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# 通货膨胀与失业之间的短期权衡

## The Short-Run Tradeoff between Inflation and Unemployment

# 失业与通货膨胀

## Unemployment and Inflation

- 两个密切受到注视的经济状况指标是通货膨胀和失业。

Two closely watched indicators of economic performance are inflation and unemployment.

- 将通货膨胀率和失业率相加得到**痛苦指数**，它是经济“健康”的一个衡量指标。

The **miser index**, one measure of the “health” of the economy, adds together the inflation rate and unemployment rate.

# 失业与通货膨胀

## Unemployment and Inflation

- 通胀与失业的关系这一话题吸引了过去半个世纪最重要的一些经济学家的注意力。

**The relationship between inflation and unemployment is a topic that has attracted attention of some of the most important economists of the last half-century.**

- 关于通胀与失业的思想史不可避免地和美国经济的历史相联系。

**The history of thought regarding inflation and unemployment since the 1950s is inextricably connected to the history of the U.S. economy.**



# **失业与通货膨胀：长期**

## **Unemployment and Inflation: The Long-run**

- **自然失业率依赖于劳动力市场的各种特征。 The natural rate of unemployment depends on various features of the labor market.**
- **例如，最低工资法、工会的市场权力、效率工资的作用、寻找工作的有效性。**

**Examples include minimum-wage laws, the market power of unions, the role of efficiency wages, and the effectiveness of job**



# **失业与通货膨胀：长期**

## **Unemployment and Inflation: The Long-run**

- **通货膨胀率主要依赖于货币数量的增长，它是由美联储控制的。**

**The inflation rate depends primarily on growth in the quantity of money, controlled by the Fed.**

- **因此，在长期中，通货膨胀和失业基本是互不相关的问题。**

**In the long run, therefore, inflation and unemployment are largely unrelated problems.**



# **失业与通货膨胀：短期**

## **Unemployment and Inflation: The Short-run**

- **社会面临着失业与通货膨胀之间的短期权衡。**  
**Society faces a short-run tradeoff between unemployment and inflation.**
- **如果政策制定者扩张总需求，他们能够降低失业，但必须以更高的通货膨胀为代价。**  
**If policymakers expand aggregate demand, they can lower unemployment, but only at the cost of higher inflation.**
- **如果他们紧缩总需求，他们能够降低通货膨胀，但必须以暂时更高的失业率为代价。**  
**If they contract aggregate demand, they can lower inflation, but at the cost of temporarily higher unemployment.**





# 菲利普斯曲线

## The Phillips Curve

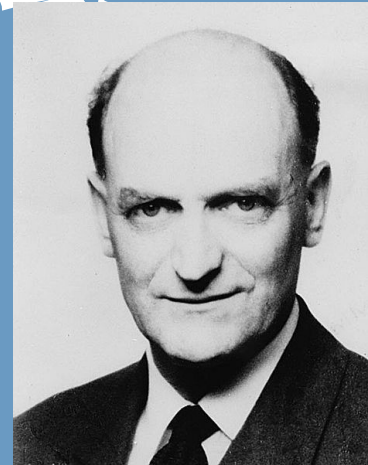
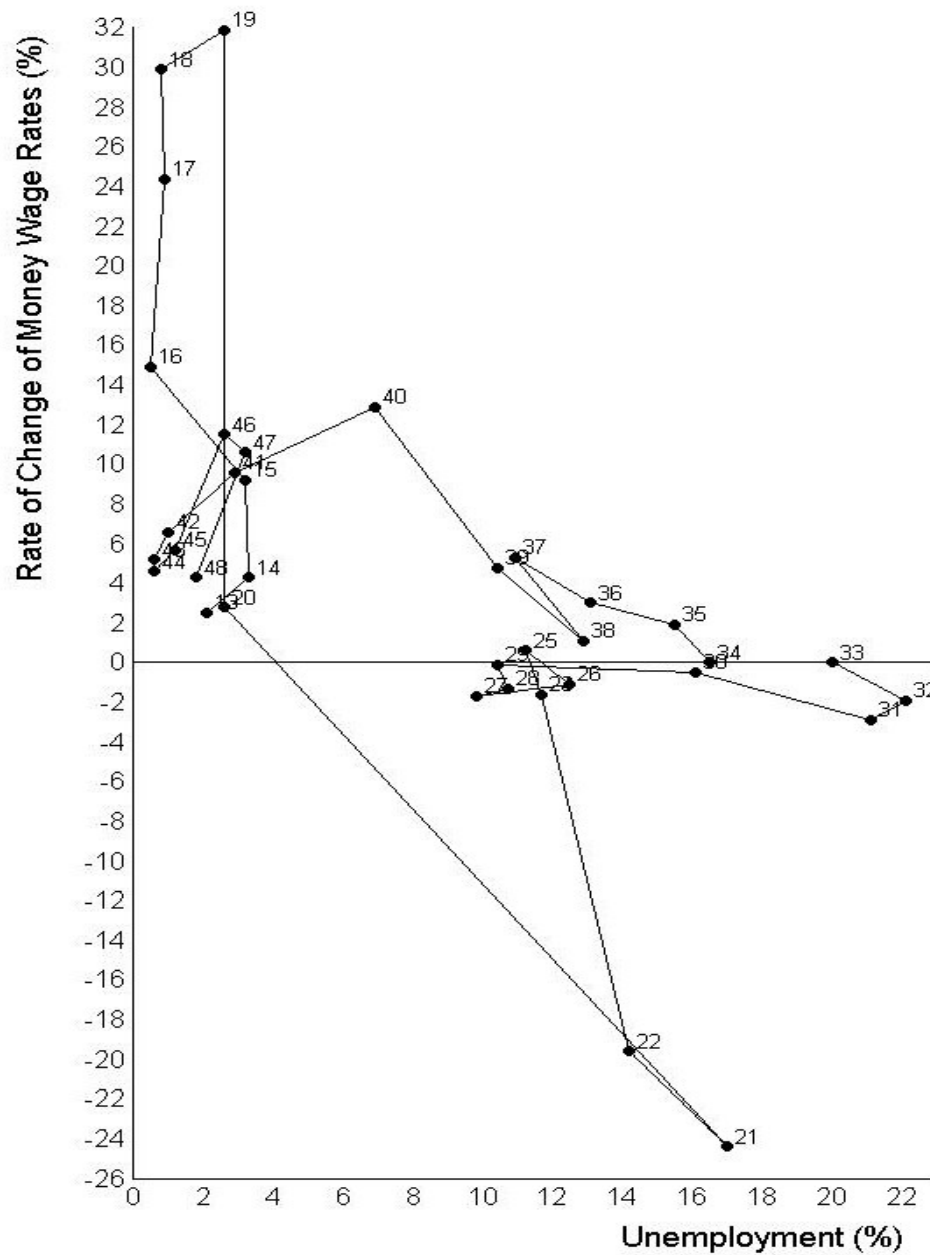
- 1958 年， A·W· 菲利普斯将英国自 1861 至 1957 年历年的通货膨胀率与失业率绘制成图。

In 1958, A.W. Phillips drew a diagram plotting the rate of inflation against the rate of unemployment in the United Kingdom for each year from 1861 to 1957.

- 他发现通货膨胀率与失业率之间有明显的负相关关系：当失业率低时，通货膨胀率高，而当失业率高时，通货膨胀低，甚至经常是负的。

He found clear evidence of a negative relation between inflation and unemployment: When unemployment was low, inflation was high, and when unemployment was high, inflation was low, often

# 菲利普斯曲线 The Phillips Curve





# 菲利普斯曲线

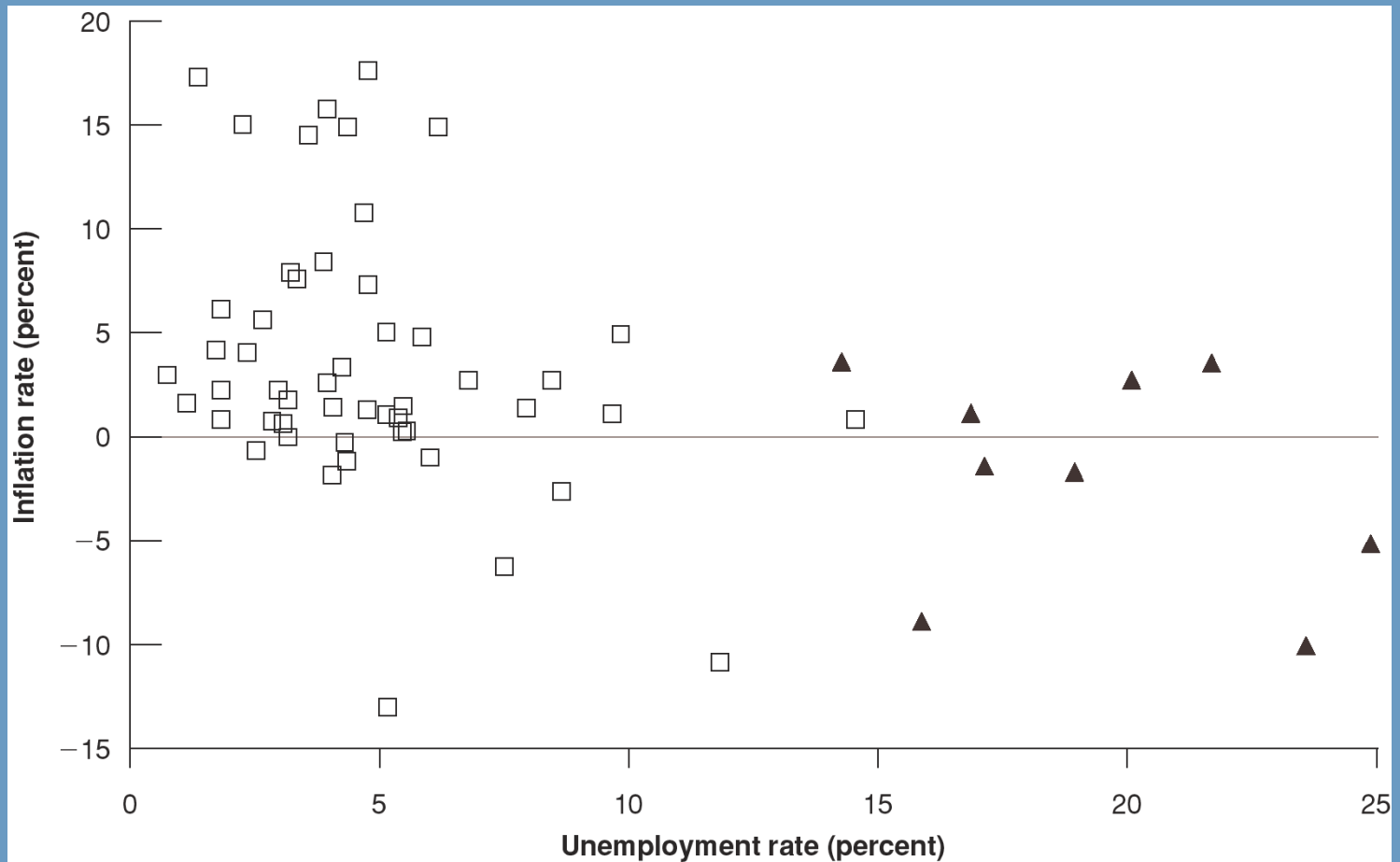
## The Phillips Curve



- 两年之后，保罗·萨缪尔森与罗伯特·索洛用美国 1900 至 1960 年的数据重复了菲利普斯的工作 Two years later, Paul Samuelson and Robert Solow replicated Phillip's exercise for the United States, using data from 1900 to 1960.
- 除了失业率非常高的三十年代，看起来在美国也存在通胀率与失业率之间的负相关关系。 Apart from the period of very high unemployment during the 1930s, there appeared to be a negative relation between inflation and unemployment in the United States also.

