Lecture 5

The Money Market

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Today's Topics

- The Money Markets Defined
- The Purpose of Money Markets
- Who Participates in Money Markets?
- Money Market Instruments
- Comparing Money Market Securities

The Money Markets Defined

The term “money market” is a misnomer. Money (currency) is not actually traded in the money markets. The securities in the money market are short term with high liquidity; therefore, they are close to being money.

The Money Markets Defined

- Money Markets Defined

1. Money market securities are usually sold in large denominations ($1,000,000 or more)
2. They have low default risk
3. They mature in one year or less from their issue date

The Money Markets Defined: Why Do We Need Money Markets?

In theory, the banking industry should handle the needs for short-term loans and accept short-term deposits. Banks also have an information advantage on the credit-worthiness of participants.

Banks do mediate between savers and borrowers; however, they are heavily regulated. This creates a distinct cost advantage for money markets over banks.

The Money Markets Defined: Cost Advantages

- Reserve requirements create additional expense for banks that money markets do not have
- Regulations on the level of interest banks could offer depositors lead to a significant growth in money markets, especially in the 1970s and 1980s. When interest rates rose, depositors moved their money from banks to money markets to earn a higher interest rate.

The Money Markets Defined: Cost Advantages

- Even today, the cost structure of banks limits their competitiveness to situations where their informational advantages outweighs their regulatory costs.
- Figure 1 shows that limits on interest banks could offer was not relevant until the 1950s. But in the decades that followed, the problem became apparent.

