

Industry Effects of Unconventional Monetary Policy, Within and
Across Countries
Online Appendix

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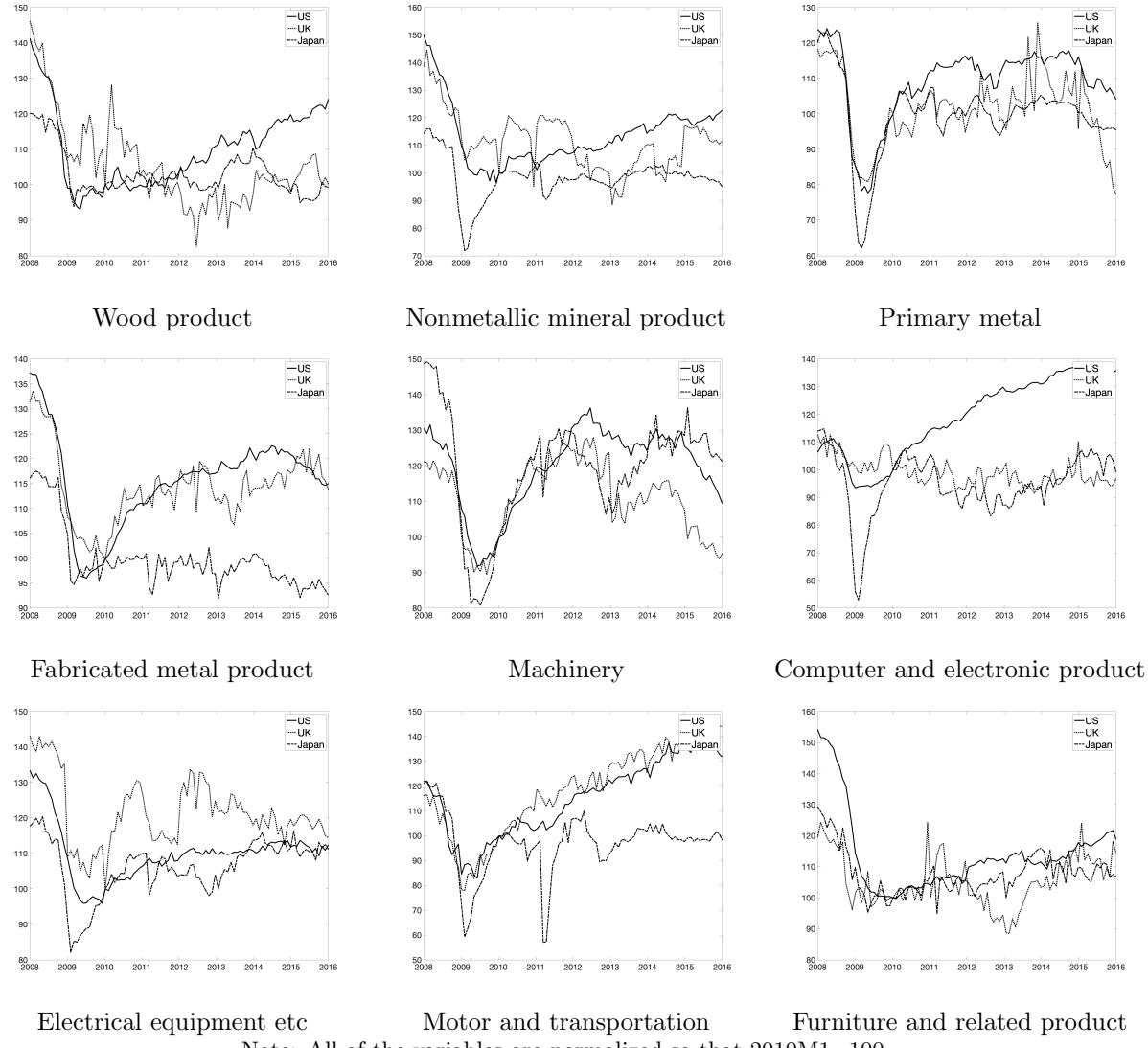
JEL classification: E32; E52; G32

Keywords: Unconventional monetary policy; Industry output; Monetary policy transmission mechanisms; Spillover effects

1 Figures

I plot industry output in Figures 1 and 2. Generally, industry output drops sharply during the financial crisis and increases thereafter. Strikingly, during the sample, most of the industries do not recover to the pre-recession level, displaying the severity of the recession. Further, I also plot other data used in this paper in Figure 3.

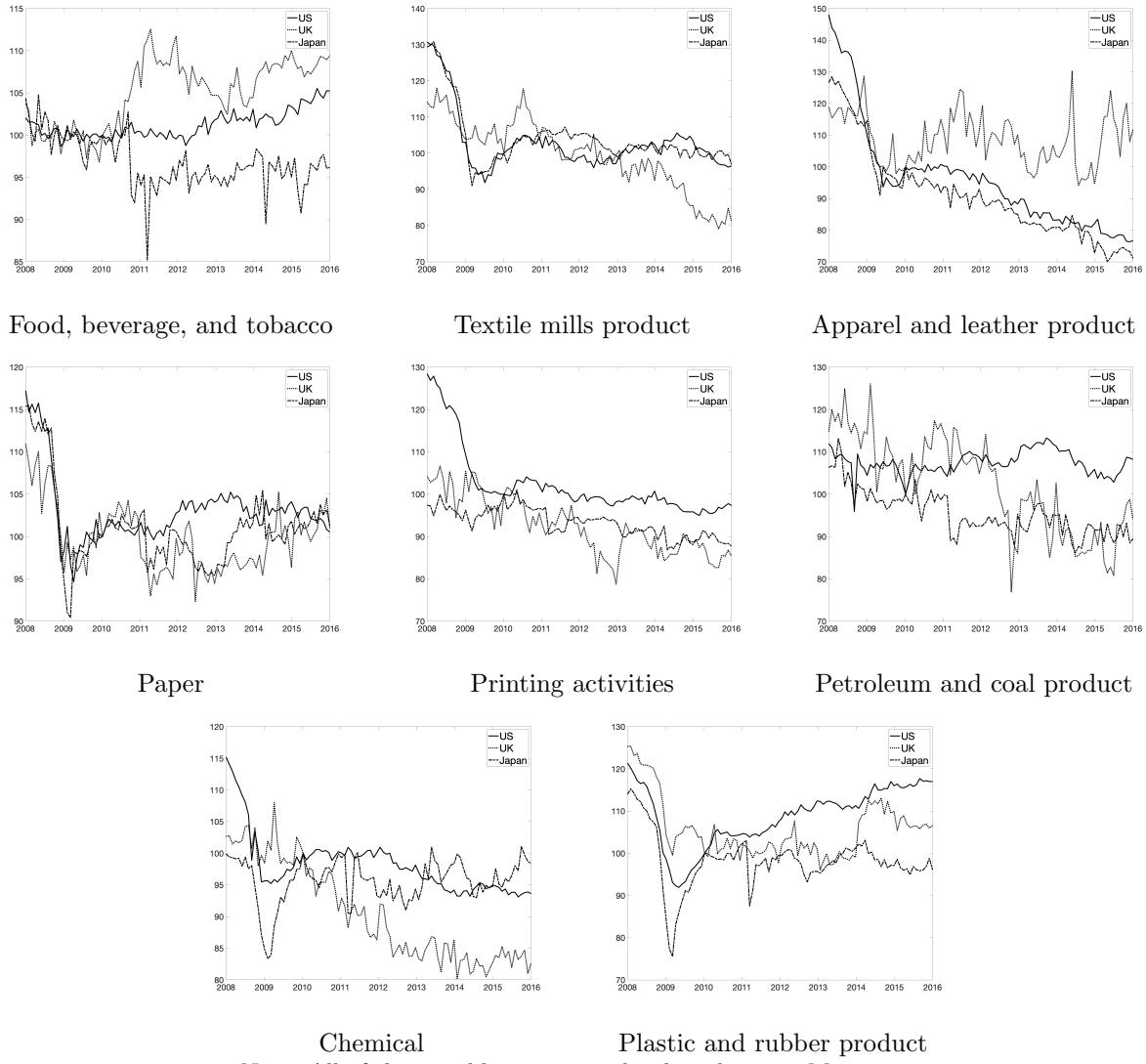
Figure 1: Industry Output I



Note: All of the variables are normalized so that 2010M1=100.

Source: The Federal Reserve Board, the Ministry of Economy, Trade and Industry, and the Office for National Statistics.

Figure 2: Industry Output II



Note: All of the variables are normalized so that 2010M1=100.

Source: The Federal Reserve Board, the Ministry of Economy, Trade and Industry, and the Office for National Statistics.

