# COPING WITH CAPITAL INFLOW SURGES

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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. The presentation draws on "Capital Inflows: The Role of Controls" by Jonathan D. Ostry, Atish R. Ghosh, Karl Habermeier, Marcos Chamon, Mahvash Qureshi, and Dennis Reinhardt, IMF Staff Position Note 10/04 (February 2010).

# Plan of Presentation

- Context
- Role of capital controls in macro/prudential toolkit for coping with inflow surges
- Effectiveness of controls in practice
- Empirical evidence from current crisis
- 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

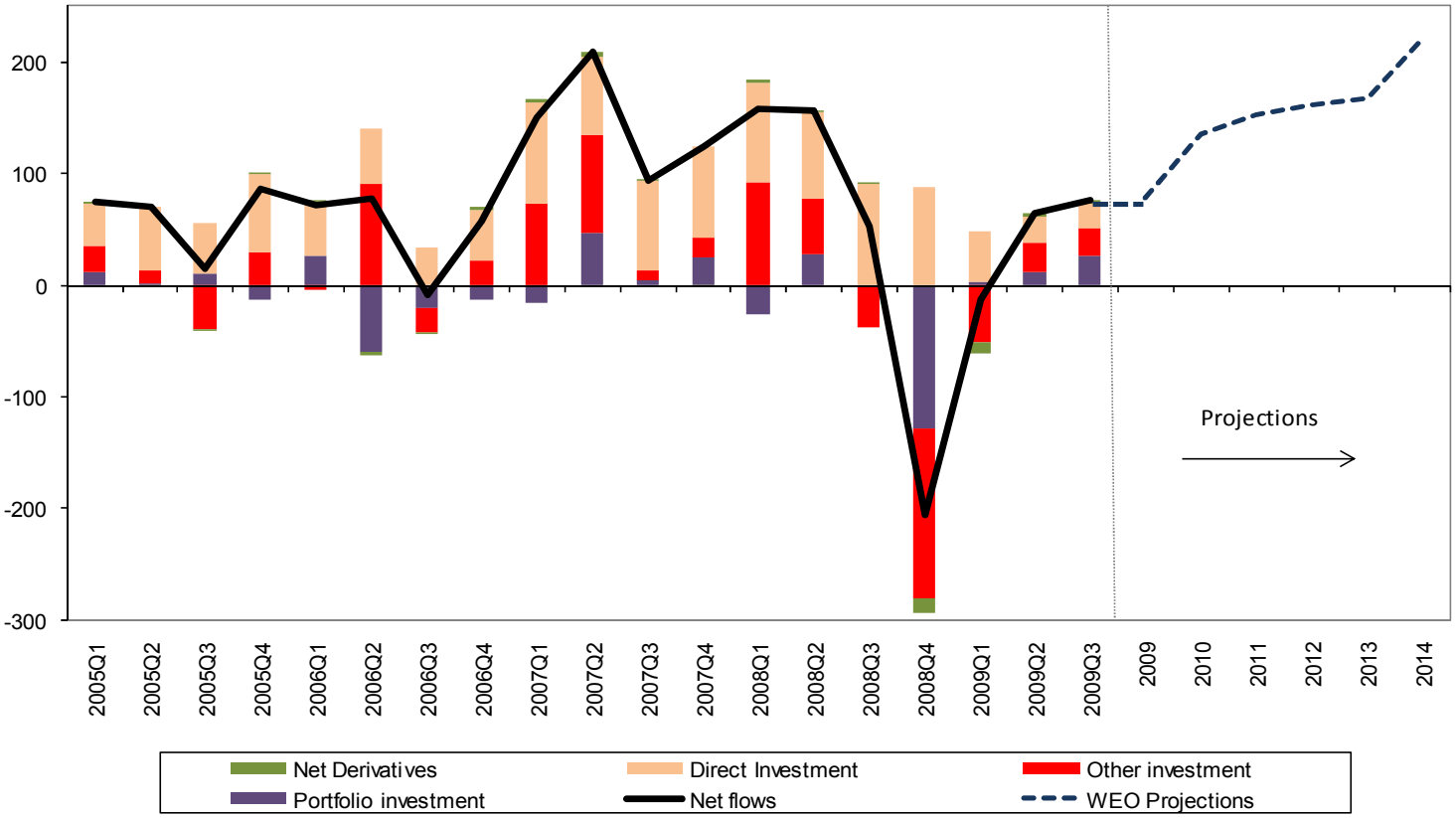
# Context

# Capital Flows Back on the Radar Screen

(Bil. US$)