# 菲利普斯曲线

## The Phillips Curve



# 菲利普斯曲线

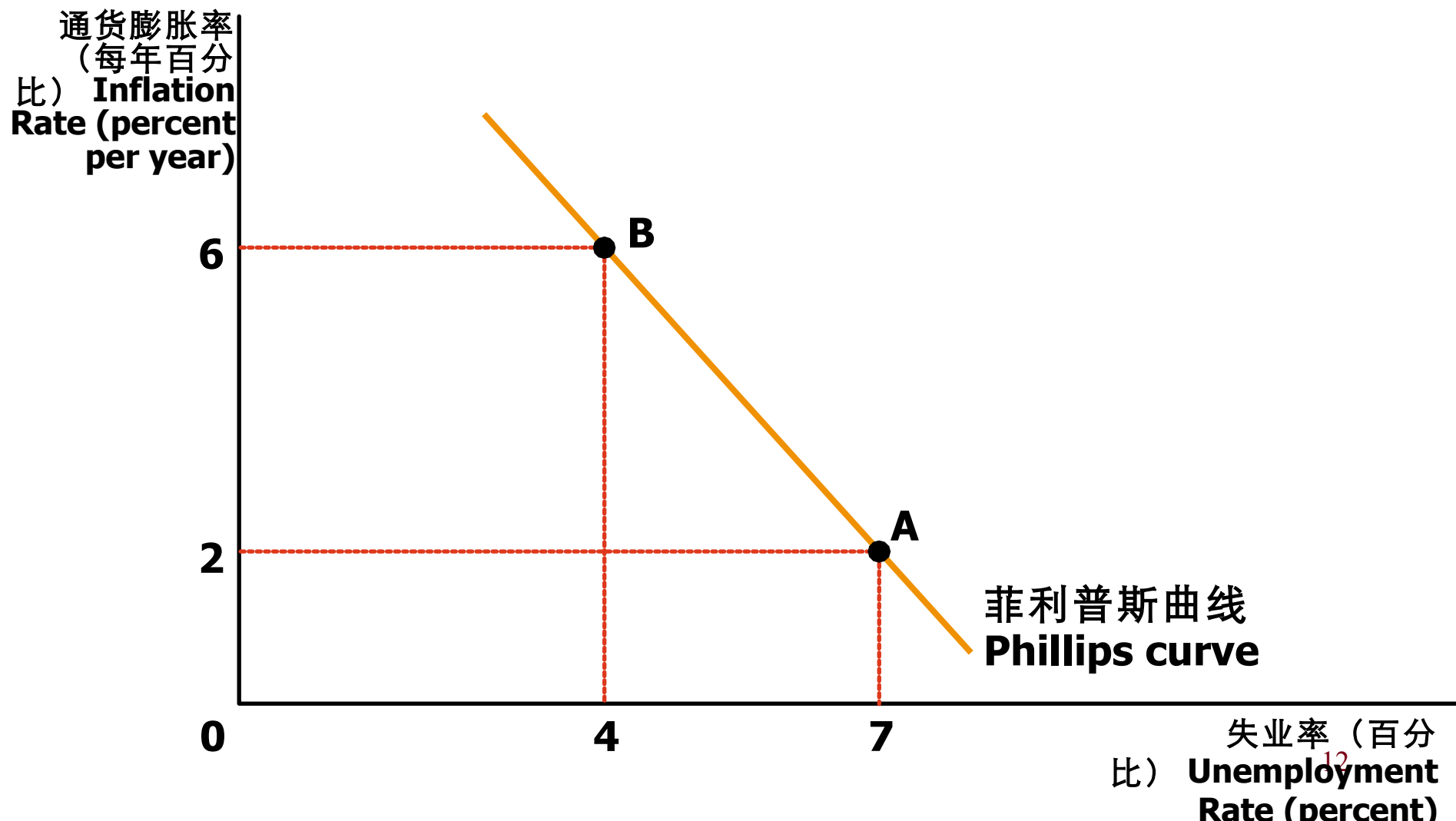
## The Phillips Curve

**菲利普斯曲线**表示了通货膨胀与失业之间的（短期）权衡取舍。

The **Phillips curve** illustrates the (short-run) trade-off between inflation and unemployment.

# 菲利普斯曲线

## The Phillips Curve...



# 菲利普斯曲线

## The Phillips Curve

菲利普斯曲线看起来向政策制定者提供了一个通货膨胀与失业可能结果的菜单。

**The Phillips curve seems to offer policymakers a menu of possible inflation and unemployment outcomes.**



# **总需求、总供给与菲利普斯曲线**

## **Aggregate Demand, Aggregate Supply, and the Phillips Curve**

- **菲利普斯曲线表示失业率与通货膨胀率的短期组合，它源于总需求曲线的移动沿着短期总供给曲线改变了经济。**

**The Phillips curve shows the short-run combinations of unemployment and inflation that arise as shifts in the aggregate demand curve move the economy along the short-run aggregate supply curve.**





# **总需求、总供给与菲利普斯曲线**

## **Aggregate Demand, Aggregate Supply, and the Phillips Curve**

- **对于物品与服务的总需求越大，经济的产出越大，整体价格水平越高。**

**The greater the aggregate demand for goods and services, the greater is the economy's output, and the higher is the overall price level.**

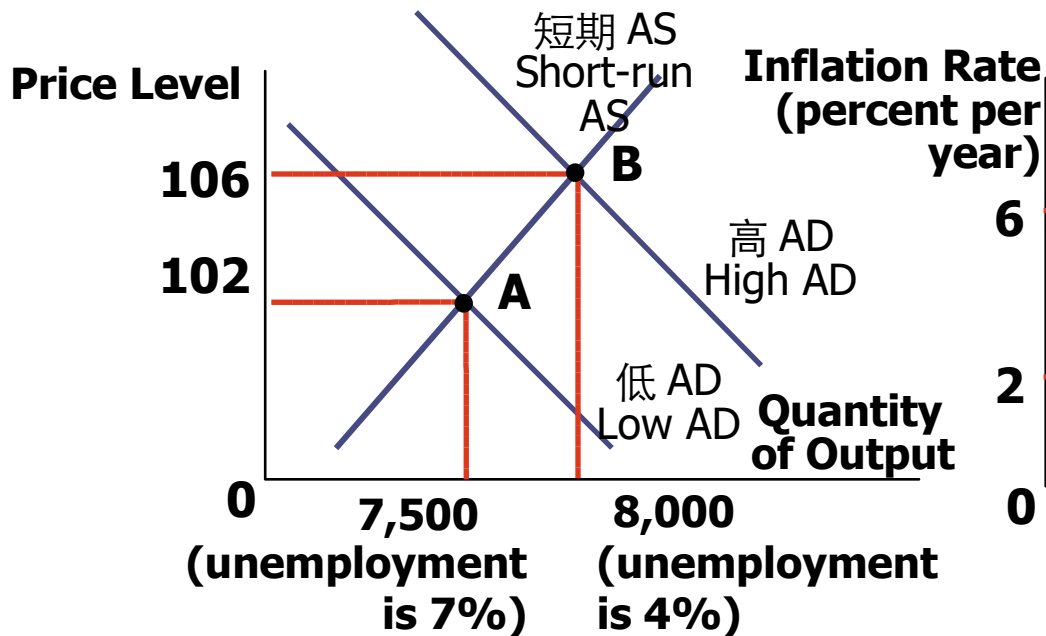
- **更高的产出水平导致更低的失业水平。**

**A higher level of output results in a lower level of unemployment.**

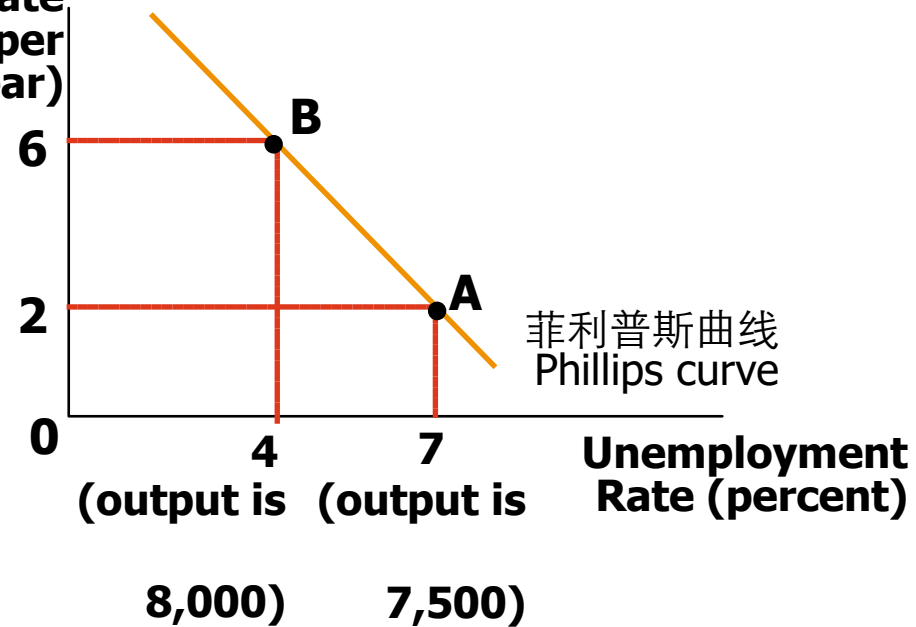
# 菲利普斯曲线如何与总供求模型相联系

## How the Phillips Curve is Related to the Model of Aggregate Demand and Aggregate Supply

(a) AD - AS 模型  
The Model of AD and AS

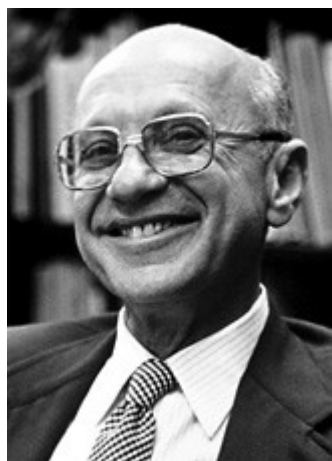


(b) 菲利普斯曲线  
The Phillips Curve



# 长期菲利普斯曲线

## The Long-Run Phillips Curve



- 在二十世纪六十年代后期，弗里德曼和费尔普斯断定，通货膨胀率与失业率在长期不相关。

In the late 1960s, Friedman and Phelps concluded that inflation and unemployment are unrelated in the long run.

- 结果，长期的菲利普斯曲线垂直于自然失业率处。

As a result, the long-run Phillips curve is vertical at the natural rate of unemployment.

