UNIT 15

coreecon

Parama Chaudhury
UNIVERSITY COLLEGE LONDON

EXERCISE 15.1 THE BARGAINING GAP IN A RECESSION

Suppose the economy is initially at labour market equilibrium with stable prices (inflation is zero). At the beginning of year 1, investment declines and the economy moves into recession with high unemployment.

1. Explain why a negative bargaining gap arises.
2. Assume the negative bargaining gap is 1%. Draw a diagram with years on the horizontal axis and the price level on the vertical axis. Starting from a price index of 100, sketch the path of the price level for the 5 years that follow, assuming the bargaining gap remains at –1%.
3. Who are the winners and losers in this economy?

Introduction

This question is an introduction to the wage-setting curve-price-setting curve model. Students learn why a bargaining gap may arise and how the economy moves to a new equilibrium.

Answer

1. The investment decline reduces aggregate demand so that we are at a point such as C in the bottom diagram of Figure 15.4d below. Due to the higher level of unemployment, there is more competition for jobs and the expected duration of unemployment may rise. As a result, employment rents rise and the wages that firms need to offer falls. This creates a downward pressure on wages. The real wages needed to secure workers' effort is now lower than the real wages consistent with the markup that firms wish to secure. This bargaining gap leads to a downward pressure on output prices and deflation.

EXERCISE ANSWERS UNIT 15

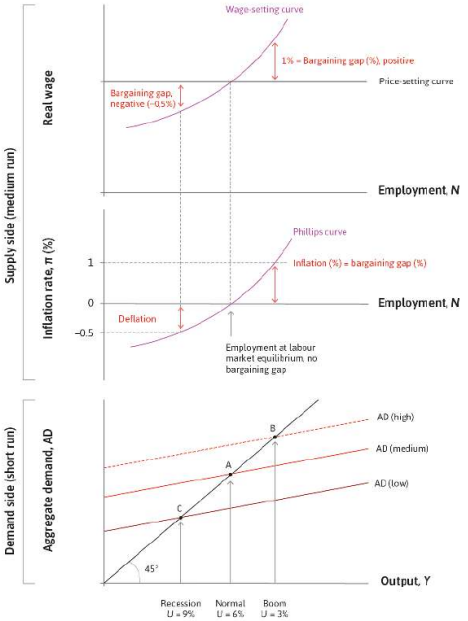
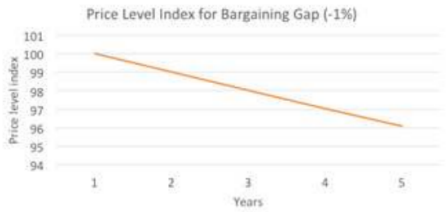


Figure 15.4d The short and medium run models: aggregate demand, employment, inflation

2.

Year	Price level	Absolute amount decrease
1	100.00	
2	99.00	1.00
3	98.01	0.99
4	97.03	0.98
5	96.06	0.97



3. Deflation increases the value of cash holdings and savings so it benefits those with savings i.e. lenders. On the other hand, debts denominated in nominal terms will increase in real terms so that borrowers will be worse off.

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Marking guidance

A good answer will:

- Reproduce Fig 15.4d
- Explain how the difference between the claims of firms and workers on output per worker give rise to the bargaining gap
- Explain how the new equilibrium is obtained, with some stakeholders better off and others worse off

Teaching ideas

It might be tempting for students to copy and paste Fig 15.4d into their answer, but it is essential for their understanding that they draw it. This highlights the importance of the units on the two axes and the causal chain from changes in aggregate demand in the bottom panel to wage and price decisions in the top panel and their reflection in the Phillips curve in the middle. Lecturers might want to ask students to draw the figure on the board during class.

EXERCISE 15.2 POSITIVE AND NEGATIVE SHOCKS

Draw a labour market diagram where the economy is at labour market equilibrium with stable prices. Now consider:

- A positive shock to aggregate demand that reduces the unemployment rate by 2 percentage points.
- A negative shock that increases it by 2 percentage points.

