EUROPEAN CENTRAL BANK
EUROSYSTEM

Discussion of Bacchetta & Benhima paper "The Demand for Liquid Assets and International Capital Flows"

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Main theme

- Contribution to literature on global imbalances – focus on EME role
- Complementary (vs alternative) explanation of global excess savings – *demand* for liquid assets (absence of risk)
- Role of financial constraints on EME firms amid lack of liquid domestic assets triggers capital outflows
- Implication for asymmetric effects of EME shocks vs. advanced economy shocks
- Claim: model can account for capital flow dynamics (and exchange rates) in normal times and during 2007-09 crisis

Key aspects of model

- Three key aspects
  - Production takes time – period t: invest K_{t+1} but production available only in t+2
  - Cost before production available – period t+1: workers need to be paid ($w_{t+1}l_{t+1}$)
  - Firms are credit-constrained – period t: investment in (short-term, liquid) bond B_{t+1} to cover costs – lack of pledgeability of future output (Holmstrom and Tirole 2001)
- Demand for liquid assets …
  - arises even in the absence of risk
  - is highly inelastic to (world) interest rate, and reduces them
  - is a complement to investment K_{t+1}

Contribution

- Important aspect: EME demand for liquid assets
- Claim: *alternative* explanation to other hypotheses
- Financial development hypothesis:
  - Limited *supply* of liquid & safe assets (Caballero et al. 2008, Dooley et al 2005, Ju & Wei 2006)
  - Complement: BB demand hypothesis requires lack of supply of domestic liquid assets; otherwise no EME capital outflows
- Precautionary savings hypothesis:
  - Insurance against idiosyncratic risk of EMEs (Mendoza et al. 2009)
  - Complements: investment/capital=risk and bonds=safe asset
  - May be better in accounting for crisis capital flows (more later)

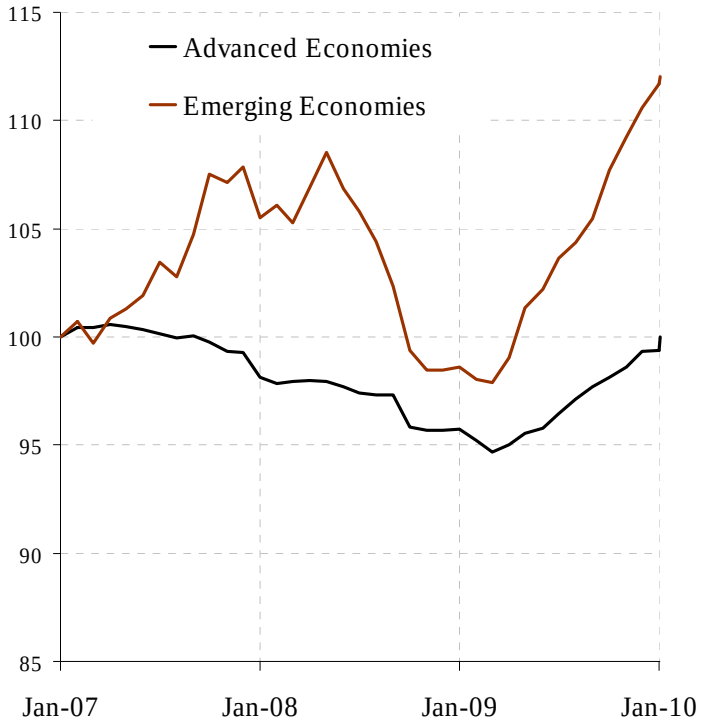
How well does the model fit the facts?

- Stylised facts about EME capital flows
  - Net outflows
  - Composition is key: Gross outflows in portfolio investment (bonds in particular) vs sizeable share of gross inflows in FDI (not liquid assets)
  - Big role of EME official outflows – accounting for most of EME net outflows - or sometimes even more → even net private inflows into some EMEs
  - Importance of household savings vs. corporate savings

Net private capital inflows into EMEs

Cumulated portfolio flows by region

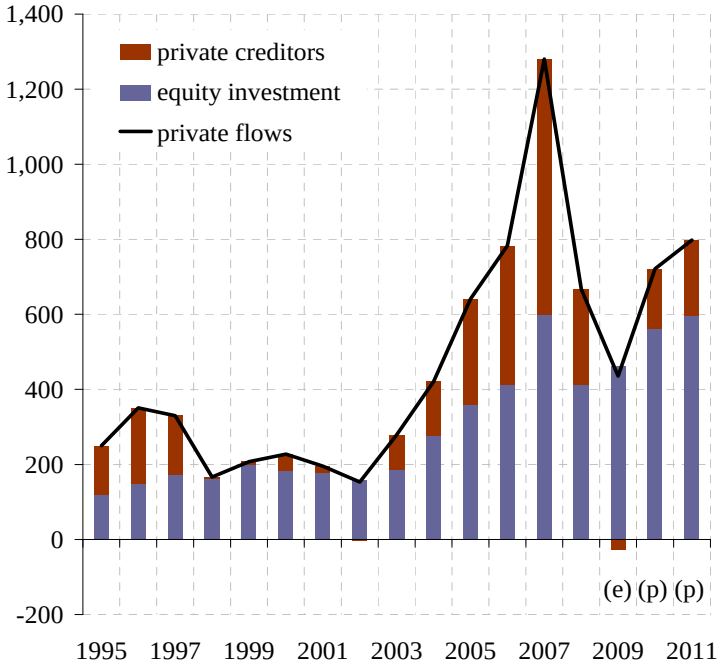
(Feb 2007=100; index)



Source: Emerging Portfolio Fund Research (EPFR).

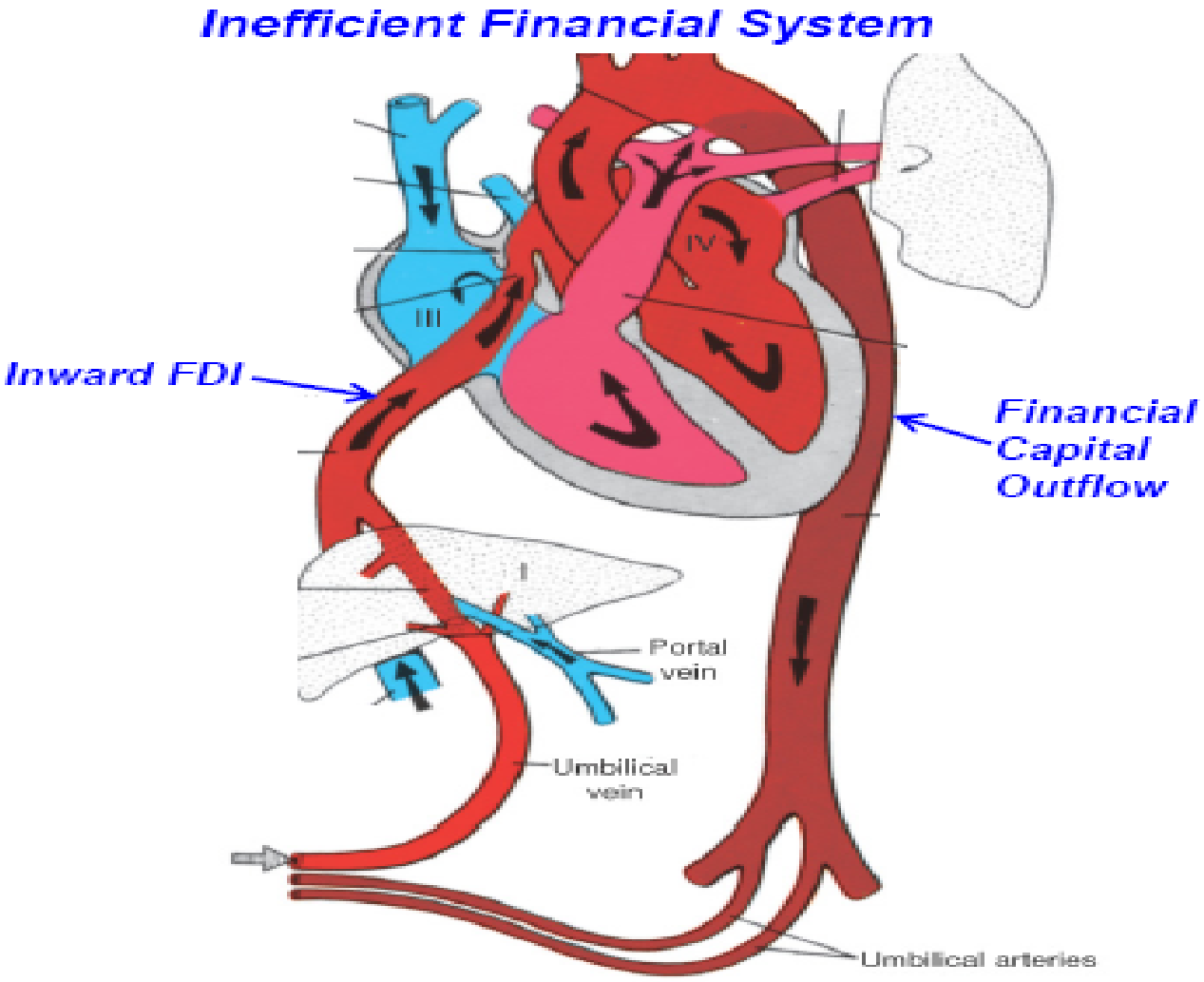
Net private capital flows to emerging economies

