Core Inflation Measures in New Zealand

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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

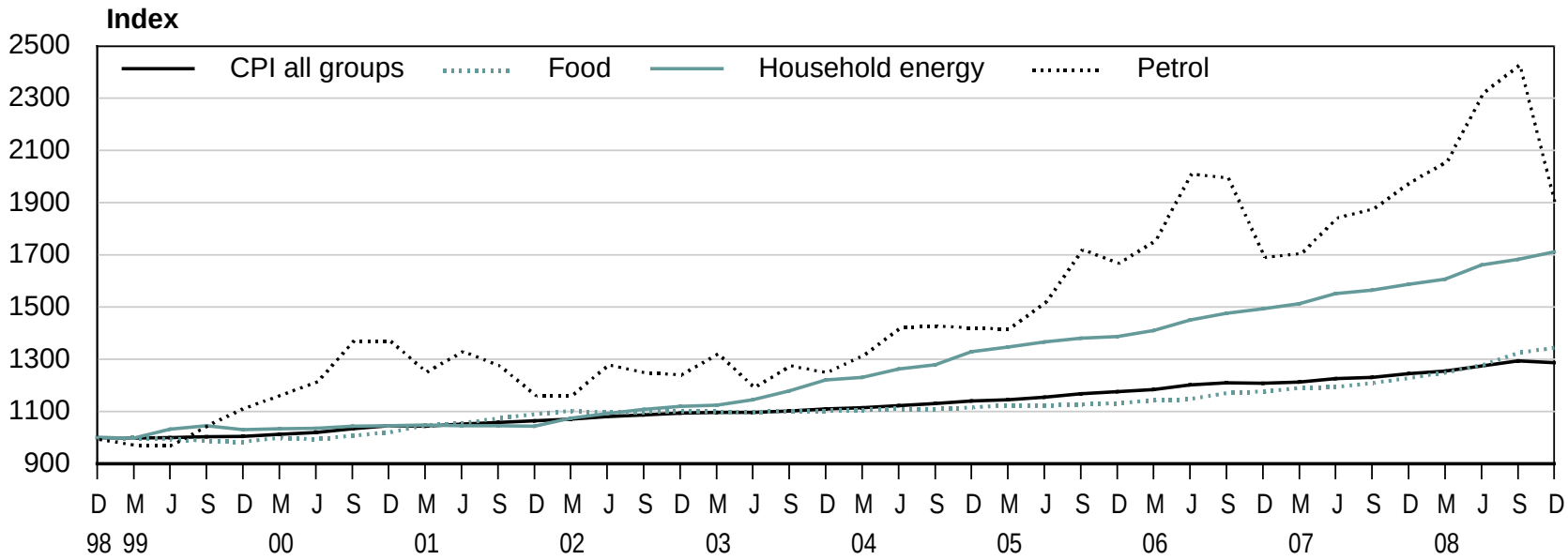
Exclusion-based measures

- 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)



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 (10^{th}, 25^{th}, 50^{th}, 75^{th}, 90^{th})
- Choice of annual measure:
  - Annual percentage change
  - Compounding quarterly changes

Stochastic theory and factor modelling

- $$p_n^1 / p_n^0 = f(\mu^{01}, \varepsilon_n^{01})(n = 1, ..., N)$$

$$\pi_{jt} = \chi_{jt} + \varepsilon_{jt}$$

$$\pi_{jt} = \chi_{jt}^{L} + \chi_{jt}^{S} + \varepsilon_{jt}$$

Where:

- the long-run component X^L (core inflation)
- short-run component X^S

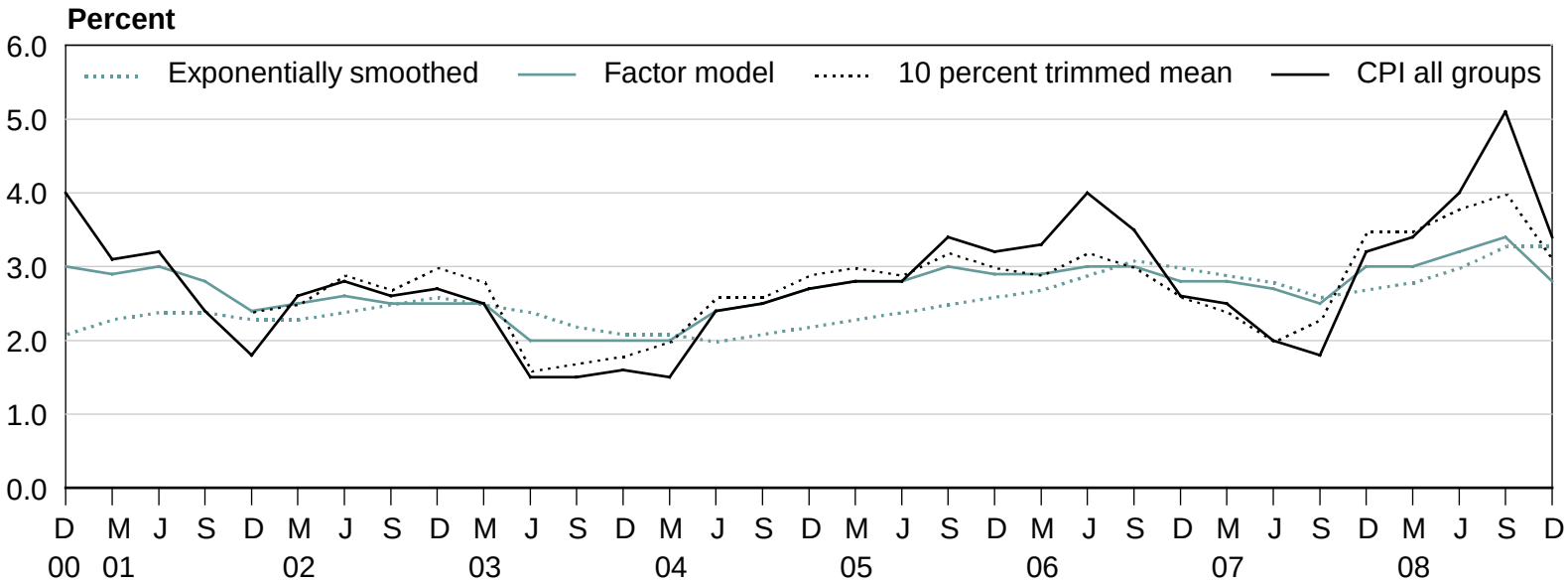
Characteristics of core inflation candidates (ranked)

Core measure	Simple	Picks up persistent changes in inflation	Leads or coincident	Unbiased	Smooth
Trimmed mean	1	3	1	1	3
ES measure	1	2	3	1	1
Factor model	3	1	1	1	2

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