

Supplemental Appendix

Import Tariffs and the Systematic Response of Monetary Policy

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Alessandro Franconi and Lukas Hack

Contents

A Data sources	2
B Testing partial invertibility	6
C Narrative identification	7
D Comparison with Schmitt-Grohé and Uribe (2025) and Barnichon and Singh (2025)	8
E Alternative identification approaches	12
F Additional VAR variables	22
G Further sensitivity analysis for the tariff VAR	39
H Baseline monetary responses	44
I Alternative monetary policy shocks	52

A Data sources

All data sources are described below. We use the arithmetic average across observations to aggregate to a quarterly frequency for all monthly data except the monetary shocks. The monetary shocks are aggregated by summing up all shocks within a quarter.

Specifically, we use real GDP, CPI inflation, and the federal funds rate as measures of real activity, prices, and monetary policy, respectively. Beyond these core variables, we include real imports and real exports as well as a terms-of-trade

Table A.1: Macroeconomic data from the FRED database

Variable	Data identifier and details
CPI inflation	<i>CPIAUCSL</i> and implied year-over-year inflation.
CPI core inflation	<i>CPILFESL</i> and implied year-over-year inflation
Inflation expectations.	<i>MICH</i> (One-year horizon).
PPI inflation	<i>PPIACO</i> and implied year-over-year inflation.
Real GDP	<i>GDPC1</i>
Real investment	<i>GPDIC1</i>
Real consumption	<i>PCECC96</i>
Imported consumption goods	Computed as nominal imported consumption goods (excluding automotive and food) (<i>A652RC1Q027SBEA</i>) divided by the GDP deflator (<i>GDPDEF</i>).
Real government spending	<i>GCEC1</i>
Real exports	<i>EXPGSC1</i>
Real imports	<i>IMPGSC1</i>
Unemployment rate	<i>UNRATE</i>
Industrial production	<i>INDPRO</i>
Output gap	Computed as real GDP (<i>GDPC1</i>) divided by potential output (<i>GDPOT</i>).
Terms of trade (non-petroleum goods)	<i>W371RG3Q020SBEA</i>
Federal funds rate	<i>DFR</i>
One-year treasury yield	<i>GS1</i>
Real federal debt	Computed as nominal federal debt (<i>FGSDODNS</i>) divided by the GDP deflator (<i>GDPDEF</i>).
Real government receipts	Computed as nominal federal debt (<i>FGRECP</i>) divided by the GDP deflator (<i>GDPDEF</i>) minus real customs duties (<i>B235RC1Q027SBEA</i>).

Notes: All displayed variables are from [FRED](#), provided by the FRB of St. Louis. Data identifiers are in italic letters.

Table A.2: Import tariff measures

Variable	Data identifier and details
Trade-weighted average tariff rate	Computed as customs duties (<i>B235RC1Q027SBEA</i>) divided by dutiable imports. Dutiable imports are given by all goods imports (<i>A255RC1Q027SBEA</i>) multiplied by the average share of dutiable goods over all imported goods taken from the DataWeb of the United States International Trade Commission.
Not trade-weighted average tariff rate	We use an approximate unweighted average tariff rate computed as follows. First, we compute all disaggregated trade-weighted tariff rates at the four-digit HTS times origin country level. Then, we compute the (unweighted) arithmetic average across these disaggregated tariff rates. To limit the influence of small trading partners, we drop all countries with average import values below the median, where average import values are computed over the full sample. The data is retrieved from the DataWeb of the United States International Trade Commission.
Trade restrictiveness index	The index is provided by Schmitt-Grohé and Uribe (2025) and can be downloaded here .

Notes: Data identifiers are in italic letters if taken from [FRED](#), provided by the FRB of St. Louis.

Table A.3: Further data

Variable	Data identifier and details
Macroeconomic uncertainty	We use the 12-month index, which can be downloaded here .
Shadow federal funds rate	We use the shadow federal funds rate from Wu and Xia (2016) , which can be downloaded here .
Romer and Romer (2004) shock	We use the extended shock that ends in 2007Q4, taken from McKay and Wolf (2023) .
Miranda-Agrippino and Ricco (2021) shock	We use the shock that ends in 2014Q4, taken from McKay and Wolf (2023) . They take the shock corresponding to the posterior mode of the reduced-form parameters of the original paper.
Jarociński (2024) shock	We use the conventional monetary shock ($u1$), which can be downloaded here .
Hack, Istrefi, and Meier (2024)	We take the refined Romer and Romer (2004) shock kindly provided by the authors.

Notes: All displayed variables are provided by the mentioned scholars as indicated in the second column.

B Testing partial invertibility

To ensure that our baseline VAR contains sufficient information to identify the tariff shock, we perform the orthogonality test proposed by [Forni and Gambetti \(2014\)](#). First, we estimate the principal components using a large quarterly dataset of macroeconomic and financial variables for the U.S. economy, taken from [McCracken and Ng \(2021\)](#). Then, we test for orthogonality with respect to the lags of these principal components. To select the optimal number of principal components to be included in the test, we rely on the criteria proposed by [Alessi, Barigozzi, and Capasso \(2010\)](#), which suggests the first four or first six principal components. The results of the orthogonality are reported in Table B.1. In all cases, we cannot reject the null hypothesis of orthogonality, indicating a lack of shock predictability by the information set spanned by the principal components. Therefore, we conclude that the VAR is informationally sufficient to identify our tariff shock.

Finally, as an additional test, we include the first two principal components in the VAR and order them after the federal funds rate. The results in Figure B.1 are similar to the baseline. This indicates that our results are not driven by the omission of important macroeconomic and financial variables from our VAR.¹

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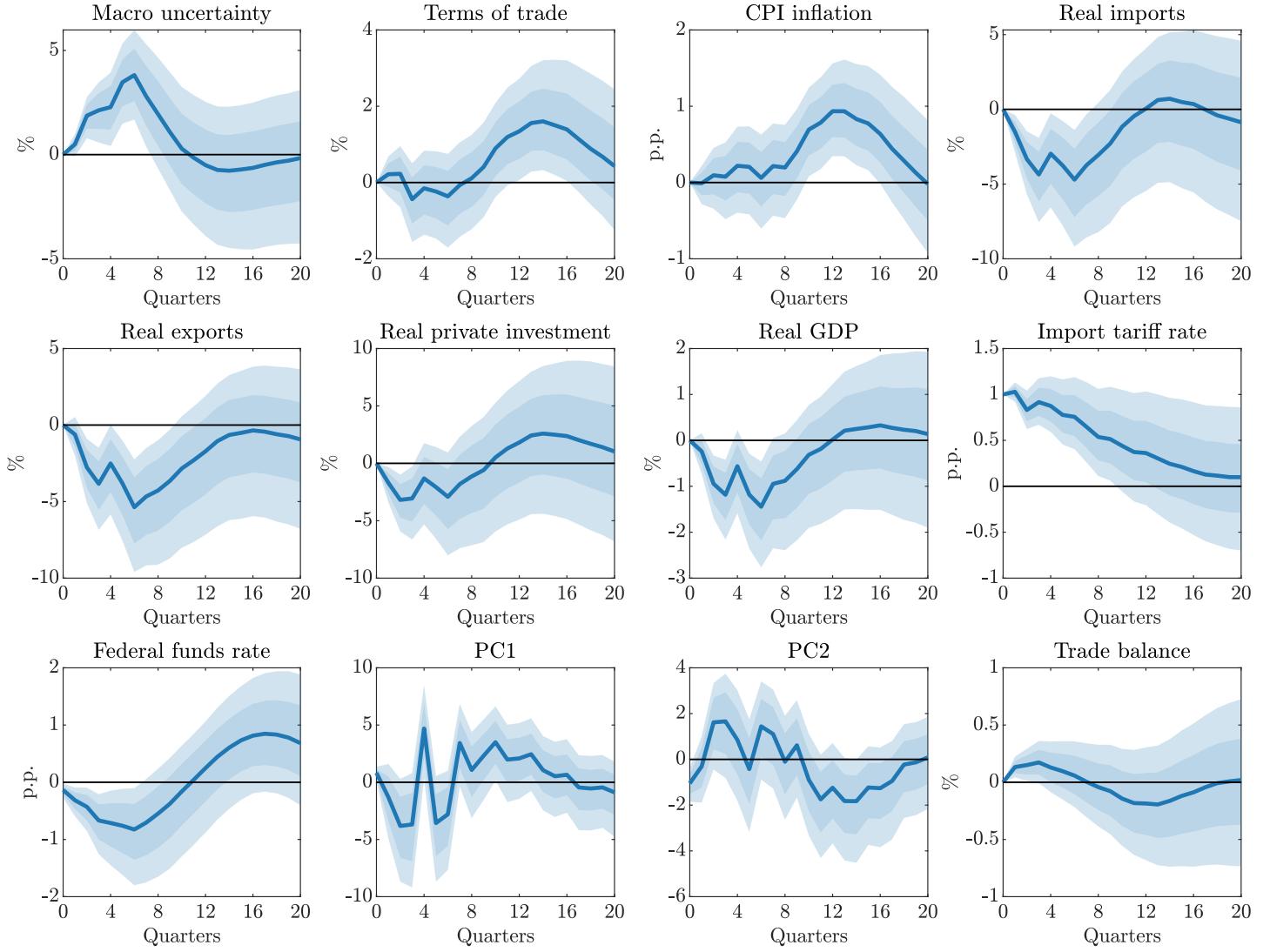
Table B.1: Testing partial invertibility based on [Forni and Gambetti \(2014\)](#)

	First 4 PCs, k lags				First 6 PCs, k lags			
	$k = 1$	$k = 2$	$k = 3$	$k = 4$	$k = 1$	$k = 2$	$k = 3$	$k = 4$
F -stat	0.161	0.429	0.425	0.472	0.249	0.497	0.569	0.527
p -value	0.958	0.902	0.951	0.956	0.959	0.913	0.915	0.964

Notes: The table shows the results of the “Structuralness” test proposed in [Forni and Gambetti \(2014\)](#). Specifically, we report the F-statistics and the p -values for regressions of the tariff shock on up to k lags of the first four and six principal components. The shock is based on the posterior median of the Tariff VAR, taken over the reduced-form parameters.

¹Including more principal components does not meaningfully change the results.

Figure B.1: Include first and second principal component



Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text. We include principal components in the VAR, which are estimated using a large quarterly dataset of macroeconomic and financial variables for the U.S. economy, taken from [McCracken and Ng \(2021\)](#).

C Narrative identification

Our baseline tariff rate measure is trade-weighted and, thus, may also be affected by compositional changes in imports and import prices. To address the concern that our estimates pick up these alternative sources of variation, we compile a series of narratively identified tariff policy changes, which are unlikely to be confounded by the above-described issues. To

this end, we define an indicator, $\mathbb{I}_t\{\text{tariff policy event}\} \in \{0, 1\}$, which is only activated when we identify a tariff policy change in quarter t . Table C.1 lists all of these events. Finally, we compute our narrative tariff change time series as $\Delta\tau_t^{narr} = \mathbb{I}_t\{\text{tariff policy event}\}\Delta\tau_t$, where $\Delta\tau_t$ denotes the quarter-on-quarter change in the trade-weighted average tariff rate. We include this as exogenous variable in the VAR.

Table C.1: Narratively identified tariff policy changes

#	Event description	Quarterly date
(1)	NAFTA Agreement	1994Q1
(2)	WTO Establishment	1995Q1
(3)	US–Canada SLA Agreement I	1996Q2
(4)	WTO ITA I	1997Q3
(5)	Trade & Development Act (Sub-Saharan Africa)	2000Q2
(6)	Bush Steel Safeguard	2002Q1
(7)	Early Removal of Bush Steel Safeguard	2003Q4
(8)	US–Canada SLA Agreement II	2006Q4
(9)	WTO ITA II	2016Q3
(10)	US Tariffs (Solar, Washing Machines, Steel, Aluminum)	2018Q1
(11)	Section 232 Expansion (EU, Canada, Mexico)	2018Q2
(12)	Section 301 China Tariffs – List 1 & 2	2018Q3
(13)	Section 301 China Tariffs – List 3	2018Q4
(14)	Section 301 China Tariffs – List 3 Increase	2019Q1

D Comparison with Schmitt-Grohé and Uribe (2025) and Barnichon and Singh (2025)

Schmitt-Grohé and Uribe (2025) estimate transitory and permanent U.S. import tariff shocks. Different from our results, they find that transitory import tariff shocks are deflationary and

expansionary. Their permanent shocks deliver a very transitory inflation response and a mostly insignificant expansion of output. [Barnichon and Singh \(2025\)](#) estimate an annual VAR model over 150 years and also find that tariffs are deflationary. However, different from [Schmitt-Grohé and Uribe \(2025\)](#), they detect contractionary effects of tariffs. Below, we investigate why their results differ from our findings.

The core methodological differences of [Schmitt-Grohé and Uribe \(2025\)](#) relative to our approach are that they (i) use a state-space model following [Uribe \(2022\)](#), (ii) impose that the trade-weighted average tariff rate is exogenous to the economy (in their baseline), (iii) consider a different set of macroeconomic variables, and (iv) use a sample that starts already in 1959Q2.

To compare with their results, we use our baseline identification approach and focus on (iv), the sample period. First, we re-estimate our VAR but let our sample start in 1980Q1 to ensure that our results are not unduly sensitive to starting the sample in 1990Q1.² The results are shown as solid blue lines in Figure D.1. In this sample, our main results remain unchanged. In particular, we still find that tariff shocks are inflationary and contractionary. Next, we go further and start the sample in 1967Q1, which is the earliest feasible sample start due to data availability.³ The results are shown as gray dashed-dotted lines. Indeed, in this long sample, we find that the shock is deflationary and not contractionary anymore, broadly consistent with [Schmitt-Grohé and Uribe \(2025\)](#).

However, the extended sample includes two large tariff spikes, the so-called Nixon and Ford shocks, which are also discussed in [Schmitt-Grohé and Uribe \(2025\)](#); see their Figure 4. However, the Nixon shock partly captures the endogenous response of the US government to the turmoil associated with the end of the Bretton Woods system. The Ford shock was a tariff on oil imports, partly in response to high oil prices ([Dainauskas and Lastauskas, 2024](#)). Note that [Barnichon and Singh \(2025\)](#) raise similar concerns in their narrative account. Because of these potential endogeneity concerns, we would like the estimates not to be unduly affected

²Recall that this sample start is chosen because all three tariff measures are available from 1990 onward.

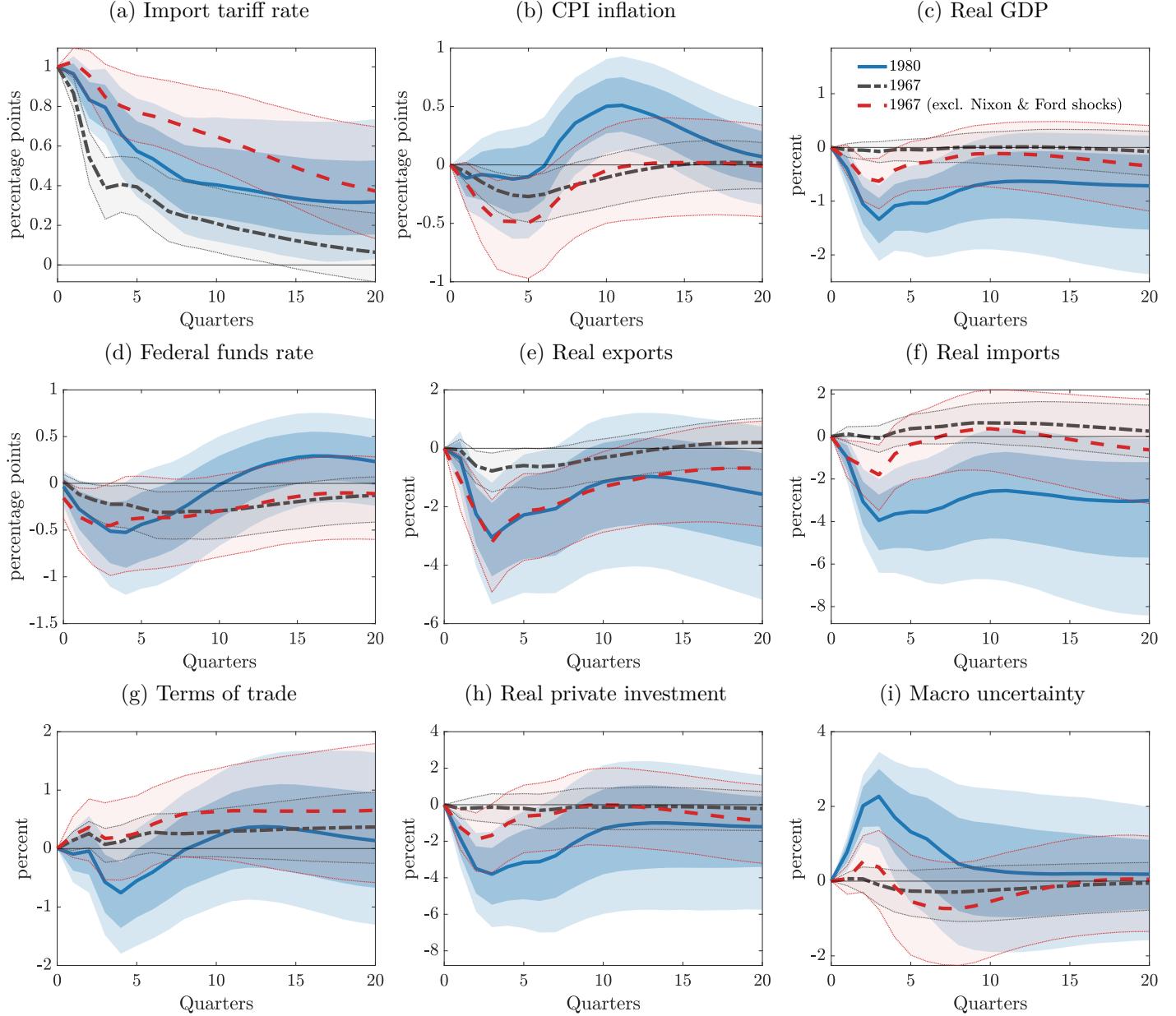
³An earlier sample start is infeasible since the terms of trade index is only available starting in 1967.

by these events.

Thus, we investigate how the results change if one takes out these shocks. Specifically, we smooth out these events from the average tariff rate time series in the following way: We replace the values during these shock episodes with the average import tariff across the pre- and post-event tariff rate.⁴ The responses using the smoothed import tariff series are shown as dashed red lines in Figure D.1. It turns out that we recover a significant output contraction, which is also visible in other components of aggregate demand, e.g., in real private investment. Thus, we conclude that there is robust evidence for tariffs being contractionary, consistent with [Barnichon and Singh \(2025\)](#), while the effects on inflation are more sample dependent. One potential reason for this sample dependence is that supply chain length and supply chain complexity have increased substantially, so that more products are affected by tariff changes in today's economy. In a similar vein, [Bergin and Corsetti \(2023\)](#) show that a sufficiently low share of material inputs in marginal cost induces a short-lived producer-price deflation in response to a tariff shock, followed by delayed inflation. Investigating such dependencies in greater detail is left for future research, however.

⁴The Nixon shock took place in the third and fourth quarters of 1971. The Ford shock took place during all quarters of 1975.

Figure D.1: Varying sample starts to compare with Schmitt-Grohé and Uribe (2025)

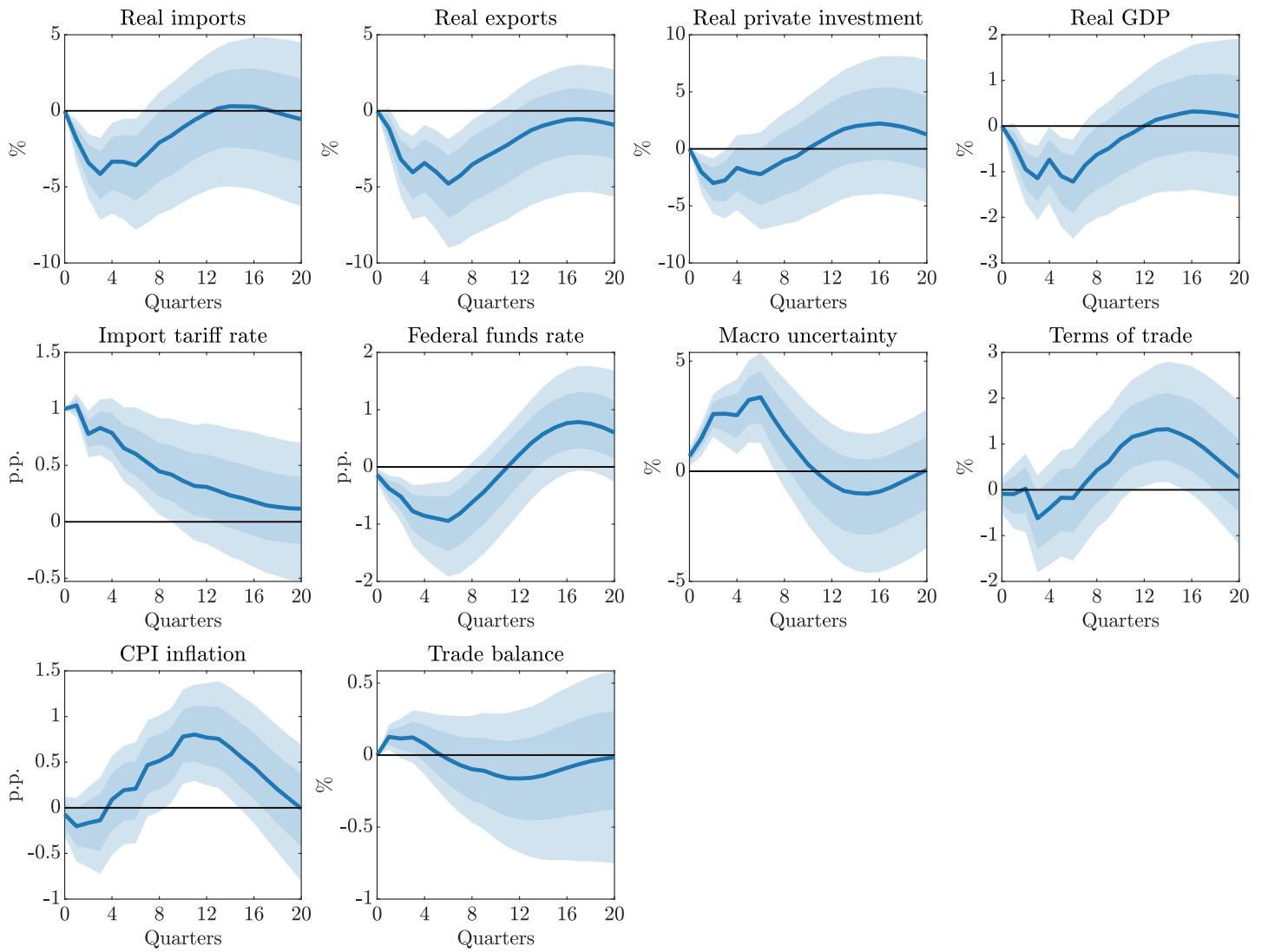


Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median when the sample starts in 1980Q1, and the shaded areas are 68% and 90% credible sets. The dashed-dotted and dashed lines represent the posterior median when the sample starts in 1967Q1, and the thin dotted lines indicate the 90% credible sets. Finally, the dashed red line shows responses when using an average tariff rate series that smooths out the so-called Nixon and Ford tariff shocks, as explained in Appendix D

E Alternative identification approaches

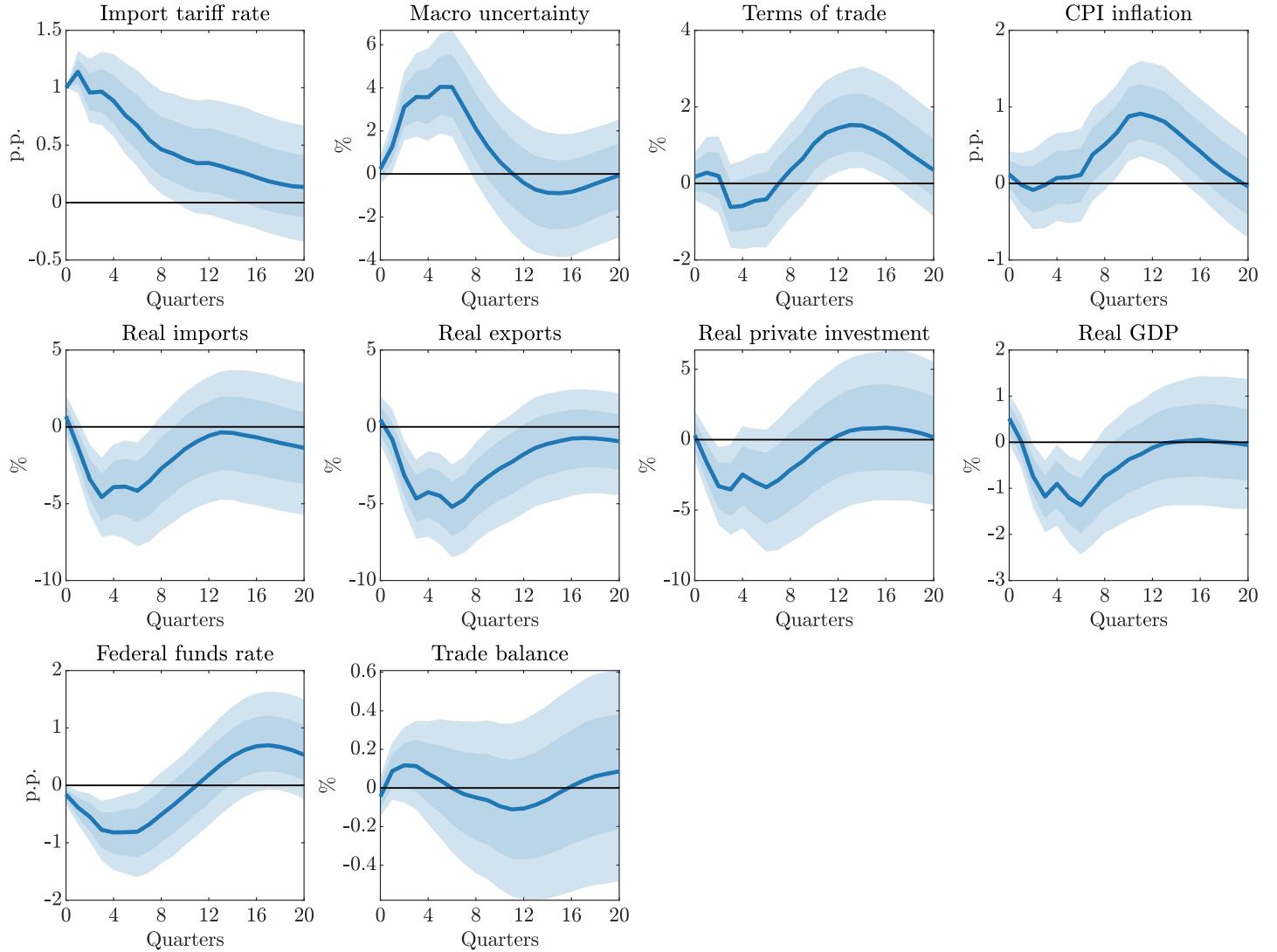
In this section, we show the full impulse responses for all variables, corresponding to the alternative identification approaches displayed in Figure 1 of the main text. The trade balance is always computed from real imports and real exports, as explained in the main text. The only exception is when we include the trade balance as a separate variable in the VAR, rather than real exports and real imports.