(1995 – 2011; USD billions)



Source: The International Institute of Finance (IIF).
Note: (e) stands for estimated and (p) for projected.

Composition: "Capital Bypass Circulation"



Source: Ju and Wei (2007)

How well does the model fit the facts?

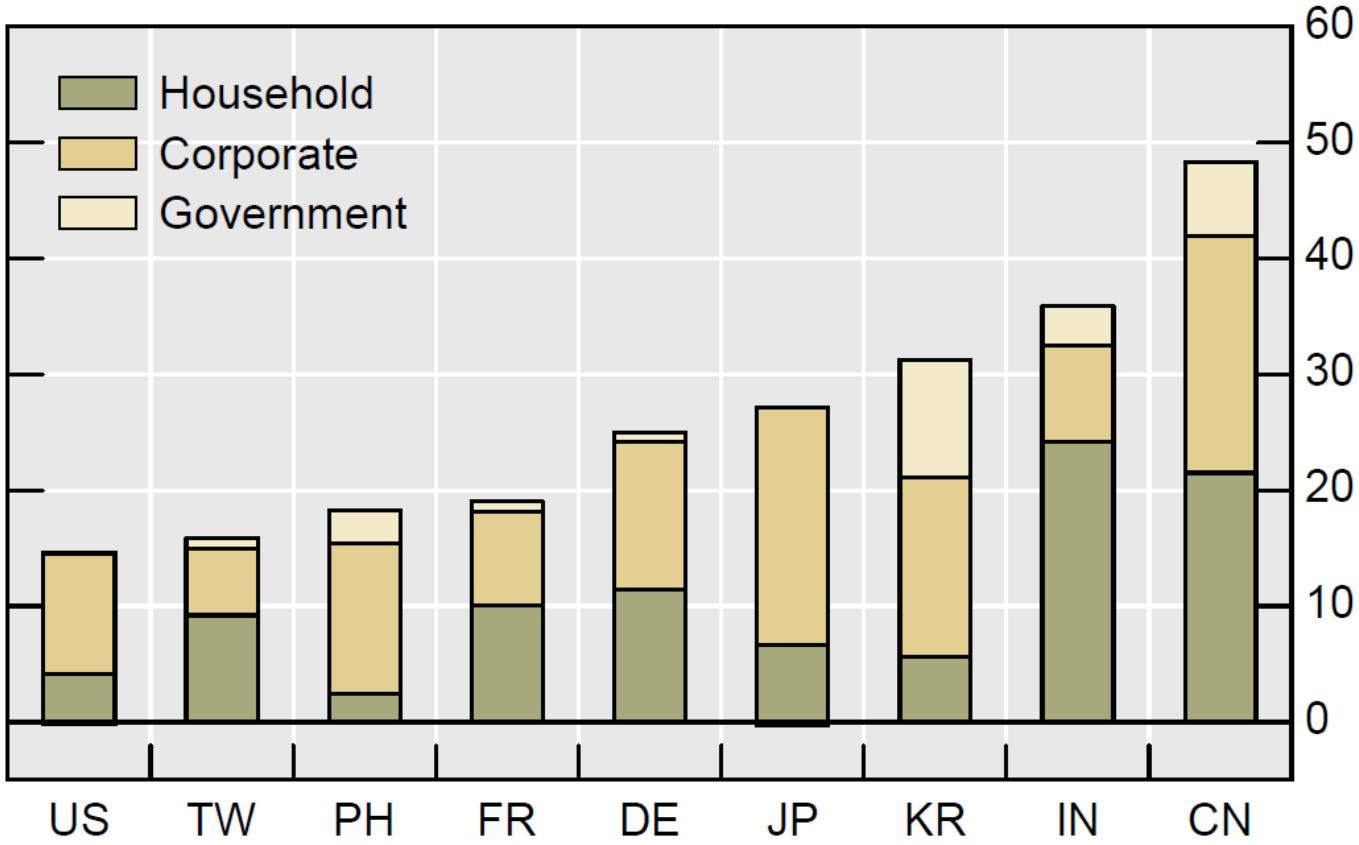
- Composition of gross flows suggests that lack of financial intermediation is important, rather than demand for liquid assets alone
  - Ju & Wei (2006): "bypass circulation effect" → large EME gross flows as a form of financial intermediation across EME sectors
- BB model: why are capital flows not more volatile?
  - Gross capital flows should be volatile as some EME firms draw on liquid foreign assets, while other firms build up such assets
  - Little evidence of large movements in EME foreign assets – both in aggregate and at the firm level

How well does the model fit the facts?

- EME household sector important source of savings
  - Missing from model
  - Decisions likely in part due to precautionary motives and also credit constraints, yet of a different form
  - precautionary motive more consistent with stability of gross EME asset outflows during normal times

Are savings in EMEs really that different?

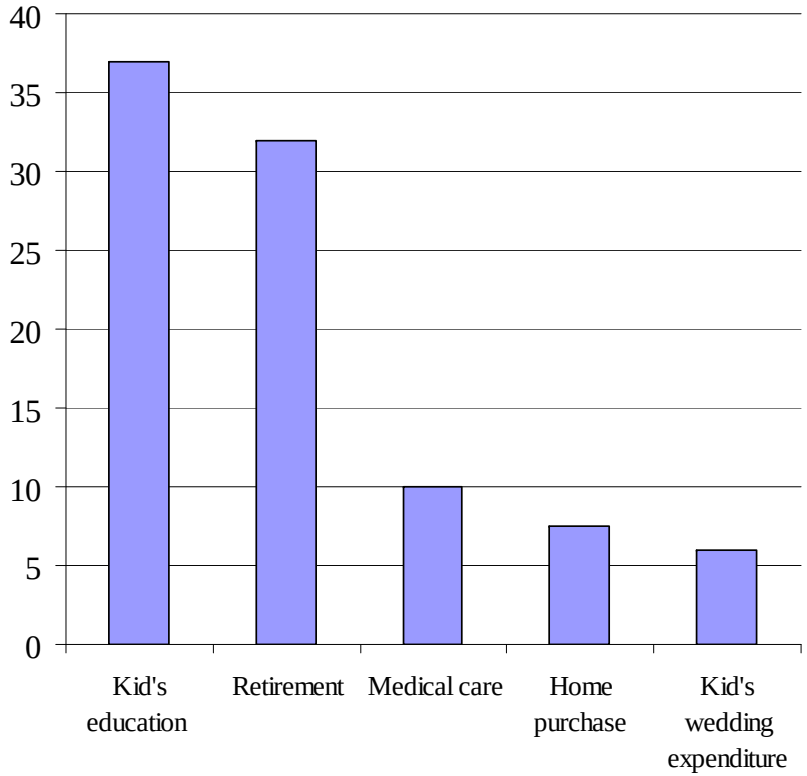
Gross national savings, as % of GDP, average 2005-07



