

Sentimental Business Cycles

Lagerborg, Pappa, Ravn

Discussion by
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The paper

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- ▶ QUESTION: Do sentiment/confidence shocks affect the macroeconomy?

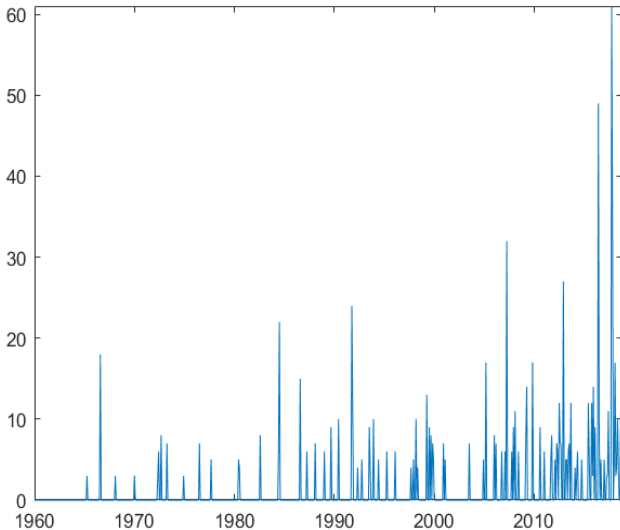
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- ▶ ANSWER: YES, business cycle is sentimental.

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- ▶ **QUESTION:** Do sentiment/confidence shocks affect the macroeconomy?
- ▶ **ANSWER:** YES, business cycle is sentimental.
- ▶ **NICE PAPER:** contributing to the expectation-driven business cycles and the news shocks literature (vast, Barsky and Sims, Beaudry and Portier, Blanchard, L'Huillier and Lorenzoni, myself with coauthors, etc.).

Mass Shooting



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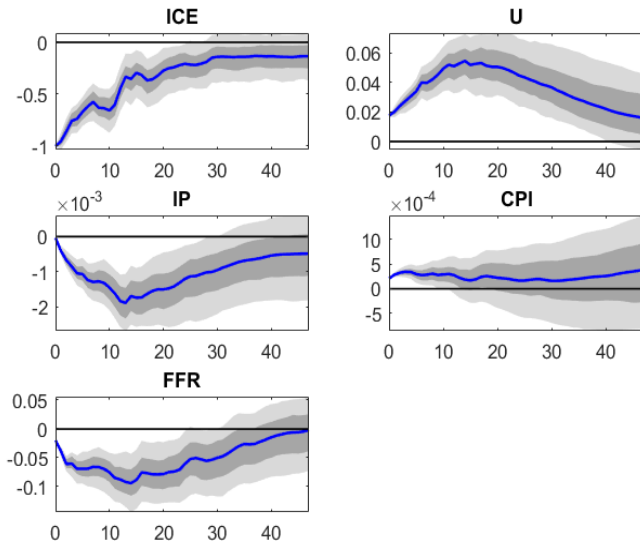
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 - ▶ Uncorrelated with other shocks,
- ▶ Great! Let's use it as an external instrument in a VAR to identify the “sentiment shock”.

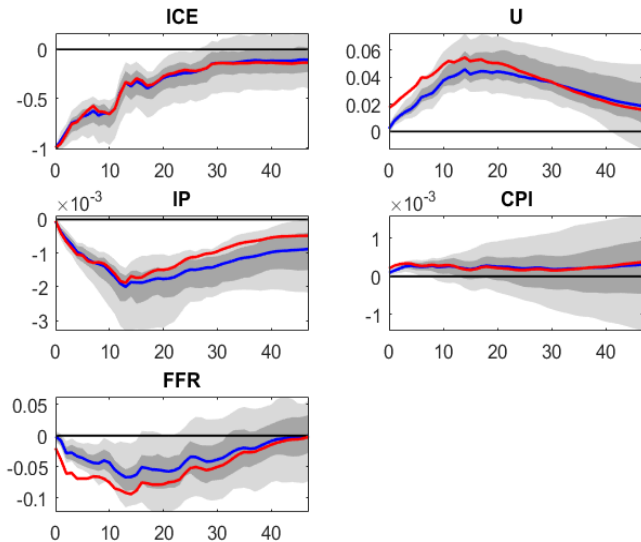
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 - ▶ Correlated with sentiment shock,
 - ▶ Uncorrelated with other shocks,
- ▶ Great! Let's use it as an external instrument in a VAR to identify the “sentiment shock”.
- ▶ VAR(18) (btw, AIC says 14), US monthly data, IP, U, ICE, CPI, FFR (baseline).

