The Short-Term Effects of Monetary Policy

Lennart Brandt
Bank of England

Johannes Fischer
Deutsche Bundesbank

Wolfram Horn
Frankfurt School

Silvia Miranda-Agrippino
New York Fed & CEPR

Filippo Pallotti
Lombard Odier & UCL

Work in progress
Please check the link to the latest version

Motivation

- The conventional wisdom in central banks is that monetary policy works with a significant lag. For example, Christiano et al. (1999) and Aruoba and Drechsel (2024).
- This notion shapes the conduct of policy along many dimensions, inducing decision-makers to try and act preemptively.
- However, a recent literature on causal effects of monetary policy has begun to challenge the consensus.
  - Macro official data: e.g. Miranda-Agrippino and Ricco (2021) and Bauer and Swanson (2023) for US, Cesa-Bianchi et al. (2020) and Burr and Willems (2024) for UK
  - Transaction-level data: Grigoli and Sandri (2022) and Buda et al. (2025)

What we do

- We assemble a novel high-frequency dataset for the UK economy, covering credit and debit card spending, online vacancies postings, and online prices.
- We study the transmission of monetary policy to macroeconomic activity at a daily frequency.
- We use the high-frequency surprises by Braun et al. (2025) as external instruments for changes in interest rates.

Main findings

- We find that, following an exogenous change in interest rates, consumer spending falls significantly below baseline within days of the impulse.
- The response is concentrated in discretionary spending categories such as restaurants and hotels.
- Online postings of vacancies fall more slowly but are significantly below baseline in the second half of the year following the shock.
- We do not find a significant fall in the price level within the first year.
- Our preferred interpretation relies on heightened attention to economic conditions after a monetary-policy shock.

Data

Data: Overview

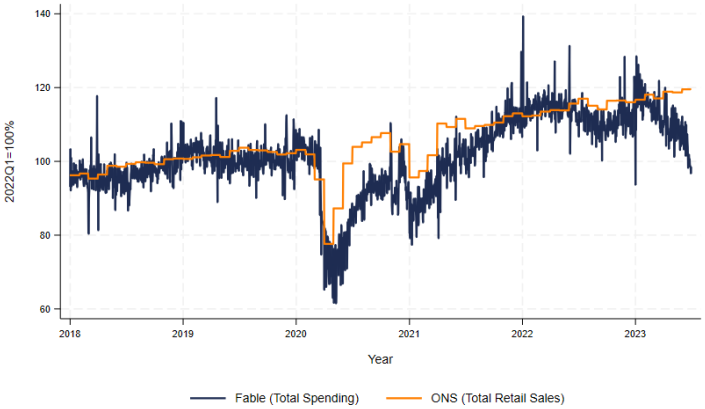
- **Spending**: Fintech, Fable Data - spending on UK credit/debit cards (daily, 2017-2023)
- **Job Vacancies**: Indeed (daily, 2018-2023)
  - most used page for online job search in the UK (≈50m visits per month)
- **Prices**: PriceStats (daily, 2008-2023)
  - formerly Billion Prices Project (Cavallo and Rigobon, 2016)
  - daily online prices of goods and services (60% of CPI weights).
  - remaining "offline" prices imputed using related goods
  - weighted with CPI weights
- **High-frequency UK monetary policy surprises**
  - Path factor of Braun et al. (2025)

⇒ **Final Sample**: 1 February 2018 - 30 September 2023

Data: Daily spending - Fable sample selection

- We follow Koeniger et al. (2024) and select only those cards with at least one transaction per year.
- We exclude expenditures that do not enter consumption in national accounts (e.g. fines) based on Merchant Category Code, and exclude those not transacted in Sterling.
- This works out to $\approx$ 125mn transactions performed by $\approx$ 200k cards.

