AcF 304 Financial Markets

Topic 4: Central Banks & Conduct of Monetary Policy

Part 2 – US Federal Reserve & Conventional Monetary Tools

Topic Preview (1 of 3)

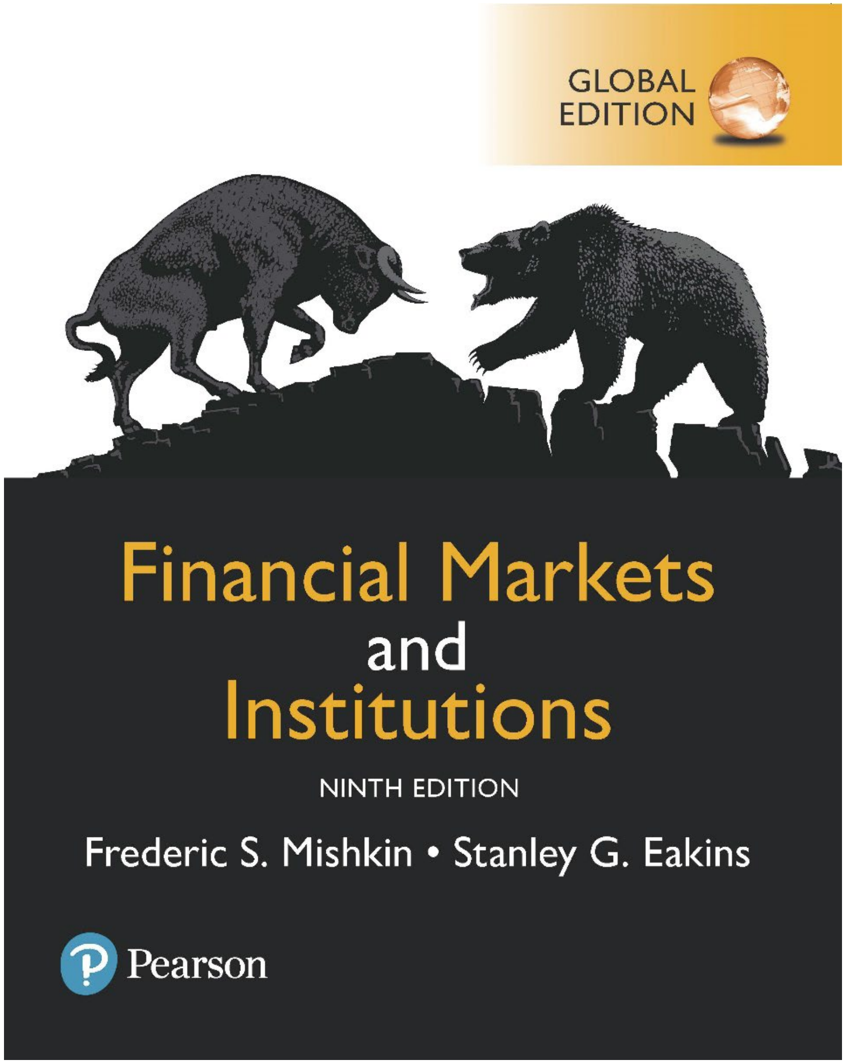
"Monetary policy" refers to the management of the money supply. The theories guiding the Federal Reserve are complex and often controversial. We are affected by this policy, and a basic understanding of how it works is, therefore, important.

Topic Preview (2 of 2)

- How Fed Actions Affect Reserves in the Banking System thereby affecting interest rates
- The Market for Reserves and the Federal Funds Rate
- Conventional Monetary Policy Tools

Financial Markets and Institutions

Ninth Edition, Global Edition



Chapter 10…

Conduct of Monetary Policy: Tools, Goals, Strategy, and Tactics

Chapter 10 goes into more detail in some areas than I wish to for this topic – so be guided by the lecture slides as to what you will be assessed on.

Ignore detailed Supply/Demand diagrams & content P.249-253

Pearson

How Fed Actions Affect Reserves in the Banking System (1 of 2)

Set by the Board of Governors bank reserves are one of the three main tools of monetary policy.

