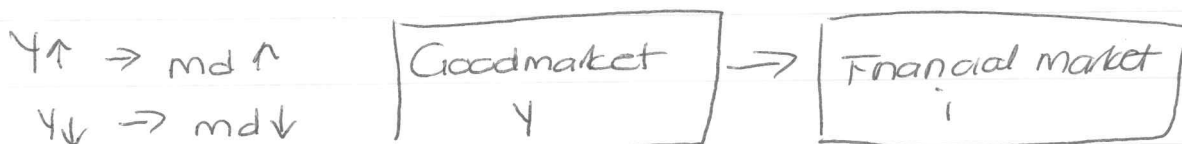④

Financial Markets

Demand for money →

→ Influenced by a factors → level of output Y ⟍ Possitive relationship
→ interest rate i   negative relationship

→ demand for money increases — ↑ output level increases
  demand for money decreases → ↓ output level decreases

         Y = level of output   interest rate
  $Y \uparrow \Rightarrow Md \uparrow$ $i \uparrow \Rightarrow Md \downarrow$
  $Y \downarrow \Rightarrow Md \downarrow$ $i \downarrow \Rightarrow Md \uparrow$

level of output + income represents the number of transactions
→ to do transactions → money is needed.

  $Y \uparrow \Rightarrow$ transactions $\uparrow \Rightarrow Md \uparrow$
  ⌣
  possitive transaction

  $Y \uparrow \Rightarrow Md \uparrow$ | Good market | → | Financial market |
  $Y \downarrow \Rightarrow Md \downarrow$ | Y | | i |
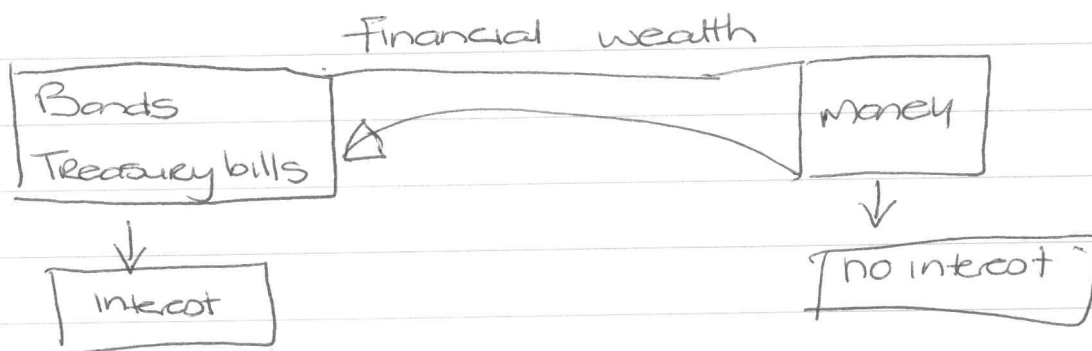
Financial weath → bonds → interest.
                → money → no interest
∴ money opportunity cost as there is no interest → cost is the interest
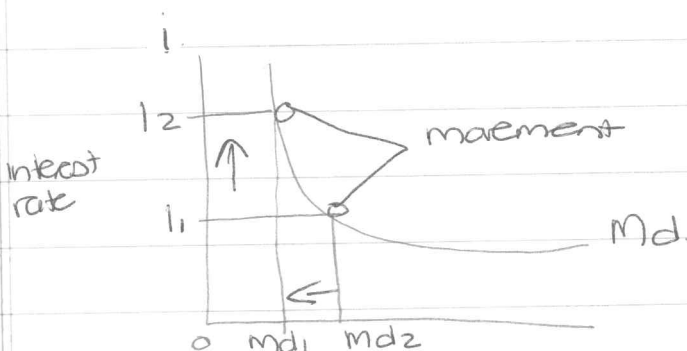→ higher the interest rate → higher the opportunity cost of money → less money people want to hold.
→ high interest rate people will swith from ~~bond~~ money → bonds → lower quantity of money demanded.

