COPING WITH CAPITAL INFLOW SURGES

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Policies for Growth and Financial Stability beyond the Crisis

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* The views expressed in this presentation are those of the presenter and do not necessarily represent those of the IMF or IMF policy. This presentation draws on joint work with Marcos Chamon, Atish Ghosh, and Mahvash Qureshi.

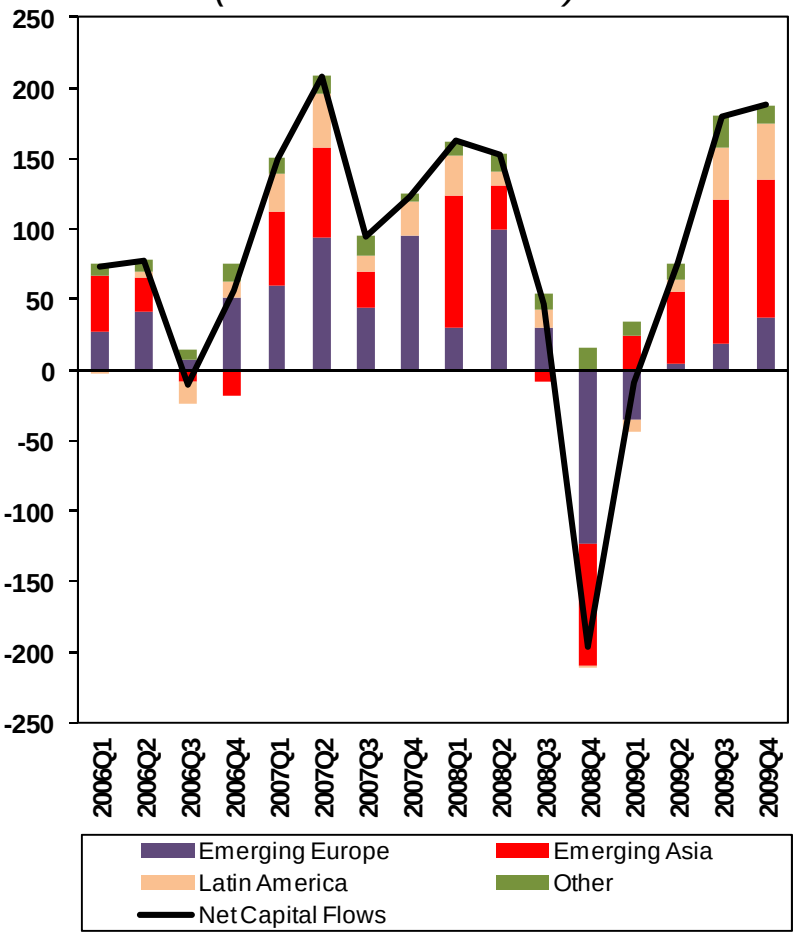
Plan of Presentation

- Context
- Toolkit for coping with inflow surges
- Effectiveness of controls in practice
- Empirical evidence from current crisis
- Conclusions

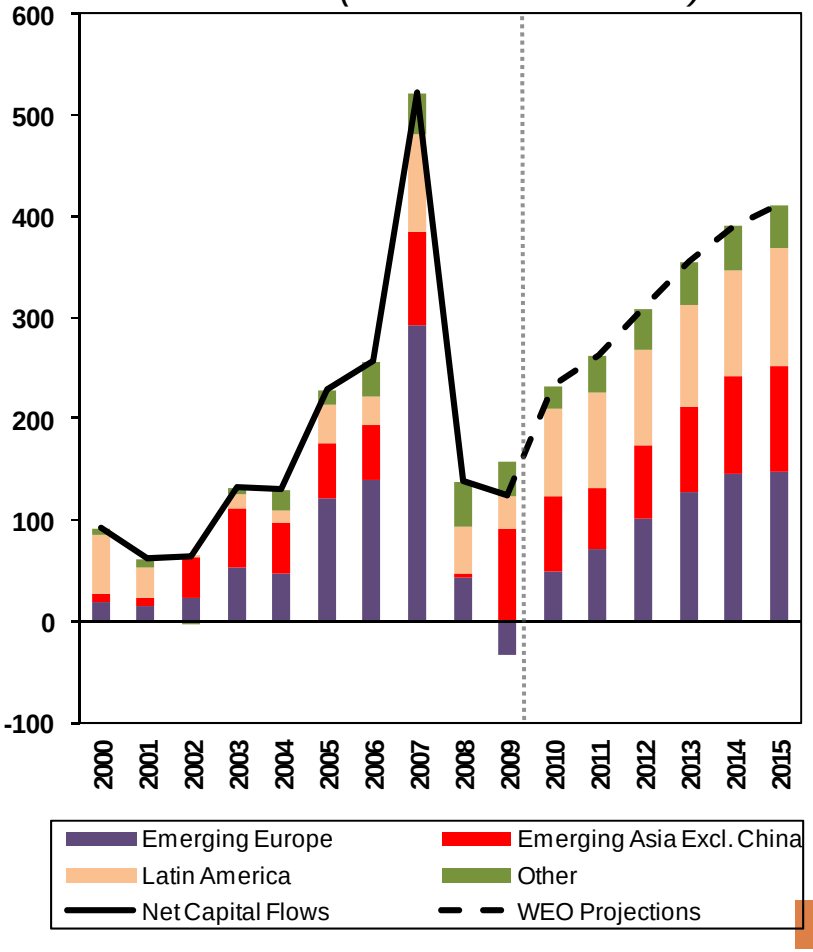
Context

Capital Flows Back on the Radar Screen

Net Quarterly Capital Flows into EMEs, 2006-09
(billions of US dollars)



