WDI
Pop (log)	6617	15.4	2.0	124	WDI
Kaopen	5275	0.0	1.5	121	C&I
Fin_dev (% of GDP)	1657	1.0	0.9	83	Beck *et al.*(2010)
PMR	891	4.2	1.4	33	OECD
EPL	599	2.1	1.0	26	OECD
Regulatory quality	1382	0.0	1.0	124	WGI
Financial liberalisation	2671	0.0	1.0	72	Abiad *et al.* (2008)

Note: L&M = Lane and Milesi–Ferretti (2007). WDI = World Bank Development Indicators (2010). CI = Chin and Ito (2008). WGI = World Bank governance Indicators (2010).

Table 2. Static cross-country equations explaining foreign asset stock-to-GDP ratio

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
	Full Sample							Advanced economies	Emerging economies
Openness	0.734 (2.33)**	0.805 (2.28)**	-	2.266 (3.88)***	2.753 (6.68)***	0.805 (2.59)**	1.240 (2.72)***	1.308 (3.92)***	0.129 (1.63)*
GDP per capita (log)	2.866 (0.28)	15.151 (3.55)***	-	34.930 (0.47)	150.144 (1.55)	19.419 (1.92)*	9.845 (1.86)*	8.496 (0.17)	9.594 (2.79)***
Pop (log)	-14.474 (-1.43)	-2.966 (-0.47)	-12.458 (-2.93)***	-6.021 (-0.32)	30.427 (1.75)*	-16.317 (-1.58)	10.435 (1.98)*	-19.634 (-1.89)*	-4.684 (-1.43)
Kaopen	-6.248 (-0.76)	-0.612 (-0.18)	13.130 (2.82)***	-59.373 (-2.50)**	-44.208 (-1.63)	-3.100 (-0.34)	-	-19.041 (-0.87)	-0.123 (-0.05)
Fin_dev	73.092 (2.49)**	-	-	98.109 (1.96)**	56.343 (0.86)	78.727 (2.64)***	-	141.509 (7.44)***	12.641 (2.76)***
Fin_centre	282.785 (2.49)**	439.534 (2.41)**	631.796 (3.87)***	187.749 (1.00)	274.21 (2.26)**	281.554 (2.64)***	387.468 (2.50)**	42.045 (0.47)	-
Offshore_centre	-18.934 (-0.68)	58.837 (1.89)*	138.717 (2.50)**	55.179 (1.00)	-	-24.093 (-0.88)	15.526 (0.70)	-114.990 (-1.38)	12.528 (1.44)
EU15	143.677 (3.94)***	166.220 (4.66)***	182.728 (4.41)***	210.31 (4.61)***	85.783 (0.91)	151.722 (4.16)***	155.497 (4.84)***	143.677 (3.94)***	-
PMR	-	-	-	13.287 (0.31)	-	-	-	-	-
EPL	-	-	-	-	58.939 (1.49)	-	-	-	-
Regulatory quality	-	-	-	-	-	-42.813 (-2.49)**	-	-	-
Financial liberalisation	-	-	-	-	-	-	39.671 (0.78)	-	-
N	70	134	168	26	20	69	80	26	44
R^2	0.85	0.72	0.62	0.91	0.88	0.83	0.83	0.95	0.53

Note: t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

Table 3. Static cross-country equations explaining foreign liabilities-to-GDP ratio

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
	Full sample							Advanced economies	Emerging economies
Openness	0.528 (1.89)*	0.809 (2.28)**	-	1.532 (2.88)***	1.977 (5.13)***	0.540 (1.89)*	0.984 (2.68)***	0.754 (2.38)**	0.524 (2.89)***
GDP per capita (log)	-3.967 (-0.48)	-14.205 (-1.05)	-	-88.684 (-1.19)	11.955 (0.13)	-0.774 (-0.08)	4.370 (0.87)	-26.995 (-0.65)	8.623 (1.85)*
Pop (log)	-24.011 (-1.96)*	-13.108 (-1.96)*	-22.798 (-5.27)***	-34.597 (-1.90)*	2.240 (0.13)	-24.564 (-1.89)*	2.936 (0.64)	-39.574 (-2.74)***	-3.608 (-0.64)
Kaopen	-9.577 (-0.98)	10.037 (1.42)	12.231 (2.45)**	-48.347 (-2.17)**	-24.763 (-0.95)	-8.289 (-0.85)	-	-7.103 (-0.27)	-0.267 (-0.09)
Fin_dev	67.036 (2.85)***	-	-	145.096 (2.86)**	112.709 (1.95)*	68.047 (2.80)***	-	131.911 (9.08)***	8.056 (0.87)
Fin_centre	201.099 (2.67)***	290.517 (2.22)**	498.766 (3.20)***	135.708 (1.97)*	193.451 (1.76)	201.468 (2.68)***	286.159 (2.53)**	55.512 (0.66)	-
Offshore_centre	-18.934 (-0.68)	89.928 (1.74)*	121.025 (2.20)**	-35.870 (-0.65)	-	-39.089 (-1.39)	-1.080 (-0.06)	-158.777 (-1.94)*	-13.575 (-0.82)
EU15	163.546 (4.91)***	229.672 (5.20)***	186.604 (4.52)***	227.274 (5.14)***	112.346 (1.23)	165.040 (4.89)***	146.451 (5.34)***	177.529 (4.43)***	-
PMR	-	-	-	-9.356 (-0.25)	-	-	-	-	-
EPL	-	-	-	-	33.804 (0.92)	-	-	-	-
Regulatory quality	-	-	-	-	-	-8.073 (-0.46)	-	-	-
Financial liberalisation	-	-	-	-	-	-	116.404 (2.89)***	-	-
N	70	134	168	26	20	69	80	26	44
R^2	0.83	0.60	0.56	0.86	0.88	0.83	0.79	0.91	0.41

