

Rapid Monetary Transmission: High-Frequency Evidence from the UK

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Main findings

- We use a novel dataset of UK credit and debit card spending to evaluate consumer behaviour at high frequency and high granularity.
- We find that consumer spending falls quickly and its response to interest rate surprises is statistically significant.
- The response is concentrated in discretionary spending categories such as restaurants and hotels.
- We complete the picture with the response of online vacancies postings and web-scraped prices which also fall significantly within the quarter of the shock.

Data: Overview

- **Consumption:** Fable (daily, 2017-2023)
 - daily raw data converted into 90-day moving average.
 - each COICOP category deflated using the respective deflator.
 - aggregate index constructed by weighting COICOP categories.
- **Job Vacancies:** Indeed (7-day MA, 2018-2023) [▶ Summary](#)
 - most used page for online job search in the UK (≈ 50 m visits per month).
- **Prices:** PriceStats (7-day MA, 2008-2023) [▶ Summary](#)
 - formerly Billion Prices Project, Cavallo and Rigobon (2016)
 - scrapes daily online prices of goods and services (60% of CPI weights).
 - remaining "offline" prices proxied using related goods with similar developments.
 - weighted with CPI weights.
- **High-frequency monetary policy shocks:** Braun et al. (2023)

Data: Fable deep-dive

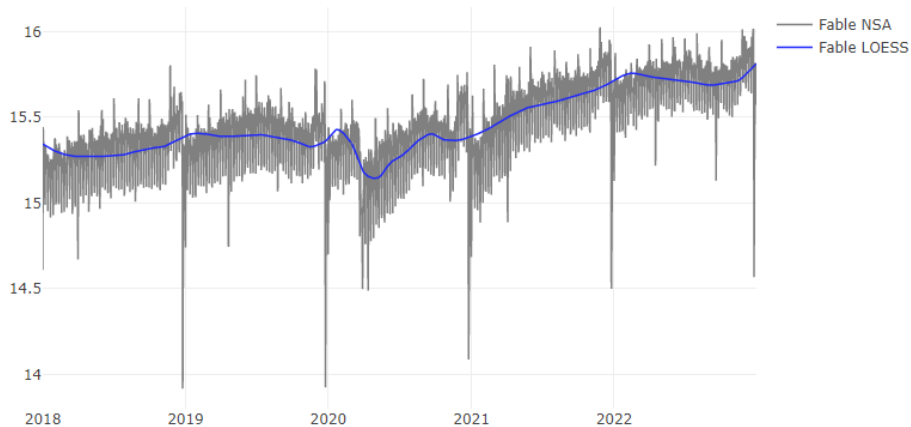
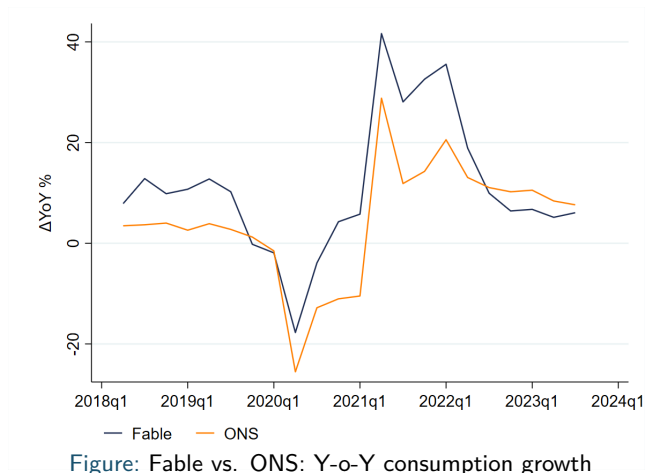
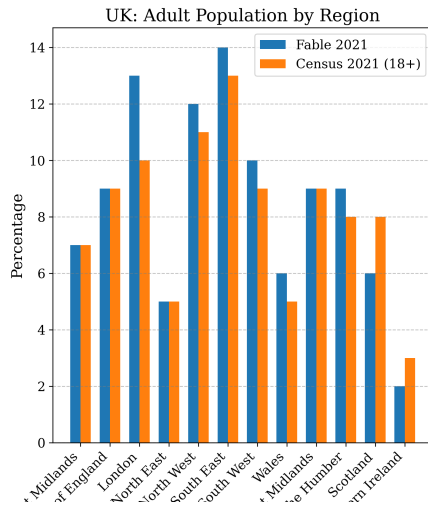
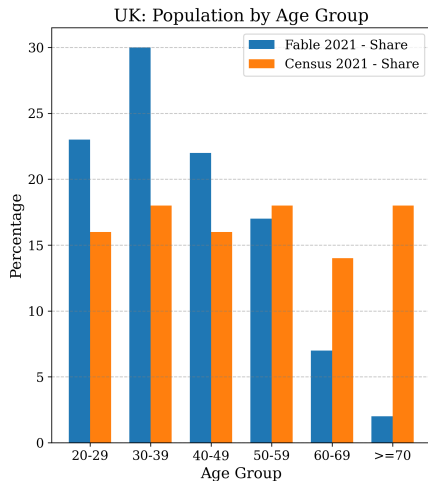


