Inflation and Unemployment: Applications

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Econ520

February 12, 2024

NAIRU and Policy

NAIRU

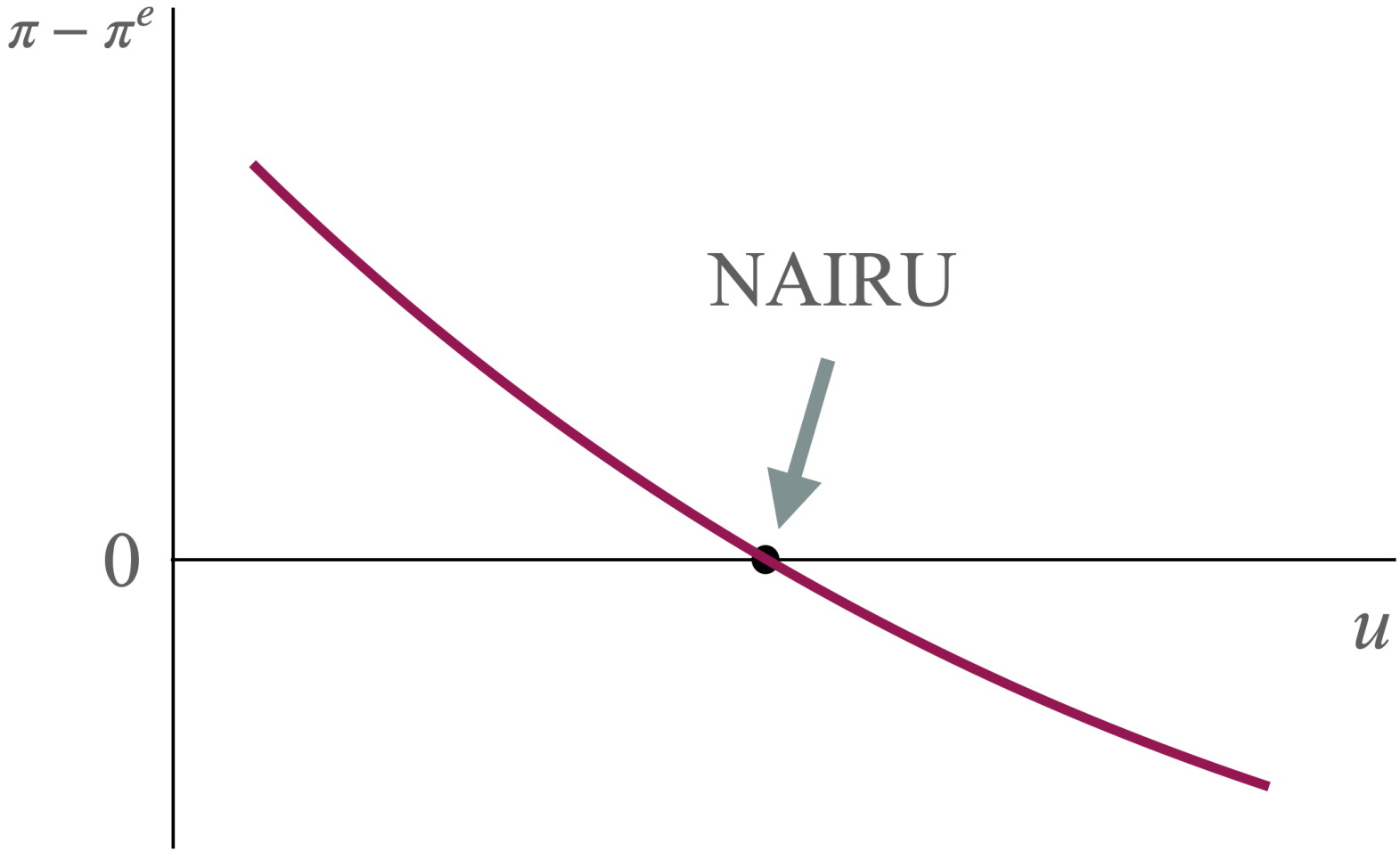
The modified Phillips Curve implies:

- 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



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?

