



RESERVE BANK OF AUSTRALIA

Discussion: How Much Do Supply and Demand Drive Inflation?

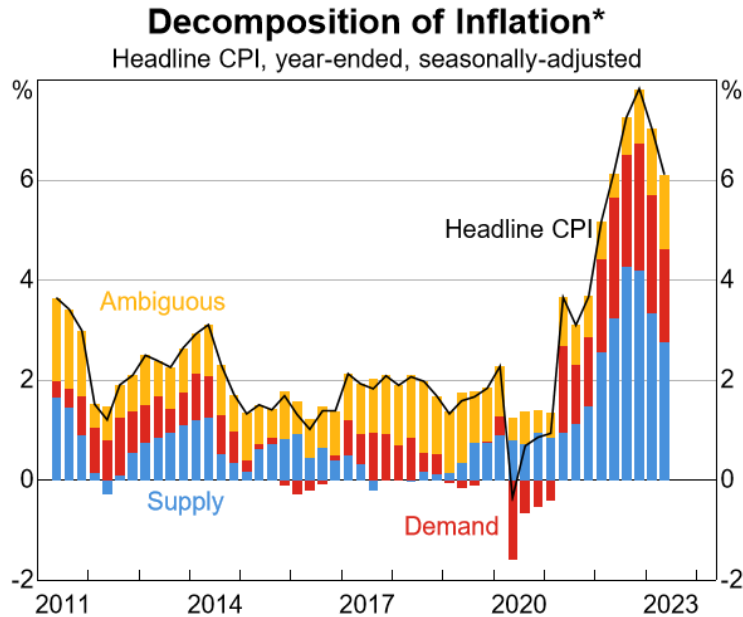
Benjamin Beckers

25 September 2023
Sydney

Highly influential paper

- Clever and simple idea
 - Label each PCE inflation category as supply- or demand-driven based on signs of price and quantity forecast errors...
 - ... and aggregate up
- Replicated for
 - Canada (Chen and Tombe 2023)
 - Eurozone (Gonçalves and Koester 2022, Koester et al 2022)
 - US (but Food only; Adjemian, Li and Jo 2023)
 - **Australia (Beckers, Hambur and Williams 2023)**

Supply and demand-driven inflation in Australia



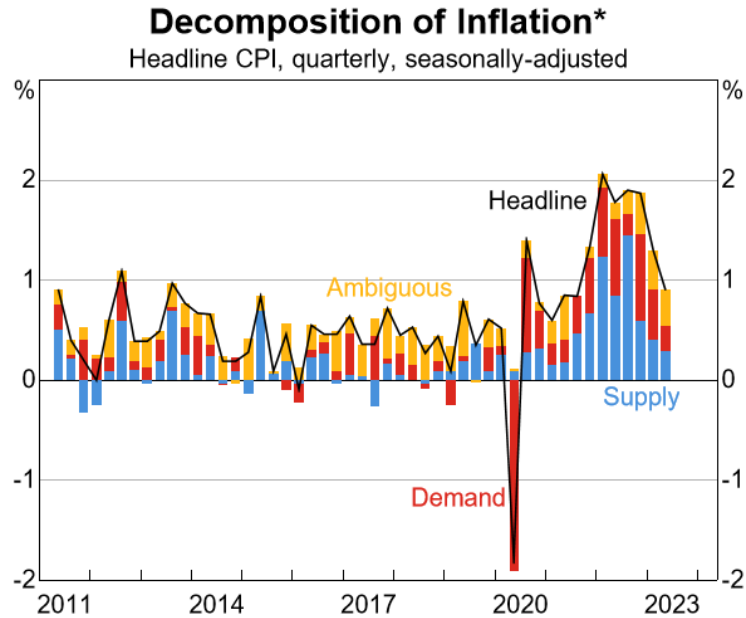
* Based on the methodology of Shapiro (2022); 'Ambiguous' indicates the contribution from components where the unexpected change in prices or quantities is within the 25 per cent prediction interval and the contribution from unmodelled components due to data limitations.

