Inflation Targeting in Chile: Experience and Issues

Rodrigo O. Valdés

Monetary Policy in Emerging Markets organized by the Economics Department/OECD and CCBS/Bank of England

28 February 2007
Agenda

1. Inflation targeting in Chile
   - Inflation history
   - Institutional framework
   - IT Phases
   - Results

2. Recent monetary policy issues
   - Objective and target definition
   - Future interest-rate path
   - Role of market expectations

3. Concluding remarks
Inflation targeting in Chile
Inflation History

<table>
<thead>
<tr>
<th>Period</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Coefficient of variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1925-2006</td>
<td>39.2%</td>
<td>89.7%</td>
<td>2.3</td>
</tr>
<tr>
<td>1925-1989</td>
<td>47.5%</td>
<td>99.1%</td>
<td>2.1</td>
</tr>
<tr>
<td>1925-1989*</td>
<td>24.8%</td>
<td>29.3%</td>
<td>1.2</td>
</tr>
<tr>
<td>1990-2006</td>
<td>7.5%</td>
<td>6.9%</td>
<td>0.9</td>
</tr>
<tr>
<td>1990-1999</td>
<td>10.8%</td>
<td>7.5%</td>
<td>0.7</td>
</tr>
<tr>
<td>2000-2006</td>
<td>2.8%</td>
<td>1.1%</td>
<td>0.4</td>
</tr>
</tbody>
</table>

* Excluding 1972–75 period.

Sources: Diaz et al. (2003); National Statistics Bureau.
### Central Bank Independence

<table>
<thead>
<tr>
<th>Indicator</th>
<th>1980</th>
<th></th>
<th>1990</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chile</td>
<td>All (72)</td>
<td>Ranking</td>
<td>Chile</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(percentile)</td>
<td></td>
</tr>
<tr>
<td>CB Governor</td>
<td>0.46</td>
<td>0.47</td>
<td>46</td>
<td>0.71</td>
</tr>
<tr>
<td>CB’s primary obj.</td>
<td>0.80</td>
<td>0.38</td>
<td>94</td>
<td>0.60</td>
</tr>
<tr>
<td>Policy formulation</td>
<td>0.27</td>
<td>0.21</td>
<td>72</td>
<td>0.75</td>
</tr>
<tr>
<td>CB lending</td>
<td>0.50</td>
<td>0.33</td>
<td>88</td>
<td>1.00</td>
</tr>
<tr>
<td>Cukierman index</td>
<td>0.51</td>
<td>0.34</td>
<td>92</td>
<td>0.88</td>
</tr>
</tbody>
</table>

Sources: Céspedes and Valdés (2006), based on Cukierman (1992); Cukierman and Lippi (1999), and Jácome and Vázquez (2005).

<table>
<thead>
<tr>
<th>Indicator</th>
<th>1980</th>
<th></th>
<th>1990</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chile</td>
<td>All (93)</td>
<td>Ranking</td>
<td>(percentile)</td>
</tr>
<tr>
<td>Fry et al. index (1998)</td>
<td>0.93</td>
<td>0.74</td>
<td>93</td>
<td></td>
</tr>
</tbody>
</table>

Source: Fry et al. (2000)
Institutional Framework

Fiscal Strength
Central Government Debt (% of GDP)

Source: Ministry of Finance.
IT: Convergence phase (1990–99)

- Main Characteristics:
  - Since 1989 autonomous CB with clear mandate
  - Annual targets
    - Announced every September for next year’s December/December inflation.
    - Actual average horizon: 7.5 months.
    - Range target between 1991 and 1996, point target thereafter.
  - Blurred final target, but firm commitment to gradually achieve first single-digit inflation and then developed countries’ inflation rates.
  - Exchange-rate target band system (current account target).
  - Selective capital controls to support an independent MP with an exchange rate target.
IT: Convergence phase (1990–99)

Sources: National Statistics Bureau and Central Bank of Chile
IT: Steady state (since Sep. 99)

- **Main Characteristics:**
  - Floating exchange rate regime
  - Permanent inflation target
    - 2%-4% in 2000–2006
    - Most of the time 3% +/- 1% since 2007
  - MP horizon over the medium term
    - 12–24 months in 2000–2006
    - Around 2 years since 2007
  - A number of the standard bells & whistles
    - Inflation reports every 4 months
    - Detailed minutes of MP meetings after 3 weeks
    - Pre-announced MP meetings
IT: Steady state (since Sep. 99)

- Key companions:
  - Fiscal rule since 2000.
    - Budget such that Central Government structural surplus = 1% of GDP.
    - Cyclical adjustment for tax and copper revenues.
    - Avoids sudden changes in fiscal expenditures and procyclicality.
  
