

# The Chilean experience managing capital inflows

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\*The opinions expressed in this presentation are personal and do not represent the views of the Central Bank of Chile

# Introduction

- At this stage there is abundant evidence that the demand by non residents of assets issued by EMEs is volatile
  - Depends on push factors that unrelated to the expected returns of these EME assets.
- These push factors include balance sheet constraints and shifts in perceptions:
  - Capital requirements, margin calls, fixed portfolio investors – some of which are driven by regulation
  - Wake up calls, changes in perceived risk...

# Introduction

- The concern is that this increased demand leads to higher prices of EMEs assets
  - Falling yields in USD and local currency, appreciating exchange rate ...
  - .. and increased issuance of these assets, which is usually been associated with a current account (CA) deficits, since new assets finance consumption, investment and government spending.
- When demand falls...this leads to a costly adjustment (Calvo et al (2004) and long literature on the costs of CA adjustments)

# The Chilean experience managing capital inflows: a tale of two crisis

- During the subprime crisis, the Chilean policy mix delivered strong resilience to large fluctuations in gross capital inflows
- The current policy mix is characterized by:
  - (1) an inflation targeting framework
  - (2) freely floating exchange rate
  - (3) an structural balance fiscal rule (counter-cyclical fiscal policy)
  - (4) open capital market (remove of most capital controls on inflows and outflows), and
  - (5) strong financial regulation and supervision, including (some) macroprudential policy.

# The role of capital outflows

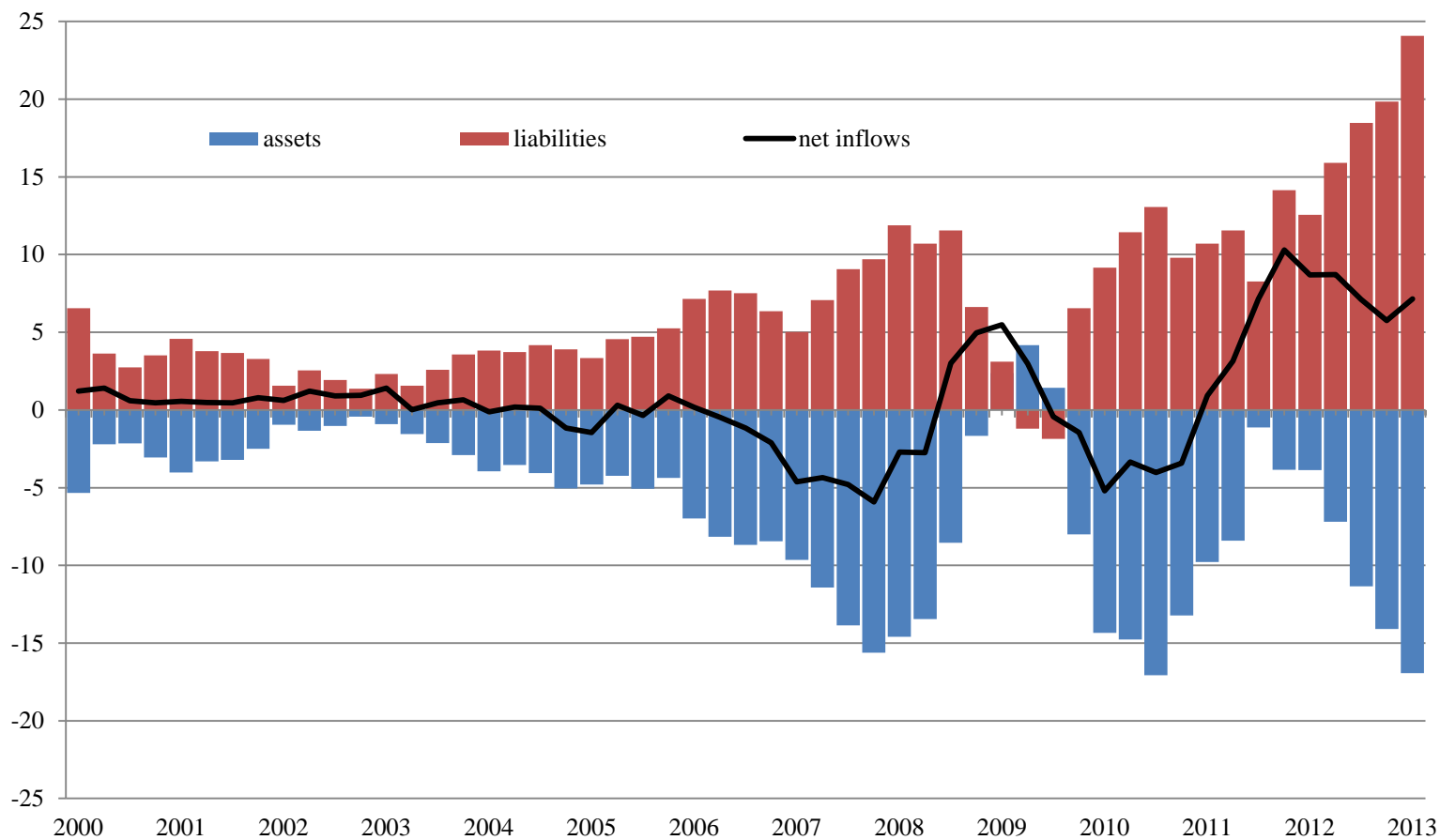
- In addition, residents (private and public) hold a significant fraction of their assets overseas, introducing an additional margin of adjustment:
  - When demand for EME assets rises, its price increases, encouraging local residents to change their portfolio and increase holdings on foreign assets, dropping the price of local EME assets.
  - As a result, the net effect is that for a given change in non resident demand for EME assets (gross inflows), total demand (net inflows) shifts outwards less ... smoothing the non resident effects on the price and quantity supplied.

# The role of capital outflows

- Likewise, if demand by non resident for EME assets falls...then residents will offset this fall
  - Several recent papers have recognized this effect (Forbes and Warnock (2012), Broner et al (2012))
- Hence, the policy implications seen straightforward...liberalize the capital account to outflows!!
- In Chile in 2008 this seems to have been the case...with residents offsetting a reversal of inflows ...

# Capital flows in Chile

(% of GDP in 2007)



Note: Assets include international reserves

Source: IFS (IMF) and WEO

# Is this “offsetting capacity” of capital outflows guaranteed?

- Drawing on the Chilean experience and some recent research the answer is no for several reasons:
  - It only provides buffers against some shocks (global vs. idiosyncratic).
  - It requires a consistent domestic macro policy mix.
  - Composition of these outflows matter!
- In fact, several authors have emphasizes that the Chilean policy mix by the end of the 90s was inconsistent as both resident and non residents perceive a fall in expected returns of EME asset.



