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Abstract:
This paper documents the methodology underlying the construction of a global database of gross foreign asset and liability positions for 153 countries over the period 1970 to 2004 and illustrates some key data characteristics. The data cover both inflows and outflows of capital and thus allow for an assessment of the degree of international financial integration. In addition to net foreign asset stocks, we also provide details on the composition of the main asset and liability categories, namely the foreign direct investment, equity investment and debt components. Finally, we report on valuation changes as one of the main sources of discrepancy between transaction-based capital flow data and stock values of investment positions. The dataset is available for download at www.ifk-cfs.de/fileadmin/downloads/data/cfs-icfd.zip.

JEL Classification: F21; F34; F32

Keywords: Net Foreign Assets; Valuation Adjustment; International Financial Integration

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1 Introduction

Economic interaction has become an increasingly international phenomenon characterized by markedly growing flows of trade and capital. As international payments and investment positions claim a growing share of both corporate and national balance sheets, they also inevitably impact domestic financial variables and the level and composition of economic activity. This development demands appropriate consideration in both theoretical and applied research, and it is to this end that we have endeavored to properly capture and report international capital and financial flows and international investment positions. This user's guide is intended to describe and explain the data series reported in the corresponding data file, which can be found at `http://www.ifk-cfs.de/fileadmin/downloads/data/cfs-icfd.zip`.

We provide information not only on the size of the external investment position on a gross and net basis, but also on its composition according to asset class, as far as data availability permits. Total assets and liabilities are hence consistently built up as the sum of their components, i.e. foreign direct investment (FDI), equity, and debt. In addition, international reserves are included on the asset side, after subtracting gold holdings since the latter do not constitute a liability of any counterpart. To provide an indicator of the relative magnitude of the international investment position of each country we also include a series for gross domestic product (GDP).

While this data set is based both on flows as reported in the balance of payments and on international investment position stock data, only stock data are presented. Due to the conceptual equivalence of flows and the corresponding changes in stocks, no information is lost by only reporting the international investment position. Apart from the effect of inadvertent accounting errors and omissions, however, there will be a discrepancy between flows and increments in stock variables resulting from changes in the valuation of flow balances brought forward from prior periods. In fact, one of the main contributions in compiling this database is the appropriate adjustment of flow figures that re-establishes the conceptual equivalence. Through complementing reported international investment position figures with valuation-adjusted flows, we are able to cover a larger number of countries and obtain longer data series than either concept by itself could provide.

The database has significantly benefited from pioneering work by Sinn (1990) and was conceptually inspired by Lane and Milesi-Ferretti (2001). Lane and Milesi-Ferretti (2006) now offer a data set of similar coverage.

2 Data Sources

A variety of data sources has been drawn upon in compiling this data set. We present annual estimates of gross and net international capital stocks for 153 countries over the period 1970-2004. Our main source is the International Financial Statistics (IFS) online database by the International Monetary Fund (IMF), which provides the data series of the Balance of Payments Statistics (BOPS) and the International Investment Position (IIP). For the net foreign assets (NFA) position only, the IIP series are complemented through data points taken from Sinn (1990) for the period 1970-1987. Debt stock figures for developing countries are taken from the World Bank's Global Development Finance (GDF) database since these numbers are generally not available from the IIP series of the IFS.

For GDP, the primary data source is the World Bank's World Development Indicators database due to its comprehensive coverage. These series are complemented by data points taken from the IFS.[1] Time series for the consumer price index (CPI) that enter the calculation of valuation adjustments to flow data are obtained from the IFS. Similarly, trade-weighted real exchange rates of partner countries vis-à-vis the U.S. are calculated using trade data from the IMF's Direction of Trade Statistics and bilateral nominal exchange rates (period averages) from the IFS.

Equity indices, which also enter the calculation of valuation adjustments, are primarily taken from Morgan Stanley Capital International. Additional national and regional indices are obtained from Standard & Poor's, Nomura, Datastream, FTSE, Global Property Research, or directly from national stock exchanges. For Japan, the UK, and the U.S., separate world equity indices are used that omit the domestic country in each case. Tables providing more details on the source data series are shown in Appendix A.

3 Construction of Stock Data

3.1 Gross Asset and Liability Components

The guiding principle in building this database has been to obtain estimates of gross foreign asset and gross foreign liability components whenever data quality permits. Not only do these components allow the calculation of total foreign assets and total foreign liabilities, but they can also provide important information on a country's financial structure and changes in economic activity.

[1] Subsequently, some missing GDP observations were filled through data points from the recently published Lane and Milesi-Ferretti (2006), who generally rely on many different data sources. The same holds for the NFA series of Hong Kong, in which the new data points replace BOPS as the basis for complementing Sinn (1990) and IIP data. For details on the construction procedure, see the following section.

To this end, the different data sources are employed according to a consistent pecking order. When the level of detail in the reporting of individual asset and liability components is high enough, stock data from the IIP section of the IFS are used. However, IIP series are generally available only from the 1980s onwards and may omit too many of the individual components, in which case a calculation of total assets and total liabilities would not be meaningful. In these instances, the IIP-based series are extrapolated by use of the corresponding flow data from the BOPS, provided the latter benefit from a more comprehensive data coverage. In cumulating flow data, valuation adjustments need to be made to ensure consistency with the IIP series as the value of flow balances brought forward will change over time. Valuation adjustments will be specific to individual asset and liability classes, as described in detail in the following subsection.

