

Online Appendix to “The macroeconomic effects of inflation uncertainty”

A Additional figures and tables

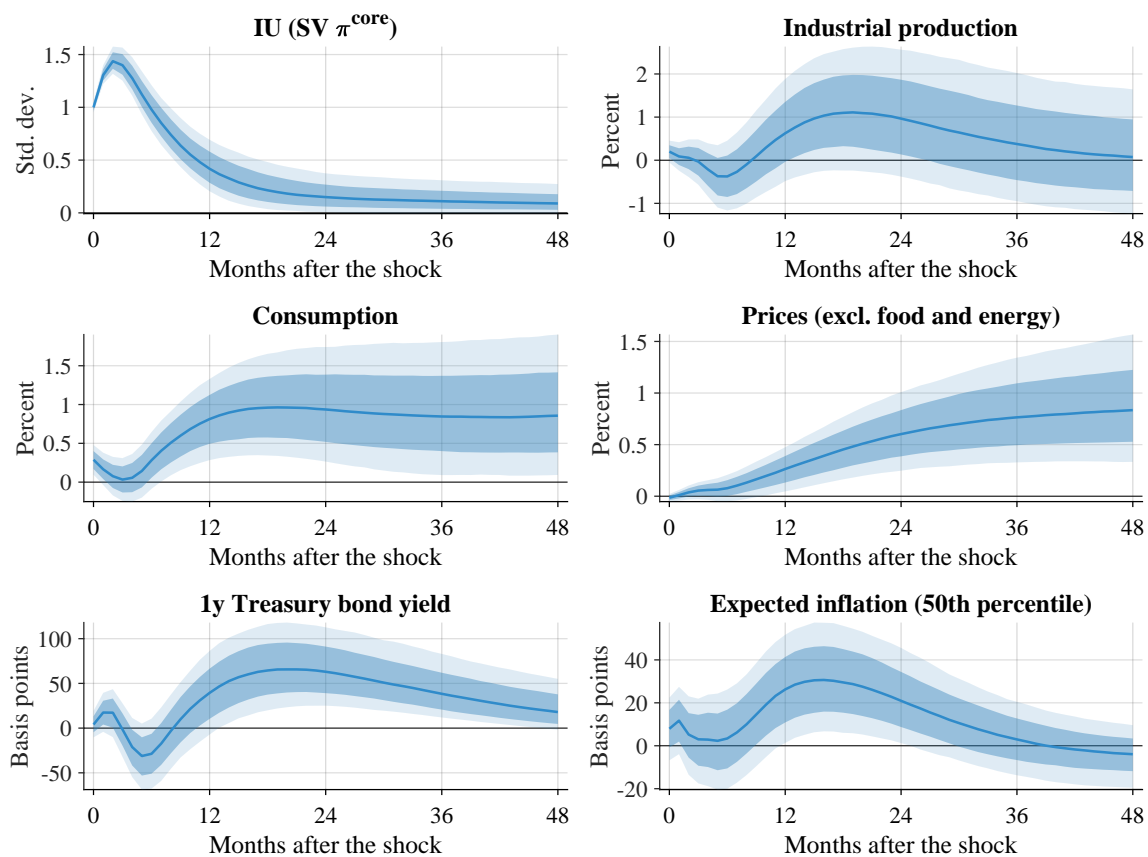


Figure A.1: **Effects of an exogenous increase in core inflation uncertainty: Not purged**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. IU is not purged of macroeconomic and financial uncertainty. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

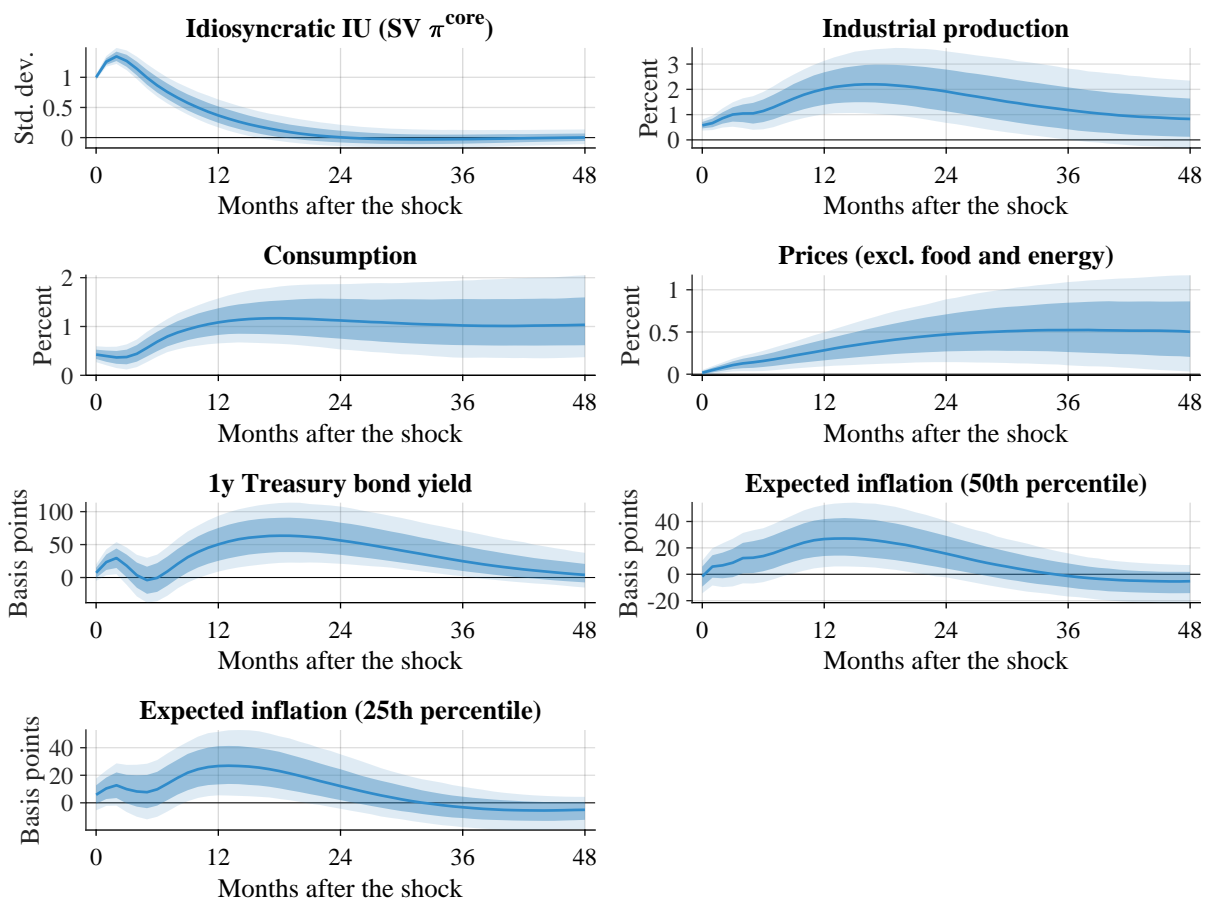


Figure A.2: Effects of an exogenous increase in core inflation uncertainty: 25th percentile of inflation expectations

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

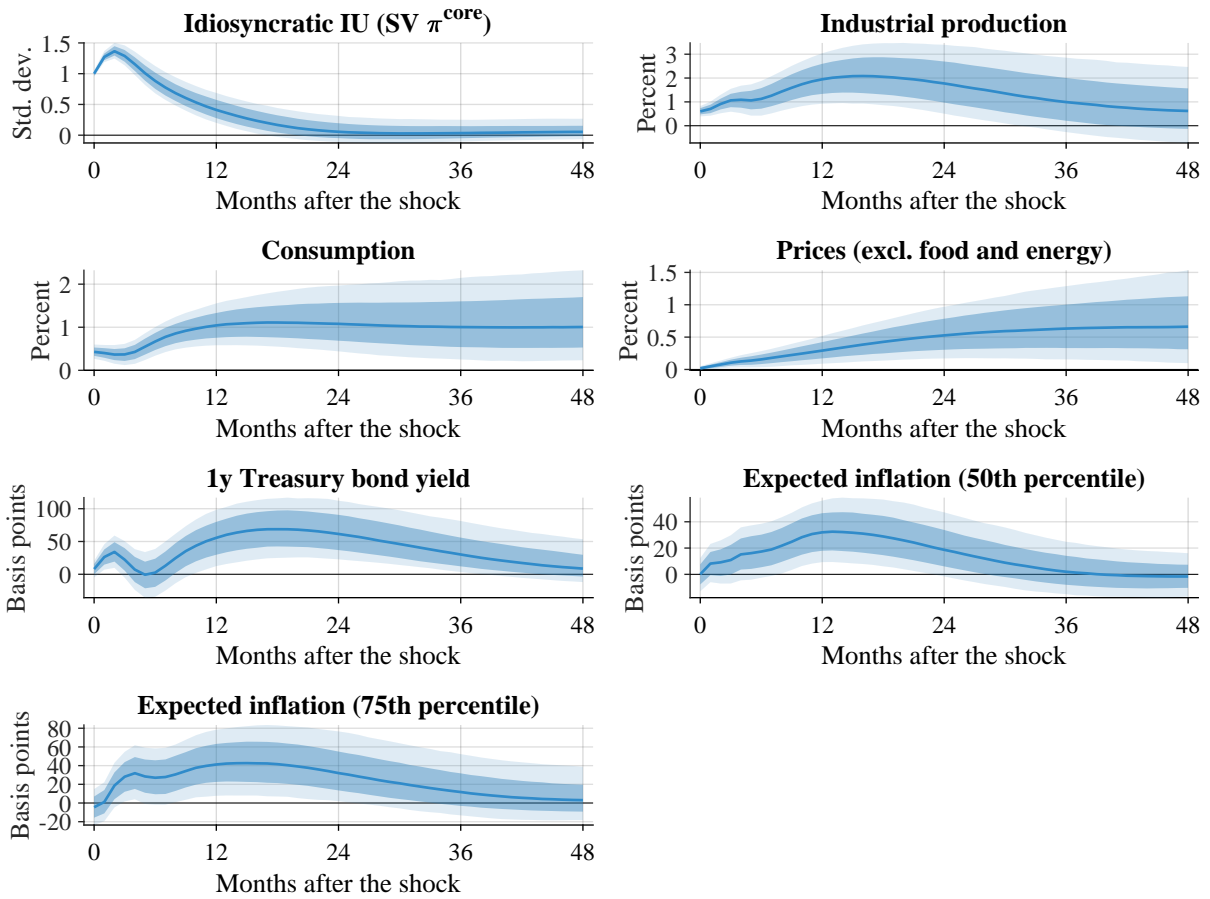


Figure A.3: Effects of an exogenous increase in core inflation uncertainty: 75th percentile of inflation expectations

