Core Inflation Measures in New Zealand

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Ottawa Group Meeting: Neuchâtel

27–29 May 2009
Monetary backdrop to core inflation

- Inflation targeting
- Reserve Bank Act (1989)
- Policy Targets Agreement (PTA)
Policy Targets Agreements

- Defines the target of monetary policy
  - Stabilisation of the ‘general level of prices’
- Specification and measurement of price stability
  - Monitored via a range of price indexes
- Important element in monetary policy transparency and accountability
Target measures of inflation

- Housing adjusted price index
- ‘Underlying inflation’
- CPI less credit services
- CPI all groups

Other considerations to the target
  - Avoiding instability in output, exchange rates and interest rates
Caveats within the PTA

- Natural disaster
- Significant changes in terms of trade
- Changes in:
  - direct and indirect taxes
  - government and local body charges
- Move towards more general approach
Desirable qualities of core inflation measures

- Robust and unbiased – efficient in distinguishing between persistent and transitory inflation, and not be biased relative to the target measure of inflation
- Timely
- Credible
- Verifiable
Other properties of core inflation

- Simple
- Picks up persistent changes in inflation
- Leads or coincides with measured inflation
- Smooth
- Low prediction error for measured inflation
Measures of core inflation

- Exclusion-based approaches
- Decomposition measures
- Statistical measures
Exclusion-based measures

- Classification-based measures
- Exclusion of volatile components
- Exclusion based on economic priors

- Criticisms of exclusion-based measures
Consumers Price Index

- CPI all groups, food, petrol, and household energy
- Base: December 1998 quarter (=1000)

Index

- CPI all groups
- Food
- Household energy
- Petrol

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Decomposition measures

- Tradables and non-tradables (domestically generated inflation)
- Central and local government charges
- Goods and services
Statistical measures

- Trimmed means
- Weighted percentiles
- Double-weighted median
- Exponentially smoothed (ES)
Trimmed means and weighted percentiles

- Trimmed means (5, 10, 15, 20, 25, 30)
- Percentiles (10th, 25th, 50th, 75th, 90th)
- Choice of annual measure:
  - Annual percentage change
  - Compounding quarterly changes
Stochastic theory and factor modelling

\[ p^1_n / p^0_n = f(\mu^{01}, \varepsilon^{01})(n = 1, \ldots, N) \]

\[ \pi_{jt} = \chi_{jt} + \varepsilon_{jt} \]

\[ \pi_{jt} = \chi^L_{jt} + \chi^S_{jt} + \varepsilon_{jt} \]

Where:
- the long-run component \( \chi^L \) (core inflation)
- short-run component \( \chi^S \)
Characteristics of core inflation candidates (ranked)

<table>
<thead>
<tr>
<th>Core measure</th>
<th>Simple</th>
<th>Picks up persistent changes in inflation</th>
<th>Leads or coincident</th>
<th>Unbiased</th>
<th>Smooth</th>
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<tr>
<td>Trimmed mean</td>
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<td>3</td>
<td>1</td>
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<td>3</td>
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Source: Holden (2006)
Consumers Price Index

Annual percentage change: all groups and core measures

Sources: Statistics New Zealand, Reserve Bank of New Zealand
Concluding remarks

- Formalisation of monetary policy
- Concurrent development of PTAs and target and core measures
- Importance of credibility for core measures
- Importance of frameworks