



RESERVE BANK OF AUSTRALIA

Monetary Policy Trade-offs Under Imperfect Central Bank Information

Tommy Iao and Ekaterina Shabalina

Reserve Bank of Australia

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Policy depends on the source of inflation

"If demand picks up... Monetary policy can be used to slow demand and so economic activity and inflationary pressures, bringing the economy back into balance over time... The oft-cited policy prescription for temporary supply shocks ... is to 'look through' them, allowing inflation to rise temporarily before falling back to target with limited monetary policy response."

Sarah Hunter, RBA, 8 July 2026

Different shocks

require different
policy responses



Uncertainty

demand or supply?



Costs

aggregate
and distributional

How costly is uncertainty about demand and supply inflationary pressures, and who bears those costs?

How costly is uncertainty about demand and supply inflationary pressures, and who bears those costs?

Approach

1. Measure misattribution.
 - recover the RBA's real-time assessment
 - construct the demand-supply split with hindsight
 - compare the two to recover the extent of misattribution
2. Back out the central bank's reaction function.
 - estimate the Australian Heterogeneous Agent New Keynesian model (HALLIE) with shock-specific reactions to demand and supply inflation
 - back out the policy without misattribution using empirical estimates
3. Assess aggregate and distributional welfare costs of misattribution.

How costly is uncertainty about demand and supply inflationary pressures, and who bears those costs?

Approach and Findings

1. Measure misattribution.

Correct-attribution: 66% for demand and 73% for supply.

2. Back out the central bank's reaction function.

Monetary policy reacts more strongly to demand than to supply inflation. Misattribution weakens responses to demand-driven inflation and amplifies responses to supply-driven inflation.

3. Assess aggregate and distributional welfare costs of misattribution.

Uncertainty is costly for *all* households, with the largest costs for the wealth-poor households; most costs come from stronger responses to supply inflation.

4. Can policy do better?

Measuring misattribution

Step 1: central bank's perceived demand- and supply-driven inflation

- Use RBA forecast database from 2013Q3 to 2026Q2.
- Classify forecast revisions as demand-driven when inflation and output-gap forecasts move in the same direction, and supply-driven when they move in opposite directions.
- Sum classified revisions across forecast horizons for each inflation observation.

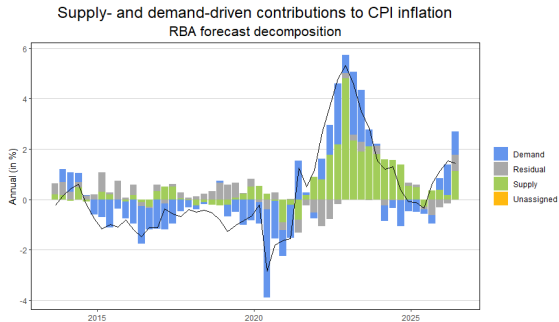
Step 2: benchmark demand- and supply-driven inflation

- Use disaggregated prices and quantities data from the Australian Bureau of Statistics.
- Changes in the disaggregated price index are attributed to demand if prices and quantities move in the same direction, otherwise, they are attributed to supply.
- Sum disaggregated demand and supply inflation using weights of the disaggregated prices in the headline inflation index.

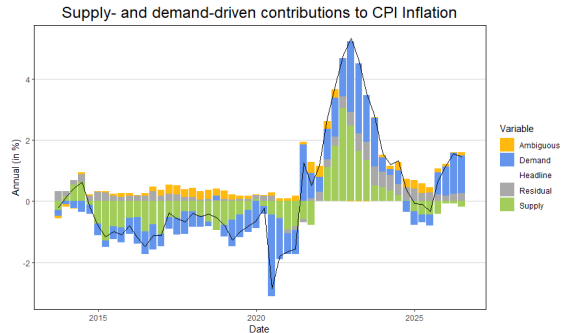
Step 3: recover correct-attribution probabilities

- Compare the demand- and supply-driven inflation components from both classifications.