- Healthy financial system supported by strong institutions (prudential supervision and effective regulation).
IT: Steady state (since Sep. 99)

Inflation Rate
(%, 12-month rate)

Average: 2.9%
time within 2–4: 73%
time below 2%: 16%
time above 4%: 11%

Sources: National Statistics Bureau and Central Bank of Chile.
IT: Steady state (since Sep. 99)

Inflation Expectations Anchoring
Survey and Break-Even Inflation

Source: Central Bank of Chile.
IT: Steady state (since Sep. 99)

Inflation Expectations Anchoring
Two-year Expected Inflation Distribution (Survey)

Source: Central Bank of Chile.
Results

GDP–Growth Volatility (%)

Two-year moving sample standard deviation of quarterly growth.
Results

Inflation Volatility (%)

Two-year moving sample standard deviation of the inflation rate.
Results

Inflation Persistence

Sum of autoregressive coefficients in a linear model for quarterly inflation (rolling estimations)
Results

Monetary Policy*

\[ r_t - \bar{r} = \beta_r (r_{t-1} - \bar{r}) + (1 - \beta_r) \left[ \beta_\pi (\pi_t - \bar{\pi}) + \beta_x (y_t - \bar{y}) + \beta_{rer} (rer_t - re\bar{r}) \right] + \varepsilon_t \]

<table>
<thead>
<tr>
<th>Fixed coefficients</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>( \beta_r )</td>
<td>0.8 (0.04)</td>
</tr>
<tr>
<td>( \beta_\pi )</td>
<td>1.37 (0.12)</td>
</tr>
<tr>
<td>( \beta_x )</td>
<td>0.27 (0.06)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Varying coefficient</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>( \beta_{rer} ) (1991-1999)</td>
<td>0.12 (0.03)</td>
</tr>
<tr>
<td>( \beta_{rer} ) (2000-2005)</td>
<td>0.06 (0.03)</td>
</tr>
</tbody>
</table>

Monetary policy issues
Objective and target definition

  - Gradual reduction of targets given inflation inertia.
  - Poor past experience with sustainability of previous stabilization attempts (1962 and 1982).

- 2000–2006 target: Maintain inflation in a 2–4% range, centered in 3%.
  - Stable and permanent inflation target.
  - Consistent with MP transmission and lags.
Since 2007 (special document):

- **Objective:** To keep annual CPI inflation most of the time around 3%, within a +/- 1 pp tolerance range.
  - Aimed at strengthening 3% as the nominal anchor of the economy.
  - Recognize it can be temporarily out of 3+/-1.
- **Operational target:** Inflation forecast = 3% in a policy horizon of around 2 years.
  - In line with actual MP implementation in practice.
  - Current trend in CBs – lengthening horizons.
Future monetary policy rate path

- As other CBs, the CBC initially included an explicit “fixed MPR” during the policy horizon in its forecast.

- In 2002 moved to a “non credible fixed MPR”.
  - A fixed rate implied:
    - Large jumps after the policy horizon
    - Overly restricted activism – time to undo changes?
  - Forecast included a shadow MPR (rule–based) for determining the exchange rate and long–term interest rate.
In Sept. 2004 we moved to a rule-based assumption.
- Partial solution implied implausible MP shock responses.
- Rule was not published.
- Internal discussion separated more clearly the MP strategy from implementation (timing) issues.
  - Model usefulness is limited for the latter.
- External communication gives broad contours of the assumption.
  - Some comparison with market expectation implied in financial markets
  - Risk of excessive precision when CB communicates a long pause.
Role of market expectations

- Broad question: How much weight should be given to market expectations?
  - Expected inflation:
    - Not 100%, because of “mirror game” danger.
    - Not 0%, because they check anchor credibility.
  - More complex issue: discrepancy between CBC and market – January 2007 MP meeting
- Interest rates:
  - CB strategy needs to be understood – broad trajectory in financial prices.
  - But, should MP changes be anticipated? Interest rate cuts have generally not been anticipated.
Concluding Remarks

- IT has served Chile well.
  - Macroeconomic pillars plus IT have allowed the Chilean economy to have sustainable low inflation.
  - Today 3% acts as a true inflation anchor.
  - “Great moderation” observed elsewhere appears clearly in Chilean data.

- IT raises the possibility of improvement and learning; it is far from a rigid system.
  - Only three particular aspects have been discussed, but there are many others.
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References

Results

Inflation Persistence (II)*

* Sum of autoregressive coefficients in a linear model for inflation deviations (HP cyclical component before IT adoption)