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

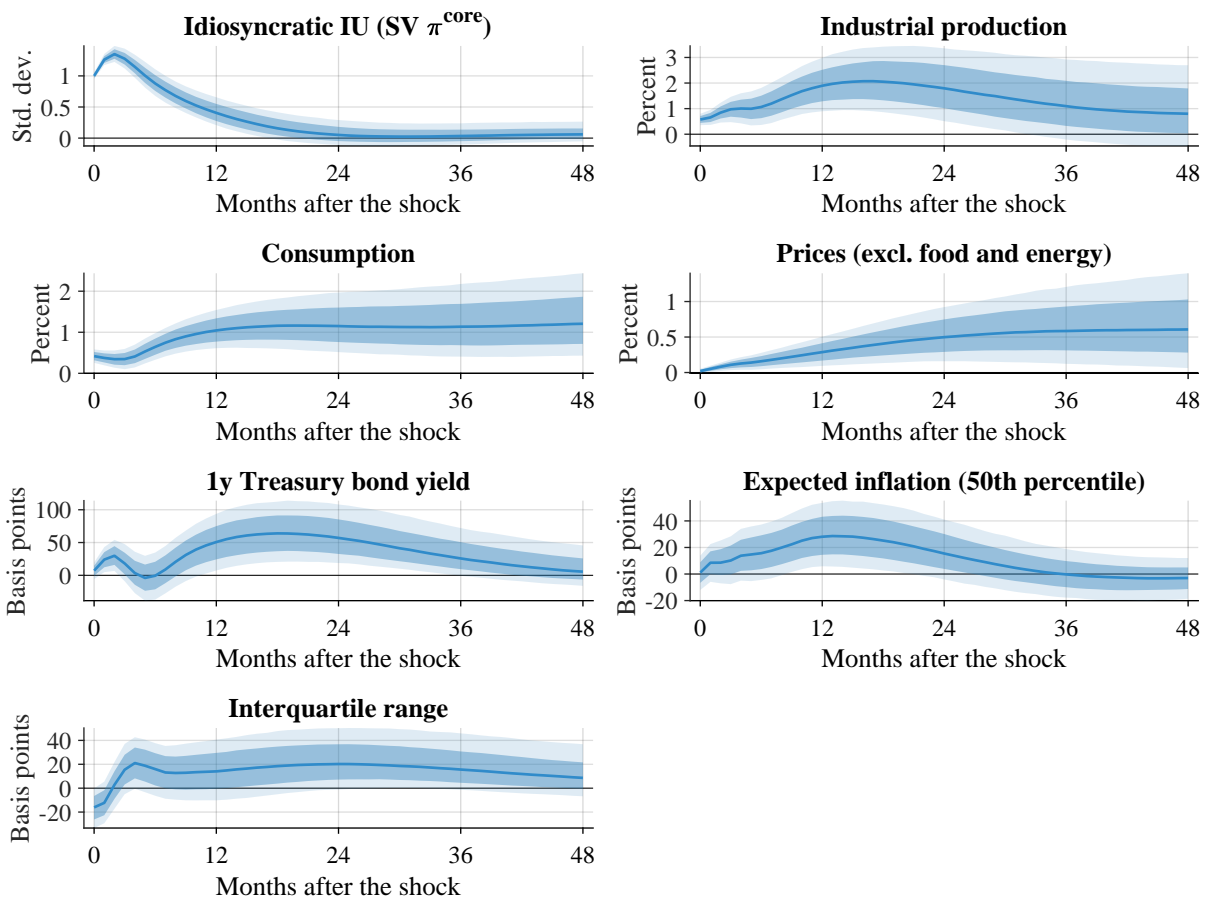


Figure A.4: Effects of an exogenous increase in core inflation uncertainty: Interquartile range of inflation expectations

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

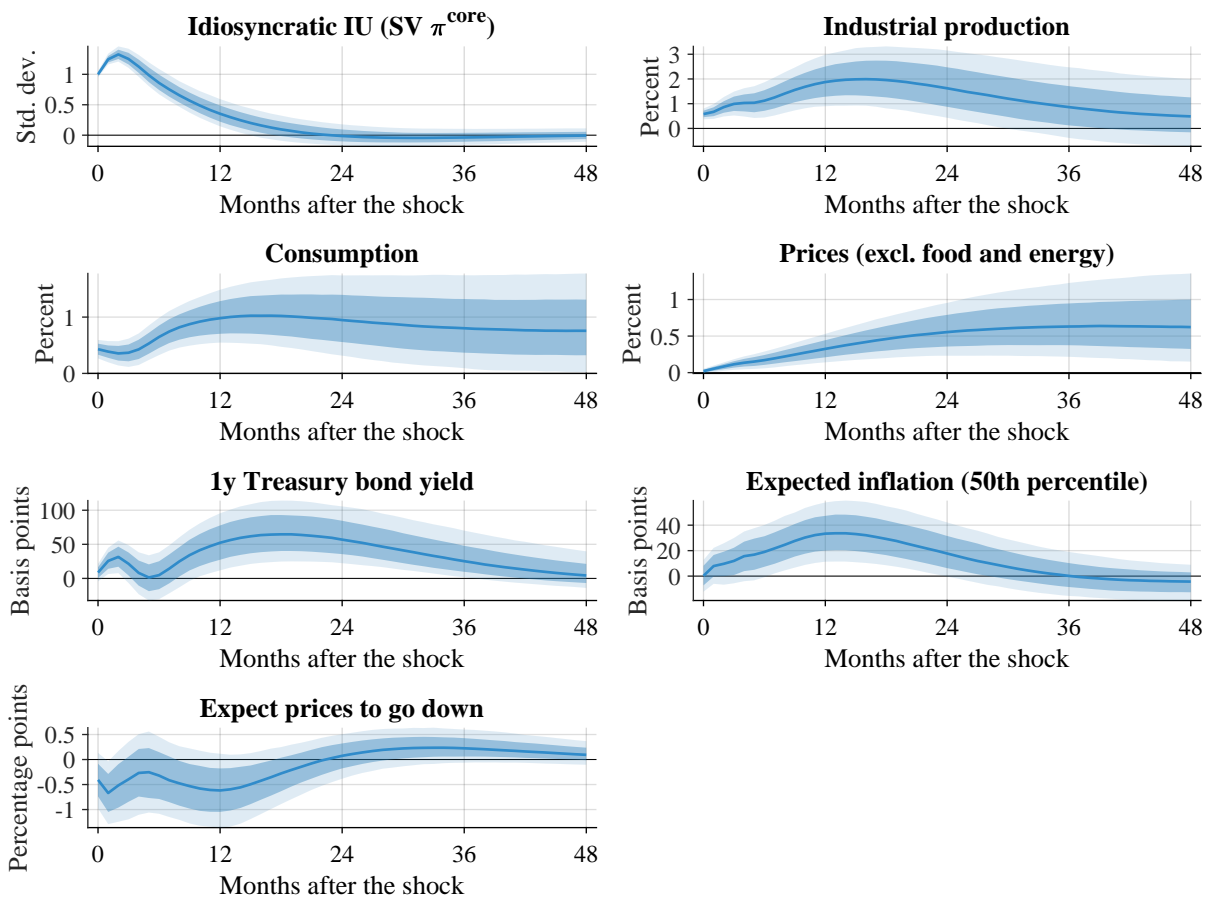


Figure A.5: Effects of an exogenous increase in core inflation uncertainty: Share of survey respondents who expect prices to go down

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

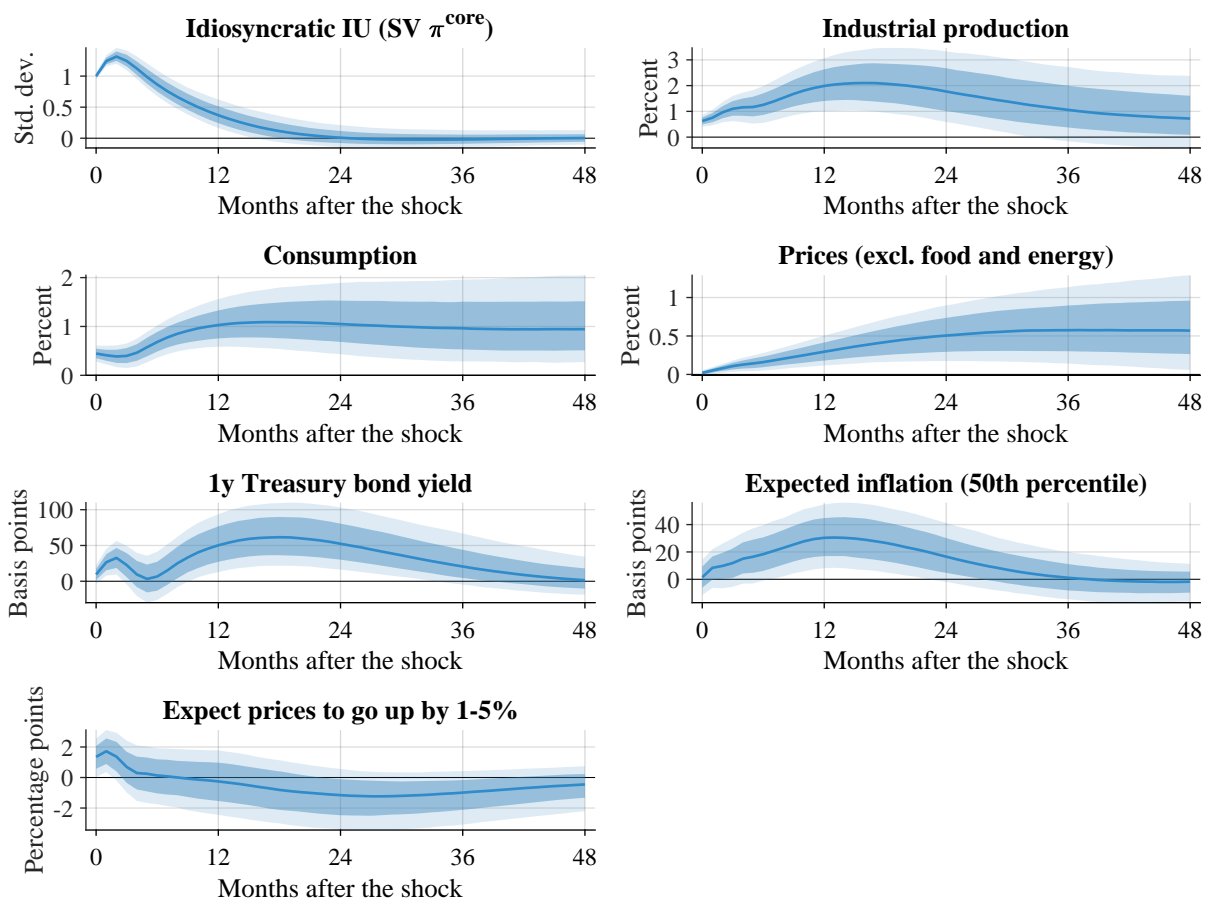


Figure A.6: Effects of an exogenous increase in core inflation uncertainty: Share of survey respondents who expect prices to go up by 1-5%