3-month T-bill rates and Interest Rate Ceilings

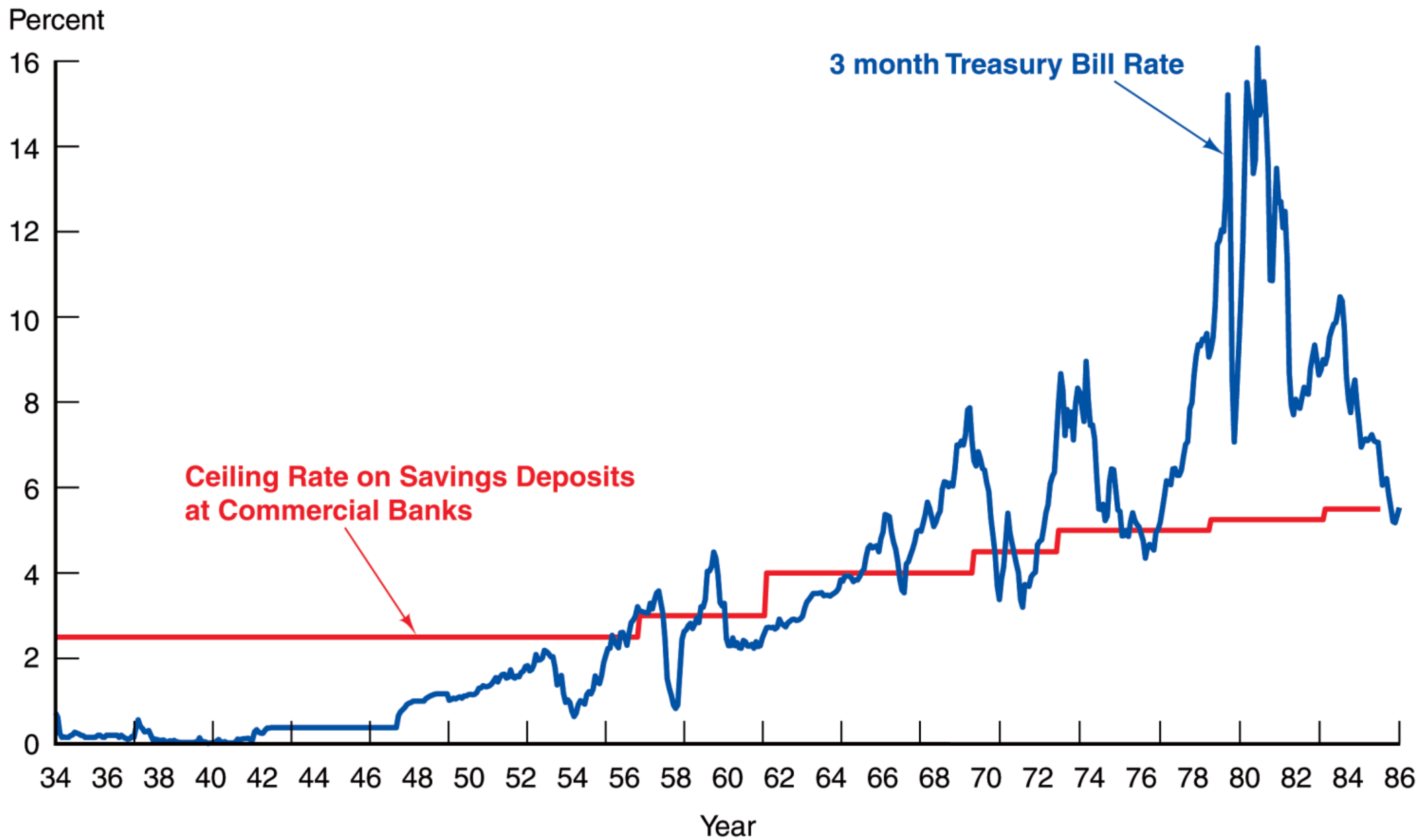

Figure 9.1 3-Month Treasury Bill Rate and Ceiling Rate on Savings Deposits at Commercial Banks

Source: http://www.stlouisfed.org/default.cfm.

Money Market Instruments

- We will examine each of these in the following slides:
  - Treasury Bills
  - Federal Funds
  - Repurchase Agreements
  - Negotiable Certificates of Deposit (NCD)
  - Commercial Paper
  - Banker’s Acceptance
  - Eurodollars

Money Market Instruments: Treasury Bills

- T-bills have 28-day maturities through 12-month maturities.
- **<u>Discounting</u>:** When an investor pays less for the security than it will be worth when it matures, and the increase in price provides a return. This is common to short-term securities because they often mature before the issuer can mail out interest checks.

Money Market Instruments: Treasury Bills Discounting Example

- You pay $996.37 for a 28-day T-bill. It is worth $1,000 at maturity. What is its discount rate?

$$i_{discount} = \frac{F - P}{F} \, x \, \frac{360}{n} \qquad (1)$$

$$i_{discount} = \frac{1{,}000 - 996.73}{1{,}000} \, x \, \frac{360}{28} = 4.665\%$$

Money Market Instruments: Treasury Bills Discounting Example

- You pay $996.37 for a 28-day T-bill. It is worth $1,000 at maturity. What is its annualized yield?

$$i_{yt} = \frac{F - P}{P} \times \frac{365}{n} \qquad (1)$$

$$i_{yt} = \frac{1{,}000 - 996.73}{996.37} \, x \, \frac{366}{28} = 4.76\%$$

Money Market Instruments: Treasury Bill Auctions

- T-bills are auctioned to the dealers every Thursday.
- The Treasury may accept both *competitive* and *noncompetitive* bids, and the price everyone pays is the highest yield paid to any accepted bid.

