

Chapter 35: The Short-run Tradeoff Between Inflation and Unemployment Principles of Economics, 6th Edition

N. Gregory Mankiw

Page 1

1. Introduction
 - a. Two closely watched indicators of economic performance are inflation and unemployment.
 - b. In the long run, inflation and unemployment are largely unrelated problems
 - c. In the short run, just the opposite is true.
 - d. *This is an interesting case of the development of ideas.*
 - e. *At one time, people were told and wanted to believe that deficits cause inflation which in turn reduces unemployment.*
 - i. *The economic equivalent of a free lunch.*
 - ii. *Unfortunately, it was not true.*
2. The Phillips Curve
 - a. Origins of the Phillips curve, which is a curve that shows the short run tradeoff between inflation and unemployment. P. 786
 - i. A. W. Phillips' 1958 article covered data from 1861-1957.
 - (1) *He demonstrated a relationship between nominal wage changes and unemployment.*
 - (2) *Mankiw states that nominal wage changes and inflation are the same thing, but that is not true as wages can increase without inflation when labor productivity is increasing.*
 - (3) *The results observed by Phillips was due to the much of the period one of the gold standard, so people expected stable prices.*
 - (a) *Any deviations from those prices were unanticipated and, therefore, caused changes in output and employment.*
 - ii. Samuelson and Solow's 1960 article.
 - (1) There was no theoretical basis for why an increase in the average level of prices should have any effect on a market that normally would only change due to a relative price change.
 - (a) Microeconomic theory would anticipate that unemployment would go up if the relative price of labor rose.
 - iii. **Figure 1: The Phillips Curve. P. 787**
 - b. Aggregate Demand, Aggregate Supply and the Phillips Curve
 - i. The Phillips curve simply shows the combination of inflation and unemployment that arise in the short run as shifts in the AD curve move the economy along the SRAS curve.
 - (1) **Figure 2: How the Phillips Curve Is Related to the Model of Aggregate Demand and Aggregate Supply. P. 788**

Chapter 35: The Short-run Tradeoff Between Inflation and Unemployment
Principles of Economics, 6th Edition

N. Gregory Mankiw

Page 2

3. Shifts in the Phillips Curve: The Role of Expectations
 - a. The Long Run Phillips Curve
 - i. Friedman and Phelps' 1968 response.
 - (1) They argued that the monetary authority can control nominal, but not real, variables.
 - (a) Therefore, the real output level is independent of the price level and the LRAS is vertical.
 - (b) There is a natural rate of unemployment that is not "natural."
 - (2) *They assumed a very intellectually courageous position because the data continued to support the Phillips curve.*
 - (3) *However, they argued that Phillips curve as presented was irrational and, therefore, not consistent with economic theory.*
 - (4) *They argued that unemployment tends toward its normal level that they called the natural rate of unemployment.*
 - (a) *It is not a fixed number that is influenced by the costs and benefits of unemployment such as unemployment compensation.*
 - ii. **Figure 3: The Long Run Phillips Curve. P. 790**
 - iii. **Figure 4: How the Long Run Phillips Curve Is Related to the Model of Aggregate Demand and Aggregate Supply. P. 791**
 - iv. In the long run, the Phillips Curve is vertical.
 - v. Just as the AS curve slopes upward only in the short run, the tradeoff between inflation and unemployment holds only in the short run.
 - vi. Just as the LRAS curve is vertical, the LR Phillips Curve is also vertical.
 - b. Reconciling Theory and Evidence
 - i. Friedman and Phelps introduced a new variable into the analysis: expected inflation.
 - ii. The Fed's ability to create unexpected inflation by increasing the money supply exists only in the short run.
 - iii. *The Phillips, Samuelson and Solow results follow from the periods that they observe being ones during which people expected stable prices and any deviation was unexpected.*
 - c. The Short Run Phillips Curve
 - i. $U/L = (U/L)^n - \alpha (\text{inflation}^{\text{actual}} - \text{inflation}^{\text{expected}})$
 - (1) *Therefore, the unemployment rate (U/L) only decreases when the actual inflation rate is greater than the expected rate.*
 - (2) In the short run, expected inflation is given.

