

Financial Crises and International Portfolio Dynamics

Fernando Broner

CREI and Universitat Pompeu Fabra

Tatiana Didier

World Bank

Click to edit Master subtitle style

Aitor Erce

Bank of Spain

Sergio Schmukler

World Bank

September 2010

Gross Capital Flows: Evidence from Tranquil and Crisis Times

Fernando Broner

CREI and Universitat Pompeu Fabra

Tatiana Didier

World Bank

Click to edit Master subtitle style
Aitor Erce

Bank of Spain

Sergio Schmukler

World Bank

September 2010

Introduction

- This paper studies the behavior of gross capital flows
 - Dynamics at business-cycle frequencies
 - Around periods of financial distress
- Literature focuses mostly on net capital flows
 - Net capital flows highly pro-cyclical in developing countries
 - Crises linked to large reduction (or even reversal) in net flows
- As opposed to the literature, here focus on gross capital flows
- Provide description of capital flows from different angles
- Document stylized facts, linking them to theory and discussions

Introduction

- Gross capital flows: flows by foreign and domestic agents
- Capital inflows by foreign agents: C I F
- Capital outflows by domestic agents: C O D
- Net flows = inflows (foreign agents) - outflows (domestic agents)

- *Gross capital flows* = C I F, C O D
- *Net flows* = C I F - C O D
- *Total gross capital flows* = C I F + C O D

Introduction

- Some studies have already looked at CIF and COD
- Try to do it more broadly and more systematically, emphasizing the dynamics/fluctuations during tranquil and crisis times
- Organization of the evidence
 - Link CIF to COD, and both to net flows
 - Behavior over time
- We cover many and different types of crises
 - Debt, exchange rate, banking crises
 - Only one and more than one crises
 - Include 2008 global financial crisis
- We also look at the components of CIF and COD

Introduction

- Global financial crisis of 2008 as motivation
 - Years before the crisis, very large gross capital
 - During crisis, retrenchment
- CIF and COD shed light on sources of fluctuations in capital flows
 - Fire sales of domestic assets to foreign investors
 - Capital flight by domestic agents
- CIF and COD shed light on nature of shocks
 - Productivity shocks
 - Worsening of investor property rights , default risk
 - Increased information asymmetries

Data

- Source: IMF's Balance of Payments Statistics Yearbooks (BOP)
- 40 years of yearly data: 1970 to 2009
- Pooled countries by income (PPP adjusted, 2005)
 - High income: GNI per capita > US\$15,000 (40 countries)
 - Middle income: US\$15,000 > GNI per capita > US\$7,500 (25 countries)
 - Low income: US\$7,500 > GNI per capita > US\$ 2,000 (38 countries)
 - Drop small countries: GNI < US\$ 4 billion (30 countries)
 - Drop poor countries: GNI per capita < US\$ 2,000 (46 countries)
 - Thus, drop offshore centers
- 103 economies

Data

- Capital flows
 - Direct investments (FDI)
 - Portfolio flows, divided into equity and debt flows
 - Other investment flows (bank flows and trade credit)
 - International reserve asset flows
- CIF = Direct investments in the reporting economy +
Portfolio investment liabilities (domestic assets) + Other
investment liabilities
- COD = Direct investments abroad + Portfolio investment
assets (foreign assets) + Other investment assets +
International reserve assets by the government

Data

- Positive values of C I F : foreign agents increase their holdings of domestic assets
- Positive values of C O D : domestic agents increase their investments in foreign assets, more capital outflows
 - Negative values of C O D : domestic agents come back home
- C I F and C O D scaled by trend G D P to account for their size and measure volatility relative to output
- Capital flows standardized by de-meaning and dividing each variable by the standard deviation at the country level
 - Prevents estimates from being driven by countries with large and volatile capital flows

Data

- Composite crisis indicator
 - External debt crises
 - Reinhart and Reinhart (2008), Laeven and Valencia (2008), S & P's foreign currency default
 - Domestic debt crises
 - S & P's local currency default, Reinhart and Rogoff (2008)
 - Banking crises
 - Reinhart and Rogoff (2008), Laeven and Valencia (2008), Honohan and Laeven (2005)
 - Currency crises
 - Laeven and Valencia (2008), Honohan and Laeven (2005)

Data

- Crises events classified into two types depending on their intensity
 - “One Crisis”
 - Beginning of one, and only one, type of crisis in a given year and no other crisis observed in the previous two years
 - “More than One Crisis”
 - Beginning of more than one type of crisis within a given year, and no such event occurred in the previous two years
- 2008 global crisis in separate analysis

Sample Coverage

High-Income Countries		Middle-Income Countries	Low-Income Countries	
Australia	Norway	Argentina	Albania	Nicaragua
Austria	Oman	Belarus	Algeria	Pakistan
Bahamas, The	Portugal	Botswana	Angola	Paraguay
Barbados	Saudi Arabia	Brazil	Armenia	Peru
Belgium-Luxembourg	Singapore	Bulgaria	Azerbaijan, Rep. of	Philippines
Canada	Slovak Republic	Chile	Bolivia	Sri Lanka
Cyprus	Slovenia	Costa Rica	Bosnia and Herzegovina	Swaziland
Czech Republic	Spain	Croatia	China, P.R.: Mainland	Syrian Arab Republic
Denmark	Sweden	Equatorial Guinea	Colombia	Thailand
Estonia	Switzerland	Gabon	Congo, Republic of	Tunisia
Finland	Trinidad and Tobago	Iran, I.R. of	Dominican Republic	Ukraine
France	United Kingdom	Kazakhstan	Ecuador	Vietnam
Germany	United States	Latvia	Egypt	
Greece		Libya	El Salvador	
Hong Kong		Lithuania	Georgia	
Hungary		Malaysia	Guatemala	
Iceland		Mauritius	Honduras	
Ireland		Mexico	India	
Israel		Panama	Indonesia	
Italy		Poland	Jamaica	
Japan		Romania	Jordan	
Korea, Rep.		Russian Federation	Macedonia	
Kuwait		South Africa	Moldova	
Malta		Turkey	Mongolia	
Netherlands		Uruguay	Morocco	
New Zealand		Venezuela, R.B.	Namibia	

High-Income Countries

Country	Crisis Dates	Country	Crisis Dates
Australia	1989	Japan	1992, 1997
Austria	–	Korea, Rep.	1980, 1983, 1997, 2008
Bahamas, The	–	Kuwait	1980, 1990
Barbados	–	Malta	–
Belgium-Luxembourg	–	Netherlands	–
Canada	1983	New Zealand	1984, 1987, 2008
Cyprus	–	Norway	1987, 1990
Czech Republic	1996	Oman	–
Denmark	1987	Portugal	1982
Estonia	1992, 1998	Saudi Arabia	–
Finland	1991	Singapore	1982
France	1994	Slovak Republic	1998
Germany	1976	Slovenia	1992
Greece	1983, 1991	Spain	1977, 1983
Hong Kong	1998	Sweden	1991
Hungary	1991	Switzerland	–
Iceland	1978, 1985, 1989, 1993, 2008	Trinidad and Tobago	1982, 1985, 1993
Ireland	–	United Kingdom	1974, 1980, 1984, 1991, 1995, 2007
Israel	1975, 1985	United States	1984, 1988, 2007
Italy	1981, 1990		

Middle-Income Countries

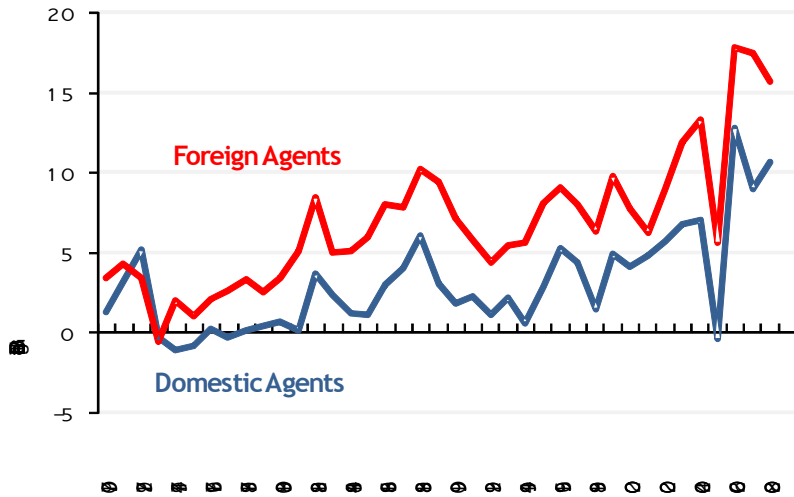
Country	Crisis Dates	Country	Crisis Dates
Argentina	1980, 1985, 1995, 2001	Libya	2002
Belarus	1994, 1999	Lithuania	1995
Botswana	1984, 1994, 2001	Malaysia	1985, 1997
Brazil	1976, 1982, 1990, 1999, 2002, 2008	Mauritius	1981, 1996
Bulgaria	1990, 1993, 1996	Mexico	1981, 1985, 1994
Chile	1975, 1980	Panama	1983, 1987
Costa Rica	1981, 1987, 1991, 1994	Poland	1986, 1989
Croatia	1993, 1996	Romania	1990, 1993, 1996, 1999
Equatorial Guinea	1994	Russian Federation	1995, 1998
Gabon	1986, 1994, 1999, 2002	South Africa	1985, 1989, 1993, 2001, 2008
Iran, I.R. of	1978, 1985, 1992, 2000	Turkey	1978, 1982, 1988, 1994, 1999, 2008
Kazakhstan	1999	Uruguay	1978, 1981, 1987, 2002
Latvia	1992, 1995	Venezuela, R.B.	1976, 1982, 1989, 1993, 2002

Low-Income Countries

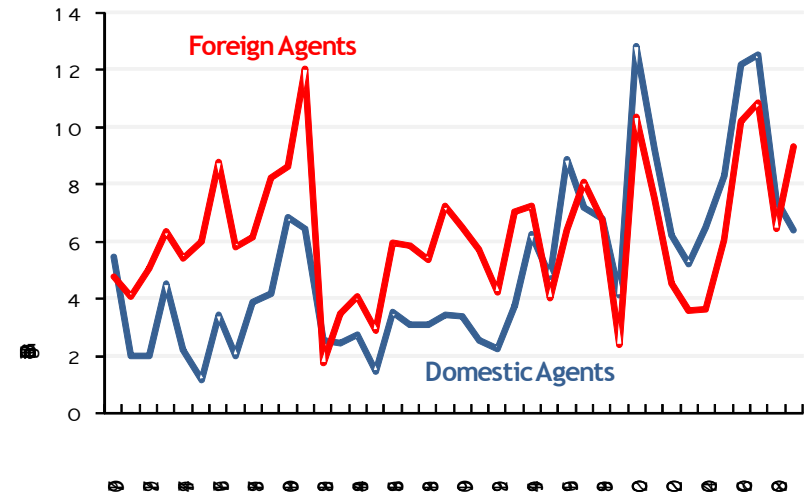
Country	Crisis Dates	Country	Crisis Dates
Albania	1990, 1997	Jordan	1988
Algeria	1988	Macedonia	1997
Angola	1985, 1988, 1991, 1996	Moldova	1998, 2002
Armenia	1994	Mongolia	1990, 1993, 1996
Azerbaijan, Rep. of	1995	Morocco	1980, 1986
Bolivia	1980, 1985, 1994, 1999	Namibia	2001, 2008
Bosnia and Herzegovina	–	Nicaragua	1979, 1985, 1990, 2000
China, P.R.: Mainland	1984, 1990, 1998	Pakistan	1981, 1998
Colombia	1982, 1985, 1998	Paraguay	1982, 1989, 1995, 2001
Congo, Republic of	1983, 1986, 1991	Peru	1978, 1988, 1999
Dominican Republic	1975, 1982, 1985, 1990, 2003	Philippines	1981, 1997
Ecuador	1980, 1996, 2008	Sri Lanka	1977, 1981, 1989, 1996
Egypt	1979, 1984, 1989, 2003	Swaziland	1984, 1995, 2001
El Salvador	1981, 1986, 1989, 1998	Syrian Arab Republic	1988
Georgia	1998	Thailand	1983, 1996
Guatemala	1986, 1989, 2001, 2006	Tunisia	1980, 1991
Honduras	1981, 1990, 1999	Ukraine	1997, 2008
India	1991	Vietnam	1997
Indonesia	1983, 1986, 1992, 1997		
Jamaica	1978, 1981, 1987, 1991		