The other two tools are

- Open Market operations
- Discount Loans held by banks.

How Fed Actions Affect Reserves in the Banking System (2 of 2)

- Banks make loan funds to customers using deposits placed by customers. Banks only keep back small amount of cash rather than lend out to clients.
- The Fed makes one requirement > to keep a certain amount of deposits on hand to cover withdrawals i.e. **a reserve requirement.**
- Banks have an account at the Fed in which they hold deposits. **Reserves** consist of deposits at the Fed plus currency that is physically held by banks.

How Fed Actions Affect Reserves in the Banking System (1 of 2)

Reserve Requirement Example

- A Bank has $200MM deposits and is required to hold 10%. The Bank is allowed to lend out $180MM and keep $20MM as reserves at its account at the Fed*.
- By increasing the reserve requirement (i.e. 15% - bank can now lend out only $170MM) the Federal Reserve is essentially taking money out of the money supply (Reasons:economy expanding too fast /inflation a threat?)
- Conversely lowering the reserve requirement increases money supply > economic growth.

The more reserves a bank has the more loans it can make

** In reality the Reserve ratio calculation is a little more complex involving both deposits and loans*

How Fed Actions Affect Reserves in the Banking System (1 of 2)

Reserves are assets for the banks and liabilities for the Fed.

When the Fed takes action to increase reserves, it increases liquidity in the banking system.

Reserves are divided into two categories:

- Required reserves
- Excess reserves

Note: Excess reserves can be lent out to other banks

How Fed Actions Affect Reserves in the Banking System (2 of 2)

The Fed sets the **required reserve ratio –** the portion of deposits banks must hold at the Fed plus any cash held at bank. Any reserves deposited with the Fed beyond this amount are *excess reserves**.

The Fed injects reserves into the banking system in two ways:

- **Open market operations**
- Loans to banks, referred to as **discount loans**.

* Fed Funds Rate

Open Market Operations

- In the next two slides, we will examine the impact of **open market operations** conducted through **primary dealers**. We will show the following:
  - Purchase of bonds increases the money supply
  - Making discount loans increases the money supply
- Naturally, the Fed can decrease the money supply by reversing these transactions.

The Federal Reserve Balance Sheet (1 of 2)

- Open Market Purchase $100 million bonds from Primary Dealer

Banking System	
Assets	Liabilities
Securities	
–$100 m	
Reserves (Deposits at the Fed)	
+$100 m	