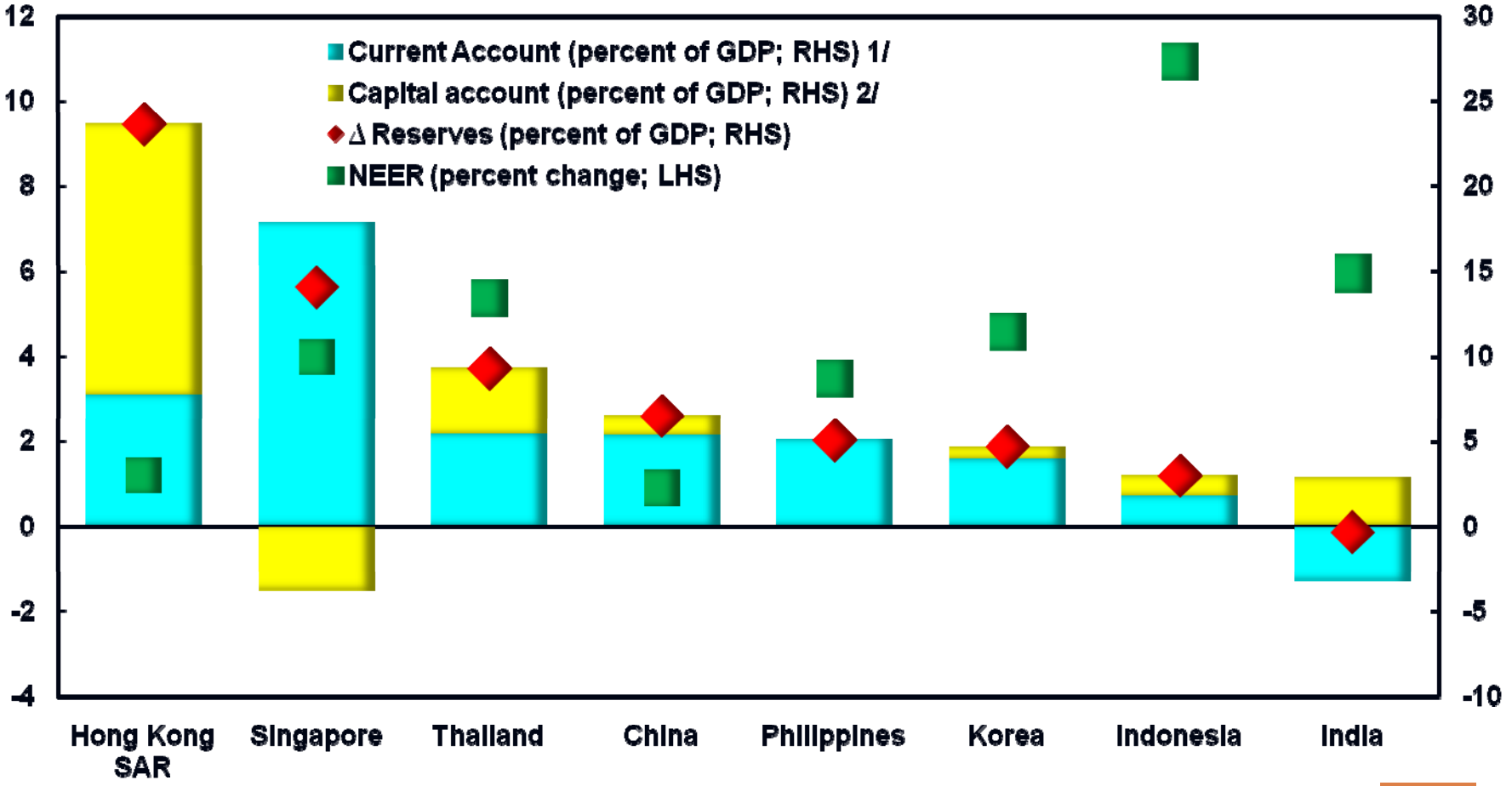
Net Annual Capital Flows into EMEs, 2000-2015 *(billions of US dollars)*



Capital Flows, Reserves, and Appreciation

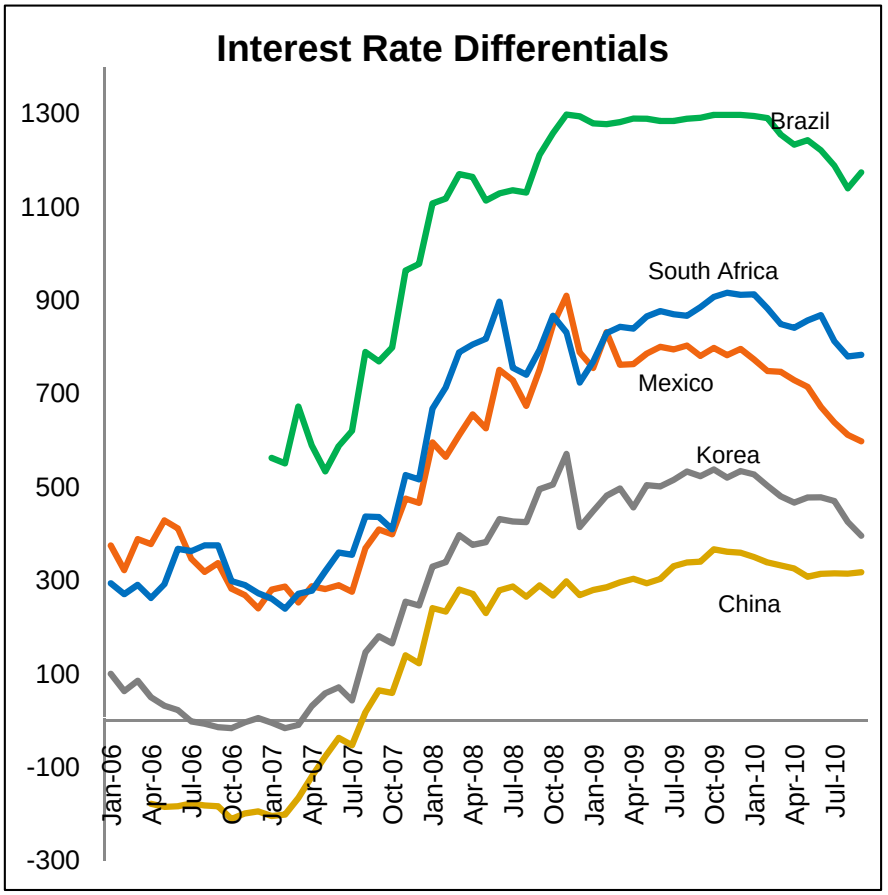
Foreign Reserves and Nominal Effective Exchange Rate

(change from end-June 2009 until end-June 2010)