**Net Capital Flows into Emerging Markets [1]**

**2005Q1: 2009Q3**

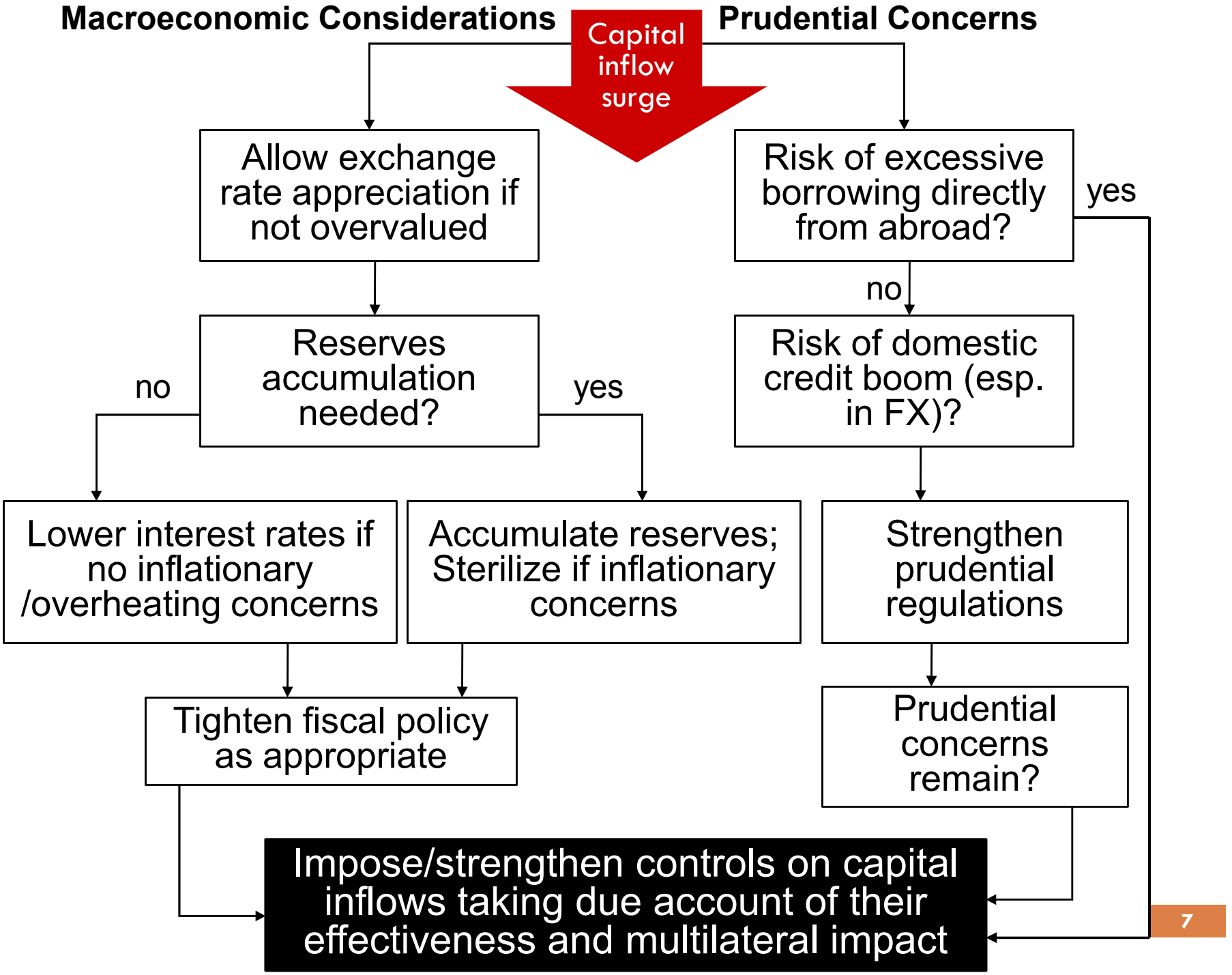



Source: IMF's Balance of Payment Statistics and WEO databases.
1/Excludes China.