Sources: ABS; RBA.

Health warnings – at least for Australia

- Decomposition of *forecast errors* can change the story
- Sign restrictions often not enough to pin down shock contributions with high accuracy
- Fundamental shocks cannot be identified

Forecast errors tell a different story



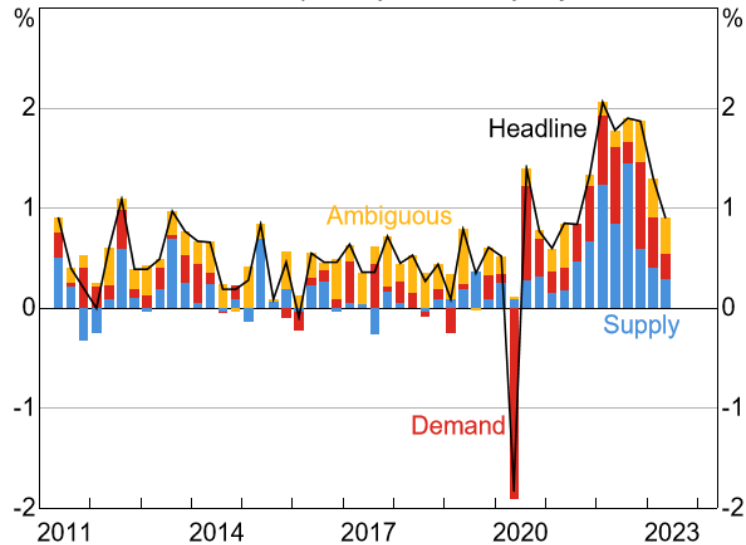
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Forecast errors tell a different story

Decomposition of Inflation*

Headline CPI, quarterly, seasonally-adjusted

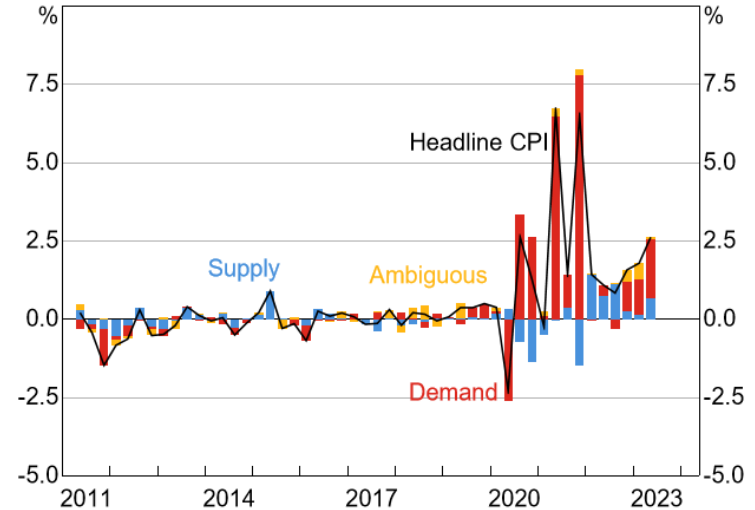


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Decomposition of Inflation Forecast Errors*

