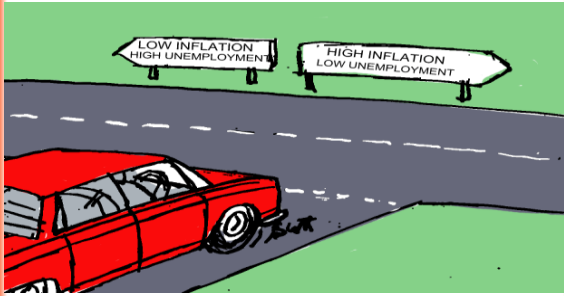


Chapter 12 Lecture – Unemployment and Inflation

Chapter 12 Lecture - Unemployment and Inflation



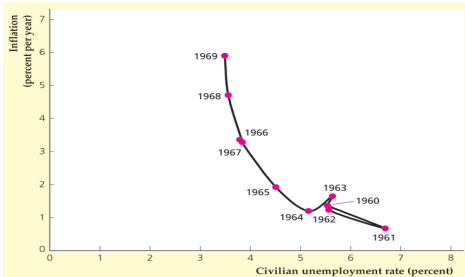
Unemployment and Inflation: Is There a Trade-off?

- Many people think there is a trade-off between inflation and unemployment
 - The idea originated in 1958 when A.W. Phillips showed a negative relationship between unemployment and nominal wage growth in Britain
 - Since then economists have looked at the relationship between unemployment and inflation
 - In the 1950s and 1960s many nations seemed to have a negative relationship between the two variables
 - The United States appears to be on one Phillips curve in the 1960s

12-2

Figure 12.1 The Phillips curve and the U.S. economy during the 1960s

It was suggested that policymakers could choose the combination of unemployment and inflation they most desired



Source: Federal Reserve Bank of St. Louis FRED database at research.stlouisfed.org/fred2, series CPIAUCSL and UNRATE.

12-3

Figure 12.2 Inflation and unemployment in the US

- But the relationship fell apart in the following three decades
- The 1970s were a particularly bad period, with both high inflation and high unemployment, inconsistent with the Phillips curve



Source: Federal Reserve Bank of St. Louis FRED database at research.stlouisfed.org/fred2, series CPIAUCSL and UNRATE.

12-4

Chapter 12 Lecture – Unemployment and Inflation

Unemployment and Inflation: Is There a Trade-off?

- The expectations-augmented Phillips curve
 - Friedman and Phelps: The *cyclical* unemployment rate (the difference between actual and natural unemployment rates) depends only on *unanticipated* inflation (the difference between actual and expected inflation)
 - This theory was made before the Phillips curve began breaking down in the 1970s
 - It suggests that the relationship between inflation and the unemployment rate isn't stable

12-5

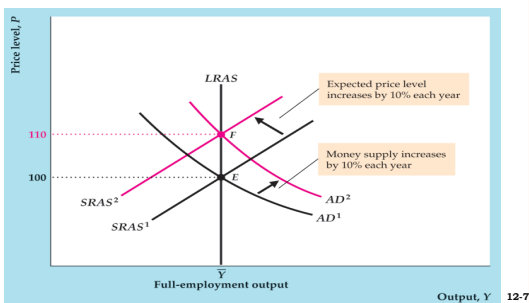
Unemployment and Inflation: Is There a Trade-off?

- The expectations-augmented Phillips curve
 - How does this work in the extended classical model?
 - First case: anticipated increase in money supply (Fig. 12.3)
 - *AD* shifts up and *SRAS* shifts up, with no misperceptions
 - Result: *P* rises, *Y* unchanged
 - Inflation rises with no change in unemployment

12-6

Figure 12.3 Ongoing inflation in the extended classical model

First case: anticipated increase in money supply. *AD* shifts up and *SRAS* shifts up, with no misperceptions. Result: *P* rises, *Y* unchanged. Inflation rises with no change in unemployment.