Figure E.1: Block recursive identification



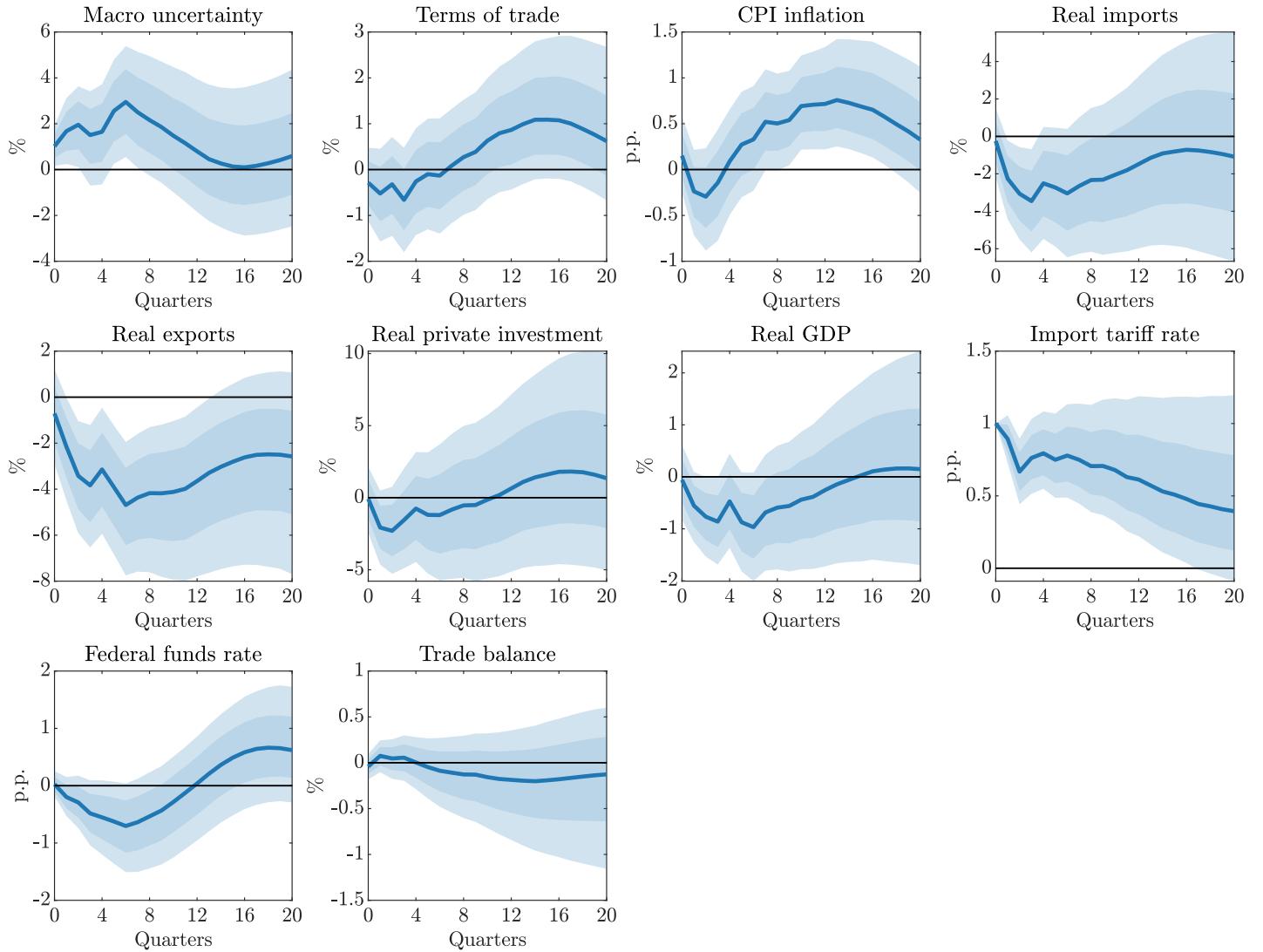
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.2: Penalty function identification



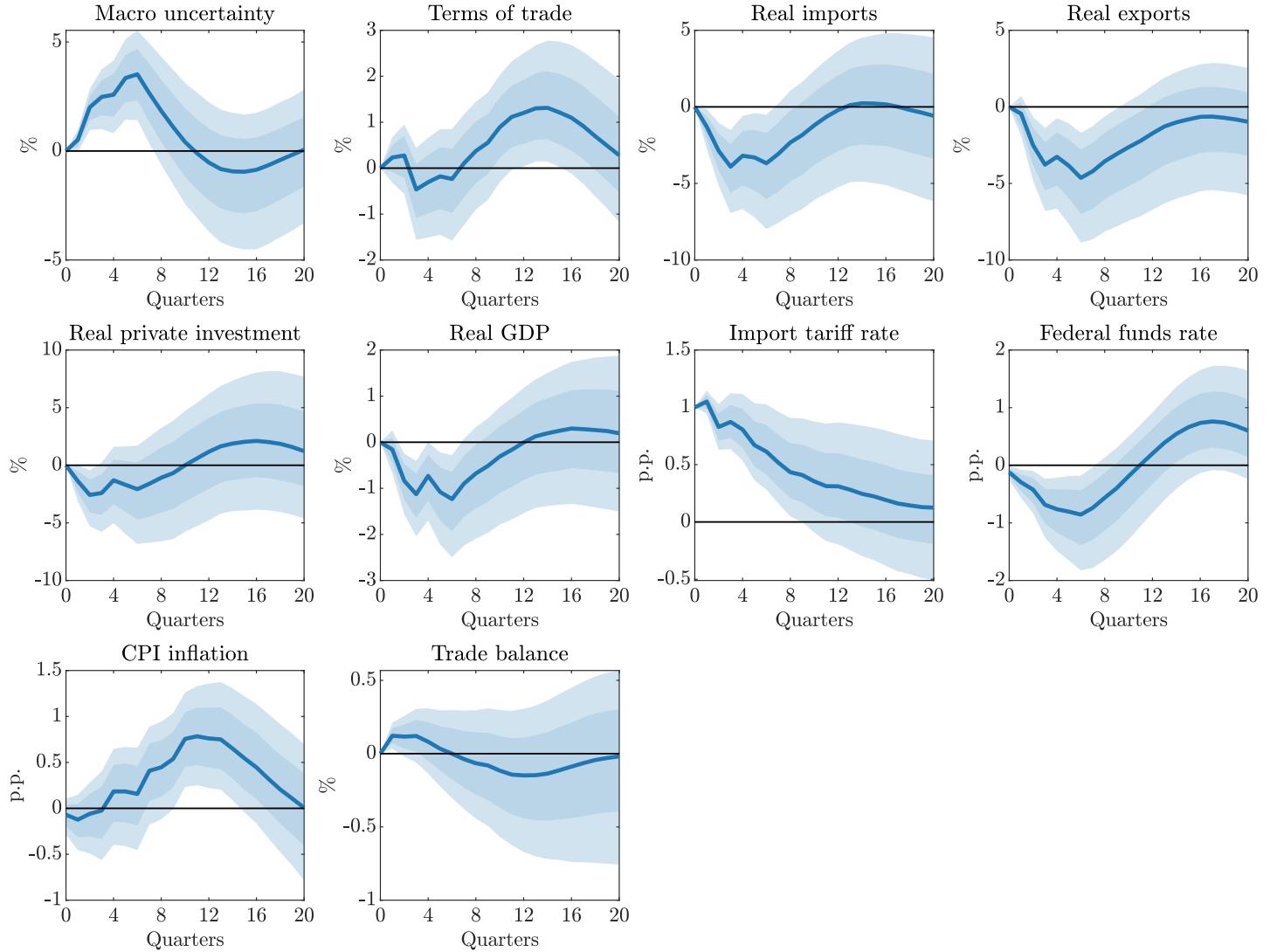
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.3: Narrative identification



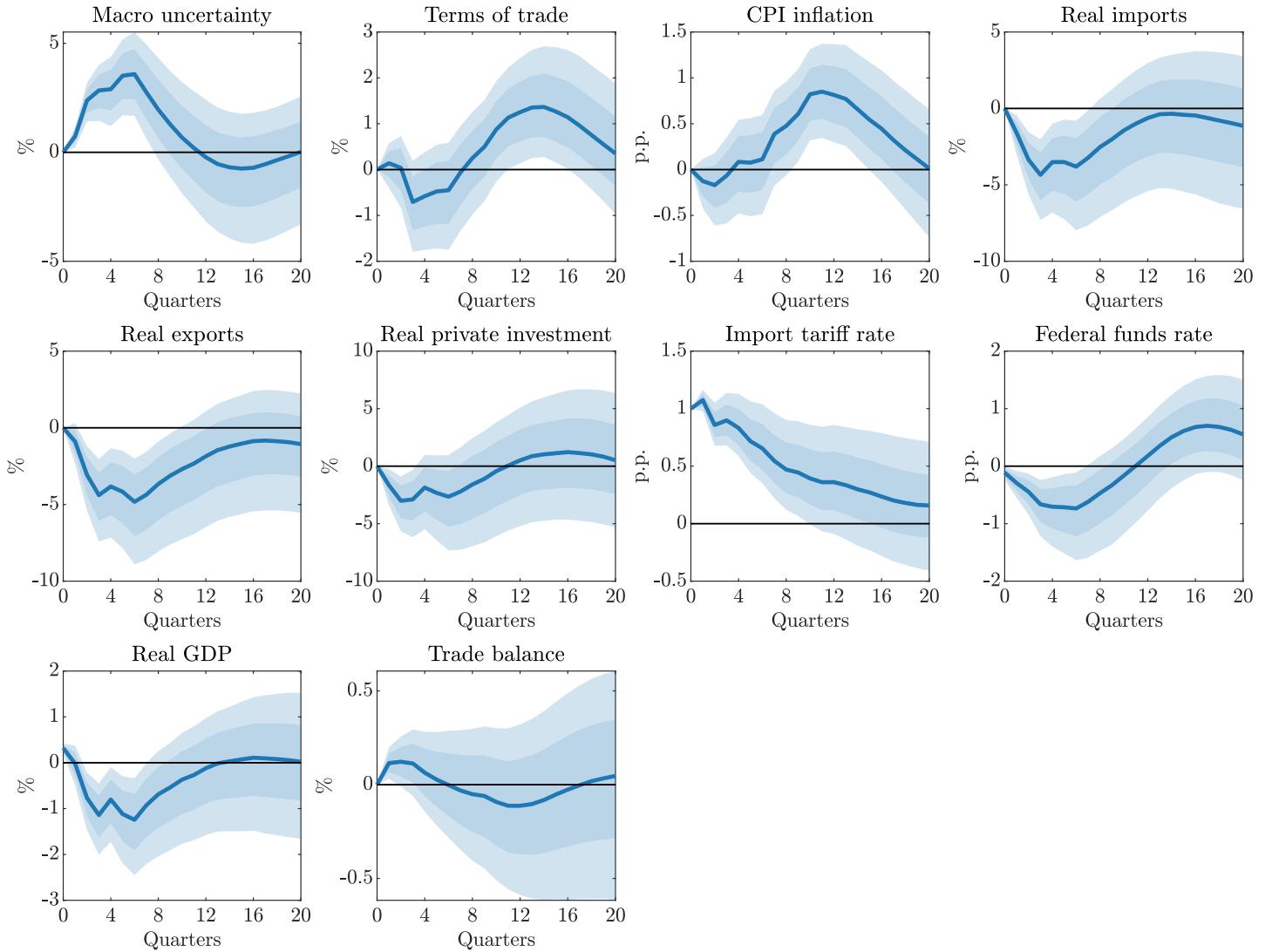
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.4: Reordering: Relaxing the zero restriction for CPI inflation



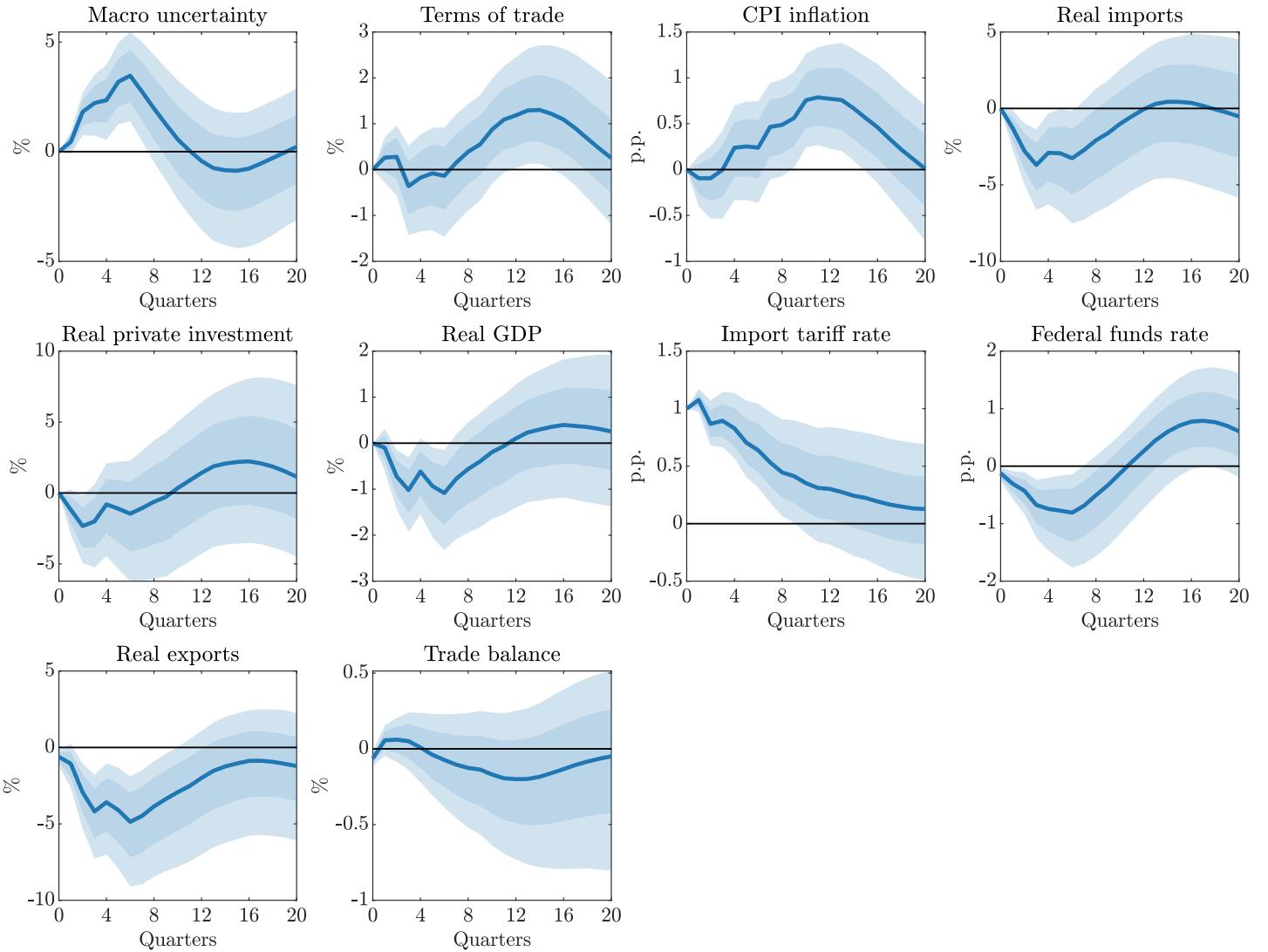
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.5: Reordering: Relaxing the zero restriction for real GDP



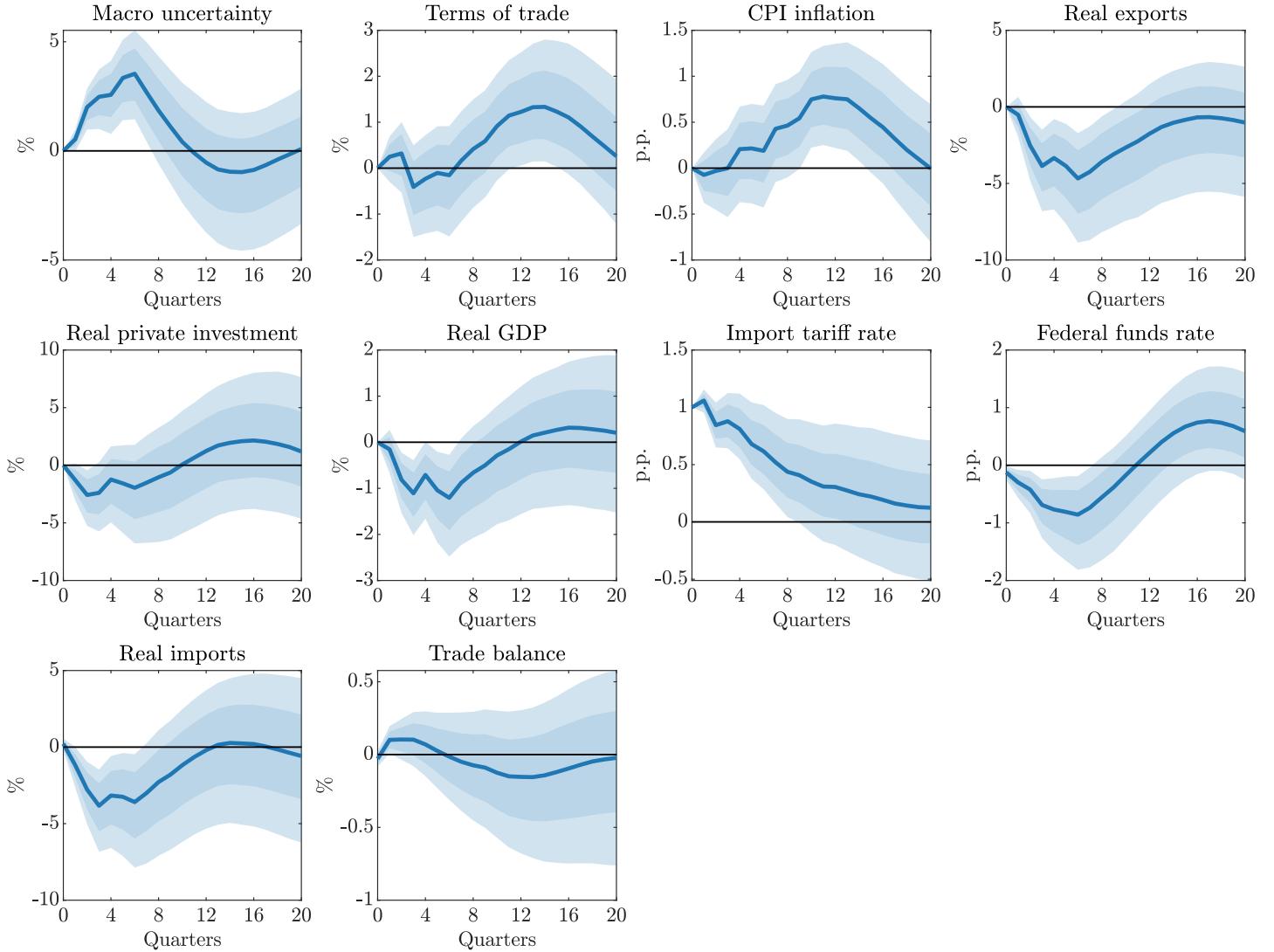
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.6: Reordering: Relaxing the zero restriction for real exports



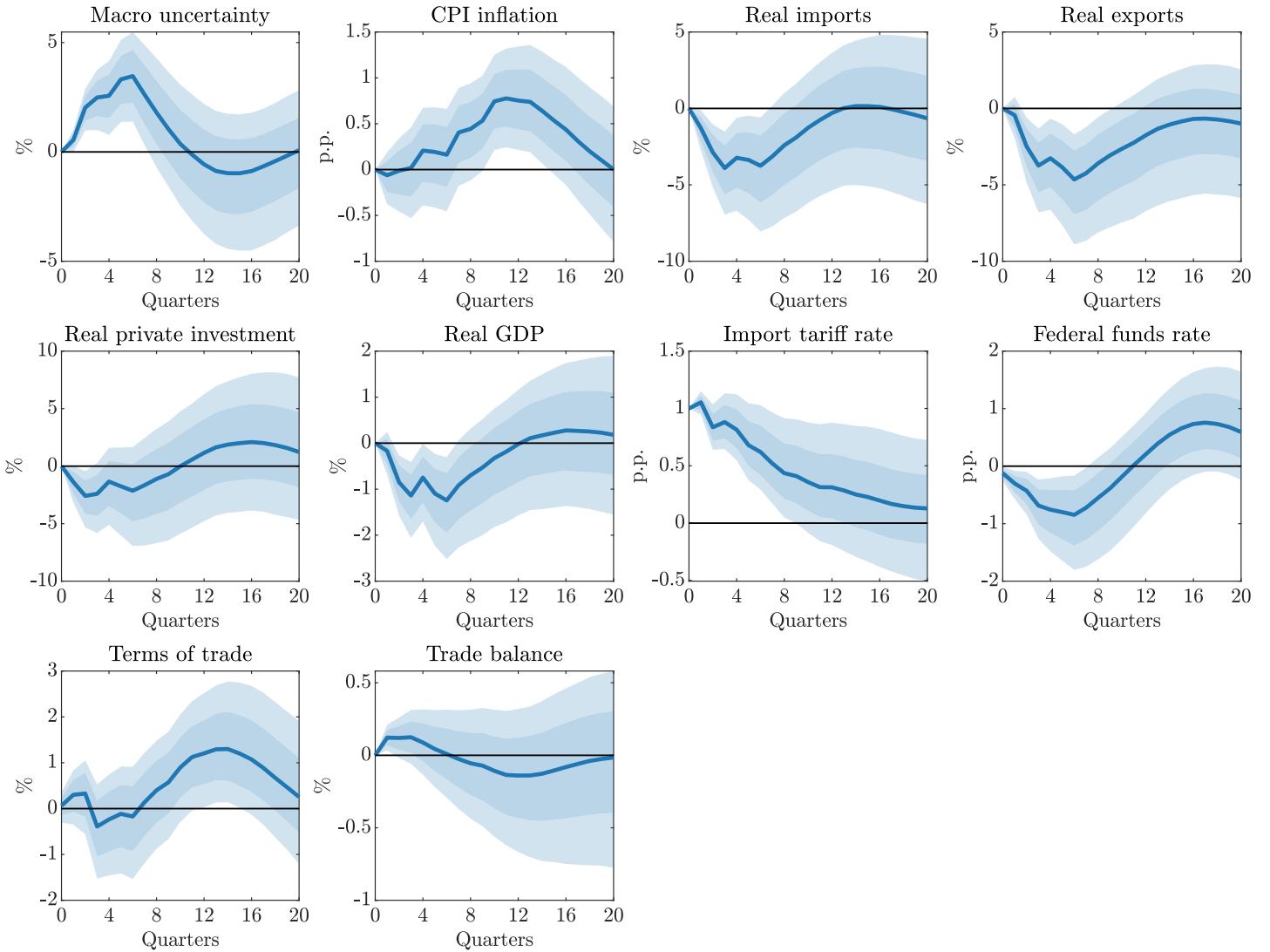
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.7: Reordering: Relaxing the zero restriction for real imports



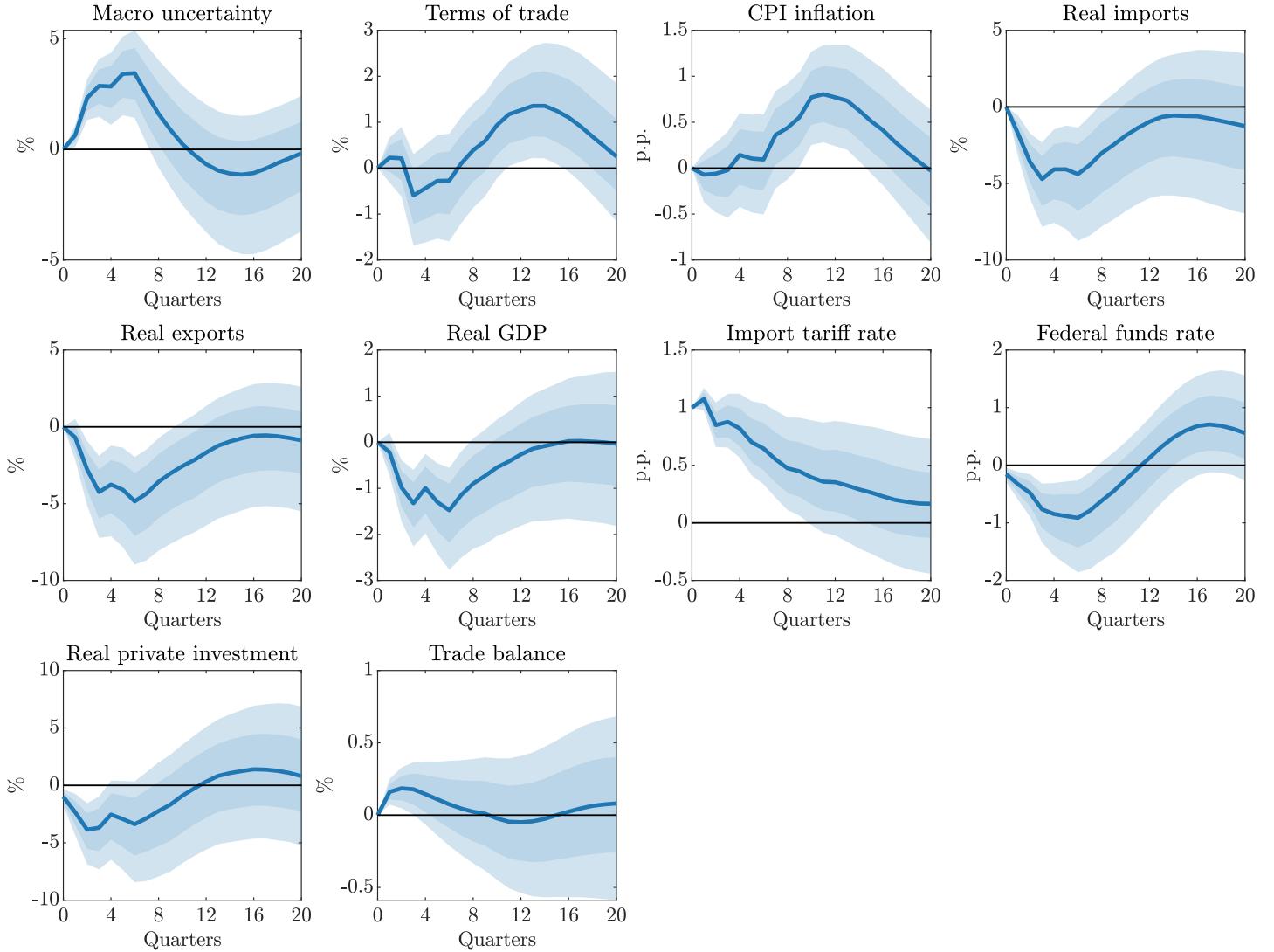
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.8: Reordering: Relaxing the zero restriction for terms of trade