Figure 3: Data Used in this Paper

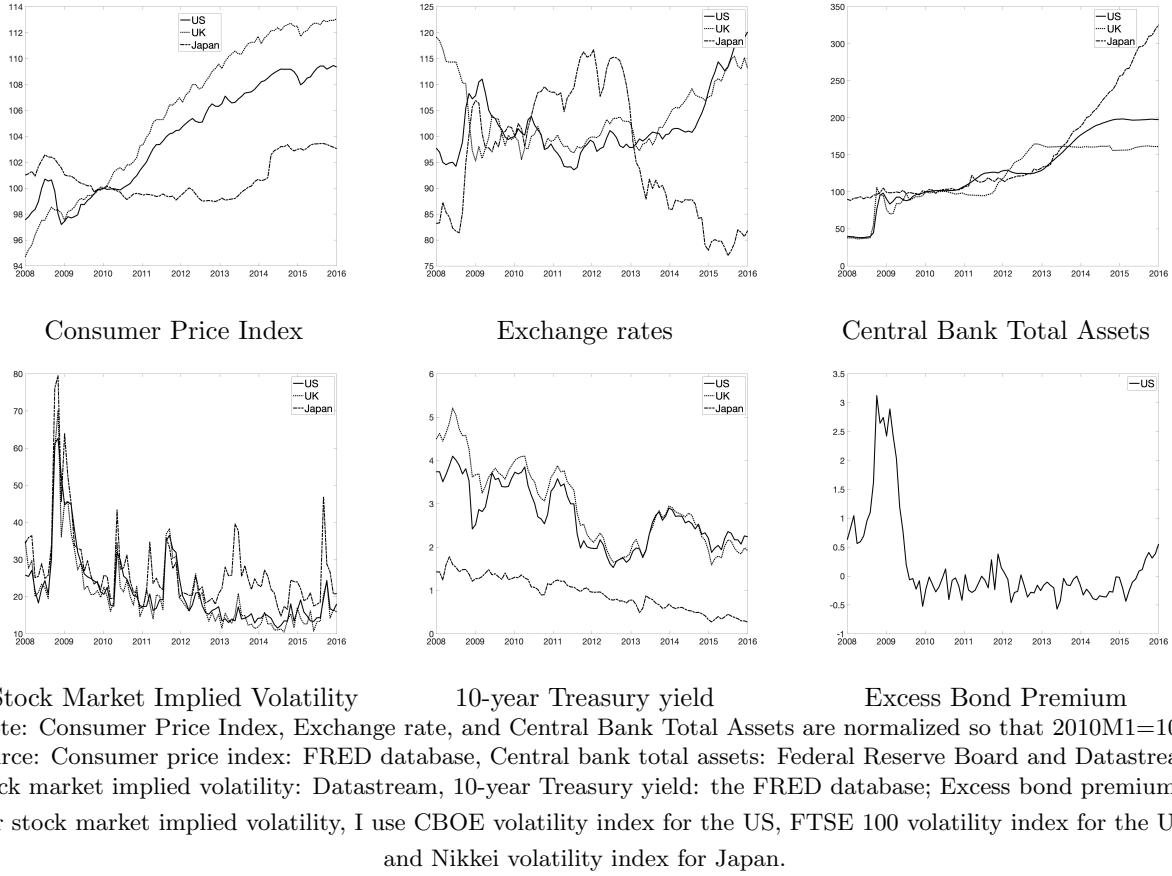


Figure 4: Weighted Impulse Response Functions

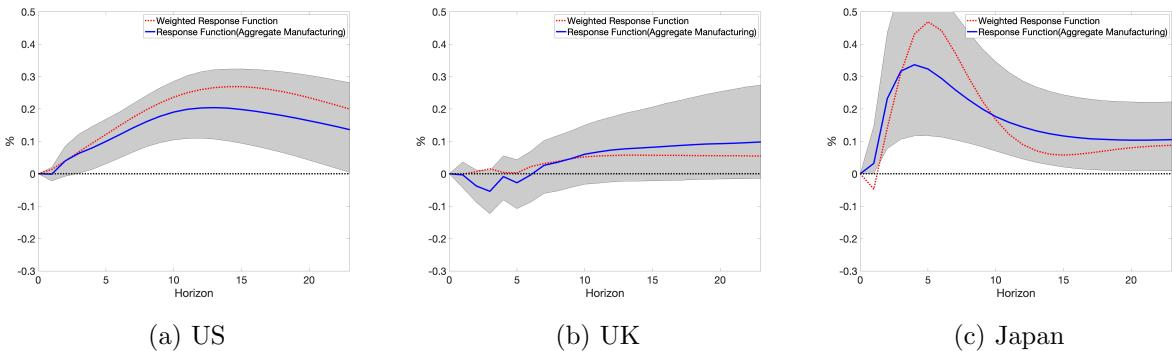
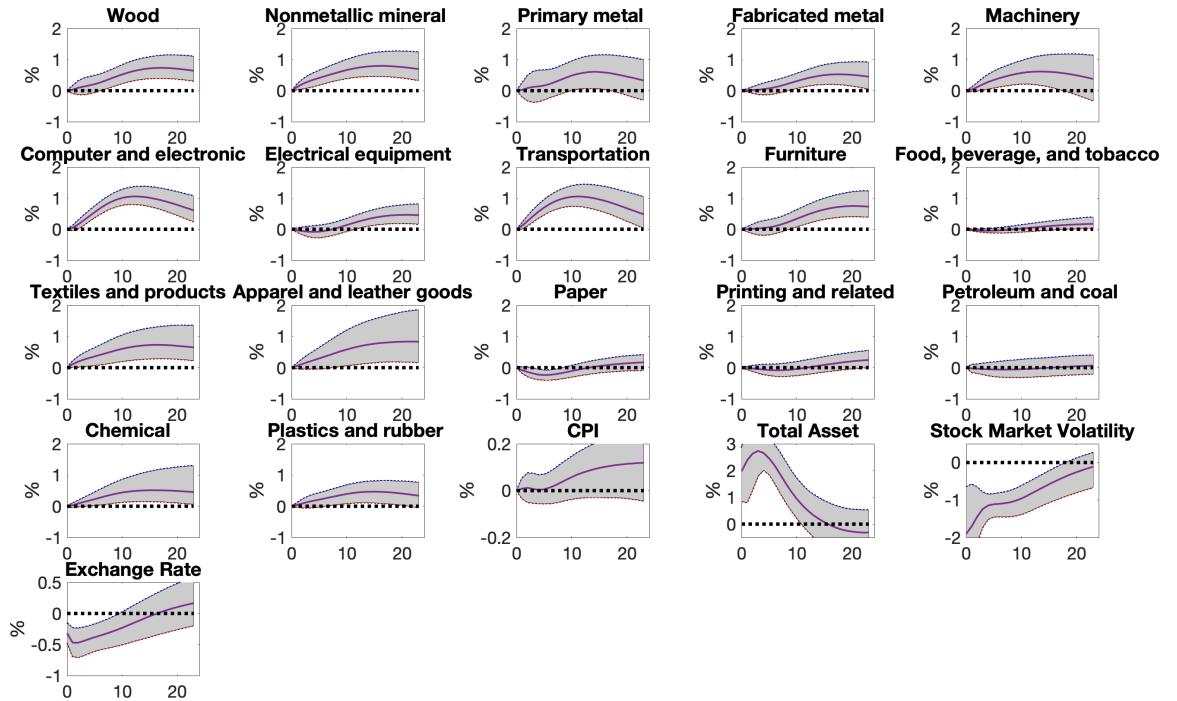
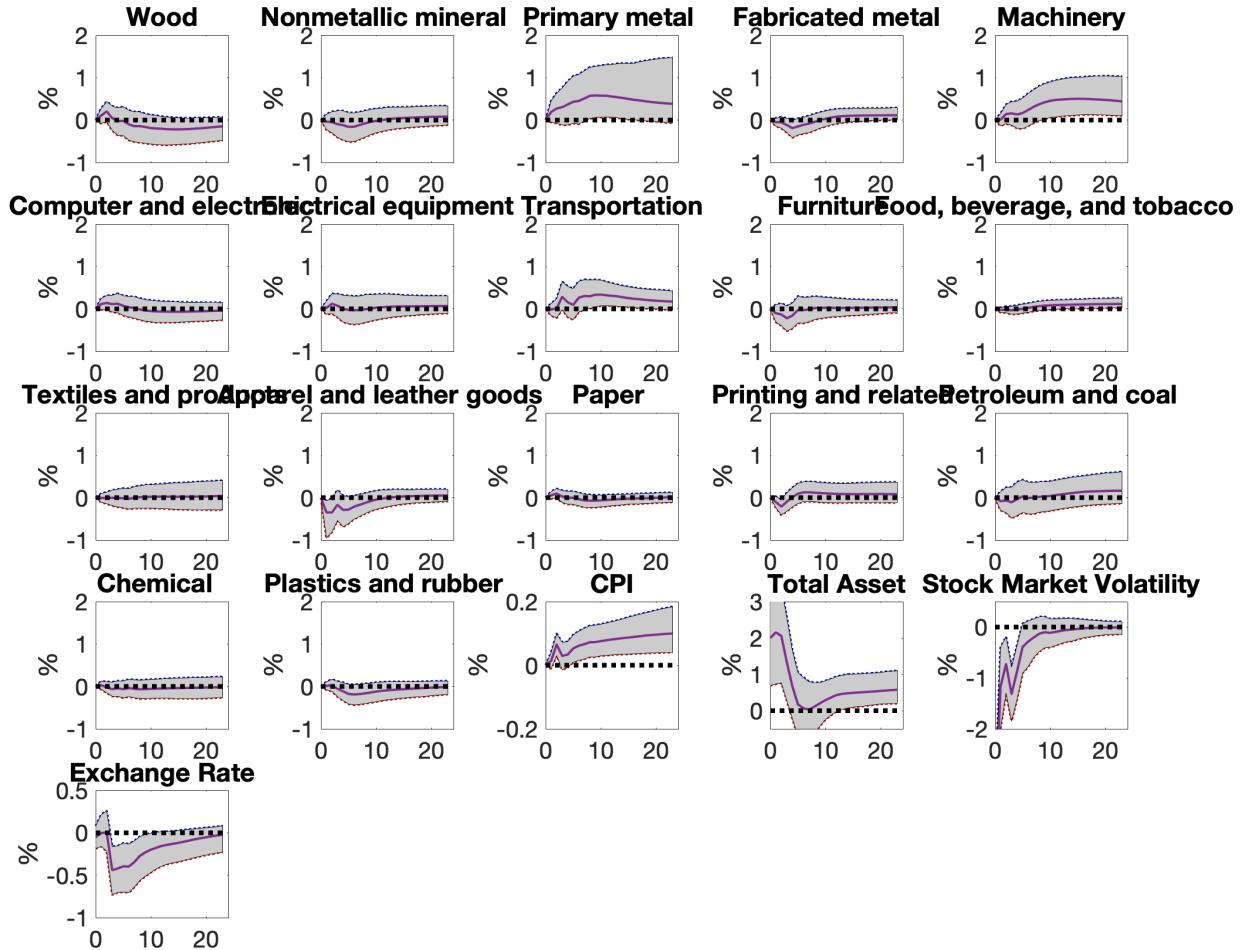


Figure 5: Industry Response Functions (US, Sign Restriction)



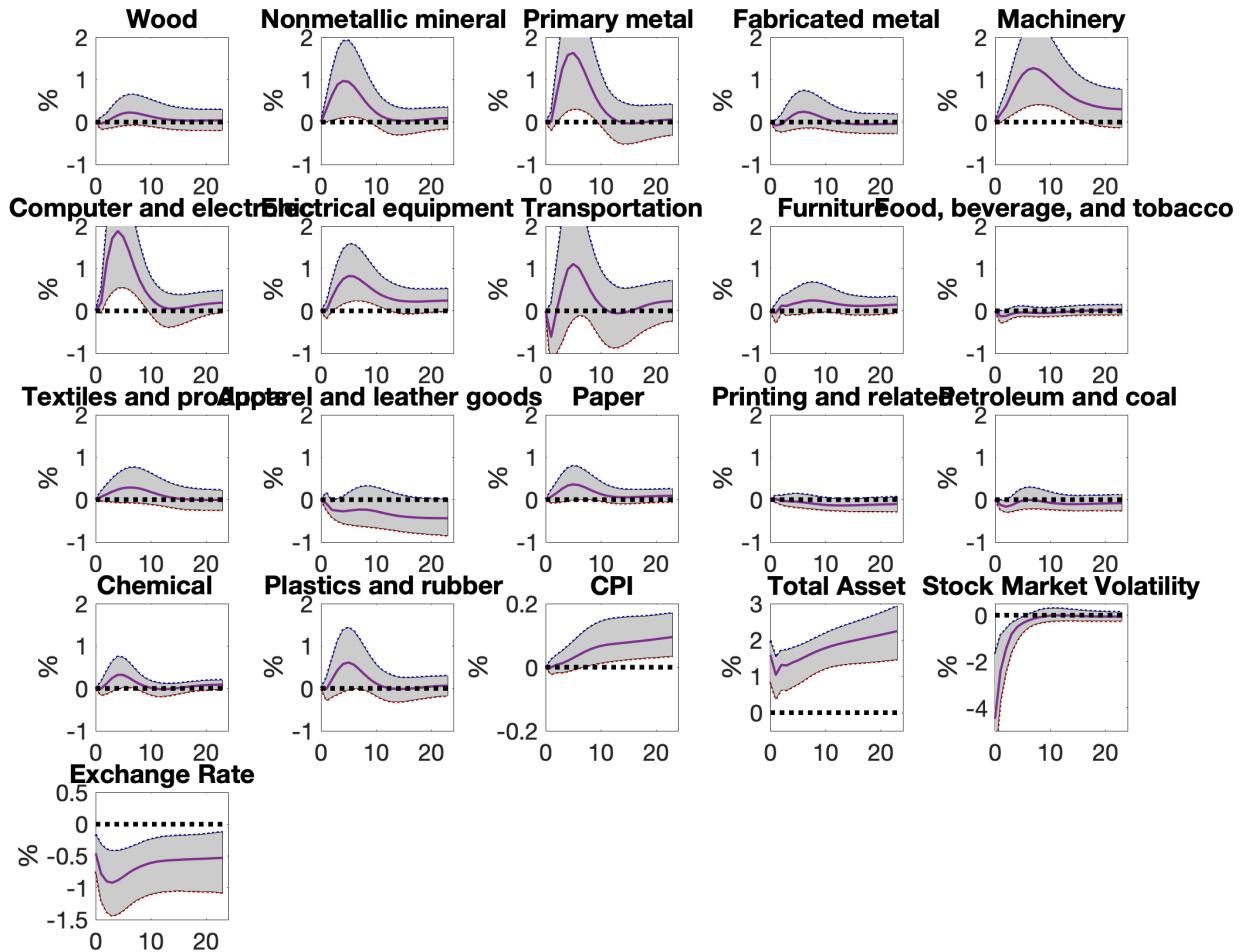
Note: The Median, 16th, and 84th Bayesian percentiles are reported. Monthly horizon.

