

- Income distribution effect (increasing savings through profit)
→ Savings of profit-earners will rise
- Inflation tax effect
Inflation leads to more money getting transferred to govt. as tax which will finally go to more investments done by the govt.

★ Financial Regulation Theory

- Financial markets are prone to market failure.
- Certain forms of Government intervention are required.
- The lowering of interest rates through government intervention improves the average quality of the pool of loan applications, and improves the efficiency with which capital is allocated.
- Lower interest rates makes the loans cheaper for the firms and the total output will rise.
- When there is underemployment and some capacity that is unutilized, then lowering the interest rate would help in increasing

investment.

- Direct credit programmes can encourage lending to sectors which are usually shunned by the market.
There are certain sectors and industries which are not very profitable, but the products produced by those sectors are needed by other industries e.g. agriculture and small scale industries.
- Some amount of money has to be provided to these sectors for their development. Government reserves some funds in particular for these sectors. This is called priority sector lending.
- Government intervention can lead to some equality of uniformity in fundings across the sectors.
- Government intervention provides that public good.
- Stable payment system.
In India, all transactions including loans, savings, stock market investments etc are driven by the banks, ∴ govt intervention leads to a more stable and secured payment system by regulating the banks.

- Norms and regulations given by the govt. and other regulatory bodies make the system secured.

* Financial Liberalisation Theory.

- Increase in interest rates on a variety of financial assets as they would adjust to their competitive free-market equilibrium level.
- Indian market is considered to be risky, so interest rate is kept high so that foreign investors borrow from their market and can invest in Indian market at a higher interest rate i.e. it attracts foreign investment.
- This will lead to more players in the market because of increased foreign investments and market will be competitive.
- And perfect competition will lead to eq. in the market.
- Increase in savings, reduction in the holding of real assets, and increase in financial deepening.
As savings will increase, consumption of goods will decrease & people will shift from consumption to savings/investment

in financial institutions.

- Expansion in the supply of ~~seed~~ real credit
→ Increase in investment → Increase in average productivity of investment → Increase in allocative efficiency of investment.
- Now, RBI can only change the policy rates which ~~#~~ to some extent leads to change in savings and investment but banks are free to choose the other parameters.
- Therefore, it can be concluded that some degree of regulation is required but mostly the market should be free and competitive.
- Aggregate Financial Development Indicators
- Finance Ratio (FR): the ratio of total issues of primary and secondary claims to national income.
⇒ Money raised in financial market from primary to secondary markets / National income.
- Financial Inter-relation Ratio (FIR): The ratio of financial assets to physical assets in the economy.
- Finance ratio has a direct relation to the growth of an economy.

- **New Issue Ratio:** The ratio of financial assets to physical assets in the economy primary issues to the physical capital formation which indicates how far investment has been financed by direct issues to the savers by the investing sectors.
- It measures the amount of investment which is financed by direct issues to the savers i.e. the extra money which is created through the direct issues.
- **Intermediation Ratio (IR):** The ratio of secondary issues to primary issues, which indicates the extent of development of financial institutions as mobilisers of funds relative to real sectors as mobilisers of funds. It indicates institutionalisation of the financial activity in the economy.
- If secondary issues are more than money is better mobilised in the secondary market but if the primary issues are more then we are able to generate more funds in the system for investment.
- **The ratio of money to national income:** the higher this ratio, the greater the financial development because it indicates the extent of monetisation and the size of exchange in economy in the country.

- The proportion of current account deficit which is financed by market related flows.

Current account deficit = Import - Export

- Current account deficit = Import - Export.
It can be financed through government intervention or by market related flows which try to increase the export. If the deficit is financed by markets without any govt. intervention then it implies that financial markets are developed, otherwise, vice-versa.
- Developed financial market is fully integrated (is not segmented) domestically as well as internationally.
Nowadays, international linkages of markets across the world are helping in the development of financial markets.
- Lower the transaction cost and information cost.
If the transaction cost is low and there is no asymmetric information in the market then the price gap b/w the buyers and sellers will be less and there will be transparency and financial markets will be more developed.

- Private banking and not public sector banking is promoted.

Most of the banks in India are govt. owned i.e. public sector banks. If lendings by private sector banks increase, then we can say that private banking is developing because it implies there is more money in circulation, more savings, more investments, etc.