1. What happens to the bargaining gap in each case?
2. What would you expect to happen to the price level in each case? Explain your answers.

Introduction

This question is similar to Exercise 1 and aims to get students to understand the out-of-equilibrium dynamics of the labour market model.

Answer

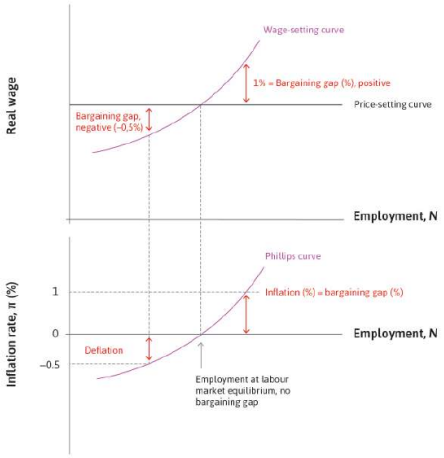

Figure 15.4c Bargaining gaps, inflation, and the Philips curve

1. In the case of a positive shock, the bargaining gap increases by an amount shown by the distance between the wage-setting curve and the price-setting curve. In the case of a negative shock the bargaining gap is negative, but smaller than in the previous case if the wage-setting curve is convex. This convexity implies that unemployment has smaller and smaller effects as the wage decreases.

(Recall the explanation from units 6 and 9 for the convexity of the wage-setting curve.)

2. In the first case, prices will increase (inflation) while in the second they decrease (deflation). But the inflationary pressure in the first case is greater than the deflationary pressure in the second. The reasoning is again because of the shape of the wage-setting curve.

Marking guidance

A good answer will:

- Draw the labour market model
- Explain why the inflationary/deflationary pressures are of different strength

Teaching ideas

The shape of the wage-setting curve (derived in U9, based on the models in U6) is the focus of this question. The lecturer may want to ask students to see what would happen to the gaps if the curve was linear. Then ask them to go back and think about what justified this particular shape of the wage-setting curve. The point is to understand that the wage-setting curve can never cross the labour supply curve—there must always be involuntary unemployment in the model. Otherwise effort is insufficient.

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EXERCISE 15.3 THE PHILLIPS CURVE AND THE POLICYMAKER'S PREFERENCES

The following questions refer to Figure 15.5.

1. What would the policymaker's indifference curves look like if the policymaker cared only about low unemployment?
2. Which point on the Phillips curve would that policymaker choose?
3. What would the policymaker's indifference curves look like if the policymaker cared only about low inflation?
4. Which point on the Phillips curve would this policymaker choose?
5. What would the indifference curves look like if to be re-elected, the policymaker needed the support of pensioners more than that of working-age people?

Introduction

This question highlights the fact that different policymakers might have different preferences, and hence have differently-shaped indifference curves.

Answer

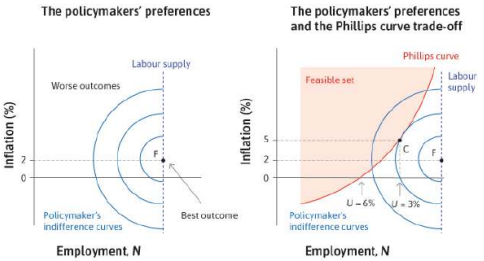

Figure 15.5 The Phillip's curve and the policymaker's preferences

1. In this case they are vertical (see diagram below), e.g. through U=3% because the policymaker cares only about unemployment, therefore willing to achieve the optimal level of unemployment at whatever inflation rate required. The indifference curve with highest utility would lie somewhat to the left of the labour supply curve since the policymaker requires a finite rate of inflation.

2. Since the policymaker aims for low unemployment, she will choose the point where the Phillips curve intersects her right-most indifference curve (e.g. at U=3%).

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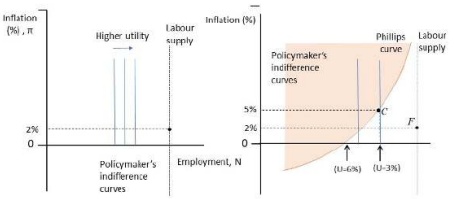

a. The policymakers' preferences

b. The policymakers' preferences and the Phillips curve tradeoff

3. In this case, they are horizontal with higher utility the closer the curves are to the low inflation target; utility will fall as the horizontal lines are further above and further below the one at the low inflation target.