Demand- and supply-driven inflation: perceived and benchmark



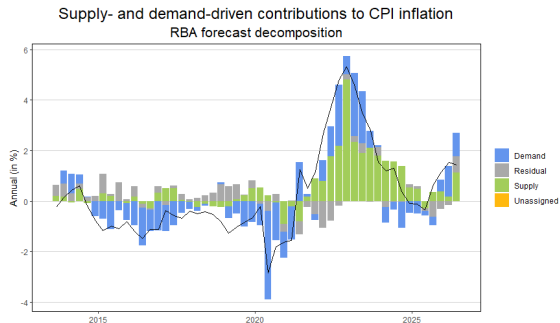
(a) Central bank's perceived decomposition



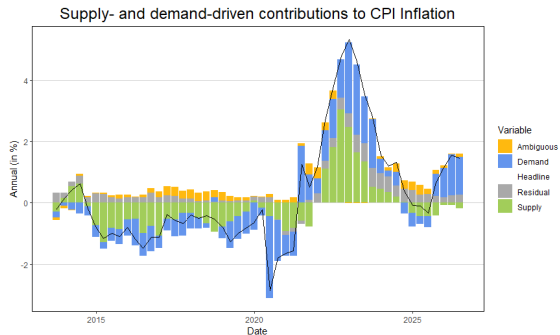
(b) Benchmark decomposition

- Both decompositions attribute negative demand contributions before COVID and sizeable positive supply contributions after 2020.
- The benchmark assigns a larger role to supply pressures before 2020 and to demand pressures after 2020; these differences identify **shock-type uncertainty**.

Demand- and supply-driven inflation: meaningful misattribution



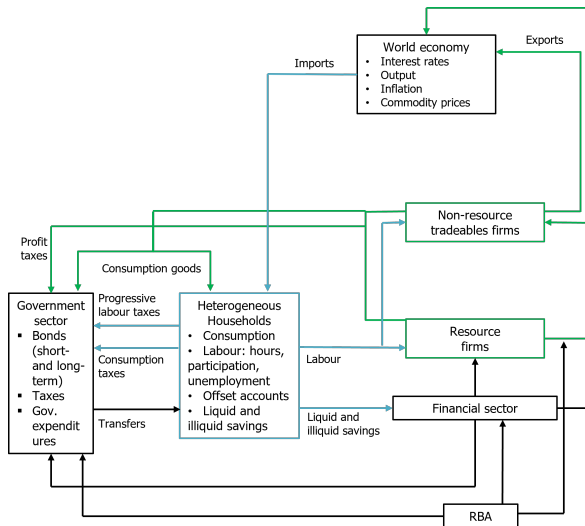
(a) Central bank's perceived decomposition



(b) Benchmark decomposition

Benchmark	Perceived component	
	Supply	Demand
Demand	0.34***	0.66***
Supply	0.73***	0.27**

HALLIE model



- Medium-scale, two-asset, small-open-economy Heterogeneous Agent New Keynesian model calibrated and estimated on Australian data.

A better fit for the estimated targeted Taylor rule

Targeted Taylor rule

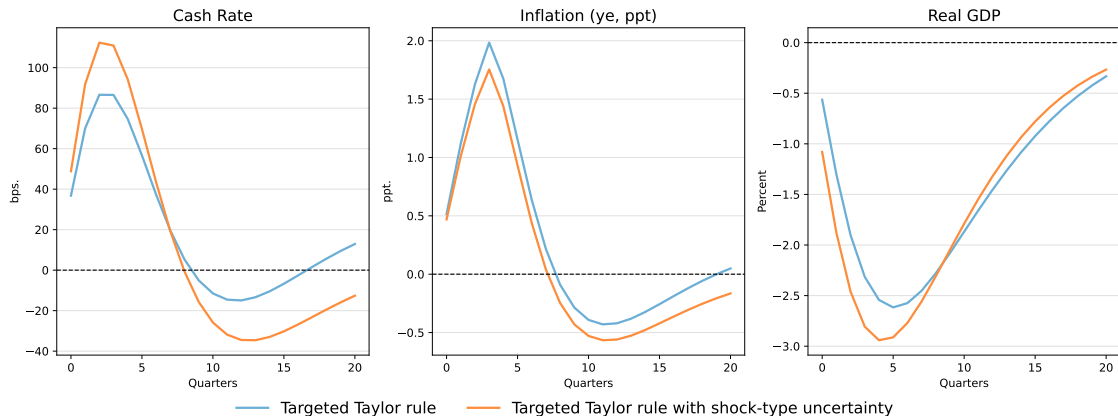
$$i_t = \rho_r i_{t-1} + (1 - \rho_r) \left[i^* + \phi_\pi^s \mathbb{E}^{CB} \pi_t^s + \phi_\pi^d \mathbb{E}^{CB} \pi_t^d + \phi_u (u_t - \bar{u}) \right] + \varepsilon_t^i \quad (1)$$