# What are the Issues/Concerns?

- Much of the flows perceived to be temporary, driven by low interest rates in advanced economies
- Crisis has heightened concerns that inflows could inflate asset price bubbles, contributing to financial fragilities, and lead to exchange rate overshooting
- **Macroeconomic** and **prudential** challenges
- 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?
no
yes
Risk of domestic credit boom (esp. in FX)?
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.<br>- 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.<br>- 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.<br>- 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 | |

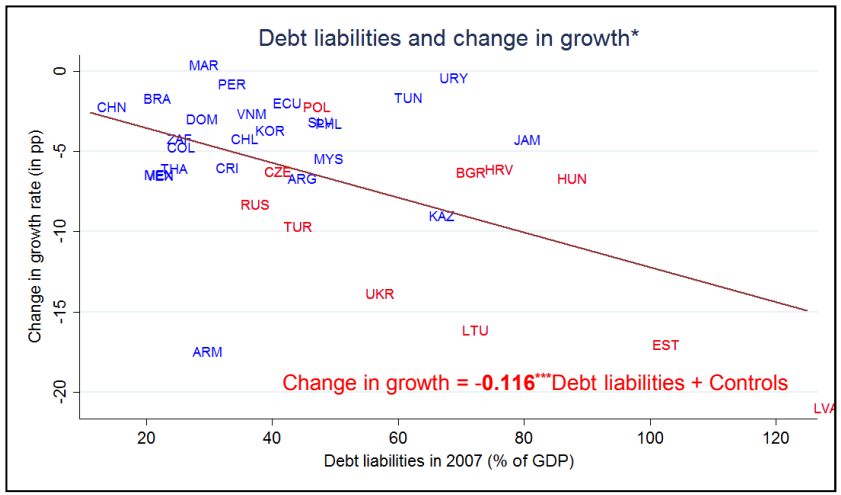
**Table 1. Selected Cases of Control Measures on Capital Inflows (concluded)**

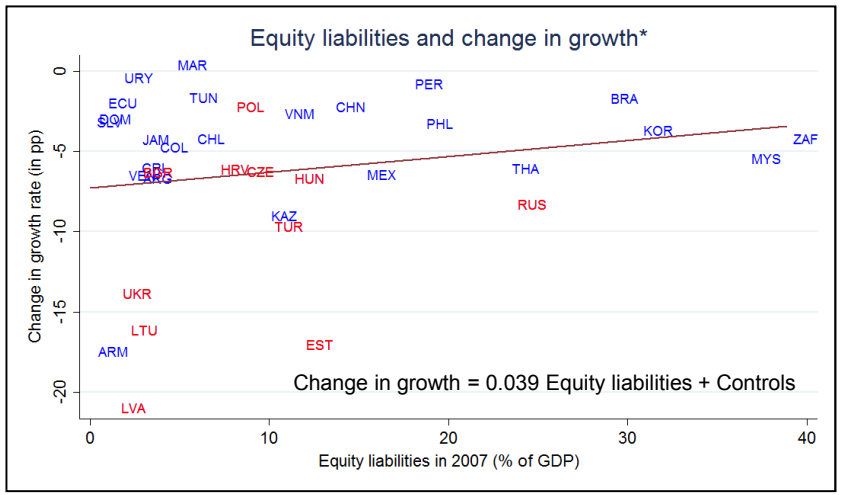
| Country | Year | Controls | Did controls on inflows: | | | |
|---|---|---|---|---|---|---|
| | | | Study | Reduce the volume of net flows | Alter the composition | Reduce real exchange rate pressures |
| **Malaysia** | 1994 | - Prohibition against sale of short-term debt securities and money market instruments to nonresidents, and against commercial banks' engagement in non-trade-related swaps or forward transactions with nonresidents.<br>- Ceilings on banks' net liability position.<br>- Non-interest-bearing deposit requirement for commercial banks against ringgit funds of foreign banks. | Ariyoshi and others (2000)<br>Tamirisa (2004) | **Yes** | **Yes** | **Yes (ST)**<br>**No** |
| **Thailand** | 1995–96 | - URR imposed on banks' nonresident baht accounts.<br>- Introduced asymmetric open-position limits to discourage foreign borrowing.<br>- 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** | |