The asset and liability series for FDI and equity (EQ) conform with the IIP classifications. Debt assets ($DEBTA$) are the sum of the IIP categories portfolio debt assets, other assets, and, if applicable, financial derivative assets. Debt liabilities ($DEBTL$) are analogously calculated from portfolio debt liabilities, other liabilities, and financial derivative liabilities. Since these IIP series are frequently not available for developing countries, external debt figures from the GDF database are used in these cases. Instead of the IIP series reserve assets, we use the alternative IFS stock series total reserves minus gold (RES^*) since gold holdings do not constitute a liability of any counterpart. Hence, our measures of gross foreign assets (GFA) and gross foreign liabilities (GFL) are constructed as follows:

$$GFA_{it} = FDIA_{it} + EQA_{it} + DEBTA_{it} + RES^*_{it}, \tag{1}$$

$$GFL_{it} = FDIL_{it} + EQL_{it} + DEBTL_{it}. \tag{2}$$

Note that unlike the gross foreign assets and gross foreign liabilities figures directly reported by the IIP, we employ strict criteria for determining whether the number of individual components available permits the calculation of dependable total foreign assets and total foreign liabilities figures. These aggregates are calculated only if all of the three components FDI, equity and debt are simultaneously available on both the asset and the liability side. However, even when meaningful gross asset and liability estimates cannot be calculated from the available data series, it may nonetheless be possible to construct a net foreign asset position as outlined below.

3.2 Valuation Adjustment

When flow data are used to extrapolate stock positions, the change in value of the balances brought forward needs to be added to the flow figure in every period. Since the value of different components of the international investment position is determined by different factors, these differences also need to be reflected in

the calculation of valuation adjustments. While any attempt of such "marking to market" will necessarily be imperfect, neglecting it altogether would not only be wrong on conceptual grounds but could also lead to severe distortions in practice. In some cases the valuation effect may more than offset the contribution of the flow figure for that period, thereby not only altering the magnitude but also the sign of the change in the corresponding stock position.

For this purpose, we follow the lead provided in Lane and Milesi-Ferretti (2001) and calculate comparable valuation adjustments. Equity assets (domestic holdings of foreign equity shares) are adjusted by changes in the MSCI World Index m, assuming that equity investment abroad is allocated according to the world portfolio that is approximated by this index.[2] Decomposing the change in the stock as above into

$$\Delta EQA_{it} = DEQA_{it} + \Delta V(EQA)_{it}, \tag{3}$$

where Δ is the first difference operator and $DEQA_{it}$ refers to the inflow of equity assets into country i in period t, we take the change in the value of the stock as

$$\Delta V(EQA)_{it} = \left(\frac{m_t}{m_{t-1}} - 1\right) EQA_{i,t-1} + \left(\frac{m_t}{\sqrt{m_t m_{t-1}}} - 1\right) DEQA_{it}, \tag{4}$$

taking into account that m_t refers to end-of-period values whereas flows are assumed to be evenly distributed over the year and hence adjusted for the average index value of $\sqrt{m_t m_{t-1}}$.

Equity liabilities (foreign holdings of domestic equity shares) are adjusted by changes in domestic (or regional) stock market indices m_i in the same vein as equity assets, with

$$\Delta EQL_{it} = DEQL_{it} + \Delta V(EQL)_{it}, \tag{5}$$

$DEQL_{it}$ denoting the flow of equity liabilities to country i in period t, and

$$\Delta V(EQL)_{it} = \left(\frac{m_{it}}{m_{i,t-1}} - 1\right) EQL_{i,t-1} + \left(\frac{m_{it}}{\sqrt{m_{it} m_{i,t-1}}} - 1\right) DEQL_{it}. \tag{6}$$

FDI assets are adjusted for changes in the real trade-weighted Dollar exchange rate of country i's trade partners, $\tilde{q}_{it}$,

$$\Delta FDIA_{it} = DFDIA_{it} + \Delta V(FDIA)_{it}, \tag{7}$$

where $DFDIA_{it}$ is the inflow of FDI assets into country i (i.e. an outflow of capital) in period t. $\Delta V(FDIA)_{it}$ is the change in the value of the FDI asset stock as of the end of period $t-1$ during period t, with

$$\Delta V(FDIA)_{it} = \left(\frac{\tilde{q}_{it}}{\tilde{q}_{i,t-1}} - 1\right) FDIA_{i,t-1}, \tag{8}$$

[2]Note that for the U.S., Japan and the UK, we use an index that excludes the respective home country.

where

$$\tilde{q}_{it} = \exp\left\{\sum_{j=1}^{N} \ln\left(\frac{CPI_{jt}}{CPI_{US,t}} \cdot s_{jt}\right) \cdot \tilde{w}_{ijt}\right\}, \tag{9}$$

CPI is the consumer price index, and s_{jt} is country j's exchange rate in U.S. Dollar per unit of domestic currency. The weight $\tilde{w}_{ijt}$ is calculated as a predetermined moving average of country i's trade (i.e., the sum of exports, EXP, and imports, IMP) with country j relative to country i's total trade for each year, or specifically

$$\tilde{w}_{ijt} = \frac{1}{\tau} \sum_{s=t-\tau}^{t-1} w_{ijs} \tag{10}$$

where

$$w_{ijs} = \frac{EXP_{ijs} + IMP_{ijs}}{\sum_{k=1}^{N} EXP_{iks} + IMP_{iks}} \tag{11}$$

and the span is set to $\tau = 3$.

We thus assume that a country's foreign direct investment flows are in line with its trade pattern, and that changes in the foreign direct investment position that country i holds in country j are due to changes in the relative price of consumption goods between country j and the U.S. as well as changes in the value of country j's currency relative to the U.S. Dollar.

