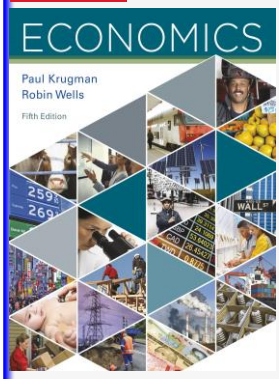
CHAPTER 15 LECTURE - MONETARY POLICY



15(30)

MONETARY POLICY

Revised by Solina Lindahl

WHAT YOU WILL LEARN IN THIS CHAPTER

- What is the money demand curve?
- Why does the liquidity preference model determine the interest rate in the short run?
- How does the Federal Reserve implement monetary policy?
- Why is monetary policy the main tool for stabilizing the economy?
- Why do economists believe in monetary neutrality?

2

THE MOST POWERFUL PERSON IN GOVERNMENT

- The chairmanship of the Federal Reserve is arguably the most powerful position in the U.S. government
- **Jerome Hayden "Jay" Powell**

3

THE DEMAND FOR MONEY

- **The Opportunity Cost of Holding Money**
- We all carry some cash around for the convenience.
- When we do, we give up interest income we'd collect if that spending power were in an interest-bearing asset like a bond.
- ***There is a price to be paid for the convenience of holding money.***

Big Cheese Photo/Big Cheese Photo/Superstock

4

INTEREST RATES AND THE OPPORTUNITY COST OF HOLDING MONEY (1 of 3)

- Individuals and firms **trade off the benefit of holding cash versus the benefit of holding interest-bearing nonmonetary assets.**
- **Selected interest rates, 2007 (before the financial crisis):**

Table 15-1 Selected Interest Rates, June 2007

One-month certificates of deposit (CDs)	5.30%
Interest-bearing demand deposits	2.30%
Currency	0

Data from: Federal Reserve Bank of St. Louis.

5

INTEREST RATES AND THE OPPORTUNITY COST OF HOLDING MONEY (2 of 3)

- **Short-term interest rates**: the interest rates on financial assets that mature within six months
- **Long-term interest rates**: interest rates on financial assets that mature a number of years in the future
- *The **higher** the interest rate, the **higher the opportunity cost of holding money.***
- *The **lower** the interest rate, the **lower the opportunity cost of holding money.***

6

INTEREST RATES AND THE OPPORTUNITY COST OF HOLDING MONEY (3 of 3)

- Although there are many different interest rates and they don't move exactly together, as a rule **most short-term rates tend to move in the same direction.**

Table 15-2 Interest Rates and the Opportunity Cost of Holding Money

	June 2007	June 2009
Federal funds rate	5.25%	0.20%
One-month certificates of deposit (CDs)	5.30%	0.28%
Interest-bearing demand deposits	2.30%	0.14%
Currency	0	0
CDs minus interest-bearing demand deposits (percentage points)	**3.00**	**0.14**
CDs minus currency (percentage points)	**5.30**	**0.28**

Data from: Federal Reserve Bank of St. Louis.

7

THE MONEY DEMAND CURVE

- **The money demand curve shows the relationship between the quantity of money demanded and the interest rate.**

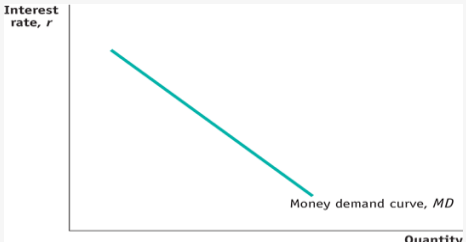


FIGURE 15-1 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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SHIFTS OF THE REAL MONEY DEMAND CURVE

- **What shifts the money demand curve?**
- **Changes in aggregate price level**
  - Higher prices mean we need more money for transactions (and vice versa).
- **Changes in real GDP**
  - More goods and services produced and sold means we need more money (and vice versa).
- **Changes in technology**
  - The ease of credit cards reduces the need for cash.
- **Changes in institutions**
  - After 1980 banks were allowed to offer interest on checking accounts. This decreased the cost of holding money, and money demand increased.