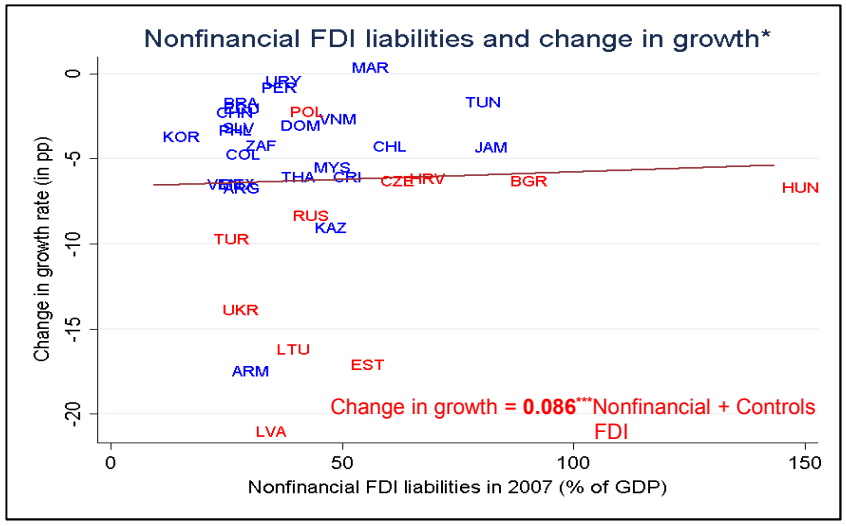
Sources: Magud, Reinhart, and Rogoff (2007), and IMF staff.
Note: A blank entry refers to the cases where the study in question did not analyze the particular relationship. (ST) refers to cases where only short-term effects were detected

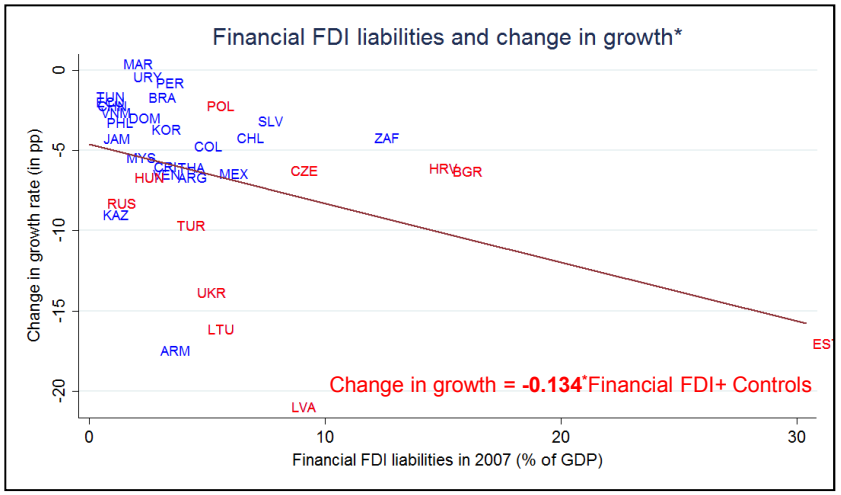
# Empirical Evidence from the Current Crisis

