Online appendix (Not for Publication) to Sovereigns, Upstream Capital Flows, and Global Imbalances

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Appendix A: Construction of Variables and General Patterns in the Data

A.1: Construction of Variables

Our primary sources of the data on annual capital flows are the *International Financial Statistics* database (IFS) issued by the International Monetary Fund (IMF), the *Global Development Finance* database (GDF) by the World Bank (WB), and the *Development Assistance Committee* database (DAC) from the OECD's Development Co-operation Directorate. We also use Lane and Milesi-Ferretti (2007) "External Wealth of Nations Mark II" (LM) data. In addition we rely on the World Bank's *World Development Indicators* (WDI) database for the macro data.

IFS reports BOP transactions as flows of equity and debt. In 1997, the IMF started reporting stock data, i.e., international investment position for each country. This stock data is computed as cumulated flows. However, the stocks of foreign assets and liabilities depend on past flows, capital gains and losses, and defaults, also refereed to as "valuation effects." LM construct estimates of foreign assets and liabilities and their subcomponents for different countries, paying particular attention to valuation effects.[1] As we note in the main text, the IMF data does not provide the complete and comprehensive division of debt by private and public issuers and holders. The WB's GDF database provides detailed data on official and private borrowers, *only* for the countries classified by the WB as developing. Finally, OECD's DAC database presents the detailed data of net development assistance ("aid") for "aid-eligible" recipient countries in developing world. We use all these sources to compute the measure of total net capital flows and decompose them into the private and public components.

Measures of net total capital flows

Our main measure of net (total) capital flows (referred to throughout as *Net Capital Flows (-CA/GDP)*) is an average of the annual observations for the negative of the current account balance from the IFS normalized by the annual nominal GDP from WDI, both in U.S. dollars.

1. LM found that the correlation between the first difference of foreign claims on capital and current account to be generally high but significantly below unity for several countries, confirming the importance of valuation adjustments.

For our robustness checks and replication exercises we use the cumulated PPP-adjusted capital flows measure introduced by Gourinchas and Jeanne (2013). It is estimated by the expression

$$\left[(1/Q_T - 1/Q_0)\, d_0 - \sum_{t=0}^{T-1} \frac{CA_t}{Q_T} \right] / GDP_0$$

as the initial (1980) net external debt d_0 (net foreign asset position plus cumulative net errors and omissions as of 1980 from LM) minus the sum of the current account balances from the IFS over the 1980–1999 in current dollars, PPP-adjusted by the deflator estimated as (for time 0) $Q_0 = \text{Price of Investment}_0 * \text{CGDP/RGDP}_0$ using the PWT ver. 6.1 data, and then normalized by the initial GDP from the PWT, GDP_0. We refer to this measure as *Total Capital Flows/*GDP_0.

For the robustness checks in our earlier NBER working paper version (WP 17396) of this paper we use the following alternatives to this measure: i) The change in the net external position between first and last year of the sample period normalized by GDP in the first year, all in current U.S. dollars from LM following earlier versions of Gourinchas and Jeanne (2013); ii) The change in the net external position between first and last year of the sample period normalized by the respective GDPs in those years, all in current U.S. dollars from LM as in LM and also as in Aguiar and Amador (2011).

Equity Flows

Net FDI+Portfolio Flows/GDP include foreign direct and portfolio equity investment flows. The FDI includes greenfield investments (construction of new factories), investments into the equity capital of existing companies, reinvesting of earnings, and other types of intercompany debt between affiliated enterprizes. Portfolio equity investment includes investments into shares, stock participation, and similar instruments that usually denote ownership of equity.[2] We compute two versions of net equity flows: i) using the annual changes in stock of direct and portfolio equity liabilities minus the annual changes in stock of direct and portfolio equity assets in current U.S. dollars from LM, and ii) using the annual flows of direct and portfolio equity liabilities minus the annual flows of direct and portfolio equity assets in current U.S. dollars from the IMF. We normalize these flows by annual GDP in current U.S. dollars and average out over the sample period.

Debt Flows

2. When a foreign investor purchases a local firm's securities without a controlling stake, the investment is regarded as a portfolio investment. FDI is the equity participation giving a controlling stake. The IMF classifies an investment as direct if as the result of the transaction a foreign investor holds at least 10 percent of a local firm's equity, while the remaining equity purchases are classified under portfolio equity investment. Recently the most of the FDI has been in the form of mergers and acquisitions instead of greenfield investments. In empirical analysis, we do not distinguish between minority and majority shareholders, because this distinction is not relevant for our analysis.

For the (total) *Net Debt Flows/GDP* we use annual changes in stock of debt and other investment liabilities minus the annual changes in stock of debt and other investment assets in current U.S. dollars from LM. As before, we normalize it by annual GDP in current U.S. dollars from WB for consistency with other data, and average out over the sample period.

To dig deeper into the issue of public versus private debt flows, we use all the available components of debt flows coming from the WB GDF database. According to the *GDF 2012 Manual*,[3] the raw data are reported to the WB in the currency of repayment; the WB then converts them into a common currency (U.S. dollars) using official exchange rates published by the IMF at the annual average exchange rate for flows (commitments, disbursements, and debt service payments) and at the exchange rate in effect at the end of the relevant year for stock concepts (debt outstanding). Because of these practices, there may be differences between the change in aggregate stocks from one period to the next and flows during the relevant period.

The WB derives total debt stock and other aggregate measures by adding up loan-level data on stocks and flows after conversion to a common currency. WB explains that changes in the stock of debt from one period to the next can be attributed to net flow of debt, net change in interest arrears, the capitalization of interest, a reduction in debt resulting from debt forgiveness or other debt reduction mechanisms, cross-currency valuation effects.[4] For this reason, the debt stocks reported in GDF may be regarded as *net* concepts (stock of liabilities minus stock of assets), and we refer to the annual changes in debt stocks from GDF as annual *net debt flows*.[5]

As noted in text, the GDF database covers only the countries which are considered developing by the World Bank at the moment a given vintage of the GDF is released. The reason is regulatory. Countries who borrow externally are a part of the World Bank's Debtor Reporting System (DRS) and they are required to report since they receive loans and grants from World Bank, International Bank for Reconstruction and Development and from other international agencies. Borrowers have been required to provide statistics on their public external debt and private sector debt that benefits from a public guarantee and private sector debt that is not guaranteed. In its design, consistency, and continuity of coverage, the DRS is a unique resource. These data is also checked against IMF and BIS statistics for consistency but Lane and Milesi-Ferretti (2001) note that for developing countries there are discrepancies between the loan flows reported in the IMF's BOP statistics and the changes in the external debt stocks as reported by the WB's GDF database.

Next, we precisely define a number of debt components we consider in this paper.

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3. Available at http://data.worldbank.org/sites/default/files/gdf_2012.pdf (accessed on 25/10/2012).

4. The final reconciliation of debt stock and flow are sometimes necessary due to individual country phenomena or reported data inconsistencies.

5. The following passage reinforces our view (p. 324): "private nonguaranteed external debt may be derived as a residual between *net* long-term external borrowing recorded in the balance of payments and *net* longterm public and publicly guaranteed external debt reported to the DRS [Debtor Reporting System]" (our italics).

Components of Debt Flows

In a nutshell, total external debt can be divided into long-term, short-term external debt, and and the use of IMF credit, see Figure 1 in the main text. The long-term debt can be divided, *by the type of debtor*, into private non-guaranteed external debt and public and publicly guaranteed external debt (PPG). The latter can further be divided, *by the type of creditor*, into PPG debt from official creditors (multilateral and bilateral lenders) and PPG debt from private creditors (commercial banks, bonds, and other).

Net total external debt is defined as the debt owed to nonresidents repayable in foreign currency, goods, or services, and represents the total debt owed to nonresident creditors and repayable in foreign currencies or in goods or services by public and private entities in the country. The major components are short-term debt, long-term debt, and use of the IMF credit.

1. *Net Short-Term External Debt*: All debt having an original maturity of one year or less and interest in arrears on long-term debt and on the use of IMF credit. The source does not permit the distinction between public and private non-guaranteed short-term debt.
2. *Net Long-Term External Debt*: Debt that has an original or extended maturity of more than one year and that is owed to nonresidents by residents (both public and private) of an economy and repayable in foreign currency, goods, or services, as well as principal in arrears. Long-term debt has two components: Private non-guaranteed external debt and public and publicly guaranteed long-term debt, aggregated as one item. Public debt is an external obligation of a public debtor, including the national government, a political subdivision (or an agency of either), and autonomous public bodies. Publicly guaranteed debt is an external obligation of a private debtor that is guaranteed for repayment by a public entity.
   (a) *Net private non-guaranteed external debt, PNG*: Long-term external obligations of private debtors that are not guaranteed for repayment by a public entity. It includes the total amount of disbursed and outstanding debt; the amount of disbursements, principal repayments, and interest payments; the principal and interest rescheduled; and the projected principal and interest payments for future years. The data on PNG debt in this publication is as reported or as estimated for countries where this type of external debt is known to be significant.
   (b) *Net Public and Publicly Guaranteed Debt, PPG*: Long-term external obligations of official debtors, including the national government, political subdivisions (or an agency of either), and autonomous public bodies, and external obligations of private debtors that are guaranteed for repayment by a public entity.
      - *Net PPG from Private Creditors:* Includes PPG debt by commercial banks, bondholders, and other private creditors. Commercial bank loans from private banks, other private financial institutions, or private creditors such as manufacturers, exporters, and other suppliers of goods, plus bank credits covered by a guarantee of an export credit. Also included are bank

credits covered by a guarantee of an export credit agency. Bonds, which are either publicly issued or privately placed, are usually underwritten and sold by a group of banks of the market country and are denominated in that country's currency. Loans from commercial banks and other private lenders comprise bank and trade-related lending.

- *Net PPG from Official Creditors:* PPG debt from the multilateral and bilateral lenders. In general, official creditors provide loans (and, in some cases, provide grants) to public bodies, although in some cases they may lend to other entities with a public guarantee.
  - *Net PPG from Multilateral Institutions:* Include loans from the World Bank, the regional development banks, and other multilateral and intergovernmental agencies. Excluded are loans administered by such agencies on behalf of a bilateral donor.
  - *Net PPG Bilateral:* Bilateral loans are loans from governments and their agencies, including central banks, aid agencies, official export credit agencies, and autonomous agencies. This item also includes bilateral or officially guaranteed loans by the member-countries of the OECD Development Assistance Committee.
  - *Net Concessional PPG Debt*: Includes concesional PPG debt from bilateral and multilateral lenders. It represents the long-term external debt outstanding and disbursed that conveys information about the borrower's receipt of aid from official lenders at concessional terms as defined by the DAC, that is, loans with an original grant element of 25 percent or more. Loans from major regional development banks: African Development Bank, Asian Development Bank, and the Inter-American Development Bank, and from the World Bank are classified as concessional, according to each institution's classification and not according to the DAC definition.

(c) *Net Total External Debt From Private Creditors*: Net Private Non-Guaranteed External Debt plus Net PPG Debt from Private Creditors. Notice, that this aggregate uses only a part of the *Net Public and Publicly Guaranteed Debt, PPG*.

3. *Use of the IMF Credit*: Denotes members' drawings on the IMF other than those drawn against the country's reserve tranche position. Use of IMF credit includes purchases and drawings under Stand-By, Extended, Structural Adjustment, Enhanced Structural Adjustment, and Systemic Transformation Facility Arrangements, together with Trust Fund loans. Notice that the use of the IMF credit is counted separately from the PPG debt from multilateral institutions.

Aid-adjusted Net Capital Flows and Components of Aid Flows

We adjust our measure of net capital flows by subtracting aid flows. The aid flows data are net receipts of official development assistance (ODA) from the OECD's DAC

database.[6] These aid flows consist of total grants and concessional development loans net of any repayment on the principal. The loans are composed of development loans from World Bank and also other aid flows and loans, most of which are counted as public debt.

Economic development and welfare are regarded the main objective of ODA, in particular, building developing countries' capacity are ODA-eligible and one-off interventions are not ODA-eligible. Therefore, some flows are not reported as ODA. These are, for example, military aid, the enforcement aspects of peacekeeping, and anti-terrorism activities. In contrast, peacekeeping activities conducted for developmental reasons outside UN peace operations, expenditure on civil police training, social and cultural programmes (e.g., promotion of museums, libraries, art and music schools, and sports training facilities, but not single concert tours or promotion of the culture of the donor), assistance to refugees, the peaceful use of nuclear energy, and research directly and primarily relevant to the problems of developing countries are all counted as ODA.