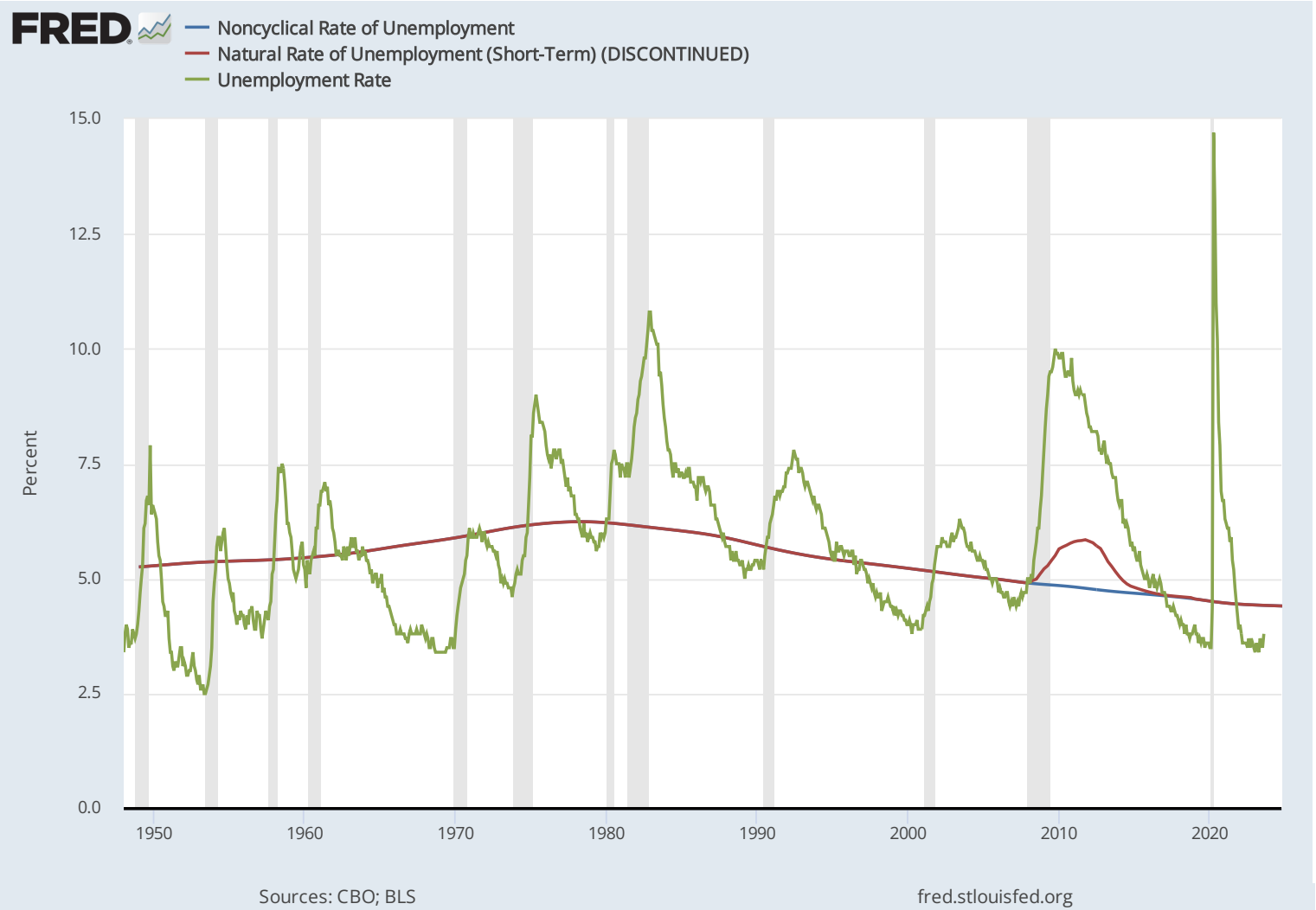
Also from FRED:

