

5.4 Demand for Money, Demand for Liquidity

Reasons for holding Money

➤ Transaction Demand for Money (M^d_t)

➤ Precautionary Demand for Money (M^d_p)

➤ Speculative Demand for Money (M^d_s)

5.4 Demand for Money, Demand for Liquidity

Money Demand Function

$$M^d = M^d_t + M^d_p + M^d_s$$

$$M^d = f (r, Y, \dots)$$

(-) (+)

5.4 Demand for Money, Demand for Liquidity

Suppose there are only two assets: **Money** and **Bond**

Money

High
liquidity

No
interest

Bond

Low
liquidity

with
interest

Relationship between price of bond and interest rate

Face value = 100 Baht

Maturity date = 20 years

Coupon rate = 5%

Coupon payment = 5 Baht per year

When issuing bond suppose bond price = 100 Baht

Nominal interest rate in the market = 5%

If in the second year, nominal interest rate increases to 7%

Q: If you want to sell bond in the second year can you sell at the price of 100 Baht?

A: No, you must sell at a lower price, otherwise no one want to buy your bond

Negative relationship between Price of Bond and Interest Rate

Relationship between price of bond and interest rate

Face value = 100 Baht

Maturity date = 20 years

Coupon rate = 5%

Coupon payment = 5 Baht per year

When issuing bond suppose bond price = 100 Baht
Nominal interest rate in the market = 5%

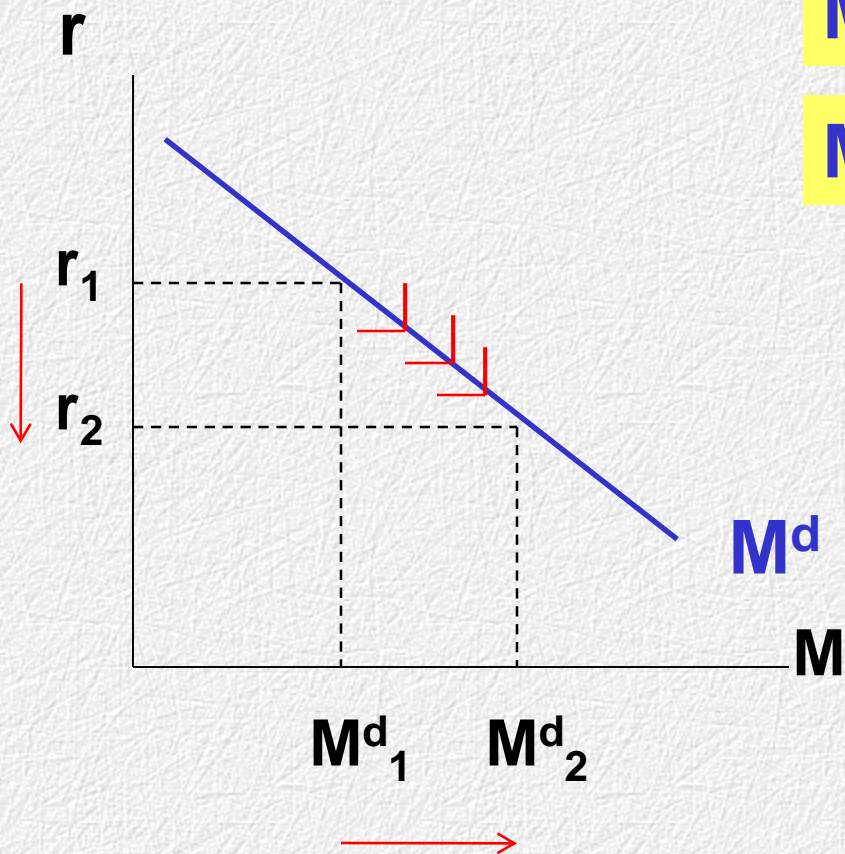
If in the second year, nominal interest rate decreases to 3%

Q: If you want to sell bond in the second year will you sell at the price of 100 Baht?

