International Reserves Policy under Inflation Targeting
The case of Chile

Pablo García*

Central Bank of Chile

Prepared for FLAR's II International Conference: "International Reserves in Middle- and Low-Income Countries: Background of Recent Accumulation, Management, Monetary and Exchange Rate Policy and Outlook"

*The views expressed here are my own and do not necessarily reflect the official position of the Central Bank of Chile.

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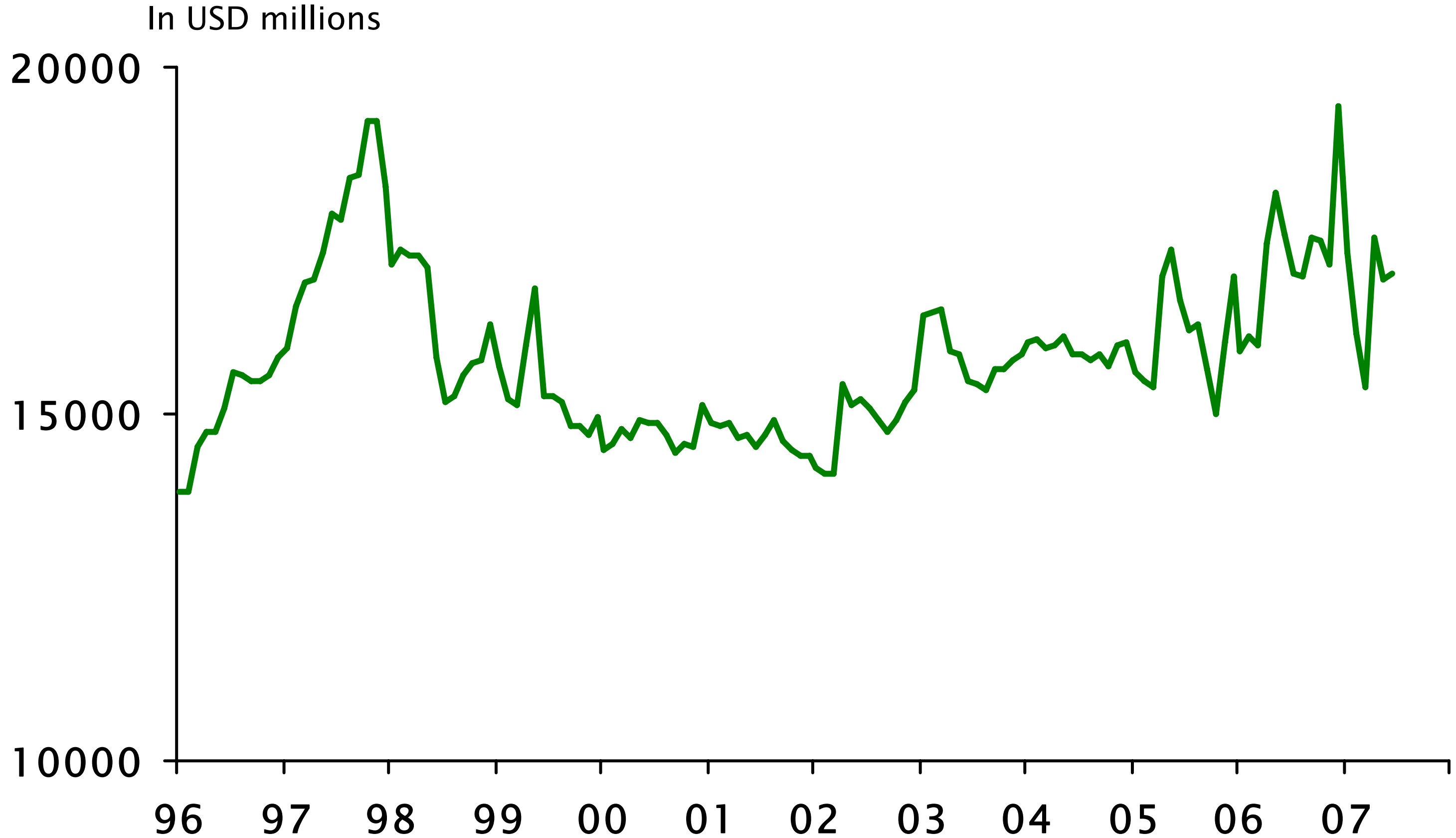
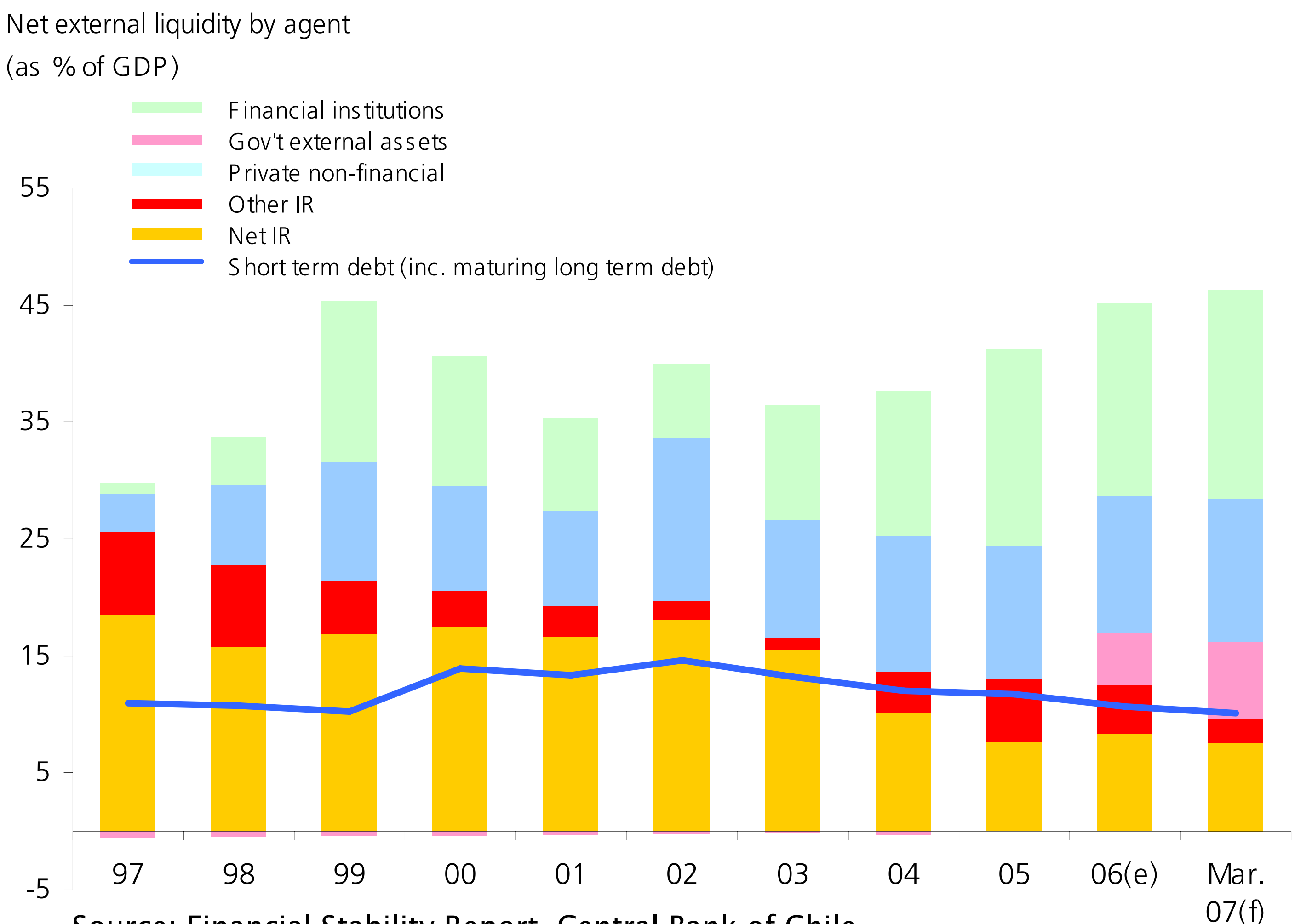
BCCh's Gross International Reserves have fluctuated over time



Source: Central Bank of Chile

The net external liquidity is increasingly held widely across agents in the economy.



