The Short-Term Effects of Monetary Policy

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Work in progress
Swiss Macro Workshop
Link to the latest version

Motivation

- The conventional wisdom in central banks is that monetary policy works with a significant lag - e.g. (Christiano et al., 1999)
- 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 in response to a contractionary monetary policy shock
  - Private consumption falls significantly without a lag
  - Firms are quick in adjusting hiring plans
  - Labour market sentiment deteriorates contemporaneously with consumption

Literature review

- **High-frequency indicator of economic activity**
  (Eraslan and Götz, 2021), (Baumeister et al., 2024), (Grigoli and Pugacheva, 2024), ...

- **Monetary policy: High-frequency identification & effects**
  (Kuttner, 2001), (Gürkaynak et al., 2005), (Jarociński and Karadi, 2020), (Altavilla et al., 2019), (Cesa-Bianchi et al., 2020), (Braun et al., 2025), **(Buda et al., 2023)**, ...

- **Fable Consumer Spending Data**
  (Koeniger et al., 2024), (Koeniger and Kress, 2024), (Grigoli and Sandri, 2022), (Grigoli and Pugacheva, 2024), (Askitas et al., 2024)

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)
  - daily online prices of goods and services (60% of CPI weights).
  - remaining "offline" prices imputed using related goods
- **Monetary Policy and Financial Markets**: UKMPD Shocks
  - 1-year gilt yield and ICE BofA Sterling high-yield option-adjusted spread
  - High-frequency UK monetary policy surprises - path factor of (Braun et al., 2025)
- **Labor Market Sentiment**: Google Trends
  - First principal component of web searches related to unemployment

Data: Fable deep-dive

- $\approx$ 900mn transactions performed by more than 5mn cards
- Sample starting in early 2016 and ending at the end of 2023 (currently)
- For each transaction, the data set provides information on
  - Date of purchase
  - Merchant category code (MCC)
  - Location (zipcode level)
  - Card type (debit/credit), online/offline
  - Card holder age group, gender, income band
  - Often merchant tags (not our focus here)
- Not possible to link cards belonging to the same user, or the same household

Data: Fable sample selection

- Follow (Koeniger et al., 2024) and select cards with at least one transaction per year 2017 to 2023
- Exclude expenditures that do not belong to consumption in national accounts (e.g. fines) based on the MCC, exclude those not in GBP

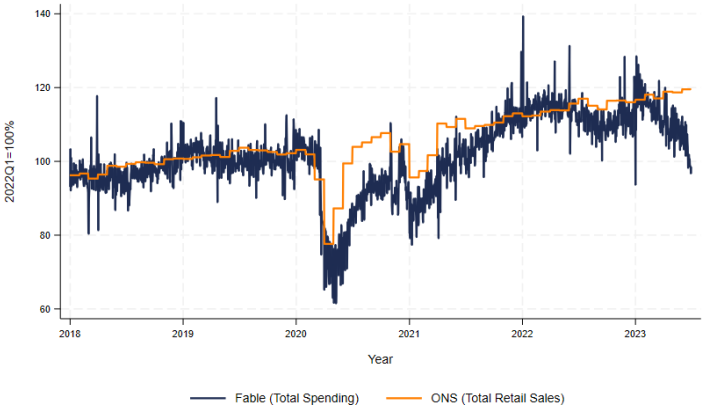
$\Rightarrow$ Final Sample: $\approx$ 125mn transactions performed by $\approx$ 200k cards from 1 February 2018 to 30 September 2023