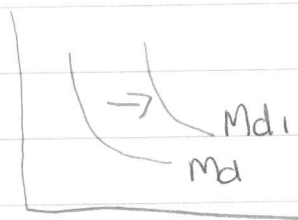→ the higher the interest rate → the lower the demand for money is

Financial wealth

Bonds		Money
Treasury bills		

↓   ↓

| Interest | | no interest |

$i\uparrow \rightarrow$ opportunity cost $\uparrow \rightarrow md\downarrow$

negative relationship

∴ $i\uparrow \rightarrow Md\downarrow$

$i\downarrow \rightarrow Md\uparrow$

i

I_2 — movement

Interest rate

I_1 — Md

o Md_1 Md_2

If Y increases → demand for money increases to buy more

Md₁

Md

Interest - shift on same curve

shift of demand curve → change in level of output + income.

Income → What you earn

Salary + interest + dividends

Financial wealth (wealth) → bonds, stocks, → have less liabilities
value of financial assets → Less Liabilities

Money → current check accounts / currency.

Financial Bonds + money (financial wealth) is
divided based on 2 factors
↳ Level of transactions
↳ interest Rates

level of transactions → enough money on hand
to avoid having to sell bonds to get money
to often

Interest Rates → reason to hold bonds is the
Money they pay ↑ the interest rate the more
willing people will be to keep these bonds /
treasury bills

Increase in the demand for bonds →
decrease in the demand for money.
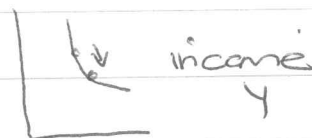
Deriving the demand for money

$$M_d = \$Y \, L(i)$$
$$(-)$$

M_d = Money demand

$\$Y$ = Nominal income

$$\uparrow M_d = Y\uparrow$$
$$Y\downarrow = M_d\downarrow$$
$\Big\rangle$ + relationship

↓ income
y

$$i\downarrow = M_d\uparrow$$
$$i\uparrow = M_d\downarrow$$
$\Big\rangle$ – relationship

interest i

Determination of the Interest Rate

Supply of Money.

→ controlled by a central bank - SA Reserve Bank
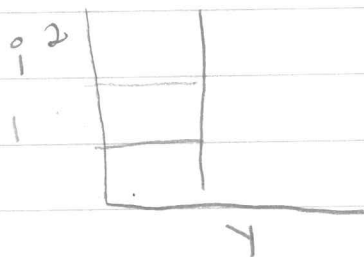- US Treasury.

* exogenously determined supply of money
  → money supply is determined by the central bank
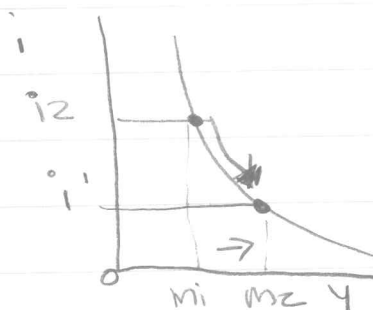 → independent from the interest rate
  → change in Interest Rate from i to i2 does
  NOT affect the demand of money

i2

i

y

Demand determined supply

→ supply of money depends on the interest rate.

→ supply of money depends on the demand for money and interest rate

→ interest rate is determined mainly by the monetary authorities

→ decrease in the interest rate from i^2 to i^1 increases the quantity of money demanded + quantity of money supplied

→ No independent money supply curve just the demand for money curve
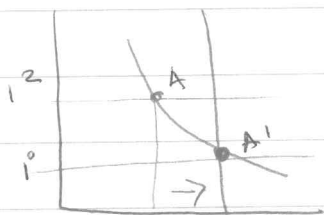

Equilibrium in the financial Market

→ Equilibrium in the market where money supply = money demand

→ people must be willing to hold an amount of money = to the existing money supply → This relationship is the LM relation

→ interest rate must be of such that the supply
of money = the demand of money
supply is Indepen't of interest rate
demand is dependent on interest rate

→ increase in nominal Income leads to a
increase in interest rate

→ Increase in supply of money → decrease of
interest rate

∴ increase in supply of money by the central bank
leads to a decrease of interest rate.

Open Market Operations + Monetary Policy

→ measures taken by the monetary authorities to influence
the quantity of money or the rate of interest with a
view to achieving stable prices, full employment, +

economic growth.

→ central bank holds both money (currency) + bonds.

→ central bank is not part of the money supply.

→ If the central bank wishes to increase the money supply it **Buys** Treasury bills on the open market from a broker. money supply is increased + the Ms moves to the Right

→ If the central bank wishes to decrease the money supply it **Sells** Treasury bills to a broker on the open market. the Ms line moves to the left.