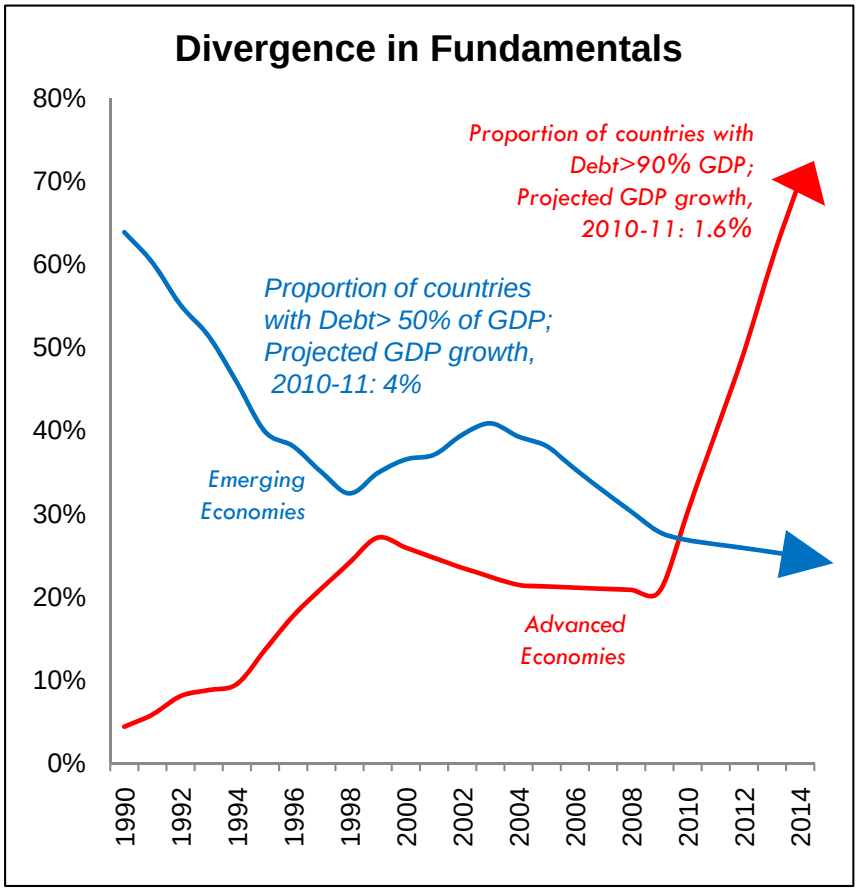


Sources: IMF, International Financial Statistics, Global Data Source and IMF staff estimates.
1/ Comprises a four quarter sum of flows from 2009Q2 through 2010Q1.
2/ Calculated residually; includes valuation effects.

What is Driving the Wave of Inflows?

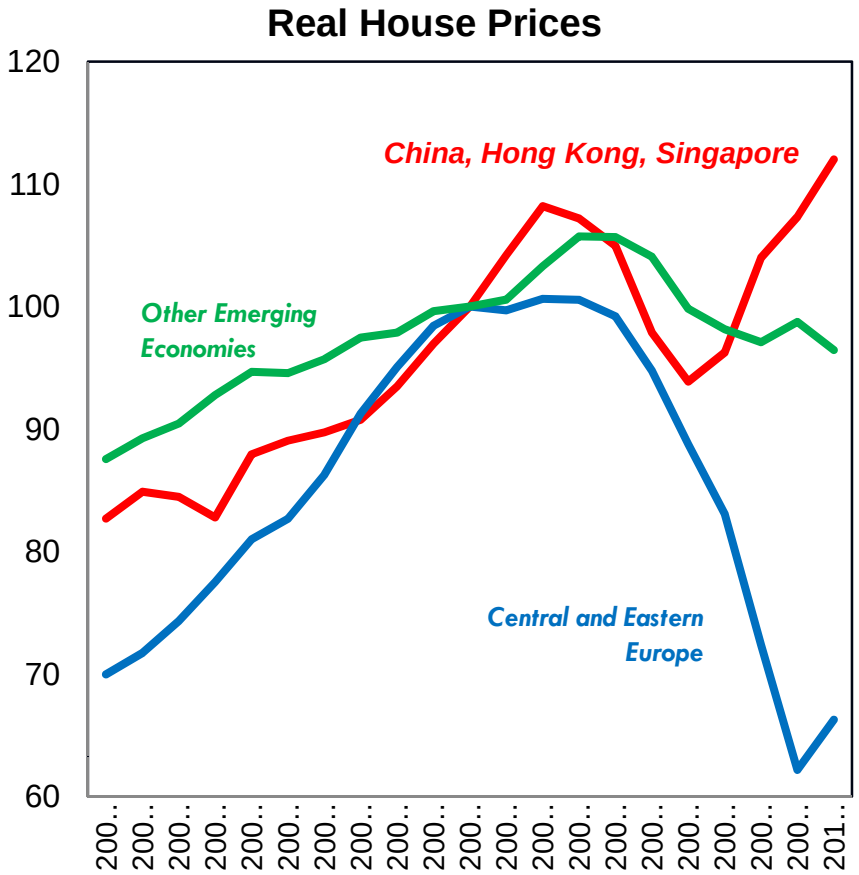


Note: 10-year government bond yield minus 3-month US T-bill rate in basis points.