Data: Fable summary statistics

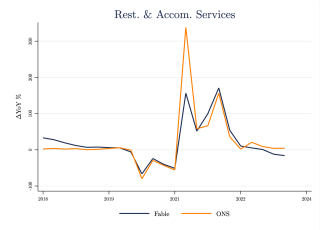
Table: Consumption per card by year

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

Data: Daily spending - Fable comparison with official aggregates

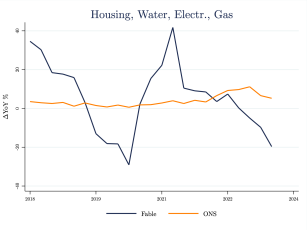


Data: Daily spending by consumption category



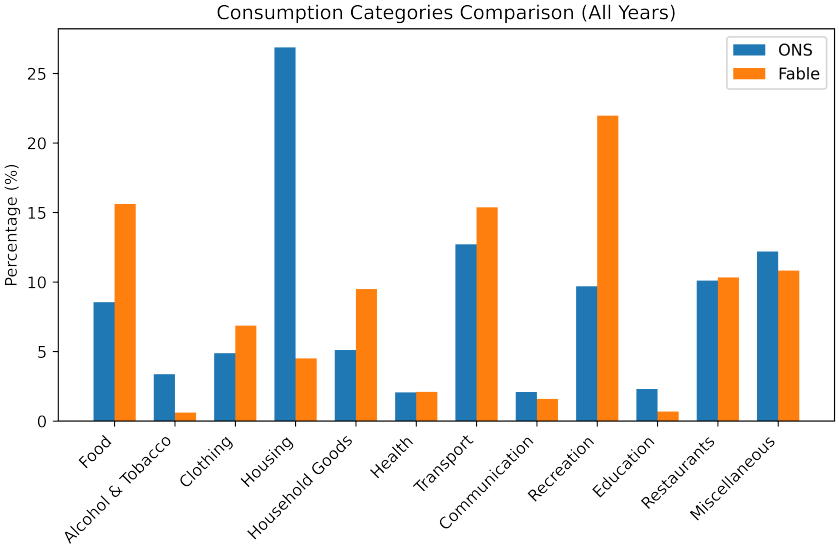
(a) COICOP 11: Restaurants and accommodation services

(b) COICOP 7: Transport

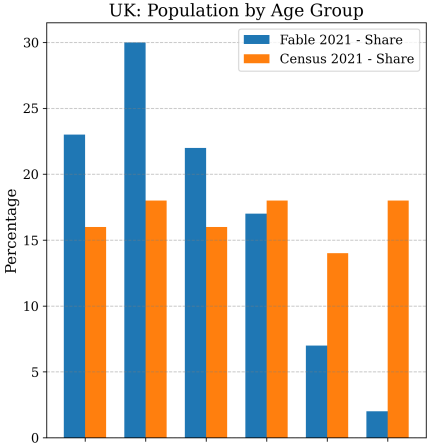


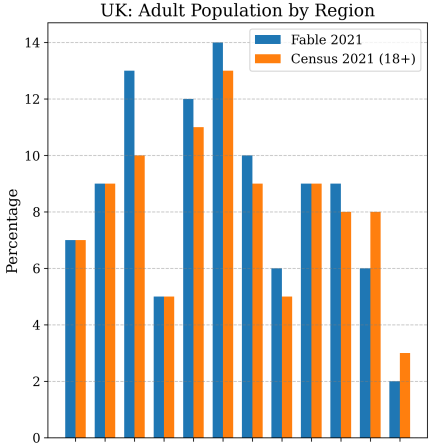
(c) COICOP 4: Housing, Water, Electricity, Gas