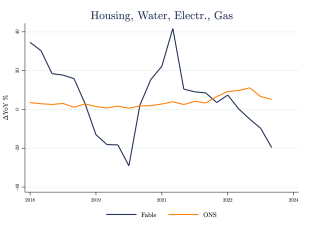
Data: Daily spending - Fable comparison with official aggregates



Data: Daily spending by consumption category

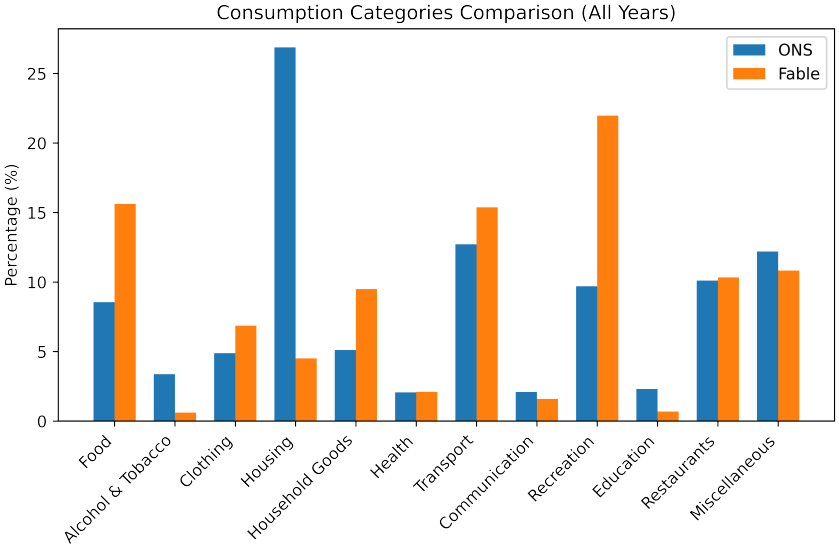
(a) COICOP 11: Restaurants and accommodation services

(b) COICOP 7: Transport

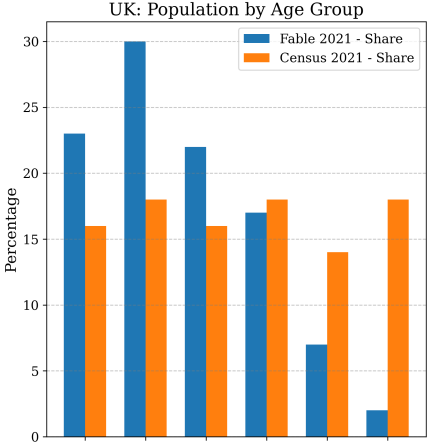


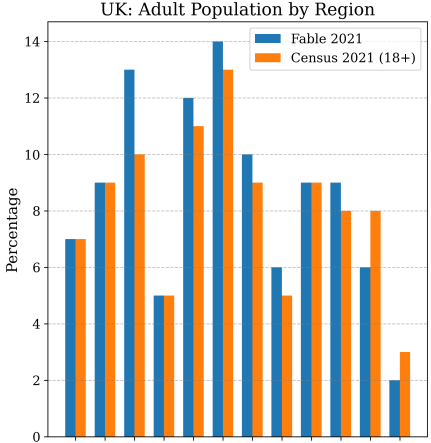
(c) COICOP 4: Housing, Water, Electricity, Gas