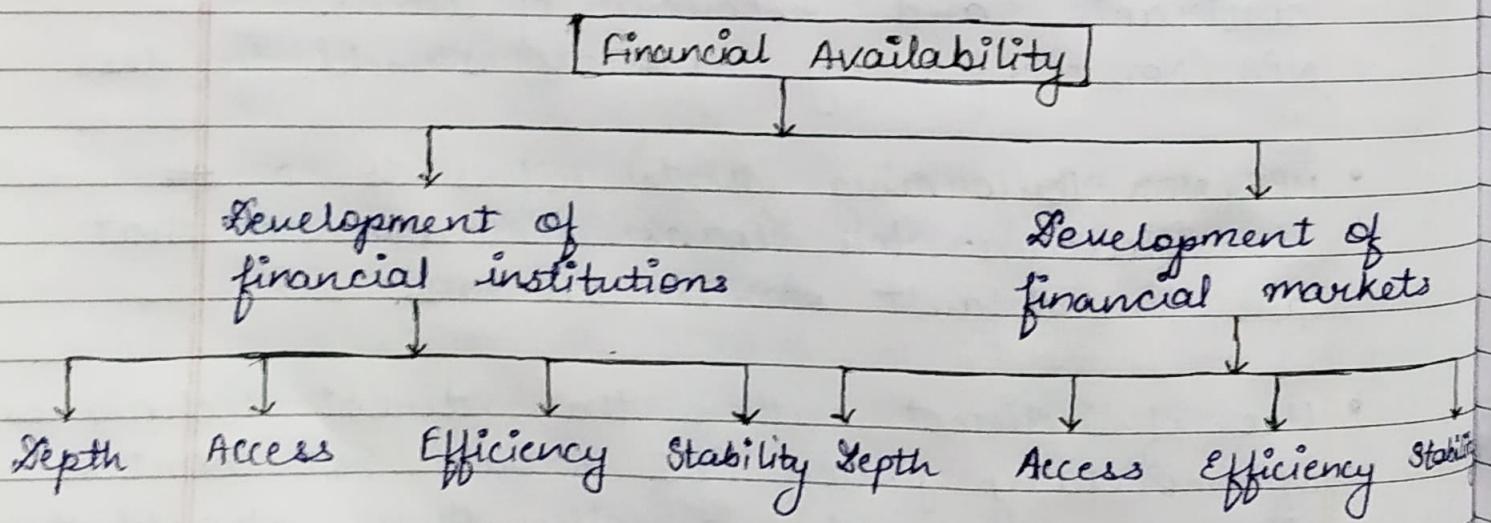
- Strong and effective system of supervision, inspection, auditing, and regulation.
Different regulatory bodies regulate and take care of the stakeholders by different policies and guidelines. Supervision system should be strong because it makes the system more robust.
- If number of private banks will increase then banks would be more accessible for many people and reliance on the govt. will ~~decrease~~ decrease. So private banking should be encouraged.
 - If some fraud or unfortunate loss happens, whole burden will not fall upon the government.
 - Banks would be more accessible.
 - Competition will increase in the banking sector. ∴ Services will be better.

- Physical assets → Total amount of money utilised in the market for physical capital formation. i.e. land, machinery, buildings, etc.
- Financial assets → Money flown in different markets: stock market, debt market, savings and investments, etc.
- Presence of strong, active, large-sized non-bank financial sector comprising stock market, debt market, insurance companies, pension funds, mutual funds, etc.
- High level of current and capital account openness/convertibility and minimum restrictions on foreign ownership of assets. Ease of converting foreign currency to Indian and vice-versa to make foreign investments easier.
- Effective and quick enforcement of financial contracts, and recovery of loans.
NPA (Non-Performing Assets) should be less.
- NPA (Non-Performing Assets) refers to a classification for loans or advances that are in default or in arrears.
- Use of indirect rather than direct techniques of monetary policy. RBI should not control the money supply directly, there should be

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proper channels through which money supply
should be controlled.

- whenever there is monetary control through indirect measure then we can say that the market is mature enough & the regulation can be transmitted to the market in an effective way.
- If RBI wants ~~to~~ to decrease the ~~to~~ money supply and loans and it directly orders the banks to do so won't be a good ~~to~~ impression. Instead, it will increase the REPO rate, ~~to~~ and it will be difficult for the banks to take loans from ^{DD} RBI and funds of the bank will decrease and ~~to~~ ultimately the borrowing, lending rates of the bank will decrease and demand for loans will decrease.
- Dimensions of Financial sector development



- Indicators

- Depth:

→ Financial Institutions

- 1) Private sector credit to GDP
- 2) Mutual fund assets to GDP
- 3) Pension fund assets to GDP
- 4) Nontank. financial assets to GDP

→ Financial Markets

- 1) Stock market capitalization to GDP
- 2) Stock market total value traded to GDP
- 3) International debt issues to GDP
- 4) Outstanding domestic private debt securities to GDP
- 5) Outstanding domestic public debt securities to GDP.

- Access

→ Financial institutions:

- 1) Bank branches per 100000 adults
- 2) ATMs per 100000 adults
- 3) Working capital financed by banks.

→ Financial Markets

- 1) Market capitalization excluding top 10 top largest companies to total market capitalization
- 2) Non-financial corporate bonds to total bonds.
- 3) Investment financed by equity or stock sales.

- Efficiency

→ Financial Institutions

- 1) Bank net interest margin
- 2) Bank lending - deposit spread
- 3) Non-investment income to total income
- 4) Return on assets
- 5) Return on equity
- 6) Bank cost to income ratio
- 7) Bank overhead ~~as~~ cost to total assets

→ financial markets

Stock market turnover ratio (stocks traded to capitalization)

- Stability

→ Financial Institution

- 1) Bank Z-score
- 2) Non-performing loans to total loans (%)
- 3) Bank credit to bank deposits
- 4) Capital to risk weighted assets

→ financial markets

Stock price volatility.

