Online Appendix for "Monetary Policy, Real Activity, and Credit Spreads"[1]

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A. Bayesian Proxy SVAR with Two Proxies

In this section we show the results of the estimation of BP-SVARs that include multiple proxies. We first consider the 5-equation BP-SVAR from Section III augmented with the RR-CS shocks—which we denote by $m_{RR-CS,t}$—as an additional proxy. We then estimate a BP-SVAR that includes $m_{HF,t}$ and $m_{CG,t}$, the residual of the Taylor rule estimated in Section IV-A.

To introduce a second proxy, we write the measurement equation (??) as,

$$m_{HF,t} = \beta_{HF} e_{MP,t} + \sigma_{\nu_{HF}} \nu_{HF,t},$$

$$m_{RR-CS,t} = \beta_{RR-CS} e_{MP,t} + \sigma_{\nu_{RR-CS}} \nu_{RR-CS,t},$$

where we have added clarifying subscripts to the coefficients in Equation (??). We assume, as before, that the measurement errors $\nu_{HF,t}$ and $\nu_{RR-CS,t}$ are independent over time, follow a standard normal distribution, and are orthogonal to all of the structural shocks of interest. The other assumption we make is that the measurement errors are independent of each other, even though this assumption can easily be relaxed. Using this framework, we can deduce the conditional likelihood

$$p(M_{HF,1:T}, M_{RR-CS,1:T} | Y_{1:T}, A_{0,1}, A_{+,1}, \beta_{HF}, \sigma_{\nu_{HF}}, \beta_{RR-CS}, \sigma_{\nu_{RR-CS}}),$$

which again follows the multivariate normal form. With this conditional likelihood we can proceed as before to estimate the structural parameters of interest.

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[1]NOT FOR PUBLICATION.

Panel (a) in Figure 1 displays the impulse responses to a monetary policy shock identified in the BP-SVAR that includes both the high frequency surprises and the RR-CS shocks as proxies. The inclusion of $m_{RR-CS,t}$ as an additional proxy attenuates the responses of IP and unemployment: the median response of IP bottoms at 0.25 percent, and the increase in the unemployment rate peaks at about 4 basis points. Importantly, and in line with the results from the hybrid VAR, the response of the Baa spread is only 2 basis points, suggesting that the inclusion of $m_{RR-CS,t}$ could attenuate the responses to a monetary policy shock because the extended **?** does not fully purge the series of intended policy changes. Finally, it should be noted that the conclusions of Section III are preserved even as $m_{RR-CS,t}$ has a much higher relevance (0.4) than the $m_{HF,t}$ (0.1).[2]

Panel (b) displays the impulse responses to a monetary policy shock identified in the BP-SVAR that includes both the high frequency surprises and the residual from the Taylor rule estimation described in Equation (18) as proxies. Results are nearly identical to those from the BP-SVAR that only includes $m_{HF,t}$.

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[2]Results are closer to those reported in Section III if we impose a high relevance prior on both proxies to induce a equal reliability of about 0.4.