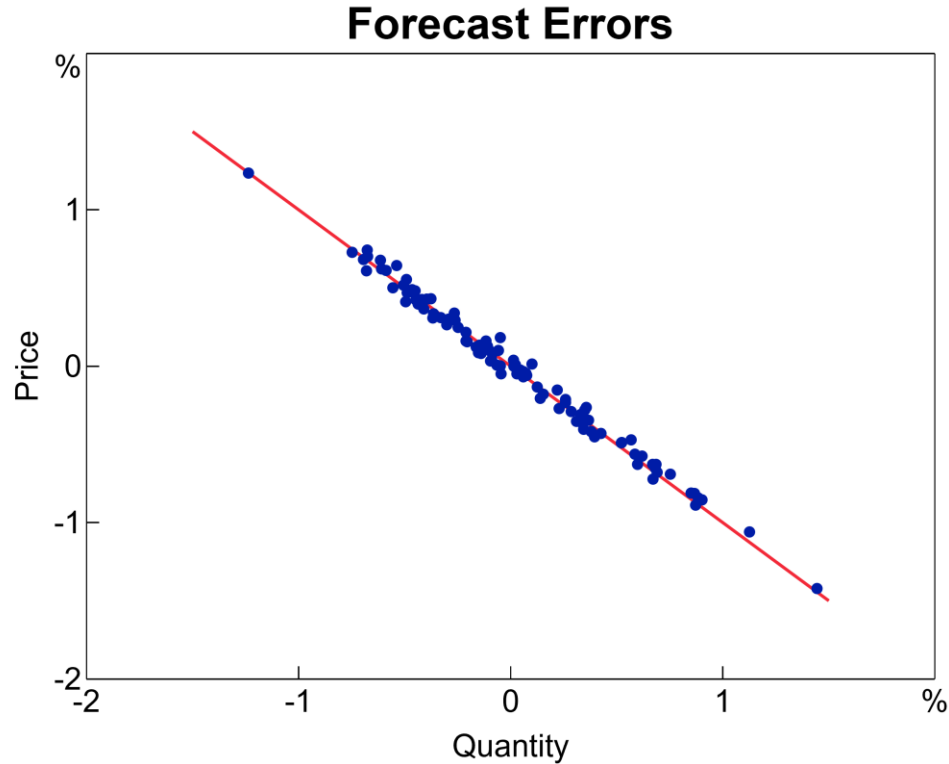
Headline CPI, quarterly, seasonally-adjusted



* Bottom-up one-quarter-ahead forecast errors split into contributions from supply- and demand-driven components weighted by expenditure shares. 'Ambiguous' indicates the contribution from components for which inflation or quantity forecast errors are within the 25 per cent prediction interval. Excludes large forecast errors for 'Other' category (-6% of CPI basket) for 2021:Q2, 2021:Q4, 2022:Q1.

Sources: ABS; RBA.

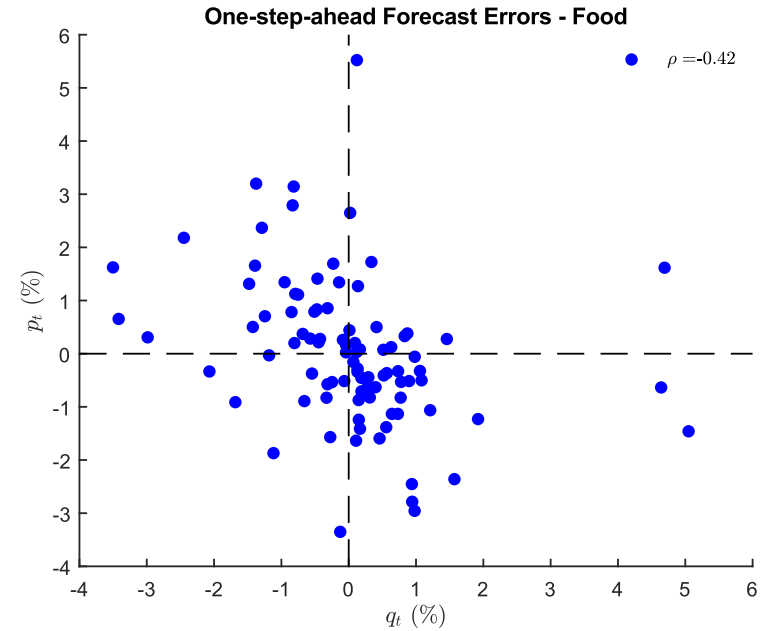
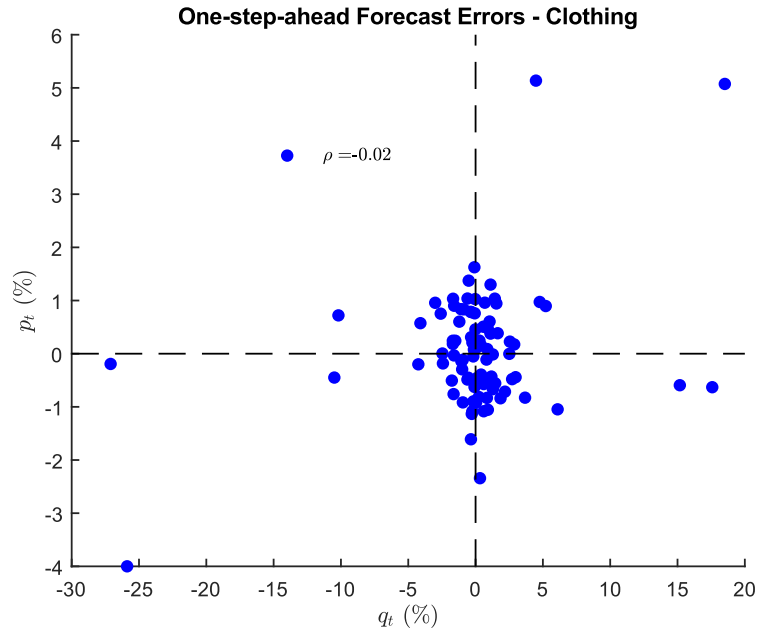
What can we learn from forecast errors?