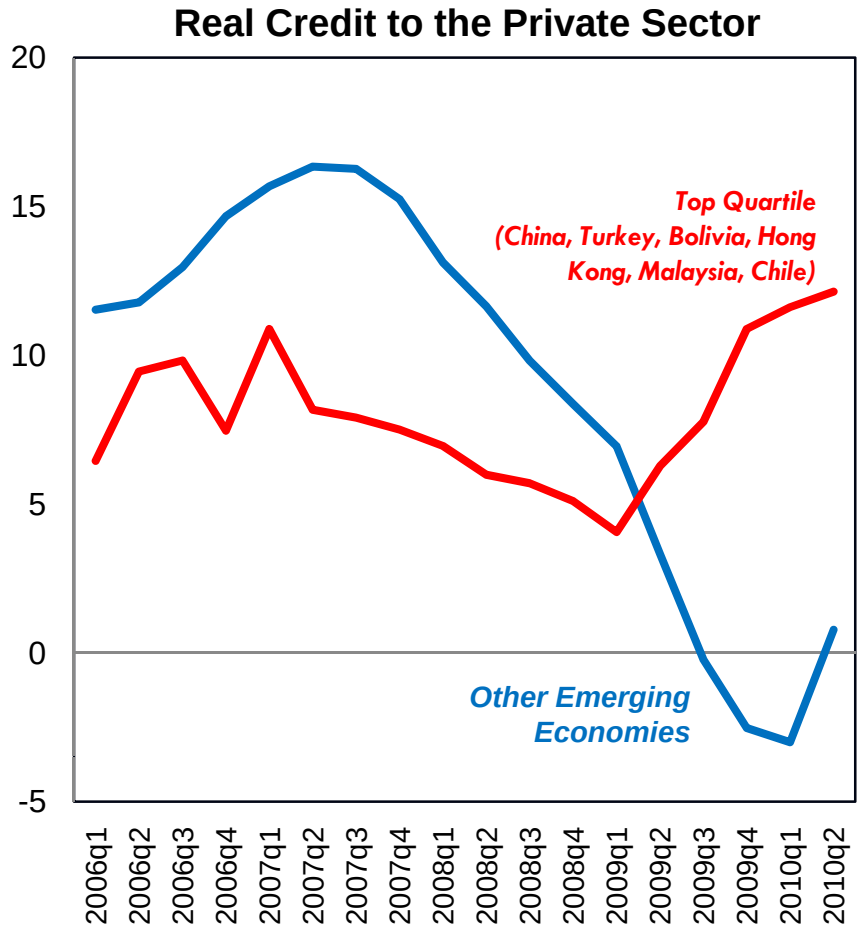


Note: G-20 GDP associated with high debt ratios. Weighted GDP share in percent, 5 year moving average.

Are New Bubbles Emerging in EMs?



Note: Non-weighted averages of the real house price index. 2007q3 is set to equal 100.
Source: OECD, Global Property Data, Haver Analytics and national sources.

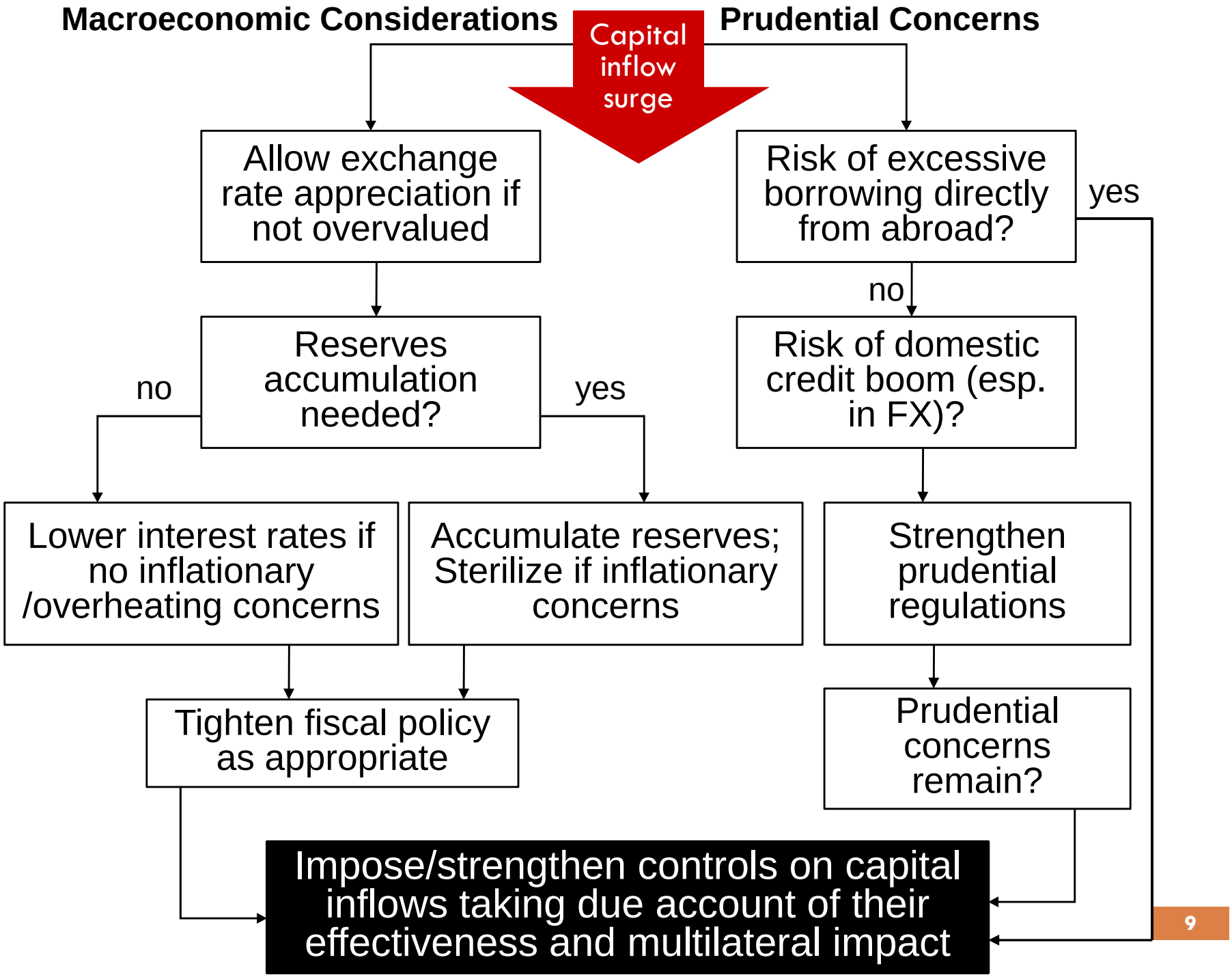


Note: Non-weighted averages of the annual growth of real private credit. The group of "other emerging" lies below the 75th percentile of the distribution of the 2008q3 to 2010q2 averages of the annual growth of real domestic credit to the private sector. China, Turkey, Bolivia, Hong Kong, Malaysia and Chile are above it.
Source: IMF, International Financial Statistics.

Macroeconomic and Prudential Challenges

- Crisis has heightened concerns that inflows could
  - Lead to exchange rate overshooting
  - Inflate asset price bubbles
  - Contribute to financial fragilities
- Capital controls (residency-based restrictions on cross-border capital flows) again in the news

When are Capital Controls Appropriate?