Figure: Fable: Total spending

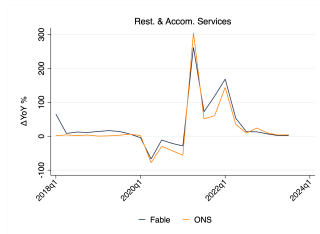
Data: Comparison with national accounts consumption



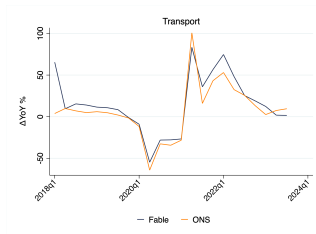
Data: Representativeness



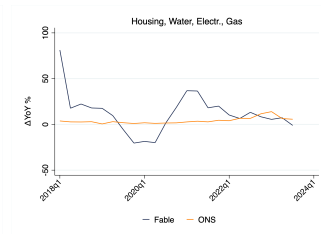
Data: Card spending bias



(a) COICOP 11: Restaurants and accommodation services



(b) COICOP 7: Transport



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

Specification

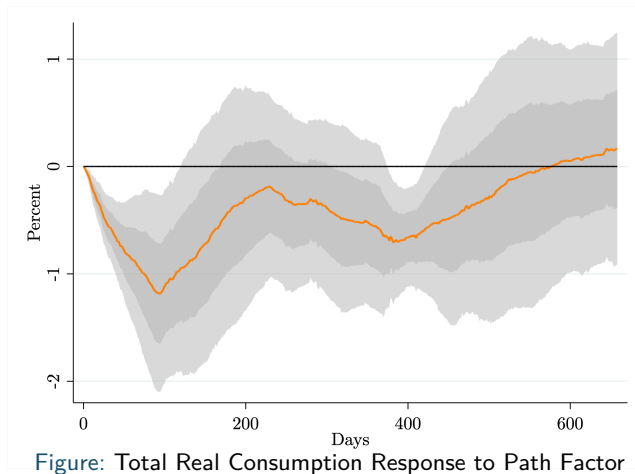
Following Buda et al. (2023), we estimate the short-run effects of UK monetary policy using local projections:

$$y_{t+h} = \alpha_h + \beta_h \text{path}_t + \sum_{\ell=1}^{90} \varphi_{h,\ell} y_{t-\ell} + \theta_h \text{cases}_t + \delta_h \text{stringency}_t + \varepsilon_{h,t} \quad (1)$$

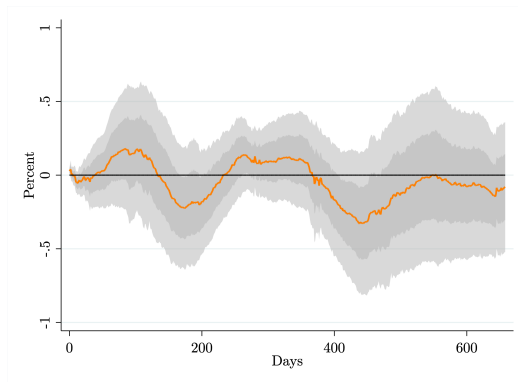
where

- y_t is the year-on-year growth rate of consumption, vacancies, or prices
- path_t is the monetary policy shock
- cases_t is the log of new confirmed cases of COVID-19
- stringency_t is the log of the Oxford stringency index for UK

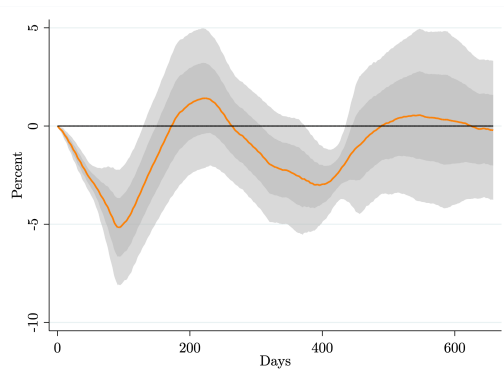
Results: Consumption



Results: Consumption components



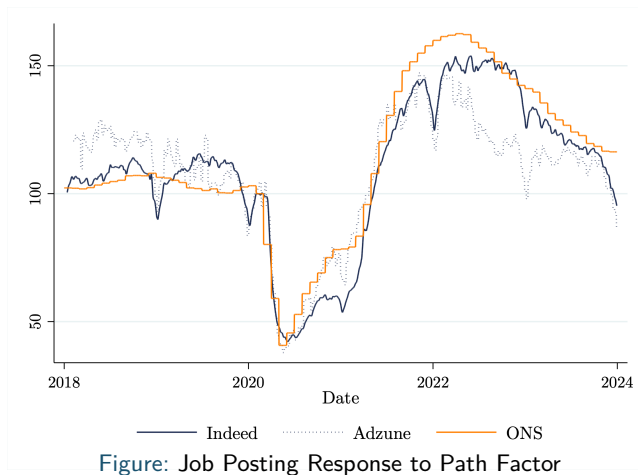
(a) Consumption: Food and non-alcoholic beverages