Source: Ma & Yi (BIS WP No. 312, June 2010)

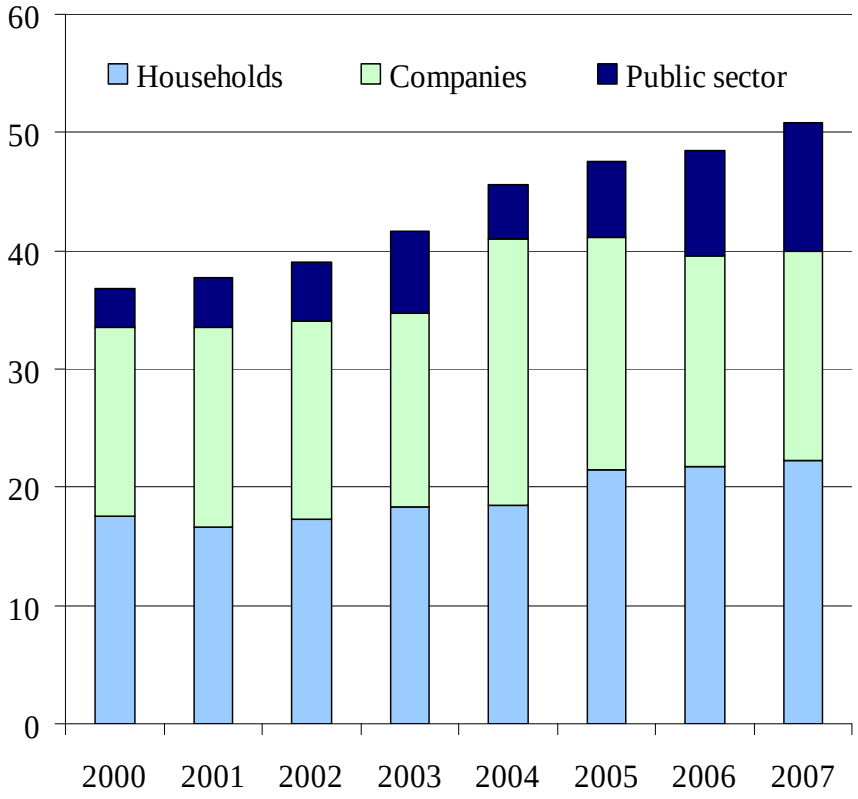
China's excess savings rate

Key motivations for saving in China,
% of respondents



Source: HSBC

The savings by sectors
% of GDP



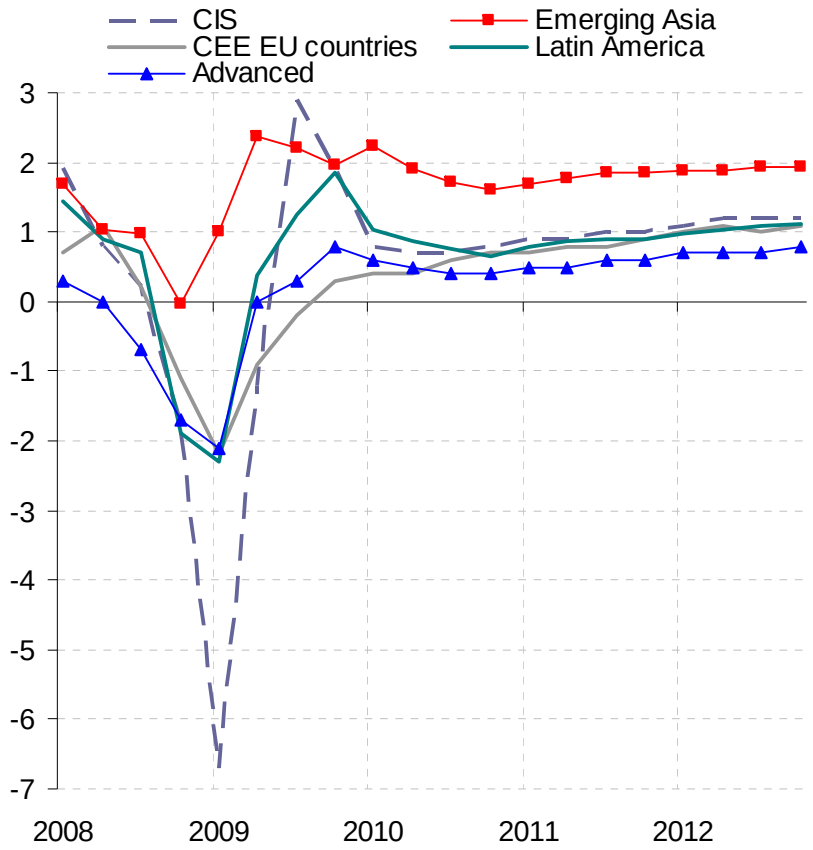
Source: CEIC

How well does the model fit the facts **in crisis**?

- Claim: the hypothesis "*is consistent with the limited reaction of net capital flows and exchange rates in the wake of the financial crisis*"
- But capital flows and exchange rates reacted massively during the crisis
  - Biggest effects on EMEs (rather than advanced countries)
  - Flight to "safety" or "liquidity"
  - Shift into government bonds → risk a key motive behind global capital flow dynamics during crisis
  - Massive depreciation of EME exchange rates & some loss in reserves
  - Some evidence…

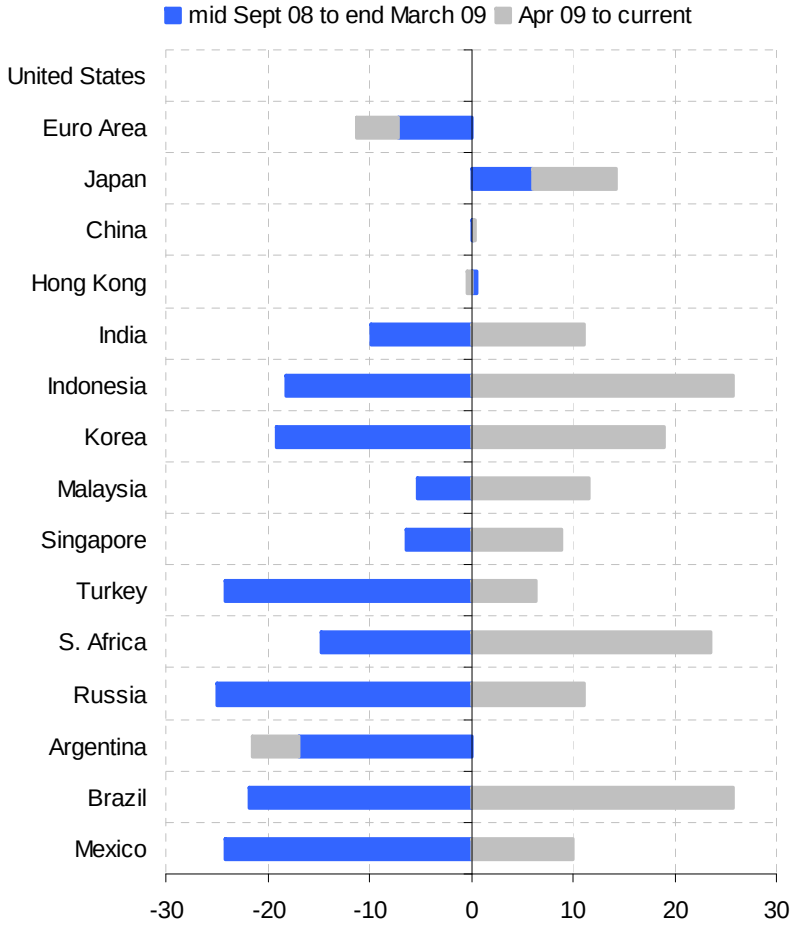
EMEs strongly affected by the crisis

Real GDP growth developments and outlook *(quarter-on-quarter % change)*



Source: ECB Staff Calculations.
Note: Last observation refers to 2014.

