

Noisy News in Business Cycles

Mario Forni Luca Gambetti Marco Lippi Luca Sala

Online Appendix

Data

Transformations: 1 = levels, 2 = logs, 3 = first differences of logs. Most series are taken from the FRED database. TFP data are taken from the Federal Reserve Bank of San Francisco database. A few stock market and leading indicators are taken from Datastream. Monthly data have been temporally aggregated to get quarterly figures. CNP = Civilian Noninstitutional Population (Fred mnemonic: CNP16OV).

no.series	Transf.	Mnemonic	Long Label
1	2	GDPC1/CNP	Real Gross Domestic Product/CNP
2	2	GNPC96/CNP	Real Gross National Product/CNP
3	2	(NICUR/GDPDEF)/CNP	(National Income/GDP Deflator)/CNP
4	2	DPIC96/CNP	Real Disposable Personal Income/CNP
5	2	OUTNFB/CNP	Nonfarm Business Sector: Output/CNP
6	2	FINSLC1/CNP	Real Final Sales of Domestic Product/CNP
7	2	(FPIC1+PCNDGC96)/CNP	(Real Private Fixed Inv. + Real Durables Cons.)/CNP
8	2	PRFIC1/CNP	Real Private Residential Fixed Investment/CNP
9	2	PNFIC1/CNP	Real Private Nonresidential Fixed Investment/CNP
10	2	GPDIC1/CNP	Real Gross Private Domestic Investment/CNP
11	2	(PCNDGC96+PCESVC96)/CNP	(Real Pers. Cons. Exp.: Non Durables + Services)/CNP
12	2	PCNDGC96/CNP	Real Pers. Cons. Exp.: Nondurable Goods /CNP
13	2	PCDGCC96/CNP	Real Pers. Cons. Exp.: Durable Goods/CNP
14	2	PCESVC96/CNP	Real Pers. Cons. Exp.: Services/CNP
15	2	(GSAVE/GDPDEF)/CNP	(Gross Saving/GDP Deflator)/CNP
16	2	FGCEC1/CNP	Real Federal Cons. Exp. & Gross Investment/CNP
17	2	(FGEXPND/GDPDEF)/CNP	(Federal Gov.: Current Exp./ GDP Deflator)/CNP
18	2	(FGRECPT/GDPDEF)/CNP	(Federal Gov. Current Receipts/ GDP Deflator)/CNP
19	1	CBIC1	Real Change in Private Inventories
20	2	EXPGSC1/CNP	Real Exports of Goods & Services /CNP
21	2	IMPGSC1/CNP	Real Imports of Goods & Services /CNP
22	2	CP/GDPDEF	Corporate Profits After Tax/GDP Deflator
23	2	NFCPATAX/GDPDEF	Nonfin. Corp. Bus.: Profits After Tax/GDP Deflator
24	2	CNCF/GDPDEF	Corporate Net Cash Flow/GDP Deflator

