Inflation and Unemployment: Applications

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NAIRU and Policy

NAIRU

The modified Phillips Curve implies:

- Only one unemployment rate is consistent with constant inflation
- The level of inflation does not matter

NAIRU: "Non-accelerating inflation rate of unemployment"

the point where the modified PC crosses 0



NAIRU

Definition from FRED:

NAIRU is the rate of unemployment arising from all sources except fluctuations in aggregate demand.

The causes of unemployment are separated into two groups:

- 1. NAIRU the MR equilibrium in the model
 - hard to change through monetary policy Includes
 - frictional unemployment: workers in between jobs
 - structural: unemployable workers who would like to work
 - voluntary: "pretending" to look for work

2. Demand driven

deviations from MR equilibrium



How is NAIRU used?

Also from FRED: [NAIRU] is used to gauge the amount of current and projected slack in labor markets, which is a key input into CBO's projections of inflation.

Where the economy is relative to NAIRU affects whether stimulating AD creates inflation

- $Y < Y_n$: inflation will likely fall over time
 - stimulating AD not likely to cause inflation
- $Y > Y_n$: inflation will likely rise over time
 - need to reduce AD to avoid inflation

NAIRU Fluctuations



Source: FRED

Philips Curve Recap $T = T^2 + m + 2 - du$ No LR trade-off between TI and u TI len Anchos TTC LT stategy

Phillips Curve: Applications

The Phillips Curve in Reality

When is inflation a serious problem?

The answer depends on inflation expectations.

If people believe we are entering a more inflationary era ... they could alter their behavior in self-fulfilling ways. Businesses would be quicker to raise prices and workers to demand raises. ...

That situation would leave ... the Federal Reserve faced with two bad choices: Allow inflation to take off in an upward spiral, or stop it by raising interest rates and quite possibly causing a recession. – NY Times March 24, 2021

Inflation becomes a problem when inflation expectations start to rise.

The Importance of Expectations



Overheating

When people talk about an "**overheating**" economy; that's what they mean.

- Inflation is high for long enough that inflation expectations rise.
- Then inflation becomes self-sustaining and bringing it down is costly.

In our model:

$$\pi - \pi^e = m + z - \alpha u \tag{1}$$

If inflation expectations rise, the Fed has two options:

- 1. Accommodate: Let π rise to validate the expectations Then unemployment need not rise.
- Hold the line: Keep π at target (below π^e) Hope that π^e comes down over time. This usually requires a period of recession (high u).

Did the Fed Cause Recessions?



The early record is not great

when the Fed tightened to lower inflation, recessions usually followed

The later record is much better

Anchored Inflation Expectations



Soft landings are easier with anchored inflation expectations.

A Soft Landing



Source: Federal Reserve Bank of Philadelphia Survey of Professional Forecasters

EconoFact econofact.org

Why did the disinflation after the Pandemic not create a recession? Inflation expectations stayed firmly anchored.

The flip-side of the expectations story:

If the Fed can bring inflation expectations down, it can generate a soft landing.

Historical examples: WW2, Argentina.

Pandemic Inflation

Does a tight labor market cause inflation?

Why did inflation rise during / after the 2020 Pandemic? One argument: wage price spiral

U.S. labor costs increased strongly in the second quarter as a tight jobs market boosted wage growth, which could keep inflation elevated ... – Reuters July 29, 2022

Is that how it works?

- "In the 12 months through June, the PCE price index advanced 6.8%"
- "Wages and salaries ... were up 5.3% on a year-on-year basis" (Reuters)

So real wages are actually falling.

How to think about this?

Does a tight labor market cause inflation?

It's the wrong question.

The tight labor market is an endogenous outcome, not a shock.

It is caused either by a reduction in labor supply or by an increase in demand for goods.

During the pandemic, both happened.

- labor force participation dropped
- demand was pushed up by government transfers

But then why did real wages fall?

The Pandemic Shock

Three shocks

- 1. Labor supply declines $\rightarrow z \uparrow \rightarrow AS$ shifts left.
- 2. Stimulus checks \rightarrow AD shifts right.
- 3. Inputs costs rise $\rightarrow m \uparrow \rightarrow AS$ shifts left and real wage falls.

Note: In our model, by assumption, shocks 1 and 2 do not change real wages.

- ► In reality: lower labor supply ⇒ move up labor demand curve ⇒ real wages rise.
- But in the short run, with sticky prices / wages: more complicated.

The Pandemic Shock



We don't have a good answer.

The Fed targets 2% per year.

- ▶ Why not 0% or 10%?
- What does our theory imply?

Why not zero inflation?

- nominal wages may be downward rigid
 - more room to cut interest rates in recessions
- can achieve negative real rates
- avoid deflation

Why not higher inflation?

- taxes on nominal capital income
- distorts sticky vs flexible prices
- redistribution (debtors vs savers; job stayers vs movers)

These are all valid reasons, but the main one is: High inflation is hard to control and predict

Conclusion by John Cochrane:

... clear just how thin the scientific understanding behind the 2% mantra is, just how much our central banks pulled 2% out of a hat and then repeated it over and over again until it seemed carved in to stone.

Making inflation predictable is probably more important that its exact value.

Useful reading: St Louis Fed 2006, St Louis Fed 2019

Text: Blanchard and Johnson (2013), ch 8 On NAIRU: Ball and Mankiw (2002)

Ball, L. and N. G. Mankiw (2002): "The NAIRU in Theory and Practice," *The Journal of Economic Perspectives*, 16, 115–136.
Blanchard, O. and D. Johnson (2013): *Macroeconomics*, Boston: Pearson, 6th ed.