Note: t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

Table 4. Static cross-country equations explaining financial integration and net foreign assets-to-GDP ratios

	Financial integration[1]					Net foreign assets				
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)
Openness	1.262 (2.19)**	1.614 (2.69)***	-	-	2.223 (2.74)***	0.206 (1.42)	0.735 (6.94)***	0.776 (7.50)***	0.264 (1.99)**	0.256 (1.57)
GDP per capita (log)	-1.101 (-0.06)	0.946 (0.07)	19.445 (1.77)*	-	14.215 (1.54)	6.833 (1.02)	123.614 (7.17)***	138.189 (7.17)***	20.194 (2.29)**	5.474 (1.16)
Pop (log)	-38.485 (-1.75)*	-16.074 (-1.29)	-33.570 (-4.24)***	-35.256 (-4.28)***	13.371 (1.43)	9.537 (1.86)*	28.575 (9.81)***	28.187 (4.65)***	8.247 (1.52)	7.498 (2.27)
Kaopen	-6.248 (-0.76)	9.425 (1.15)	18.334 (2.13)**	25.361 (2.93)***	-	2.328 (0.55)	-11.026 (-1.90)*	-19.445 (-2.36)**	5.188 (1.12)	-
Fin_dev	140.128 (2.68)***	-	-	-	-	6.056 (0.61)	-46.988 (-4.75)***	-56.367 (-4.16)***	10.680 (1.04)	-
Fin_centre	483.772 (2.49)**	730.051 (2.40)**	1120.156 (3.54)***	1130.562 (3.59)***	673.627 (2.56)**	81.686 (1.34)	52.041 (4.18)***	80.756 (2.73)***	80.086 (1.52)	101.309 (1.59)
Offshore_centre	-56.793 (-1.06)	148.765 (2.16)**	243.516 (2.41)**	259.741 (2.52)**	14.446 (0.38)	18.925 (1.33)	91.049 (6.65)***		14.996 (1.04)	16.606 (1.46)
EU15	307.223 (4.48)***	182.728 (4.41)***	329.723 (3.72)***	371.332 (4.414)***	301.948 (5.27)	-19.870 (-1.02)	-17.143 (-1.27)	-26.563 (-0.97)	-13.318 (-0.72)	9.046 (0.53)
PMR	-	-	-	-	-	-	22.642 (1.85)*	-	-	-
EPL	-	-	-	-	-	-	-	25.136 (1.85)*	-	-
Regulatory quality	-	-	-	-	-	-	-		-34.741 (-2.46)**	-
Financial liberalisation	-	-	-	-	156.075 (1.91)*	-	-	-	-	-76.733 (-1.77)*
N	70	134	168	168	80	70	26	20	69	80
R^2	0.85	0.72	0.62	0.62	0.81	0.44	0.84	0.89	0.49	0.45

1. Financial integration is defined as the sum of total asset and liabilities over GDP.

Note: t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

Table 5. Static cross-country equations explaining the composition of financial assets

	FDI/total assets (as a %)		Portfolio/total assets (as a %)	Debt/total assets (as a %)	
	(I)	(II)	(IV)	(V)	(VI)
Openness	0.011 (0.38)	0.035 (1.35)	-0.018 (-0.81)	-0.036 (-1.12)	-0.016 (-0.46)
GDP per capita (log)	6.043 (4.24)***	4.373 (4.20)***	1.168 (1.02)	0.053 (0.02)	5.408 (1.37)
Pop (log)	2.549 (2.33)**	3.027 (3.89)***	0.041 (0.06)	-2.444 (-1.46)	-3.310 (-1.89)*
Kaopen	0.451 (0.45)	-	-0.501 (-0.60)	1.317 (0.64)	1.897 (1.02)
Fin_dev	3.935 (2.47)**	-	2.535 (1.51)	-5.561 (-3.15)***	-3.842 (-2.24)**
Fin_centre	-13.988 (-2.53)**	-7.973 (-1.19)	-1.881 (-0.25)	21.879 (2.93)***	22.314 (2.69)***
Offshore_centre	-1.159 (-0.36)	1.516 (0.43)	-3.280 (-1.92)*	9.328 (1.48)	7.336 (1.11)
EU15	-4.101 (-1.03)	-2.347 (-0.57)	-3.184 (-0.92)	20.873 (3.01)***	23.397 (3.86)***
Regulatory quality	-	-	5.966 (2.36)**	-	-13.597 (-2.17)**
Financial liberalisation	-	21.859 (2.61)**	-	-	-
N	70	80	70	70	69
R^2	0.50	0.49	0.44	0.30	0.37

Note: t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

Table 6. Static cross-country equations explaining the composition of financial liabilities