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

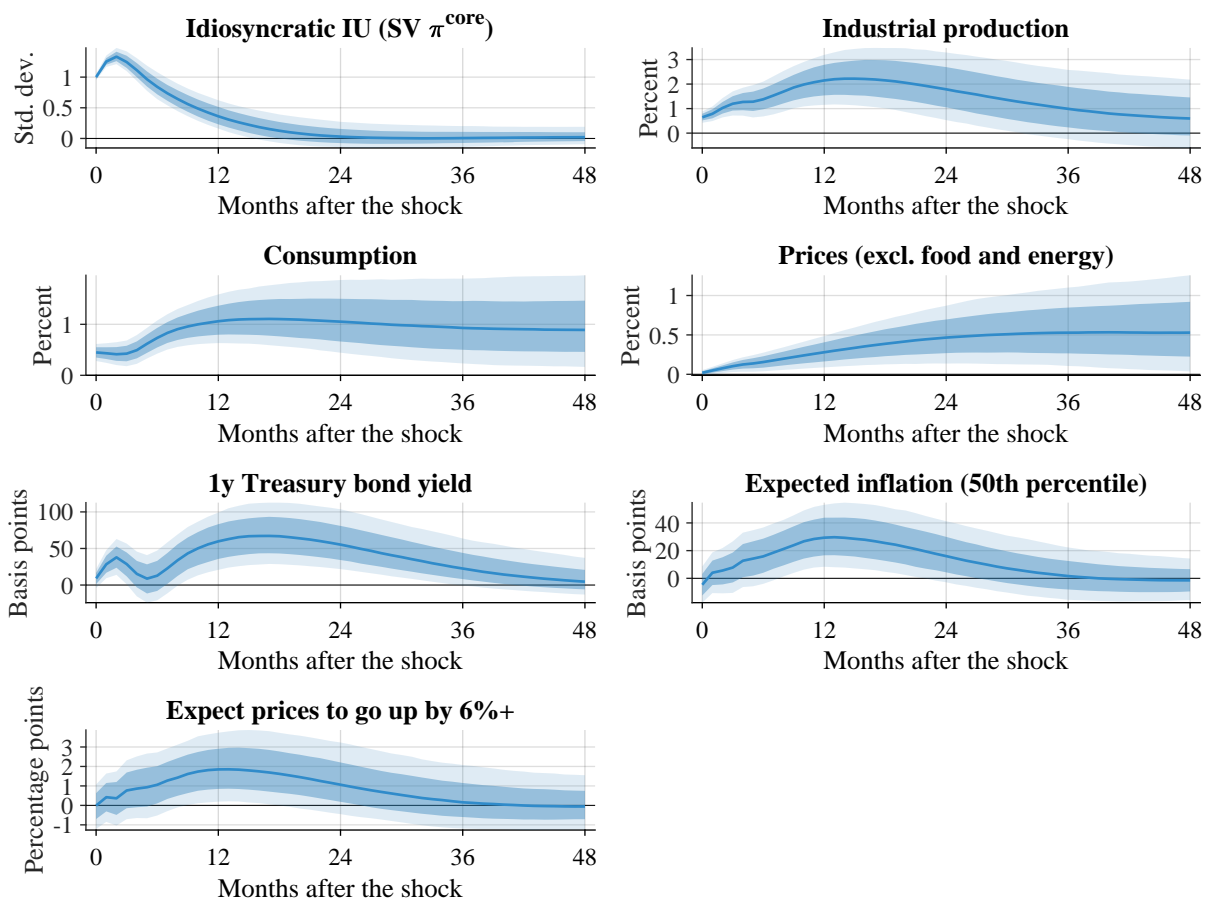


Figure A.7: Effects of an exogenous increase in core inflation uncertainty: Share of survey respondents who expect prices to go up by 6% or more

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

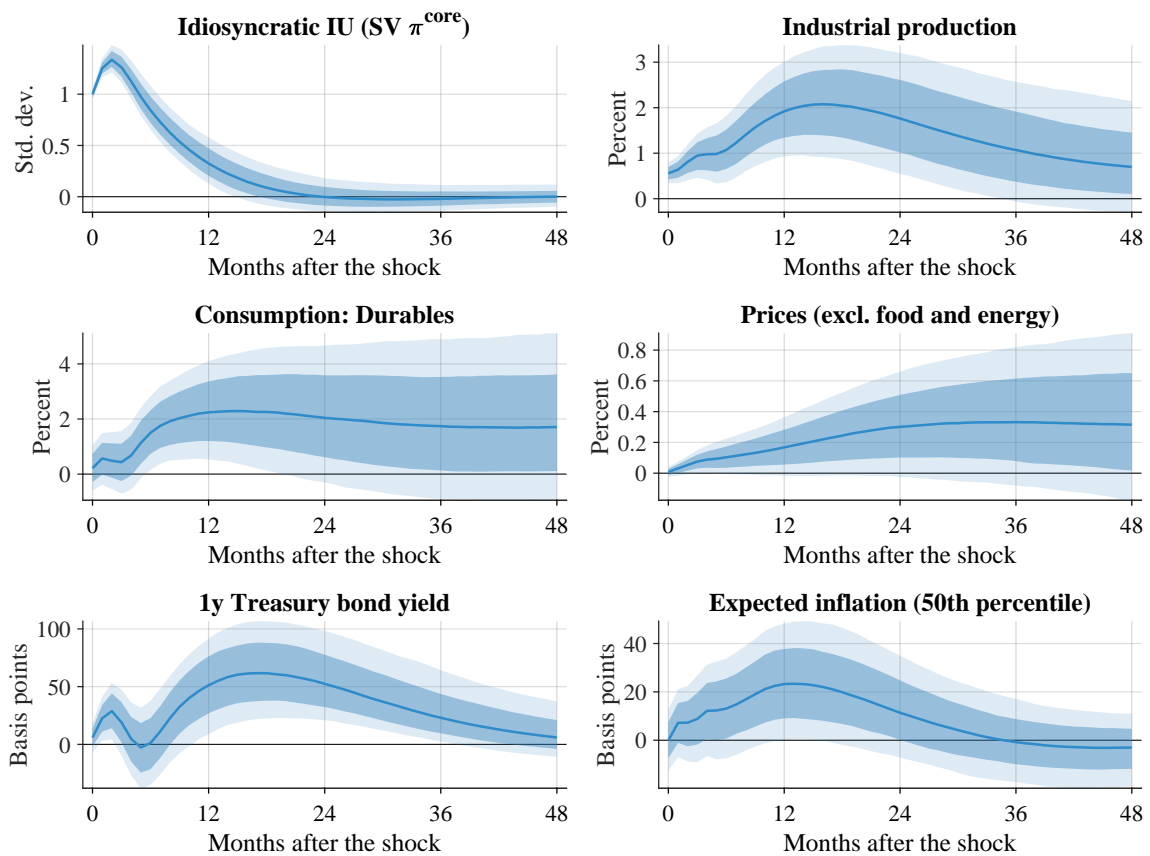


Figure A.8: Effects of an exogenous increase in core inflation uncertainty: Durables consumption

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

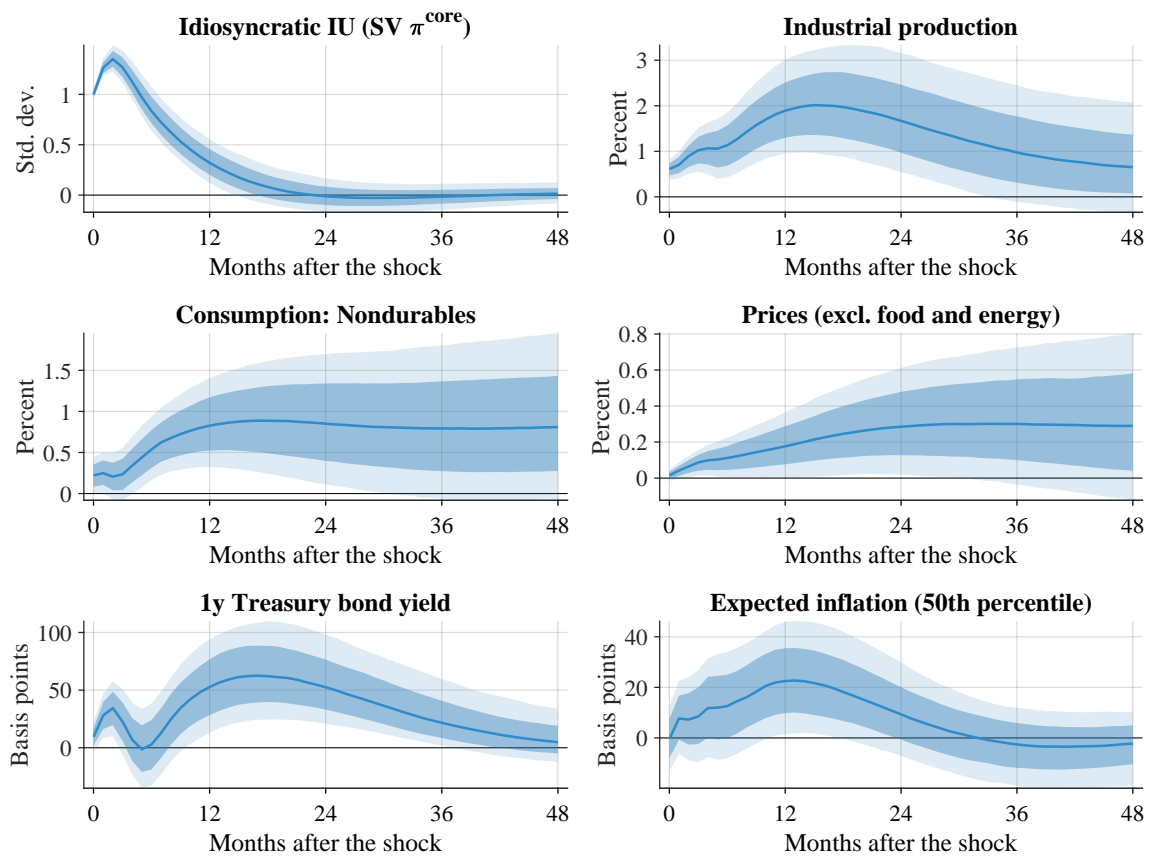


Figure A.9: Effects of an exogenous increase in core inflation uncertainty: Nondurables consumption