The OECD DAC database covers the data for countries meet the DAC definition and thus are in "the DAC list of aid recipients." The part II of the DAC list of recipients includes more advanced countries of Central and Eastern Europe, the countries of the former Soviet Union, and certain advanced developing countries and territories. Official aid to these countries has been provided under terms and conditions similar to ODA, but the part II of the DAC list was abolished in 2005 and the collection of data on official aid and other resource flows to Part II countries ended with 2004 data. For this reason, the data for Part II countries were missing when we accessed the OECD database. The World Bank's WDI dataset did retain those countries' data in the series DT.ODA.ALLD.PC.ZS. Conversely, some countries present in the OECD dataset were missing in WDI; mostly they are small island nations, but also countries like Mongolia. We combined the data from both sources to improve the coverage in our time period 1980–2007.

Disbursements are mostly measured on a cash basis, not an accruals basis. Loans for one year or less are not counted as ODA because they are unlikely to have a development impact. Repayments of the principal of ODA loans count as negative flows, and are deducted to arrive at net ODA, so that by the time a loan is repaid, net flow over the period of the loan is zero. Interest is recorded, but is not counted in the net flow statistics. Where official equity investments in a developing country are reported as ODA because of their development intention, proceeds from their later sale are recorded as negative flows, regardless of whether the purchaser is in a developed or a developing country.

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6. Official development assistance data we use is compiled by DAC and available at www.oecd.org/dac/stats/idsonline and through World Bank's WDI online database. In particular a note on ODA eligibility can be found at http://www.oecd.org/dac/aidstatistics/34086975.pdf; the full DAC Directives providing definitions and detailed descriptions of the concepts and categories used in the DAC statistics are available at http://www.oecd.org/dac/aidstatistics/38429349.pdf (accessed on 5/11/2012).

Disbursements are measured on a cash basis, except that:

- wherever contributions to multilateral development banks and funds are made in the form of promissory notes, the full amount of the note is recorded at the time of deposit; and
- the net present value of debt relief provided by implementing a Paris Club debt reorganization through debt service reduction is reportable as an ODA grant in the year of the reorganization.

Some transactions not recorded as transfers in balance of payments statistics are nevertheless eligible to be recorded as ODA, since they represent an effort by the official sector in favor of development. These include the costs of developmentally relevant secondary and tertiary education and vocational training (including stipends and travel) provided to developing country nationals in the donor country, the administrative costs of ODA programmes, subsidies to non-governmental organizations, in donor refugee costs and programmes to raise development awareness in donor countries. Capital investment in the donor country is not regarded as a flow and is therefore not eligible to be reported as ODA. This applies even to the construction and equipment of training and research facilities related to development issues. The running costs of such facilities may, however, be counted as ODA.

Components of Aid Flows

1. *Net ODA*, also referred to as throughout the present paper as *Net Total Aid Receipts*: Flows to developing countries and multilateral institutions provided by official agencies, including state and local governments or by their executive agencies, which meet the following criteria: i) it is undertaken by the official sector; ii) the transaction is administered with the promotion of the economic development and welfare of developing countries as its main objective; and iii) it is concessional in character and conveys a grant element of at least 25 percent. The grant element of a loan is defined as the difference between the face value of the loan and the present value of the repayments on the principal and interest over the life of the loan. This difference (i.e., the grant element) is then expressed as a percentage of the loan's face value.
2. *Net ODA Loans*: Loans with maturities of over one year extended by governments and official agencies for which payment is required in convertible currencies or in kind. Rescheduled loans (loans given maturity extensions and originally made by a government or official agency) and loans originally made by a government or an official agency to refinance indebtedness due to the private or official sector are included if reported as ODA, otherwise they are recorded as other official flows. The net data are reported after deduction of amortization receipts in other than local currencies, including repayments in kind.
3. *Net Total Grants*: Net ODA flows minus net ODA loans; they are either official (i.e. public body) or private in origin, they include transfers made in cash or in kind in respect of which no legal debt is incurred by the recipients. Included also are grants for reparations and indemnification payments made

at the government level and technical assistance. However, reparations and indemnification payments to private individuals, insurance, and similar payments to residents of developing countries are excluded. Domestic and overseas administrative costs of aid programs are, in principle, also excluded. Grants are recorded on a net basis.

4. *Net ODA flows from Multilateral*: Same as net ODA flows but coming from all multilateral institutions.
5. *Net ODA loans from Multilateral*: Same as net ODA loans but coming from all multilateral institutions.
6. *Total Grants Multilateral*: Net ODA flows multilateral minus net ODA loans multilateral.
7. *Net ODA Flows from IMF*: Same as net ODA flows but coming from only the IMF.
8. *Net ODA Loans from IMF*: Same as net ODA loans but coming from only the IMF.

The Components of Government Savings.

Current revenue of the consolidated central government, excluding grants: Revenue is cash receipts from taxes, social contributions, and other revenues such as fines, fees, rent, and income from property or sales; from the WB.

Current expenditure of the consolidated central government: Expenditure is cash payments for operating activities of the government in providing goods and services. It includes compensation of employees, interest and subsidies, grants, social benefits, and other expenses such as rent and dividends; from the WB.

Grants and other revenue: Grants and other revenue include grants from other foreign governments, international organizations, and other government units, interest, dividends, rent, requited, non-repayable receipts for public purposes, and voluntary, unrequited, non-repayable receipts other than grants; from the WB.

Capital transfers to abroad: the IMF's BOP series Current Transfers–Debit, with the sign reversed for ease of interpretation, including all transfers that are not transfers of capital; they directly affect the level of disposable income and influence the consumption of goods or services.[7] The two main categories are (i) general government and (ii)) other sectors. (1) comprise current international cooperation, which covers current transfers—in cash or in kind—between governments of different economies or between governments and international organizations (e.g., current international cooperation between different governments, payments of current taxes on income and wealth, etc.). (ii) comprise those occurring between individuals, between nongovernmental institutions or organizations (or between the two groups),

7. By BOP Fifth Edition (BPM5) convention, all the debit transactions (foreign asset purchases) are included with the minus sign. Current transfers consist of all transfers that do not involve (i) transfers of ownership of fixed assets; (ii) transfers of funds linked to, or conditional upon, acquisition or disposal of fixed assets; (iii) forgiveness, without any counterparts being received in return, of liabilities by creditors. All of these are capital transfers.

or between nonresident governmental institutions and individuals or nongovernmental institutions (e.g., workers' remittances, premiums—less service charges, and claims on non-life insurance).

Reserve Accumulation: the IMF's BOP series Reserves and Related Items Assets, with the sign reversed for ease of interpretation, which includes the sum of transactions in reserve assets, exceptional financing, and use of the IMF credit and WB loans. The category of Reserve Assets includes monetary gold, SDRs, reserve position in the IMF, foreign exchange assets (such as currency deposits, government and non-government securities, and nonmarketable claims arising from arrangements between central banks or governments).

Measures of Capital Flows used in Reconciling Regressions

Total Capital Flows/GDP$_0$ in Online appendix Table 6 is defined in the beginning of this Online appendix; it is estimated as the initial (1980) net external debt (net foreign asset position plus cumulative net errors and omissions as of 1980) plus the sum of the current account balances over 1980–1999, PPP-adjusted by a deflator computed with PWT ver. 6.1 data and normalized by the initial GDP based on PWT ver. 6.1 data.

Net Public Flows/GDP$_0$ in Online appendix Table 7 is estimated as the initial (1980) net public and publicly guaranteed (PPG) debt from WB minus the stock in international reserves excluding gold from LM as of 1980 plus the sum of over 1980–1999 of (annual differences in PPG debt minus annual flows of international reserves excluding gold from IMF IFS), PPP-adjusted and normalized by the initial GDP computed with PWT ver. 6.1 data.

Net Private Flows/GDP$_0$ in Online appendix Table 7 is calculated as a difference ("residual") of the cumulated PPP-adjusted Total Capital Flows/GDP$_0$ and the cumulated PPP-adjusted Public Flows/GDP$_0$.

The remainder of the measures is considered in Table 5 and Table 6 or in unreported robustness exercises.

Net Private Flows/GDP in Table 5 is the average over the 1980–2000 of the annual net private capital flows estimated by the *"residual method"*, as percentage of annual GDP, both in current U.S. dollars. Here the annual net private capital flows are a difference (residual) of the total net capital flows we use in present paper (average of the current account balance with the sign reversed) and one of the following proxies of the "Net Public Debt Flows":

1. Net PPG Debt Flows – Reserve Accumulation
2. Net PPG Debt Flows + IMF Credit – Reserve Accumulation
3. Net PPG Debt Flows from Official Creditors + IMF Credit – Reserve Accumulation
4. Net Grants + Net PPG Debt Flows from Official Creditors + IMF Credit – Reserve Accumulation
5. Net Total Aid + Net PPG Debt Flows from Multilateral Creditors + IMF Credit – Reserve Accumulation
6. Net Total Aid + IMF Credit – Reserve Accumulation

7. Net Short-Term Public Debt Flows + (3) = Net Short-Term Public Debt Flows + Net PPG Debt Flows from Official Creditors + IMF Credit – Reserve Accumulation
8. Net Short-Term Public Debt Flows + (4) = Net Short-term Public Debt Flows + Net Grants + Net PPG Debt Flows from Official Creditors + IMF Credit – Reserve Accumulation
9. Net Short-Term Public Debt Flows + (5) = Net Short-Term Public Debt Flows + Net Total Aid + Net PPG Debt Flows from Multilateral Creditors + IMF Credit – Reserve Accumulation

where the components of these measures are defined above under Components of Aid Flows and Components of Debt Flows, and Net Short-Term Public Debt Flows is calculated from the data available in GDF as the total sort-term debt flows times the average over time share of PPG debt flows in total long-term debt flows.

The following measures compute net private capital flows directly (*"direct measures"*) by adding up the relevant components of annual capital flows using two alternative data sources. Annual flows are computed as i) the difference between liability and asset flows in current U.S. dollars from the IMF IFS, or ii) as annual changes in stocks of liabilities minus annual changes in assets in current U.S. dollars, adjusted for valuation effects from LM dataset. All the measures are normalized by nominal GDP in U.S. dollars from the WB WDI.

Average Net FDI + Portfolio/GDP (defined above and represents total equity flows) is computed directly as the average over time period of the annual flows of foreign direct investment and portfolio equity liabilities minus annual flows of foreign assets, normalized by GDP in current U.S. dollars.

Average Net FDI + Portfolio +Private Debt Flows/GDP are computed similarly using net annual flows of FDI plus portfolio equity investment plus annual changes in stocks of total debt from private creditors (private non-guaranteed debt and public and publicly-guaranteed debt from private creditors) from WB GDF, normalized by nominal GDP in U.S. dollars.

Explanatory variables used in Reconciling Regressions.

Average per capita GDP growth is the annual rate of change of GDP per capita in 2000 U.S. dollars (times 100) over 1980–2000 from WB WDI.

Average per capita GDP Growth relative to the U.S. is the geometric mean of the rate of change of GDP per capita in 2000 U.S. dollars relative to that of the U.S. over 1980–2000.

The following explanatory variables are computed following the methods of Gourinchas and Jeanne (2013).

Productivity Catch-up Relative to the U.S. (π) is calculated as $\overline{A}_{2000}/g^* \cdot \overline{A}_{2000} - 1$, where $\overline{A}$ is the Hodrick-Prescott trend of productivity estimate $A_t = (y_t/k_t^{\alpha})^{1/(1-\alpha)}$ and g^* is the annual TFP growth observed on average in the U.S. between 1980 and 2000, set to 1.017. In formula for A_t, the y_t denotes GDP per capita and k_t is capital stock

per capita, estimated by the perpetual inventory method from time series data on real investment, assuming a capital share α of 0.3 and a depreciation rate δ of 6 percent. All the data for the estimation of π comes from the PWT ver. 6.1.

Initial Capital Abundance (k_0/y_0) is the level of total capital stock, constructed with the perpetual inventory method from time series data on real investment from the PWT ver. 6.1, assuming a capital share 0.3 and a depreciation rate of 6 percent, and normalized by the initial GDP computed with PWT ver. 6.1 data.

Initial Debt (d_0/y_0) is estimated as the initial (1980) net external debt (net foreign asset position plus cumulative net errors and omissions as of 1980) from LM.

Population Growth (n) is the growth rate of the working-age population over 1980–2000 from WB.

Average KA Openness (Chinn-Ito) is the average over 1980–2000 value of the capital account openness index from Chinn and Ito (2006).

Average KA Openness$\times$*Average per capita GDP growth* is the product (interaction) of Average KA Openness (Chinn-Ito) and Average per capita GDP growth.

Average KA Openness$\times\pi$ is the product (interaction) of Average KA Openness (Chinn-Ito) and Productivity Catch-up Relative to the U.S.

A.2: General Patterns in the Data

In this section of the Online Appendix we present descriptive statistics that show a broad picture of international allocation of capital.