	FDI/total liabilities (as a %)		Portfolio/total liabilities (as a %)		Debt/total liabilities (as a %)
	(I)	(I)	(IV)	(V)	(VI)
Openness	0.040 (1.22)	0.117 (2.30)**	-0.023 (-0.36)	-0.013 (-0.57)	-0.037 (-1.32)
GDP per capita (log)	-2.232 (-0.84)	-18.899 (-2.43)**	12.285 (1.86)*	0.921 (0.57)	-1.156 (-0.45)
Pop (log)	-1.333 (-0.92)	0.098 (0.06)	3.407 (2.02)**	4.495 (4.54)***	-3.116 (-2.22)**
Kaopen	2.611 (1.66)*	0.305 (0.16)	1.085 (0.059)	-0.594 (-0.58)	-2.549 (-1.73)*
Fin_dev	1.209 (0.75)	0.187 (0.05)	3.312 (0.87)	4.942 (2.62)**	-7.145 (-4.12)***
Fin_centre	-14.100 (-1.84)*	-11.220 (-2.09)**	-5.082 (-1.37)	-16.619 (-2.75)**	32.698 (4.27)***
Offshore_centre	-1.025 (-0.19)	-0.097 (-0.02)	6.520 (2.01)	4.115 (1.62)	-2.202 (-0.46)
EU15	-23.116 (-3.82)***	-5.908 (-1.07)	-11.177 (-2.26)**	-6.723 (-1.69)*	28.051 (4.72)***
PMR	-	-8.735 (-2.31)**	7.855 (2.13)**	-	-
Regulatory quality	-	-	-	5.582 (2.21)**	-
N	70	26	26	69	70
R^2	0.41	0.84	0.62	0.55	0.52

Note: t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

Table 7. Panel equations explaining foreign assets and liabilities-to-GDP ratios (time fixed effects)

	Foreign assets				Foreign liabilities	Financial integration	Net foreign assets				
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)
Openness	0.818	1.875	1.913	0.888	0.731	1.549	0.087	0.303	0.401	0.078	0.044
	(4.23)***	(4.83)***	(4.99)***	(2.72)***	(4.13)***	(4.40)***	(0.75)	(2.10)**	(3.13)***	(0.53)	(0.38)
GDP per capita (log)	15.636	57.734	48.703	31.271	-5.080	10.556	20.715	36.941	35.28	39.654	26.472
	(3.78)***	(2.22)**	(1.92)*	(2.68)***	(-1.09)	(1.33)	(5.46)***	(3.67)***	(3.28)***	(4.72)***	(6.35)***
Pop (log)	-0.899	7.797	7.026	-9.004	-6.061	-6.960	5.162	13.805	13.267	-2.404	8.266
	(-0.17)	(1.79)*	(1.38)	(-0.76)	(-1.23)	(-0.70)	(1.81)*	(4.37)***	(3.38)***	(-0.52)	(5.18)***
Kaopen	3.170	11.909	8.745	12.709	10.044	13.214	-6.874	-7.118	-10.669	-1.943	-
	(0.89)	(1.60)	(1.46)	(1.16)	(2.75)***	(1.95)**	(-2.88)***	(-2.41)**	(-3.84)***	(-0.43)	
Fin_dev	11.976	20.738	16.843	13.807	9.540	21.516	2.436	12.222	11.074	14.681	-
	(0.98)	(1.46)	(0.99)	(0.66)	(0.74)	(0.89)	(0.38)	(1.23)	(1.03)	(1.77)*	
Fin_centre	283.652	251.024	274.709	338.385	229.383	513.035	54.270	26.547	37.781	71.979	39.408
	(3.85)***	(3.71)***	(3.26)***	(3.29)***	(3.09)***	(3.51)***	(2.37)**	(1.16)	(1.44)	(2.35)**	(3.33)***
Offshore_centre	25.419	-	-	58.732	4.045	29.464	21.374	-	-	21.914	32.667
	(1.18)			(1.22)	(0.21)	(0.74)	(1.94)*			(1.56)	(4.38)***
EU15	19.996	1.291	-17.266	58.471	29.610	49.607	-9.614	2.011	-10.581	-16.766	-16.314
	(1.69)*	(0.05)	(-0.48)	(2.10)**	(2.68)***	(2.29)***	(-1.29)	(0.27)	(-0.78)	(-1.23)	(-1.99)*
PMR	-	27.930	-	-	-	-	-	15.939	-	-	-
		(2.04)**						(2.70)***			
EPL	-	-	24.836	-	-	-	-	-	13.500	-	-
			(1.75)*						(2.28)**		
Regulatory quality	-	-	-	-51.745	-	-	-	-	-	-66.891	-
				(-1.75)*						(-4.39)***	
Real exchange rate flexibility	-	-	-	-	-	-	-	-	-	-	-0.004
											(-32.35)****
N	225	73	76	85	225	225	225	76	76	85	422
R^2	0.58	0.87	0.85	0.63	0.53	0.60	0.34	0.55	0.55	0.55	0.38

Note: Financial integration is defined as the sum of total asset and liabilities over GDP. t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

Table 8. Panel equations explaining the composition of foreign assets (time fixed effects)

