Monetary Policy

Big Questions

- What should central banks do?
  - Control inflation?
  - Control output?
- What can central banks do?
  - How does policy respond to demand shocks?
  - How does policy respond to supply shocks?

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US Federal Reserve

- Federal Reserve Act
  - The Federal Reserve System and the Federal Open Market Committee should seek "to promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates."

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European Central Bank (ECB)

- Treaty establishing the European Community:
  - The primary objective of (monetary policy) shall be to maintain price stability.
  - Without prejudice to the objective of price stability, the ECB shall support the general economic policies in the Community with a view to contributing to the achievement of . . . a high level of employment and sustainable and non-inflationary growth.

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Monetary Policy + AS/AD

- What are our goals?
  - Low, predictable, inflation (stable prices)
  - Output near long run AS or "potential output" $\bar{Y}$
- What should central banks do?
  - How should we respond to demand shocks?
  - How should we respond to supply shocks?

Adverse Demand Shock

- What's an example of an adverse demand shock?
- What is its impact?
- How should FED respond?

Adverse Demand Shock

- Examples of adverse demand shocks...
- Shock to k, or liquidity preference.
  - Consumers/firms become worried and increase liquidity preference, e.g. Y2K or Fall 2008.
- Shock to money multiplier m.
  - Banks become worried and increase reserves/deposit ratio, e.g. Fall 2008.

Aggregate Supply Shock

- What's an example of an positive supply shock?
- What is its impact?
- How should the FED respond?

Monetary Policy + AS/AD

- How should we respond to demand shocks?
  - Resist demand shocks
- How should we respond to supply shocks?
  - Accommodate supply shocks
- Or do nothing...
  - How do you know it is a supply shock?
  - A demand shock?

What Should Monetary Policy Do?

- Should monetary policy try to stabilize output?
- If so should policy be by rule or discretion?

Passive vs. Active Policy

- Argument for active policy...
  - It's the law
  - Recessions cause hardship for many people
- Argument for passive policy...
  - How do policy makers know what shock is occurring? Example: 2008, Fed officials were worried about the supply shock from oil prices. Large demand shock in Fall 2008 sunk us though.
  - Even if the shock is well understood, it can take time before policy has an affect and perhaps be too late.
  - Previous point is one reason to prefer monetary vs. fiscal policy.

Rule or Discretion

- Argument for discretion... it gives discretion!
- Argument for rule based policy
  - Distrust of policy makers and political process.
  - Time inconsistency of discretionary policy... policymakers have incentives to renege on policy once others have acted.
  - Example: FED says expect lower prices. Sticky price firms set low prices. But FED reneges and does nothing—this generates a boom.

Policy in the US

- US Federal Reserve
  - Has complete discretion...
  - Yet, Fed still acts much like it follows a rule
- This rule is called the "Taylor rule"
  - Describes how the FED should set nominal interest rates via open market operations.
  - Example: Data says increase the monetary base until short term nominal interest rates equal 4 percent.

Taylor Rule

- Rule for setting short-term interest rate

$$i = \bar{r} + \pi + a_1(\pi - \bar{\pi}) + a_2(y - \bar{y})$$

  - i = short term interest rate (fed funds rate)
  - $\bar{r}$ = "equilibrium" real interest rate (2% ?)
  - π = inflation rate
  - $\bar{\pi}$ = target inflation (2% ?)
  - y = actual real GDP growth rate
  - $\bar{y}$ = long run real GDP growth rate (3% ?)
  - a_1 and a_2 summarize the response

Taylor Rule

- Use historical data to find a_1 and a_2 with a regression,
- Or do what Taylor suggests ...

$$i = 2 + \pi + 0.50 \times (\pi - 2) + 0.50 \times (y - \bar{y})$$

- What should you expect if
  - Inflation rises 1%?
  - Growth rises 1%?

Taylor Rule

- If the Fed follows this rule, how does the interest rate respond to
  - Positive demand shock?
  - Negative supply shock?

Putting it all together

- How does policy respond to a demand or supply shock?
  - Use the Taylor Rule
- What does the Fed do to change interest rates?
  - Change the monetary base through open market operations.
  - This changes the money supply.
- What is the impact of the Fed's actions on the economy?
  - Use AS/AD analysis