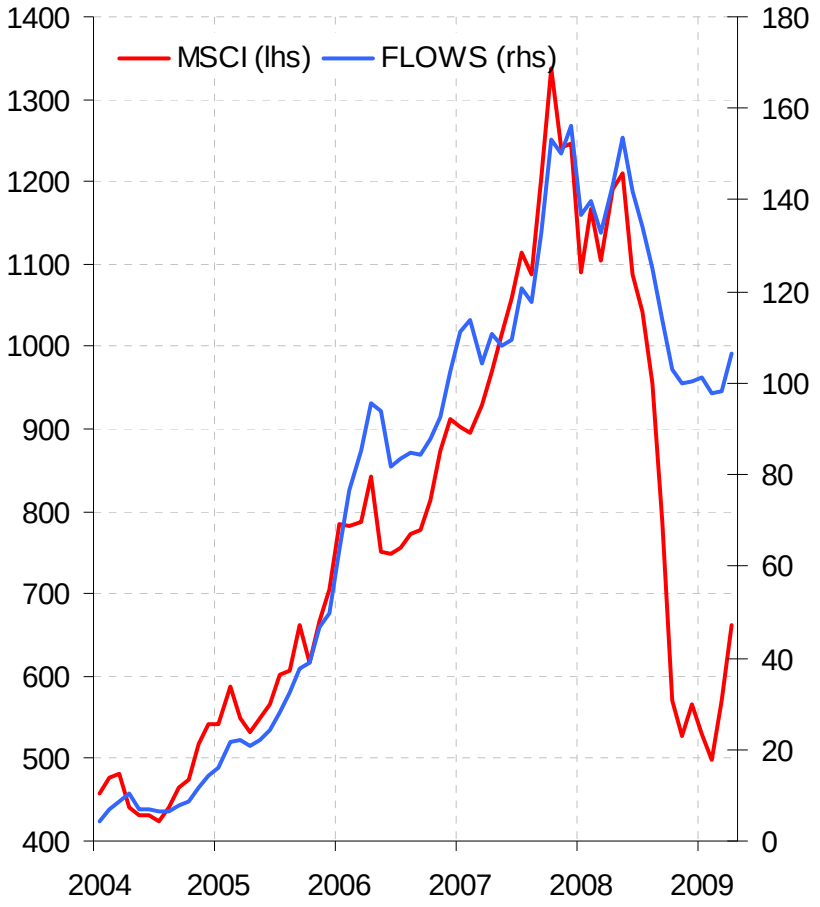
Exchange rate developments in selected EMEs *(vis-à-vis USD, in pp contribution)*



Source: Haver Analytics and ECB Staff Calculations
Note: Last observation refers to 10 May 2010.

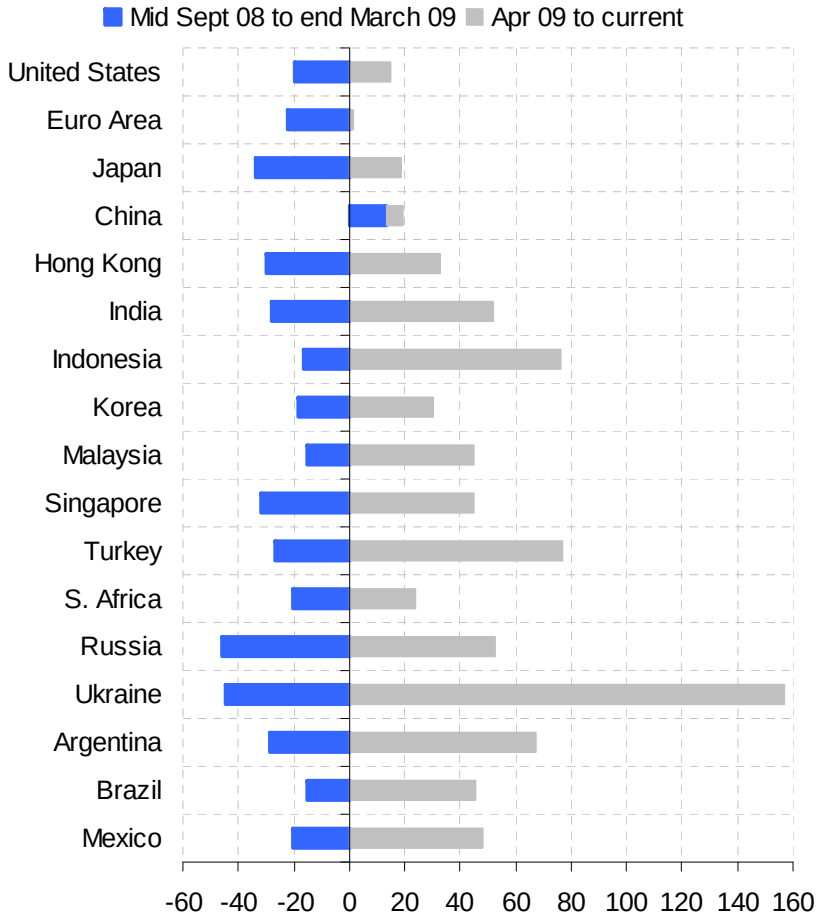
Equity markets: EMEs hit hardest – particularly via capital flows retrenchment and flight to "safety"

Total EME equity flows and prices *(since Jan 2004, cumulative monthly flows in bn USD and total MSCI return index)*



Source: EPFR and Bloomberg.
Note: Last observation refers to end April 2009.