	FDI/Total Assets (as a %)		Portfolio/Total Assets (as a %)			Debt/ Total Assets (as a %)		
	(I)	(II)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
Openness	-0.018 (-0.57)	0.038 (2.14)**	0.016 (0.75)	-0.051 (-1.80)*	-0.013 (-1.96)**	0.021 (0.45)	0.062 (1.31)	-0.005 (-1.80)*
GDP per capita (log)	3.314 (1.10)	4.119 (6.99)***	3.910 (2.18)**	0.986 (1.12)	1.883 (7.63)***	0.391 (0.09)	-0.550 (-0.13)	3.209 (1.29)
Pop (log)	-1.312 (-1.31)	1.198 (3.03)**	0.116 (0.16)	-0.527 (-0.53)	0.220 (1.40)	4.756 (4.57)***	4.744 (4.27)***	-1.258 (-0.67)
Kaopen	2.290 (2.07)**	-	2.814 (3.80)***	-1.231 (-1.36)	-	2.049 (1.02)	0.547 (0.34)	3.692 (2.09)**
Fin_dev	-1.121 (-0.49)	-	-1.615 (-1.24)	3.343 (1.40)	-	3.568 (1.04)	3.117 (0.95)	-6.407 (-2.58)**
Fin_centre	-10.751 (-3.07)***	-7.464 (-4.33)***	-0.671 (-0.26)	-5.717 (-0.95)	2.559 (2.61)***	10.517 (1.77)*	15.476 (2.18)**	22.862 (3.57)***
Offshore_centre	-	-5.826 (-4.19)***	-	-4.124 (-2.27)**	-1.850 (-3.00)***	-	-	13.801 (2.21)**
EU15	-2.822 (-0.88)	-5.943 (-3.20)***	-2.873 (-1.02)	2.181 (0.62)	-1.016 (-1.05)	46.997 (3.61)***	11.655 (1.93)*	10.704 (1.76)*
PMR	-4.205 (-2.62)**	-	-	-	-	6.386 (2.91)***	-	-
EPL	-	-	-1.873 (-1.87)*	-	-	-	5.630 (2.63)**	-
Regulatory quality	-	-	-	5.662 (3.33)***	-	-	-	-10.320 (-2.15)**
Financial liberalisation	-	12.797 (3.50)***	-	-	5.902 (4.40)***	-	-	-
N	73	449	73	84	443	73	76	85
R^2	0.58	0.33	0.61	0.53	0.47	0.58	0.52	0.25

Note: t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

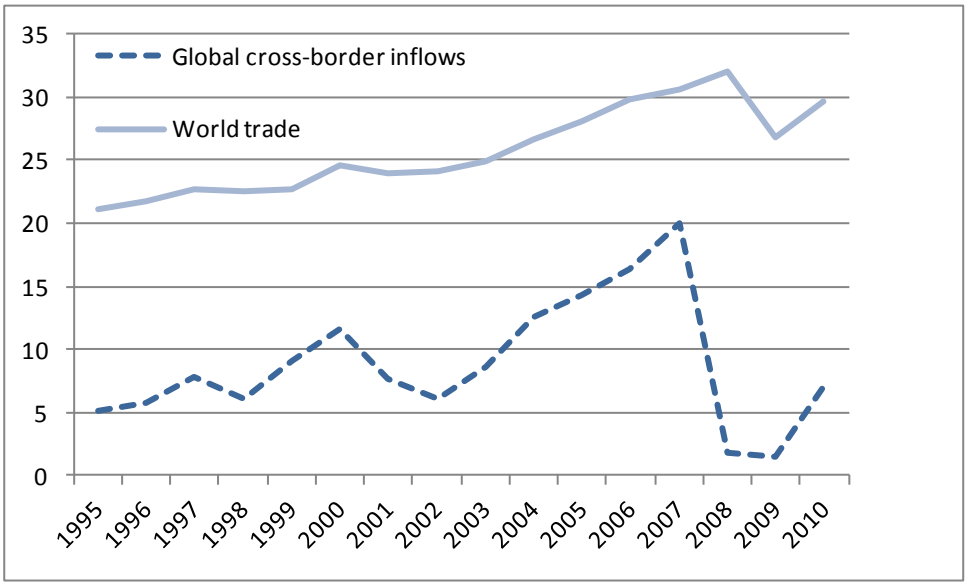
Table 9. Panel equations explaining the composition of foreign liabilities (time fixed effects)

	FDI/total liabilities (as a %)		Portfolio/total liabilities (as a %)	Debt/total liabilities (as a %)
	(I)	(II)	(III)	(IV)
Openness	0.134 (4.08)***	0.073 (2.24)**	-0.007 (-0.57)	-0.157 (-2.84)***
GDP per capita (log)	-6.267 (-2.33)**	-6.795 (-2.73)***	2.163** (8.10)***	3.021 (0.81)
Pop (log)	-0.255 (-0.21)	-1.386 (-1.23)	1.083 (5.41)***	-0.002 (-0.00)
Kaopen	-0.388 (-0.27)	0.431 (0.35)	-	0.762 (0.39)
Fin_dev	-3.200 (-1.63)	-2.685 (-1.37)	-	-2.361 (-0.71)
Fin_centre	-6.068 (-1.55)	-11.354 (-2.26)**	4.98 (2.04)**	4.699 (0.76)
Offshore_centre	-	-	0.515 (0.69)	-
EU15	-6.512 (-2.19)**	0.181 (0.04)	-0.756 (-0.85)	7.892 (1.93)**
PMR	-3.496 (-2.27)**	-	-	3.366 (1.66)*
EPL	-	-4.244 (-2.57)**	-	-
Regulatory quality	-	-	-	-
Financial liberalisation	-	-	5.305 (3.40)***	-
N	73	76	447	73
R^2	0.53	0.51	0.52	0.53

Note: t-statistics in brackets, based on robust standard errors.***,**,* denote significance at 1%, 5% and 10%, respectively.