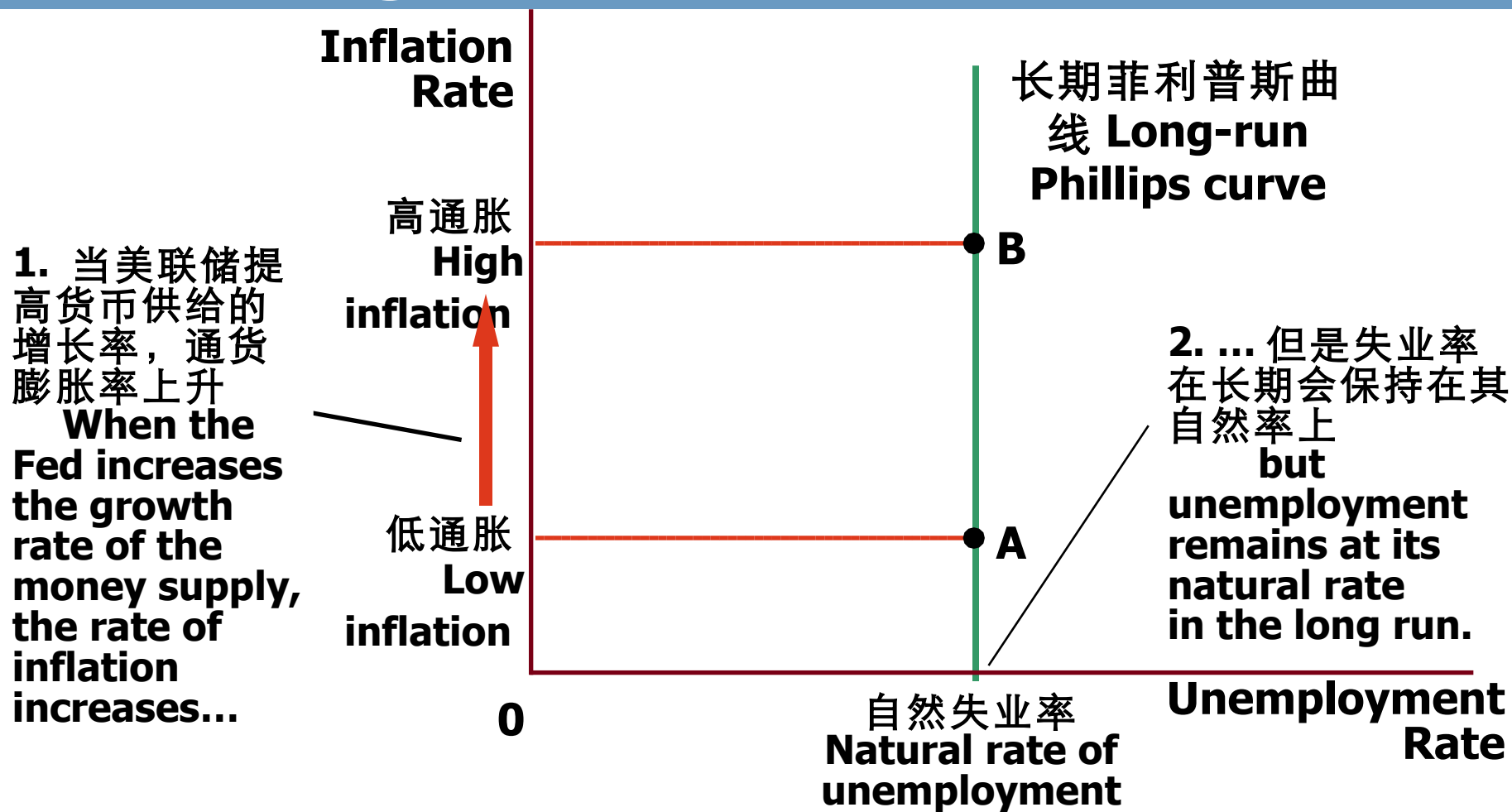
- 货币政策在短期有效，但在长期无效。

Monetary policy could be effective in the short run but not in the long



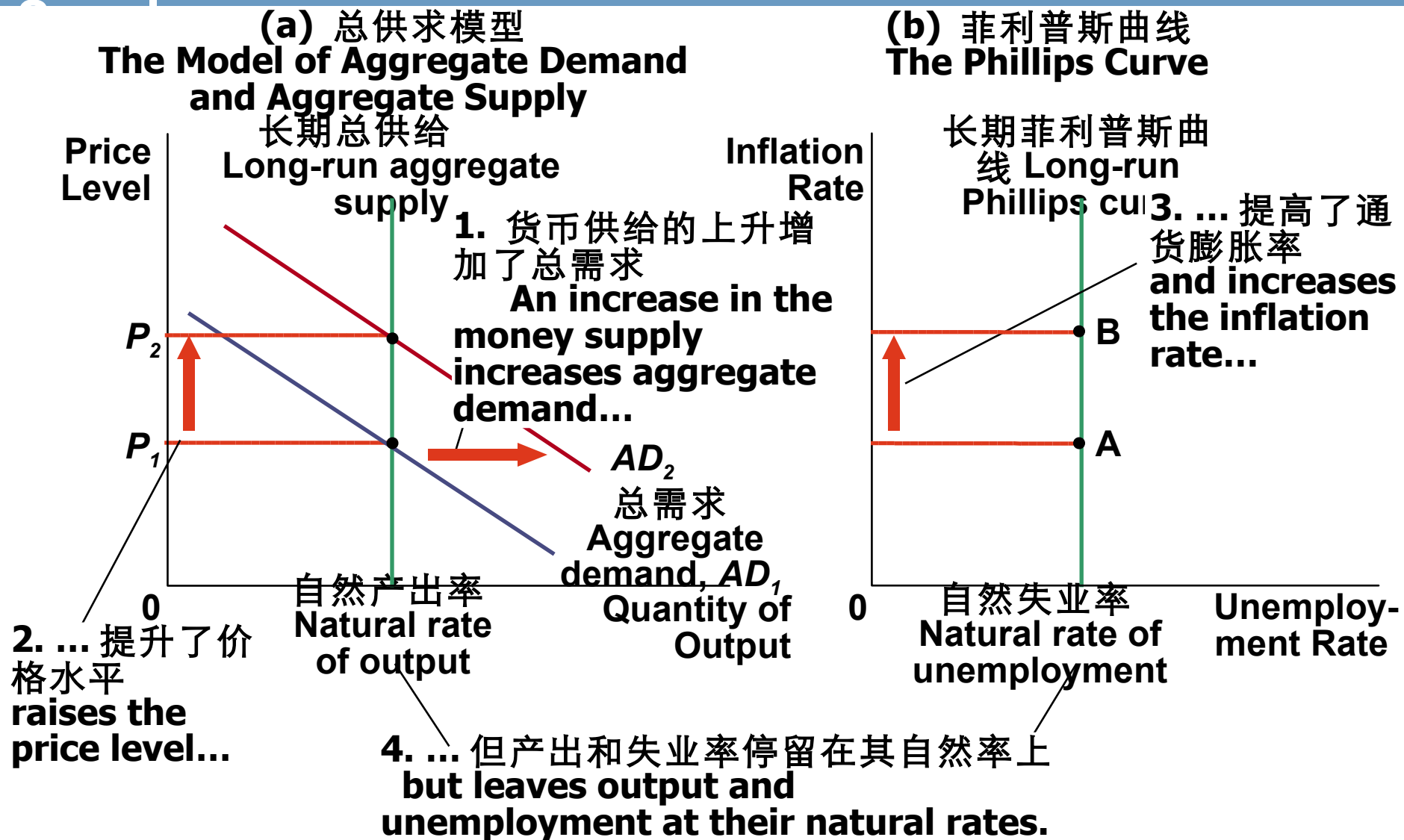
# 长期菲利普斯曲线

## The Long-Run Phillips Curve...



# 菲利普斯曲线是如何与总供求模型相联系的

## How the Phillips Curve is Related to the Model of Aggregate Demand and Aggregate Supply



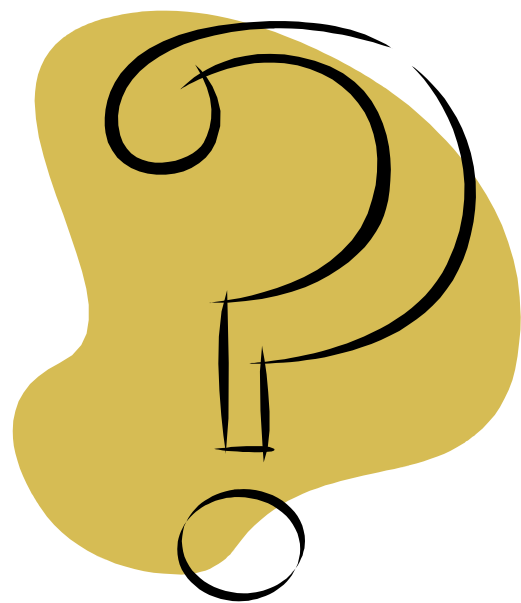


# 预期与短期菲利普斯曲线 Expectations and the Short-Run Phillips Curve

• 问题：古典宏观经济理论预言（长期）垂直菲利普斯曲线，而证据显示（短期内）失业与通胀之间存在权衡取舍，如何协调？

Question:

How can classical macroeconomic theories predicting a vertical long run Phillips curve be reconciled with the evidence that, in the short run, there is a tradeoff between unemployment and inflation?







# 预期与短期菲利普斯曲线

## Expectations and the Short-Run Phillips Curve

- **预期通货膨胀率**衡量了人们预计整体价格水平将变化多少。

**Expected inflation** measures how much people expect the overall price level to change.

- 预期通货膨胀率的引入使得短期与长期菲利普斯曲线可以协调。

The introduction of expected inflation reconciles the long-run Philips curve with the short-run Philips curve.



# 预期与短期菲利普斯曲线

## Expectations and the Short-Run Phillips Curve

$$\text{失业率} = \text{自然失业率} - a(\text{实际通胀率} - \text{预期通胀率})$$

Unemployment Rate = Natural rate of unemployment - a (Actual inflation - Expected inflation)

$$u = u_n - a(\pi - \pi^e)$$

这一等式将失业率与自然失业率、实际通胀率与预期通胀率联系在一起

This equation relates the unemployment rate to the natural rate of unemployment, actual inflation, and expected inflation.

