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Bénétrix, Agustín S.

Department of Economics and Institute for International Integration
Studies, Trinity College Dublin

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The Anatomy of Large Valuation Episodes*

Agustín S. Bénétrix†

Department of Economics and IIIS
Trinity College Dublin

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Abstract

We examine episodes in which there is a large shift in a country's net foreign asset position due to the re-valuation of its foreign assets and/or liabilities. We highlight the differences in large valuation episodes between countries characterized by large gross stocks of foreign assets and liabilities and countries exhibiting large net positions. Finally, we analyze macroeconomic dynamics in the neighborhood of large valuation episodes.

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†E-mail: benetria@tcd.ie - <http://www.tcd.ie/Economics/staff/benetria>

1 Introduction

The rapid increase in gross stocks of foreign assets and liabilities shown in Figure 1 has revived the concern for the dynamics of the external accounts. In particular, there is a growing interest in the impact of capital gains on foreign assets and liabilities. In other words, the valuation channel.

This growth in gross stocks, documented by Lane and Milesi-Ferretti (2001), together with the evidence on return differentials reported by Lane and Milesi-Ferretti (2001, 2006), Tille (2003), Hung and Mascaro (2004), Congressional Budget Office (2005) and Gourinchas and Rey (2006), suggest that the valuation channel plays an important role in the external adjustment process. For instance, it can operate in a way that makes not necessary for a persistent debtor to run trade balance surpluses, albeit this is not always the case. Moreover, it can move swiftly and generate large wealth redistributions.

When the external adjustment is abrupt, the literature has focused on the study of current account reversals and sudden stops. Examples of this strategy are Milesi-Ferretti and Razin (1997), Edwards (2004) and Calvo, Izquierdo and Mejia (2004).

Nowadays, as a result of the breakthrough made by Lane and Milesi-Ferretti (2001, 2006) with External Wealth of Nations (EWN), it is possible to analyze sharp external adjustments from a new angle: the valuation channel.

Since this database measures gross stocks of foreign assets and liabilities, the relative role of the rates of capital gains in both sides of the balance sheet as well as across different portfolio categories can be studied. Moreover, EWN provides enough information to evaluate how the increase in gross stocks of foreign assets and liabilities affects these adjustments.

This paper makes a step in this direction. In particular, we evaluate how the upsurge in the degree of international financial integration has contributed to abrupt adjustments via the valuation channel. The methodology of our study is analogous to the one used in the current account reversal literature. That is, an event study methodology where an episode is defined as the year in which the valuation channel goes beyond a threshold. Then, we study the dynamics of the related macroeconomics variables in the neighborhood of that episode.

Using a sample of 38 countries we derive the valuation channel from the accounting framework used in Lane and Milesi-Ferretti (2005) and identify 59 large valuation episodes between 1994 and 2004. This finding raises the following questions: which are the roots of these large valuation episodes? Are large valuations the result of sizeable gross stocks? What is the relative role of the debt, direct investment or portfolio equity subcomponent? Are large valuations persistent? Does a different pattern emerge for developing and industrialized countries?

To answer these questions we evaluate the relative role of sizeable net positions and gross stocks (international financial integration), for the whole international investment position and for its main three subcomponents. Then, we study the dynamics of the related macroeconomic variables in the neighborhood of two kinds of valuation episodes: isolated large valuations and turbulent periods.

We find that the degree of international financial integration matters for large valuation episodes since the impact of return differentials between assets and liabilities is enlarged. For emerging markets and developing countries, we find that valuation episodes were triggered by sizeable net positions. In particular, the debt subcomponent played the main role. For most of these countries, the cumulated valuation shift was not counterbalanced in subsequent years, the real exchange rate largely depreciates and trade balance improves the year of the episode.

For industrialized countries, we find that gross stocks explain most of the valuation episodes. In particular, the main contribution has been by portfolio equity and foreign direct investment. For many of these countries, the cumulated valuation shift was counterbalanced in subsequent years. Moreover, even if the real exchange rate does not seem to be associated with isolated large valuations or turbulent periods, the trade balance improves substantially in subsequent years.

In what remains, the paper is organized in four more sections. In section two, we present the method to identify large valuations and different definitions of valuation episodes. In section three, we evaluate the relative importance of the degree of gross stocks and net positions, taking either the aggregate portfolio or each of the different subcomponents. In section four, we analyze the dynamics of a set of related macroeconomic fundamentals in the neighborhood of the valuation episodes. In the last section, we conclude.

2 Method

In this section, we present the steps followed to define a cross-country comparable measure of large valuation episodes. To this end, we follow Lane and Milesi-Ferretti (2005) and derive the valuation channel using balance of payments accounting identities and rates of capital gain. Equation (1) shows that the current value of the net foreign asset position depends on the gross total returns of its outstanding net position, the current trade balance, capital account and errors and omissions.

$$NFA_t = R_t NFA_{t-1} + TB_t - E_t \quad (1)$$

NFA_t is the net foreign assets, R_t the gross total return on the net foreign asset position, TB_t the balance of trade of goods and services. $E_t = KA_t + EO_t$, where KA_t is the capital account and EO_t are the errors and omissions. From equation (1), we can write the change in the net foreign asset position in equation (2). i_t^A, i_t^L are the net yields and kg_t^A, kg_t^L net rates of capital gain on assets and liabilities, respectively.

$$NFA_t - NFA_{t-1} = (kg_t^A + i_t^A) A_{t-1} - (i_t^L + kg_t^L) L_{t-1} + TB_t - E_t \quad (2)$$

Defining the rates of capital gain in equation (3), we can then write the valuation channel as the net capital gain on the net foreign asset position, in equation (4).

$$kg_t \equiv \frac{Stock_t - Stock_{t-1} - Flow_t}{Stock_{t-1}} \quad (3)$$

$$VAL_t = kg_t^A A_{t-1} - kg_t^L L_{t-1} \quad (4)$$

Since net investment income is given by $NI_t = i_t^A A_{t-1} - i_t^L L_{t-1}$, the change in the net foreign asset position can be written as $NFA_t - NFA_{t-1} = VAL_t + NI_t + TB_t - KA_t - EO_t$. Then, using the balance of payments accounting identity ($CA_t + KA_t + FA_t - \Delta FX_t + EO_t \equiv 0$), the change in the foreign exchange reserves (ΔFX_t), the financial account balance which measures the net capital inflow (FA_t) and the trade balance ($TB_t = -FA_t + \Delta FX_t - NI_t$); we can write the valuation channel as

$$VAL_t = NFA_t - NFA_{t-1} - CA_t \quad (5)$$

Equation (5) shows that valuation channel is given by the part of the change in the net foreign asset position which is not explained by capital flows. However, part of this difference may be explained by data revisions.

One intermediate step before constructing our definition is to document large valuations scaled either by GDP_t or by $A_t + L_t$. To do this, it is convenient to elaborate a rationale for the GDP threshold. The related literature on current account reversals and sudden stops uses different thresholds for different time frames. Milesi-Ferretti and Razin (1997), define a current account reversal if the following two conditions are satisfied. First, an average reduction in the current account deficit of at least three percentage points of GDP in a period of three years with respect to the three years before the event. Second, the maximum deficit after the reversal is no larger than the minimum deficit in the three years preceding the reversal. In their paper of 1998, they add a third condition: the average current account deficit must be reduced by at least one third. Edwards (2004) follows a different strategy. He concentrates more on the changes from one year to another. He defines a current account reversal as a reduction in the current account deficit of at least four percent in one year and a sudden stop when capital inflows decline by at least five percent of GDP in one year. Calvo, Izquierdo and Mejia (2004) define sudden stops using a different strategy. They define sudden stop as a phase that meets three conditions. First, it contains at least one observation where the year-on-year fall in capital flows lies at least two standard deviations below its sample mean. Second, it ends when the annual change in capital flows exceeds one standard deviation below its sample mean. Third, the start of a sudden stop phase is determined by the first time the annual change in capital flows falls one standard deviation below the mean.

We follow Edwards' strategy: that is, we analyze changes from one year to another setting the threshold at 10 percent of GDP. Then, we say that a country has experienced a large valuation if condition (6) is satisfied. Since we are interested in the 'home country' and not in the 'international investor' perspective, we compute this ratio in local currency. In this way, our measure captures the effects of the exchange rate movements. Large valuations going beyond this threshold together with their signs are reported in Table 1. The table shows that in emerging markets and developing countries there was only one

large positive valuation episode, while in the industrialized group we have mixed signs.

$$val_t \equiv \frac{NFA_t - NFA_{t-1} - CA_t}{GDP_t} > |0.1| \quad (6)$$

We also use a second scaling factor to control for the degree of international financial integration and to make a first step in analyzing whether the main factors affecting the large valuation were the large net external positions or high degrees of international financial integration. In this second definition we say that a country has experienced a large valuation episode when

$$val_t^{IFI} = \frac{NFA_t - NFA_{t-1} - CA_t}{A_t + L_t} > |0.1|. \quad (7)$$

Figure 2 presents large valuation episodes in domestic currency between 1970 and 2004, using both scaling factors. From this figure, three different patterns emerge. Between 1971 and 1982, the number of large valuations scaled by the degree of international financial integration was larger. Between 1983 and 1991, large valuation episodes seem to have no relation to the degree of international financial integration. We observe a similar number for both scaling factors. The last period, from 1999 onwards, is characterized by a larger amount of valuations episodes scaled by GDP.

Since we are interested on the dynamics of the main drivers of large valuation episodes, we find useful to separate periods of ‘tranquility’ from those where large valuations episodes take place. Following this strategy, we ensure that the neighborhood of the episodes is ‘clean’ and comparable across countries. When two large valuations happen in two consecutive years, we collapse them into one considering it as a single episode. If we observe consecutive large valuation episodes with intervals smaller than three years, we group them into a different category. Those with the same sign are separated from those with mixed signs. Also, due to data quality issues and availability, we focus on the period between 1994 and 2004.

First, we exclude countries where the average inflation between 1994 and 2004 is greater than 40 percent and inflation the year of the valuation episode is also greater than 40 percent.

Definition 1 A country faces a **Type-A** episode or isolated large valuation episode if one of these two conditions holds: (1) The valuation channel scaled by GDP hits the 10 percent threshold once and then remains below that threshold for at least three consecutive years (period of tranquility). (2) The valuation channel scaled by GDP hits the 10 percent threshold in two consecutive years with the same direction and then remains in tranquility for at least three consecutive years.

Definition 2 A country experiences a **Type-B** episode or a turbulent period if one of these two conditions holds: (1) The valuation channel scaled by GDP hits repeatedly the 10 percent threshold in the same direction with tranquility intervals smaller than three years. In this case the turbulent period is subtype B_1 and it is called a **sustained** large valuation episode. (2) The valuation channel scaled by GDP hits repeatedly the 10 percent

*threshold in different directions with tranquility intervals smaller than three years. Here, the turbulent period is subtype B_2 and it is called **counterbalancing** large valuation episode.*

The sign and year of these valuation episodes is reported in Table 1. Between 1994 and 2004, the valuation channel hits the 10 percent threshold 59 times: 22 in emerging markets and developing countries, and 37 in industrialized countries. The number of isolated large valuations is 12, most of them with negative sign. The only positive isolated large valuation took place in the United Kingdom in 1999. Sustained large valuations are present only in emerging markets and developing countries and have negative sign. There are 7 episodes of counterbalancing large valuations. Most of them appear in industrialized countries.

3 Gross Stocks versus Net Position

We have shown that these countries have experienced an increase in the degree of international financial integration as well as a rise in the frequency of large valuation episodes. However, we have not say much about the source of these valuation episodes. In this section, we make a step in this direction. We ask how many of these episodes are the result of sizable gross stocks versus those drawn by large net positions.

To this end, we add and subtract $kg_t^L A_t$ from equation (4) and then scale by GDP_t to obtain equation (8). Small case letters stand for variables scaled by GDP.

$$val_t = (kg_t^A - kg_t^L) a_{t-1} + kg_t^L nfa_{t-1} \quad (8)$$

The first term of equation (8) measures the contribution of the degree of international financial integration (gross stocks) to the valuation effect. That is, the impact of returns differentials for a given stock of foreign assets. The second term of equation (8) captures the role of the outstanding net foreign asset position. In other words, the part of the valuation effect produced by a change in the rate of return for a given net foreign asset position.

