Inflation and Unemployment: Applications

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1. The Importance of Expectations

The Phillips Curve in Reality

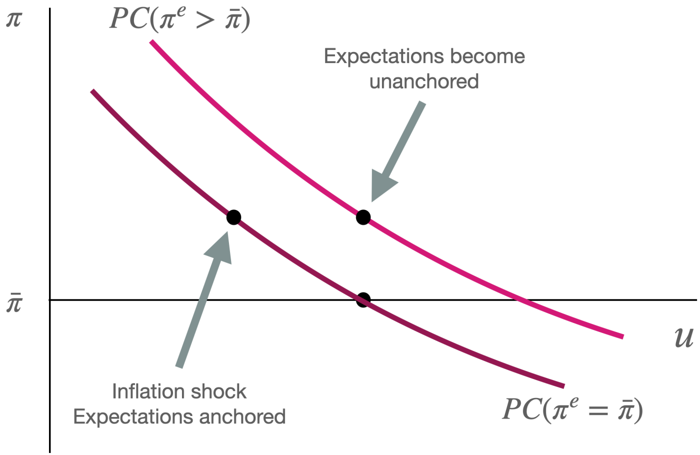
When is inflation a serious problem?

The answer depends on **inflation expectations**.

> *Inflation expectations can sometimes become **self-fulfilling**. While some prices can change quickly, others are adjusted only infrequently; producers of these goods and services will naturally set their prices based on likely future costs and expectations of what the market will bear in the coming months. ...*
>
> *If people expected the 2021 inflation rate to continue for the foreseeable future, a 7 percent rise in prices would become "built in" as future prices are set and as wage and salary contracts are negotiated. This will cause inflation to persist even when the economy is no longer "overheating." – Econofact: Thinking can make it so (2022)*

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:

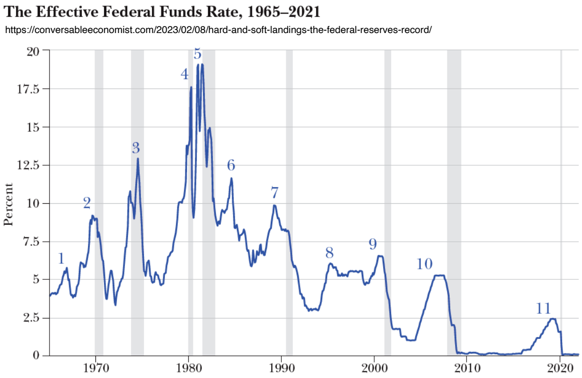
1. **Accommodate**: Let π rise to validate the expectations

   Then unemployment need not rise.
2. **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?