Data: Daily spending - Fable representativeness on consumption categories



Data: Daily spending - Fable representativeness on age and regions





Data: Daily labour market data - Indeed

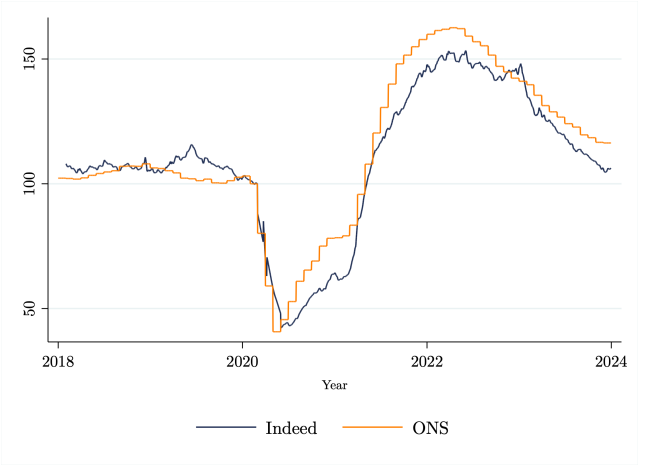


Figure: Indeed vs ONS vacancies

Back

Data: Seasonal adjustment

- Consumer spending at daily frequency is highly seasonal.
- Following Ollech (2021), we adjust for four seasonal components:
  - Intra-weekly: weekdays versus weekends
  - Intra-monthly: consumption spikes at start of month
  - Intra-annual: consumption is strong in Q4 and then falls back after Christmas
  - Finally, irregular moving holidays: Easter, bank holidays ...

Data: Seasonal adjustment

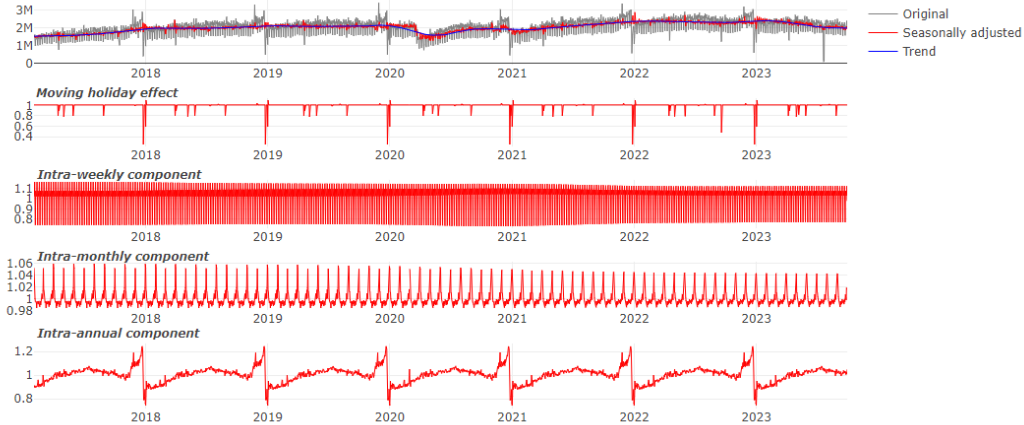


Figure: Seasonal components of total spending

Results

Bayesian proxy-SVAR

We estimate a five-variable VAR at **daily** frequency. The reduced form is

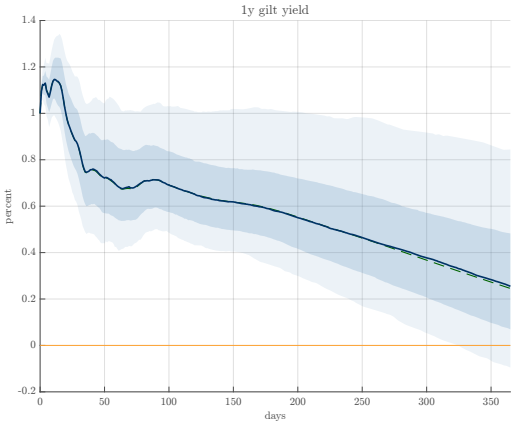
$$y = \begin{bmatrix} \text{1-year gilt} \\ \text{spreads} \\ \ln(\text{spending}) \\ \ln(\text{vacancies}) \\ \ln(\text{prices}) \end{bmatrix} \tag{1}$$

$$y_t = \sum_{j=1}^{p} B_j y_{t-j} + u_t \tag{2}$$

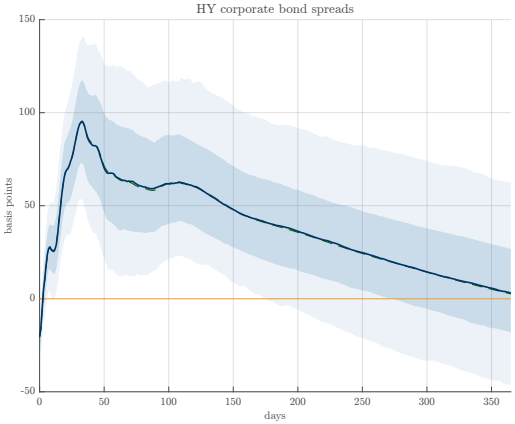
where spending is a seven-day rolling average of total (deflated by the retail sales deflator).