- Once individual ratios are calculated, weighted average is taken to calculate the aggregate score.

* Risk and Return

What is risk?

- Risk is a situation wherein objective probability distribution of the values of a variable is known, even though the exact values it would take are not known.
- The objective probability is one which is supported by rigorous theory, past experience and the laws of chance.
- The risk can be defined as the chance that the expected or prospective advantage, gain, profit or return may not materialise; that the actual outcome of investment may be less than the expected outcome.
- The greater the variability or dispersion in the possible outcomes, or the ~~broad~~ broader the range of possible outcomes, the greater the risk.

Measures of risk.

- The variance and standard deviation of return serve as the alternative statistical measures of the risk of the security in an absolute sense.

- Covariance measures the risk of the security relative to other securities in a portfolio.
- Value-at-risk is a statistical measure of the riskiness of financial assets or portfolio of assets. It is defined as the maximum amount expected to be lost over a given time horizon, at a pre-defined confidence level. For example, if 95% one-month VAR is Rs. 5 million, there is 95% confidence that over the next month the portfolio will not lose more than Rs. 5 million.

Types of risk.

- The variability in a security's total return that is directly associated with the overall movements in the general market or economy is called systematic risk. This risk cannot be diversified. The systematic risk arises due to the fluctuations of ~~the~~ macroeconomic fundamentals like interest rate, inflation, etc.
- The variability in a security's total return that is not related to the overall market variability is called unsystematic risk. This type of risk can be diversified and it is specific to individual entity i.e. individual company. The unsystematic risk can also

be called as idiosyncratic risk.

* Types of systematic Risk

- Market Risk (beta)
- Interest Rate Risk
- Inflation Risk
- Exchange Rate or Currency Risk

* Market Risk (Beta)

- Beta indicates the extent to which the risk of a given asset is non-diversifiable; it is a coefficient measuring a security's relative volatility. Statistically, beta is the ~~covari~~ covariance of a security's return with that of the market for a security class.
- It is the slope of the regression line ~~not~~ relating a security return with the market return. The security with a higher (than 1) beta is more volatile than the market, and the asset with a lower (than 1) beta would rise or fall more slowly than the market.

$$\beta = \frac{\text{Cov}(i, m)}{\sigma_m^2} = \frac{\sum i * \sigma_m^2}{\sigma_m^2} = \frac{\sum i}{\sigma_m}$$

$i \rightarrow$ Individual returns

$m \rightarrow$ Market returns.

$\sigma_{im} \rightarrow$ Correlation b/w $i \& m$.

$$R_i = f(R_m)$$

$$R_i = \alpha + \beta R_m + \epsilon$$

\downarrow
Market-risk.

* Interest Rate Risk

- Interest rate risk is the variability in return on security due to changes in the level of market interest rates.
- Interest rate risk has two parts. First, the price risk resulting from the inverse relationship between the security price and interest rates.
- Second, the reinvestment risk resulting from the uncertainty about the interest rate at which the future coupon income or principal can be reinvested.
- These two parts of interest rate risk move in opposite directions.

$P = \frac{\text{Cashflow}}{\text{Discount rate}}$

Bond price = $\frac{\text{Cashflow}}{\text{Interest rate}}$

Interest rate rises \rightarrow Bond price falls
 \Rightarrow Price risk

- When interest rate rises, bond price falls, but the returns gained from the bond could be reinvested at the current interest rate and ultimately the ~~is~~ total cashflow will rise.
- With increase in interest rate, price risk rises and reinvestment risk falls.

* Inflation risk

- Inflation risk is also known as purchasing power risk as there is always a chance or probability that the purchasing power of invested money will decline, or that the real (inflation-adjusted) return will decline due to inflation.
- Inflation risk is really the risk of unanticipated or uncertain inflation.

* Exchange rate or Currency Risk

- Exchange rate risk refers to cash-flow variability experienced by economic units engaged in international transactions or international exchange, on account of uncertain ~~or~~ unexpected changes in exchange rates.
- There is no exchange rate risk under the fixed exchange rate system, while it is the

highest under the freely floating exchange rate system.

* Country risk

- Country risk is the degree to which political and economic unrest affect the securities of issuers doing business in a particular country.
- It is the probability of loss due to political instability in the buyer's country resulting in inability to pay for imports.

* Types of Unsystematic risk

- Business risk
- Financial risk
- Default risk.
- Liquidity risk.
- Maturity risk.
- Call risk.

* Business risk \rightarrow Sales revenue i.e. volatility of sales revenue.

* Business risk is the uncertainty of income flows that is caused by the nature of a firm's business.