Source: Financial Stability Report, Central Bank of Chile

Agenda:

- Forex Interventions in times of trouble
  - Framework
  - Triggers and characterization
  - Effects
- Structural reduction of gross reserves
  - Rationale?
  - Implementation 2003-2005 within a floating regime
- Facing favorable terms of trade shocks
  - Fiscal rules and sovereign wealth management in 2006-2007

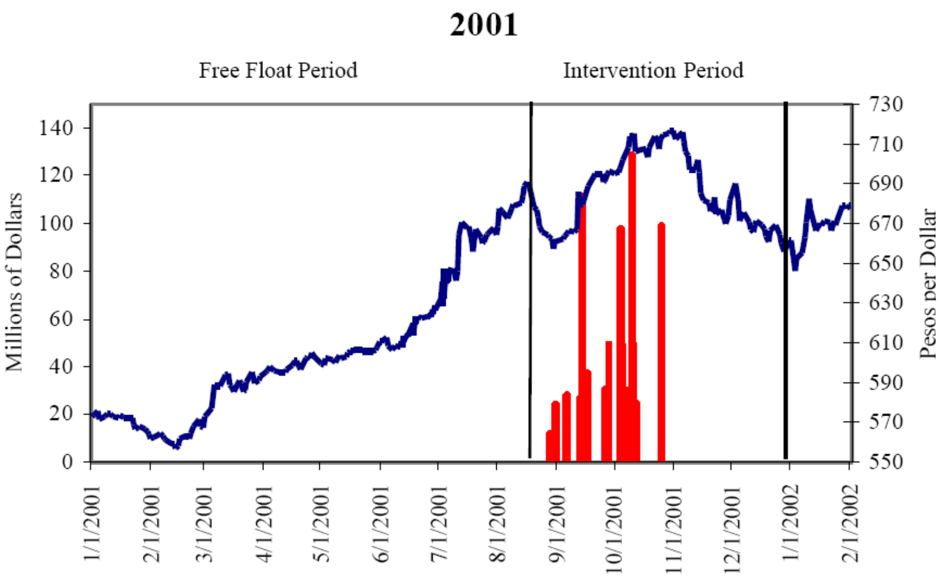
Forex interventions in times of trouble

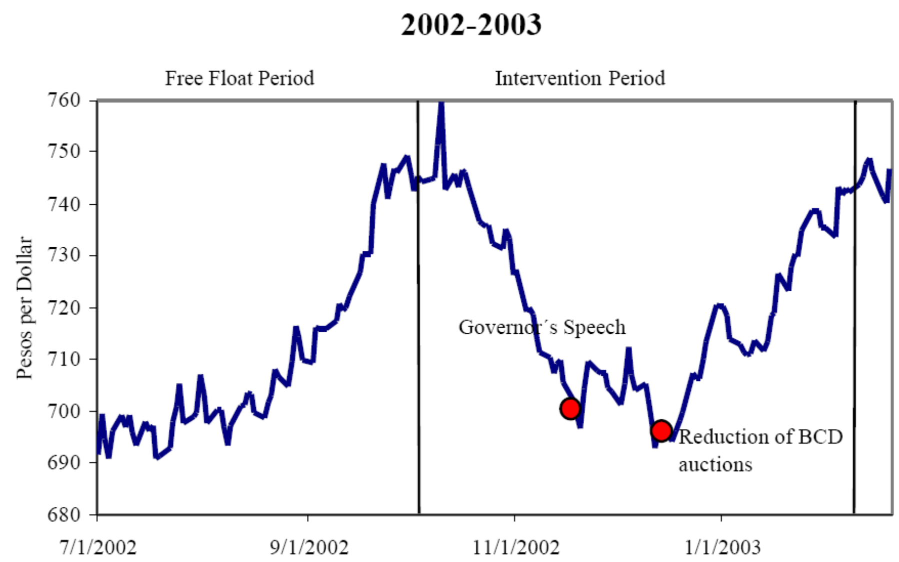
- Floating exchange rate regime set framework for intervention in September 2nd 1999
  - Suspension of exchange rate band.
  - Forex intervention under very qualified circumstances and with a public rationale.