Figure 1. Financial and trade globalisation

Per cent of world GDP

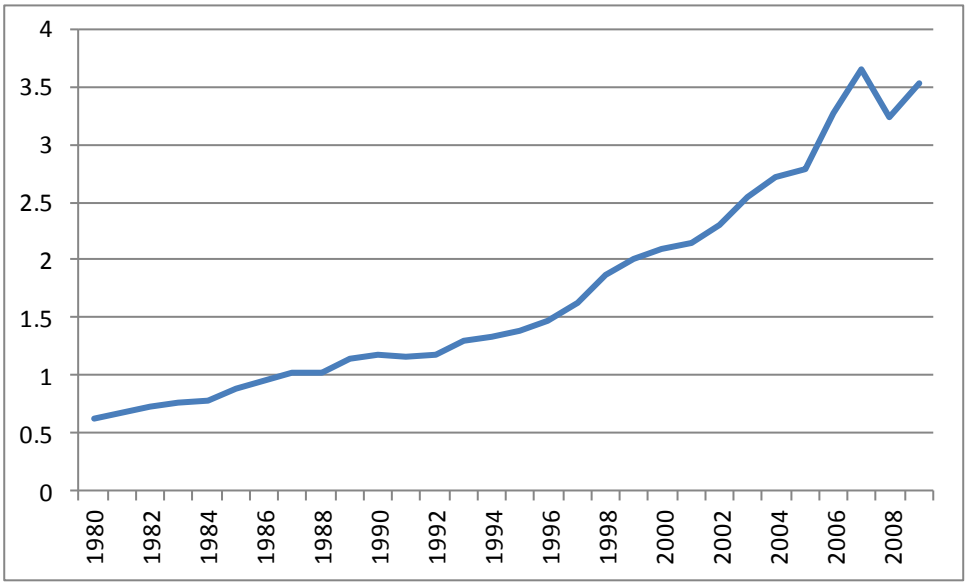


Note: See footnote 2 for more details on the capital flow data. 2010 global cross-border flows are estimated using available quarterly data.

Source: IMF BOPS, *OECD Economic Outlook*.

Figure 2. Global financial openness

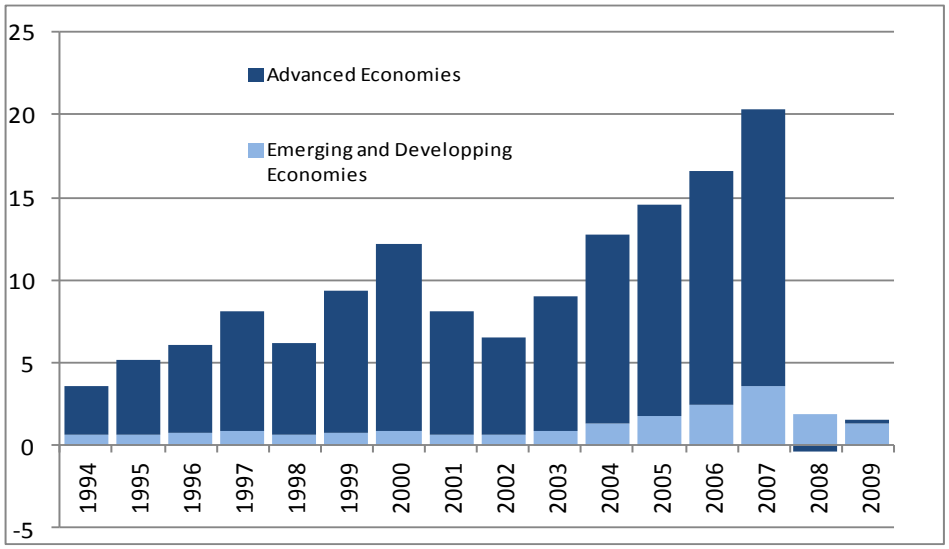
Ratio to world GDP



Note: Measured as the absolute sum of all countries gross assets and liabilities positions (taken from Lane and Milesi-Ferretti 2007 and IMF-BOPS after 2004) as a share of world GDP (taken from the IMF WEO Economic Outlook).