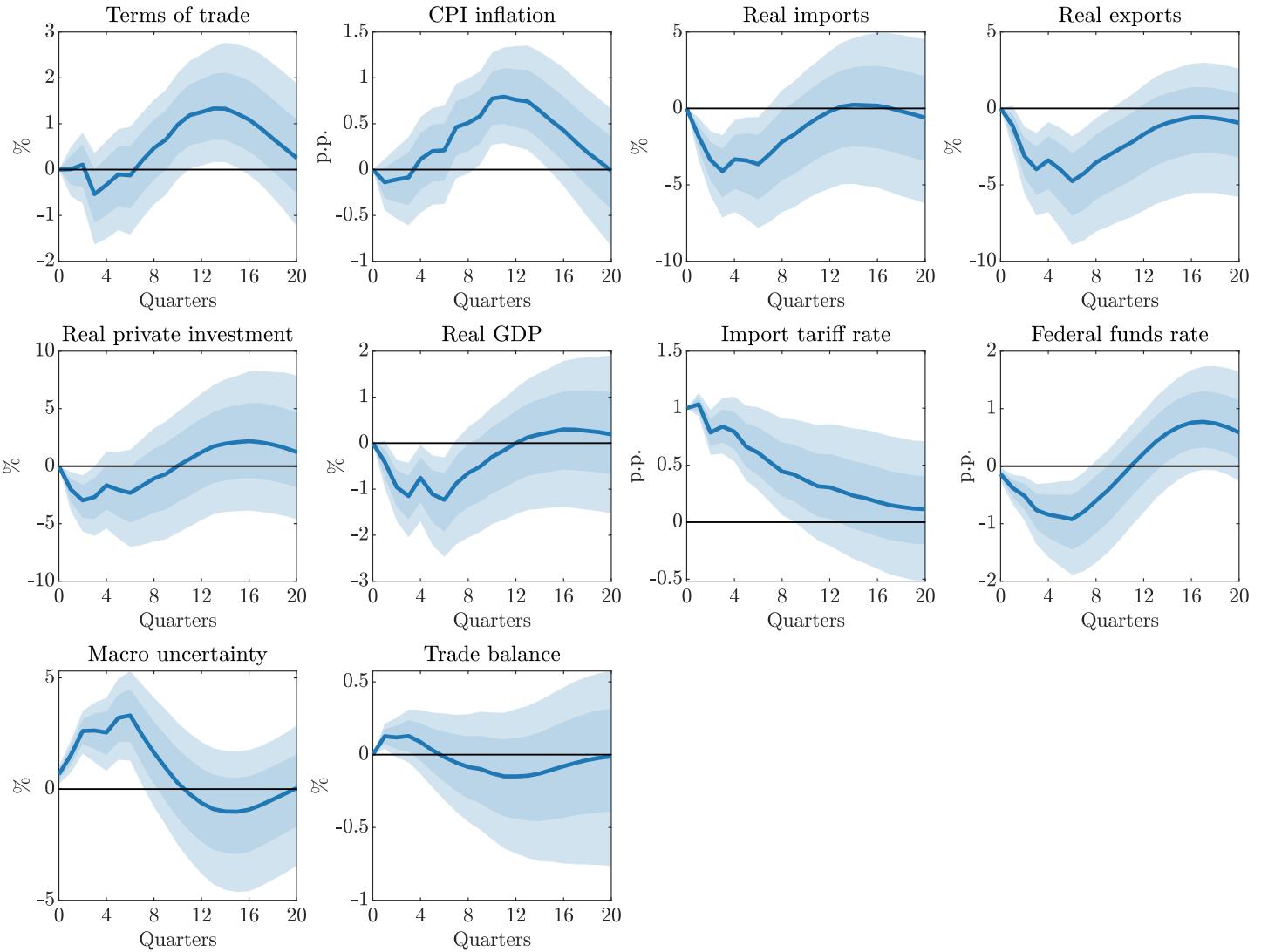
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.9: Reordering: Relaxing the zero restriction for real investment



Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure E.10: Reordering: Relaxing the zero restriction for macro uncertainty

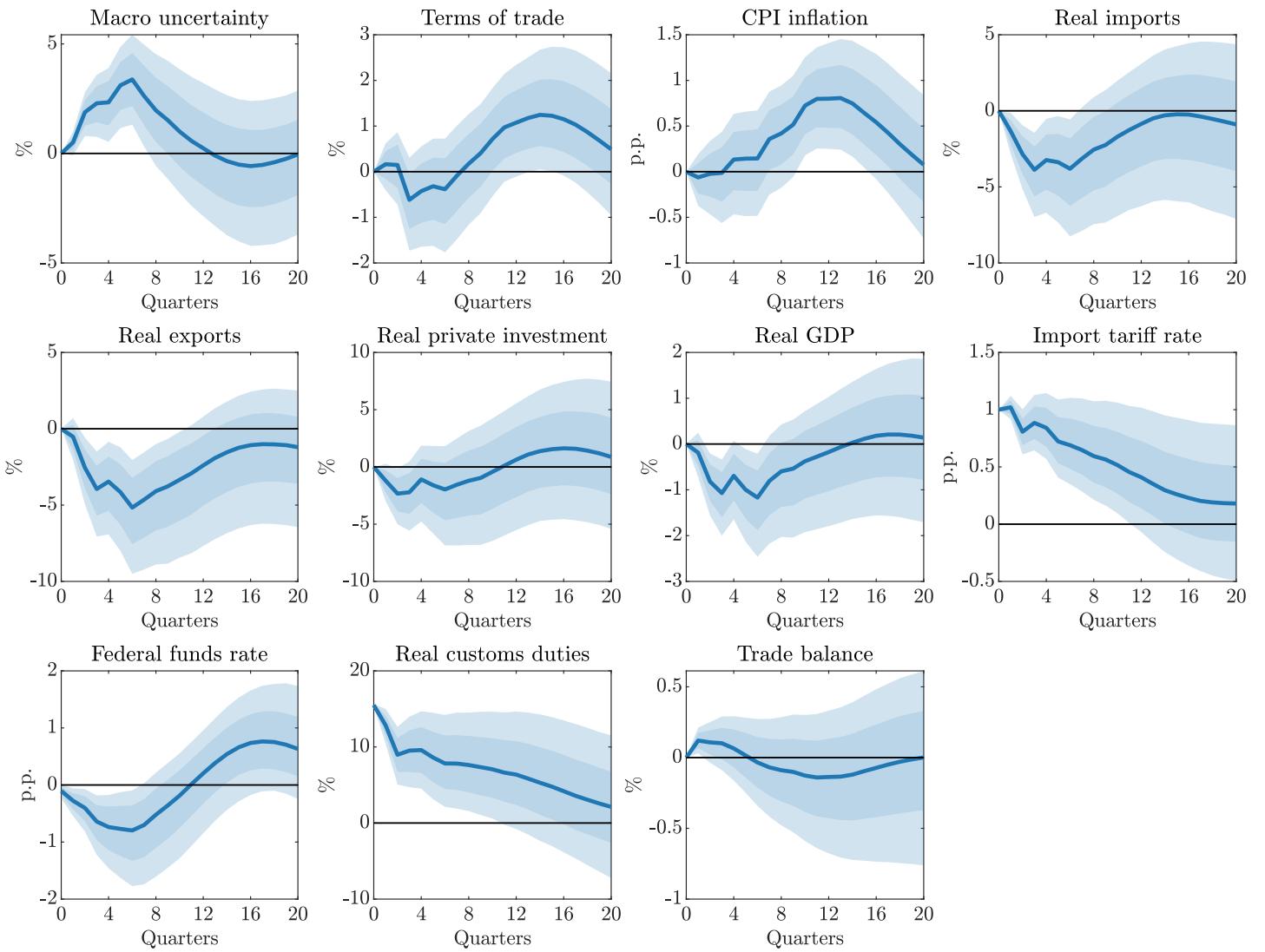


Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

F Additional VAR variables

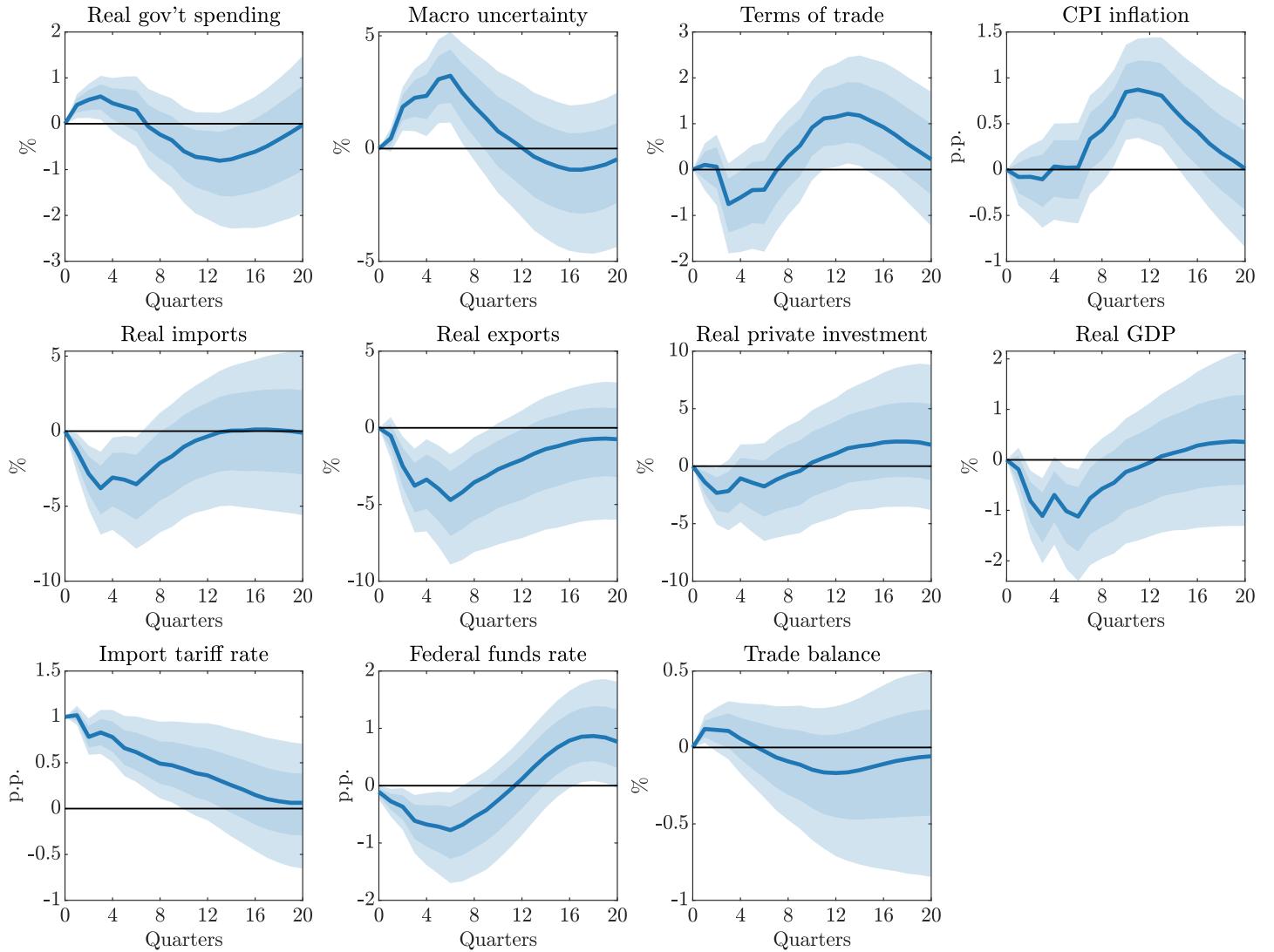
In this section, we show the full impulse responses for all variables, corresponding to the augmented VAR specifications displayed in Figure 3 of the main text. The trade balance is always computed from real imports and real exports, as explained in the main text. The only exception is when we include the trade balance as a separate variable in the VAR, rather than real exports and real imports.

Figure F.1: Augmented VAR: include real customs duties



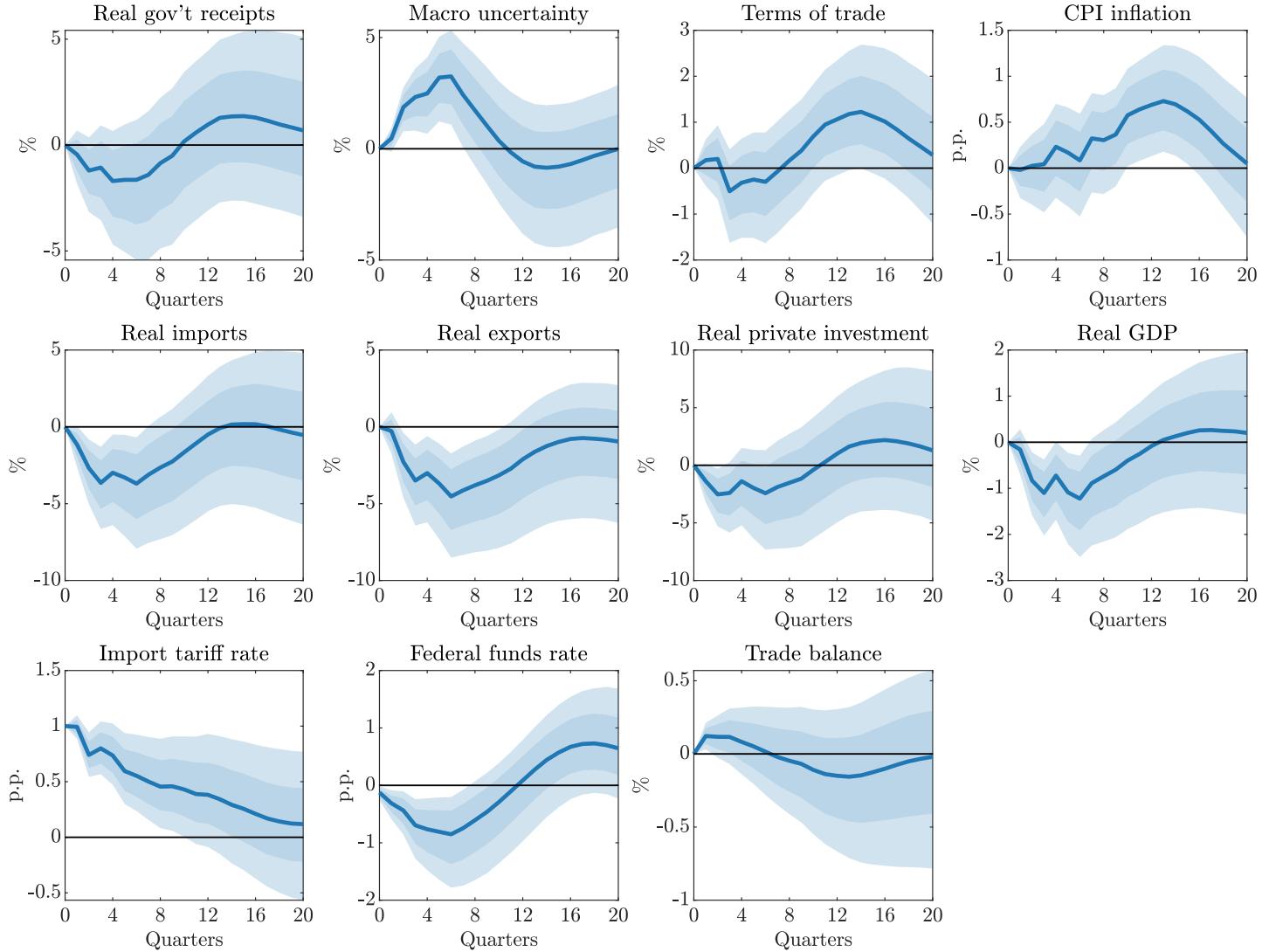
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.2: Augmented VAR: include real government spending



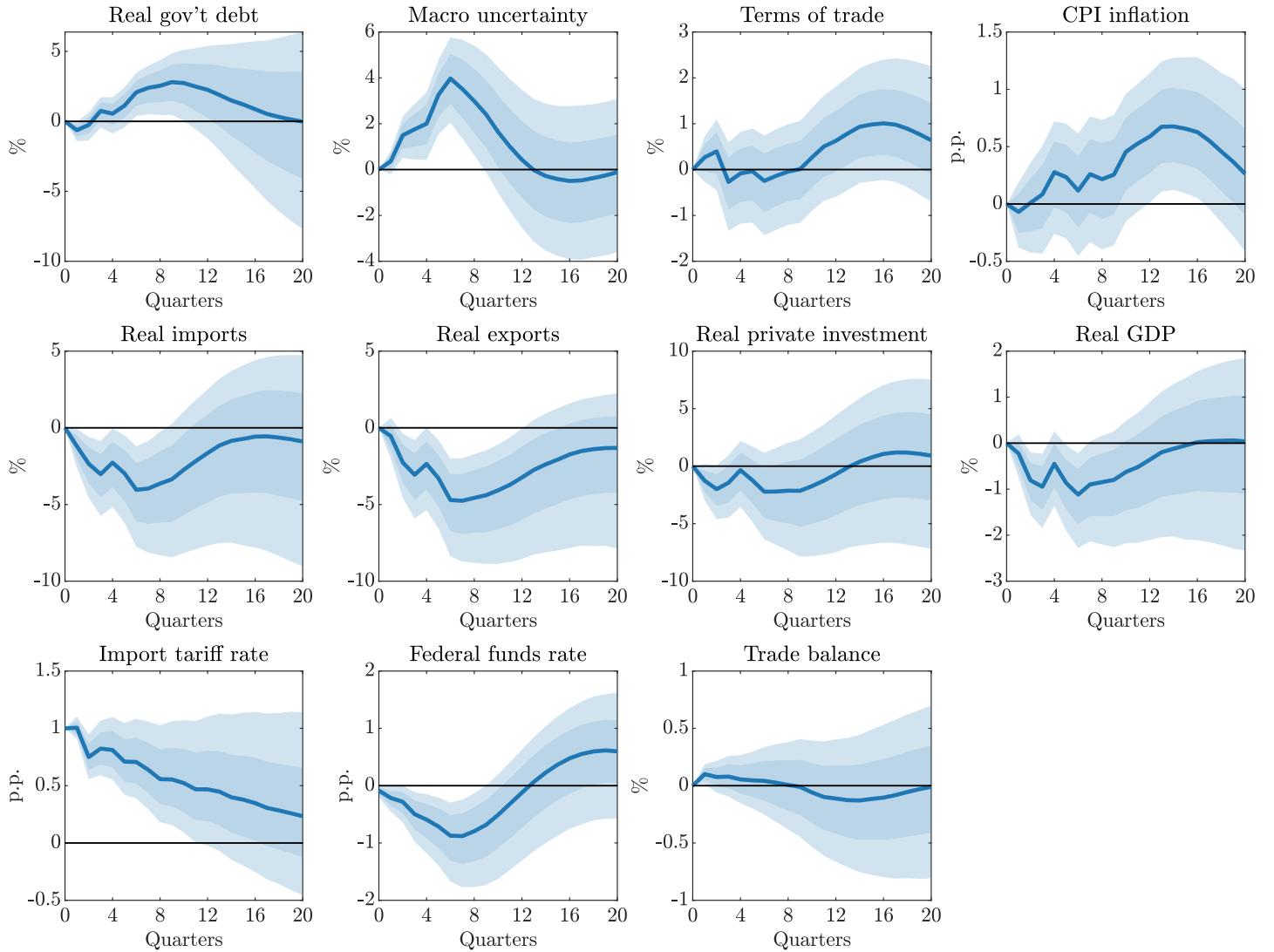
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.3: Augmented VAR: include real government receipts



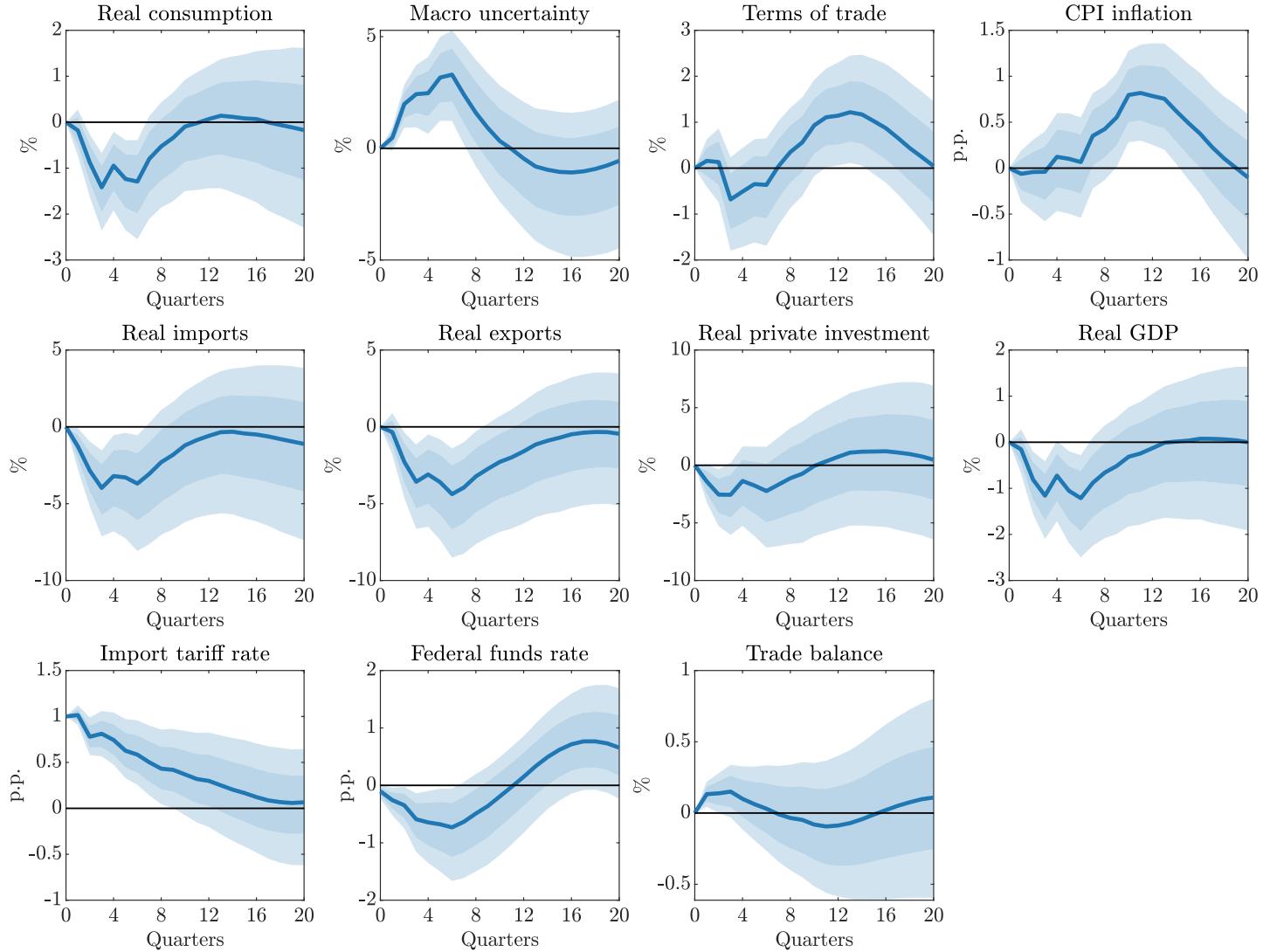
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.4: Augmented VAR: include real government debt



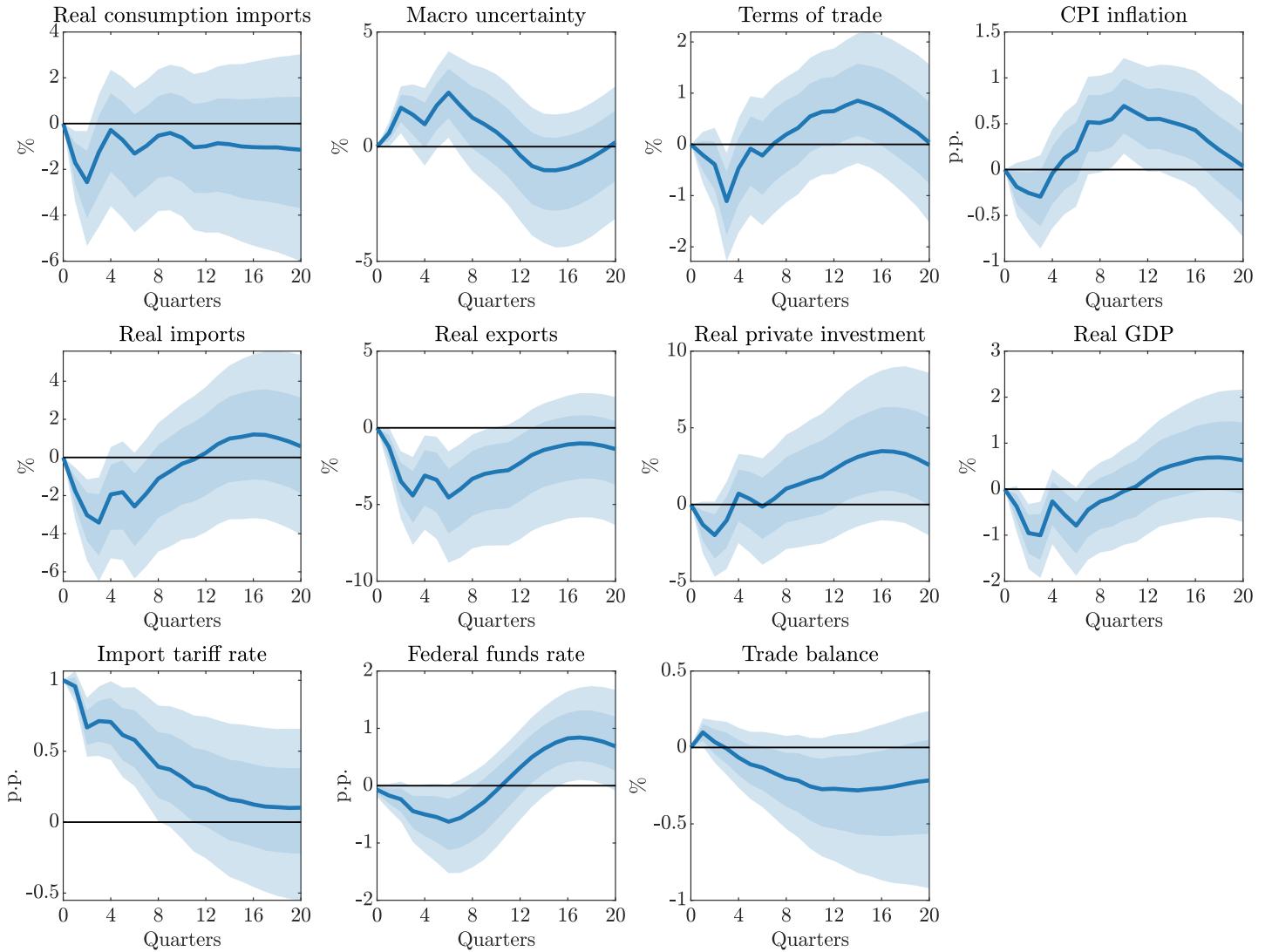
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.5: Augmented VAR: include real private consumption



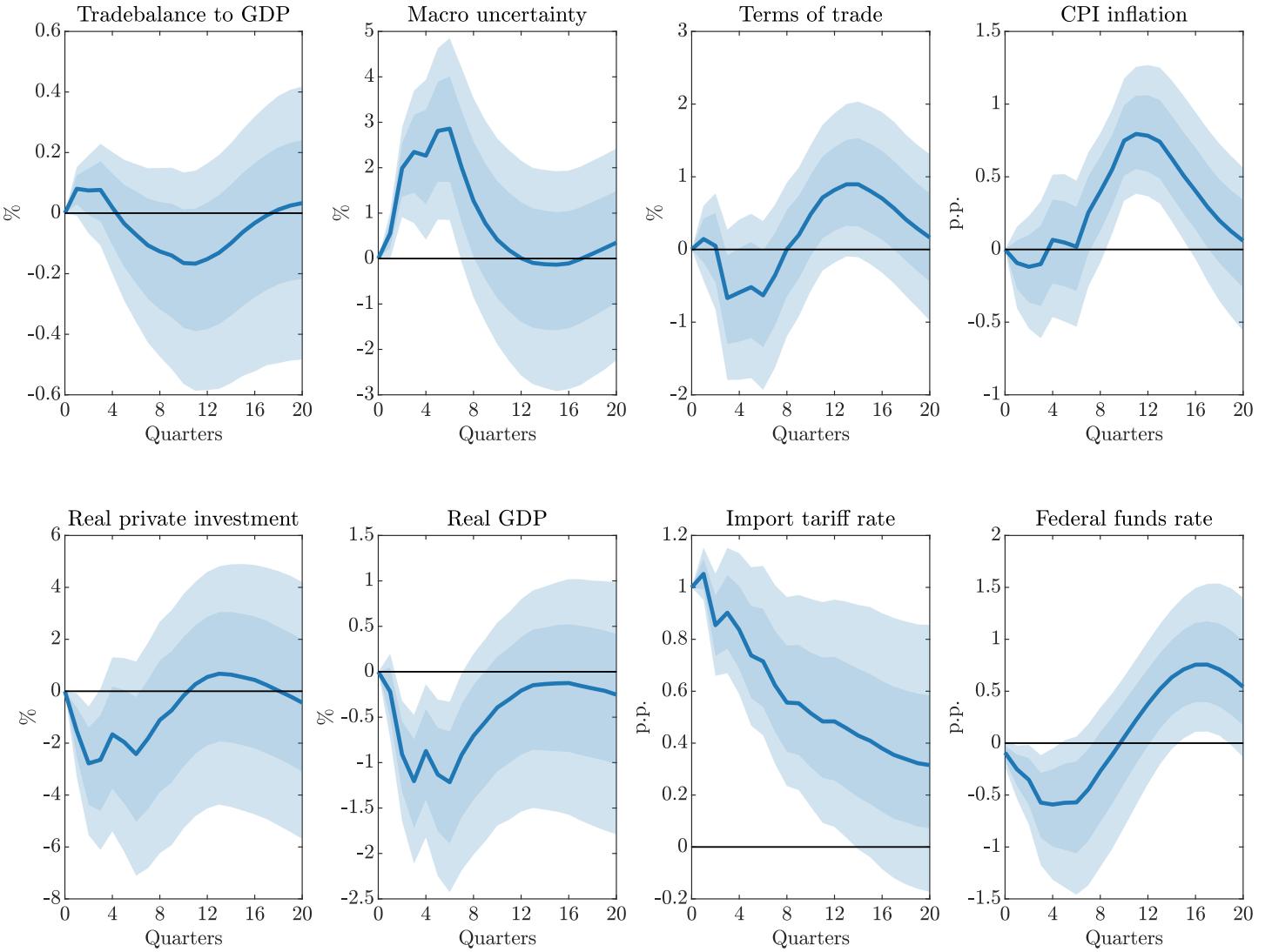
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.6: Augmented VAR: include real consumption imports