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

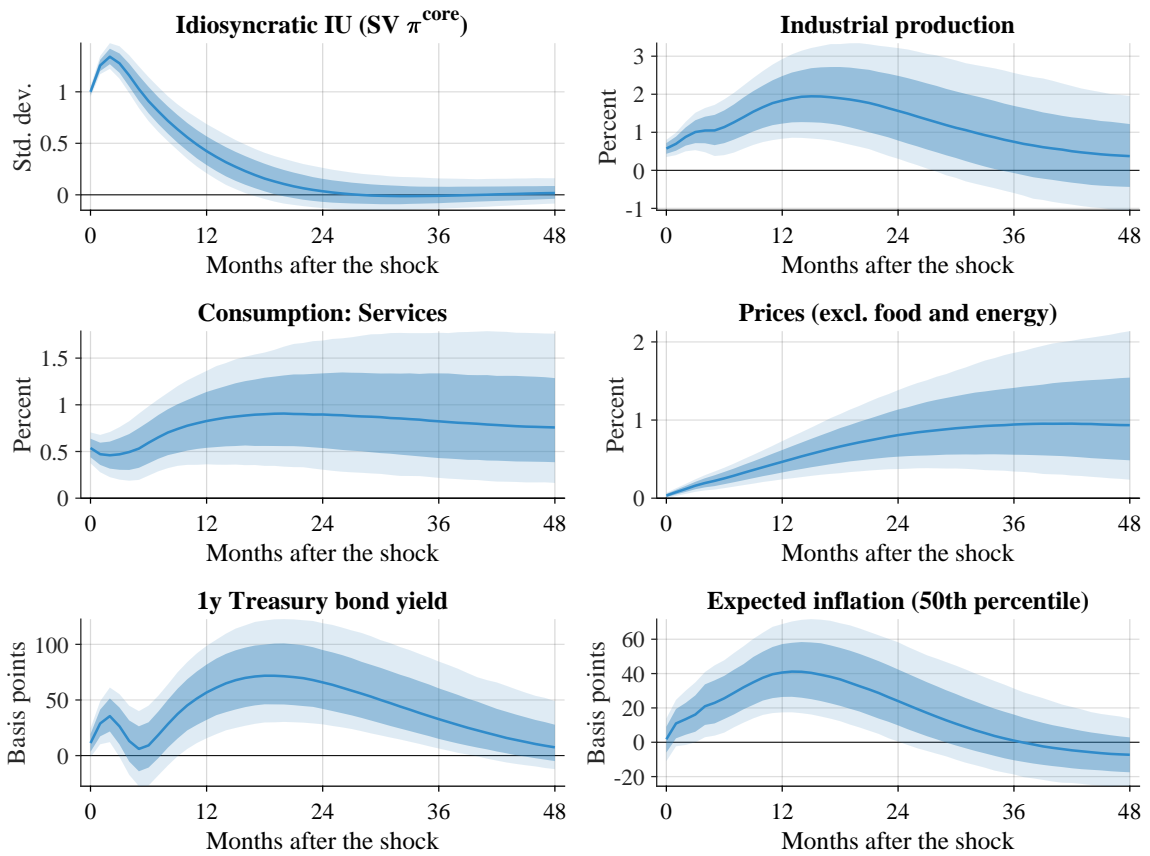


Figure A.10: **Effects of an exogenous increase in core inflation uncertainty: Services consumption**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

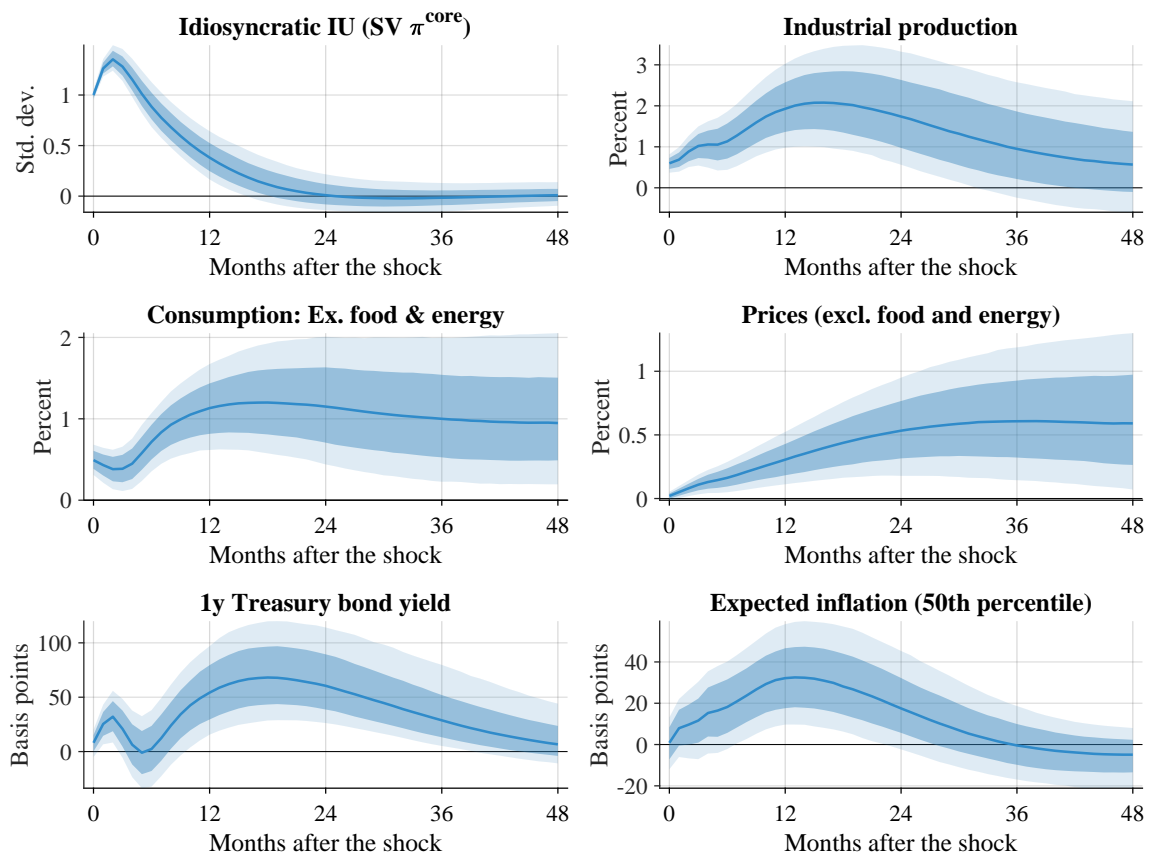


Figure A.11: **Effects of an exogenous increase in core inflation uncertainty: Consumption excluding food and energy**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

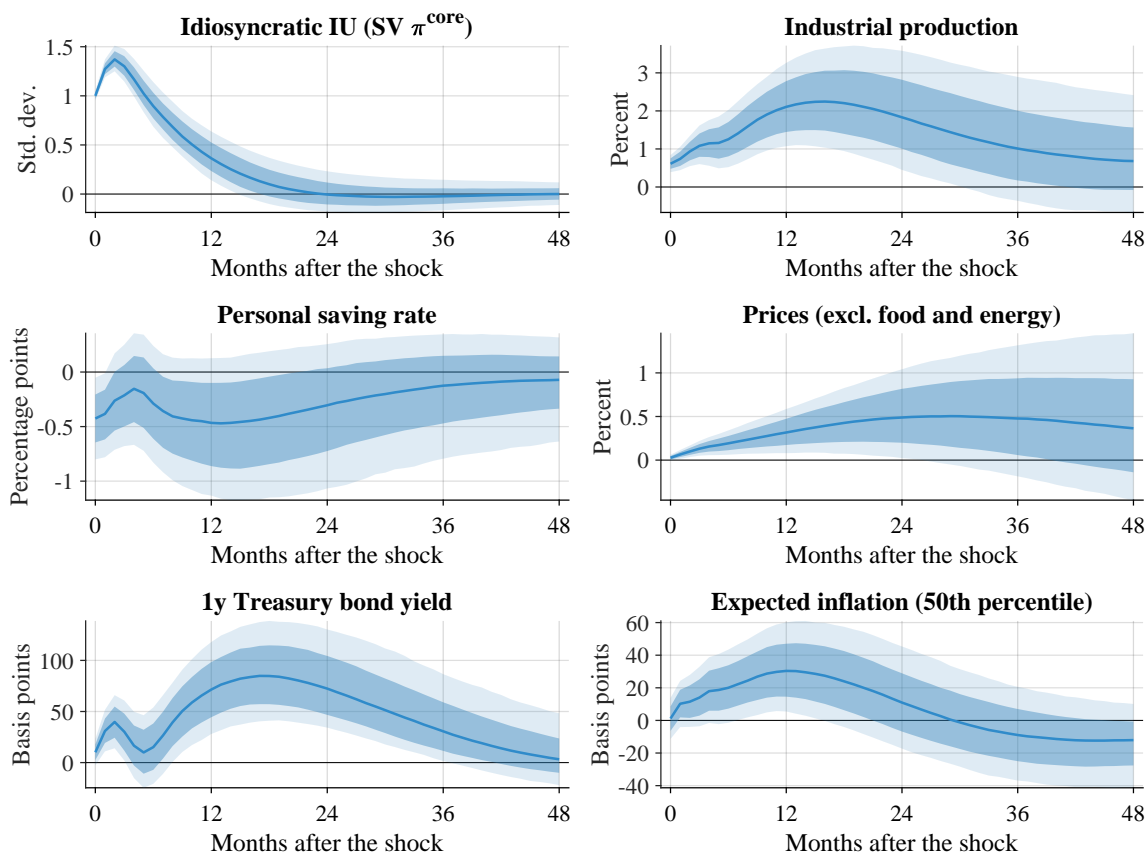


Figure A.12: **Effects of an exogenous increase in core inflation uncertainty: Personal saving rate**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

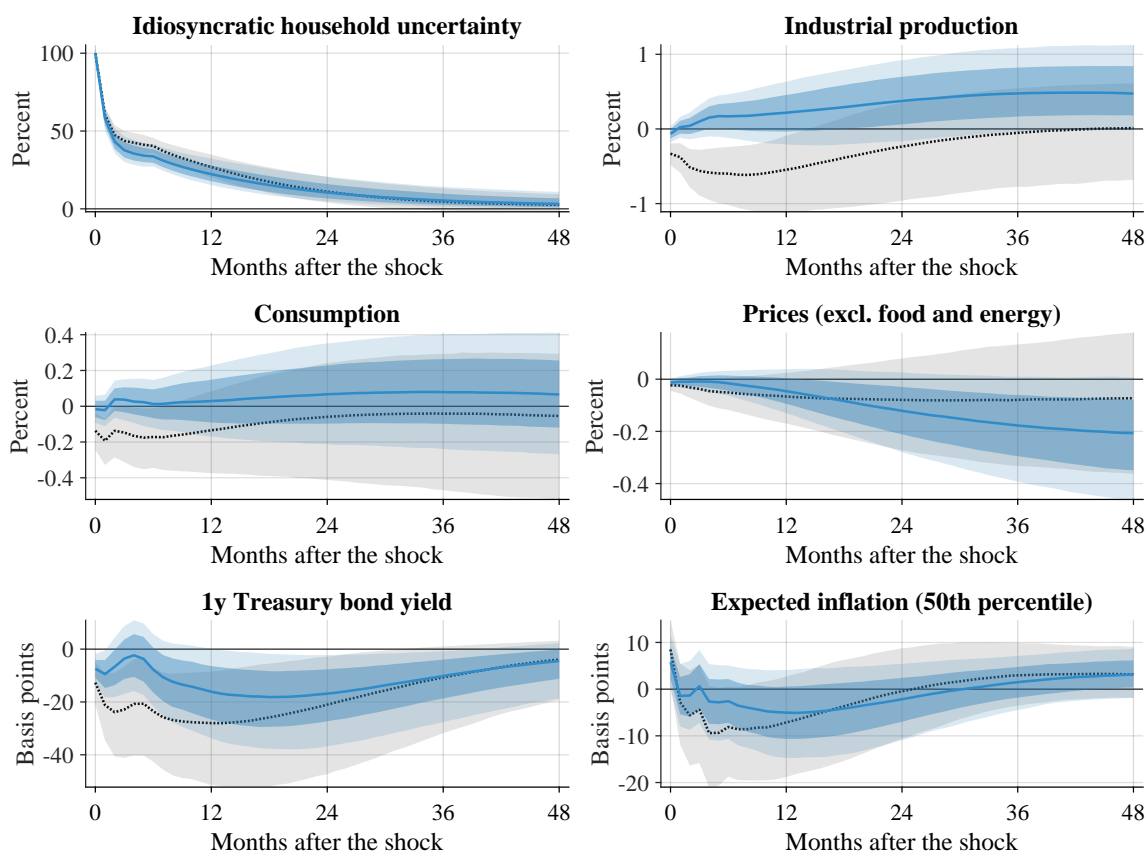


Figure A.13: **Effects of an exogenous increase in headline inflation uncertainty: Binder (2017)'s measure of household inflation uncertainty**

Note: Impulse responses to a one-standard-deviation positive shock to the uncertainty of headline inflation, identified using recursive zero restrictions with inflation uncertainty ordered first. Posterior median (blue solid line) with 68% (dark blue) and 90% (light blue) credible regions. Headline inflation uncertainty is measured by the share of households in the Michigan Survey who are uncertain about their one-year-ahead inflation expectations as proposed by Binder (2017). Black dotted lines denote the posterior median of the responses computed without purging inflation uncertainty of macroeconomic and financial uncertainty, with 90% credible regions shaded in gray.

