ARE THE EFFECTS OF MONETARY POLICY SHOCKS BIG OR SMALL?

Olivier Coibion (2012)

CONTEXT

- A central question in monetary economics is determining the sensitivity of the economy to policy instruments.
- Standard VAR literature typically found policy effects to be relatively small.
- Romer & Romer (2004) used a narrative measure of shocks via FOMC records and Fed forecasts, finding **large** effects and big historical role for policy.
- This paper reconciles VAR and R&R approaches, showing that the effects are actually medium once methodological differences are accounted for.

RESEARCH QUESTION

- Why do **standard VARs** and **Romer & Romer** obtain such different estimates of the effects of monetary policy shocks?
- What drives the discrepancy?
  - Shock measurement?
  - Estimation method (VAR vs. single equation)?
  - Sample period (e.g. Volcker years)?
  - Lag structure?
- Once these issues are considered, how big are the **true** real effects of monetary policy shocks?

MAIN ANSWER

(1) **Different contractionary impetus**
   - R&R shocks generate much larger and more persistent increases in the FFR.
   - When standard VAR shocks are scaled up to match the contractionary impetus of R&R shocks, the resulting real effects are broadly similar to R&R's large estimate

(2) **Non-borrowed reserves (NBR) targeting period, 1979–1982**
   - Fed stops targeting the FFR; interest rates become extremely volatile.
   - R&R shocks during this period are noisy and partly endogenous.

(3) **Lag length sensitivity**
   - R&R use longer lags (up to 3–4 years) → larger impulse responses.
   - Using information criteria (AIC) or model-averaging reduces the RR estimates substantially.

ILLUSTRATION: CONTRACTIONARY IMPETUS

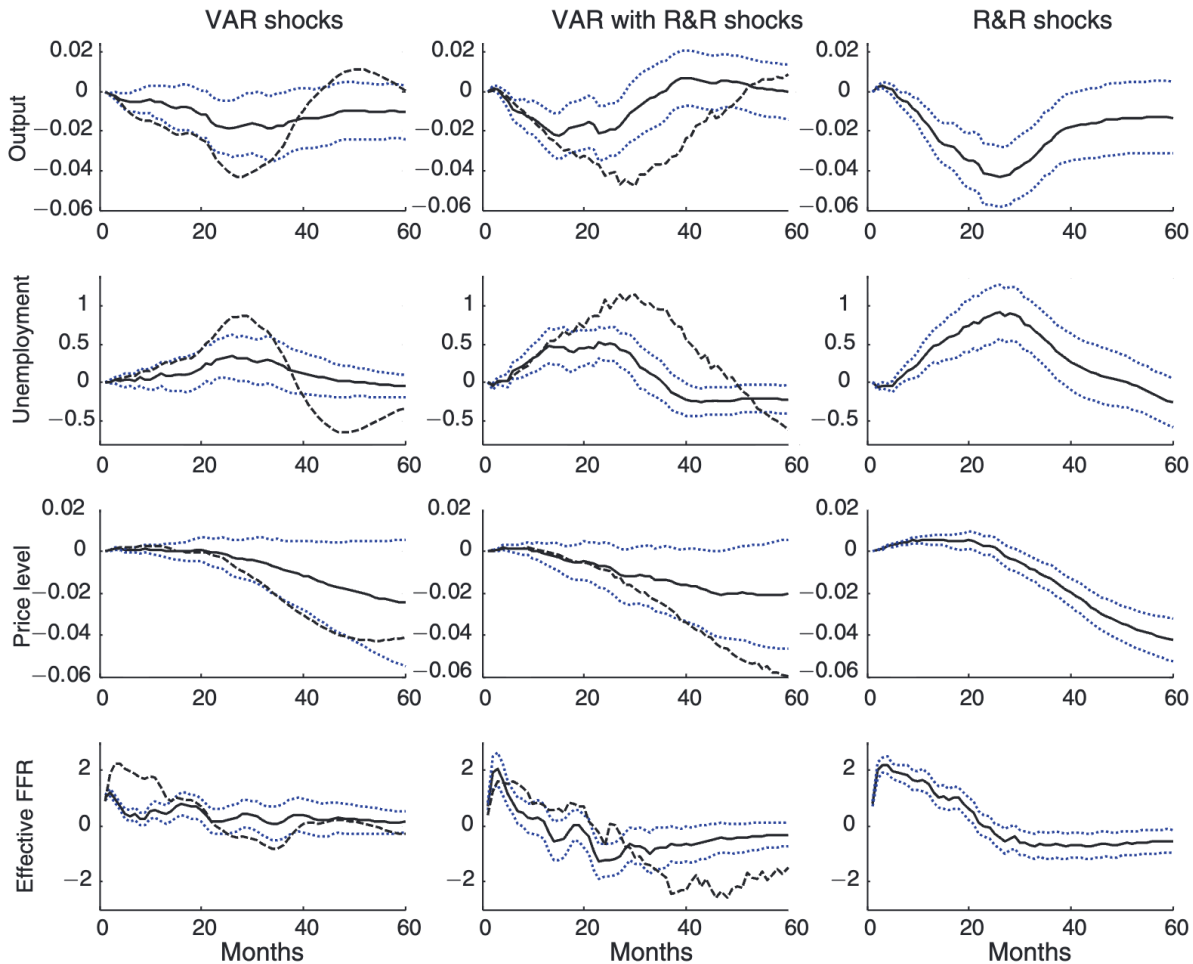

FIGURE 4. IMPULSE RESPONSES TO MONETARY POLICY SHOCKS USING SINGLE EQUATION APPROACH

Notes: The solid lines are the impulse response functions of each macroeconomic variable to a 100 basis point monetary policy innovation from each identification procedure. Each impulse response is estimated following R&R (2004). The dotted lines are one standard deviation confidence intervals from a bootstrap. The *VAR shocks* correspond to impulse responses using monetary policy shocks identified using the baseline VAR. The *VAR with R&R shocks* correspond to impulse responses using monetary policy shocks identified using the VAR with R&R cumulative shocks in place of the effective FFR. The *R&R shocks* correspond to impulse responses using monetary policy shocks identified in R&R (2004). The dashed lines are the counterfactual impulse responses to a sequence of shocks designed to replicate the IRF of the FFR to R&R shocks. See Section IIB for details.