Then, we combine equation (8) with the mean rate of capital gain between assets and liabilities, $\bar{kg}_t \equiv \frac{kg_t^A + kg_t^L}{2}$, and, the deviations from that mean of the rates of capital gain in assets and liabilities; $kgdev_t^A = kg_t^A - \bar{kg}_t$ and $kgdev_t^L = kg_t^L - \bar{kg}_t$, to obtain equation (9).

$$val_t = \bar{kg}_t nfa_{t-1} + kgdev_t^A a_{t-1} - kgdev_t^L l_{t-1} \quad (9)$$

To define a rationale for the relative contribution of the net foreign asset position and the outstanding gross stocks we split equation (9) in two parts. One is given by the first term, which measures the role of the net foreign asset position. The other, by the last two. That is, the part capturing the role of the outstanding gross stocks. Since we are not interested in the sign of these valuations episodes, we compare their absolute value.

Definition 3 *A valuation episode has international financial integration root (**FI**) if*

$$|\bar{kg}_t nfa_{t-1}| < |kgdev_t^A a_{t-1} - kgdev_t^L l_{t-1}|$$

Definition 4 *A valuation episode has net position root (**Net**) if*

$$|\bar{kg}_t nfa_{t-1}| > |kgdev_t^A a_{t-1} - kgdev_t^L l_{t-1}|$$

Subcomponents: Rates of capital gains

Since the role of gross stocks in the valuation channel depends on the yields and the rates of capital gain differentials, we present in Table 3 real rates of capital gains (equation (3) minus the inflation rate) for the years in which valuation episodes took place. In this way, it is possible to see the behavior of the return differentials for each of the large valuation episodes.

If we take for example Ireland in 2000, we see that this large valuation was the result of sizable gross stocks rather than a net position. The real rate of return in domestic currency was -12.2 and -4.2 percent for assets and liabilities respectively. The return differential of the whole portfolio was triggered by returns in the equity subcomponent. These were -14.4 and 4.9 percent for equity assets and liabilities respectively.

The relatively low return differentials of Brazil in 1999, for example, suggest that the large valuation had its root in the size of the net position. For this country, rates of return in assets and liabilities were 56.5 and 42.6 percent. However, if we analyze the return differentials in equity in Table 3, we find evidence suggesting that this subcomponent may have had a different root. Therefore, we need to consider the size of the outstanding gross stocks.

In Table 4, we present the components of equation (9) for the year of the valuation episode. Columns nfa_{t-1} , a_{t-1} and l_{t-1} represent the outstanding net foreign asset position, foreign assets and foreign liabilities, respectively. The gross stocks and net positions are scaled by GDP_t . Columns \bar{kg}_t , $kgdev_t^A$ and $kgdev_t^L$ are the mean capital gain and capital gain deviations from that mean for assets and liabilities respectively. Table 4 shows that 84 percent of the countries, for which we have computed the valuation decomposition, have experienced large valuations with FI root. From them, 86 percent were industrialized. The majority of the cases with the root in the net position were developing countries and emerging markets. The only industrialized countries that we find with a Net root are New Zealand in 1995 and Finland in 2001.

If we take the case of Finland in 1998, we see that the net position was negative at minus 41.9 percent of its GDP. The outstanding stocks of assets and liabilities, as a share of GDP, at the end of 1997 were 59.1 and 101 percent respectively. The 22.7 percent deviation, in Table 4, from the mean rate of capital gain suggests that the valuation equivalent to -40.3 percent of the Finland's GDP had a FI root. Table 3 shows that in fact, in 1998 the rates of return for the whole portfolio (Debt + Equity) were -18.0 and 27.3 percent for assets and liabilities respectively. Now, we can say that the negative large valuation shock was clearly the result of the Finland's degree of international financial integration. For

that year, the real rate of capital gain in domestic currency, in Table 3, was equal to -50.0 for equity assets and 82.8 for equity liabilities. For the debt subcomponents the values were -1.6 and 2.3 for assets and liabilities respectively. This result can be cross-checked with the help of Table A4, in the appendix. There, we report the percentage change with respect to the previous year of the other important variables that can influence the valuation channel. The change in the equity price index, world market price index, bond return index and net foreign asset position, explain the FI root of this large valuation episode.

Another example can be Argentina in 2002. During that year, the real rates of return in assets and liabilities were equal to 203.6 and 135.5, respectively. The outstanding net position was equivalent to -45.4 percent of the GDP, 40.3 percent corresponding to foreign assets and 85.8 percent to liabilities. The deviation between the rates of capital gain of 34 percent in comparison with the mean rate equivalent to 169.6 show that this large valuation episode was the result of the Argentina's net position. This is supported by the similar rates of capital gain on the debt subcomponent; 209.3 for debt assets and 206.2 for debt liabilities.

At this stage, it is clear that the contribution of gross stocks to the valuation channel can be very important. Therefore, we present in Figure 3 the decomposition of large valuation episodes into FI and Net root. The share of GDP corresponding to the first one is measured in the Y axis, while the share corresponding to the second one, in the X axis. For the period between 1994 and 2004, the figure shows that the importance of the net position was larger when the valuation coming from the FI root was positive.

Since the EWN database allows studying the debt, portfolio equity and foreign direct investment subcategories, we assess their behavior for the cases in which the root of the valuation episode was either Net or FI. Then, we take these episodes and report their root and the cross-country averages of \bar{kg}_t , $kgdev_t$, nfa_{t-1} , a_{t-1} and l_{t-1} . For simplicity, we refer to the cross-country averages with this same notation.

Subcomponents: Net Aggregate Cases

As it is shown in Table 4, we are considering 16 percent of the cases were valuation channel hits the 10 percent GDP threshold.

Debt

For this subcategory, 75 percent of all episodes had also the Net root in debt. Table A1, shows that all cases came about in emerging markets and developing countries. Those in this set are: Philippines in 1997 and 2000, Thailand in 1997, Brazil in 1999 and 2002, and, Argentina in 2002. Only New Zealand in 1995 and Finland in 2001 show up with Net root in the aggregate and FI root in debt. For those with Net root in debt, nfa_{t-1} was equal to -40.4 percent of GDP: 12.8 percent were debt assets and 53.2 percent debt liabilities. \bar{kg}_t was 73.5 percent or, 46.7 percent when we exclude Argentina. This decomposition shows that emerging markets and developing countries came across large valuations as a result of their large and negative net positions. The degree of international financial

integration in the debt subcomponent had a minor role. For those industrialized countries with FI root in the debt subcomponent, a_{t-1} represented 26.5 and l_{t-1} 66.1 percent of GDP. $kgdev_t$ was equal to 2.3 percent.

Portfolio Equity

When we turn to this subcategory, in Table A2, we find that 42.9 percent of the valuation episodes with Net root were associated with the same root in portfolio equity. The countries in this set are New Zealand in 1995, Brazil in 1999 and Finland in 2001. Those with FI root in portfolio equity were: Philippines in 1999 and 2001, Argentina in 2002 and Brazil in 2002. For countries with Net root in this subcategory nfa_{t-1} was -49.1 percent of GDP: 6.4 percent were portfolio equity assets and 55.5 percent portfolio equity liabilities. \bar{kg}_t was 37 percent. For those with FI roots in portfolio equity, a_{t-1} and l_{t-1} were 2.1 and 7.2 percent of GDP, respectively. $kgdev_t$ was equal to 36.1 percent. For industrialized countries all Net roots in the aggregate portfolio were associated with Net roots in portfolio equity. For emerging markets and developing countries, however, the results are mixed.

Foreign Direct Investment

For FDI, 62.5 percent of the valuation episodes had also Net root. Table A3 show that these countries are: New Zealand in 1995, Philippines in 1997, 2000, Thailand in 1997 and Finland in 2000. Those with FI root, are: Brazil in 1999 and 2000, and Argentina in 2002. In countries where FDI had also Net root, nfa_{t-1} was -11.5 percent of GDP: 11.6 percent were FDI assets and 23.1 FDI liabilities. \bar{kg}_t was 9.6 percent. For countries with FI root in FDI, a_{t-1} and l_{t-1} were 7.0 and 22.4 percent of GDP, respectively. $kgdev_t$ was 59.0 percent.

Subcomponents: Financial Integration Aggregate Cases

Table 4 shows that 84 percent of the times where valuation channel hits the 10 percent GDP threshold, the valuation episode had FI root.

Debt

Here, we observe that 57.1 percent of these episodes were associated with a FI root in debt. From these 24 cases, 4 correspond to emerging markets and developing countries: Colombia in 1997, Israel in 1999 and Philippines in 1999 and 2000. From those in the industrialized group, 11 cases correspond only to two countries: 6 of them to Netherlands and five to Sweden. The number of cases with Net root in debt and FI root in the aggregate is 18. From them, only 3 belong to emerging markets or developing countries. These are: South Africa in 1999, Israel in 2001 and Indonesia in 2004. In countries where the root in debt was also FI, a_{t-1} was 81.2 and l_{t-1} 101.6 percent of GDP. $kgdev_t$ was 1.1 percent. Countries experiencing a Net root in debt, had \bar{kg}_t equal to 1.2 and nfa_{t-1} equivalent to 4.1 percent of GDP.

Portfolio Equity

This subcategory shows that most of the roots were FI. About 73.7 percent of large valuations with FI root were associated with the same root in portfolio equity. Most of them, industrialized countries. The exceptions are Israel in 1999, South Africa in 1999 and Indonesia in 2004. For the cases where the two FI roots coexisted a_{t-1} was 34.9 and l_{t-1} 47.0 percent of GDP. $kgdev_t$ 12.9 percent. For those cases where the root in portfolio equity was Net, \bar{kg}_t was 5.6 percent and nfa_{t-1} -20.8 percent of GDP.

Foreign Direct Investment

Foreign direct investment follows a similar pattern. 60 percent of the valuation episodes with FI root, had also FI root in FDI. From these 60 percent, 87 percent were industrialized countries. For the case where the two FI roots coexisted, a_{t-1} was 41.4 and l_{t-1} was 32.6 percent of GDP. The average rate of capital gain deviation was 6.3 percent. In those countries with Net root in FDI, nfa_{t-1} was 2.2 and \bar{kg}_t -8.1 percent.

4 Valuation Dynamics

The literature on the external adjustment process has revealed that trade balance and valuation channel do not necessarily move in the same direction. For instance, Lane and Milesi-Ferretti (2006), show that for advanced economies the valuation channel tends to operate in the same direction as the trade channel. This is the result of liabilities to foreign investors mostly denominated in domestic currency and assets in foreign currency. This balance sheet structure implies that a depreciation of the currency raises the value of foreign assets relative to foreign liabilities improving the net foreign asset position. For example, evidence on the valuation channel stabilizing the U.S. external position can be found in the International Monetary Fund's World Economic Outlook (2005), Lane and Milesi-Ferretti (2006) and Gourinchas and Rey (2006). There are also studies assessing quantitatively the contribution of the valuation channel to the external adjustment process. For instance, De Gregorio (2005), Obstfeld and Rogoff (2005) and Lane and Milesi-Ferretti (2005) show that valuation channel accounts for 14-30 percent of the total adjustment. Gourinchas and Rey (2006) investigate also the relative importance of exchange rate movements to adjustment of external imbalances through valuation or trade channel. They find that stabilizing valuation effects contribute as much as 31 percent to the external adjustment for the United States.

The parallel of our paper is the current account reversal and sudden stop literature. In this field, Milesi-Ferretti and Razin (1997, 1998) show what triggers the current account reversals and which factors determine how costly these reversals are. To do this, they take low- and middle-income countries and find that domestic variables such as current account balances, degree of trade openness and levels of reserves contribute to the likelihood of current account reversals. External variables such as unfavorable terms of trade and high interest rates in industrialized economies also contribute to the probability of reversals. In their paper of 1998, they find that the current account reversals are highly associated with

major changes in the country external position. To assess their implications on the path of other macroeconomic variables, they follow the methodology developed in Eichengreen et al. (1995). That basic idea is an event study methodology distinguishing between periods of turbulence and periods of tranquility.

The way in which the trade balance is constructed, suggest that current account reversals and sudden stops are related. Using a panel of 157 countries, Edwards (2004), shows that 46.1 percent of countries subject to sudden stops faced a current account reversal and, 22.9 percent of the countries subject to current account reversals faced a sudden stop in the same year.

