

EC 831: Empirical Methods in Macroeconomics

Aeimit Lakdawala

Michigan State University

Orphanides:

- (2001) AER: "Monetary Policy Rules Based on Real-Time Data"
- (2002) AER: "Monetary Policy Rules and the Great Inflation"
- (2004) JMCB: "Monetary Policy Rules, Macroeconomic Stability, and Inflation: A View from the Trenches "

Original Taylor (1992) rule

Set the nominal interest rate i_t according to

$$i_t^* = \pi_t + r^* + \tilde{\beta}(\pi_t - \pi^*) + \gamma\tilde{y}_t$$

r^* is the "equilibrium" real interest rate

$\tilde{y}_t = (y_t - y_t^P)$ is the output gap where y_t^P is log potential output

π^* is the inflation target

The Taylor rule is commonly written as

$$i_t^* = \alpha + \beta\pi_t + \gamma\tilde{y}_t$$

where α would depend on r^* and π^*

and $\beta = 1 + \tilde{\beta}$

Estimated rules are typically of the form

$$i_t = \rho(L)i_{t-1} + (1 - \rho(1)) [\alpha + \beta\pi_t + \gamma\tilde{y}_t] + \eta_t$$

	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.

Important questions:

What measure of inflation?

- CPI vs PCE vs GDP Deflator?
- Core vs Overall measures?
- Contemporaneous or forecasts of inflation?

Additionally for Output gap

- Which measure of potential output?

Orphanides raised another important issue

- How accurate are real-time measurements of π_t and y_t ?

Consider the Taylor rule

$$i_t = \rho(L)i_{t-1} + (1 - \rho(1)) [\alpha + \beta\pi_{t,i|t} + \gamma_{t|t}\tilde{y}_t] + \eta_t$$

$\pi_{t,i|t}$:

- average rate of inflation from quarter t to quarter $t + i$ as perceived during quarter t .

y_t :

- output gap for quarter t , as perceived during the quarter t

Orphanides constructs a real-time dataset

- Using Greenbook forecasts from the Fed
- Commerce Department's "Business Conditions Digest"
- Economic Report of the President

Current sources of real-time data:

1) Philly Fed keeps a good database

- <http://www.phil.frb.org/research-and-data/real-time-center/real-time-data/>

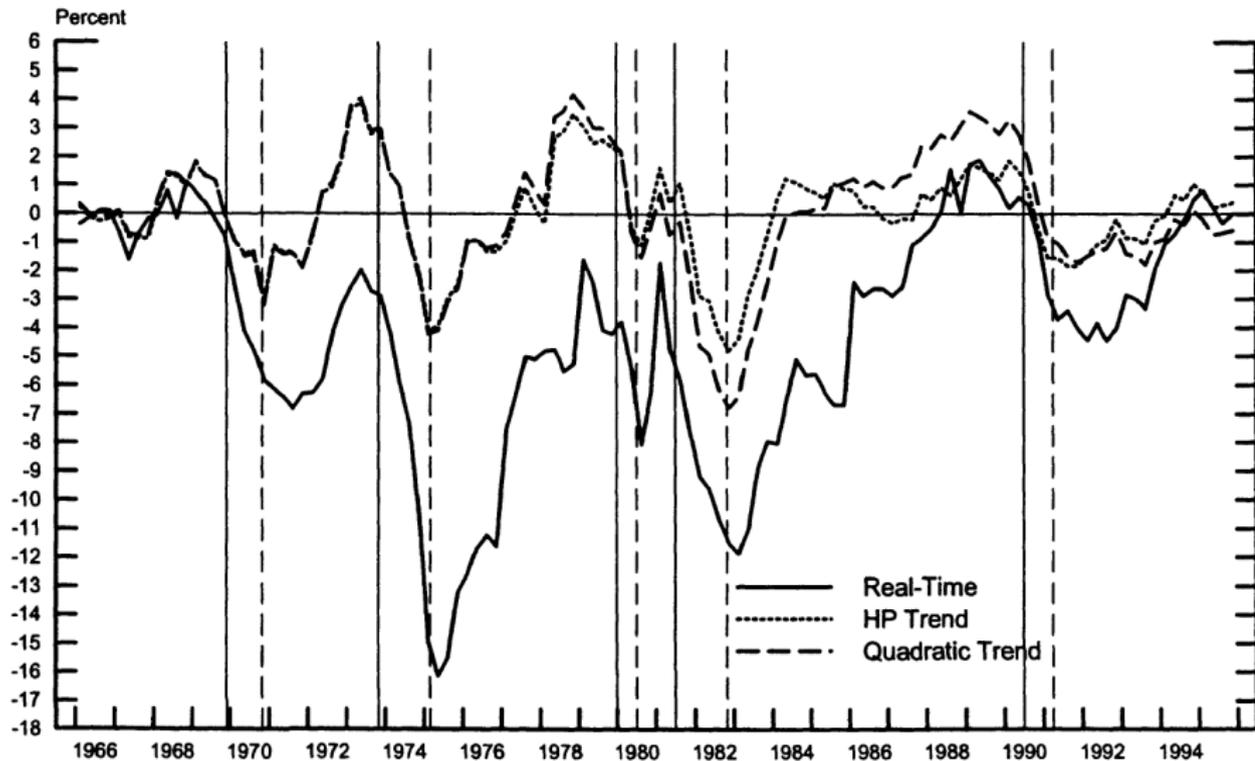
2) St. Louis Fed Alfred

- <http://alfred.stlouisfed.org/>

TABLE 1
ESTIMATED POLICY RULES

	α	β	γ	ρ	ρ_2	SEE	R^2	p
<i>i</i> = 1								
1966:1–1979:2	1.95 (1.27)	1.49 (0.38)	0.46 (0.13)	0.68 (0.07)	-0.26 (0.14)	0.86	0.87	0.02
1979:3–1995:4	1.20 (2.10)	1.89 (0.64)	0.18 (0.20)	0.77 (0.10)	-0.08 (0.19)	1.37	0.89	0.56
<i>i</i> = 2								
1966:1–1979:2	2.40 (1.43)	1.54 (0.39)	0.53 (0.12)	0.66 (0.08)	-0.21 (0.09)	0.87	0.87	0.06
1979:3–1995:4	0.92 (2.04)	1.97 (0.60)	0.18 (0.20)	0.76 (0.09)	-0.06 (0.12)	1.37	0.89	0.57
<i>i</i> = 3								
1966:1–1979:2	2.19 (1.82)	1.59 (0.43)	0.53 (0.15)	0.68 (0.08)	-0.22 (0.12)	0.96	0.85	0.20
1979:3–1995:4	0.60 (1.77)	2.04 (0.52)	0.15 (0.19)	0.74 (0.06)	-0.04 (0.12)	1.35	0.89	0.90
<i>i</i> = 4								
1966:1–1979:2	3.36 (2.02)	1.48 (0.47)	0.57 (0.26)	0.71 (0.10)	-0.12 (0.13)	1.08	0.83	0.17
1979:3–1995:4	0.30 (1.61)	2.12 (0.48)	0.14 (0.18)	0.73 (0.05)	-0.04 (0.10)	1.32	0.90	0.89

Orphanides (2004) JMCB



Fed policy in Great Inflation:

- " policy was not flawed in an obvious manner "
- " policy that was followed during the Great Inflation would be workable, if only policymakers could have a solid understanding of the structure of the economy and reliable readings of the state of the economy upon which to base their action"