We divide all countries into three groups according to their productivity growth (measured by the average growth rate of the real GDP per capita over 1970–2007). Low-Growth countries are those countries with growth rates below 25th percent quartile (0.9%); High-Growth countries are economies with growth rates above 75th percent quartile (3.2%); the rest of countries are assigned to the Medium-Growth countries group. Online appendix Table 1 shows the descriptive statistics for each of the three groups, low, medium, and high growth, for the period-average of the CA balance to GDP, change in net foreign asset position (NFA) to GDP (both with the sign reversed to interpret as capital flows), and their main components. The table relies on the data from the IMF's IFS, marked "IMF", and also the data that are adjusted for valuation effects from Lane and Milesi-Ferretti (2007), marked "LM". For aid flows we rely on the OECD DAC database, and for debt components we use the World Bank's GDF database (as described in section A.1 in this Appendix). Notice that the negative CA is a flow concept available directly from BOP, while the changes NFA are computed from the stock. Not every country is present in every sub-period, as shown in Online appendix Table 2.

For the longest period 1970–2007, the negative of the current account in the low-growth countries averages 5.4% of GDP; it is 3.5% in the medium-growth countries and 5.4% in the high-growth countries, suggesting no definite long-run relationship between productivity growth and CA deficit. This is because low and high growth countries got the same amount of capital glows on average. The same is true for the

change in NFA based on the IMF data. A slightly different picture emerges when we look at the change in NFA, adjusted for valuation changes from LM. Here we observe a positive relationship between capital flows and growth since highest growth countries received most of the capital flows during 1970–2007.

In columns (5) and (6) of Online appendix Table 1 we report the FDI and portfolio equity flows from two sources. These flows, that are clearly private, are positively correlated with growth. As seen in columns (7) and (8), the same is true for debt flows, regardless of the data source and hence the valuation adjustment.

Columns (9) to (11) show a negative relation between aid receipts and growth, and a positive one between two measures of reserve accumulation and growth.[8] Therefore, low-growth countries are net recipients of debt in the form of aid, and high-growth countries seem to accumulate reserves. The broader aggregate "reserve and related assets" in column (10) includes the transactions with reserve assets, exceptional financing, and use of the IMF credit and loans. The item "reserve assets" includes more liquid external assets readily available to and controlled by the monetary authorities. Both measures give the same overall message—a not surprising result given the correlation between the two measures above 0.7. In column (12) we report the item Net Errors and Omissions (NEO), where a negative value is typically interpreted as unaccounted capital outflows, the "capital flight." There seems to be a weak positive relationship between the NEO and growth: the fastest growing economies experience on average less unrecorded capital outflows.

In column (13), we report a measure for net public debt flows introduced by Aguiar and Amador (2011) and also used by Gourinchas and Jeanne (2013), computed as the period average of the annual changes in stock of public and publicly-guaranteed external debt minus the period average of the annual changes in foreign reserves stocks (excluding gold). The attempt is to get a net international asset position of the overall government, including fiscal authorities and the central bank, where the total PPG debt is a proxy of the external public liabilities while the reserves is a proxy for external government assets. We use the narrow definition of reserves for internal consistency because only this aggregate is available in the data as a stock concept, and the PPG debt is also computed from the stock data. The correlation between growth and net government debt during the 1970–2007 seems negative, which means that the fastest growing countries borrow less on net in terms of public debt. This result gets stronger when we focus on a more precise measure of net government debt in column (14), that we call the *sovereign-to-sovereign capital flows* in the rest of the paper. In this column we do not just use the total PPG debt, which includes some debt flows from private creditors (see Figure 1). Instead, we add up the components of debt which we believe conceptually most closely correspond to the transactions between two public entities, possibly represented by the international donor agencies on the creditor side. The components include the PPG from official creditors (other

8. By the BOP convention, the net accumulation of reserve assets is considered net capital outflow and has a negative sign in the BOP statistics because it involves a purchase of foreign assets. We multiply it by minus one (-1), so that a larger reserve accumulation is represented by a larger positive number.

sovereigns or international agencies) and other forms of sovereign borrowing, such as official development assistance (aid) grants and the IMF credit (the details are in Online appendix A). The reserves accumulation is subtracted as before.

To further explore the time-series trends in net capital flows and their main components, we compute averages over shorter time periods. When we look at the sub-periods, no clear pattern jumps out. This is expected given the noisy nature of shorter time span data. However, the periods 1990–2007 and 2000–2007 seem to mimic the general long term trends in all categories of flows, and the private types of flows in column (5)–(6) positively correlate with growth in every sub-period. In addition, columns (11) and (14) clearly show that the low-growth countries borrow (or receive aid) in terms of government debt (liabilities) and middle- and high-growth countries lend in terms of reserve accumulation (government assets).

Next, we present country-by-country data to identify net borrower and net lender countries and the components of capital that drive this behavior. In Online appendix Table 3, countries from the largest "Raw World" sample of 156 countries are grouped by large geographic regions according to the World Bank classification, and sorted from lowest to highest rate of growth within each region. We also report cross-sectional averages for each region to establish possible regional patterns. We do not report the measures of capital flows adjusted for valuation effects for brevity because the previous results show that the valuation adjustment does not alter the cross-sectional and over time patterns.

In Africa, capital flows are clearly dominated by aid receipts. Once aid flows are subtracted from CA, there is capital flight on average out of this region that has experienced low growth rates on average. This is the predicted outcome of the standard theory.

An interesting pattern emerges in Asia: in contrast to the common view, only 4 high-growth countries are net savers: China, Korea, Malaysia, and Singapore. These countries, however, are all net borrowers in terms of equity while their public saving (the negative of the public debt) find their way in the accumulation of reserves. Comparing these countries to other fast-growing countries, like Cambodia or Lao PDR, shows the latter heavily rely on aid and public debt and do not stockpile reserves.

Countries in Europe and Central Asia include mostly emerging market economies. While some (e.g., Albania, Armenia, Kyrgyzstan) rely heavily on aid, for most of these countries aid is a small portion of GDP. More importantly, both private flows and public debt seem to follow the prediction of the neoclassical model exhibiting a positive correlation with growth. The similar behavior of private flows and public debt flows is visible in countries of Latin America. There, the positive correlation between growth and aid-adjusted net capital flows is strong.

An interesting feature of the African and Latin American countries is a clear difference between the narrow reserve assets aggregate and the broader one, including "reserve-related items" (exceptional financing and use of the IMF loans). These countries have relied more on the multinational financing for various reasons (lower income countries, debt crisis, etc.). For the rest of the countries the difference is immaterial. For completeness, the table shows industrial countries. All of the rich

countries with the above average growth are net borrowers except Japan, Finland, and Norway.

We find similar patterns for the 1990–2007 and 2000–2007. Although now we have 7 countries in Asia that display current account surpluses (Indonesia and Thailand are added to the previous 4 during the 1990–2007 and India added to this list during the 2000–2007). The broad patterns remain the same. These countries are net borrowers in FDI, and their government behavior, in particular reserves minus government debt, is the main driver of the current account surpluses (results for 1990-2007 are available upon request).

Appendix B: Samples

Our most inclusive *Raw World* sample includes 22 advanced OECD countries (Australia, Austria, Belgium, Canada, Switzerland, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Ireland, Iceland, Italy, Japan, the Netherlands, Norway, New Zealand, Portugal, Sweden, the United States) and all non-OECD countries where data on their current account balances and the level and growth of GDP per capita is available for a chosen minimum number of years over the 1980–2007. The time coverage of the data varies substantially from country to country and in particular for developing countries. Most developing countries report data starting in the mid-1970s. Some countries drop put from the official releases of the databases, such as GDF, once they reach some level of economic development as we noted above. For other countries, data are not available until the mid 1980s or the early 1990s, such as Eastern Europe. In the former Soviet Union the early years following its collapse witnessed the hyperinflation episodes making the data unreliable until the macro stabilization was achieved for most of countries around 1995. Results without imposing this assumptions are qualitatively the same and available upon request.

The choice of the minimum number of years in the initial sample affects the size of all our subsamples, except for PWT and 1970 samples, defined below, that are built using different principles and used for comparison with the literature.

In Table 1 we retain countries with the CA/GDP and growth for a minimum of 10 years (or 35 percent of the time) over the 1980–2007, giving us 165 countries. In the rest of the paper, including Online appendix Table 1 and 3, we are more conservative and require countries to have that data close a half of the time over the 1980–2007 (minimum 13 years), retaining 156 countries in the Raw World sample.

The most inclusive *Raw Developing* sample excludes 22 advanced OECD countries from the Raw World sample (Online appendix Table 3 indicates the countries in each sample; Online appendix Table 2 presents the exact time-series coverage).

Formal outlier checks. We construct our developing countries samples based on the formal econometric outlier tests designed to detect the unusual and influential data. First, we select our samples by removing the influential observations with large residuals and high leverage (an extreme value compared to the sample mean). For this we use DFITS statistics (Welsch and Kuh, 1977) and Cook's D statistics (Cook

1977), both of which attempt to summarize the information in the leverage and the size of residuals into one statistic. Cook's D and DFITS are very similar except for scalingand give us very similar answers. We eliminate all countries detected by those two statistics using the convention cut-off point for Cook's D of $4/N$ and for DFITS of $2\sqrt{k/N}$, where k is the number of predictors (including the constant) in the linear regression of a relevant measure of capital flows on growth (in our case, $k = 2$) and N is the number of observations in sample. We also experiment with a somewhat stricter outlier cleaning procedure where we remove countries with the predicted Studentized residuals that exceed +3 or -3 and countries with leverage greater than $(2k+2)/N$.[9]

Second, we use more specific measure of influence called DFBETA that assess how the regression coefficients are changed (increased or decreased) by deleting one observation at a time. This measure is created for our predictor, GDP per capita growth, to measure the difference between the regression coefficient when the *i*th country is included and excluded, the difference being scaled by the estimated standard error of the coefficient. We follow the recommendation of Belsley, Kuh, and Welsch (1980) and delete countries with abs(DFBETA)$> 2\sqrt{N}$.

Our non-OECD developing country samples, obtained with formal outlier checks, are as follows:

1. *Developing* sample: A subset of Raw Developing sample including 108 non-OECD countries where the data on their current account balance/GDP and GDP per capita growth is available close to 50 percent of the time over 1980–2007 and whose data for the main underlying components of capital flows (FDI plus portfolio equity/GDP and public and publicly-guaranteed debt/GDP) are non-missing in at least one year over 1980–2007. Having non-missing components is important in a number of decompositions of the CA balance we discuss.

   We further eliminate the outliers in terms of the (-1)current account balance/GDP and GDP growth using the formal outlier checks described above. Online appendix Figure 1 highlights the essence of these tests by showing the outliers detected in the Raw Developing sample. The upper plot presents the leverage against standardized squared residuals. Cook's D and DFITS statistics allow to detect the countries which have a high leverage, or residuals, or both. The lower plot depicts the measure of influence DFBETA. It indicates which countries, when eliminated, result in a large (positive or negative) change of the coefficient in the regression of Net capital flows (-CA/GDP) on Growth as in col(2), Panel A in Table 2. The figure presents the plot of the measure of influence DFBETA from the regression of net capital flows on growth in Raw Developing sample, 1980–2007, as in col(2), Panel A in Table 2. We eliminate the countries which fall outside of the critical bands for DFBETA (abs(DFBETA)$> 2\sqrt{N}$) in this sample,

9. All these cutoffs are recommended in *Regression with Stata.* UCLA: Statistical Consulting Group. Available at http://www.ats.ucla.edu/stat/stata/webbooks/reg/chapter2/statareg2.htm (accessed December 2013).

indicated by the solid horizontal lines. With minimum 10 years of CA/GDP and growth data restriction this sample includes 116 countries.

2. *Benchmark* sample: A subset of Raw Developing sample including 98 non-OECD countries where the data on their current account balance/GDP and GDP per capita growth is available close to 50 percent of the time over 1980–2007. We further eliminate the outliers in terms of the (-1)current account balance/GDP, FDI plus portfolio equity/GDP, public and publicly-guaranteed debt/GDP, and GDP per capita growth using the formal outlier checks described above. Because the tests are sample-specific, we implement them for growth and all chosen measures of capital flows always in a Raw World sample (not sequentially, eliminating the countries and thus reducing the sample size on each step) after which all countries detected by three tests as outliers are deleted. With minimum 10 years of CA/GDP and growth data restriction this sample includes 112 countries.

We also consider several other samples for comparison and reconciling with the literature. No outlier tests have been conducted in these samples.

1. *PWT sample:* a 67-country subsample of Raw Developing sample where capital stock estimates based on the Penn World Tables version 6.1 data is available 100 percent of the time. This sample plus Taiwan is considered by Gourinchas and Jeanne (2013).
2. *1970 sample:* a 46-country subsample of of Raw Developing with 1970's data for GDP, total foreign assets and liabilities, foreign reserves (excluding gold), and stock of public and publicly-guaranteed external debt are non missing 100 percent of time, and 1970 GDP per capita is less than 10,000 of 2000 US dollars. This sample is considered in Aguiar and Amador (2011).

