

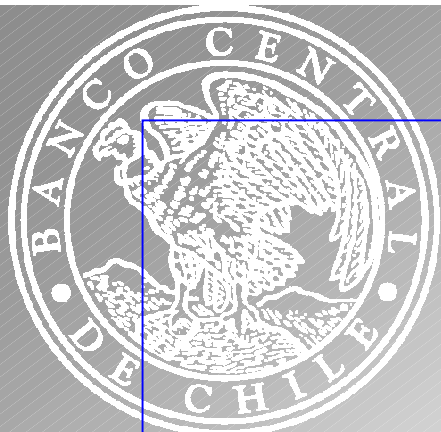
Monetary Policy Under Inflation Targeting: The Chilean Experience

Manuel Marfan

Central Bank of Chile

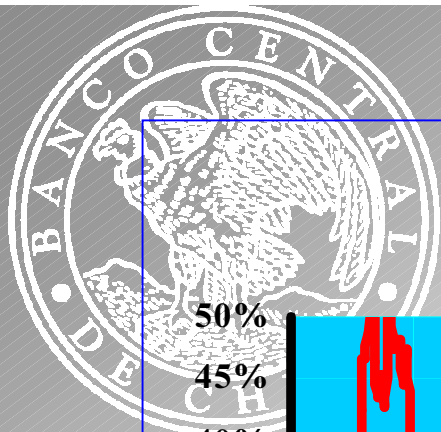
January 2006

Presentation prepared for the conference “Inflation Targeting: Performance and Challenges”, Istanbul, January 19-20, 2006.



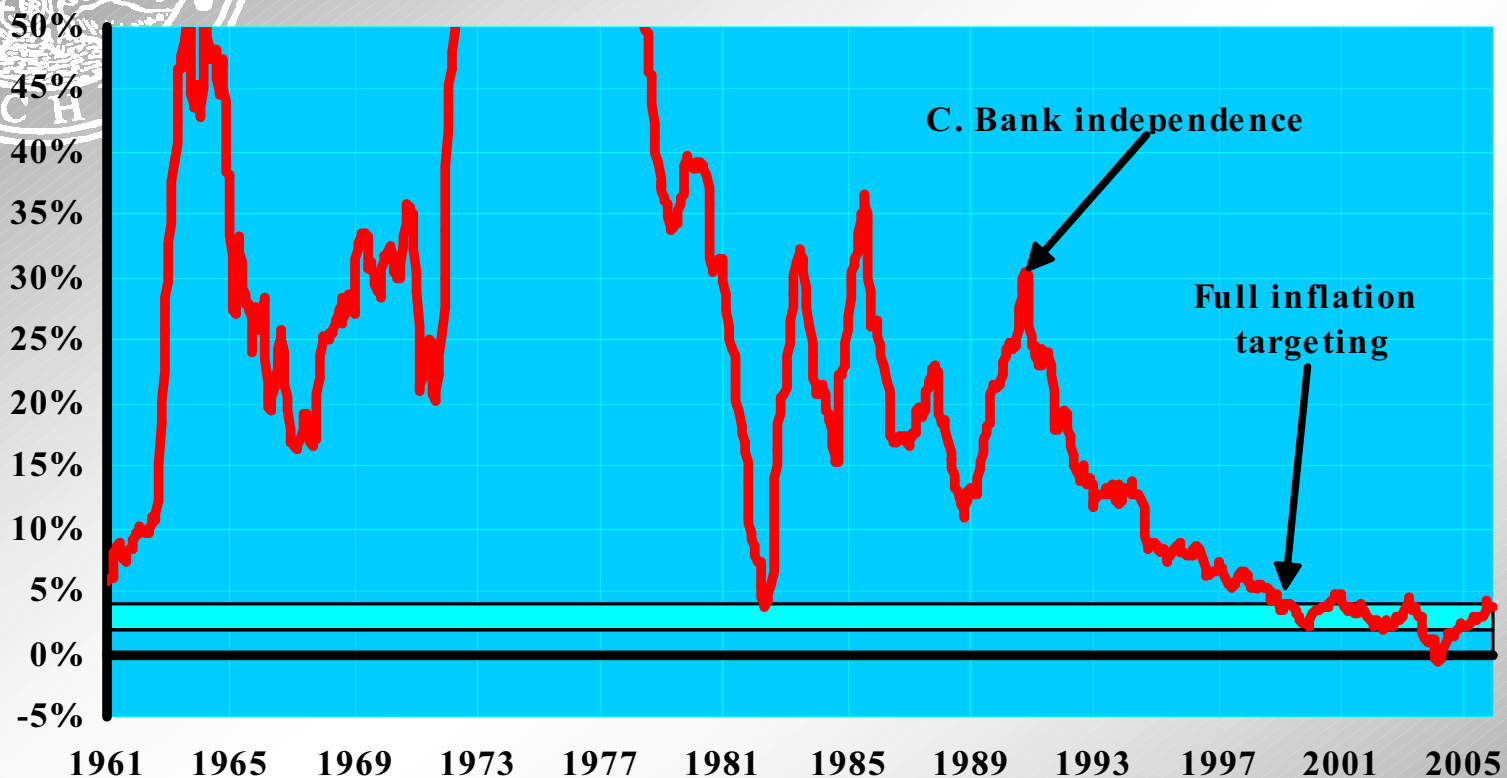
Outline of presentation

- 1. Stylized facts of Chilean macro and political environment.**
- 2. The Road to Inflation Targeting with Floating Exchange Rate.**
- 3. ER policy and nominalization under inflation targeting.**
- 4. An episode to remember.**
- 5. Final comments.**

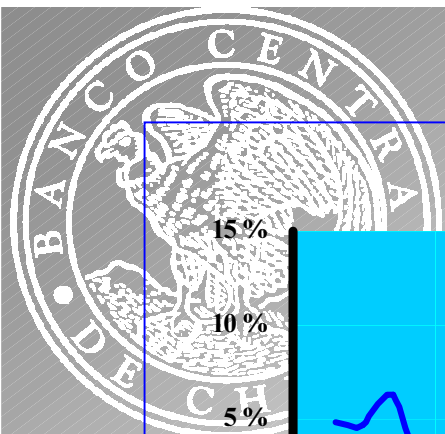


Inflation in Chile

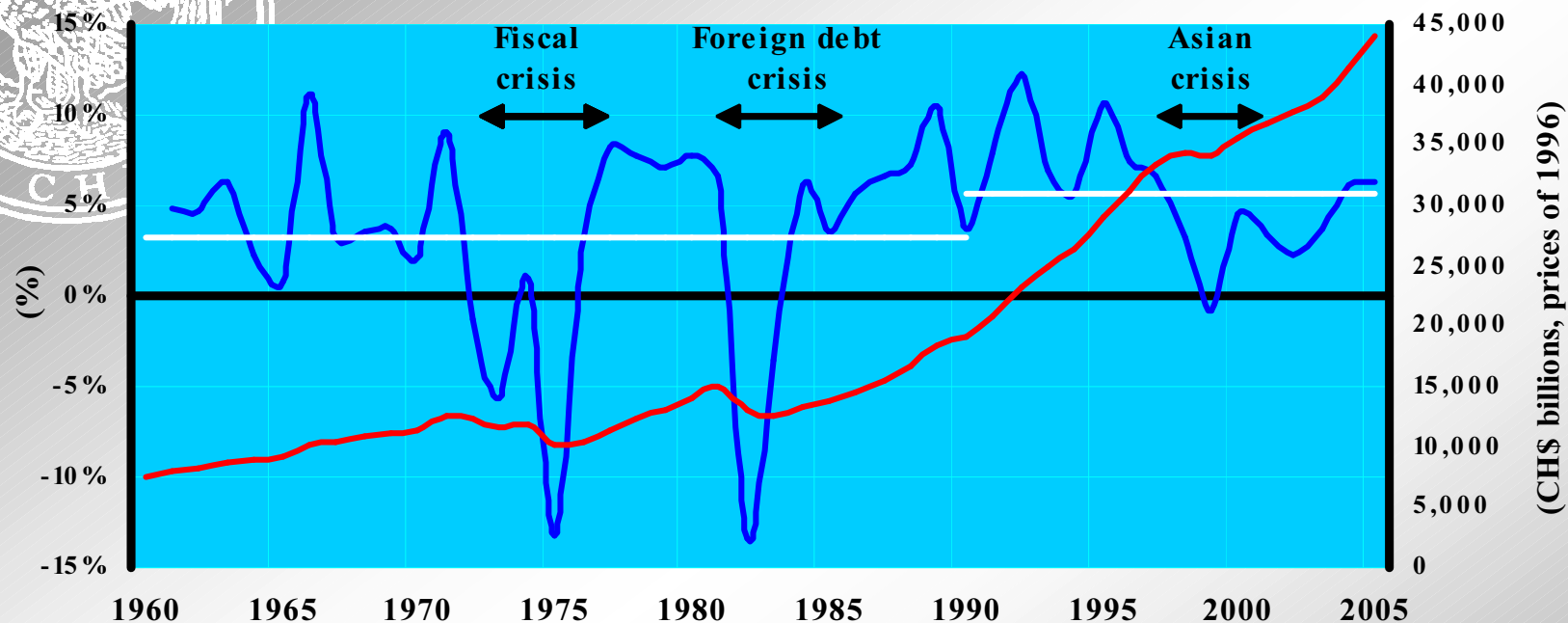
(12 m. % change in CPI)