4. In this case, the policymaker would choose the point at which the Phillips curve intersects the horizontal line at the low inflation target.

5. Pensioners are not directly affected by unemployment and are more likely to rely on savings and accumulated wealth. Since their welfare is more likely to be affected by inflation, the policymaker's indifference curves may be relatively flat so that inflation has a stronger effect on welfare than unemployment.

Marking guidance

A good answer will:

- Draw the two different sets of indifference curves for the policymaker
- Explain why they look the way they do (and which direction utility increases in)
- Explain the choice of optimal point in each case

Teaching ideas

This question can be used quite generally to remind students about how particular types of preferences lead to specific shapes of indifference curves. It is also a good opportunity to reiterate that our overall model of optimizing against constraints (introduced in Unit 3) is revisited here in terms of policymaker preferences and the constraint posed by the Phillips curve.

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EXERCISE 15.4 A NEGATIVE AGGREGATE DEMAND SHOCK WITH HIGH UNEMPLOYMENT

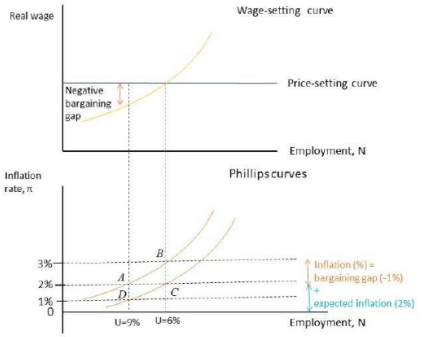
Copy Figure 15.9, making sure you leave plenty of space to the left of the 6% unemployment marker. Assume that from an initial position at A, there is a negative shock to private sector demand such as depressed private investment, which raises unemployment to 9%.

1. Show the inflation, expected inflation, and the bargaining gap at the new level of unemployment on your diagram.
2. What do you predict will happen to inflation over the following two years, assuming there is no further change in unemployment?
3. Draw the Phillips curves and write a brief explanation of your findings.

Introduction

This question is a study of the Phillips curve and how it shifts as inflation expectations change. Students usually find it easier to model a process of rising inflation than of falling inflation. This exercise focuses on this likely weakness.

Answer



1. From the top figure, it is clear that there is a negative bargaining gap at 9% unemployment. Supposing that this gap is -1% (it is likely to be smaller than the positive gap at 3% unemployment), inflationary pressures will fall (point B). Inflation will be equal to 2% (inflation = expected inflation + gap = 3%—1%).

2. and 3. In the following period, expected inflation is 2% (point C), so the inflation rate will now fall to 1% because of the negative bargaining gap (point D). The Phillips curves will move downward each period.

Marking guidance

A good answer will:

- Draw Fig 15.9 along with the change in unemployment rate.
- Explain the movement from A to B to C to D.
- A3 requires a verbal explanation. The verbal explanation should work through what happens when unemployment goes up to 9%: in the HR department, in the marketing department, etc. as explained in the text for the case of unemployment below labour market equilibrium.

Teaching ideas

This combines a straightforward diagrammatic question with the need to explain the mechanisms using the model. In class, get students to explain the movements from A to B to C to D verbally in class, as the role of the bargaining gap in explaining the wage and price-setting decisions, and of inflation expectations in determining the position of the Phillips curve is something that students often find challenging.

EXERCISE 15.5 INFLATION, EXPECTED INFLATION, AND THE BARGAINING GAP

Use the same axes as in Figure 15.10 to plot inflation, expected inflation, and the bargaining gap in a single diagram. Assume that the price level is constant in period zero. The economy is hit by a recession at the beginning of period 1 and unemployment remains at a constant high level until the beginning of period 6.

1. Plot the path of the bargaining gap.
2. Plot the path of inflation and expected inflation.
3. Give a brief explanation of why the bargaining gap might have disappeared and state any other assumptions you are making. Summarize your findings.