Capital Flows in High-Income Countries

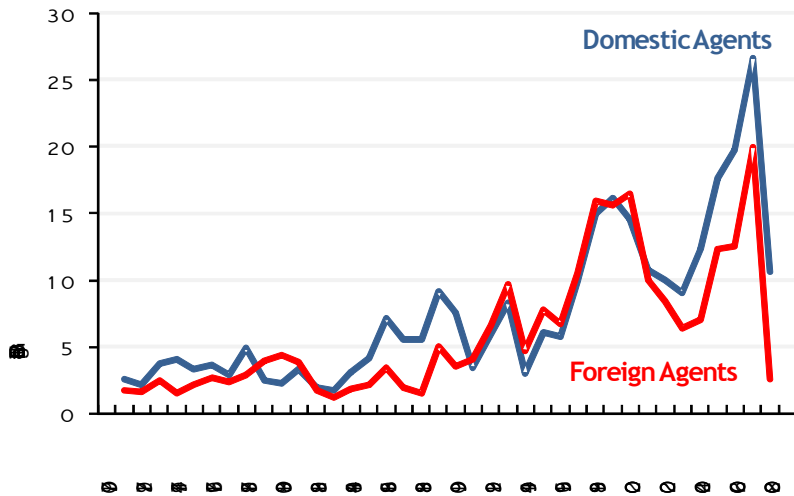
Australia



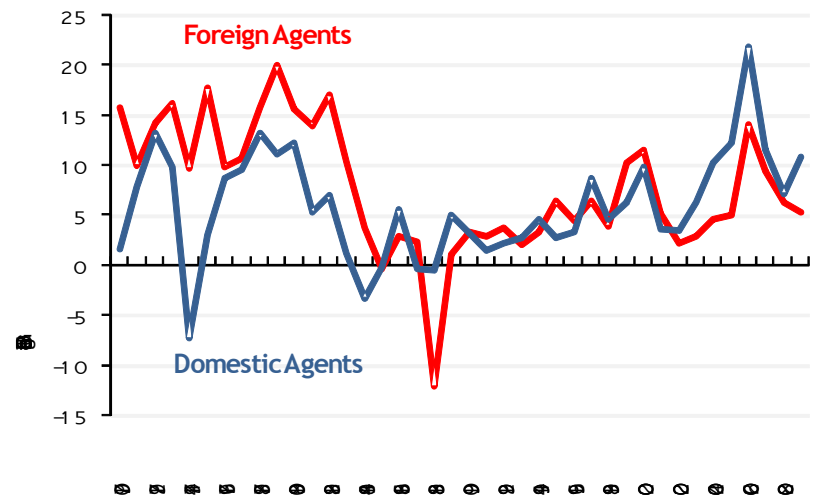
Canada



Germany

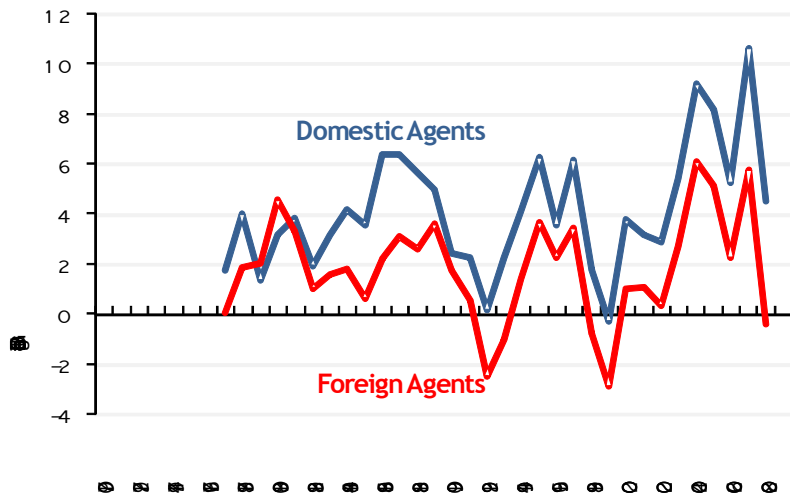


Israel

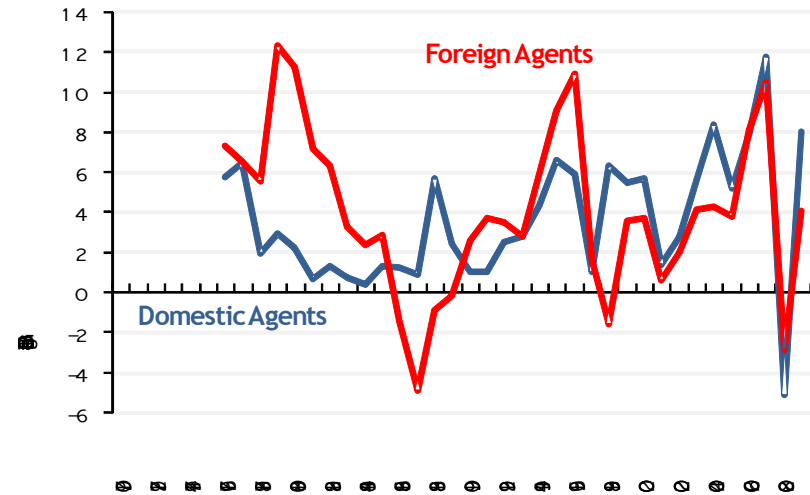


Capital Flows in High-Income Countries

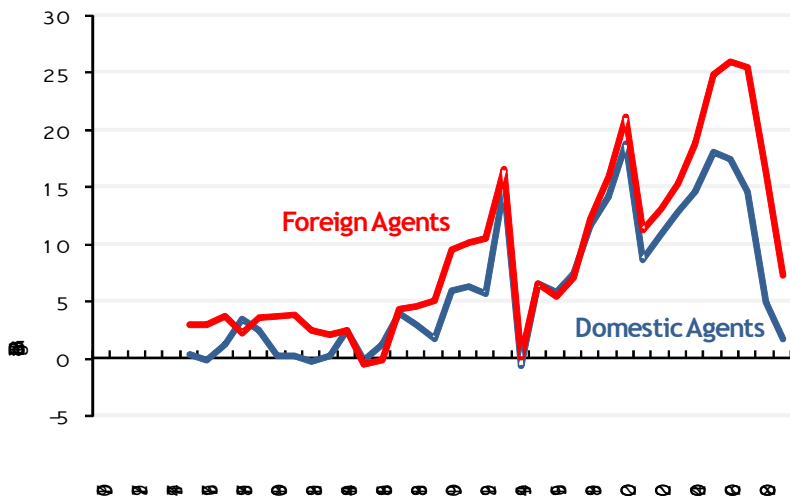
Japan



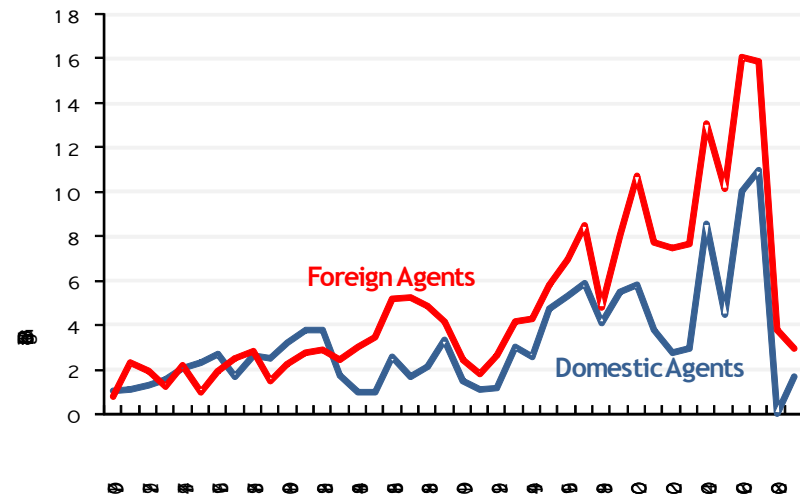
Korea, Rep.