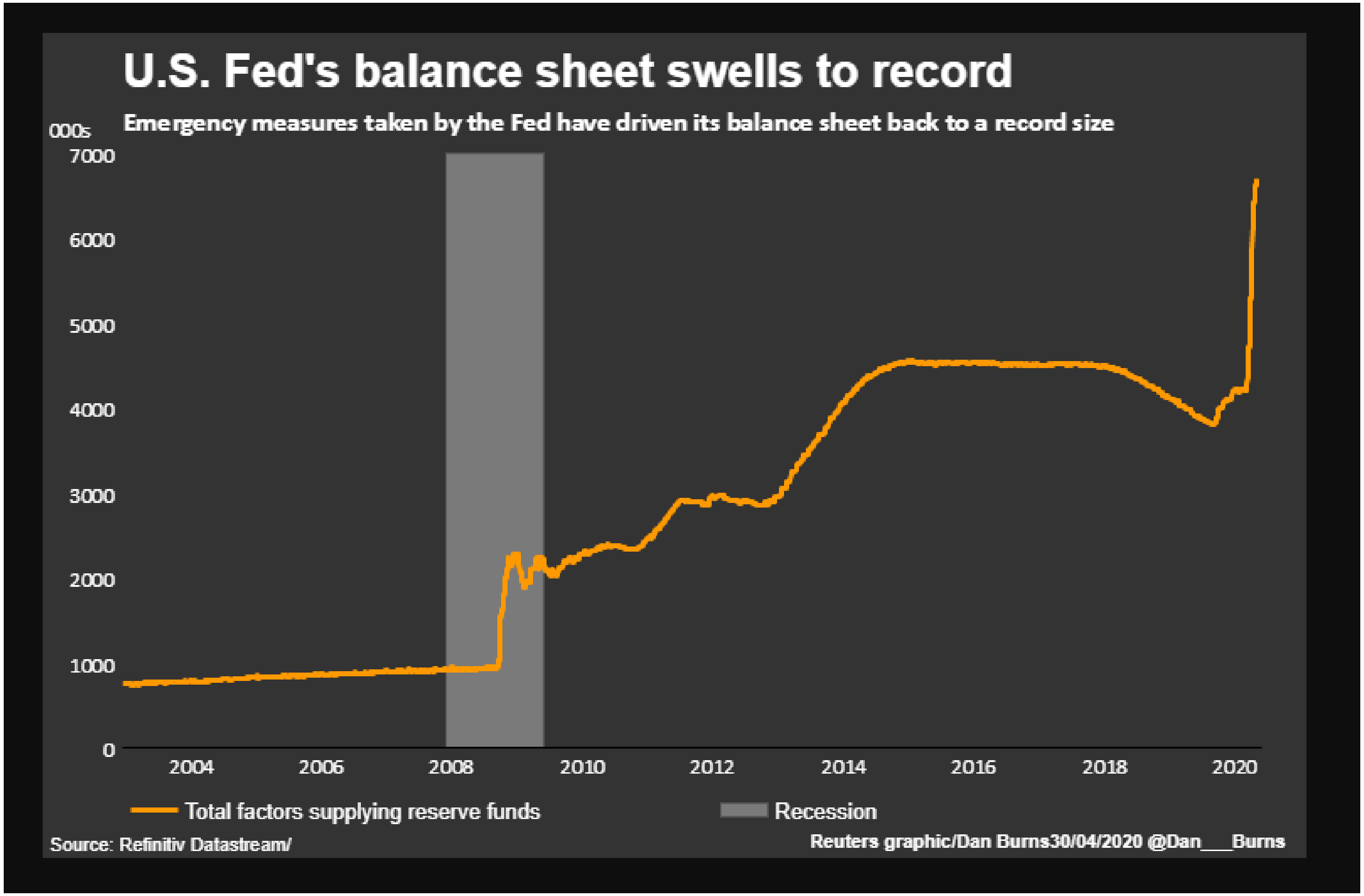
- The size of the banking systems Balance Sheet has not changed, with total assets the same.However, the banking system's holdings of deposits/reserves at the Fed has increased.Since these can be lent out, liquidity in the banking system has increased.

The Federal Reserve Balance Sheet (1 of 2)

- Open Market Purchase $100 Million from Primary Dealer

The Fed	
Assets	Liabilities
Securities	Reserves
+$100 m	+$100 m

- Expansion of Fed's Balance Sheet with increases in assets and liabilities.



https://www.investopedia.com/articles/economics/10/understanding-the-fed-balance-sheet.asp

The Federal Reserve Balance Sheet (1 of 2)

- An Open Market Purchase leads to an expansion of reserves in the banking system

...because the central bank pays for bonds with reserves.

- An Open Market Sale leads to a contraction of reserves in the banking system

...because the banking system pays for bonds with reserves.

The Federal Reserve Balance Sheet (2 of 2)

- Discount Lending e.g. $100 MM Discount Loan to First National Bank. The Fed credits $100 MM to the banks reserve account.

The Fed	
Assets	Liabilities
Discount loans	Reserves
+$100 m	+$100 m

The Federal Reserve Balance Sheet (2 of 2)

- Discount Loan leads to an expansion of reserves, which can be lent out, thereby leading to an expansion of liquidity in banking system.

- When a bank repays its discount loan it reduces the total amount of discount lending, the amount of reserves decreases along with liquidity in the banking system.