Here, we assess the dynamics of the valuation channel, trade channel and other related variables following the strategy of Milesi-Ferretti and Razin (1997, 1998). We analyze their behavior in the three-year neighborhood of a valuation episode and evaluate: whether large valuation episodes were counterbalanced in the following years, whether the valuation channel and trade channel moved in the same direction and how real exchange rate, rate of return differentials, equity prices and bond returns behaved in the neighborhood of the valuation episode. Furthermore, we report the evolution of the inflation rate and the rate of growth of the real GDP.

To analyze the dynamics of the adjustment process we assign countries to three groups. In the first one we put developing countries and emerging markets with isolated large valuation episodes (episodes of Type-A). In the second, industrialized countries with negative Type-A episodes. We analyze negative episodes only because we are interested on drawing general cross-country regularities and the only industrialized country experiencing a positive large valuation episode is the United Kingdom in 1999. In the last group, we place industrialized countries with turbulent periods of type B_2 . That is, counterbalancing large valuation episodes.

Figure 4 presents cross-country means of the valuation channel, real rate of return in debt, real rate of return in equity, real exchange rate, domestic bond return index, domestic equity price index, trade balance, rate of growth of real GDP and inflation for the first group of countries. The valuation channel and trade balance are scaled by the year-of-episode GDP. The countries in this group are: Argentina in 2002, Colombia in 1997, Indonesia in 2004, Mexico in 1994/5, South Africa in 1999 and Thailand in 1997. The valuation channel, real exchange rate and trade balance are also presented in Table 2 for each country separately. Column $t - 3$ reports cumulated valuation scaled by GDP, mean trade balance scaled by GDP and mean percentage change in the real exchange rate for the three previous years. Columns t and $t + 3$ report the same information for the year of the episode and for the following three years, respectively.

An inspection of Figure 4 and Table 2 reveals that negative episodes of Type-A were not counterbalanced afterwards. That is, the capital loss was permanent. The mean cumulated valuation remained close to 23.0 percent of GDP. Moreover, as shown in Table 2, Argentina and Mexico continued accumulating negative capital gains in the subsequent years. A second chart in Figure 4 shows that the real exchange rate largely depreciated the year of the episode. The mean annual change was -21.7 percent¹. Following this large

¹In this group, South Africa is the only country experiencing real appreciation (2.9 percent). If we

depreciation, the trade balance improved significantly. In this set of countries, the real exchange rate depreciation caused the valuation channel and trade balance to move in opposite directions. This was not the result of large negative net positions alone; it was also the result of countries having liabilities largely denominated in foreign currency due to their inability to issue debt in domestic currency (original sin).

Additionally, Figure 4 gives information to evaluate whether the root of the valuation episode was in the net position or in the degree of international financial integration. The upsurge in the rate of return for debt strengthens the explanation of large valuations with the net position as a root. Moreover, its negative differential increased considerably the burden of the net position in the debt subcomponent contributing heavily to the negative sign of the whole valuation. Although the mean return differential in equity was positive, its relatively small degree of international financial integration prevented this subcomponent to offset the negative capital gain coming from debt.

Figure 5 presents industrialized countries experiencing negative valuation episodes of Type-A. These countries are: France in 1999, Greece in 2004, Iceland in 2000/1, Japan in 1999 and Norway in 2000. Differently from the other group, the negative capital gain in the year of the episode was partially counterbalanced the following years. Real exchange rate shows no important change the year of the episode. However, the cross-country mean of the trade balance experiences a large improvement one year after. Table 2 shows that this increase was driven by the Norway's surplus which was equivalent to 16.1 percent of GDP. The charts for the return differential show that these episodes had a financial integration (FI) root. Large gross stocks in equity or debt combined with negative return differentials, either in debt or equity, support this hypothesis. Bond return index and the equity price index show a reduction in their rate of growth.

Turbulent periods are presented in Figure 6. The countries and the periods of turbulence are: Ireland 1994-2000, Finland 1998-2000, Netherlands 1994-2002, New Zealand 1995-2000, Sweden 1997-2003 and Switzerland 1996-2004. Now, $t = 0$ represents the mean of the variable in the turbulent period. These values are also reported in Table 2 at a country level. We see that negative capital gains were not recovered afterwards. Moreover, the negative trend of the accumulated valuation remains negative for the subsequent years, driven mainly by Ireland. Return differential for debt does not have a clear pattern in the neighborhood the turbulent period. However, the size of the return differential for equity reduces in the following years. Real exchange rate as well as bond and equity indices do not show changes in their behavior. The trade balance, however, experiences a substantial improvement in almost all countries of the group. The exception is New Zealand with a three-year average trade deficit equal to 1.9 percent of GDP.

To sum up, emerging markets and developing countries are characterized by valuation episodes, most of them isolated with negative sign and rooted on their large and negative net position. These large capital losses are rarely counterbalanced in the medium run. The behavior of the portfolio subcomponents in terms of the root of the large valuations track the aggregate valuation root in different proportions. Debt is the subcomponent that have in most of the cases the same root as the aggregate valuation. For the portfolio

exclude this country to compute the mean depreciation, the mean fall would have been -26.6 percent

equity and foreign direct investment subcomponents, the roots do not necessary coincide with the root of the aggregate portfolio.

Industrialized countries are characterized by large valuation episodes with FI root and counterbalancing turbulence periods. Both are the result of their high degree of international financial integration combined with changes in the rates of capital gain differentials. For the case of isolated large valuation episodes, the negative trend of the cumulated valuation effect turns to positive. In turbulent periods, however, this negative trend does not change. Isolated large valuation episodes as well as turbulent periods are associated with important improvements in the trade balance.

5 Final Words

This paper studies the anatomy of large valuation episodes giving special attention to the role of the increase in the degree of international financial integration experienced by most countries at the beginning of the nineties. We study sharp alignments of the external imbalances, tackled by the current account reversals and sudden stop literature, from a completely new angle; the valuation channel.

We believe that the study of the valuation channel contributes to the literature of sharp externals adjustments. Specially if we take into account that the volume of external assets plus liabilities represents more than 2.5 times the GDP of industrialized countries.

Our approach shows how re-evaluations of foreign assets or liabilities contribute to the external adjustment process. Using an event-study methodology, we identify different types of valuation episodes and measure the role of the outstanding gross stocks of foreign assets and liabilities. The main advantage of our approach is that it relies on accounting identities to identify valuation episodes. Therefore, although we can not say much about causality, we are able to present how the dynamics of the main related fundamentals are associated with those of the valuation channel in tranquil times surrounding the valuation episodes.

In terms of country groups we find that developing countries and emerging markets had negative valuation episodes as a result of their large net position. The cumulated valuation effects is rarely counterbalanced in the medium run. In this group, almost all valuation episodes were associated with large real exchange rate depreciations followed by improvements in the trade balance. For industrialized countries we find that gross stocks of foreign assets and liabilities play a crucial role. In isolated valuation episodes, the cumulated valuation effect is then partially counterbalanced. In turbulent periods, however, the cumulated negative valuation effect does not change its negative trend. Trade balance improves substantially after these two types of episodes.

Two are the main factors that change the domestic value of the international investment position: the relative economic performance, that affects the expected return on investments and hence its price, and the exchange rate. These two hint potential directions for future research. For the first case, the next step can be the study of the location of the international investments. In this way, it would be possible to measure, for example, how much of the capital gains experienced by United Kingdom in 1999 were

driven by its claims on the Finish assets. For the second, the step would be to study the currency composition of the international portfolio to pin down the role of the exchange rate in both sides of the balance sheet.

6 Figures and Tables

Figure 1. Evolution of International Financial Integration².

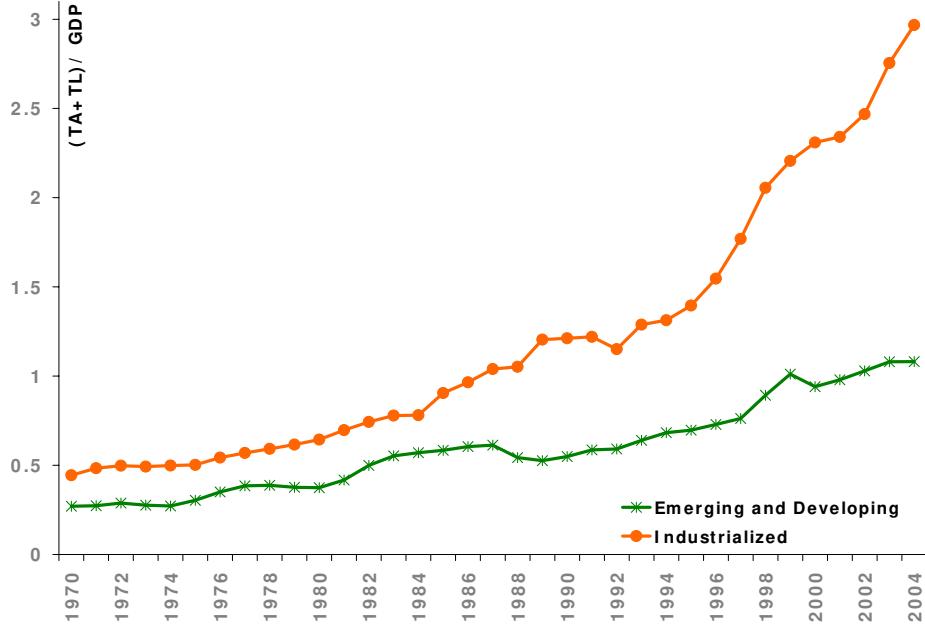
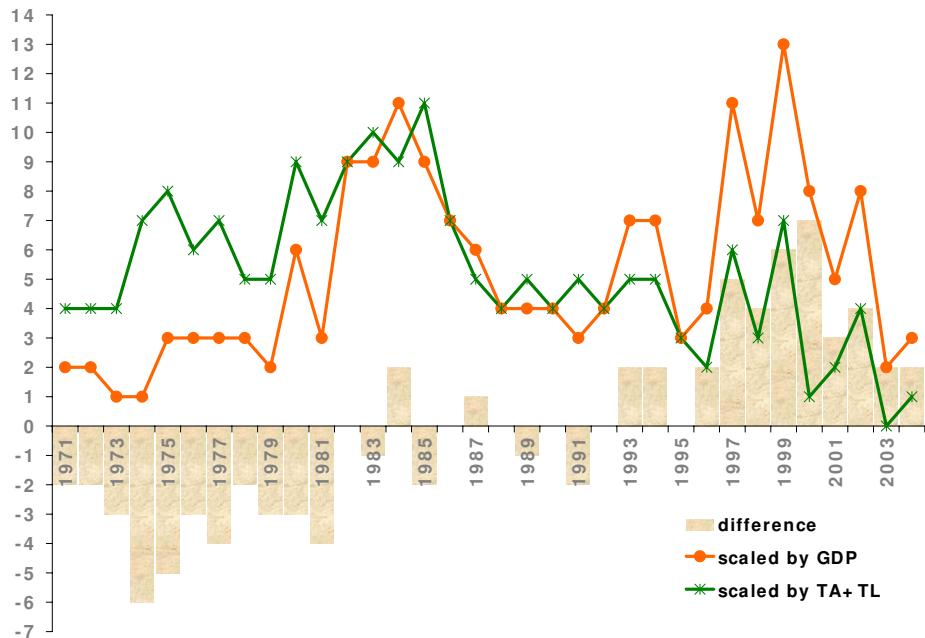
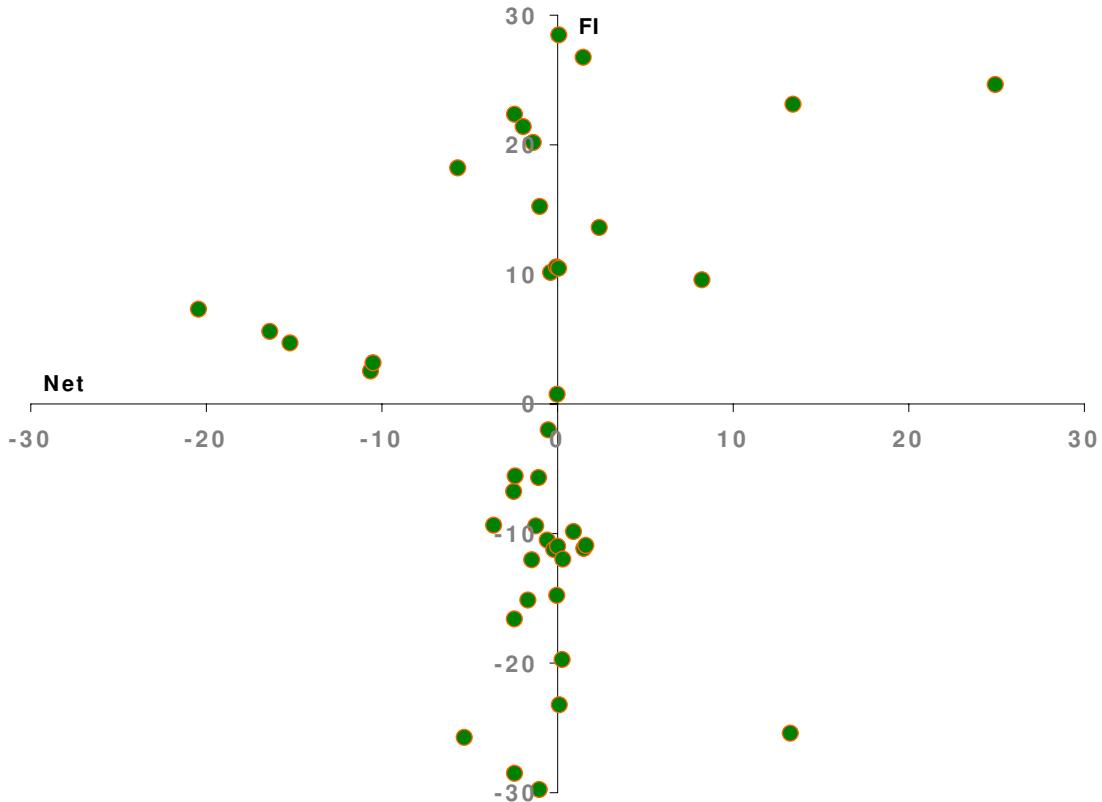


Figure 2. Valuation Episodes in Time.