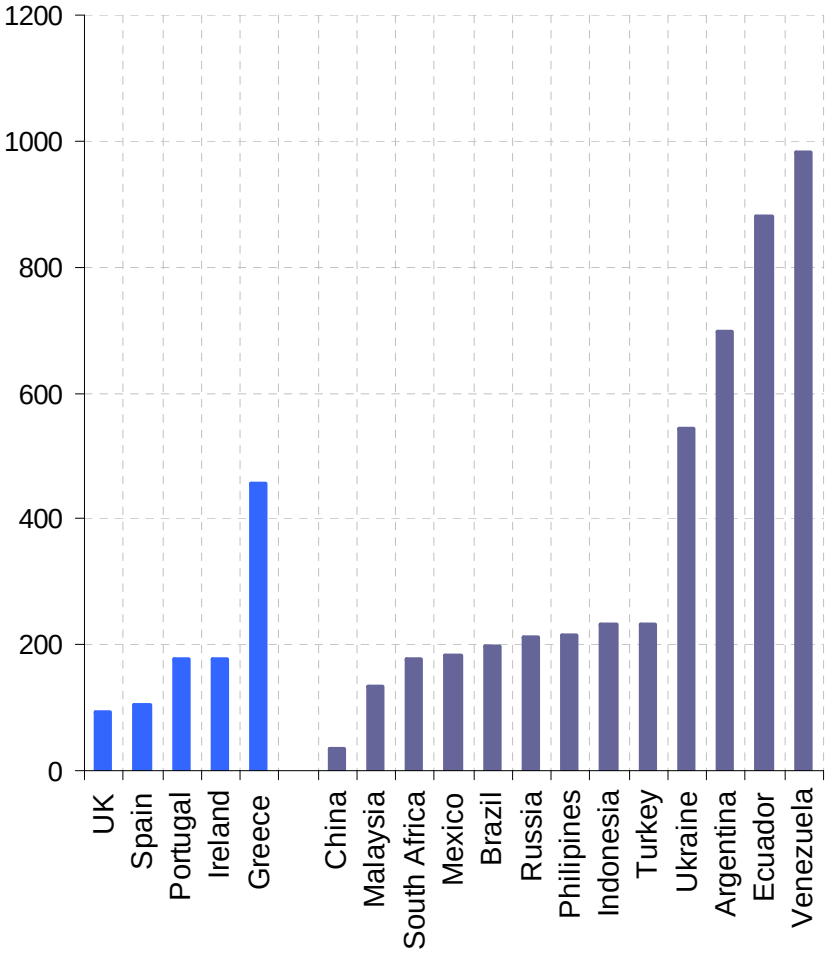
Stock market developments in selected EMEs *(total return since 15/9/2008, in pp contribution)*



Source: Haver Analytics and ECB Staff Calculations
Note: Last observation refers to 10 May 2010.

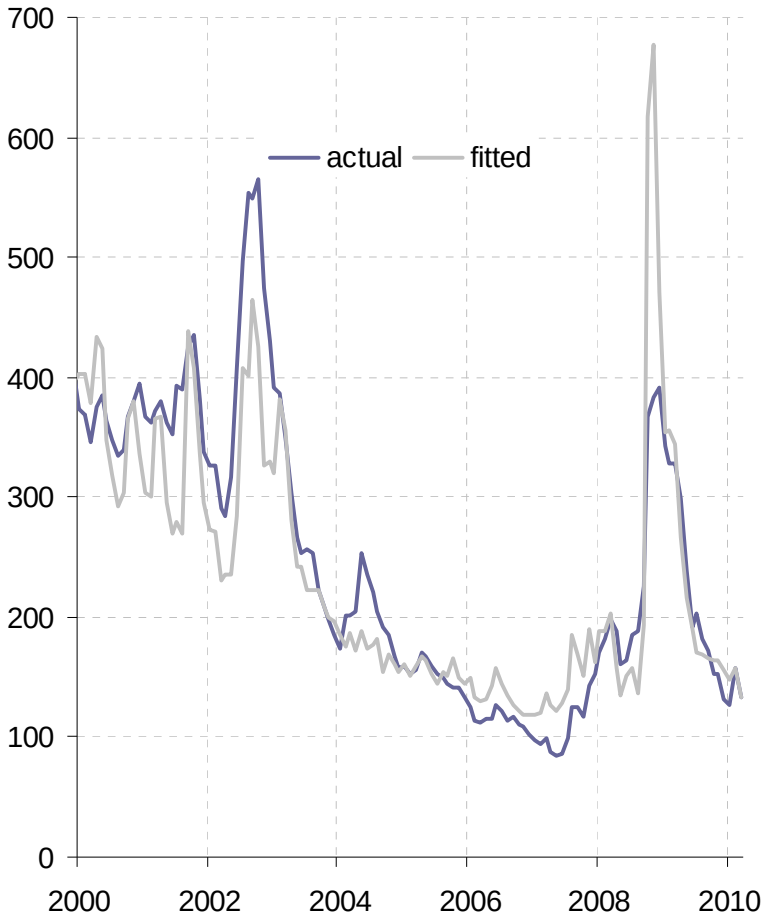
Market perception of fiscal risk: Sovereign spreads

Selected bond spreads *(vis-à-vis German bonds for euro area countries, vis-à-vis US bonds for EMEs)*



Source: Haver Analytics.
Note: Observation refers to 12 May 2010.

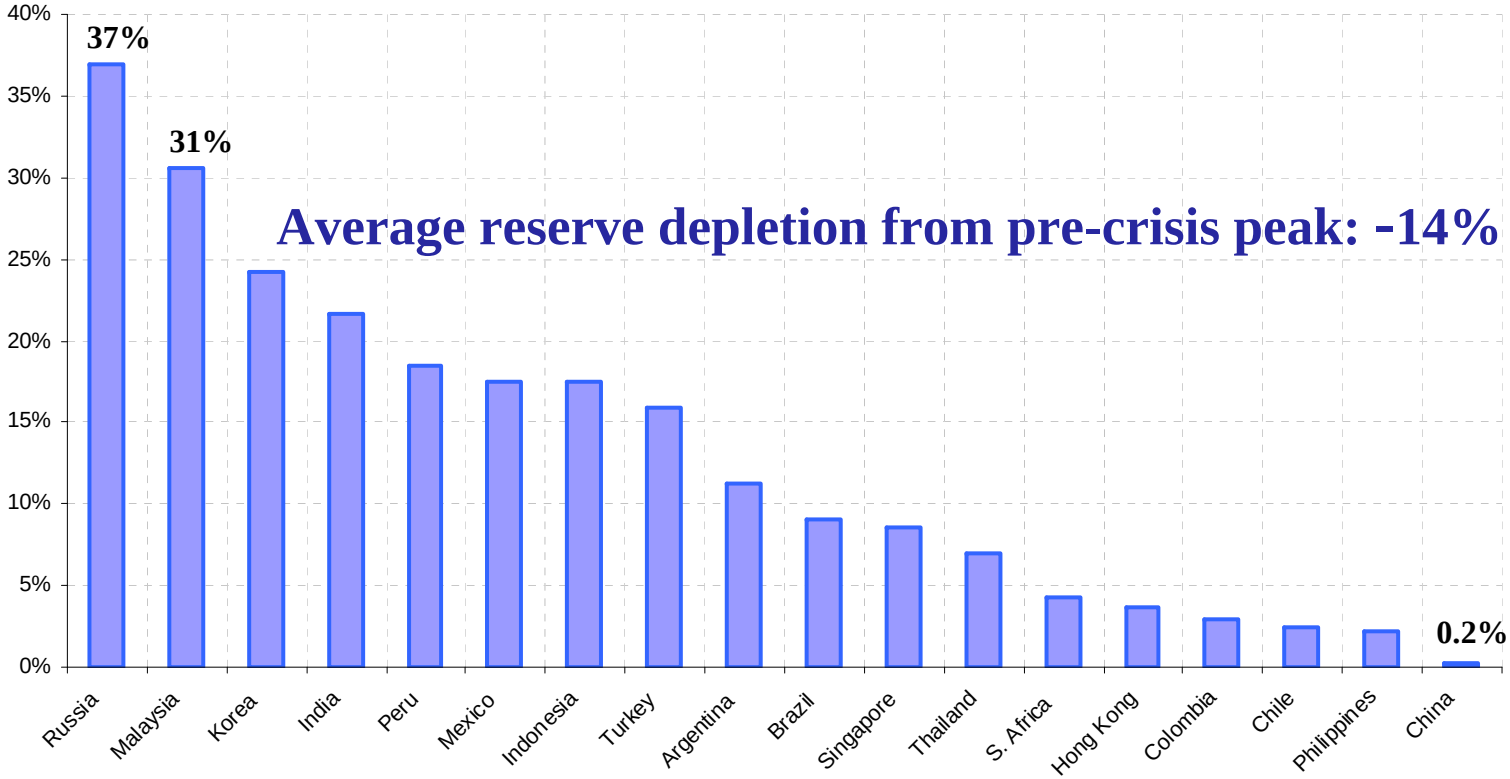
EMBIG bond spreads *(actual versus fitted bps)*



Source: ECB Staff Calculations.
Note: Last observation refers to March 2010.