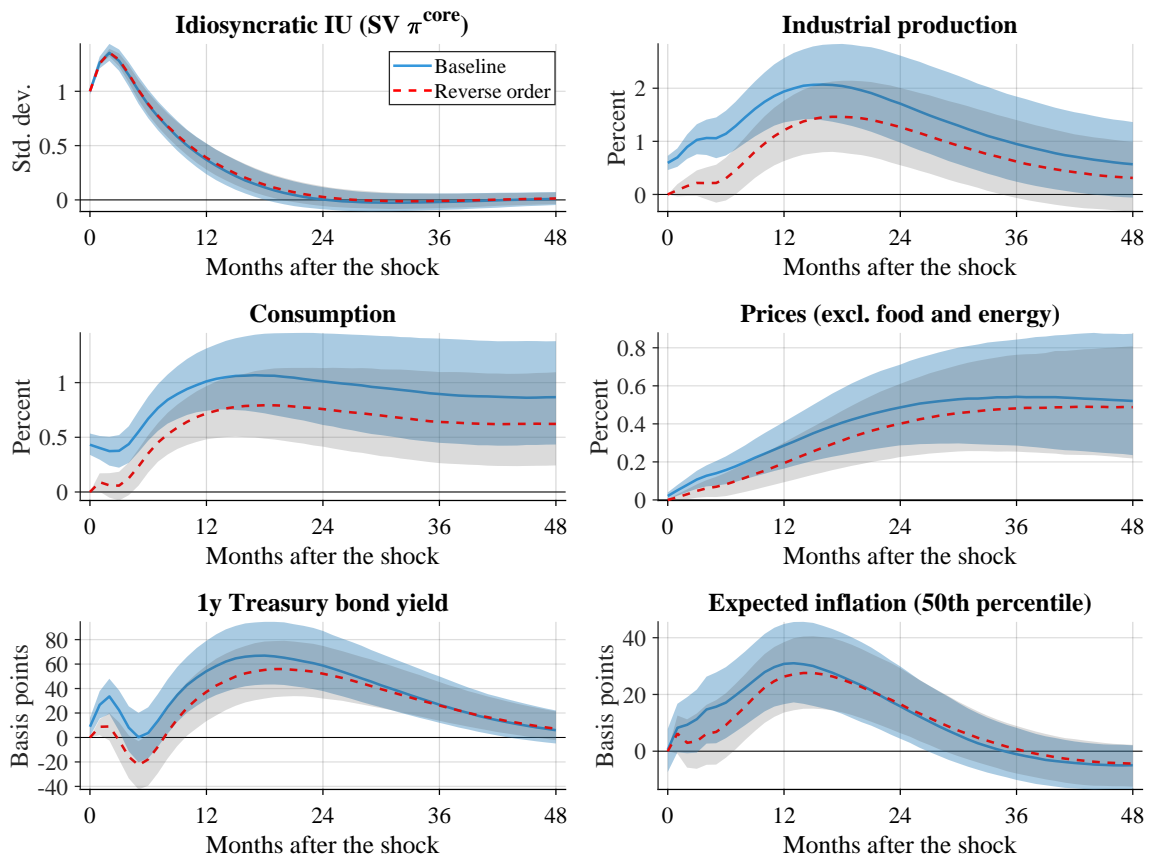


Figure A.14: **Effects of an exogenous increase in core inflation uncertainty: Reversed order**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions. Posterior median of impulse responses with IU ordered first (blue solid lines) with 68% credible interval (blue area). Posterior median of impulse responses with IU ordered last (red dashed lines) with 68% credible interval (gray area).

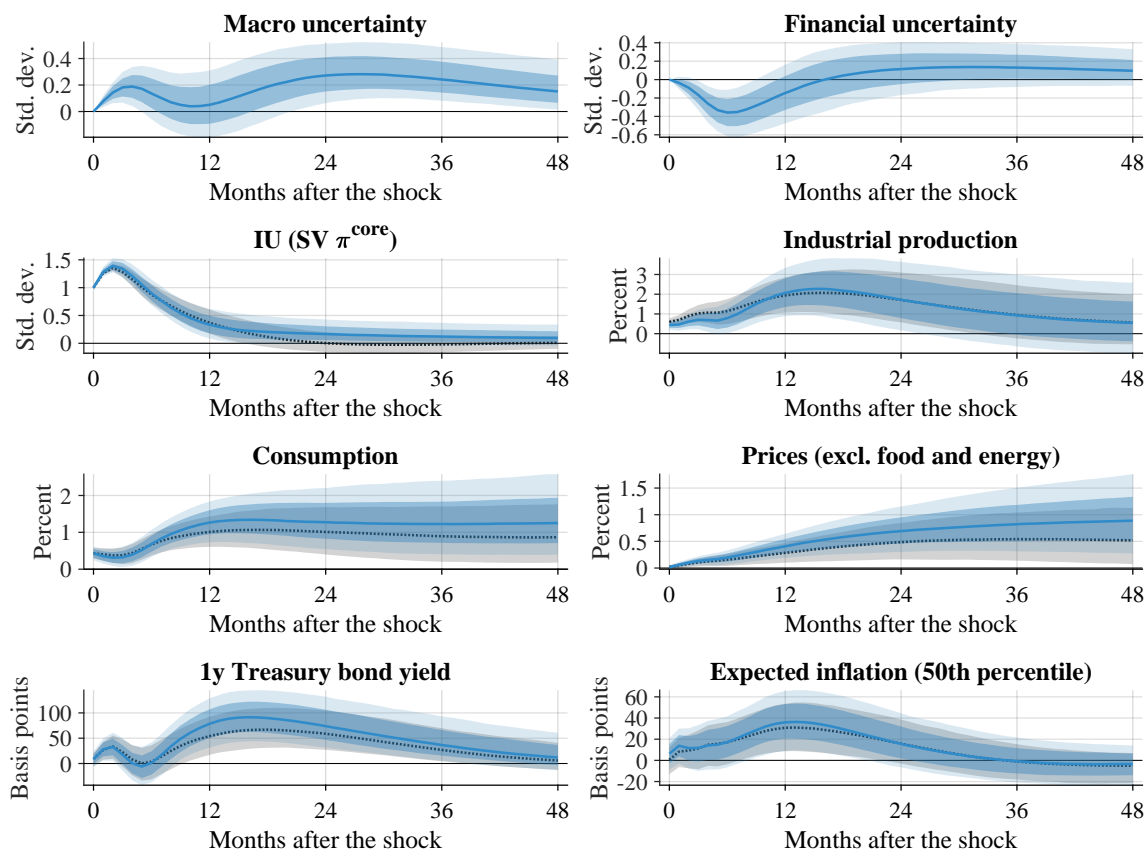


Figure A.15: **Effects of an exogenous increase in core inflation uncertainty: Adding macroeconomic and financial uncertainty to the VAR**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions. IU is ordered below the measures of macroeconomic and financial uncertainty proposed by Jurado et al. (2015) in a recursive VAR. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions. The figure also shows the baseline IRFs (black dotted lines) with the 90% credible interval shaded in gray.

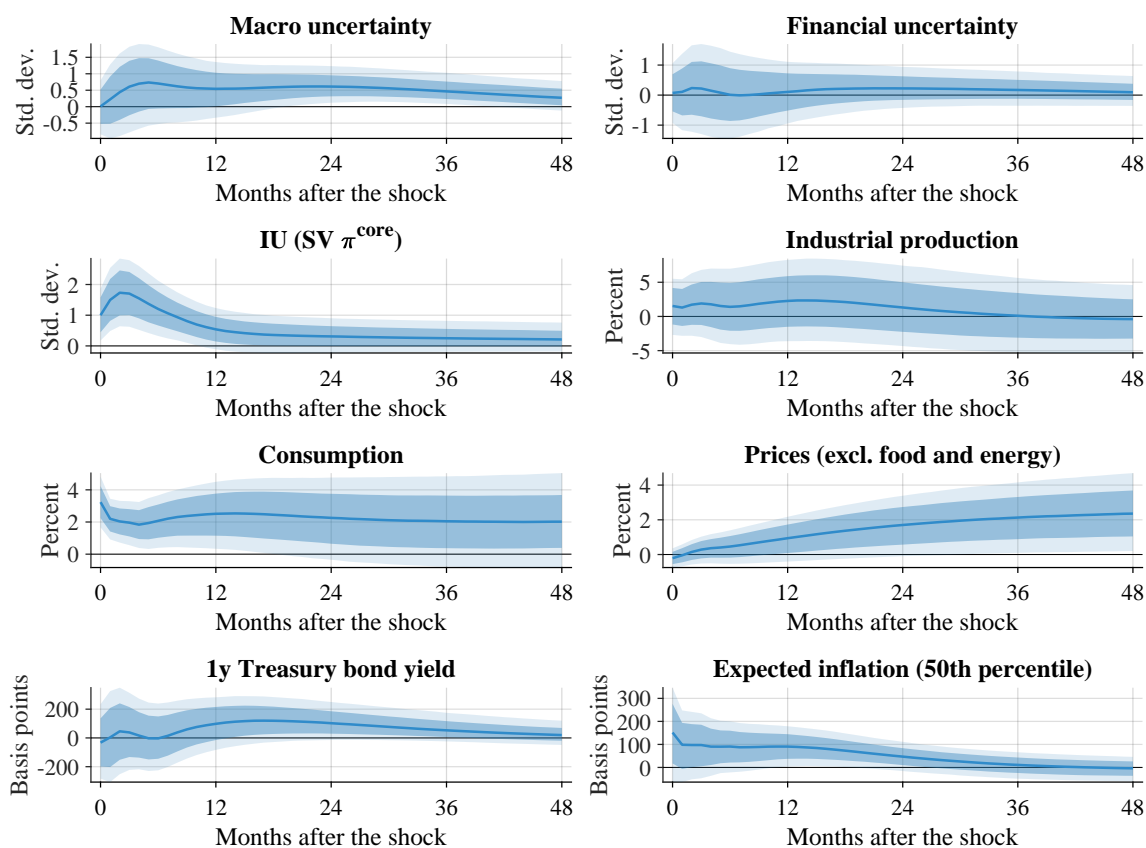


Figure A.16: **Effects of an exogenous increase in core inflation uncertainty: Identification using shock-based restrictions I.**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified by imposing the event constraints that the IU shock exceeds the 75th percentile of the distribution of all candidate shocks in February 1979 and March 2021, obtained from different rotations of the Cholesky factor of the reduced-form error variance-covariance matrix (Ludvigson et al., 2021). Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