no.series	Transf.	Mnemonic	Long Label
25	2	DIVIDEND/GDPDEF	Net Corporate Dividends/GDP Deflator
26	2	HOANBS/CNP	Nonfarm Business Sector: Hours of All Persons/CNP
27	2	OPHNFB	Nonfarm Business Sector: Output Per Hour of All Persons
28	2	UNLPNBS	Nonfarm Business Sector: Unit Nonlabor Payments
29	2	ULCNFB	Nonfarm Business Sector: Unit Labor Cost
30	2	WASCUR/CPI	Compensation of Employees: Wages & Salary Accruals/CPI
31	3	COMPNFB	Nonfarm Business Sector: Compensation Per Hour
32	2	COMPRNFB	Nonfarm Business Sector: Real Compensation Per Hour
33	3	GDPCTPI	Gross Domestic Product: Chain-type Price Index
34	3	GNPCTPI	Gross National Product: Chain-type Price Index
35	3	GDPDEF	Gross Domestic Product: Implicit Price Deflator
36	3	GNPDEF	Gross National Product: Implicit Price Deflator
37	2	INDPRO	Industrial Production Index
38	2	IPBUSEQ	Industrial Production: Business Equipment
39	2	IPCONGD	Industrial Production: Consumer Goods
40	2	IPDCONGD	Industrial Production: Durable Consumer Goods
41	2	IPFINAL	Industrial Production: Final Products (Market Group)
42	2	IPMAT	Industrial Production: Materials
43	2	IPNCONGD	Industrial Production: Nondurable Consumer Goods
44	1	AWHMAN	Average Weekly Hours: Manufacturing
45	1	AWOTMAN	Average Weekly Hours: Overtime: Manufacturing
46	1	CIVPART	Civilian Participation Rate
47	2	CLF16OV	Civilian Labor Force
48	2	CE16OV	Civilian Employment
49	2	USPRIV	All Employees: Total Private Industries
50	2	USGOOD	All Employees: Goods-Producing Industries
51	2	SRVPRD	All Employees: Service-Providing Industries
52	2	UNEMPLOY	Unemployed
53	2	UEMPMEAN	Average (Mean) Duration of Unemployment
54	1	UNRATE	Civilian Unemployment Rate
55	2	HOUST	Housing Starts: Total: New Privately Owned Housing Units Started
56	1	FEDFUNDS	Effective Federal Funds Rate
57	1	TB3MS	3-Month Treasury Bill: Secondary Market Rate
58	1	GS1	1- Year Treasury Constant Maturity Rate
59	1	GS10	10-Year Treasury Constant Maturity Rate
60	1	AAA	Moody's Seasoned Aaa Corporate Bond Yield
61	1	BAA	Moody's Seasoned Baa Corporate Bond Yield
62	1	MPRIME	Bank Prime Loan Rate
63	3	M1SL	M1 Money Stock
64	3	M2MSL	M2 Minus
65	3	M2SL	M2 Money Stock
66	3	BUSLOANS	Commercial and Industrial Loans at All Commercial Banks

no.series	Transf.	Mnemonic	Long Label
67	3	CONSUMER	Consumer (Individual) Loans at All Commercial Banks
68	3	LOANINV	Total Loans and Investments at All Commercial Banks
69	3	REALLN	Real Estate Loans at All Commercial Banks
70	3	TOTALSL	Total Consumer Credit Outstanding
71	3	CPIAUCSL	Consumer Price Index For All Urban Consumers: All Items
72	3	CPIULFSL	Consumer Price Index for All Urban Consumers: All Items Less Food
73	3	CPILEGSL	Consumer Price Index for All Urban Consumers: All Items Less Energy
74	3	CPILFESL	Consumer Price Index for All Urban Consumers: All Items Less Food & Energy
75	3	CPIENGSL	Consumer Price Index for All Urban Consumers: Energy
76	3	CPIUFDSL	Consumer Price Index for All Urban Consumers: Food
77	3	PPICPE	Producer Price Index Finished Goods: Capital Equipment
78	3	PPICRM	Producer Price Index: Crude Materials for Further Processing
79	3	PPIFCG	Producer Price Index: Finished Consumer Goods
80	3	PPIFGS	Producer Price Index: Finished Goods
81	3	OILPRICE	Spot Oil Price: West Texas Intermediate
82	3	USSHRPCF	US Dow Jones Industrials Share Price Index (EP) NADJ
83	2	US500STK	US Standard & Poor's Index of 500 Common Stocks
84	2	USI62...F	US Share Price Index NADJ
85	2	USNOIDN.D	US Manufacturers New Orders for Non Defense Capital Goods (B CI 27)
86	2	USCNORCGD	US New Orders of Consumer Goods & Materials (BCI 8) CONA
87	1	USNAPMNO	US ISM Manufacturers Survey: New Orders Index SADJ
88	2	USCYLEAD	US The Conference Board Leading Economic Indicators Index S ADJ
89	2	USECRIWLH	US Economic Cycle Research Institute Weekly Leading Index
90	2	GEXPND/GDPDEF	(Government Current Expenditures/ GDP Deflator)
91	2	GRECPT/GDPDEF	(Government Current Receipts/ GDP Deflator)
92	2	GCEC1	Real Government Consumption Expenditures & Gross Investment
93	1		Fernald's TFP growth CU adjusted
94	1		Fernald's TFP growth
95	2		(DOW JONES/GDP Deflator)/Civilian Noninstitutional Population
96	2		(S&P500/GDP Deflator)/Civilian Noninstitutional Population
97	1		Fernald's TFP growth - Investment
98	1		Fernald's TFP growth - Consumption
99	1		Fernald's TFP growth CU - Investment
100	1		Fernald's TFP growth CU - Consumption
101	1		Michigan Consumer Sentiment: Personal Finance Current
102	1		Michigan Consumer Sentiment: Personal Finance Expected
103	1		Michigan Consumer Sentiment: Business Condition 12 Months
104	1		Michigan Consumer Sentiment: Business Condition 5 Years
105	1		Michigan Consumer Sentiment: Buying Conditions
106	1		Michigan Consumer Sentiment: Current Index
107	1		Michigan Consumer Sentiment: Expected Index
108	2	GDPPOT	US Potential Output from the CBO