Figure 6: Industry Response Functions (UK, Sign Restriction)



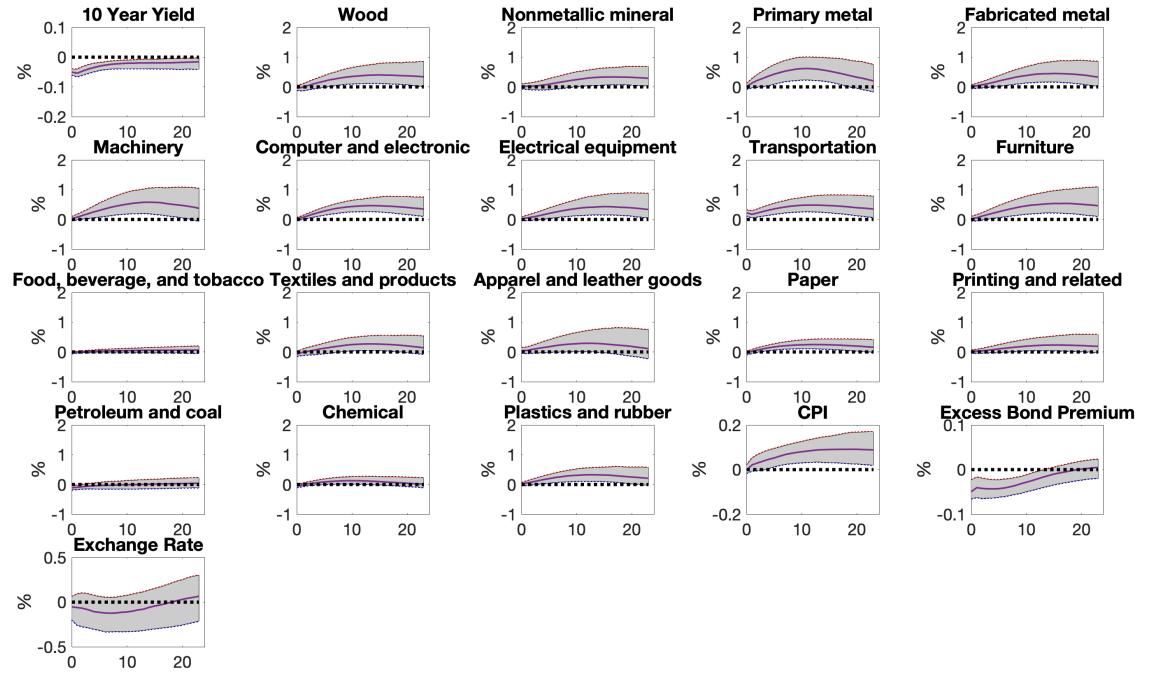
Note: The Median, 16th, and 84th Bayesian percentiles are reported. Monthly horizon.

Figure 7: Industry Response Functions (Japan, Sign Restriction)



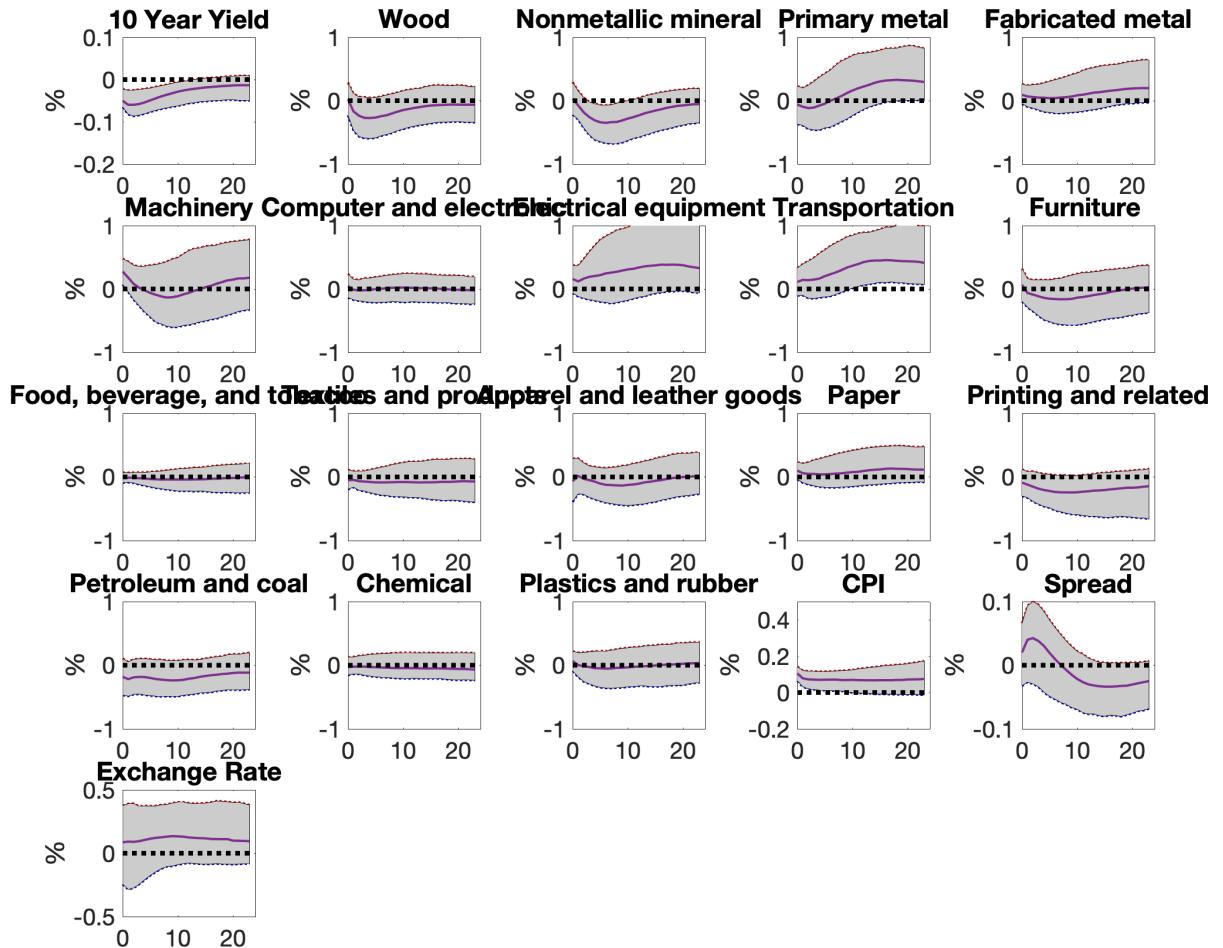
Note: The Median, 16th, and 84th Bayesian percentiles are reported. Monthly horizon.

Figure 8: Industry Response Functions (US, Proxy VAR)



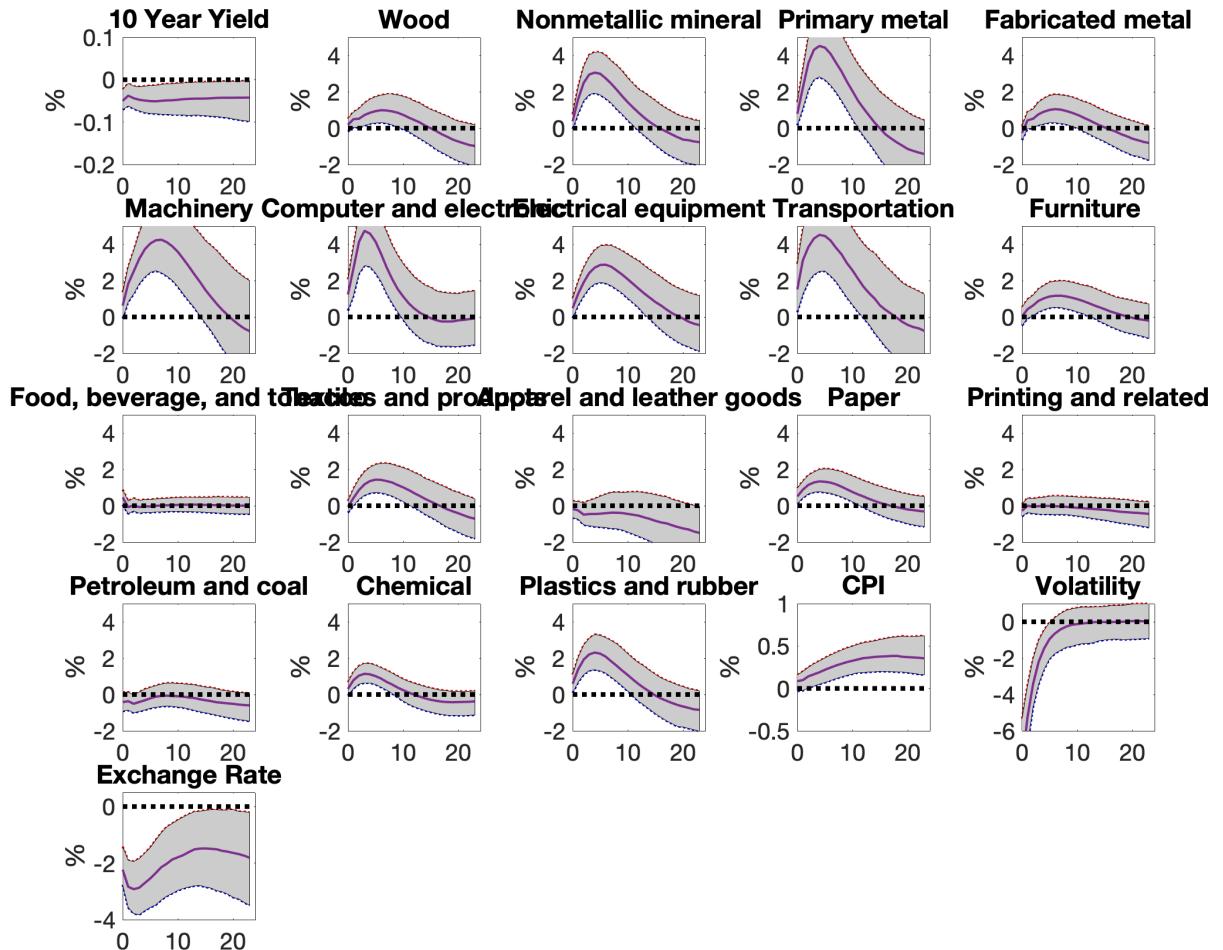
Note: The Median, 16th, and 84th Bayesian percentiles are reported. Monthly horizon.