> *[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

Phillips Curve: Applications

The Phillips Curve in Reality

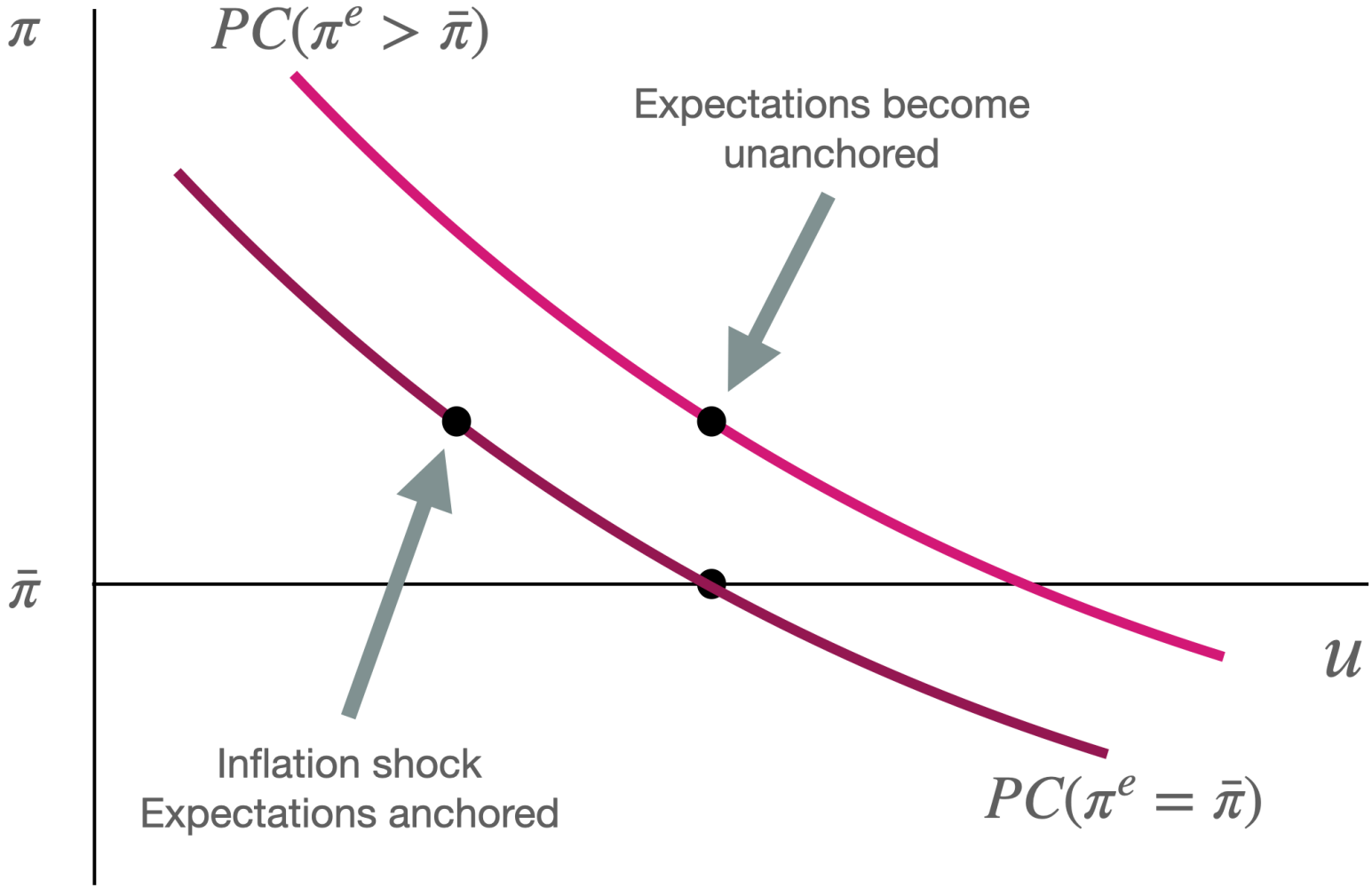
When is inflation a serious problem?