TABLE 1. Net Capital Flows and Growth in Developing Countries, 1970–2007

Raw World Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
		Measures of Flows												
	GDP per capita growth	Net capital flows (-CA/GDP)	Net capital flows (-NFA/GDP)	Net capital flows (-NFA/GDP)	Net FDI +Portfolio Flows/GDP	Net FDI +Portfolio Flows/GDP	Net Debt Flows/GDP	Net Debt Flows/GDP	Net Total Aid Receipts /GDP	Reserve & Related Assets Accumulation /GDP	Reserve Accumulation /GDP	Net E&O /GDP	Net PPG Debt Flows –Reserve Accumulation /GDP	Net Grants +Net PPG Debt Flows from Official Creditors +IMF Credit -Reserve Accumulation /GDP
Data Source	WB	IMF,WB	IMF,WB	LM	IMF,WB	LM	IMF,WB	LM	OECD,WB	IMF,WB	IMF,WB	IMF,WB	WB	IMF,OECD,WB
33 Low-Growth Non-OECD Developing Countries														
1970–2007	-0.14	5.36	0.34	1.69	1.09	1.74	-0.03	0.88	11.53	-3.19	0.49	-0.77	3.24	14.27
1970–1979	0.39	0.97	3.59	1.82	0.76	1.14	1.42	2.30	8.16	0.07	1.33	-0.61	5.14	9.71
1980–1989	-1.33	6.64	-0.32	3.60	0.31	0.21	1.47	3.78	13.52	-3.99	0.02	-0.75	7.54	17.64
1990–1999	-0.14	5.85	-1.56	2.59	1.75	2.13	-0.45	0.91	13.63	-4.01	0.09	-1.50	1.73	13.87
2000–2007	0.94	5.50	1.40	-1.34	2.50	3.17	-2.19	-2.69	9.90	-2.29	1.91	0.27	-2.21	10.93
1990–2007	0.47	5.58	1.65	0.85	1.91	2.58	-1.39	-0.68	11.62	-3.32	0.65	-0.84	0.02	12.62
1980–2007	-0.25	5.69	0.31	1.68	1.13	1.87	-0.21	0.66	12.70	-3.52	0.41	-0.80	2.95	14.53
67 Medium-Growth Non-OECD Developing Countries														
1970–2007	1.96	3.48	1.79	2.79	1.99	2.68	0.38	1.77	5.26	-0.41	1.61	-0.05	0.81	5.08
1970–1979	3.11	3.72	.	4.18	1.40	1.87	3.53	3.80	4.39	0.96	1.67	-0.26	3.30	4.74
1980–1989	0.57	4.19	-1.80	4.53	0.95	0.75	1.09	4.00	5.43	-2.33	0.46	-0.22	4.16	7.61
1990–1999	1.17	4.32	3.52	2.53	1.88	2.35	0.16	1.52	6.36	-1.16	1.55	0.20	-0.06	5.46
2000–2007	2.89	1.87	3.69	0.66	3.45	4.77	-1.12	-1.40	3.60	1.33	2.33	-0.35	-1.72	2.00
1990–2007	2.14	3.13	4.07	1.71	2.72	3.52	-0.41	0.19	4.85	0.17	1.96	-0.09	-0.91	3.74
1980–2007	1.67	3.44	1.79	2.56	2.06	2.79	0.04	1.35	5.30	-0.58	1.55	-0.03	0.61	5.01
34 High-Growth Non-OECD Developing Countries														
1970–2007	5.16	5.42	0.81	4.67	4.05	4.57	1.93	2.44	4.44	1.57	2.30	-0.02	0.48	3.07
1970–1979	5.81	4.72	.	2.57	2.09	2.71	4.45	3.51	6.46	2.57	3.38	0.66	1.33	4.10
1980–1989	4.40	6.37	-1.33	4.69	2.85	2.72	3.08	3.76	6.78	0.61	1.80	0.52	3.23	8.52
1990–1999	3.60	5.69	3.07	4.88	4.29	4.48	1.11	2.08	3.85	0.69	1.87	-0.20	0.57	3.47
2000–2007	4.23	4.85	-2.52	3.93	4.99	5.87	0.60	0.84	2.03	2.25	2.54	-0.09	-0.84	0.36
1990–2007	4.11	5.08	-2.63	4.32	4.58	5.10	0.77	1.50	2.80	1.62	2.28	-0.14	-0.28	1.69
1980–2007	4.92	5.32	0.81	4.62	4.14	4.61	1.65	2.21	4.00	1.50	2.22	-0.05	0.40	2.95
22 Advanced OECD Countries (excluding Luxembourg)														
1970–2007	2.25	0.48	1.81	1.28	-0.32	0.27	1.11	1.47	0.00	0.15	0.34	-0.06	.	.
1970–1979	3.08	1.78	1.20	1.59	0.26	0.34	1.90	1.97	0.00	0.22	0.53	0.00	.	.
1980–1989	2.06	1.45	0.36	1.51	0.02	0.22	1.52	1.83	0.00	-0.06	0.45	0.20	.	.
1990–1999	1.77	0.07	1.59	0.62	-0.22	1.03	0.59	-0.13	0.00	0.34	0.35	-0.17	.	.
2000–2007	1.05	-0.03	1.33	1.89	-0.64	-0.64	0.40	2.81	0.00	-0.73	0.56	-0.53	.	.
1990–2007	1.35	0.01	1.57	1.19	-0.40	0.29	0.42	1.18	0.00	-0.25	0.45	-0.36	.	.
1980–2007	1.98	0.35	1.82	1.30	-0.42	0.26	1.06	1.41	0.00	0.12	0.30	-0.10	.	.

Notes: The statistics shown are based on "Raw World" sample of 22 advanced OECD countries and 134 non-OECD countries. All flows are expressed as percent of GDP. The data comes from several sources; the IMF's IFS database ("IMF"); Lane and Milesi-Ferretti Mark II dataset ("LM"); OECD DAC database ("OECD"), and World Bank GDF dataset ("WB"). The countries are divided into groups according to the average 1970–2007 growth rate of the real GDP per capita in 2000 U.S. dollars. Low-Growth Countries are the ones with growth rates below 25th percent quartile (0.94 percent); High-Growth Countries are economies with growth rates above 75th percent quartile (3.19 percent); the rest of countries are assigned to the Medium-Growth Countries group. "Net capital flows (-CA/GDP)" represents the average of the annual current account balance with the sign reversed in current U.S. dollars, normalized by GDP in current U.S. dollars. "Net capital flows (-NFA/GDP)" (IMF,WB data) represents the average of the annual changes in stocks of total liabilities minus total assets from the IMF's International Investment Position statistics in current U.S. dollars, normalized by GDP in current U.S. dollars. "Net capital flows (-NFA/GDP)" (LM data) represents the average of the annual changes in Net Foreign Assets (Net External Position) with the sign reversed as percentage of GDP; these flows include valuation effects. Details of other variables are in Online appendix A and the countries included are listed in Online appendix Table 3.

TABLE 2. Net Capital Flows and Growth: Country Coverage, 1980–2007

Whole World Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
		Measures of Flows												
	GDP per capita growth	Net capital flows (-CA/GDP)	Net capital flows (-NFA/GDP)	Net capital flows (-NFA/GDP)	Net FDI +Portfolio Flows/GDP	Net FDI +Portfolio Flows/GDP	Net Debt Flows/GDP	Net Debt Flows/GDP	Net Total Aid Receipts /GDP	Reserve & Related Assets Accumulation /GDP	Reserve Accumulation /GDP	Net E&O /GDP	Net PPG Debt Flows –Reserve Accumulation /GDP	Net Grants +Net PPG Debt Flows from Official Creditors +IMF Credit -Reserve Accumulation /GDP
Data source	WB	IMF,WB	IMF,WB	LM	IMF,WB	LM	IMF,WB	LM	OECD,WB	IMF,WB	IMF,WB	IMF,WB	WB	IMF,OECD,WB
33 Low-Growth Non-OECD Developing Countries														
1970–2007	33	33	22	31	33	31	33	31	33	33	33	33	27	27
1970–1979	26	25	1	24	25	24	25	24	28	25	25	25	20	20
1980–1989	30	30	2	29	30	29	30	29	32	30	30	30	24	24
1990–1999	33	33	11	31	33	31	33	31	33	33	33	33	27	27
2000–2007	33	28	22	31	28	31	28	31	33	28	28	28	23	23
1990–2007	33	33	22	31	33	31	33	31	33	33	33	33	27	27
1980–2007	33	33	22	31	33	31	33	31	33	33	33	33	27	27
67 Medium-Growth Non-OECD Developing Countries														
1970–2007	67	67	45	66	67	66	67	66	67	67	67	67	63	63
1970–1979	46	47	0	46	47	46	47	46	49	47	47	47	43	43
1980–1989	60	59	3	54	58	54	59	54	60	59	59	59	54	54
1990–1999	66	67	26	66	66	66	67	66	67	67	67	67	63	63
2000–2007	67	66	51	66	65	66	66	66	67	66	66	66	62	62
1990–2007	67	67	51	66	66	66	67	66	67	67	67	67	63	63
1980–2007	67	67	45	66	67	66	67	66	67	67	67	67	63	63
34 High-Growth Non-OECD Developing Countries														
1970–2007	34	34	25	34	34	34	34	34	34	34	34	34	29	29
1970–1979	20	16	0	18	16	18	16	18	21	17	16	16	9	9
1980–1989	22	24	2	24	24	24	24	24	24	24	24	24	19	19
1990–1999	34	34	15	34	34	34	34	34	34	34	34	34	29	29
2000–2007	34	34	25	34	33	34	34	34	34	34	34	34	29	29
1990–2007	34	34	25	34	34	34	34	34	34	34	34	34	29	29
1980–2007	34	34	25	34	34	34	34	34	34	34	34	34	29	29
22 Advanced OECD Countries (excluding Luxembourg)														
1970–2007	22	22	22	22	22	22	22	22	22	22	22	22	0	0
1970–1979	20	20	3	21	20	21	20	21	21	20	20	20	0	0
1980–1989	21	21	16	22	21	22	21	22	22	21	21	21	0	0
1990–1999	21	21	21	22	21	22	21	22	22	21	21	21	0	0
2000–2007	22	22	22	22	22	22	22	22	22	22	22	22	0	0
1990–2007	22	22	22	22	22	22	22	22	22	22	22	22	0	0
1980–2007	22	22	22	22	22	22	22	22	22	22	22	22	0	0

Notes: The table presents country coverage of average growth and measures of capital flows by sub-periods and country groups from Online appendix Table 1.

