

HYSTERESIS IN UNEMPLOYMENT

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The accelerationist Phillips curve (Friedman, 1968):

$$p = p(-1) + a(U-U^*), \quad a < 0$$

p = inflation, U = unemployment, U^* = natural rate, or
“NAIRU”

Friedman: Shifts in aggregate demand cause SR movements in U . But in LR, U returns to U^* , which is determined by supply-side factors (e.g. labor market distortions). So factors that influence AD, including monetary policy, don't affect U in LR.

Blanchard and Summers (1986): U affects U^* through “hysteresis” mechanisms. So AD can affect U in the long run.

This view is not widely accepted.

This paper argues there is considerable evidence of hysteresis, although the details are not well-understood.

A large literature seeks to explain changes in the NAIRU over time in OECD countries. Most stories involve some combination of labor-market distortions (“institutions”) and supply-side “shocks.”

For example, a popular story for the rise in European unemployment, 1960-2000: technological change reduced the demand for low-skill labor, and labor market rigidities prevented wages from falling.

In contrast, this paper argues that many changes in the NAIRU have resulted from shifts in aggregate demand. AD affected U , which affected U^* through some hysteresis mechanism.

The mechanism is not clear, but appears to involve detachment of the long-term unemployed from the labor market.

Previous Evidence (Ball, 1997, 1999)

The NAIRU rose in most OECD countries in the 1980s. These increases are explained largely by monetary tightenings aimed at reducing inflation:

Evidence:

- Little correlation across countries between the U^* rise and measures of labor market distortions
- Significant negative correlation across countries between the U^* rise and the change in inflation over the 80s.
- Significant correlation between the U^* rise and the length of disinflation**
- Strong interaction between the size/length of disinflation and the duration of unemployment benefits.**

** suggestive of hysteresis mechanisms

Previous Evidence (2)

Disinflations common in early 1980s. In some cases, U rose temporarily, then returned to a stable U^* . In other cases, U^* rose, so U rose and stayed high.

What explains these different patterns?

- 1) Again, duration of UI
- 2) Conduct of monetary policy: how long policy stayed tight

Example of (2): U.S. (Volcker) vs. U.K. (Thatcher):

Volcker tightened, but then eased sharply when a recession began, even though inflation had not yet fallen significantly. This produced disinflation with a sharp but short-lived increase in U .

Thatcher tightened and kept policy tight through a long recession. Achieved a disinflation similar to Volcker's, but with a long-lived increase in U .

In the U.K., high unemployment reduced inflation for several years, but then inflation leveled off with unemployment still high.**

Previous Evidence (3)

Success stories

According to OECD estimates, four countries reduced U^* by $>2\%$ between 1985-1997: Ireland, Netherlands, Portugal, U.K.

Many economists attribute the U^* declines to labor-market reforms. However, reforms in the four countries were modest. Similar or greater reforms occurred in many countries where U^* did not fall.

What distinguishes the four countries is strong demand expansions. For example, U.K. experienced the “Lawson boom” of the late 1980s (with inflation increase $>5\%$), then lowered interest rates when exited ERM. Substantial inflation increases occurred in three of the four countries – although the increases were not permanent.**

New Evidence

Estimate U^* from 1980-2007 in 20 OECD countries.

Method is variation on Ball-Mankiw (2002):
adjust a univariate filter to account for inflation changes (e.g., U^* estimate is lower if inflation is falling).

See example of France (Figure 1)

Identify episodes of large changes in U^* . U^* rises or falls by at least 3% within 10 years.

8 episodes of U^* increases, 9 episodes of U^* decreases (Table I).

Examine behavior of inflation during NAIRU-change episodes.

If U^* changes driven by demand shifts, likely to be accompanied by inflation changes in the opposite direction

If U^* changes caused by real factors, likely no effect on inflation, or inflation moves in the same direction as U lags behind U^* (Orphanides, 2000).

Table 2 shows major changes in trend inflation (9-quarter MA of inflation) during episodes of major NAIRU changes. Includes disinflations (trend inflation falls $>3\%$) and inflation run-ups (trend inflation rises $>3\%$).

NAIRU-INCREASE EPISODES

6 of 8 episodes include a disinflation without an inflation run-up.

2 of 8 episodes include two disinflations with a smaller run-up in between; overall, I interpret them as highly disinflationary regimes

Therefore,

U^* increase \rightarrow Disinflation

where “ \rightarrow ” means “sufficient for”

NAIRU-DECREASE EPISODES

5 of 9 episodes have inflation run-ups and do not have substantially larger disinflations.

4 of 9 episodes have neither run-ups nor disinflations. These U^* decreases are partial reversals of earlier U^* increases.**

Therefore,

U^* decrease \rightarrow inflation run-up or previous U^* increase

Examining all inflation run-ups:

Table 3 shows all inflation run-ups of $>3\%$ from 1980 to 2007.

Suppose we ignore (a) cases when a run-up is sandwiched between two larger disinflations and (b) cases when the initial $U^* < 3\%$. Then the seven largest inflation run-ups occurred during U^* -decrease episodes. Therefore, with qualifications,

Inflation run-up \rightarrow Decrease in U^*

CONCLUSION: Some type of hysteresis effects seem to exist.

Open Questions

What mechanism?

The insider-outsider model of Blanchard-Summers is dubious. It seems more plausible that the long-term unemployed become detached from the labor market because they are unattractive to employers and/or they don't search vigorously for jobs.

This story is consistent with evidence that hysteresis is stronger with long-lived unemployment benefits. Also consistent with Laudes (2007), who finds that short-term U has stronger effects on inflation than long-term U.

Perhaps a monetary tightening raises short-term U initially, reducing inflation. But if policy stays tight, short-term U becomes long-term U, so inflation levels off and U^* is higher. Fits the Thatcher example.

Need more research! (For example, emulate Bewley and interview employers and unemployed workers.)

Non-linearities and State-Dependence...

... seem to exist in hysteresis effects. Sometimes changes in U cause changes in U^* and sometimes they don't, depending on the prior behavior of U^* and how long U is pushed away from U^* ... and effects appear asymmetric.

Need more research to understand! In particular, need more work on the behavior of short-term and long-term U . We can check whether increases in U^* coincide with shifts from short-term U to long-term U . And perhaps the behavior of inflation during U^* decreases depends on whether short-term or long-term U is falling.

Policy Implications?

A caution for inflation targeters. Can't assume unemployment will take care of itself in the long run. Might achieve inflation target with needlessly high unemployment.

Hard to derive more precise policy implications until we understand hysteresis mechanisms and non-linearities better.

More research needed!!