Spain

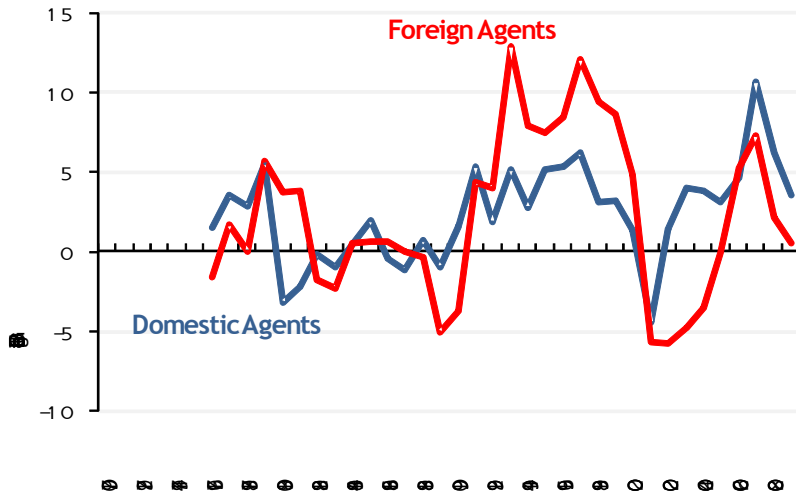


United States

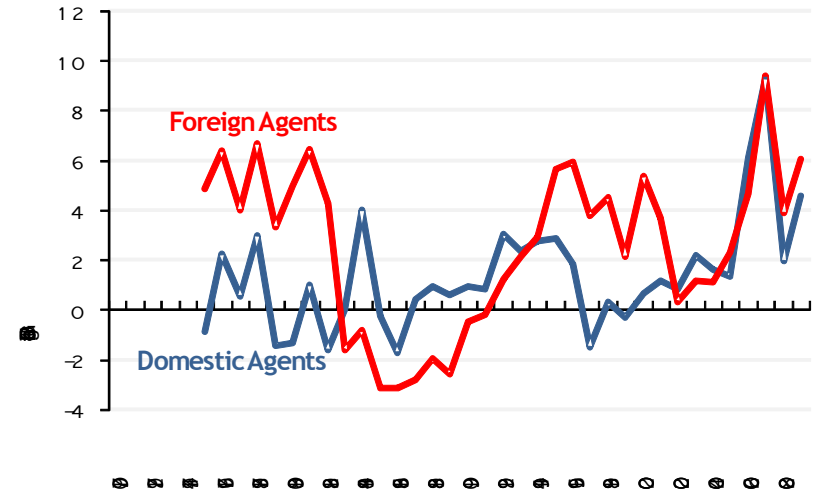


Capital Flows in Low- and Middle-Income

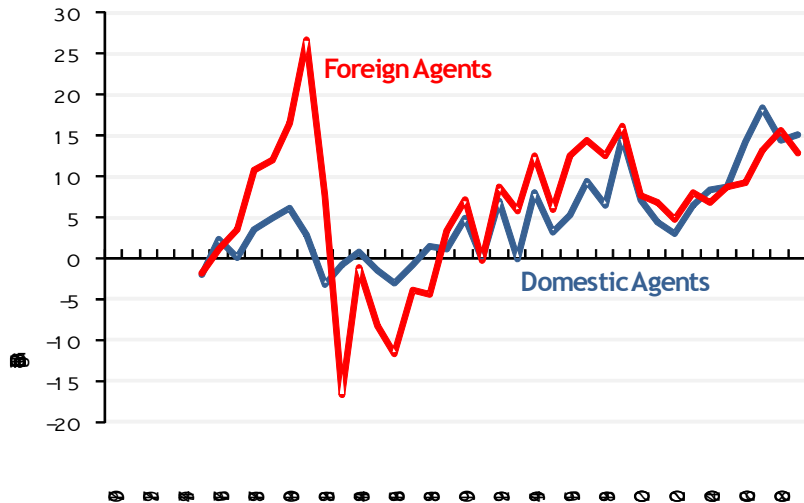
Argentina



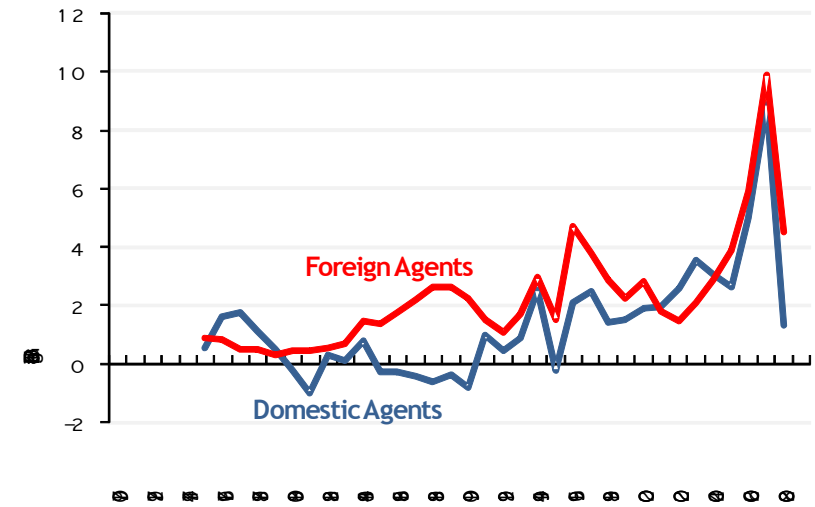
Brazil



Chile

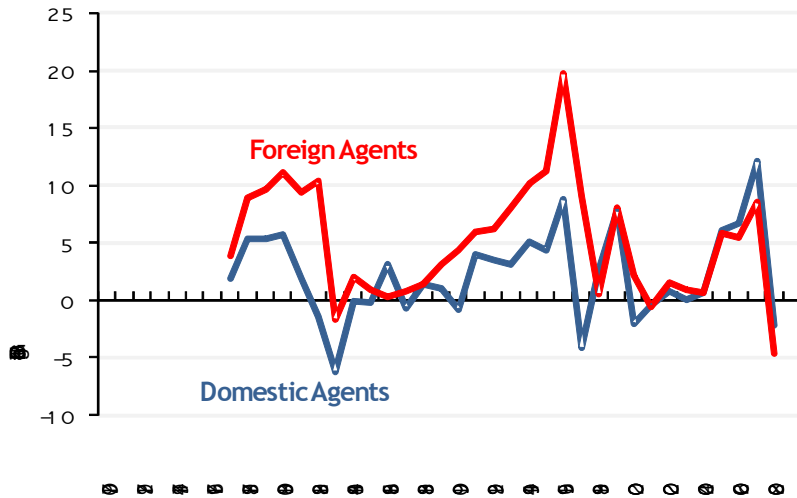


India

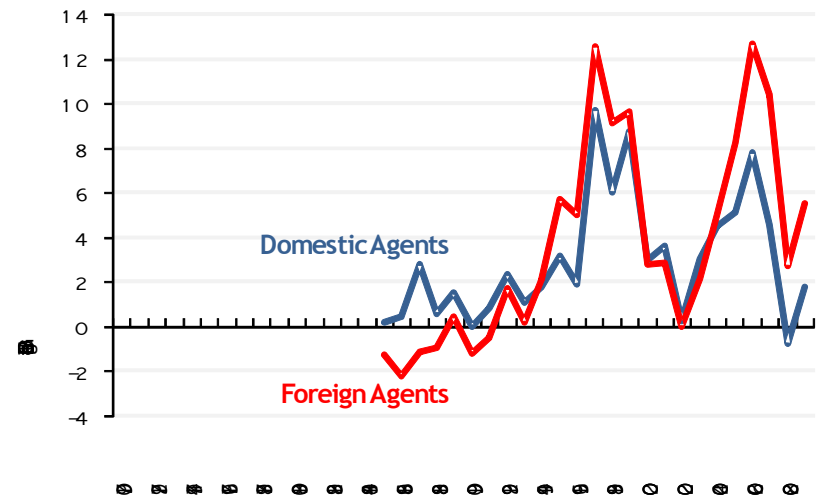


Capital Flows in Low- and Middle-Income

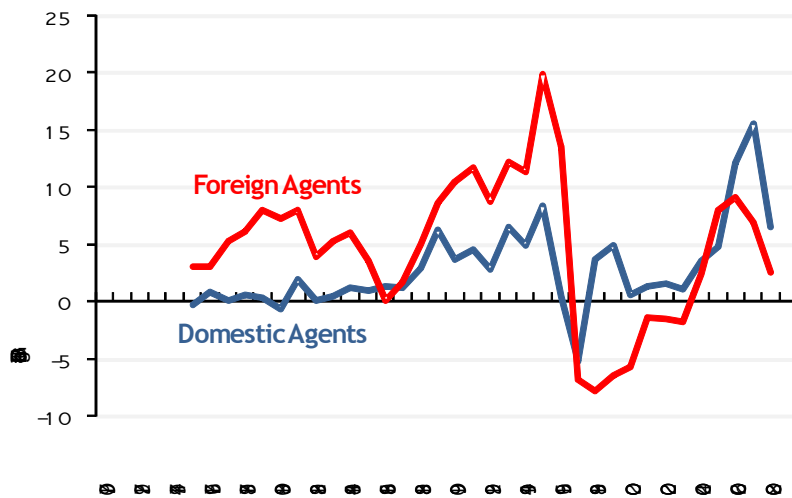
Philippines



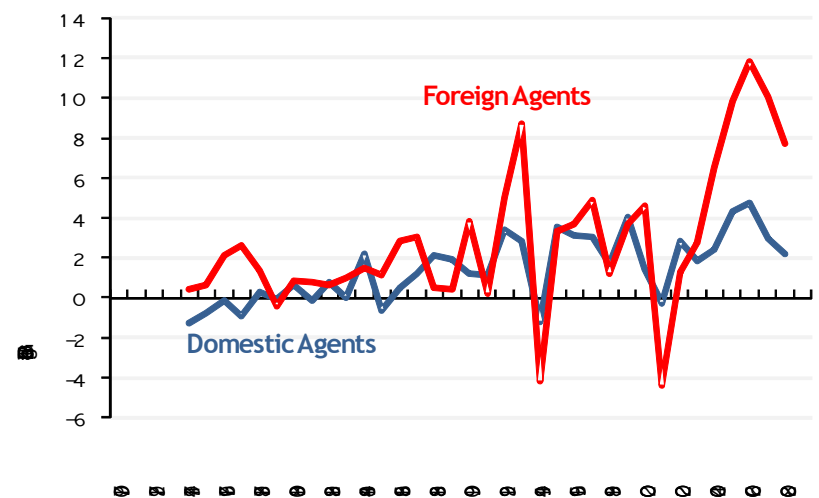
South Africa



Thailand



Turkey



Capital Flows: Summary Statistics

Median Average

	High-Income Countries	Middle-Income Countries	Low-Income Countries
Total Gross Capital Flows (CIF + COD)	17.67	9.31	6.97
1970s	9.50	7.01	7.92
1980s	9.10	1.96	4.86
1990s	13.56	7.80	7.21
2000s	32.65	15.06	8.41
Net Capital Flows (CIF - COD)	0.64	1.29	2.08
1970s	1.64	3.37	3.54
1980s	1.42	0.39	2.71
1990s	0.87	0.82	1.28
2000s	-0.18	1.90	0.56
Capital Inflows by Foreign Agents (CIF)	8.89	4.83	4.07
1970s	4.73	5.08	5.62
1980s	4.79	0.83	3.99
1990s	7.00	3.96	4.43
2000s	15.16	5.58	4.22
Capital Outflows by Domestic Agents (COD)	8.33	3.78	2.87
1970s	3.43	3.34	2.07
1980s	3.78	1.40	0.54
1990s	6.56	2.80	2.54
2000s	17.71	6.44	3.73
No. of Countries	39	26	38

Units are in percentage of trend GDP. The sample period is 1970 to 2009.

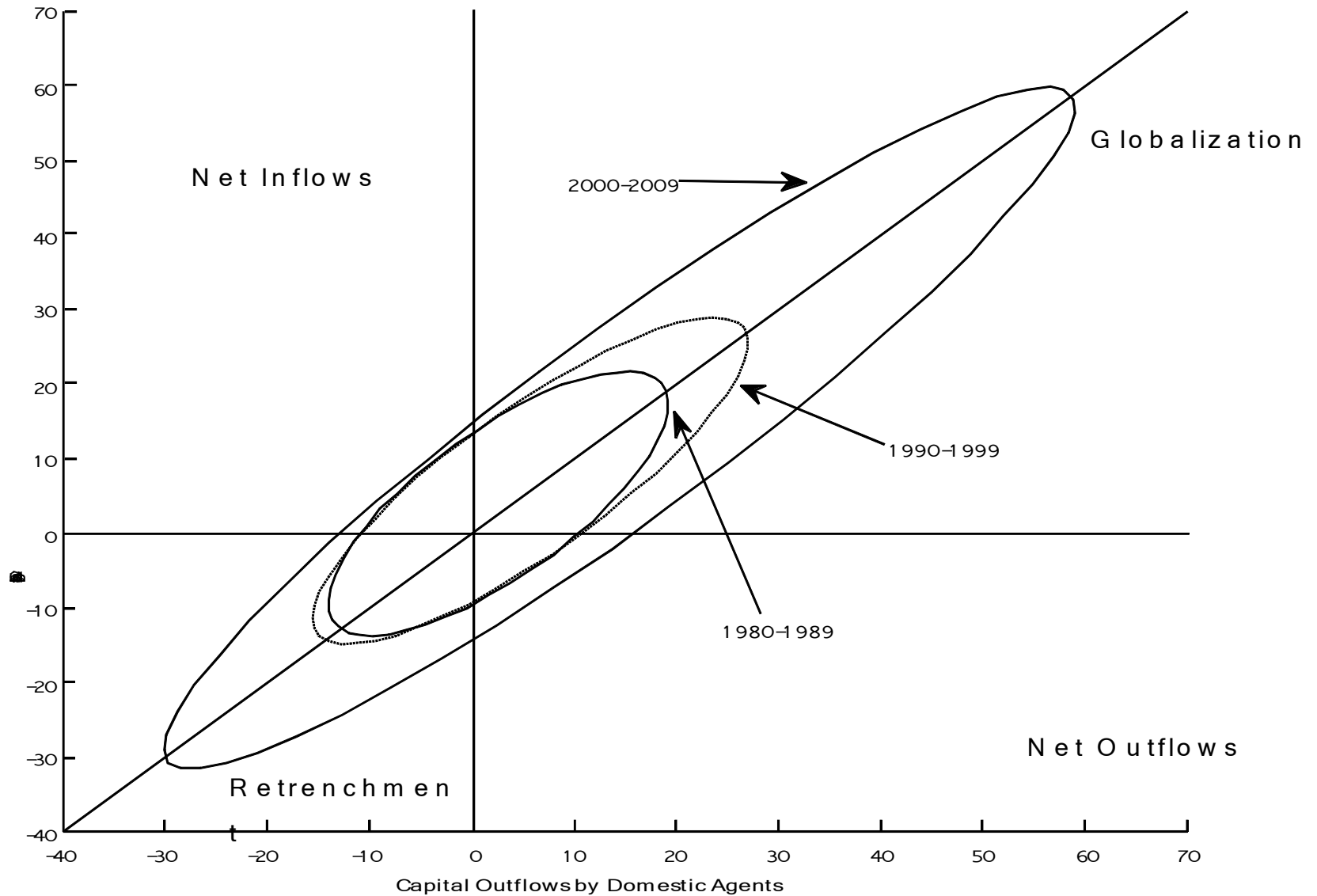
Capital Flows: Summary Statistics

Median Standard Deviation

	High-Income Countries	Middle-Income Countries	Low-Income Countries
Total Gross Capital Flows (CIF + COD)	15.49	10.01	7.17
1970s	3.62	5.27	2.75
1980s	6.16	5.95	3.90
1990s	9.39	5.60	5.56
2000s	16.70	8.48	6.21
Net Capital Flows (CIF - COD)	3.92	5.62	5.51
1970s	2.41	3.94	3.09
1980s	2.71	5.56	4.11
1990s	2.79	4.23	4.18
2000s	3.60	3.94	4.37
Capital Inflows by Foreign Agents (CIF)	7.81	6.06	5.21
1970s	2.66	3.07	2.29
1980s	3.47	4.03	3.37
1990s	5.54	4.12	4.16
2000s	9.16	4.96	3.93
Capital Outflows by Domestic Agents (COD)	8.05	5.10	3.87
1970s	2.29	2.96	1.77
1980s	3.09	2.71	2.06
1990s	5.32	3.32	3.03
2000s	8.13	4.86	3.35
No. of Countries	39	26	38