Figure 3. Advanced countries drove international cross border flows

Flows as a per cent of world GDP

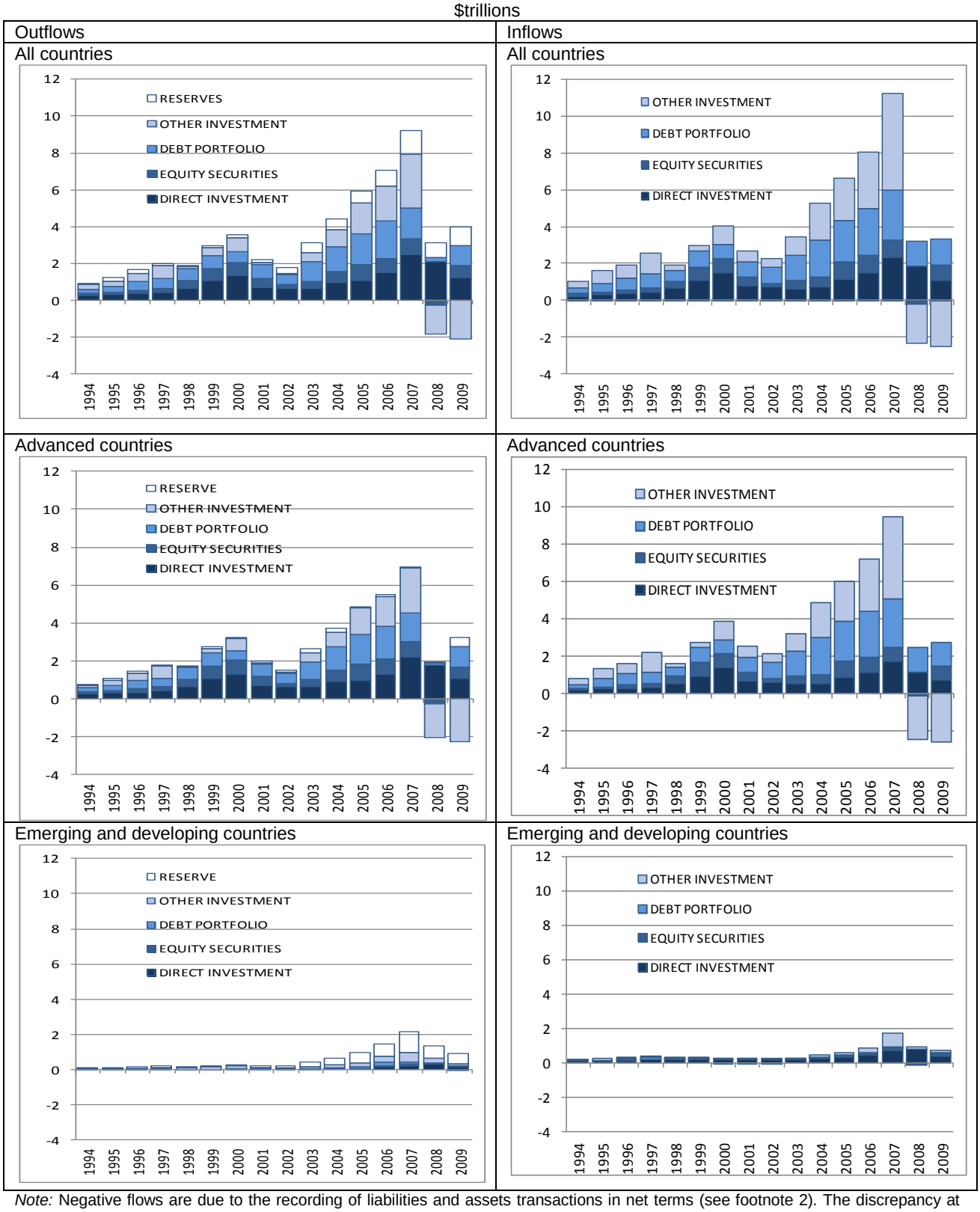


Note: Average of annual flows and flows in and out of each economy in each region, advanced countries are those defined as such by the IMF. See footnote 2 for more details on the capital flow data.

Source: IMF-BOPS, OECD calculations.

Figure 4. International capital flows by type of country and instrument

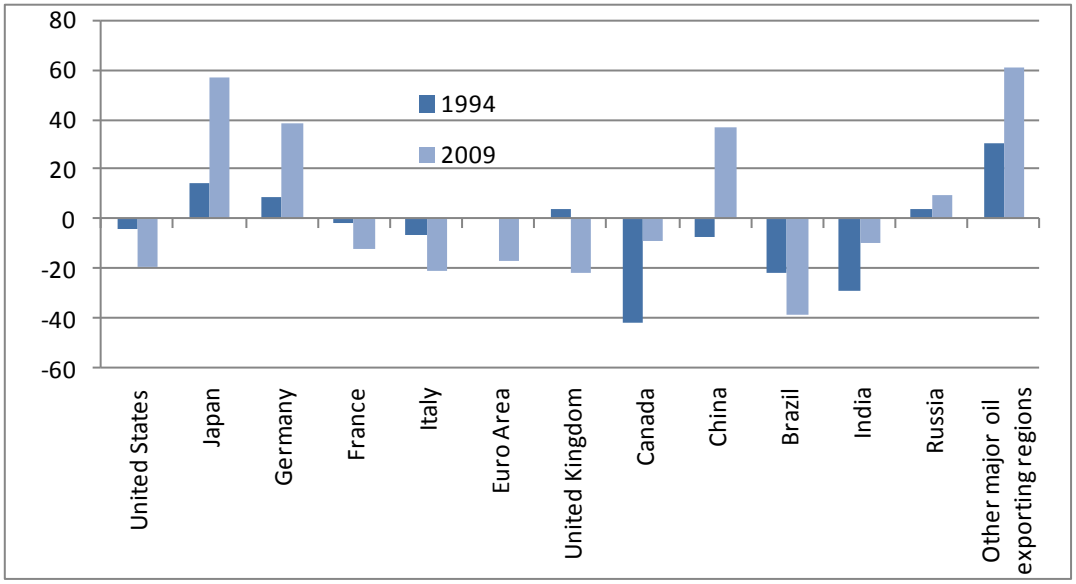
$trillions



Note: Negative flows are due to the recording of liabilities and assets transactions in net terms (see footnote 2). The discrepancy at the world level reflects both the usual world current account discrepancy and differences in valuation methods.
Source: IMF-BOPS (financial account), OECD calculations.