Data: Daily spending - Fable representativeness on consumption categories



Data: Daily spending - Fable representativeness on age and regions





Data: Daily labour market data - Indeed

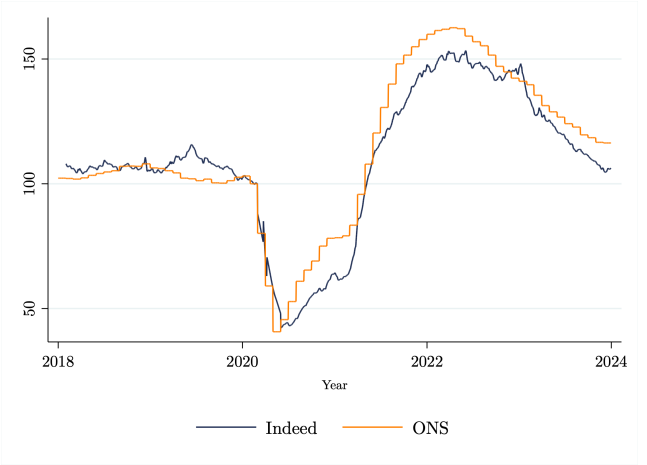


Figure: Indeed vs ONS vacancies

Back

Data: PriceStats over time

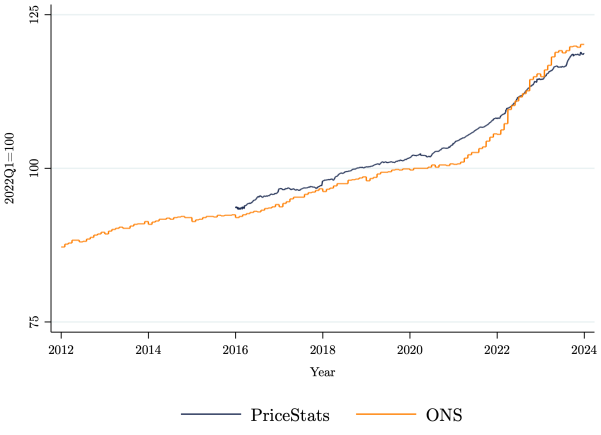


Figure: PriceStats Index vs. ONS CPI Index

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

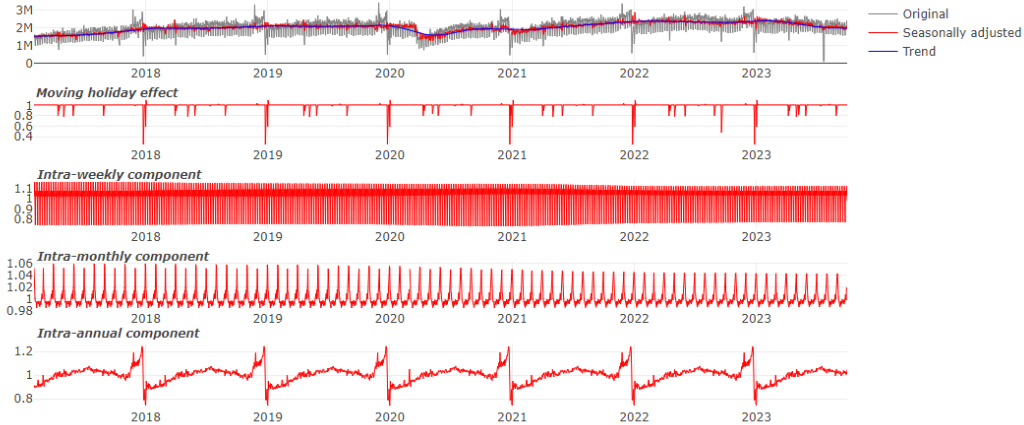


Figure: Seasonal components of total spending

Results

Bayesian proxy-SVAR

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

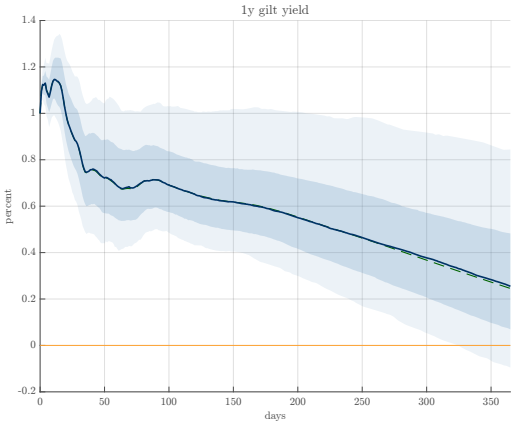
$$y = \begin{bmatrix} \text{1-year gilt} \\ \text{spreads} \\ \ln(\text{spending}) \\ \ln(\text{vacancies}) \\ \ln(\text{prices}) \end{bmatrix} \tag{1}$$

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

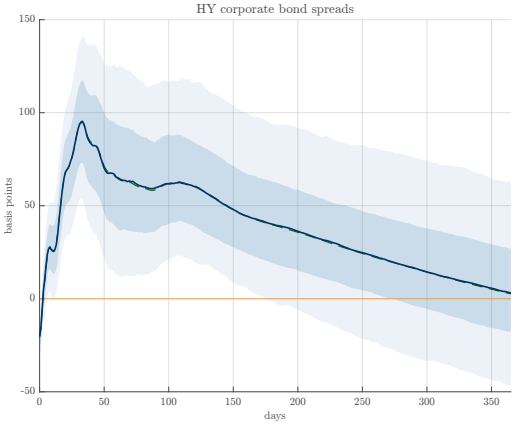
where spending is a seven-day rolling average of total (deflated by the retail sales deflator).