FDI liabilities are adjusted in the same vein, using country i's real Dollar exchange rate q_{it}, such that

$$\Delta FDIL_{it} = DFDIL_{it} + \Delta V(FDIL)_{it}, \tag{12}$$

where $DFDIL_{it}$ denotes the inflow of FDI liabilities into country i (i.e. a capital inflow) in period t, and the change in the stock value is defined as

$$\Delta V(FDIL)_{it} = \left(\frac{q_{it}}{q_{i,t-1}} - 1\right) FDIL_{i,t-1}, \tag{13}$$

with

$$q_{it} = \frac{CPI_{it}}{CPI_{US,t}} \cdot s_{it}. \tag{14}$$

Finally, we infer changes to the stock of international reserves excluding gold holdings (RES^*) from the difference between the change in official reserves (ΔRES) according to IIP and recorded reserve flows ($DRES$):

$$\Delta V(RES^*)_{it} = \Delta RES_{it} - DRES_{it}. \tag{15}$$

Since debt figures from the GDF database are available as stock data only, separate series for valuation adjustments cannot be obtained.

3.3 Net Foreign Asset Position

When we derive separate total asset (GFA) and total liability (GFL) estimates from individual components as described above, the calculation of the net foreign asset (NFA) position is straightforward:[3]

$$NFA_t = GFA_t - GFL_t. \tag{16}$$

Whenever this method is not feasible due to a lack of observations for gross figures, the following option may be available. Sinn (1990) had compiled an earlier database on NFA positions that covers 145 countries for the period from 1970 to 1987. This supplementary source is used to complement the data points calculated from total asset and total liability numbers. In most instances, combining these two sources will result in a data gap in the middle of the series. The remaining gap can, however, be filled through interpolation based on the other supplementary source, viz. valuation-adjusted flow figures. This last approach is also used when only one of the two aforementioned NFA sources is available, in which case the valuation-adjusted flow figures are used for extrapolation instead of interpolation.

In using flow figures from the BOPS, we exploit the fact that the sum of domestic balances on current and capital account over a particular period will amount to the change in the international investment position of that economy, provided that the valuation adjustments of all international investment components are taken into account. Since both flows and international investment positions in this database are classified in accordance with the fifth edition of the Balance of Payments Manual (BOPM) published by the IMF, it is worth noting that there have been some changes in definitions relative to earlier editions of the BOPM in order to harmonize the reporting practice with the System of National Accounts. Most importantly, what had formerly been known as the "capital account" has been redesignated as the "capital and financial account". As a consequence, the current account balance (CA) and the balance on capital account (KA) within the capital and financial account do not conceptually offset each other any longer, instead the sum of the two represents the net lending (or net borrowing) of an economy.[4] Therefore, the final adjusted flow figure is computed as

$$CA^*_t = CA_t + KA_t + \Delta NV_t, \tag{17}$$

where ΔNV_t represents the sum of available net valuation changes of asset and liability components,

$$\Delta NV_t = \Delta V(FDIA)_t - \Delta V(FDIL)_t + \Delta V(EQA)_t - \Delta V(EQL)_t + \Delta V(RES^*)_t. \tag{18}$$

[3] In the following, we will omit the country subscript i for notational convenience.

[4] Additional changes, particularly in the definition and reporting of transfers, have also altered the scope of the current account, so the redesignated terms are not directly comparable to their corresponding former definitions.

We derive the valuation changes $\Delta V(\cdot)$ by constructing purely flow-based series for each component both with and without valuation adjustments, and computing the difference between the adjusted and the unadjusted estimates. Since the absolute level of balances brought forward determines the size of the valuation adjustment, we anchor the flow-based series through the earliest available IIP stock figure. When this starting value is preceded by one or more of the available BOPS data points, an initial value for the flow-based series is computed by extrapolating the IIP starting value backwards with and without valuation adjustments, respectively.

As a consequence, the adjusted current account balance provides an alternative estimate on the change in NFA which can be used to fill the gaps induced by missing observations. However, in the case of interpolation, we need to ensure that the interpolated segment meets its two attachment points. Therefore, the flow-based increments in the NFA position are scaled as follows. Observing stock data for NFA_t and $NFA_{t'}$, with $t < t'$, and observing the valuation-adjusted current account, CA^*_s, with $s = t+1, t+2, \ldots, t'$, we obtain the missing values for NFA between t and t' as

$$NFA_s = NFA_t + \sum_{r=t+1}^{s} CA^*_r + d_{t',t},\ s = t+1, t+2, \ldots, t', \tag{19}$$

where $d_{t',t} = \frac{1}{t'-t}(NFA_{t'} - NFA_t - \sum_{s=t+1}^{t'} CA^*_s)$. Missing values at the beginning or at the end of the sample are filled in the same manner by using extrapolation, i.e. with $d_{t',t} = 0$.

The NFA position of a country may deviate from the difference between gross foreign assets and liabilities calculated from individual components. Let us denote stock data which are based on the aggregation of components and the respective component itself by an asterisk. Then we have

$$NFADIFF_t = NFA_t - NFA^*_t,$$

where NFA^*_t is computed as the difference between

$$GFA^*_t = FDIA^*_t + EQA^*_t + DEBTA^*_t + RES^*_t$$

and

$$GFL^*_t = FDIL^*_t + EQL^*_t + DEBTL^*_t.$$

To adjust the underlying gross stock figures accordingly, we distribute the difference across components to obtain estimates that are consistent with net figures. Hence, we apply the following scheme:

$$GFA_t = GFA^*_t + w_{A,t} \cdot NFADIFF_t, \qquad GFL_t = GFL^*_t - w_{L,t} \cdot NFADIFF_t,$$

where[5]

$$w_{A,t} = \frac{|GFA_t^* - RES_t^*|}{|GFA_t^* - RES_t^*| + |GFL_t^*|}, \quad w_{L,t} = 1 - w_{A,t}.$$