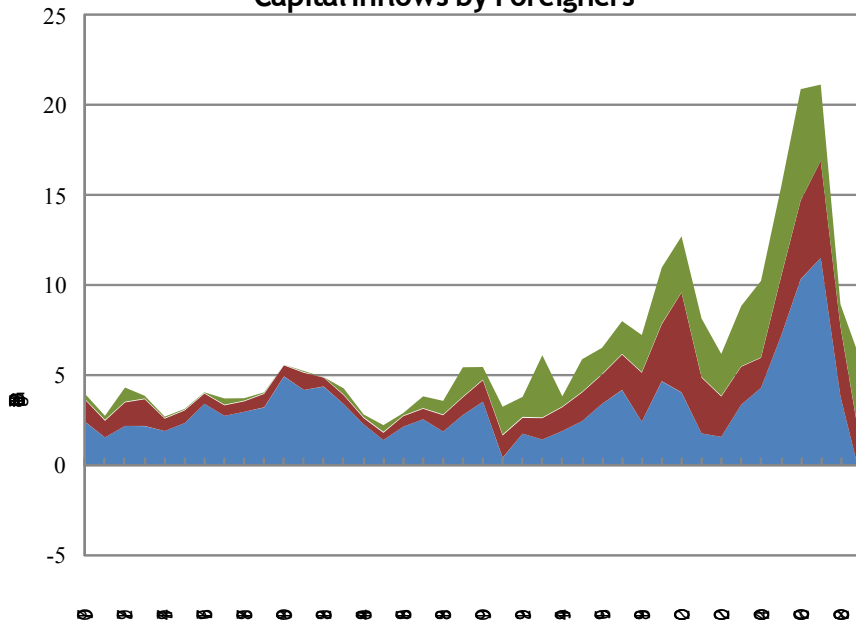
Units are in percentage of trend GDP. The sample period is 1970 to 2009.

Joint Distribution of Capital Flows

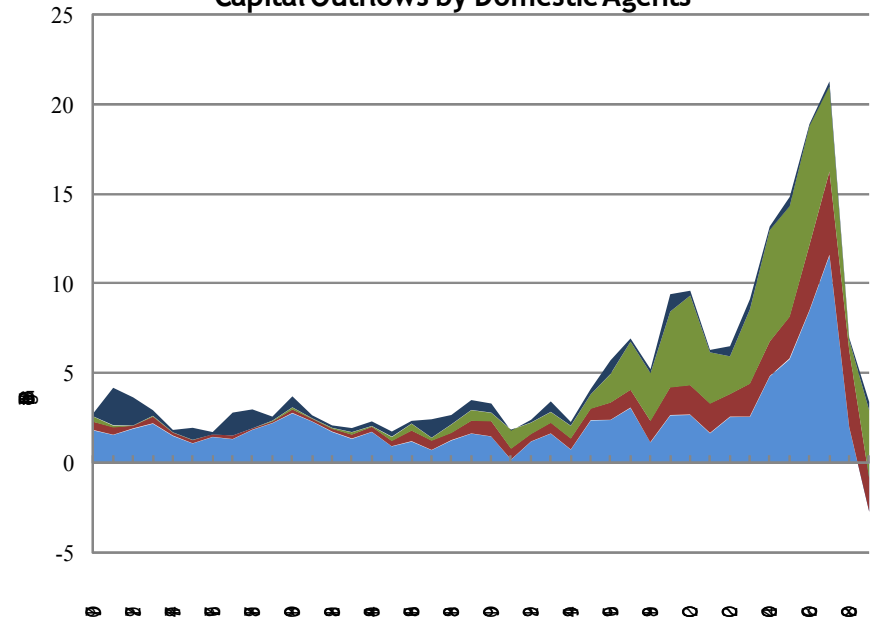


Decomposition of Capital Flows High-Income Countries

High-Income Countries
Capital Inflows by Foreigners



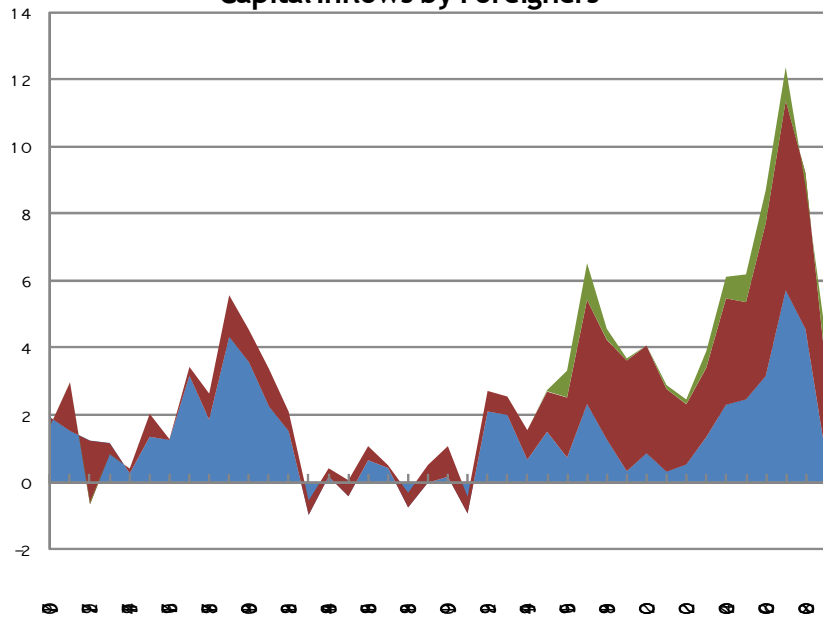
High-Income Countries
Capital Outflows by Domestic Agents



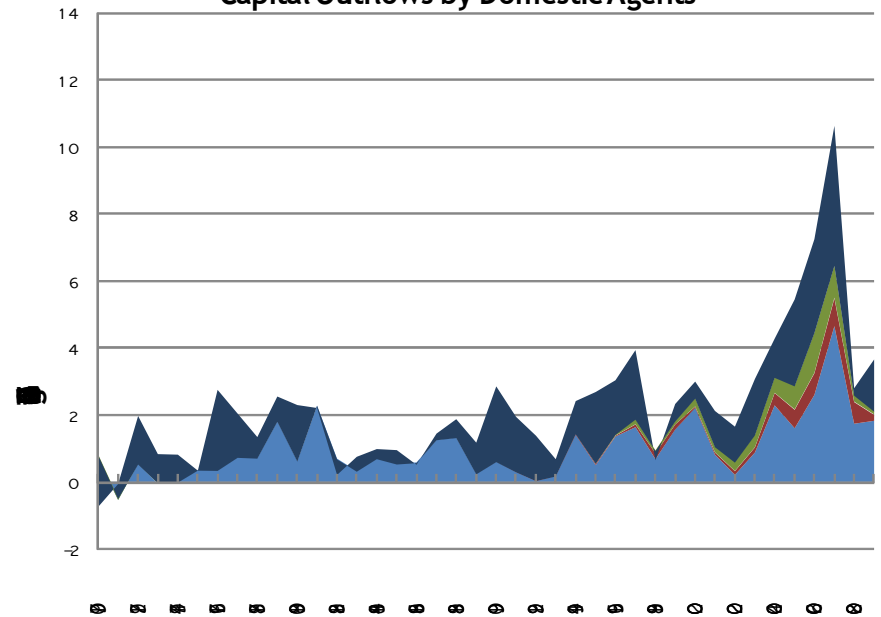
Decomposition of Capital Flows

Middle-Income Countries

Middle-Income Countries
Capital Inflows by Foreigners



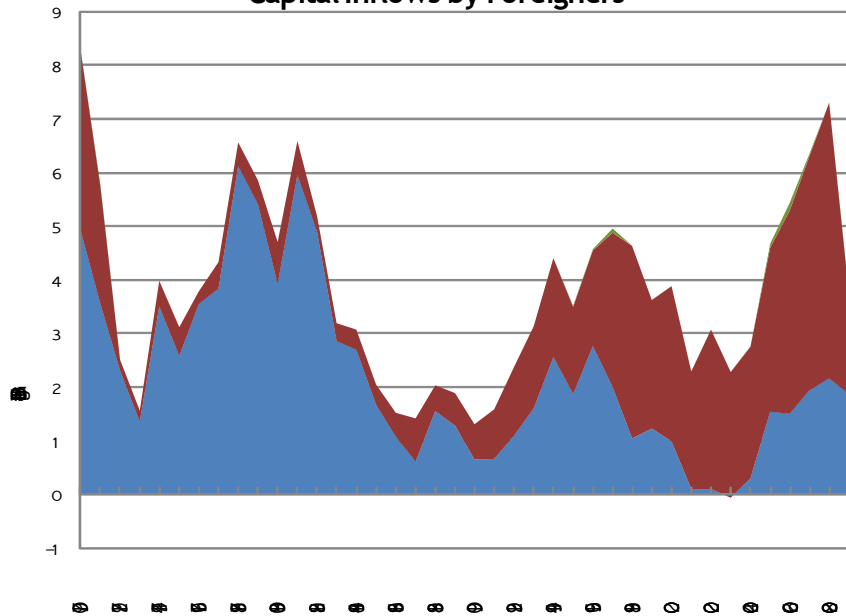
Middle-Income Countries
Capital Outflows by Domestic Agents



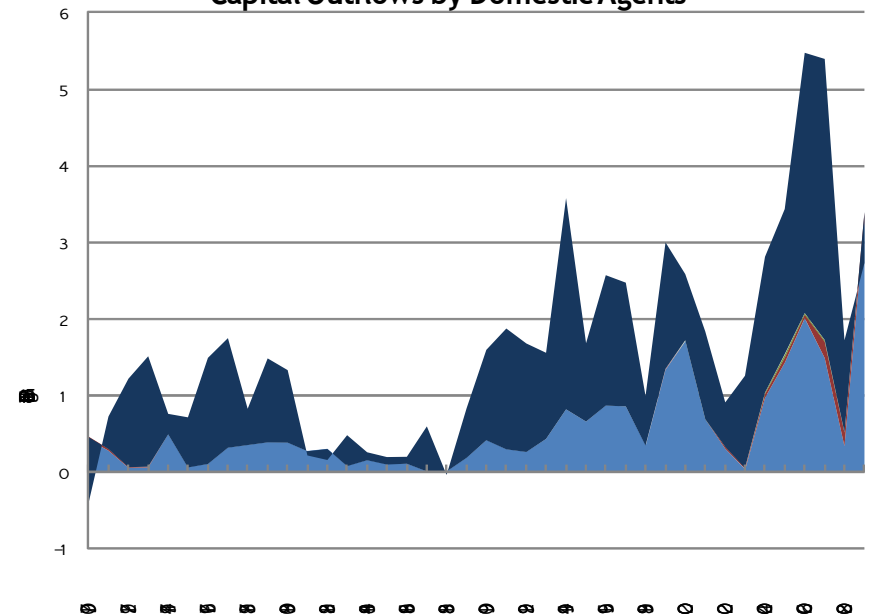
Decomposition of Capital Flows

Low-Income Countries

Low-Income Countries
Capital Inflows by Foreigners



Low-Income Countries
Capital Outflows by Domestic Agents



Correlation between Capital Flows

- Fixed-effects panel regressions of capital flows on each other

$$CIF_{c,t} = \beta \cdot COD_{c,t} + Controls + v_c + \varepsilon_{c,t}$$

$$COD_{c,t} = \beta \cdot CIF_{c,t} + Controls + v_c + \varepsilon_{c,t}$$

- *Controls* are country-trend and year dummies

Correlation between Capital Flows

Country-Trend Dummies

	High-Income Countries		Middle-Income		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
COD	0.79 *** [0.05]		0.48 *** [0.07]		0.28 *** [0.05]	
CIF		0.73 *** [0.05]		0.44 *** [0.06]		0.26 *** [0.05]
No. of Countries	39	39	26	26	38	38
No. of Observations	1,300	1,300	702	702	1,050	1,050
R-squared	0.66	0.68	0.25	0.31	0.10	0.15