- Further refinements
  - January 2003: Exceptional circumstances of uncertainty and volatility that lead to exchange rate overreaction adversely affecting the economy.
  - January 2005: Adverse effect of overreaction through equivocal market signals. Sterilized interventions should be the norm.

Forex interventions in times of trouble

- Triggers in 2001 – 2002
  - Regional turbulences in the run-up to the Argentinean sovereign default and elections in Brazil





Source: De Gregorio and Tokman (2004)

Forex interventions in times of trouble

- Characterization
  - Similar package announcements in 2001 and 2002.
  - Preannouncement of maximum amount of BCD (dollar-linked debt) issuance and direct sales of reserves (up to USD2billion each).
  - Preannouncement of the duration of exceptional period (four months in each case).
  - Implementation differed: in first episode 40% of direct sales and 100% of BCD issuance were implemented, compared with 0% of direct sales and ¾ of BCD issuance in second episode.

Forex interventions in times of trouble

- Effects (Tapia and Tokman 2004)
  - Main effect is through the effect of intervention announcements. Level effects of 2,7% and 0,5% in 2001 and 2002; daily trend effects of 0,18% and 0,28% resp.
  - Direct sales and BCD issuance with no significant impact on the exchange rate.
  - Evidence supports the significance of the expectations channel.

International Reserves in Chile: 2003-2005

- In December 2003, stock of exchange rate-indexed debt of aprox. US$ 6 bn.
  - More than US$ 5 bn falling due in 2004 and 2005
- Financial cost was not small
  - Spread = 140bp vs Chilean EMBI = 90bp in November 2003
  - Rationale #1 = Cost of maintaining reserves financed with XR-indexed debt

International Reserves in Chile: 2003-2005

- At the same time: revaluation of optimal IR level for Chile
  - Cross-country comparisons and demand for IR
  - Cost-benefit analysis
  - Rationale #2 = optimal level of IR

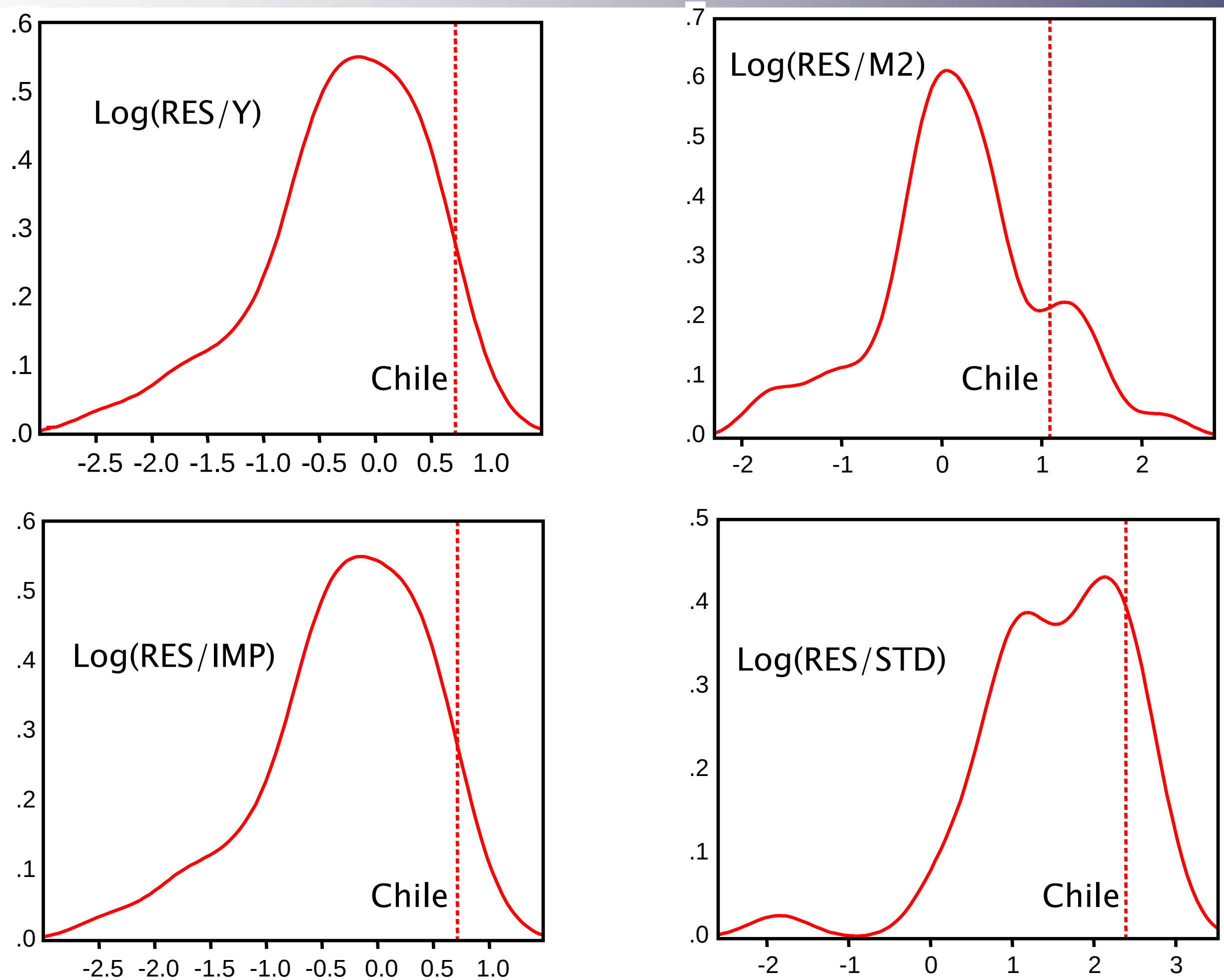
- Good opportunity to modify IR level
  - Without the need of modifying CB Forex risk (i.e., “without XR intervention”)
  - Fostering credibility of the floating regime