The gross stock figures of the components are adjusted in the same manner, computing assets as

$$\begin{aligned} FDIA_t &= FDIA_t^* + w_{FDIA,t} \cdot (w_{A,t} \cdot NFADIFF_t), \\ EQA_t &= EQA_t^* + w_{EQA,t} \cdot (w_{A,t} \cdot NFADIFF_t), \\ DEBTA_t &= DEBTA_t^* + w_{DEBTA,t} \cdot (w_{A,t} \cdot NFADIFF_t), \end{aligned}$$

with

$$w_{FDIA,t} = \frac{|FDIA_t^*|}{|GFA_t^* - RES_t^*|}, \quad w_{EQA,t} = \frac{|EQA_t^*|}{|GFA_t^* - RES_t^*|}, \quad w_{DEBTA,t} = 1 - w_{FDIA,t} - w_{EQA,t},$$

and liabilities as

$$\begin{aligned} FDIL_t &= FDIL_t^* - w_{FDIL,t} \cdot (w_{L,t} \cdot NFADIFF_t), \\ EQL_t &= EQL_t^* - w_{EQL,t} \cdot (w_{L,t} \cdot NFADIFF_t), \\ DEBTL_t &= DEBTL_t^* - w_{DEBTL,t} \cdot (w_{L,t} \cdot NFADIFF_t), \end{aligned}$$

with

$$w_{FDIL,t} = \frac{|FDIL_t^*|}{|GFL_t^*|}, \quad w_{EQL,t} = \frac{|EQL_t^*|}{|GFL_t^*|}, \quad w_{DEBTL,t} = 1 - w_{FDIL_t} - w_{EQL_t}.$$

The consistency adjustment ensures that the relations (1), (2) and (16) hold.

The valuation-adjusted current account described above may not only be used for interpolation of gaps in the NFA position, it also permits the construction of an entire NFA series based on BOPS flow figures. In that case, CA^* is cumulated over time:

$$NFA_t^{CF} = NFA_{t-1}^{CF} + CA_t^*. \tag{20}$$

The initial value for this cumulative flow series is the earliest available stock figure for NFA, which we take from Sinn (1990).

[5]For conceptual reasons, assets and liabilities are also affected by negative transactions (e.g. realized holding losses, repayments) and by difficulties in attributing transactions to residents vs. non-residents. Therefore individual components and hence GFA and GFL could turn negative. However, this occurs in a few cases only.

4 Data Characteristics

The increase in international capital flows and stock positions clearly marks a global trend, nonetheless it is necessary to distinguish between different developments across different groups of countries. For this purpose, we will distinguish between three groups of countries, based on their degree of economic development and in accordance with the World Bank classification.[6] The group of "industrial countries" includes "high-income OECD countries", while "emerging markets" captures "high-income non-OECD countries" and "upper-middle income countries". The third group, "developing countries", consists of "lower-middle or low income" countries.

Figure 1 shows the development of gross asset and liability positions over time for these country groups.[7] Industrial countries (Figure 1(a)) display a strong growth of capital stocks for all categories, amounting to an increase in the group's NFA/GDP mean ratio from about 50% in 1970 to more than 250% in 2003. We combine the other two groups, which are summarized in Figure 1(b) and display a similar trending behavior. However, they experienced strong flows of capital already at the beginning of the sample until the 1980s, comprising mostly debt liabilities, which is of course partly due to the major role of foreign credit in many developing countries' government budgets.[8] In addition, there has been a big increase also in FDI liabilities. Altogether, capital stock positions of non-industrial countries built up mainly after the sequence of financial crises that occurred in the 1990s when markets regained confidence in the stability of their financial system.

Figure 2 compares the differences in relative NFA positions between different country groups over time. The series of aggregate NFA scaled by aggregate GDP (Figure 2(a)) show that industrial countries have gradually moved from a slightly positive to a slightly negative position over time. In contrast, emerging markets rose to a period of positive balances lasting from the mid-1970's to the mid-1980's from an otherwise negative position, while developing countries started from a visibly negative position and experienced minor further deterioration over time. However, the series are all contained within a relatively close range, with only moderate dispersion and no discernible trends. The means of individual NFA/GDP ratios (Figure 2(b)) instead document larger differences between country groups. As these series give equal weight to all group members and are not dominated by large economies, they better reflect developments affecting the majority of countries within a given group. Based on group means, industrial countries exhibit an almost entirely negative position over the sample period, while both the rise and the subsequent fall experienced by

[6] See `http://go.worldbank.org/D7SN0B8YU0`, as of April 26, 2006.

[7] Subfigures (a) and (b) are based on the series for 22 industrial countries and 48 non-industrial countries, respectively, as all other countries do not have sufficiently complete component series.

[8] Note that data points prior to 1980 are only available for a small number of these countries such that the representation would be severely distorted by including these observations.