# The Chilean experience managing capital inflows in the late 1990s

- In the late 90s, the Chilean's policy mix was characterized by:
  - Targeting a stable and depreciated exchange rate – due to its export-led growth model.
  - Introducing capital controls – aiming an independent monetary policy (only partially successful)

# The Chilean experience managing capital inflows in the late 1990s

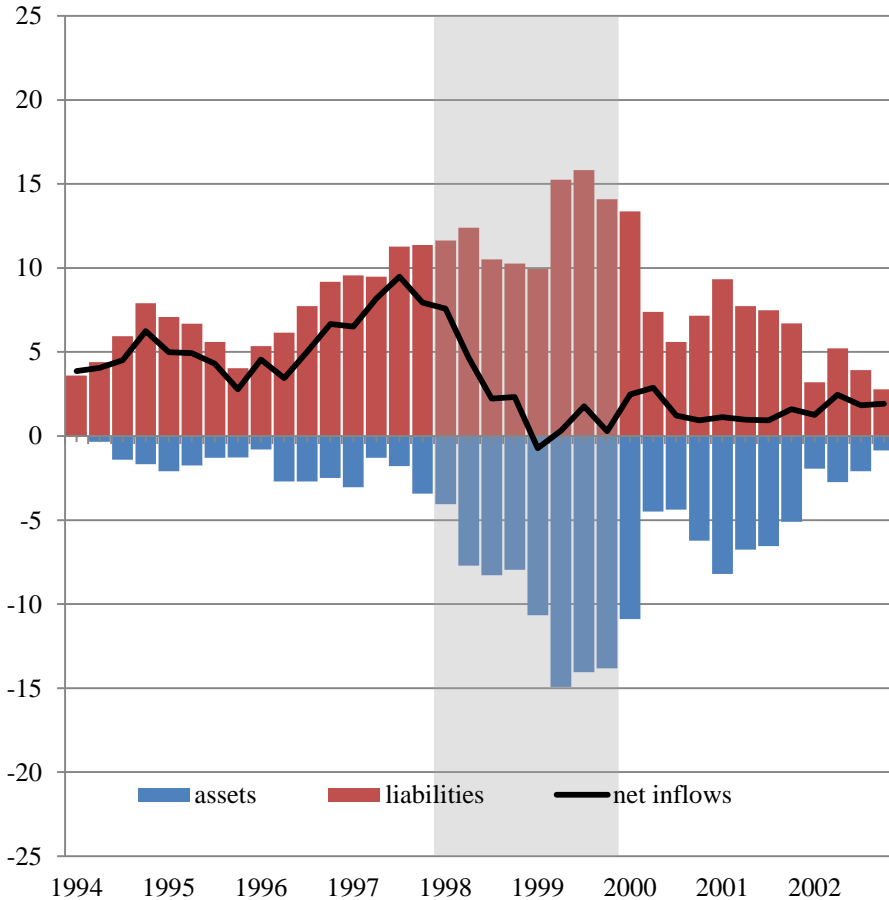
- Defending the exchange rate within this framework was non-credible and revealed no resilience to stops in capital inflows
  - During the surge, the attempt to avoid appreciation created huge financial costs (extensive sterilized intervention in a context of higher interest rate differential).
  - During the stop, the attempt to avoid depreciation was contractionary: tightened monetary policy, higher unemployment, lower GDP growth
  - Moreover, during the stop of gross inflows of the late 1990s, resident investors had strong incentives to move money abroad (“sudden start” of capital outflows) – enhancing this negative circular process: depreciation expectations (one way beats), limits on foreign investment were relaxed

# The Chilean experience during the subprime crisis

- In 2008 the policy framework results to be resilient to changes in gross capital inflows:
  - The accumulation of foreign assets acted as buffer of gross inflows.
    - Pension funds substitute (portfolio) investment abroad from domestic (banks) deposits.
    - International reserve accumulation as a financial stabilizing policy – FX intervention has no target of the exchange rate level.
  - Exchange rate flexibility reduces incentives to short-term transactions – lower correlation between domestic and foreign returns.
  - Fiscal policy and monetary policy act in a counter-cyclical manner.
  - As a result, net capital flows are more stable than other emerging countries and macroeconomic risks are mitigated as the risks of inflation and excessive credit growth are reduced.

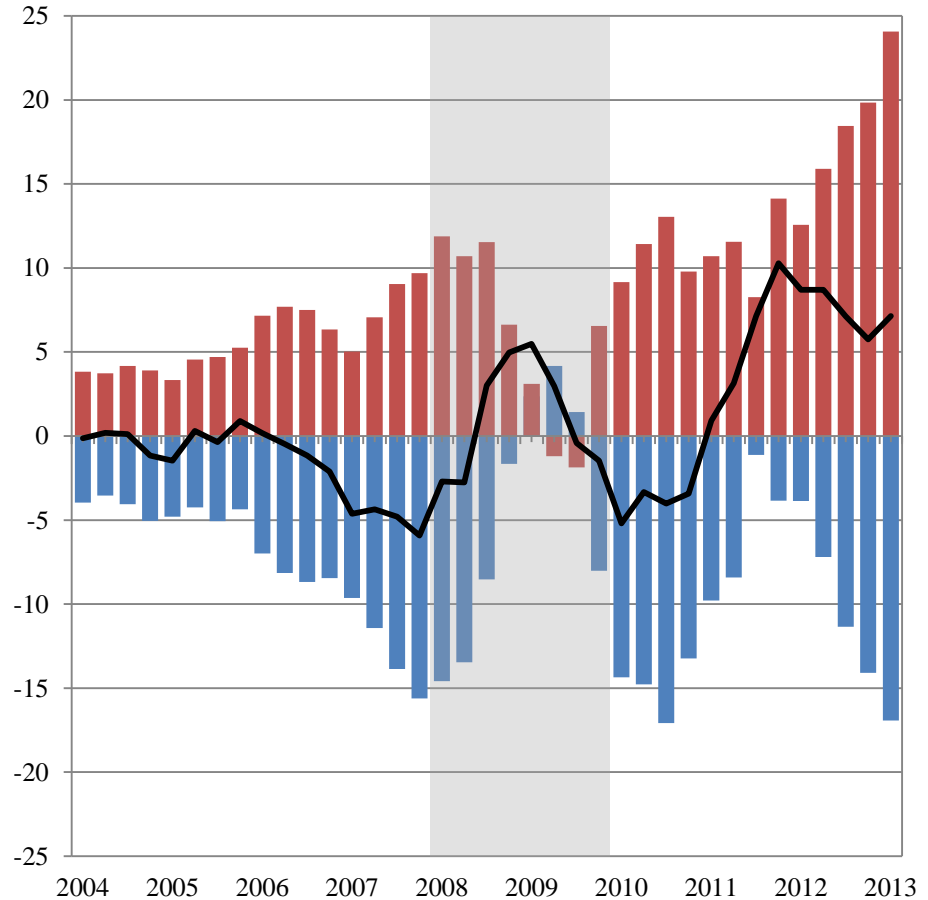
# Capital flows during the Asian/Russian/LTCB Crisis

