LM 5 - Monetary and Fiscal Policy

CFA Level 1 - Economics

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Learning Outcomes

The candidate should be able to:

1. compare monetary and fiscal policy;
2. describe functions and definitions of money;
3. explain the money creation process;
4. describe theories of the demand for and supply of money;
5. describe the Fisher effect;
6. describe roles and objectives of central banks;
7. contrast the costs of expected and unexpected inflation;
8. describe tools used to implement monetary policy.
9. describe the monetary transmission mechanism;

Learning Outcomes

The candidate should be able to:

10. explain the relationships between monetary policy and economic growth, inflation, interest, and exchange rates;
11. describe qualities of effective central banks;
12. contrast the use of inflation, interest rate, and exchange rate targeting by central banks;
13. determine whether a monetary policy is expansionary or contractionary;
14. describe limitations of monetary policy;
15. describe roles and objectives of fiscal policy;
16. describe the arguments about whether the size of a national debt relative to GDP matters;
17. describe tools of fiscal policy, including their advantages and disadvantages

Monetary Policy vs. Fiscal Policy

- Monetary policy: Central bank's actions that influence the supply of money or interest rates (i.e. price of money).
- Fiscal policy: government's decisions about spending and taxation.
- Both monetary and fiscal policies are used to regulate economic activity over time.

Definition and Functions of Money

- Money is one of mankind's most important inventions.
- In a world without money, if you wanted to trade, you would have to barter, trading goods and services directly for other goods and services.
- Trades would require a **double coincidence of wants**.
- The existence of money makes trading much easier and allows specialization, an important step for developing an economy.
- Economists consider money to be any asset that people are generally willing to accept in exchange for goods and services or for payment of debts.
- Functions of money:
  - Medium of exchange.
  - Unit of account.
  - Store of value.

Definition and Functions of Money

In order to serve as an acceptable medium of exchange (and hence a potential "money"), a good should have the following characteristics:

- The good must be **acceptable** to most people.
- It should be of **standardized quality** so any two units are alike.
- It should be **durable** so that value is not lost by wearing out.
- It should be **valuable** relative to its weight, so that it can easily be transported even in large quantities.
- It should be **divisible** enough to be used for purchases of both low-priced and high-priced goods.

Types of Money

- Commodity money has value independent of its use as money (e.g. coins made of precious metals).
- Commodity-backed money is money that represents a claim on a commodity (e.g. gold standard).
- Fiat money is any money that does not have to be exchanged for a commodity (i.e. it represents a claim on itself). It's usually authorized by a government to be legal tender.

Measures of the Supply of Money

- Different measures of the quantity of money circulating in an economy exist.
- These measures vary depending on the **liquidity** of assets included.
- The most important measures in most countries are M1 and M2.
- **M1**: a narrow definition of the money supply that includes currency in circulation and checking account deposits in banks.
- **M2**: a broader definition of the money supply that includes M1, plus small-denomination time deposits, savings account deposits (including balances in money market deposit accounts in banks), and non-institutional money market fund shares.
- The definitions of M1 and M2 may vary between countries.