Read (forthcoming)

Strong correlations are rare...

Read (forthcoming)

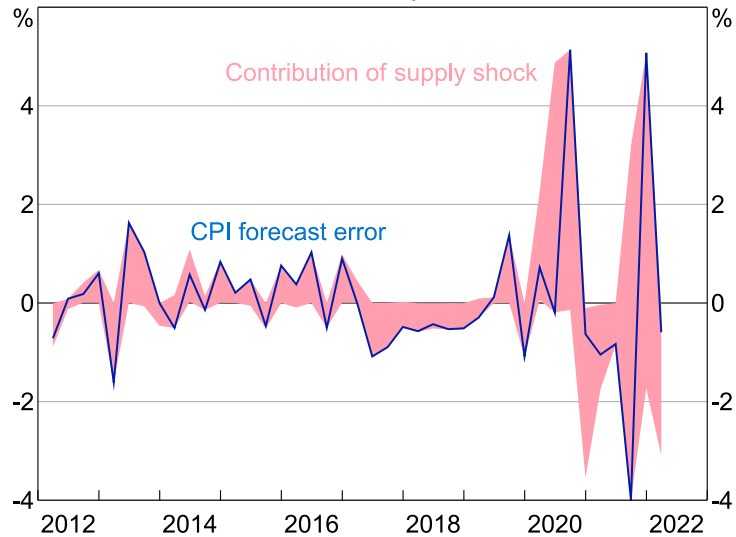


...and sign restrictions often uninformative

Read (forthcoming)