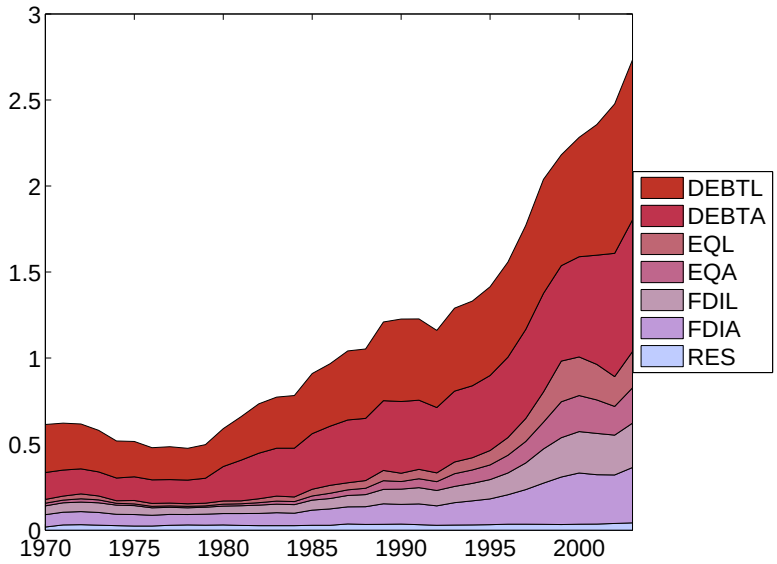
emerging markets are much more pronounced. Developing countries still start from a similar negative position, but display a substantial deterioration throughout the 1980's with further subsequent decline and no major trend reversal. Subfigure (a) also documents the fact that aggregate NFA of all countries is different from zero, which is well-known under the designation "world NFA discrepancy".

Tables 1 and 2 display the degree of commonality in different measures of capital flows. For both industrial and non-industrial countries, the outcomes are very similar to the figures presented in Lane and Milesi-Ferretti (2001, 2006). The left column of each table shows the correlation between the current account balance and the change in net foreign assets. Since most of the difference between the flow figure and the increment in the stock series is caused by the change in the value of the previous period's stock balance, this number can also be interpreted as a measure for the impact of valuation adjustments. In countries with high correlation coefficients the effect of valuation changes is relatively low and vice versa. On average, the figures for non-industrial countries are higher than for industrial countries. However, one has to bear in mind that this partly reflects the lack of appropriate indices for valuation adjustments in these countries rather than less volatile asset prices.

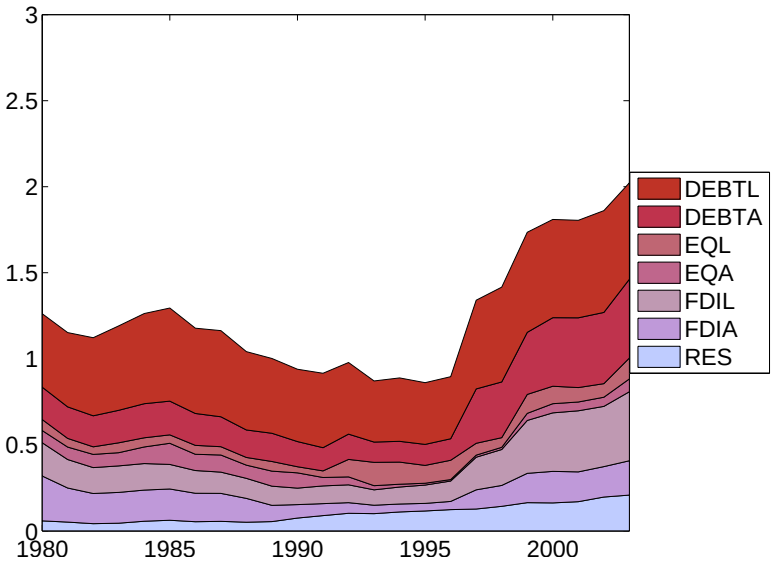
The right column of both tables shows the correlation between the two measures of capital flows constructed by using the different approaches outlined in Section 3.3. Here, a high correlation coefficient indicates a high degree of empirical equivalence between accumulated flows and extrapolated stocks. Although the correlation figures are usually larger than those in the left column, especially for industrial countries, the correlation in many cases is still far from unity.

In a last step, we separately identify each country's net debt and net equity (including FDI) position in the most recent period available (Figure 3). For the group of industrial economies, this comparison reveals that the majority of countries display a positive net equity, but a negative net debt asset position, with a net equity-net debt correlation coefficient of -0.16. So it would seem that from a national perspective, external borrowing is used for maintaining a foreign equity portfolio. Both emerging markets and developing countries instead virtually always show a negative net equity balance, in the vast majority of cases coupled with negative net debt assets. However, among emerging markets there is a positive correlation of 0.27 between the two asset categories, while for developing countries the correlation is -0.37. This suggests that depending on the stage of development, countries either face a trade-off between debt and equity financing or are allowed to use the two instruments as complements.