# 预期与短期菲利普斯曲线

## Expectations and the Short-Run Phillips Curve

- 在短期中，预期通货膨胀率是既定的，较高的实际通货膨胀与较低的失业相联系。

**In the short run, expected inflation is given, so higher actual inflation is associated with lower unemployment.**

- 在长期中，预期通货膨胀率与实际通货膨胀的变动相一致，失业率等于其自然率。

**In the long run, expected inflation adjusts to changes in actual inflation, so unemployment is at its natural rate.**

# 预期与短期菲利普斯曲线

## Expectations and the Short-Run Phillips Curve

- 政策制定者面对的仅是暂时的通货膨胀与失业的权衡取舍。

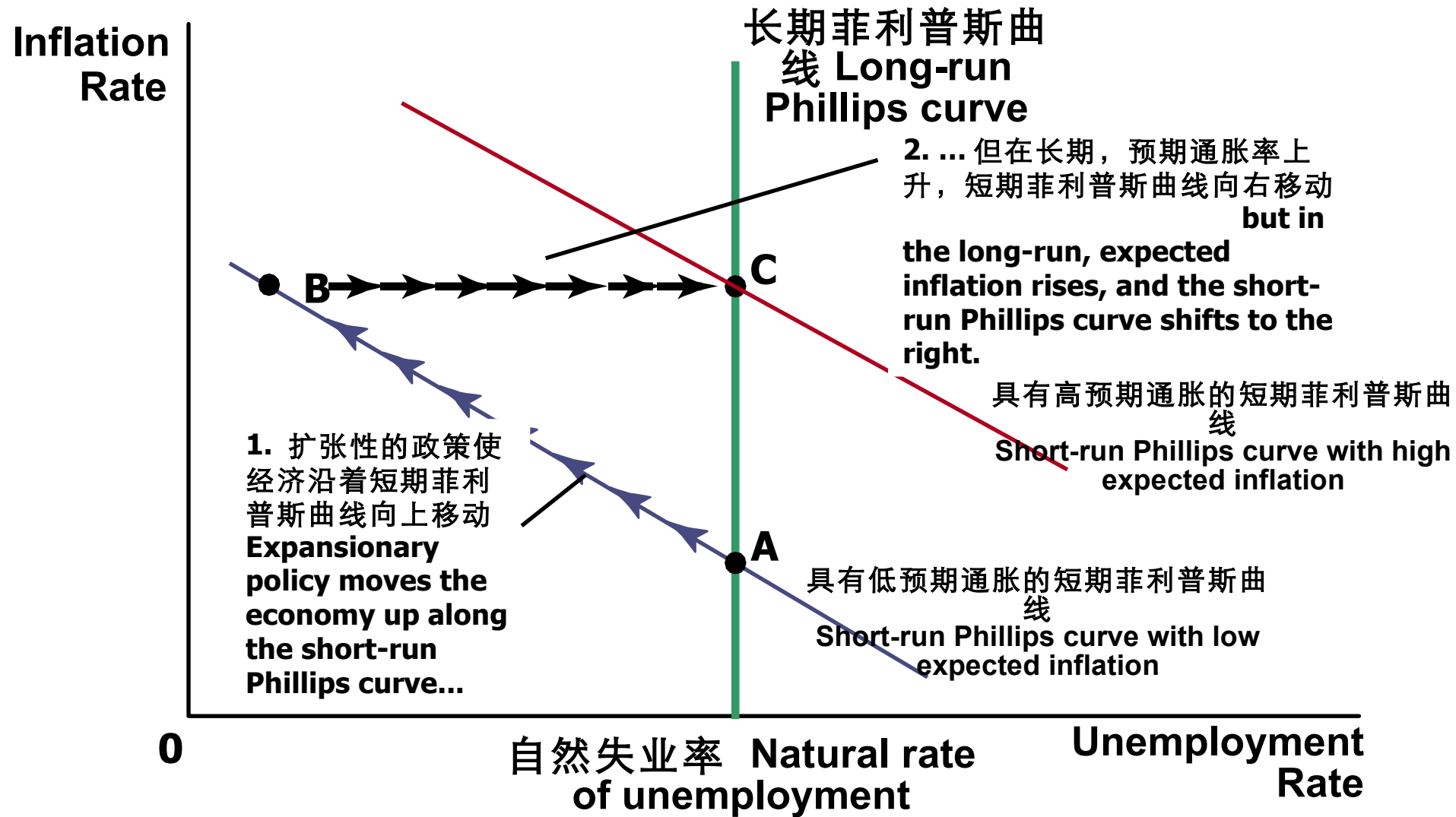
**Policy makers face only a temporary trade-off between inflation and unemployment.**

- 在长期，总需求更为迅速的扩张将导致更高的通货膨胀，而不能减少失业。

**In the long run, expanding aggregate demand more rapidly will yield higher inflation without reduction in unemployment.**

# 扩张性政策如何移动经济……

## How Expansionary Policy Moves the Economy...





# 自然率假说

## The Natural-Rate Hypothesis

- 无论通胀率如何，失业最终会回到其自然率上，这一观点被称为**自然率假说**。

The view that unemployment eventually returns to its natural rate, regardless of the rate of inflation, is called the **natural-rate hypothesis**.

- （后来的）历史观察支持了自然率假说。

Historical observations support the natural-rate hypothesis.



# 自然率假说的自然实验

## The Natural Experiment for the Natural Rate Hypothesis

- 稳定的菲利普斯曲线的概念在七十年代早期破产了。

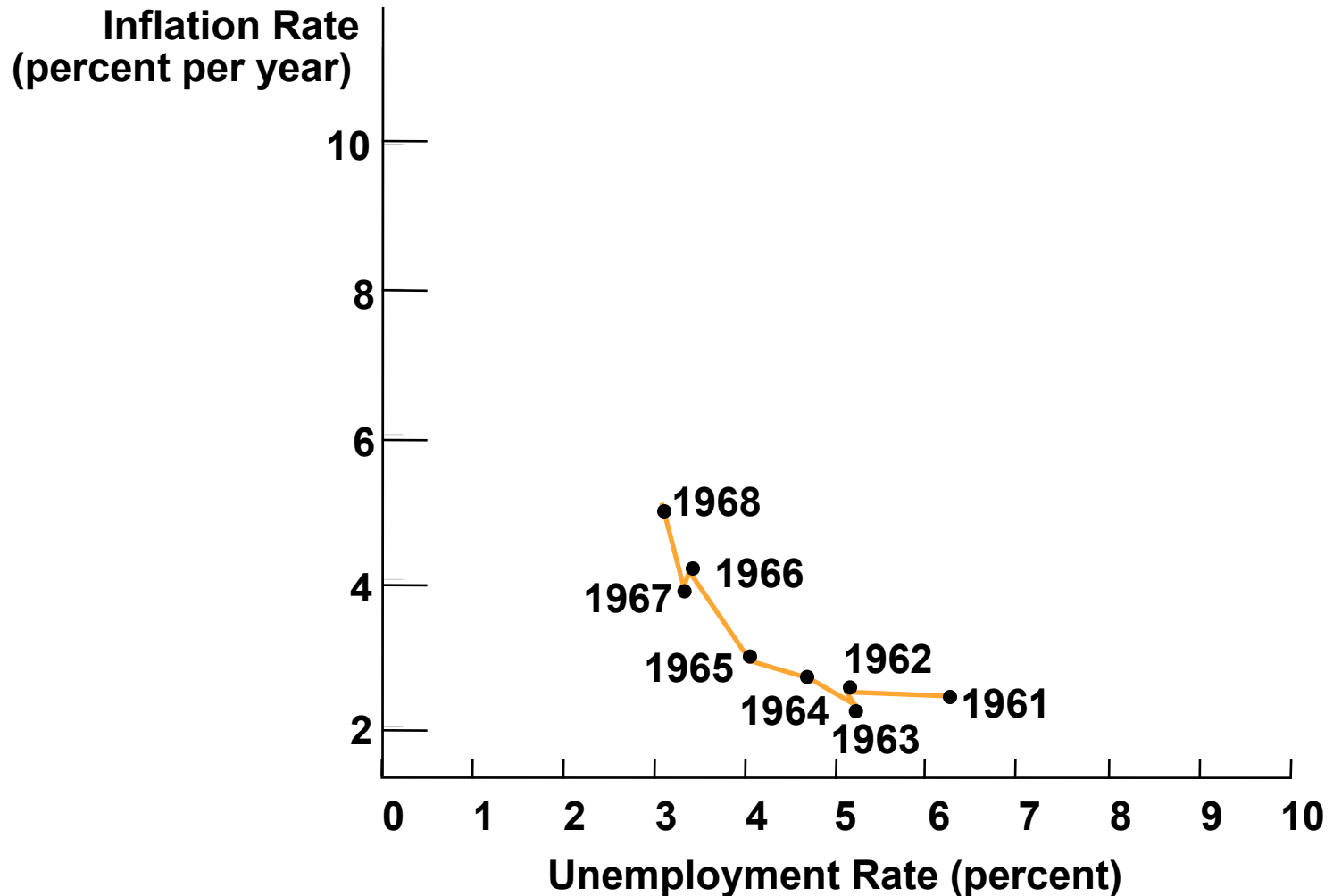
**The concept of a stable Phillips curve broke down in the early '70s.**