Country-Trend Dummies and Year Dummies

	High-Income Countries		Middle-Income		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
COD	0.73 *** [0.06]		0.39 *** [0.06]		0.26 *** [0.06]	
CIF		0.64 *** [0.06]		0.38 *** [0.08]		0.24 *** [0.05]
No. of Countries	39	39	26	26	38	38
No. of Observations	1,300	1,300	702	702	1,050	1,050
R-squared	0.68	0.72	0.38	0.39	0.20	0.25

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2009.

Standard errors, clusterized at the country level, are in brackets.

Dynamics around Business Cycle

- Fixed-effects panel regressions of gross flows on cyclical variables

$$Y_{c,t} = \alpha + \beta \cdot X_{c,t} + \textit{Controls} + v_c + \varepsilon_{c,t}$$

- Y is CIF, COD or a measure of aggregate flows CIF + COD
- X is either trade balance, net capital flows, or real GDP growth
- *Controls* are country-trend dummies

Cyclicality in Capital Flows

	High-Income Countries								
	CF	COD	CIF+COD	CF	COD	CIF+COD	CF	COD	CIF+COD
Net Capital Flows (CIF - COD)	0.25 *** [0.05]	-0.24 *** [0.07]	-0.02 [0.07]						
Trade Balance				-0.25 *** [0.06]	0.19 ** [0.07]	0.00 [0.08]			
GDP Growth							3.58 ** [1.45]	5.20 *** [1.46]	5.17 *** [1.41]
No. of Countries	39	39	39	39	39	39	39	39	39
No. of Observations	1,300	1,300	1,300	1,300	1,300	1,300	1,287	1,287	1,287
R-squared	0.34	0.35	0.30	0.33	0.33	0.30	0.31	0.35	0.35
	Middle-Income Countries								
	CF	COD	CIF+COD	CF	COD	CIF+COD	CF	COD	CIF+COD
Net Capital Flows (CIF + COD)	0.63 *** [0.06]	-0.26 ** [0.09]	0.26 ** [0.10]						
Trade Balance				-0.59 *** [0.04]	0.21 ** [0.09]	-0.25 *** [0.08]			
GDP Growth							3.90 *** [0.92]	3.18 *** [0.92]	4.47 *** [0.87]
No. of Countries	26	26	26	26	26	26	26	26	26
No. of Observations	702	702	702	702	702	702	681	681	681
R-squared	0.53	0.25	0.28	0.46	0.23	0.27	0.24	0.22	0.27
	Low-Income Countries								
	CF	COD	CIF+COD	CF	COD	CIF+COD	CF	COD	CIF+COD
Net Capital Flows (CIF + COD)	0.72 *** [0.04]	-0.39 *** [0.05]	0.32 *** [0.06]						
Trade Balance				-0.58 *** [0.04]	0.30 *** [0.05]	-0.27 *** [0.05]			
GDP Growth							3.02 *** [0.86]	2.95 *** [0.78]	3.71 *** [0.87]
No. of Countries	38	38	38	38	38	38	38	38	38
No. of Observations	1,050	1,050	1,050	1,050	1,050	1,050	1,042	1,042	1,042
R-squared	0.6	0.29	0.23	0.4	0.23	0.20	0.19	0.18	0.18

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2009. Country-trend dummies are included in all regressions.

Standard errors, clustered at the country level, are in brackets.

Capital Flows and Financial Crises

- Composite crisis indicator captures only the initial year of the turmoil period in a country, independent of its source
- Behavior of CIF and COD both in the run-up to the crises and the immediate aftermath
- Gross flows during crises: Event studies

$$Y_{c,t} = \alpha + \sum_{i=-2}^{i=2} (\beta_i \cdot Crisis_{c,t+i}) + Controls + \nu_c + \varepsilon_{c,t}$$

- Y is CIF or COD
- *Crisis* is the Crisis indicator
- Controls are country-trend dummies

Capital Flows: Tranquil vs. Crisis Periods

	Capital Flows/GDP		
	High-Income Countries	Middle-Income Countries	Low-Income Countries
Total Gross Capital Flows (CIF + COD)			
Non-Crisis Years	27.33	12.95	8.18
Crisis Years	10.42	-10.63	5.29
Net Capital Flows (CIF - COD)			
Non-Crisis Years	-0.14	0.68	1.62
Crisis Years	2.72	0.20	2.04
Capital Inflows by Foreign Agents (CIF)			
Non-Crisis Years	13.59	6.82	4.90
Crisis Years	6.57	-5.21	3.67
Capital Outflows by Domestic Agents (COD)			
Non-Crisis Years	13.73	6.13	3.28
Crisis Years	3.85	-5.42	1.62
No. of Countries	39	26	38

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2009.

Capital Flows around Crises

	High-Income Countries		Middle-Income Countries		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
Year t - 2	0.34 *** [0.10]	0.01 [0.07]	0.30 *** [0.10]	0.01 [0.14]	0.14 [0.15]	0.01 [0.11]
Year t - 1	0.32 * [0.19]	-0.08 [0.17]	0.17 [0.13]	-0.26 ** [0.10]	0.27 * [0.15]	0.13 [0.12]
Crisis Year	0.06 [0.12]	-0.36 *** [0.11]	-0.10 [0.19]	-0.55 *** [0.14]	-0.11 [0.15]	-0.19 [0.12]
Year t + 1	-0.32 *** [0.11]	-0.50 *** [0.15]	-0.12 [0.20]	0.01 [0.16]	-0.27 ** [0.13]	0.10 [0.12]
Year t + 2	-0.20 [0.12]	-0.29 * [0.14]	-0.18 [0.13]	-0.06 [0.12]	-0.23 * [0.11]	-0.05 [0.10]
Diff. between Crisis Year and Avg. Previous 2 Years	-0.27 **	-0.33 ***	-0.34 **	-0.43 **	-0.32 ***	-0.26 *
No. of Crises	46	46	66	66	85	85
No. of Countries	39	39	26	26	38	38
No. of Observations	1,108	1,108	567	567	867	867
R-squared	0.30	0.34	0.12	0.16	0.21	0.12
Median Country Std. Dev.	7.81	8.55	6.04	5.56	5.02	3.31

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions. Standard errors, clusterized at the country level, are in brackets.

Capital Flows around Crises

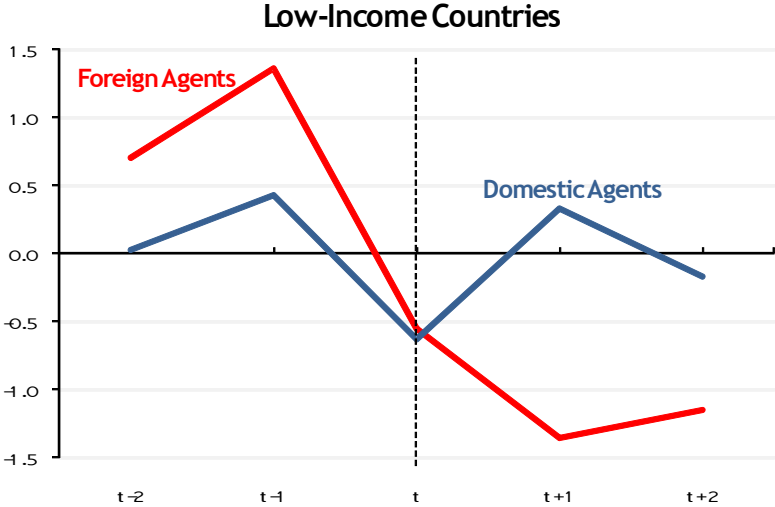
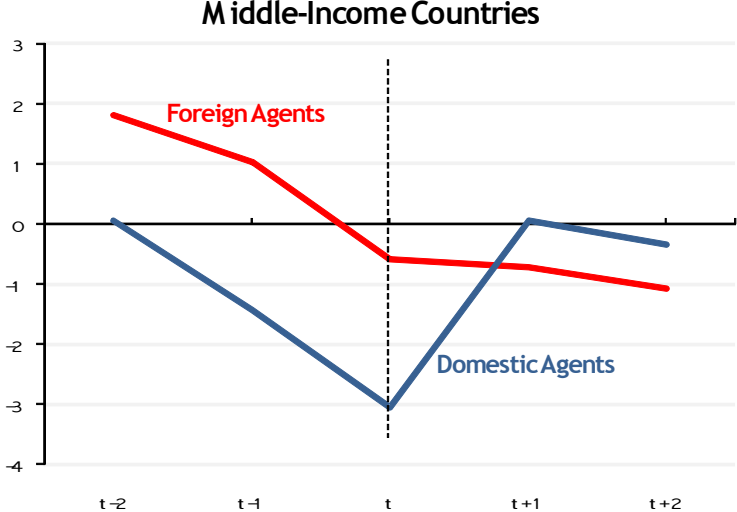
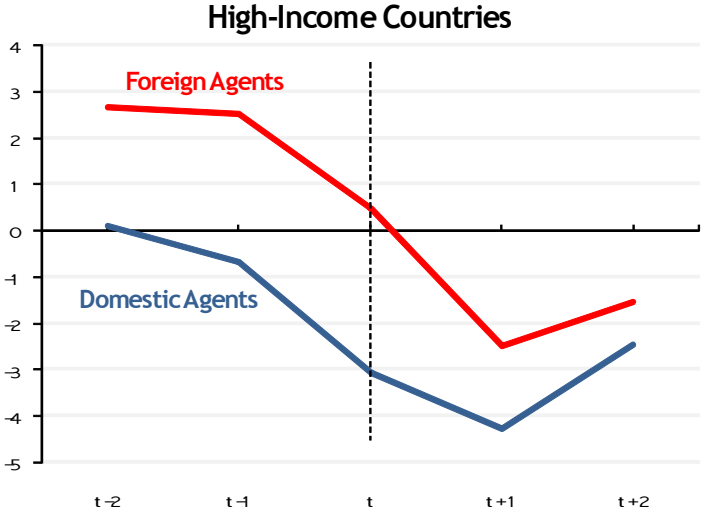
Regression Coefficients Multiplied by Median Standard Deviation Across Countries

	High-Income Countries		Middle-Income Countries		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
Year t - 2	2.66 ***	0.09	1.81 ***	0.06	0.70	0.03
Year t - 1	2.50 *	-0.68	1.03	-1.45 **	1.36 *	0.43
Crisis Year	0.47	-3.08 ***	-0.60	-3.06 ***	-0.55	-0.63
Year t + 1	-2.50 ***	-4.27 ***	-0.72	0.06	-1.36 **	0.33
Year t + 2	-1.56	-2.48 *	-1.09	-0.33	-1.16 *	-0.17
Diff. between Crisis Year and Avg. Previous 2 Years	-0.27 **	-0.33 ***	-0.34 **	-0.43 **	-0.32 ***	-0.26 *
No. of Crises	46	46	66	66	85	85
No. of Countries	39	39	26	26	38	38
No. of Observations	1,108	1,108	567	567	867	867
R-squared	0.30	0.34	0.12	0.16	0.21	0.12
Median Country Std. Dev.	7.81	8.55	6.04	5.56	5.02	3.31