9

SHIFTS IN THE DEMAND FOR MONEY

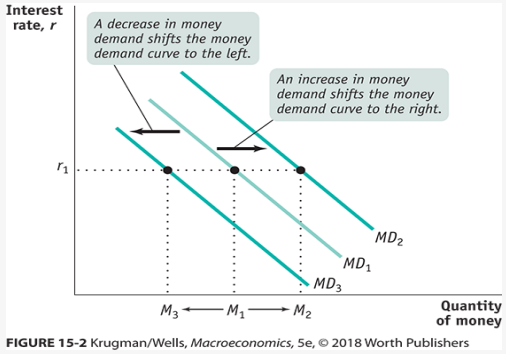

FIGURE 15-2 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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MONEY AND INTEREST RATES

- **So how does the Fed control interest rates?**
- We need to understand how interest rates are set in the market.
  - **The liquidity preference model of the interest rate** asserts that the interest rate is determined by the supply and demand for money.
  - **The money supply curve** shows how the nominal quantity of money supplied varies with the interest rate.

11

EQUILIBRIUM IN THE MONEY MARKET

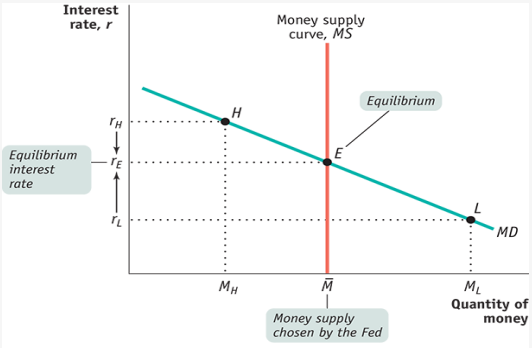

FIGURE 15-3 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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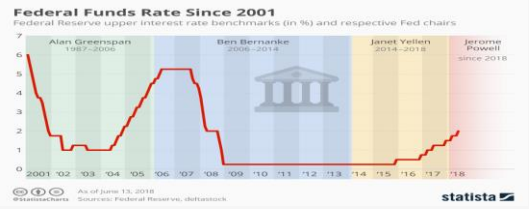
CHAPTER 15 LECTURE - MONETARY POLICY

MONETARY POLICY AND THE INTEREST RATE

- **By adjusting the money supply up or down, the Fed can set the interest rate.**
- The Fed sets a **target federal funds rate** and undertakes the appropriate open-market operations.
- **Target federal funds rate:** the Federal Reserve's desired federal funds rate



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THE EFFECT OF AN INCREASE IN THE MONEY SUPPLY ON THE INTEREST RATE

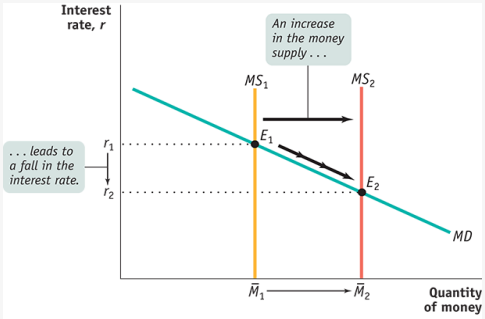

FIGURE 15-4 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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SETTING THE FEDERAL FUNDS RATE

- **The Fed uses open-market operations to push the interest rate down (or up) to the target rate.**

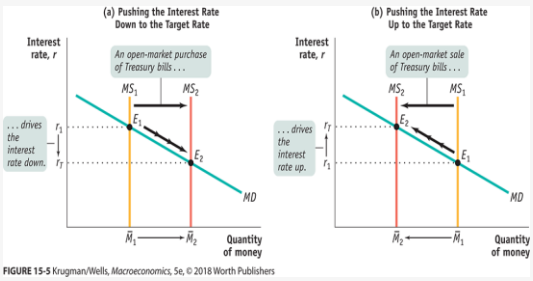

FIGURE 15-5 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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PITFALLS: THE TARGET VS. THE MARKET

- A common **mistake** is to imagine that changes in the way the Federal Reserve operates alter the way the money market works.
- In fact, the **money market works the same way as always:** The interest rate is determined by the supply and demand for money.
- The **only difference** is that now the Fed adjusts the supply of money to achieve its target interest rate.

16

LONG-TERM INTEREST RATES

- **Long-term interest rates don't necessarily move with short-term interest rates.**
- **If investors expect short-term interest rates to rise, they may buy short-term bonds.**
- **In practice, long-term interest rates reflect the market's average expectation for short-term rates.**

Flagg, J. M. (ca. 1917) *I want you for U.S. Army: nearest recruiting station/James Montgomery Flagg.* United States, ca. 1917. (Photograph). Retrieved from the Library of Congress, https://www.loc.gov/item/96507165/.