International Reserves in Chile: 2003-2005

- Cross country comparisons and demand for IR are not very informative
  - Fixed effects explain almost all cross country variation
  - Still, Chile appeared with “rather large” fixed effect

- Cost-benefit analysis
  - Present in CBC internal discussions for some time
  - Standard marginal analysis showed that savings from a small decline in IR outweighed the benefits of having these extra IR

Demand for IR (fixed effects distribution)



Source: Soto et. al. (2004)

Cost-Benefit Analysis

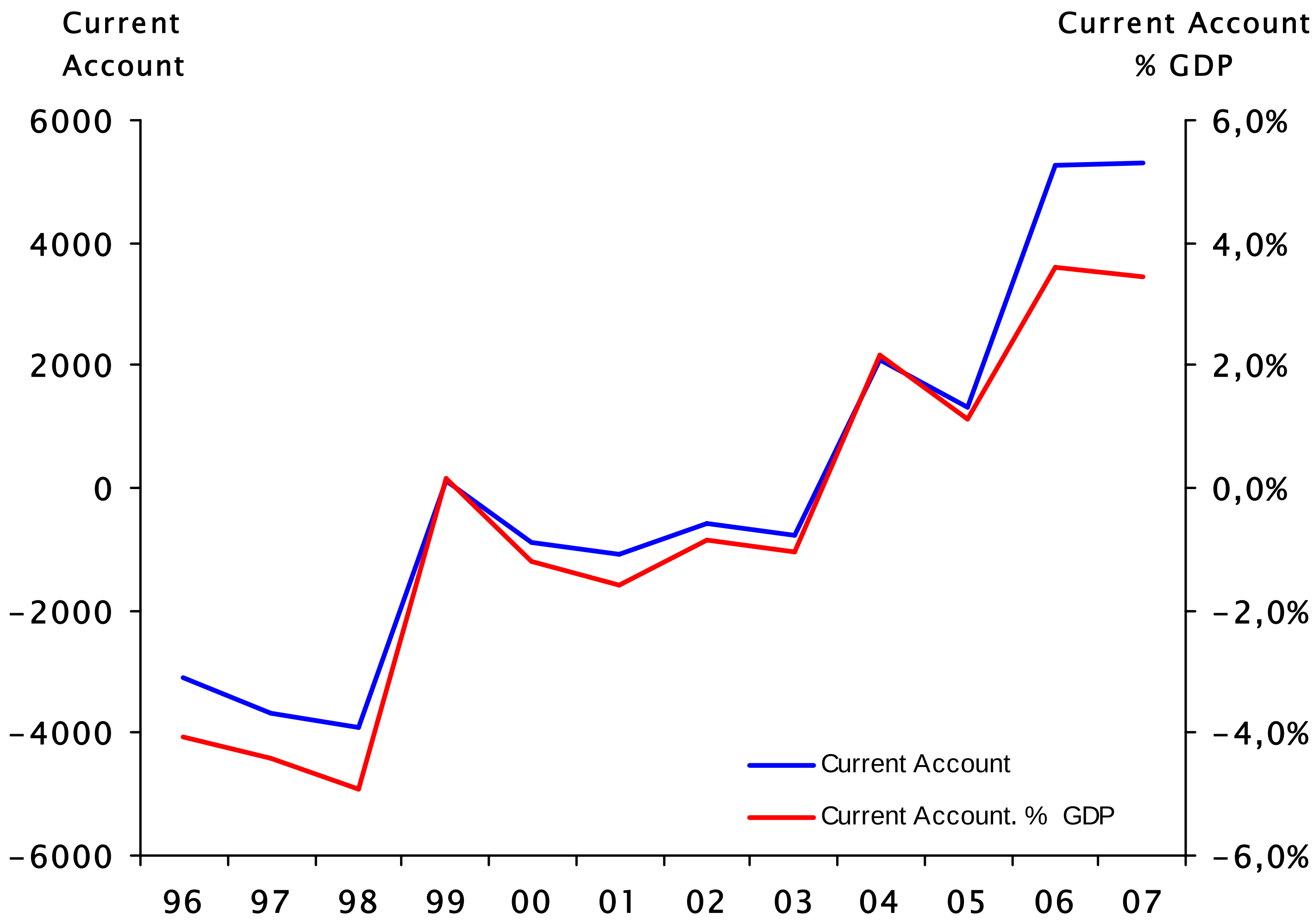
- Marginal cost of holding reserves:
  - +/- sovereign spread
  - Observable
- Marginal benefit:
  - Smaller probability of crisis × cost of crisis
  - Several papers give broad estimates
- Interior solution?
  - Non-linear effect of IR on probability of crisis (and sometimes spread)
  - Could also consider risk aversion and other refinements

International Reserves in Chile: 2003–2005

- Implementation
  - Initially, exchange auctions BCD x 1–year US$ denominated debt (BCX)
  - Since June 2004 issues of BCX–1
  - Payment with IR at maturity

- Results
  - Net IR declined from US$15.3 bn. in Dec. 2003 to US$12 bn in Sept. 2006
  - Gross IR (incl. fiscal and bank deposits, swaps, etc.) IR *increased* from US$15.8 bn to 17.4 bn.