Money Market Instruments: Treasury Bills

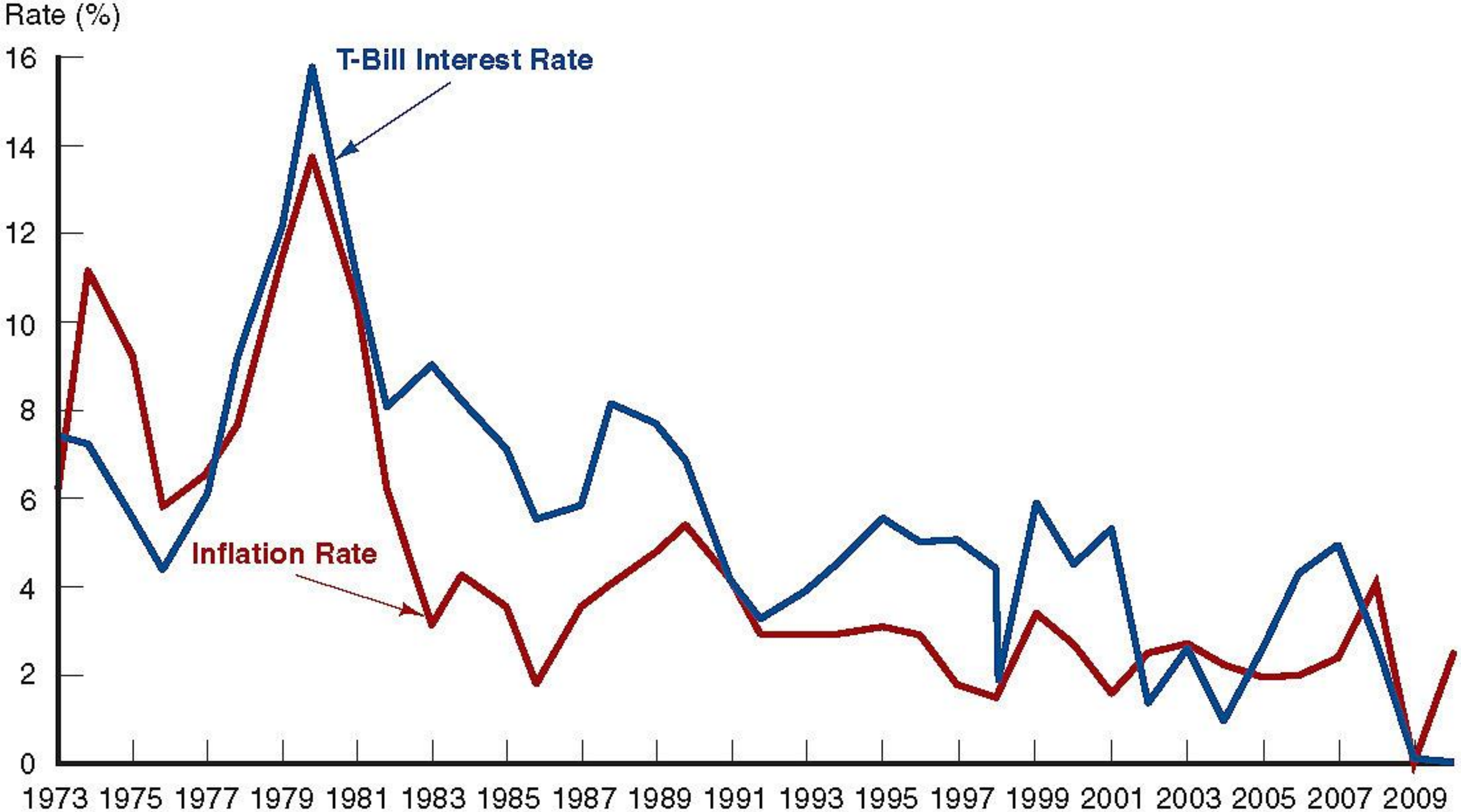

FIGURE 11.2 Treasury Bill Interest Rate and the Inflation Rate, January 1973–January 2010

Source: ftp://ftp.bls.gov/special.requests/cpi/cpiai.txt.

Money Market Instruments: Fed Funds

- Short-term funds transferred (loaned or borrowed) between financial institutions, usually for a period of one day.

- Used by banks to meet short-term needs to meet reserve requirements.