Reserve depletion during the crisis

Percentage decrease of reserves between March 2008 and August 2009 (*)



Source: Haver Analytics and ECB staff calculations.
(*) The **pre-crisis maximum** reserve level that had been reached by August 2008 was reached in: 08-2008 in the Philippines, China, Mexico, Colombia, Chile and Brazil; in 07-2008 in Russia, South-Africa and Indonesia; in 06-2008 in Malaysia; in 05-2008 in India, in 04-2008 in Peru and in 03-2008 in Argentina, Hong Kong SAR, Korea, Singapore, Thailand and Turkey.
The **crisis minimum** was reached in 10-2008 in China, Hong Kong SAR, the Philippines, Singapore, Thailand and South Africa; in 11-2008 in Chile, Indonesia and Korea; in 02-2009 in Brazil, Colombia, Peru and India; in 03-2009 in Russia; in 04-2009 in Turkey and Malaysia; and in 08-2009 in Argentina and Mexico.

Asymmetric effects of shocks

- AC shocks have little effect on EMEs in model and AC behave like closed economies
- EME shocks (productivity) have effect on advanced economies via capital flows/liquidity and interest rates
  - Pos. productivity shock induces *outflows* of capital and a *decrease* in world interest rates due to financial constraints on EME firms
- This implication of model seems rather counter-intuitive and not entirely consistent with observed transmission
- Missing from model is real side of the economy
  - EME investment in part causes by AC demand

Effect of reserve accumulation on US interest rates substantial

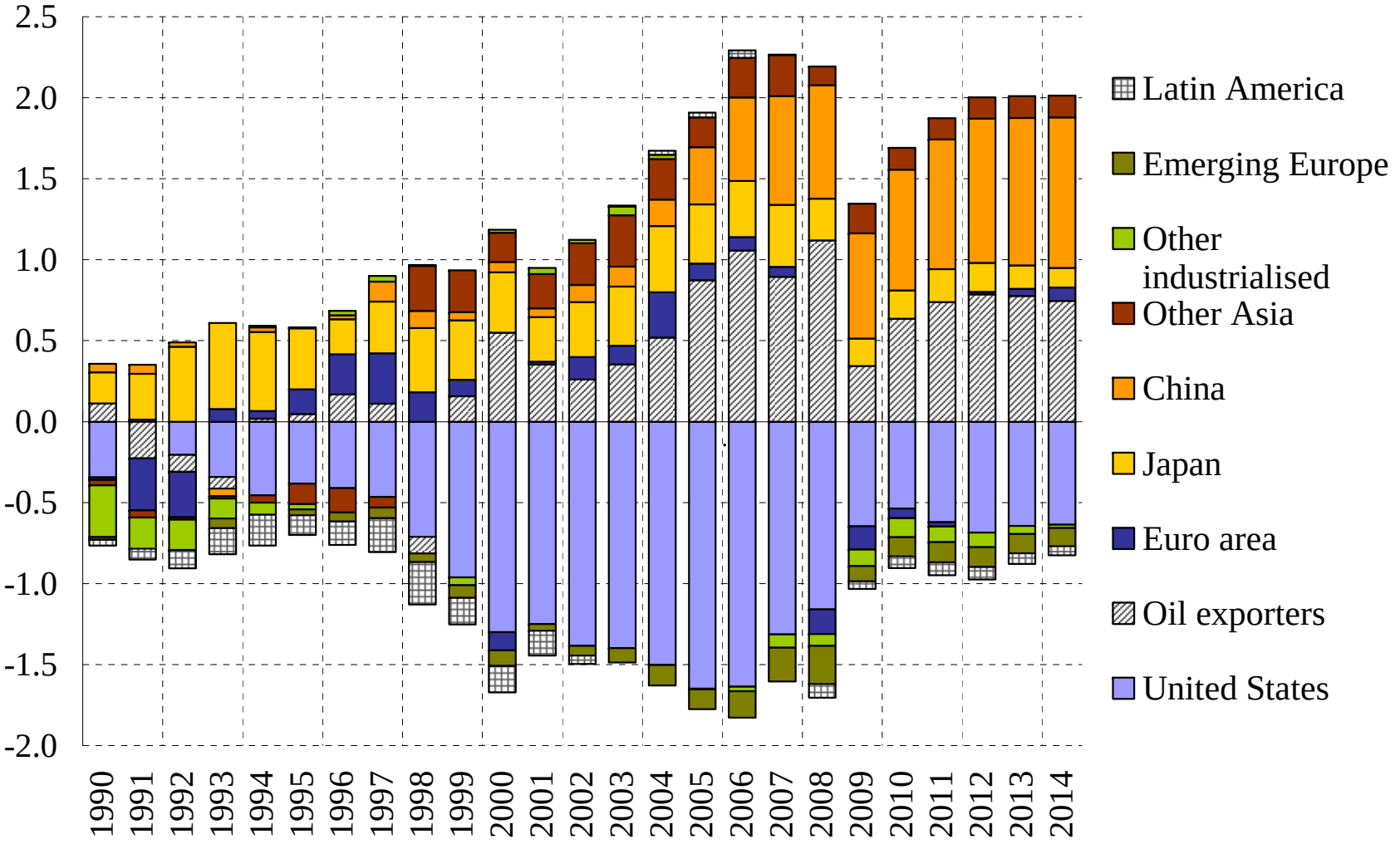
Source	Estimated reduction
Banque de France (2005)	125
Bernanke et al. (2004)	50-100
BIS (2006)	~ 0
Goldman Sachs (2004)	40
IXIS (2005)	75
JP Morgan (2005)	30-50
Krishnamurthy and Vissing-Jorgensen (2007)	20-55
Merrill Lynch (2005)	30
Morgan Stanley (2005)	100-150
PIMCO (2005)	100
Roubini and Setser (2005)	200
Truman (2005)	75
Vanguard Group (2005)	~0
Warnock and Warnock (2006)	90

Summary

- Nice and compelling contribution to the literature, esp. for understanding EME demand for liquid AC assets
- Complementary, rather than alternative explanation to that of the literature (financial development, precautionary motives)
- Yet some open issues as to how well model can account for observed pattern of capital flows, asset prices & exchange rates
- Also not clear whether model's implications about the international transmission of shocks captures main features of true transmission