Estimated coefficients

Parameters	ρ_r	ϕ_u	ϕ_π^s	ϕ_π^d	$\tilde{\phi}_\pi^s$	$\tilde{\phi}_\pi^d$
Values	0.794	0.221	1.345	1.779	0.918	2.217

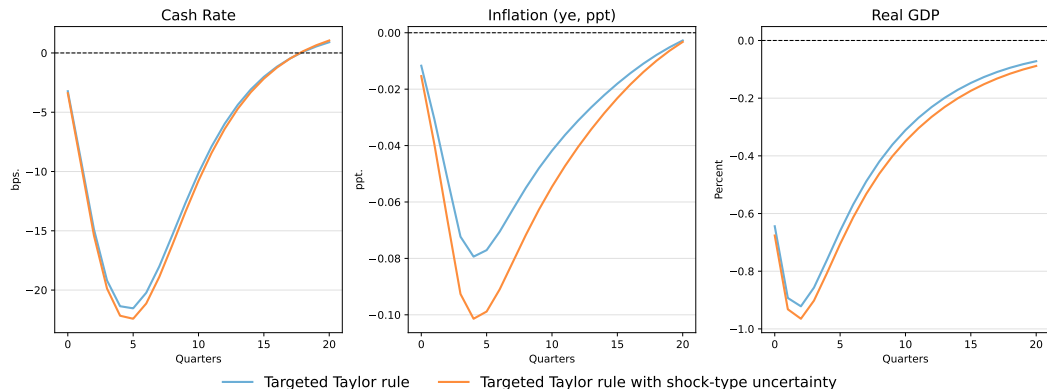
- The targeted rule fits the data better and implies a substantially weaker response to supply inflation and a stronger response to demand inflation.
- Misattribution pushes the reactions to supply- and demand-driven inflation to be more alike.

Supply shock: larger GDP losses with uncertainty



- A cost-push shock raises inflation and lowers GDP.
- Shock-type uncertainty induces a more aggressive policy response and a greater downward pressure on GDP.

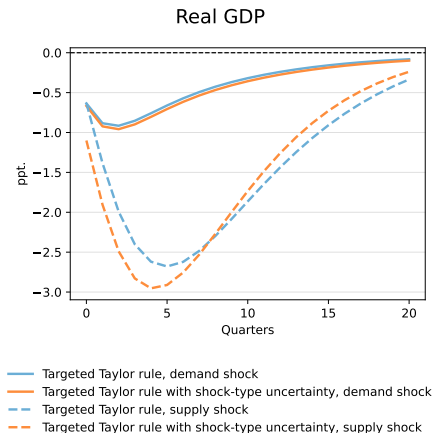
Demand shock: larger GDP losses with uncertainty



- A negative investment shock lowers inflation and GDP.
- Policy actions and *expectations* of them are highly effective following this shock. Without shock-type uncertainty, they mute inflation and GDP responses, so interest rates do not *actually* need to move as much.

Shock-type uncertainty leads to larger fluctuations in output

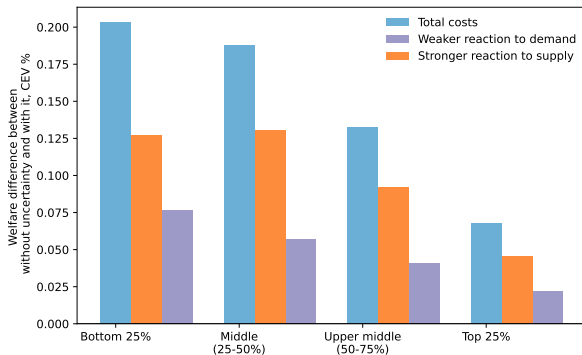
Policy rule	$\text{sd}(\pi)$	$\text{sd}(Y)$
Shock-type uncertainty	0.28	0.96
Weaker demand response	0.25	0.90
Stronger supply response	0.48	0.57
Full information	0.48	0.53



- Evaluated over the period 1992Q1 to 2025Q2, shock-type uncertainty leads to lower inflation volatility but substantially higher output volatility, mainly through the stronger response to supply shocks.