Money Market Instruments: Fed Funds Rates

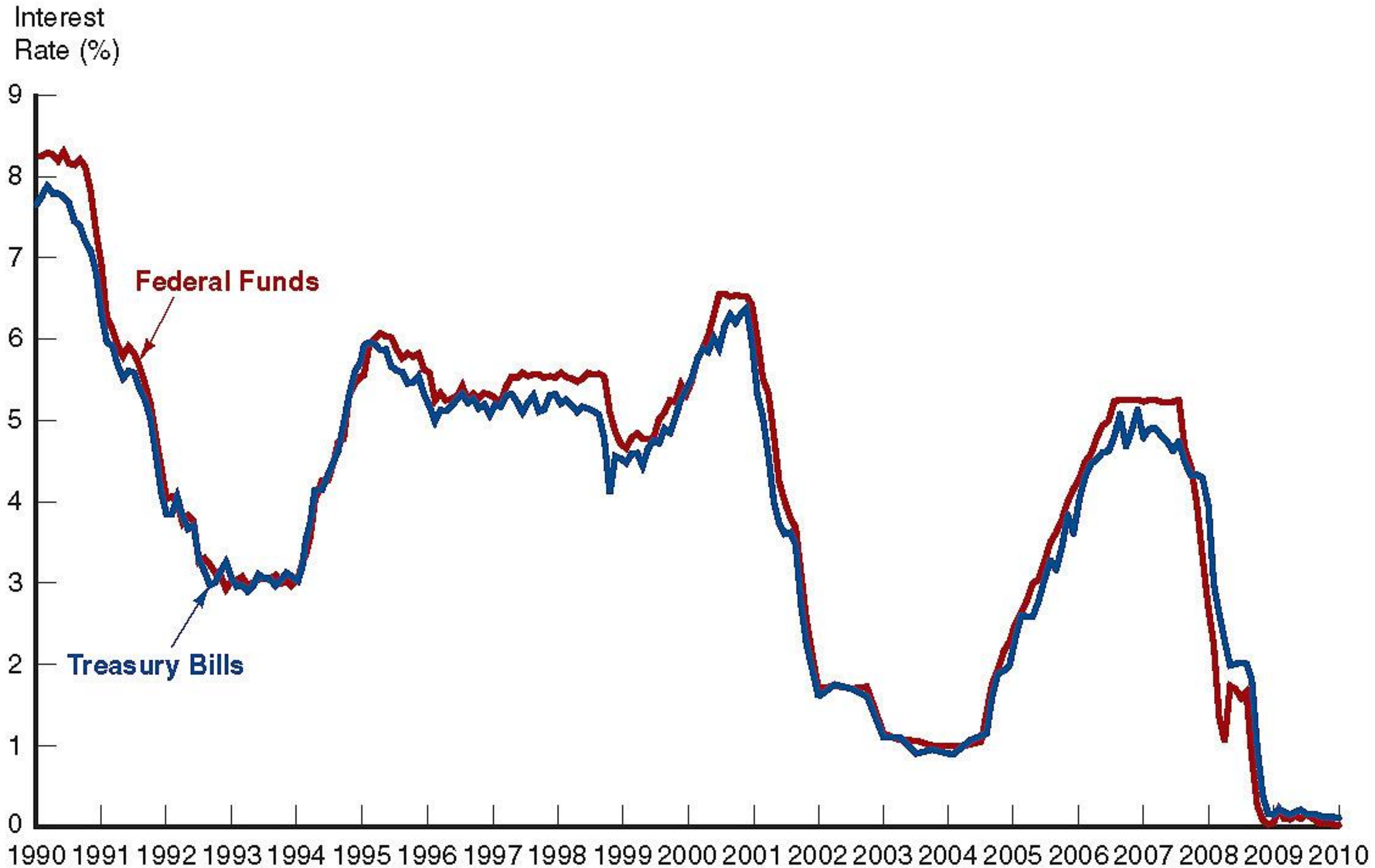

FIGURE 11.3 Federal Funds and Treasury Bill Interest Rates, January 1990–January 2010

Source: http://www.federalreserve.gov/releases/H15/data.htm/.

Money Market Instruments: Repurchase Agreements (Repo)

- These work similar to the market for fed funds, but **nonbanks** can participate.
- A firm sells Treasury securities, but agrees to buy them back at a certain date (usually 3–14 days later) for a certain price.
- This set-up makes a repo agreements essentially a short-term collateralized loan.
- This is one market the Fed may use to conduct its monetary policy, whereby the Fed purchases/sells Treasury securities in the repo market.

Money Market Instruments: Negotiable Certificates of Deposit (NCD)

- A bank-issued security that documents a deposit and specifies the interest rate and the maturity date