Figure 9: Industry Response Functions (UK, Proxy VAR)



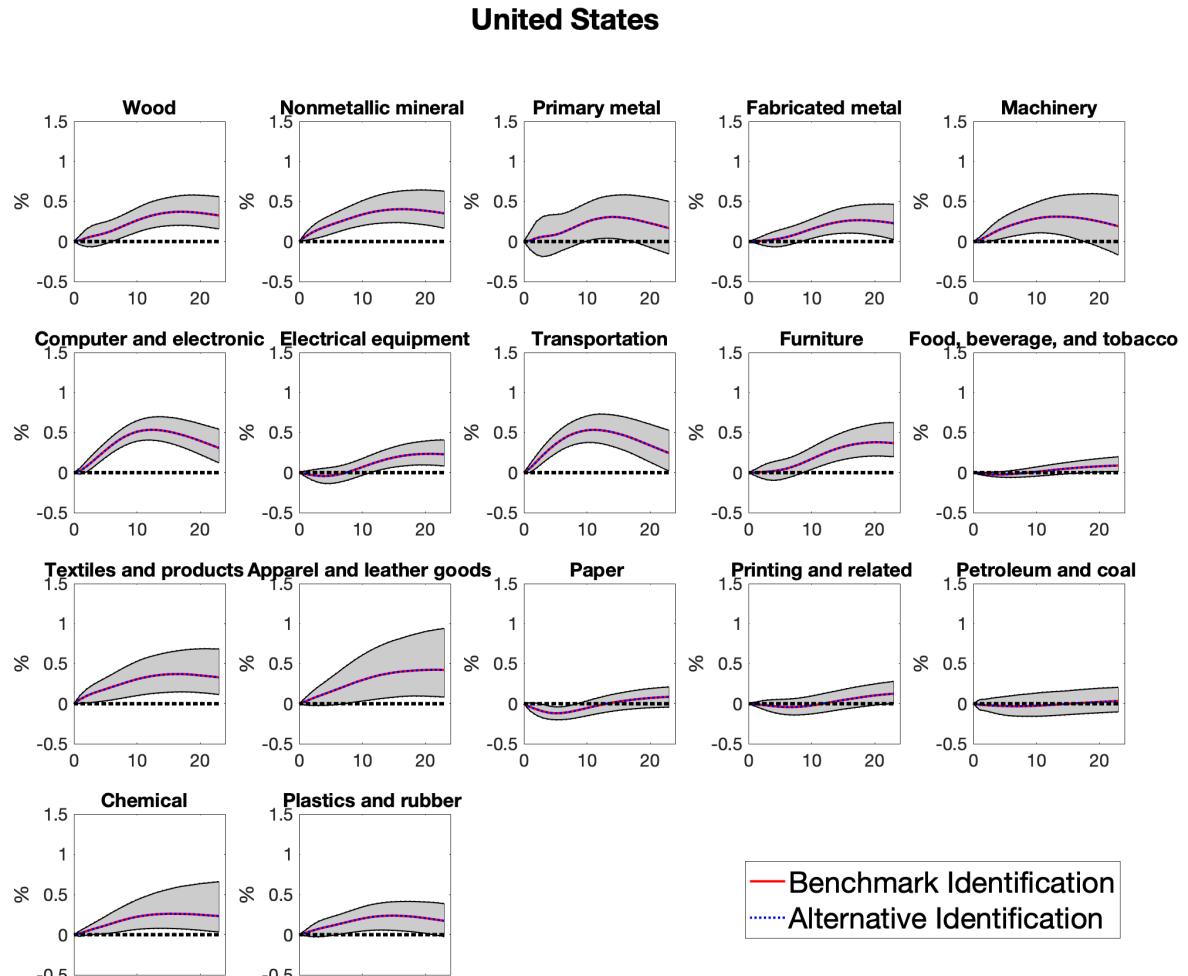
Note: The Median, 16th, and 84th Bayesian percentiles are reported. Monthly horizon.

Figure 10: Industry Response Functions (Japan, Proxy VAR)



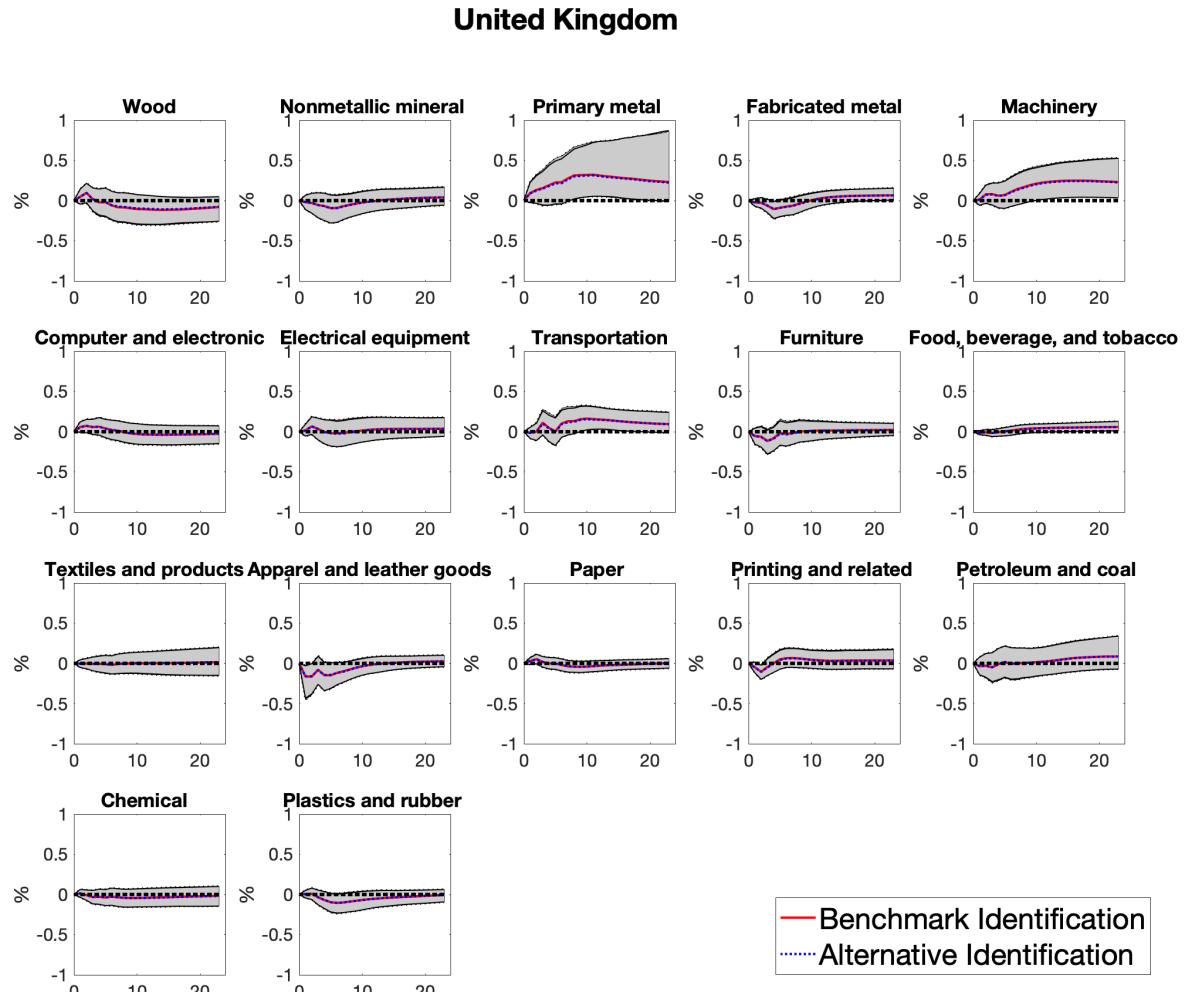
Note: The Median, 16th, and 84th Bayesian percentiles are reported. Monthly horizon.

Figure 11: Industry Response Functions (US, Sign Restriction with Longer Sign Restrictions)



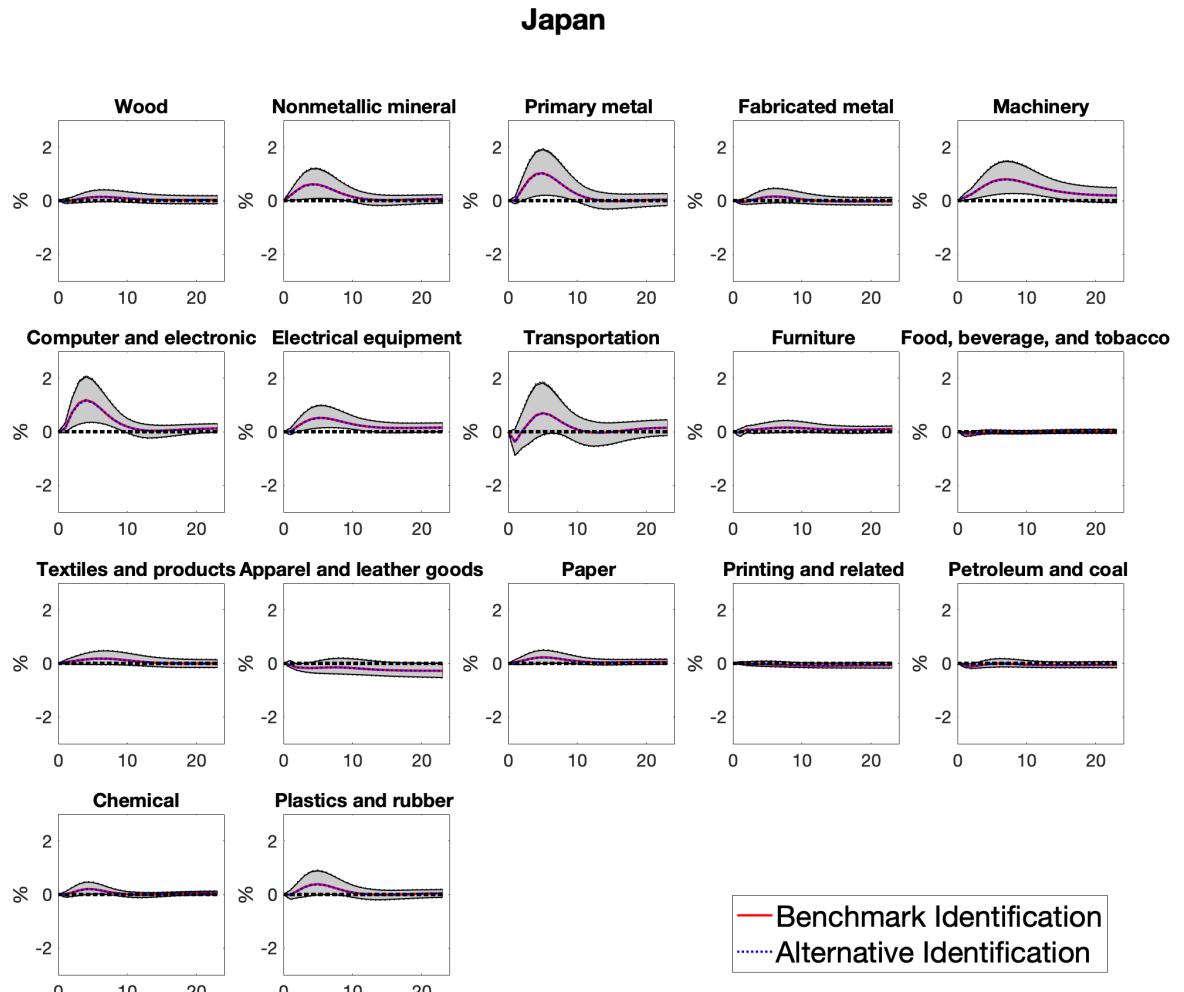
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 12: Industry Response Functions (UK, Sign Restriction with Longer Sign Restrictions)