- 在七十和八十年代内，经济同时经历了高通胀与高失业。

**During the '70s and '80s, the economy experienced high inflation and high unemployment simultaneously.**

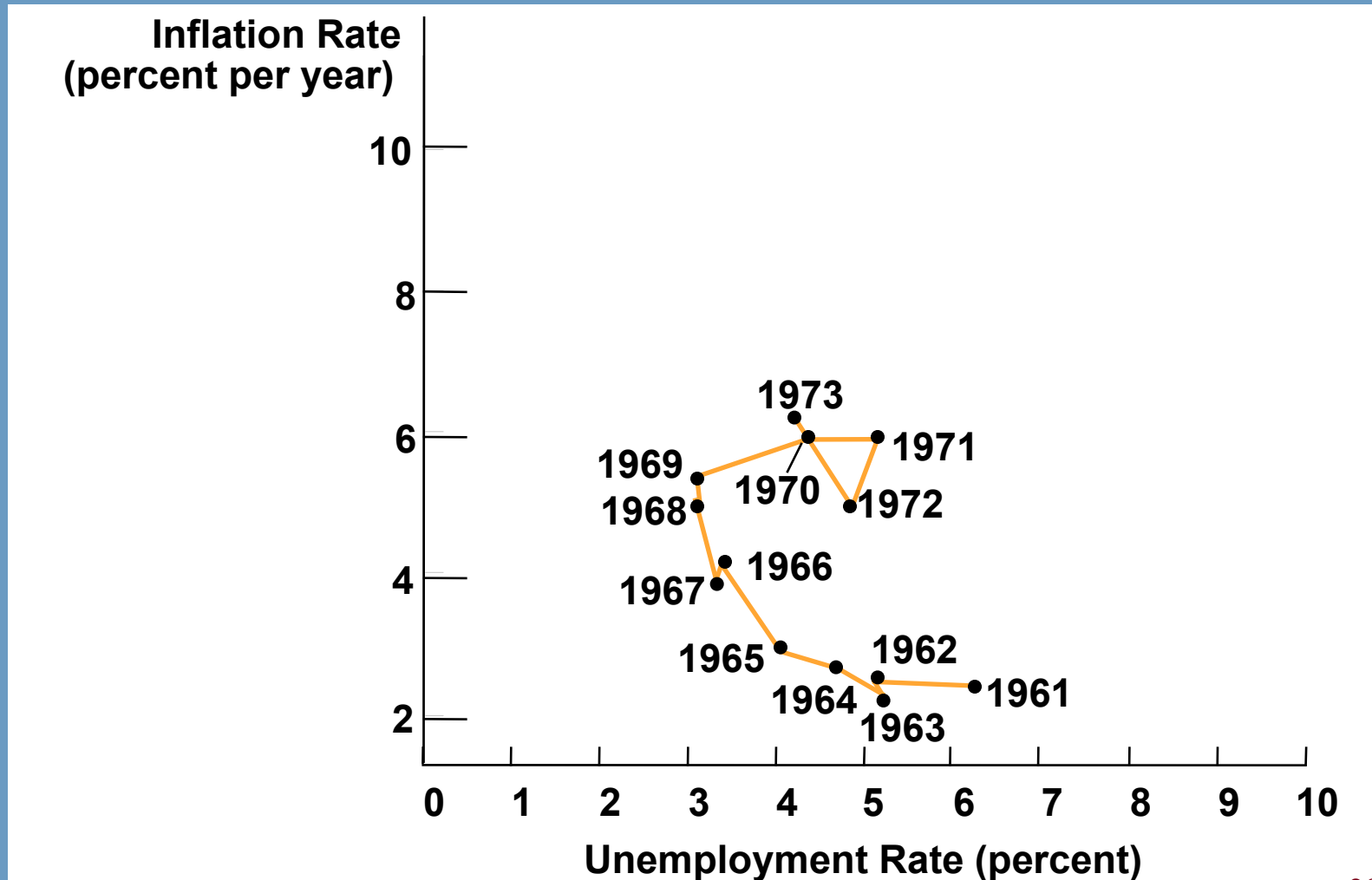
# 二十世纪六十年代的菲利普斯曲线

## The Phillips Curve in the 1960s...



# 菲利普斯曲线的破产

## The Breakdown of the Phillips Curve...





# **菲利普斯曲线的移动：供给冲击的作用**

## **Shifts in the Phillips Curve: The Role of Supply Shocks**

- **历史事件表明，短期菲利普斯曲线会因为预期的改变而移动。**

**Historical events have shown that the short-run Phillips curve can shift due to changes in expectations.**

- **短期菲利普斯曲线也会因为对总供给的冲击而移动。**

**The short-run Phillips curve also shifts because of shocks to aggregate supply.**



# 菲利普斯曲线的移动：供给冲击的作用

## Shifts in the Phillips Curve: The Role of Supply Shocks

- 总供给的重大不利变动会恶化失业与通胀的短期权衡。

Major adverse changes in aggregate supply can worsen the short-run tradeoff between unemployment and inflation.

- 不利的供给冲击带给政策制定者更为不利的通胀与失业的权衡。

An adverse supply shock gives policymakers a less favorable tradeoff between



# 菲利普斯曲线的移动：供给冲击的作用

## Shifts in the Phillips Curve: The Role of Supply Shocks

- **供给冲击**是直接影响企业的生产成本因而影响其价格制定的事件。

A **supply shock** is an event that directly affects firms' costs of production and thus the prices they charge.

- 它会移动经济的总供给曲线

It shifts the economy's aggregate supply curve...

- ... 并最终移动其菲利普斯曲线

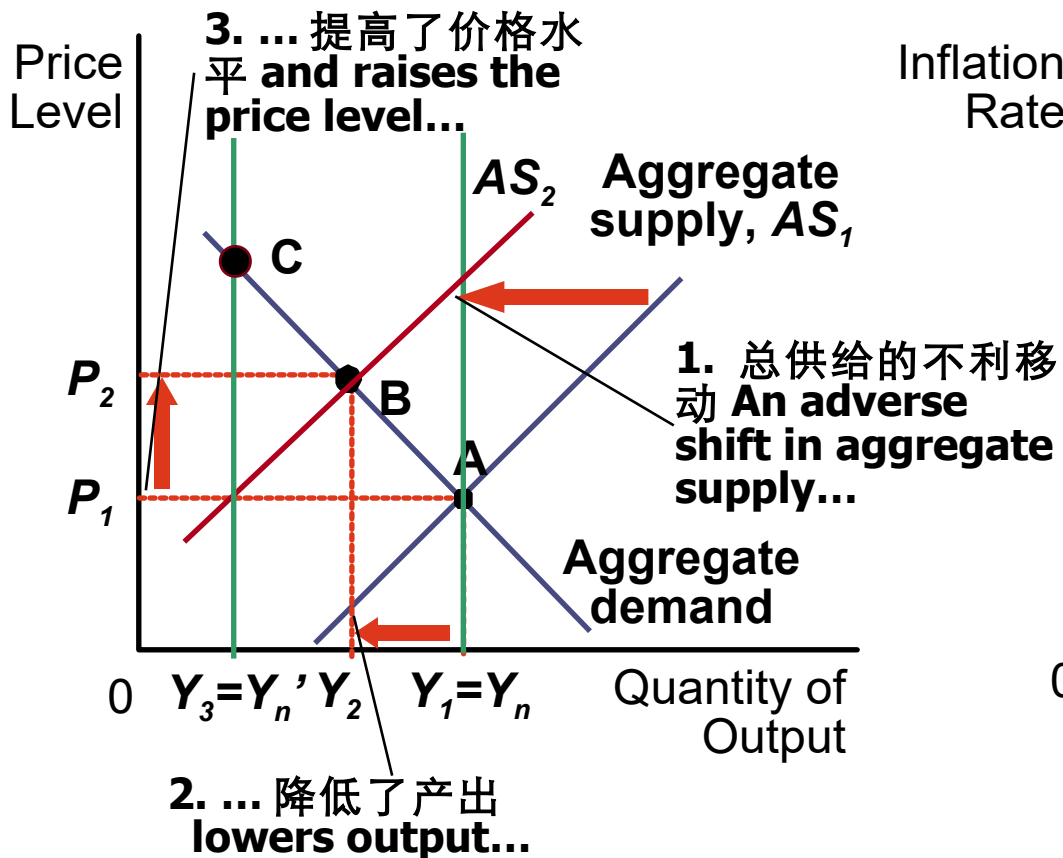
and as a result, the Phillips curve.



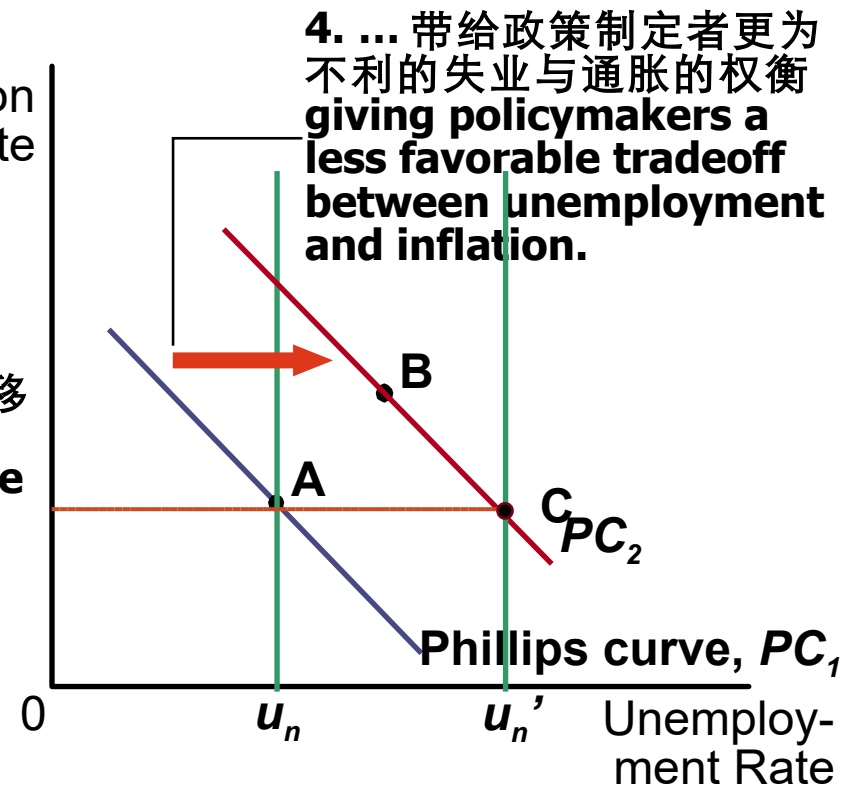
# 对总供给的不利冲击

## An Adverse Shock to Aggregate Supply

**(a) The Model of Aggregate Demand and Aggregate Supply**

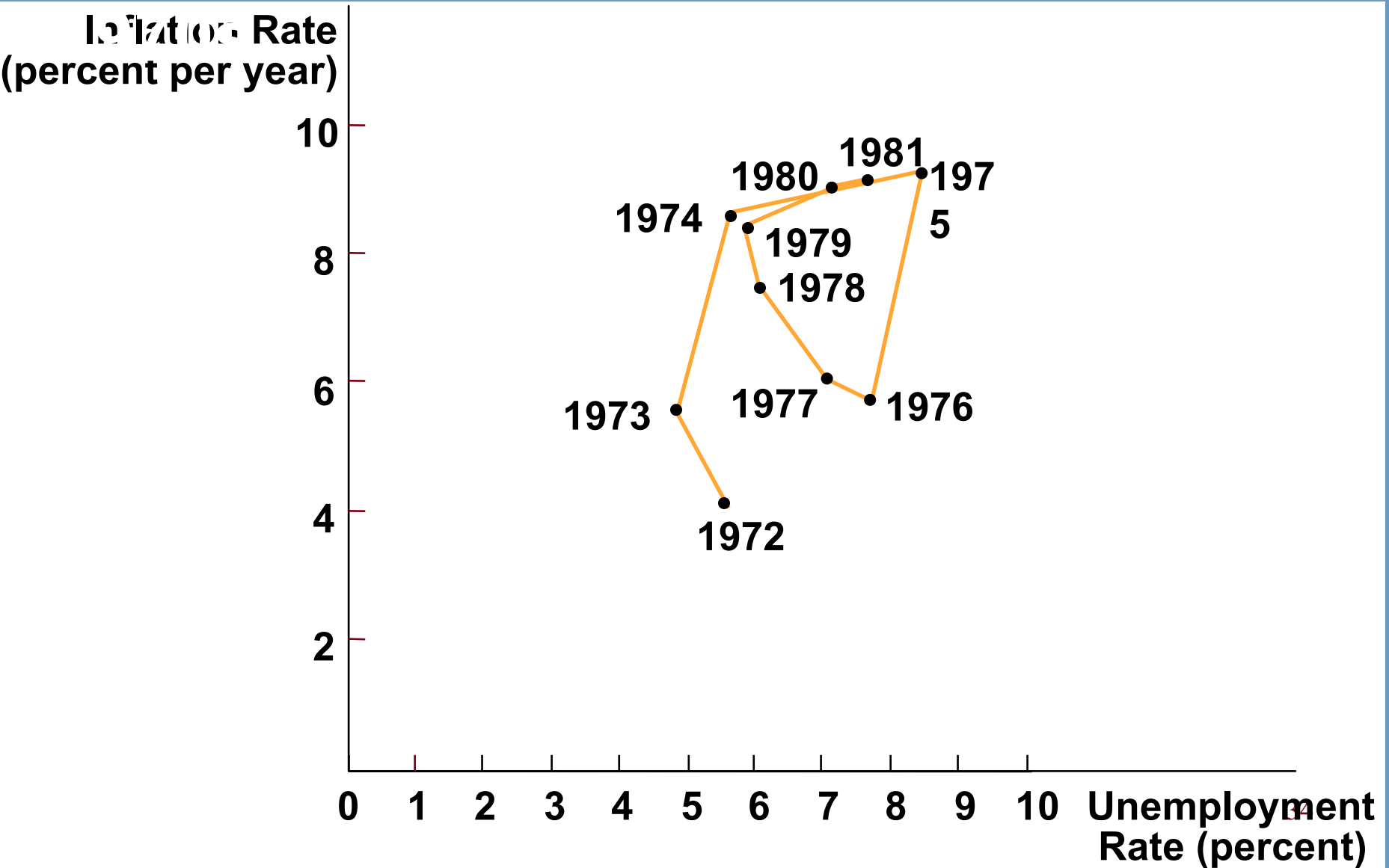


**(b) The Phillips Curve**



# 二十世纪七十年代的供给冲击

## The Supply Shocks of the



# 菲利普斯曲线的移动：供给冲击的作用

## Shifts in the Phillips Curve: The Role of Supply Shocks

- 在二十世纪七十年代，当欧佩克削减石油产出提高其价格时，政策制定者面对两个选择。  
In the 1970s, policymakers faced two choices when OPEC cut output and raised worldwide prices of petroleum.
  - 通过扩张总需求、加速通胀来打一场失业攻坚战。  
Fight the unemployment battle by expanding aggregate demand and accelerate inflation.
  - 通过紧缩总需求和承受甚至更高的失业率来对付通胀  
Fight inflation by contracting aggregate demand and endure even higher unemployment.