- Denominations range from $100,000 to $10 million

Money Market Instruments: Negotiable Certificates of Deposit Rates

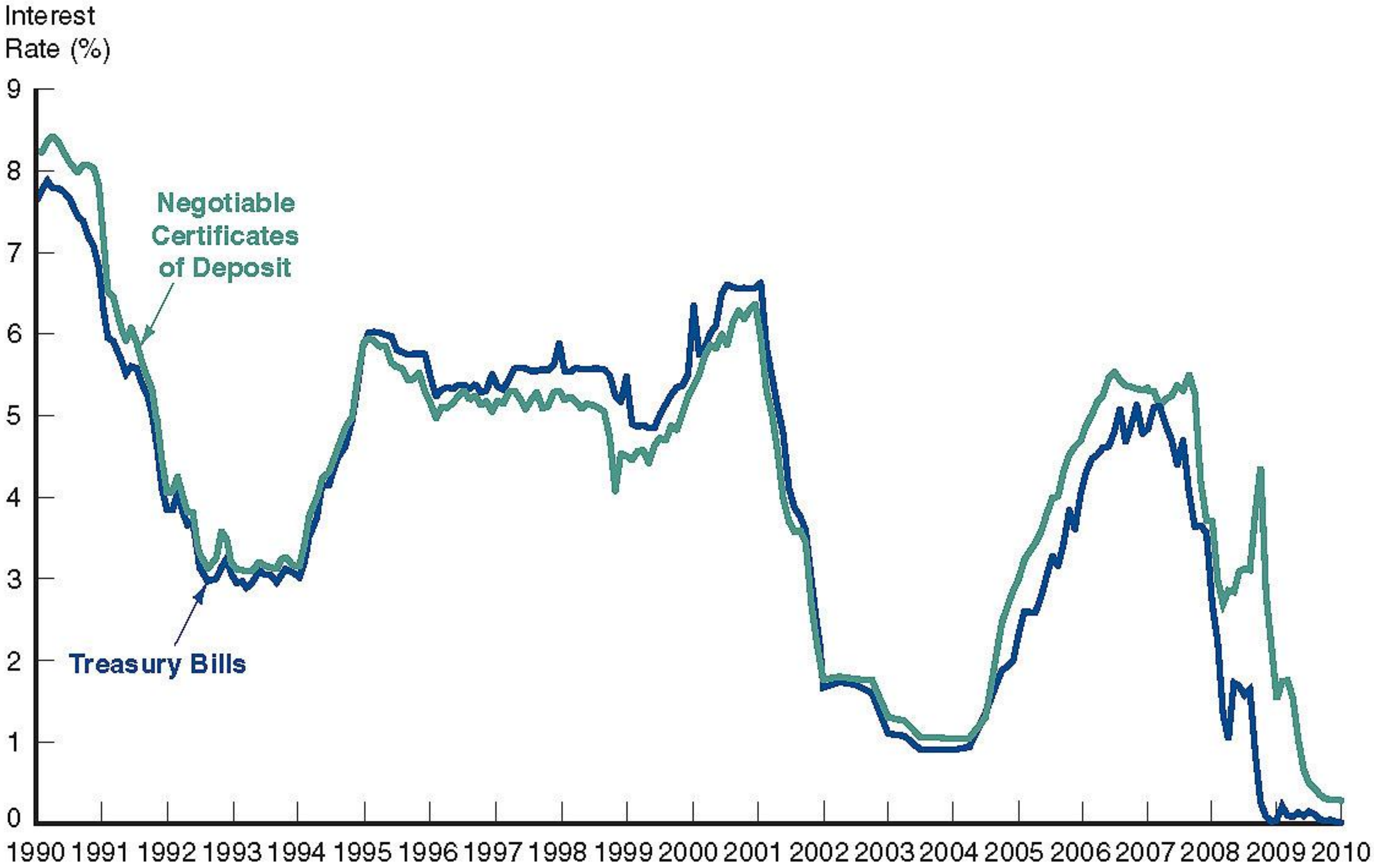

FIGURE 11.4 Interest Rates on Negotiable Certificates of Deposit and on Treasury Bills, January 1990–January 2010

Source: http://www.federalreserve.gov/releases.

Money Market Instruments: Commercial Paper

- Unsecured promissory notes, issued by corporations, that mature in no more than 270 days.

- The use of commercial paper increased significantly in the early 1980s because of the rising cost of bank loans.