A: No, you can sell at a higher price and other people still want to buy your bond

Negative relationship between Price of Bond and Interest Rate

Move along M^d curve



$$M^d = M^d_t + M^d_p + M^d_s$$

$$M^d = f(r, Y, \dots)$$

(-) (+)

$r \downarrow$



$M^d \uparrow$

nominal GDP



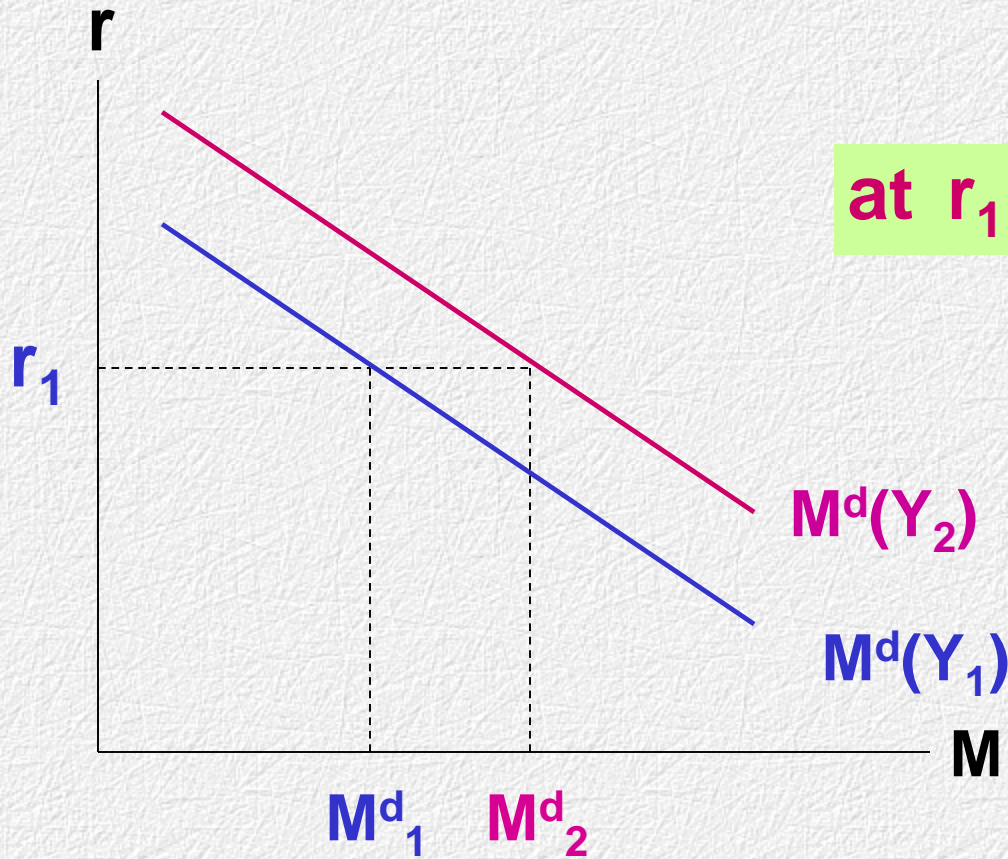
$$\text{Nominal } M^d = L(\$Y, i)$$

$$\text{Real } M^d = L(Y, r)$$



real GDP

Shift in M^d



at r_1 , if $Y \uparrow$ \Rightarrow $M^d \uparrow$

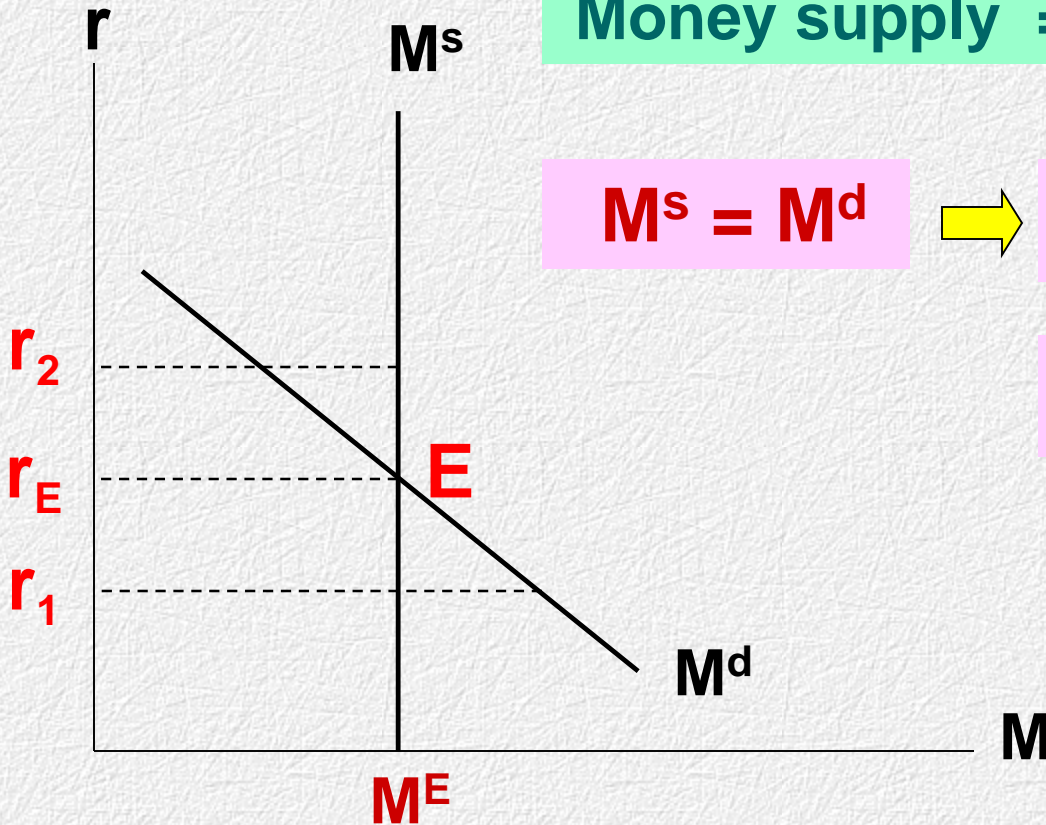
(M^d shift to the right)

5.5 Equilibrium in Money Market

Money supply = Money demand

$M^s = M^d \Rightarrow \text{Equil}^m \text{ money} = M_E$

$\text{Equil}^m \text{ interest rate} = r_E$



Equilibrium in Money Market

•at r_1



$r < r_E$



$M^d > M^s$



Excess Demand
for Money



People sell
bond to hold
money



Bond price ↓



Interest rate ↑



M^d ↓ until $M^d = M^s$

Equilibrium in Money Market

• at r_2



$r > r_E$



$M^s > M^d$



Excess Supply
of Money



People use
this ES of
money to buy
bond



Bond price ↑



Interest rate ↓



$M^d \uparrow$ until $M^d = M^s$

• at r_E



$r = r_E$



$M^s = M^d$



Equilibrium

5.6 Changes in equilibrium money market

Start with M^d_1, M^s_1, E_1

When factors determining M^d and M^s (rather than r) Δ

Ex. Central bank buy government bonds back

$M^s \uparrow$ (M^s shift to the right)