12-7

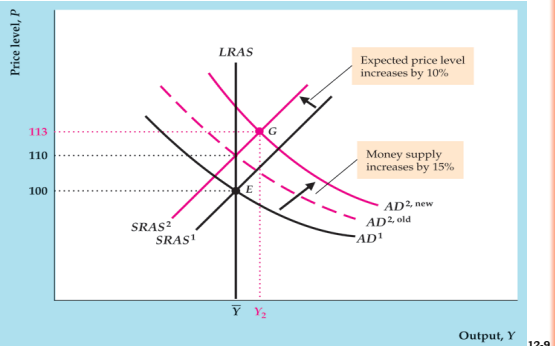
Unemployment and Inflation: Is There a Trade-off?

- Second case: unanticipated increase in money supply
 - *AD* expected to shift up to $AD^{2,old}$ (money supply expected to rise 10%), but unexpectedly money supply rises 15%, so *AD* shifts further up to $AD^{2,new}$
 - *SRAS* shifts up based on expected 10% rise in money supply
 - Result: *P* rises and *Y* rises as misperceptions occur
 - So higher inflation occurs with lower unemployment
 - Long run: *P* rises further, *Y* declines to full-employment level

12-8

Chapter 12 Lecture – Unemployment and Inflation

Figure 12.4 Unanticipated inflation in the extended classical model



12-9

Unemployment and Inflation: Is There a Trade-off?

- Supply shocks and the Phillips curve
 - A supply shock increases both expected inflation and the natural rate of unemployment
 - A supply shock in the classical model increases the natural rate of unemployment, because it increases the mismatch between firms and workers
 - A supply shock in the Keynesian model reduces the marginal product of labor and thus reduces labor demand at the fixed real wage, so the natural unemployment rate rises
- Supply shocks and the Phillips curve
 - So an adverse supply shock shifts the Phillips curve up and to the right
 - The Phillips curve will be unstable in periods with many supply shocks

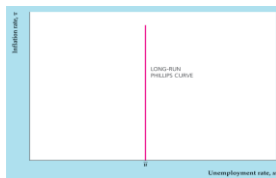
12-10

Macroeconomic Policy and the Phillips Curve

- The long-run Phillips curve
 - Long run: the $u = \bar{u}$ for both Keynesians and classicals
- The long-run Phillips curve is vertical, since when $\pi = \pi^e$, then

$$u = \bar{u}$$

(Figure 12.8)



12-11

Macroeconomic Policy and the Phillips Curve

- The long-run Phillips curve
 - Changes in the level of money supply have no long-run real effects; changes in the growth rate of money supply have no long-run real effects, either
 - Even though expansionary policy may reduce unemployment only temporarily, policymakers may want to do so if, for example, timing economic booms right before elections helps them (or their political allies) get reelected

12-12

Chapter 12 Lecture – Unemployment and Inflation

The Problem of Unemployment

- The costs of unemployment
 - Loss in output from idle resources
 - Workers lose income
 - Society pays for unemployment benefits and makes up lost tax revenue
 - Using Okun's Law (each percentage point of cyclical unemployment is associated with a loss equal to 2% of full-employment output), if full-employment output is \$17 trillion, each percentage point of unemployment sustained for one year costs \$340 billion

12-13

The Problem of Unemployment

- The costs of unemployment
 - Personal or psychological cost to workers and their families
 - Especially important for those with long spells of unemployment
 - There are some offsetting factors
 - Unemployment leads to increased job search and acquiring new skills, which may lead to increased future output
 - Unemployed workers have increased leisure time, though most wouldn't feel that the increased leisure compensated them for being unemployed

12-14

The Problem of Inflation

- The costs of inflation
 - Perfectly anticipated inflation
 - No effects if all prices and wages keep up with inflation
 - Even returns on assets may rise exactly with inflation
 - Shoe-leather costs: People spend resources to economize on currency holdings; the estimated cost of 10% inflation is 0.3% of GNP
 - Menu costs: the costs of changing prices (but technology may mitigate this somewhat)

12-15

The Problem of Inflation

- Can Inflation Be Too Low?
 - Should central banks be concerned about low inflation rates or even deflation (negative rates of inflation?)
 - Low inflation can be harmful
 - Borrowers are hurt by unexpectedly low inflation, as in the 1930s, when deflation led to severe financial distress
 - Anticipated deflation also has costs, such as the increase in real wages if nominal wages are sticky, leading to lower employment
 - Understanding relative prices can also be difficult in a deflationary environment