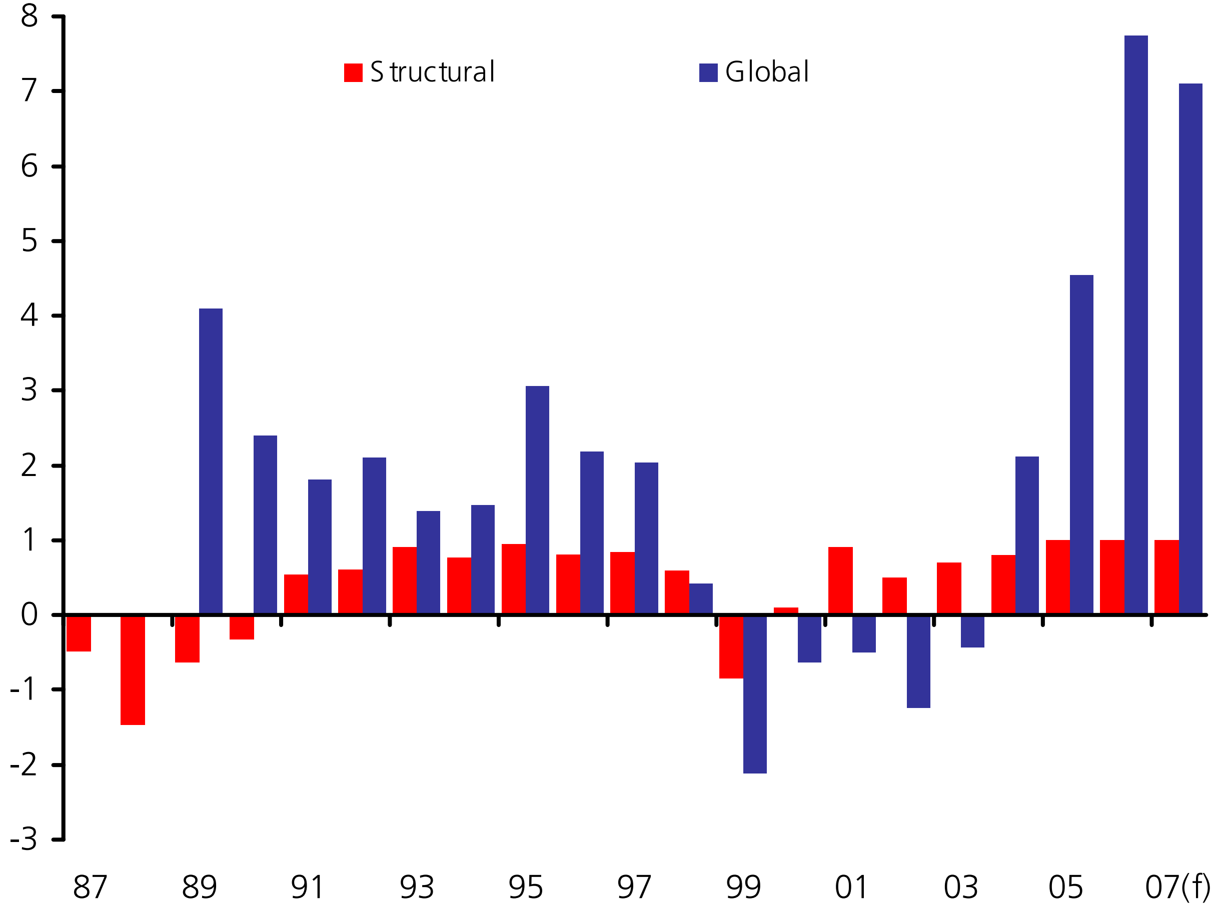
Current account balance shifts into surplus from 2004 onwards…



Source: Central Bank of Chile, inc. forecast for 2007

…mainly due to a significant fiscal surplus…

Central Government balance (% of GDP)