- This risk has two components: internal and external. The former results from the operating conditions or operating efficiency of the firm, and it is manageable within or by the firm. The latter is the result of operating conditions which the firm faces but which are beyond its control.
- E.g. Internal: Transaction cost, operating cost
External: Cost of factors of production.
- Business risk is measured by the distribution of the firm's operating income (i.e., firm's earnings before interest and tax) over time. ∵ it incorporates both - the sales side as well as the cost side. It will fluctuate
- * ~~Financial risk~~ if either of them are affected.
- * Financial risk
- Financial risk is associated with the use of debt financing by firms or companies.
- There is a risk ~~on~~ that the earnings of the firm may not be sufficient to meet these obligations towards the creditors.
- The use of debt by the firm causes variability of return for both creditors and shareholders.

- Financial risk is usually measured by the debt/equity ratio of the firm; the higher this ratio, the greater the variability of return and higher the financial risk.
- Debt is the borrowings made by the company and equity is the wealth of its shareholders i.e. funds owned by the company. If the company is not able to payback the debt, then the company will be liquidated.

$$\text{Leverage} = \frac{\text{Debt}}{\text{Equity}}$$

* Default risk or Credit risk

- Default risk arises from the failure on the part of the borrower or debtor to pay the specified amount ~~or~~ of interest and/or to repay the principal, both at the time specified in the debt contract or covenant or indenture.
- The default risk has the capital risk and income risk as its components, and that it means not only the complete failure to pay but also the delay in payment.
- Eg: Default in repayment of loan or in payment of coupons of bonds.

* Liquidity risk

- Liquidity risk refers to a situation wherein it may not be possible to dispose off or sell the asset, or it may be possible to do so only at great inconvenience, and cost in terms of money and time.
- The greater the uncertainty about time element, price ~~or~~ concession, and transaction cost, the greater the liquidity risk.
- For banks, and financial institutions, liquidity risk refers to their inability to meet the liabilities towards depositors when they want to withdraw their deposits.
- Competition leads to better information symmetry and distribution.

* Maturity Risk

- Maturity risk arises when the term of maturity of the security happens to be longer.
- Since foreseeing, forecasting and ~~envisioning~~ envisioning the environment, conditions and situations becomes more and more difficult as we stretch more and more into the future, the long-term investment involves risk.

* Call Risk

- Call-back provision: For some bonds, there is a provision that the owner ~~can~~ or company can redeem the bond from the holder before maturity. Call-back price is separately determined.
- Call risk is associated with the corporate bonds which are issued with call-back provision or option whereby the issuer has the ~~right~~ right of redeeming the bonds before their maturity.
- In case of such bonds, the bond holders face the risk of giving up higher coupon bonds, ~~reinvesting~~ reinvesting proceeds only at lower interest rates, and incurring the cost and inconvenience of reinvestment.

* What is Return?

- Return is the amount ~~or~~ or rate of produce, proceeds, gain, profit which accrues to an economic agent from an investment
- It is a reward for and a motivating force behind investment.
- The objective of the investor is ~~usually~~ usually to maximize return.

* Return Components

- Return on a typical investment has two components: the basic one which is the periodic cash or income receipts, either interest or dividend; and the other which is the appreciation or depreciation in the price or value of the asset, called the capital gain or the capital loss.
- The income component is usually but not necessarily ~~not~~ received in cash viz., stock dividend.
- The capital gain (or loss) is the difference between the purchase price of the asset and the price at which it can be sold.
- The total return on an investment thus can be defined as income plus/minus price appreciation/depreciation.

* Types of Return Concepts

- Expected return is an anticipated, predicted, desired, ex-ante return which is subject to uncertainty.
- Realised return, on the other hand, is actually earned; it is an ex-post return.

- Holding period return (HPR) measures the total return from an investment during a given or designated time period in which the asset is held by the investor.
- $$\boxed{HPR = \frac{\text{Ending value of investment}}{\text{Beginning value of investment}}}$$

$$HPY = HPR - 1$$

- Annual HPR = $HPR^{1/n}$,
 n = number of years the investment is held.

* Nominal and Real Return.

- Nominal return is the return in nominal rupees (terms).
- Real return is equal to the nominal return adjusted for changes in prices i.e., the rate of inflation.
- The relation between nominal and real return:
$$(1 + \text{Nominal Return}) = (1 + \text{Real Return})(1 + \text{Inflation rate})$$

* Required Rate of Return (RRR)

- The RRR for a security is defined as the minimum expected rate of return needed to induce or persuade an investor to purchase the security, given its risk.
- The RRR has two components:
 - Risk-free rate of return
 - Risk premium
- $RRR = \text{Risk-free rate of return} + \text{Risk premium}$
- Risk-free rate of return \rightarrow Treasury bill rate, coupon bond rate, etc., i.e. other risks are 0.
- Risk premium = f (macroeconomic fundamentals, industry specific variables and ~~company~~ company specific variables) \rightarrow also depends on market.

Calculation of RRR (Capital Asset Pricing Model).

- Assumption \rightarrow Unsystematic risk is diversifiable
- The Capital Asset Pricing Model (CAPM) is used in finance to determine a theoretically appropriate required rate of return of an asset, if that asset is to be added to an already well-diversified portfolio, given that asset's non-diversifiable risk.