Macroeconomic Considerations
Capital inflow surge
Prudential Concerns
Allow exchange rate appreciation if not overvalued
Risk of excessive borrowing directly from abroad?
yes
no
Reserves accumulation needed?
Risk of domestic credit boom (esp. in FX)?
no
yes
Lower interest rates if no inflationary /overheating concerns
Accumulate reserves; Sterilize if inflationary concerns
Strengthen prudential regulations
Tighten fiscal policy as appropriate
Prudential concerns remain?
Impose/strengthen controls on capital inflows taking due account of their effectiveness and multilateral impact

How Effective are Capital Controls?

Do Capital Controls Work in Practice?

- Evidence from empirical studies on the effectiveness of controls on aggregate inflows and REER mixed:
  - Cross-country analyses suggest controls dampen surges
  - Weaker evidence from individual country studies
  - Obvious endogeneity/econometric problems
- Stronger evidence linking controls to changes in the *composition* of capital inflows—key for financial fragility

Table 1. Selected Cases of Control Measures on Capital Inflows

Country	Year	Controls	Did controls on inflows:			
			Study	Reduce the volume of net flows	Alter the composition	Reduce real exchange rate pressures
Brazil	1993–97	- Explicit tax on capital flows on stock market investments, foreign loans, and certain foreign exchange transactions. - Administrative controls (outright prohibitions against, or minimum maturity requirements for, certain types of inflows).	Cardoso and Goldfajn (1998)	Yes (ST)	Yes (ST)	
			Reinhart and Smith (1998)	Yes (ST)	Yes (ST)	
			Ariyoshi and others (2000)	No	No	No
			Edison and Reinhart (2001)			No
			Carvalho and Garcia (2008)	Yes (ST)		
Chile	1991–98	- Introduced URR on foreign borrowing, later extended to cover nondebt flows, American Depository Receipts, and potentially speculative FDI. - Raised the discount rate.	Valdes-Prieto and Soto (1998)	No	Yes	No
			Le Fort and Budnevich (1997)	No		Yes
			Larrain, Laban, and Chumacero (1997)	No	Yes	
			Cardoso and Laurens (1998)	Yes (ST)	Yes	No
			Reinhart and Smith (1998)	Yes (ST)	Yes (ST)	
			Edwards (1999)	No	Yes	No
			Gallego and Schmidt-Hebbel (1999)	Yes (ST)	Yes (ST)	No
			Ariyoshi and others (2000)	No	No	No
			De Gregorio, Edwards, and Valdes (2000)	No	Yes	Yes (ST)
			Edwards and Rigobon (2009)			Yes
Colombia	1993–98	- Introduced URR on external borrowing (limited to loans with maturities up to 18 months) and later extended to cover certain trade credits.	Le Fort and Budnevich (1997)	Yes (ST)	Yes	Yes
			Cardenas and Barrera (1997)	No	Yes	
			Reinhart and Smith (1998)	No	No	
			Ariyoshi and others (2000)	No	No	No
	2007–08	- Introduced URR of 40 percent on foreign borrowing and portfolio inflows. - Imposed limits on the currency derivative positions of banks (500 percent of capital).	Concha and Galindo (2008)	No	Yes	
			Cardenas (2007)	No	Yes (ST)	
			Clements and Kamil (2009)	No	Yes	No
Croatia	2004–08	- Introduced prudential marginal reserve requirements on bank foreign financing.	Jankov (2009)		Yes	

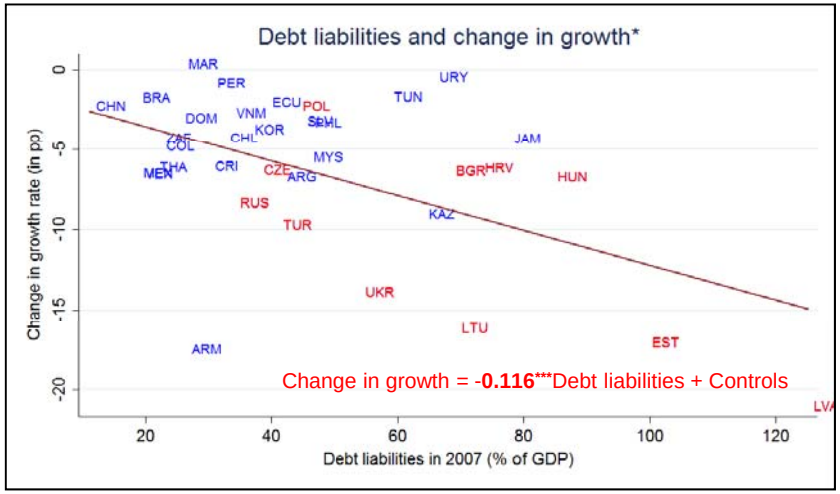
Table 1. Selected Cases of Control Measures on Capital Inflows (concluded)

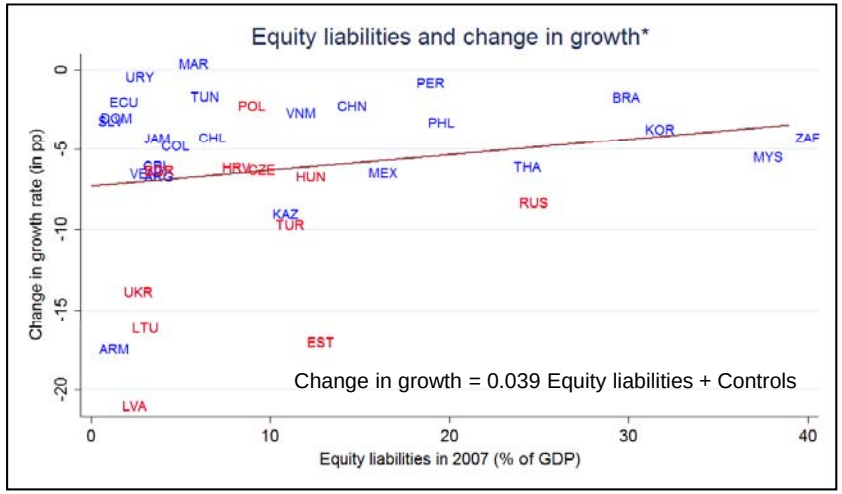
Country	Year	Controls	Did controls on inflows:			
			Study	Reduce the volume of net flows	Alter the composition	Reduce real exchange rate pressures
Malaysia	1994	- Prohibition against sale of short-term debt securities and money market instruments to nonresidents, and against commercial banks' engagement in non-trade-related swaps or forward transactions with nonresidents. - Ceilings on banks' net liability position. - Non-interest-bearing deposit requirement for commercial banks against ringgit funds of foreign banks.	Ariyoshi and others (2000) Tamirisa (2004)	**Yes**	**Yes**	**Yes (ST)** **No**
Thailand	1995–96	- URR imposed on banks' nonresident baht accounts. - Introduced asymmetric open-position limits to discourage foreign borrowing. - Imposed reporting requirements for banks on risk-control measures in foreign exchange and derivatives trading.	Ariyoshi and others (2000)	**Yes**	**Yes**	**Yes**
	2006–08	- URR of 30 percent imposed on foreign currencies sold or exchanged against baht with authorized financial institutions (except for FDI and amounts not exceeding US$20,000). Equity investments in companies listed on the stock exchange were made exempt from the URR.				
Cross-country evidence			Reinhart and Smith (1998)	**Yes (ST)**	**Yes (ST)**	
			Montiel and Reinhart (1999)	**No**	**Yes (ST)**	
			Edison and Reinhart (2001)			**No**
			Binici, Hutchison, and Schindler (2009)	**No**	**No**	