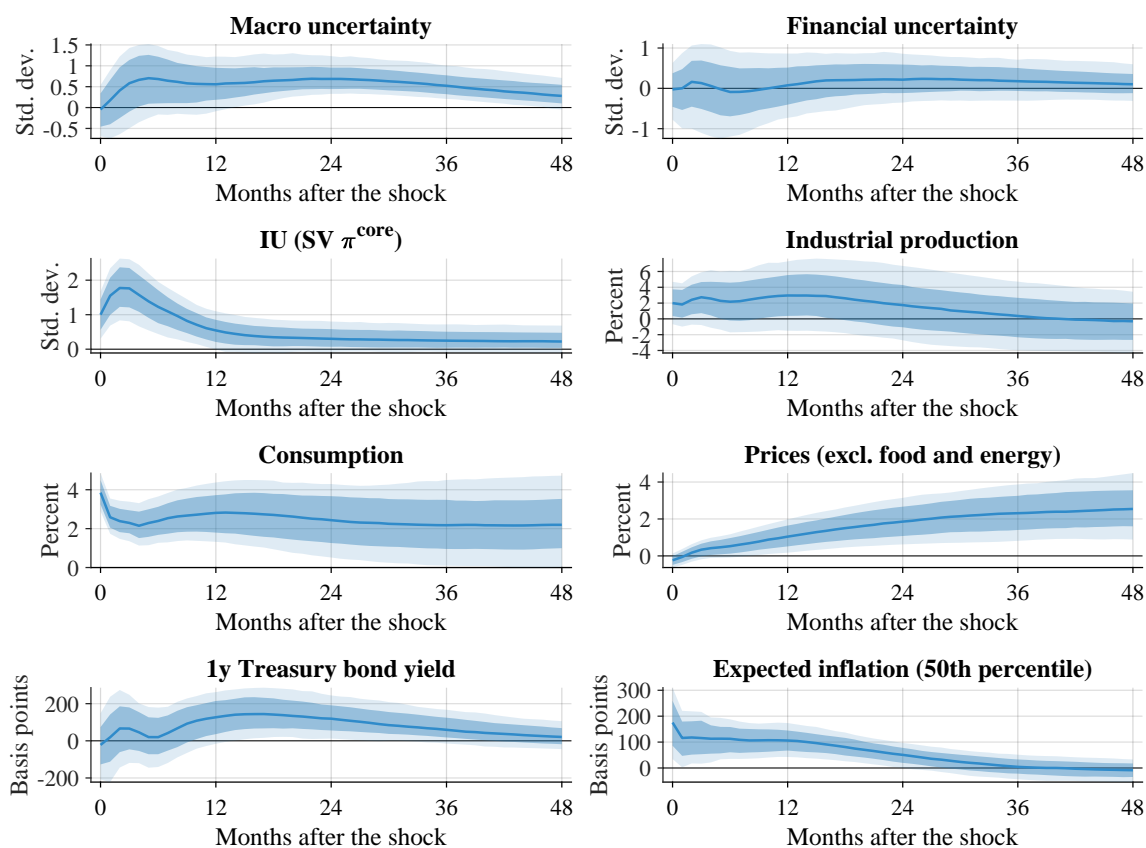


Figure A.17: Effects of an exogenous increase in core inflation uncertainty: Identification using shock-based restrictions II.

Note: Impulse responses to a one-standard-deviation positive IU shock, identified by imposing the event constraints that the IU shock exceeds the 90th percentile of the distribution of all candidate shocks in February 1979 and March 2021, obtained from different rotations of the Cholesky factor of the reduced-form error variance-covariance matrix (Ludvigson et al., 2021). Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions.

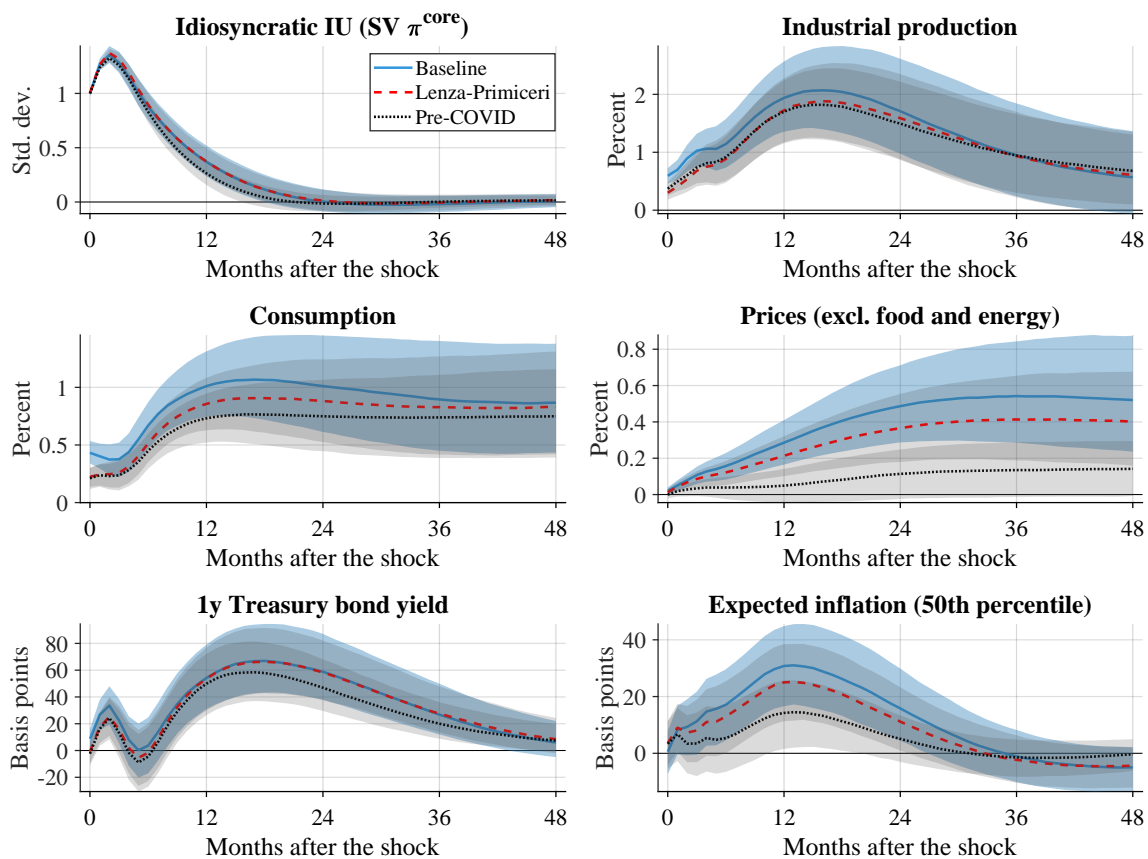


Figure A.18: **Effects of an exogenous increase in core inflation uncertainty: Accounting for the COVID-19 pandemic**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median of impulse responses from the baseline VAR (blue solid lines) with 68% credible interval (blue area). Posterior median of impulse responses from the VAR with time-varying errors proposed by [Lenza and Primiceri \(2022\)](#) (red dashed lines) with 68% credible interval (gray area). Posterior median of impulse responses from a VAR estimated on a sample that ends in February 2020 (black dotted lines) with 68% credible interval (gray area).

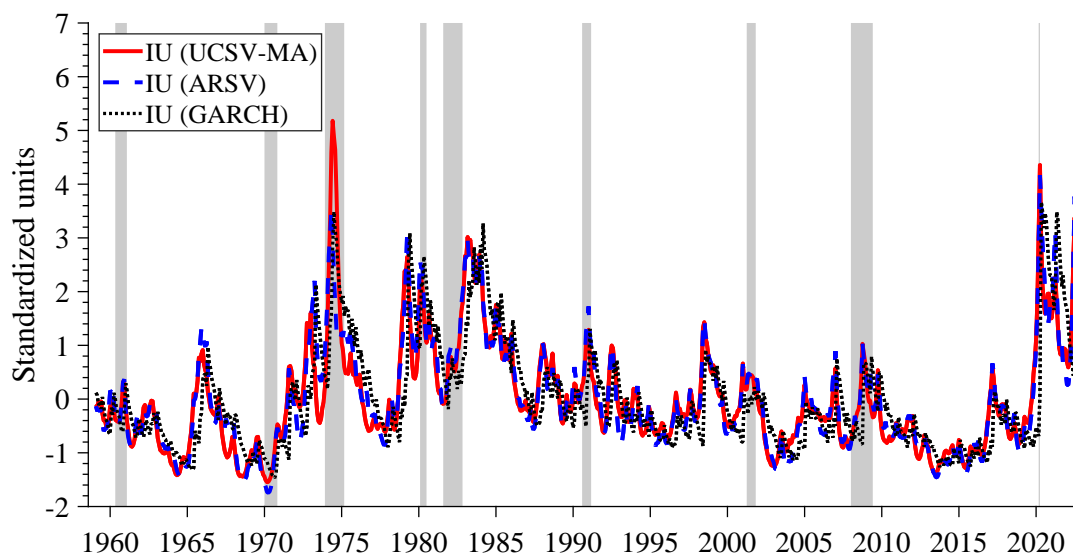


Figure A.19: Estimates of core inflation uncertainty: Alternative models

Note: The figure shows the uncertainty of core inflation estimated using three different models. The red solid line shows the baseline estimates obtained using an UCSV model with MA errors. The blue dashed line shows the estimates obtained using an ARSV model. The black dotted line shows the estimates obtained using a GARCH model. Variables are standardized to have zero mean and unit standard deviation. Shaded areas represent U.S. recessions. Sample: 1959:M2-2022:M8.