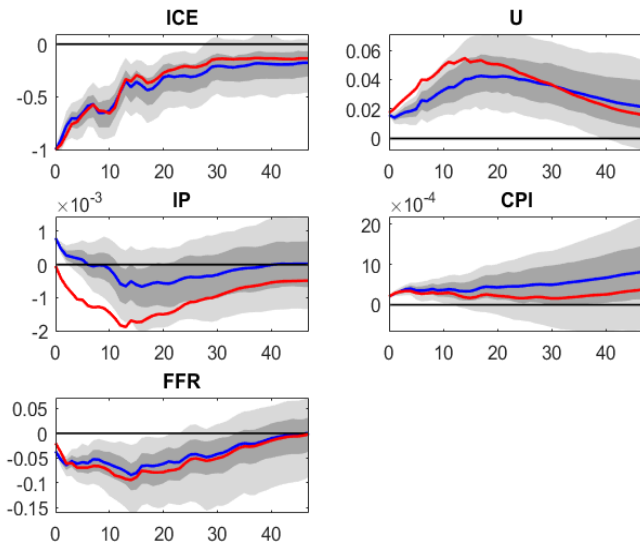
Main Results (my estimations)



IRF: Cholesky vs IV



Adding October 2017



Main Conclusion

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Cycles are sentimental

My discussion

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 1. First empirical: shock identification.
 2. Second theoretical: model estimation.

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 - ▶ Financial markets absent...

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 2. Bad economic news about the future.
 - ▶ Macro controlling for U and IP
 - ▶ Financial markets absent...But shown to be important for news

S&P500 and VAR Residuals

- ▶ Estimate the regression

$$\hat{u}_{it} = \beta_0 + \beta_{i1}sp_{t-1} + \beta_{i2}sp_{t-2} + \beta_{i3}sp_{t-3} + \beta_{i4}sp_{t-4} + \eta_{it}$$

(sp_t is log stock prices).

	$ t - stat $			
	sp_{t-1}	sp_{t-2}	sp_{t-3}	sp_{t-4}
u_{1t}	3.4074	-1.2753	-1.1064	0.4293
u_{2t}	-1.0422	0.4257	-0.7520	1.5666
u_{3t}	-0.4170	1.1194	0.7325	-2.5667
u_{4t}	4.1527	-2.7865	-0.1261	0.5274
u_{5t}	0.0643	0.8492	-1.0499	0.2506

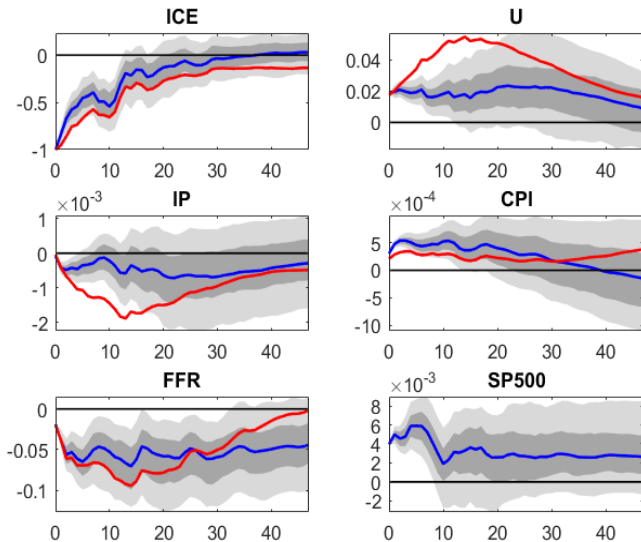
SP500 and VAR residuals

- ▶ Ans in growth rates

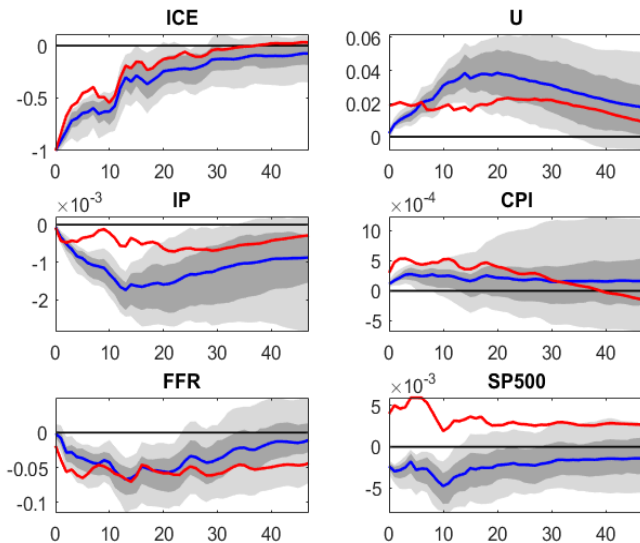
	$ t - stat $			
	sp_{t-1}	sp_{t-2}	sp_{t-3}	sp_{t-4}
u_{1t}	3.3605	1.3654	0.6050	0.7391
u_{2t}	0.9207	0.5150	0.9685	2.1359
u_{3t}	0.4675	1.4069	2.2517	0.8745
u_{4t}	4.1781	0.3700	0.3771	0.5684
u_{5t}	0.0807	1.3563	0.1759	0.3039