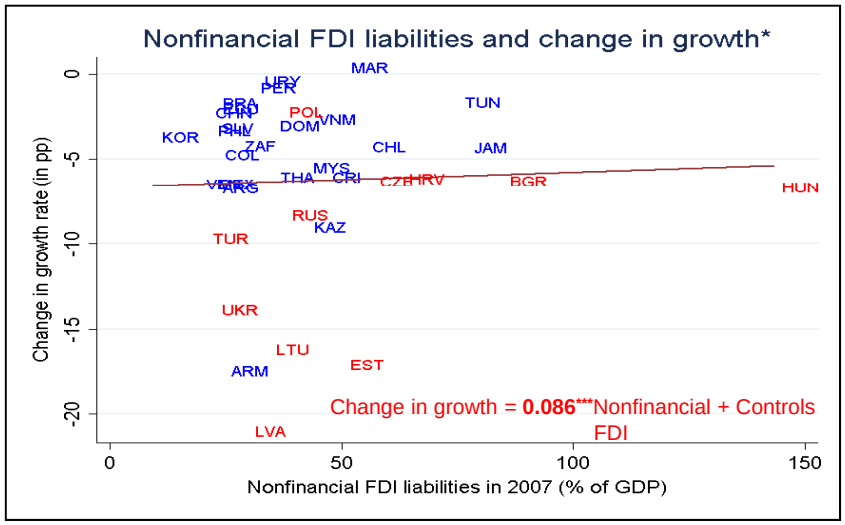
Sources: Magud, Reinhart, and Rogoff (2007), and IMF staff.
Note: A blank entry refers to the cases where the study in question did not analyze the particular relationship. (ST) refers to cases where only short-term effects were detected

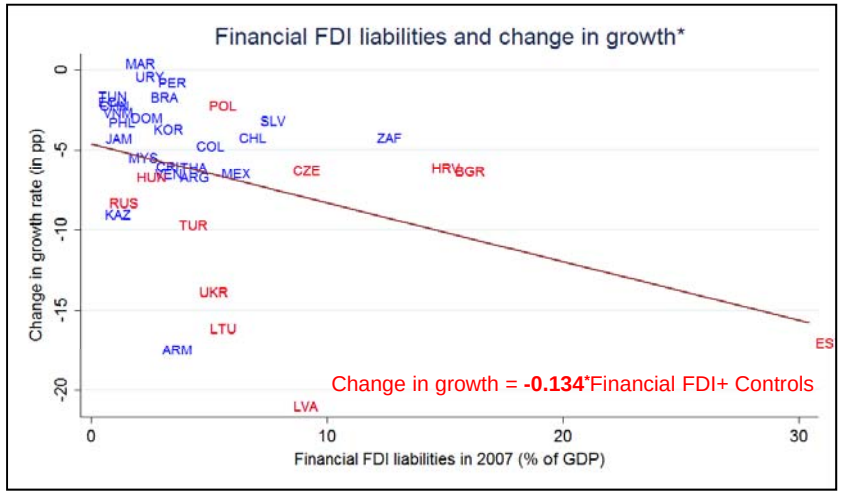
Empirical Evidence from the Current Crisis