# 降低通货膨胀的代价

## The Cost of Reducing Inflation

- 为了降低通胀，美联储不得不推行**紧缩性**的货币政策。

To reduce inflation, the Fed has to pursue **contractionary** monetary policy.

- 当美联储减慢货币增长率时，它就紧缩了总需求。

When the Fed slows the rate of money growth, it contracts aggregate demand.

- 这就减少了企业生产的物品与服务的数量。

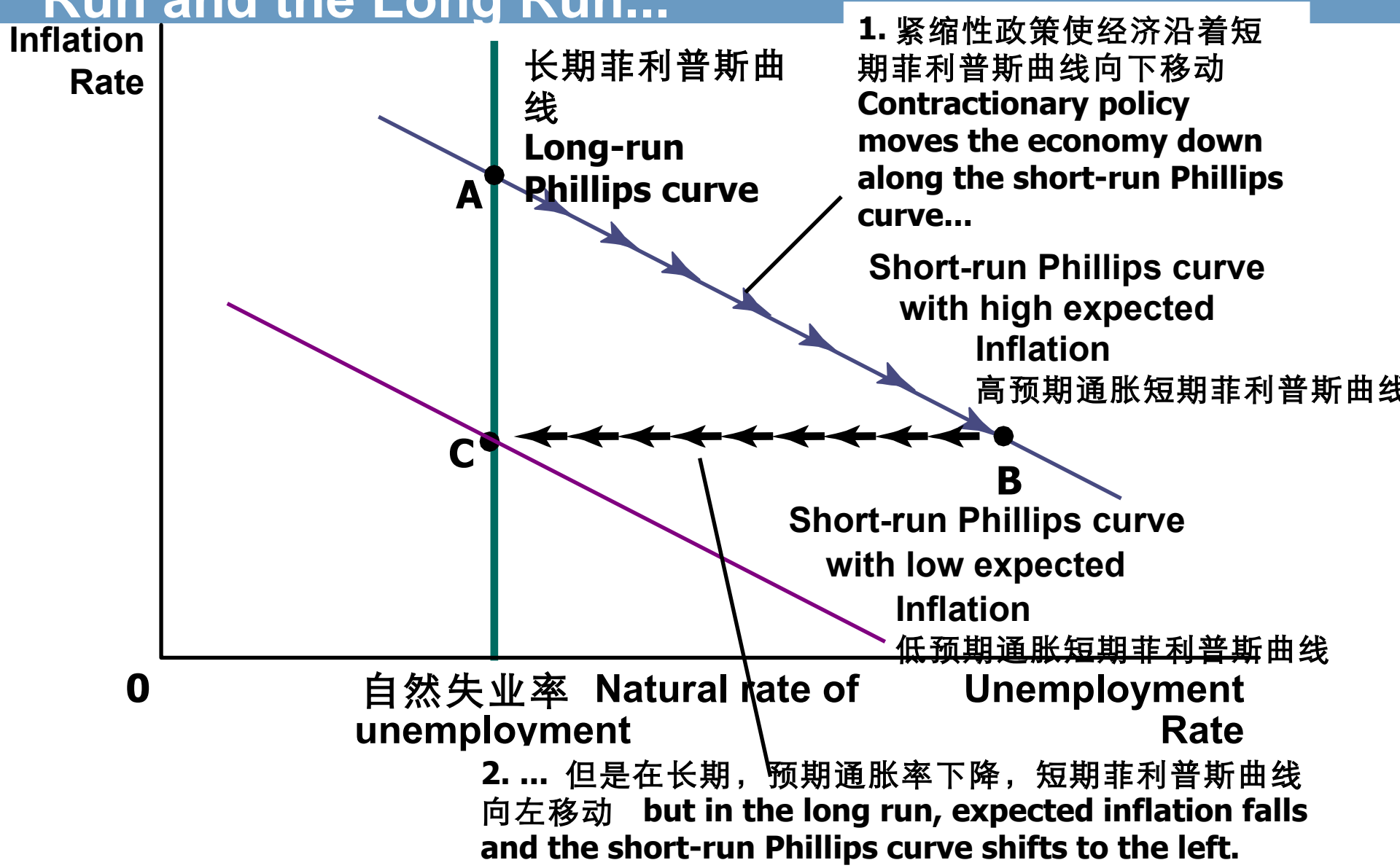
This reduces the quantity of goods and services that firms produce.

- 这就导致了失业的上升。

This leads to a rise in unemployment.

# 短期和长期中的反通胀货币政策

## Disinflationary Monetary Policy in the Short Run and the Long Run...



# 降低通货膨胀的代价

## The Cost of Reducing Inflation

- 为了降低通胀，经济必须经受一段时间的高失业与低产出。

**To reduce inflation, an economy must endure a period of high unemployment and low output.**

- 当美联储抗击通胀时，经济沿短期菲利普斯曲线向下移动。

**When the Fed combats inflation, the economy moves down the short-run Phillips curve.**

- 经济经历了更低的通胀，但付出的代价则是更高的失业。

**The economy experiences**

# 降低通货膨胀的代价

## The Cost of Reducing Inflation

- **牺牲率**是在降低通胀的过程中，每降低一个百分点的通胀率，所损失的年度产出的百分比数字。 The **sacrifice ratio** is the number of percentage points of annual output that is lost in the process of reducing inflation by one percentage point.
  - 牺牲率的一个估计数字是 5  
An estimate of the sacrifice ratio is five.
  - 为了将通胀率从 1979-81 年间的 10 % 降到 4 %，就要求牺牲年度产出的大约 30 %。  
To reduce inflation from about 10% in 1979-1981 to 4% would have required an estimated sacrifice of 30% of annual output!

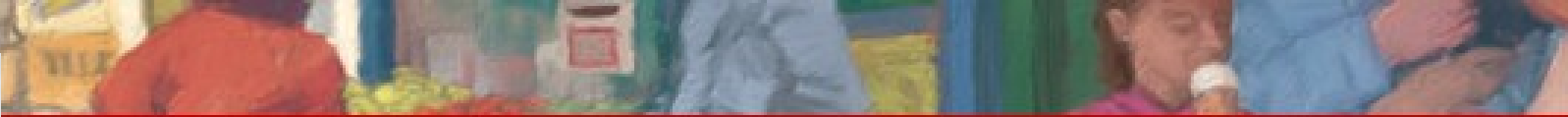
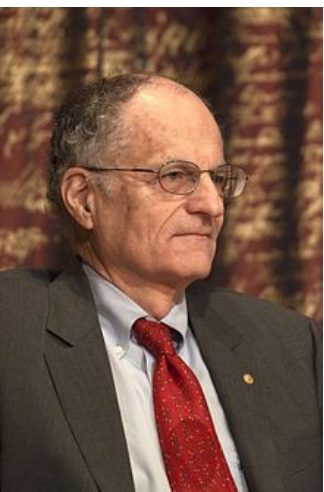


# 理性预期

## Rational Expectations

- 预期通胀是解释为什么通胀与失业之间存在短期的权衡却不存在长期的权衡的一个重要变量。  
Expected inflation is an important variable that explains why there is a tradeoff between inflation and unemployment in the short run but not in the long run.
- 短期权衡的消失有多快，依赖于预期调整有多快  
How quickly the short-run tradeoff disappears depends on how quickly expectations adjust.





# 理性预期

## Rational Expectations

**理性预期**理论认为，人们在预测未来时，会最佳地利用他们拥有的所有信息，包括对政府政策的信息。

The theory of **rational expectations** suggests that people optimally use all the information they have, including information about government policies, when forecasting the future.

提出者：罗伯特·卢卡斯（Robert Lucas）、托马斯·萨金特（Thomas <sup>41</sup>



# 理性预期

## Rational Expectations

- 理性预期理论认为……

The theory of rational expectations suggests that

- 企业和工人可以预期**未来**的通货膨胀率。

Firms and workers have come to expect rates of inflation **in the future**.

- 当经济政策改变时，人们会相应地调整对通胀率的预期。

When economic policies change, people adjust their expectations of inflation accordingly.

- 结果是，牺牲率可以比估计的小很多。

As a result, the sacrifice-ratio could be much smaller than estimated.

- 如果政府做出了降低通胀的**可信**承诺，人们的理性就足以立即降低通胀预期。

If the government made a **credible** commitment to a policy of low inflation, people would be rational enough to lower their expectations of inflation immediately.

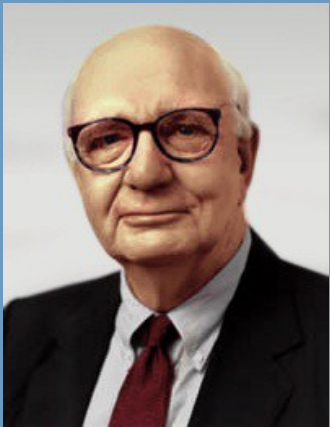
# 沃克的反通货膨胀

## The Volcker Disinflation

- 当保罗·沃克尔在二十世纪七十年代担任美联储主席的时候，人们普遍认为，通胀是这个国家首要的问题之一。

When Paul Volcker was Fed chairman in the 1970s, inflation was widely viewed as one of the nation's foremost problems.