Money Market Instruments: Commercial Paper Rates

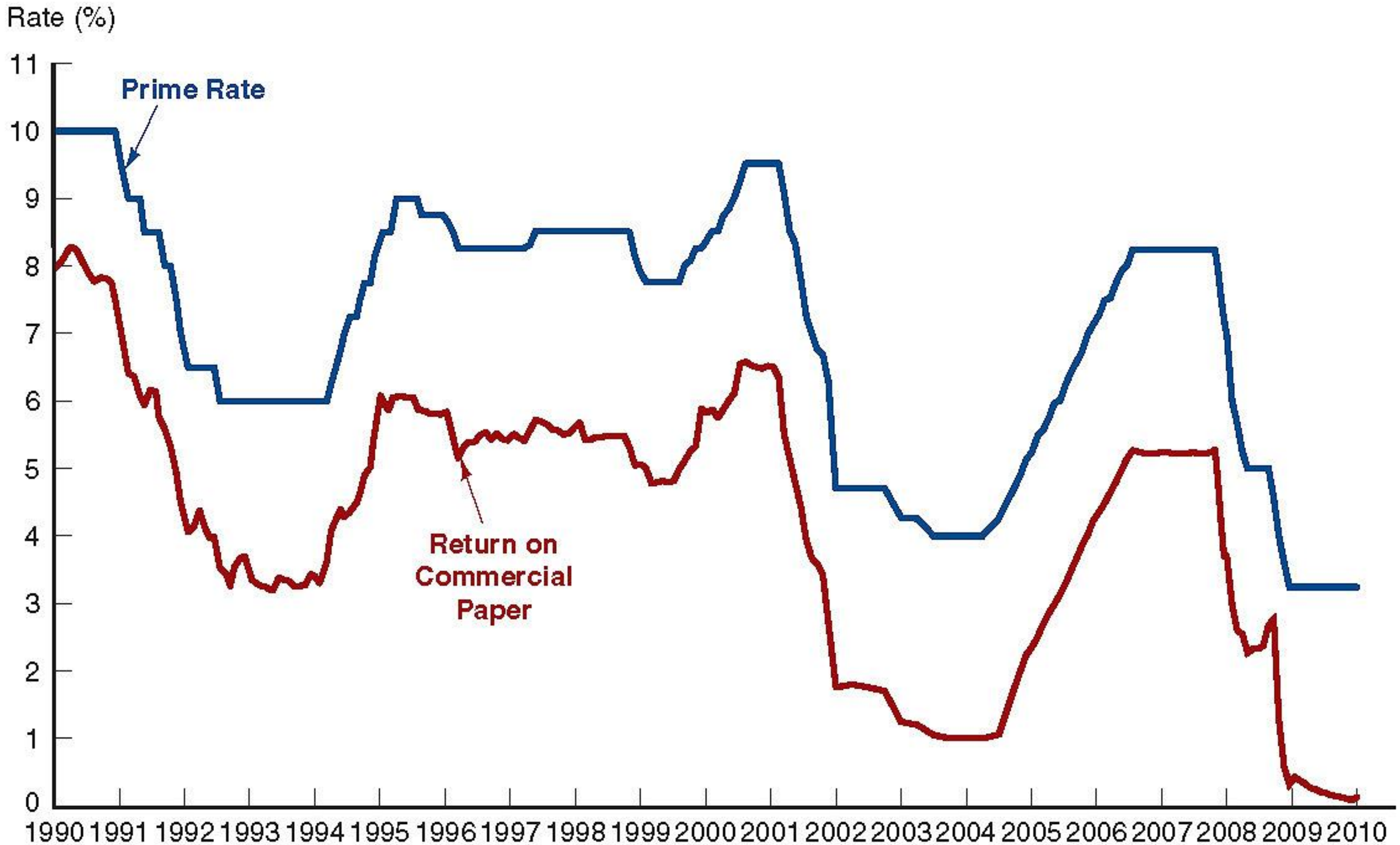

FIGURE 11.5 Return on Commercial Paper and the Prime Rate, 1990–2010

Source: http://www.federalreserve.gov/releases.