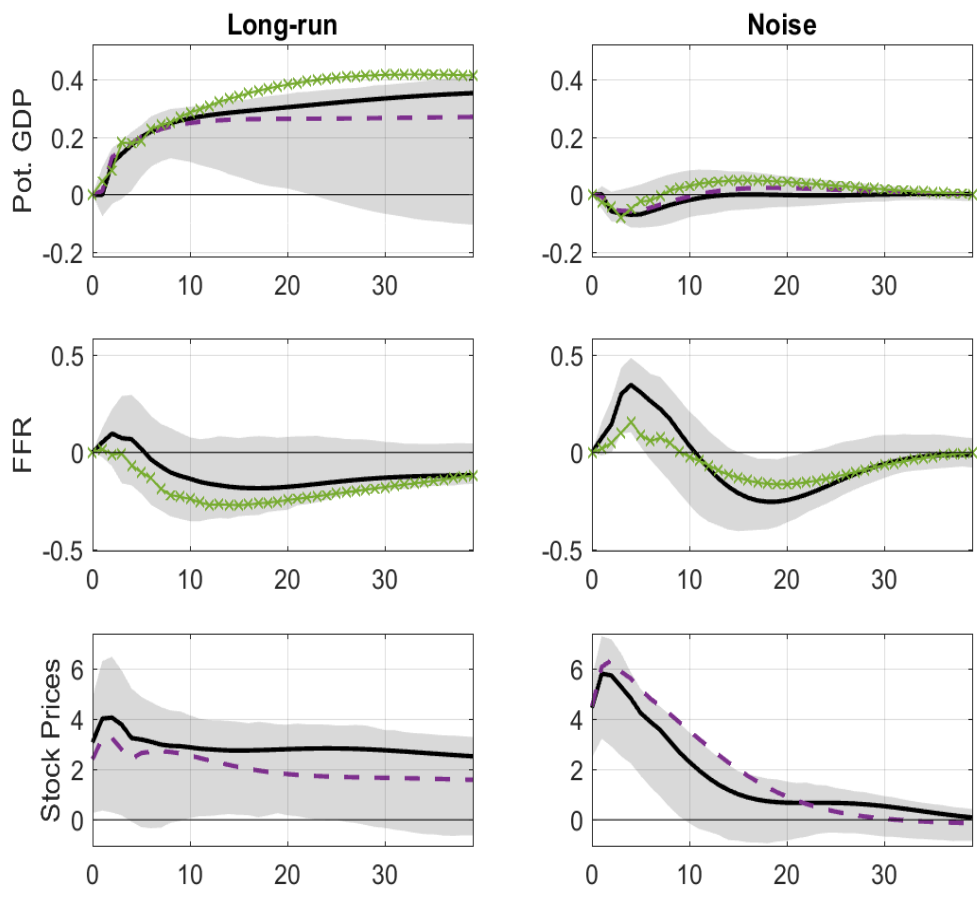


Figure 1: Impulse response functions to long-run (left column) and noise (right column) shocks when changing the signaling and the control variable in Specification I. Solid line: point estimate in the benchmark Specification I (stock prices). Grey area: 90% confidence bands in the benchmark specification. Dashed line: point estimate with the BAA Corporate Bond - 10 year Treasury Bond spread in place of FFR. Starred line: point estimate with the Michigan indicator of business conditions within the next five years (E5Y) in place of stock prices.