- We estimate the reduced form using 8 weeks of lags, that is, $p = 56$ in daily frequency.
- We identify a monetary policy shock by using the Path factor of Braun et al. (2025) to instrument the residual in the interest rate equation.
- To capture the Covid period in a data-driven way, we use a break-in-volatility prior following Lenza and Primiceri (2022). Results are unchanged if we exclude the shocks in March 2020.

Results: Financial market variables

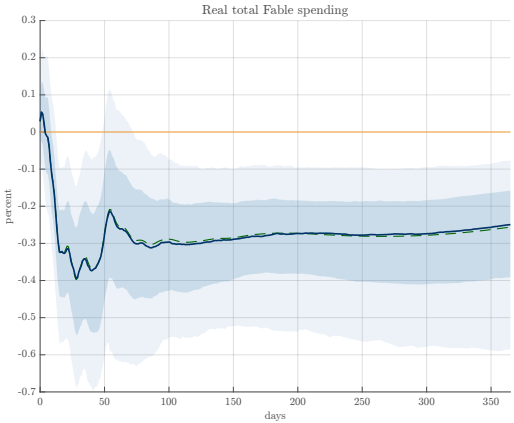


(a) Response of 1-year gilt to Path shock

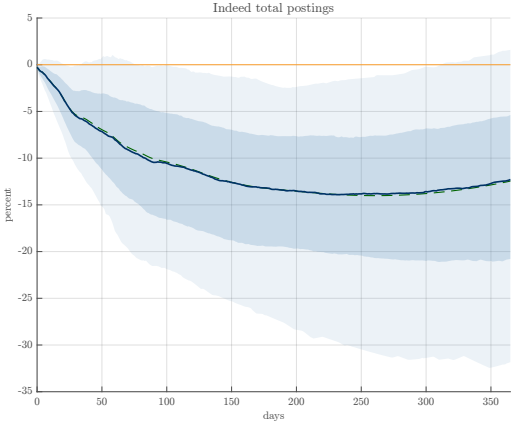


(b) Response of high-yield corporate bond spreads

Results: Economic activity



(a) Response of real total spending to Path shock



(b) Response of posted vacancies to Path shock

Results: Prices

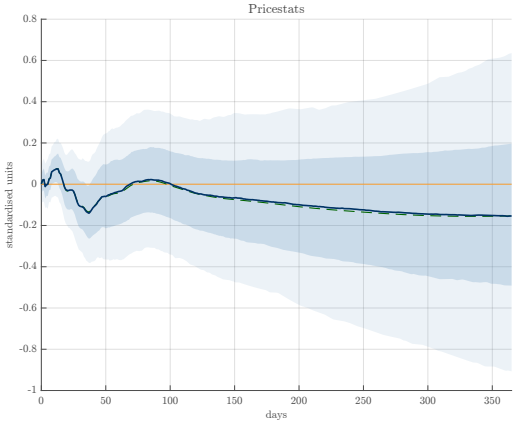
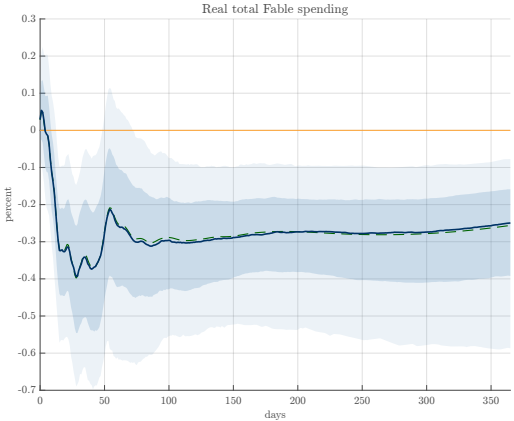