TABLE 3. Net Capital Flows and Growth, by Country, 1980–2007

Out of Raw World Sample

							(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		Raw Deve -loping Sample	Deve -loping Sample	Bench- mark Sample	PWT Sample	1970 Sample	GDP per capita growth	Net capital flows/GDP (-CA/GDP)	Aid-adjusted net capital flows/GDP	Net FDI +Portfolio Flows/GDP	Net Debt Flows/GDP	Net total Aid Receipts /GDP	Reserve & Related Assets Accumulation /GDP	Reserve Accumulation /GDP	Net E&O /GDP	Net PPG Debt Flows –Reserve Accumulation /GDP	Net Grants +Net PPG Debt Flows from Official Creditors +IMF Credit -Reserve Accumulation /GDP
									Africa								
CIV	Cote d'Ivoire	X	X	X	X	X	-2.1	4.9	0.5	1.3	-2.5	4.4	-6.1	0.5	-0.5	2.3	5.3
DJI	Djibouti	X	X	.	.	.	-1.9	-0.2	-17.1	3.2	-4.4	19.4	-2.8	0.2	-4.5	4.2	18.3
NER	Niger	X	X	X	X	.	-1.5	7.5	-7.1	0.4	1.4	14.6	-0.1	0.3	1.9	1.4	15.2
CAF	Centr. Afr. Rep.	X	X	X	.	.	-1.3	4.4	-10.2	0.1	3.0	12.2	-1.3	0.8	0.0	3.5	14.5
MDG	Madagascar	X	X	X	X	X	-1.2	8.0	-3.3	0.3	-0.8	11.4	-6.5	0.6	0.3	2.8	11.6
ZWE	Zimbabwe	X	X	X	.	.	-0.9	2.9	-1.6	0.1	2.7	4.5	0.1	0.4	0.4	2.3	5.9
GAB	Gabon	X	X	X	X	X	-0.7	-3.4	-5.1	0.1	-4.8	1.6	-2.2	0.3	-0.9	1.8	4.3
ZMB	Zambia	X	X	.	.	X	-0.7	13.0	-2.0	2.7	-0.9	17.9	-8.5	0.3	-0.7	3.0	17.1
BDI	Burundi	X	X	X	.	.	-0.6	9.2	-12.6	0.1	2.0	20.2	-8.1	1.3	-1.6	3.1	21.5
COM	Comoros *	X	X	X	.	.	-0.6	7.5	-20.4	0.5	9.7	20.6	-0.0	1.4	-2.7	6.1	26.2
TGO	Togo	X	X	X	X	X	-0.5	7.6	-1.8	2.0	1.8	9.4	-3.1	1.2	0.0	0.1	9.2
SLE	Sierra Leone	X	X	X	.	.	-0.1	7.5	-11.6	0.2	-0.4	19.2	-4.8	0.9	1.4	2.2	18.8
CMR	Cameroon	X	X	X	X	X	-0.0	3.5	-0.9	1.0	-0.2	4.4	-2.4	0.5	-0.2	0.7	4.6
MWI	Malawi	X	X	X	X	.	0.1	9.1	-12.0	0.9	3.7	21.2	-0.7	-0.1	0.4	3.1	22.9
GNB	Guinea-Bissau	X	.	.	.	.	0.1	26.6	-14.9	0.7	2.3	41.3	-12.8	1.8	-2.7	15.8	46.8
GMB	Gambia	X	X	X	.	.	0.1	3.7	-16.4	1.3	0.6	17.7	-1.9	1.5	-1.5	5.2	21.1
SEN	Senegal	X	X	X	X	X	0.2	7.7	-3.2	0.8	0.9	10.9	-3.6	0.6	-0.0	1.3	10.8
KEN	Kenya	X	X	X	X	X	0.3	5.7	-1.1	0.4	2.3	6.8	0.3	1.1	2.7	0.9	6.2
ZAF	South Africa	X	X	X	X	.	0.4	0.5	0.3	0.8	-0.0	0.2	0.5	0.5	0.3	-0.5	-0.6
DZA	Algeria	X	X	X	.	X	0.4	-4.6	-4.9	0.3	-1.3	0.4	3.3	3.5	-0.3	-3.6	-3.6
MRT	Mauritania	X	X	.	.	.	0.5	10.6	-11.3	0.7	6.9	19.7	-4.0	-0.1	-1.1	9.1	24.3
NAM	Namibia	X	.	.	.	.	0.6	-3.6	-7.8	-1.5	-7.0	2.9	-2.2	1.2	1.4	.	.
MLI	Mali	X	X	X	X	X	0.6	9.1	-8.2	1.4	1.9	17.3	-2.1	1.2	-0.2	2.4	16.5
NGA	Nigeria	X	X	X	X	X	0.7	-4.0	-5.0	2.9	-11.0	1.0	-4.4	1.9	-0.6	0.9	1.7
IRN	Iran	X	X	X	X	.	0.9	-1.0	-1.1	0.0	-1.1	0.1	-0.3	-0.3	-0.3	1.1	0.9
BEN	Benin	X	X	X	X	.	0.9	7.4	-3.1	1.4	-2.1	10.5	-5.6	1.3	0.4	0.7	9.7
GHA	Ghana	X	X	X	X	X	1.0	4.8	-3.9	1.5	3.8	8.7	0.6	1.1	-0.2	1.4	7.8
ETH	Ethiopia	X	X	X	X	.	1.1	2.6	-7.2	0.4	0.9	9.8	-2.4	-0.4	-1.0	1.6	10.3
COG	Congo Rep. Of	X	X	X	X	.	1.1	10.4	4.3	4.6	-9.4	6.1	-14.3	1.1	0.6	5.8	8.6
YEM	Yemen	X	X	X	.	.	1.3	1.0	-2.9	0.9	-5.0	3.9	-0.8	3.7	-0.1	-2.9	1.0
JOR	Jordan	X	X	X	X	.	1.4	3.5	-7.7	3.6	3.6	11.1	3.9	5.8	-0.2	-1.6	7.6
SYR	Syrian	X	X	X	X	.	1.4	-1.2	-4.6	0.7	-0.1	3.4	1.6	1.6	-0.3	0.8	3.7
LSO	Lesotho	X	X	.	.	.	1.5	2.4	-14.6	2.7	-4.6	16.9	5.6	5.8	3.0	-1.5	12.2
RWA	Rwanda	X	X	X	X	X	1.5	3.9	-16.2	0.6	-0.1	20.2	-0.4	1.0	0.5	0.7	19.6
TZA	Tanzania	X	X	X	X	.	1.8	10.5	-6.0	2.4	0.8	16.4	-1.4	1.7	-0.5	-1.3	13.8
MAR	Morocco	X	X	X	X	X	1.9	1.9	-0.9	1.0	0.8	2.8	0.0	1.6	0.1	0.8	2.4
BFA	Burkina Faso	X	X	X	.	.	2.0	5.8	-7.4	0.4	0.9	13.7	-1.9	0.8	0.1	0.8	12.4
SDN	Sudan	X	X	X	.	X	2.1	4.8	-0.2	2.4	0.8	5.0	-1.1	0.5	0.9	1.9	5.8
MOZ	Mozambique	X	X	X	X	.	2.1	14.4	-13.0	2.3	1.2	27.4	-13.2	-0.0	-4.1	2.9	31.7
SYC	Seychelles *	X	X	X	.	.	2.2	11.3	5.2	5.5	2.9	6.1	-2.7	0.3	-0.5	4.3	6.5
UGA	Uganda	X	X	X	X	.	2.4	4.2	-7.8	1.8	1.2	12.1	-0.5	1.2	-0.7	0.7	11.5
GIN	Guinea	X	X	X	.	.	2.4	6.0	-3.4	2.0	-0.0	9.4	-2.9	-0.3	1.0	3.2	10.1
AGO	Angola	X	X	X	X	.	2.5	1.0	-2.8	7.2	-8.7	3.8	-4.9	1.6	-2.5	-0.5	2.6
LBY	Libya	X	.	.	.	.	2.6	-11.3	-11.3	-0.3	-1.7	0.0	10.1	10.1	0.7	.	.
TCD	Chad	X	X	X	.	X	2.6	2.0	-11.6	0.7	1.4	12.2	-0.6	0.1	-0.7	1.6	13.1
TUN	Tunisia	X	X	X	X	X	2.6	3.9	2.1	2.6	2.0	1.8	1.3	1.3	0.5	1.4	2.0
EGY	Egypt	X	X	X	X	X	2.9	0.7	-3.7	2.3	-2.9	4.4	-1.1	2.0	0.2	0.7	3.8
SWZ	Swaziland *	X	X	X	.	X	3.4	3.0	-0.9	3.2	-2.4	3.9	0.1	0.1	2.4	0.8	4.4
MUS	Mauritius	X	X	X	X	.	3.6	2.2	0.5	0.7	0.7	1.8	1.6	2.3	2.5	-1.1	0.2
CPV	Cape Verde *	X	X	X	.	.	4.3	7.3	-20.9	3.1	5.7	28.2	1.8	1.3	-1.3	3.1	26.4
BWA	Botswana	X	.	.	X	.	5.0	-5.5	-9.4	1.9	-0.7	3.9	11.1	11.3	3.8	-10.2	-6.7
	N	51	47	43	29	19	51	51	51	51	51	51	51	51	51	49	49
	mean						1.0	4.5	-6.4	1.5	-0.1	10.6	-1.8	1.5	-0.1	1.7	11.0
	sd						1.6	5.9	6.2	1.5	3.8	8.7	4.7	2.3	1.6	3.5	9.9
	min						-2.1	-11.3	-20.9	-1.5	-11.0	0.0	-14.3	-0.4	-4.5	-10.2	-6.7
	max						5.0	26.6	5.2	7.2	9.7	41.3	11.1	11.3	3.8	15.8	46.8
									Asia								
SAU	Saudi Arabia	X	.	.	.	.	-1.7	-1.1	-1.1	1.2	0.6	0.0	2.0	2.0	-0.7	.	.
KWT	Kuwait	X	.	.	.	.	-1.5	-16.1	-16.2	-0.6	-4.6	0.0	1.4	1.4	-10.1	.	.
KIR	Kiribati	X	.	.	.	.	-1.1	6.8	-46.9	0.2	-14.6	39.7	-16.6	-13.0	-12.2	.	.
PNG	Papua New Gunea	X	X	X	X	.	-0.0	2.3	-6.6	3.4	-2.3	8.9	-0.5	1.2	1.3	0.1	8.4
SLB	Solomon Isl. *	X	X	X	.	.	0.2	8.6	-8.9	2.3	0.7	17.5	-2.5	-0.2	2.3	2.1	17.8
PHL	Philippines	X	X	X	X	X	0.7	2.2	0.8	1.4	2.3	1.4	1.0	1.1	-0.6	1.7	1.4
VUT	Vanuatu	X	X	.	.	.	0.7	8.7	-9.8	7.9	-3.4	19.7	-1.2	1.7	-3.3	-0.2	17.0
FJI	Fiji *	X	X	X	X	.	0.8	4.2	1.5	2.8	0.6	2.7	0.8	0.7	0.5	-0.2	2.3
BHR	Bahrain	X	.	.	.	.	0.8	-1.6	-3.8	0.3	-2.8	2.1	1.6	1.6	1.1	.	.
TON	Tonga *	X	X	X	.	.	1.8	2.8	-16.6	1.2	2.7	18.1	0.1	0.1	-2.5	3.7	19.1
NPL	Nepal	X	X	X	X	X	1.8	4.3	-4.5	0.1	2.8	8.7	-0.0	1.4	1.2	1.7	7.8
ISR	Israel	X	.	.	X	.	2.0	1.8	-0.5	0.8	0.3	2.3	-0.1	1.0	-0.4	.	.
MNG	Mongolia	X	X	X	.	.	2.1	14.6	5.7	1.7	11.9	8.9	-1.0	1.3	-0.6	3.4	12.9
WSM	Samoa *	X	X	X	.	.	2.1	3.7	-19.7	0.2	2.1	21.9	2.6	2.8	1.8	1.1	20.7
BGD	Bangladesh	X	X	X	X	.	2.3	1.0	-3.4	0.3	1.1	4.5	0.4	0.4	-0.2	1.7	4.6
PAK	Pakistan	X	X	X	X	X	2.6	2.6	0.2	1.1	1.1	2.3	-0.1	0.7	0.2	1.2	2.4
OMN	Oman	X	X	X	.	.	3.1	-3.0	-3.9	1.6	-0.4	0.9	3.1	3.1	-1.1	-2.0	-1.8
LKA	Sri Lanka	X	X	X	X	X	3.6	5.3	-0.4	1.1	3.5	5.6	-0.3	0.8	0.1	3.0	5.3
LAO	Lao PDR	X	X	.	.	.	3.6	9.5	-3.7	1.5	0.5	13.2	-9.3	-0.0	-2.8	7.2	16.1
MYS	Malaysia	X	X	X	X	X	3.7	-1.8	-2.2	3.4	-0.5	0.3	3.8	3.8	-0.7	-2.2	-3.2
IDN	Indonesia	X	X	X	X	X	3.7	0.6	-0.3	0.4	1.0	1.0	0.5	0.8	-0.4	1.5	1.6
IND	India	X	X	X	X	X	4.1	1.0	0.5	0.8	1.3	0.5	1.1	1.2	0.0	-0.4	-0.4
THA	Thailand	X	X	X	X	X	4.5	1.5	0.9	2.9	0.2	0.6	1.7	2.1	0.2	-1.2	-1.2
SGP	Singapore	X	.	.	X	.	4.7	-9.8	-9.8	3.0	-5.5	0.1	7.7	7.7	0.5	.	.
KOR	Korea Rep. Of	X	.	.	X	.	5.5	-1.0	-1.0	0.1	1.2	0.0	1.7	1.7	-0.5	.	.
KHM	Cambodia	X	X	X	.	.	6.6	4.6	-5.8	4.9	-0.3	10.4	1.6	1.9	-0.2	0.9	9.3
MDV	Maldives	X	.	.	.	.	6.6	12.6	2.2	2.4	9.8	10.3	1.7	2.1	2.1	3.5	9.5
CHN	China	X	.	.	X	.	8.9	-1.9	-2.3	2.7	-0.5	0.3	3.5	3.5	-0.7	-2.6	-3.0

Notes: Continued on the next page.