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Capital Flows around Crises

Percentage of Trend GDP



Capital Flows and Financial Crises by Intensity

- Distinction between mild and severe crisis episodes
- Gross flows during crises: Event studies

$$Y_{c,t} = \alpha + \sum_{i=-2}^{i=2} (\beta_i \cdot OneCrisis_{c,t+i}) + \sum_{i=-2}^{i=2} (\beta_i \cdot MoreOneCrisis_{c,t+i}) + Controls + v_c + \varepsilon_{c,t}$$

- Y is CIF or COD
- Controls are country-trend dummies

Capital Flows around Crises of Different Intensities

	High-Income Countries		Middle-Income Countries		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
One Crisis Episodes						
Year t - 2	0.34 ***	0.02	0.32 **	0.02	0.07	-0.09
Year t - 1	0.30 *	-0.07	0.06	-0.42 ***	0.18	0.06
Crisis Year	0.06	-0.34 ***	-0.02	-0.46 ***	-0.17	-0.15
Year t + 1	-0.32 **	-0.54 ***	-0.10	-0.13	-0.23 *	0.11
Year t + 2	-0.20	-0.31 **	-0.15	-0.16	-0.20	-0.10
Diff. between Crisis Year and Avg. Previous 2 Years	-0.26 **	-0.32 ***	-0.21	-0.26	-0.30 **	-0.14
More than One Crisis Episodes						
Year t - 2	1.34 ***	0.52 *	0.21	-0.20	0.42	0.17
Year t - 1	1.17 *	1.01 ***	0.37	-0.31	0.46	0.06
Crisis Year	0.08	0.21	-0.75 **	-1.14 ***	-0.52 *	-0.43
Year t + 1	0.02	1.20 ***	-0.59 ***	0.12	-0.69 ***	0.35 *
Year t + 2	0.59	0.60 **	-0.45 ***	0.30 **	-0.45 **	0.12
Diff. between Crisis Year and Avg. Previous 2 Years	-1.18 *	-0.56	-1.04 ***	-0.89 ***	-0.96 ***	-0.55 *
No. of Only One Crisis Episodes	45	45	49	49	74	74
No. of More than One Crisis Episo	2	2	24	24	25	25
No. of Countries	39	39	26	26	38	38
No. of Observations	1,082	1,082	563	563	861	861
R-squared	0.31	0.35	0.18	0.21	0.24	0.13
Median Country Std. Dev.	7.81	8.55	6.04	5.56	5.02	3.31

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Capital Flows around Crises of Different Intensities

Regression Coefficients Multiplied by Median Standard Deviation Across Countries

	High-Income Countries		Middle-Income Countries		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
One Crisis Episodes						
Year t - 2	2.66 ***	0.17	1.93 **	0.11	0.35	-0.30
Year t - 1	2.34 *	-0.60	0.36	-2.33 ***	0.90	0.20
Crisis Year	0.47	-2.91 ***	-0.12	-2.56 ***	-0.85	-0.50
Year t + 1	-2.50 **	-4.62 ***	-0.60	-0.72	-1.16 *	0.36
Year t + 2	-1.56	-2.65 **	-0.91	-0.89	-1.00	-0.33
Diff. between Crisis Year and Avg. Previous 2 Years	-0.26 **	-0.32 ***	-0.21	-0.26	-0.30 **	-0.14
More than One Crisis Episodes						
Year t - 2	10.46 ***	4.44 *	1.27	-1.11	2.11	0.56
Year t - 1	9.14 *	8.63 ***	2.23	-1.72	2.31	0.20
Crisis Year	0.62	1.79	-4.53 **	-6.34 ***	-2.61 *	-1.42
Year t + 1	0.16	10.26 ***	-3.56 ***	0.67	-3.47 ***	1.16 *
Year t + 2	4.61	5.13 **	-2.72 ***	1.67 **	-2.26 **	0.40
Diff. between Crisis Year and Avg. Previous 2 Years	-1.18 *	-0.56	-1.04 ***	-0.89 ***	-0.96 ***	-0.55 *
No. of Only One Crisis Episodes	45	45	49	49	74	74
No. of More than One Crisis Episodes	2	2	24	24	25	25
No. of Countries	39	39	26	26	38	38
No. of Observations	1,082	1,082	563	563	861	861
R-squared	0.31	0.35	0.18	0.21	0.24	0.13
Median Country Std. Dev.	7.81	8.55	6.04	5.56	5.02	3.31

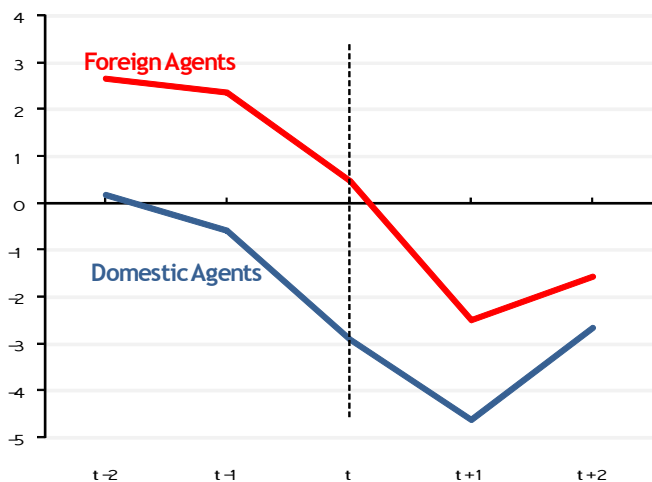
Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Capital Flows Around Crises of Different Intensities

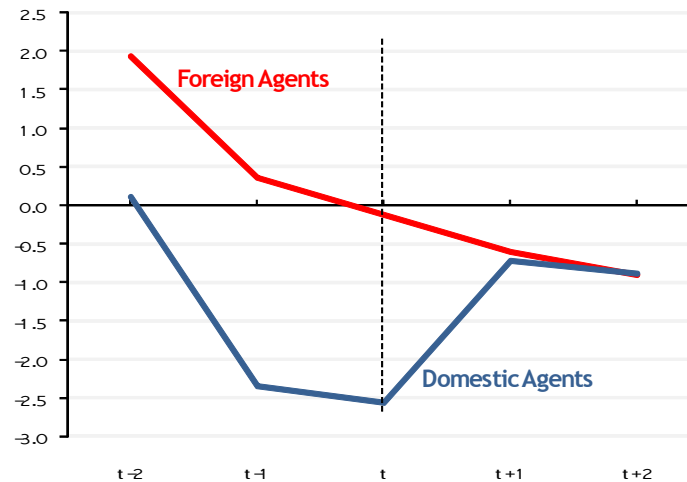
Percentage of Trend GDP

Only One Cris

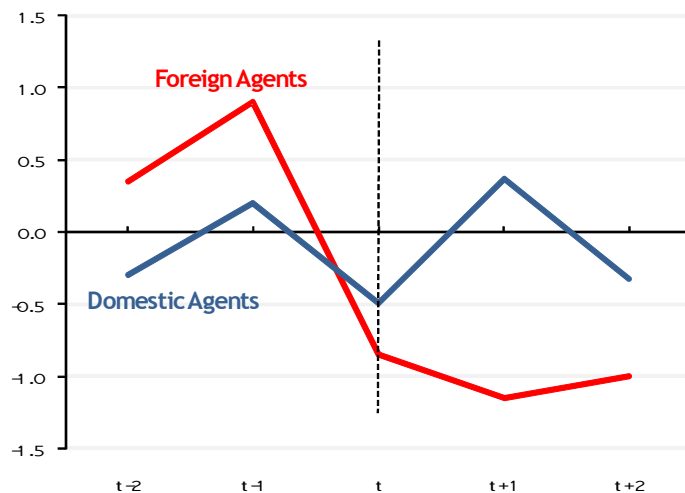
High-Income Countries



Middle-Income Countries



Low-Income Countries

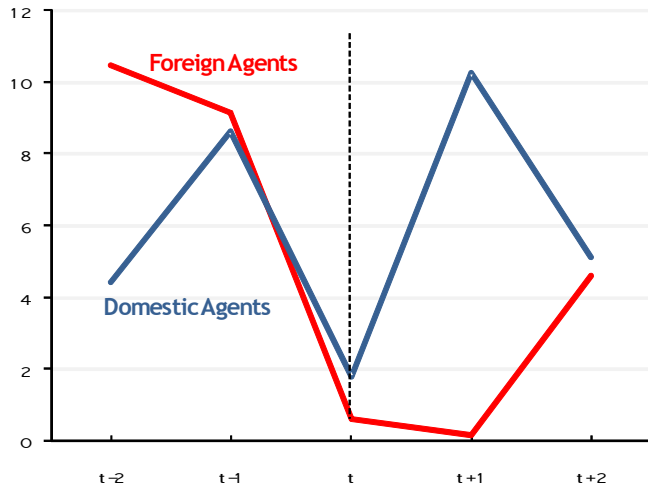


Capital Flows Around Crises of Different Intensities

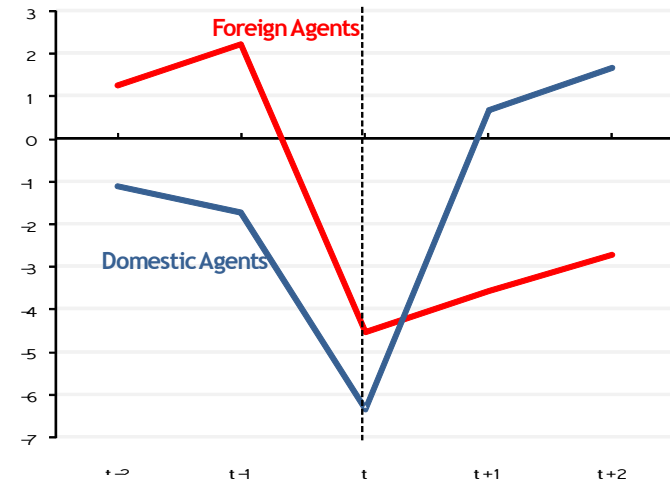
Percentage of Trend GDP

More than One Crisis

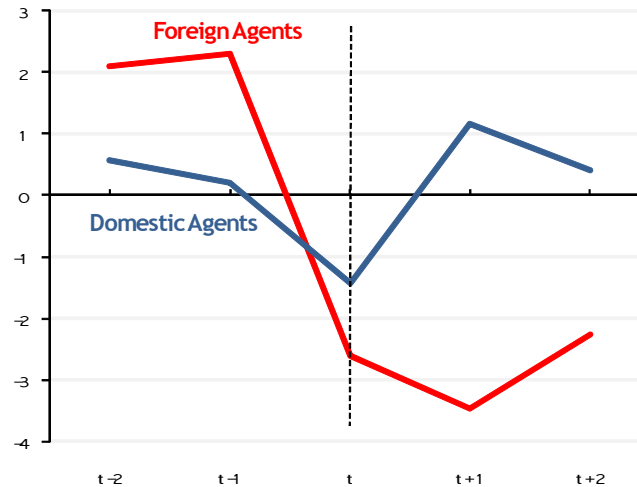
High-Income Countries



Middle-Income Countries



Low-Income Countries



Components of Capital Flows by Foreign Agents around Crises of Different Intensities