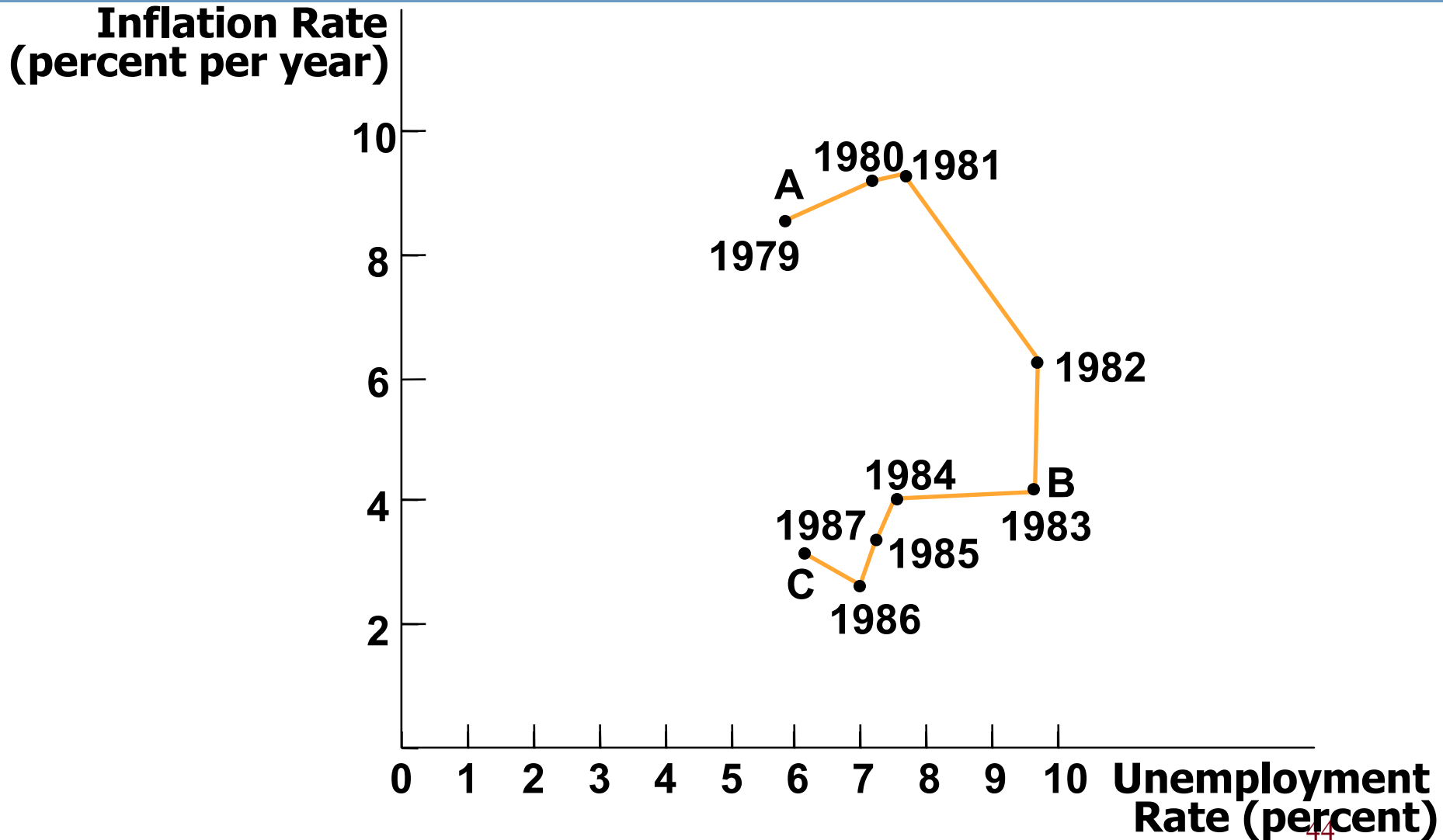
- 沃克尔在降低通胀方面是成功的（从 10 % 降到了 4 %），但是付出了高失业的代价（在 1983 年为 10 %）。



Volcker succeeded in reducing inflation (from 10% to 4%), but at the

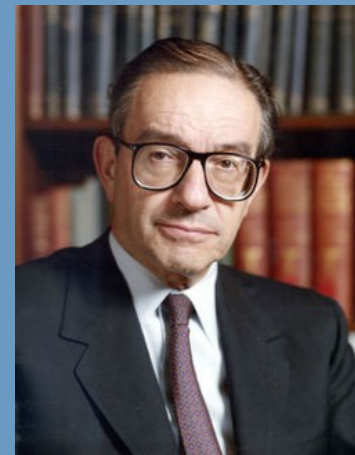
# 沃克的反通货膨胀

## The Volcker Disinflation...



# 格林斯潘时代

## The Greenspan Era



- 艾伦·格林斯潘甫任美联储主席，即获有利供给冲击。

**Alan Greenspan's term as Fed chairman began with a favorable supply shock.**

- 在 1986 年，欧佩克成员放弃了他们的限产协定。  
In 1986, OPEC members abandoned their agreement to restrict supply.

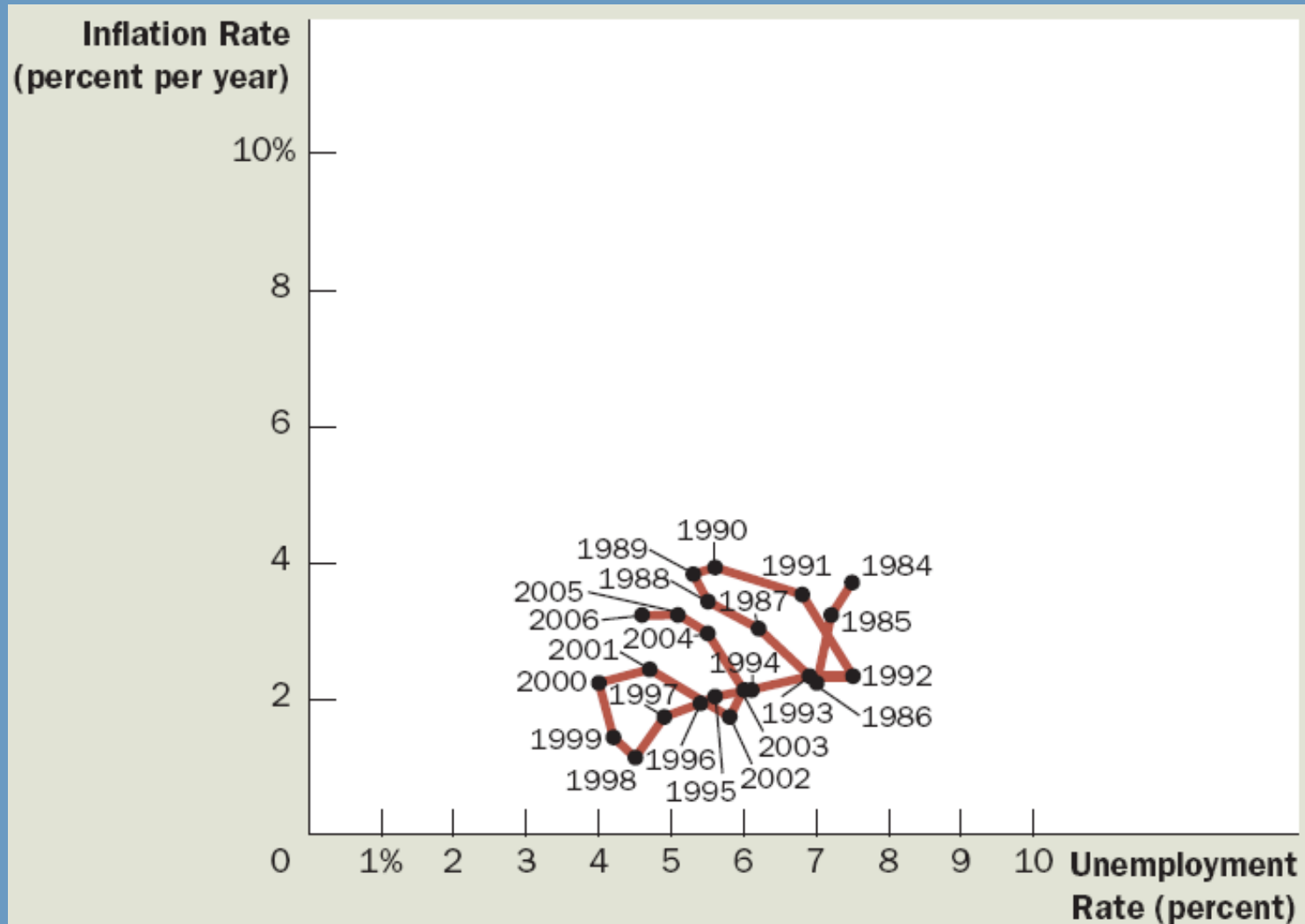
- 这导致通胀下降，失业也下降。  
This led to falling inflation and falling unemployment.

- 近年通胀与失业相对小的波动则应归功于美联储的行动。

**Fluctuations in inflation and unemployment in recent years have been relatively**

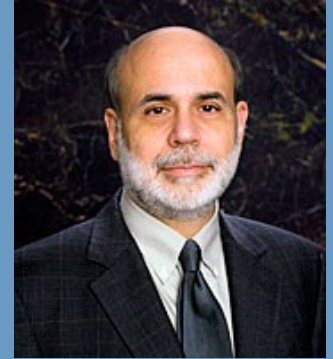
# 格林斯潘时代

## The Greenspan Era...



# 伯南克的挑战

## Bernanke's Challenges



- 当本·伯南克继任时，住房市场由盛转衰，这有可能引发普遍的金融危机。

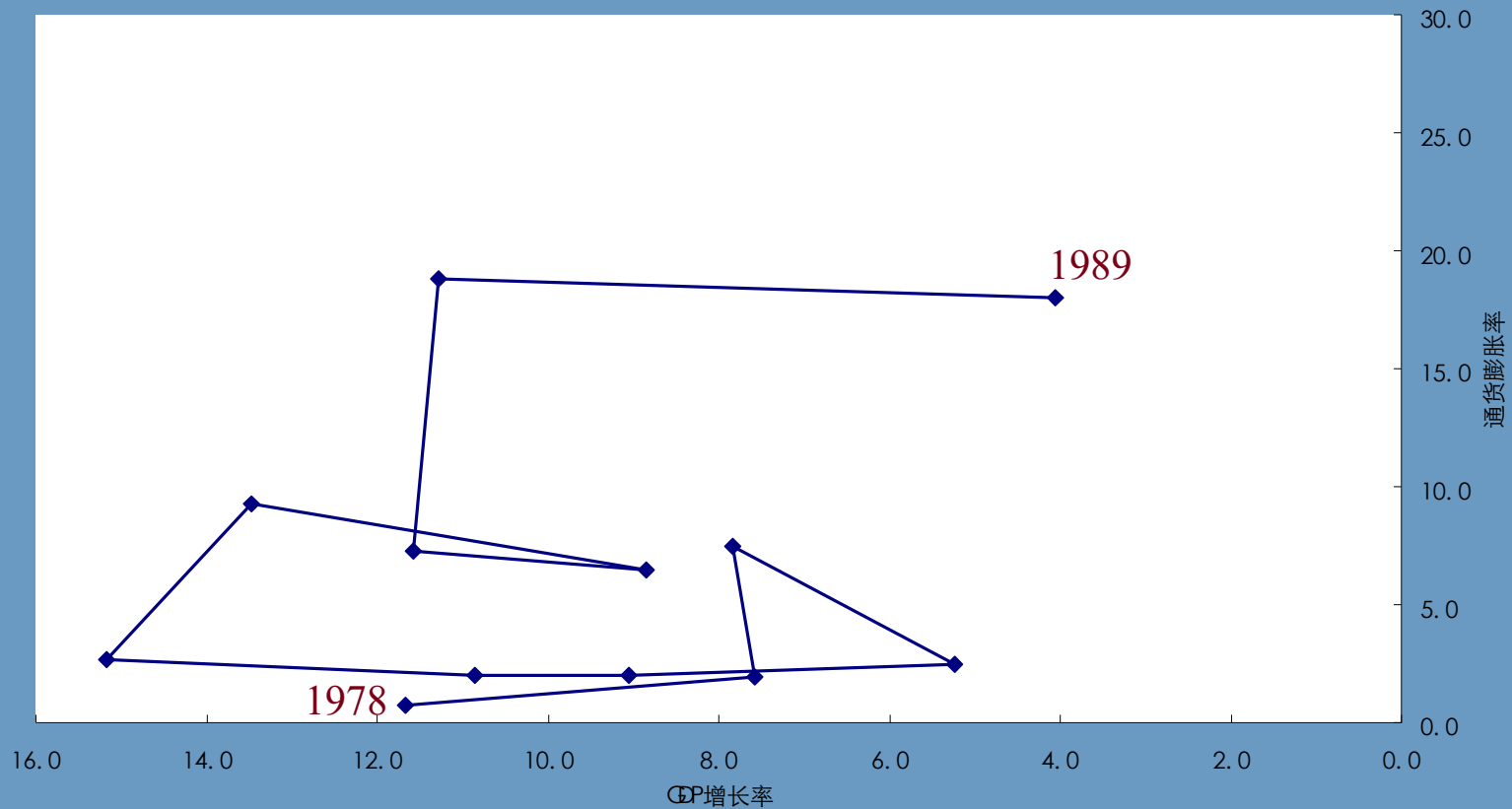
**As Ben Bernanke took office, the housing market was turning from boom to bust, which might start a more widespread financial crisis.**