Equilibrium changes from E_1 to E_2

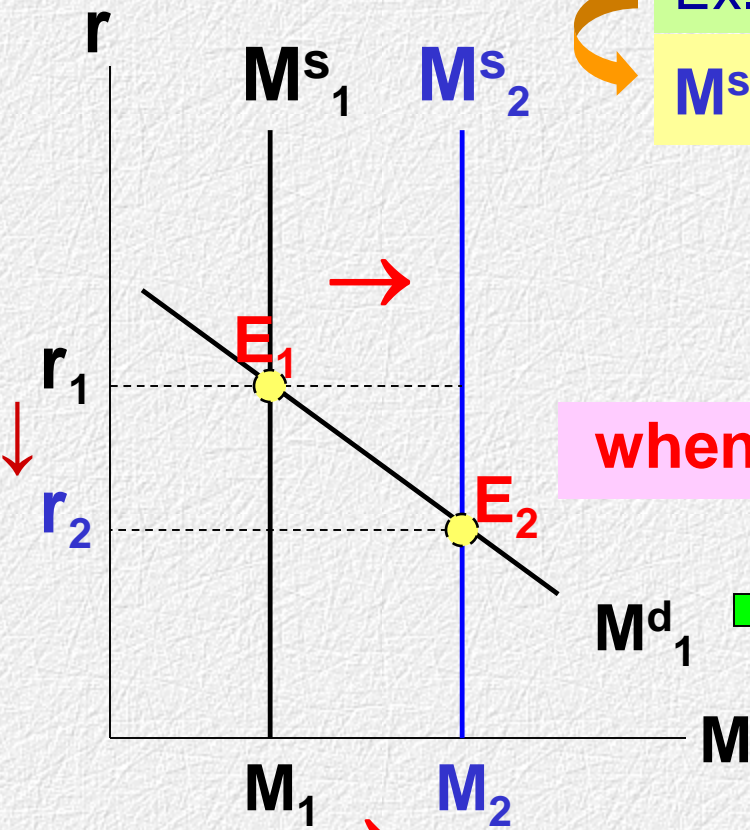
$r \downarrow$ from r_1 to r_2

when $M^s = M^s_2$ at $r_1 \Rightarrow M^s(\text{now}) > M^d$

Excess Supply of Money \Rightarrow D. for Bond \uparrow

$P_{\text{Bond}} \uparrow \Rightarrow r \downarrow$ until $r = r_2$

Note: when $M^s > M^d \rightarrow \therefore r \downarrow$ in order to $\uparrow M^d$ until $M^d = M^s$



Start with M^d_1, M^s_1, E_1

If people income \uparrow

$M^d \uparrow$ (M^d shifts to the right)

Equilibrium changes from E_1 to E_2

$r \uparrow$ from r_1 to r_2

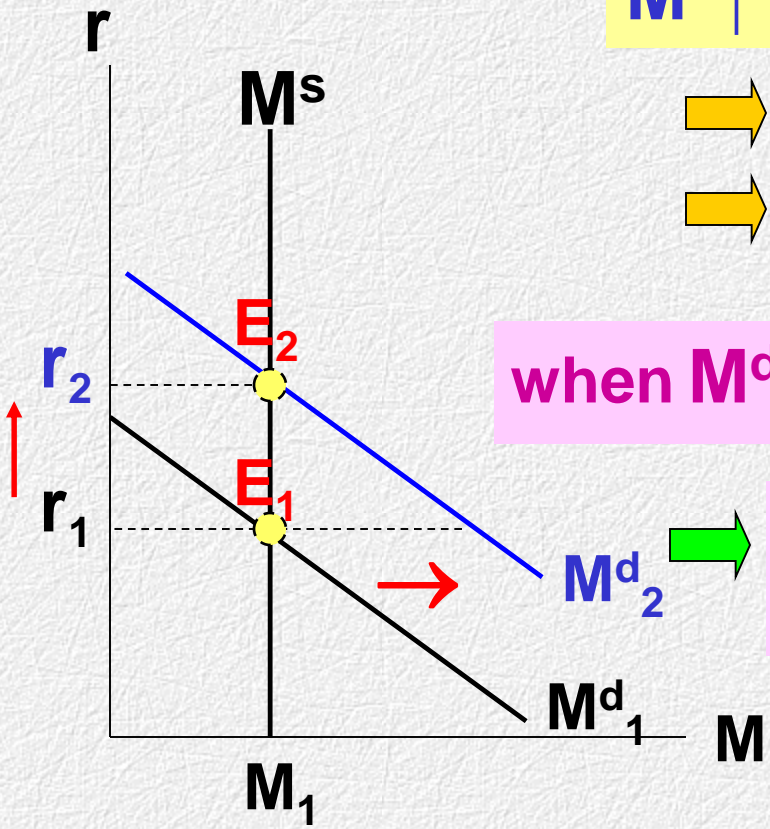
when $M^d = M^d_2$ at $r_1 \Rightarrow M^d(\text{now}) > M^s$

Excess Demand of Money

People sell bonds to hold money

$P_{\text{Bond}} \downarrow \Rightarrow r \uparrow$ until $r = r_2$

Note: when $M^d > M^s \rightarrow \therefore r \uparrow$ in order to $\downarrow M^d$ until $M^d = M^s$



Financial Market

➤ **Definition:** a market that facilitates the transfer of money from the economic unit with saving to economic units needed money for investment

➤ Types of Financial Market

Money market: short-term borrowing and lending (promissory note) with original maturities of one year or shorter time frames, such as money deposit in the bank, corporate bond, treasury bills (treasury notes) with maturities less than 1 year

Capital Market: long-term borrowing and lending (promissory note) with original maturities of one year or longer time frames, such as money deposit in the bank, corporate bond, treasury bond with maturities more than 1 year

**Capital
market**

```
graph LR; A[Capital market] --- B[Debt market]; A --- C[Security market]
```

Debt market

Security market

- **Primary Market**

deals with the issuance of new securities

- **Secondary Market**

the financial market where previously issued securities and financial instruments such as stock and bonds are bought and sold