External Liability (EL) Structure and Growth Resilience*



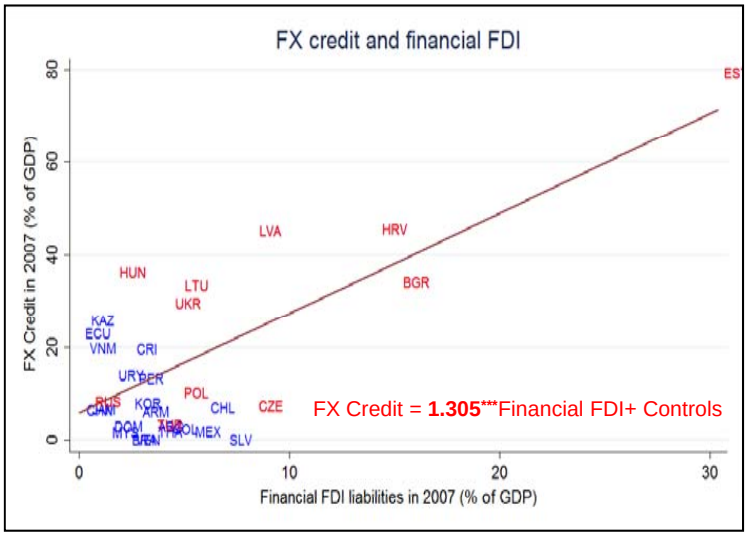


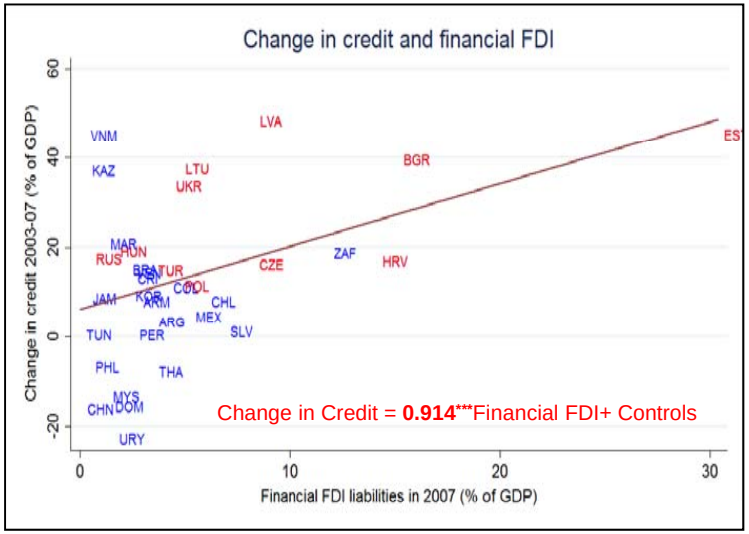


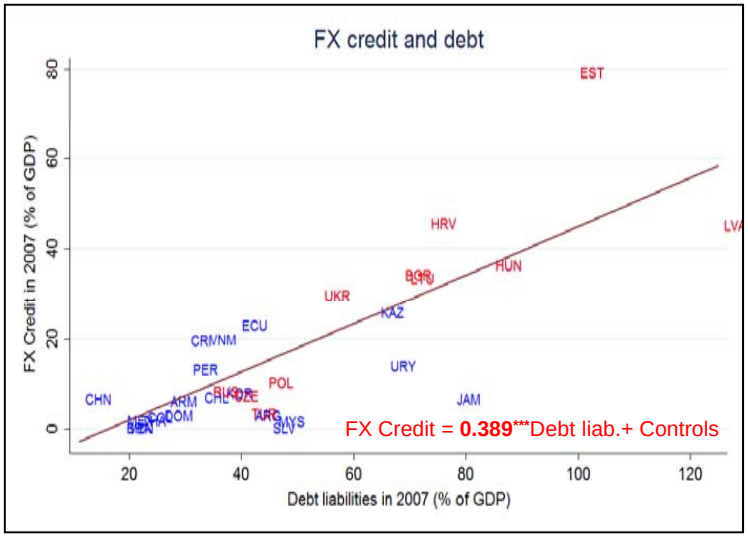


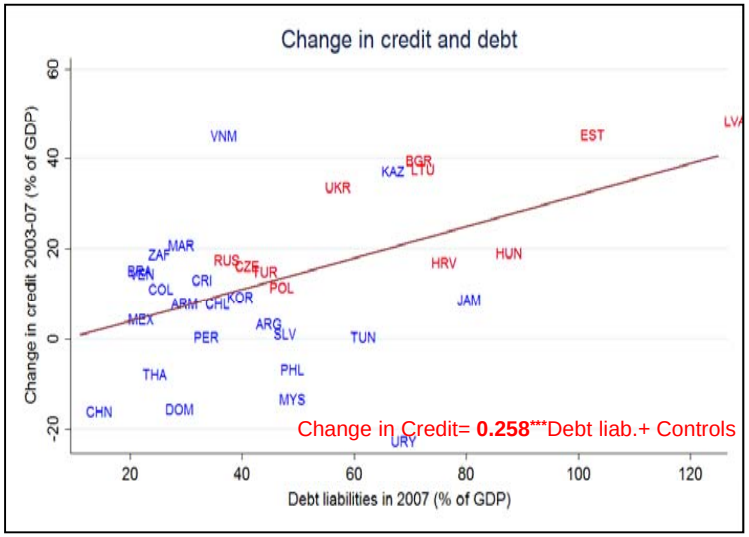
**Growth resilience* defined as difference between average growth rate in 2008-09 relative to 2003-07.
Controls include other types of foreign liabilities, growth in trading partners, and change in terms of trade.

EL Structure and Credit and FX-Lending Booms*









**FX credit* is FX-denominated banking system credit (in percent of GDP); *Change in credit* is change in banking system credit/GDP over 2003-07; Controls include other types of foreign liabilities.

Growth "Crisis" and the Protective Impact of Controls

	[1]	[2]	[3]	[4]
Controls on 2/				
Overall Inflows	-2.026*	-2.644**		
	(1.043)	(1.329)		
FDI Inflows			-0.032	1.939
			(1.206)	(1.583)
Equity Inflows			2.057	3.443**
			(1.376)	(1.722)
Bond Inflows			-4.054*	-8.548**
			(2.294)	(3.708)
Growth in trading partners 3/		-0.010		0.030**
		(0.012)		(0.014)
Change in terms of trade 4/		-0.107**		-0.145*
		(0.054)		(0.085)
Constant	-0.712*	-1.480*	-0.900**	-3.097***
	(0.385)	(0.812)	(0.351)	(0.882)
Observations	37	37	37	37
Pseudo R-squared	0.117	0.240	0.168	0.368

Note: Robust standard errors in parentheses. *,**, and *** denote statistical significance at the 10, 5 and 1 percent levels, respectively.

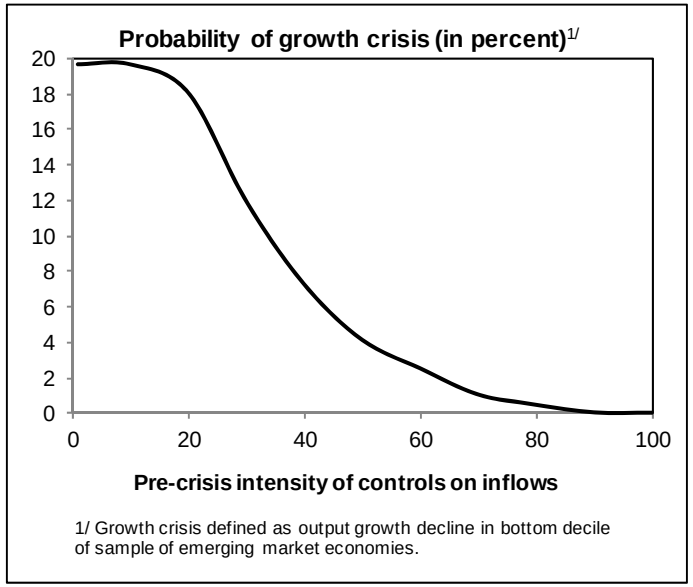
1/ Crisis is coded as equal to one if the decline in the country's real GDP growth (2008-09 relative to 2003-07) is in the lowest 10th percentile of the sample.