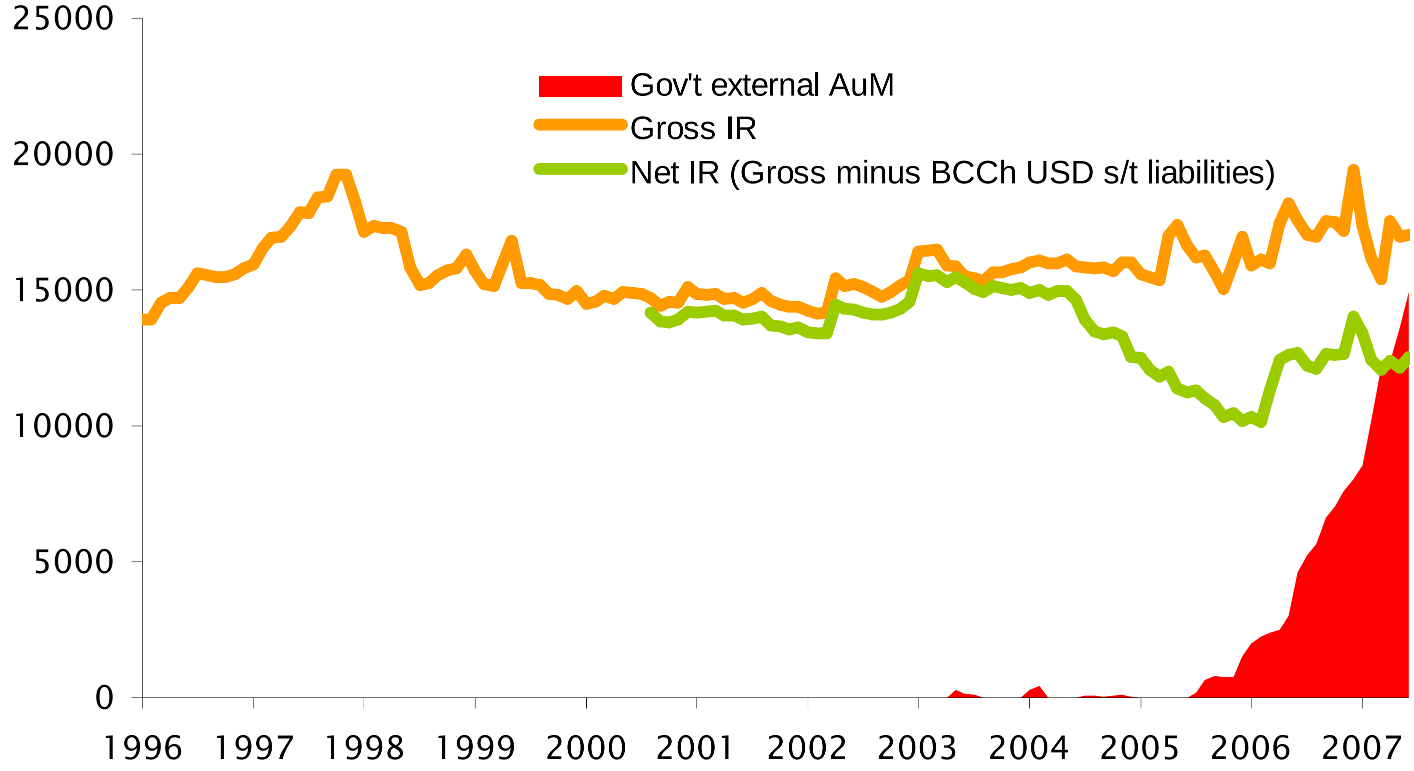


(f) Budget office forecast (2007).

Source: Ministry of Finance

…pushing up gov't external assets that are rapidly surpassing BCCh's IR

Central Bank IR and Gov't external assets (USD millions)



Source: Central Bank of Chile

Challenges ahead

- Response to external shocks in the face of diversification of external liquidity across agents.
- Central Bank/Gov’t coordination of intervention:
  - Exceptional circumstances for IR sales
  - Automatic fiscal surplus rule
- Sovereign wealth management vs. stabilization?
- Increased demands for transparency going forward.

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IR Pooling in Latam?

- Replicating Asian arrangement
  - Chiang Mai Initiative + ASEAN Swap arrangement = US$ 77 bn.
  - IR of ASEAN + 3 = US$ 2,250 bn.
  - Given Latam IR of US$ 230 bn, proportionally this is only US$ 7.9 bn.

Current account shocks more frequent and costly in LATAM…

Current account reversal episodes (1980-2001) from Edwards 2005

