The Optimal Rate of Inflation

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Inflation Targets Around the Industrial World

Country	Inflation Target (percent per year)
New Zealand	1-3
Canada	1-3
United Kingdom	2
Australia	2-3
Sweden	2 ± 1
Switzerland	< 2
Iceland	2.5
Norway	2.5

Source: World Economic Outlook 2005.

Motivating Question

Are observed magnitudes of inflation targets (2 percent or higher) consistent with the optimal rate of inflation predicted by leading theories of monetary non-neutrality?

Two Key Sources of Monetary Nonneutrality

Source	Optimal Inflation Target
Demand for Money	-r
Sticky Prices	0

Deviations from the Friedman Rule within the Money-Demand Model

- **Distortionary Taxation:** Friedman rule still optimal (contrary to Phelps' 1973 conjecture)

- **Untaxed Income:** Small deviations from Friedman rule.
  - Untaxed Profits
  - Tax Evasion

A Foreign Demand for Domestic Money

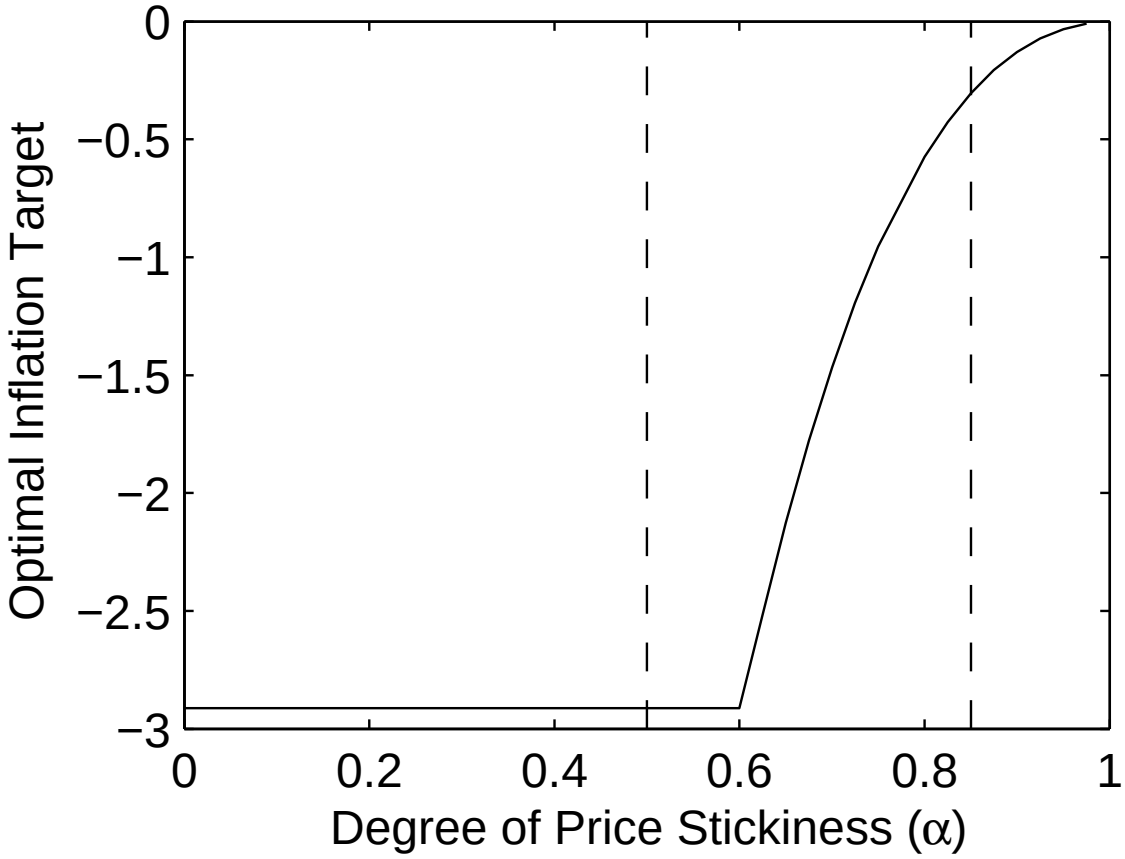
- **Motivating Fact: More than 50% of US currency circulates abroad**

- **Ramsey Optimal Inflation Target with a Foreign Demand for Domestic Currency**

	$\frac{M^f}{M^f+M^d}$	$\frac{M^f+M^d}{Pc}$	Optimal Inflation Target
No Foreign Demand:	0	0.27	-3.9%
Foreign Demand:	0.22	0.26	+2.1%