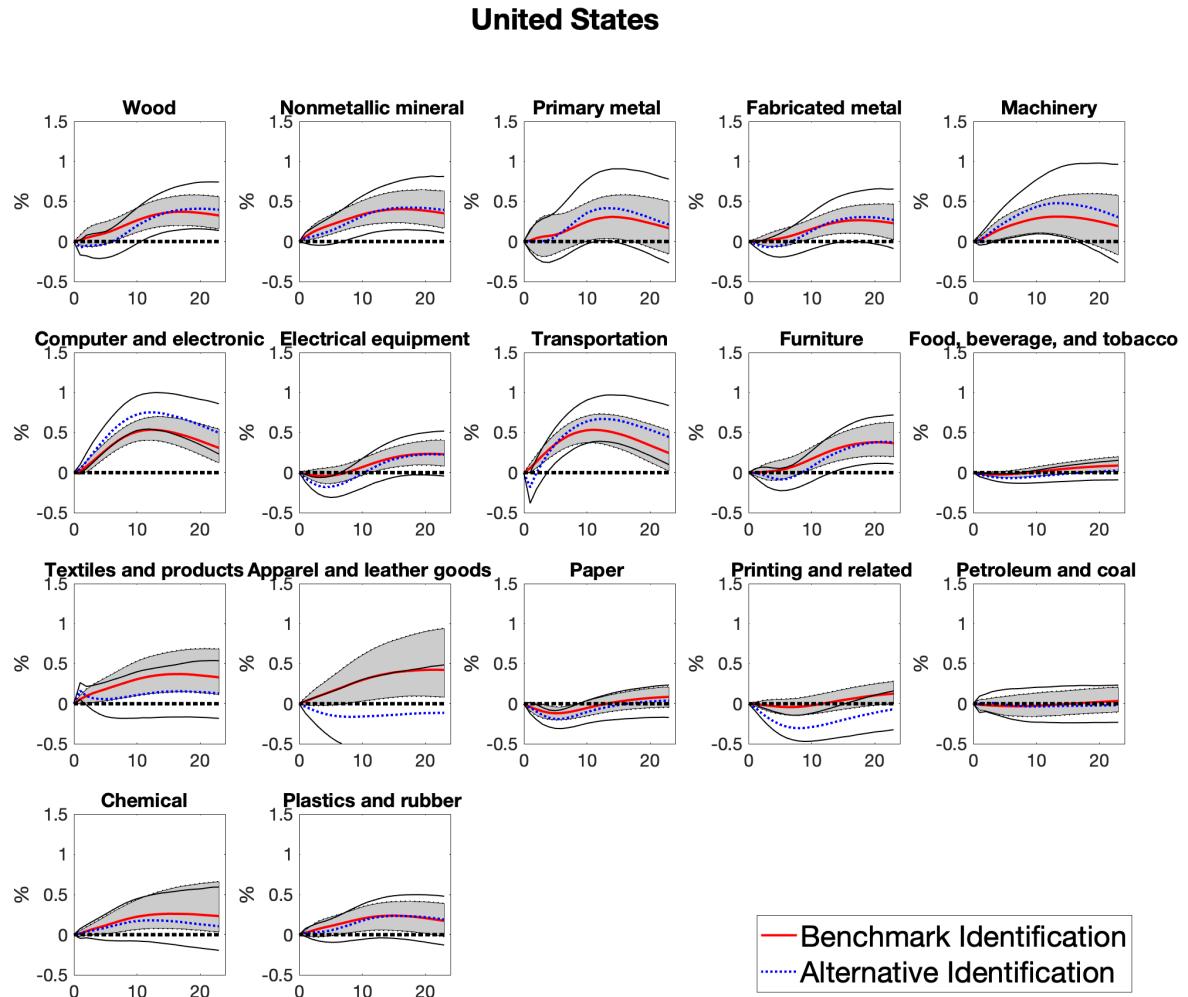
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 13: Industry Response Functions (Japan, Sign Restriction with Longer Sign Restrictions)



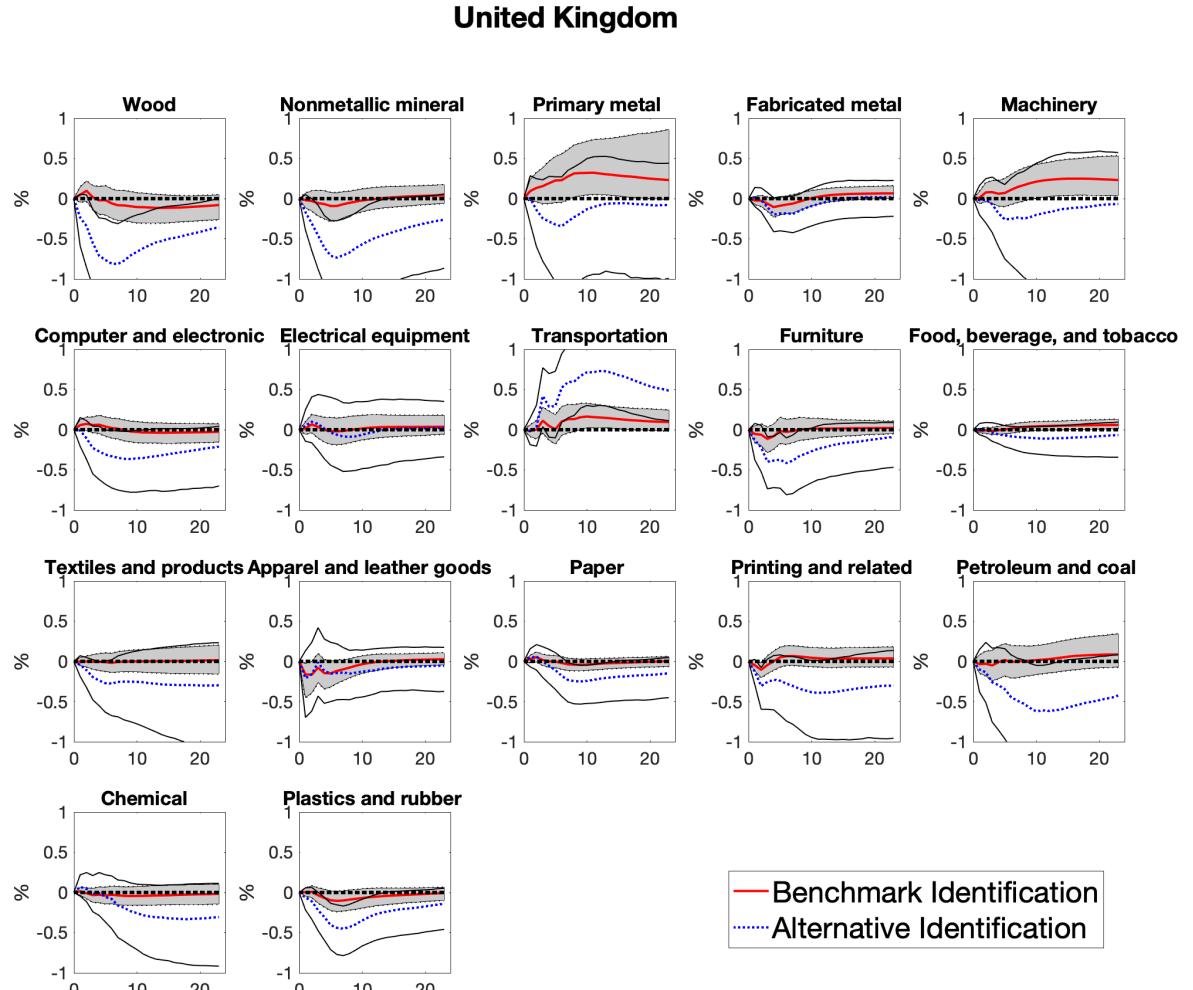
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 14: Industry Response Functions (US, Sign Restriction with Long-Term Interest Rate)



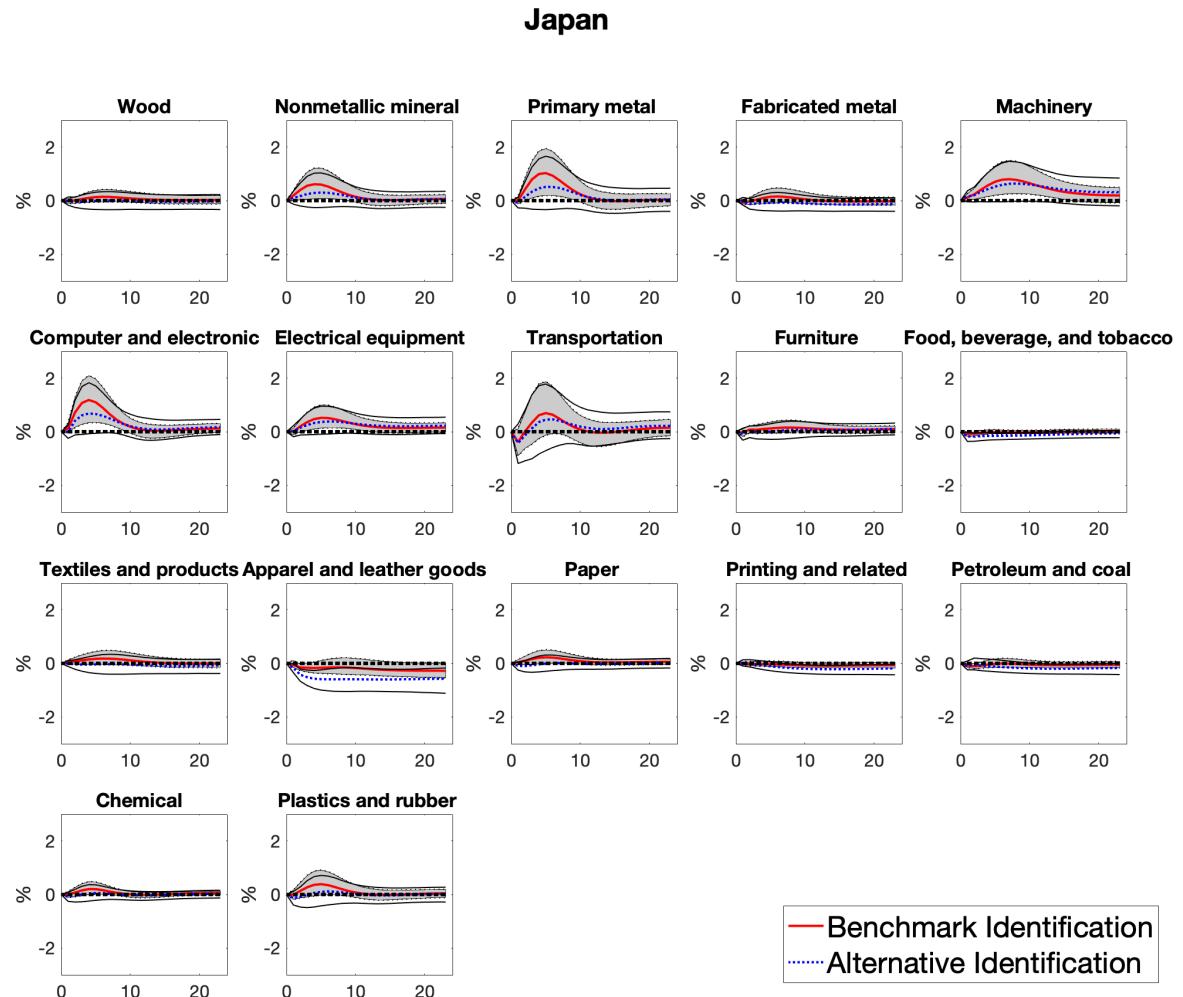
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 15: Industry Response Functions (UK, Sign Restriction with Long-Term Interest Rate)