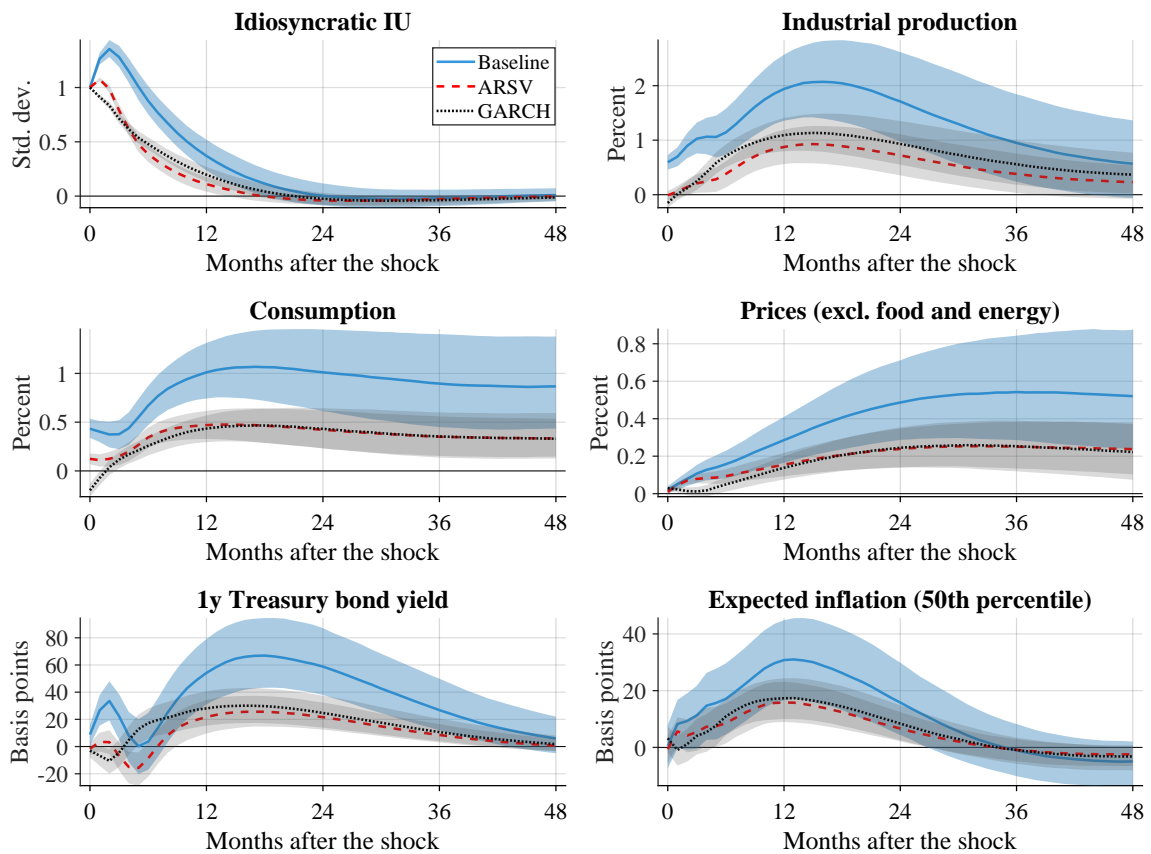


Figure A.20: **Effects of an exogenous increase in core inflation uncertainty: Alternative models of core inflation uncertainty**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median of impulse responses from the baseline VAR (blue solid lines) with 68% credible interval (blue area). Posterior median of impulse responses from a VAR with IU estimated with an ARSV model (red dashed lines) or a GARCH model (black solid lines) with 68% credible interval (gray areas).

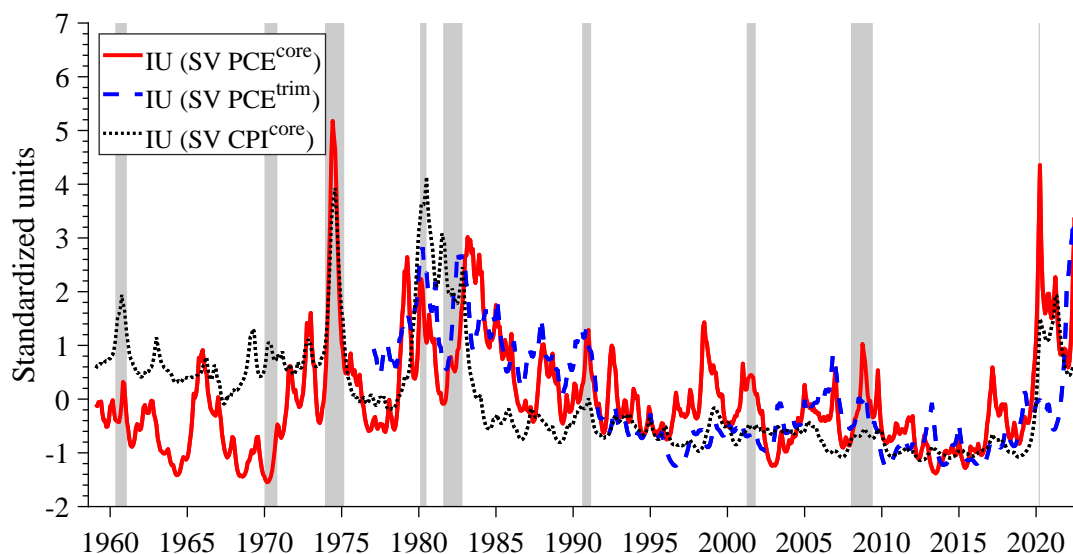


Figure A.21: Estimates of core inflation uncertainty: Alternative measures

Note: The figure shows the uncertainty of core inflation estimated using three different measures of core inflation. The red solid line shows the baseline estimates obtained using the core PCE price index. The blue dashed line shows the estimates obtained using the trimmed-mean PCE price index. The black dotted line shows the estimates obtained using the core CPI. Variables are standardized to have zero mean and unit standard deviation. Shaded areas represent U.S. recessions. Sample: 1959:M2-2022:M8. Data for the trimmed-mean PCE are only available from February 1977 onward.

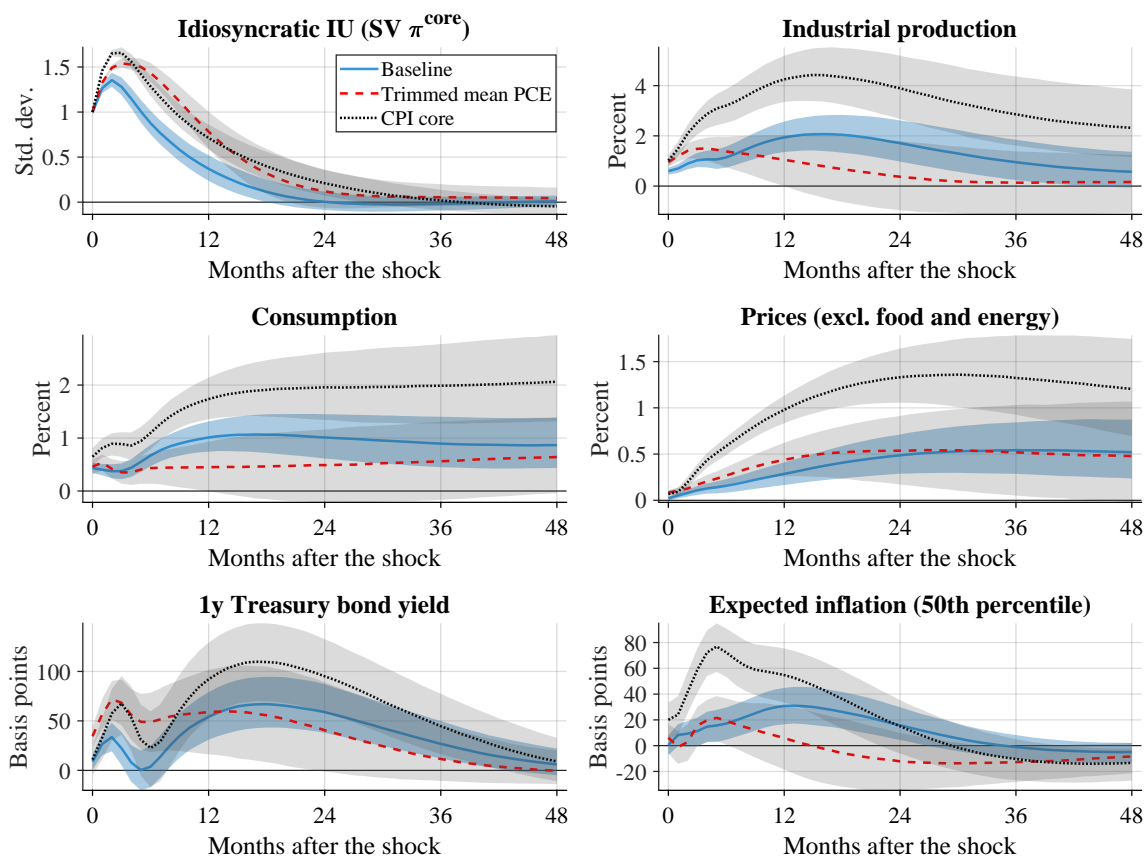


Figure A.22: **Effects of an exogenous increase in core inflation uncertainty: Alternative measures of core inflation**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median of impulse responses from the baseline VAR with core PCE and its uncertainty (blue solid lines) with 68% credible interval (blue area). Posterior median of impulse responses computed with the trimmed-mean PCE and its uncertainty (red dashed lines) with the 68% credible interval (gray area). Posterior median of impulse responses computed with the core CPI and its uncertainty (black dotted lines) with the 68% credible interval (gray area).

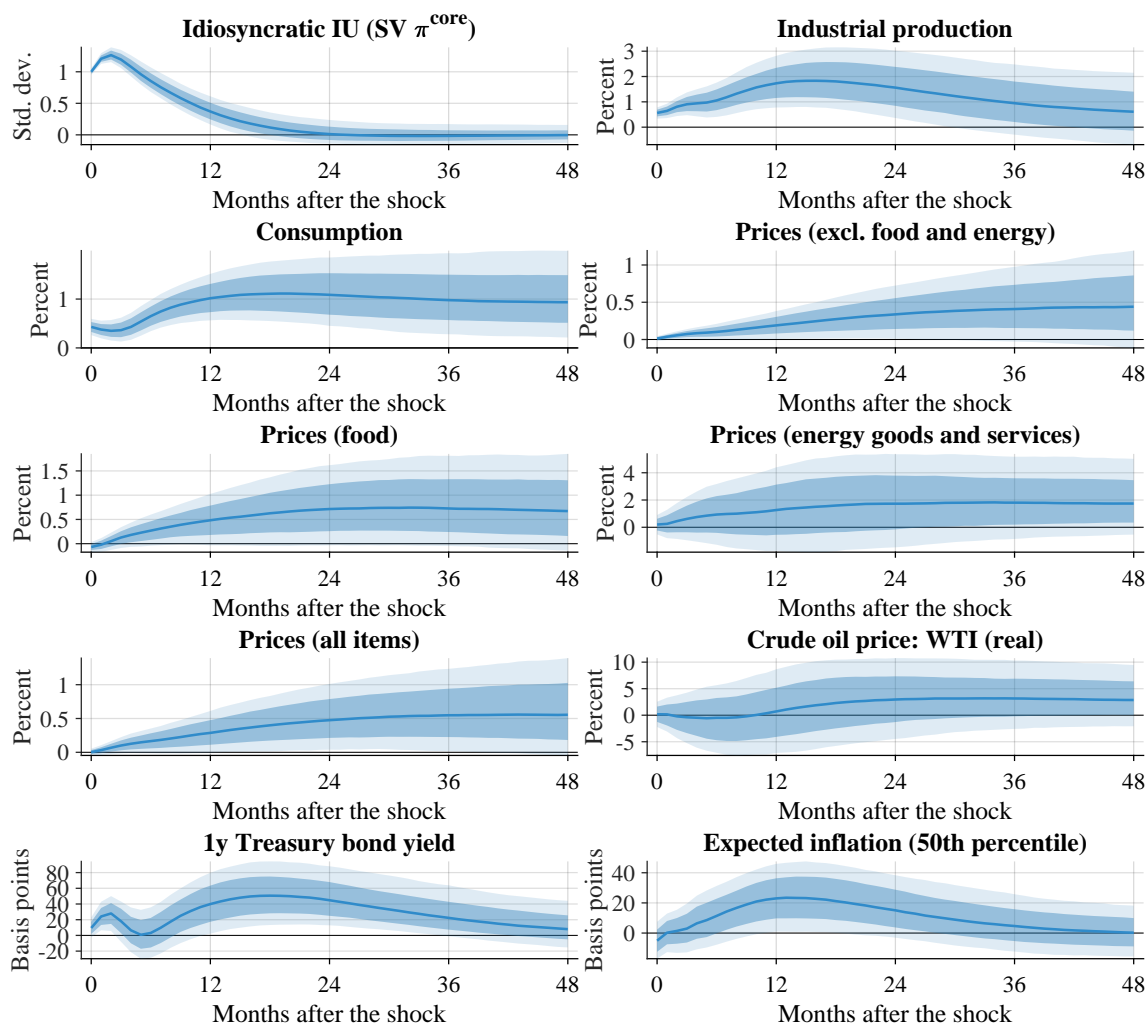


Figure A.23: **Effects of an exogenous increase in core inflation uncertainty: Prices**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median (blue solid lines) with 68% (dark blue) and 90% (light blue) credible regions. In addition to the variables used in the baseline, the VAR model specification also includes the PCE price index for food, the PCE price index for energy goods and services, the headline PCE price index, and the real price of crude oil.