Figure: Response of daily prices to Path shock

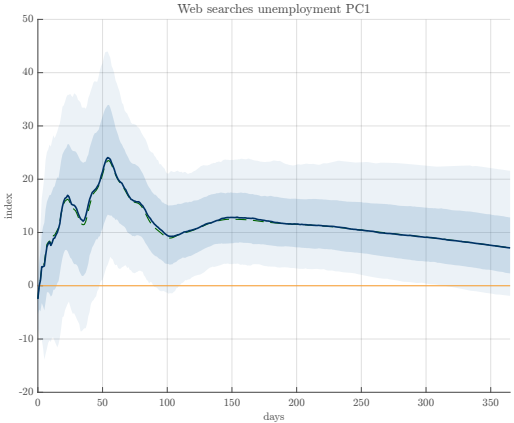
Our preferred interpretation

- What may explain the fall in consumption within days following a monetary policy shock?
- Our preferred interpretation is heightened attention to economic conditions after a monetary-policy shock.
- To proxy attention, we add to our VAR the first principal component of Google searches for terms related to "unemployment"
- The IRFs of our macro variables are unchanged and the web-search factor spikes on impact, almost mirroring the response of spending over a year.
- This is consistent with evidence that monetary announcements swiftly reshape household expectations (e.g. Rast (2022), Lewis et al. (2019)).

Results: Consumption and google searches for unemployment



(a) Response of real total spending to Path shock



(b) Response of google searches for unemployment to Path shock

Results: all IRFs

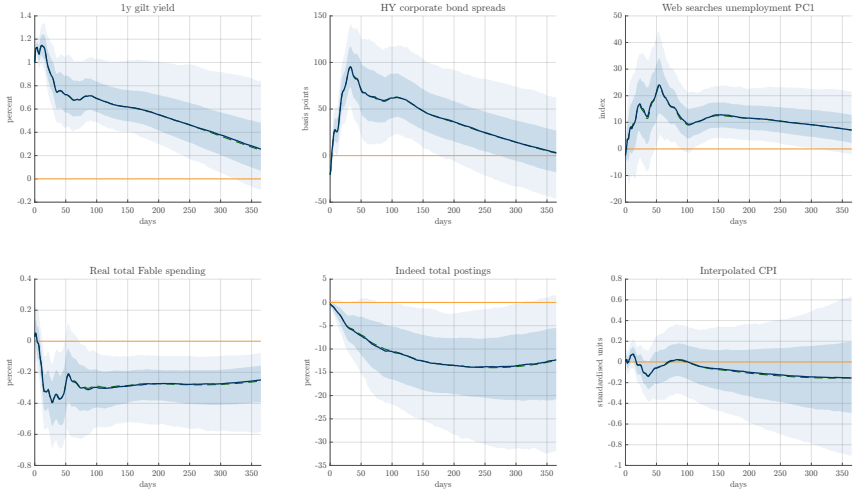


Figure: Proxy-SVAR response to Path shock

Conclusion

Conclusion

- We find that, following an interest rate surprise, consumer spending falls significantly below baseline within days of the impulse.
- The response seems to be concentrated in discretionary spending categories such as restaurants and hotels.
- Online postings of vacancies fall more slowly but are significantly below baseline in the second half of the year following the shock.
- The response of prices depends on the choice of index. Interpolated CPI falls gradually below baseline while PriceStats prices do not fall significantly within the first year.
- Our preferred interpretation relies on heightened attention to economic conditions after a monetary-policy shock.

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Data: Daily spending, summary statistics

Table: Consumption per card by year

Year	min	p10	p25	median	p75	p90	max
2017	0.01	209	521	1,415	3,346	7,196	914,301
2018	0.04	215	652	1,824	4,191	8,689	1,100,582
2019	0.01	241	657	1,874	4,445	9,102	665,014
2020	0.01	204	556	1,586	3,898	8,136	463,776
2021	0.01	252	690	1,876	4,487	9,196	590,524
2022	0.01	305	840	2,217	5,012	9,939	814,058
2023	0.01	199	657	1,871	4,506	9,292	459,674