Monetary Policy and the Great Moderation

Reduced Macro Volatility

ECGA 7020 Special Topic Prentation

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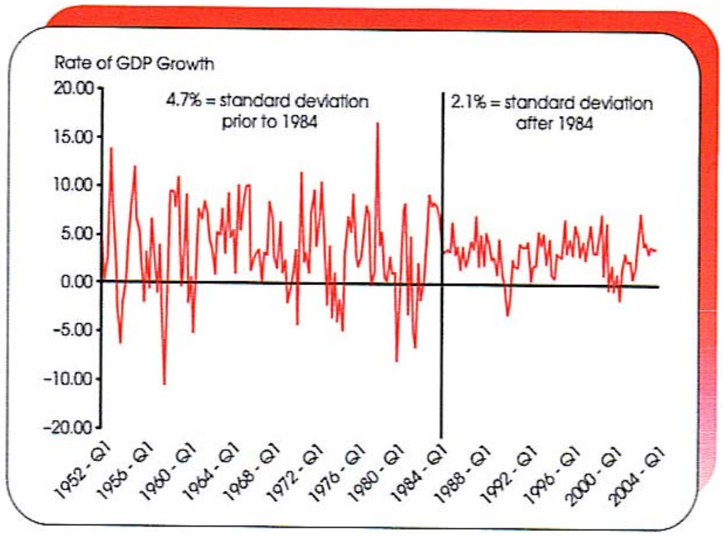
Evidence of moderating Volatility

- Standard Deviation of GDP growth decreased after 1984
- Pre-1984: Std dev of quarterly GDP growth was about 4.7%
- Post 1984: quarterly GDP growth std dev fell to 2.1%

Rolling Quarterly std dev of U.S. GDP

Anesto and Piger; International Economic Trends; August 2005)



Causes and Explanations

- Three possible Explanations
- -Improved Macro Policy
- -Structural Change
- -Good Luck
- All these explanations explored extensively in literature
- I focus on the first explanation

Clarida, Gali & Gertler (2000)* argue,

- Improved monetary policy the reason for "great moderation"
- Estimate a forward looking Taylor rule monetary policy reaction function for two perios: 1960:1-79:2 and 1979:3-96:4

***Clarida, Gali and Gertler (2000) "Monetary Policy Rules and Macroeconomic Stability: Evidence and some Theory*", Quarterly Journal of Economics,* 115,147-180.**

Standard Deviation of Inflation and output: pre and post Volcker

	Std Dev of Inflation	Std dev around HP Trend	Output Gap Std Dev	Std dev around HP Trend
Pre-Volcker 1960-1979:2	2.77	1.48	2.71	1.83
Volcker-Greenspan 1979:3-1996	2.18	0.96	2.36	1.49
Post-1982	1.00	0.79	2.06	1.34

The great moderation...

- The decline in volatility appears substantial for each variable
- The sharp decline in volatility characteristic of the Volcker-Greenspan era starts in 82:4, after the Volcker disinflation

Estimated Taylor Rule for Fed Policy

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

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

where: r_t^* is the target rate for the nominal Federal Funds rate in period t

- $\pi_{t,k}$ is the inflation rate % change in the price level between periods t and t+k
- π^* is the target inflation rate.
- $x_{t,q}$ a measure of the average output gap between period t and t+q
- Ω the information set at the time the interest rate is set.
- ρ is an exogenous interest persistence term

Estimates pre & post Volcker

	A	B	C	D	E
	π^*	β	γ	ρ	P-value
Pre-Volcker 60:1-79:2	4.24 (1.09)	0.83 (0.07)	0.27 (0.08)	0.68 (0.05)	0.834
Volcker-Greenspan 79:3-96:4	3.58 (0.50)	2.15 (0.40)	0.93 (0.42)	0.79 (0.04)	0.316

- Table shows estimates of Fed response to expected inflation, , Column B and Fed response to GDP gap, β , γColumn C
- Standard errors are in parenthesis