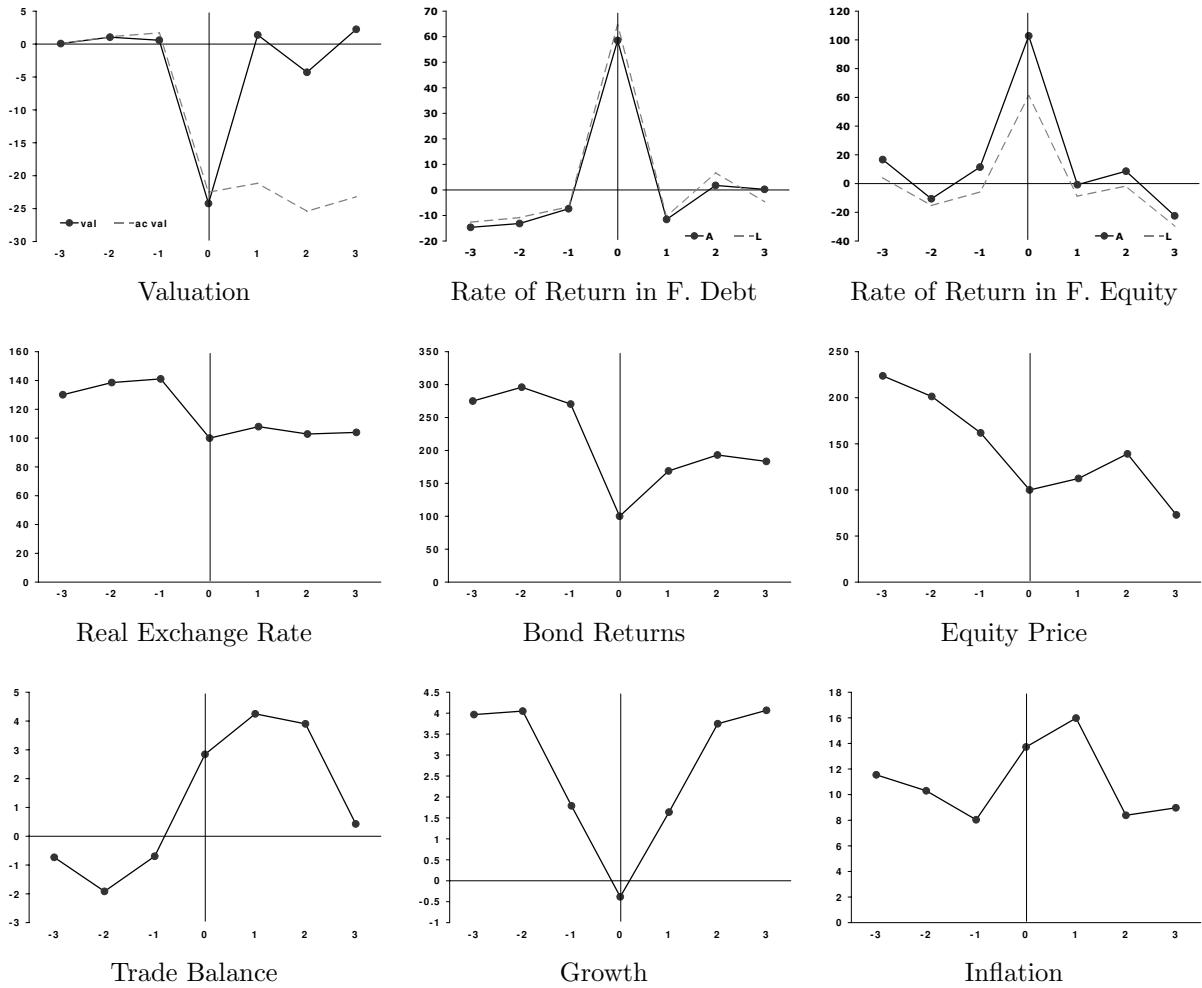
²Emerging and Developing countries are: Argentina, Brazil, Chile, China, Colombia, India, Indonesia, Israel, Korea, Malaysia, Mexico, Pakistan, Philippines, South Africa, Thailand, Turkey and Venezuela. Industrialized countries are: Australia, Austria, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and United States.

Figure 3. Decomposition of Large Valuations. *Scaled by GDP.*



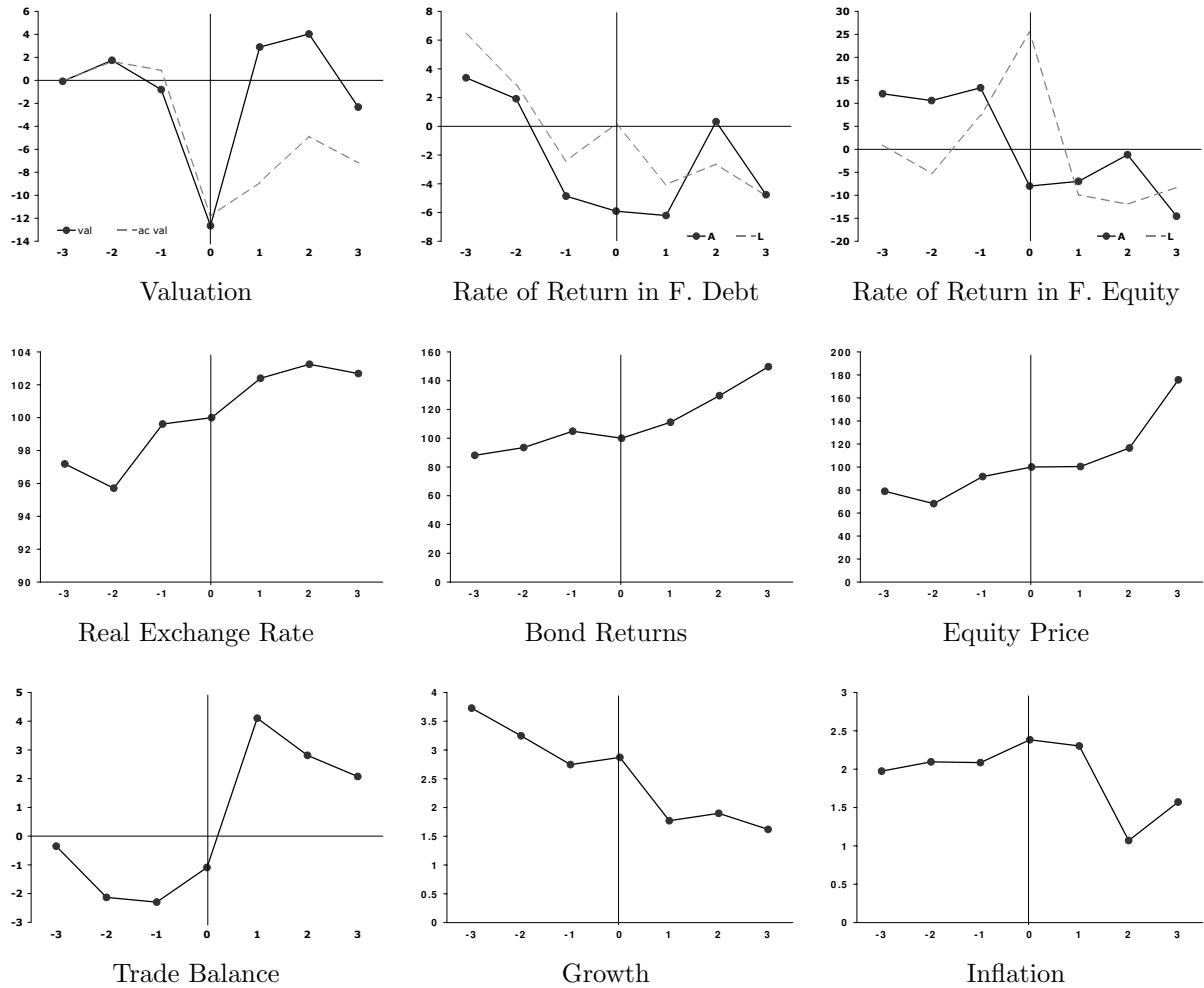
Notes: **FI:** is the percentage of GDP in local currency explained by the international financial integration root in large valuations. **Net:** is the percentage of GDP in local currency explained by the net foreign asset position root in large valuations. For presentation purposes, the sample of countries is constrained to those facing valuations smaller than 30 percent of GDP.

Figure 4. Dynamics around negative valuation episodes. *Emerging markets and developing countries.*