# External Liability (EL) Structure and Growth Resilience*



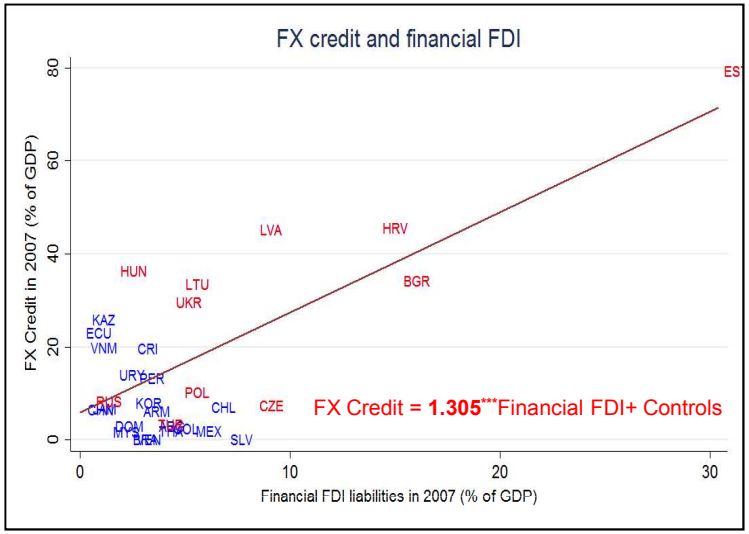



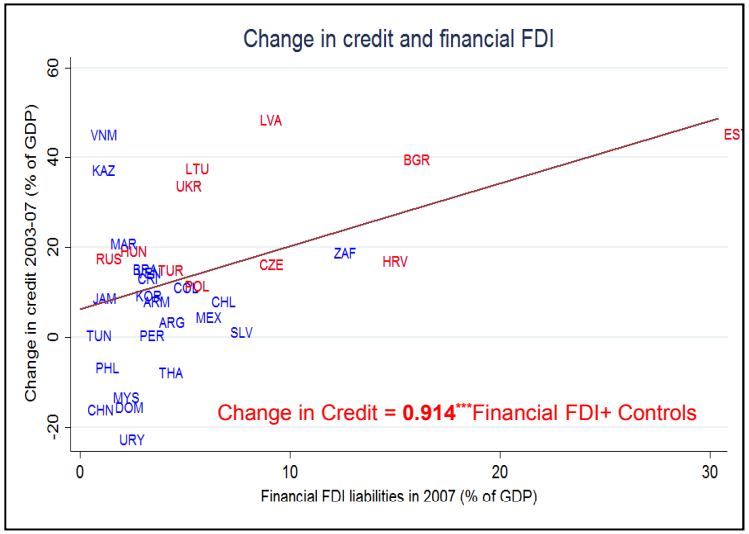



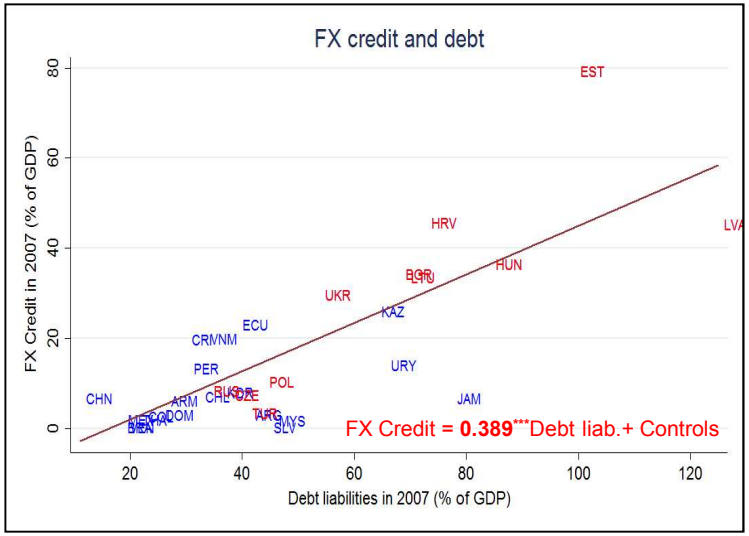



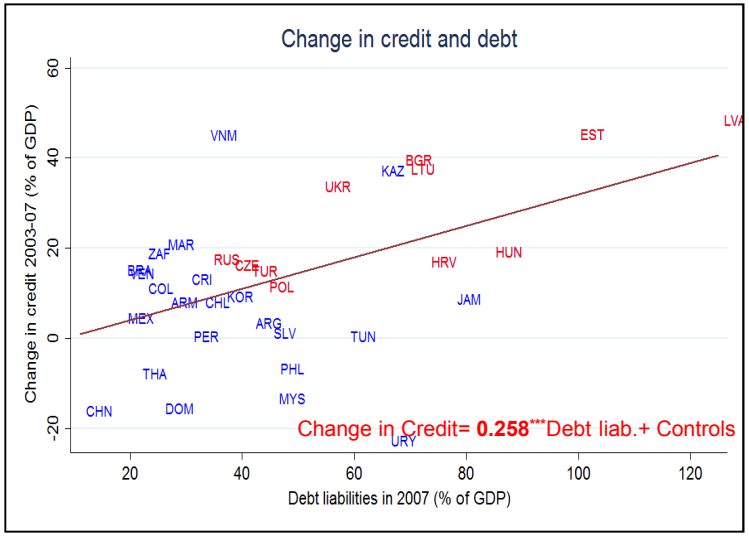

**Growth resilience* defined as difference between average growth rate in 2008-09 relative to 2003-07.
Controls include other types of foreign liabilities, growth in trading partners, and change in terms of trade.