12-16

Chapter 12 Lecture – Unemployment and Inflation

The Problem of Inflation

- Can Inflation Be Too Low?
 - Nominal interest rates cannot generally fall below zero, so under deflation, real interest rates cannot be very low
 - So, a central bank's ability to reduce real interest rates to combat a recession is limited
 - For example, if deflation occurs at a rate of 2% (that is, the inflation rate is negative 2%), the lowest real interest rate possible occurs when the nominal interest rate is 0%, in which case the real interest rate is 2%
 - However, if inflation were positive 2%, the central bank could achieve a real interest rate of negative 2%

12-17

The Problem of Inflation

- Can Inflation Be Too Low?
 - What inflation rate should central banks aim for?
 - Many central banks target inflation around 2%
 - An inflation rate around 2% keeps the costs of inflation fairly low
 - But an inflation rate of 2% is high enough that there is only a small risk that the economy will suffer from deflation
 - In addition, inflation measures are biased up, so 2% measured inflation means that true inflation is somewhat lower

12-18

Fighting Inflation: The Role of Inflationary Expectations

- If rapid money growth causes inflation, why do central banks allow the money supply to grow rapidly?
 - Developing or war-torn countries may not be able to raise taxes or borrow, so they print money to finance spending
 - Industrialized countries may try to use expansionary monetary policy to fight recessions, then not tighten monetary policy enough later
- Disinflation is a reduction in the rate of inflation
 - But disinflations may lead to recessions
 - An unexpected reduction in inflation leads to a rise in unemployment along the Phillips curve
- The costs of disinflation could be reduced if expected inflation fell at the same time actual inflation fell

12-19

Fighting Inflation: The Role of Inflationary Expectations

- Disinflation is a reduction in the rate of inflation
 - But disinflations may lead to recessions
 - An unexpected reduction in inflation leads to a rise in unemployment along the Phillips curve
- The costs of disinflation could be reduced if expected inflation fell at the same time actual inflation fell

12-20

Chapter 12 Lecture – Unemployment and Inflation

Fighting Inflation: The Role of Inflationary Expectations

- Rapid versus gradual disinflation
 - The classical prescription for disinflation is cold turkey—a rapid and decisive reduction in money growth
 - Proponents argue that the economy will adjust fairly quickly, with low costs of adjustment, if the policy is announced well in advance
- Keynesians disagree with rapid disinflation
 - Price stickiness due to menu costs and wage stickiness due to labor contracts make adjustment slow
 - Cold turkey disinflation would cause a major recession
 - The strategy might fail to alter inflation expectations, because if the costs of the policy are high (because the economy goes into recession), the government will reverse the policy

12-21

Fighting Inflation: The Role of Inflationary Expectations

- The Keynesian prescription for disinflation is gradualism
 - A gradual approach gives prices and wages time to adjust to the disinflation
 - Such a strategy will be politically sustainable because the costs are low



12-22

Fighting Inflation: The Role of Inflationary Expectations

- The U.S. disinflation of the 1980s and 1990s
 - Fed chairmen Volcker and Greenspan gradually reduced the inflation rate in the 1980s and 1990s
 - They sought to eliminate inflation as a source of economic instability
 - They wanted people to be confident that inflation would never be very high again

12-23

The psychology of inflation

Rational expectations  **Adaptive expectations** 

Sam expects inflation to carry on at the same rate as it is now. He suffers from money illusion.

Julie keeps up with the news and knows inflation is expected to rise further. She behaves rationally and does not suffer from money illusion.

Friedman thought people behaved like **Sam**. They would be drawn in to the labour market by higher wages and not understand that higher inflation in the future would erode their real wage. According to Friedman, there would therefore need to be a period of higher unemployment to 'bleed' the system of expectations of inflation.

New-classical economists think people are like **Julie**. They are not fooled by nominal wage increases. Therefore, increasing aggregate demand will not result in unemployment levels falling below the natural rate; there will just be inflation. This leads to the conclusion that, as long as people believe government will take a tough stance on inflation, expectations will be rapidly brought under control without a purging period of unemployment

12-24