Figure 1: Impulse Responses to a Monetary Policy Shock
(BP-SVARs with Two Proxies)
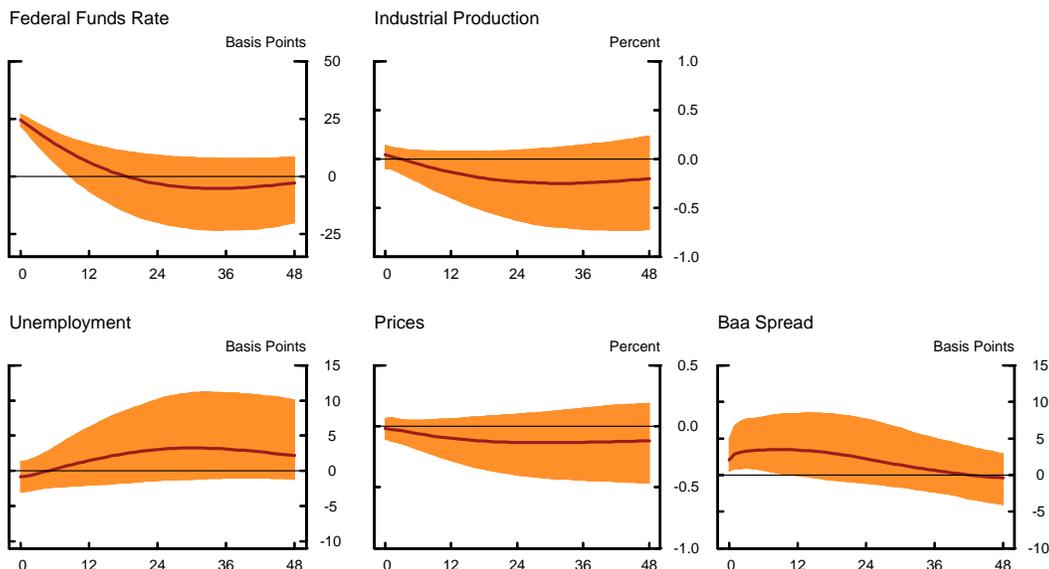
(a) High Frequency Surprises + RR-CS Shock
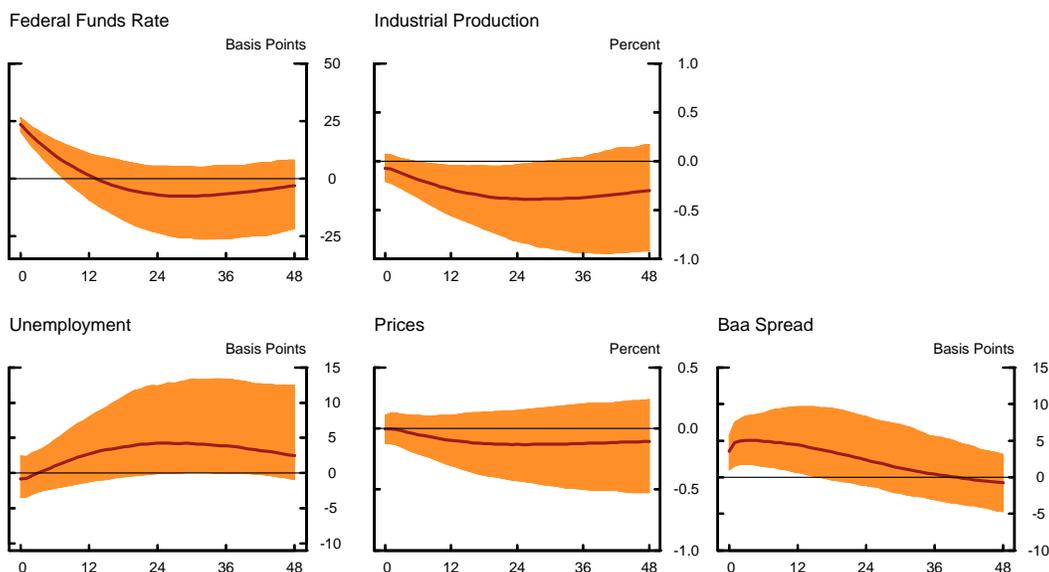
(b) High Frequency Surprises + Coibion-Gorodnichenko (2012) Shock

NOTE: The solid lines in panel (a) depict the median impulse responses of the specified variable to a one standard deviation monetary policy shock identified in the BP-SVAR using jointly the high frequency surprises and the RR-CS shocks as proxies; those in panel (b) depict the impulse responses identified in the BP-SVAR using jointly the high frequency surprises and the residuals from the augmented Coibion-Gorodnichenko (2012) Taylor rule as proxies. Shaded bands denote the 90 percent pointwise credible sets