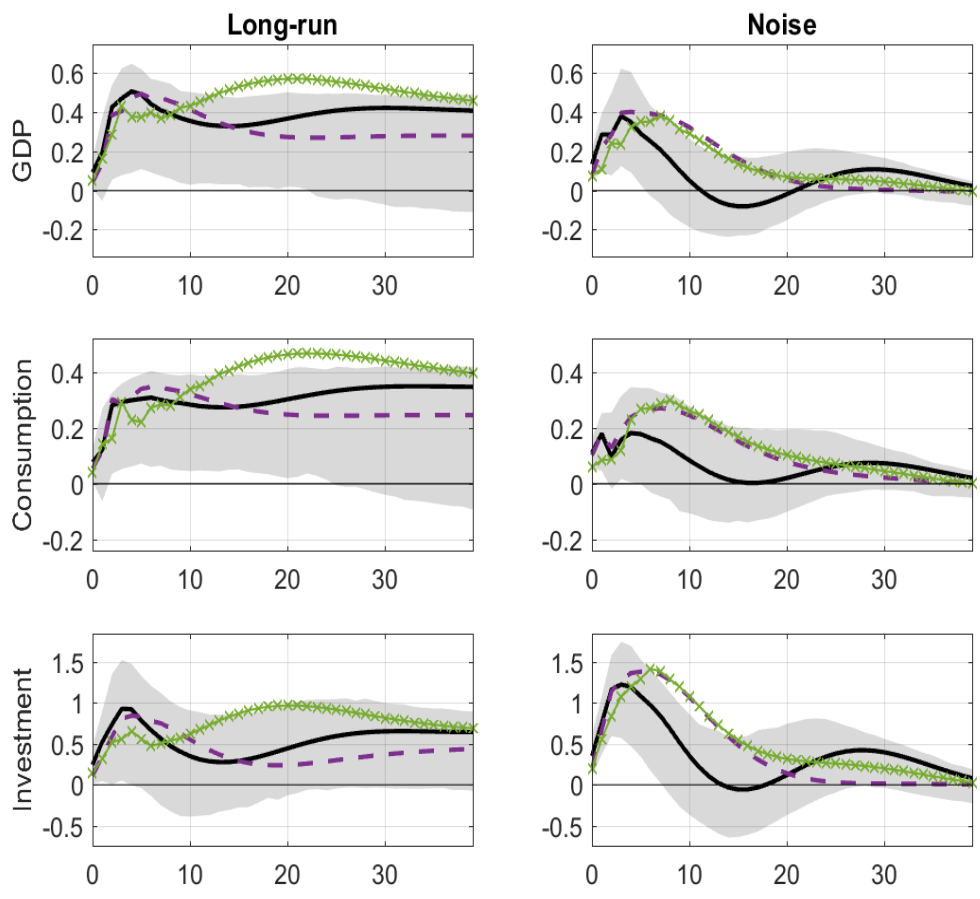


Figure 2: Impulse response functions to long-run (left column) and noise (right column) shocks when changing the signaling and the control variable in Specification I. Solid line: point estimate in the benchmark Specification I (stock prices). Grey area: 90% confidence bands in the benchmark specification. Dashed line: point estimate with the BAA Corporate Bond - 10 year Treasury Bond spread in place of FFR. Starred line: point estimate with the Michigan indicator of business conditions within the next five years (E5Y) in place of stock prices.