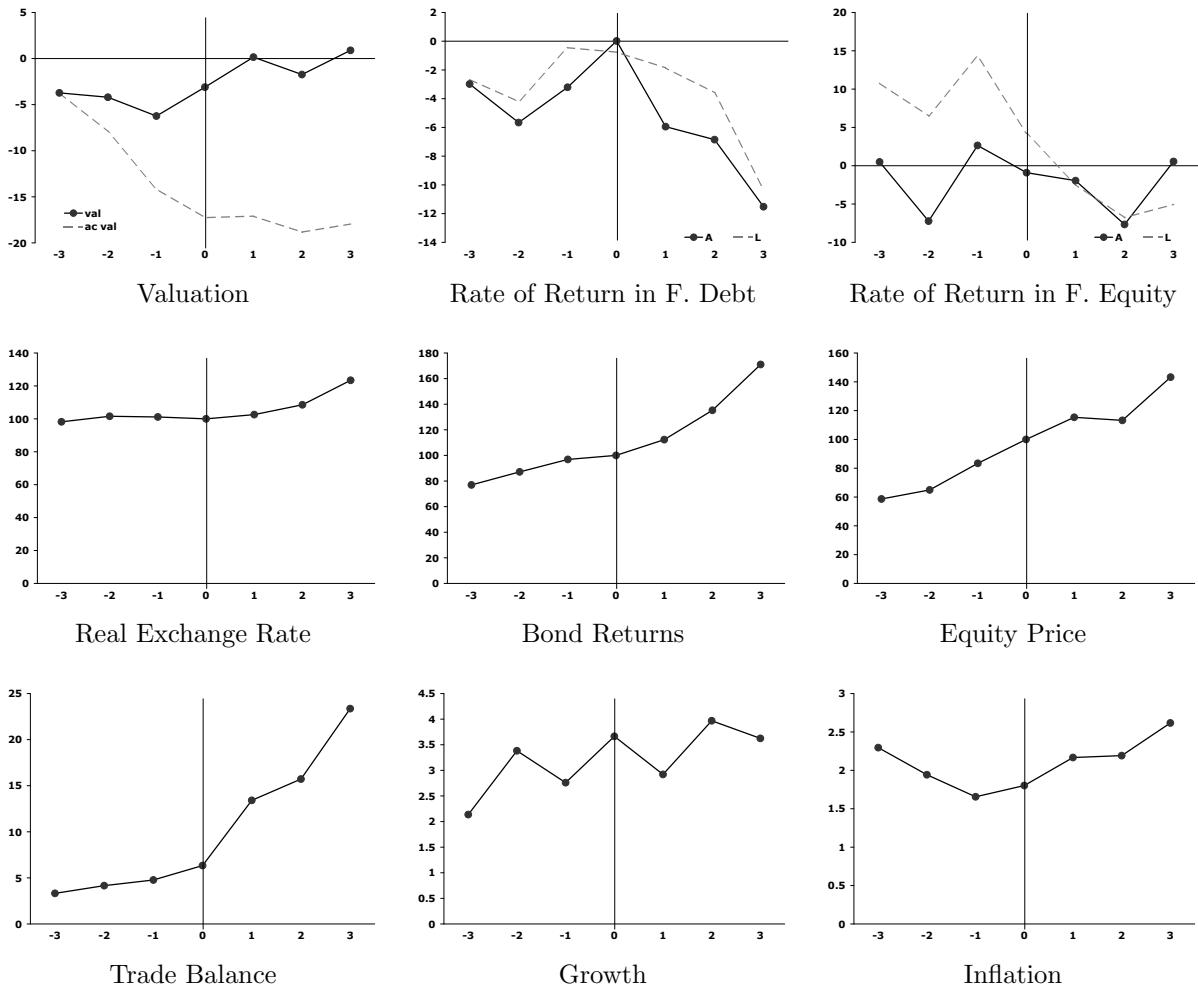


Notes: All charts represent cross-country means. The set of countries in this figure is formed by: Argentina 2002, Colombia 1997, Indonesia 2004, Mexico 1994/5, South Africa 1999 and Thailand 1997. The analyzed period is three years before and after the valuation episode. Year $t = 0$, is the year of the valuation episode. **Valuation:** mean and cumulated valuation scaled by $GDP_{t=0}$. **Rate of Return in F. Debt:** real rate of return in domestic currency for foreign assets and liabilities. Debt assets is portfolio debt + bank debt + foreign exchange reserves minus gold. Debt liabilities is portfolio debt + bank debt. Thailand and Indonesia were not taken into account in this figure. For both countries, previous three years flow data on debt asset was not available. **Rate of Return in F. EQ:** real rate of return in domestic currency for portfolio equity + foreign direct investment for assets and liabilities. Mexico, Indonesia, Colombia and Thailand were not considered in this chart since data on portfolio equity flows was not available. **Real Exchange Rate:** real exchange rate index $t = 0 = 100$. **Bond Returns:** change in the total return local bond index. **Equity Price:** change in the local equity price index. **Trade Balance:** trade balance scaled by $GDP_{t=0}$. **Growth:** change in the real GDP in local currency. **Inflation:** change in CPI.

Figure 5. Dynamics around negative valuation episodes. *Industrialized countries.*



Notes: All charts represent cross-country means. The set of countries in this figure is formed by: France 1999, Greece 2004, Iceland 2000/1, Japan 1999 and Norway 2000. The analyzed period is three years before and after the valuation episode. Year $t = 0$, is the year of the valuation episode. **Valuation:** mean and cumulated valuation scaled by $GDP_{t=0}$. **Rate of Return in F. Debt:** real rate of return in domestic currency for foreign assets and liabilities. Debt assets is portfolio debt + bank debt + foreign exchange reserves minus gold. Debt liabilities is portfolio debt + bank debt. **Rate of Return in F. EQ:** real rate of return in domestic currency for portfolio equity + foreign direct investment for assets and liabilities. **Real Exchange Rate:** real exchange rate index $t = 0 = 100$. **Bond Returns:** change in the total return local bond index. **Equity Price:** change in the local equity price index. **Trade Balance:** trade balance scaled by $GDP_{t=0}$. **Growth:** change in the real GDP in local currency. **Inflation:** change in CPI.

Figure 6. Dynamics around turbulent periods. *Industrialized countries.*


Notes: All charts represent cross-country means. The turbulent periods represented in this figure are: Ireland 1994-2000, Finland 1998-2000, Netherlands 1994-2002, New Zealand 1995-2000, Sweden 1997-2003 and Switzerland 1996-2004. The analyzed period is three years before and after the valuation episode. Year $t = 0$, represents the period of turbulence. **Valuation:** mean and cumulated valuation scaled by $GDP_{t=0}$. **Rate of Return in F. Debt:** real rate of return in domestic currency for foreign assets and liabilities. Debt assets is portfolio debt + bank debt + foreign exchange reserves minus gold. Debt liabilities is portfolio debt + bank debt. **Rate of Return in F. EQ:** real rate of return in domestic currency for portfolio equity + foreign direct investment for assets and liabilities. **Real Exchange Rate:** real exchange rate index $t = 0 = 100$. **Bond Returns:** total return local bond index. **Equity Price:** local equity price index. **Trade Balance:** trade balance scaled by $GDP_{t=0}$. **Growth:** change in the real GDP in local currency. **Inflation:** change in CPI.

Table 1. Valuation episodes in domestic currency. *Scaling factor GDP.*

Emerging markets and developing countries

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Type
Argentina								-				A
Brazil					-				-			B ₁
Colombia			-									A
Indonesia	-		-	-			-			-	-	A / B ₁
Israel					-			+				B ₂
Malaysia	-		-			-						B ₁
Mexico	-	-										A
Philippines			-		-		-					B ₁
South Africa					-							A
Thailand			-									A

Industrialized countries

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Type
Finland				-	-			+	+			B ₂
France						-						A
Greece										-		A
Iceland							-	-				A
Ireland	+			+	+	+	-					B ₂
Japan						-						A
Netherlands	-		-	-	-	+			-			B ₂
New Zealand	-				+		+					B ₂
Norway							-					A
Sweden				+	+	+	-	+	-	-		B ₂
Switzerland		+	-				-			-	-	B ₂
United Kingdom						+						A

Table 2. Dynamics in the episode neighborhood(*three-year window*).

Type	Country	t=0	Variable	t - 3	t	t + 3
A	Argentina	2002	REER	2.8	-61.2	0.9*
			TB	1.7	18.0	15.9*
			Valuation	0.3	-44.8	-8.1*
A	Colombia	1997	REER	9.2	-5.1	-5.5
			TB	-3.4	-3.6	-0.3
			Valuation	-3.5	-11.7	1.5
A	France	1999	REER	-1.5	-5.8	0.2
			TB	1.0	0.7	-0.3
			Valuation	4.8	-11.5	4.8
A	Greece	2004	REER	3.7	2.2	
			TB	-11.4	-18.2	
			Valuation	-7.1	-12.6	
A	Iceland	2000/1	REER	2.9	-8.1	8.6
			TB	-4.9	-5.9	-5.6
			Valuation	1.4	-12.8	2.4
A	Indonesia	2004	REER	8.5	-11.7	
			TB	11.8	11.1	
			Valuation	0.0	-11.9	
A	Japan	1999	REER	-2.0	16.3	-7.3
			TB	1.9	2.4	1.7
			Valuation	2.9	-12.1	10.2
A	Mexico	1994/5	REER	8.9	-22.0	11.2
			TB	-5.1	-3.8	-3.1
			Valuation	-2.6	-20.0	-23.6
A	Norway	2000	REER	-1.0	-1.6	1.6
			TB	5.5	15.5	16.1
			Valuation	2.2	-14.2	0.9
A	South Africa	1999	REER	-6.0	2.9	-2.1
			TB	-1.9	-1.4	1.1
			Valuation	8.8	-18.5	20.7
A	Thailand	1997	REER	2.0	-33.0	4.5
			TB	-10.1	-3.3	5.9
			Valuation	7.3	-38.4	3.9
A	United Kingdom	1999	REER	8.5	5.5	0.0
			TB	-2.1	-3.5	-3.8
			Valuation	-10.4	10.3	8.6

Notes: In the column *t*, value the year of the large valuation or the period of turbulence. **Valuation:** cumulated valuation. **TB:** mean trade balance scaled by GDP in *t* = 0. **REER:** average change in the real effective exchange rate index. * means that the value has been calculated using the available remaining years.

Table 2 cont'd. Dynamics on the episode neighborhood (*three-year window*).

Type	Country	t=0	Variable	$t - 3$	t	$t + 3$
B_1	Brazil	1999-2002	REER	-0.8	-15.9	12.2*
			TB	-2.4	-0.1	5.4*
			Valuation	-8.1	-31.2	-1.6*
B_1	Indonesia	1994-2000	REER	2.6	-4.8	8.5
			TB	3.5	10.7	17.7
			Valuation	-12.5	-133.1	0.1
B_1	Malaysia	1994-1999	REER	3.8	-3.2	2.0
			TB	0.0	6.5	18.8
			Valuation	-12.4	-40.4	-19.4
B_1	Philippines	1997-2002	REER	6.3	-4.9	-5.5*
			TB	-12.5	-1.2	-3.7*
			Valuation	1.7	-74.9	-9.2*
B_2	Finland	1998-2002	REER	-1.4	-0.2	1.1*
			TB	7.8	8.6	7.9*
			Valuation	-13.3	-43.3	12.3*
B_2	Ireland	1994-2000	REER	-2.8	-0.8	5.6
			TB	10.2	20.5	38.0
			Valuation	-14.0	20.7	-11.2
B_2	Israel	1999-2001	REER	0.3	4.2	-8.8
			TB	-6.4	-4.4	-2.7
			Valuation	25.2	-13.5	2.7
B_2	Netherlands	1994-2002	REER	0.3	0.3	2.4*
			TB	3.0	4.2	8.2*
			Valuation	-7.3	-80.4	3.8*
B_2	New Zealand	1995-2000	REER	4.9	-3.2	9.1
			TB	0.6	-1.6	-1.9
			Valuation	-22.8	19.8	-1.4
B_2	Sweden	1997-2003	REER	3.5	-1.2	0.7*
			TB	5.6	6.9	7.6*
			Valuation	-8.9	3.3	-7.9*
B_2	Switzerland	1996-2004	REER	4.1	-0.8	
			TB	0.7	0.4	
			Valuation	-18.6	-53.5	

Notes: In the column t , value the year of the large valuation or the period of turbulence. **Valuation:** cumulated valuation. **TB:** mean trade balance scaled by GDP in $t = 0$. **REER:** average change in the real effective exchange rate index. * means that the value has been calculated using the available remaining years.

Table 3. Real Rate of Capital Gain in Domestic Currency.