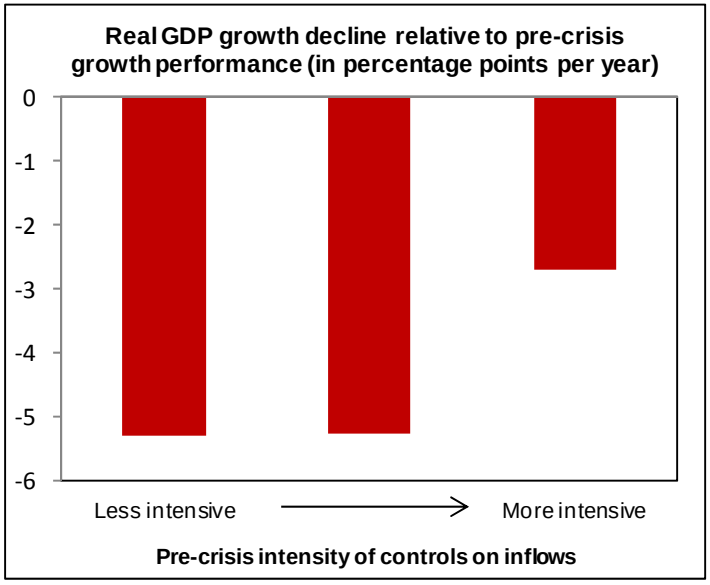
2/ Capital controls based on the Schindler (2009) index averaged over 2000-05 (the last year covered in the database is 2005).

3/ Average annual real growth rate in trading partners over 2008-09 weighted by average export to GDP ratio in 2003-07 (in percent).

4/ Average annual percentage change in terms of trade over 2008-09.

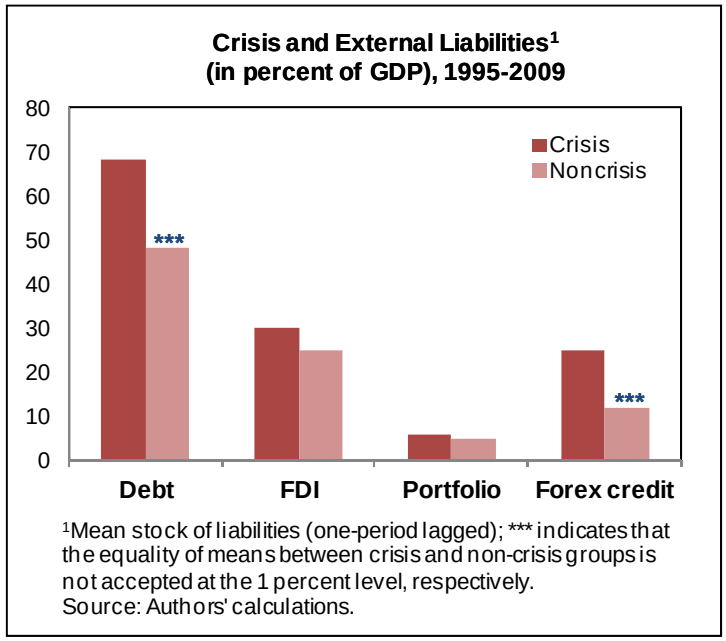
Growth Crisis and the Intensity of "Pre-Crisis" Controls



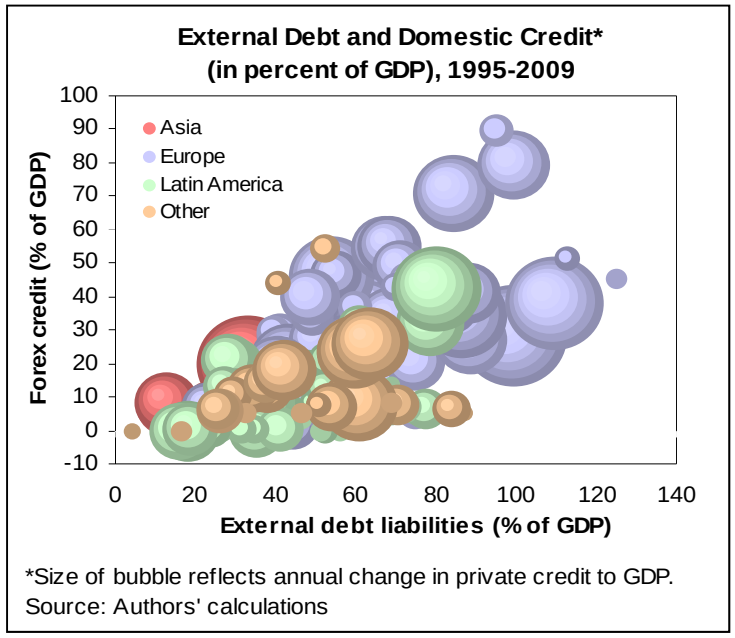


Extensions and Future Work

- Findings remain robust to: dropping the Baltics; extending the cross-sectional sample; using alternative measures of crisis
- Do the results hold more generally (i.e., including previous crises)?



[1]Mean stock of liabilities (one-period lagged); *** indicates that the equality of means between crisis and non-crisis groups is not accepted at the 1 percent level, respectively.
Source: Authors' calculations.



*Size of bubble reflects annual change in private credit to GDP.
Source: Authors' calculations

- Open question: Are controls complements to or substitutes for macroprudential tools?

Conclusions

Key Takeaways

- Capital inflows fundamentally good: additional financing for productive investment, risk diversification, etc.
- But sudden surges can pose macro-prudential challenges
  - Recent evidence does suggest that capital controls improved resilience to crisis
  - Recent experience also confirms "pecking" order of capital inflows—but with a twist in terms of financial-FDI
- Capital controls appropriate for inclusion in toolkit when:
  - Currency overvalued
  - Further reserve accumulation undesirable
  - Inflation/overheating concerns
  - Limited scope for fiscal tightening
  - Prudential framework still leaves high risk of financial fragility
- Multilateral considerations also need to be factored in