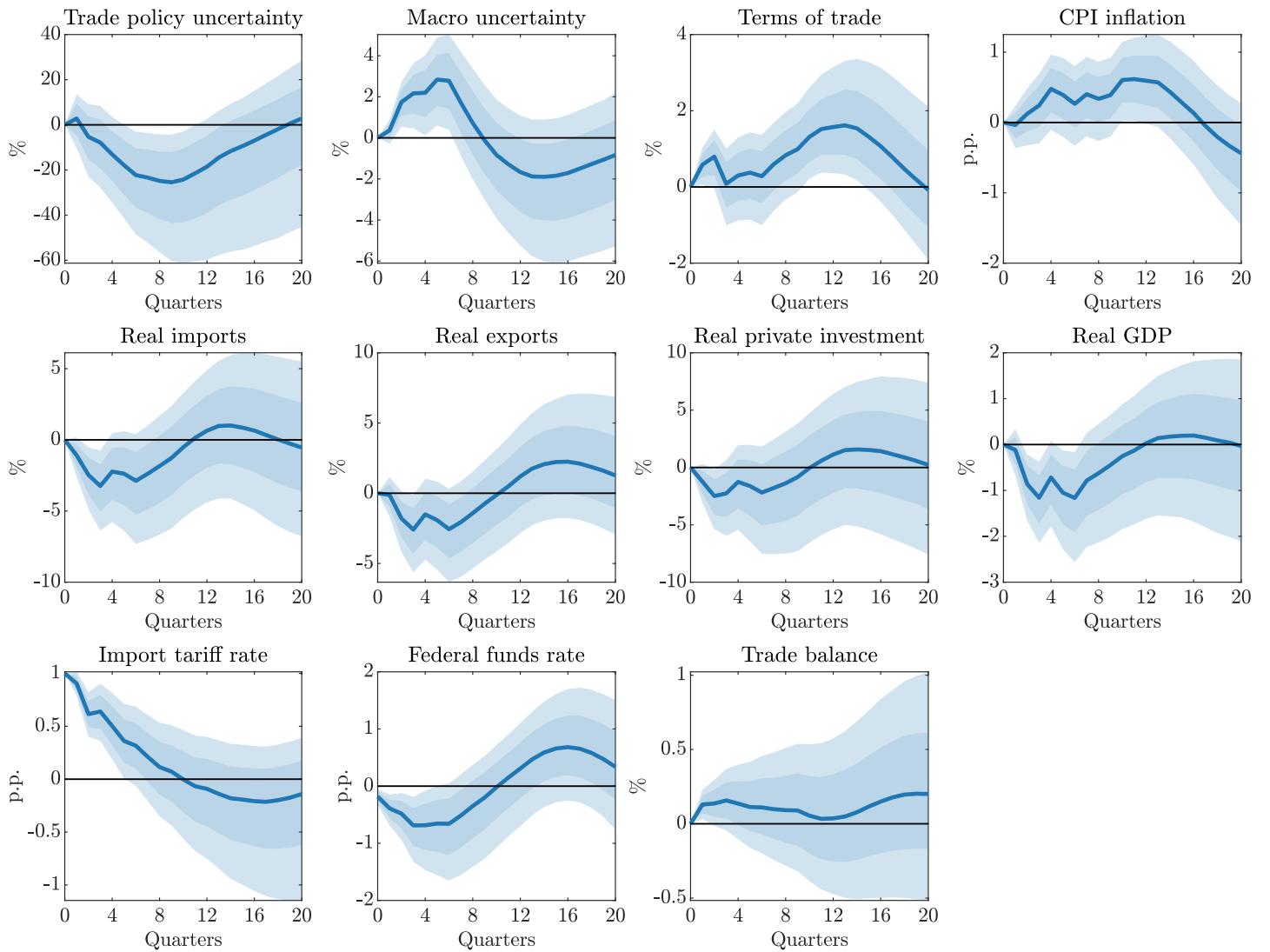
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.7: Augmented VAR: include the trade balance relative to GDP instead of real exports and imports



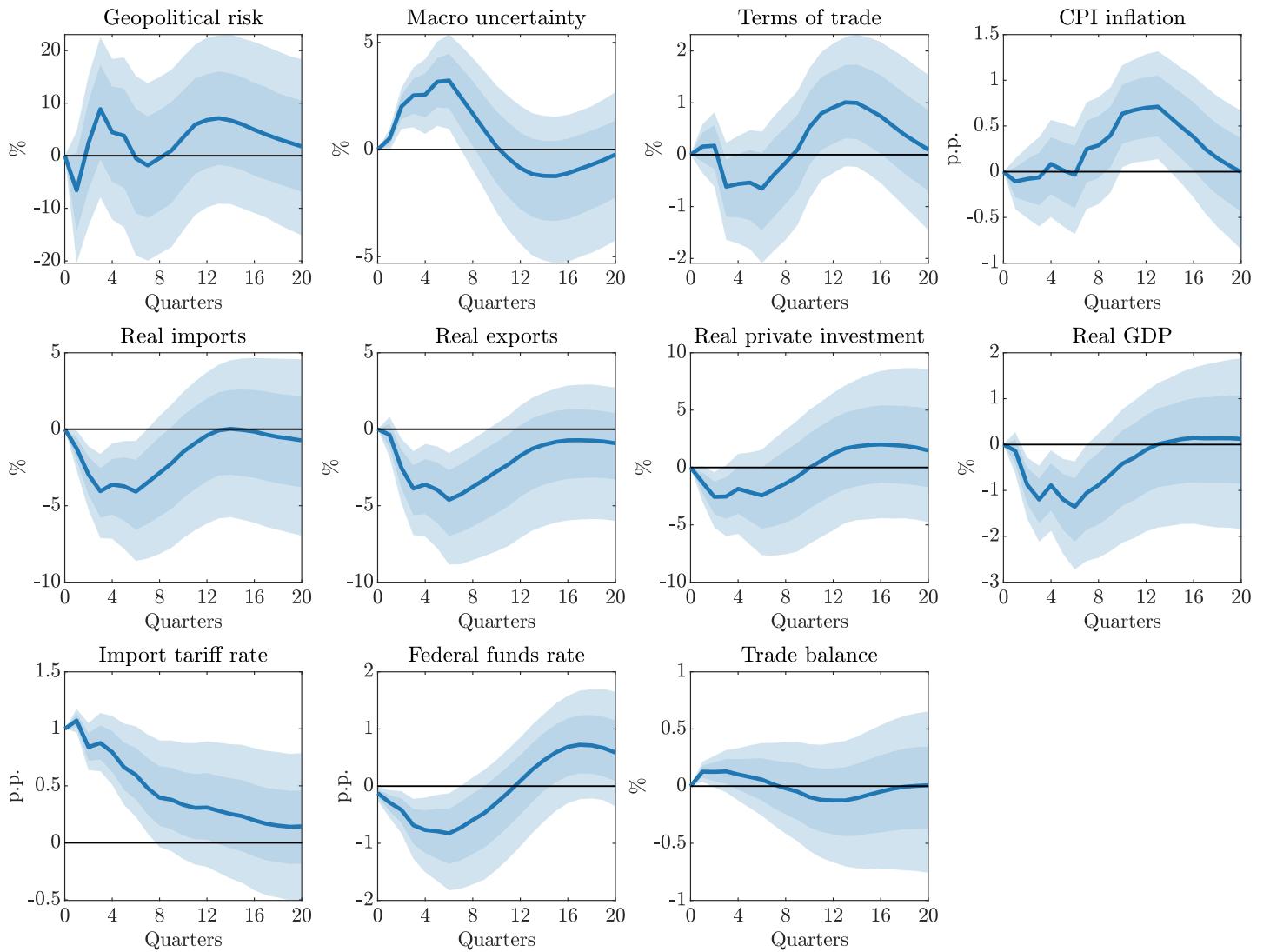
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.8: Augmented VAR: include trade policy uncertainty



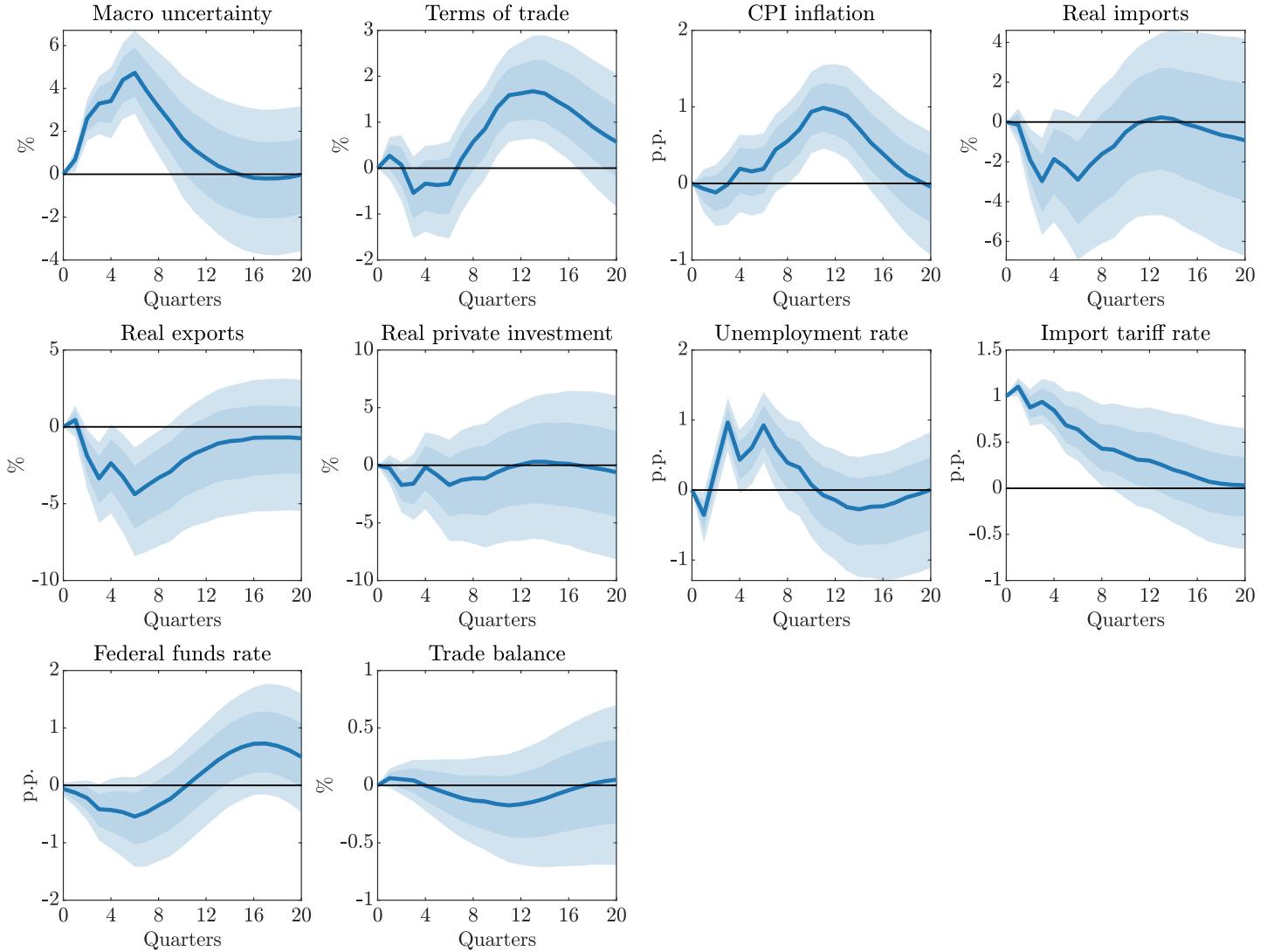
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.9: Augmented VAR: include geopolitical risk



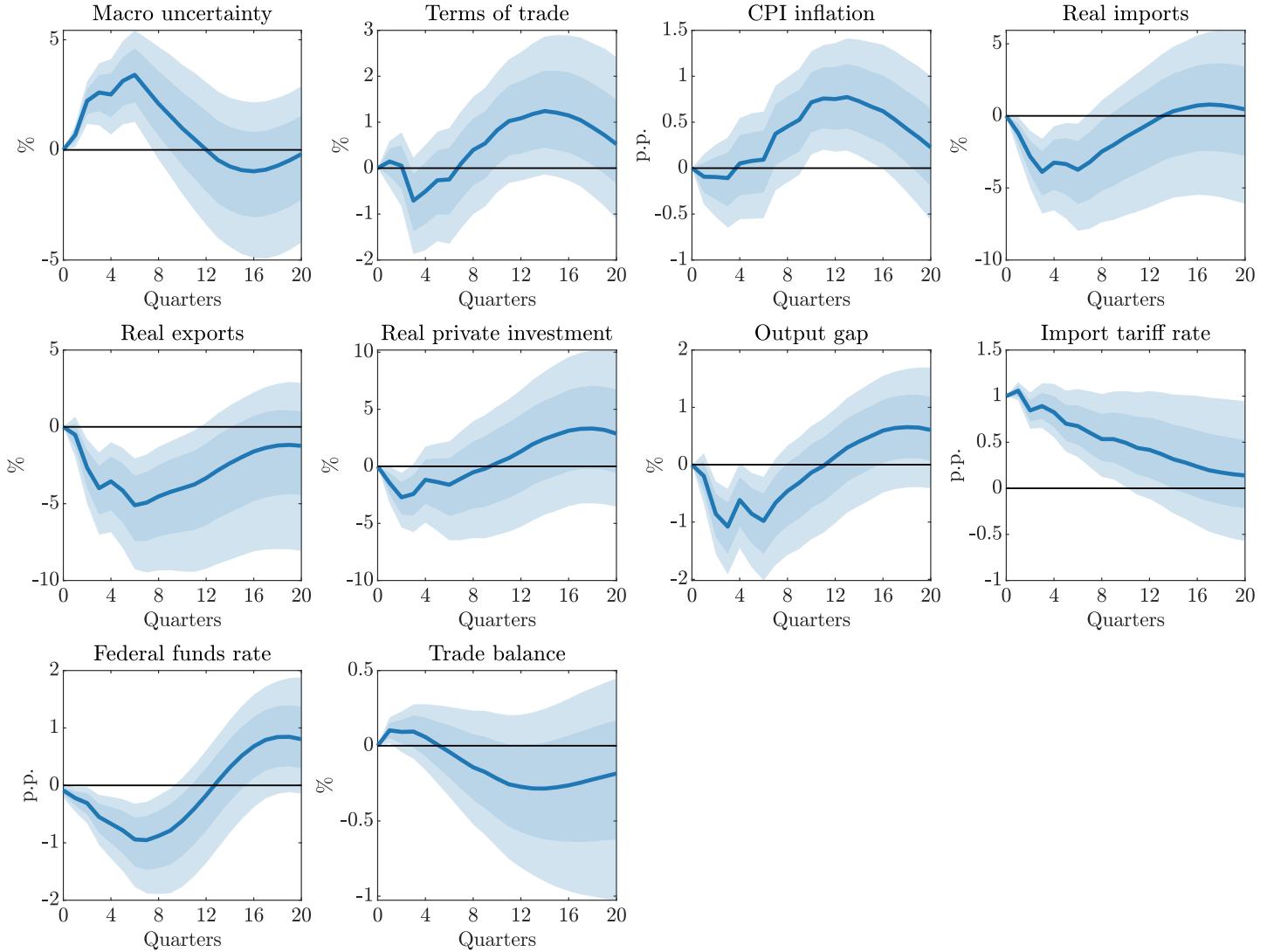
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.10: Alternative measures of real activity: unemployment rate



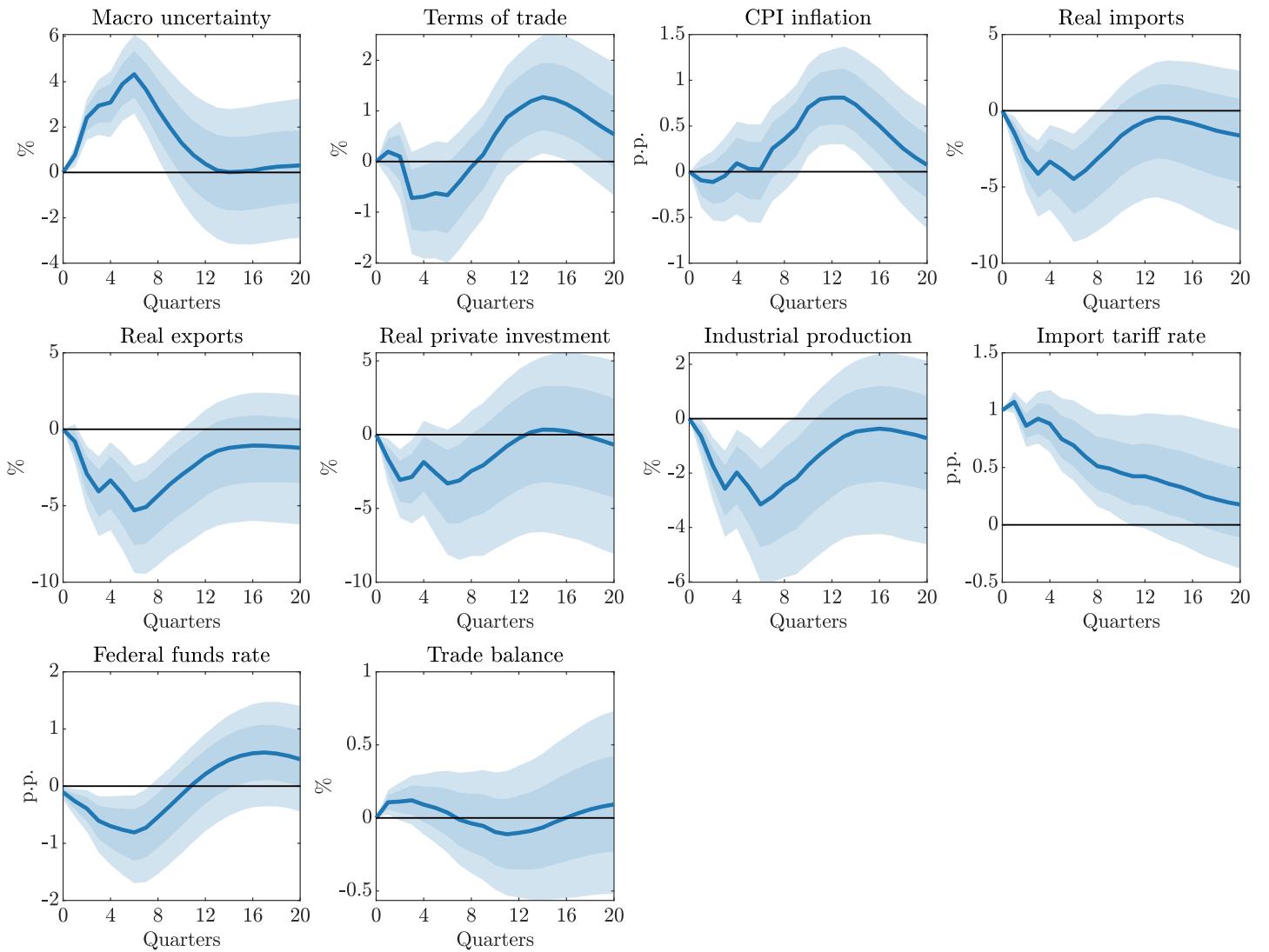
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.11: Alternative measures of real activity: output gap



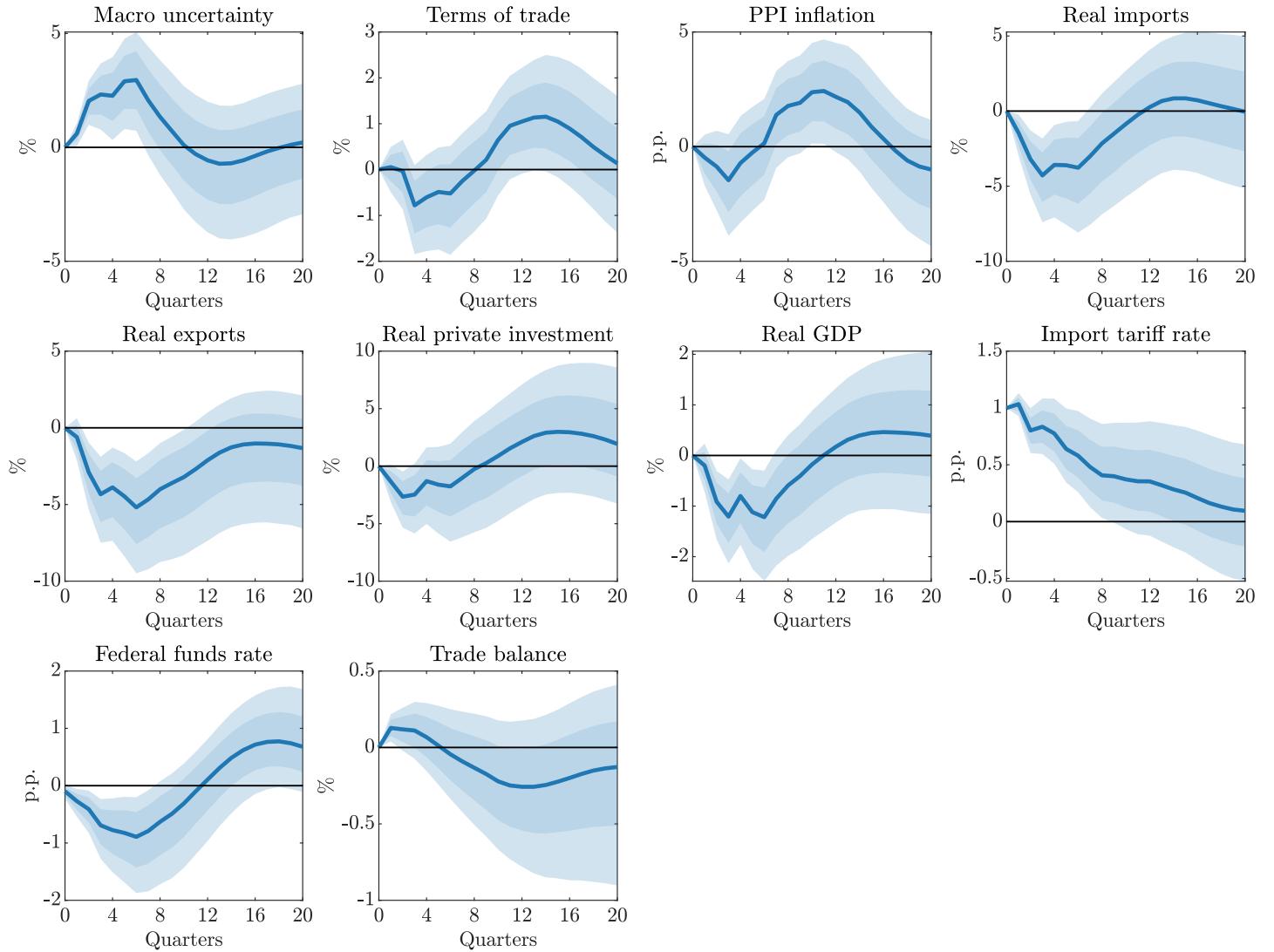
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.12: Alternative measures of real activity: industrial production



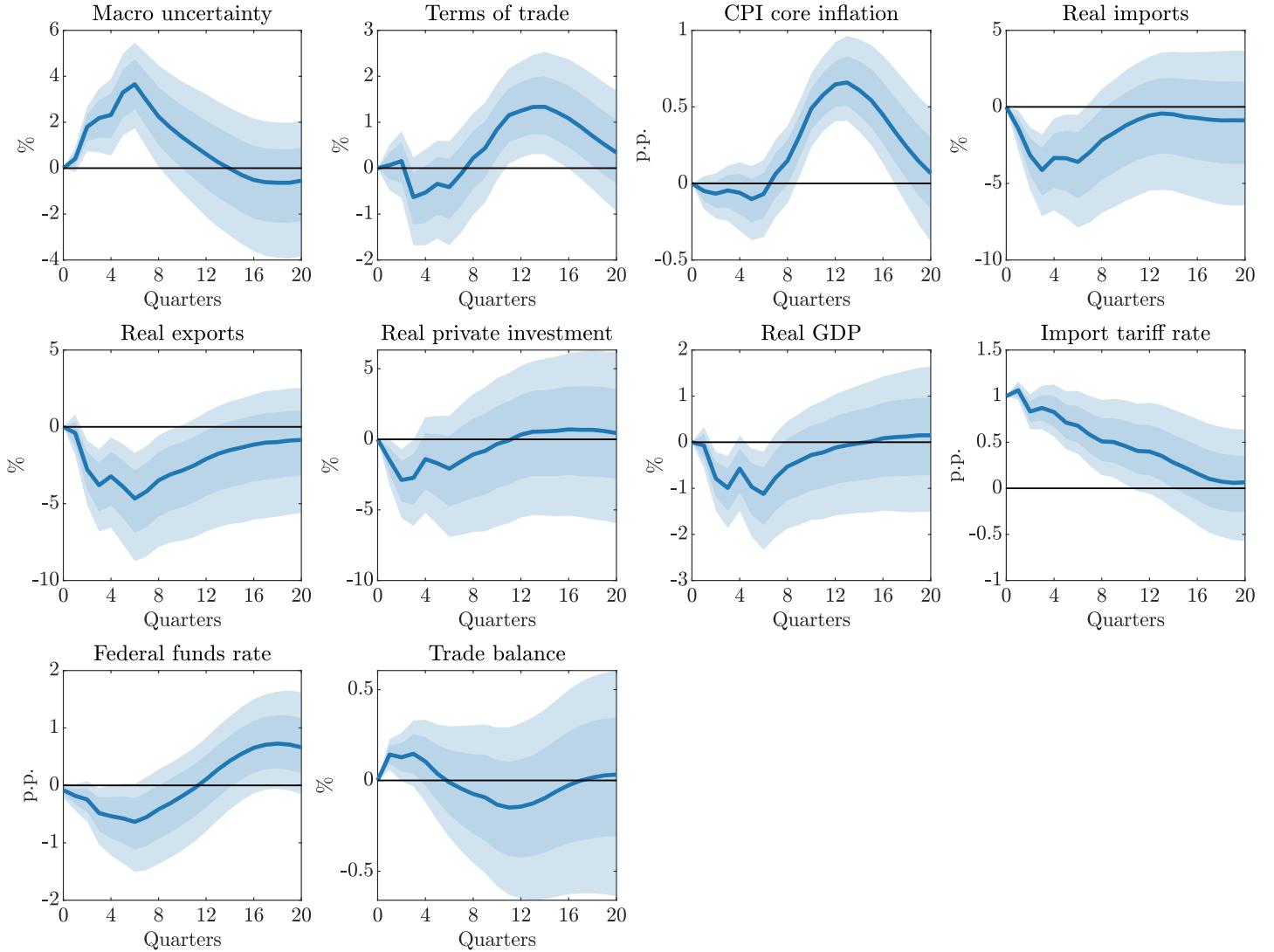
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.13: Alternative measures of prices: PPI inflation