- 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. Shocks
- 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

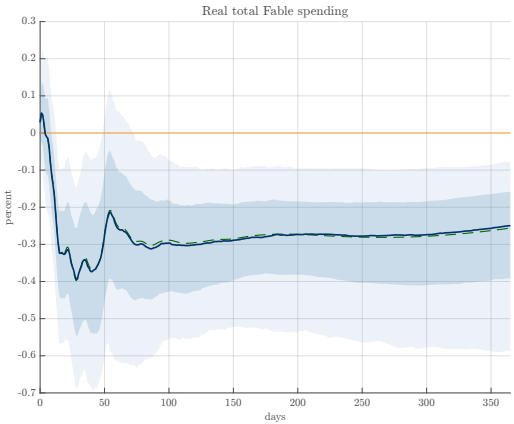


(a) Response of 1-year gilt to Path shock

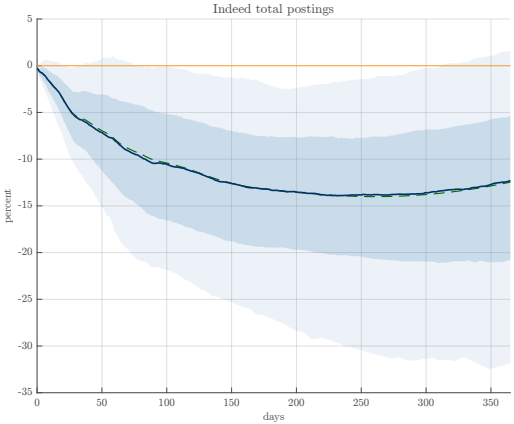


(b) Response of high-yield corporate bond spreads

Results: Economic activity



(a) Response of real total spending to Path shock



(b) Response of posted vacancies to Path shock

Results: Prices

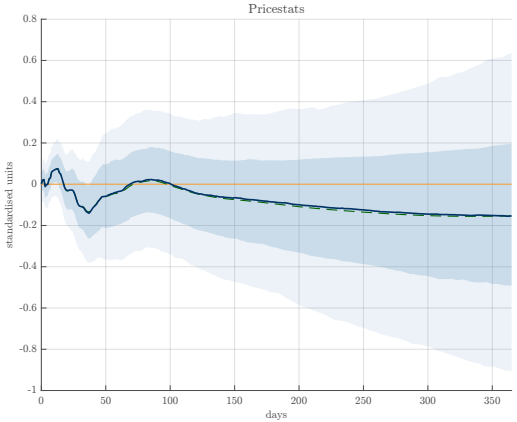
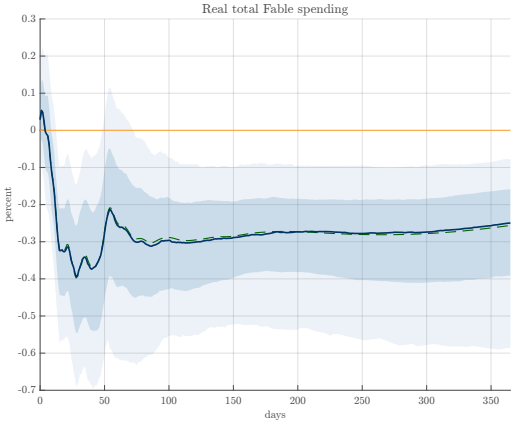