Measures of the Supply of Money

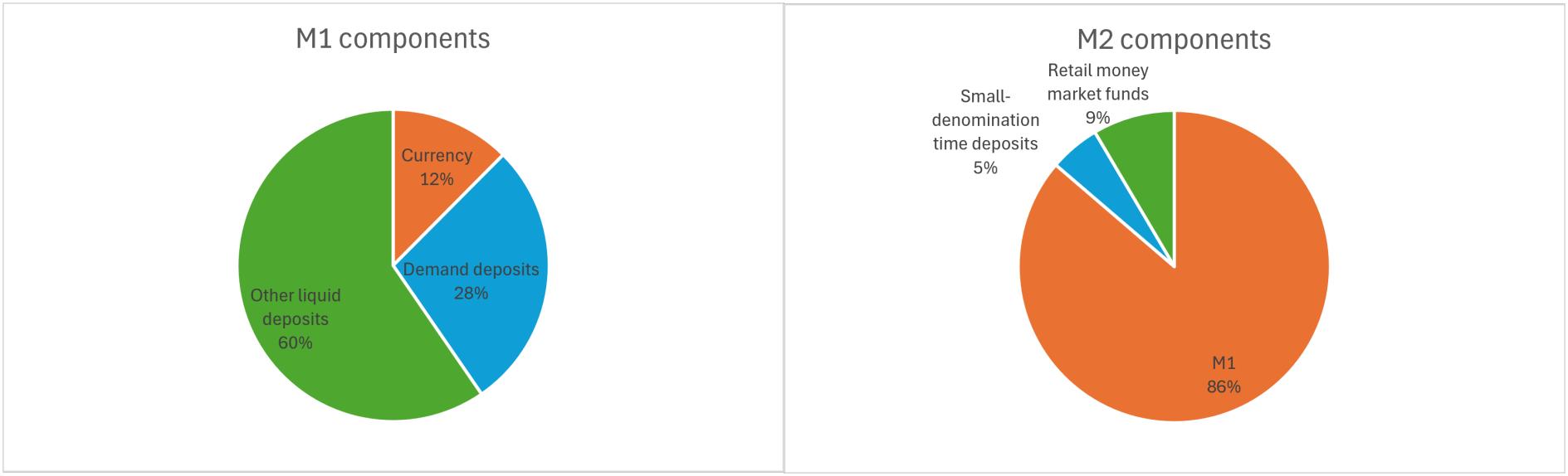

Figure: Money supply composition, US data, March 2024

Money Creation

- Banks play a critical role in the money supply.
- There is more money held in checking and saving accounts than there is actual currency in the economy.
- Part of the money supply is being created by banks.

Banks' Balance Sheet

Assets	Amount in billions	Liabilities and Stockholders' Equity	Amount in billions
Reserves	$135	Deposits	$1,000
Loans	900	Short-term borrowing	400
Securities	700	Long-term debt	360
Buildings and equipment	15	Other liabilities	275
Other assets	550	Total liabilities	$2,035
-	-	Stockholders' equity	265
Total assets	$2,300	Total liabilities and Stockholders' equity	$2,300

- Banks use money deposited with them to make loans and buy securities (investments).
- Their largest liabilities are their deposit accounts: money they owe to their depositors.

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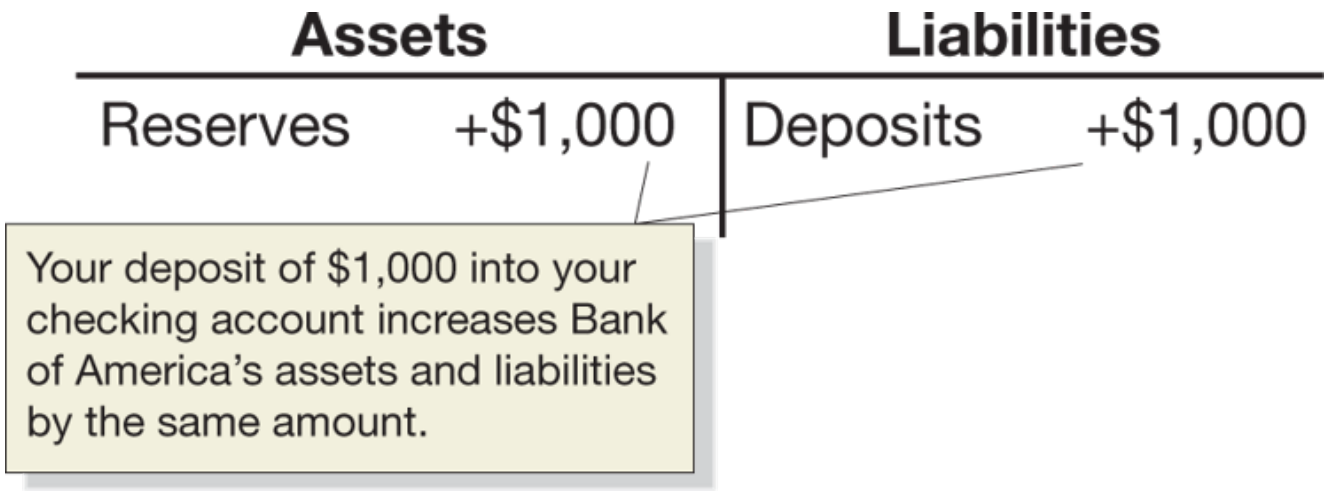
- Reserves are deposits that a bank keeps as cash in its vault or on deposit with the central bank.
- Banks do not keep enough reserves on hand to cover all of its deposits. This is how the bank makes a profit: lending out or investing money deposited with it.
- This practice is called **fractional reserve banking**.