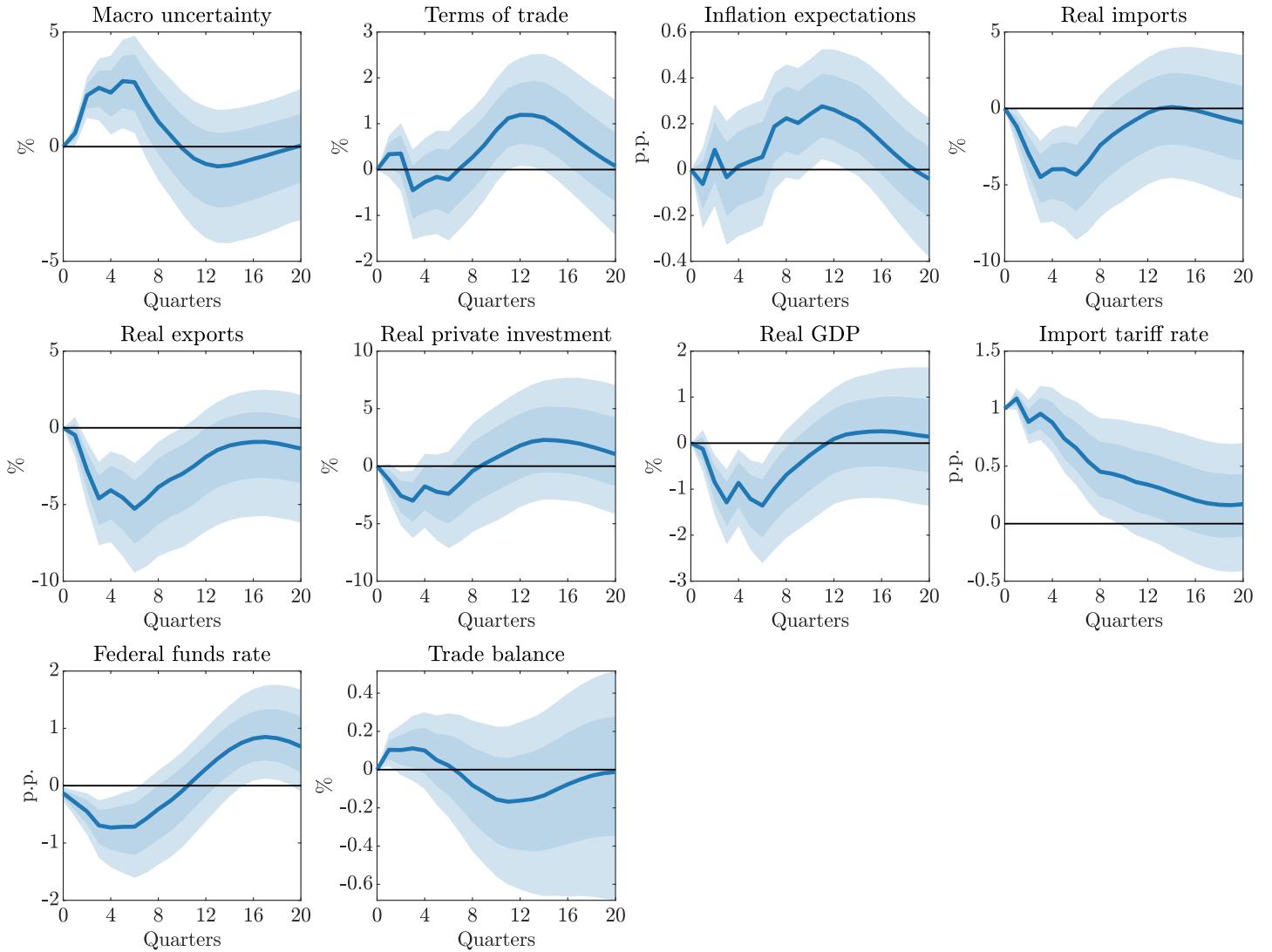
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.14: Alternative measures of prices: CPI core inflation



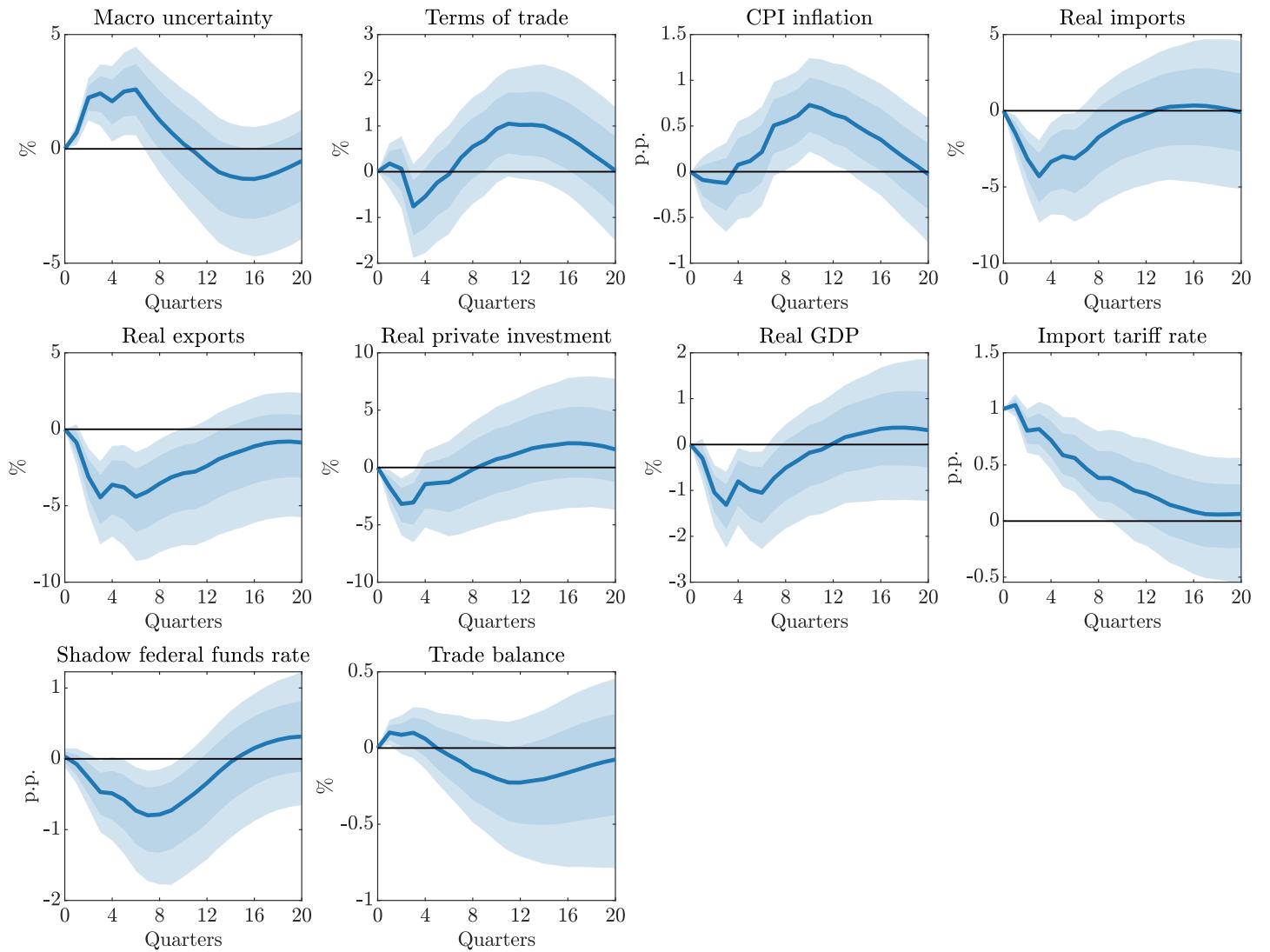
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.15: Alternative measures of prices: Inflation expectations



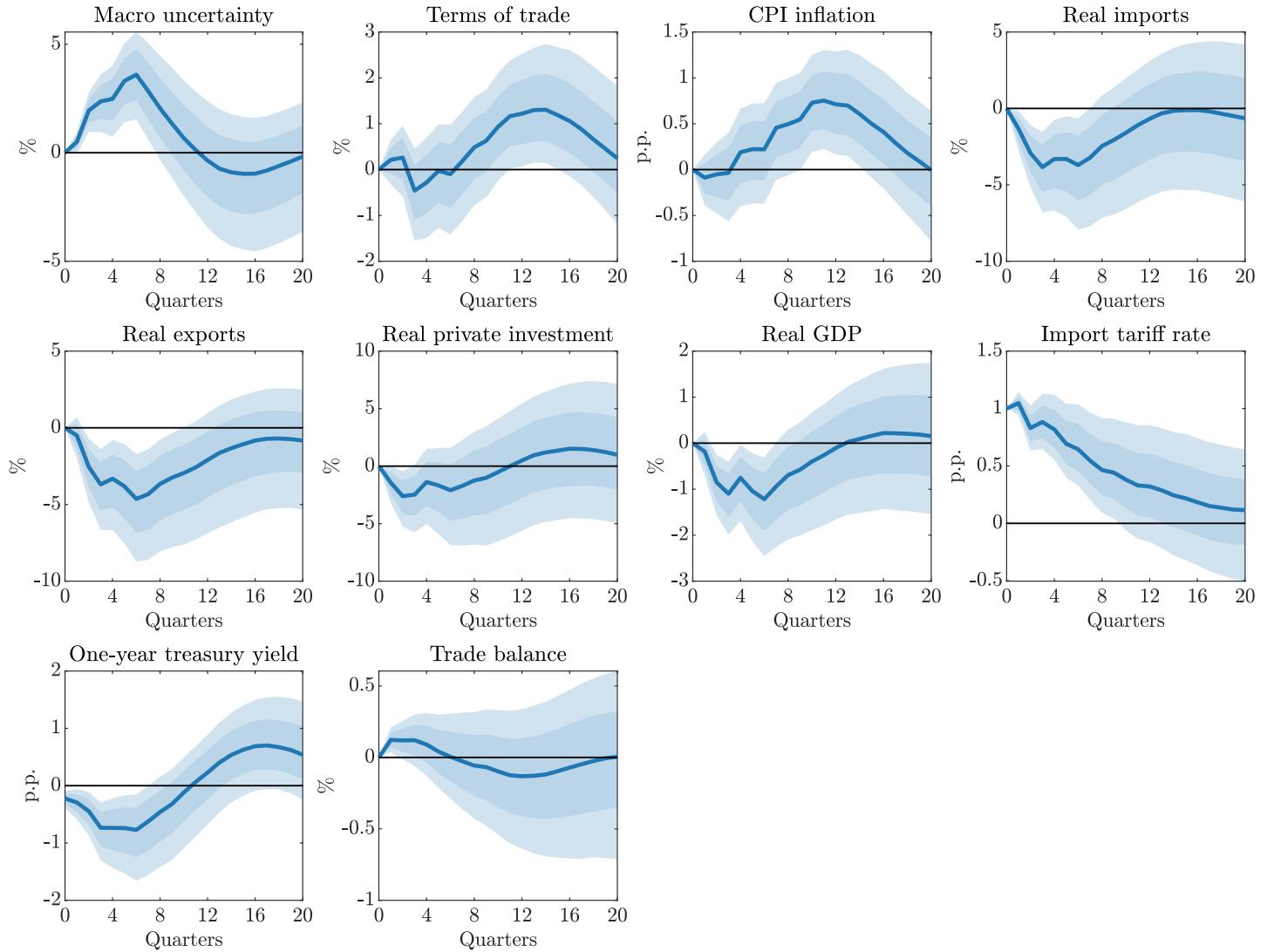
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.16: Alternative interest rates: Shadow federal funds rate



Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure F.17: Alternative interest rates: One-year treasury rate

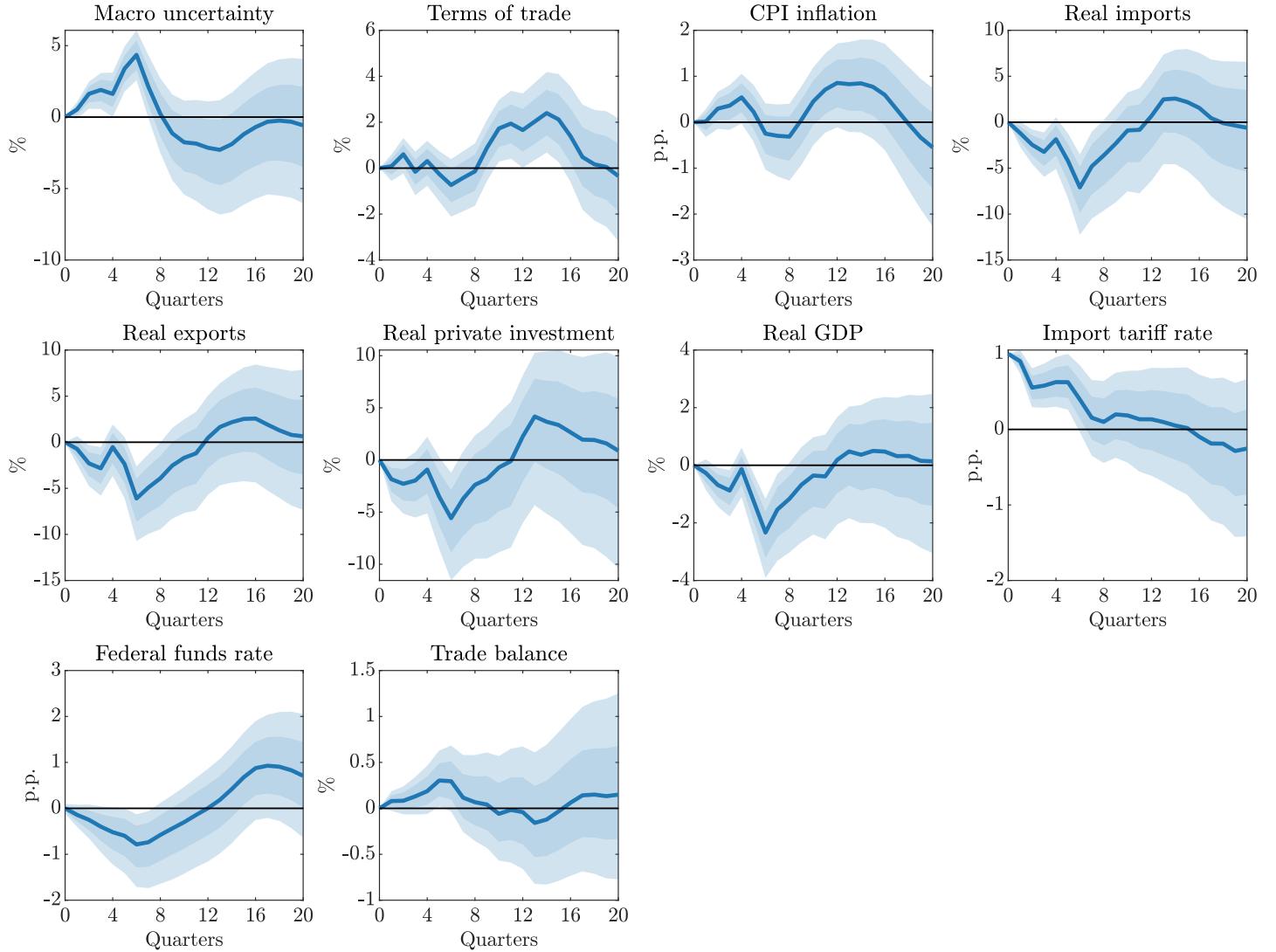


Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text.

G Further sensitivity analysis for the tariff VAR

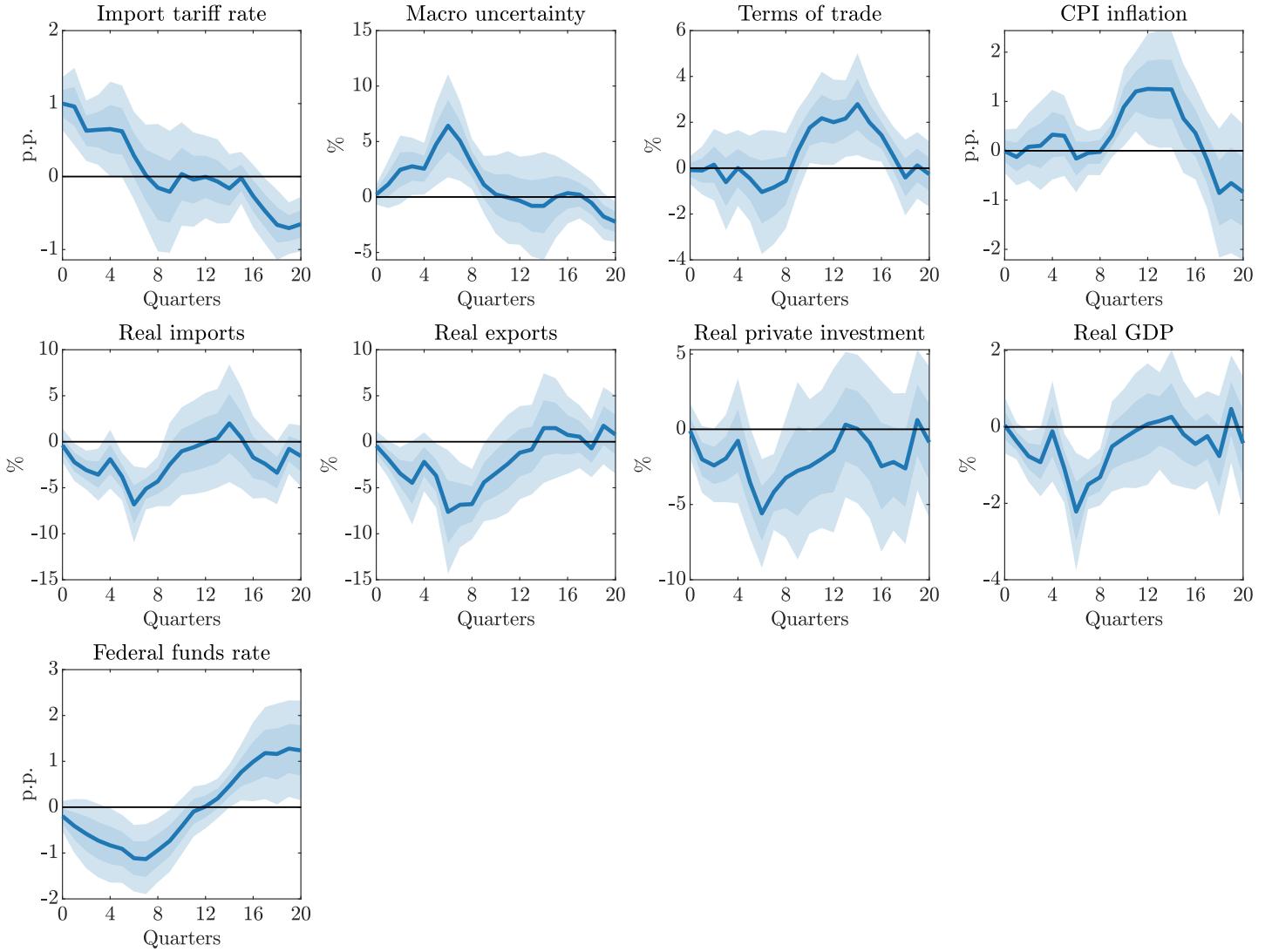
In this section, we provide an additional analysis to investigate the sensitivity of our results regarding various modeling choices. We relax VAR assumptions by adjusting the lag order or by estimating local projections, as recommended by [Montiel Olea, Plagborg-Møller, Qian, and Wolf \(2025\)](#). We account for the Covid-19 pandemic being part of our sample by including dummy variables as recommended by [Lenza and Primiceri \(2022\)](#). We include higher-order deterministic time trends to account for slow-moving trends in international trade. The trade balance is always computed from real imports and real exports, as explained in the main text. The only exception is when we include the trade balance as a separate variable in the VAR, rather than real exports and real imports.

Figure G.1: Doubling the VAR lag order



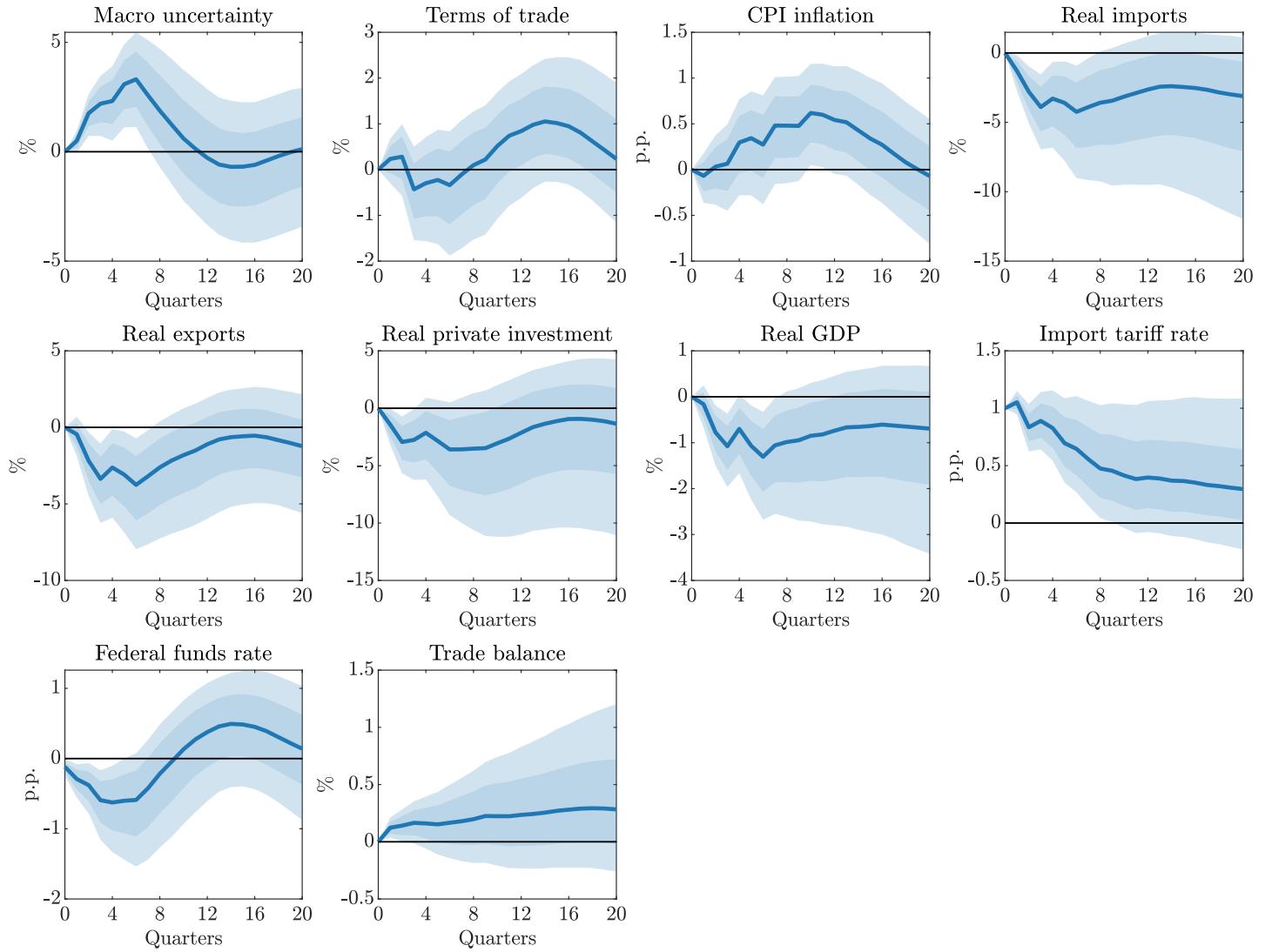
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text. The VAR lag order is set to 8.

Figure G.2: Estimating local projections



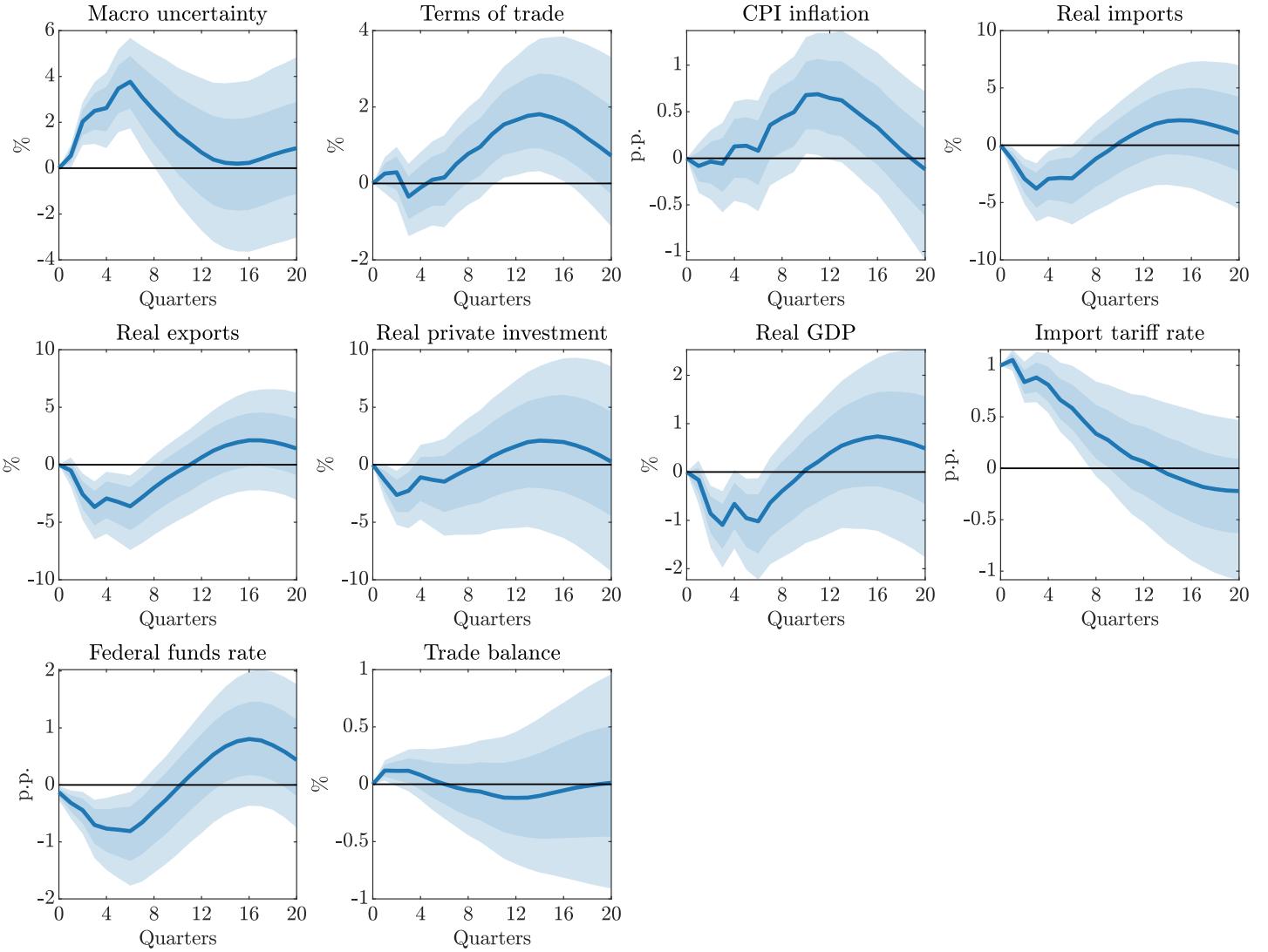
Notes: This figure shows impulse responses estimated based on OLS using local projections. The solid blue line represents the point estimate, and the shaded areas are 68% and 90% confidence bands based on standard errors robust to heteroskedasticity and serial correlation. The local projection includes four lags of the shock and the outcome variable as controls. The shock is based on the posterior median of the Tariff VAR, taken over the reduced-form parameters.