17

UP THE DOWN STAIRCASE

- **Should the Fed have moved more quickly—or not at all—when the economy finally began improving from the severe recession and slow recovery?**

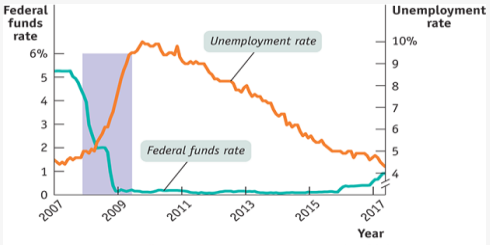

FIGURE 15-6 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers
Data from: Federal Reserve Bank of St. Louis.

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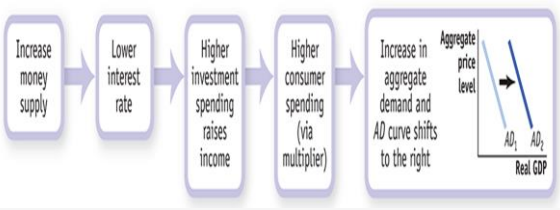
MONETARY POLICY AND AGGREGATE DEMAND

Expansionary monetary policy: monetary policy that increases aggregate demand (also called "easy money policy")



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MONETARY POLICY AND AGGREGATE DEMAND

Contractionary monetary policy: monetary policy that reduces aggregate demand (also called "tight money policy")

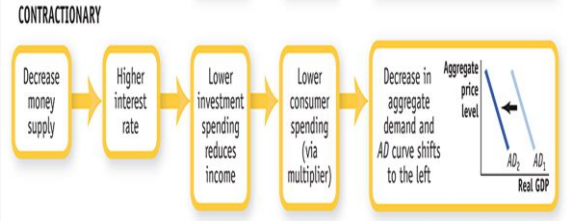

FIGURE 15-7 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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MONETARY POLICY IN PRACTICE

- **How does the Fed decide whether to use expansionary or contractionary monetary policy?**
- **And how does it decide how much is enough?**
- **Policy makers try to fight recessions, as well as to ensure *price stability*: low (though usually not zero) inflation.**
- **Actual monetary policy reflects a combination of these goals.**

21

THE TAYLOR RULE FOR MONETARY POLICY

- **In 1993, Stanford economist John Taylor proposed a simple rule for monetary policy.**
- **Taylor rule for monetary policy:** set the federal funds rate according to the level of the inflation rate and either the output gap or the unemployment rate

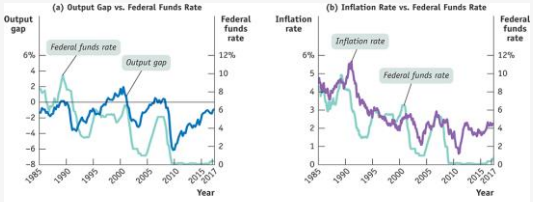

FIGURE 15-8 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers
Data from: Federal Reserve Bank of St. Louis.

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THE FEDERAL FUNDS TARGET AND THE TAYLOR RULE

- **To address both goals—inflation and recessions—the Fed can follow a rule:**
- **Federal funds target rate = 2.07 + 1.28 × inflation rate – 1.95 × unemployment gap**
- **As it turns out, between 1988 and 2008 the Fed basically did just this.**
  - **The actual federal funds rate tracked the predicted rate quite closely through the end of 2008.**
  - **After that the Taylor rule called for negative interest rates, which aren't possible.**

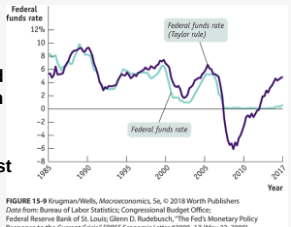


FIGURE 15-9 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers
Data from: Bureau of Labor Statistics; Congressional Budget Office; Federal Reserve Bank of St. Louis; Glenn D. Rudebusch, "The Fed's Monetary Policy Response to the Current Crisis," *FRBSF Economic Letter* #2009–17 (May 22, 2009).

23

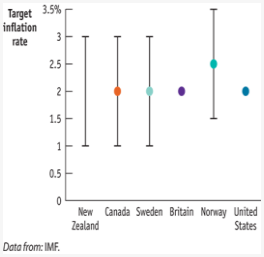
LEARN BY DOING DISCUSSION

- With a partner, **draw the *SRAS*, *AD,* and *LRAS* curves for an economy with a recessionary gap.** What **monetary policy** should the Fed pursue with its open-market operations?
- **Explain what happens to interest rates**. Show on a **money demand–money supply graph**.
- Finally, show the **effect of the monetary policy on the original graph.**

24

INFLATION TARGETING

- **Instead of using a Taylor rule,** many central banks use inflation targeting.
- **Inflation targeting:** the central bank setting an **explicit target for the inflation rate** and using monetary policy to hit that target



Data from: IMF.