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.

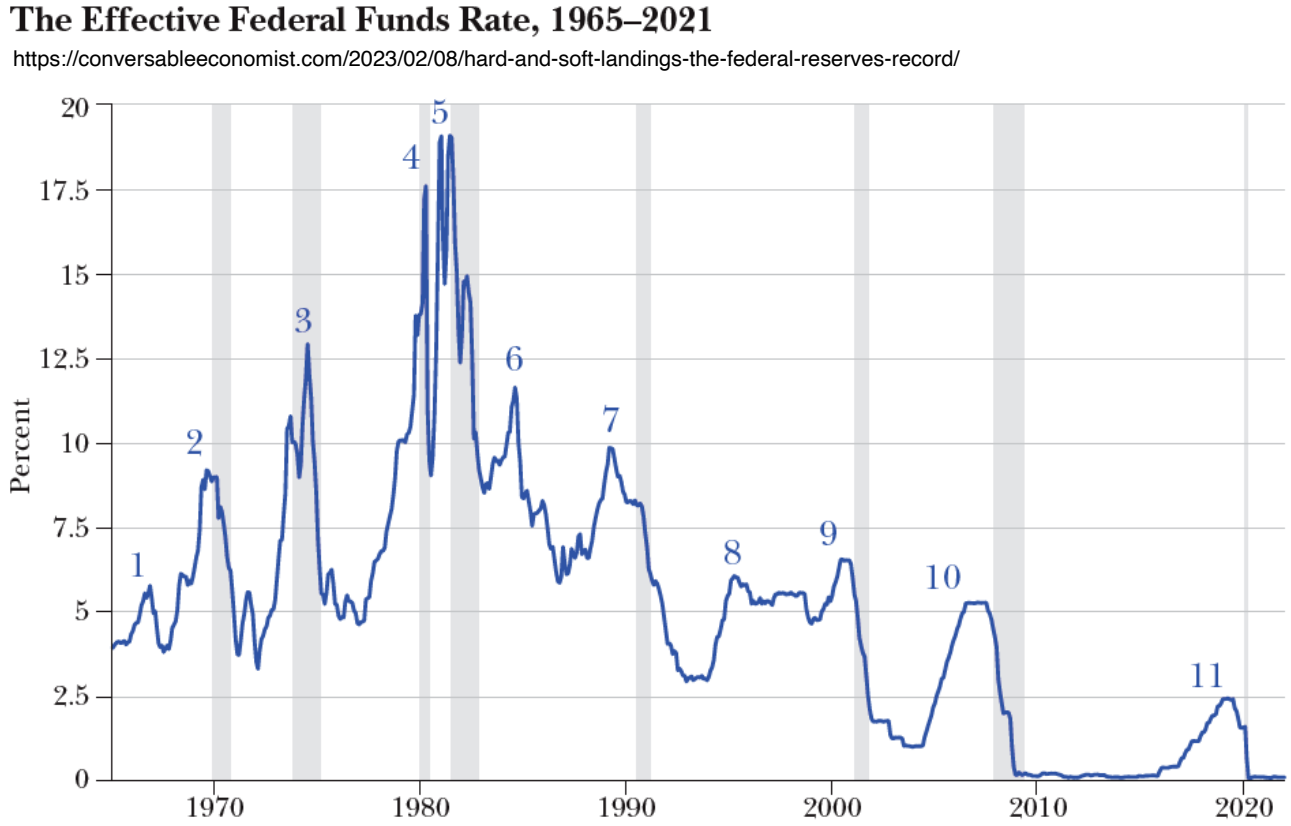
In our model:

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

If inflation expectations rise, the Fed has two options:

1. **Accommodate**: Let π rise to validate the expectations
   Then unemployment need not rise.
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?