	High-Income Countries			
	CIF			
	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes				
Year t - 2	-0.01	0.13	0.40 ***	-0.02
Year t - 1	-0.03	0.01	0.39 *	-0.07
Crisis Year	-0.19 **	0.01	0.14	-0.06
Year t + 1	-0.18 **	-0.19	-0.23	-0.19
Year t + 2	0.10	-0.13	-0.19	-0.16
Diff. between Crisis Year and Avg. Previous 2 Years	-0.17 **	-0.06	-0.26 *	-0.02
More than One Crisis Episodes				
Year t - 2	0.24 **	0.65	1.09 ***	-0.10
Year t - 1	0.31 ***	1.09	0.74 **	0.02
Crisis Year	-0.19	0.66 *	-0.10	0.09
Year t + 1	-0.09	-0.33	0.17	0.45
Year t + 2	-0.06	-0.80 **	0.70	0.79
Diff. between Crisis Year and Avg. Previous 2 Years	-0.47 ***	-0.21	-1.02 *	0.13 **
No. of Only One Crisis Episodes	43	45	45	45
No. of More than One Crisis Episodes	2	2	2	2
No. of Countries	36	38	39	39
No. of Observations	981	1,038	1,082	1,082
R-squared	0.22	0.30	0.17	0.27
Median Country Std. Dev.	1.08	2.84	5.09	2.23

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Domestic Agents around Crises of Different Intensities

High-Income Countries

	COD				
	Reserves	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes					
Year t - 2	-0.34 **	0.03	0.01	0.16 *	-0.01
Year t - 1	-0.12	-0.16 **	-0.13 **	0.03	0.00
Crisis Year	-0.16	-0.22 ***	-0.22 **	-0.18	-0.10
Year t + 1	-0.23	-0.30 ***	-0.16 *	-0.25	-0.27 ***
Year t + 2	0.04	-0.14	-0.10	-0.33 ***	-0.09
Diff. between Crisis Year and Avg. Previous 2 Years	0.07	-0.16 ***	-0.16 ***	-0.28 ***	-0.10
More than One Crisis Episodes					
Year t - 2	-0.24 ***	0.02	0.40 ***	1.46	0.51 **
Year t - 1	-0.23	0.12	0.96 **	1.94 ***	0.76 **
Crisis Year	-1.04	0.01	-0.53	2.16 ***	0.54 *
Year t + 1	1.40 ***	0.13	0.13	-0.23	0.47
Year t + 2	-0.09	0.30 *	-0.22	0.82	0.21
Diff. between Crisis Year and Avg. Previous 2 Years	-0.81 *	-0.06	-1.21	0.46	-0.10 **
No. of Only One Crisis Episodes	45	45	45	45	45
No. of More than One Crisis Episodes	2	2	2	2	2
No. of Countries	39	38	38	39	39
No. of Observations	1,082	1,037	1,039	1,082	1,082
R-squared	0.07	0.38	0.43	0.15	0.32
Median Country Std. Dev.	2.14	1.23	2.27	3.56	1.93

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Res: International Reserve Assets, PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Foreign Agents around Crises of Different Intensities

Regression Coefficients M multiplied by Median Standard Deviation across Countries

	High-Income Countries			
	CIF			
	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes				
Year t - 2	-0.01	0.37	2.04 ***	-0.04
Year t - 1	-0.03	0.03	1.99 *	-0.16
Crisis Year	-0.21 **	0.03	0.71	-0.13
Year t + 1	-0.19 **	-0.54	-1.17	-0.42
Year t + 2	0.11	-0.37	-0.97	-0.36
Diff. between Crisis Year and Avg. Previous 2 Years	-0.17 **	-0.06	-0.26 *	-0.02
More than One Crisis Episodes				
Year t - 2	0.26 **	1.84	5.55 ***	-0.22
Year t - 1	0.34 ***	3.09	3.77 **	0.04
Crisis Year	-0.21	1.87 *	-0.51	0.20
Year t + 1	-0.10	-0.94	0.87	1.00
Year t + 2	-0.06	-2.27 **	3.56	1.76
Diff. between Crisis Year and Avg. Previous 2 Years	-0.47 ***	-0.21	-1.02 *	0.13 **
No. of Only One Crisis Episodes	43	45	45	45
No. of More than One Crisis Episodes	2	2	2	2
No. of Countries	36	38	39	39
No. of Observations	981	1,038	1,082	1,082
R-squared	0.22	0.30	0.17	0.27
Median Country Std. Dev.	1.08	2.84	5.09	2.23

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Domestic Agents around Crises of Different Intensities

Regression Coefficients Multiplied by Median Standard Deviation across Countries

	High-Income Countries				
	COD				
	Reserves	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes					
Year t - 2	-0.73 **	0.04	0.02	0.57 *	-0.02
Year t - 1	-0.26	-0.20 **	-0.29 **	0.11	0.00
Crisis Year	-0.34	-0.27 ***	-0.50 **	-0.64	-0.19
Year t + 1	-0.49	-0.37 ***	-0.36 *	-0.89	-0.52 ***
Year t + 2	0.09	-0.17	-0.23	-1.18 ***	-0.17
Diff. between Crisis Year and Avg. Previous 2 Years	0.07	-0.16 ***	-0.16 ***	-0.28 ***	-0.10
More than One Crisis Episodes					
Year t - 2	-0.51 ***	0.02	0.91 ***	5.20	0.98 **
Year t - 1	-0.49	0.15	2.17 **	6.91 ***	1.46 **
Crisis Year	-2.22	0.01	-1.20	7.69 ***	1.04 *
Year t + 1	2.99 ***	0.16	0.29	-0.82	0.91
Year t + 2	-0.19	0.37 *	-0.50	2.92	0.40
Diff. between Crisis Year and Avg. Previous 2 Years	-0.81 *	-0.06	-1.21	0.46	-0.10 **
No. of Only One Crisis Episodes	45	45	45	45	45
No. of More than One Crisis Episodes	2	2	2	2	2
No. of Countries	39	38	38	39	39
No. of Observations	1,082	1,037	1,039	1,082	1,082
R-squared	0.07	0.38	0.43	0.15	0.32
Median Country Std. Dev.	2.14	1.23	2.27	3.56	1.93

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Res: International Reserve Assets, PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Foreign Agents around Crises of Different Intensities

	Middle-Income Countries			
	CIF			
	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes				
Year t - 2	-0.04	0.29	0.17	0.09
Year t - 1	-0.21	-0.02	0.17	-0.09
Crisis Year	-0.22	-0.22	0.13	-0.18
Year t + 1	-0.03	0.2	-0.08	-0.24
Year t + 2	-0.06	-0.21	-0.01	-0.13
Diff. between Crisis Year and Avg. Previous 2 Years	-0.10	-0.36 *	-0.04	-0.18
More than One Crisis Episodes				
Year t - 2	-0.09	0	0.27	0.00
Year t - 1	0.16	0.32	0.32	-0.09
Crisis Year	0.06	-0.36 **	-0.73 **	-0.32
Year t + 1	-0.13	-0.43 **	-0.44 *	-0.33 **
Year t + 2	0.07	-0.23	-0.36 ***	-0.31 ***
Diff. between Crisis Year and Avg. Previous 2 Years	0.03	-0.52 ***	-1.03 ***	-0.28
No. of Only One Crisis Episodes	40	43	49	49
No. of More than One Crisis Episodes	23	24	24	24
No. of Countries	22	23	26	26
No. of Observations	482	506	563	563
R-squared	0.08	0.13	0.15	0.31
Median Country Std. Dev.	0.31	1.43	4.91	2.05

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Domestic Agents around Crises of Different Intensities

Middle-Income Countries

	COD				
	Reserves	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes					
Year t - 2	-0.15	0.09	-0.04	0.14	-0.06
Year t - 1	-0.41 ***	-0.02	-0.22 *	-0.12	-0.20 **
Crisis Year	-0.4 ***	0.04	-0.21	-0.06	0.00
Year t + 1	-0.15	0.04	-0.1	0.02	0.07
Year t + 2	-0.27 *	0	-0.11	0.08	0.01
Diff. between Crisis Year and Avg. Previous 2 Years	-0.12	0.01	-0.08	-0.07	0.13
More than One Crisis Episodes					
Year t - 2	-0.22	-0.13	0.40	0.09	-0.05
Year t - 1	-0.4 *	-0.04	-0.21	-0.02	0.14
Crisis Year	-1.09 ***	-0.27 **	-0.43	-0.29	-0.13
Year t + 1	0.16	0	-0.1	0.21	-0.26
Year t + 2	0.36 *	-0.27 **	0.44	0.05	-0.06
Diff. between Crisis Year and Avg. Previous 2 Years	-0.78 ***	-0.19	-0.53 *	-0.33	-0.18
No. of Only One Crisis Episodes	49	43	45	49	43
No. of More than One Crisis Episodes	24	22	24	24	23
No. of Countries	26	23	24	26	23
No. of Observations	563	508	533	563	509
R-squared	0.14	0.15	0.17	0.13	0.26
Median Country Std. Dev.	2.78	0.19	0.57	2.76	0.45

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Res: International Reserve Assets, PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Foreign Agents around Crises of Different Intensities

Regression Coefficients M multiplied by Median Standard Deviation across Countries

	Middle-Income Countries			
	CIF			
	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes				
Year t - 2	-0.01	0.41	0.84	0.18
Year t - 1	-0.06	-0.03	0.84	-0.18
Crisis Year	-0.07	-0.31	0.64	-0.37
Year t + 1	-0.01	0.29	-0.39	-0.49
Year t + 2	-0.02	-0.30	-0.05	-0.27
Diff. between Crisis Year and Avg. Previous 2 Years	-0.10	-0.36 *	-0.04	-0.18
More than One Crisis Episodes				
Year t - 2	-0.03	0.00	1.33	0.00
Year t - 1	0.05	0.46	1.57	-0.18
Crisis Year	0.02	-0.51 **	-3.59 **	-0.66
Year t + 1	-0.04	-0.61 **	-2.16 *	-0.68 **
Year t + 2	0.02	-0.33	-1.77 ***	-0.64 ***
Diff. between Crisis Year and Avg. Previous 2 Years	0.03	-0.52 ****	-1.03 ***	-0.28
No. of Only One Crisis Episodes	40	43	49	49
No. of More than One Crisis Episodes	23	24	24	24
No. of Countries	22	23	26	26
No. of Observations	482	506	563	563
R-squared	0.08	0.13	0.15	0.31
Median Country Std. Dev.	0.31	1.43	4.91	2.05

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Domestic Agents around Crises of Different Intensities

Regression Coefficients Multiplied by Median Standard Deviation across Countries

Middle-Income Countries					
	COD				
	Reserves	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes					
Year t - 2	-0.42	0.02	-0.02	0.39	-0.03
Year t - 1	-1.14 ***	0.00	-0.13 *	-0.33	-0.09 **
Crisis Year	-1.11 ***	0.01	-0.12	-0.17	0.00
Year t + 1	-0.42	0.01	-0.06	0.06	0.03
Year t + 2	-0.75 *	0.00	-0.06	0.22	0.00
Diff. between Crisis Year and Avg. Previous 2 Years	-0.12	0.01	-0.08	-0.07	0.13
More than One Crisis Episodes					
Year t - 2	-0.61	-0.02	0.23	0.25	-0.02
Year t - 1	-1.11 *	-0.01	-0.12	-0.06	0.06
Crisis Year	-3.03 ***	-0.05 **	-0.25	-0.80	-0.06
Year t + 1	0.44	0.00	-0.06	0.58	-0.12
Year t + 2	1.00 *	-0.05 **	0.25	0.14	-0.03
Diff. between Crisis Year and Avg. Previous 2 Years	-0.78 ***	-0.19	-0.53 *	-0.33	-0.18
No. of Only One Crisis Episodes	49	43	45	49	43
No. of More than One Crisis Episodes	24	22	24	24	23
No. of Countries	26	23	24	26	23
No. of Observations	563	508	533	563	509
R-squared	0.14	0.15	0.17	0.13	0.26
Median Country Std. Dev.	2.78	0.19	0.57	2.76	0.45

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Res: International Reserve Assets, PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Foreign Agents around Crises of Different Intensities

