

Mood Swings and Business Cycles: Evidence from Sign Restrictions

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 - ▶ Related to subsequent changes in fundamentals (e.g., TFP)
 - ▶ Self-fulfilling feedback loop: Farmer and Guo (1994)
 - ▶ News: Cochrane (1994a, 1994b), Beaudry and Portier (2004, 2006)

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 - ▶ Self-fulfilling feedback loop: Farmer and Guo (1994)
 - ▶ News: Cochrane (1994a, 1994b), Beaudry and Portier (2004, 2006)
- ▶ In this paper, we
 - ▶ identify an optimism shock and study its role in driving US business cycles.

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- ▶ Main findings:
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 - ▶ Optimism shocks accounts for over 30% of the FEV of hours and output at business-cycle frequencies.
 - ▶ A positive optimism shock is followed by an eventual increase in TFP 2 to 3 years after the shock.

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- ▶ Consistent with business-cycle properties of the labor market
 - ▶ Extensive margins vs intensive margins for total hours
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 - ▶ Extensive margins vs intensive margins for total hours
 - ▶ Job finding rate and job separation rate
- ▶ Robustness checks
 - ▶ Different subsamples
 - ▶ Other variables of interest such as Real wages and inventories
 - ▶ Survey measures of confidence
 - ▶ Different sets of sign restrictions

Identifying Optimism Shocks

- ▶ Sign Restrictions Method
- ▶ Data and Imposed Sign Restrictions
- ▶ Main Results

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- ▶ For instance, following a contractionary monetary shock,
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- ▶ In our application, we impose
 - ▶ sign restrictions and zero impact restriction from our definition of optimism shocks.

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 - ▶ Proposed new numerical algorithms for Bayesian inference

Data and Imposed Sign Restrictions

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- ▶ Stock price, consumption, and hours are transformed in per capita terms.

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 - ▶ Consumer confidence: Michigan Survey of Consumers

Data and Imposed Sign Restrictions

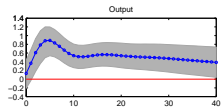
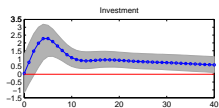
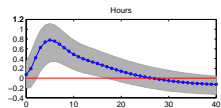
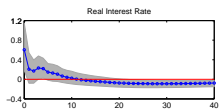
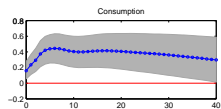
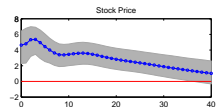
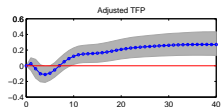
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Sign Restrictions

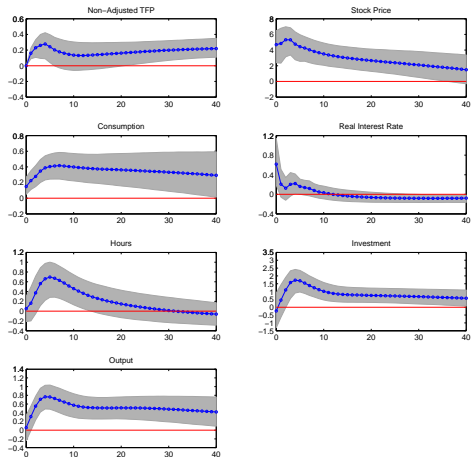
Table 1
Sign Restrictions

	TFP	Stock Price	Consumption	Real Interest Rate	Hours
Identification I	0	+			
Identification II	0	+	+		
Identification III	0	+	+	+	

Results for Adjusted TFP



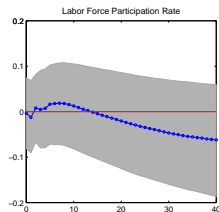
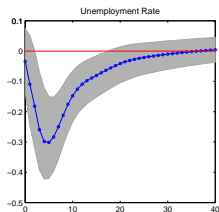
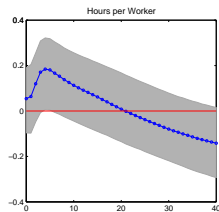
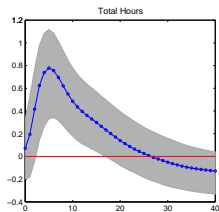
Results for Non-adjusted TFP



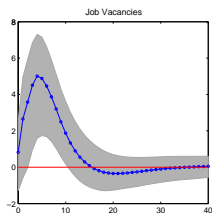
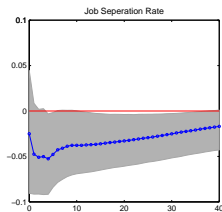
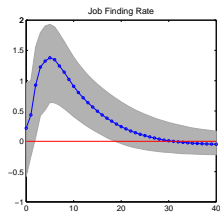
Results in the Benchmark Five-variable System