TABLE 3 (CONT'D). Net Capital Flows and Growth, by Country, 1980–2007

Out of Raw World Sample

							(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		Raw Deve -loping Sample	Deve -loping Sample	Bench- mark Sample	PWT Sample	1970 Sample	GDP per capita growth	Net capital flows/GDP (-CA/GDP)	Aid-adjusted net capital flows/GDP	Net FDI +Portfolio Flows/GDP	Net Debt Flows/GDP	Net total Aid Receipts /GDP	Reserve & Related Assets Accumulation /GDP	Reserve Accumulation /GDP	Net E&O /GDP	Net PPG Debt Flows –Reserve Accumulation /GDP	Net Grants +Net PPG Debt Flows from Official Creditors +IMF Credit -Reserve Accumulation /GDP
	Asia (continued)																
	N	28	19	17	15	8	28	28	28	28	28	28	28	28	28	21	21
	mean						2.6	2.2	-5.6	1.8	0.3	7.2	0.2	1.2	-0.9	1.1	7.0
	sd						2.5	6.2	10.1	1.8	4.6	9.3	4.3	3.2	3.2	2.3	7.7
	min						-1.7	-16.1	-46.9	-0.6	-14.6	0.0	-16.6	-13.0	-12.2	-2.6	-3.2
	max						8.9	14.6	5.7	7.9	11.9	39.7	7.7	7.7	2.3	7.2	20.7
	mean w/o China						2.3	2.4	-5.7	1.7	0.3	7.5	0.0	1.1	-0.9	1.3	7.5
	sd w/o China						2.2	6.2	10.3	1.8	4.7	9.3	4.3	3.2	3.2	2.2	7.6
	min w/o China						-1.7	-16.1	-46.9	-0.6	-14.6	0.0	-16.6	-13.0	-12.2	-2.2	-3.2
	max w/o China						6.6	14.6	5.7	7.9	11.9	39.7	7.7	7.7	2.3	7.2	20.7
	Europe & Central Asia																
ROM	Romania	X	X	X	.	.	1.4	4.3	4.3	2.7	2.5	0.0	1.6	1.9	0.5	-1.0	-1.4
HRV	Croatia	X	X	X	.	.	1.7	4.4	4.1	3.5	5.6	0.3	2.4	2.7	-2.5	0.6	-1.5
HUN	Hungary	X	X	X	.	.	1.7	4.7	4.7	3.2	2.7	0.0	1.3	1.4	-0.2	0.6	-1.2
ALB	Albania	X	X	X	.	.	2.2	5.0	-3.7	2.2	-0.7	8.7	0.6	2.6	2.7	0.0	9.0
CZE	Czech Rep.	X	X	X	.	.	2.3	3.6	3.6	5.2	1.5	0.0	3.1	2.9	0.0	-2.3	-3.1
SVK	Slovakia	X	X	X	.	.	2.3	4.0	4.0	3.3	2.8	0.0	2.9	2.8	0.5	-1.8	-2.8
BGR	Bulgaria	X	X	X	.	.	2.6	3.9	3.9	4.8	-0.0	0.0	0.7	2.2	-0.3	-2.0	-1.4
TUR	Turkey	X	X	X	X	X	2.6	1.7	1.4	0.8	1.1	0.3	0.4	0.9	0.2	0.9	0.1
MDA	Moldova	X	X	X	.	.	2.6	8.8	2.9	5.2	-0.3	5.9	-3.4	2.6	1.1	-0.7	3.4
SVN	Slovenia	X	.	.	.	.	2.9	0.3	0.1	0.4	2.3	0.2	2.0	2.0	-0.3	.	.
KGZ	Kyrgyzstan	X	X	X	.	.	2.9	10.0	-3.2	3.0	6.6	13.2	1.1	3.4	1.8	3.4	10.0
MLT	Malta	X	.	.	.	.	3.0	2.9	2.0	5.4	-1.5	0.8	2.1	2.1	0.3	.	.
CYP	Cyprus	X	.	.	X	.	3.2	4.7	4.0	3.0	3.4	0.7	2.0	2.0	0.1	.	.
UKR	Ukraine	X	X	X	.	.	3.4	-1.9	-2.8	3.2	-2.5	0.9	1.7	2.9	-0.8	-1.9	-1.6
POL	Poland	X	X	X	.	.	3.9	2.6	2.6	2.0	-1.6	0.0	-1.6	1.2	0.1	-0.9	-1.2
RUS	Russian Fed.	X	.	.	.	.	4.4	-7.7	-7.7	0.6	-2.6	0.0	3.1	4.4	-2.1	-4.4	-5.1
KAZ	Kazakhstan	X	X	.	.	.	6.1	2.7	2.1	7.5	1.9	0.7	2.5	2.4	-3.1	-2.2	-2.0
BLR	Belarus	X	X	.	.	.	6.4	3.5	3.2	1.8	2.0	0.4	0.6	0.9	0.1	-0.8	-0.5
LTU	Lithuania	X	X	X	.	.	7.0	8.5	8.5	3.4	5.9	0.0	2.1	2.1	0.9	0.3	-1.9
LVA	Latvia	X	.	X	.	.	7.8	9.8	9.8	4.7	8.0	0.0	2.5	2.3	-1.1	-1.2	-2.0
EST	Estonia	X	.	.	.	.	7.9	9.4	9.4	5.5	5.5	0.0	1.9	1.9	-0.1	-1.3	-1.8
ARM	Armenia	X	.	.	.	.	9.8	10.6	0.9	5.5	5.6	9.7	2.0	3.1	0.4	0.3	6.4
AZE	Azerbaijan	X	.	.	.	.	10.6	10.5	7.5	13.0	1.2	3.1	2.4	2.9	-0.3	-0.9	0.9
	N	23	15	14	2	1	23	23	23	23	23	23	23	23	23	20	20
	mean						4.3	4.6	2.7	3.9	2.2	1.9	1.5	2.3	-0.1	-0.8	0.1
	sd						2.7	4.3	4.2	2.7	3.0	3.7	1.5	0.8	1.3	1.6	4.0
	min						1.4	-7.7	-7.7	0.4	-2.6	0.0	-3.4	0.9	-3.1	-4.4	-5.1
	max						10.6	10.6	9.8	13.0	8.0	13.2	3.1	4.4	2.7	3.4	10.0
	Latin America																
HTI	Haiti	X	X	X	.	X	-1.6	3.8	-6.6	0.5	0.5	10.4	-1.7	0.8	1.1	0.4	9.8
NIC	Nicaragua	X	.	.	X	.	-0.3	24.6	7.7	2.7	-5.1	17.0	-24.9	0.9	-1.4	7.3	22.0
VEN	Venezuela	X	X	X	X	X	-0.1	-4.8	-4.9	1.2	-4.1	0.0	0.4	0.5	-1.5	0.5	-0.1
SUR	Suriname	X	.	.	.	X	-0.1	1.2	-5.2	-6.2	2.0	6.4	-0.1	-0.1	5.1	.	.
BOL	Bolivia	X	X	X	X	X	0.1	3.3	-4.3	3.3	-1.0	7.6	-1.7	1.6	-1.6	-0.5	7.0
GTM	Guatemala	X	X	X	X	X	0.5	4.5	3.0	1.3	1.9	1.5	-0.7	0.6	0.5	0.4	1.5
PRY	Paraguay	X	X	X	.	X	0.6	2.5	1.3	1.0	1.3	1.3	-0.0	0.6	0.0	0.7	1.5
ECU	Ecuador	X	X	X	X	X	0.7	3.0	1.9	1.2	-4.2	1.1	-5.6	0.4	-0.1	2.0	1.9
HND	Honduras	X	X	X	X	X	0.8	7.3	-0.3	2.5	1.5	7.6	-2.0	1.2	-0.0	1.8	8.0
SLV	El Salvador	X	X	X	X	X	0.8	3.2	-1.4	0.9	1.1	4.6	-1.7	0.7	-0.8	1.7	4.9
PER	Peru	X	X	X	X	X	0.9	4.0	3.0	2.1	-0.8	1.1	-2.9	1.3	0.3	0.6	0.9
BHS	Bahamas	X	.	.	.	X	0.9	6.1	6.0	2.1	3.0	0.1	0.2	0.2	1.6	.	.
BRA	Brazil	X	X	X	X	X	1.0	1.5	1.4	1.7	-0.7	0.0	-0.6	0.7	-0.1	0.1	-0.2
BRB	Barbados	X	.	.	.	X	1.0	3.3	2.8	0.8	3.4	0.4	0.6	0.9	-0.3	0.9	0.4
JAM	Jamaica	X	X	X	X	X	1.0	6.1	3.2	2.6	4.3	2.9	0.6	1.1	0.2	3.0	3.7
ARG	Argentina	X	X	X	X	X	1.1	1.2	1.1	1.5	-1.8	0.1	-1.9	0.4	-0.3	1.4	0.2
MEX	Mexico	X	X	X	X	X	1.1	2.1	2.1	2.4	0.4	0.1	0.1	0.6	-0.5	0.6	-0.1
GUY	Guyana	X	X	.	.	X	1.3	17.0	2.8	0.5	-3.3	15.2	-9.7	2.1	-1.3	-6.0	6.6
URY	Uruguay	X	X	X	X	X	1.4	1.2	1.0	1.3	0.9	0.2	0.5	0.8	-0.5	1.5	0.4
COL	Colombia	X	X	X	X	X	1.6	2.1	1.8	1.9	0.9	0.3	0.7	0.7	-0.1	0.8	0.4
CRI	Costa Rica	X	X	X	X	X	1.7	5.6	3.9	2.7	-2.4	1.7	-3.7	1.3	1.6	0.8	1.2
PAN	Panama	X	X	X	X	X	1.9	2.6	1.9	6.0	-3.0	0.7	-2.2	1.1	-0.6	1.5	0.2
TTO	Trinidad&Tobago	X	X	X	.	X	2.0	-3.4	-3.6	5.0	-6.9	0.2	0.4	1.0	-0.8	-0.1	-0.1
DOM	Dominican Rep.	X	X	X	X	X	2.7	2.9	1.8	2.2	0.1	1.0	-0.8	0.3	-0.2	1.5	1.7
BLZ	Belize *	X	X	X	.	X	2.8	6.6	2.1	4.1	3.6	4.9	1.1	1.1	-0.1	4.4	4.8
LCA	Saint Lucia	X	X	.	.	X	3.2	14.1	10.0	11.0	1.5	4.1	0.9	1.1	0.4	0.8	3.2
GRD	Grenada *	X	X	X	.	X	3.5	17.0	10.2	7.8	2.4	6.8	0.8	1.1	0.5	3.5	6.9
CHL	Chile	X	X	X	X	X	3.6	3.2	3.1	2.1	-0.5	0.1	-1.8	1.1	-0.2	0.2	-0.3
ATG	Antigua&Barbuda	X	.	.	.	X	3.8	13.4	11.7	11.1	0.3	1.6	0.3	0.9	-0.8	.	.
KNA	St Kitts&Nevis	X	X	.	.	X	3.8	17.5	13.2	13.9	1.8	4.2	1.0	1.0	0.1	2.7	3.4
DMA	Dominica *	X	X	X	.	X	3.9	14.8	3.9	6.7	1.3	10.9	0.5	0.9	1.1	2.6	8.8
VCT	St Vincent&Gr.*	X	X	X	.	X	4.1	14.1	7.6	3.1	1.5	6.5	1.1	1.1	0.6	2.1	5.7
	N	32	27	24	20	18	32	32	32	32	32	32	32	32	32	29	29
	mean						1.6	6.3	2.6	3.2	-0.0	3.8	-1.6	0.9	0.0	1.3	3.6
	sd						1.4	6.7	4.7	3.7	2.7	4.5	4.8	0.4	1.2	2.1	4.7
	min						-1.6	-4.8	-6.6	-6.2	-6.9	0.0	-24.9	-0.1	-1.6	-6.0	-0.3
	max						4.1	24.6	13.2	13.9	4.3	17.0	1.1	2.1	5.1	7.3	22.0

Notes: Continued on the next page.