- The model takes into account the asset's ~~sens~~ sensitivity to non-diversifiable risk (also known as systematic risk or market risk), often represented by beta (β).

Market risk = β .

$$E(R) = f(\beta)$$

$$E(R) = R_f + \beta(R_m - R_f)$$

Risk-free rate of return

$R_m \rightarrow$ market return.

$R_m - R_f \rightarrow$ Market risk premium

If β is more than $E(R)$ is more & vice-versa.

* Theories of Determination of Interest Rates

Interest Rate

- As all the other prices are determined in different markets, the equilibrium rate of interest is also determined by the forces of supply and demand in the financial markets.
- How aggregate interest rate is determined?
- Why the interest rate changes over time?
- Why interest rate differs over different characters?
Long term and short term interest rate

Theories

- The Classical Theory
- The Loanable Funds Theory
- The Keynesian Theory

Classical Theory.

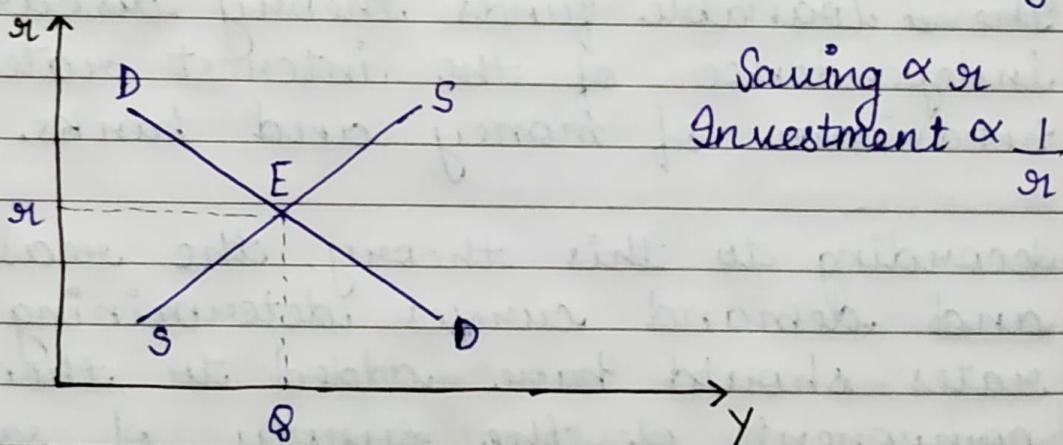
- The rate of interest is a real phenomenon in the sense that it is determined by the real factors.
- It is the supply of savings and the demand for investment that determine the equilibrium rate of interest.
- ★ Supply of savings.
 - The aggregate saving is the difference between the total income and the total consumption expenditure.
 - The savings may be effected by individuals, households, business and the government.
 - From savings point of view interest rate is a reward for sacrifice or abstinence or waiting involved in the act of supplying savings.
- ★ Demand for investment
 - Firms and other economic units demand capital to make profits by producing goods
 - The investment takes place because by investing in roundabout or indirect method

or processes of production, economic units expect to obtain more consumption in future by sacrificing present consumption.

- The opportunities to produce more effectively by using roundabout methods of production determine investment demand.

* Interest Rate Determination

- While the saving schedule is upward sloping, the investment schedule is downward sloping.
- The equilibrium rate of interest is determined by the interaction of these saving and investment schedules in the economy.



- But banks cannot give out loans from the entire savings amount:
- Banks has to keep some reserve for liquidity purposes i.e. for people who make withdrawals.

2) Bank has to keep some cash reserve with the regulator (RBI) as well.

* Loanable Fund Theory

- According to this theory, rate of interest is determined by the demand for and supply of loanable funds.
- Not all the savings can be given out as loans, and firms do not demand as many loans as the banks are willing to give.
- In this regard this theory is more realistic and broader than the classical theory of interest.
- The loanable funds theory discards the independence of the interest rate from the behaviour of money and banks.
- According to this theory, the real supply and demand curves determining interest rates should have added to them a component of the supply of saving which is associated with the creation of new money or credit.

- Demand for Loanable Funds

- ★ Investments

- Two components \rightarrow Fixed investment, Inventory investment
- Investment refers to the expenditure for the purchase or making of new capital goods including inventories.
- There is an inverse relationship between the demands for loanable funds for investment to the rate of interest.

- ★ Hoarding

- To satisfy their desire of for liquidity.
- The demand for loanable funds for hoarding purpose is a decreasing function of the rate of interest.
- At low rate of interest demand for loanable funds for hoarding will be more and vice-versa.

- ★ Speculating

- This demand comes from the people at that time when they want to spend beyond

their current income.

- It is also a decreasing function of interest rate.

Supply of Loanable Funds.

* Savings

- Individuals as well as business firms will save more at a higher rate of interest and vice-versa.

* Bank money

The banks advance loans to the businessmen through the process of credit creation. The money created by the banks ~~there~~ (by borrowing from other sources) adds to the supply of loanable funds.