- ▶ So, add the S&P500!

VAR+S&P500



Cholesky VAR+S&P500



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⇒ Residuals contain the past of the shock. **R1**
- ▶ Estimate the regression

$$ms_t = \beta_0 + \beta_{i1}ms_{t-1} + \beta_{i2}ms_{t-2} + \beta_{i3}ms_{t-3} + \beta_{i4}ms_{t-4} + \eta_{it}$$

(ms_t is mass shooting).

	$ t - stat $			
	ms_{t-1}	ms_{t-2}	ms_{t-3}	ms_{t-4}
ms_t	4.6890	-0.3358	1.4174	3.6423

- ▶ Mass shooting predicts future mass shooting. **R2**
- ▶ **R1+R2** ⇒ with S&P500 the model becomes invertible, past shocks disappear and the results change.
- ▶ Take a look at Miranda-Agrippino and Ricco (2018) (very interesting!).

And then I have found the following...

- ▶ Using a different sample: 1960-1996.

	$ t - stat $			
	sp_{t-1}	sp_{t-2}	sp_{t-3}	sp_{t-4}
u_{1t}	1.9108	-0.3538	-1.7397	1.4666
u_{2t}	-0.4088	0.5264	-0.6900	0.6748
u_{3t}	-1.5888	1.6382	-0.3492	-0.4737
u_{4t}	1.1943	-0.7249	-0.6707	1.0572
u_{5t}	0.2698	1.2207	-1.2814	-0.1778

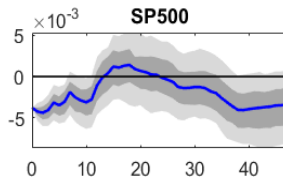
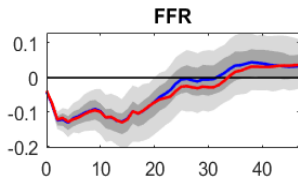
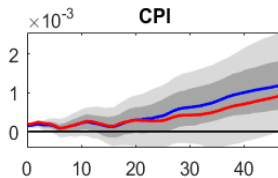
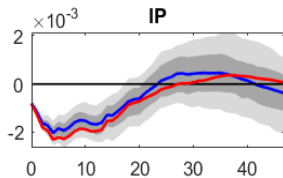
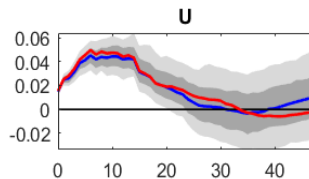
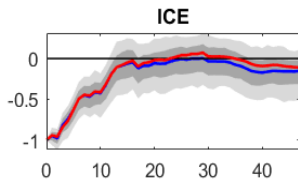
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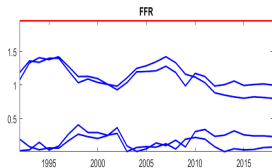
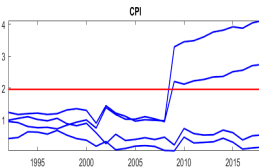
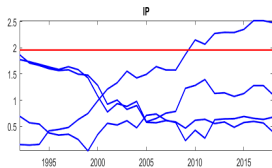
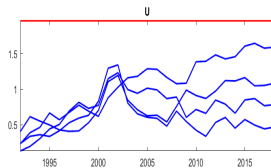
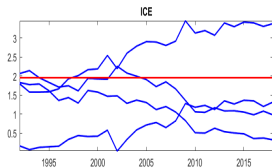
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- ▶ Nothing is significant, S&P500 does not predict...

VAR+S&P500: 1960-1996



Recursive $|t - stat|$



Summing up

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- ▶ The distortions are mainly attributable to the latest part of the sample.

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- ▶ The reason is that under limited information not even the agents observe the shocks.
- ▶ So, the comparison is hard to interpret.

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- ▶ Noise is about technology, while the empirical instrument has nothing to do.
- ▶ How can you reconcile this?