Figure 1: Sum of Gross Asset and Liability Stocks

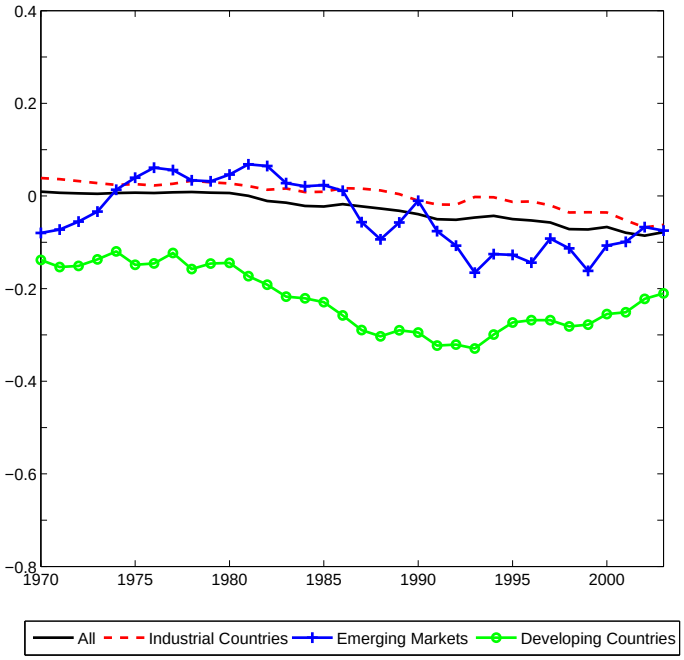


(a) Industrial Countries, 1970 – 2003

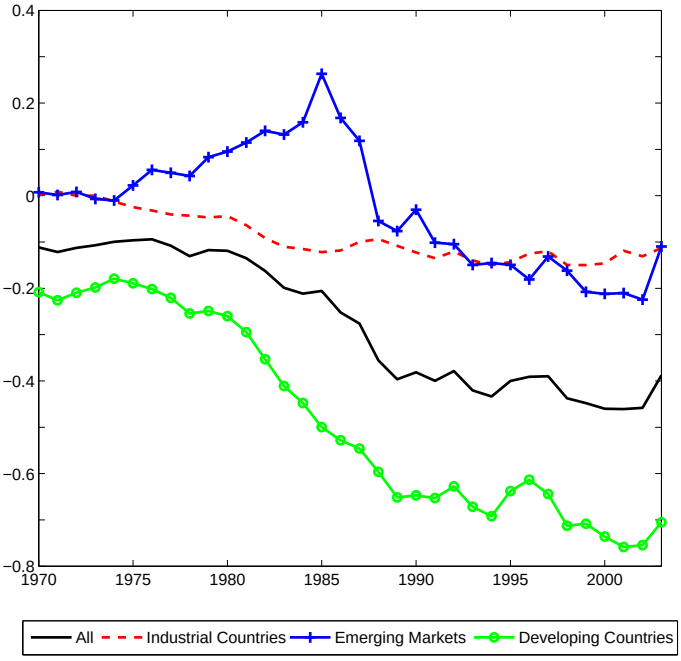


(b) Non-industrial Countries, 1980 – 2003

Figure 2: Net Foreign Assets



(a) Aggregate NFA/Aggregate GDP



(b) Mean of NFA/GDP Ratios

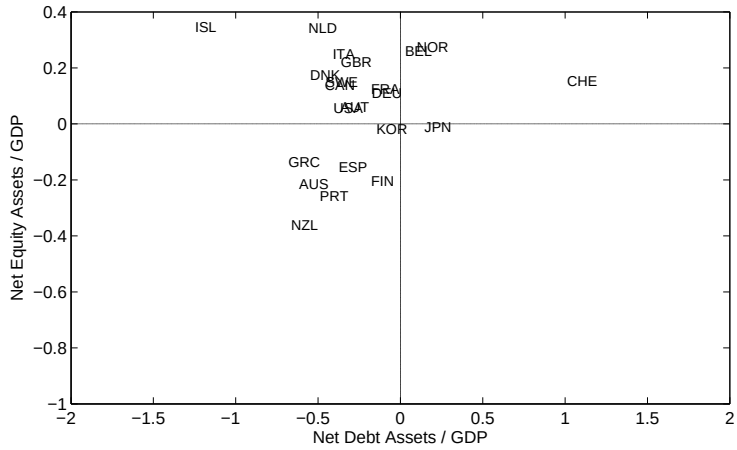
Table 1: Correlations: Industrial Countries

Country	corr(CA, ΔNFA)	corr(ΔNFA^{CF}, ΔNFA)
USA	0.50	0.88
UK	0.33	0.57
Austria	0.44	0.38
Denmark	0.70	0.61
France	0.43	0.31
Germany	0.72	0.19
Italy	0.51	0.59
Netherlands	-0.18	-0.10
Norway	0.99	0.99
Sweden	0.56	0.49
Switzerland	0.00	-0.19
Canada	0.71	0.77
Japan	0.47	0.87
Finland	0.14	0.98
Greece	0.64	0.64
Iceland	0.30	0.42
Portugal	0.58	0.69
Spain	0.30	0.85
Australia	0.40	0.86
New Zealand	0.11	0.59
Korea	0.92	0.92
Mean	0.46	0.59

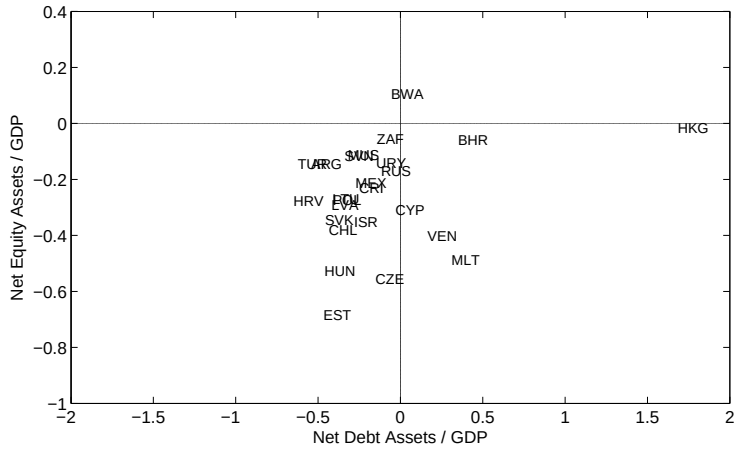
Table 2: Correlations: Non-industrial Countries

