# CHAPTER – 8 : Money Market

## UNIT-1 : The Concept of Money Demand

### Theories of Demand for Money

**1. Classical Approach: Quantity Theory – Money (QTM)**

This theory was given By - Irving Fisher (Yale University)

Book - The Purchasing Power of Money, Published- 1911

- **As per this theory**
  - money is demanded only for transaction purpose
  - There is a relationship b/w money & price level i.e. quantity of money mainly determines the price levels , income & interest rates ,
- **equation**
- Supply of money = Demand of money

$$MV = PT$$

M = Total amount of money in circulation

V = Transaction velocity of circulation

P = Average price level

V = Total no. of transaction

- Extension of earlier equation when credit money is considered

$$MV + M'V' = PT$$

- M' = Total quantity of credit money
- V' = Velocity of circulation credit money
- PT = denotes demand of money
- T remains fixed in short run due to full employment
- There is aggregate demand of money for transaction purpose
- More no. of transactions, greater demand for money

**2. The Cambridge Approach**

By - Alfred Marshall, A.C. Pigou, D.H. Robertson, John Maynard Keynes (Cambridge)

Known as Cash Balance Approach in Early 1900's

- **As per this approach there are 2 Ways that money increases utility**
  - 1. enabling split up of sale & purchase into different points in time
  - 2. being a Hedge against uncertainty
- demand for money depends partly on income and partly on other factors like wealth & interest rate .
- higher the income, greater the quantity of purchase, this will result in greater need for money a "temporary abode" of value to overcome transaction cost.
- Approach (eq)

$$M_d = kPY$$

$M_d$ = demand for money

V = Cambridge K (proportion of nominal income held as cash



Captain Love Kaushik

P = average price levels (good/services)
PY = nominal income
Y = national output

## 3. Keynesian Theory of Demand for Money

This theory was given By – John Maynard Keynes

This theory is also known as – Liquidity Preference Theory

Book – General theory of Employment, Interest and Money known in 1936

- As per this theory there are 3 Motives of to hold money
  - Transaction motive
  - Precautionary motive
  - Speculation motive

## Transaction motive

- It relates to the need for cash for current transactions for personal and business exchange

Income Motive (Individuals) ← Classification of Needs → Trade Motive (Business Firms)

- Direct relationship b/w transaction demand and level of income. (unaffected by interest rates)
- **Equation:**

$$M_r = kY$$

Lr = Transaction demand for money
k = ratio of earning

- **Conclusion:**

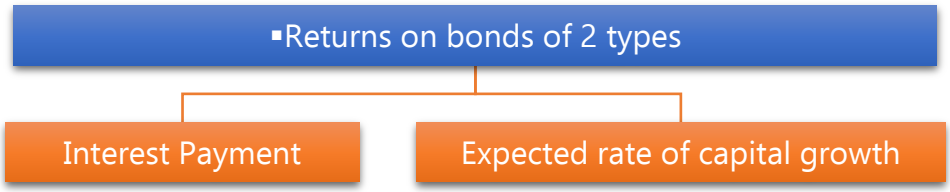
Aggregate demand for money for transaction purpose = f (national income)

## Precautionary Motive

- Individuals and businesses keep a portion of income to finance uncertainties (unanticipated expenditure)
- **As per this motive , money demand Dependents on :**
  - Size of income
  - Prevailing economic and political conditions
  - Personal characterization (pessimistic / optimistic)
- **Conclusion:**
  - Precautionary motive cash balance is income elastic
  - Not sensitive to interest rates

## Speculative Demand for Money (SDM)

- SDM Desire to hold cash in order to be equipped to exploit any attractive instrument opportunity requiring cash expenditure
- In Keynes theory interest (i) = equal interest of bond
- Assuming interest of money holding in cash = 0




- markets rate of interest and market value of phones are inversely related
- higher interested means lower speculation demand for money vice versa

## If current rates > Critical Rates (Rn > Rc)

**Interest Expects:** fall in interest rates i.e. rise in bond prices and hence will convert cash to bonds as–

1. can earn high rate of returns on bonds
2. expect capital gains from rise and price

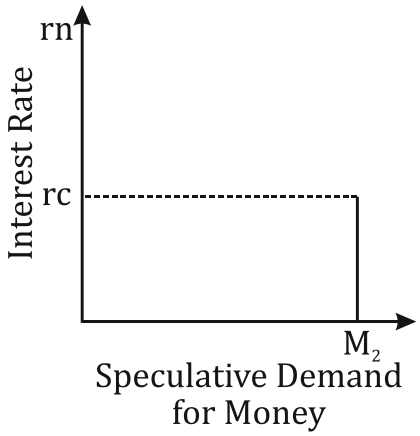
## If current rates < Critical rates (Rn < Rc)

**Interest expects:** rise in interest rates will hold wealth in liquid cash as-

1. Loss by way of interest forgone in small
2. Anticipated capital loses are avoided
3. Return on money > bonds
4. If interest rate increases, bond prices will fall and ideal cash balance will be used to buy bonds at cheap prices.