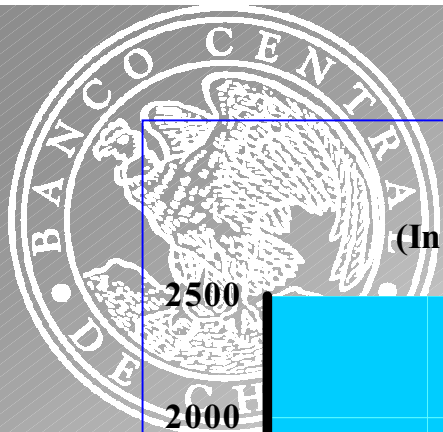
- Inflation has been a secular problem in Chile.
- Central Bank became independent in 1990.
- Full inflation targeting along with full floating ER were initiated in 1999-2000.



GDP and GDP Growth

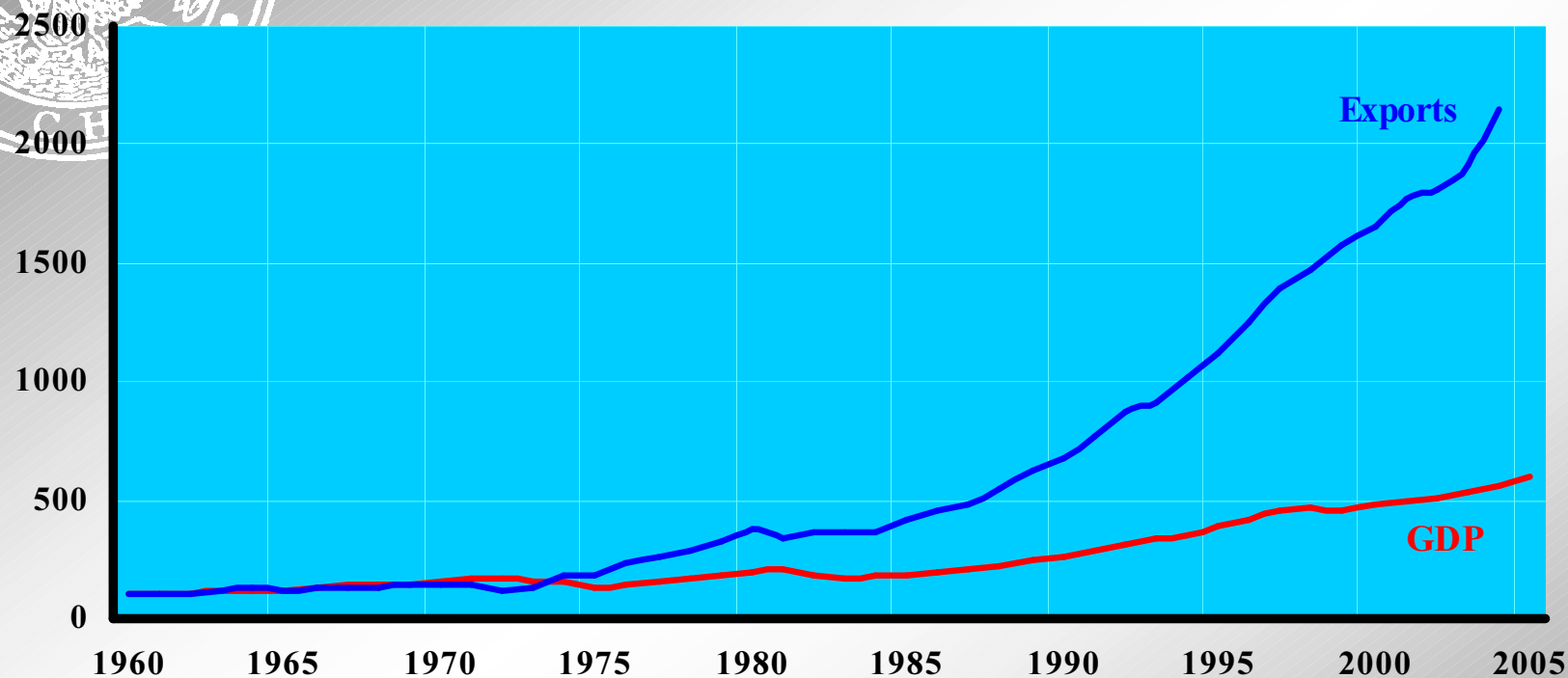


- Growth was volatile with a mediocre average until 1990.
- Central Bank independence came along with a political transition in 1990.
- Stability –in all senses- became both an economic and a political goal:
 - ✓Enhancing collaboration between economic and political rationale.
 - ✓Providing political backing to macroeconomic institution building.

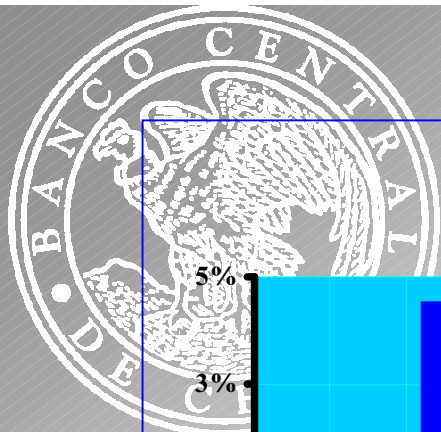


GDP and Exports of Goods & Services

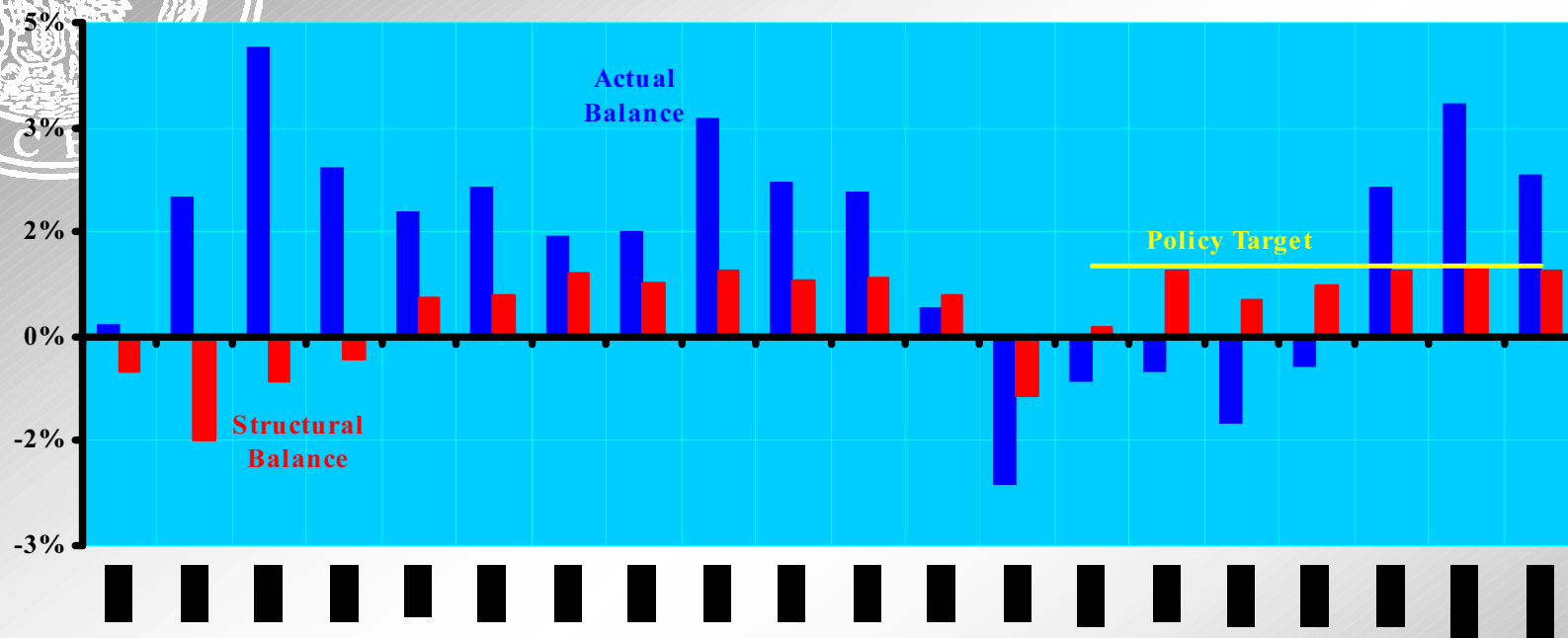
(Index 1960 = 100, based on National Accounts Data at Constant Prices)