→ Increase in money supply eventually leads to the decrease of interest rate.

Price of Treasury bills + the Interest Rate

→ Treasury bills are traded on a discount price basis + redeemed at par on maturity date.

→ Redeemed @ par → holder of a treasury bill with a face or nominal value of 100,000 → is entitled to the 100,000

→ does not promise to pay interest → the diff between paid value + par value is the int.

→ Rate of Return → benchmark indicator of financial market conditions + acts as a reference rate for the calculation of interests on many financial market assets.

$$\frac{\text{Face value} - \text{price paid}}{\text{price paid}}$$

→ Price of treasury bills (bonds) increase the rate of return (int. rate) on them decreases

$$P_B \uparrow \Rightarrow i \downarrow$$

→ Price of treasury bills (bonds) decrease → the rate of return (int rate) on them increases.

→ to change the interest rate the central bank must convince the financial market to buy or sell treasury bonds.

$$M_S \uparrow : D_B \uparrow = P_B \uparrow = i \downarrow$$

- increase Ms Supply → central bank increases the demand for bonds (D_B) which causes an increase in the price of bonds (P_B) & consequently the interest rate (i) declines

$$M_S \downarrow : D_B \downarrow = P_B \downarrow = i \uparrow$$
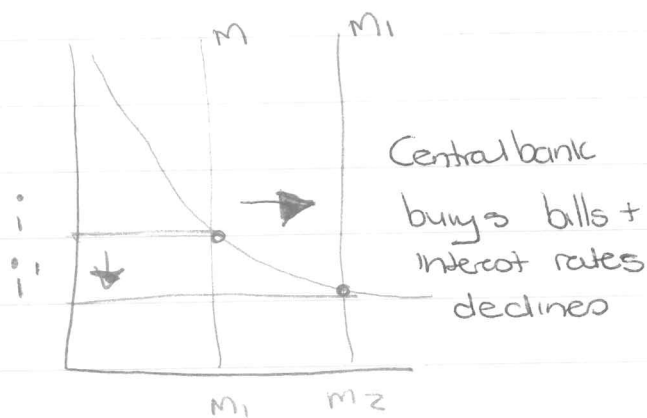
→ decrease money supply (Ms) → central bank decreases the demand for bonds (D_B) which causes a decrease in the price of bonds (P_B) & subsequently increases the interest rate
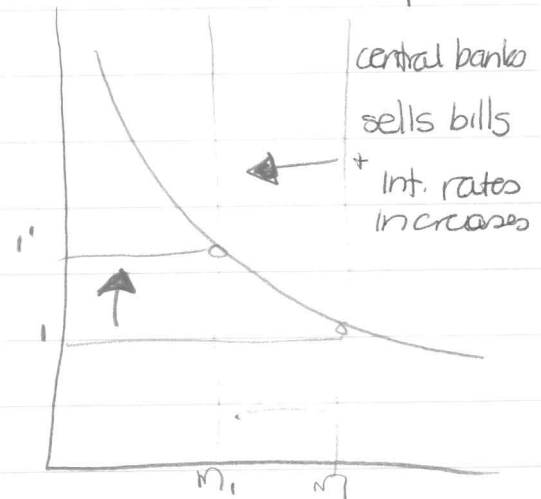
Change in income & the equilibrium interest rate.

- Increase in income → increase in the interest rate
- income increases → demand for money for transaction purposes
- excisting equilibrium interest rate → excess demand for money develops → people want to hold onto money for transaction purposes.
- To get hold of the money – bonds are sold → supply of bonds increases on the market → this additional bonds cause the decrease of bond pricing & increases the interest rate.

$$Y\uparrow = Md\uparrow \Rightarrow Pb\downarrow \Rightarrow i\uparrow$$

Expansionary market

Central bank buys bills + interest rates declines

Contractionary

central banks sells bills + Int. rates increases

→ Increase in income
    ↳ Shift to Right
    ↳ Interest rate goes up
    ↳ money supply to right (Expansionary)
                            left → Contrationary

→ Impact of decrease in income
    ↳ shifts left.
    ↳ Int. rate goes down.
    ↳ money supply to right (expansionary)
                    left (contradictionary)