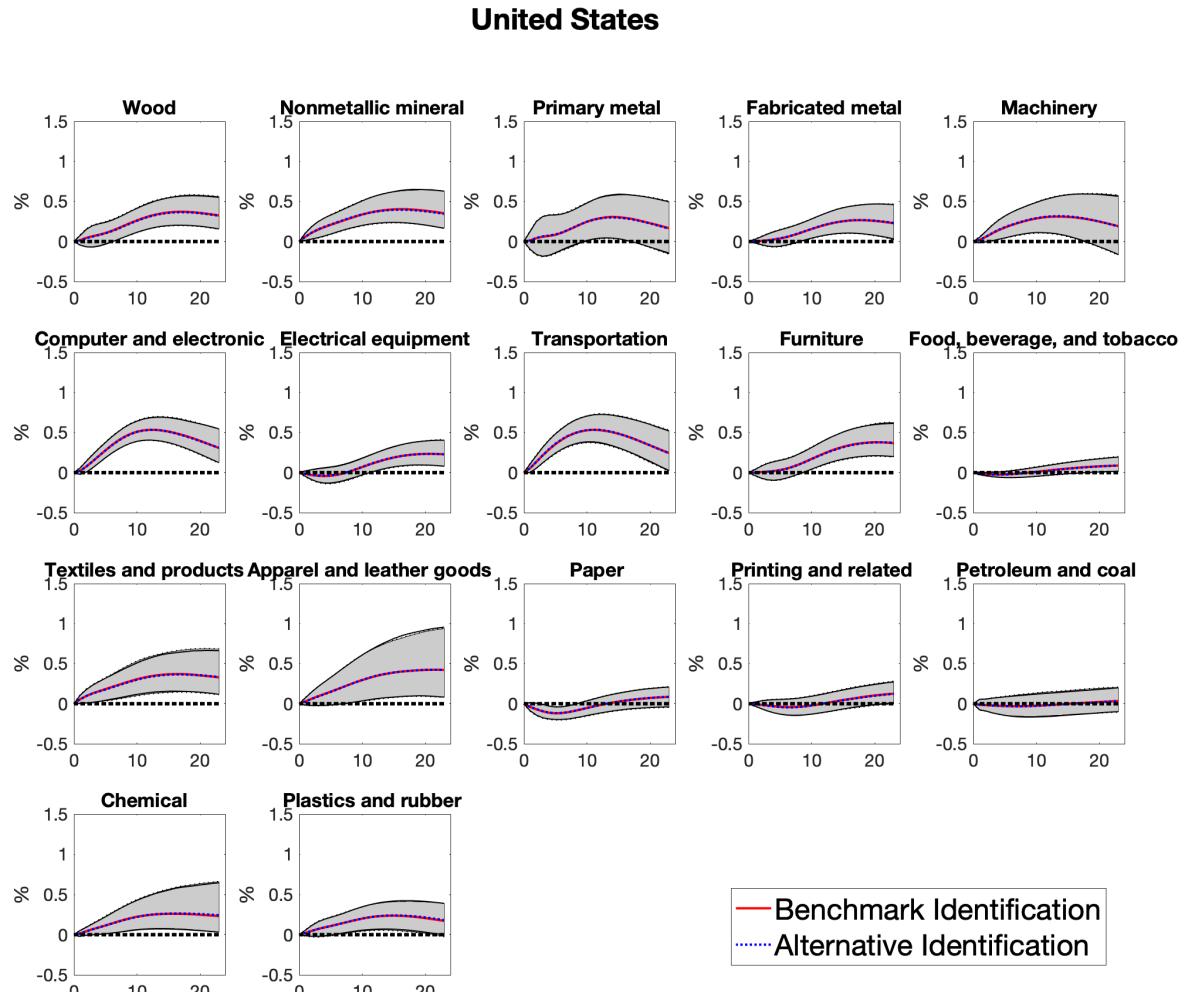
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 16: Industry Response Functions (Japan, Sign Restriction with Long-Term Interest Rate)



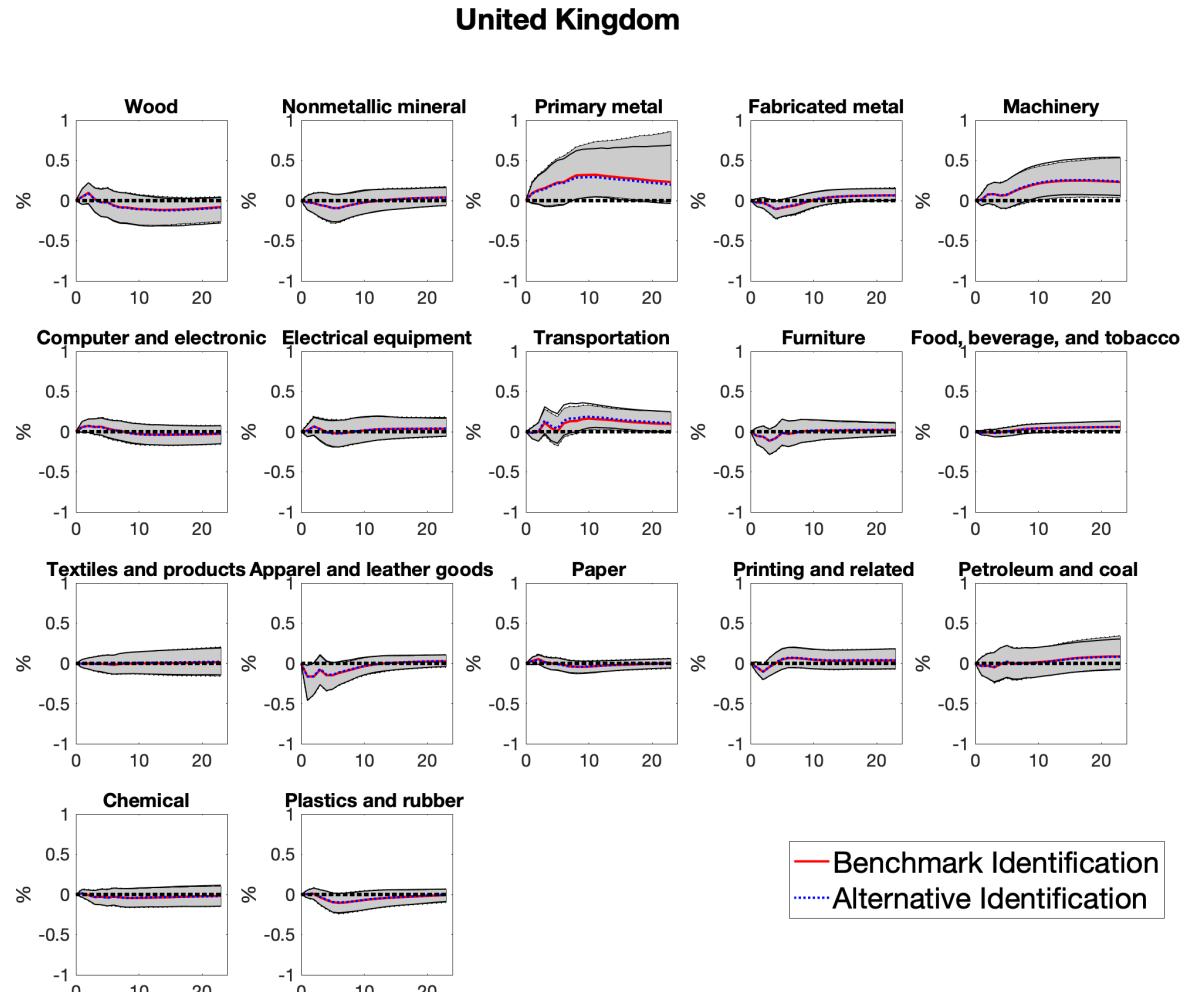
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 17: Industry Response Functions (US, Sign Restriction with Reverse Order of Industries)



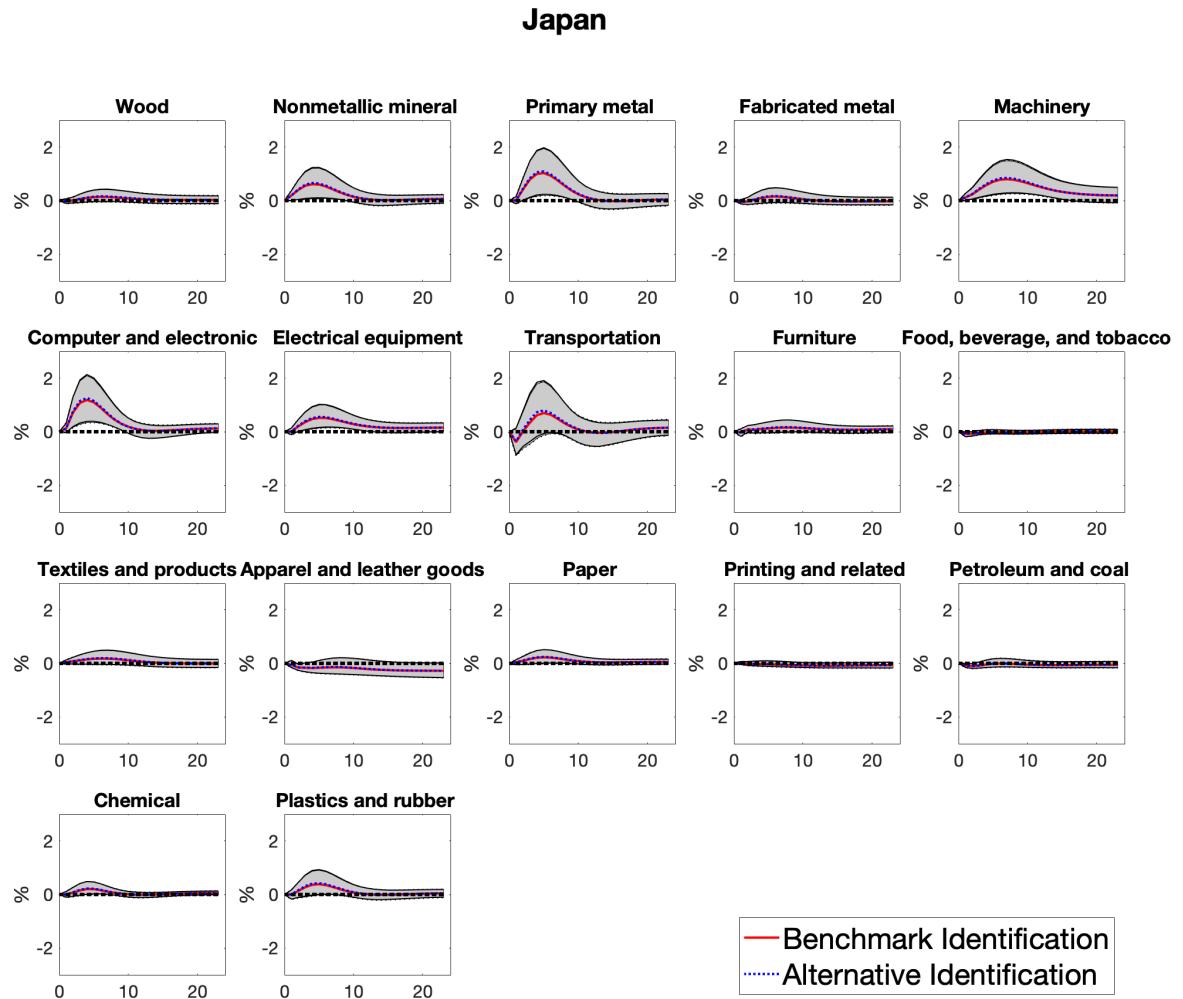
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 18: Industry Response Functions (UK, Sign Restriction with Reverse Order of Industries)