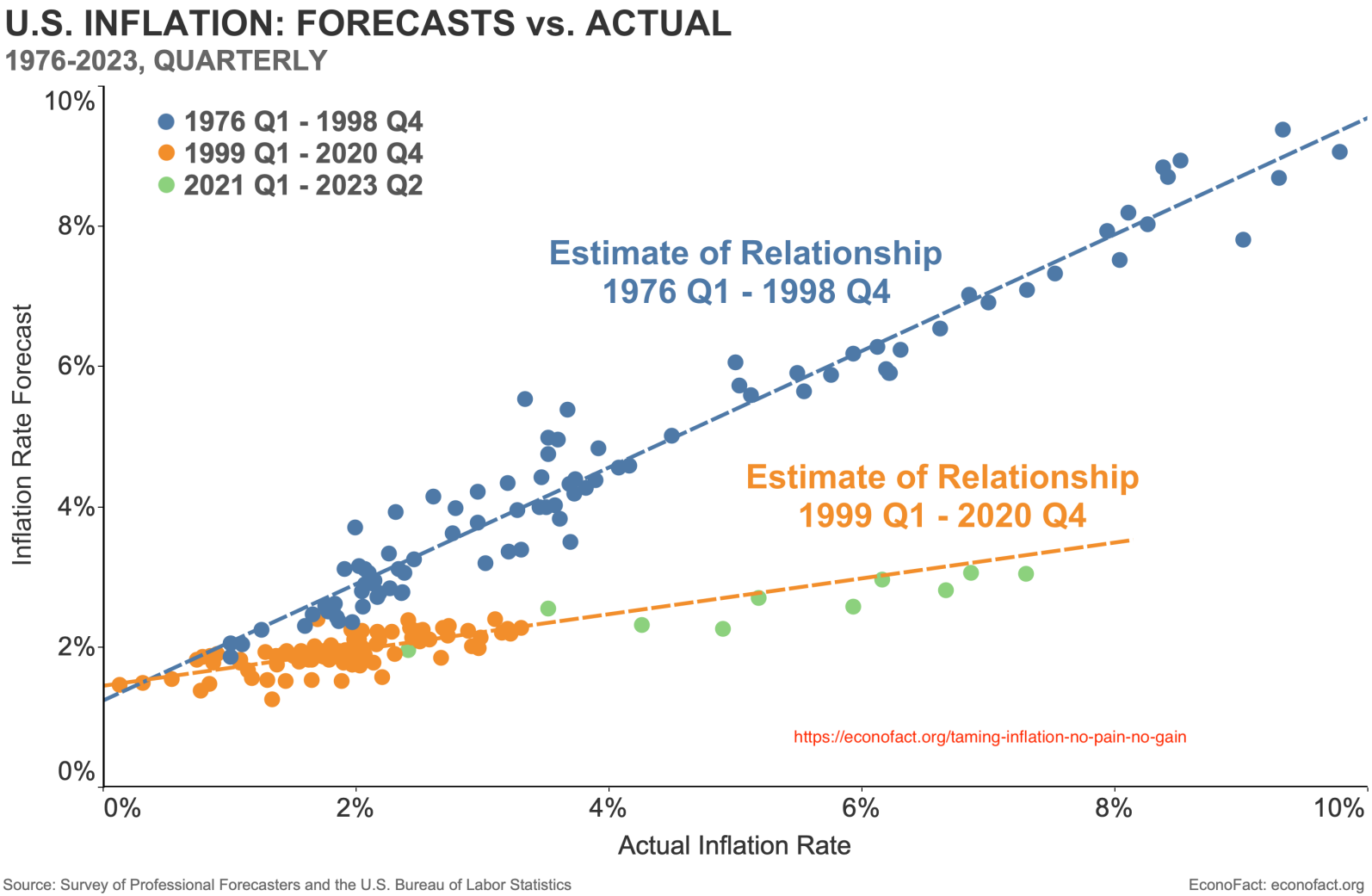


The early record is not great

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

