

MONETARY POLICY RULES
AND MACROECONOMIC
STABILITY: EVIDENCE AND
SOME THEORY

Richard Clarida, Jordi Galí, Mark Gertler

Notes by Quinton Baker, Brandon Narveson, and Taylor Warden

MOTIVATION

- ❖ Higher volatility observed in economy before Volcker took over as Fed Chairman
- ❖ Many economists site supply shocks
- ❖ Could monetary policy have explained the increased volatility?

OVERVIEW

❖ Monetary policy before and after 1979:3

- Martin 1951:2-1970:1
- Burns 1970:1-1978:1
- Miller 1978:1-1979:3
- Volcker 1979:3-1987:3
- Greenspan 1987:3-2006:4

❖ Fundamental differences in price stability outcomes

MAIN PREMISES

- ❖ Pre-Volcker rule allows for inflation and output bursts from self-fulfilling changes in expectations (“sunspot bursts”)
 - Changes in expectations manifest
- ❖ Pre-Volcker rule is less effective than Volcker-Greenspan rule at mitigating fundamental shocks

FF AS INSTRUMENT

- ❖ Fed Funds rate can be used as an instrument to monetary policy
- ❖ Funds rate normally follows a certain rule
 - $ff = f(\pi^e, x)$



DATA

❖ Inflation:

- GDP Deflator
- CPI

❖ Output:

- CBO's potential GDP
- Detrended GDP

MODELS

$$\diamond r_t^* = r^* + \beta(E\{\pi_{t,k}|\Omega_t\} - \pi^*) + \gamma E\{x_{t,q}|\Omega_t\}$$

- $H_0: \beta = 1$

- $H_0: \gamma = 0$

$$\diamond r_t = \rho(L)r_{t-1} + (1 - \rho)r_t^*$$

- Taylor Principle

- Fisher Equation

RESULTS-REGRESSIONS

TABLE II
BASELINE ESTIMATES

	π^*	β	γ	ρ	p
Pre-Volcker	4.24 (1.09)	0.83 (0.07)	0.27 (0.08)	0.68 (0.05)	0.834
Volcker-Greenspan	3.58 (0.50)	2.15 (0.40)	0.93 (0.42)	0.79 (0.04)	0.316

Standard errors are reported in parentheses. The set of instruments includes four lags of inflation; output gap, the federal funds rate, the short-long spread, and commodity price inflation.



ROBUSTNESS CHECKS

- ❖ Change the time horizon
- ❖ Subsample stability
- ❖ Alternative measures of inflation



SIMULATIONS

- ❖ With estimated weights on output and inflation, how destabilizing can a shock of the same size be with pre-Volcker policy compared to Volcker-Greenspan policy?
 - This can be examined through use of simulation