region	*at least one country in a year*	*at least two countries in a year*	*at least twenty percent of members*	*at least twenty percent of GDP*
Asean swap arrangement	8	3	4	3
Chiang Mai Initiative	8	3	3	0
ASIA8	6	2	2	0
ASIA8 (exc. JPN&CHN)	6	2	6	2
LATAM 11	9	4	1	0
MERCOSUR (exc. BRA)	8	4	3	2

Currency crisis episodes (1980-2001) from ECB 2002

region	*at least one country in a year*	*at least two countries in a year*	*at least twenty percent of members*	*at least twenty percent of GDP*
Asean swap arrangement	4	2	3	0
Chiang Mai Initiative	4	2	2	0
ASIA8	4	2	2	0
ASIA8 (exc. JPN&CHN)	4	2	3	0
LATAM 11	7	4	4	2
MERCOSUR (exc. BRA)	6	4	4	3

…and a worse history of sovereign default in LATAM.

- Sovereign risk
  - Region's default history
  - Local currency debt default
  - Foreign currency debt default

Default episodes (mean of country members)

region	*Local and foreign currency debt (1975-2004)*	*Foreign currency debt (1824-2004)*
ASA	1	0.7
CMI	0.8	0.8
ASIA8	0.5	0.9
ASIA8 (exc. JPN&CHN)	0.7	0.7
LAC11	2.2	6.7
MERCOSUR (exc. BRA)	2.3	6.6

Source: Standard & Poor's (2004).

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