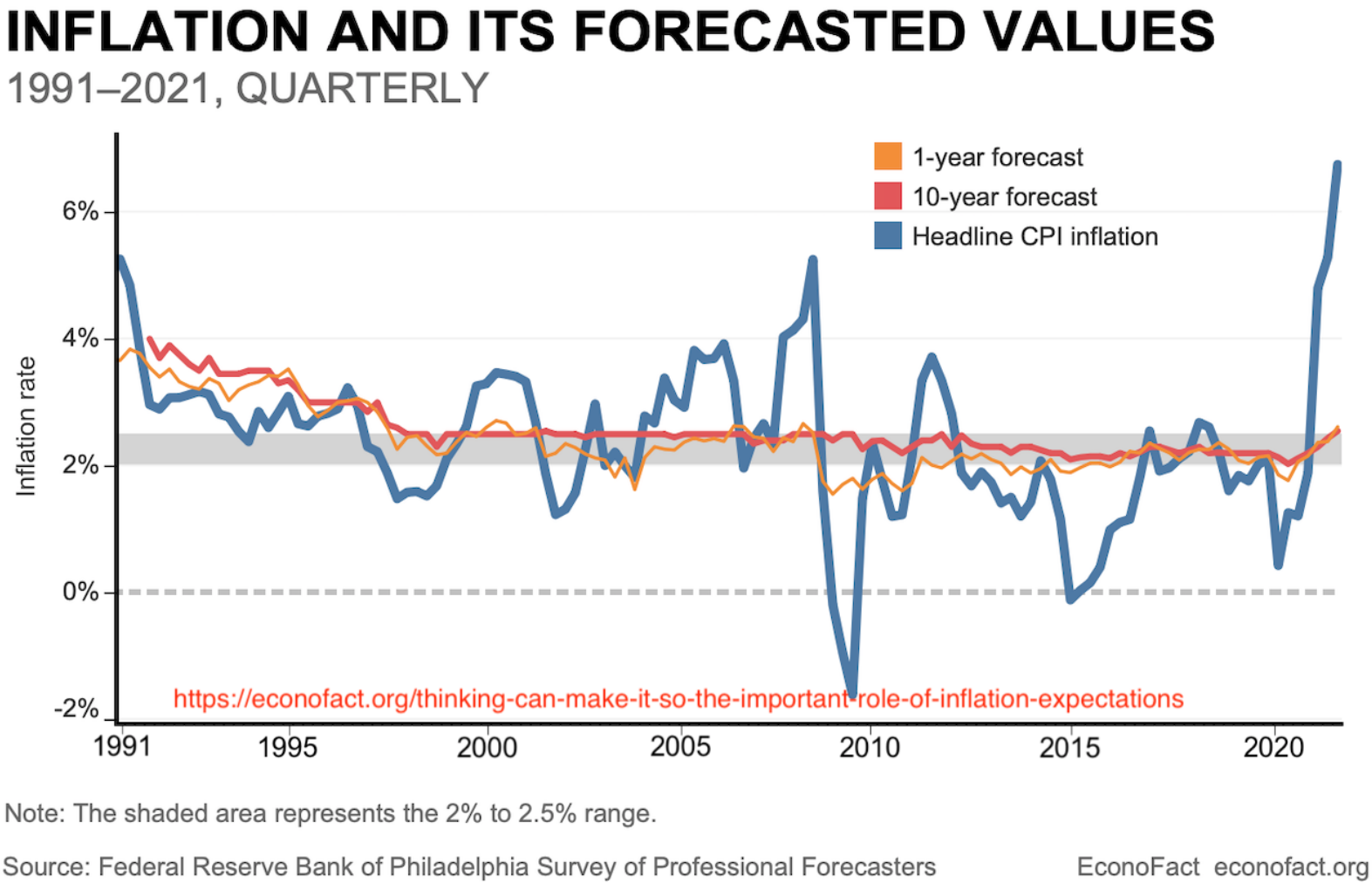
The later record is much better

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.