ILLUSTRATION:

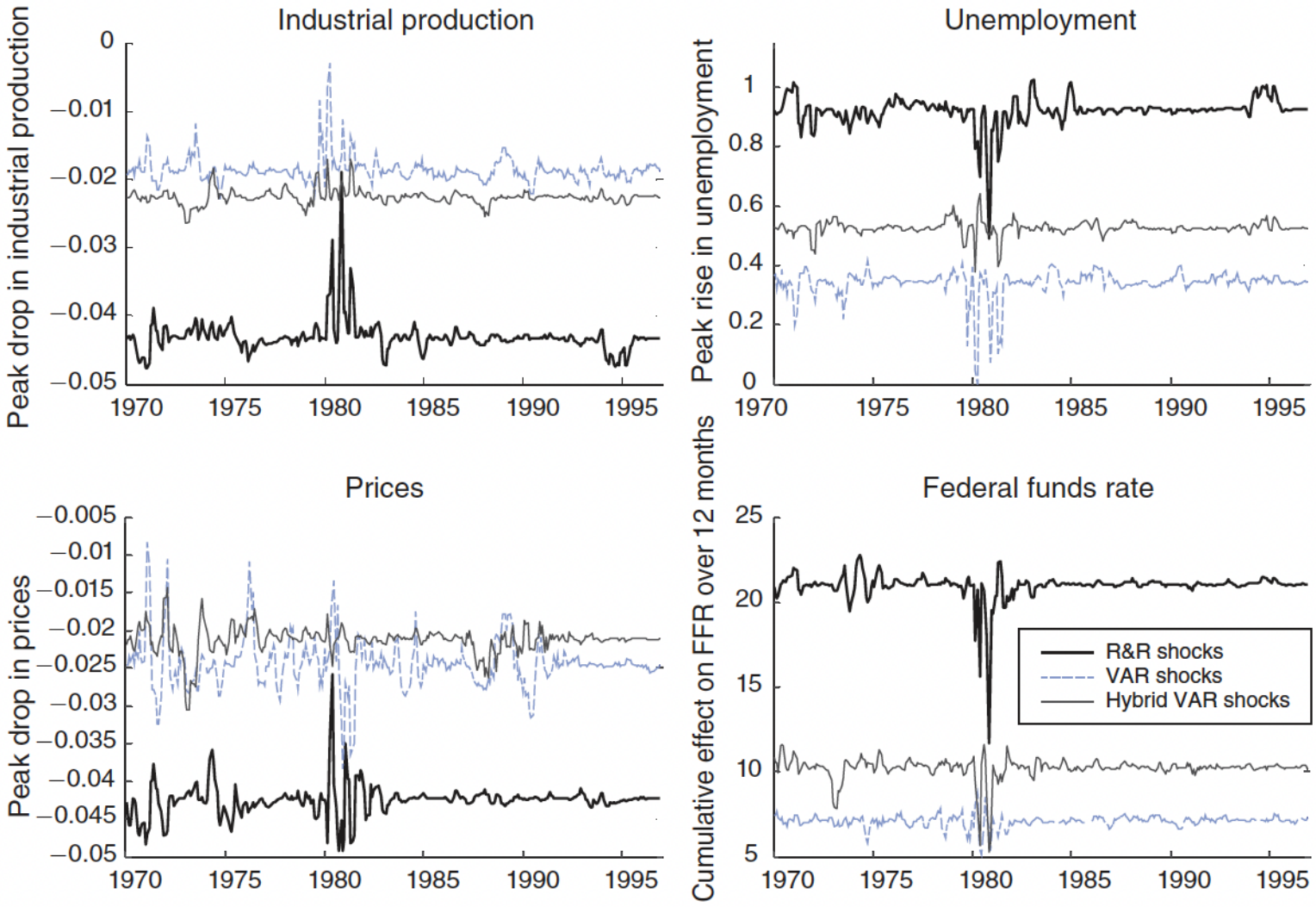

FIGURE 5. SENSITIVITY OF PEAK EFFECTS OF MONETARY POLICY SHOCKS TO INDIVIDUAL EPISODES

POSITIONING

- VAR literature (Christiano–Eichenbaum–Evans; Bernanke–Blinder) → small effects
- R&R narrative shocks → large effects
- Coibion (2012) bridges these findings:
  - Shows narrative shocks overstate contraction during NBR period
  - Shows VARs understate shocks because FFR response too weak
  - Hybrid VARs + alternative shock measures (Taylor-rule shocks, DSGE shocks) → medium-sized effects

CONCLUSION & LIMITATIONS

- **Main quantitative conclusion**
  - A 100 bp monetary policy innovation:
    - Lowers industrial production by about **2–3%**.
    - Raises unemployment by about **0.5 percentage points**.
  - Effects are **medium**, not tiny (standard VAR) or huge (R&R).
- **Limitations**
  - Narrative shocks and VARs both subject to measurement error and model dependence.
  - Results rely on linear, time-invariant dynamics and pre-2000 sample.
- **Possible extensions / open questions**
  - Compare with high-frequency identification (HFI) shocks.
  - Study post-2000 low-rate environment and unconventional policy.