- Growth has been led by Exports.
- Integration to the world economy was initiated in the 1970s.
- A network of FTAs has supplemented unilateral opening as of 1990.
- Specialization in natural resources.

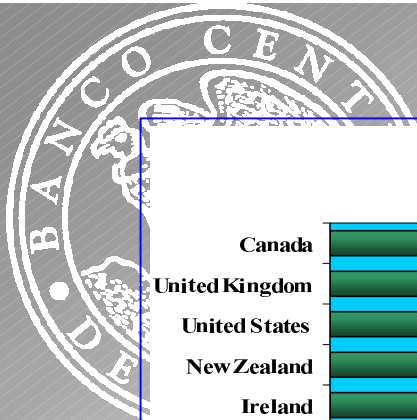


Central Government Balance (% of GDP)



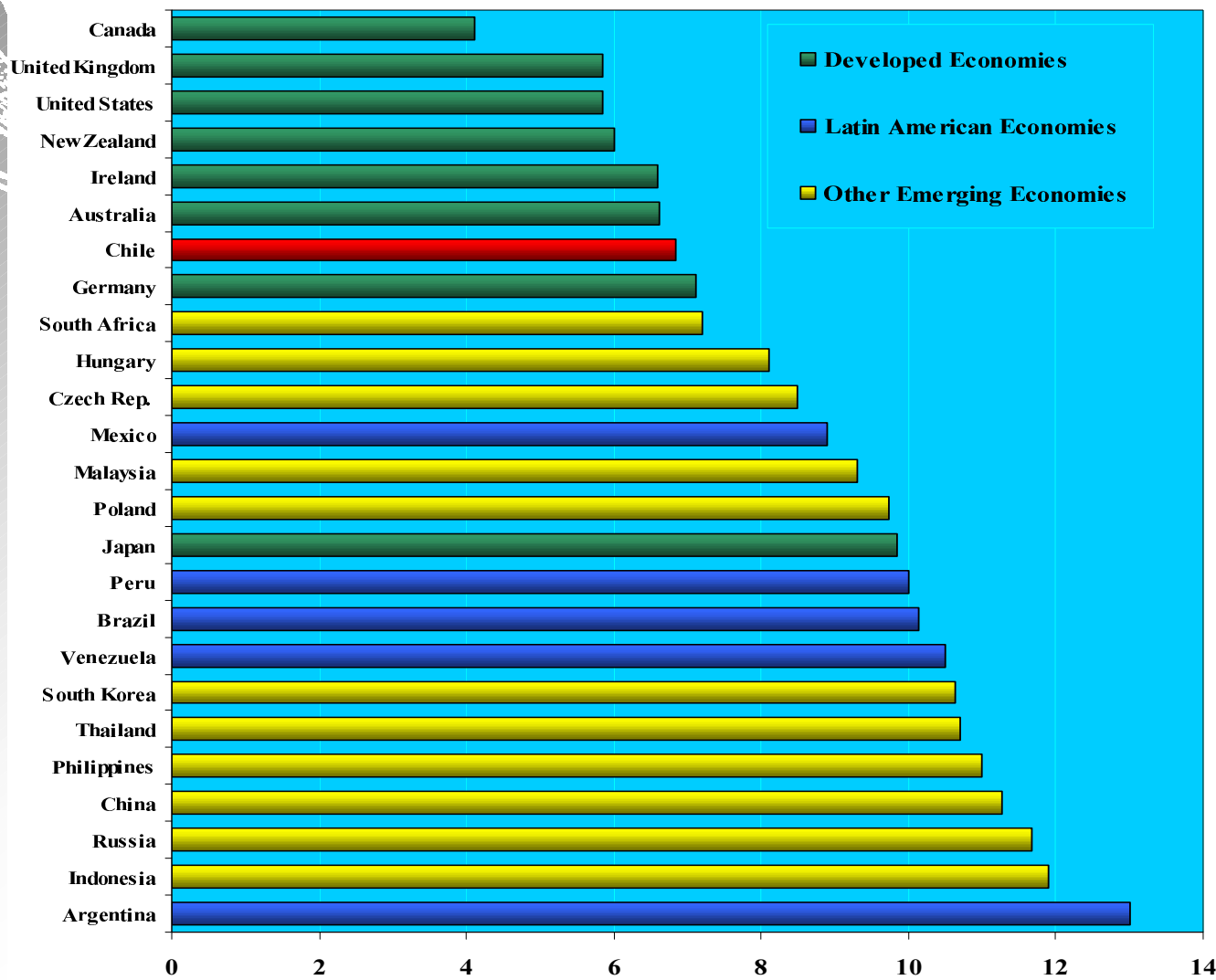
Source: Budget Office.

- **Strong fiscal policy has been a staple of macroeconomic performance.**
- **Structural Balance:** Corrects mainly for cyclical component and terms of trade.
- **Fiscal target as of 2000:** A structural surplus of 1% of GDP.



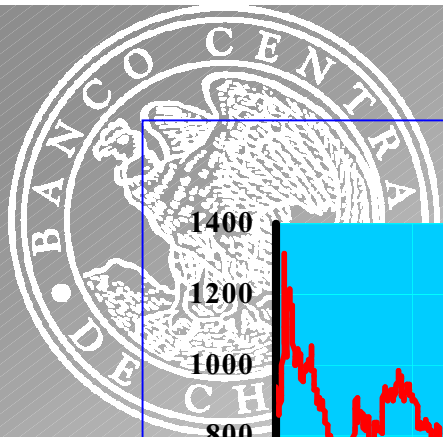
Banking Strength Index

(September 2005)