Required and Excess Reserves

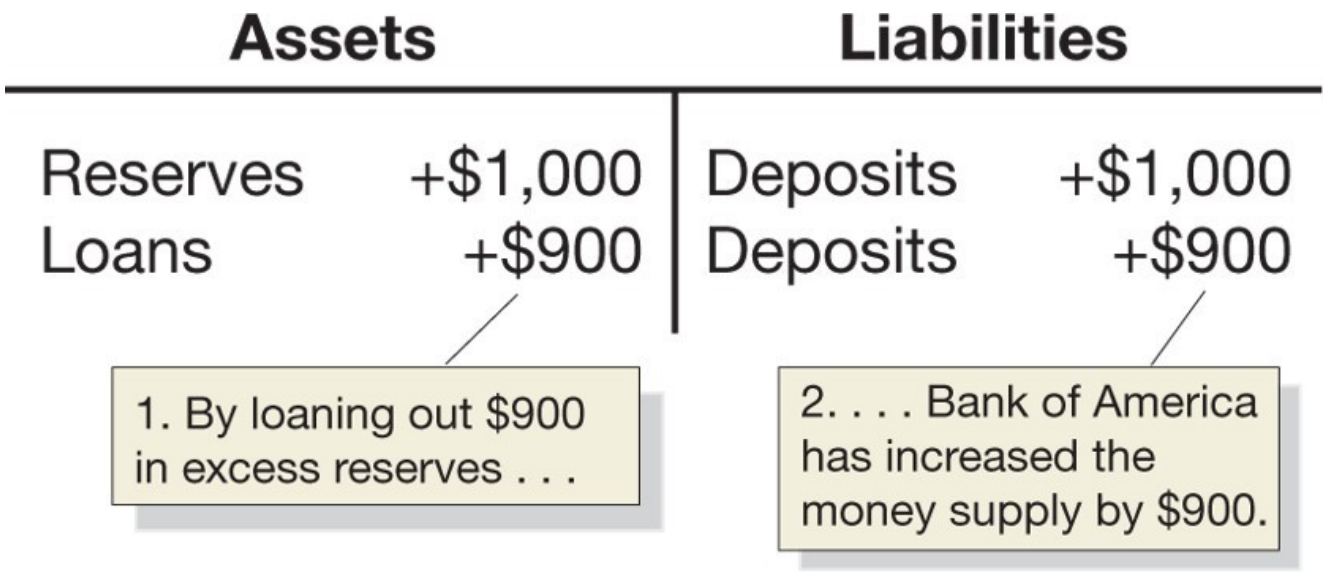
- The bank must keep some cash available for its depositors; it does this through a combination of vault cash and deposits with the central bank.
- Banks in some countries are legally required to hold a minimum amount of reserves based on the amount of deposits they hold: these are called **required reserves**.
- The required reserve ratio (RR): the minimum fraction of deposits banks are required by the central bank to keep as reserves. Currently, the RR is 0% in the US.
- Banks might choose to hold **excess reserves**: reserves that banks hold on top of the legal requirement.