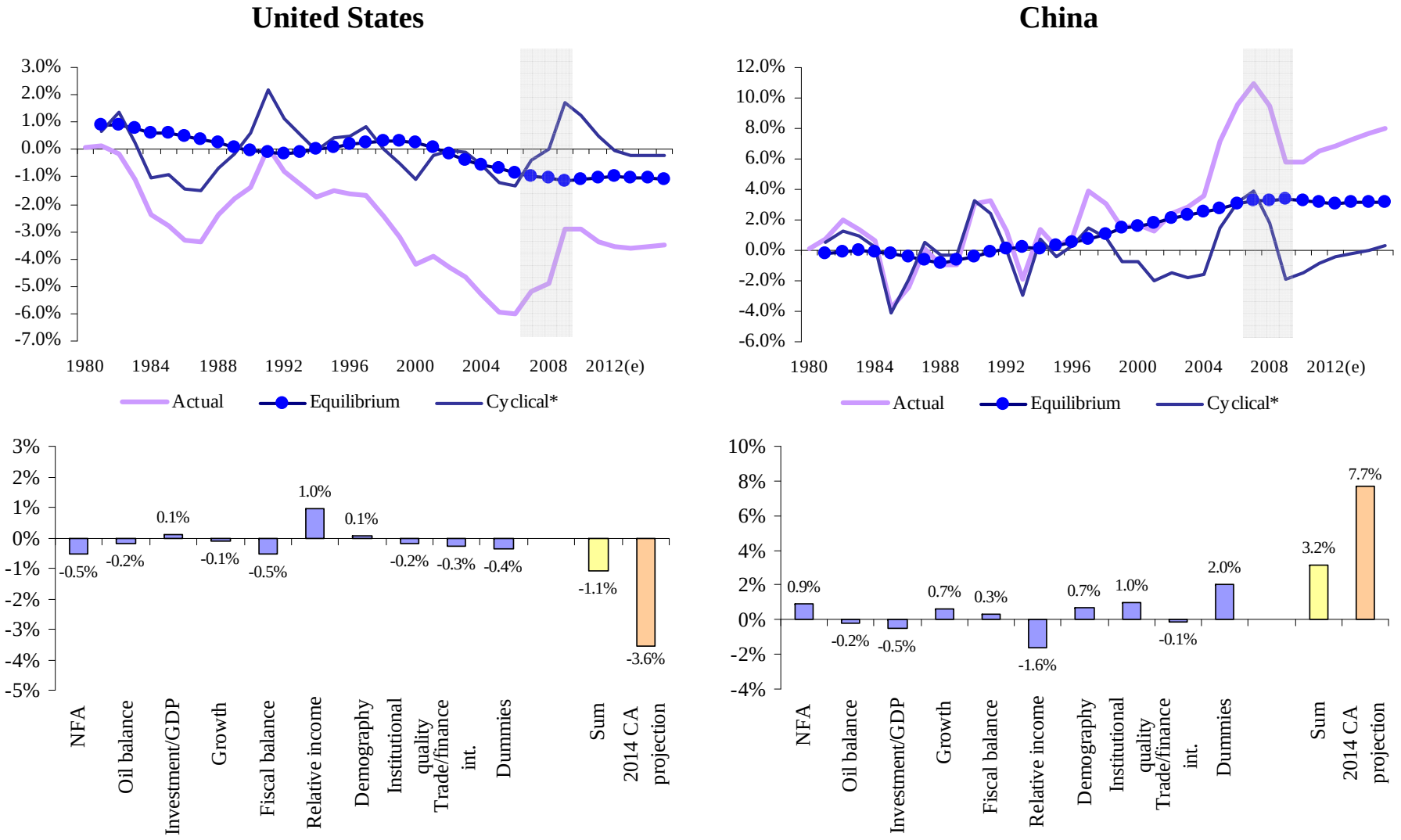
Annex

Emerging and re-emerging global imbalances



Source: IMF WEO (April 2010)

Emerging and re-emerging global imbalances

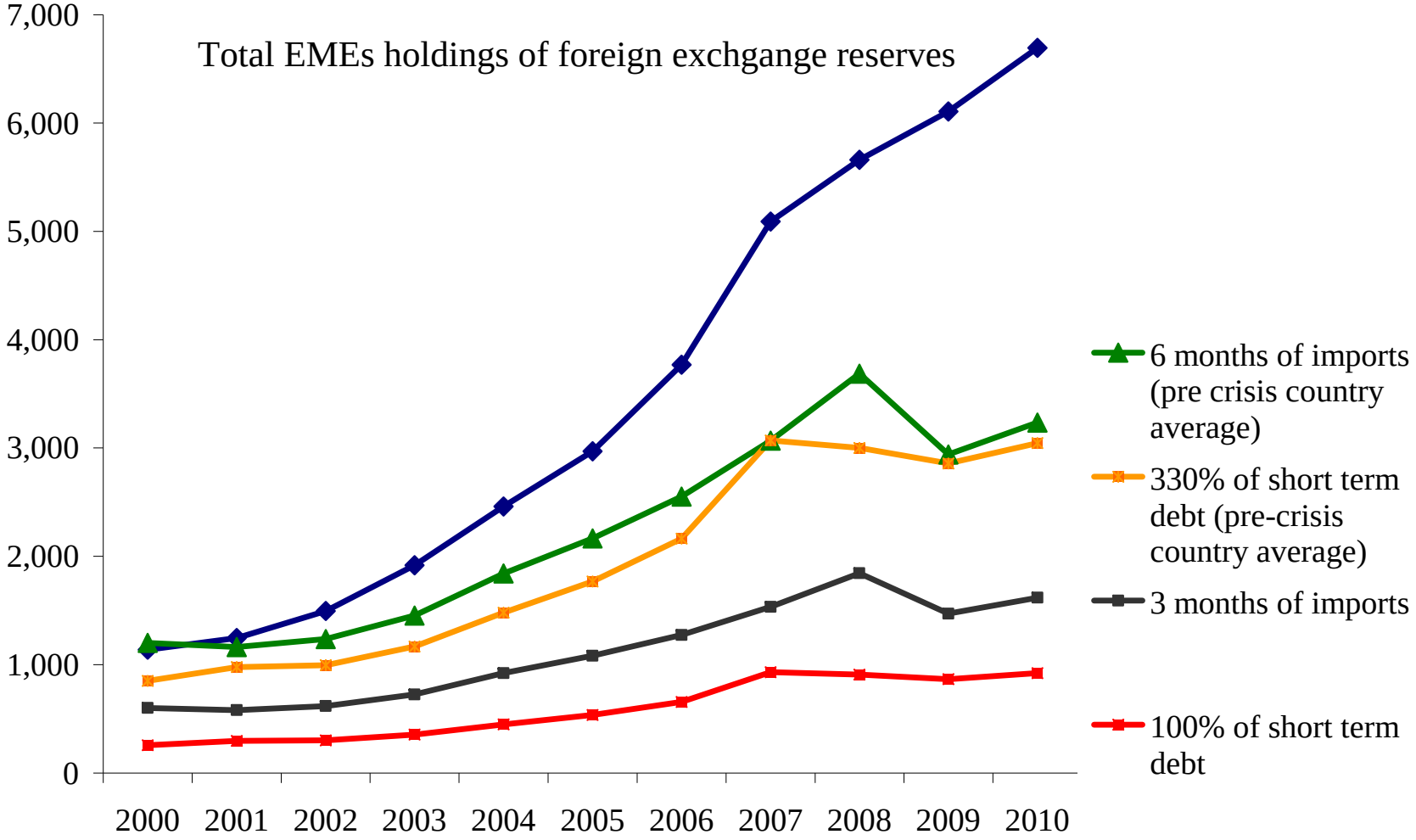


Source: ECB staff calculations based on Bussiere, CA'Zorzi, Chudik and Dieppe (2009)