Figure G.3: Dummying out of the Covid-19 pandemic



Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text. The Covid-19 dummy is included as an additional deterministic variable and is activated from 2020Q1 to 2021Q4.

Figure G.4: Allowing for a quadratic time trend

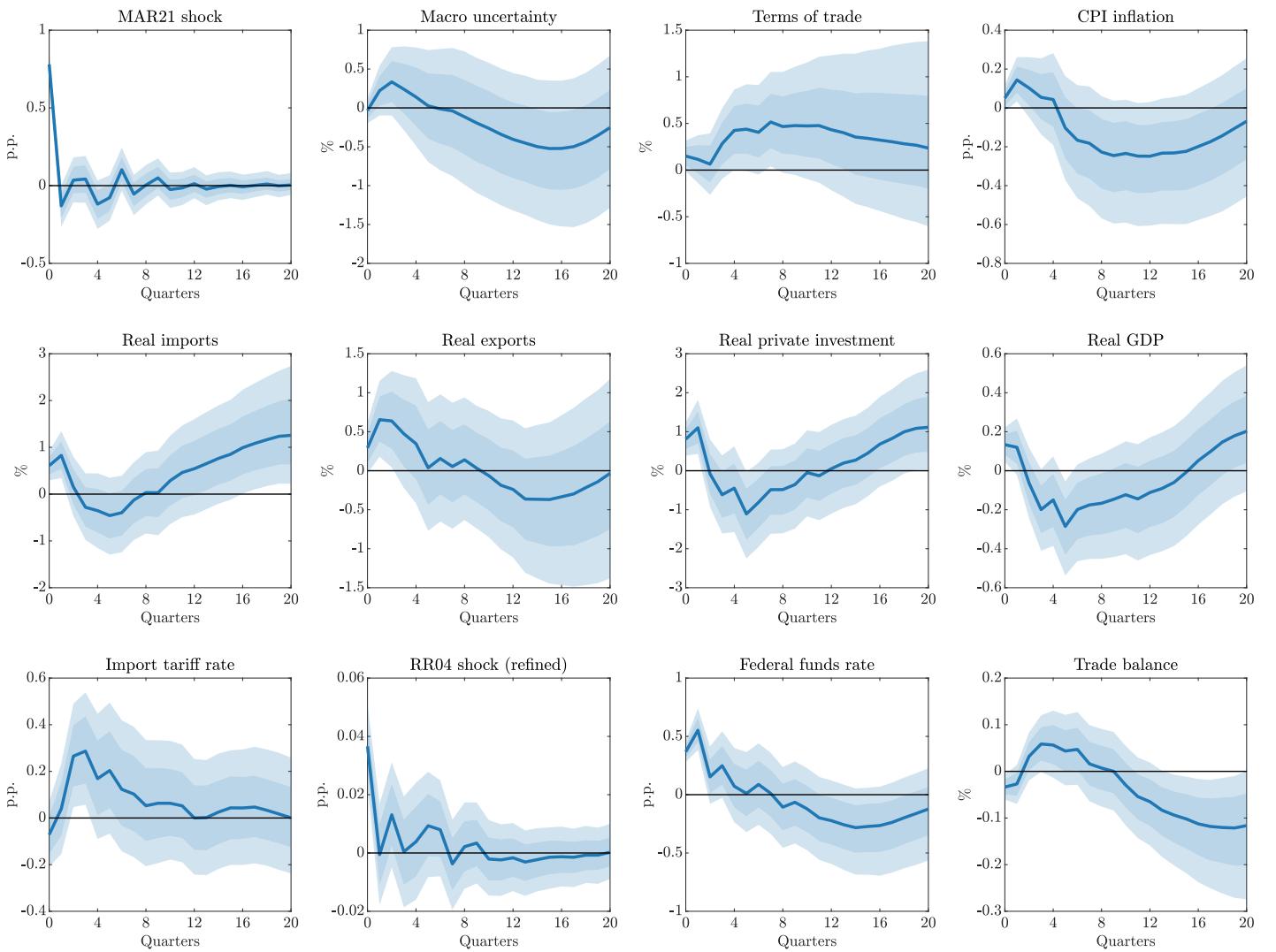


Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text. The deterministic variables include a constant, a linear, and a quadratic time trend.

H Baseline monetary responses

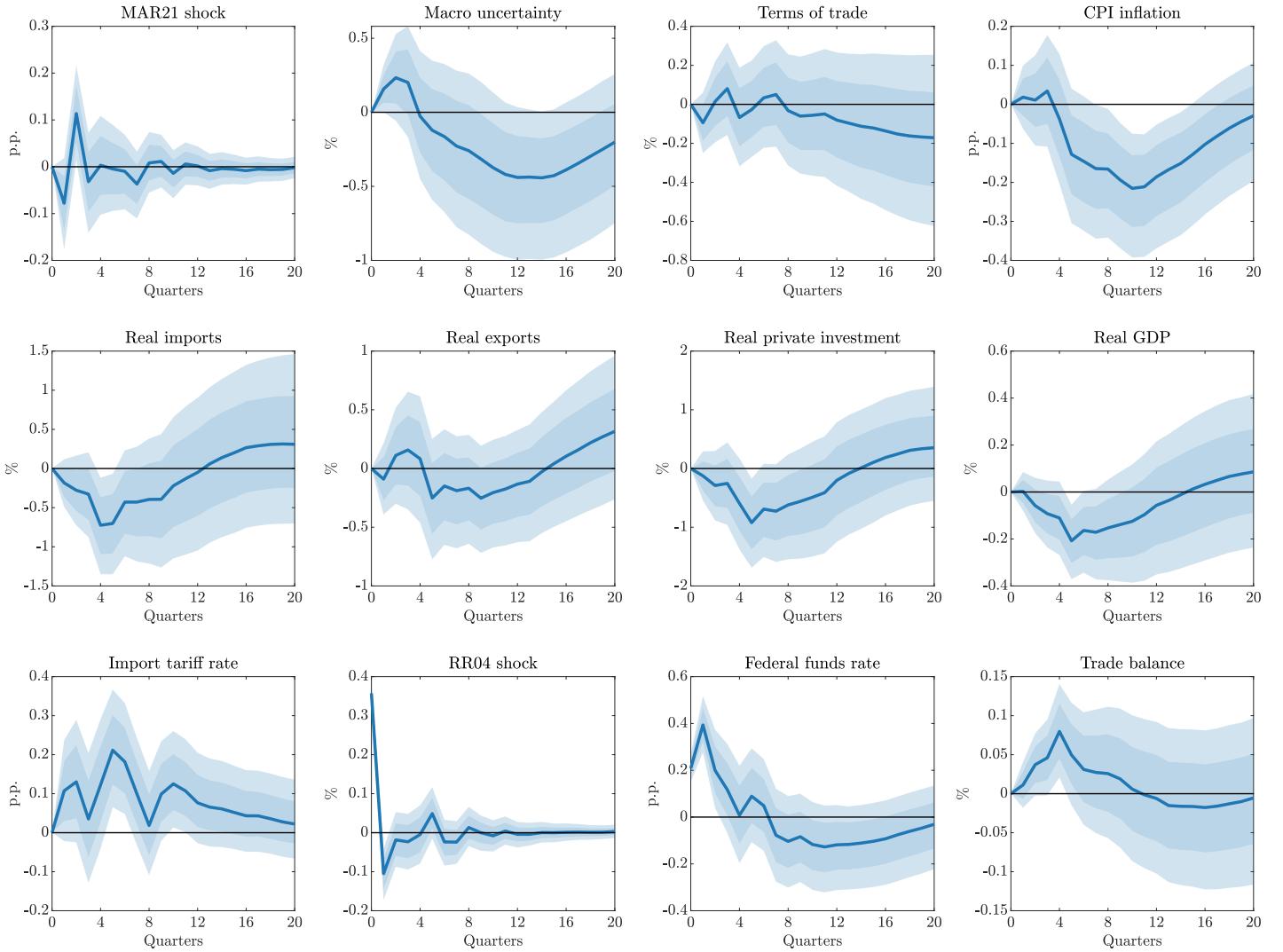
In this section, we show the impulse responses to both monetary policy shocks that are used to construct the baseline monetary counterfactuals. Additionally, we display the counterfactuals using either only the shock from [Miranda-Agrippino and Ricco \(2021\)](#) or from [Romer and Romer \(2004\)](#).

Figure H.1: Baseline monetary VAR: Responses to the [Miranda-Agrippino and Ricco \(2021\)](#) shock



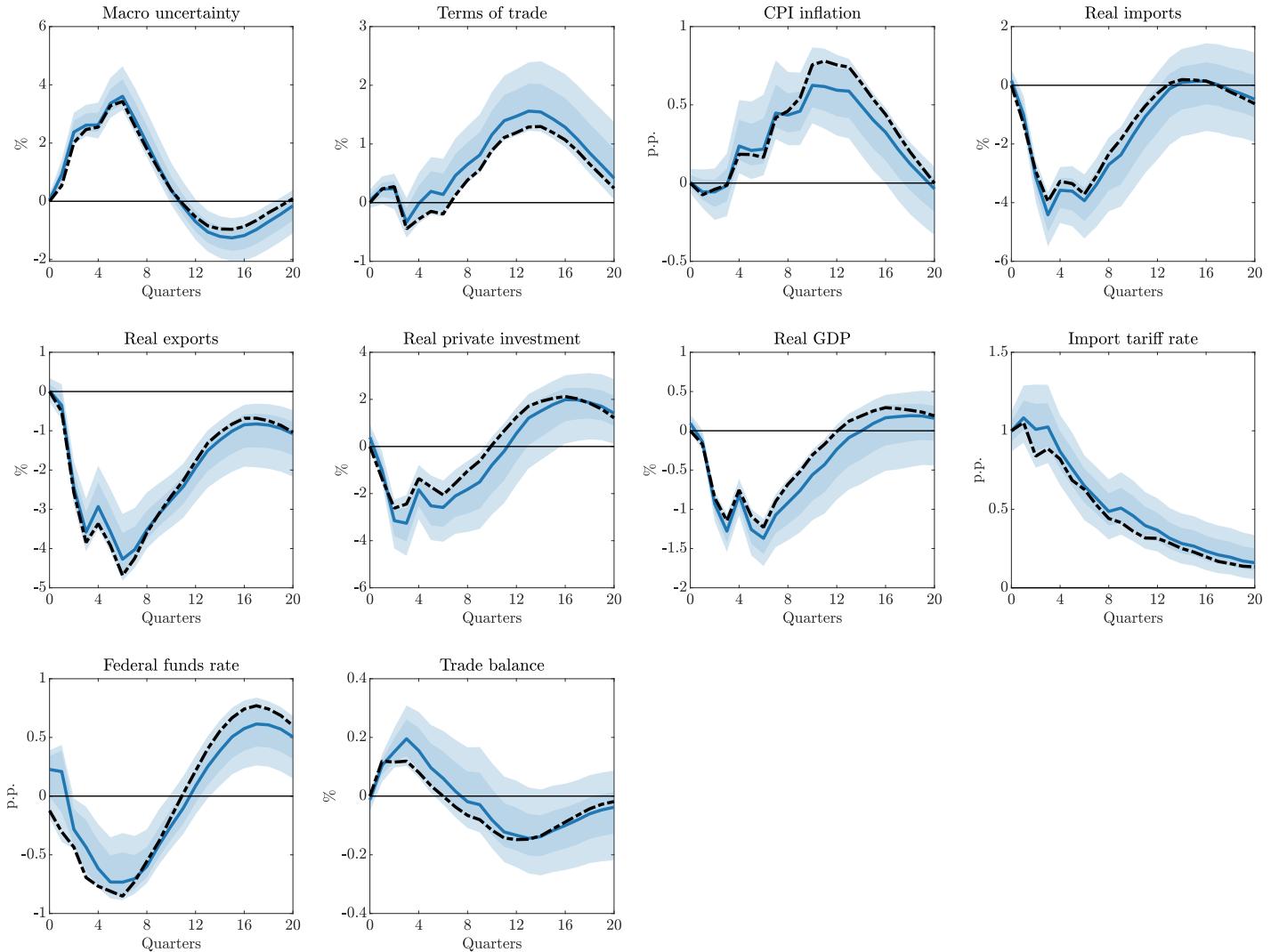
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text. MAR21 refers to the shock from [Miranda-Agrippino and Ricco \(2021\)](#).

Figure H.2: Baseline monetary VAR: Responses to the [Romer and Romer \(2004\)](#) shock



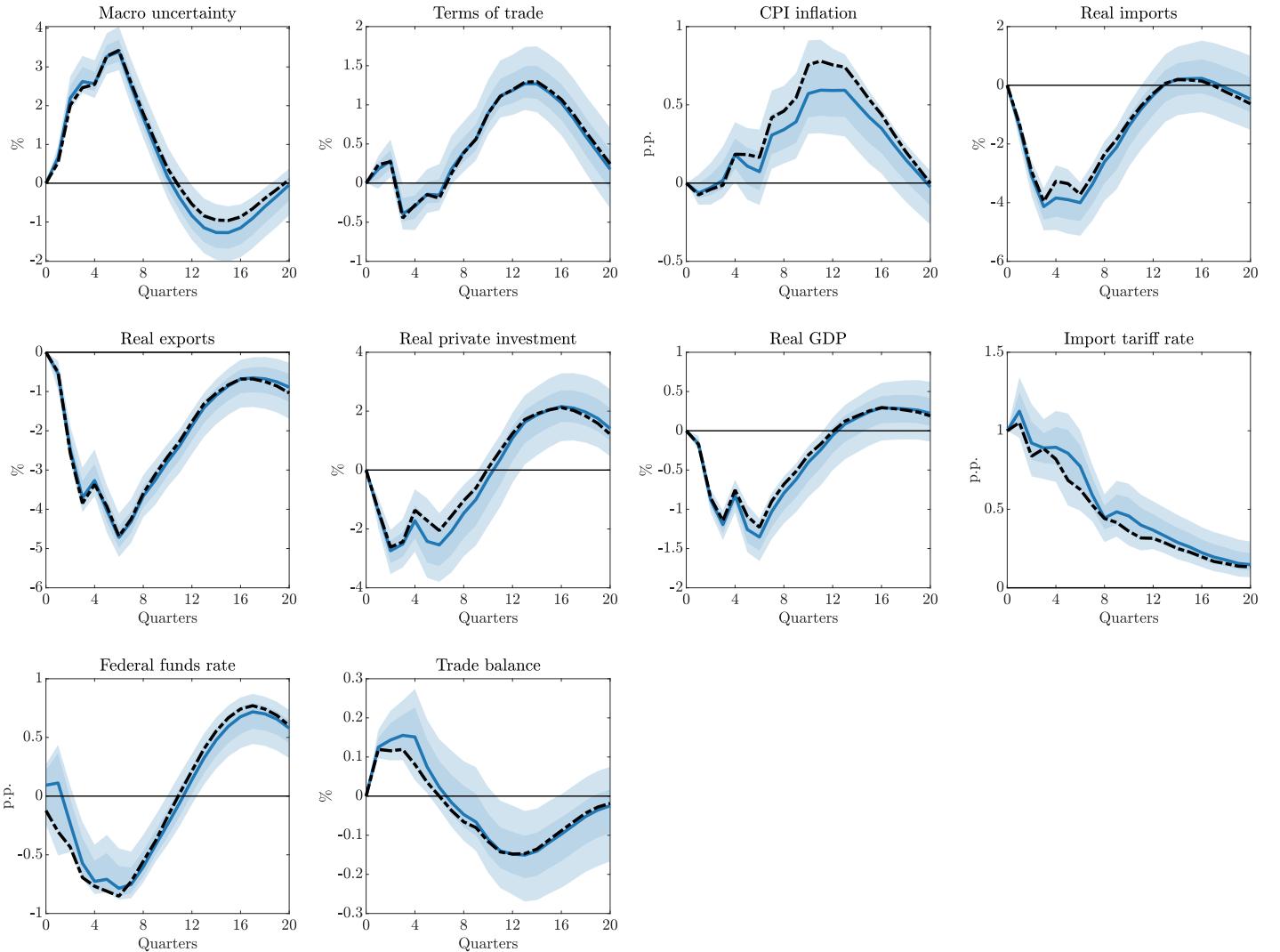
Notes: This figure shows impulse responses estimated based on a Bayesian VAR, as specified in Section ???. The solid blue line represents the posterior median, and the shaded areas are 68% and 90% credible sets. The particular specification under consideration is indicated in the figure caption and described in the main text. RR04 refers to the shock from [Romer and Romer \(2004\)](#) augmented until 2007.

Figure H.3: No federal funds rate response counterfactual using only the [Miranda-Agrippino and Ricco \(2021\)](#) shock



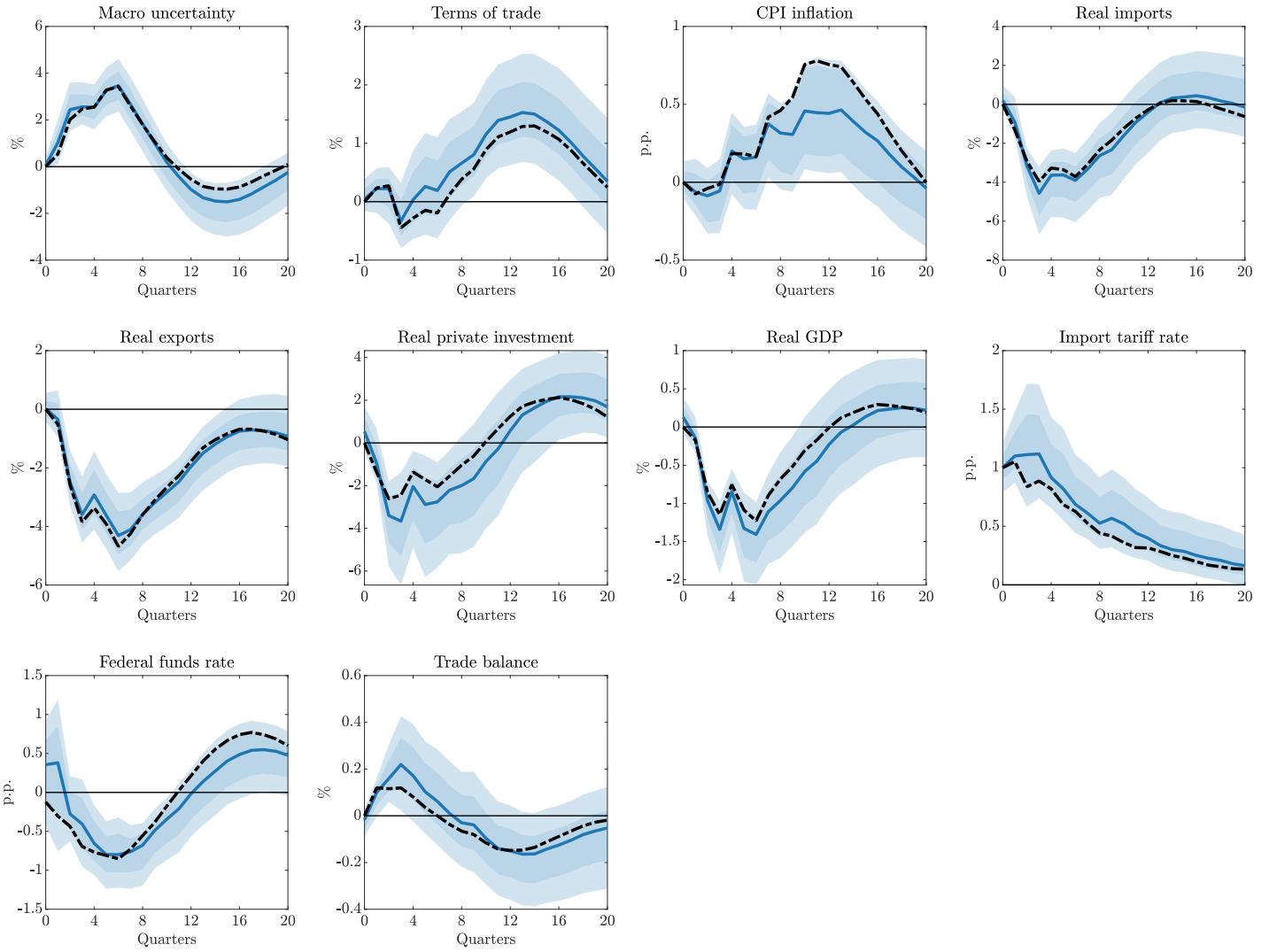
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure H.4: No federal funds rate response counterfactual using only the [Romer and Romer \(2004\)](#) shock



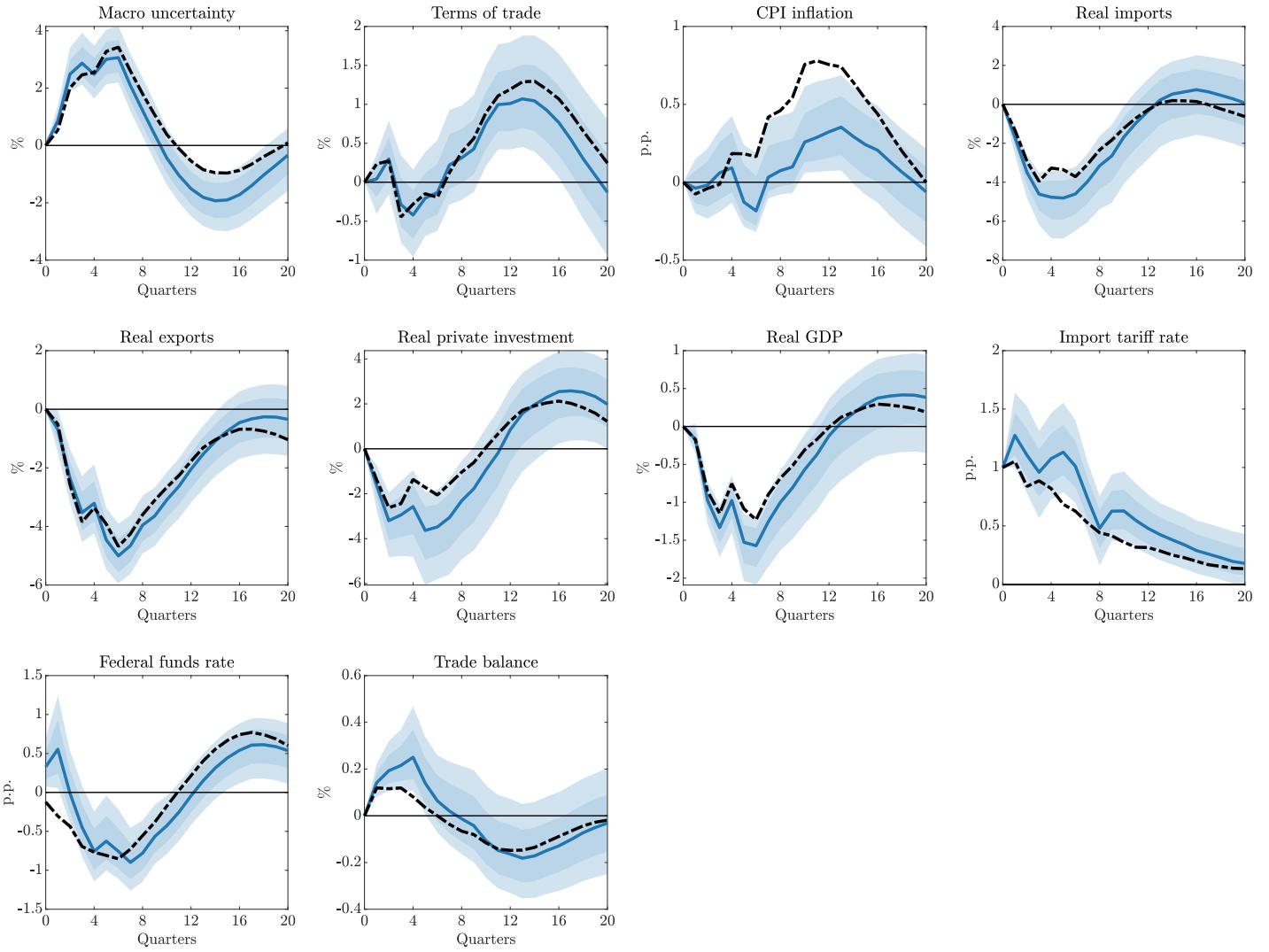
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure H.5: Strict inflation stabilization counterfactual using only the [Miranda-Agrippino and Ricco \(2021\)](#) shock



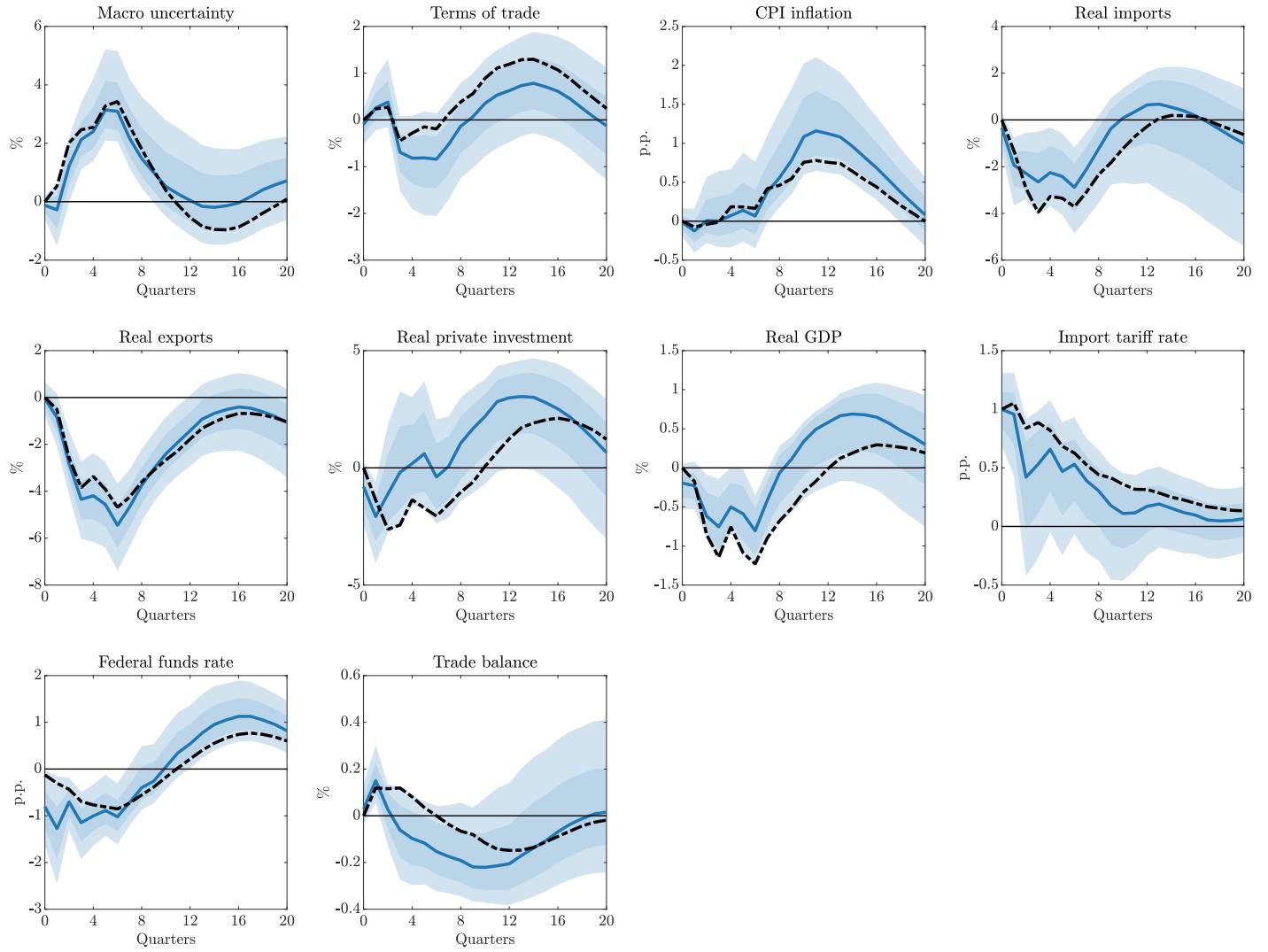
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure H.6: Strict inflation stabilization counterfactual using only the [Romer and Romer \(2004\)](#) shock