# 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.

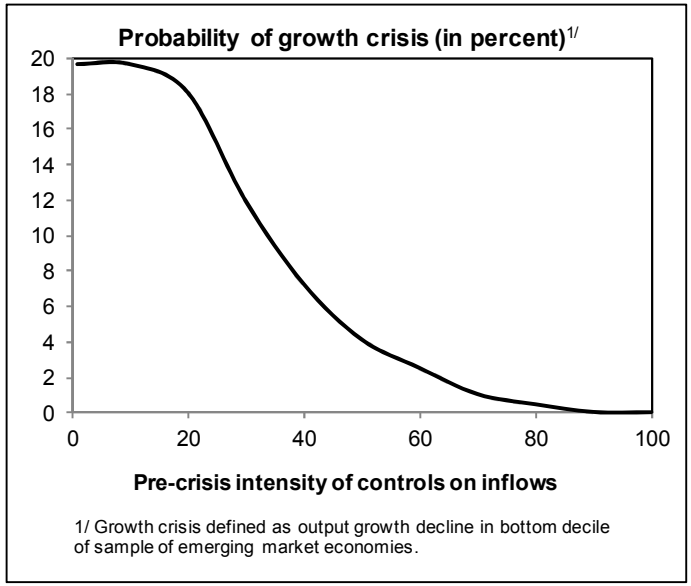
1/ Crisis is coded as equal to one if the decline in the country's real GDP growth (2008-09 relative to 2003-07) is in the lowest 10th percentile of the sample.

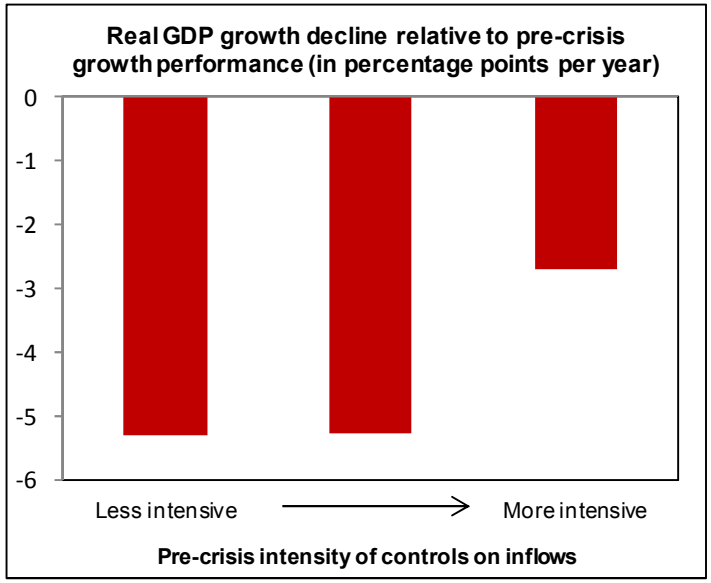
2/ Capital controls based on the Schindler (2009) index averaged over 2000-05 (the last year covered in the database is 2005).

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



# Evidence from the Recent Crisis—Robustness

- We conduct a number of sensitivity analysis, including:
  - Dropping Baltics
  - Extending the sample of countries
  - Using alternative measures of crisis (e.g. change in GDP growth as opposed to crisis dummy)

- Findings remain fairly robust:
  - Pre-crisis capital controls continue to point to more resilience
  - Debt liabilities remain associated with FX Credit; Financial FDI with credit booms
  - Financial FDI remains associated with sharper contractions

# 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**
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  - Limited scope for fiscal tightening
  - Prudential framework still leaves high risk of financial fragility
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