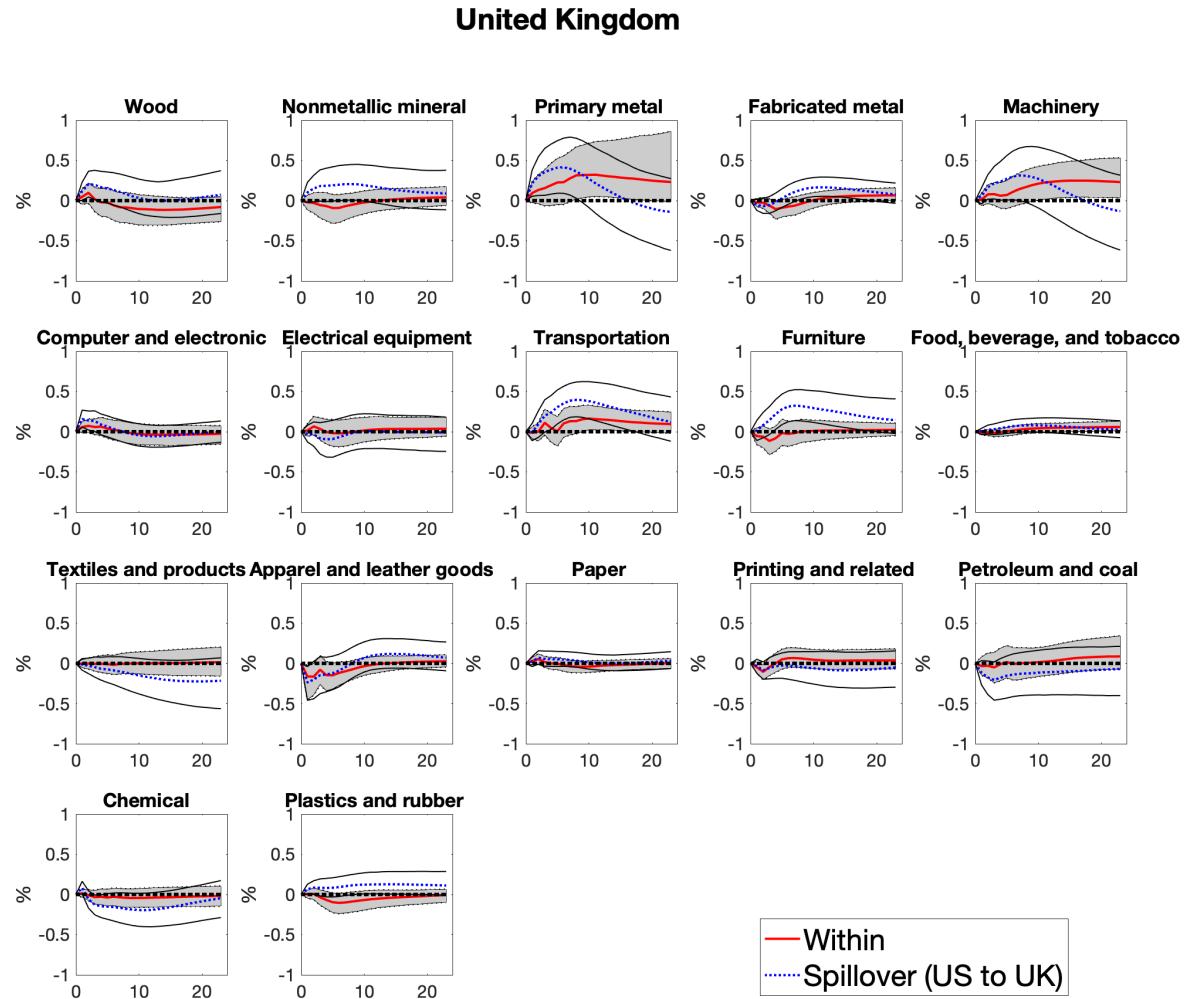
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 19: Industry Response Functions (JP, Sign Restriction with Reverse Order of Industries)



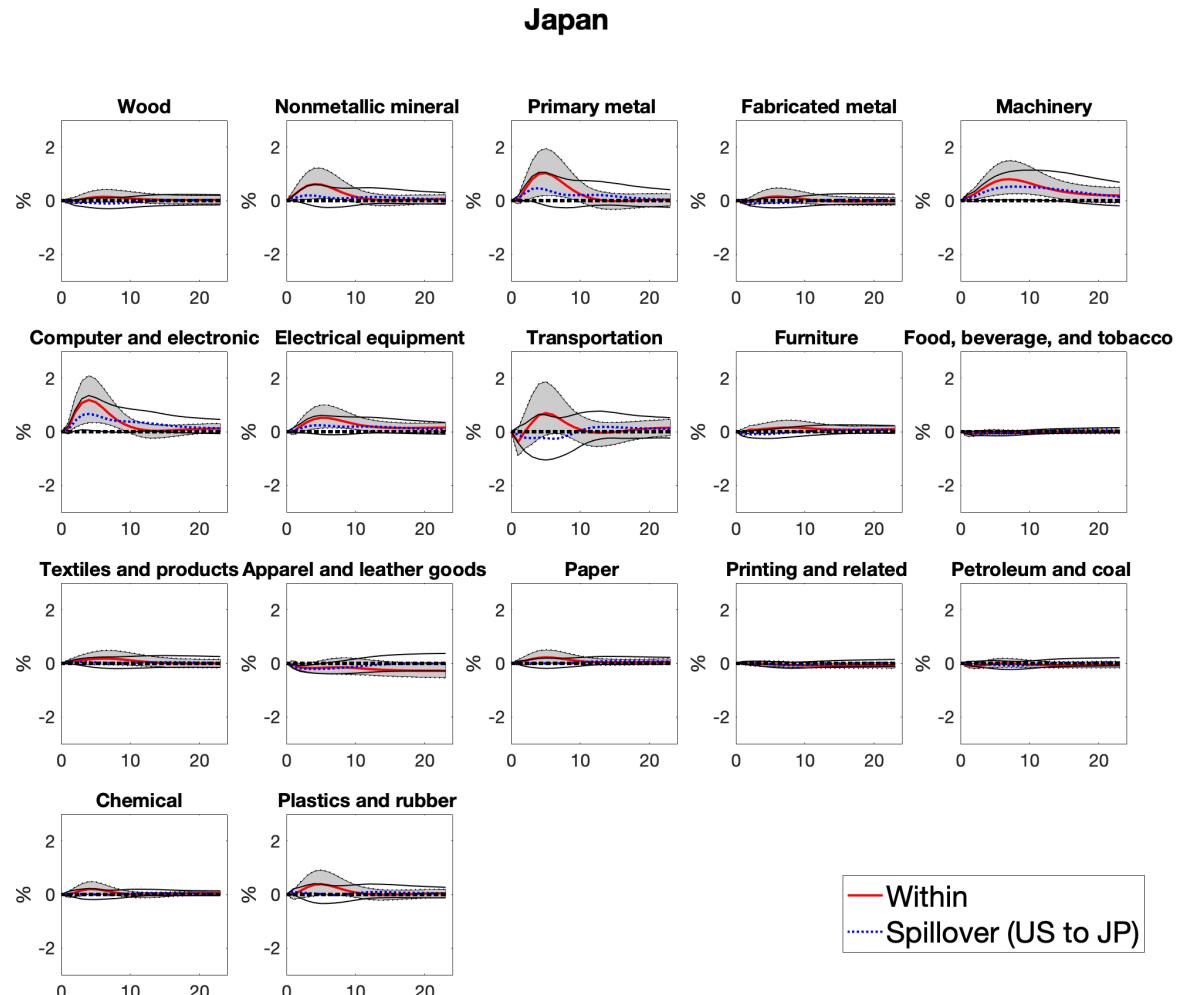
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 20: Industry Response Functions (Spillover Effects, Home US - Foreign UK)



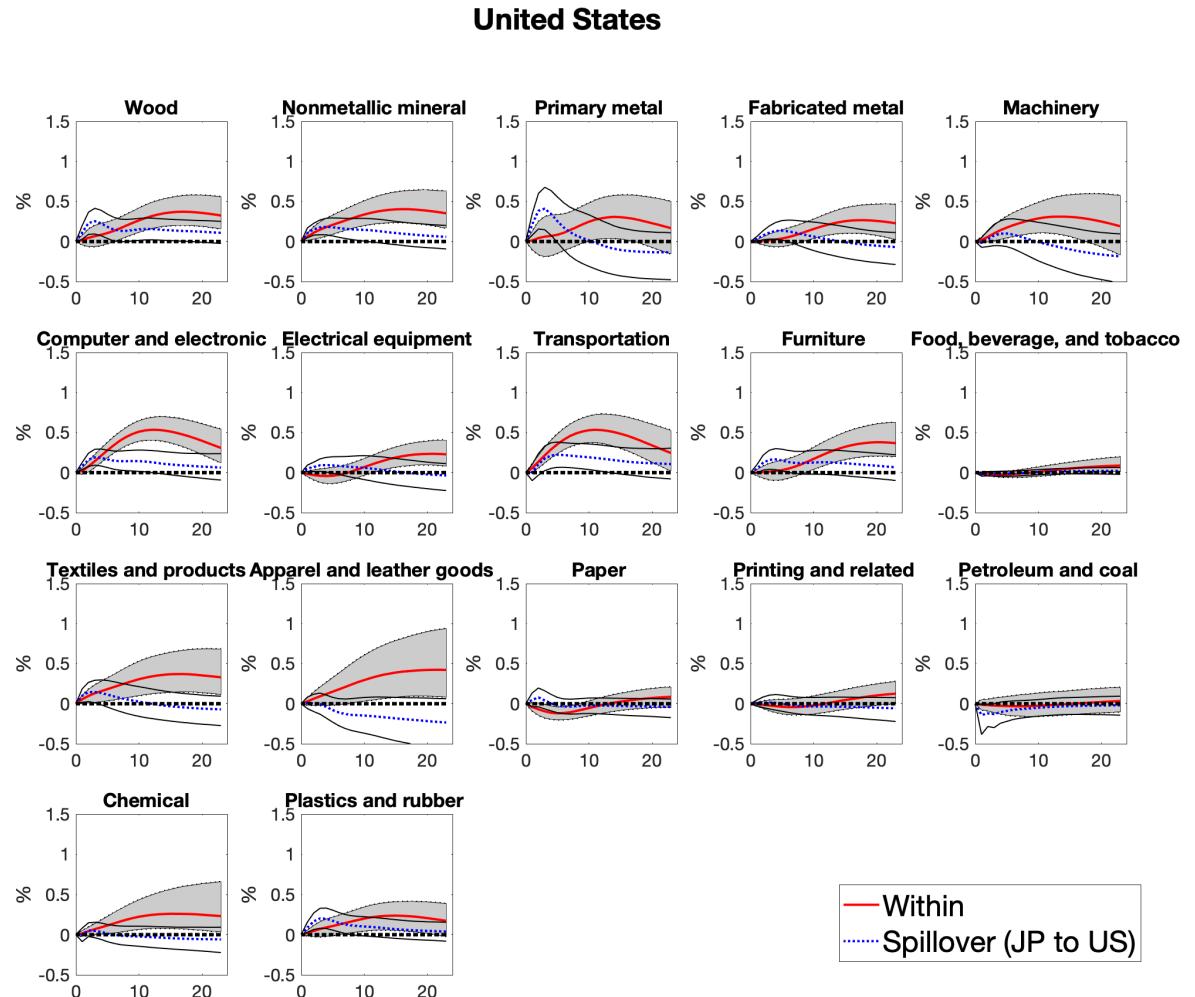
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 21: Industry Response Functions (Spillover Effects, Home US - Foreign Japan)