* Disinvestment

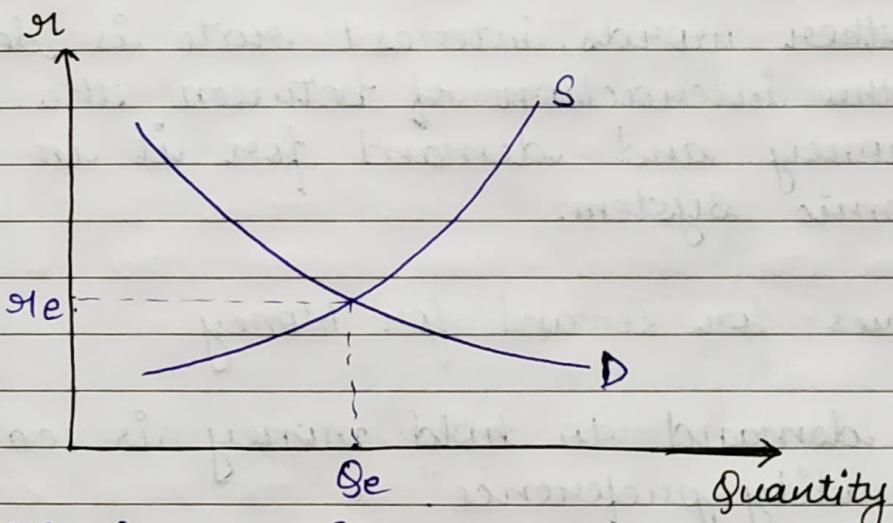
- Disinvestment occurs when the existing ~~capital~~ stock of capital is allowed to wear out without being replaced by new capital equipment.

- It is the condition when firms do not ~~not~~ invest in new capital and continue with their depreciated capital and ultimately capital stock wears out.

- High rate of interest leads to higher disinvestment because it would be difficult for the firms to take loans.

* Dishoarding

- Individuals may dishoard money from the past hoardings at a higher rate of interest.
- If the interest rate is low dishoarding would be negligible.



- Equilibrium exists where the demand curve intersects supply.

Keynesian Theory

- ★ According to Keynes, interest rate is a purely monetary phenomenon. This means that the rate of interest, at least in the short-run, is determined by the monetary factors, i.e., it depends on the actions of the monetary authorities (the Central Bank and the Government), and on the attitude of economic units towards holding money as an alternative to holding bonds.
- In other words, interest rate is determined by the interaction of between the supply of money and demand for it in the economic system.
- ★ Motives for Demand for Money
 - The demand to hold money is called the "liquidity preference".
 - There are three motives or reasons behind the demand for liquidity or liquidity preferences of individuals, firms, and institutions:
 - (a) transactions motive
 - (b) precautionary motive
 - (c) speculative motive

* Transactions Demand for Money

- amount of money which consumers need for transactions purpose mostly for buying and selling of goods and services.
- Factors affecting transactions demand for money:

→ Income, spending habits, time interval after which income is received, banking developments, industrial structure.

→ Income

Let transactions demand for money is :

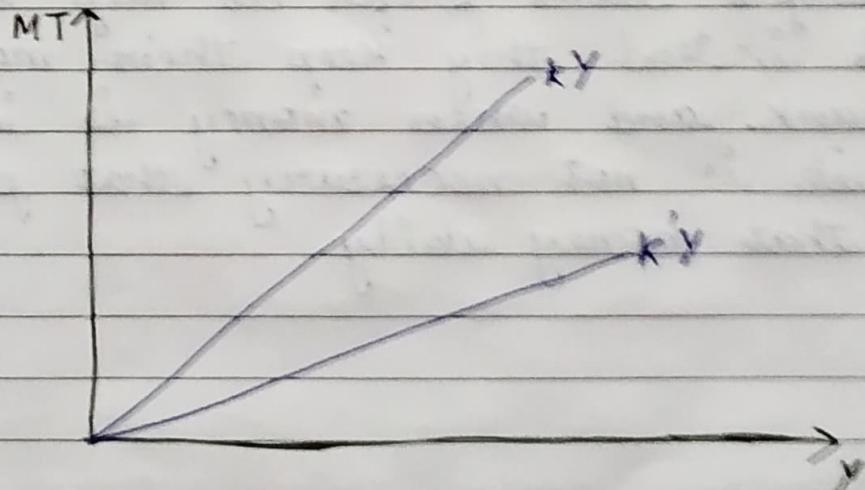
$$MT = f(Y)$$

MT = transactions demand for money

Y = Income

$$MT = KY \text{ where } 0 < K < 1$$

The slope of the transactions demand for money is positively sloped, $\frac{dMT}{dy} > 0$.



- Frequency of income receipt i.e. the length of time period which elapses between the receipt of money income and its disbursement.
Shorter the pay period, smaller will be the amount of money required for the transaction purpose.
- Banking developments
alternative modes of payment (cheque, online payment) declines M.T.
- Industrial structure
Vertical integration declines the M.T. when intermediate goods are produced by different firms, loan demand is more as number of firms are more but if they integrate then the integrated one firm will demand lesser loans.
- When there are alternative modes of payment, then people don't prefer to keep cash with them & instead they keep their money in the bank and when money is in the bank then it is not necessary that people will spend that money daily.