Money Market Instruments: Commercial Paper Volume

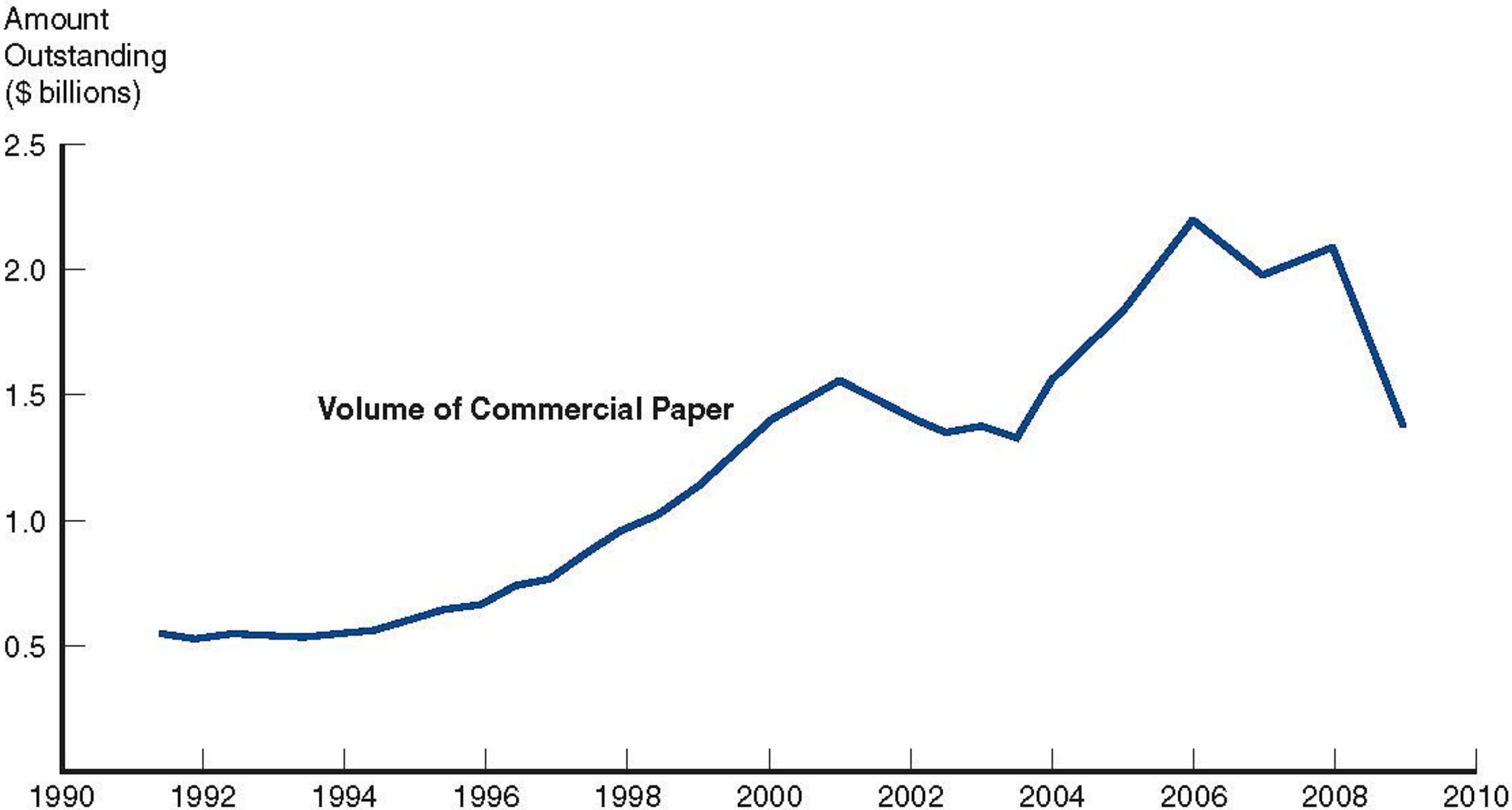

FIGURE 11.6 Volume of Commercial Paper Outstanding

Source: http://www.federalreserve.gov/releases/cp/histouts.txt.

Asset-backed commercial paper

- A special type of commercial paper, known as asset-backed commercial paper (ABCP), played a key role in the financial crisis in 2008. These were backed by securitized mortgages, often difficult to understand. This special part of the commercial paper market accounted for about $1 trillion.

- When the poor quality of the underlying assets was exposed, a run on ABCP began. Because ABCP was held by many money market mutual funds (MMMFs), these funds also experienced a run. The government eventually had to step in to prevent the collapse of the MMMF market.

Money Market Instruments: Banker's Acceptances

- An order to pay a specified amount to the bearer on a given date if specified conditions have been met, usually delivery of promised goods.

- These are often used when buyers / sellers of expensive goods live in different countries.

Money Market Instruments: Banker's Acceptances Advantages

1. Exporter paid immediately
2. Exporter shielded from foreign exchange risk
3. Exporter does not have to assess the financial security of the importer
4. Importer's bank guarantees payment
5. Crucial to international trade

Money Market Instruments: Banker's Acceptances

- As seen, banker's acceptances avoid the need to establish the credit-worthiness of a customer living abroad.

- There is also an active secondary market for banker's acceptances until they mature. The terms of note indicate that the bearer, whoever that is, will be paid upon maturity.

Money Market Instruments: Eurodollars

- Eurodollars represent Dollar denominated deposits held in foreign banks.

- The market is essential since many foreign contracts call for payment is U.S. dollars due to the stability of the dollar, relative to other currencies.

Money Market Instruments: Eurodollars

- The Eurodollar market has continued to grow rapidly because depositors receive a higher rate of return on a dollar deposit in the Eurodollar market than in the domestic market.

- Multinational banks are not subject to the same regulations restricting U.S. banks and because they are willing to accept narrower spreads between the interest paid on deposits and the interest earned on loans.

Money Market Instruments: Eurodollars Rates

- London interbank bid rate (LIBID)
  - The rate paid by banks buying funds
- London interbank offer rate (LIBOR)
  - The rate offered for sale of the funds
- Time deposits with fixed maturities
  - Largest short term security in the world

Global: Birth of the Eurodollar

- The Eurodollar market is one of the most important financial markets, but oddly enough, it was initially created by the former Soviet Union.
- In the 1950s, the Soviet Union had accumulated large dollar deposits, but all were in US banks. They feared the US might seize them, but still wanted dollars. So, it transferred the dollars to European banks, creating the Eurodollar market.