Panel A: Adjusted TFP						
	$h = 0$	$h = 4$	$h = 8$	$h = 16$	$h = 24$	$h = 40$
TFP	0.00 [0.00, 0.00]	0.02 [0.01, 0.05]	0.02 [0.01, 0.06]	0.05 [0.02, 0.10]	0.10 [0.03, 0.20]	0.17 [0.06, 0.34]
Stock Price	0.39 [0.10, 0.74]	0.44 [0.15, 0.75]	0.44 [0.14, 0.73]	0.39 [0.13, 0.65]	0.34 [0.11, 0.58]	0.26 [0.10, 0.48]
Consumption	0.18 [0.02, 0.54]	0.32 [0.10, 0.68]	0.36 [0.12, 0.71]	0.37 [0.13, 0.69]	0.35 [0.12, 0.65]	0.30 [0.10, 0.59]
Real Interest Rate	0.14 [0.01, 0.48]	0.15 [0.03, 0.44]	0.16 [0.04, 0.45]	0.16 [0.05, 0.43]	0.17 [0.06, 0.41]	0.19 [0.08, 0.38]
Hours	0.12 [0.01, 0.43]	0.24 [0.06, 0.58]	0.30 [0.07, 0.63]	0.28 [0.07, 0.60]	0.25 [0.07, 0.54]	0.24 [0.09, 0.47]
Investment	0.10 [0.01, 0.35]	0.21 [0.08, 0.56]	0.33 [0.11, 0.60]	0.34 [0.13, 0.59]	0.35 [0.13, 0.58]	0.35 [0.14, 0.56]
Output	0.08 [0.01, 0.27]	0.30 [0.08, 0.60]	0.36 [0.14, 0.63]	0.36 [0.17, 0.62]	0.35 [0.15, 0.61]	0.30 [0.12, 0.55]

Results for labor-market variables



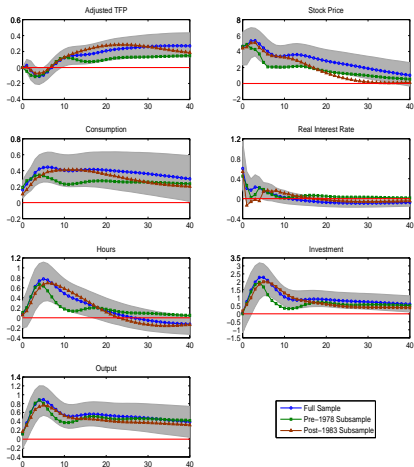
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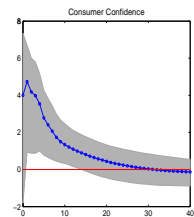
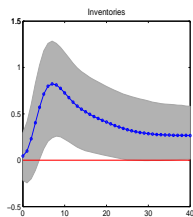
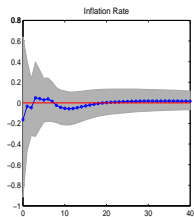
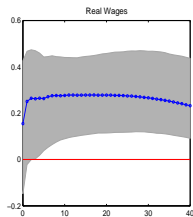
Results of Variance Decomposition

	$h = 0$	$h = 4$	$h = 8$	$h = 16$	$h = 24$	$h = 40$
Total Hours	0.12 [0.01, 0.43]	0.24 [0.06, 0.58]	0.30 [0.07, 0.63]	0.28 [0.07, 0.60]	0.25 [0.07, 0.54]	0.24 [0.09, 0.47]
Hours per Worker	0.13 [0.01, 0.45]	0.17 [0.04, 0.50]	0.18 [0.04, 0.52]	0.15 [0.04, 0.44]	0.14 [0.04, 0.35]	0.15 [0.05, 0.30]
Unemployment Rate	0.12 [0.01, 0.42]	0.27 [0.06, 0.63]	0.34 [0.10, 0.64]	0.34 [0.12, 0.60]	0.32 [0.12, 0.56]	0.29 [0.12, 0.51]
Labor Force Participation Rate	0.11 [0.01, 0.41]	0.11 [0.02, 0.39]	0.11 [0.02, 0.38]	0.11 [0.02, 0.37]	0.11 [0.02, 0.36]	0.12 [0.03, 0.37]
Job Finding Rate	0.13 [0.01, 0.46]	0.27 [0.08, 0.61]	0.33 [0.09, 0.65]	0.35 [0.09, 0.65]	0.34 [0.09, 0.64]	0.33 [0.10, 0.61]
Job Separation Rate	0.13 [0.01, 0.47]	0.18 [0.04, 0.52]	0.19 [0.04, 0.52]	0.20 [0.04, 0.50]	0.20 [0.05, 0.49]	0.20 [0.05, 0.47]
Job Vacancies	0.16 [0.02, 0.52]	0.28 [0.05, 0.64]	0.30 [0.06, 0.64]	0.28 [0.07, 0.60]	0.28 [0.08, 0.57]	0.26 [0.08, 0.53]
Vacancy-Unemployment Ratio	0.20 [0.02, 0.58]	0.32 [0.06, 0.67]	0.35 [0.08, 0.66]	0.35 [0.09, 0.64]	0.34 [0.09, 0.63]	0.33 [0.09, 0.61]

Subsample Results



Results for other variables



Discussions

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 - ▶ TFP rises before aggregate variables.
 - ▶ RBC model is consistent with news TFP shocks
 - ▶ Our findings support expectation-driven business cycles.
- ▶ Levchenko and Pandalai-Nayar (2015)
 - ▶ Sentiment shocks that are orthogonal to TFP
 - ▶ Short-run movements in expectations

Conclusion

- ▶ Identify optimism shocks using sign restrictions
- ▶ Optimism shocks play an important role in US business cycles.
- ▶ Optimism shocks proceed an eventual increase in TFP.