(% of GDP in 1997)



# Capital flows during the Subprime Crisis

(% of GDP in 2007)



Note: Assets include international reserves

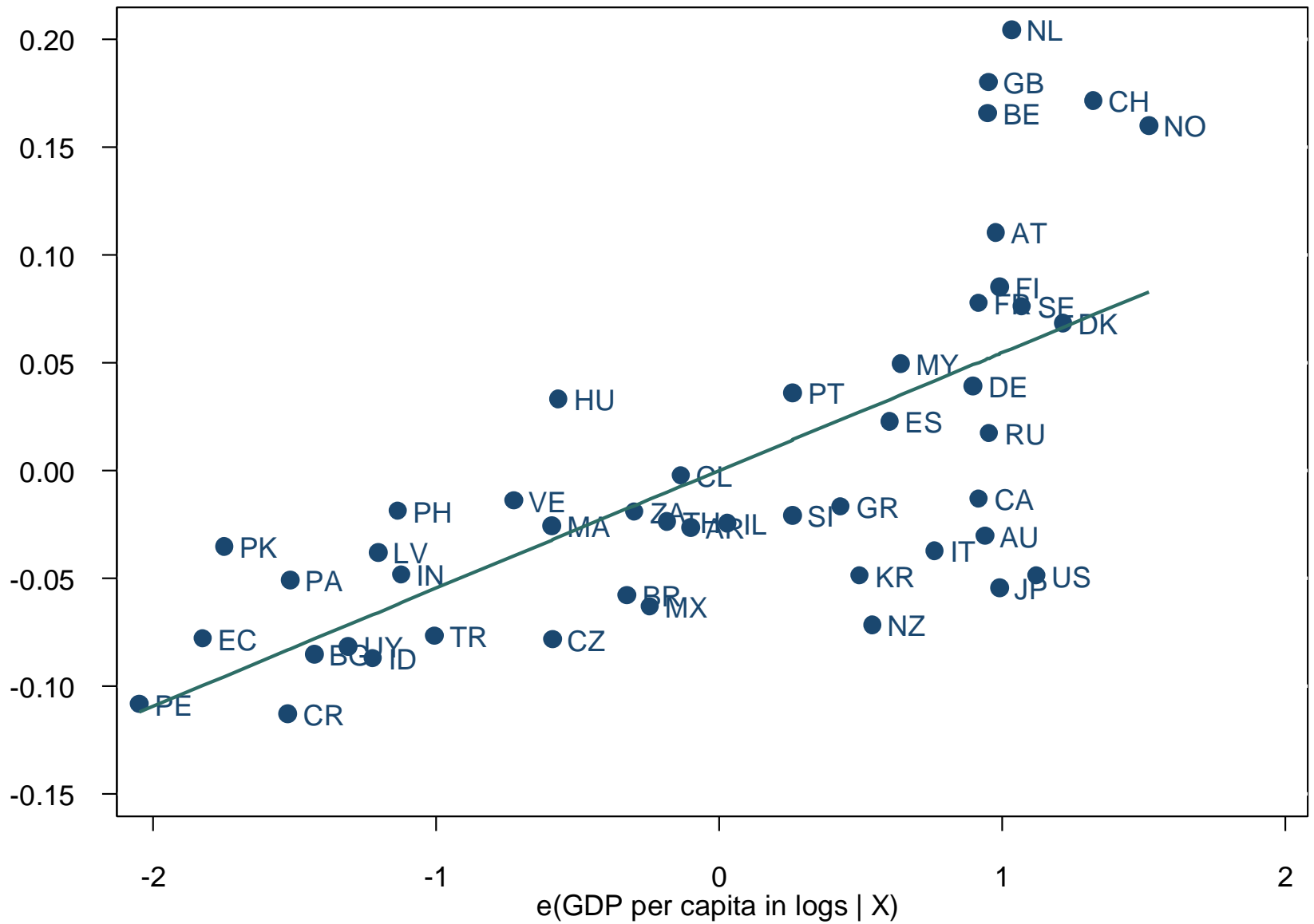
Source: IFS (IMF) and WEO

# The role of capital outflows

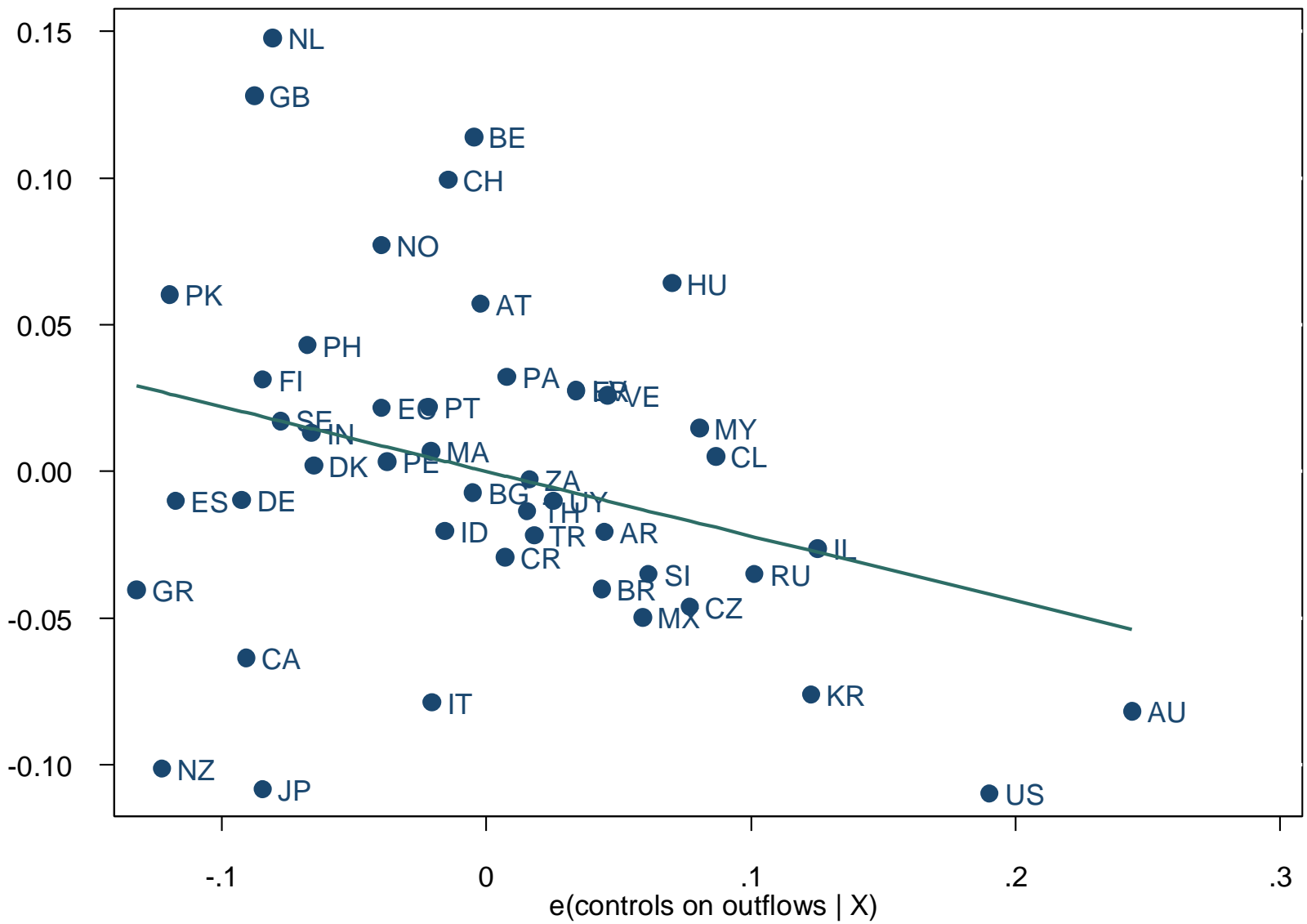
- It requires that foreign assets reach a “reasonable” level and that they are able to be substituted with local assets:
  - For the level of foreign assets the income levels matter, and interestingly capital controls on inflows matter too!
  - For the elasticity of these assets to local returns, the liquidity of foreign assets matter (i.e assets composition matter)