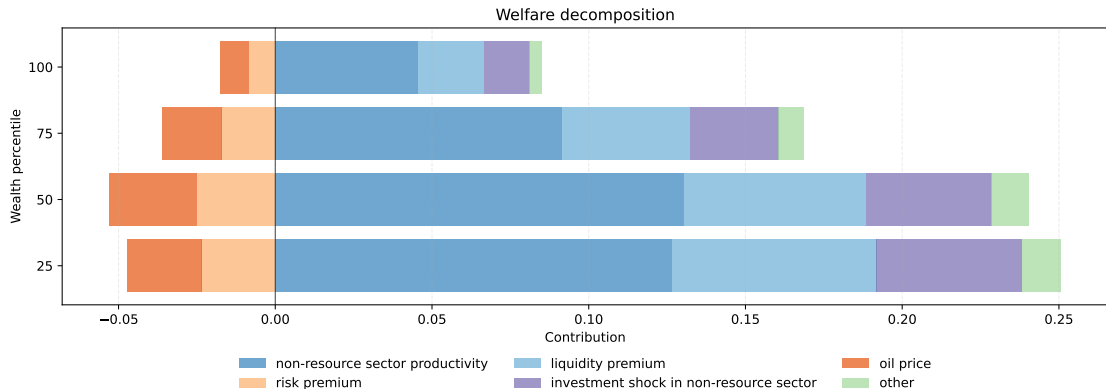
Costs of uncertainty are largest for wealth-poor households and are due to a stronger reaction to supply shocks

Welfare costs of uncertainty across the population



- Shock-type uncertainty is costly for *all* households.
- Wealth-poor households incur the largest costs.
- A stronger response to supply-driven inflation accounts for most welfare costs of shock-type uncertainty. Costs from weaker demand stabilisation are also positive but smaller.

Decomposition of welfare costs across shocks



- The largest costs arise from a larger response to productivity shocks and weaker responses to liquidity-premium and investment shocks (the main drivers of consumption and investment dynamics).
- Misattribution is costly for most shocks, but can be beneficial for oil-price and risk-premium shocks.

Conclusion

- Central-bank forecasts reveal a meaningful degree of uncertainty about whether inflation is demand- or supply-driven.
- This uncertainty makes the effective response too weak following demand shocks and too strong following supply shocks.
- The presence of shock-type uncertainty leads to welfare losses for *all* households, with the largest losses for low-wealth households. Most losses come from excessive tightening in response to supply-driven inflation.

Implications

Improved real-time diagnosis, data and models can improve aggregate stabilisation and distributional outcomes. When supply pressures are confidently identified, weaker responses may be beneficial, subject to persistence and inflation-expectations risks.