Introduction

This question applies the wage-setting curve-price-setting curve model of equilibrium unemployment and inflation using the 'pathways' or 'impulse-response' type of diagram developed in Fig 15.10.

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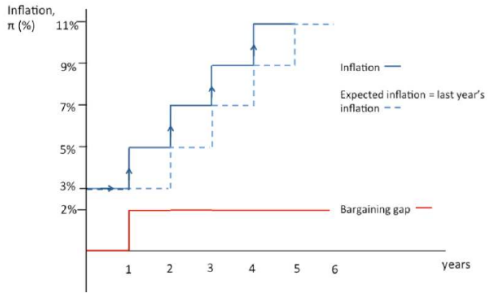
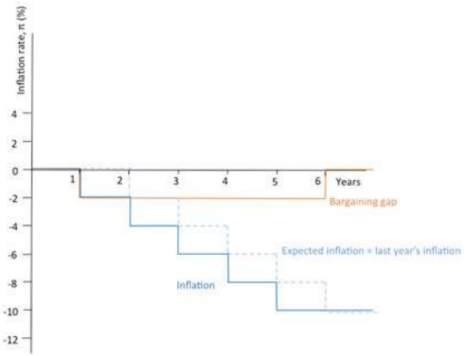
Answer

Figure 15.10 Inflation, expected inflation and the bargaining gap





1. The path of the bargaining gap is shown in yellow.

2. The shock justifies the negative, persistent bargaining gap beginning in period 1. Inflation now drops each period, with expected inflation rate lagging by one period.

3. With the bargaining gap disappearing, the expected inflation rate will stabilize at -10% from period 6 (although the price level would continue to fall), assuming no further shocks to the economy. The disappearance of the gap could be because of an exogenous increase in aggregate demand such as a rise in exports, or because of the operation of monetary policy or fiscal policy to halt the process of deflation and reduce unemployment.

Marking guidance

A good answer will:

- Draw the relevant diagram using the structure in Fig 15.10
- Explain the path of inflation and the bargaining gap

A very good answer would make the point that in order to stop the price level falling, there would have to be a positive bargaining gap.

Teaching ideas

This is not as straightforward as it might first appear and provides plenty of opportunities for reinforcing the basic model and the relationships between aggregate demand, wage- and price-setting, labour market equilibrium and the Phillips curve. It also offers the chance to introduce students to impulse response diagrams and thinking, which they will encounter in later courses.

EXERCISE 15.6 AN OIL SHOCK

Think about the three questions related to oil shocks that we listed above. In each case:

1. Explain the mechanism linking the oil shock to inflation using a diagram.
2. Identify some evidence (for example, data or commentary in the economics press) that is consistent with the hypothesis proposed.

Introduction

This question aims to take students through the effects of one of the most common and high-profile shocks an economy faces, an oil price shock.

Answer

1. Was the unit cost increase smaller due to less energy-intensive production?

The diagram is similar to the one that would explain previous inflation episodes but the magnitudes are smaller. A smaller unit cost change would move the price-setting curve down less than in previous episodes so that the bargaining gap is smaller. The movement is because more has to be spent on imports, so keeping markups constant requires a lower real wage to be paid domestically. A lower energy intensity of production would explain this fact, which would partly be the result of the response of economies in developing new technologies following the high energy prices in the 1970s. The oil price rises in the 2000s were also more gradual so that their impacts were not so pronounced. (Further, the oil price rises in the 2000s were also associated with rising global demand, so increased export demand helped to offset some of the effects of the increased energy prices. Note that the text has focused on the supply-side effects of the oil shocks rather than on their effects on aggregate demand.)

Did the wage-setting curve shift downwards at the same time as the third oil price shock?

If the wage-setting curve also shifted downwards this would further reduce the bargaining gap. This could be because of reduced bargaining power and more labour market flexibility, possibly also reflecting a greater awareness of the nature of the shock.

Did a wage-price spiral fail to develop because expected inflation did not adjust upward, as in the past oil shocks?