Money Creation: Example



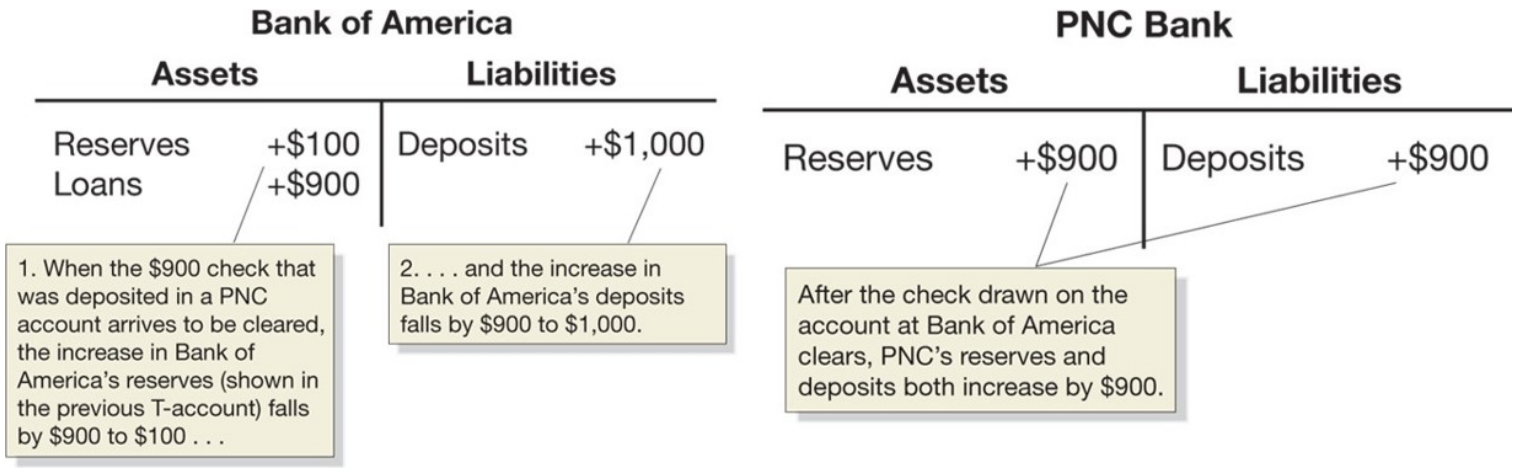
- When a customer deposits 1'000$ in currency at Bank of America, for example, both its reserves and deposits increase by 1'000$.
- The currency component of M1 decreases by 1'000$ and the checking deposits component increases by 1'000$. So there is no change in the money supply so far.

Money Creation: Example



- Bank of America needs to make a profit, so it keeps 10% of the deposit as reserves and lends out the rest, creating a 900$ checking account deposit.

Money Creation: Example



- When the newly created 900$ of deposits is spent, Bank of America will transfer 900$ in currency (or central bank reserves) to the bank at which the 900$ check is deposited, in this example PNC.
- In turn, PNC will lend out part of that money and keep the rest as reserves.

Money Creation: Example

Bank	Increase in the Checking Account Deposits
Bank of America	$\$1,000$
PNC	$+\ 900\ (=0.9\times\$1,000)$
Third Bank	$+\ 810(=0.9\times\$900)$
Fourth Bank	$+\ 729(=0.9\times\$810)$
.	$+$ [
	$+$ [
	$+$ [
Total change in checking account deposits	$=\$10,000$

Fisher Effect

- Riskless nominal interest rate = real riskless rate + expected inflation
- There is also uncertainty about future inflation rates and other economic variables, and a risk premium that increases with uncertainty
- Riskless nominal interest rate = real riskless rate + expected inflation + risk premium for inflation uncertainty

Objectives of Central Banks

- All central banks have price stability (low inflation rates) as an objective. Many have explicit target rates, usually 2% to 3%.
- Some central banks also attempt to:
  - Maintain full employment
  - Promote economic growth
  - Keep exchange rates stable
  - Keep long-term interest rates moderate

Monetary Policy Tools

- Policy rate: Interest rate central banks charge banks for borrowed reserves. U.S. sets a target for Fed funds rate, rate that banks charge each other for short-term loans.
- Increasing (decreasing) the interbank lending rate decreases increases bank lending and the money supply.