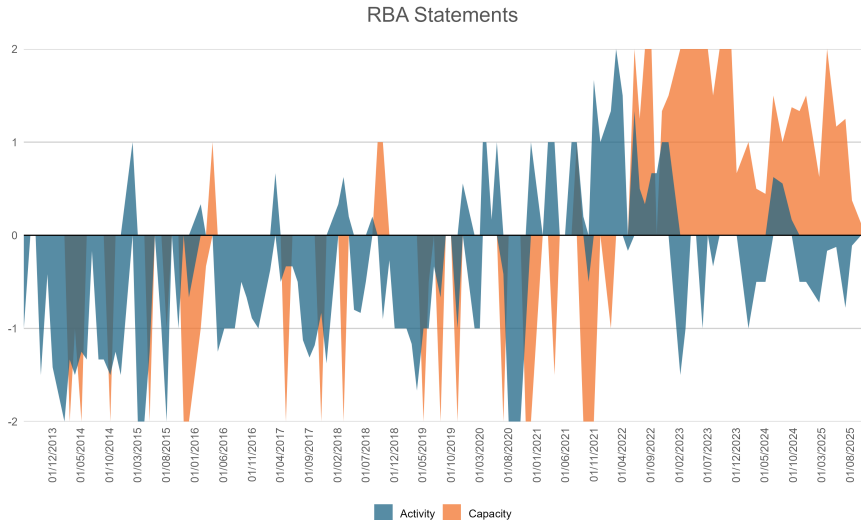
Spares

Related literature

- **Shock-dependent monetary policy:** optimal policy depends on the source of inflation.
Erceg, Henderson and Levin (2000); Blanchard and Galí (2007); Bodenstein, Erceg and Guerrieri (2008); Bandera et al. (2023); Nakamura and Steinsson (2025) and Hofmann et al. (2024) building on Taylor (1993).
- **Demand-supply decompositions:** sign restrictions applied to sectoral prices and quantities, and forecast-revision methods.
Shapiro (2026); Firat and Hao (2023); Beckers et al. (2023); Read (2026); Morley et al. (2026).
- **Distributional effects in HANK:** heterogeneous exposure to monetary policy and optimal policy design.
Auclert (2019); Kaplan, Moll and Violante (2018); Bhandari et al. (2021); McKay and Wolf (2022); Dávila and Schaab (2023); Acharya et al. (2023); Del Negro et al. (2025).
- **Central-bank information frictions:** parameter uncertainty, real-time data uncertainty and imperfectly observed states.
Brainard (1967); Orphanides (2001, 2003); Iovino, La'O and Mascarenhas (2022); Fujiwara and Waki (2022); Granziera et al. (2025); Ferrara (2025).

Contribution: we estimate shock-type uncertainty from central-bank forecasts and quantify its distributional welfare consequences.

Text-based indices of hawkishness and dovishness



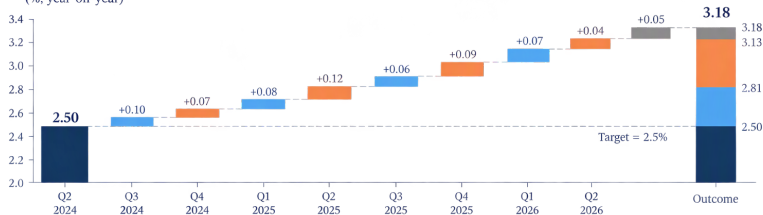
Source: Jones, D., "Ornithologist: Towards Trustworthy 'Reasoning' about Central Bank Communications."

Perceived demand-supply decomposition of inflation

Step 1: central bank's perceived decomposition Building the Q2 2026 inflation forecast

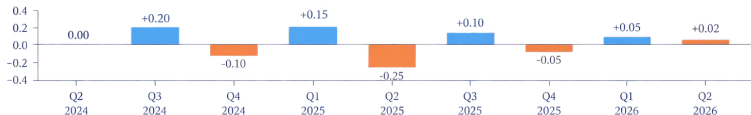
A. Inflation forecast for Q2 2026

(%, year-on-year)



B. Output gap revisions for Q2 2026

(percentage points)



Target

Demand contribution
($\Delta\pi \cdot \Delta y > 0$)

Supply contribution
($\Delta\pi \cdot \Delta y < 0$)

Residual (forecast error)

Regression results: shock attribution is imperfect

Perceived supply component				
Variable	Estimate	Std. error	<i>t</i> -statistic	<i>p</i> -value
Intercept	−0.62***	0.15	−4.22	< 0.001
Demand	0.34***	0.11	3.12	0.002
Supply	0.73***	0.11	6.80	< 0.001
R^2				0.72
Perceived demand component				
Variable	Estimate	Std. error	<i>t</i> -statistic	<i>p</i> -value
Intercept	−1.29***	0.14	−9.50	< 0.001
Demand	0.66***	0.11	5.97	< 0.001
Supply	0.27**	0.11	2.54	0.010
R^2				0.73

- Both cross-components are statistically significant, implying the presence of misattribution.
- RBA identifies supply-driven inflation somewhat more accurately than demand-driven inflation.