B. Additional Figures and Tables

Figure 2: Coefficients in the Monetary Policy Equation
(Prior-Posterior Comparison)
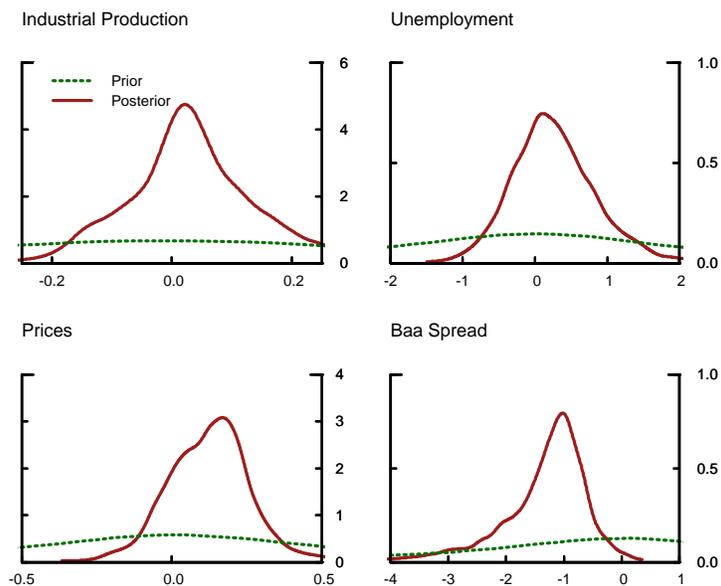
(a) Contemporaneous Elasticities
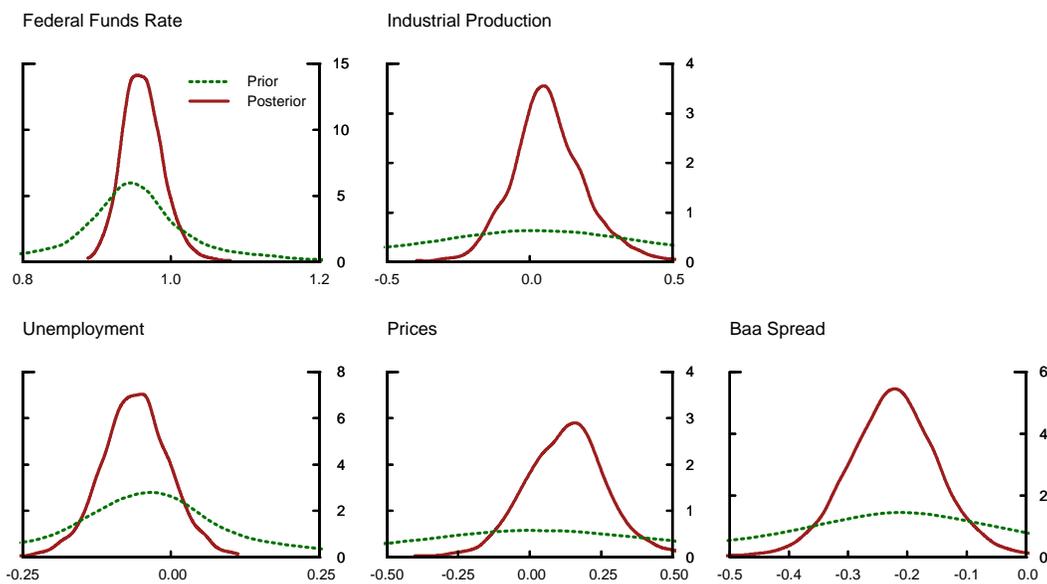
(b) Cumulative Elasticities

NOTE: The solid lines in panel (a) depict the posterior density of the contemporaneous elasticities from the monetary policy equation identified in the BP-SVAR that includes the Baa spread, and those in panel (b) depict the cumulative elasticities. The dashed lines denotes the density of impulse response under the prior distribution $p(A_0, A_+|Y_{1:T})$.

Table 1: Coefficients in the Monetary Policy Equation (Cholesky Identification)

	(1)
(A.) *Contemporaneous Elasticities*	
$\psi_{0,cs}$	0.00
$\psi_{0,\pi}$	0.01
	[-0.04 0.07]
$\psi_{0,\Delta ip}$	0.00
	[-0.05 0.04]
$\psi_{0,u}$	-0.02
	[-0.23 0.20]
(B.) *Cumulative Elasticities*	
ψ_{cs}	-0.21
	[-0.29 -0.13]
ψ_{π}	0.03
	[-0.05 0.11]
ψ_{Δ_y}	0.03
	[-0.04 0.09]
ψ_{u}	-0.04
	[-0.11 -0.03]
ψ_{r}	0.95
	[0.91 0.98]

NOTE: The entries in the table denote the posterior median estimates of the contemporaneous elasticities (panel A) and the cumulative elasticities (panel B) in the monetary equation identified using the Cholesky identification. The 90 percent credible sets from the posterior distributions are reported in brackets. See the main text for details.