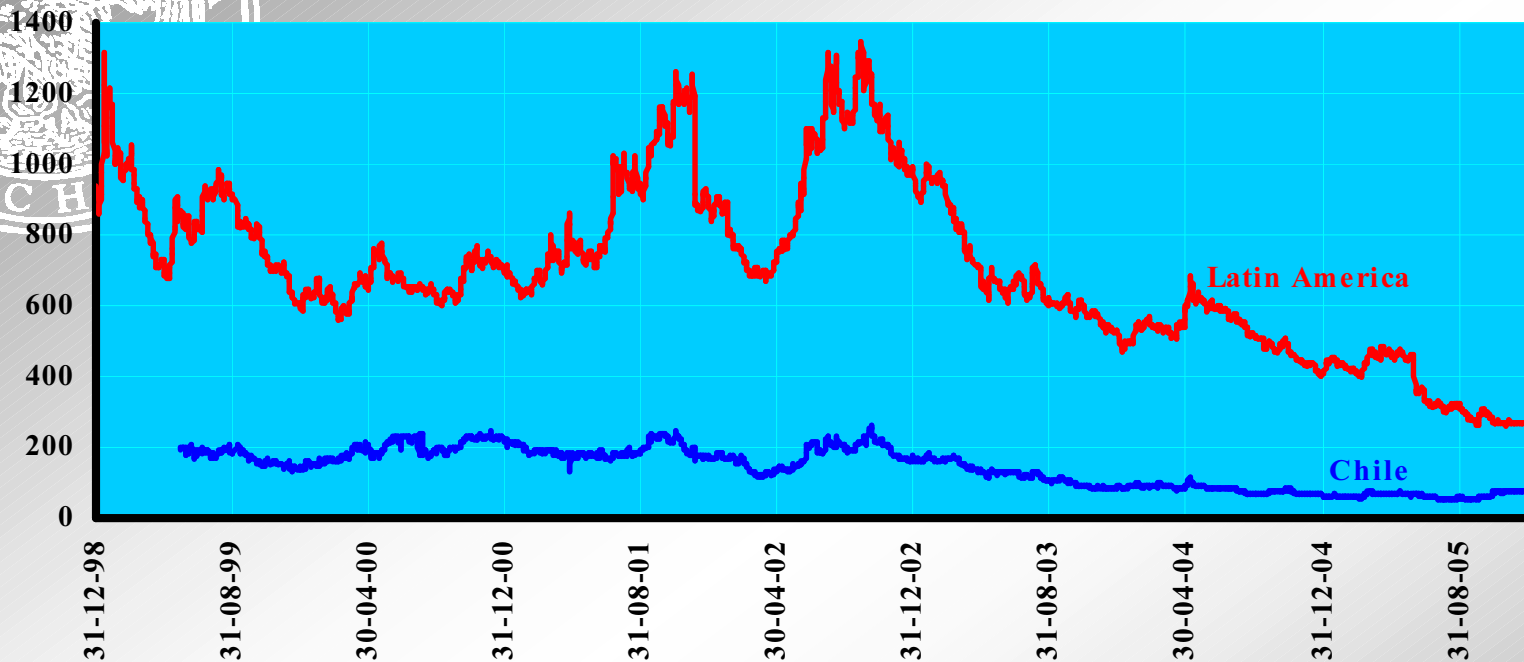


A strong and resilient banking system increases the potential and credibility of monetary policy.

Source: CBCH, based on Moody's Financial Strength Ranking, September 2005.

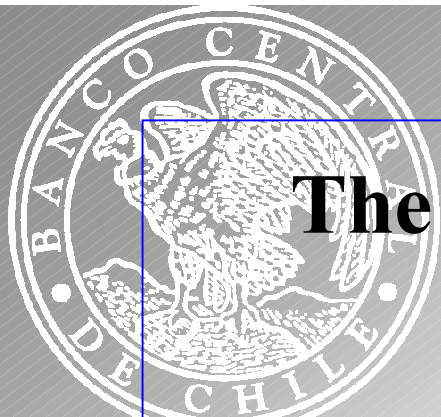


Sovereign spreads (Basis points)



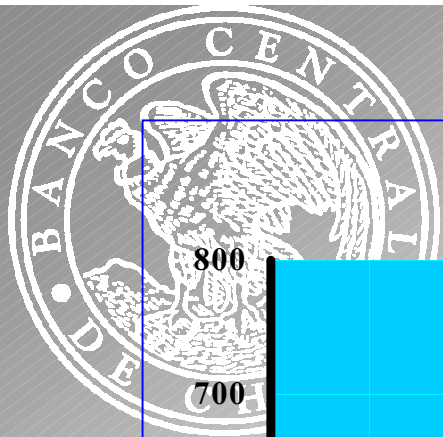
Source: EMBI JP Morgan Chase

- **A positive perception of financial markets (endogenous) has also been helpful.**

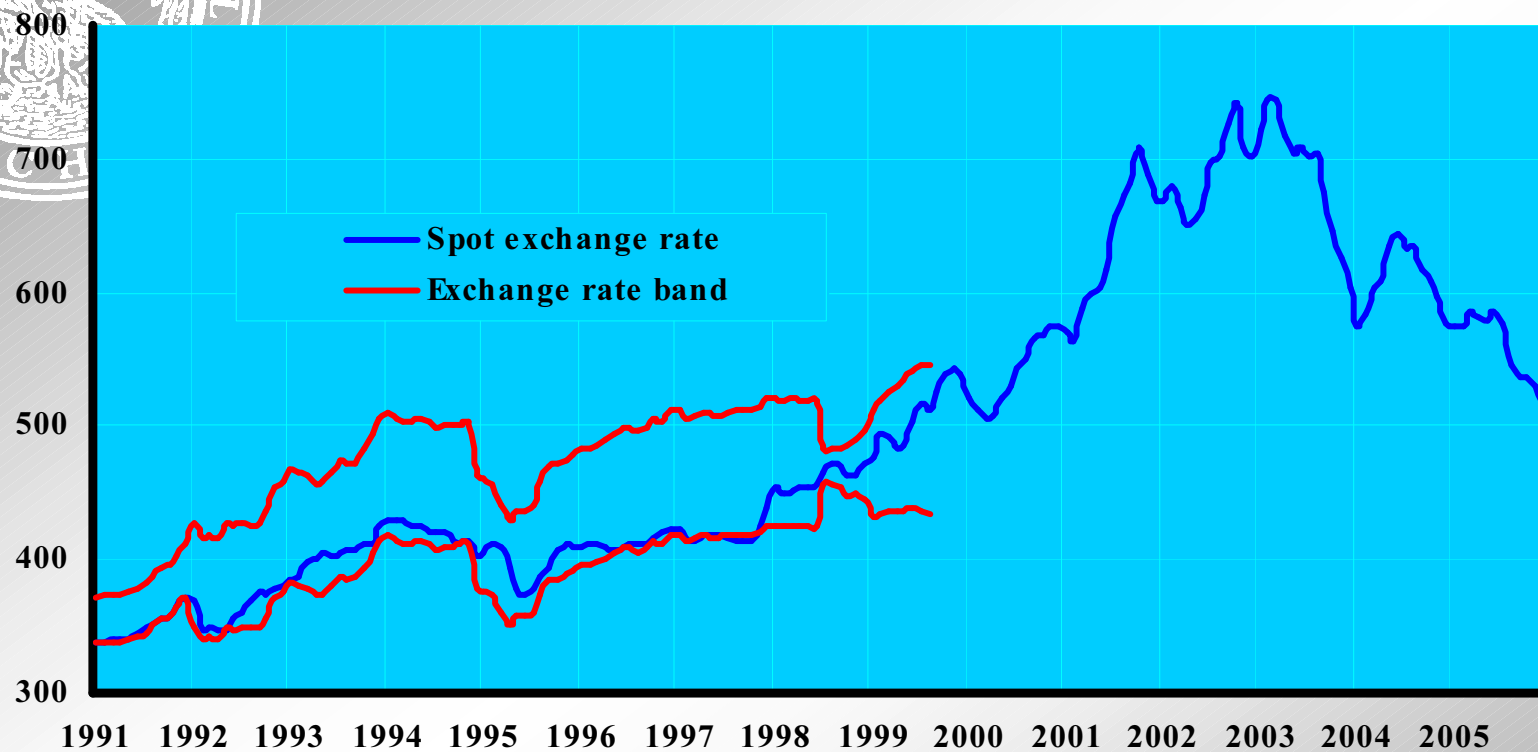


The Road to Inflation Targeting with Floating Exchange Rate

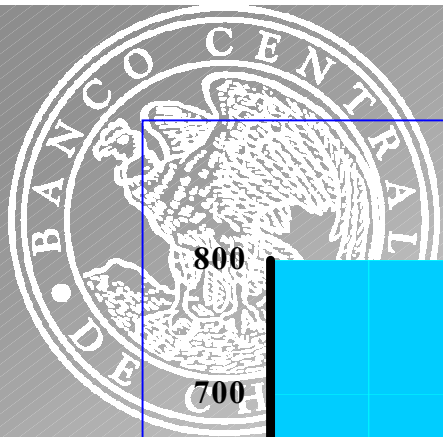
- **Exchange rate band, 1984-1999**
- **“Impure” inflation targeting, 1991-1999**
- **Controls on capital flows, 1991-1996 and 1996-1998**
- **Exchange rate interventions in response to appreciating pressures, 1990-97**
- **Exchange rate interventions in response to depreciating pressures, 1998**
- **Increasing loss of credibility in ER band.**
- **Abandonment of ER band; floating ER, 1999.**
- **“Pure” inflation targeting, 2000 →**
- **Nominalization of monetary policy, 2001.**
- **Limited ER interventions in 2002 and 2003.**