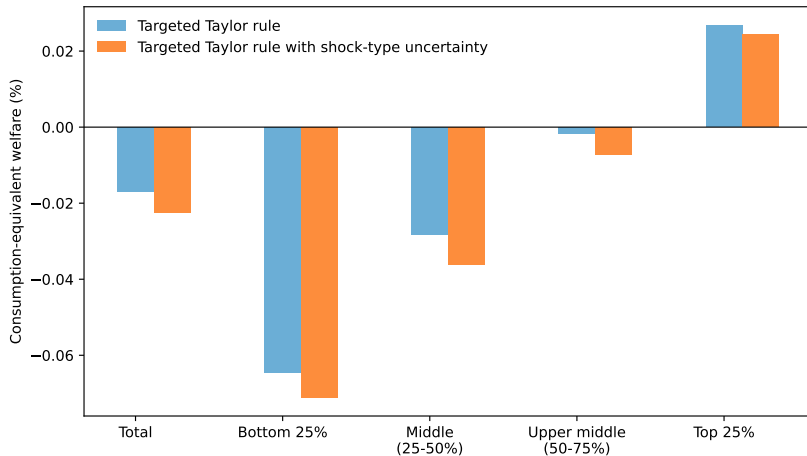
Robustness of the correct-attribution probabilities

Various specifications				
	OLS	OLS, HAC	System	Restricted system
ω^s	0.73	0.70	0.73	0.78
ω^d	0.65	0.76	0.65	0.65
Various measures				
	Headline, not SA	Underlying CPI	Unemployment gap	One-step ahead
ω^s	0.73	0.70	-0.07	0.85
ω^d	0.72	0.56	0.65	0.68
Empirical-strategy choices				
	Include COVID	$H = 9$	$H = 7$	First forecast assigned
ω^s	0.75	0.72	0.73	0.67
ω^d	0.80	0.66	0.63	0.66

- The estimates are broadly stable across specifications, measures and timing choices.

Supply shock: lower welfare with uncertainty

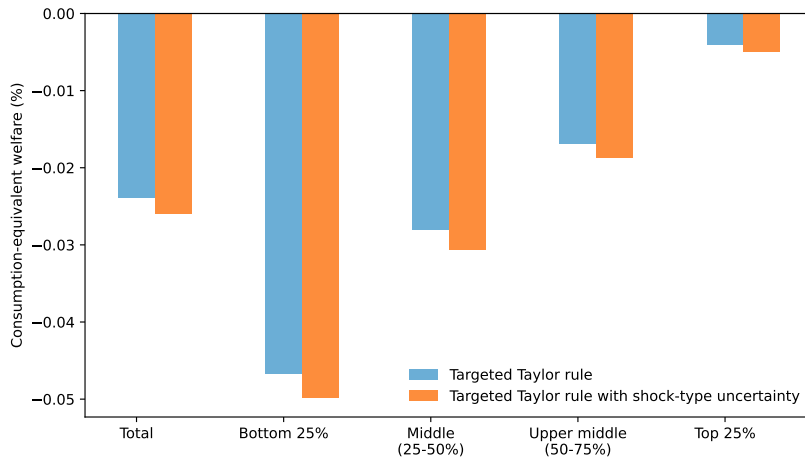
Supply Shock



- The shock benefits the wealthiest quartile through capital gains, but shock-type uncertainty reduces welfare for all wealth groups.

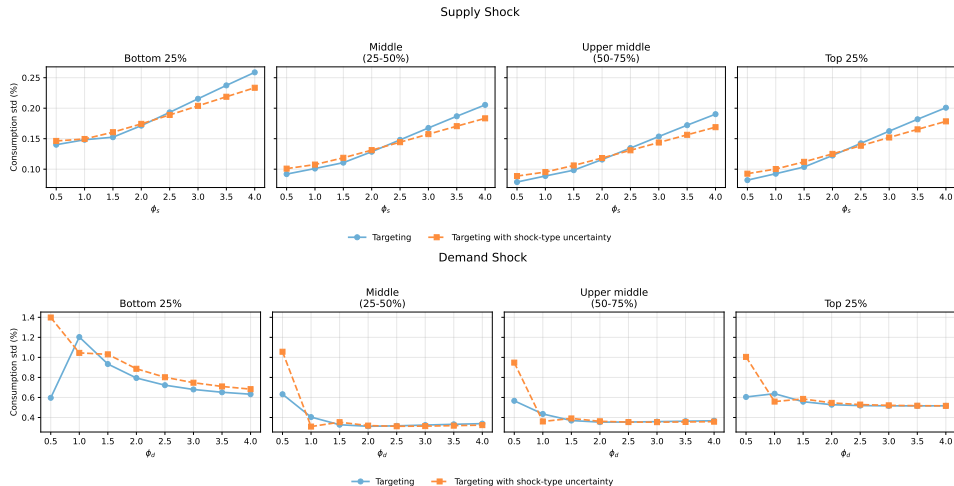
Demand shock: lower welfare with uncertainty

Demand Shock



- The resulting decline in activity is more pronounced and welfare losses are larger for all wealth quartiles with shock-type uncertainty.