SIMULATIONS

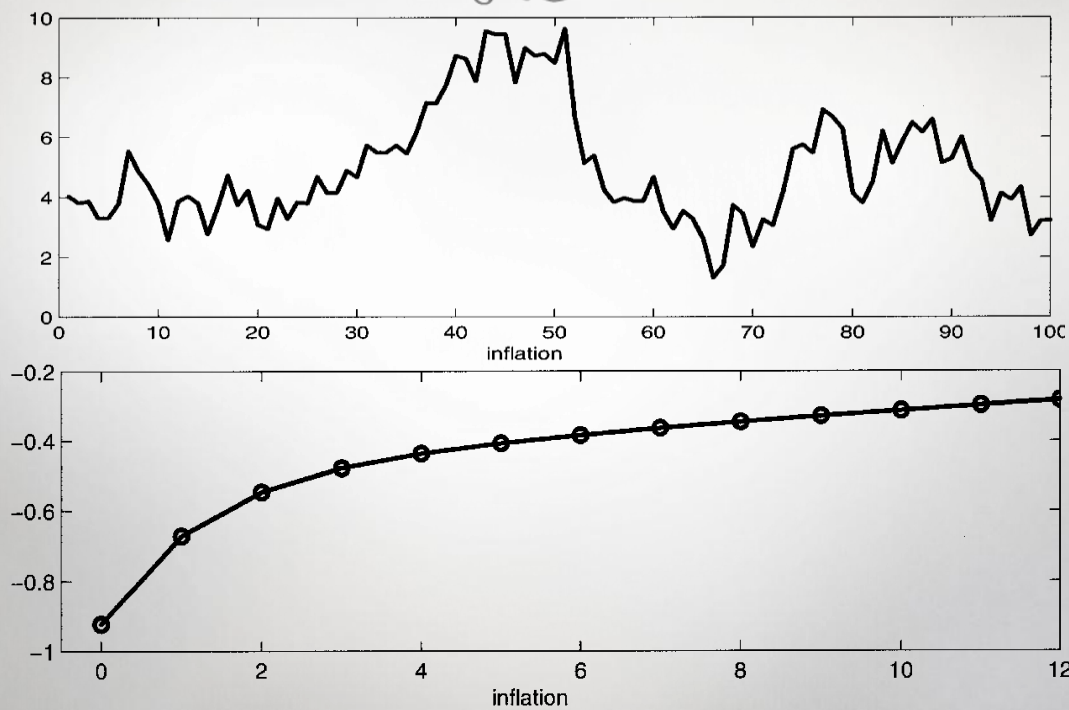
- ❖ Sticky-Price model
- ❖ How would the different policies react to “sunspot shocks”
 - Holding constant non-policy conditions



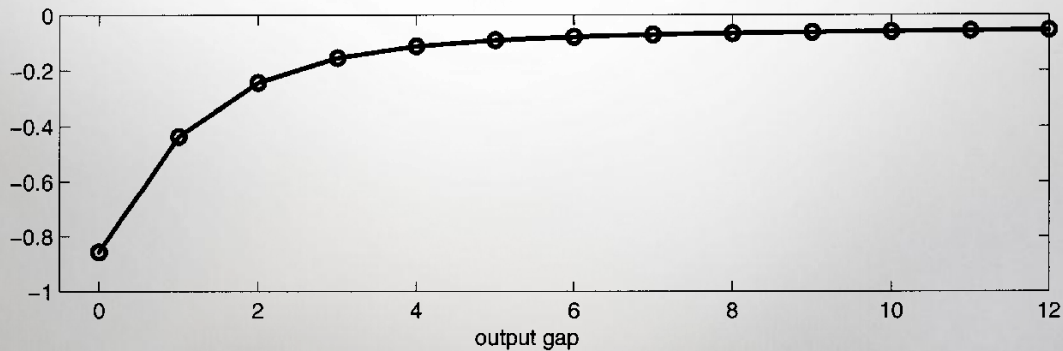
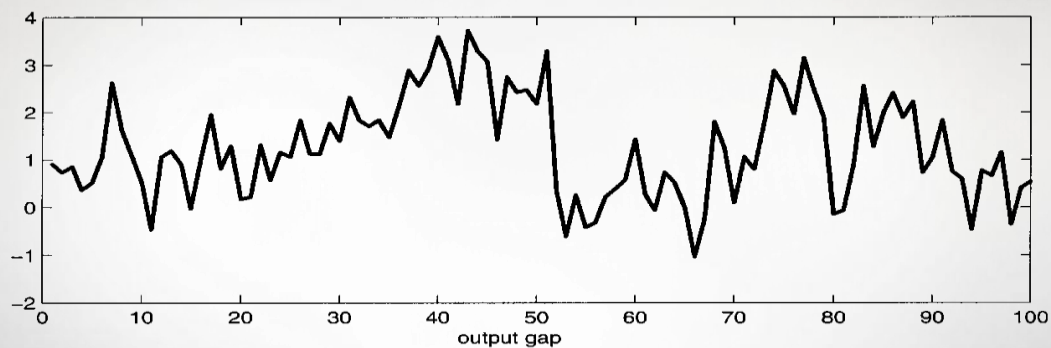
RESULTS-EXPERIMENTS

- ❖ Pre-Volcker monetary policy did not stabilize shocks, but perhaps made them more volatile!
- ❖ Volcker-Greenspan policy was able to handle shocks effectively