The Market for Reserves and the Federal Funds Rate

- We have just seen how open market operations and Federal Reserves affect the balance sheet of the Fed and amount of reserves influencing the money supply.
- Federal Funds Rate or **'Fed Funds'**- the interest rate on overnight loans on excess reserves from one bank to another.
- Fed Funds is particularly important in the conduct of monetary policy because it affects the cost of excess reserves i.e it influences the willingness of banks to build excess reserves and make bank lending according.

The Market for Reserves and the Federal Funds Rate*…The Most Powerful Interest Rate in the World*

- Low Fed Funds rate e.g. 1% is an accommodative monetary policy. Banks will lend more and meet their Reserve Requirement buy borrowing Reserves at a low Fed Funds rate.
- High Fed Funds rate is a restrictive monetary policy meaning banks will lend less. That is because it costs more to borrow Reserves through the Fed Funds rate to meet the Reserve Requirement.
- It is an interest rate that the Fed influences directly so it is indicative of the Fed's stance on monetary policy.
- It is a rate decided at the FOMC meeting and announced/discussed at the FOMC Press Conference – as we shall see!
- The current Fed Funds rate range was Jan 2020 1.50-1.75% and is now Feb 2023 4.50-4.75% - a sharp rise over last 18 months as inflation has risen

Federal Funds Rate & Market Implications

If the Fed Funds Rate is accomodative i.e.low

- Bank Lending/Money Supply will expand.
- The economy will grow.
- Corporate Profitability will increase.
- Share prices/the stock market will rise

*So if the Fed makes 'dovish' comments at its Press Conference about future Fed Funds interest rate movements the stock market will **immediately** react (Bonds, US Dollar, Gold also).*

Conventional Monetary Policy Tools

We further examine each of the tools in turn to see how the Fed uses them in practice and how useful each tool is.

Conventional Tools of Monetary Policy:

- During normal times, the Fed uses four tools of monetary policy
  1. Open Market Operations
  2. Discount lending
  3. Reserve Requirements
  4. Paying interest on Reserves

Tools of Monetary Policy: Open Market Operations

- Open Market Operations
  1. An open market purchase of bonds (US Treasuries) causes the Fed Funds rate to fall.
  2. An open market sale causes the Fed Funds rate to rise.

Tools of Monetary Policy: Open Market Operations

- Open Market Operations
  1. Dynamic: Change reserves and monetary base
  2. Defensive: Offset factors affecting reserves

  e.g. If a foreign country is expected to sell its US Treasury security holdings in exchange for US dollars, the Federal Reserve may decide to buy Treasury securities in advance in order to maintain the same level of US dollars.

  Typically uses REPOs for 2.

Tools of Monetary Policy: Open Market Operations-What is a REPO?

See Video & Reading for the week

https://www.investopedia.com/terms/r/repurchaseagreement.asp

Tools of Monetary Policy: Open Market Operations - What is a REPO?

- A repurchase agreement, or repo for short, is a short-term loan much used in the money markets whereby the seller of the security agrees to buy it back as a specified price and time.
- The seller pays an interest rate on money borrowed, called the repo rate, when buying back the securities.
- Example: Central Banks often use repos to boost money supply, buying Treasury bills or other government paper from commercial banks so the bank can boost their reserves and selling paper back at a later date.
- When the central bank wants to tighten money supply, it sells paper first, and buys it back later, an agreement to lend securities rather than funds.

Tools of Monetary Policy: Open Market Operations-What is a REPO?

See Video & Reading for the week
https://www.investopedia.com/terms/r/repurchaseagreement.asp

Bottom of Page 254 in FM&I book has confusing Reverse Repo description. Remenber:

I SELL and then REPURCHASE is REPURCHASE agreement/ REPO

I BUY and then RE-SELL is REVERSE REPO

The party that is selling securities is doing a Repo, and the party that is buying securities is doing Reverse Repo.

Tools of Monetary Policy: Open Market Operations - What is a REPO?