# Gross international assets (% of GDP)

Explanatory variable: Outflows as % of GDP	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
Log GDP per capita	.0546639	.0087469	6.25	0.000	.0370241 .0723037	
EME Dummy* kai	.143623	.0870648	1.65	0.106	-.0319599 .3192058	
EME Dummy*kao	-.0686075	.0650712	-1.05	0.298	-.1998361 .0626212	
Constant	-.4210673	.0835469	-5.04	0.000	-.5895557 -.2525788	
Adj. R2	0.4857					
No. Obs.	47					



coef = .05466394, se = .0087469, t = 6.25

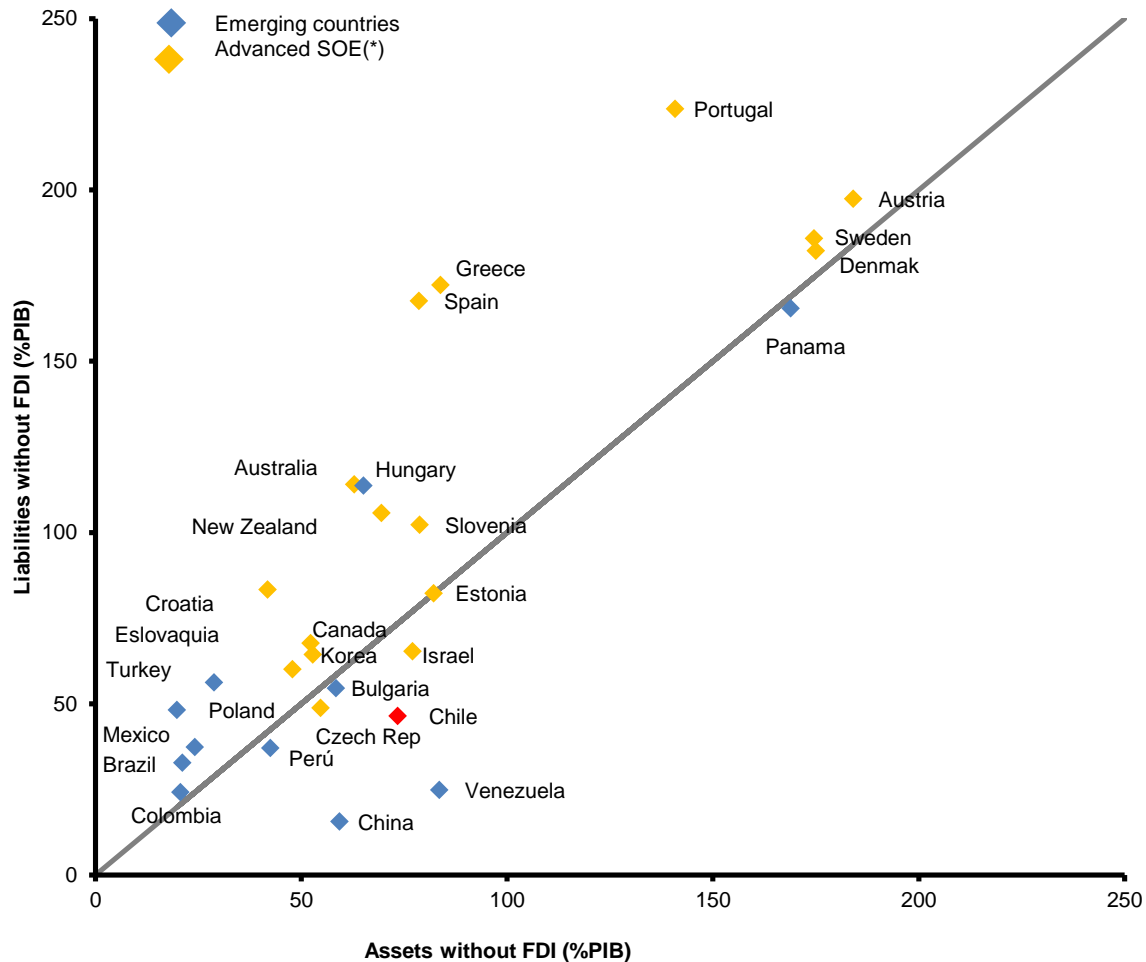


coef = -.22017004, se = .10407336, t = -2.12



# Liquid assets and liabilities

(% of GDP)



(\*) High income OECD countries, whose GDP in current dollars is below the average and have a degree of trade openness exceeds 60% of GDP.