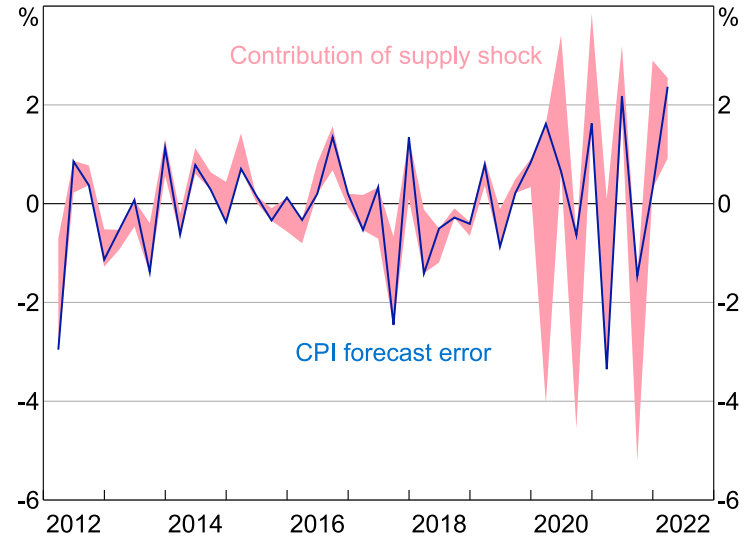
Historical Decomposition – Clothing

Quarterly



Historical Decomposition – Food

Quarterly



Fundamental shocks cannot be identified

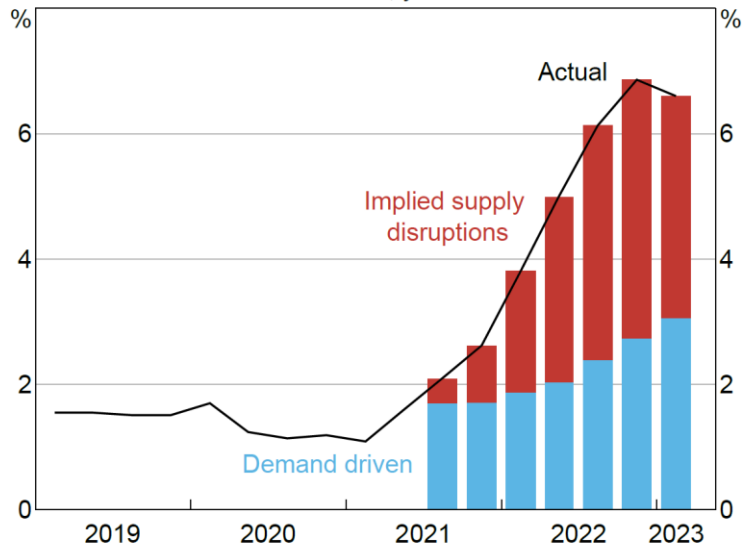
- Different 'supply' shocks can have different dynamic properties and implications for policy
- General equilibrium effects:
 - Supply shock to one sector can raise demand for another sector (Substitution)
 - Aggregate demand shock looks like supply shocks for some sectors
 - Global demand shock can look like supply shock (SOE)

What options remain?

Corroborate results using alternative models

Decomposition of Inflation – Approach 2

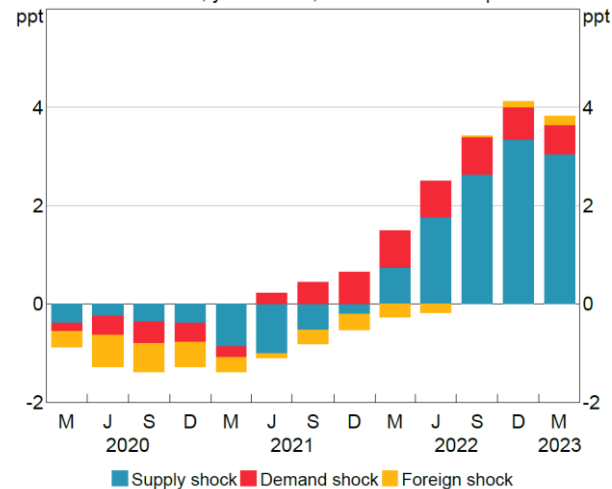
Trimmed mean, year-ended



Sources: ABS; RBA.

Decomposition of Inflation – Approach 3*

Trimmed mean, year-ended, deviation from 2.5 per cent



* Demand includes monetary policy, investment and consumption shocks. Foreign includes foreign demand and cost shocks. Supply includes markup, technology and labour supply shocks. Supply will capture some overseas cost shocks.

Source: RBA.

What options remain?

Robust monetary policy under uncertainty

- Inflation expectations matter: Backward-looking inflation expectations warrant a more aggressive response to inflation
(Söderström 2002; Jääskelä 2005; Kimura and Kurozumi 2007; Tetlow 2018)
- If uncertainty is large, use 'robust control' methods
(Orphanides and Williams 2007; Hansen and Sargent 2010)