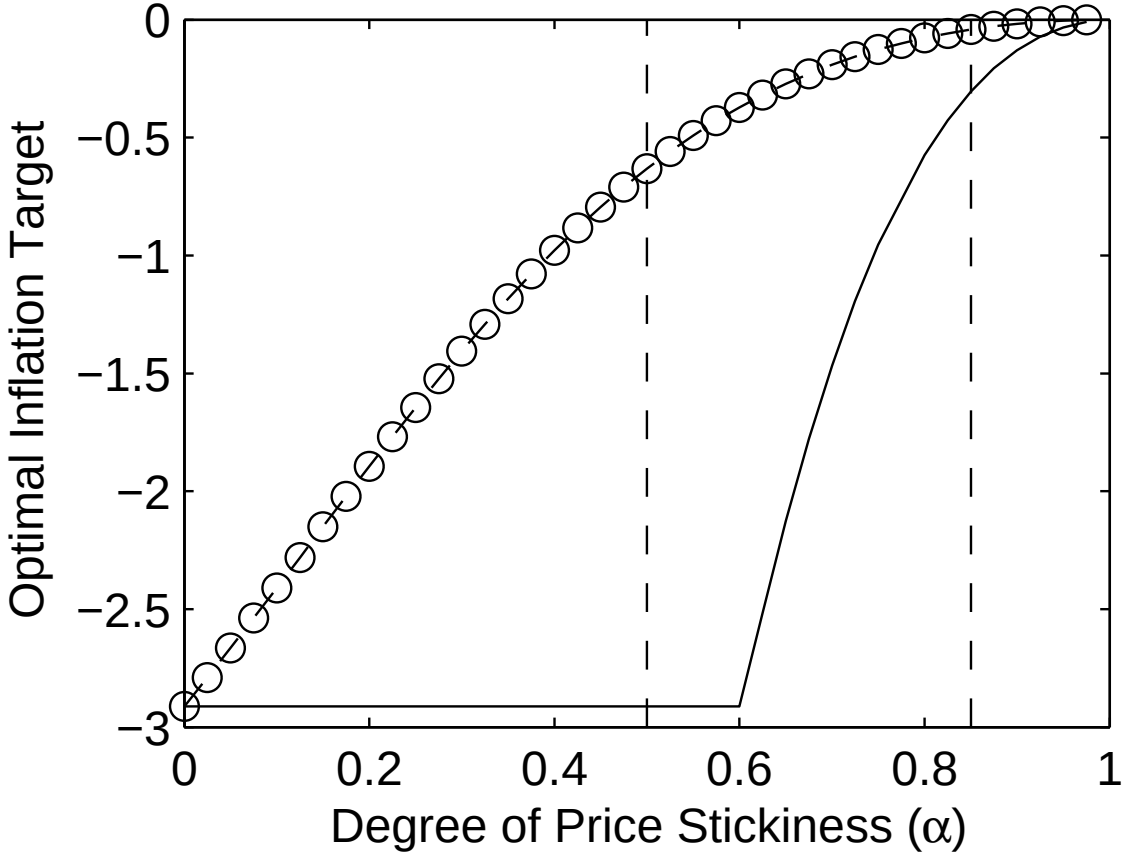
- **Caveat** This argument does not apply to countries lacking a foreign demand for their currency.

Friedman-Rule Versus Price-Stability Tradeoff (or Money Demand Meets Sticky Prices)



Friedman-Rule Versus Price-Stability Tradeoff with Optimal Distortionary Taxation

Phelps' conjecture resurrected



Does the Zero Bound Provide a Rationale for Positive Inflation Targets?

- Strategy: Build medium-scale macroeconomic model estimated on U.S. data.

- Compute Ramsey optimal monetary policy.

- Finding: mean(π) = -0.4%; mean(R) = 4.4%; std(R) = 0.9.
  $\Rightarrow R$ must fall 4 stds to hit zero bound

- Under optimal policy hitting zero bound is unlikely.

Downward Nominal Rigidity

The Issue: If nominal prices are downwardly rigid, then any change in relative prices requires an increase in the nominal price level. (Structural inflationary pressure. Olivera, *OEP*, 1964.)

The Question: What is the optimal structural rate of inflation?

The model:— Neo-Keynesian framework with price and wage rigidity, no capital and no demand for money. Wage adjustment costs are asymmetric. (Kim and Ruge Murcia, 2009).

Answer: The optimal structural rate of inflation is 0.35 percent per year. Not large enough to explain observed inflation targets of 2 percent.

Quality Bias

Firms produce $c_{it} = z_t F(h_{it})$ and sell it for $\boxed{P_{it}}$ dollars.

Households care about $a_t \equiv \left[\int_0^1 (x_{it} c_{it})^{1-1/\eta} di\right]^{1/(1-1/\eta)}$ and demand $c_{it} = \left(\frac{\tilde{P}_{it}}{\tilde{P}_t}\right)^{1-\eta} \frac{a_t}{x_{it}}$.

The exogenous variable $x_{it} = (1+\kappa) x_{it-1}$ captures quality improvement.

$\boxed{\tilde{P}_{it} \equiv P_{it}/x_{it}}$ is the quality-adjusted (or hedonic) price of c_{it}.

$\tilde{P}_t$ is an index of quality-adjusted (or hedonic) prices.

The Optimal Rate of Inflation under Quality Bias

Stickiness in	Optimal Inflation Rate
Nonquality-Adjusted Prices, P_{it}	0
Hedonic Prices, $\tilde{P}_{it}$	κ

The parameter $\kappa > 0$ denotes the rate of quality improvement.

Conclusions

The theories reviewed in this chapter suggest that

- there is little theoretical support for inflation targets as high as 2% per year.

- the optimal inflation target is around zero.