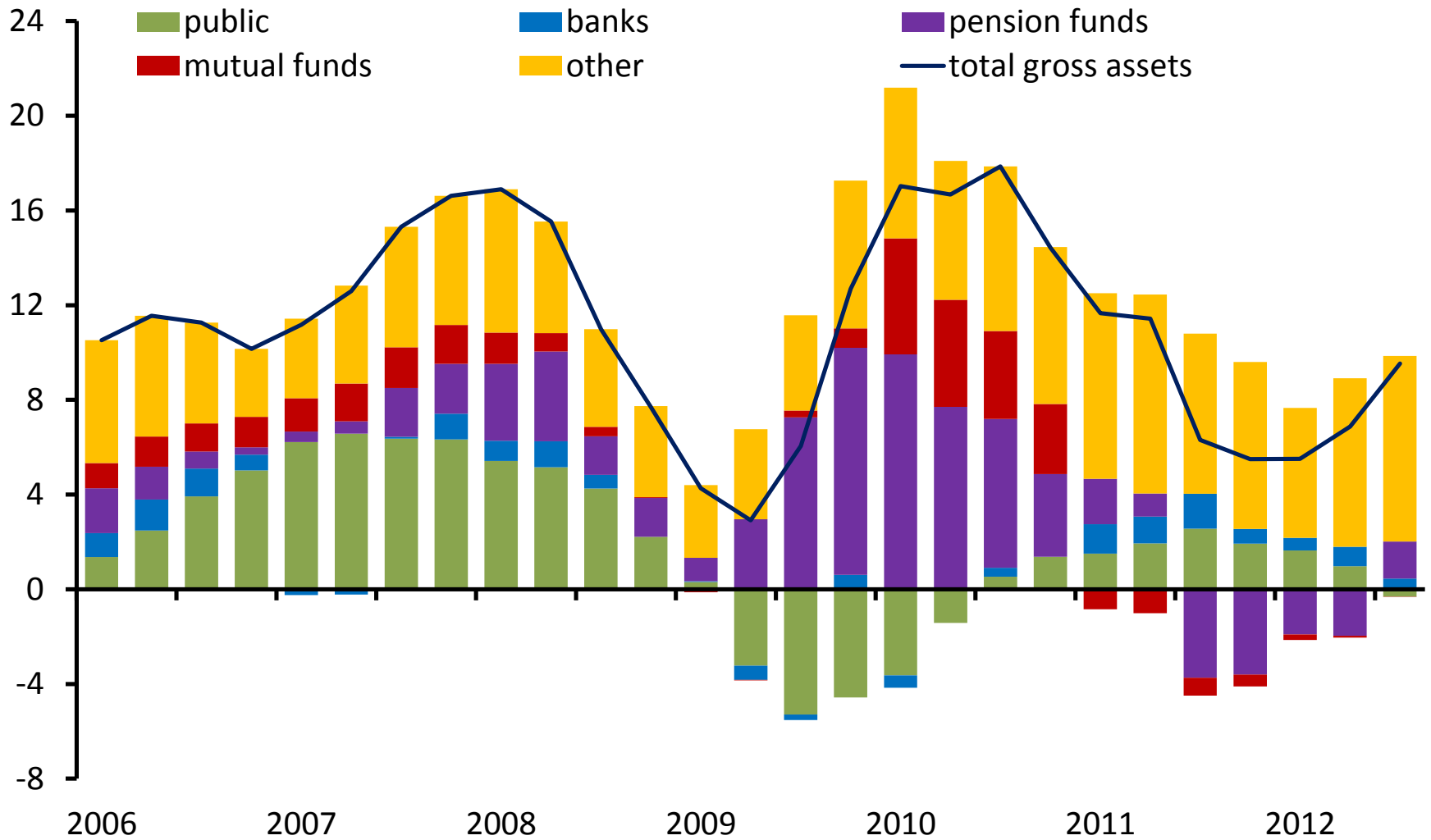
Source: Central Bank of Chile and IMF

# The role of capital outflows

- The experience from Chile also indicates that pension funds do play an important role in the elasticity of EME assets to local returns ... As well as the public allocation of foreign assets as seen during the crisis ...

# Gross assets by sector (\*)

(% of GDP)