Year	Country	Debt + Equity assets	Equity liabs.	Debt assets	Debt liabs	Equity assets	Equity liabs.
1994	Ireland	4.1	-2.3	6.8	-4.8		
1994	Netherlands	-24.8	-5.6	-33.0	-9.4	-10.9	0.4
1995	New Zealand	13.5	9.3	-4.4	1.7	25.4	16.4
1996	Netherlands	6.8	11.0	5.6	1.1	8.2	24.7
1996	Switzerland	11.3	6.9	11.3	7.6	11.4	6.1
1997	Colombia	-0.2	20.9	-3.5	10.3		45.5
1997	Ireland	43.9	25.6	38.8	7.2		
1997	Netherlands	3.7	9.7	-0.8	-3.2	8.0	24.6
1997	Philippines	48.4	34.4	48.6	54.7	45.5	-8.1
1997	Sweden	21.7	7.2	-18.9	-6.1	57.9	28.8
1997	Switzerland	6.5	15.9	2.1	2.7	16.6	34.4
1997	Thailand	59.3	64.1	58.9	89.6		-6.2
1998	Finland	-18.0	27.3	-1.6	2.3	-50.0	82.8
1998	Ireland	17.9	13.8	26.4	24.3	-15.2	-0.4
1998	Netherlands	-6.4	4.3	-10.4	-4.7	-2.6	14.0
1998	New Zealand	13.8	-9.7	6.5	2.0	19.3	-19.3
1998	Sweden	15.5	1.0	0.4	-2.3	23.3	5.1
1999	Brazil	56.5	42.6	40.3	50.1	80.2	28.5
1999	Finland	-10.0	53.9	-18.6	-17.1	-6.3	117.5
1999	France	-12.7	-4.4	-16.7	-17.5	-11.6	8.7
1999	Ireland	-3.2	-7.7	-7.5	-3.5	15.1	-13.3
1999	Israel	-9.0	18.4	-10.7	-6.0	0.5	83.2
1999	Japan	-9.9	12.3	-9.3	-6.8	-12.3	101.1
1999	Netherlands	2.5	-9.9	4.6	-19.5	-9.1	-6.0
1999	Philippines	0.6	-0.5	0.6	-2.3	0.5	4.7
1999	South Africa	16.7	49.3	-5.6	-6.7	22.1	109.3
1999	Sweden	22.1	13.3	-1.4	-2.4	32.2	33.7
1999	United Kingdom	2.4	-1.7	-2.9	-2.8	15.9	1.3
2000	Iceland	-9.5	5.9	-14.3	8.8	-6.3	-20.8
2000	Ireland	-12.2	-4.2	-11.5	-11.4	-14.4	4.9
2000	New Zealand	23.0	-6.5	18.2	11.3	-2.4	-31.8
2000	Norway	-5.5	5.5	-1.8	8.4	-10.4	-0.8
2000	Philippines	18.1	14.7	20.3	25.9	-2.6	-16.0
2000	Sweden	-4.8	0.3	1.6	6.4	-8.9	-6.0
2000	Switzerland	-4.3	2.6	-4.1	-5.8	-4.6	13.3
2001	Finland	-11.5	-25.4	-4.0	-0.9	-18.6	-36.2
2001	Iceland	-0.5	11.3	22.2	10.8	-8.0	17.7
2001	Israel	5.5	-6.0	7.6	7.4	-3.7	-21.8
2001	Sweden	-5.9	-18.2	-2.5	-0.1	-6.6	-33.4
2002	Argentina	203.6	135.5	209.3	206.2	183.5	12.6
2002	Brazil	38.2	27.1	31.1	47.5	47.4	-1.6
2002	Finland	-10.3	-24.9	-4.3	-3.7	-19.5	-40.8
2002	Netherlands	-12.7	-8.8	-9.6	-5.7	-19.5	-17.1
2002	Philippines	-0.6	2.1	0.1	4.5	-8.1	-5.9
2002	Sweden	-28.5	-16.7	-7.0	-2.4	-38.6	-39.6
2003	Sweden	-2.5	6.1	-4.3	-2.4	-1.6	22.8
2003	Switzerland	0.1	2.7	-3.5	-2.8	7.1	10.7
2004	Greece	-4.5	9.2	-5.8	7.0	1.5	19.9
2004	Indonesia	-0.6	10.3	5.6	6.0	-123.6	31.3
2004	Switzerland	-3.2	0.3	-4.9	-3.4	-0.2	5.0

Notes: The decomposition for the following countries is not reported because the data on equity flows and debt flows are not available: Indonesia 1994, 1997, 1998, 2000; Malaysia 1994, 1997, 1999 and Mexico 1994, 1995.

Table 4. Valuation Decomposition: *Debt + Equity*.

Year	Country	$\overline{kg_t}$	nfa_{t-1}	$kgdev_t^A$	a_{t-1}	$kgdev_t^L$	l_{t-1}	Root
1994	Ireland	0.9	-43.0	3.2	136.9	-3.2	179.8	FI
1994	Netherlands	-15.2	16.1	-9.6	156.4	9.6	140.4	FI
1995	New Zealand	11.4	-91.9	2.1	29.8	-2.1	121.7	Net
1996	Netherlands	8.9	-12.0	-2.1	129.0	2.1	141.1	FI
1996	Switzerland	9.1	90.0	2.2	261.7	-2.2	171.7	FI
1997	Colombia	10.3	-24.1	-10.5	20.1	10.5	44.2	FI
1997	Ireland	34.7	-24.9	9.2	217.2	-9.2	242.1	FI
1997	Netherlands	6.7	-18.5	-3.0	146.9	3.0	165.4	FI
1997	Philippines	41.4	-49.4	7.0	27.9	-7.0	77.3	Net
1997	Sweden	14.5	-39.3	7.3	105.7	-7.3	145.0	FI
1997	Switzerland	11.2	117.9	-4.7	329.2	4.7	211.3	FI
1997	Thailand	61.7	-51.6	-2.4	27.1	2.4	78.7	Net
1998	Finland	4.7	-41.9	-22.7	59.1	22.7	101.0	FI
1998	Ireland	15.9	15.0	2.1	332.6	-2.1	317.6	FI
1998	Netherlands	-1.1	-24.9	-5.3	172.6	5.3	197.5	FI
1998	New Zealand	2.1	-119.5	11.7	35.7	-11.7	155.1	FI
1998	Sweden	8.2	-23.8	7.2	135.7	-7.2	159.5	FI
1999	Brazil	49.5	-30.8	7.0	18.3	-7.0	49.1	Net
1999	Finland	21.9	-73.2	-31.9	62.5	31.9	135.7	FI
1999	France	-8.6	6.9	-4.1	130.9	4.1	124.1	FI
1999	Ireland	-5.4	25.4	2.3	459.7	-2.3	434.3	FI
1999	Israel	4.7	2.1	-13.7	85.9	13.7	83.8	FI
1999	Japan	1.2	25.7	-11.1	66.8	11.1	41.0	FI
1999	Netherlands	-3.7	-39.0	6.2	196.2	-6.2	235.1	FI
1999	Philippines	0.0	-67.1	0.5	35.9	-0.5	103.0	FI
1999	South Africa	33.0	-7.5	-16.3	47.1	16.3	54.5	FI
1999	Sweden	17.7	-5.7	4.4	169.7	-4.4	175.4	FI
1999	United Kingdom	0.4	-15.5	2.1	247.6	-2.1	263.1	FI
2000	Iceland	-1.8	-49.9	-7.7	38.7	7.7	88.7	FI
2000	Ireland	-8.2	45.7	-4.0	570.2	4.0	524.5	FI
2000	New Zealand	8.3	-98.1	14.7	54.4	-14.7	152.5	FI
2000	Norway	0.0	18.2	-5.5	108.8	5.5	90.5	FI
2000	Philippines	16.4	-65.0	1.7	42.5	-1.7	107.4	Net
2000	Sweden	-2.3	9.3	-2.6	224.2	2.6	214.8	FI
2000	Switzerland	-0.8	125.3	-3.5	493.8	3.5	368.5	FI
2001	Finland	-18.4	-135.2	7.0	109.5	-7.0	244.7	Net
2001	Iceland	5.4	-67.4	-5.9	46.3	5.9	113.6	FI
2001	Israel	-0.2	-24.5	5.7	78.9	-5.7	103.4	FI
2001	Sweden	-12.1	-0.6	6.1	231.4	-6.1	232.0	FI
2002	Argentina	169.6	-45.4	34.0	40.3	-34.0	85.8	Net
2002	Brazil	32.7	-50.2	5.6	25.1	-5.6	75.3	Net
2002	Finland	-17.6	-76.2	7.3	120.9	-7.3	197.1	FI
2002	Netherlands	-10.7	-13.9	-1.9	281.9	1.9	295.9	FI
2002	Philippines	0.8	-67.0	-1.3	40.7	1.3	107.8	FI
2002	Sweden	-22.6	23.5	-5.9	229.4	5.9	205.9	FI
2003	Sweden	1.8	-2.2	-4.3	169.4	4.3	171.6	FI
2003	Switzerland	1.4	115.0	-1.3	476.6	1.3	361.6	FI
2004	Greece	2.4	-61.5	-6.8	57.1	6.8	118.7	FI
2004	Indonesia	4.9	-49.3	-5.5	26.3	5.5	75.6	FI
2004	Switzerland	-1.5	114.5	-1.7	494.4	1.7	379.9	FI

Notes: The first six columns come from equation (3) $val_t = \overline{kg_t}nfa_{t-1} + kgdev_t^Aa_{t-1} - kgdev_t^Ll_{t-1}$. ‘Root’ stands for the root in this subcategory and ‘Main Root’ for the root in the aggregate valuation episode. Variables nfa_{t-1} , a_{t-1} and l_{t-1} are the previous year net position, gross stocks of assets and gross stock of liabilities respectively scaled by GDP. The decomposition for the following countries is not reported because the data on equity flows and debt flows are not available: Indonesia 1994, 1997, 1998, 2000; Malaysia 1994, 1997, 1999 and Mexico 1994, 1995.

7 Appendix: Other Tables

Table A1. Valuation Decomposition: *Debt*

Year	Country	$\overline{kg_t}$	nfa_{t-1}	$kgdev_t^A$	a_{t-1}	$kgdev_t^L$	l_{t-1}	Root	Main Root
1994	Ireland	1.0	-18.0	5.8	85.4	-5.8	103.4	FI	FI
1994	Netherlands	-21.2	1.8	-11.8	88.4	11.8	86.6	FI	FI
1995	New Zealand	-1.3	-53.5	-3.1	5.1	3.1	58.6	FI	Net
1996	Netherlands	3.3	-24.6	2.2	57.3	-2.2	81.9	FI	FI
1996	Switzerland	9.5	75.5	1.9	169.3	-1.9	93.8	Net	FI
1997	Colombia	3.4	-22.8	-6.9	8.6	6.9	31.4	FI	FI
1997	Ireland	23.0	17.6	15.8	159.8	-15.8	142.2	FI	FI
1997	Netherlands	-2.0	-24.1	1.2	64.4	-1.2	88.5	FI	FI
1997	Philippines	51.6	-38.8	-3.0	13.6	3.0	52.3	Net	Net
1997	Sweden	-12.5	-46.4	-6.4	39.1	6.4	85.5	FI	FI
1997	Switzerland	2.4	91.5	-0.3	214.5	0.3	123.0	Net	FI
1997	Thailand	74.3	-53.5	-15.3	4.3	15.3	57.8	Net	Net
1998	Finland	0.4	-35.7	-1.9	31.9	1.9	67.6	FI	FI
1998	Ireland	25.3	74.4	1.1	256.6	-1.1	182.2	Net	FI
1998	Netherlands	-7.6	-25.1	-2.8	77.4	2.8	102.5	FI	FI
1998	New Zealand	4.3	-62.5	2.3	7.9	-2.3	70.3	Net	FI
1998	Sweden	-1.0	-49.1	1.4	34.5	-1.4	83.6	FI	FI
1999	Brazil	45.2	-26.7	-4.9	5.2	4.9	32.0	Net	Net
1999	Finland	-17.9	-35.4	-0.7	30.1	0.7	65.4	Net	FI
1999	France	-17.1	1.7	0.4	65.6	-0.4	63.9	FI	FI
1999	Ireland	-5.5	115.9	-2.0	363.9	2.0	248.0	FI	FI
1999	Israel	-8.4	-12.1	-2.4	48.8	2.4	60.9	FI	FI
1999	Japan	-8.1	17.6	-1.2	51.1	1.2	33.5	Net	FI
1999	Netherlands	-7.4	-27.0	12.1	93.8	-12.1	120.8	FI	FI
1999	Philippines	-0.8	-58.1	1.4	18.7	-1.4	76.8	FI	FI
1999	South Africa	-6.2	-22.5	0.6	5.7	-0.6	28.2	Net	FI
1999	Sweden	-1.9	-52.4	0.5	39.4	-0.5	91.8	Net	FI
1999	United Kingdom	-2.8	-16.3	0.0	175.1	0.0	191.4	Net	FI
2000	Iceland	-2.8	-72.7	-11.5	8.0	11.5	80.6	FI	FI
2000	Ireland	-11.5	129.7	0.0	421.2	0.0	291.6	Net	FI
2000	New Zealand	14.7	-59.2	3.4	14.3	-3.4	73.5	Net	FI
2000	Norway	3.3	-13.7	-5.1	48.5	5.1	62.2	FI	FI
2000	Philippines	23.1	-58.2	-2.8	20.5	2.8	78.7	Net	Net
2000	Sweden	4.0	-45.3	-2.4	43.8	2.4	89.1	FI	FI
2000	Switzerland	-4.9	90.8	0.9	296.7	-0.9	206.0	Net	FI
2001	Finland	-2.4	-25.8	-1.5	47.8	1.5	73.7	FI	Net
2001	Iceland	16.5	-99.5	5.7	6.7	-5.7	106.2	Net	FI
2001	Israel	7.5	-11.8	0.1	44.3	-0.1	56.1	Net	FI
2001	Sweden	-1.3	-46.6	-1.2	54.1	1.2	100.7	FI	FI
2002	Argentina	207.7	-28.5	1.6	26.0	-1.6	54.5	Net	Net
2002	Brazil	39.3	-36.5	-8.2	7.4	8.2	43.9	Net	Net
2002	Finland	-4.0	-22.6	-0.3	58.8	0.3	81.4	Net	FI
2002	Netherlands	-7.6	-15.0	-2.0	139.8	2.0	154.7	FI	FI
2002	Philippines	2.3	-64.5	-2.2	18.6	2.2	83.0	FI	FI
2002	Sweden	-4.7	-60.0	-2.3	51.4	2.3	111.5	FI	FI
2003	Sweden	-3.4	-54.3	-1.0	49.1	1.0	103.4	Net	FI
2003	Switzerland	-3.2	86.5	-0.4	300.9	0.4	214.4	Net	FI
2004	Greece	0.6	-52.5	-6.4	46.7	6.4	99.2	FI	FI
2004	Indonesia	5.8	-55.4	-0.2	8.4	0.2	63.8	Net	FI
2004	Switzerland	-4.2	88.1	-0.7	301.1	0.7	213.0	FI	FI

Notes: The first six columns come from equation (3) $val_t = \overline{kg_t}nfa_{t-1} + kgdev_t^A a_{t-1} - kgdev_t^L l_{t-1}$. ‘Root’ stands for the root in this subcategory and ‘Main Root’ for the root in the aggregate valuation episode. Variables nfa_{t-1} , a_{t-1} and l_{t-1} are the previous year net position, gross stocks of assets and gross stock of liabilities respectively scaled by GDP. The decomposition for the following countries is not reported because the data on equity flows and debt flows are not available: Indonesia 1994, 1997, 1998, 2000; Malaysia 1994, 1997, 1999 and Mexico 1994, 1995.