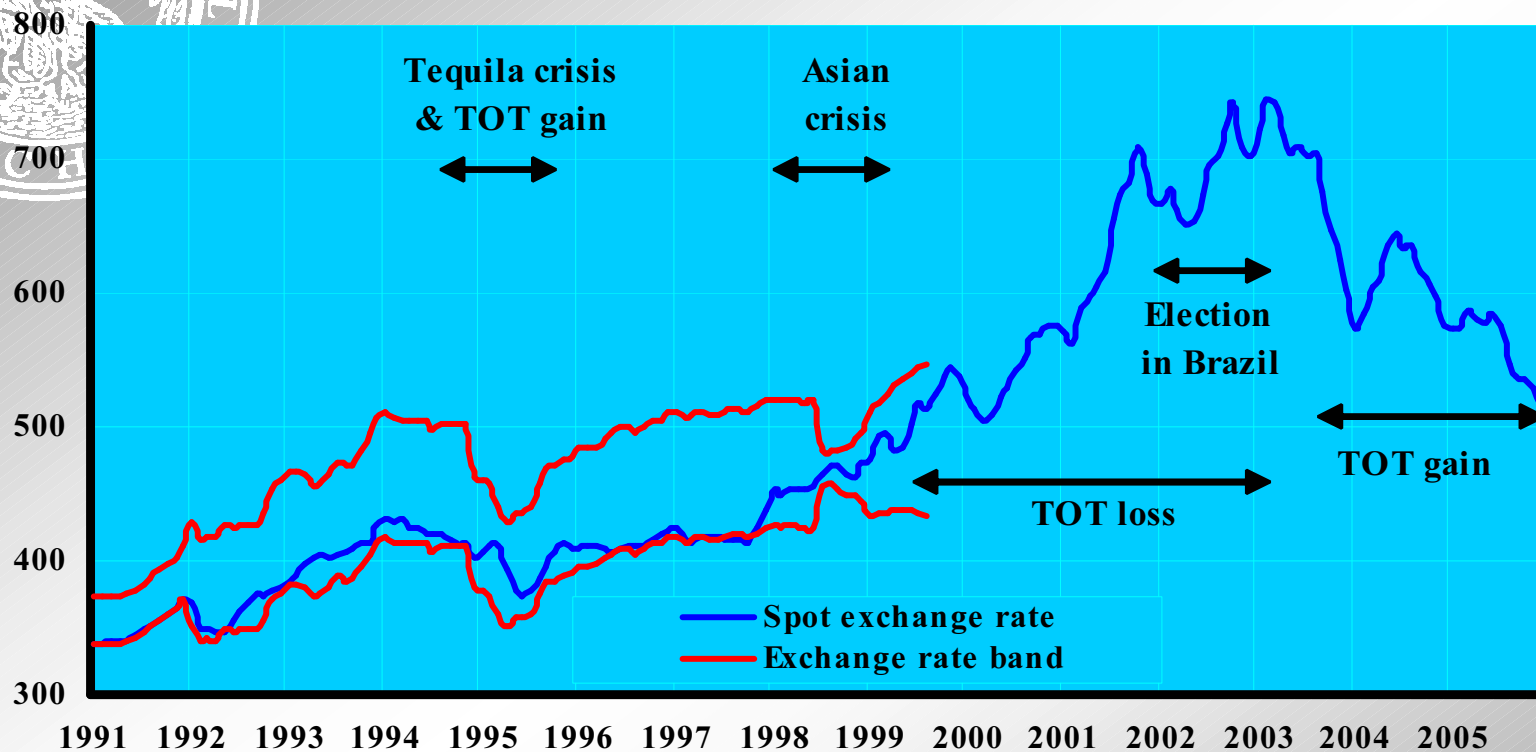
Nominal Exchange Rate and the ER Band (Ch\$/US\$)



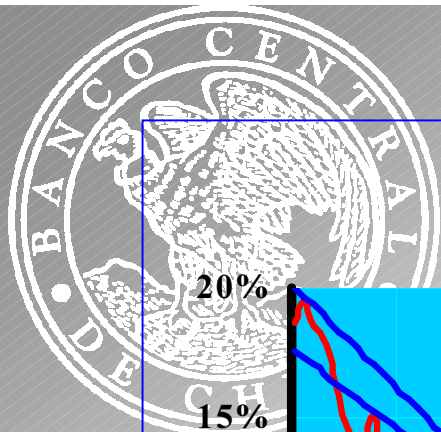
- Rise and fall of the ER band.
- Initial overreaction of the ER under floating.



Nominal Exchange Rate and the ER Band (Ch\$/US\$)

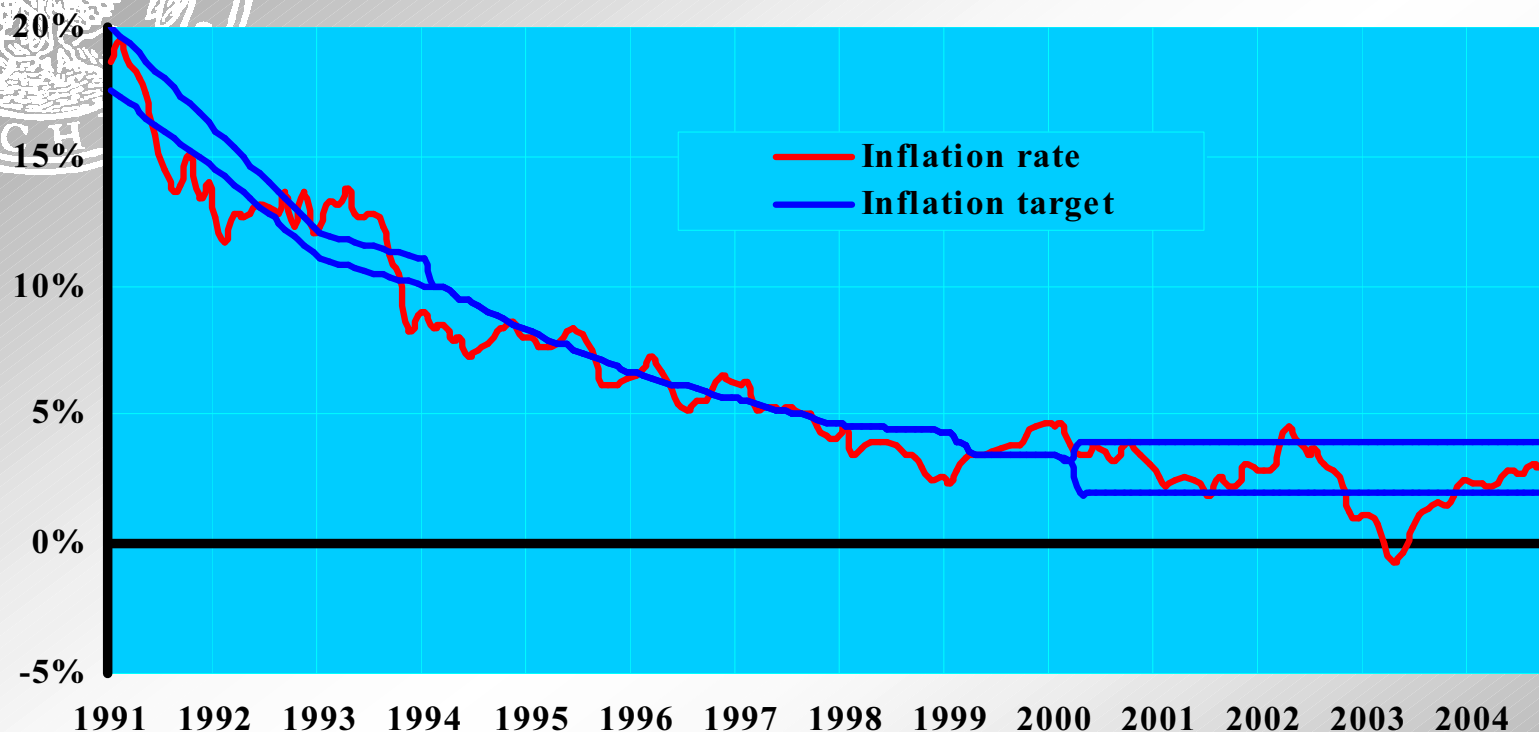


- Rise and fall of the ER band.
- Initial overreaction of the ER under floating.