Chapter 35: The Short-run Tradeoff Between Inflation and Unemployment
Principles of Economics, 6th Edition

N. Gregory Mankiw

Page 3

- ii. **Figure 5: How Expected Inflation Shifts the Short Run Phillips Curve. P. 794**
 - iii. Friedman and Phelps concluded that policymakers do face a tradeoff between inflation and unemployment, but only a temporary one.
 - iv. If policymakers use this tradeoff, they lose it.
 - d. The Natural Experiment for the Natural Rate Hypothesis
 - i. Def: Natural rate hypothesis is the claim that unemployment eventually returns to its normal, or natural, rate, regardless of the rate of inflation. P. 794
 - ii. *It is interesting to see how people can misinterpret data.*
 - (1) **Figure 6: The Phillips Curve in the 1960s. P. 795**
 - (2) **Figure 7: The Breakdown of the Phillips Curve. P. 796**
4. Shifts in the Phillips Curve: The Role of Supply Shocks
- a. *Only the government has the power to cause major disturbances in the economy.*
 - b. *Even recent dramatic increases in energy prices and declines in housing prices have had only a limited effect on the economy.*
 - c. Def: A supply shock is an event that directly alters firms' costs and prices, shifting the economy's AS curve and thus the Phillips Curve. P. 796
 - d. **Figure 8: An Adverse Shock to Aggregate Supply. P. 797**
 - e. In the 1970s, the Fed accommodated the supply shock with higher money growth, the increased expected inflation.
 - f. **Figure 9: The Supply Shocks of the 1970s. P. 798**
5. The Cost of Reducing Inflation
- a. The Sacrifice Ratio
 - i. **Figure 10: Disinflationary Monetary Policy in the Short Run and Long Run. P. 799**
 - ii. Def: Sacrifice ratio is the number of percentage points of annual output lost in the process of reducing inflation by 1 percentage point. P. 800
 - b. Rational Expectations and the Possibility of Costless Disinflation
 - i. *Normally, disinflation (or deflation) increases unemployment because workers overestimate inflation and, therefore, they underestimate their real wages, which results in higher unemployment.*
 - ii. *With rational expectations, if workers believed that the government was pursuing a disinflation policy, they would base their decisions on future expectations rather than past data, thereby, estimating*

Chapter 35: The Short-run Tradeoff Between Inflation and Unemployment
Principles of Economics, 6th Edition
N. Gregory Mankiw
Page 4

- real wages more accurately and with effect on unemployment.*
- iii. Def: Rational expectations is the theory according to which people optimally use all the information they have, including information about government policies, when forecasting the future. P. 800
 - iv. How quickly the SR tradeoff disappears depends on how quickly expectations adjust.
- c. The Volcker Disinflation
- i. *Imposed a substantial cost on society in the form of high unemployment because of past lies by the Fed, the public did not believe that the Fed was actually pursuing a disinflation policy.*
 - ii. **Figure 11: The Volcker Disinflation. P. 802**
 - iii. There are two reasons not to reject the conclusions of the rational expectations theorists too quickly.
 - (1) Even though the Volcker disinflation did impose a cost of temporary unemployment, the cost was not as large as many economists had predicted.
 - (2) Even though Volcker announced that he would aim monetary policy to lower inflation, much of the public did not believe him.
- d. The Greenspan Era
- i. Because economists are such bad forecasters, there are some clear lessons.
 - (1) Reasonable growth of the money supply will limit inflation.
 - (2) The Fed needs to be ready to respond to shocks.
 - ii. Bad forecasting is not due to poor theory, but the inability to guess what politicians and the weather will do.
 - iii. **Figure 12: The Greenspan Era. P. 803**
- e. The Phillips Curve during the Financial Crisis
- i. **Figure 13: The Phillips Curve during the Recession of 2008-2009, P. 804**
 - ii. **In the News: Do We Need More Inflation? P. 805**
6. Conclusion
- a. Friedman emphasized that the tradeoff is not between inflation and unemployment, but between unanticipated inflation and unemployment.
7. Summary