Monetary Policy Tools

- Open market operations: Most often used
  - Central bank buys or sells government securities to increase or decrease money supply
  - In recent years central banks have purchased other debt securities by creating money, referred to as "quantitative easing"
- Required reserve ratio: Seldom changed
  - Lower reserve ratio increases funds banks have to make loans.
  - Max money multiplier $= 1/$required % reserves

Monetary Policy Effects on Economy

- When a central bank buys securities:
  - Bank reserves increase
  - Interbank lending rates decrease
  - Short-term and long-term lending rates decrease
  - Businesses increase investment
  - Consumers increase purchases of homes and durable goods
  - Domestic currency depreciates, exports increase
- Overall, aggregate demand increases, increasing real GDP, employment, and inflation

The Neutral Interest Rate

- Neutral interest rate = trend growth rate of real GDP + target inflation rate
- Policy rate > neutral rate: Contractionary
- Policy rate < neutral rate: Expansionary

Fiscal Policy

- Keynesian economists believe discretionary fiscal policy can stabilize the economy, increasing aggregate demand to combat recessions and decreasing aggregate demand to combat inflation.
- Monetarists believe that such effects are temporary and that appropriate monetary policy will dampen economic cycles

Fiscal Policy Tools: Spending

- 1. Transfer payments: Cash payments by government to redistribute wealth
- 2. Current spending: Purchases of goods and services.
- 3. Capital spending: To increase future productivity; on infrastructure, or to support research on and development of new technologies

Fiscal Policy Tools: Revenue

- Direct taxes—levied on income or wealth (Take time to implement).
- Indirect taxes—levied on goods and services (Quick to implement to raise revenue or promote social goals, or both (e.g., tobacco tax)).

Fiscal Multiplier

- Increased spending has a multiplied effect as it creates more spending

$$\text{Fiscal Multiplier (FM)} = \frac{1}{1 - \text{MPC}(1 - t)}$$

- An increase in government spending (ΔG) can increase aggregate demand by $\Delta G \times \text{FM}$.
- An increase in taxes (ΔT) can decrease aggregate demand by $\Delta T(\text{MPC}) \times \text{FM}$.

Ricardian Equivalence

- With Ricardian equivalence, an increase in government spending funded by issuing debt will have no impact on aggregate demand.
- This would result if individuals view the additional debt as a future tax liability.
- A decrease in taxes resulting from greater government borrowing would not increase consumption.
- Empirical evidence inconclusive.

Size of National Debt/GDP

- Reasons to be concerned:
  - May lead to higher future taxes.
  - Crowding out (of private investment).
  - Money creation may increase inflation
- Reasons not to be concerned:
  - Debt owed to own citizens.
  - Money used for capital investment.
  - Ricardian equivalence
  - Spending reduces unemployment

Fiscal Policy Lags

- Recognition lag: To identify the need for fiscal policy change.
- Action lag: To enact legislation.
- Impact lag: For the policy change to have the intended effect
- Lags can cause fiscal policy changes to be destabilizing rather than stabilizing

Fiscal Policy Limitations

- If economy is at full employment, fiscal stimulus will result in higher inflation.
- If economy is below full employment due to supply shortages, fiscal stimulus will lead to inflation rather than GDP growth.
- If the economy has high unemployment and high inflation (stagflation), fiscal policy cannot address both.

Analysis of Fiscal Policy

- A full-employment (cyclically adjusted) deficit amount can be used to account for the stage of the business cycle.
- Automatic stabilizers (taxes and transfer payments) tend to increase deficits during recessions and decrease deficits during expansions.

Optional Questions

Question 1:

- According to the theory of money neutrality, money supply growth does not affect variables such as real output and employment in:
  - A. the long run.
  - B. the short run.
  - C. the long and short run.

Question 2:

- Which role is a central bank least likely to assume?
  - A. Lender of last resort.
  - B. Sole supervisor of banks.
  - C. Supplier of the currency.

Question 3:

- The least likely limitation to the effectiveness of monetary policy is that central banks cannot:
  - A. accurately determine the neutral rate of interest.
  - B. regulate the willingness of financial institutions to lend.
  - C. control amounts that economic agents deposit into banks.

Question 4:

- The most likely argument against high national debt levels is that:
  - A. the debt is owed internally to fellow citizens.
  - B. they create disincentives for economic activity.
  - C. they may finance investment in physical and human capital.