Lecture 13: Monetary Policy Theory
Response of Monetary Policy to Shocks

- Monetary policy should try to minimize the difference between inflation and the inflation target.

- In the case of both demand shocks and permanent supply shocks, policy makers can simultaneously pursue price stability and stability in economic activity.

- Following a temporary supply shock, however, policy makers can achieve either price stability or economic activity stability, but not both. This tradeoff poses a dilemma for central banks with dual mandates.
Response to an Aggregate Demand Shock

- Policy makers can respond to this shock in two possible ways:
  - No policy response
  - Policy stabilizes economic activity and inflation in the short run

- In the case of aggregate demand shocks, there is no tradeoff between the pursuit of price stability and economic activity stability
Figure 1 Aggregate Demand Shock: No Policy Response

Step 1. The aggregate demand curve shifts leftward...

Step 2. Decreasing output and inflation until...

Step 3. The economy returns to long-run equilibrium, with inflation permanently decreased.
Figure 2  Aggregate Demand Shock: Policy Stabilizes Output and Inflation in the Short Run

Step 1. The aggregate demand curve shifts leftward...

Step 2. Decreasing output and inflation.

Step 3. Autonomous easing of monetary policy shifts the aggregate demand curve back to $AD_1$ and the economy returns to long-run equilibrium, with inflation stabilized at $\pi^T$. 

LRAS

$AD_1$

$AD_2$

$AS_1$

Inflation Rate, $\pi$

Aggregate Output, $Y$
APPLICATION Quantitative (Credit) Easing to Respond to the Global Financial Crisis

• Sometimes the negative aggregate demand shock is so large that at some point the central bank cannot lower the real interest rate further because the nominal interest rate hits a floor of zero, as occurred after the Lehman Brothers bankruptcy in late 2008

• In this situation when the zero-lower-bound problem arises, the central bank must turn to nonconventional monetary policy
Though the Fed took action, the negative aggregate demand shock to the economy from the global financial crisis was so great that the Fed’s quantitative (credit) easing was insufficient to overcome it, and the Fed was unable to shift the aggregate demand curve all the way back and the economy still suffered a severe recession.
Response to a Permanent Supply Shock

- There are two possible policy responses to a permanent supply shock:
  - No policy response
  - Policy stabilizes inflation
Figure 3  Permanent Supply Shock: No Policy Response

Step 1. A permanent negative supply shock shifts the long-run aggregate supply curve leftward . . .

Step 2. and the short-run aggregate supply curve shifts upward until . . .

Step 3. the economy returns to long-run equilibrium, with output falling and inflation rising.
Figure 4  Permanent Supply Shock: Policy Stabilizes Inflation

Step 1. A permanent negative supply shock shifts the long-run aggregate supply curve leftward.

Step 2. Autonomous monetary policy tightening shifts the aggregate demand curve to $AD_3$ and the economy returns to long-run equilibrium with inflation stabilized at $\pi_T$. 
Response to a Temporary Supply Shock

• When a supply shock is temporary, policymakers face a short-run tradeoff between stabilizing inflation and economic activity.

• Policymakers can respond to the temporary supply shock in three possible ways:
  – No policy response
  – Policy stabilizes inflation in the short run
  – Policy stabilizes economic activity in the short run
Figure 5  Response to a Temporary Aggregate Supply Shock: No Policy Response

Step 1. A temporary negative supply shock shifts the aggregate supply curve upward . . .

Step 2. temporarily increasing inflation and decreasing output.

Step 3. Inflation and economic activity will stabilize in the long run.
Figure 6  Response to a Temporary Aggregate Supply Shock: Short-Run Inflation Stabilization

Step 1. A temporary negative supply shock shifts the aggregate supply curve upward.

Step 2. Autonomous tightening of monetary policy shifts the aggregate demand curve to $AD_3$, leading to a decline in output, but keeping inflation at $\pi^T$.

Step 3. The aggregate supply curve shifts downward . . .

Step 4. Leading policy makers to autonomously ease monetary policy to shift the aggregate demand curve back to $AD_1$, stabilizing inflation and output in the long run.
Figure 7  Response to a Temporary Aggregate Supply Shock: Short-Run Output Stabilization

Step 1. A temporary negative supply shock shifts the aggregate supply curve upward...

Step 2. Leading to a rise in inflation and a fall in output.

Step 3. Autonomous easing of monetary policy shifts the AD curve rightward.