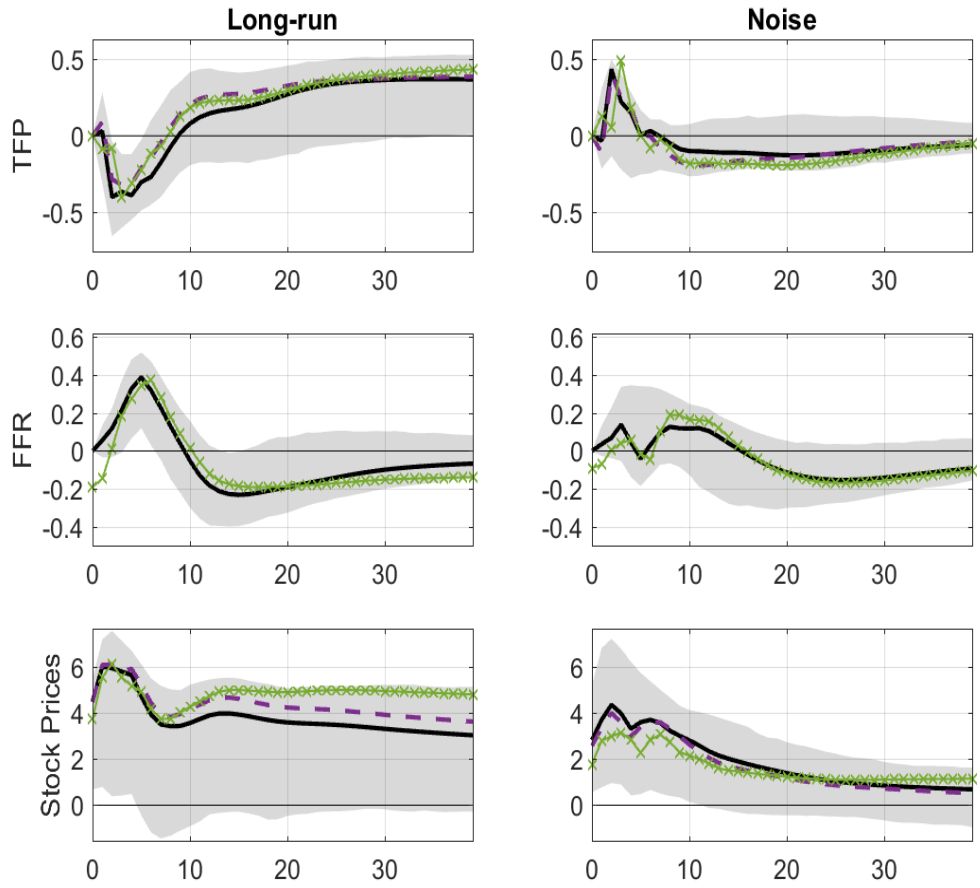


Figure 3: Impulse response functions to long-run (left column) and noise (right column) shocks when changing the identification scheme and the control variable in Specification II. Solid line: point estimate with the benchmark Specification II. Grey area: 90% confidence bands. Dashed line: point estimate with the spread in place of FFR. Starred line: point estimate with the alternative identification scheme (Forni, Gambetti and Sala 2014).