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

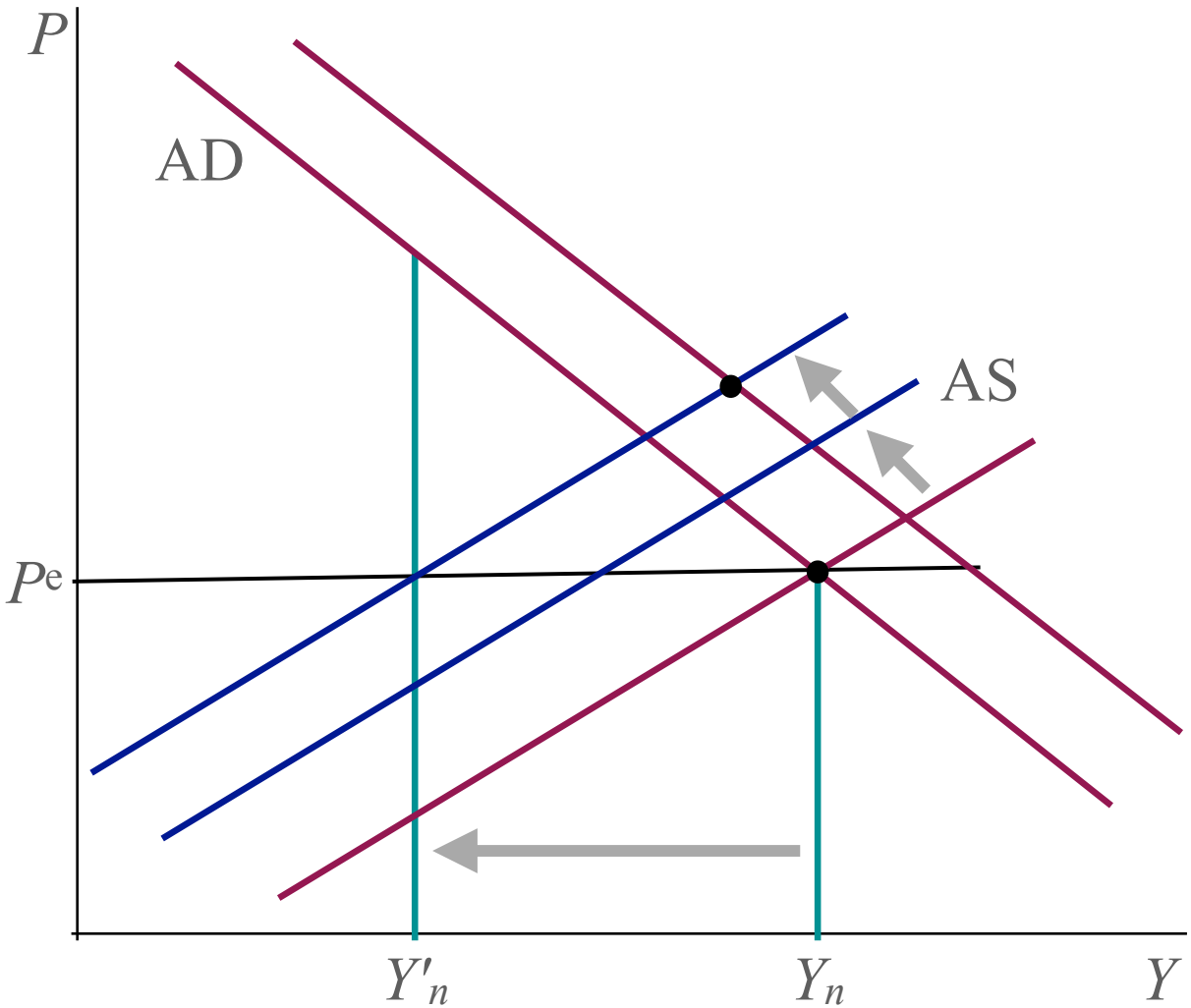
Three shocks

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

The Pandemic Shock



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

Reading

Text: Blanchard and Johnson (2013), 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.

Blanchard, O. and D. Johnson (2013): *Macroeconomics*, Boston: Pearson, 6th ed.