TABLE 3 (CONT'D). Net Capital Flows and Growth, by Country, 1980–2007

Out of Whole World Sample

							(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
		Raw Deve -loping Sample	Deve -loping Sample	Bench mark Sample	PWT Sample	1970 Sample	GDP per capita growth	Net capital flows/GDP (-CA/GDP)	Aid-adjusted net capital flows/GDP	Net FDI +Portfolio Flows/GDP	Net Debt Flows/GDP	Net total Aid Receipts /GDP	Reserve & Related Assets Accumulation /GDP	Reserve Accumulation /GDP	Net E&O /GDP	Net PPG Debt Flows –Reserve Accumulation /GDP	Net Grants +Net PPG Debt Flows from Official Creditors +IMF Credit -Reserve Accumulation /GDP
Industrialized OECD Countries Sample																	
CHE	Switzerland	.	.	.	.	.	1.1	-7.2	-7.2	-3.8	-5.1	0.0	0.3	0.3	2.3	.	.
NZL	New Zealand	.	.	.	.	.	1.4	5.6	5.6	2.0	3.0	0.0	-2.1	0.7	0.7	.	.
FRA	France	.	.	.	.	.	1.5	-0.3	-0.3	-1.1	0.8	0.0	0.1	0.1	-0.0	.	.
GRC	Greece	.	.	.	.	.	1.6	4.8	4.8	1.0	3.8	0.0	0.3	0.3	-0.1	.	.
CAN	Canada	.	.	.	.	.	1.7	1.0	1.0	-0.9	1.5	0.0	0.1	0.2	-0.2	.	.
ITA	Italy	.	.	.	.	.	1.7	0.5	0.5	-0.9	1.7	0.0	0.0	0.0	-0.4	.	.
DEU	Germany	.	.	.	.	.	1.7	-1.3	-1.3	-1.1	-0.4	0.0	0.0	0.0	0.4	.	.
DNK	Denmark	.	.	.	.	.	1.8	-0.2	-0.2	-1.4	1.9	0.0	0.5	0.5	-0.2	.	.
BEL	Belgium	.	.	.	.	.	1.9	-2.8	-2.8	-0.8	-1.2	0.0	-0.2	-0.2	-0.1	.	.
USA	United States	.	.	.	.	.	1.9	2.6	2.6	-0.1	2.5	0.0	0.0	0.0	0.2	.	.
NLD	Netherlands	.	.	.	.	.	2.0	-4.0	-4.0	-3.7	0.9	0.0	0.1	0.1	-0.7	.	.
SWE	Sweden	.	.	.	.	.	2.0	-1.7	-1.7	-2.2	0.9	0.0	-0.7	0.3	-1.0	.	.
AUS	Australia	.	.	.	.	.	2.0	4.5	4.5	0.8	3.9	0.0	0.2	0.2	-0.1	.	.
AUT	Austria	.	.	.	.	.	2.0	0.3	0.3	-0.4	1.1	0.0	0.1	0.1	-0.2	.	.
ISL	Iceland	.	.	.	.	.	2.1	5.0	5.0	-5.2	11.8	0.0	0.7	0.7	-0.9	.	.
JPN	Japan	.	.	.	.	.	2.2	-2.5	-2.5	-0.3	-1.3	0.0	0.7	0.7	-0.0	.	.
ESP	Spain	.	.	.	.	.	2.3	2.6	2.6	-0.3	3.0	0.0	0.1	0.1	-0.4	.	.
PRT	Portugal	.	.	.	.	.	2.4	4.9	4.9	1.2	2.9	0.0	0.5	0.5	0.6	.	.
GBR	United Kingdom	.	.	.	.	.	2.4	1.3	1.3	-1.3	2.3	0.0	0.1	0.1	0.3	.	.
NOR	Norway	.	.	.	.	.	2.4	-5.7	-5.7	-2.4	-0.2	0.0	1.0	1.0	-1.9	.	.
FIN	Finland	.	.	.	.	.	2.5	-1.5	-1.5	-1.1	0.6	0.0	0.3	0.3	-0.8	.	.
IRL	Ireland	.	.	.	.	.	3.0	1.8	1.8	12.8	-11.1	0.0	0.4	0.4	0.2	.	.
	N						22	22	22	22	22	22	22	22	22	0	0
	mean						2.0	0.4	0.4	-0.4	1.1	0.0	0.1	0.3	-0.1	.	.
	sd						0.4	3.5	3.5	3.4	4.1	0.0	0.6	0.3	0.8	.	.
	min						1.1	-7.2	-7.2	-5.2	-11.1	0.0	-2.1	-0.2	-1.9	.	.
	max						3.0	5.6	5.6	12.8	11.8	0.0	1.0	1.0	2.3	.	.

Notes: All flows are expressed as percent of GDP. The countries are divided into geographic regions according to the World Bank classification. Details of variables are in Online appendix A and the countries included in several samples used in the paper are marked by "X". Countries with average population less than 1 million are marked with "*". The samples are defined in Table 1 and Online appendix B.

TABLE 4. Correlations of Net Debt Flows and Aid Flows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Measures of aid flows								
	Net Total ODA	Net Total ODA Loans	Net Total Grants	Net Total ODA from Multilateral Creditors	Net Total Loans from Multilateral Creditors	Net Total Grants from Multilateral Creditors	Net Total ODA from the IMF	Net Total Loans from the IMF	Net Total Grants from the IMF
Measures of net debt flows									
	Sample: Developing								
Net Total Debt Flows	0.11	0.34	0.05	0.15	0.29	0.04	0.17	0.28	0.01
Net L-Term Debt Flows	0.21	0.45	0.15	0.26	0.40	0.13	0.21	0.31	0.06
Net S-Term Debt Flows	-0.30	-0.22	-0.30	-0.30	-0.26	-0.29	-0.14	-0.06	-0.20
Net Private NG Debt Flows	-0.23	-0.18	-0.23	-0.21	-0.16	-0.22	-0.06	-0.02	-0.08
Net Total PPG Debt Flows	0.49	0.75	0.41	0.53	0.67	0.38	0.32	0.41	0.15
Net Multilat. PPG Debt Flows	0.78	0.94	0.70	0.86	0.96	0.68	0.49	0.59	0.29
Net Bilat. PPG Debt Flows	0.22	0.42	0.16	0.20	0.30	0.11	0.25	0.30	0.15
Net Official PPG Debt Flows	0.67	0.89	0.59	0.72	0.84	0.55	0.48	0.57	0.28
Net Concessional PPG Debt Flows	0.73	0.93	0.65	0.79	0.92	0.61	0.50	0.60	0.28
Use Of The Imf Credit	0.30	0.42	0.25	0.41	0.46	0.33	0.54	0.60	0.35
Net PPG Debt Flows From Private Creditors	-0.43	-0.36	-0.43	-0.45	-0.43	-0.41	-0.37	-0.38	-0.29
Net Total Debt Flows From Private Creditors	-0.37	-0.30	-0.37	-0.37	-0.31	-0.35	-0.20	-0.18	-0.19
Reserve Accumulation	-0.09	-0.00	-0.11	-0.09	0.01	-0.14	0.00	0.11	-0.11
	Sample: Benchmark								
Net Total Debt Flows	0.03	0.22	-0.02	0.05	0.17	-0.02	0.14	0.27	-0.07
Net L-Term Debt Flows	0.17	0.40	0.11	0.19	0.32	0.09	0.19	0.32	-0.04
Net S-Term Debt Flows	-0.24	-0.17	-0.24	-0.22	-0.17	-0.22	-0.05	0.04	-0.12
Net Private NG Debt Flows	-0.27	-0.24	-0.26	-0.25	-0.22	-0.24	-0.05	0.02	-0.10
Net Total PPG Debt Flows	0.45	0.71	0.37	0.46	0.59	0.32	0.28	0.38	0.04
Net Multilat. PPG Debt Flows	0.79	0.94	0.71	0.84	0.95	0.67	0.52	0.60	0.20
Net Bilat. PPG Debt Flows	0.14	0.33	0.09	0.06	0.13	0.02	0.10	0.15	-0.01
Net Official PPG Debt Flows	0.67	0.88	0.59	0.67	0.79	0.52	0.44	0.53	0.15
Net Concessional PPG Debt Flows	0.75	0.95	0.66	0.77	0.90	0.60	0.52	0.62	0.18
Use Of The Imf Credit	0.26	0.40	0.21	0.34	0.39	0.28	0.44	0.51	0.18
Net PPG Debt Flows From Private Creditors	-0.42	-0.34	-0.42	-0.42	-0.39	-0.38	-0.32	-0.29	-0.21
Net Total Debt Flows From Private Creditors	-0.40	-0.34	-0.39	-0.38	-0.35	-0.36	-0.18	-0.12	-0.17
Reserve Accumulation	-0.13	0.00	-0.15	-0.15	-0.02	-0.20	0.03	0.14	-0.11

Notes: This table reports the correlations of aid and debt flows components for the developing countries.

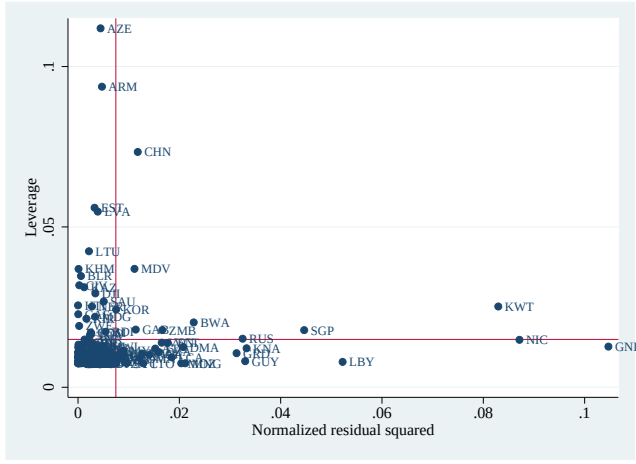
TABLE 5. Aid Flows and Growth: Decomposition, 1980–2007

Country Sample: Benchmark

	(1)	(2)	(3)	(4)
Dependent Variable/GDP	Net Total ODA (Net Total Aid Receipts)	Net Total Grants	Net Total Grants from multilat.	Net Total Grants from the IMF
Average per capita GDP growth	–0.821** (0.376)	–0.778** (0.319)	–0.276*** (0.104)	–0.009* (0.005)
Obs.	98	98	98	98

Notes: Robust standard errors are in parentheses. ***, **, and * denote significance at 1%, 5%, and 10% levels. In this table, all dependent variables are the aid flows computed as the average over 1980–2007 of the annual aid receipts in current U.S. dollars, normalized by nominal GDP in U.S. dollars, and multiplied by 100. As the aid flow measures, "Net Total ODA" represents all official development assistance (ODA) flows (loans plus grants), defined as those flows to developing countries and Multiple institutions provided by official agencies, including state and local governments, or by their executive agencies. "Net Total Grants" represent Total ODA minus Total ODA loans; ODA loans are loans with maturities of over one year and meeting the criteria set under Official Development Assistance and Official Aid. "Net Total Grants from multilat." represents net ODA grants from Multiple agencies; "Net Total Grants from the IMF" are net ODA grants from the IMF. Average per capita GDP Growth is calculated as the average over 1980–2007 of the annual change of GDP per capita in 2000 U.S. dollars. Details of the variable calculations are in Online appendix A, samples are defined in Table 1 and Online appendix B, and the countries included are listed in Online appendix Table 3.

Leverage against the Squared Normalized Residuals from the Regression of Net capital Flows on Growth in Raw Developing Sample, 1980–2007



The figure presents the plot of the leverage versus the Studentized residuals from the regression of net capital flows on growth in Raw Developing sample, 1980–2007, as in col(2), Panel A in Table 2. We select our samples by removing the influential observations using DFITS statistics and Cook's D statistics which summarize the information in the leverage and the size of residuals into one statistic.

DFBETA from the Regression of Net capital Flows on Growth in Raw Developing Sample, 1980–2007

The figure presents the plot of the measure of influence DFBETA from the regression of net capital flows on growth in Raw Developing sample, 1980–2007, as in col(2), Panel A in Table 2. DFBETA demonstrates how the regression coefficient of Growth changes (increases or decreases) by deleting one observation (country) at a time. We eliminate the countries which fall outside of the critical bands for DFBETA in this sample, indicated by the solid horizontal lines.

FIGURE 1. Outliers in Terms of Net Capital Flows and Growth in Raw Developing Sample, 1980–2007

Appendix C: Reconciling with literature

C.1: Total and Public/Private-Residual Flows

In this section of the Online Appendix, we replicate results of GJ, who used "PWT" sample with GJ's officially released data and our data. There are other differences in our approaches such as measuring external debt and productivity growth, and we want to make sure the reasons for the different results is the sample composition and not different measurements of key variables.

There are a number of differences in the GJ's approach from ours, in addition to the fact that they use a sample of 67/68 countries whereas we use a benchmark sample of 98 countries. First, they compute total flows as initial debt stock d_0 minus cumulated annual CA balances while we use the average of the annual CA balances; second, they express annual CA balances in PPP international dollars as in PWT while we use the CA balances in nominal dollars as they come from the IMF-IFS; third, they normalize the cumulated flows by the initial GDP while we normalize each annual flow by the corresponding annual GDP; and fourth, they use a measure of cross-country productivity growth instead of average per capita GDP growth. Their PPP-adjusted cumulated and normalized by the initial GDP measure of total capital flows is on average 31.5% of the initial GDP in their sample (varying from -197 to 134%). Their measure of productivity catch up is on average -0.10 (varying from -0.62 to 0.85).

Online appendix Table 6 starts with replicating results of GJ using the their data released online as the web-appendix to the published paper (marked "GJ-REStud" in the header of the table) in column (1). Column (2) runs their exact regression using our data where we compute the variables over the same time period (the 1980–2000), from the same data sources, and by the same methods, as in GJ (marked "AKV"). Comparing the results in columns (1) and (2) we find a very similar negative correlation between productivity catch-up parameter π and total capital flows, except weaker significance due to the fact that we do robust standard errors.[10]

In columns (3) and (4) we use our main measure of productivity, the average per capita GDP growth, and find a similar negative correlation. Doing exactly the same regression in our bigger benchmark sample of 98 (93 since we lose some countries due to the missing control variables used by GJ), we find a positive and weakly significant correlation between total capital flows and growth, as shown in column (5). This result is identical to the one showed in Table 2 but here the flows variable is measured as in GJ and we control for other regressors. All in all, the crux of the matter is not about using productivity catch-up or simple growth differences across countries, which is

10. Column (1) in our Online appendix Table 6 is the exact match of GJ's Table 2, column (3) [p.1497] with the coefficient significant only at 10% level. In the Online appendix Table APP-5, we replicate GJ's Table 2 using published GJ codes and data exactly when we use the OLS standard errors like them. So the difference in significance is due to robust standard errors used in our code.

not surprising given that the correlation between the two measures of productivity is above 0.8.