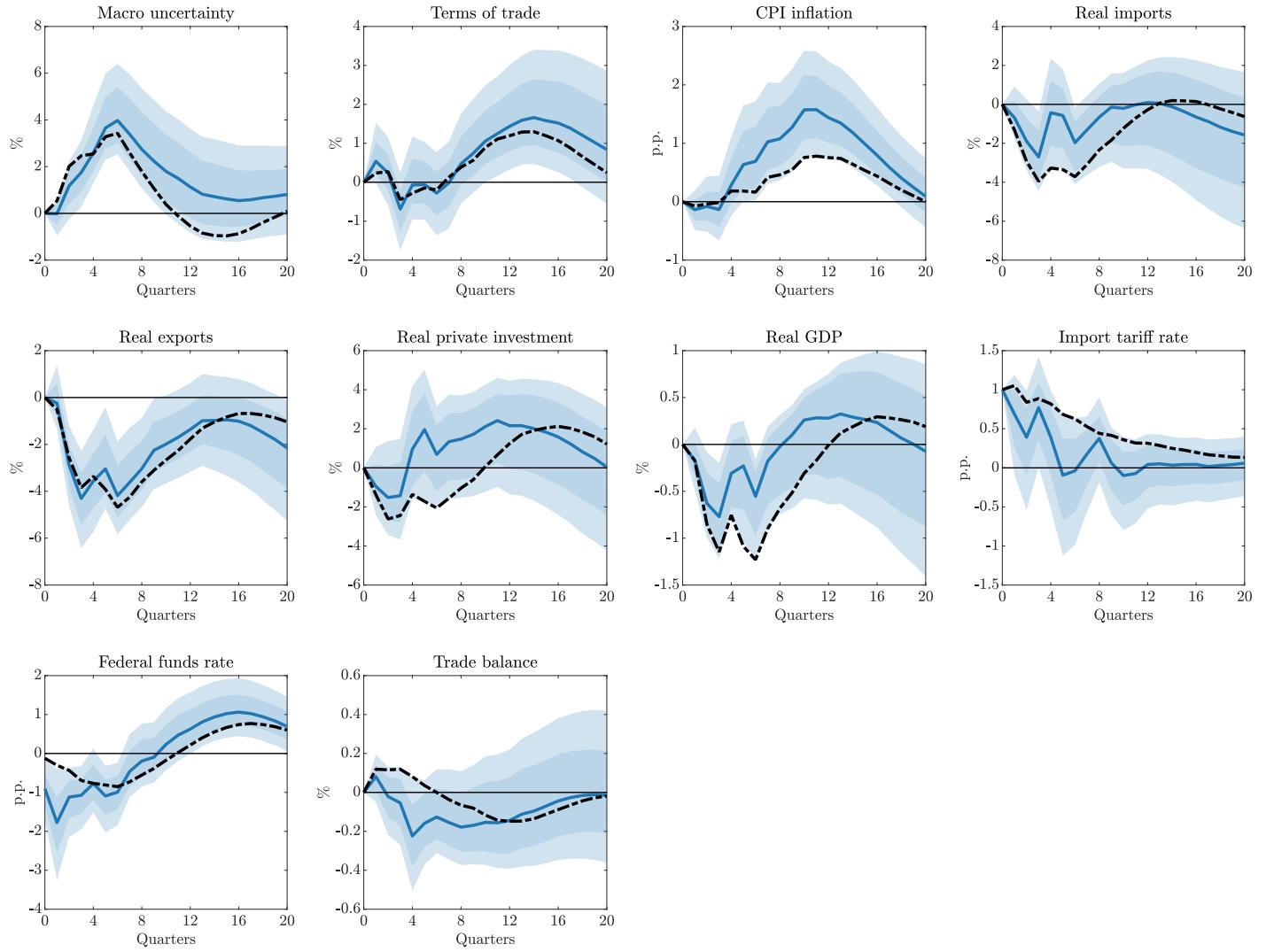
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure H.7: Strict output stabilization counterfactual using only the [Miranda-Agrippino and Ricco \(2021\)](#) shock



Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure H.8: Strict output stabilization counterfactual using only the [Romer and Romer \(2004\)](#) shock



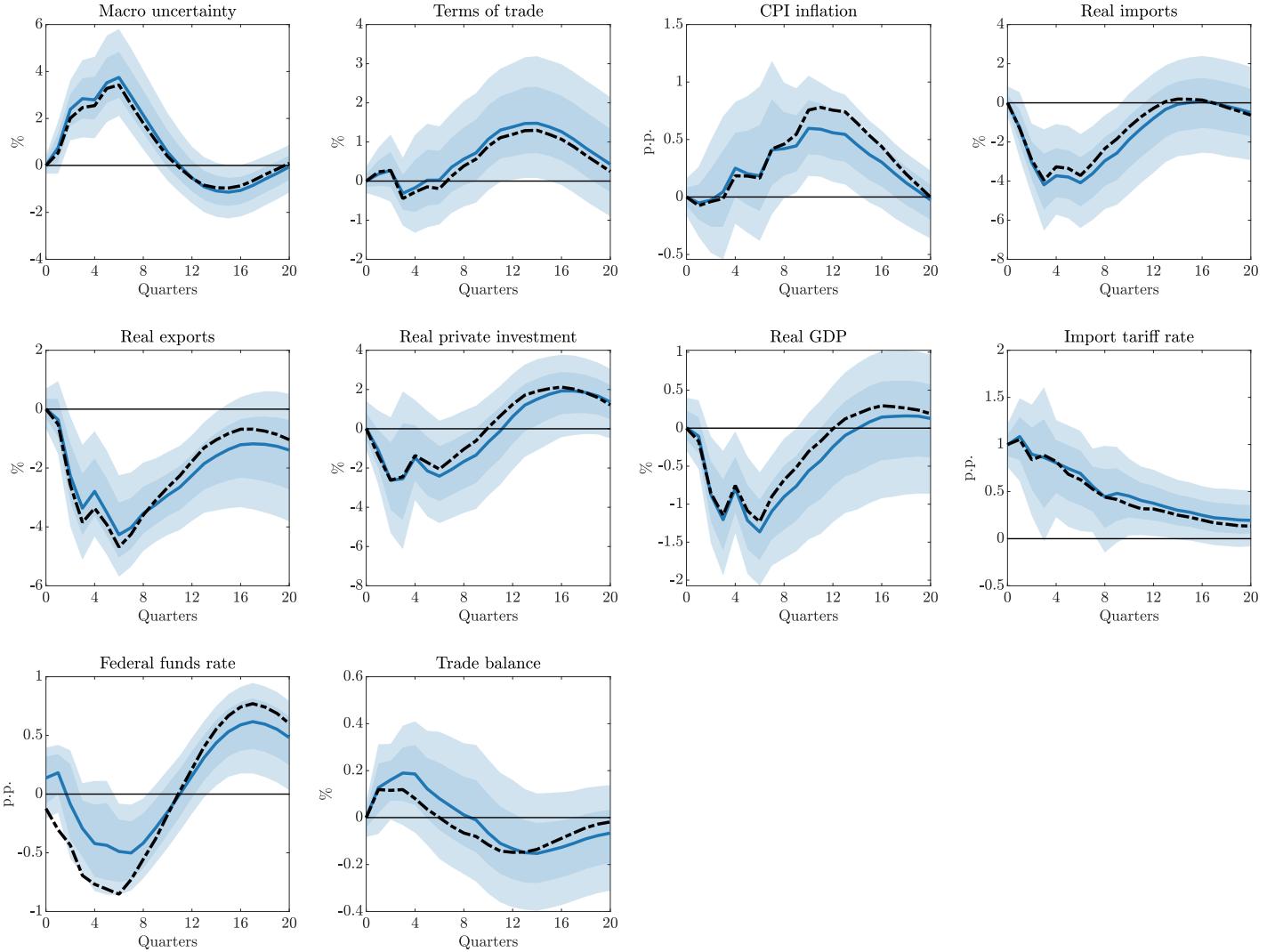
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

I Alternative monetary policy shocks

In this section, we show alternative monetary policy counterfactuals based on alternative sample periods and alternative shock measures from [Jarociński \(2024\)](#) and [Hack et al. \(2024\)](#).⁵

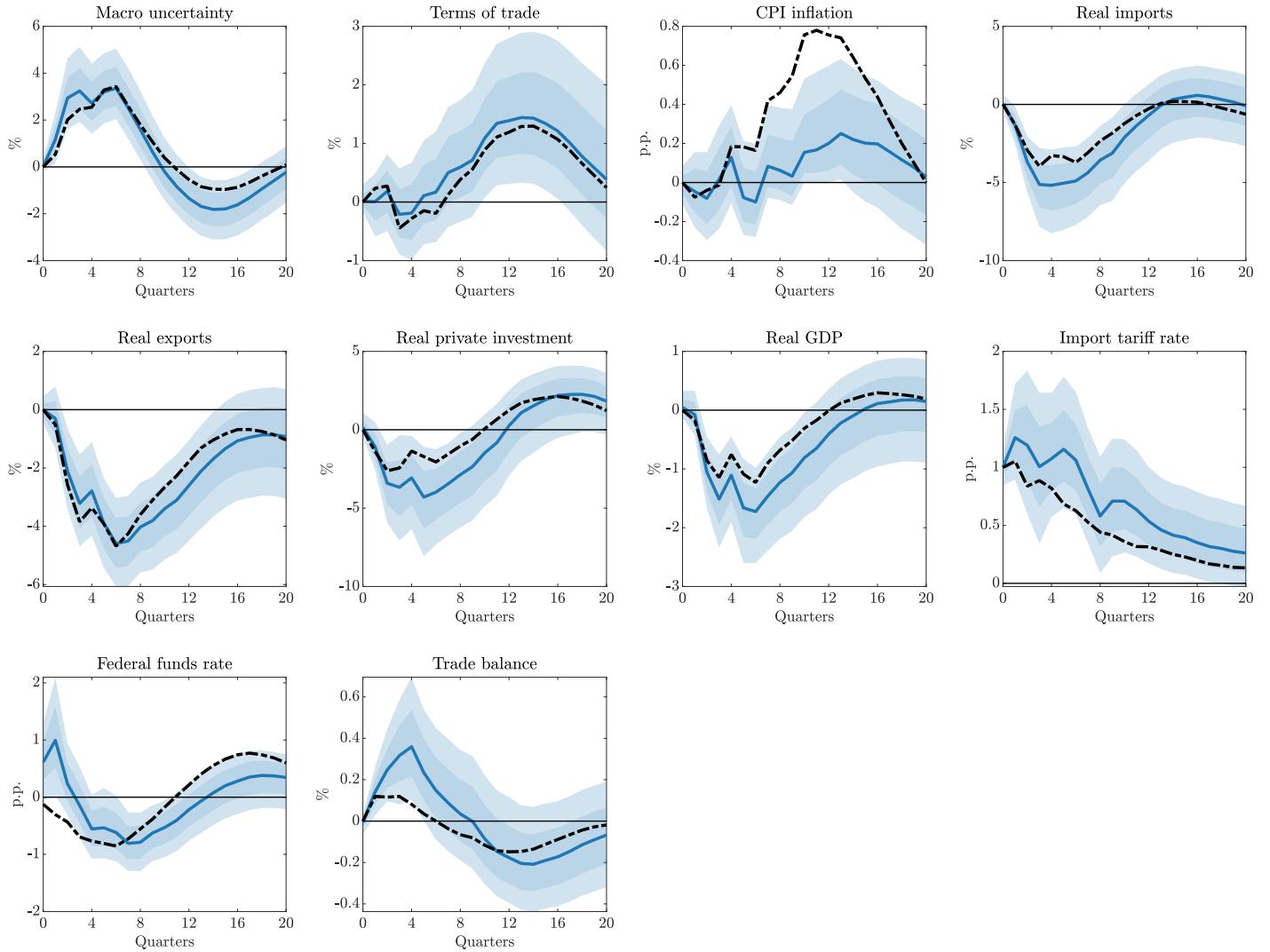
⁵We have also investigated other commonly studied types of monetary shocks, e.g., from [Gertler and Karadi \(2015\)](#) and [Jarociński and Karadi \(2020\)](#). However, we failed to obtain statistically significant effects, possibly because it is more challenging to identify monetary shocks at a quarterly frequency.

Figure I.1: No federal funds rate response counterfactual, extended sample until 2024



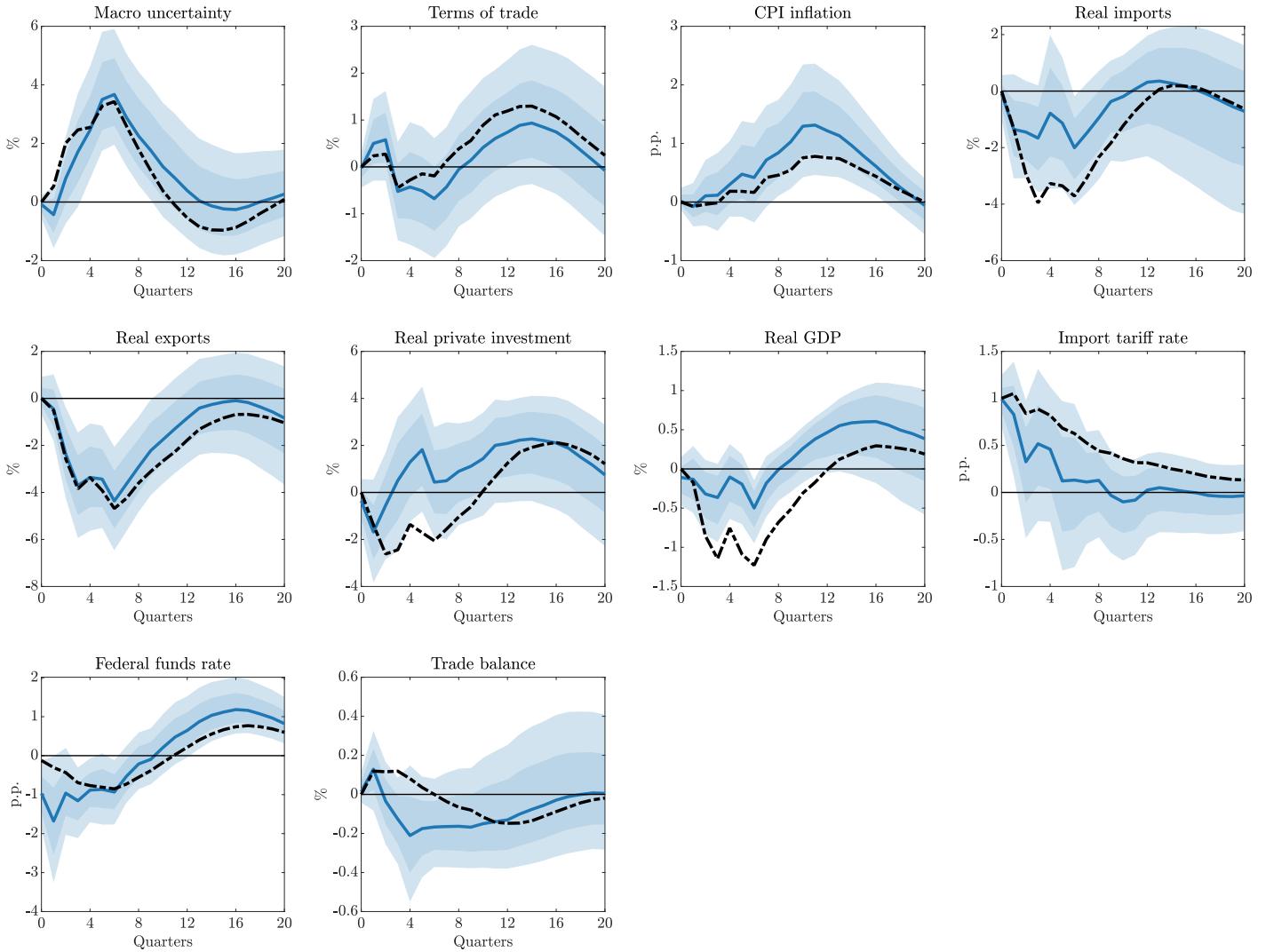
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure I.2: Strict inflation stabilization counterfactual, extended sample until 2024



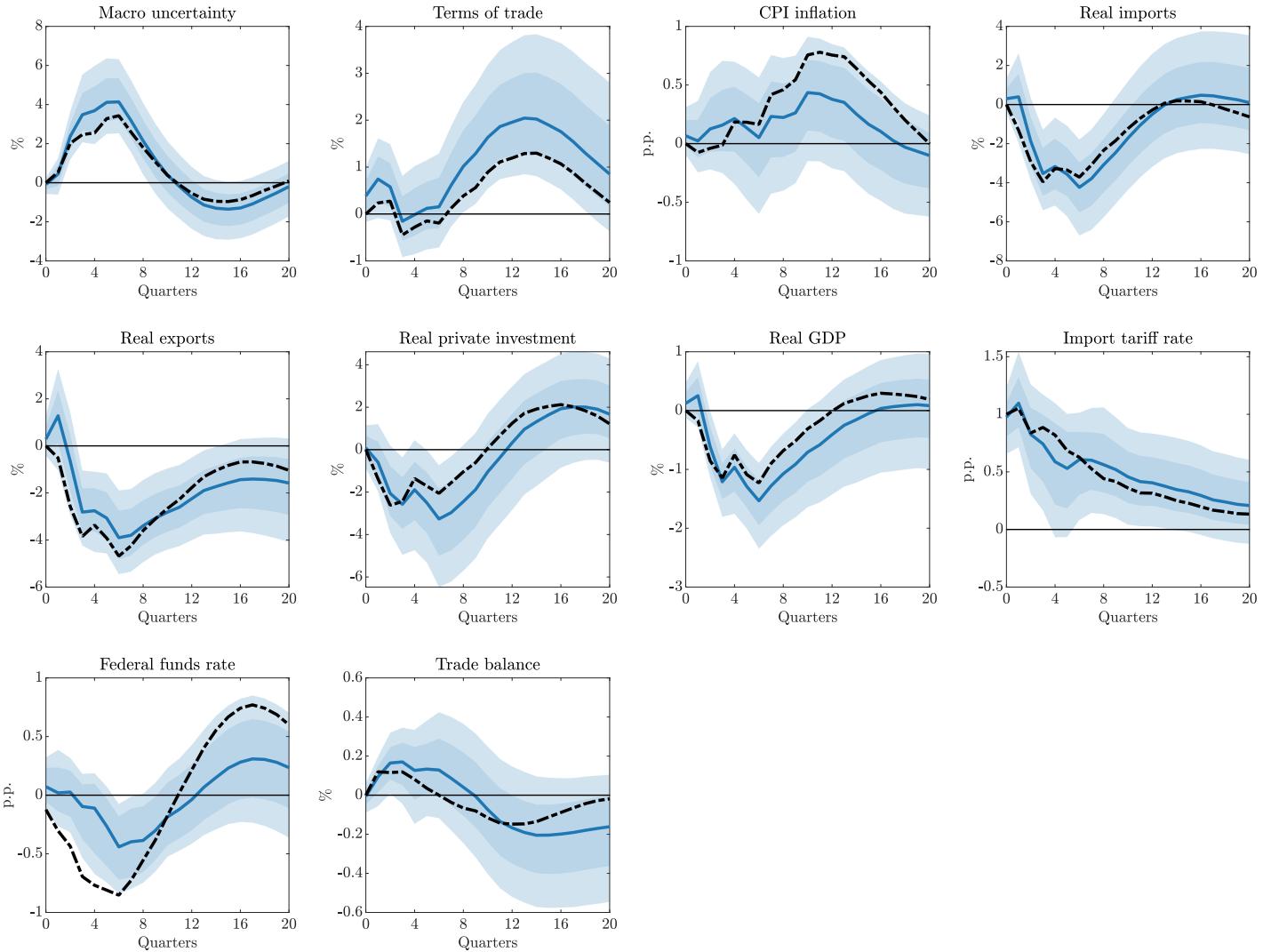
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure I.3: Strict output stabilization counterfactual, extended sample until 2024



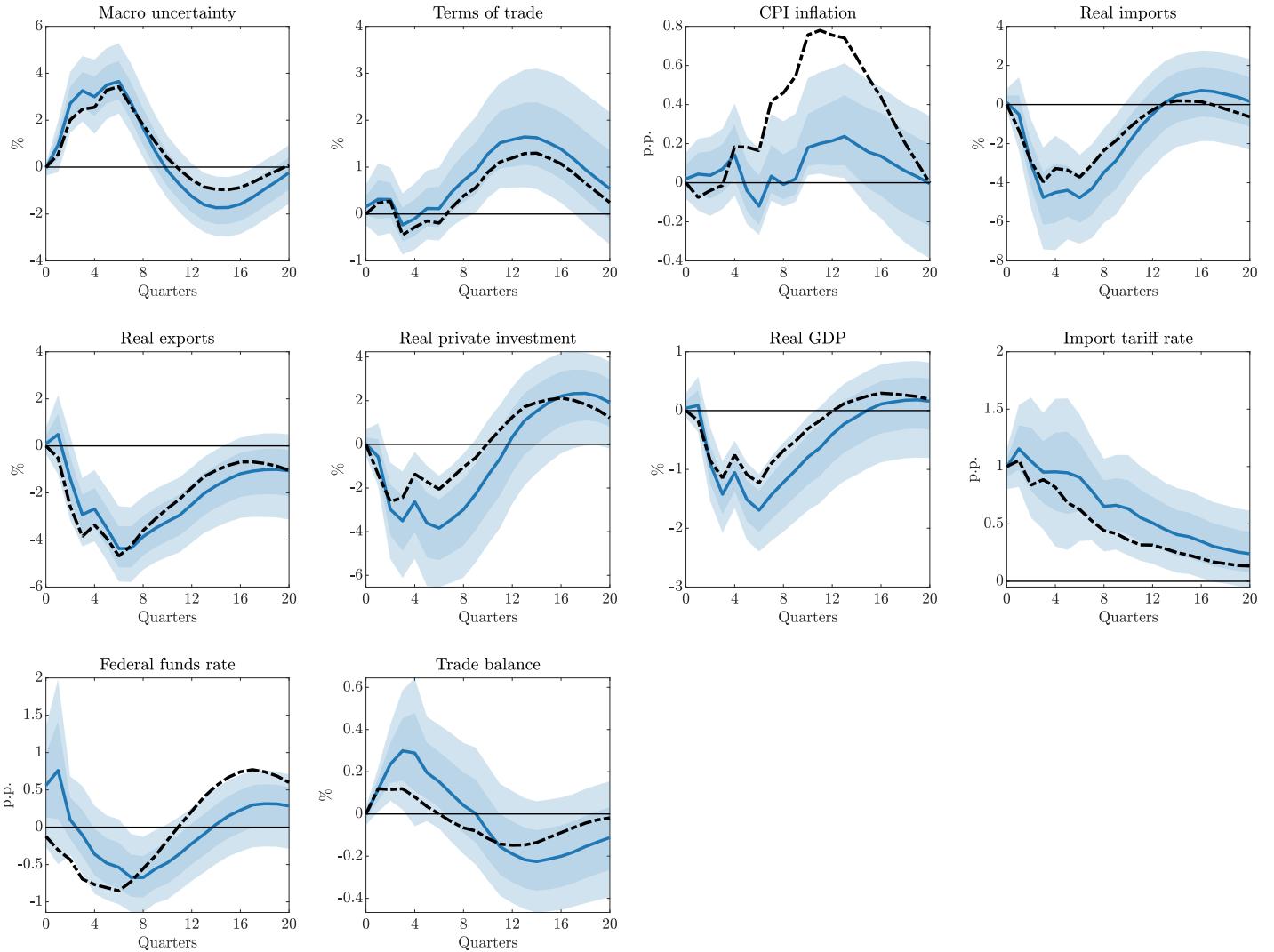
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure I.4: No federal funds rate response counterfactual, extended sample until 2024 and using the shock from [Jarociński \(2024\)](#)



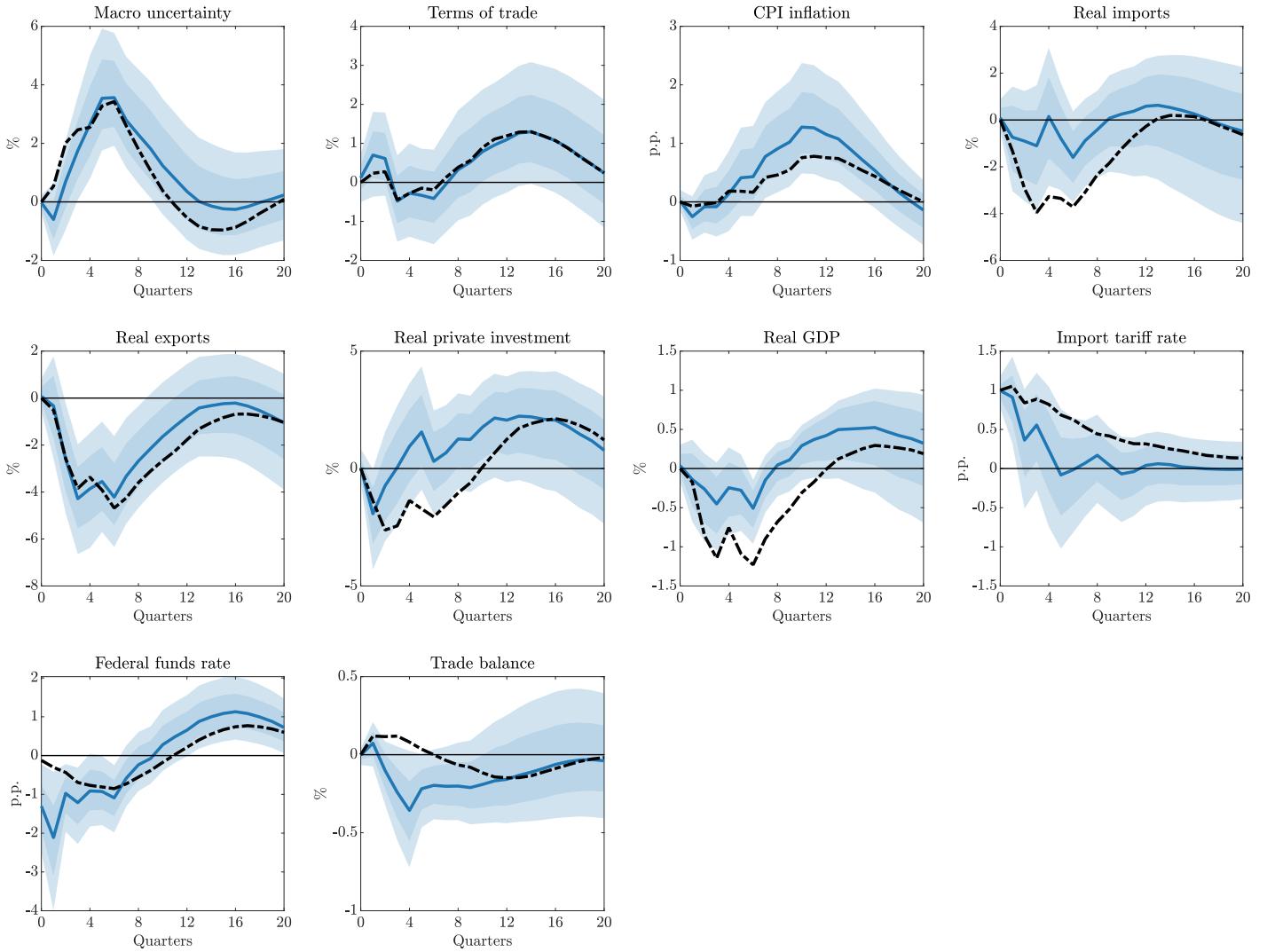
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text. We use the conventional monetary policy shock (uI) from [Jarociński \(2024\)](#) to replace the shock from [Miranda-Agrippino and Ricco \(2021\)](#).