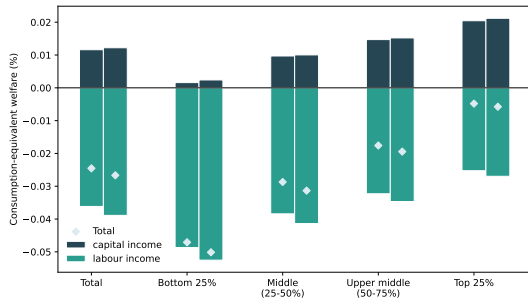
Volatility increases with weaker demand and stronger supply reactions



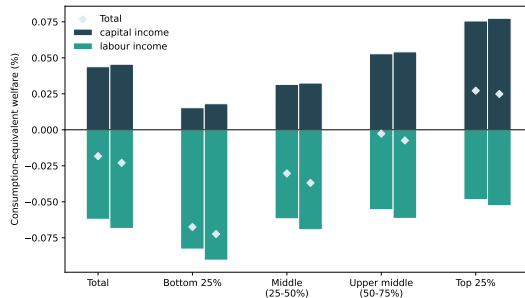
- Demand frontiers: stronger demand stabilisation lowers consumption volatility for all wealth groups.
- Supply frontiers: stronger supply response raises consumption volatility throughout the distribution.

Welfare decomposition: labour- and capital-income channels

Demand Shock

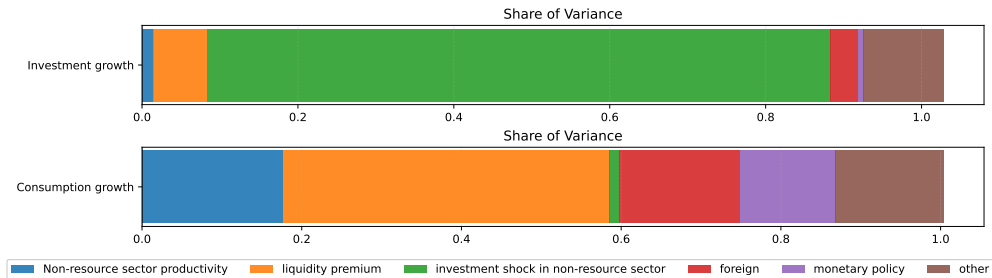


Supply Shock



- Welfare losses are driven by labour-income declines; capital income provides a partial offset.
- Uncertainty further reduces labour income while generating only modest capital-income gains.
- After the supply shock, capital-income gains can exceed labour-income losses for the wealthiest quartile, but uncertainty remains welfare-reducing relative to full information.

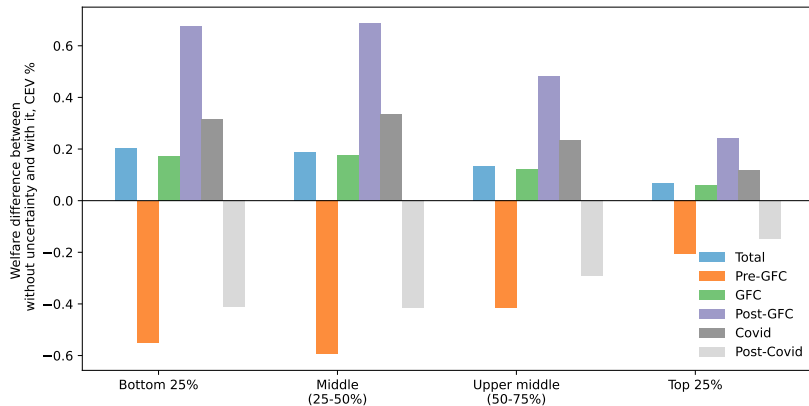
Historical decomposition of consumption and investment



- Liquidity-premium and investment shocks are important drivers of consumption and investment dynamics, respectively.

Welfare costs across historical episodes

Welfare costs of uncertainty across the population



- The costs of shock-type uncertainty are not evenly distributed over time.
- The largest costs occur during the GFC, post-GFC and COVID periods.