	Low-Income Countries			
	CIF			
	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes				
Year t - 2	-0.08	0.06	0.12	0.03
Year t - 1	0	-0.16	0.24 *	0.06
Crisis Year	-0.24 **	-0.18	-0.13	-0.01
Year t + 1	0.10	-0.18	-0.15	-0.06
Year t + 2	-0.07	-0.08	-0.2 *	-0.06
Diff. between Crisis Year and Avg. Previous 2 Years	-0.20	-0.13	-0.31 **	-0.06
More than One Crisis Episodes				
Year t - 2	0.23	0.39	0.37	0.20
Year t - 1	0.43 **	0.69 **	0.46	0.05
Crisis Year	-0.09	0.06	-0.57 *	-0.04
Year t + 1	-0.14	-0.24	-0.51 ***	-0.23
Year t + 2	0.1	-0.18	-0.35	-0.19
Diff. between Crisis Year and Avg. Previous 2 Years	0.32	0.50	0.28 ***	-0.05
No. of Only One Crisis Episodes	55	63	74	74
No. of More than One Crisis Episodes	18	24	25	25
No. of Countries	30	30	38	38
No. of Observations	670	702	861	861
R-squared	0.13	0.14	0.26	0.31
Median Country Std. Dev.	0.31	0.66	4.09	1.99

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Domestic Agents around Crises of Different Intensities

Low-Income Countries

	COD				
	Reserves	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes					
Year t - 2	-0.17 *	-0.16 **	0.06	0.13	0.12
Year t - 1	-0.1	-0.15	0.07	0.22	0.08
Crisis Year	-0.19	-0.01	0.15	0.02	0.02
Year t + 1	-0.11	-0.07	-0.11	0.35 ***	-0.04
Year t + 2	-0.16	-0.04	0.00	-0.01	-0.09
Diff. between Crisis Year and Avg. Previous 2 Years	-0.06	0.15	0.09	-0.16	-0.08
More than One Crisis Episodes					
Year t - 2	0.19	0.16	0.15	0.08	0.19
Year t - 1	-0.19	0	-0.19 *	0.30	0.19
Crisis Year	-0.62 *	-0.14	-0.09	0.06	0.05
Year t + 1	0.24	0.18	-0.12	0.3	0.01
Year t + 2	0.4	-0.01	-0.09	-0.31 *	0.01
Diff. between Crisis Year and Avg. Previous 2 Years	-0.29 *	-0.08	-0.27	0.26	0.10
No. of Only One Crisis Episodes	74	65	66	74	62
No. of More than One Crisis Episodes	25	22	21	25	19
No. of Countries	38	32	31	38	33
No. of Observations	861	730	697	861	723
R-squared	0.12	0.12	0.14	0.14	0.24
Median Country Std. Dev.	2.77	0.05	0.22	1.56	0.19

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Res: International Reserve Assets, PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Foreign Agents around Crises of Different Intensities

Regression Coefficients M multiplied by Median Standard Deviation across Countries

	Low-Income Countries			
	CIF			
	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes				
Year t - 2	-0.03	0.04	0.49	0.06
Year t - 1	0.00	-0.11	0.98 *	0.12
Crisis Year	-0.08 **	-0.12	-0.53	-0.02
Year t + 1	0.03	-0.12	-0.61	-0.12
Year t + 2	-0.02	-0.05	-0.82 *	-0.12
Diff. between Crisis Year and Avg. Previous 2 Years	-0.20	-0.13	-0.31 **	-0.06
More than One Crisis Episodes				
Year t - 2	0.07	0.26	1.51	0.40
Year t - 1	0.14 **	0.46 **	1.88	0.10
Crisis Year	-0.03	0.04	-2.33 *	-0.08
Year t + 1	-0.04	-0.16	-2.09 ***	-0.46
Year t + 2	0.03	-0.12	-1.43	-0.38
Diff. between Crisis Year and Avg. Previous 2 Years	0.32	0.50	0.28 ***	-0.05
No. of Only One Crisis Episodes	55	63	74	74
No. of More than One Crisis Episodes	18	24	25	25
No. of Countries	30	30	38	38
No. of Observations	670	702	861	861
R-squared	0.13	0.14	0.26	0.31
Median Country Std. Dev.	0.31	0.66	4.09	1.99

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Components of Capital Flows by Domestic Agents around Crises of Different Intensities

Regression Coefficients Multiplied by Median Standard Deviation across Countries

	Low-Income Countries				
	COD				
	Reserves	PI - Equity	PI - Debt	OI	DI
One Crisis Episodes					
Year t - 2	-0.47 *	-0.01 **	0.01	0.20	0.02
Year t - 1	-0.28	-0.01	0.02	0.34	0.02
Crisis Year	-0.53	0.00	0.03	0.03	0.00
Year t + 1	-0.31	0.00	-0.02	0.55 ***	-0.01
Year t + 2	-0.44	0.00	0.00	-0.02	-0.02
Diff. between Crisis Year and Avg. Previous 2 Years	-0.06	0.15	0.09	-0.16	-0.08
More than One Crisis Episodes					
Year t - 2	0.53	0.01	0.03	0.12	0.04
Year t - 1	-0.53	0.00	-0.04 *	0.47	0.04
Crisis Year	-1.72 *	-0.01	-0.02	0.09	0.01
Year t + 1	0.67	0.01	-0.03	0.47	0.00
Year t + 2	1.11	0.00	-0.02	-0.48 *	0.00
Diff. between Crisis Year and Avg. Previous 2 Years	-0.29 *	-0.08	-0.27	0.26	0.10
No. of Only One Crisis Episodes	74	65	66	74	62
No. of More than One Crisis Episodes	25	22	21	25	19
No. of Countries	38	32	31	38	33
No. of Observations	861	730	697	861	723
R-squared	0.12	0.12	0.14	0.14	0.24
Median Country Std. Dev.	2.77	0.05	0.22	1.56	0.19

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions.

Res: International Reserve Assets, PI: Portfolio Investments, OI: Other Investments, DI: Direct Investments

Capital Flows around 2008

	High-Income Countries		Middle-Income Countries		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
Year 2006	1.36 *** [0.19]	1.55 *** [0.16]	0.80 *** [0.21]	1.16 *** [0.21]	0.15 [0.17]	1.01 *** [0.17]
Year 2007	2.22 *** [0.19]	2.25 *** [0.16]	1.75 *** [0.25]	1.91 *** [0.23]	0.65 *** [0.23]	1.18 *** [0.23]
Year 2008	0.36 [0.25]	0.19 [0.27]	0.48 ** [0.22]	0.11 [0.24]	0.59 *** [0.16]	0.18 [0.24]
Year 2009	-0.21 [0.30]	-0.14 [0.28]	0.21 [0.24]	0.34 [0.23]	0.02 [0.39]	0.58 [0.71]
Diff. between Year 2008 and Avg. Previous 2 Years	-1.43 ***	-1.71 ***	-0.80 ***	-1.43 ***	0.19	-0.92 ***
No. of Countries	39	39	23	23	37	37
No. of Observations	132	132	81	81	110	110
R-squared	0.56	0.61	0.52	0.59	0.17	0.34

Flows are normalized by trend GDP and standardized. The sample period is 2006 to 2009.

Standard errors, clusterized at the country level, are in brackets.

Capital Flows around 2008

Including the 2008 Crisis

	High-Income Countries		Middle-Income Countries		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
Year t - 2	0.52 *** [0.09]	0.25 *** [0.08]	0.41 *** [0.12]	0.13 [0.14]	0.15 [0.14]	0.04 [0.11]
Year t - 1	0.79 *** [0.16]	0.49 *** [0.17]	0.31 ** [0.14]	-0.15 [0.13]	0.27 * [0.15]	0.12 [0.13]
Crisis Year	-0.09 [0.12]	-0.50 *** [0.14]	-0.11 [0.17]	-0.61 *** [0.14]	-0.09 [0.15]	-0.17 [0.12]
Year t + 1	-0.61 *** [0.11]	-0.78 *** [0.13]	-0.18 [0.18]	-0.07 [0.15]	-0.28 ** [0.13]	0.07 [0.12]
Year t + 2	-0.32 ** [0.12]	-0.41 *** [0.13]	-0.23 * [0.12]	-0.12 [0.11]	-0.26 ** [0.11]	-0.06 [0.09]
Diff. between Crisis Year and Avg. Previous 2 Years	-0.745 ***	-0.87 ***	-0.47 ***	-0.60 ***	-0.30 ***	-0.25 *
Country-Trend Dummies	Yes	Yes	Yes	Yes	Yes	Yes
No. of Crises	65	65	72	72	89	89
No. of Countries	39	39	26	26	38	38
No. of Observations	1,240	1,240	648	648	978	978
R-squared	0.35	0.37	0.21	0.23	0.20	0.18

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2009. Country-trend dummies are included in all regressions. Standard errors, clustered at the country level, are in brackets.

Capital Flows around Crises

	High-Income Countries		Middle-Income Countries		Low-Income Countries	
	CIF	COD	CIF	COD	CIF	COD
Year t - 2	0.34 *** [0.10]	0.01 [0.07]	0.30 *** [0.10]	0.01 [0.14]	0.14 [0.15]	0.01 [0.11]
Year t - 1	0.32 * [0.19]	-0.08 [0.17]	0.17 [0.13]	-0.26 ** [0.10]	0.27 * [0.15]	0.13 [0.12]
Crisis Year	0.06 [0.12]	-0.36 *** [0.11]	-0.10 [0.19]	-0.55 *** [0.14]	-0.11 [0.15]	-0.19 [0.12]
Year t + 1	-0.32 *** [0.11]	-0.50 *** [0.15]	-0.12 [0.20]	0.01 [0.16]	-0.27 ** [0.13]	0.10 [0.12]
Year t + 2	-0.20 [0.12]	-0.29 * [0.14]	-0.18 [0.13]	-0.06 [0.12]	-0.23 * [0.11]	-0.05 [0.10]
Diff. between Crisis Year and Avg. Previous 2 Years	-0.27 **	-0.33 ***	-0.34 **	-0.43 **	-0.32 ***	-0.26 *
No. of Crises	46	46	66	66	85	85
No. of Countries	39	39	26	26	38	38
No. of Observations	1,108	1,108	567	567	867	867
R-squared	0.30	0.34	0.12	0.16	0.21	0.12
Median Country Std. Dev.	7.81	8.55	6.04	5.56	5.02	3.31

Flows are normalized by trend GDP and standardized. The sample period is 1970 to 2005. Country-trend dummies are included in all regressions. Standard errors, clusterized at the country level, are in brackets.

Conclusions

- Size and volatility of gross flows have increased over last four decades
 - Net capital flows do not show such an increase, since CIF and COD are highly positively correlated
- Total gross capital are pro-cyclical
 - During expansions, foreign agents increase their investment in domestic assets
 - Domestic agents increase their investment in foreign assets

Conclusions

- Total gross capital flows fall significantly during crises
 - CIF and COD contract significantly
 - Especially during severe crises
 - Significant retrenchment (more CIF and COD) during systemic crises

Conclusions

- Behavior of gross flows during crises not driven by single component
 - In developed countries, reduction in
 - CIF mostly due to reductions of equity and other investments
 - COD mostly due to reductions of assets in equity, debt, and other investments
 - In developing countries, reduction in
 - CIF mostly due to reductions of debt and other investments
 - COD mostly due to reductions in international reserves and debt portfolio
 - Overall, FDI less responsive than other types of flows

Conclusions

- Behavior of gross capital flows sheds light on the sources of fluctuations and international capital flows
- Gross capital flows do not seem to be driven by fire sales of domestic assets to foreigners
- Nor by domestic capital flight, at least in the frequency and types of capital flows analyzed
- Capital flows do not seem to be driven by productivity shocks
 - Under those shocks: similar behavior by foreign and domestic agents towards domestic assets

Conclusions

- Instead, crises seem to affect foreign and domestic agents asymmetrically
- Two plausible explanations for the asymmetry
 - Crises associated with a worsening of investor property rights or default affecting foreign creditors more than domestic ones
 - Crises increase the informational asymmetry between foreign and domestic agents

Thank you !