Figure: Response of daily prices to Path shock

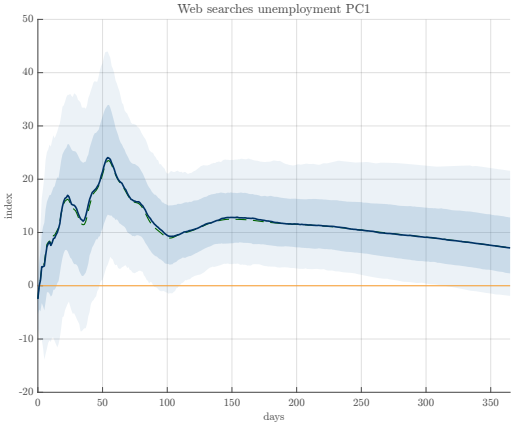
Our preferred interpretation for the fast reaction of spending

- Firms are quick in adjusting hiring plans
- Consumer sentiment about the labor market deteriorates
- To proxy this channel, 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

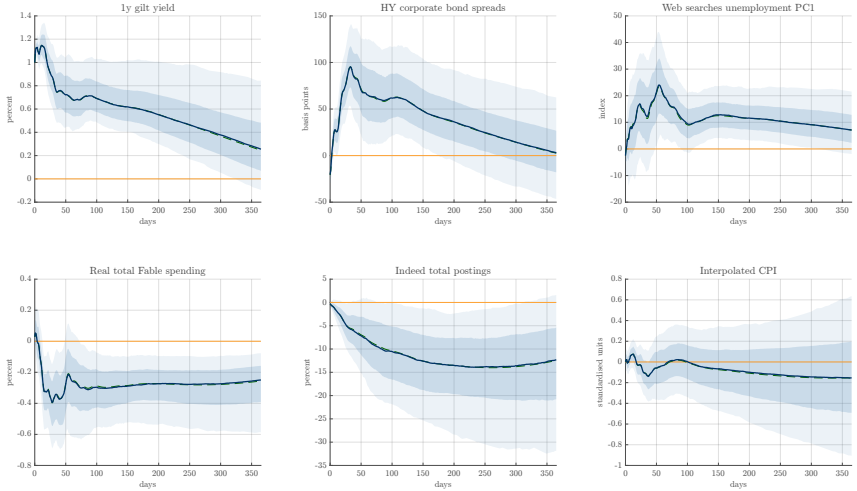


Figure: Proxy-SVAR response to Path shock

Ongoing work

- Extending the data to December 2025
- Evaluating the role of rates (mortgages, consumer debt)
- Heterogeneity across consumption categories (COICOP, durables vs nondurables)
- Heterogeneity across households (age/income/region)

Conclusion

Conclusion

- We find that in response to a contractionary monetary policy shock
  - Private consumption falls significantly without a lag,
  - Labour market sentiment deteriorates contemporaneously with consumption
  - Firms are quick in adjusting hiring plans
- Our results suggest that monetary policy which assumes long transmission lags may not be optimal

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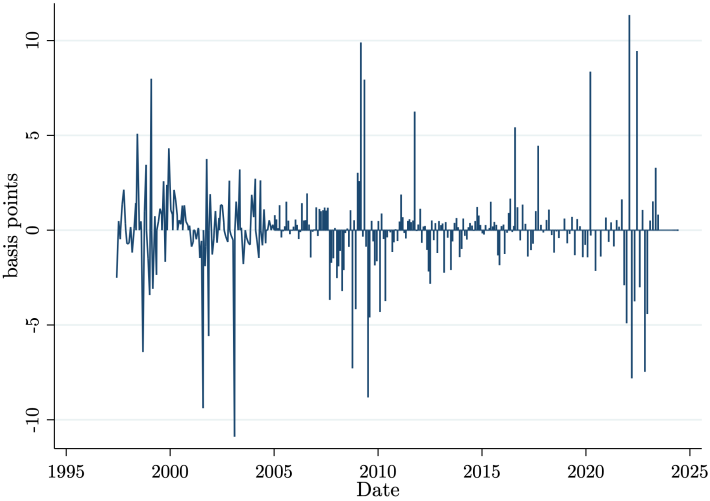
Monetary policy shocks - Path factor



Back to data Back to SVAR