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Module 27
Monetary Policy

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AP Macroeconomics

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Monetary Policy

- Efforts made the country's central bank (The Fed, Bank of Japan, ECB, Bank of England, etc.) to promote full employment, maintain price stability, and encourage long-run economic through control of the money supply and interest rates.

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Types of Monetary Policy

- Expansionary
  (Easy Money)
  – Monetary policy designed to counteract the effects of recession and return the economy to full employment.
- Contractionary
  (Tight Money)
  – Monetary policy designed to counteract the effects of inflation and return the economy to full employment.

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The Four Tools of Monetary Policy

- Required Reserve Ratio
  - (and Contractual Clearing Balances)
- The Discount Rate
- Open Market Operations (OMO)
- Term Auction Facility (TAF)

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Required Reserve Ratio (rr%)

- The % of demand deposits that must be stored as vault cash or kept on reserve as Federal Funds in the bank's account with the Federal Reserve.
- The Required Reserve Ratio determines the money multiplier ($^1/_{rr\%}$)
  - Decreasing the reserve ratio <u>increases</u> the rate of money creation in the banking system and is expansionary. (Banks can lend more money)
  - Increasing the reserve ratio <u>decreases</u> the rate of money creation in the banking system and is contractionary. (Banks have to keep more money)
- Changing the required reserve ratio is the least used tool of monetary policy and is usually held constant at 10%.
  - Remember, the AP test will use 5%, 10%, 20%, and 25% as numbers!

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Contractual Clearing Balance

- Even though some deposits are not subject to the reserve requirement, banks may contract with the fed to maintain a clearing balance in order to have the funds necessary to clear transactions at the end-of-day.
- Contractual Clearing Balances provide the Fed with information to better conduct monetary policy

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The Discount Rate

- The interest % banks pay the Fed for overnight loans in order to meet the required reserve
  - Decreasing the discount rate lowers the cost of borrowing for banks, thus creating an incentive for banks to loan more of their excess reserves and borrow from the Fed in order to meet their reserve requirement or contractual clearance balance. The effect is to increase the money supply and is therefore expansionary.
  - Increasing the discount rate raises the cost of borrowing for banks, thus creating an incentive for banks to loan less of their excess reserves. The effect is to decrease the money supply and is therefore contractionary.

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The Discount Rate

- The discount rate is a secondary tool of monetary policy. It functions as a substitute to the Fed Funds market, providing banks with necessary liquidity when they are unable to access Fed Funds from other private sector banks. However, banks are often reluctant to utilize the discount window.
- The discount rate is usually higher than the fed funds rate.

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Open Market Operations

- The purchase and sale of government securities by the Fed in order to increase or decrease banks' excess reserves. OMO determines the Fed Funds rate, which is the interest % banks pay each other for overnight loans of Federal Funds
  - When the Fed buys bonds, excess reserves in the banking system increase and is therefore expansionary.
  - When the Fed sells bonds, excess reserves in the banking system decrease and is therefore contractionary.

OMO is the primary tool of monetary policy.

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Term Auction Facility (TAF)

- Instituted in December 2007 in response to a crisis in the Fed Funds market and a reluctance of banks to utilize the Fed's discount window . Under the TAF, banks can competitively bid against each other on collateralized 28 day loans from the Fed in incremental amounts from $10 million to $3 billion. The total amount of funds available for auction are determined prior to the auction by the Fed. The purpose of the TAF is to ensure bank liquidity without the perceived downsides of utilizing the discount window.
  - The Term Auction Facility is a tool of expansionary monetary policy
  - The interest rate on a TAF loan (stop-out rate) is most likely between the fed funds rate and the discount rate

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AP Tips & Tricks

- It can be hard sometimes to remember which tool by the Central Bank should be used because of the varying rates. This list below shows the rates from lowest on the left to highest on the right

(Fed Funds Rate) → TAF → Discount Rate

Lowest (most preferred) **Highest (least preferred)**

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Why would a bank need an overnight loan?