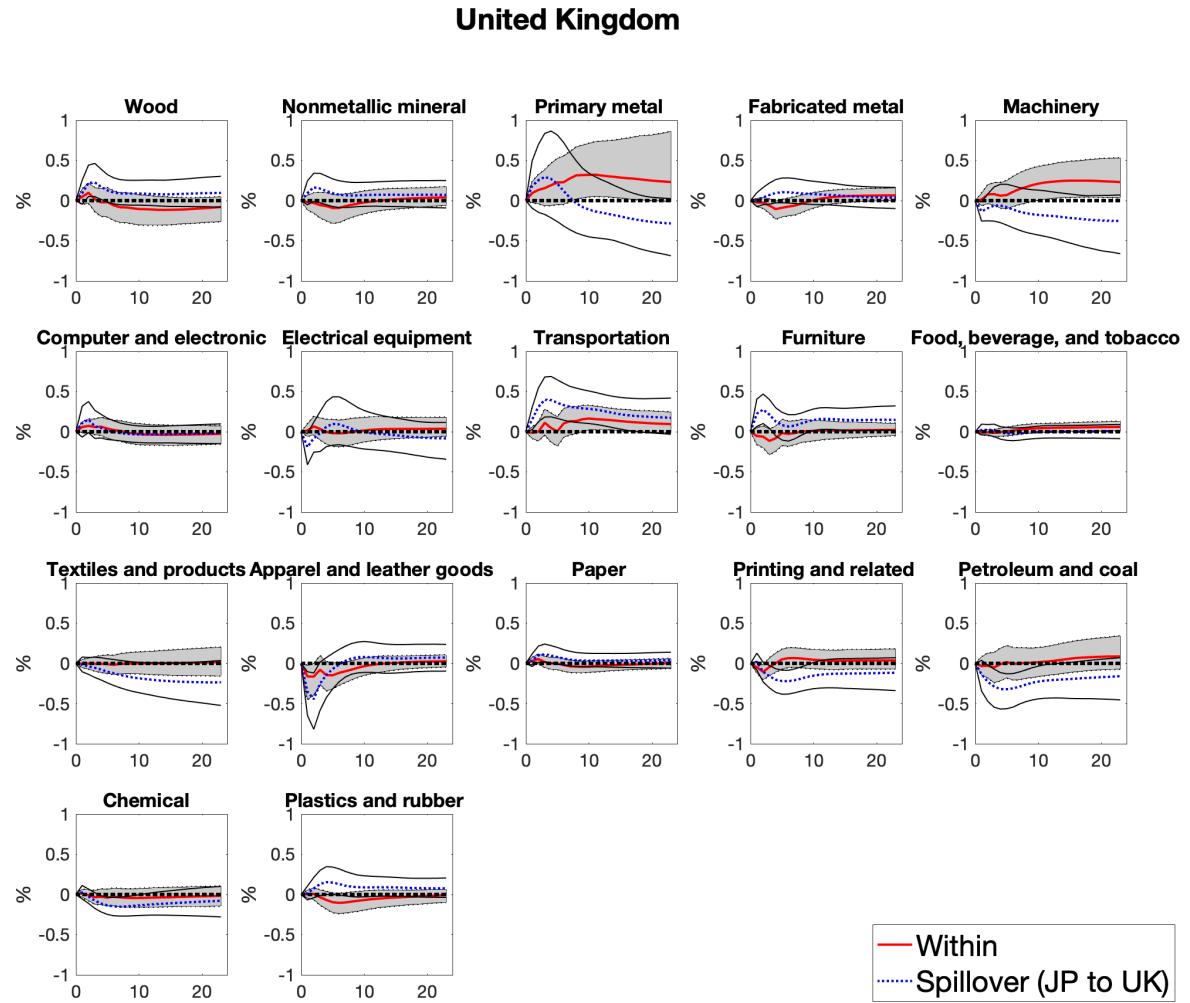
Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 22: Industry Response Functions (Spillover Effects, Home Japan - Foreign US)



Note: The Median Bayesian percentile is reported. Monthly horizon.

Figure 23: Industry Response Functions (Spillover Effects, Home Japan - Foreign UK)



Note: The Median Bayesian percentile is reported. Monthly horizon.

2 Tables

Table 1: Monetary Policy Elasticity of Output (Proxy VAR)

Country Industry	US	UK	Japan	Country	US	UK	Japan
Food, beverage, and tobacco	0.062 (-0.040 , 0.199)	-0.003 (-0.246 , 0.209)	0.457 (0.054 , 0.895)	Nonmetallic mineral product	0.334 (0.079 , 0.648)	0.031 (-0.219 , 0.293)	3.054 (1.934 , 4.187)
Textile mills product	0.270 (0.062 , 0.543)	-0.046 (-0.162 , 0.092)	1.433 (0.728 , 2.271)	Primary metal	0.619 (0.235 , 1.003)	0.329 (-0.001 , 0.830)	4.523 (2.818 , 6.375)
Apparel and leather product	0.292 (0.015 , 0.717)	0.018 (-0.264 , 0.384)	-0.167 (-0.646 , 0.261)	Fabricated metal product	0.450 (0.169 , 0.850)	0.199 (-0.029 , 0.645)	1.046 (0.294 , 1.860)
Wood product	0.404 (0.121 , 0.785)	0.023 (-0.226 , 0.287)	0.989 (0.302 , 1.821)	Machinery	0.578 (0.195 , 1.051)	0.276 (0.071 , 0.477)	4.248 (2.432 , 6.240)
Paper	0.249 (0.116 , 0.424)	0.132 (-0.098 , 0.485)	1.341 (0.774 , 1.998)	Computer and electronic product	0.464 (0.269 , 0.709)	0.046 (-0.135 , 0.238)	4.739 (2.821 , 6.455)
Printing activities	0.233 (0.045 , 0.530)	-0.090 (-0.299 , 0.119)	0.002 (-0.379 , 0.421)	Electrical equipment etc	0.431 (0.157 , 0.836)	0.384 (-0.040 , 1.161)	2.873 (1.851 , 3.949)
Petroleum and coal product	0.040 (-0.111 , 0.224)	-0.116 (-0.389 , 0.174)	-0.065 (-0.642 , 0.625)	Motor and transportation	0.481 (0.265 , 0.759)	0.456 (0.101 , 0.975)	4.514 (2.504 , 6.821)
Chemical	0.128 (0.020 , 0.255)	-0.020 (-0.139 , 0.147)	1.140 (0.642 , 1.712)	Furniture and related product	0.539 (0.212 , 1.005)	0.065 (-0.196 , 0.321)	1.169 (0.513 , 1.985)
Plastic and rubber product	0.328 (0.113 , 0.564)	0.066 (-0.090 , 0.221)	2.306 (1.365 , 3.308)	Industry average	0.347	0.103	1.977
				Industry median	0.334	0.046	1.341

Note: Lower and upper values of credible band in parenthesis. Credible band is an interval within which the estimate falls with the probability given. Elasticity is the maximum median impulse response function consistent with a 5 basis point decrease in 10-year government bond yield. For example, for the food, beverage, and tobacco industry in the US, a 5 basis point decrease in 10-year government bond yield increases the output by 0.062%.

Table 2: Regression Results

Explanatory variable	Maximum Response Benchmark Identification	Cumulative Response Benchmark Identification	24th Period Response Benchmark Identification	Maximum Response Proxy VAR	Cumulative Response Proxy VAR	24th Period Response Proxy VAR	Maximum Response Shadow rate	Cumulative Response Shadow rate	24th Period Response Shadow rate
Firm size (credit channel)	0.0504* (0.0256)	0.698* (0.359)	0.0309** (0.0147)	0.236* (0.136)	2.975* (1.481)	0.0176 (0.0321)	0.0563*** (0.0122)	1.058*** (0.337)	0.0418*** (0.0124)
Working capital (interest rate channel)	-0.0674** (0.0328)	-1.320** (0.524)	-0.0574** (0.0243)	-0.217 (0.182)	-2.138 (0.2076)	0.0203 (0.0455)	-0.0425** (0.0186)	-0.907** (0.437)	-0.0393** (0.0175)
Debt to equity ratio (credit channel)	-0.0593 (0.0664)	-0.577 (0.731)	-0.0295 (0.0242)	-0.296 (0.321)	-3.258 (3.424)	0.0307 (0.0801)	-0.0712*** (0.0231)	-1.374* (0.794)	-0.0267 (0.0344)
Short-term debt (interest rate channel)	0.189 (0.246)	1.864 (4.242)	0.0385 (0.141)	-0.0431 (0.937)	2.853 (10.73)	0.378 (0.261)	0.143 (0.115)	0.758 (3.005)	0.100 (0.109)
Durable dummy									
Country dummy	0.257*** (0.0595)	3.270*** (0.695)	0.0956*** (0.0256)	0.994*** (0.277)	11.66*** (2.924)	0.0923 (0.0795)	0.123*** (0.0260)	2.690*** (0.759)	0.117*** (0.0301)
US	-0.288 (0.263)	-3.365 (4.170)	-0.0592 (0.155)	-1.772 (1.273)	-22.65 (14.01)	-0.186 (0.318)	-0.429*** (0.127)	-7.291** (3.303)	-0.343*** (0.112)
UK	-0.445 (0.267)	-6.261 (4.577)	-0.196 (0.133)	-1.638 (1.239)	-24.25* (14.74)	-0.390 (0.303)	-0.433*** (0.124)	-8.175** (3.450)	-0.348*** (0.118)
UJ	-0.181 (0.273)	-4.669 (4.353)	-0.219 (0.157)	0.157 (1.207)	-10.91 (12.99)	-1.120*** (0.312)	-0.378*** (0.127)	-7.379** (3.272)	-0.359*** (0.110)
Adj. R-sq	0.653	51	51	51.51	51	51	51	51	51

Note: Pooled OLS (cross-industry and cross-country). Robust standard errors in parentheses, * p<0.10, ** p<0.05, *** p<0.01. The durable dummy takes one if industries are wood product, nonmetallic mineral product, primary metal, fabricated metal product, machinery, computer and electronic product, electrical equipment etc, motor and transportation, and furniture and related product and 0 otherwise.