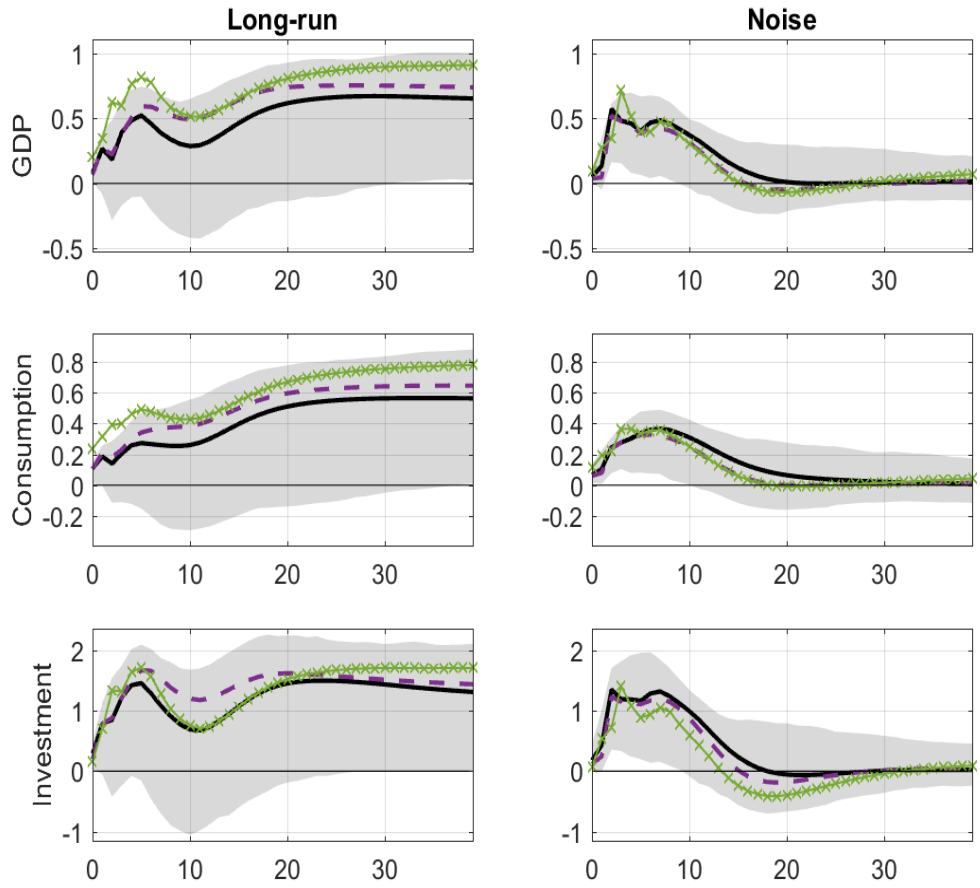


Figure 4: Impulse response functions to long-run (left column) and noise (right column) shocks when changing the identification scheme and the control variable in Specification II. Solid line: point estimate with the benchmark Specification II. Grey area: 90% confidence bands. Dashed line: point estimate with the spread in place of FFR. Starred line: point estimate with the alternative identification scheme (Forni, Gambetti and Sala 2014).