Table A2. Valuation Decomposition. *Portfolio Equity*

Year	Country	$\overline{kg_t}$	nfa_{t-1}	$kgdev_t^A$	a_{t-1}	$kgdev_t^L$	l_{t-1}	Root	Main Root
1994	Ireland		-6.3		27.9		34.2		FI
1995	New Zealand	32.4	-7.1	3.7	3.8	-3.7	10.9	Net	Net
1996	Netherlands	33.9	-9.2	-11.6	22.1	11.6	31.3	FI	FI
1996	Switzerland	14.2	-18.1	6.8	37.2	-6.8	55.3	FI	FI
1997	Colombia		-0.4		0.6		1.0		FI
1997	Ireland		-22.7		34.5		57.3		FI
1997	Netherlands	30.3	-18.1	-11.8	27.0	11.8	45.1	FI	FI
1997	Philippines	33.4	-10.1	57.1	0.7	-57.1	10.9	FI	Net
1997	Sweden	25.2	-12.4	-3.5	14.6	3.5	27.0	Net	FI
1997	Switzerland	33.6	-13.5	-12.5	50.0	12.5	63.5	FI	FI
1997	Thailand		-8.9		0.0		8.9		Net
1998	Finland	59.3	-21.6	-71.8	2.7	71.8	24.4	FI	FI
1998	Ireland	-18.5	-30.5	-6.8	51.8	6.8	82.3	FI	FI
1998	Netherlands	19.0	-27.6	-6.0	34.0	6.0	61.6	FI	FI
1998	New Zealand	7.7	-7.1	26.2	8.6	-26.2	15.7	FI	FI
1998	Sweden	24.8	-11.7	3.0	21.2	-3.0	32.8	Net	FI
1999	Brazil	111.3	-3.6	-28.7	0.5	28.7	4.1	Net	Net
1999	Finland	93.8	-54.3	-52.9	3.8	52.9	58.1	Net	FI
1999	France	23.2	-10.2	-11.9	9.2	11.9	19.4	FI	FI
1999	Ireland	7.5	-53.0	17.1	65.9	-17.1	118.9	FI	FI
1999	Israel	85.1	-4.7	-68.0	5.7	68.0	10.4	FI	FI
1999	Japan	57.3	-2.1	-51.6	4.7	51.6	6.8	FI	FI
1999	Netherlands	1.8	-32.8	2.3	41.8	-2.3	74.6	FI	FI
1999	Philippines	19.2	-6.2	3.2	1.6	-3.2	7.9	Net	FI
1999	South Africa	13.8	2.7	13.9	16.6	-13.9	13.9	FI	FI
1999	Sweden	38.2	-9.3	-18.6	28.9	18.6	38.1	FI	FI
1999	United Kingdom	19.6	-11.5	12.2	35.3	-12.2	46.8	FI	FI
2000	Iceland	-11.1	17.5	9.4	19.8	-9.4	2.3	FI	FI
2000	Ireland	-13.5	-41.8	-2.2	118.5	2.2	160.3	FI	FI
2000	New Zealand	-14.2	1.0	12.0	15.4	-12.0	14.4	FI	FI
2000	Norway	-3.3	10.5	-8.1	19.8	8.1	9.3	FI	FI
2000	Philippines	-16.5	-7.4	19.3	2.0	-19.3	9.4	FI	Net
2000	Sweden	-6.3	-10.7	6.5	44.6	-6.5	55.3	FI	FI
2000	Switzerland	7.6	-21.8	-12.3	104.4	12.3	126.2	FI	FI
2001	Finland	-32.7	-136.5	6.0	15.0	-6.0	151.6	Net	Net
2001	Iceland	-11.5	25.2	4.0	26.5	-4.0	1.3	Net	FI
2001	Israel	-21.9	-22.1	10.5	5.9	-10.5	28.0	Net	FI
2001	Sweden	-19.6	-11.1	11.9	42.2	-11.9	53.3	FI	FI
2002	Argentina	78.2	3.5	58.2	4.3	-58.2	0.8	FI	Net
2002	Brazil	2.4	-6.6	9.9	1.3	-9.9	7.9	FI	Net
2002	Finland	-39.3	-81.2	5.8	15.2	-5.8	96.3	Net	FI
2002	Netherlands	-27.3	-11.2	-1.7	53.8	1.7	65.0	Net	FI
2002	Philippines	-24.4	-3.1	4.4	1.5	-4.4	4.6	Net	FI
2002	Sweden	-37.2	13.4	9.5	49.0	-9.5	35.6	FI	FI
2003	Sweden	24.3	15.2	-8.3	35.2	8.3	20.0	FI	FI
2003	Switzerland	16.6	-31.0	1.8	70.1	-1.8	101.1	Net	FI
2004	Greece	17.7	-6.2	-15.7	2.1	15.7	8.4	FI	FI
2004	Indonesia	-114.8	-7.7	-170.6	0.0	170.6	7.7	FI	FI
2004	Switzerland	2.4	-31.0	-1.3	83.5	1.3	114.5	FI	FI

Notes: The first six columns come from equation (3) $val_t = \overline{kg_t}nfa_{t-1} + kgdev_t^Aa_{t-1} - kgdev_t^Ll_{t-1}$. ‘Root’ stands for the root in this subcategory and ‘Main Root’ for the root in the aggregate valuation episode. Variables nfa_{t-1} , a_{t-1} and l_{t-1} are the previous year net position, gross stocks of assets and gross stock of liabilities respectively scaled by GDP. The decomposition for the following countries is not reported because the data on equity flows and debt flows are not available: Indonesia 1994, 1997, 1998, 2000; Malaysia 1994, 1997, 1999 and Mexico 1994, 1995.

Table A3. Valuation Decomposition. *Foreign Direct Investment*

Year	Country	$\overline{kg_t}$	nfa_{t-1}	$kgdev_t^A$	a_{t-1}	$kgdev_t^L$	l_{t-1}	Root	Main Root
1994	Ireland	-8.4	-31.1	-0.1	11.1	0.1	42.2	Net	FI
1994	Netherlands	-4.9	14.7	-5.2	38.7	5.2	24.0	FI	FI
1995	New Zealand	18.2	-38.1	4.3	14.2	-4.3	52.3	Net	Net
1996	Netherlands	1.1	13.6	-0.4	41.6	0.4	27.9	FI	FI
1996	Switzerland	3.1	21.3	0.2	44.0	-0.2	22.6	Net	FI
1997	Colombia	31.9	-10.6	-11.9	1.1	11.9	11.7	Net	FI
1997	Ireland	33.8	-30.3	0.1	12.4	-0.1	42.6	Net	FI
1997	Netherlands	1.0	16.9	1.2	48.7	-1.2	31.8	FI	FI
1997	Philippines	14.8	-12.4	10.9	1.6	-10.9	14.1	Net	Net
1997	Sweden	50.3	12.8	21.3	38.7	-21.3	25.9	FI	FI
1997	Switzerland	8.2	26.1	4.0	50.9	-4.0	24.8	FI	FI
1997	Thailand	37.5	-10.2	26.1	1.8	-26.1	12.0	Net	Net
1998	Finland	-59.8	9.1	3.7	17.1	-3.7	8.0	Net	FI
1998	Ireland	17.5	-37.4	0.4	15.7	-0.4	53.1	Net	FI
1998	Netherlands	-9.3	20.9	-3.0	54.4	3.0	33.5	FI	FI
1998	New Zealand	-5.5	-57.5	14.0	11.6	-14.0	69.1	FI	FI
1998	Sweden	6.0	32.5	16.0	68.8	-16.0	36.4	FI	FI
1999	Brazil	36.8	-6.1	43.3	6.9	-43.3	13.0	FI	Net
1999	Finland	-19.2	9.4	4.4	21.4	-4.4	12.0	Net	FI
1999	France	-10.9	12.8	-5.1	48.3	5.1	35.4	FI	FI
1999	Ireland	-16.5	-45.5	3.3	21.9	-3.3	67.4	Net	FI
1999	Israel	6.5	-4.9	-18.5	7.6	18.5	12.5	FI	FI
1999	Japan	-8.1	5.5	-18.3	6.0	18.3	0.6	FI	FI
1999	Netherlands	-17.7	15.6	-1.4	55.3	1.4	39.7	Net	FI
1999	Philippines	-7.7	-16.0	-7.5	2.3	7.5	18.3	FI	FI
1999	South Africa	124.7	8.9	-107.0	21.3	107.0	12.4	FI	FI
1999	Sweden	23.7	50.4	12.6	89.4	-12.6	39.0	FI	FI
1999	United Kingdom	-5.3	10.0	5.0	34.9	-5.0	24.9	FI	FI
2000	Iceland	-22.4	-0.3	-1.5	5.3	1.5	5.6	FI	FI
2000	Ireland	16.4	-47.5	-24.5	25.2	24.5	72.6	FI	FI
2000	New Zealand	-17.8	-48.0	15.2	16.7	-15.2	64.6	FI	FI
2000	Norway	-6.5	8.0	-3.1	27.1	3.1	19.1	FI	FI
2000	Philippines	-7.1	-17.3	-0.7	2.1	0.7	19.4	Net	Net
2000	Sweden	-6.2	58.9	-6.0	123.6	6.0	64.7	FI	FI
2000	Switzerland	-7.1	41.8	2.5	78.1	-2.5	36.3	Net	FI
2001	Finland	-15.5	20.6	0.1	38.6	-0.1	18.0	Net	Net
2001	Iceland	7.5	2.2	-17.3	8.3	17.3	6.1	FI	FI
2001	Israel	-2.5	-10.6	3.9	8.8	-3.9	19.4	FI	FI
2001	Sweden	-20.5	49.4	14.3	119.9	-14.3	70.5	FI	FI
2002	Argentina	120.0	-25.9	107.6	4.6	-107.6	30.5	FI	Net
2002	Brazil	26.2	-14.0	25.8	9.6	-25.8	23.6	FI	Net
2002	Finland	-16.0	21.2	1.9	39.3	-1.9	18.1	Net	FI
2002	Netherlands	-10.7	11.3	-2.1	76.1	2.1	64.8	FI	FI
2002	Philippines	1.5	-18.5	2.1	1.6	-2.1	20.1	FI	FI
2002	Sweden	-39.0	63.0	-4.3	115.1	4.3	52.2	Net	FI
2003	Sweden	3.6	30.9	-14.1	69.7	14.1	38.7	FI	FI
2003	Switzerland	0.2	46.6	-1.6	92.8	1.6	46.2	FI	FI
2004	Greece	5.5	-5.3	-4.2	5.8	4.2	11.2	FI	FI
2004	Indonesia	-68.3	-2.8	-53.3	1.3	53.3	4.1	FI	FI
2004	Switzerland	3.3	43.8	-4.6	96.3	4.6	52.4	FI	FI

Notes: The first six columns come from equation (3) $val_t = \overline{kg_t}nfa_{t-1} + kgdev_t^Aa_{t-1} - kgdev_t^Ll_{t-1}$. ‘Root’ stands for the root in this subcategory and ‘Main Root’ for the root in the aggregate valuation episode. Variables nfa_{t-1} , a_{t-1} and l_{t-1} are the previous year net position, gross stocks of assets and gross stock of liabilities respectively scaled by GDP. The decomposition for the following countries is not reported because the data on equity flows and debt flows are not available: Indonesia 1994, 1997, 1998, 2000; Malaysia 1994, 1997, 1999 and Mexico 1994, 1995.