(\*) 12 months accumulated flow

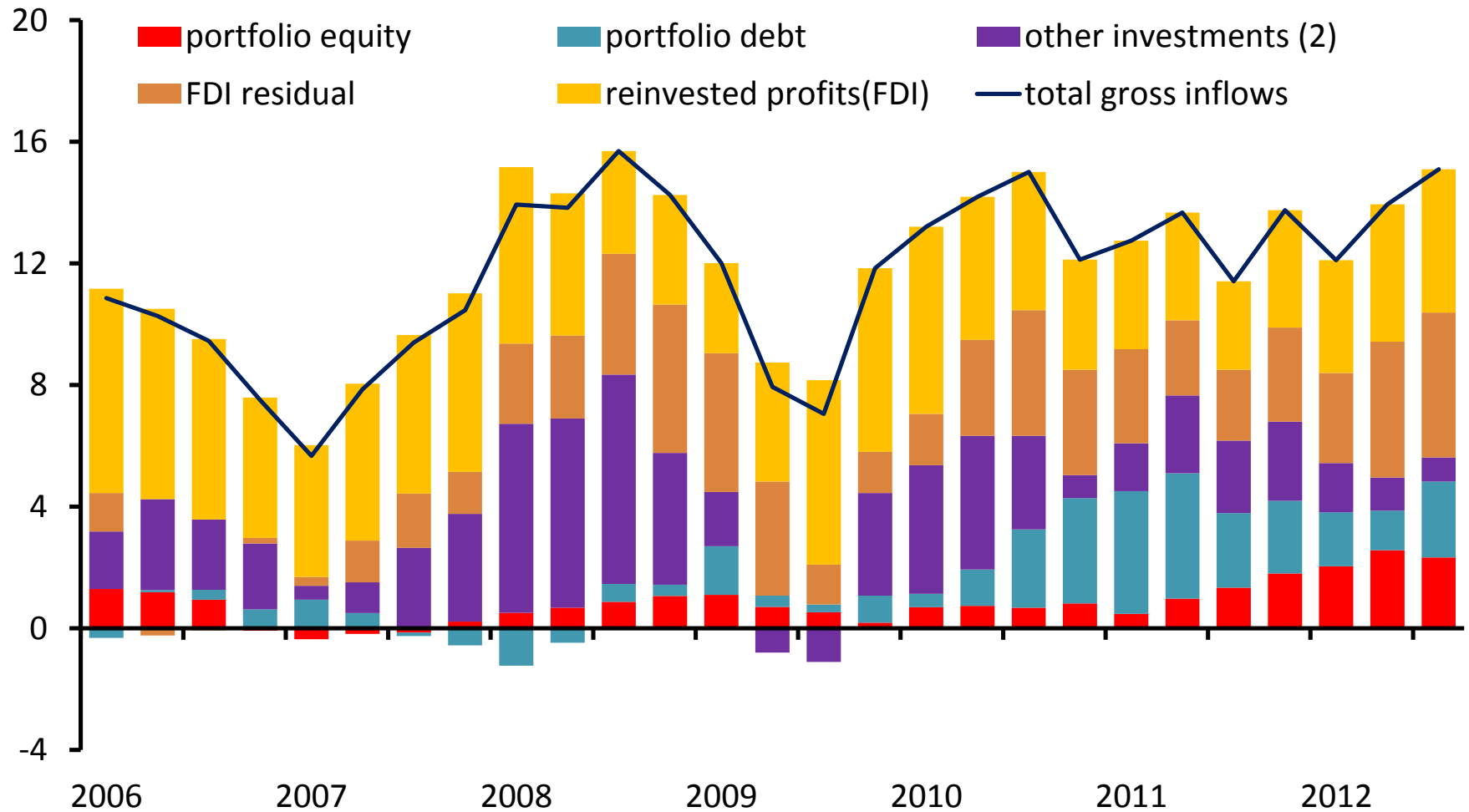
Source: Central Bank of Chile

# Financial stability implications

- Assuming residents do offset aggregate demand changes for EME by non residents...is this sufficient from a financial stability perspective?
  - The answer is no. Basically because every EME issues many assets (private, public, debt, equity, local currency foreign currency) each of which is not a perfect substitute for the other. Hence even if CAD is stable...can have rising prices in some assets and increases supply.
- Therefore, changes in gross inflows and the volatility of the exchange rate may create financial imbalances:
  - As borrowers and lenders behind gross inflows and outflows are not necessary the same – currency mismatches – credit risk – overborrowing
  - And gross inflows and outflows have different maturity – liquidity mismatches

# Gross liabilities by type (\*)

(% of GDP)



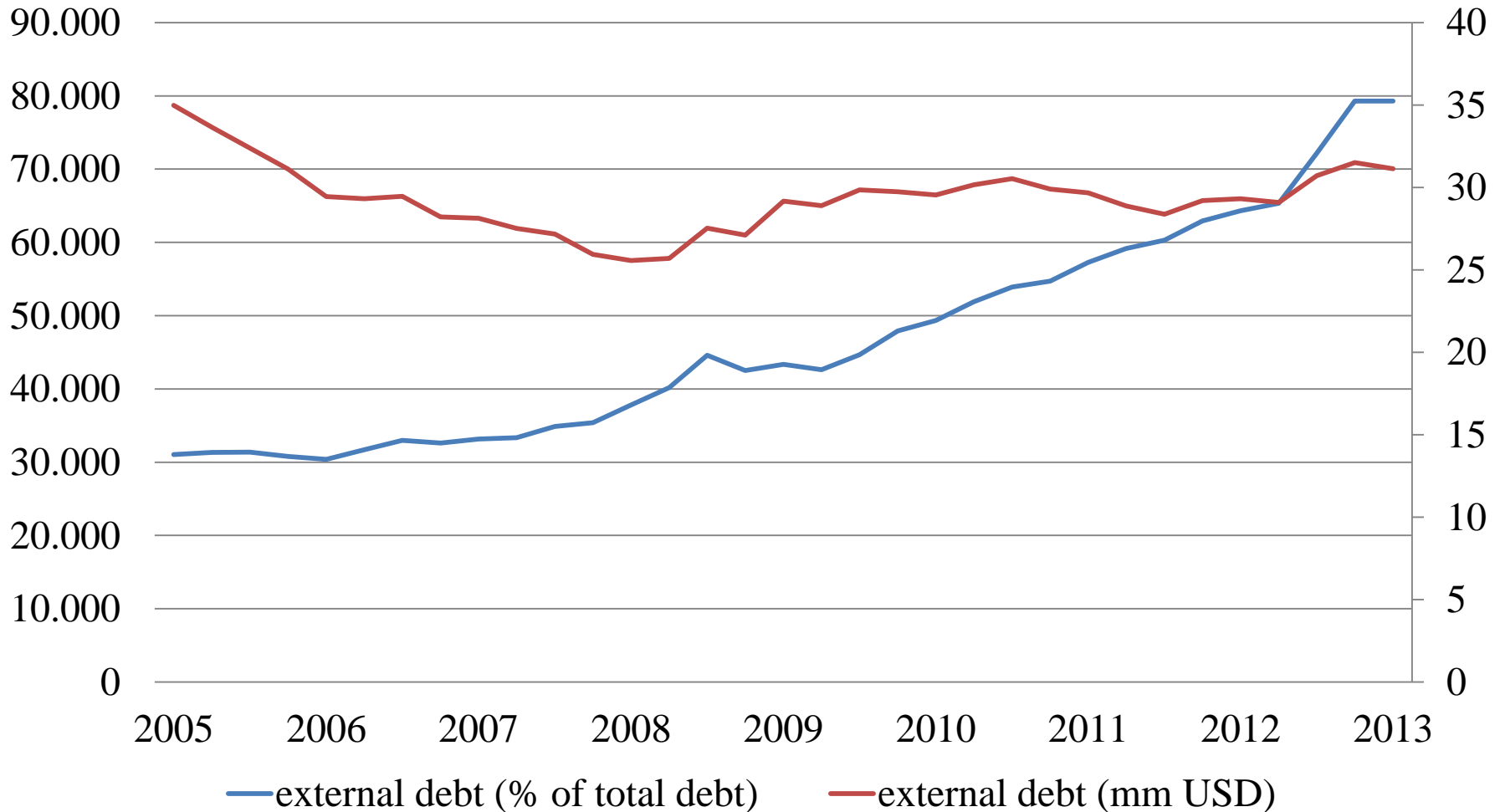
(\*) 12 months accumulated flow

(2) Includes loans, trade credits, currency and deposits.