- Banks are like any other business in that they seek to maximize profits. Banks make a profit by loaning out as much of their excess reserves as possible and charging interest to the borrower. If, in the course of business, they have loaned out all excess reserves and do not have enough money to satisfy the required reserve ratio or their contractual clearing balance , then they must either borrow from the Fed's discount window, borrow from the Fed through the TAF, or most likely borrow from each other in the Fed Funds market .

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Expansionary Monetary Policy to Counteract a Recession w/ reinforcing effect on Net Exports

Res. Ratio$\downarrow$ Disc. Rate$\downarrow$ Buy Bonds TAF	=	ER $\uparrow$, therefore MS$\uparrow$ causing i%$\downarrow$ which leads to $I_G\uparrow$ so AD $\rightarrow$, resulting in GDP_R $\uparrow$ and PL$\uparrow$, making u%$\downarrow$

And now! Because i% $\downarrow$ either $D_\$\leftarrow$ or $S_\$\rightarrow$ which causes \$$\downarrow$ making U.S. goods relatively cheaper and foreign goods relatively more expensive causing X$\uparrow$and M $\downarrow$ which means $X_N\uparrow$ thereby reinforcing the increase in AD already caused by the increase in I_G.

ER = Excess Reserves
MS = Money Supply
i% = Nominal Interest Rate
I_G = Gross Private Investment
$D_\$$= Demand for dollars in FOREX
X = Exports

AD = Aggregate Demand
PL = Price Level
GDP_R = Real Gross Domestic Product
u% = Unemployment Rate
$S_\$$ = Supply of Dollars in FOREX
M = Imports, X_N = Net Exports

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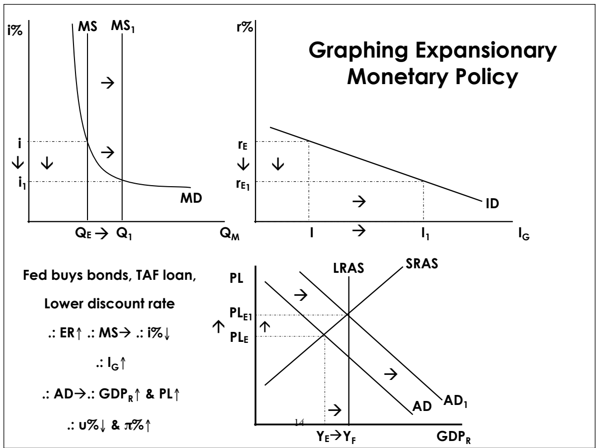

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Contractionary Monetary Policy to Counteract Inflation w/ reinforcing effect on Net Exports

Res. Ratio$\uparrow$ Disc. Rate$\uparrow$ Sell Bonds	=	ER $\downarrow$,therefore MS $\downarrow$ causing i%$\uparrow$which leads to $I_G\downarrow$ so AD $\leftarrow$, resulting in PL $\downarrow$ and GDP_R $\downarrow$, making u%$\uparrow$

And now! Because i%$\uparrow$either $D_\$\rightarrow$or $S_\$\leftarrow$ which causes \$$\uparrow$making U.S. goods relatively more expensive and foreign goods relatively cheaper causing X$\downarrow$and M $\uparrow$ which means $X_N\downarrow$thereby reinforcing the decrease in AD already caused by the decrease in I_G.

ER = Excess Reserves
MS = Money Supply
i% = Nominal Interest Rate
I_G = Gross Private Investment
$D_\$$= Demand for dollars in FOREX
X = Exports

AD = Aggregate Demand
PL = Price Level
GDP_R = Real Gross Domestic Product
u% = Unemployment Rate
$S_\$$ = Supply of Dollars in FOREX
M = Imports, X_N = Net Exports

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Summary

- Monetary policy is the process by which the Central Bank of a country tries to return an economy back to full employment equilibrium.
  - Expansionary policy aims to get out of a recession by increasing government spending and/or decreasing taxes whereas Contractionary policy aims to lower inflation by decreasing government spending and/or raising taxes.

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