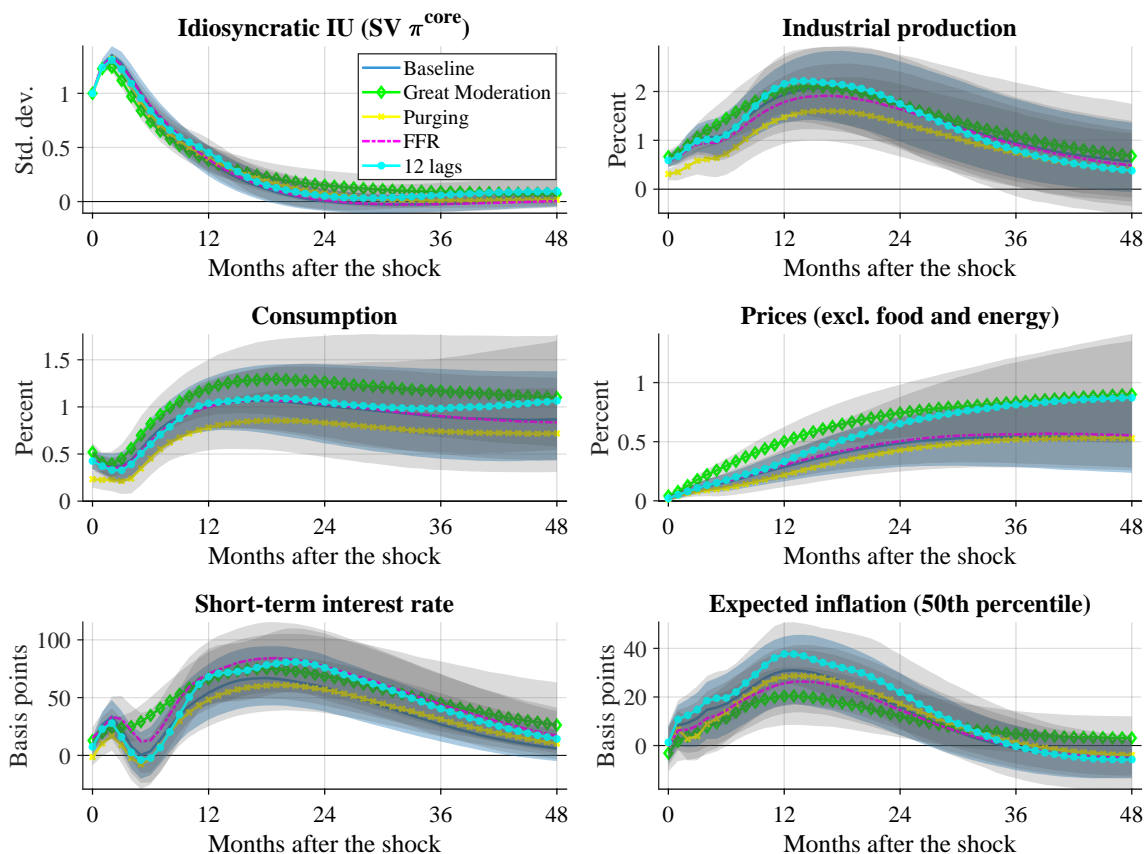


Figure A.24: **Effects of an exogenous increase in core inflation uncertainty: Additional robustness checks**

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median of baseline impulse responses (blue solid lines) with the 68% credible interval (blue area). Posterior median of impulse responses computed for the following robustness checks: VAR estimated since the beginning of the Great Moderation from January 1985 onward (green lines with diamonds); VAR with IU purged of the contemporaneous values and six lags of the [Jurado et al. \(2015\)](#) measures of macro and financial uncertainty (yellow lines with stars); VAR in which the federal funds rate spliced with the [Wu and Xia \(2016\)](#) shadow short rate replaces the 1-year Treasury yield as the interest rate measure (magenta dashed-dotted lines); and VAR estimated with $p = 12$ lags (turquoise lines with bullets). For each robustness check, gray shaded areas denote the 68% credible interval around the median.

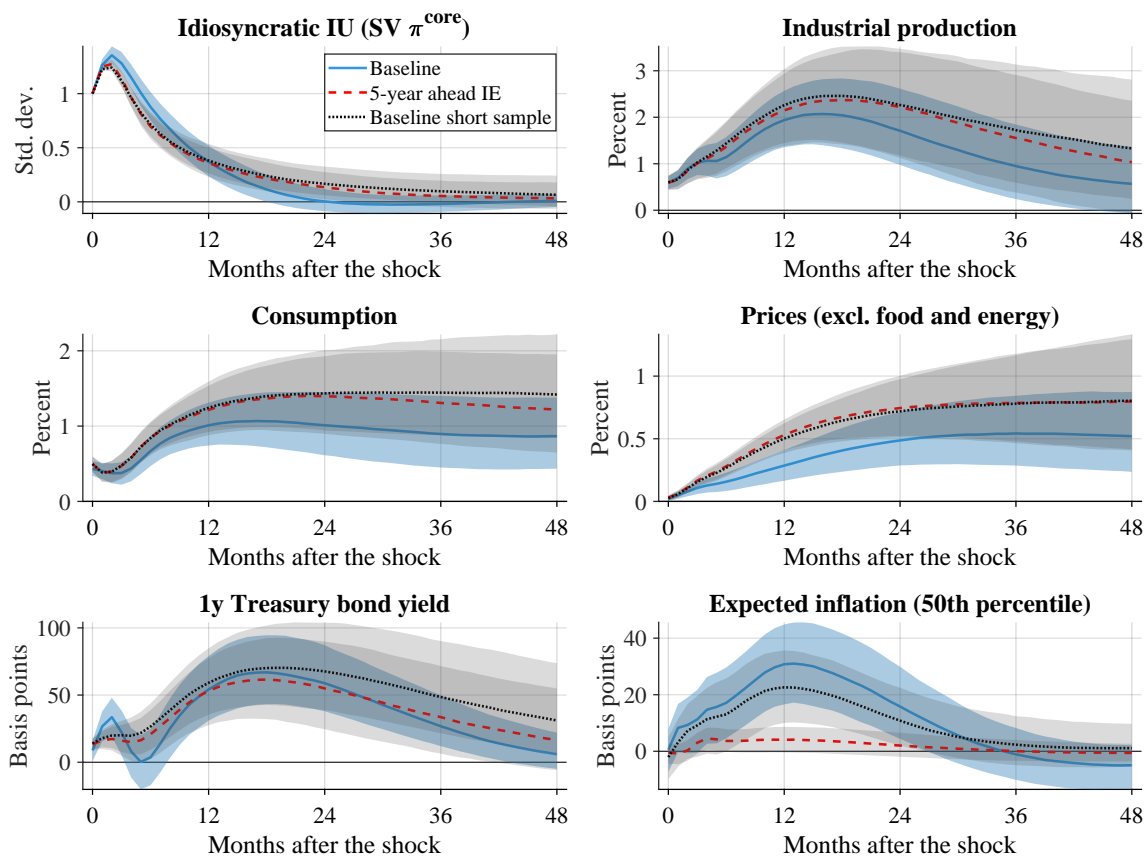


Figure A.25: Effects of an exogenous increase in core inflation uncertainty: Long-run inflation expectations

Note: Impulse responses to a one-standard-deviation positive IU shock, identified using recursive zero restrictions with IU ordered first. Posterior median of baseline impulse responses (blue solid lines), with the 68% credible interval shaded in dark blue (sample: 1978:M1-2022:M6). Posterior median of impulse responses computed with median expected inflation 5-year ahead (red dashed lines), with the 68% credible interval shaded in gray (sample: 1990:M4-2022:M6). Posterior median of baseline impulse responses (black dotted lines), with the 68% credible interval shaded in gray (sample: 1990:M4-2022:M6).

Dependent variable: stochastic volatility of all-items PCE in period t			
	(1)	(2)	(3)
MU_t	3.923*** (0.304) [0.353]		3.553*** (0.319) [0.451]
FU_t		1.761*** (0.198) [0.233]	0.392*** (0.151) [0.298]
Observations	744	744	744
Adjusted R^2	0.46	0.23	0.47

Table A.1: **Regression of headline IU on macro and financial uncertainty**

Note: The table reports OLS regression coefficients. The dependent variable is the stochastic volatility of the all-items PCE inflation rate in period t . The regressors are the contemporaneous values of the macroeconomic uncertainty (MU_t) and financial uncertainty (FU_t) measures proposed by [Jurado et al. \(2015\)](#). White standard errors appear in parentheses below the coefficients ([White, 1980](#)). Standard errors corrected to account for the estimation uncertainty of stochastic volatility are given in square brackets ([Dumont et al., 2005](#)). The model includes a constant term whose estimate is suppressed. *** denote significance at the one percent level. The sample period is 1960:M7-2022:M6.

Dependent variable: Binder (2017) 's measure of uncertainty in period t			
	(1)	(2)	(3)
MU_t	58.641*** (4.498)		57.033*** (4.907)
FU_t		24.307*** (2.643)	1.935 (2.424)
Observations	534	534	534
Adjusted R^2	0.42	0.15	0.42

Table A.2: **Regression of households' IU on macro and financial uncertainty**

Note: The table reports OLS regression coefficients. The dependent variable is a measure of households' perceived inflation uncertainty proposed by [Binder \(2017\)](#). The regressors are the contemporaneous values of the macroeconomic uncertainty (MU_t) and financial uncertainty (FU_t) measures proposed by [Jurado et al. \(2015\)](#). White standard errors appear in parentheses below the coefficients ([White, 1980](#)). The model includes a constant term whose estimate is suppressed. *** denote significance at the one percent level. The sample period is 1978:M1-2022:M6.