* Precautionary demand for money

- Money demanded to meet ~~unforeseen~~ contingencies.
- Factor affecting precautionary demand for money are:
 - Nature of business
 - Access to money market
 - Degree of conservatism
 - Degree of liquidity of the assets
 - Income.
- If business is more risky and prone to failure then precautionary demand for money is higher.
- If access to money market i.e. ability to raise money from the market in an effective way ~~then~~ ~~precautionary~~ is more then precautionary demand will be less.
- If degree of conservatism is more, ~~precaution~~ precautionary demand is more.
- If degree of liquidity of assets is more, precautionary demand is less.

$$MP = f(Y) \rightarrow MP \propto Y$$

* Speculative Demand for Money (MSP)

- Amount of money people hold for making speculations in the financial markets.
- There is an inverse relationship between interest rates and the speculative demand for money.
- Relationship between interest rate and speculative demand for money is called Liquidity Preference Curve.
- Interest elasticity of speculative demand for money increases as the interest rate declines.

$$MSP = f(r) \quad r = \text{interest rate}$$

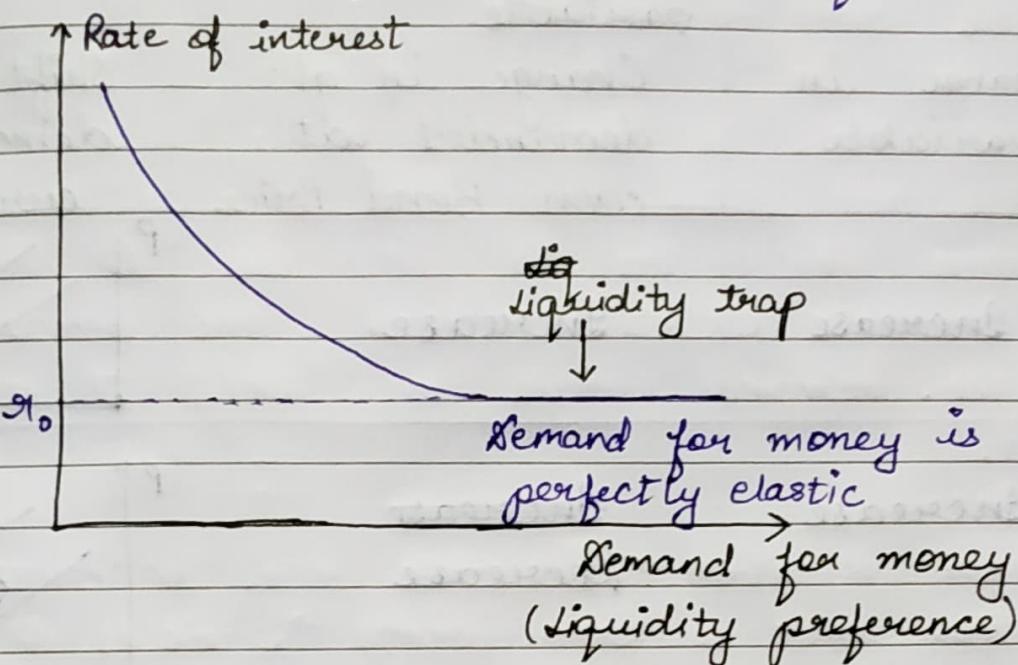
$$\text{Bond price} \propto \frac{1}{r}$$

* Liquidity Trap

- The rate of interest at which the speculative demand for money becomes perfectly elastic is called liquidity trap.
- At the liquidity trap interest rate, the wealth holders hold their entire wealth in the form of money instead of holding

the interest bearing bonds.

- at the liquidity trap rate of interest, money becomes perfect substitute for bonds.



* Total Demand for Money (TMD)

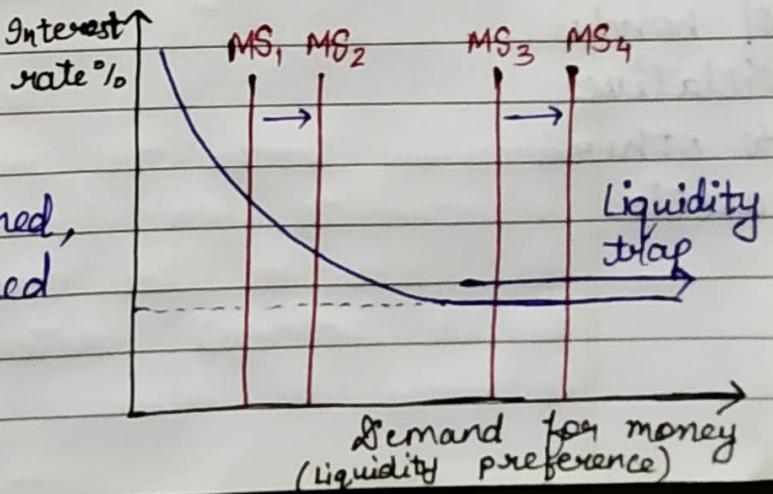
$$TMD = MT + MP + MSP$$

as MP is also a func' of Y we can combine MT and MP.

$$\text{Now } TMD = f(Y) + f(r)$$

* Interest Rate Determination.