Figure I.5: Strict inflation stabilization counterfactual, extended sample until 2024 and using the shock from [Jarociński \(2024\)](#)



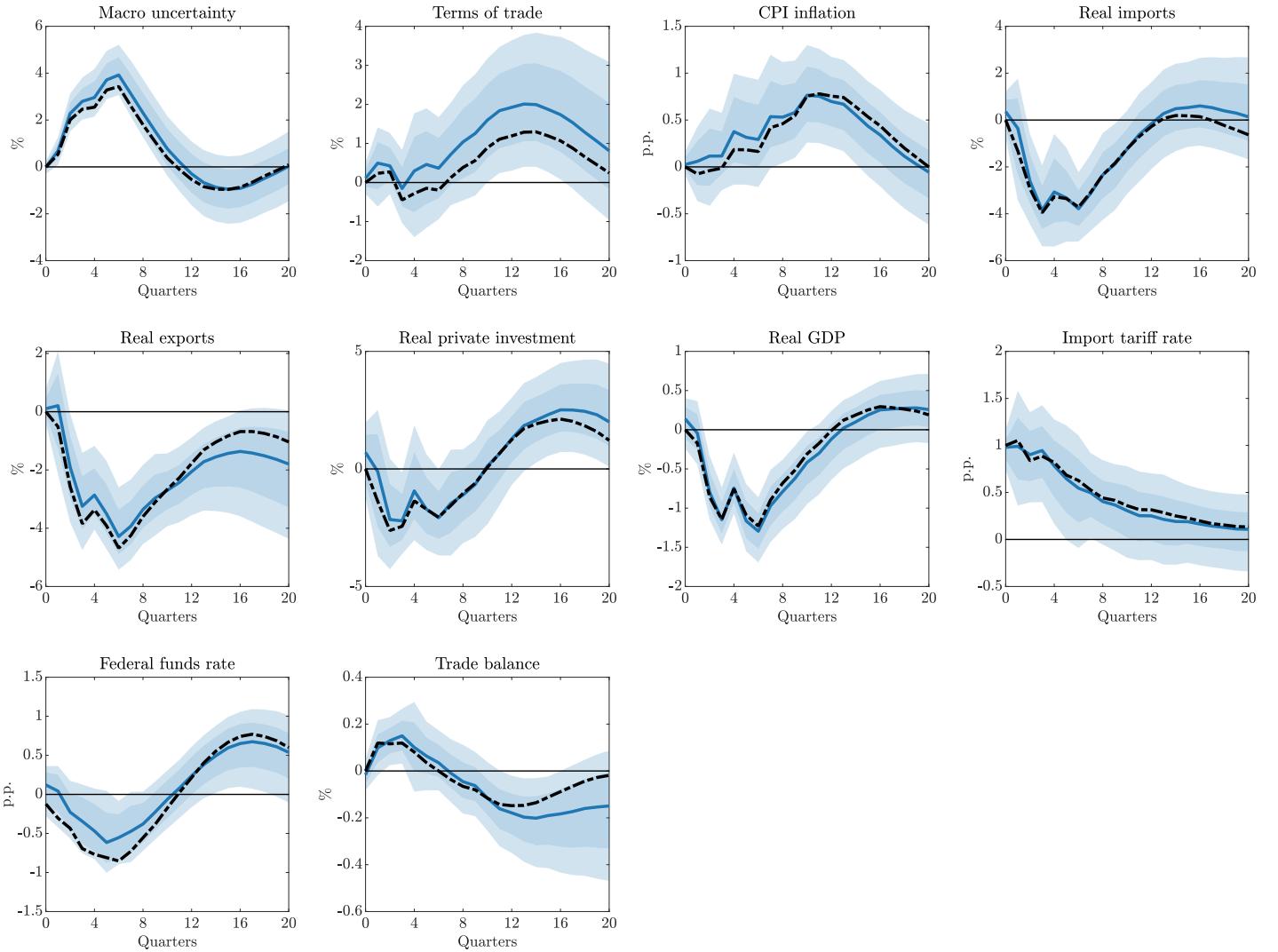
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text. We use the conventional monetary policy shock (uI) from [Jarociński \(2024\)](#) to replace the shock from [Miranda-Agrippino and Ricco \(2021\)](#).

Figure I.6: Strict output stabilization counterfactual, extended sample until 2024 and using the shock from [Jarociński \(2024\)](#)



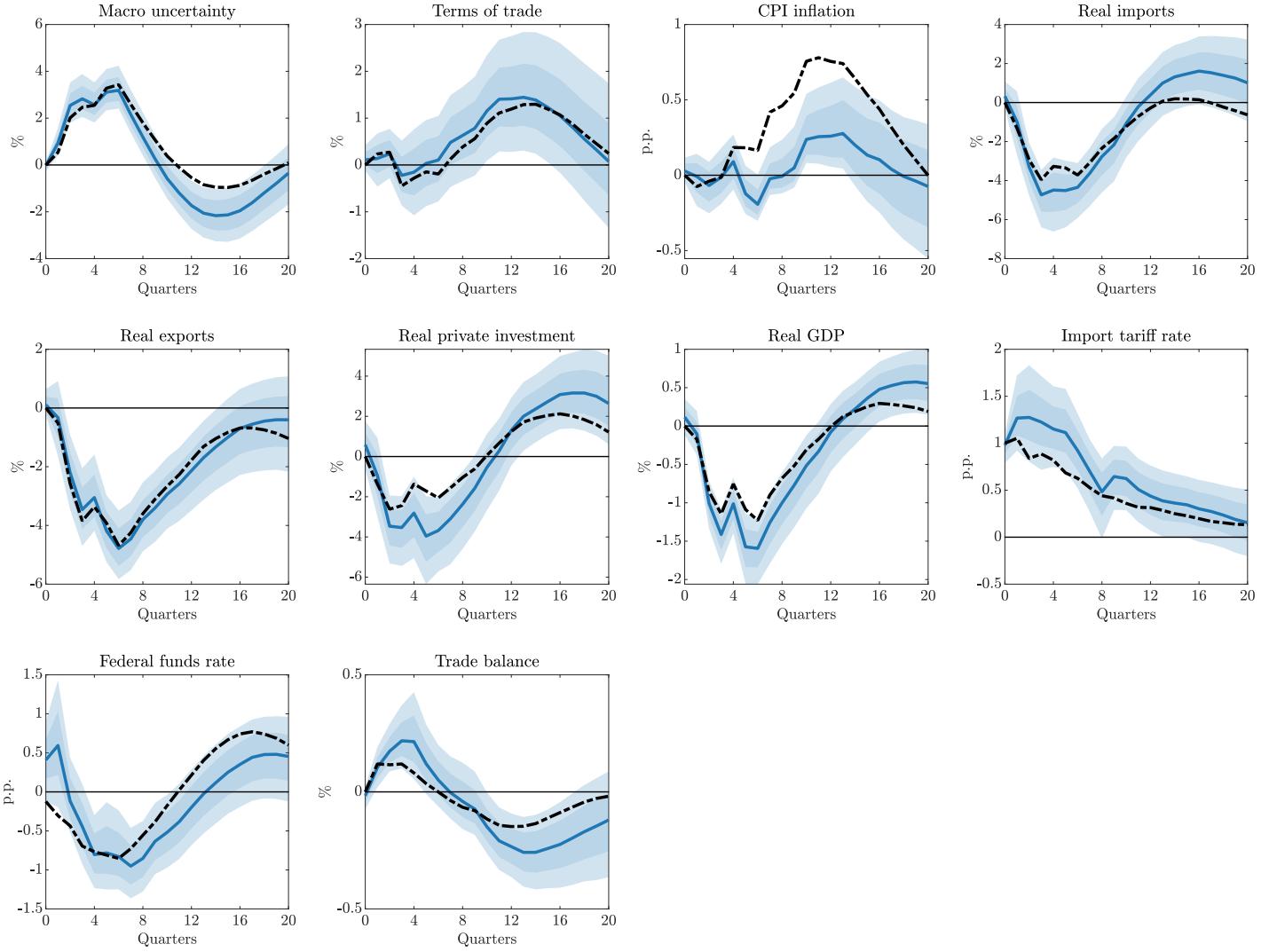
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text. We use the conventional monetary policy shock (uI) from [Jarociński \(2024\)](#) to replace the shock from [Miranda-Agrippino and Ricco \(2021\)](#).

Figure I.7: No federal funds rate response counterfactual, restricted sample until 2007



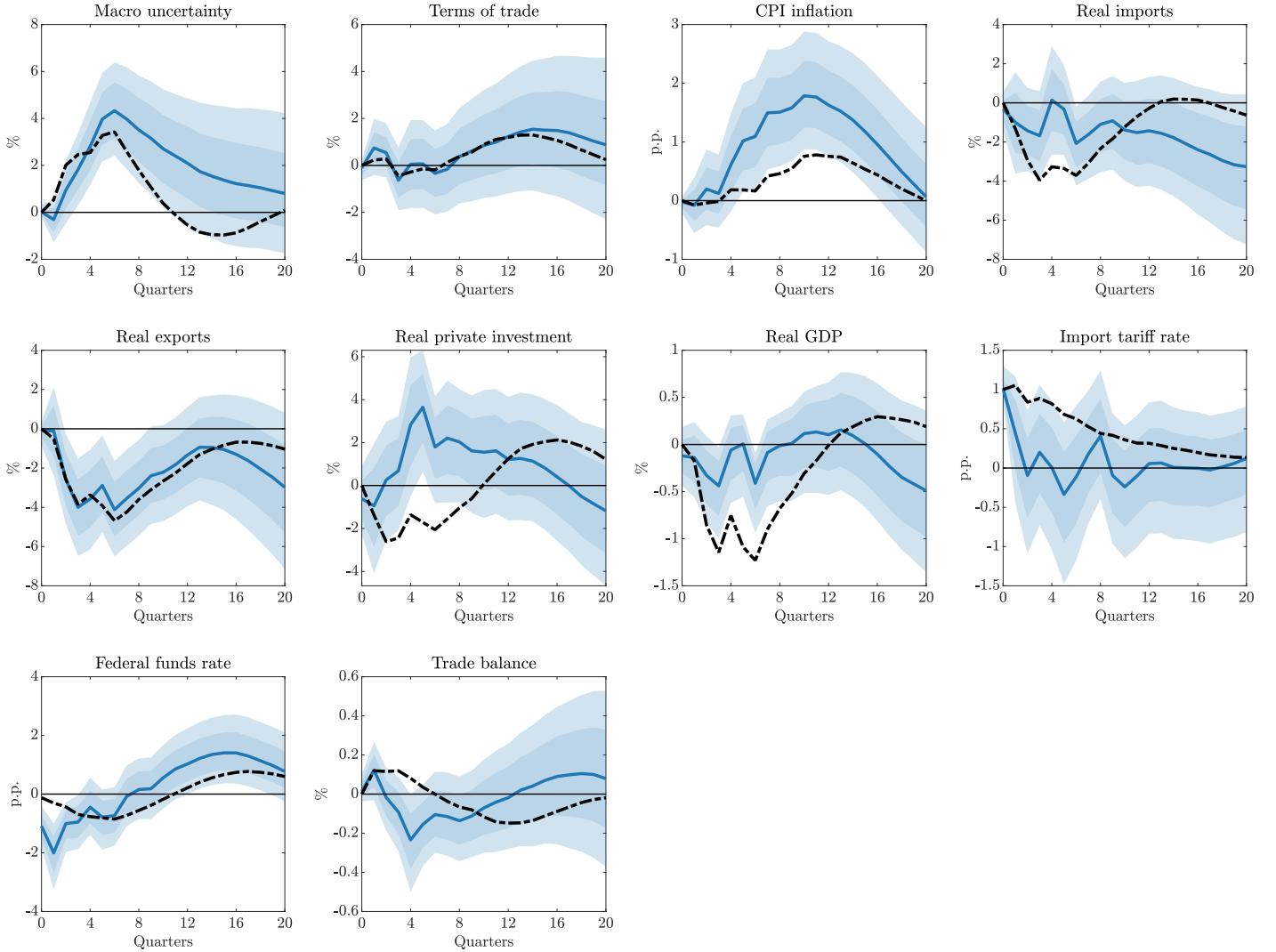
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure I.8: Strict inflation stabilization counterfactual, restricted sample until 2007



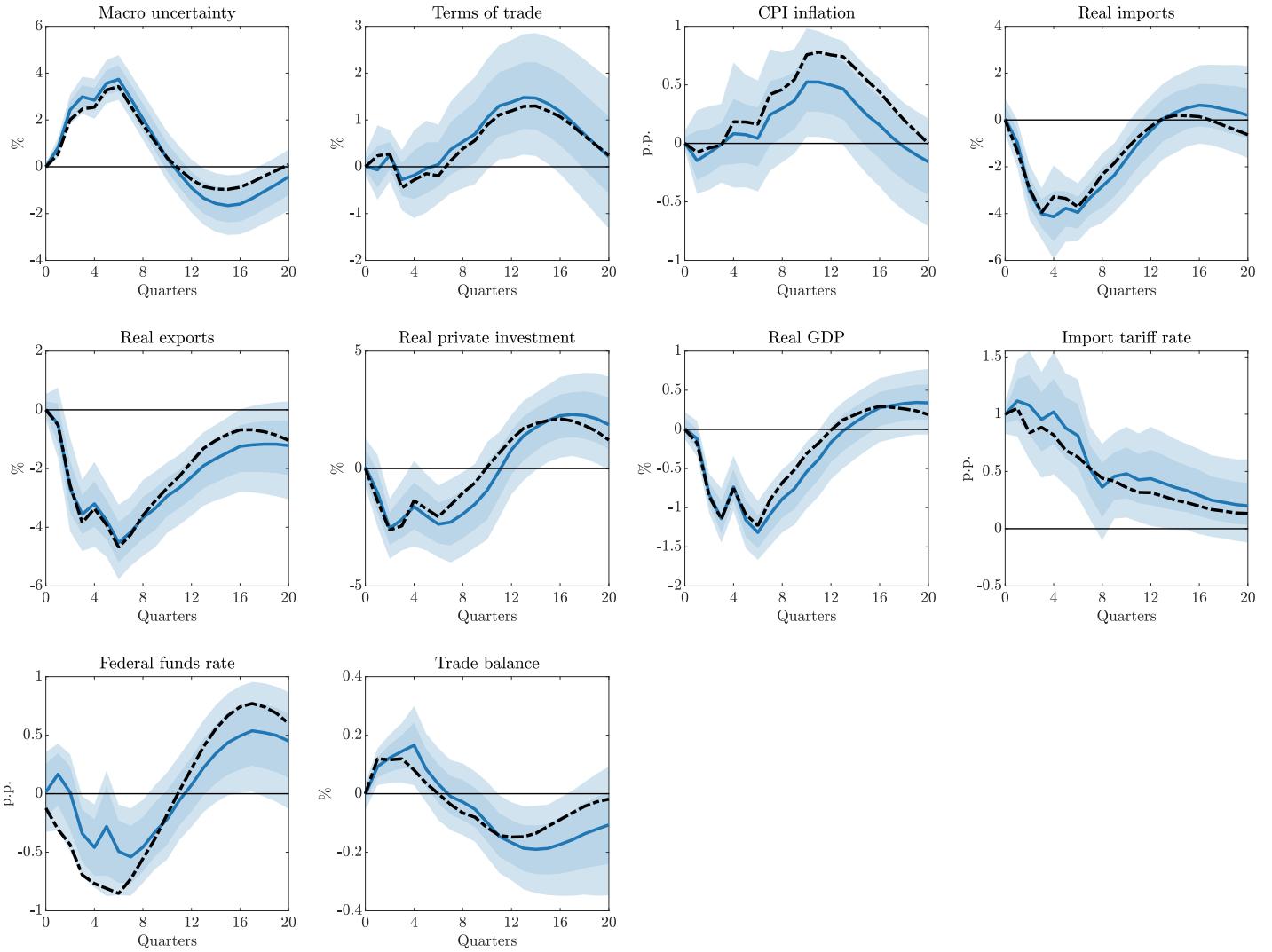
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure I.9: Strict output stabilization counterfactual, restricted sample until 2007



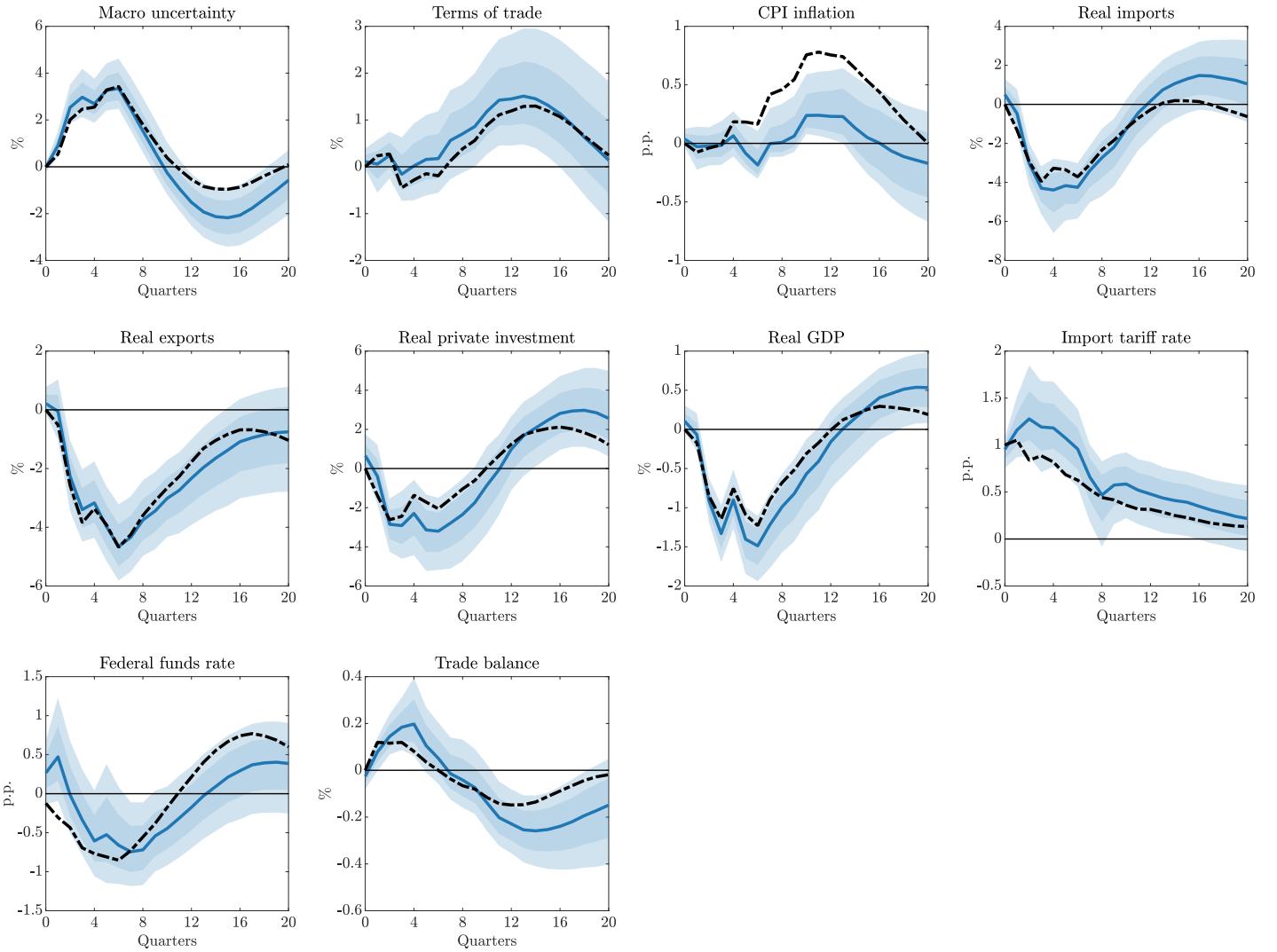
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following [McKay and Wolf \(2023\)](#). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text.

Figure I.10: No federal funds rate response counterfactual, restricted sample until 2007 and using the shock from Hack et al. (2024)



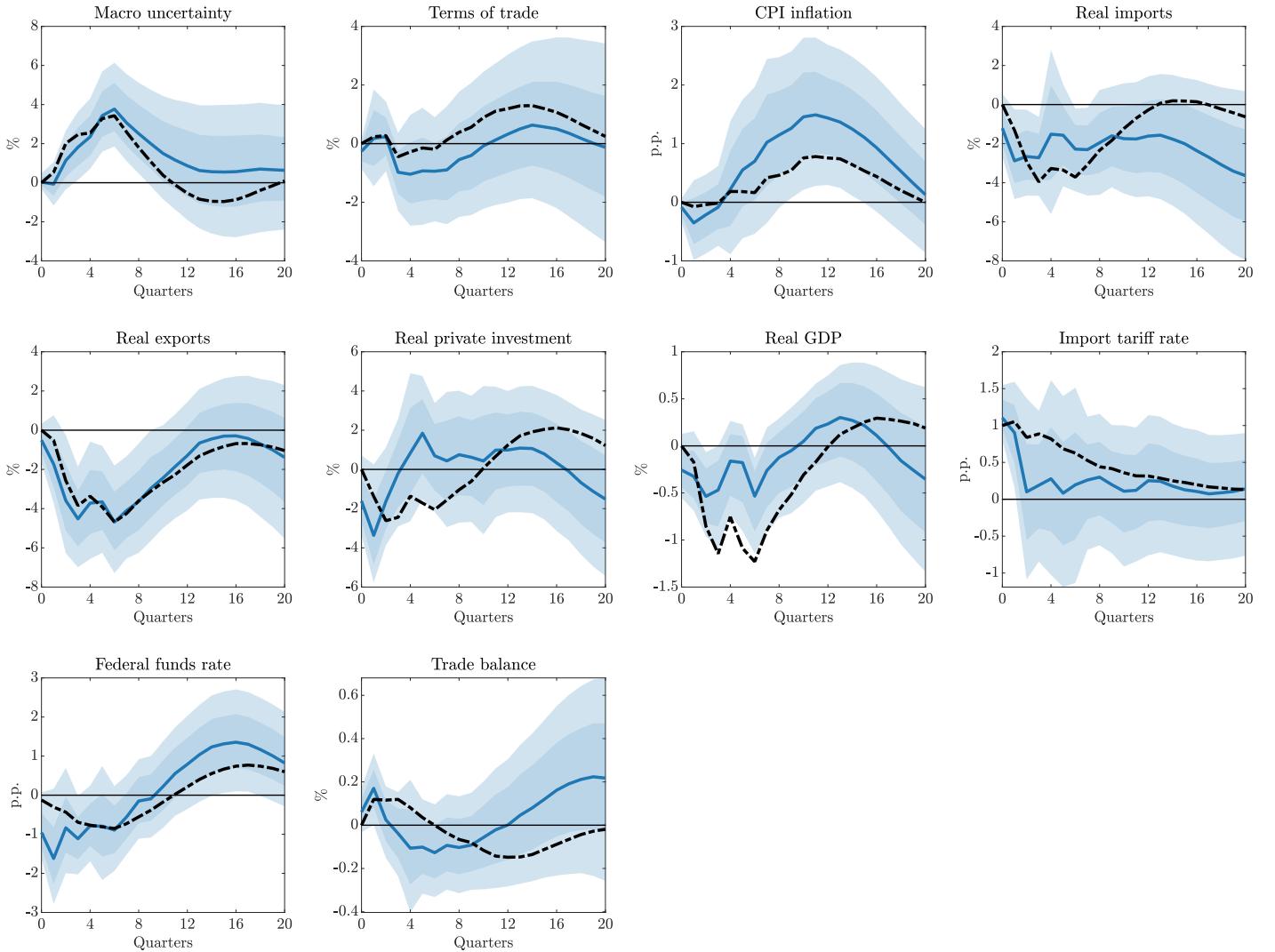
Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following McKay and Wolf (2023). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text. We use the refined monetary policy shock from Hack et al. (2024) to replace the shock from Romer and Romer (2004).

Figure I.11: Strict inflation stabilization counterfactual, restricted sample until 2007 and using the shock from Hack et al. (2024)



Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following McKay and Wolf (2023). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text. We use the refined monetary policy shock from Hack et al. (2024) to replace the shock from Romer and Romer (2004).

Figure I.12: Strict output stabilization counterfactual, restricted sample until 2007 and using the shock from Hack et al. (2024)



Notes: This figure shows counterfactual impulse responses estimated based on a Bayesian VAR, as specified in the main text. The counterfactuals are computed using monetary policy shocks following McKay and Wolf (2023). The solid blue line represents the posterior median of the counterfactual, and the shaded areas are 68% and 90% credible sets. The dashed gray line corresponds to the baseline median response to a tariff shock, as displayed in Figure 1 in the main text. The particular specification under consideration is indicated in the figure caption and described in the main text. We use the refined monetary policy shock from Hack et al. (2024) to replace the shock from Romer and Romer (2004).

References

- ALESSI, L., M. BARIGOZZI, AND M. CAPASSO (2010): “Improved Penalization for Determining the Number of Factors in Approximate Factor Models,” *Statistics & Probability Letters*, 80, 1806–1813.
- BARNICHON, R. AND A. SINGH (2025): “What Is a Tariff Shock? Insights from 150 years of Tariff Policy,” Working Paper 2025-26, Federal Reserve Bank of San Francisco.
- BERGIN, P. R. AND G. CORSETTI (2023): “The Macroeconomic Stabilization of Tariff Shocks: What is the Optimal Monetary Response?” *Journal of International Economics*, 143, 103758.
- DAINAUSKAS, J. AND P. LASTAUSKAS (2024): “Trade Shocks and the Transitional Dynamics of Markups,” .
- FORNI, M. AND L. GAMBETTI (2014): “Sufficient Information in Structural VARs,” *Journal of Monetary Economics*, 66, 124–136.
- GERTLER, M. AND P. KARADI (2015): “Monetary Policy Surprises, Credit Costs, and Economic Activity,” *American Economic Journal: Macroeconomics*, 7, 44–76.
- HACK, L., K. ISTREFI, AND M. MEIER (2024): “The Systematic Origins of Monetary Policy Shocks,” CEPR Discussion Paper 19063.
- JAROCIŃSKI, M. (2024): “Estimating the Fed’s Unconventional Policy Shocks,” *Journal of Monetary Economics*, 144, 103548.
- JAROCIŃSKI, M. AND P. KARADI (2020): “Deconstructing Monetary Policy Surprises — The Role of Information Shocks,” *American Economic Journal: Macroeconomics*, 12, 1–43.
- LENZA, M. AND G. E. PRIMICERI (2022): “How to Estimate a Vector Autoregression after March 2020,” *Journal of Applied Econometrics*, 37, 688–699.
- MCCRACKEN, M. W. AND S. NG (2021): “FRED-QD: A Quarterly Database for Macroeconomic Research.” *Review (00149187)*, 103.
- MCKAY, A. AND C. K. WOLF (2023): “What Can Time-Series Regressions Tell Us About Policy Counterfactuals?” *Econometrica*, 91, 1695–1725.
- MIRANDA-AGRIPPINO, S. AND G. RICCO (2021): “The Transmission of Monetary Policy Shocks,” *American Economic Journal: Macroeconomics*, 13, 74–107.
- MONTIEL OLEA, J. L., M. PLAGBORG-MØLLER, E. QIAN, AND C. K. WOLF (2025): “Local Projections or VARs? A Primer for Macroeconomists,” Working Paper 33871, National Bureau of Economic Research.
- ROMER, C. D. AND D. H. ROMER (2004): “A New Measure of Monetary Shocks: Derivation and Implications,” *American Economic Review*, 94, 1055–1084.
- SCHMITT-GROHÉ, S. AND M. URIBE (2025): “Transitory and Permanent Import Tariff

Shocks in the United States: An Empirical Investigation," Working Paper 33997, National Bureau of Economic Research.

URIBE, M. (2022): "The Neo-Fisher Effect: Econometric Evidence from Empirical and Optimizing Models," *American Economic Journal: Macroeconomics*, 14, 133–162.

WU, J. C. AND F. D. XIA (2016): "Measuring the Macroeconomic Impact of Monetary Policy at the Zero Lower Bound," *Journal of Money, Credit and Banking*, 48, 253–291.