Table A4. Other Important Variables.

Year	Country	GDP	RER	CPI	EPI	BRI	WMPI	nfa_t	nfa_{t-1}	ca_t	Root
1994	Ireland	5.8	2.4	2.4	11.9	0.7	3.2	-25.5	-41.0	2.9	FI
1994	Netherlands	2.9	2.3	2.8	8.9	8.7	3.2	-11.3	15.4	5.0	FI
1995	New Zealand	4.1	0.4	3.7	17.3	22.5	15.6	-99.7	-96.1	-5.0	Net
1996	Netherlands	3.0	-3.4	2.0	24.5	-0.5	10.7	-17.9	-12.0	5.2	FI
1996	Switzerland	0.5	-10.1	0.8	1.2	-18.1	10.7	110.8	94.9	6.7	FI
1997	Colombia	3.4	-5.1	18.5	37.8		11.1	-32.6	-24.8	-5.4	FI
1997	Ireland	10.8	-6.0	1.4	13.3	-0.7	11.1	14.3	-26.5	2.3	FI
1997	Netherlands	3.8	-3.1	2.2	21.6	-7.8	11.1	-24.1	-17.9	6.6	FI
1997	Philippines	5.2	-17.2	5.6	-63.0	-44.8	11.1	-51.6	-49.3	-5.2	Net
1997	Sweden	2.4	-2.7	0.7	11.6	-6.1	11.1	-23.3	-38.7	3.0	FI
1997	Switzerland	1.9	1.6	0.5	43.2	1.5	11.1	117.4	110.8	9.9	FI
1997	Thailand	-1.4	-33.0	5.6	-74.3	-52.9	11.1	-63.6	-55.9	-2.0	Net
1998	Finland	5.0	2.3	1.4	119.1	25.8	17.9	-77.5	-40.5	5.7	FI
1998	Ireland	8.9	-0.6	2.4	33.0	22.7	17.9	29.3	14.3	1.2	FI
1998	Netherlands	4.3	2.6	2.0	21.1	17.8	17.9	-40.9	-24.1	3.3	FI
1998	New Zealand	0.5	-14.8	1.3	-25.2	8.4	17.9	-100.2	-102.2	-4.0	FI
1998	Sweden	3.6	-9.7	-0.3	12.6	10.7	17.9	-5.7	-23.3	1.9	FI
1999	Brazil	0.8	-27.2	4.9	61.6		27.7	-46.4	-29.5	-4.8	Net
1999	Finland	3.4	-6.7	1.2	150.7	-19.0	27.7	-168.8	-77.5	6.3	FI
1999	France	3.3	-5.8	0.5	28.0	-20.3	27.7	-1.3	7.2	2.8	FI
1999	Ireland	11.1	-7.0	1.6	-14.0	-19.9	27.7	48.0	29.3	0.3	FI
1999	Israel	2.3	6.0	5.2	56.3	14.0	27.7	-38.9	-19.8	-1.6	FI
1999	Japan	-0.1	16.3	-0.3	60.6	16.0	27.7	18.5	29.2	2.6	FI
1999	Netherlands	4.0	-4.7	2.2	5.2	-14.7	27.7	-8.7	-40.9	3.3	FI
1999	Philippines	3.4	0.5	5.9	2.3	32.1	27.7	-63.0	-70.3	9.5	FI
1999	South Africa	2.4	2.9	5.2	53.4	26.2	27.7	-28.4	-8.0	-0.5	FI
1999	Sweden	4.6	2.9	0.5	77.8	-6.9	27.7	9.2	-5.7	2.4	FI
1999	United Kingdom	2.9	5.5	1.6	9.7	-2.0	27.7	-7.1	-15.6	-2.7	FI
2000	Iceland	5.7	-6.1	5.2	-30.9	-18.5	-14.0	-64.3	-51.3	-10.1	FI
2000	Ireland	9.9	0.7	5.6	-14.3	2.6	-14.0	-8.2	48.0	-0.5	FI
2000	New Zealand	2.3	-6.9	2.6	-36.3	-1.3	-14.0	-75.8	-96.0	-4.8	FI
2000	Norway	2.8	-1.6	3.1	-2.4	-4.8	-14.0	16.4	17.7	15.5	FI
2000	Philippines	6.0	-9.5	4.0	-45.3	-18.6	-14.0	-64.6	-63.0	8.4	Net
2000	Sweden	4.3	-4.6	0.9	-21.9	-0.7	-14.0	-0.6	9.2	2.8	FI
2000	Switzerland	3.6	2.8	1.5	4.9	11.0	-14.0	123.5	135.3	13.9	FI
2001	Finland	1.1	3.4	2.6	-39.1	-1.3	-16.7	-83.5	-151.6	7.2	Net
2001	Iceland	2.6	-10.0	6.4	-27.0	-1.0	-16.7	-76.0	-64.3	-4.4	FI
2001	Israel	-0.3	-2.2	1.1	-32.3	0.9	-16.7	-26.4	-37.8	-1.4	FI
2001	Sweden	1.0	-6.0	2.4	-28.1	-8.0	-16.7	23.0	-0.6	3.1	FI
2002	Argentina	-10.9	-61.2	25.9	-51.0	-80.8	-20.0	-72.3	-45.4	9.3	Net
2002	Brazil	1.9	-31.0	8.5	-33.8		-20.0	-50.4	-51.0	-1.7	Net
2002	Finland	2.2	1.9	1.6	-31.2	32.0	-20.0	-41.4	-83.5	7.7	FI
2002	Netherlands	0.6	3.5	3.3	-22.5	29.0	-20.0	-30.0	-15.8	2.4	FI
2002	Philippines	4.4	-6.4	3.0	-30.5	39.1	-20.0	-63.9	-66.5	5.7	FI
2002	Sweden	2.0	6.1	2.2	-31.5	31.3	-20.0	-2.5	23.0	5.3	FI
2003	Sweden	1.5	5.7	1.9	61.0	26.6	33.0	-10.0	-2.5	7.6	FI
2003	Switzerland	-0.4	-2.7	0.6	32.4	1.6	33.0	146.3	149.8	14.4	FI
2004	Greece	4.2	2.2	2.9	41.2	18.0	14.5	-73.6	-68.5	-6.4	FI
2004	Indonesia	5.1	-11.7	6.2	44.5		14.5	-52.2	-49.9	1.4	FI
2004	Switzerland	2.1	1.8	0.8	13.8	7.0	14.5	148.6	146.3	17.5	FI

Notes: The following variables represent the percentage change respect to the previous year: GDP (constant gross domestic product in domestic currency), RER (real exchange rate), CPI (consumer price index), EPI (equity market price index), BRI (bond return index), WMPI (world market price index). The variables nfa_t and ca_t are net foreign assets and current account scaled by GDP.

8 Data Sources and Definitions

- Stocks and flows of foreign assets and liabilities. Source: External Wealth of Nations.
- Trade Balance. Source: Direction of Trade Statistics, IMF.
- Constant GDP in local currency. Source: World Development Indicators.
- Current Account Balance. Source: External Wealth of Nations.
- Real Exchange Rate. Source: International Financial Statistics, IMF.
- Equity Price Index (end of period equity price index). Source: Morgan Stanley Capital International Inc.
- Bond Index (total return index bond). Source: Global Financial Data.
- World market price index: World, Dow Jones, Broad, Global Index, price Return, Close, USD. Source: Morgan Stanley Capital International Inc.
- Foreign assets are the sum of portfolio equity assets, foreign direct investment and debt assets. Debt assets includes foreign exchange reserves minus gold. Foreign liabilities are the sum of portfolio equity liabilities , foreign direct investment and debt liabilities.

References

- [1] Pierpaolo Benigno. Are valuation effects desirable from a global perspective? Working paper, New York University, April 2006.
- [2] Olivier Blanchard, Francesco Giavazzi, and Filipa Sa. The U.S. current account and the dollar. Working Paper 11137, NBER, February 2005.
- [3] Guillermo Calvo, Alejandro Izquierdo, and Luis-Fernando Meijía. On the empirics of the sudden stops: The relevance of balance-sheet effects. Working paper, BID, 2004.
- [4] Congressional Budget Office CBO. Why does U.S. investment abroad earn higher returns than foreign investment in the united states? *Economic and Budget Issue Brief*, November 2005.
- [5] José De Gregorio. Global imbalances and exchange rate adjustment. Working Paper 15, Banco Central de Chile, September 2005.
- [6] Michael Devereux and Makoto Saito. A portfolio theory of international capital flows. Working paper, University of British Columbia, 2005.

- [7] Michael Devereux and Alan Sutherland. Country portfolios in open economy macro models. Working paper, University of British Columbia, May 2006.
- [8] Sebastian Edwards. Financial openness, sudden stops and current account reversals. Working Paper 10277, NBER, January 2004.
- [9] Barry Eichengreen, Andrew Rose, and Charles Wyplosz. Exchange market mayhem: The antecedents and aftermath of speculative attacks. *Economic Policy*, 21:349–312, October 1995.
- [10] Charles Engel and Akito Matsumoto. Portfolio choice in a monetary open-economy DSGE model. Working paper, University of Wisconsin, April 2006.
- [11] Fabio Ghironi, Jaewoo Lee, and Alessandro Rebucci. The valuation channel of external adjustment. Working paper, Boston College and IMF, April 2006.
- [12] Pierre-Olivier Gourinchas. Valuation effects and external adjustment: A review. Working paper, University of California, Berkeley, November 2006.
- [13] Pierre-Olivier Gourinchas and Hélène Rey. International financial adjustment. Working Paper 11155, NBER, February 2005.
- [14] Juann Hung and Angelo Mascaro. Return on cross-border investment: Why does the U.S. investment abroad do better? Working Paper 2004-17, Congressional Budget Office, Washington D.C., December 2004.
- [15] IMF. *World Economic Outlook. How Worrisome Are External Imbalances*, chapter II, pages 65–81. IMF, 2002.
- [16] IMF. *World Economic Outlook. Globalization and External Imbalances*, chapter III, pages 109–156. IMF, 2005.
- [17] Philip Lane and Gian Maria Milesi-Ferretti. The external wealth of nations: measures of foreign assets and liabilities for industrial and developing countries. *Journal of International Economics*, 55(2):263–294, 2001.
- [18] Philip Lane and Gian Maria Milesi-Ferretti. A global perspective on external positions. Working Paper 11589, NBER, August 2005.
- [19] Philip Lane and Gian Maria Milesi-Ferretti. Exchange rates and external adjustment: Does financial globalization matter? The Institute for International Integration Studies Discussion Paper Series 129, IIIS, April 2006.
- [20] Philip Lane and Gian Maria Milesi-Ferretti. The external wealth of nations mark II: Revised and extended estimates of foreign assets and liabilities, 1970-2004. Working Paper 06/69, IMF, 2006.

- [21] Philip Lane and Sébastien Wälti. The euro and financial integration. The Institute for International Integration Studies Discussion Paper Series 139, Department of Economics, Trinity College Dublin and IIIS, May 2006.
- [22] Gian Maria Milesi-Ferretti and Assaf Razin. Sharp reductions in current account deficits: An empirical analysis. Working Paper 6310, NBER, December 1997.
- [23] Gian Maria Milesi-Ferretti and Assaf Razin. Current account reversals and currency crises: Empirical regularities. Working Paper 6620, NBER, June 1998.
- [24] Maurice Obstfeld. External adjustment. Working Paper 10843, NBER, October 2004.
- [25] Maurice Obstfeld and Kenneth Rogoff. The unsustainable U.S. current account position revised. Working Paper 10869, NBER, 2005.
- [26] Hélène Rey and Harald Hau. Exchange rates, equity prices and capital flows. Working paper, Princeton University, CEPR, INSEAD and NBER, August 2003.
- [27] Cédric Tille. Financial integration and the wealth effect of exchange rate fluctuations. Working paper, Federal Reserve Bank of New York, 2005.