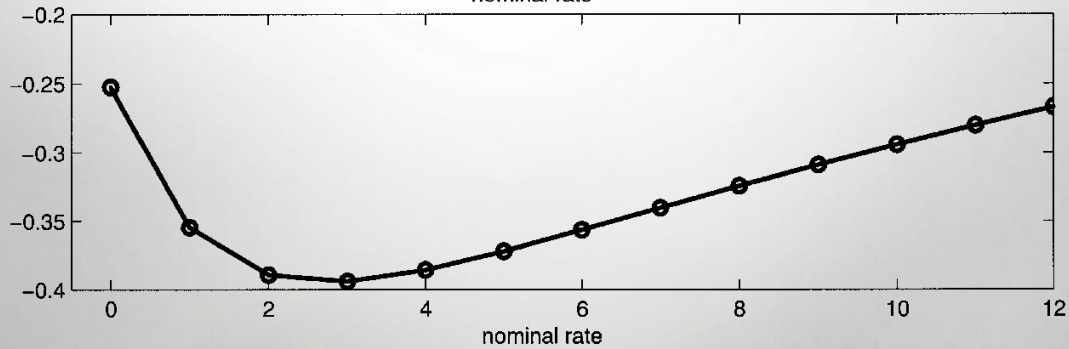
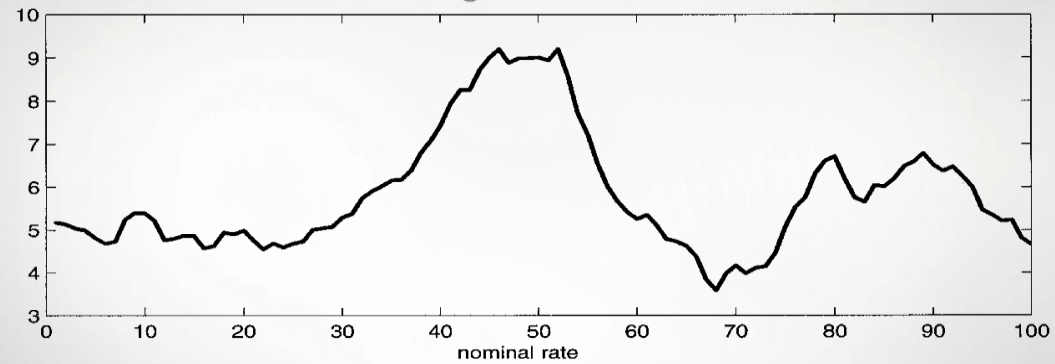
SIMULATION-INFLATION



SIMULATION-OUTPUT GAP



SIMULATION-INTEREST



NEAR-INDETERMINACY

- ❖ β is estimated to be below 1 pre-Volcker
 - But the standard errors are large
 - This does not allow us to rule out that $\beta \geq 1$
- ❖ Values of β only slightly greater than one can still be relatively unstable

TABLE VII
FUNDAMENTAL SHOCKS

β	Supply shocks			Demand shocks	
	$\sigma(\pi)$	$\sigma(x)$	$\sigma(y)$	$\sigma(\pi)$	$\sigma(y)$
2.0	1.00	1.00	1.00	1.00	1.00
1.5	1.48	1.36	1.29	1.61	1.67
1.1	2.57	2.16	2.26	3.04	1.96
1.0	3.20	2.61	2.88	3.88	4.25

OIL SHOCKS VS. POLICY

- ❖ Can Oil shocks (1973, 1979) account for increased volatility?
- ❖ Reasons why this may not hold:
 - Literature by De Long (1997); Bernanke, Gertler, Watson (1997); Barsky and Killian (1998)
 - Shocks wouldn't be persistent if monetary policy wasn't accommodative

CONCLUSION

- ❖ Pre-Volcker monetary policy did not adhere to the Taylor Principle
 - Volcker-Greenspan did adhere
 - Thought natural rate of unemployment was lower than it was
 - Bad vintage data
- ❖ Misunderstanding of dynamics of inflation
- ❖ With appropriate weight on inflation, only fundamental shocks can effect the economy



-FIN-

?