Repo description. Remember:

I SELL and then REPURCHASE is REPURCHASE agreement/ REPO

I BUY and then RE-SELL is REVERSE REPO

The party that is selling securities is doing a Repo, and the party that is buying securities is doing Reverse Repo.

- Short-term Open Market Operations (REPO is 1-15 days)

Tools of Monetary Policy: Open Market Operations

- Open Market Operations
  1. Dynamic: Change reserves and monetary base
  2. Defensive: Offset factors affecting reserves, typically uses repos
- Advantages of Open Market Operations
  1. Fed has complete control
  2. Flexible and precise
  3. Easily reversed
  4. Implemented quickly

Tools of Monetary Policy: Open Market Operations:MCQ

1) If the Federal Reserve wants to permanently expand liquidity/reserves in the banking system, it will

A) purchase government securities.

B) raise the discount rate.

C) sell government securities.

D) raise reserve requirements.

Answer: A

Tools of Monetary Policy: Open Market Operations

2) If the Federal Reserve wants to drain reserves from the banking system, it will

A) purchase government securities.

B) lower the discount rate.

C) sell government securities.

D) lower reserve requirements.

Answer: C

Inside the Fed: A Day at the Trading Desk (1 of 2)

- The staff reviews the activities of the prior day and issue forecasts of factors affecting the supply and demand for reserves.
- This information is used to determine reserve changes needed to obtain a desired fed funds rate.
- Government securities dealers are contacted to better determine the condition of the market.
- A course of action is determined.
- Once the plan is approved, the desk carries out the required trades.

Inside the Fed: A Day at the Trading Desk (2 of 2)

- The trading desk typically uses two types of transactions to implement their strategy:
  - **Repurchase agreements**: The Fed sells securities to the dealer (the dealer pays for securities with reserves) and the Fed agrees to repurchase them within about 15 days (dealer receiving reserves back).
  - *Liquidity/Reserves removed*
  - So, the desired effect is reversed when the Fed has to repurchase the securities back—good for taking defense strategies that will reverse.
  - **Reverse Repo -** The Fed purchases securities from the dealer (the Fed pays for securities by crediting dealer's reserve account) and the Fed sells securities at later date – temporarily adding reserves.
  - *Liquidity/Reserves added*

Tools of Monetary Policy: Discount Policy
(1 of 3)

- The Fed's offers Discount Loans, through the **discount window**, are:
  - Primary Credit: Healthy banks
  - Secondary Credit: Given to troubled banks experiencing liquidity problems.
- Banks do not like to borrow from the Discount Window (Secondary Credit) as
- Higher than Fed Funds (It's a penal rate!)
- It shows your firm is in trouble.No one else will lend.

Tools of Monetary Policy: Discount Policy

- Lender of Last Resort Function
  - To prevent banking panics
  - Example: Continental Illinois
  - The unusual treatment of Continental Illinois gave popular rise to the term "too big to fail."

May 1984

The failure of Continental Illinois National Bank and Trust Company in 1984, the largest in US history at the time, and its subsequent rescue gave rise to the term "too big to fail."

Tools of Monetary Policy: Discount Policy (3 of 3)

- Lender of Last Resort Function
  - Can also help avoid panics
    - Ex: Market crash in 1987 and terrorist attacks in 2001 - bad events, but no real panic in our financial system
    - After the Financial Crisis 2007-09 the Fed lowered the spread on the discount rate to 50 basis points, and then to 25.
- But there are costs!
  - Banks and other financial institutions may take on more risk (moral hazard) knowing the Fed will come to the rescue i.e. 'The Greenspan Put'

Tools of Monetary Policy: Changing Reserve Requirements

Reserve Requirements are requirements put on financial institutions to hold liquid (vault) cash again checkable deposits.

- Everyone subject to the same rule for checkable deposits:
  - 3% of first $48.3M, 10% above $48.3M
  - Fed can change the 10%
- Rarely used as a tool
  - Raising causes liquidity problems for banks
  - Makes liquidity management unnecessarily difficult...

Numbers not assessed

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Part 3 – US Federal Reserve & Non-Conventional Monetary Tools

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