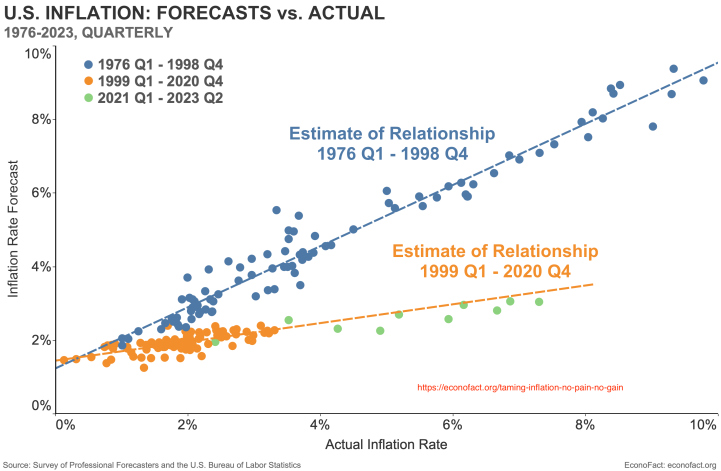


The early record is not great

- when the Fed tightened to lower inflation, recessions usually followed

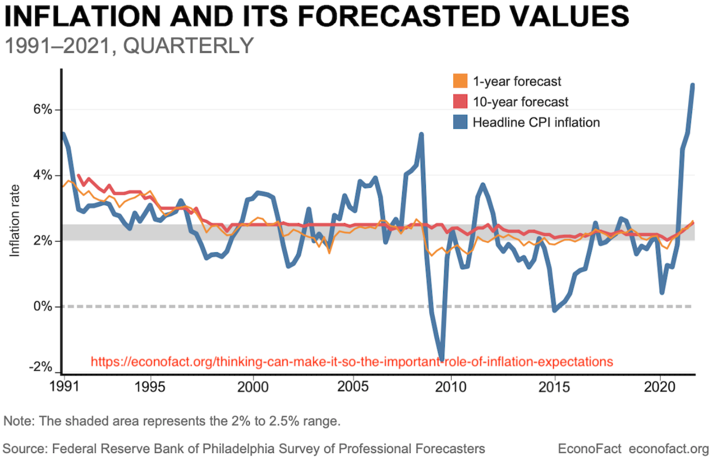
The later record is much better

Anchored Inflation Expectations



Soft landings are easier with anchored inflation expectations.

A Soft Landing



Why did the disinflation after the Pandemic not create a recession?

Inflation expectations stayed firmly anchored.

Credible Disinflation

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.

2. 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 $\Longrightarrow$ AS shifts left
- demand was pushed up by government transfers $\Longrightarrow$ AD shifts right

But then why did real wages **fall**?

The Pandemic Shock

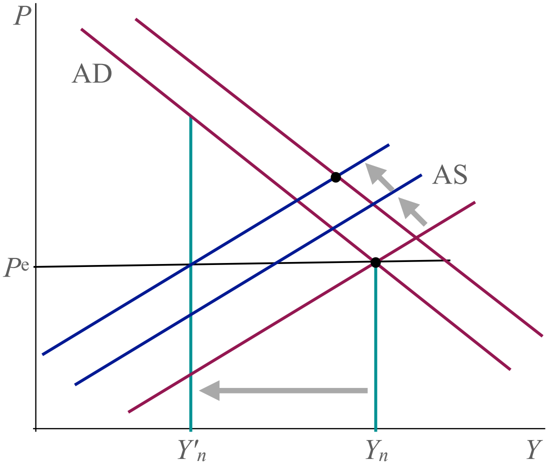
Three shocks

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 $\implies$ move up labor demand curve $\implies$ real wages rise.
- But in the short run, with sticky prices / wages: more complicated.

The Pandemic Shock



Policy Options

Should the Fed tighten in response to rising inflation?

Hint: How does the answer depend on the persistence of the shock?

3. The Optimal Rate of Inflation

What is the Optimal Inflation Rate?

We don't have a good answer.

The Fed targets 2% per year.

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

What is the Optimal Inflation Rate?

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

What is the Optimal Inflation Rate?

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

What is the Optimal Inflation Rate?

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

Phillips Curve Summary

$$\pi = \pi^e + m + z - \alpha u \tag{2}$$

The main message:

- Monetary policy doesn't do much (is neutral) when anticipated $(\pi = \pi^e)$
- The Fed only has power when it can **surprise** people

Agents figure out any systematic attempt at exploiting the inflation-unemployment trade-off.

- There is **no long-run trade-off**.

Implications for Policy

The Fed's best option is to firmly **anchor inflation expectations**.

Benefits:

1. When the Fed needs to stimulate demand, it doesn't have to worry about inflation too much.
2. When shocks temporarily drive up inflation, the Fed can bring it back down without recession.

Inflation is easy to bring down when expectations are firmly anchored.

Review

Suppose the Fed increased the money growth rate permanently from 2% p.a. to 5% p.a. What would you expect to happen to the U.S. economy after five years?

Review

> *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*

Why would the Fed face two bad choices?

What about that upward spiral?

Reading

Text: Macroeconomics

- 6th through 8th ed., ch 8

On NAIRU: Ball and Mankiw (2002)

References I

Ball, L. and N. G. Mankiw (2002): "The NAIRU in Theory and Practice," *The Journal of Economic Perspectives*, 16, 115–136.