- In this theory money supply is exogenously determined, i.e., it is determined by the monetary authorities.



* Factors that shift the demand curve for bonds

~~Variable~~

~~Change in~~

~~variable~~

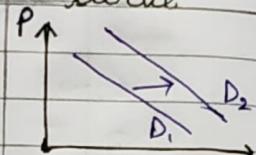
Variable Change in variable

Change in qt. demanded at each Bond Price

Shift in demand curve

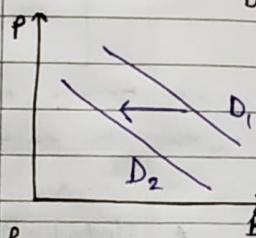
Income Increase

Increase



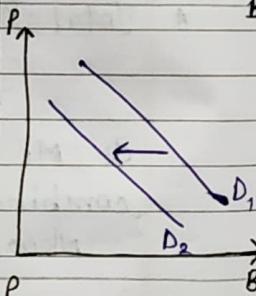
Expected interest rate Increase

~~Increase~~
Decrease



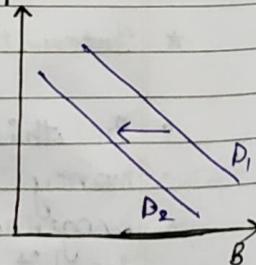
Inflation Increase.

Decrease.
(Real rate of return of bond will go down)



Riskiness of bonds relative to other assets Increase

Decrease.



Variable	Change in variables	Change in qt. dem. at each Bond price	Shift in demand curve
Liquidity of bonds relative to other assets	Increase	Increase	

* Factors that shift the supply curve for bonds.

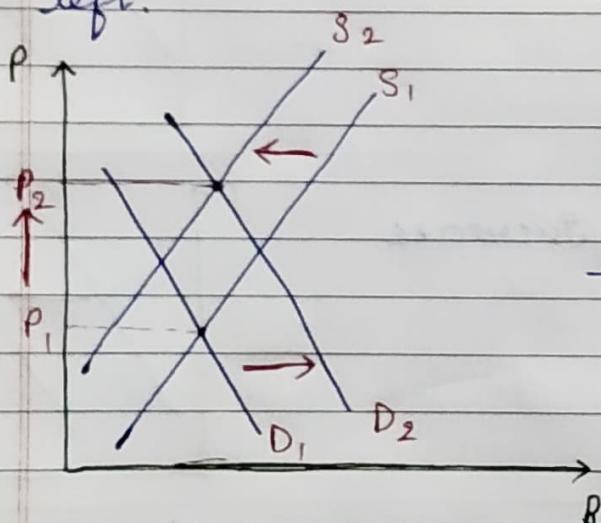
Variable	Change in variable	Change in qt. supplied at each bond price	Shift in supply curve
Profitability of investments	Increase	Increase	

Variable	Change in variable	Change in qt. supplied at each bond price	Shift in supply curve
Expected Inflation	Increase	Increase	

Variable	Change in variable	Change in qt. supplied at each bond price	Shift in supply curve
Government Deficit	Increase	Increase (Deficit can be covered by issuing more bonds)	

- To cover up the government deficit, govt. (or RBI) issues bonds which are bought by the banks, and these bonds are further sold in the market and demand is generated by the common people.
- * Interest rate in Japan is very low. In 90's and 2000's there was a negative inflation in Japan, which led to increase in demand for bonds, expected return from bonds will increase. Demand curve will shift towards right.

Negative inflation \rightarrow Increase real interest rate \rightarrow Increase cost of borrowings \rightarrow Supply of bonds will decline \rightarrow Supply curve will shift towards left.



Increase in price of bond.

\rightarrow Reduce the interest rate in market.

Recession leads to decline in profitability of investments. Opportunities for profitable investment is less in the market then it leads to lower interest rates. Lower interest rate \rightarrow Decrease in supply of bonds.

Recession \rightarrow Decrease in wealth \rightarrow Decrease in supply of bonds. demand for bonds.

Change in different Macroeconomic variables lead to change in demand and supply of bonds which leads to change in price of bonds and ultimately change in interest rate.

Investment opportunities in Japanese financial market is less. Japanese bond market is a ~~junk~~ bond market, as interest rate is low, investors borrow money from the Japanese market and invest it in other markets where return possibility is higher.

Maximum transaction that reaches the U.S. market is flown from the Japanese market. Japan has huge amount of surplus money because of high export intensiveness and \therefore they have high retained profit. But they don't have avenues to invest in financial markets. \therefore Japan invests in other country's financial markets.