- **One major difference between the two methods:**
  - **Inflation targeting is forward-looking (based on a forecast of future inflation).**
  - **Taylor rule is backward-looking (adjusts monetary policy in response to *past* inflation).**

25

THE ZERO LOWER BOUND PROBLEM

- **The fact that interest rates can't go below zero ("zero lower bound") limits the power of monetary policy.**
- **November 2010: Interest rates were at or near zero, but the economy was still far below potential output.**
- **So the Fed got creative and tried "quantitative easing" (buying longer-term government bonds).**
- **The Fed hoped this would drive down long-term interest rates and have an expansionary effect on the economy.**

26

WHAT THE FED WANTS, THE FED GETS

- Causality problems make it **hard to observe whether high interest rates are a result of an expansion or of the Fed.** Romer and Romer focused on episodes of high interest rates when the **Fed announced it would reduce inflation by increasing unemployment (red lines).** In short, the Fed gets what it wants.

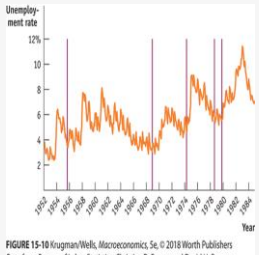


FIGURE 15-10 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers
Data from: Bureau of Labor Statistics; Christina D. Romer and David H. Romer, "Monetary Policy Matters," *Journal of Monetary Economics* 34 (August 1994): 75–88.

27

MONEY, OUTPUT, AND PRICES IN THE LONG RUN

- **What about the economy's ability to self-correct toward long-run equilibrium through flexible wages and *SRAS* shifts?**
- **In short, we believe that in the long run, changes in the quantity of money affect the price level but not the output or interest rate.**

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SHORT-RUN AND LONG-RUN EFFECTS OF AN INCREASE IN THE MONEY SUPPLY

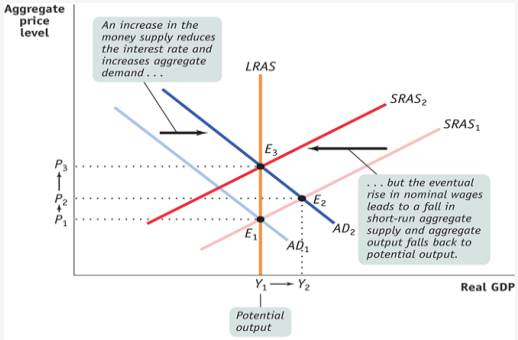

FIGURE 15-11 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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MONETARY NEUTRALITY

- **In the long run, changes in the money supply don't affect the interest rate.**
- **Monetary neutrality:** changes in the money supply have no real effect on the economy

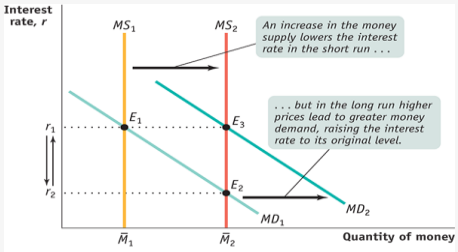

FIGURE 15-12 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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INTERNATIONAL EVIDENCE OF MONETARY NEUTRALITY

- **Do increases in the money supply really lead to increases in the price level? It's not exact, but yes.**

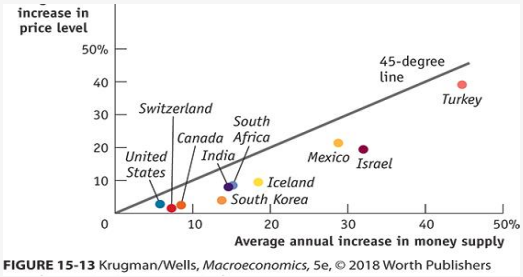

FIGURE 15-13 Krugman/Wells, *Macroeconomics*, 5e, © 2018 Worth Publishers

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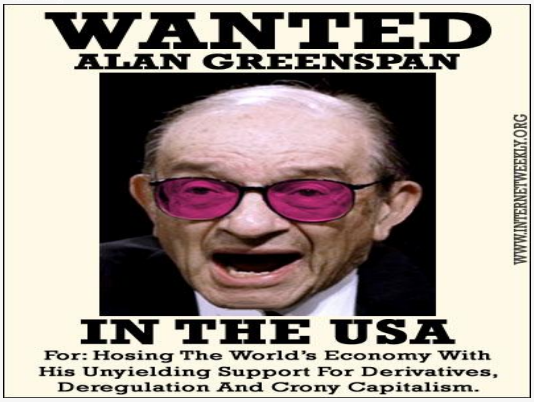

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