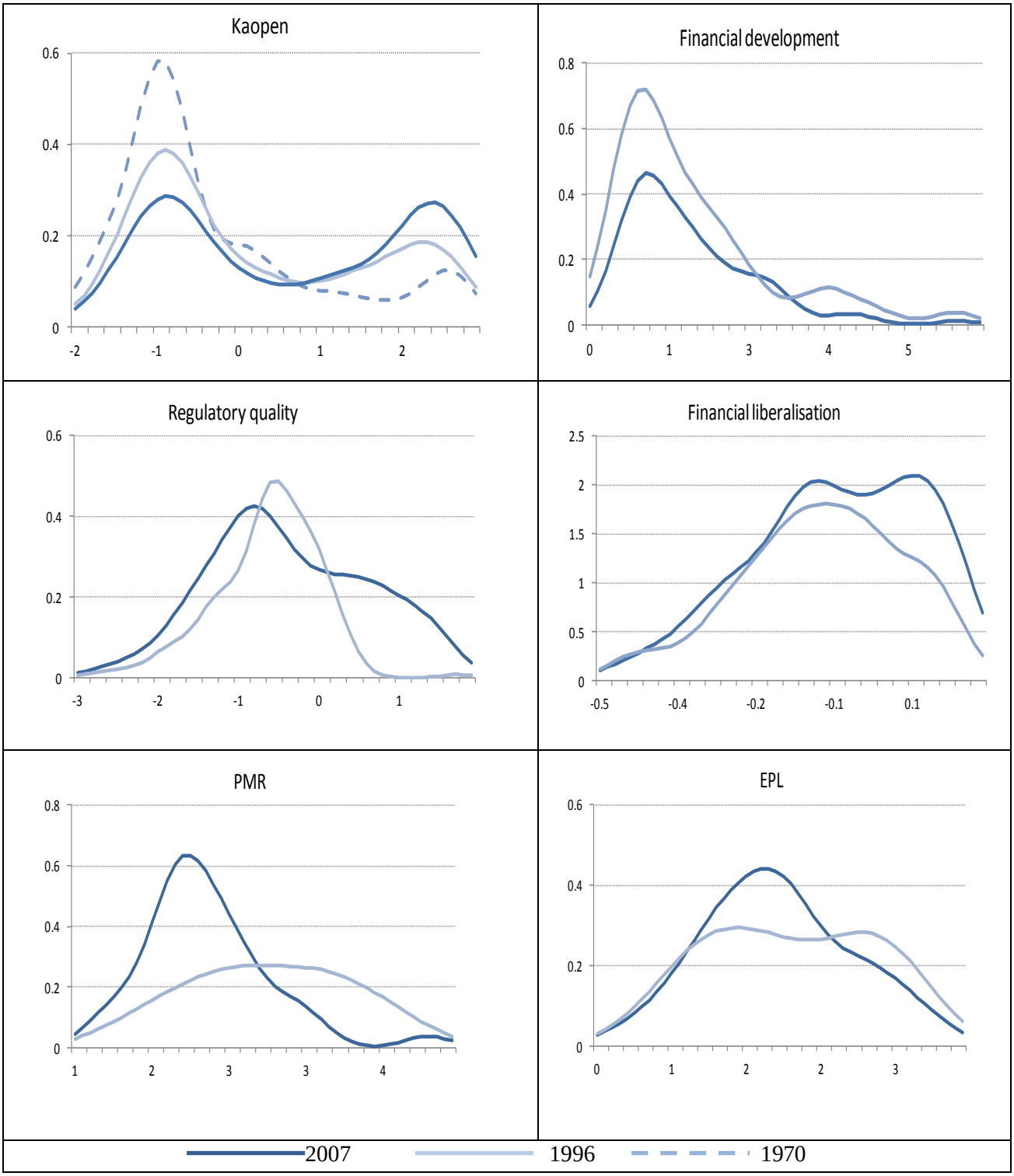
Figure 5. Net foreign assets in the G7 and the BRICS

As per cent of GDP



Source: IMF BOPS and Lane and Milesi-Ferretti (2007) for China and Brazil in 1994.

Figure 6. Density distributions of the key explanatory variables



Note: For key to variables refer to text. The vertical axis provides a smoothed measure of the frequency distribution across countries. The smoothing is achieved by applying kernel density estimates to the actual distribution.

BIBLIOGRAPHY

Abiad, A., T. Tressel and E. Detragiache (2008), "A New Database of Financial Reforms", *IMF Working Papers* 08/266.

Alfaro, L., S. Kalemli-Ozcan and V. Volosovych (2005), "Capital Flows in a Globalized World: The Role of Policies and Institutions", *NBER Working Papers* 11696.

Alfaro, L., S. Kalemli-Ozcan and V. Volosovych (2008), "Why Doesn't Capital Flow from Rich to Poor Countries? An Empirical Investigation", *The Review of Economics and Statistics* 90, 347-368.

Andersen, P. S. and K. Johnson (2004), "Global Imbalances and the Emergence of Asia", *BIS Papers* 50.

Binici, M., M. Hutchison and M. Schindler (2010), "Controlling capital? Legal Restrictions and the Asset Composition of International Financial Flows", *Journal of International Money and Finance*, vol. 29(4), 666-684.