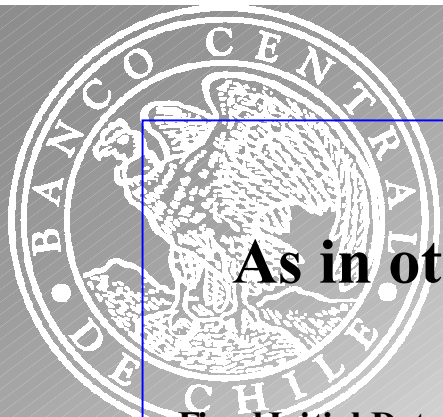


Inflation Rate and Inflation Target

(12 m. % change)

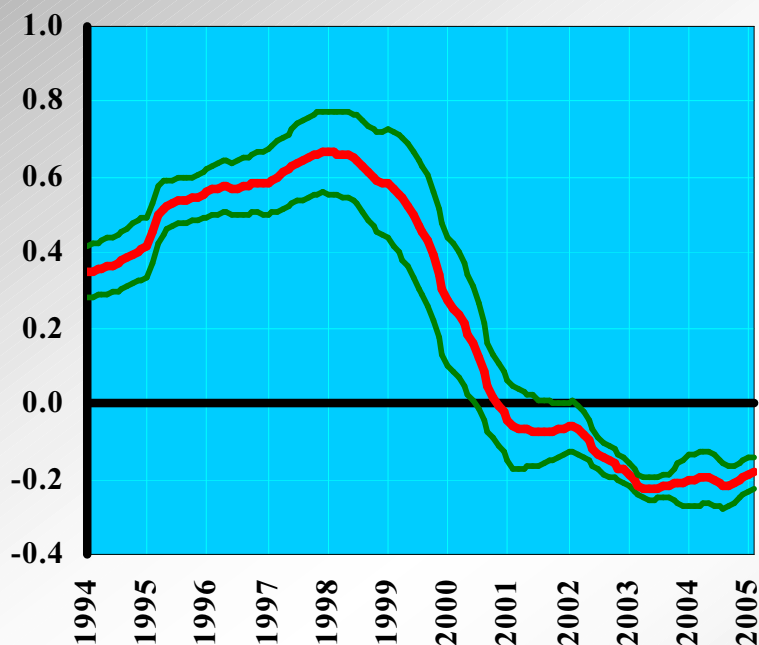


- Initially there was a “soft” target linked to the current annual inflation forecast.
- As of 2000, the target is defined as a 3% rate for a 12-24 month horizon, within a range of 2%-4%.
- A prospective target is linked to a policy rule.

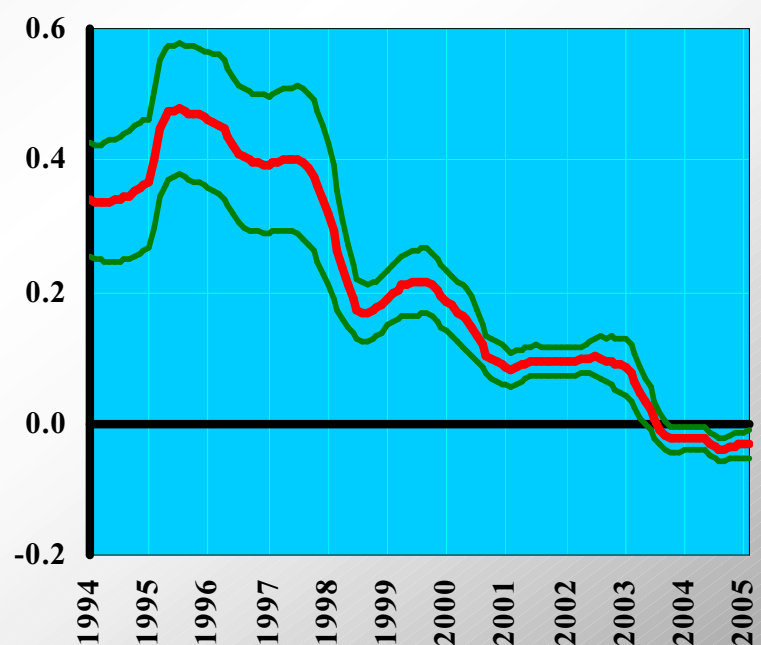


As in other economies, simple passthrough coefficients have decreased

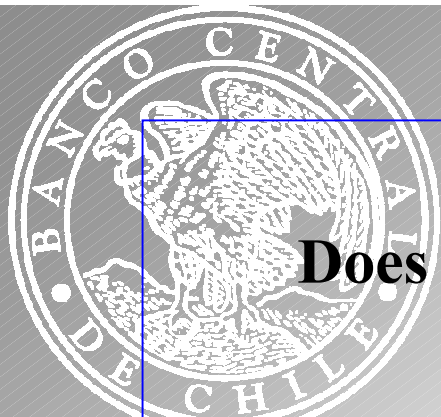
Fixed Initial Date



Variable Initial Date



Source: Updated estimates from García, C. and J. Restrepo (2002): "Price inflation and exchange rate passthrough in Chile", Working Paper N° 128, CBCH.

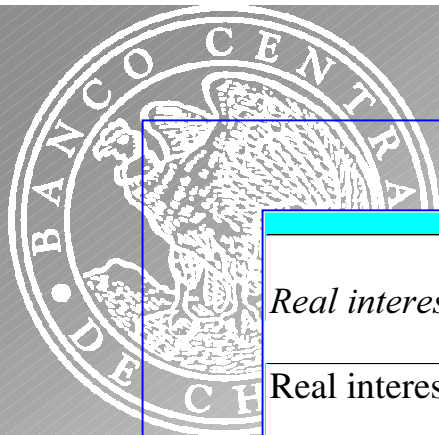


Does monetary policy react to changes in the ER?

Schmidt-Hebbel and Werner¹ tried to answer this question by adjusting a Taylor Rule sensitive to ER movements:

$$R_t = \beta_1 + \beta_2 R_{t-1} + \beta_3 (\text{ExpInf} - \text{MT})_t + \beta_4 Y_{\text{gap}_t} + \beta_5 \text{dep}_t + \beta_6 \text{Gbond}_t$$

¹ Schmidt-Hebbel, K. and A Werner (2002): “Inflation Targeting in Brazil, Chile and Mexico: Performance, Credibility and the Exchange Rate”, Economía, 2(2): 30-89.

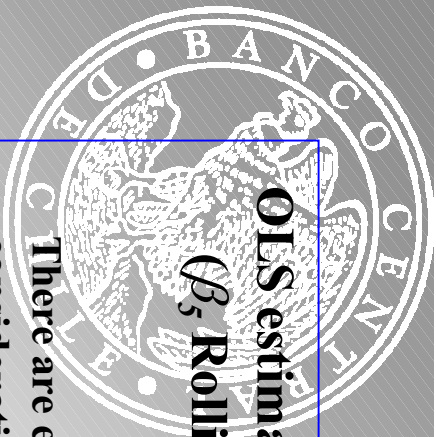


OLS estimates of Taylor rules¹

	<i>Brazil</i>	<i>Chile</i>		<i>Mexico</i>	
<i>Real interest rate</i>	<i>1999–</i> <i>2001</i>	<i>1991–</i> <i>2001</i>	<i>1997–</i> <i>2001</i>	<i>1997–</i> <i>2001</i>	<i>1999–</i> <i>2001</i>
Real interest rate lag	0.89 (3.88)*	0.92 (25.20)*	0.92 (14.6)*	0.47 (4.79)*	0.68 (5.45)*
Expected inflation- inflation target	0.30 (2.42)	0.01 (0.04)	0.01 (0.05)	0.08 (0.16)	-0.66 (-1.01)
Output gap	0.02 (0.50)	0.01 (1.56)	0.02 (1.15)	0.11 (1.34)	0.08 (1.25)
Nominal exchange rate	-0.01 (-0.02)	-0.01 (-0.27)	0.01 (0.41)	0.16 (1.51)	-0.03 (-0.23)
Long-term government bond	0.32 (0.51)	0.03 (0.64)	0.02 (0.09)	1.98 (4.02)*	1.49 (2.86)*
Trade deficit lag (exports-imports)	-0.01 (-0.1)*	-0.01 (-2.49)*	-0.01 (-1.75)	-0.01 (-3.2)*	-0.01 (-2.7)*
<i>Summary statistic</i>					
Adjusted R^2	0.75	0.88	0.87	0.80	0.81
Durbin-Watson statistic	1.92	1.64	1.68	2.17	1.95