Step 4. Output has stabilized at potential, but inflation is higher than the target level.
The Bottom Line: The Relationship Between Stabilizing Inflation and Stabilizing Economic Activity

- We can draw the following conclusions from this analysis:

1. If most shocks to the economy are aggregate demand shocks or permanent aggregate supply shocks, then policy that stabilizes inflation will also stabilize economic activity, even in the short run.

2. If temporary supply shocks are more common, then a central bank must choose between the two stabilization objectives in the short run.

3. In the long run there is no conflict between stabilizing inflation and economic activity in response to shocks.
How Actively Should Policy Makers Try to Stabilize Economic Activity?

• All economists have similar policy goals (to promote high employment and price stability), yet they often disagree on the best approach to achieve those goals.

• **Nonactivists** believe government action is unnecessary to eliminate unemployment.

• **Activists** see the need for the government to pursue active policy to eliminate high unemployment when it develops.
Lags and Policy Implementation

- Several types of lags prevent policymakers from shifting the aggregate demand curve instantaneously
  - **Data lag**: the time it takes for policy makers to obtain data indicating what is happening in the economy
  - **Recognition lag**: the time it takes for policy makers to be sure of what the data are signaling about the future course of the economy
Lags and Policy Implementation (cont’d)

- **Legislative lag**: the time it takes to pass legislation to implement a particular policy.

- **Implementation lag**: the time it takes for policy makers to change policy instruments once they have decided on the new policy.

- **Effectiveness lag**: the time it takes for the policy actually to have an impact on the economy.
FYI The Activist/Nonactivist Debate Over the Obama Fiscal Stimulus Package

• Many activists argued that the government needed to do more by implementing a massive fiscal stimulus package

• On the other hand, nonactivists opposed the fiscal stimulus package, arguing that fiscal stimulus would take too long to work because of long implementation lags

• The Obama administration came down squarely on the side of the activists and proposed the American Recovery and Reinvestment Act of 2009, a $787 billion fiscal stimulus package that Congress passed on February 13, 2009
Inflation: Always and Everywhere a Monetary Phenomenon

• This adage is supported by our aggregate demand and supply analysis because it shows that monetary policy makers can target any inflation rate in the long run by shifting the aggregate demand curve with autonomous monetary policy
Figure 8 A Rise in the Inflation Target

Step 1. Autonomous monetary policy easing shifts the AD curve to the right, and over time, the short-run aggregate supply curve shifts upward...

Step 2. and inflation rises to the new, higher target.
Causes of Inflationary Monetary Policy

• High Employment Targets and Inflation
  
  – **Cost-push inflation** results either from a temporary negative supply shock or a push by workers for wage hikes beyond what productivity gains can justify
  
  – **Demand-pull inflation** results from policy makers pursuing policies that increase aggregate demand
Figure 9 Cost-Push Inflation

Step 1. A temporary negative supply shock shifts the short-run aggregate supply curve upward . . .

Step 4. leading to a spiraling rise in inflation.

Step 2. causing output to fall and unemployment to increase.

Step 3. Policy makers increase aggregate demand in response . . .

Aggregate Output, Y
Figure 10  Demand-Pull Inflation

Step 1. Policy makers increase aggregate demand to reach a higher output target . . .

Step 2. causing AS to shift upward in response to rising wages . . .

Step 3. leading to a spiraling rise in inflation.
APPLICATION The Great Inflation

- Now that we have examined the roots of inflationary monetary policy, we can investigate the causes of the rise in U.S. inflation from 1965 to 1982, a period dubbed the “Great Inflation”

- Panel (a) of Figure 11 documents the rise in inflation during those years. Just before the Great Inflation started, the inflation rate was below 2% at an annual rate; by the late 1970s, it averaged around 8% and peaked at nearly 14% in 1980 after the oil price shock in 1979

- Panel (b) of Figure 11 compares the actual unemployment rate to estimates of the natural rate of unemployment
Figure 11  Inflation and Unemployment, 1965-1982

Panel (a) Inflation, 1965–1982

Step 1. Unemployment was below the natural rate . . .

Step 2. leading to demand-pull inflation.

Step 4. suggesting a cost-push inflation.

Panel (b) Unemployment and the Natural Rate of Unemployment, 1965–1982

Step 1. Unemployment was below the natural rate . . .

Step 3. Unemployment was above the natural rate . . .