Importance of EME official capital flows

Reserve accumulation beyond self-insurance

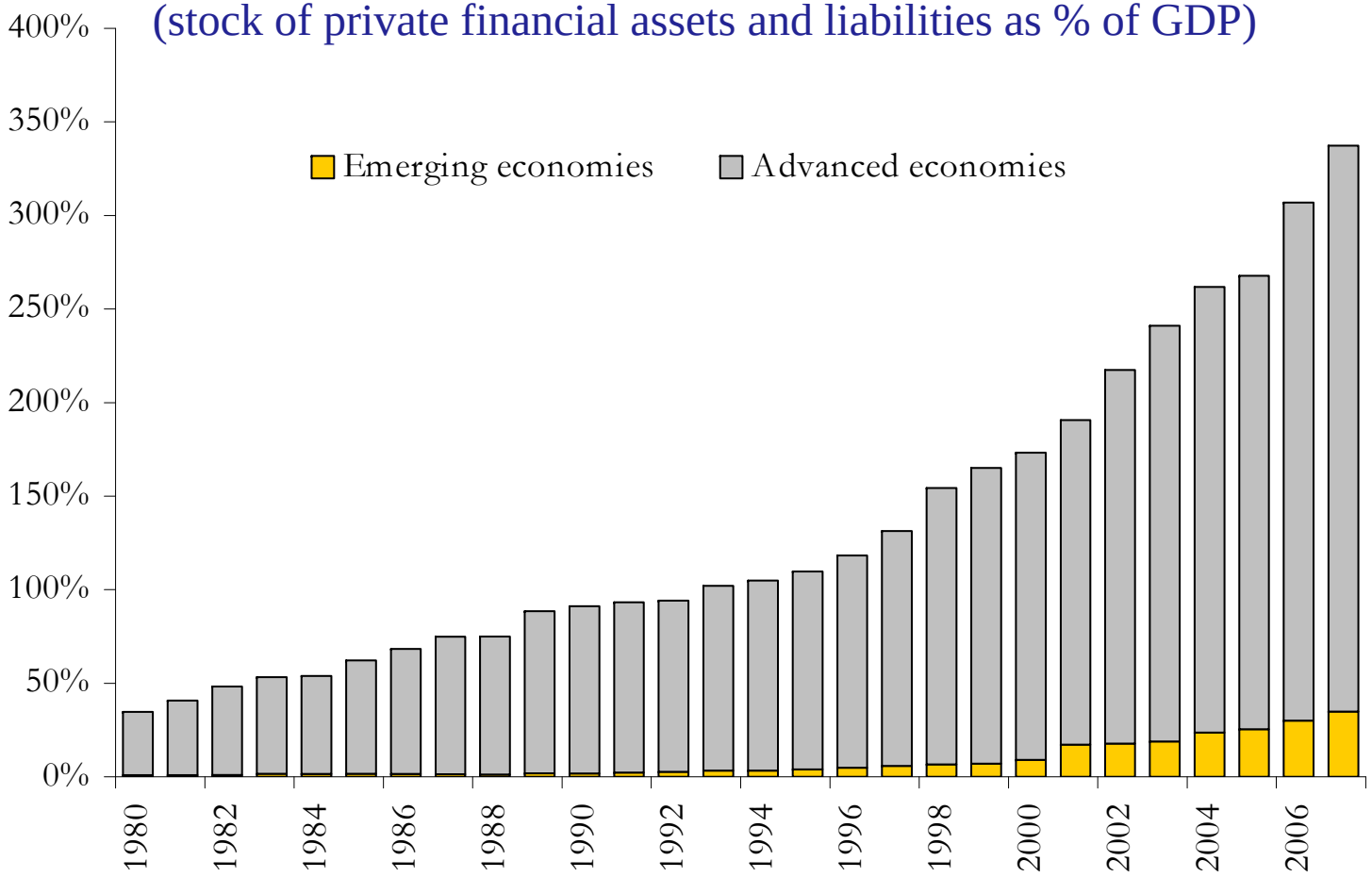
EMEs foreign exchange reserves and reserve adequacy benchmarks (USD bn)



Depth & sophistication of financial markets

Financial openness and private sector asymmetries

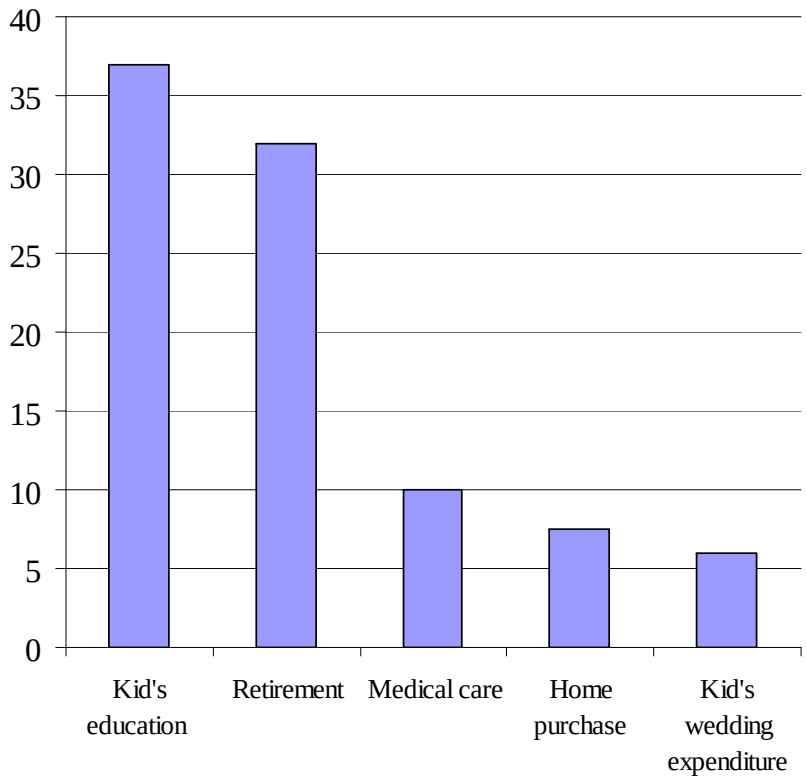
(stock of private financial assets and liabilities as % of GDP)



Source: IMF, ECB calculations.

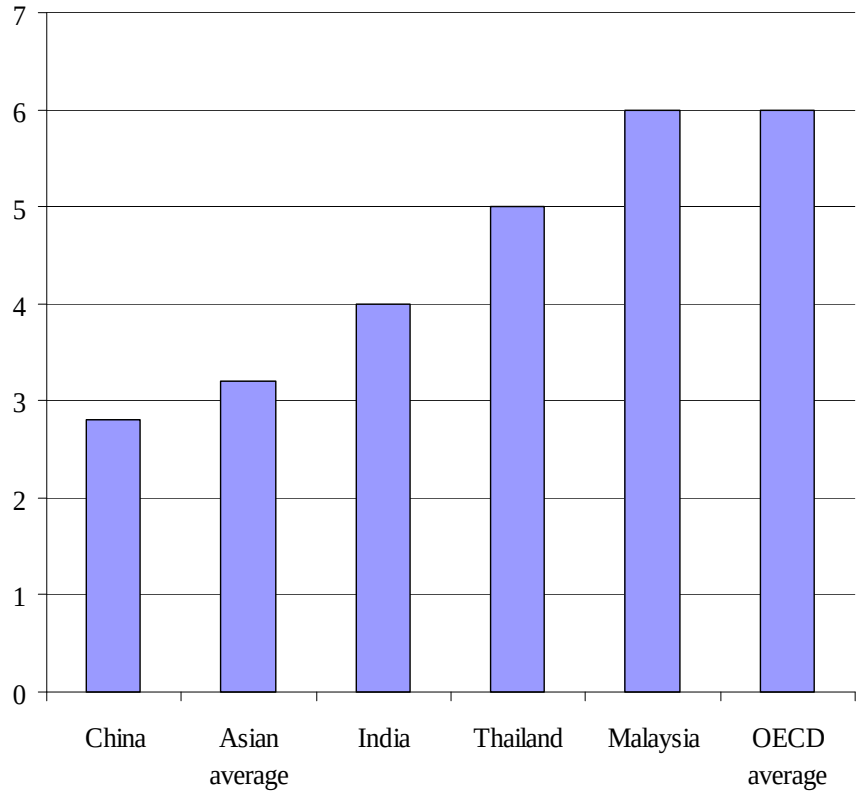
Household's savings in China: Key drivers (I)

Key motivations for saving in China, % of respondents



Source: HSBC

Public expenditure on education % of GDP



Source: HSBC