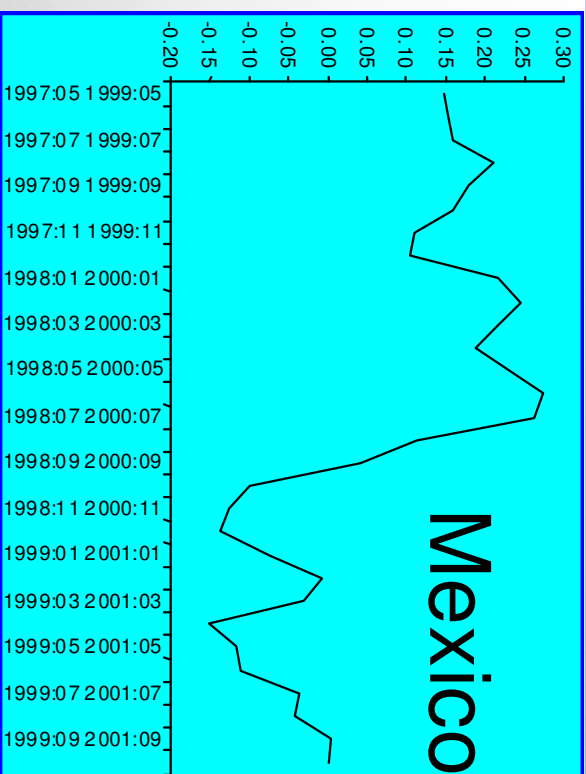
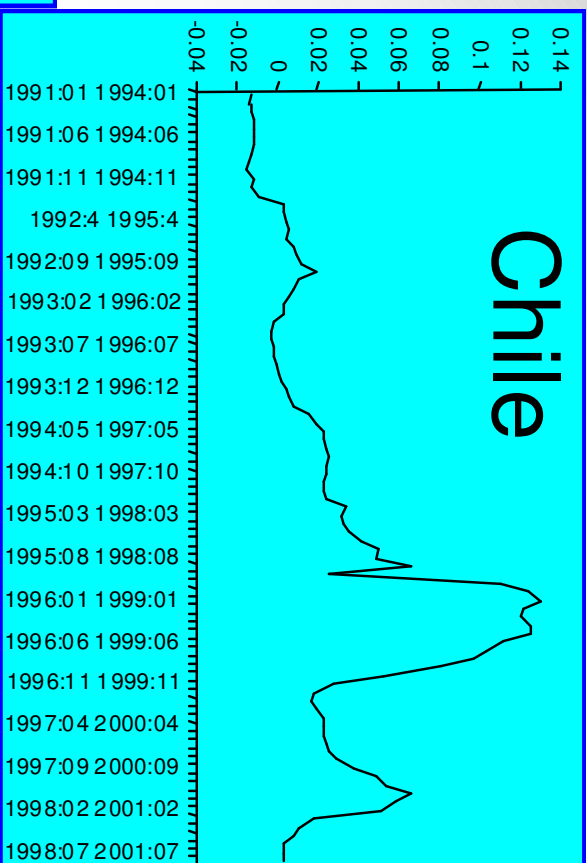
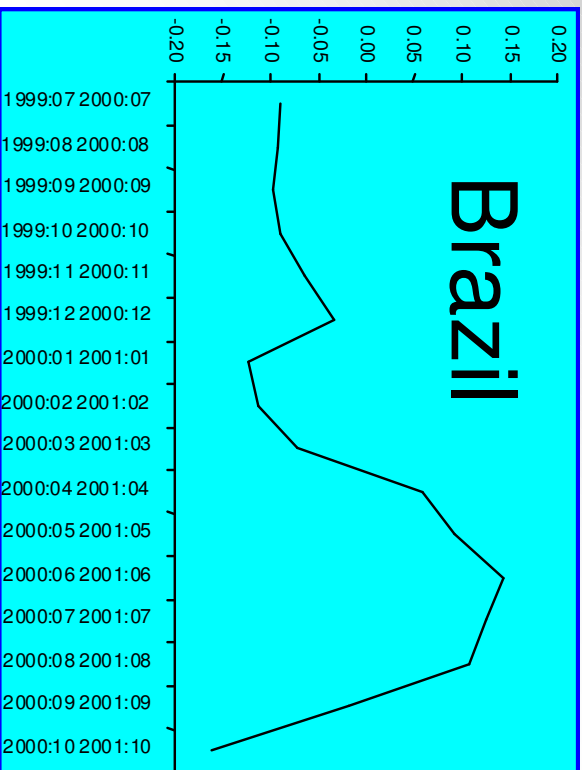
There is no evidence of a systematic link between monetary policy and ER movements.

¹ Schmidt-Hebbel, K. and A Werner (2002): op.cit.

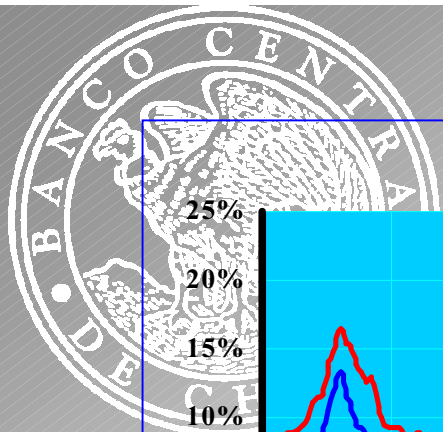


OLS estimates of Taylor rules (β_5 Rolling coefficients)¹

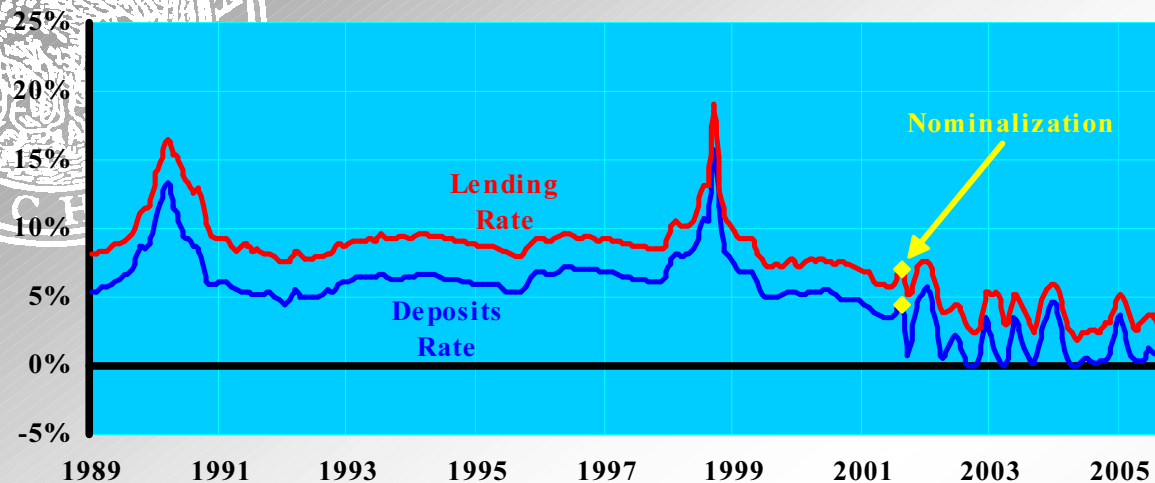
There are episodes where ER considerations have driven monetary policy.



¹ Schmidt-Hebbel, K. and A Werner (2002): op.cit.