Bird, G. and R. S. Rajan (2001), "Coping with, and Cashing in on, International Capital Volatility", *Journal of International Development*, vol. 13(1), pp.1-23.

Borensztein, E., J. De Gregorio and J. W. Lee (1998), "How Does Foreign Direct Investment Affect Growth?", *Journal of International Economics*, 45 (June), 115–35.

Bosworth, B. P. and S. M. Collins (1999), "Capital Flows to Developing Economies: Implications for Saving and Investment", *Brookings Papers on Economic Activity*, 1.

Calvo, G. and C. Reinhart (2000), "When Capital Inflows Come to a Sudden Stop: Consequences and Policy Options", *MPRA Paper* 6982.

Calvo, G, (2007), "Crises in Emerging Market Economies: A Global Perspective", *Working Papers*, Central Bank of Chile 441.

Cheung, C., D. Furceri and E. Rusticelli (2010), "Structural and Cyclical Factors behind Current-Account Balances", *OECD Economics Department Working Papers* No.775.

Chinn, M. and E. Prasad (2003), "Medium Term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration", *Journal of International Economics* 59(1), 47-76.

Chinn, M. and H. Ito (2006), "What Matters for Financial Development? Capital Controls, Institutions, and Interactions", *Journal of Development Economics*, vol. 81(1), 163-192.

Chinn, M. and H. Ito (2007), "Current Account Balances, Financial Development and Institutions: Assaying the World 'Saving Glut'", *Journal of International Money and Finance* 26(4), 546-569.

Chinn, M. and H. Ito (2008), "A New Measure of Financial Openness", *Journal of Comparative Policy Analysis*, 10 (3) 309-322.

De Mello, L. (1999), "Foreign Direct Investment-Led Growth: Evidence from Time Series and Panel Data", *Oxford Economic Papers*, 51(1), 133–51.

Errico, L. and A. Musalem (1999), "Offshore Banking: An Analysis of Micro- and Macro-Prudential Issues", *IMF Working Paper* 99/5.

Furceri D., S. Guichard and E. Rusticelli (2011a), "The Effect of Episodes of Large Capital Inflows on Private Credit", OECD Economics Department Working Paper, forthcoming.

Furceri D., S. Guichard and E. Rusticelli (2011b), "Episodes of Large Capital Inflows and the Likelihood of Banking and Currency Crises and Sudden Stops", OECD Economics Department Working Paper, forthcoming.

Ghosh, A., A-M Gulde and H. Wolf (2003), "Exchange Rate Regimes: Choices and Consequences", Cambridge, Massachusetts: MIT Press.

Hadi, A. S. and J. S. Simonoff (1993), "Procedures for the Identification of Multiple Outliers in Linear Models", *Journal of the American Statistical Association*, 88, 1264-1272.

Hajkova, D., G. Nicoletti, L. Vartia and K. Yoo (2006), "Taxation, Business Environment and FDI Location in OECD Countries", *OECD Economics Department Working Papers* No.502.

International Monetary Fund (2004), "Offshore Financial Centers: The Assessment Program – An Update", *IMF Monetary and Financial Systems Department.*

Kaufmann, D., A. Kraay and M. Mastruzzi (2010), "The Worldwide Governance Indicators: Methodology and Analytical Issues", *World Bank Policy Research Working Paper*, WPS5430.

Kirabaeva, K. and A. Razin (2010), "Composition of Capital Flows: A Survey", *NBER Working Paper*, No.16492.

Lane, P. and G. M. Milesi-Ferretti (2007), "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970-2004", *Journal of International Economics* 73.

Lane, P. and G. M. Milesi-Ferretti (2008), "The Drivers of Financial Globalization", *American Economic Review*, 98 (2), 327-332.

Levine, R., N.Loayza and T.Beck (2000), "Financial Intermediation and Growth: Causality and Causes", *Journal of Monetary Economics, 46(1), 31-77.*

Lucas, R. E. Jr. (1990), "Why doesn't Capital Flow from Rich to Poor Countries?", *American Economic Review* 80, 92-96.

Mateos y Lago, I., R. Duttagupta, and R. Goyal (2009), "The Debate on the International Monetary System", IMF Staff Position Note SPN/09/26

Milesi-Ferretti, G.-M. and C. Tille (2010), "The Great Retrenchment: International Capital Flows During the Global Financial Crisis", *IHEID Working Papers* 18-2010.

Obstfeld, M. (2007), "International Risk Sharing and the Costs of Trade", Ohlin Lectures, Stockholm School of Economics.

Obstfeld, M. and K. S. Rogoff (2001), "The Six Major Puzzles in International Macroeconomics: Is there a Common Cause?", *NBER Macroeconomics Annual*, 15, 339–90.

Prasad, E., R. Rajan and A. Subramanian (2007), "Foreign Capital and Economic Growth", Brookings Papers on Economic Activity, *Economic Studies Program,* vol. 38(1), 153-230.

Rose, A. K. and M. Spiegel (2007), "Offshore Financial Centers: Parasites or Symbionts?", *Economic Journal*, vol. 117(523), 1310-1335.

Suttle, P., R. Koepke and J. Mazzacurati (2010), "Capital Flows to Emerging Market Economies", *IIF Research Note* October, 4.

Wölfl, A., I. Wanner, O. Röhn and G. Nicoletti (2010), "Product Market Regulation: Extending the Analysis Beyond OECD Countries", *OECD Economics Department Working Papers,* No.799.

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