Source: Central Bank of Chile

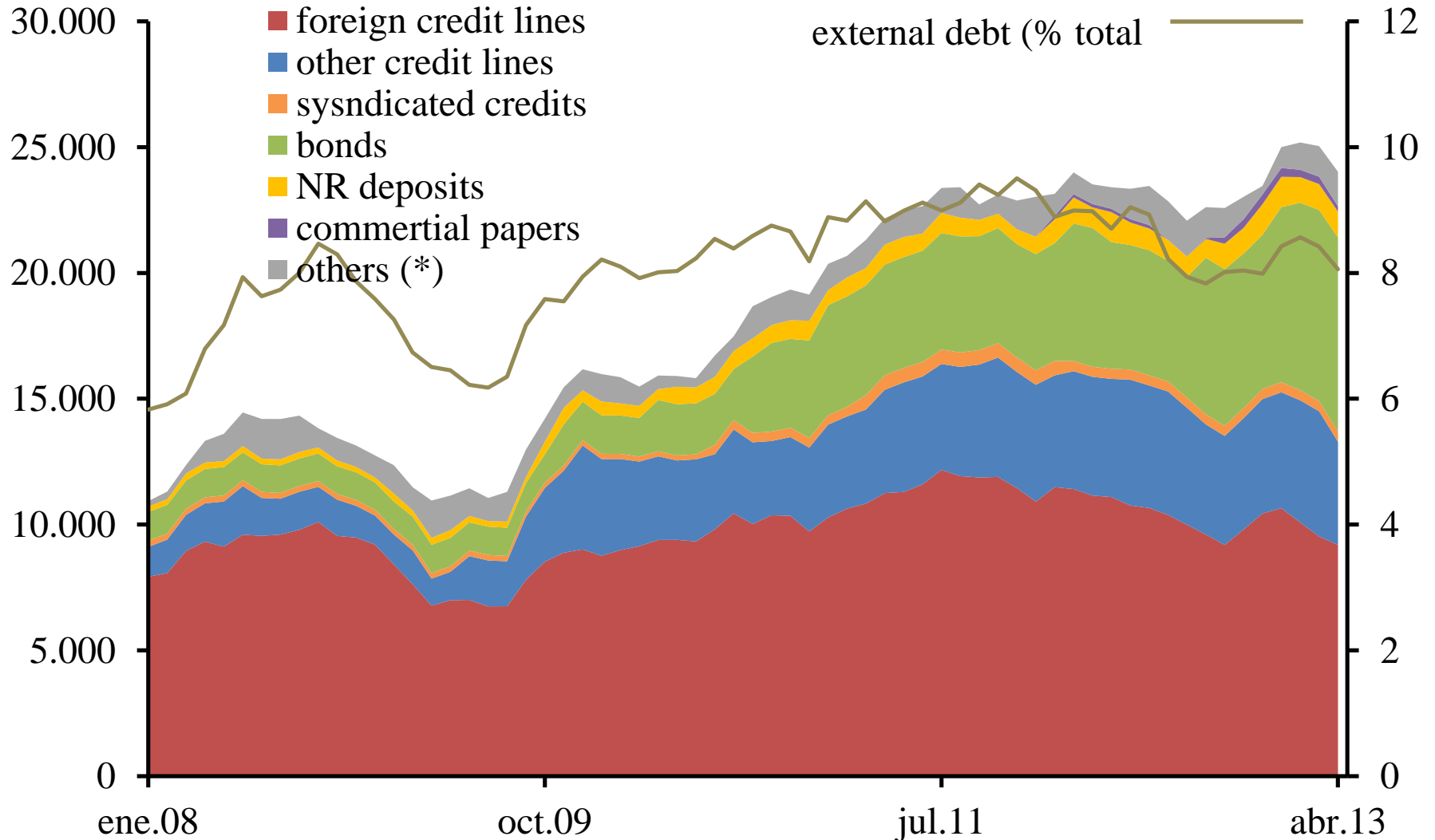
# External debt in the corporate sector

(millions of dollars)



# External debt in the banking sector

(millions of dollars and %)