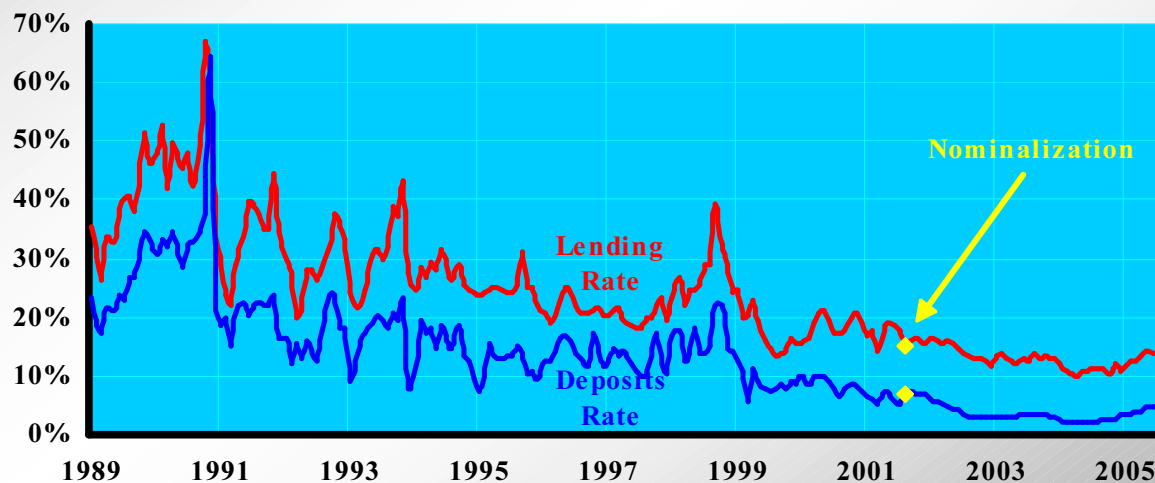
Indexed interest rates (UF) 90-365 days



- In August 2001 the policy instrument was shifted from an indexed interest rate to a nominal interest rate.

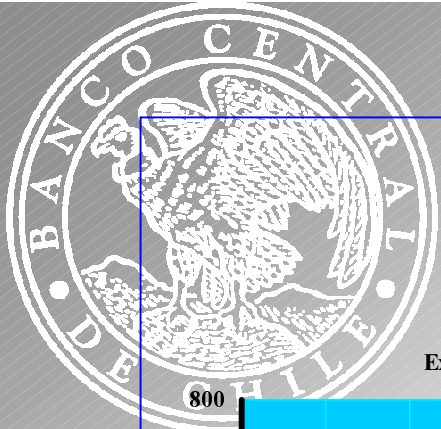
- “Nominalization” of the policy instrument increased the volatility of indexed rates.

Nominal interest rates, 90-365 days



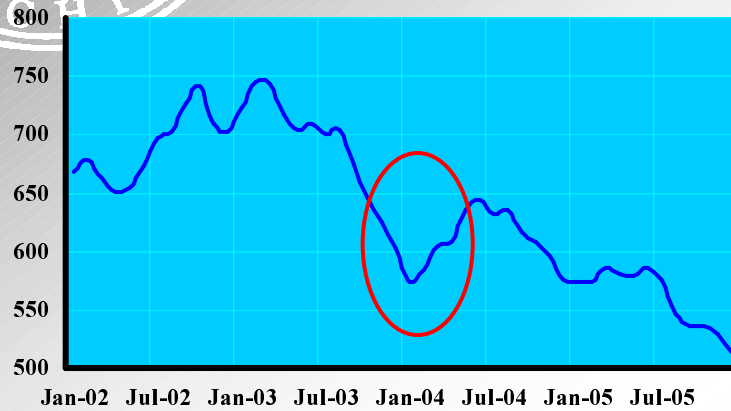
- Volatility of nominal rates decreased, making nominal financial instruments more attractive.

- Credibility of inflation targeting has enhanced de-indexation.

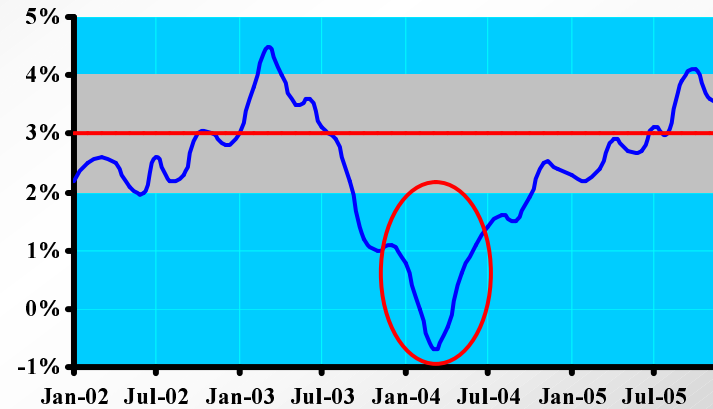


An Episode to Remember

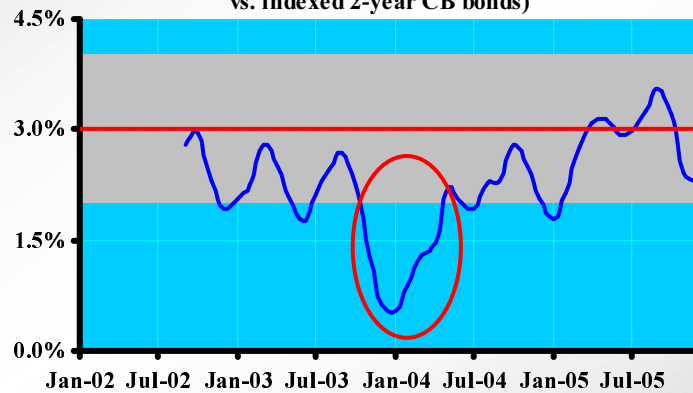
Exchange rate (Ch\$/US\$)



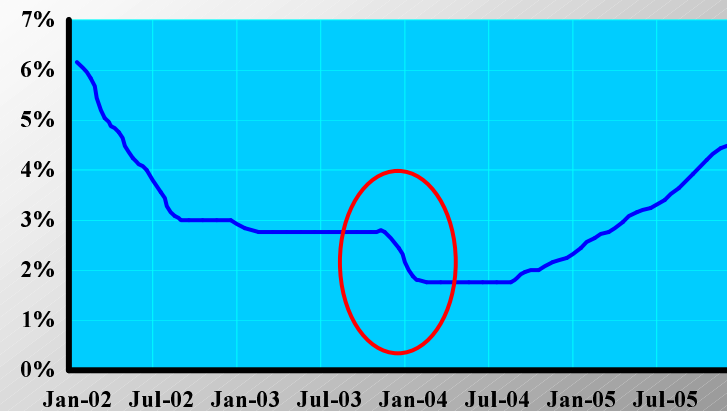
12 m. inflation rate

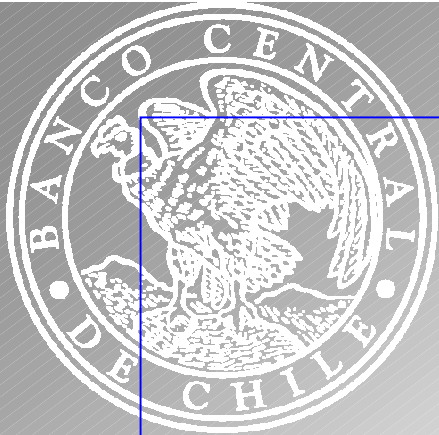


Inflation expectations (Interest rates differential, nominal vs. indexed 2-year CB bonds)



Monetary Policy Interest Rate





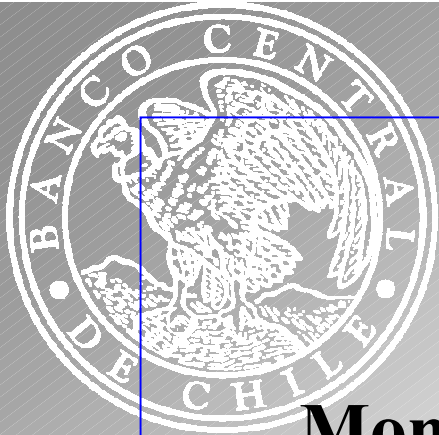
Final Comments

ER forecasts and transparency.

Degrees of freedom for ER interventions.

Depth of ER derivatives market.

Private sector exuberance.



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