- 美联储还面临另一问题：上涨的世界大宗商品价格。  
**The Fed also face another problem: rising commodity prices around the world.**

- 伯南克必须在失业与通胀上升的双重风险下前行。  
**Bernanke had to navigate between the risk of rising unemployment and the risk of rising inflation.**

# Phillips Curve in China

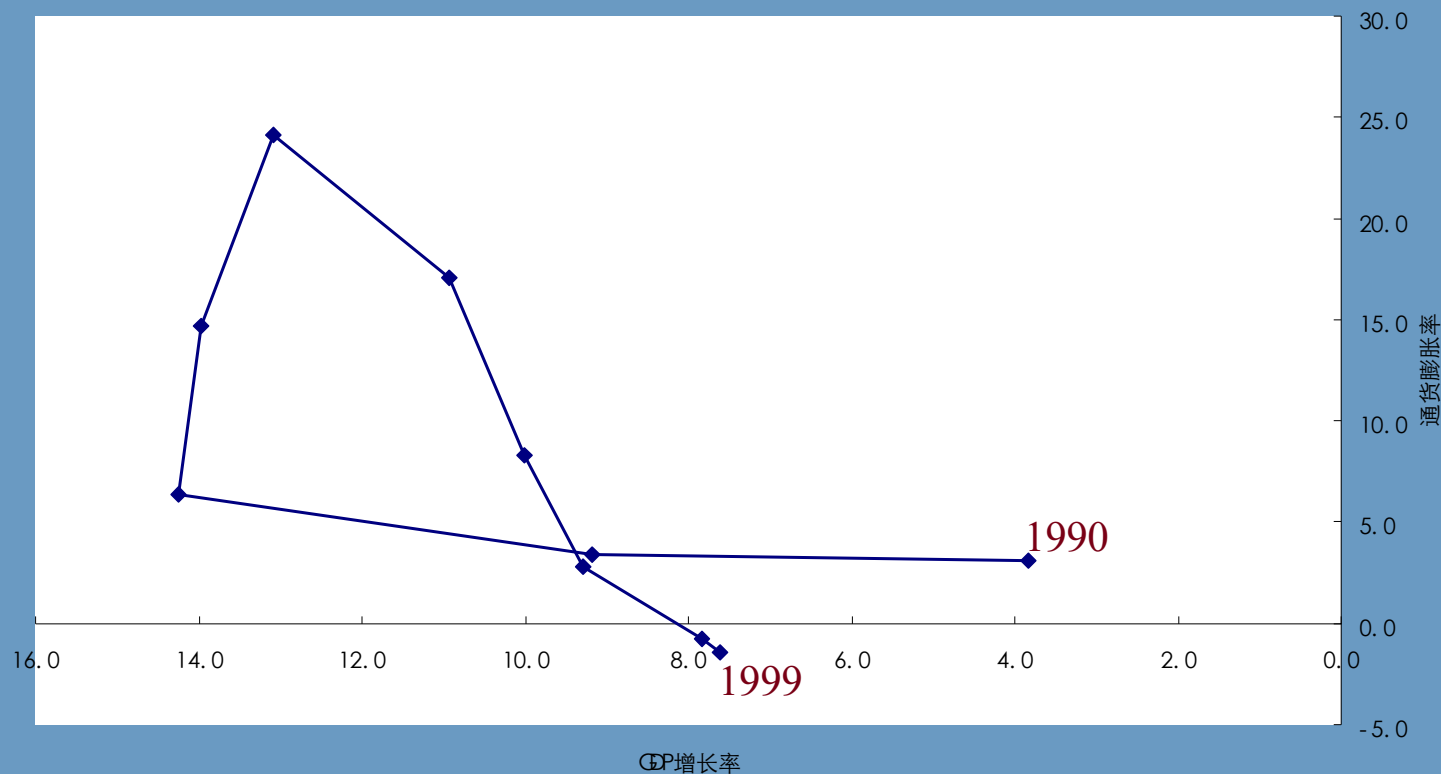
## 中国的菲利普斯曲线（80年代）





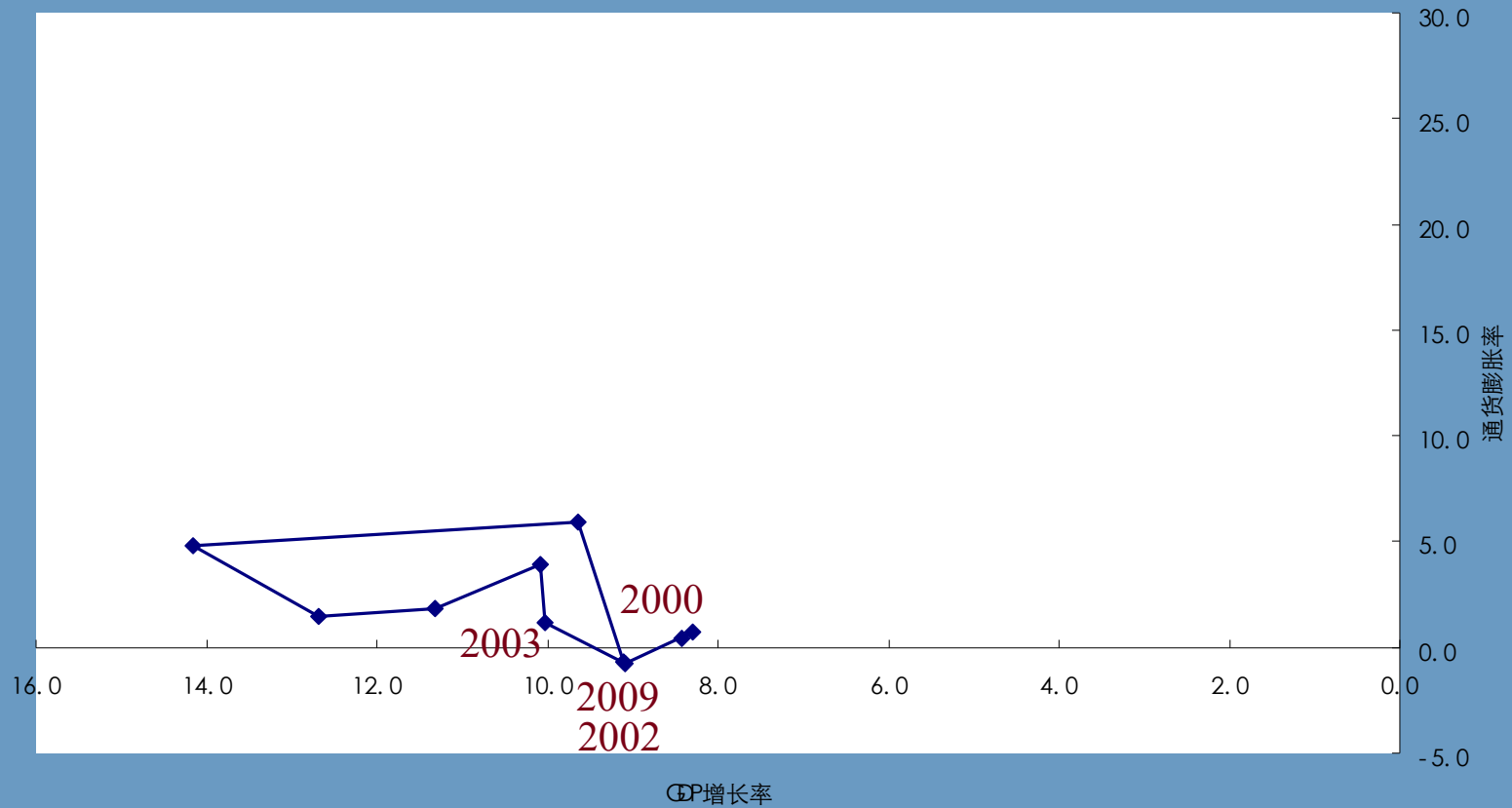
# Phillips Curve in China

## 中国的菲利普斯曲线（90年代）



# Phillips Curve in China

## 中国的菲利普斯曲线（近 10 年）





# 总结

## Summary

- 菲利普斯曲线描述通货膨胀与失业之间的负向关系

**The Phillips curve describes a negative relationship between inflation and unemployment.**

- 通过扩张总需求，政策制定者能够选择菲利普斯曲线上通胀更高但失业更低的一点。

**By expanding aggregate demand, policymakers can choose a point on the Phillips curve with higher inflation and lower unemployment.**

- 通过紧缩总需求，政策制定者能够选择菲利普斯曲线上通胀更低但失业更高的一点。

**By contracting aggregate demand, policymakers can choose a point on the Phillips curve**<sup>51</sup>



# 总结

## Summary

- 菲利普斯曲线描述的通货膨胀与失业的权衡关系只在短期内成立。

**The tradeoff between inflation and unemployment described by the Phillips curve holds only in the short run.**

- 长期菲利普斯曲线垂直于自然失业率处。

**The long-run Phillips curve is vertical at the natural rate of unemployment.**



# 总结

## Summary

- 短期菲利普斯曲线也会因为对总供给的冲击而移动。

**The short-run Phillips curve also shifts because of shocks to aggregate supply.**

- 一个不利的供给冲击带给政策制定者一个更为不利的通胀与失业的权衡。

**An adverse supply shock gives policymakers a less favorable tradeoff between inflation and unemployment.**



# 总结

## Summary

- 当美联储抑制货币供给的增长以降低通胀时，它使经济沿着短期菲利普斯曲线移动。  
When the Fed contracts growth in the money supply to reduce inflation, it moves the economy along the short-run Phillips curve.
- 这导致短期的高失业。  
This results in temporarily high unemployment.
- 反通货膨胀的代价依赖于通胀预期下降有多快  
The cost of disinflation depends on how quickly expectations of inflation fall.