Online appendix Table 7 replicates the decomposition exercise of GJ, which is again very different than our exercise. They compute PPP-adjusted cumulated public debt flows as they did with total flows, where public debt flows they measure as PPG debt minus reserves. Their private flows measure is then a residual after these cumulated public debt flows is subtracted from total flows of Online appendix Table 6.

As before, we replicate GJ results using the GJ's official data in column (1) and (2) of Online appendix Table 7 and we again match their point estimates reported in their Table 6, columns (2) and (4) [p.1507] for public and private flows respectively.[11] Column (1) shows result similar to what we show in the 98 country sample. Public flows measured as PPG minus reserve accumulation, computed by the GJ's methodology, negatively correlates with productivity catch-up. The private flows, computed as the total flows minus the measure for public flows form column (1), correlates positively with productivity catch-up, as GJ report too. These results do not change if we use our estimates of GDP per capita growth instead of productivity catch-up, but otherwise use the GJ's data and methodology, as seen in column (3) and (4).

We again confirm that the choice of a proxy for productivity does not influence the outcome for the decomposition exercise. We find much weaker evidence of the negative correlation of public flows and productivity and positive correlation between private flows and productivity in the smaller "1970" sample, using our data and the same methods as GJ. The latter results qualitatively fit what Aguiar and Amador (2011) report.[12] We conjecture that in small samples, robust standard errors may result in the loss of statistical significance since this way of calculating residual private flows is very fragile.

11. GJ use a 68-country sample for the total flows regressions in their Table 2 and a 62-country sample for the decomposition regressions in their Table 6. The difference between their 68- and 62-country samples is the exclusion of 6 countries (Angola, Hong Kong, Iran, Mozambique, South Africa, and Taiwan) whose data is not available over the whole sample period, the 1980–2000, as stated in GJ.

12. Aguiar and Amador (2011) use a different method to compute long-run public capital flows. They use the change in the ratio of public net foreign assets to GDP between 1970–2004. Our unreported regressions with such measure show that the qualitative results remain the same.

TABLE 6. Reconciling with Literature: Net Capital Flows and Growth, 1980–2000.

Dependent Variable: Total Capital Flows/GDP_0

	(1)	(2)	(3)	(4)	(5)
Normalizing and Deflating Flows	Initial GDP; PPP-Adjusted(GJ)				
Sample	PWT				Benchmark
Data Source	GJ-REStud	AKV	GJ-REStud	AKV	AKV
Productivity Catch-up Relative to the U.S. (π)	–0.697*	–0.700*			
	(0.377)	(0.358)			
Average per capita GDP growth			–0.093^{+}	–0.109*	0.046^{+}
			(0.060)	(0.062)	(0.031)
Initial Capital Abundance (k_0/y_0)	–0.081	–0.066	–0.130	–0.084	–0.006
	(0.122)	(0.116)	(0.118)	(0.119)	(0.005)
Initial Debt (d_0/y_0)	0.001	–0.054	0.004	–0.008	–0.045
	(0.004)	(0.446)	(0.003)	(0.441)	(0.280)
Population Growth (n)	–0.073	–0.001	–0.056	–0.004	0.031
	(0.114)	(0.063)	(0.115)	(0.058)	(0.030)
Average KA Openness (Chinn-Ito)	–0.115*	–0.070	–0.048	0.032	–0.019
	(0.062)	(0.070)	(0.088)	(0.093)	(0.024)
Average KA Openness$\times\pi$	–0.455*	–0.418			
	(0.235)	(0.278)			
Average KA Openness$\times$ Average per capita GDP growth			–0.033^{+}	–0.046	–0.014
			(0.043)	(0.047)	(0.057)
Obs.	67	67	67	67	93

Notes: Under the Data Source "GJ-REStud" this table uses the variables from the officially released dataset from Gourinchas and Jeanne (2013) (GJ) (distributed online at http://restud.oxfordjournals.org/content/early/2013/02/14/restud.rdt004/suppl/DC1), except for Average per capita GDP Growth (calculated by us since not included in the GJ dataset). Under the Data Source "AKV" we calculate the variables ourselves following the approach of these authors exactly and using the same data sources, similar treatment of missing data, and estimation techniques. We do this to be able to extend their methodology to our larger sample and to replicate their results in their smaller sample both with their official data and with our data. "Total Capital Flows/GDP_0" is estimated as the initial (1980) net external debt (net foreign asset position plus cumulative net errors and omissions as of 1980) minus the sum of the current account balances over 1980–1999, PPP-adjusted by a deflator computed with PWT ver. 6.1 data and normalized by the initial GDP based on PWT data. The calculation of net capital flows is as follows following GJ: 1) cumulate capital flows using CA data; 2) adjust for PPP; 3) normalize by the initial GDP. Average per capita GDP Growth is calculated as the average over 1980–2000 of the annual change of GDP per capita in 2000 U.S. dollars (times 100). "Productivity Catch-up Relative to the U.S." is estimated following the approach of GJ. Robust standard errors are in parentheses. *** , **, *, $^{+}$ denote significance at 1%, 5%, 10%, 15% levels. Details of other variables are in Online appendix A, samples are defined in Table 1 and Online appendix B, and the countries included are listed in Online appendix Table 3.

TABLE 7. Reconciling with Literature: Decomposing Net Capital Flows, 1980–2000: Residual Method Replication

	(1)	(2)	(3)	(4)	(5)	(6)
Normalizing and Deflating Flows	Initial GDP; PPP-Adjusted(GJ)					
Sample Countries	PWT				1970	
Dependent Variable	Net Public Flows/GDP_0	Net Private Flows/GDP_0	Net Public Flows/GDP_0	Net Private Flows/GDP_0	Net Public Flows/GDP_0	Net Private Flows/GDP_0
Method for Decomposing Flows		Residual		Residual		Residual
Measure of Net Public Debt Flows used to Compute Private Flows (Residual)		Net Public Flows/GDP_0 from col (1)		Net Public Flows/GDP_0 from col (3)		Net Public Flows/GDP_0 from col (5)
Data Source	GJ-REStud	GJ-REStud	GJ-REStud	GJ-REStud	AKV	AKV
Productivity Catch-up Relative to the U.S. (π)	–1.182*** (0.373)	0.428** (0.179)				
Average per capita GDP growth			–0.163*** (0.056)	0.060** (0.029)	–0.062* (0.036)	0.082 (0.066)
Initial Capital Abundance (k_0/y_0)	–0.112 (0.114)	0.059 (0.093)	–0.193* (0.114)	0.087 (0.092)	0.004 (0.114)	0.054 (0.157)
Initial Debt (d_0/y_0)	–0.002 (0.004)	0.003 (0.003)	–0.000 (0.003)	0.002 (0.003)	0.516 (0.429)	1.270^{+} (0.759)
Population Growth (n)	–0.148 (0.117)	0.072 (0.062)	–0.095 (0.107)	0.053 (0.060)	–0.012 (0.032)	0.022 (0.052)
Average KA Openness (Chinn-Ito)	–0.131** (0.060)	–0.002 (0.051)	–0.108^{+} (0.071)	–0.010 (0.052)	–0.103 (0.074)	–0.127 (0.136)
Average KA Openness$\times\pi$	–0.693*** (0.180)	0.222 (0.177)	–0.524*** (0.194)	0.164 (0.170)		
Average KA Openness$\times$ Average per capita GDP growth					0.033 (0.048)	0.050 (0.064)
Obs.	62	62	62	62	46	46

Notes: This table replicates the approaches of Gourinchas and Jeanne (2013) and Aguiar and Amador (2011). Under the Variables Source "GJ-REStud" this table uses the variables from the officially released dataset from Gourinchas and Jeanne (2013) (GJ) (distributed online at http://restud.oxfordjournals.org/content/early/2013/02/14/restud.rdt004/suppl/DC1), except for Average per capita GDP Growth (calculated by us since not included in the GJ dataset). Under the Variables Source "AKV" we calculate the variables ourselves following the approach of these authors exactly and using the same data sources, similar treatment of missing data, and estimation techniques. Method for Decomposing Flows "Residual" follows Aguiar and Amador (2011) in that public flows are computed directly while private flows are computed as a residual from total flows once public flows are subtracted. Method for Normalizing and Deflating Flows "GJ" follows Gourinchas and Jeanne (2013) in that the estimates of flows are PPP-adjusted and normalized by the initial GDP. Robust standard errors are in parentheses. *** , **, and * denote significance at 1%, 5%, and 10% levels. Details of other variables are in Online appendix A, samples are defined in Table 1 and Online appendix B, and the countries included are listed in Online appendix Table 3.

C.2: Replication Using Published GJ Codes and Data

In this appendix we replicate the main regression result (Table 2) of the published version of Pierre-Olivier Gourinchas and Olivier Jeanne "Capital Flows to Developing Countries: The Allocation Puzzle," Review of Economic Studies (2013), doi: 10.1093/restud/rdt004 using the data and codes of these authors (code GJ_results.do) distributed online at http://restud.oxfordjournals.org/content/early/2013/02/14/restud.rdt004/suppl/DC1 (accessed on 16 July 2013) and implements some minor permutation in the sample and the estimation.

In Online appendix Table 8 we use the OLS standard errors and largest GJ sample and in columns (1), (3)–(5) obtain the exact match with Table 2 in Gourinchas and Jeanne (2013). In column (2) we add a regression without Taiwan, as in the rest of this table. The coefficient in column (2) remains negative but the significance of the estimate drops.

In Online appendix Table 9 we repeat the estimation using robust, rather than OLS, standard errors. The coefficient point estimates are, naturally, the same but the the coefficients of the Productivity Catch-up are insignificant or only marginally significant (p-value of 7%) at the conventional levels.

TABLE 8. Exact Replication of Table 2 in the Final Version of GJ

Dependent Variable: Total Capital Flows/GDP_0

	(1)	(2)	(3)	(4)
		Col (1) ex. Taiwan		
Productivity Catch-up	–0.586***	–0.469**	–0.456**	–0.697***
Relative to the U.S. (π)	(0.217)	(0.215)	(0.209)	(0.227)
Initial Capital Abundance (k_0/y_0)	-0.161	-0.164	-0.126	–0.0809
	(0.115)	(0.111)	(0.109)	(0.107)
Initial Debt (d_0/y_0)	0.00583	0.00444	0.00416	0.00131
	(0.003)	(0.003)	(0.003)	(0.003)
Population Growth (n)	–0.0583	–0.0765	–0.0980	–0.0733
	(0.104)	(0.101)	(0.099)	(0.096)
Average KA Openness (Chinn-Ito)			–0.141**	–0.115*
			(0.063)	(0.062)
Average KA Openness$\times\pi$				–0.455**
				(0.197)
Intercept	0.516	0.627**	0.576*	0.536*
	(0.315)	(0.308)	(0.299)	(0.289)
Obs.	68	67	67	67
Adj. R^2	0.174	0.104	0.157	0.214

Notes: OLS standard errors are in parentheses. *** , **, * denote significance at 1%, 5%, 10% levels. The results are estimated using the data and codes of Gourinchas and Jeanne (2013) distributed online at http://restud.oxfordjournals.org/content/early/2013/02/14/restud.rdt004/suppl/DC1.

TABLE 9. Replication of Table 2 in the Final Version of GJ with Robust Standard Erors

Dependent Variable: Total Capital Flows/GDP_0

	(1)	(2)	(3)	(4)
Productivity Catch-up Relative to the U.S. (π)	–0.586* (0.337)	–0.469 (0.342)	–0.456 (0.330)	–0.697* (0.377)
Initial Capital Abundance (k_0/y_0)	-0.161 (0.156)	–0.164 (0.158)	–0.126 (0.133)	–0.0809 (0.122)
Initial Debt (d_0/y_0)	0.00583 (0.004)	0.00444 (0.004)	0.00416 (0.003)	0.00131 (0.004)
Population Growth (n)	–0.0583 (0.131)	–0.0765 (0.131)	–0.0980 (0.133)	–0.0733 (0.114)
Average KA Openness (Chinn-Ito)			–0.141* (0.078)	-0.115* (0.062)
Average KA Openness$\times\pi$				–0.455* (0.235)
Intercept	0.516 (0.345)	0.627* (0.338)	0.576* (0.289)	0.536** (0.243)
Obs.	68	67	67	67
Adj. R^2	0.174	0.104	0.157	0.214

Notes: Robust standard errors are in parentheses. *** , **, * denote significance at 1%, 5%, 10% levels. The results are estimated using the data and codes of Gourinchas and Jeanne (2013) distributed online at http://restud.oxfordjournals.org/content/early/2013/02/14/restud.rdt004/suppl/DC1.