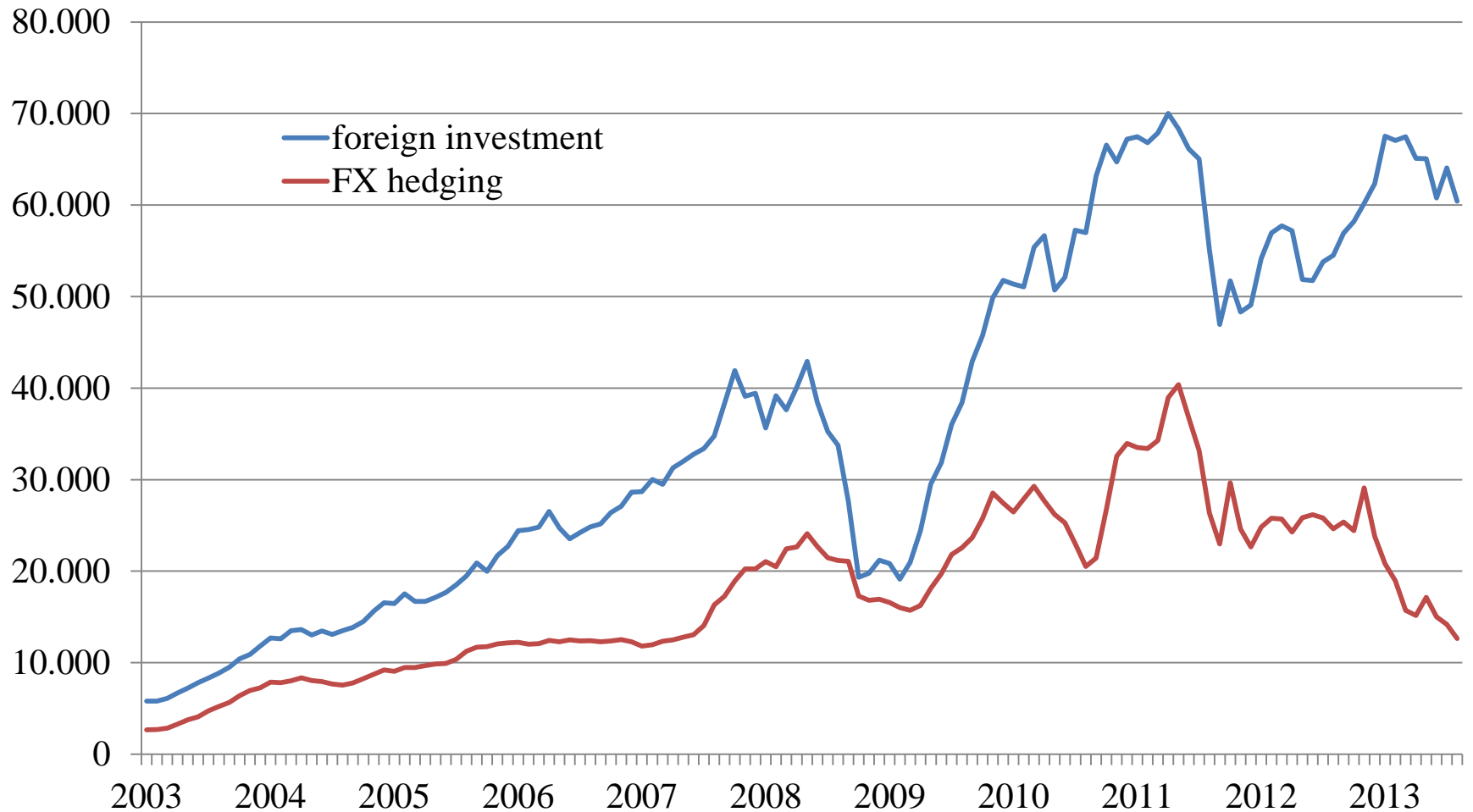


# Two additional peculiarity of Chile

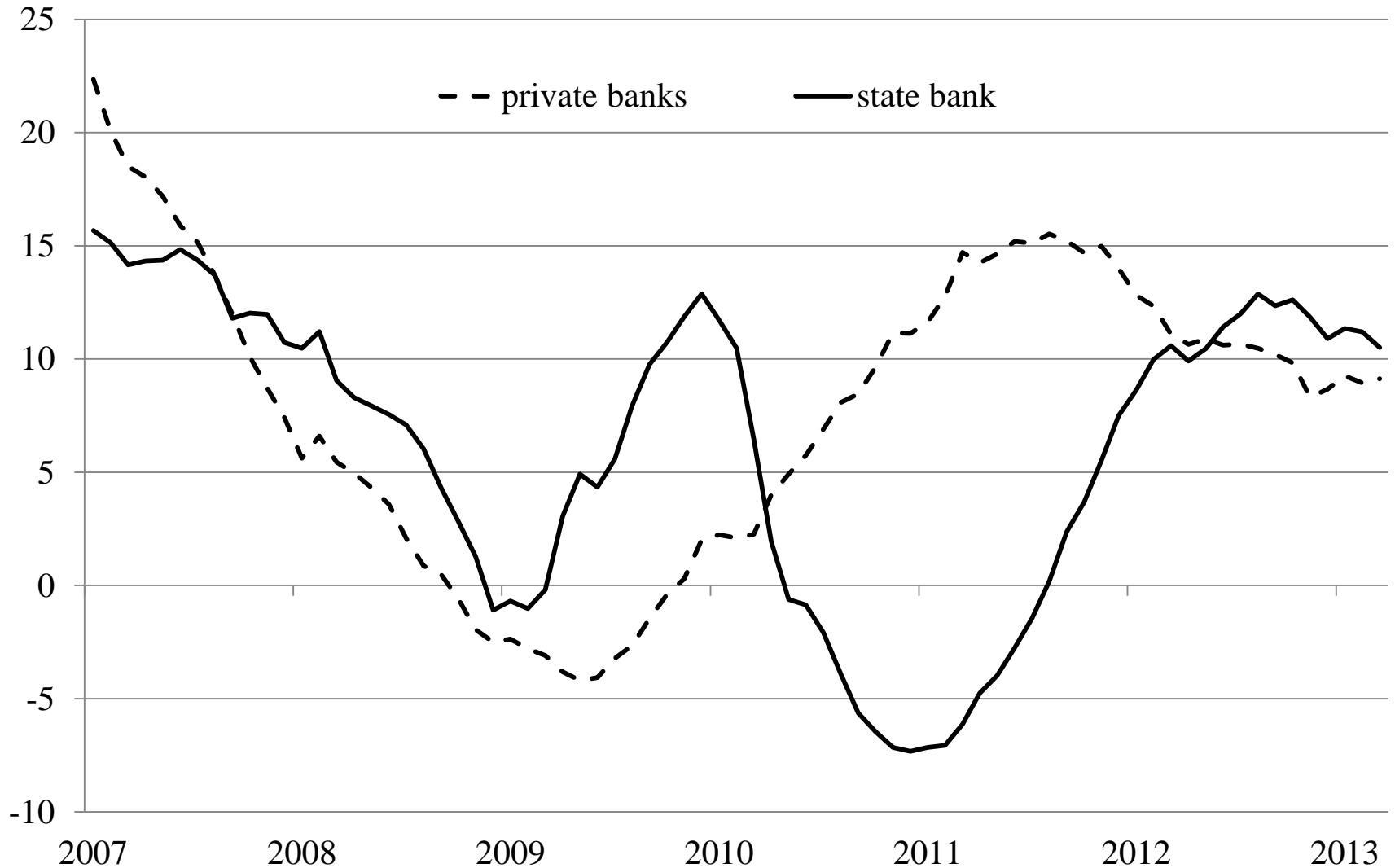
- Pension funds hedge back into local currency => swap market
- The role of publicly owned bank



# Pension Funds: foreign investment and hedging (mm USD)



# Credit growth during the subprime crisis



# Policy implications

- Flexible exchange rate + adequate currency and liquidity regulation in the financial system + proactive risk monitoring
- Still some room for capital controls?
  - Second-best world (existence of externalities) ... argument made by Korinek (2011) + IMF recently
- International reserve accumulation and capital controls are seen as inappropriate policy response to target the exchange rate level
  - During the surge, real exchange rate appreciation cannot be avoided; as accumulation of international reserves tends to be inflationary (i.e sterilization is not fully effective).
  - Capital controls had no persistent effect on the real value of the exchange rate (De Gregorio, Edwards and Valdés (2000))

Thanks for your attention!

# The Chilean experience with capital controls

Methodology	Article	Short-term subject to taxes	Short-term non subject to taxes	Total Short-term	Long-term	Total Inflows
VAR	Soto (1997)			√, <i>T</i> -60 (-40)	-240 (385) -62%	√, <i>T</i> -300 (345) -87%
	De Gregorio et al (2000)			<i>X</i>	√, <i>T</i> 1,300 (4,105) 32%	
Regression (%GDP)	De Gregorio et al (2000)			√ -433 (542) -79%		<i>X</i>
	Gallego et al (2000)	√ -1,465	176	√ -1,289	703	√ -586
Regression (USD)	Agosín (1995)			√ -204 (2,407) -8.4%		
	Larraín et al (2000)	√ -379 (619) -61%	√, <i>T</i> <i>P</i> -66 (41)	+1,098 -445 (660) -67%	<i>X</i>	<i>X</i>
	Le Fort and Lehmann (2000)					√ -420 (8,731) -4.8%

Source: Cifuentes and Poblete-Cazenave (2011). There is a √ if the author find a significant impact of the URR on a certain kind of inflows, otherwise there is an *X*. A *T* shows that this impact is transitory (no more than 1 year). The amount in parentheses is the annualized mean of the corresponding inflows associated to the sample and the definition used by each author (see Appendix B).