Comparing Money Market Securities : A comparison of rates

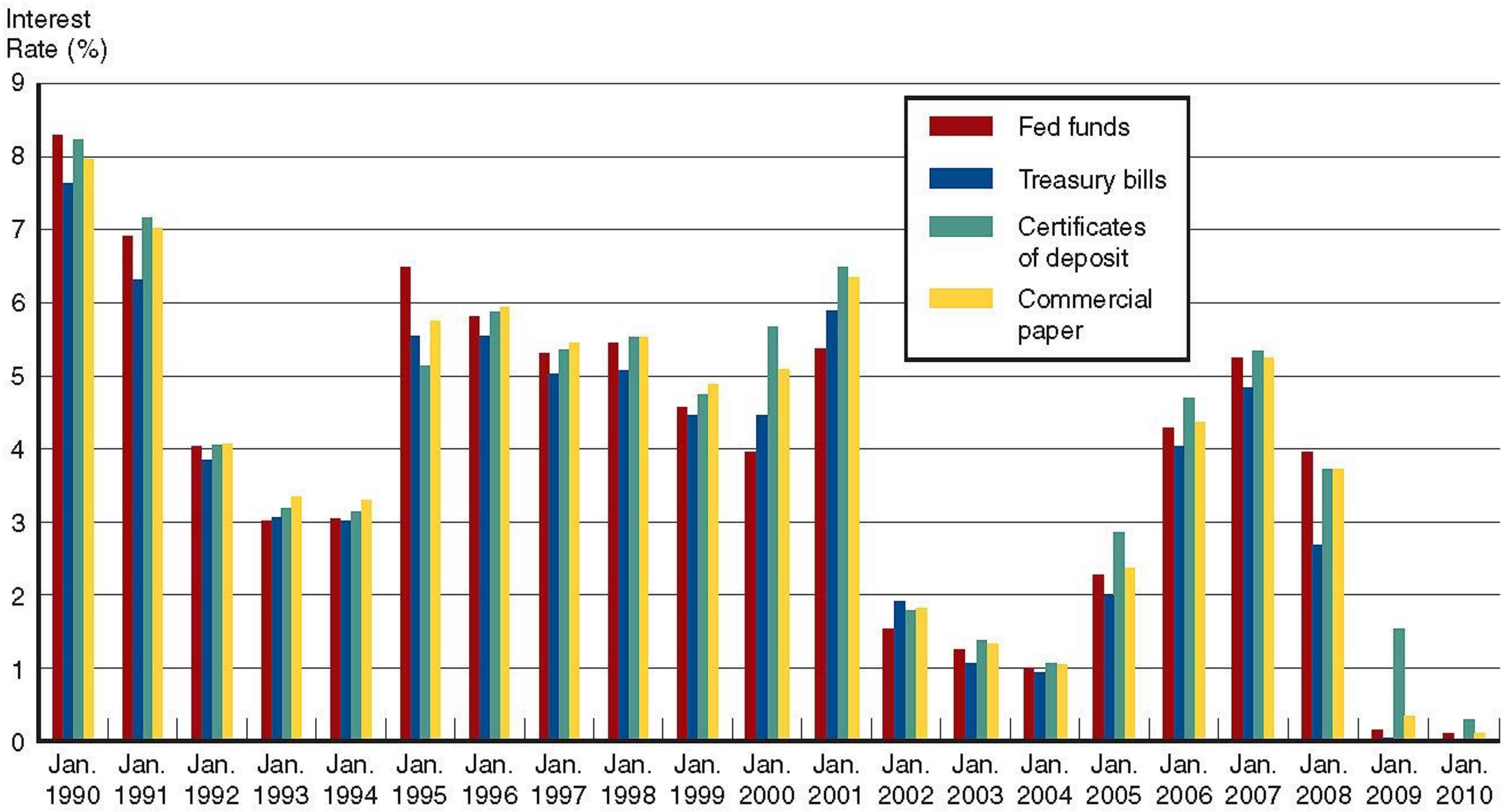

FIGURE 11.7 Interest Rates on Money Market Securities, 1990–2010

Source: http://www.federalreserve.gov/releases.

Comparing Money Market Securities: Money Market Securities and Their Depth

TABLE 4 *Money Market Securities and Their Markets*

Money Market Security	Issuer	Buyer	Usual Maturity	Secondary Market
Treasury bills	U.S. government	Consumers and companies	13 weeks, 26 weeks, 1 year	Excellent
Federal funds	Banks	Banks	1 to 7 days	None
Repurchase agreements	Businesses and banks	Businesses and banks	1 to 15 days	Good
Negotiable certificates of deposit	Large money center banks	Businesses	14 to 120 days	Good
Commercial paper	Finance companies and businesses	Businesses	1 to 270 days	Poor
Banker's acceptance	Banks	Businesses	30 to 180 days	Good
Eurodollar deposits	Non-U.S. banks	Businesses, governments, and banks	1 day to 1 year	Poor

Summary

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- The Purpose of Money Markets
- Who Participates in Money Markets?
- Money Market Instruments
- Comparing Money Market Securities