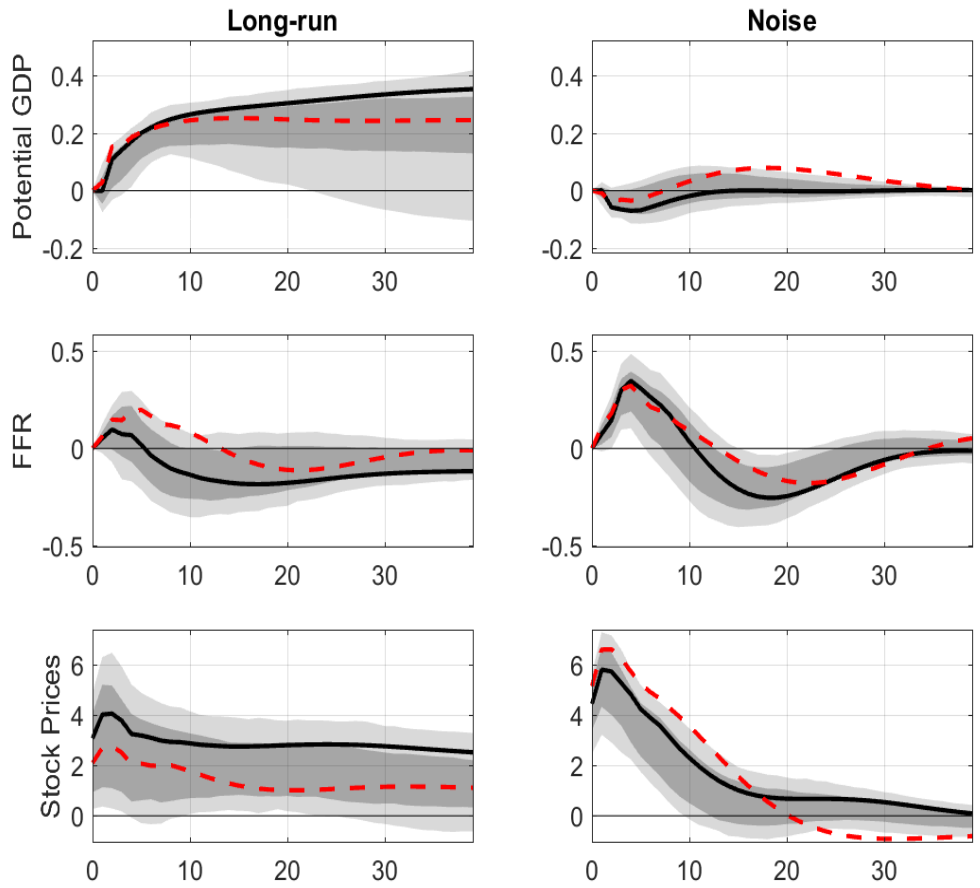


Figure 5: Impulse response functions to long-run (left column) and noise (right column) shocks when using a one-sided filter to compute potential output in Specification I. Solid line: point estimate with the benchmark Specification I. Grey area: 90% confidence bands. Dashed line: point estimate with the one-sided filter in place of the CBO potential.

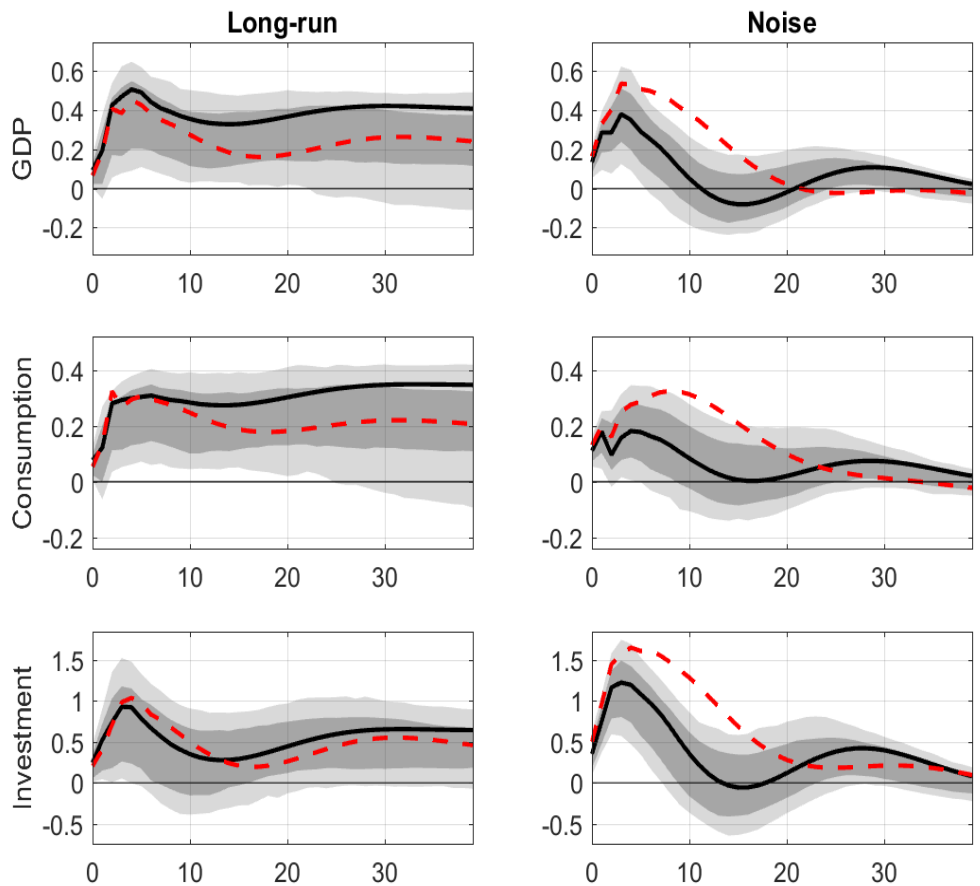


Figure 6: Impulse response functions to long-run (left column) and noise (right column) shocks when using a one-sided filter to compute potential output in Specification I. Solid line: point estimate with the benchmark Specification I. Grey area: 90% confidence bands. Dashed line: point estimate with the one-sided filter in place of the CBO potential.