Clarida (2000) Taylor Rule Estimates

	A	B	C	D	E
	π	β	γ	ρ	**P-value**
Pre-Volcker 60:1-79:2	4.24 *(1.09)*	0.83 *(0.07)*	0.27 *(0.08)*	0.68 *(0.05)*	0.834
Volcker-Greenspan 79:3-96:4	3.58 *(0.50)*	2.15 *(0.40)*	0.93 *(0.42)*	0.79 *(0.04)*	0.316

- Table shows estimates of Fed response to inflation, β , Column B and Fed response to GDP gap, γ , Column C
- Standard errors are in parenthesis

A shift in monetary policy...

- Column B: Volcker-Greenspan more responsive than pre-Volcker and therefore stabilizing since beta is greater than 1
- Column C: Volcker-Greenspan significantly greater than pre-Volcker, thus more responsive and stabilizing

Differences in Policy Rules

- Differ in terms of response to expected inflation
- Pre-Volcker: short term rates allowed to fall with a rise in expected inflation
- Fed would raise nominal rates but by less than the rise in expected inflation
- Thus less pro-active policy in pre-Volcker

Differences in Policy Rules

- Volcker-Greenspan era: more proactive policy, real and nominal short term rates raised in response to higher expected inflation
- Pre-Volcker less effective in achieving macroeconomic stability
  - Permitted bursts of inflation and output
  - Less responsive to output and inflation shock

Pre-83 Actual vs. Target inflation rate

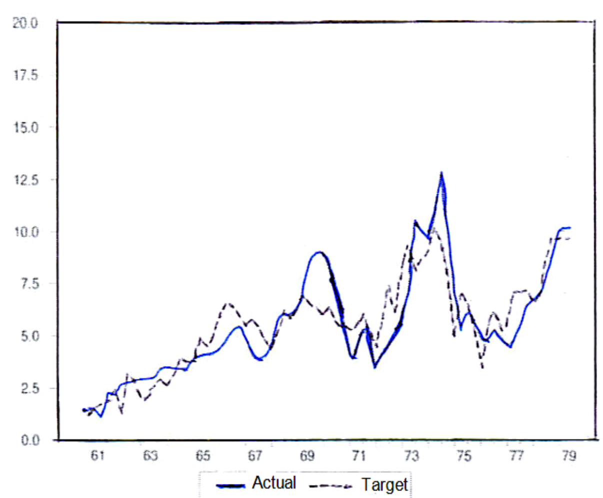


Figure 1

Actual versus Target Rates
Pre-Volcker Era

Post 83: Actual vs. Target inflation

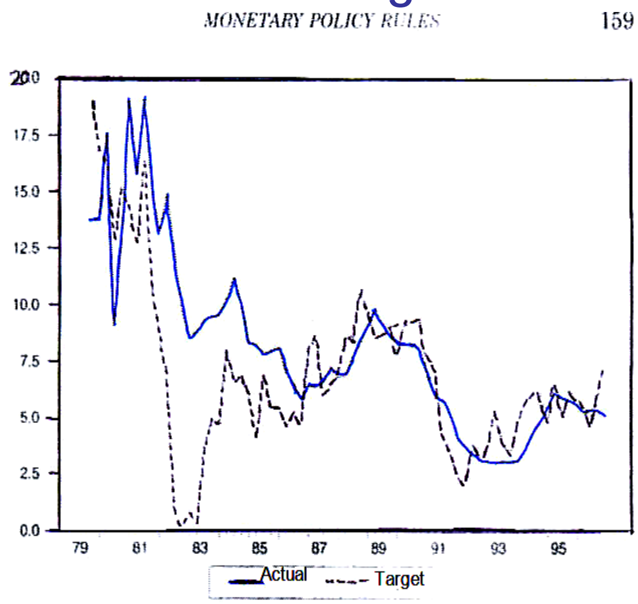


Figure II