Country	corr(CA, ΔNFA)	corr(ΔNFA^{CF}, ΔNFA)
Argentina	0.65	0.84
Bangladesh	0.48	0.48
Bolivia	0.52	0.52
Brazil	0.33	0.87
Bulgaria	0.56	0.88
Cameroon	0.20	0.20
Chile	0.66	0.63
China	0.89	0.89
Colombia	0.84	0.84
Costa Rica	0.50	0.50
Ecuador	0.85	0.85
Egypt	0.82	0.82
Guatemala	0.79	0.79
Hungary	0.56	0.78
India	0.80	0.81
Indonesia	0.66	0.66
Israel	0.60	0.77
Jordan	0.81	0.81
Kenya	0.69	0.69
Malaysia	0.64	0.64
Mexico	0.31	0.31
Morocco	0.71	0.71
Nicaragua	0.75	0.75
Nigeria	0.79	0.79
Pakistan	0.86	0.86
Paraguay	0.80	0.80
Peru	0.70	0.63
Philippines	0.70	0.77
Poland	0.69	0.75
Romania	0.79	0.84
Saudi Arabia	0.98	0.98
Singapore	0.23	0.38
South Africa	0.08	0.42
Syria	0.87	0.87
Thailand	0.89	0.89
Tunisia	0.24	0.34
Turkey	0.28	0.66
Uruguay	0.23	0.23
Venezuela	0.83	0.84
Mean over 129 countries	0.65	0.67

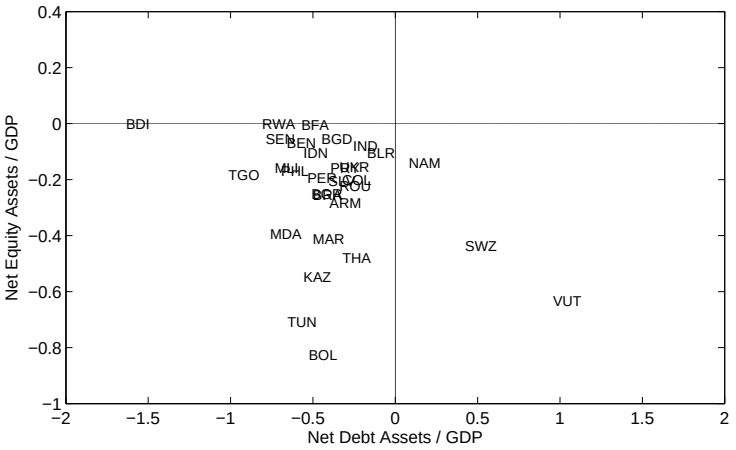
Figure 3: Debt/Equity Distribution



(a) Industrial Countries



(b) Emerging Markets



(c) Developing Countries

Appendix

A Tables

Table A.1: Source Variables

Name	Code
Balance of Payments Statistics (BOPS), flow data:	
CURRENT ACCOUNT, N.I.E.	xxx78ALDZF...
CAPITAL ACCOUNT, N.I.E.	xxx78BCDZF...
DIRECT INVESTMENT ABROAD	xxx78BDDZF...
DIR. INVEST. IN REP. ECON., N.I.E.	xxx78BEDZF...
PORTFOLIO INVESTMENT ASSETS	xxx78BFDZF...
PORTFOLIO INVESTMENT LIAB., N.I.E.	xxx78BGDZF...
PI EQUITY SECURITIES ASSETS	xxx78BKDZF...
PI EQUITY SECURITIES LIAB	xxx78BMDZF...
PI DEBT SECURITIES ASSETS	xxx78BLDZF...
PI DEBT SECURITIES LIAB	xxx78BNDZF...
FINAN DERIVATIVES: ASSETS	xxx78BWDZF...
FINAN DERIVATIVES: LIABIL	xxx78BXDZF...
OTHER INVESTMENT ASSETS	xxx78BHDZF...
OTHER INVESTMENT LIAB., N.I.E.	xxx78BIDZF...
NET ERRORS AND OMISSIONS	xxx78CADZF...
RESERVE ASSETS	xxx79DBDZF...
International Investment Position (IIP), stock data:	
FIN ACCT TOTAL ASSETS: EPS	xxx79AADZF...
FIN ACCT TOTAL LIAB: EPS	xxx79LADZF...
DIRECT INVESTMENT ABROAD: EPS	xxx79ABDZF...
DIRECT INV IN REP ECONOMY: EPS	xxx79LBDZF...
PORTFOLIO INVESTMENT ASSETS: EPS	xxx79ACDZF...
PORTFOLIO INVESTMENT LIAB: EPS	xxx79LCDZF...
PI EQUITY SECURITIES ASSETS: EPS	xxx79ADDZF...
PI EQUITY SECURITIES LIAB: EPS	xxx79LDDZF...
PI DEBT SECURITIES ASSETS: EPS	xxx79AEDZF...
PI DEBT SECURITIES LIAB: EPS	xxx79LEDZF...
FINAN DERIVATIVES: ASSETS	xxx79ALDZF...
FINAN DERIVATIVES: LIABIL	xxx79LLDZF...
OTHER INVESTMENT ASSETS: EPS	xxx79AFDZF...
OI BANKS ASSETS: EPS	xxx79AIDZF...
OI GEN GOVT ASSETS: EPS	xxx79AHDZF...
OI MON AUTH ASSETS: EPS	xxx79AGDZF...
OI OTH SECT ASSETS: EPS	xxx79AJDZF...
OTHER INVESTMENT LIAB: EPS	xxx79LFDZF...
OI BANKS LIAB: EPS	xxx79LIDZF...
OI GEN GOVT LIAB: EPS	xxx79LHDZF...
OI MON AUTH LIAB: EPS	xxx79LGDZF...
OI OTH SECT LIAB: EPS	xxx79LJDZF...
RESERVE ASSETS: EPS	xxx79AKDZF...