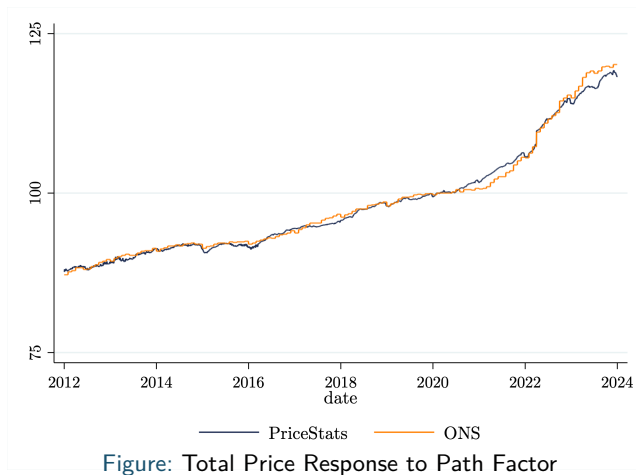
(b) Consumption: Restaurants and accommodation services

Figure: High Frequency Response of Consumption by Selected Sectors to a Monetary Policy Shock

Results: Vacancies



Results: Prices



Summary

- Using a novel dataset of UK credit and debit card spending we show that consumer spending falls quickly and significantly in response to interest rate surprises
- The response is concentrated in discretionary spending categories such as restaurants and hotels while spending on staples does not react
- Online vacancies fall similarly fast after a monetary policy shock
- The aggregate price level falls more slowly and is permanently lower a year after the shock

References I

- Braun, R., S. Miranda-Agrippino, and T. Saha (2023). Measuring monetary policy in the uk: the uk monetary policy event-study database. Technical report, Bank of England.
- Buda, G., V. M. Carvalho, G. Corsetti, J. B. Duarte, S. Hansen, Á. Ortiz, T. Rodrigo, and J. V. Rodríguez Mora (2023). Short and variable lags. Technical Report 22, Robert Schuman Centre for Advanced Studies.
- Cavallo, A. and R. Rigobon (2016, May). The billion prices project: Using online prices for measurement and research. *Journal of Economic Perspectives* 30(2), 151–78.

Appendix: Indeed

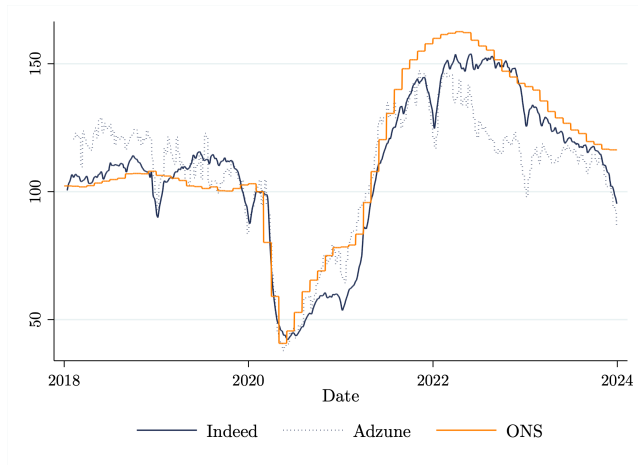


Figure: Indeed vs. ONS Vacancies

Appendix: PriceStats

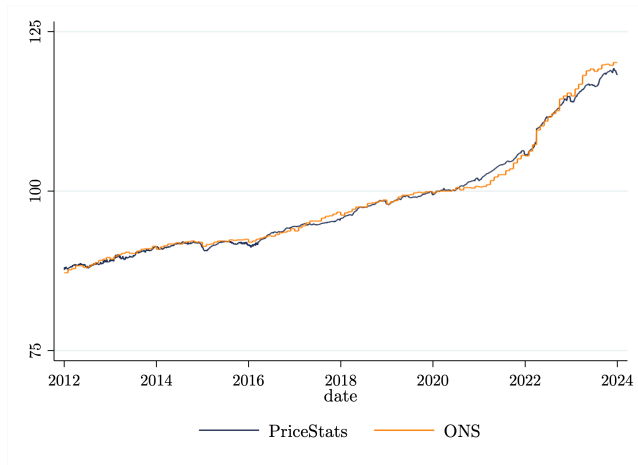


Figure: PriceStats Index vs. CPI