Table A.1: Source Variables (continued)

Name	Code
International Financial Statistics, stock data:	
TOTAL RESERVES MINUS GOLD	xxx.1L.DZF...
World Bank, Global Development Finance 2005, stock data:	
TOTAL DEBT STOCKS	xxxDTDOD-DECTCD
IMF Direction of Trade Statistics, flow data:	
EXPORTS FOB	xxx70..DZDxxx
IMPORTS CIF	xxx71..DZDxxx

Table A.2: List of Variables

Name	Description
IMFCODE	Numerical country code (IMF)
ISO3CODE	Alphanumerical country code (3-digit ISO)
COUNTRY	Name of country
DATE	Year of observation
GDP	Nominal GDP in Million U.S. Dollar
NFA	Net foreign asset (NFA) position
DVNFA	Change in valuation of net foreign assets as the sum of valuation changes of components
NFA^{CF}	NFA position calculated from adjusted cumulative current account
$DVNFA^{CF}$	Valuation change in cumulative current account: Sum of valuation changes of components
CCA	Cumulative current account
GFA	Gross foreign assets
GFL	Gross foreign liabilities
FDIA	Foreign direct investment (FDI) assets, stocks consistent with NFA
DVFDIA	Change in valuation of consistent FDI asset stocks
FDIL	FDI liabilities, stocks consistent with NFA
DVFDIL	Changes in valuation of consistent FDI liability stocks
EQA	Equity assets, stocks consistent with NFA
DVEQA	Changes in valuation of consistent equity asset stocks
EQL	Equity liabilities, stocks consistent with NFA
DVEQL	Changes in valuation of consistent equity liability stocks
DEBTA	Debt asset stocks consistent with NFA
DEBTL	Debt liability stocks consistent with NFA
RESGOLD	Reserves minus gold

Table A.3: List of Countries

Name	Code
Afghanistan	AFG
Algeria	DZA
Antigua and Barbuda	ATG
Argentina	ARG
Armenia	ARM
Australia	AUS
Austria	AUT
Bahamas	BHS
Bahrain	BHR
Bangladesh	BGD
Barbados	BRB
Belarus	BLR
Belgium	BEL
Belize	BLZ
Benin	BEN
Bolivia	BOL
Botswana	BWA
Brazil	BRA
Bulgaria	BGR
Burkina Faso	BFA
Burundi	BDI
Cameroon	CMR
Canada	CAN
Central African Republic	CAF
Chad	TCD
Chile	CHL
China	CHN
Colombia	COL
Congo, Republic Of	COG
Costa Rica	CRI
Côte d'Ivoire	CIV
Croatia	HRV
Cyprus	CYP
Czech Republic	CZE
Czechoslovakia	CZS
Denmark	DNK
Dominica	DMA
Dominican Republic	DOM
Ecuador	ECU
Egypt	EGY
El Salvador	SLV
Equatorial Guinea	GNQ
Estonia	EST
Ethiopia	ETH
Fiji	FJI
Finland	FIN
France	FRA
Gabon	GAB

Table A.3: List of Countries (continued)

Name	Code
Gambia	GMB
Germany	DEU
Ghana	GHA
Greece	GRC
Grenada	GRD
Guatemala	GTM
Guyana	GUY
Haiti	HTI
Honduras	HND
Hong Kong	HKG
Hungary	HUN
Iceland	ISL
India	IND
Indonesia	IDN
Iran	IRN
Iraq	IRQ
Ireland	IRL
Israel	ISR
Italy	ITA
Jamaica	JAM
Japan	JPN
Jordan	JOR
Kazakhstan	KAZ
Kenya	KEN
Korea	KOR
Kuwait	KWT
Latvia	LVA
Lebanon	LBN
Lesotho	LSO
Liberia	LBR
Libya	LBY
Lithuania	LTU
Luxembourg	LUX
Madagascar	MDG
Malawi	MWI
Malaysia	MYS
Maldives	MDV
Mali	MLI
Malta	MLT
Mauritania	MRT
Mauritius	MUS
Mexico	MEX
Moldova	MDA
Morocco	MAR
Myanmar	MMR
Namibia	NAM
Nepal	NPL
Netherlands	NLD

Table A.3: List of Countries (continued)

Name	Code
Netherlands Antilles	ANT
New Zealand	NZL
Nicaragua	NIC
Niger	NER
Nigeria	NGA
Norway	NOR
Oman	OMN
Pakistan	PAK
Panama	PAN
Papua New Guinea	PNG
Paraguay	PRY
Peru	PER
Philippines	PHL
Poland	POL
Portugal	PRT
Qatar	QAT
Romania	ROU
Russia	RUS
Rwanda	RWA
Samoa	WSM
Saudi Arabia	SAU
Senegal	SEN
Seychelles	SYC
Sierra Leone	SLE
Singapore	SGP
Slovak Republic	SVK
Slovenia	SVN
Solomon Islands	SLB
Somalia	SOM
South Africa	ZAF
Spain	ESP
Sri Lanka	LKA
St. Lucia	LCA
St. Vincent & Grenadines	VCT
Sudan	SDN
Suriname	SUR
Swaziland	SWZ
Sweden	SWE
Switzerland	CHE
Syrian Arab Republic	SYR
Taiwan	OAN
Tanzania	TZA
Thailand	THA
Togo	TGO
Trinidad and Tobago	TTO
Tunisia	TUN
Turkey	TUR
Uganda	UGA

Table A.3: List of Countries (continued)

Name	Code
Ukraine	UKR
United Arab Emirates	ARE
United Kingdom	GBR
United States	USA
Uruguay	URY
Vanuatu	VUT
Venezuela	VEN
Zambia	ZMB
Zimbabwe	ZWE

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