## 1. Individual Speculation Demand

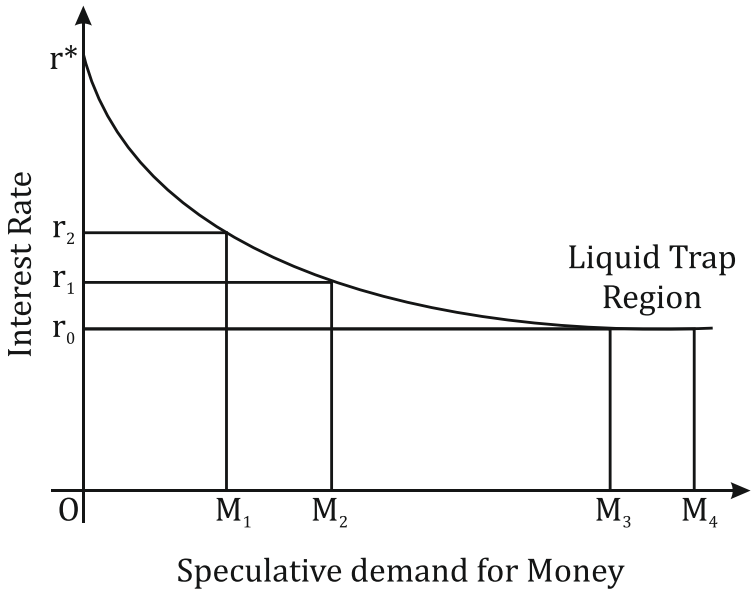
- Discontinuous portfolio decision of individuals
- Rn = current rate
  Rc = critical rate
- Rn > Rc, individuals hold extra wealth in form of bonds
- Rn < Rc, individuals hold wealth in form of speculation cash




## 2. Aggregate Speculation Demand

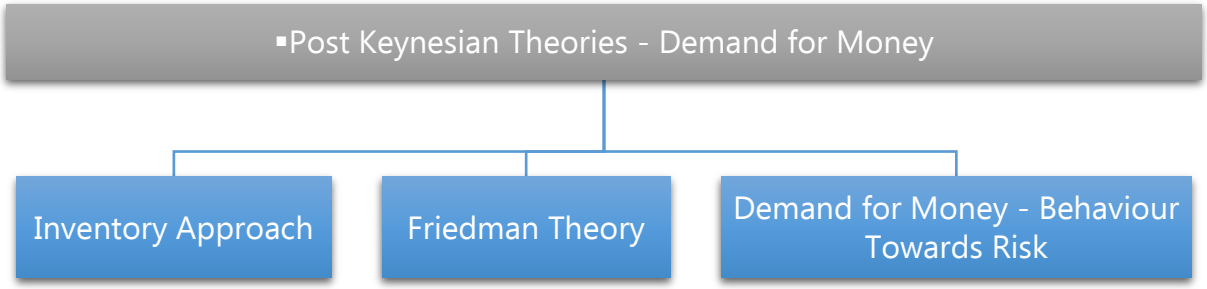
**Observation**

- When we go from individual speculation demand to aggregate speculation demand, discontinuity in demand curve disappears.
- We get Continuous downward sloping demand function
- Inverse relationship b/w current rate of interest and speculative demand for money.




| Liquidity Trap | |
|---|---|
| **Situation** | • Expansionary monetary policy does not increase interest rates, income or stimulate the economy. |
| **Preference** | • Public prefers to hold money unaffected by interest rate, e.g., during war or deflation. |
| | |
| **Investors** | • Investors hold cash instead of bonds |
| **Elasticity** | • Speculative demand becomes perfectly elastic with respect to change in interest rates, curve becomes parallel to axis |
| **Policies** | • Monetary policies cannot stimulate economic growth. Expansionary monetary policy becomes ineffective. |

| | |
|---|---|
| **Cost** | • Opportunity cost of holding money is 0; with increased money supply, people still hold cash |




## 1. Inventory Approach to Transaction Balance

This theory was By – Baumol (1952) and Tobin (1956)

This theory is also known as Known as – Inventory Theoretic Approach

As per this **Approach –** "Real cash balance" was viewed as inventory held for transaction purpose

- Inventory models assume 2 media of storing values
  - 1. Money
  - 2. Interest bearing alternative financial purpose
- Transfer Flow


- Liquid financial assets other than money (eg.- bank deposits) offer positive return which justify the above said transaction cost between money and assets.

| Baumol's Approach | |
|---|---|
| **Transaction** | • Individuals hold money for transaction purposes |
| **Cost** | • Cost incurred while holding money inventory, i.e., interest foregone |
| **Opportunity** | • Foregone cost is called opportunity cost |
| **Assets** | • Alternative assets like bonds and shares are riskier than holding money |
| **Savings** | • Savings deposits in bank are relatively safe and earn some interest |
| **Demand** | • Transaction demand for money depends on the interest rate |
| **Transfer** | • Cost of transferring between money and assets (e.g., brokerage fees) affects the transfer frequency |

- Baumol proves that the average amounts of cash withdrawal which minimizes cost is given by

$$C = \sqrt{\frac{2bY}{r}}$$

$b = brockers\ fee$

$Y = size\ of\ individual\ income$

$r = interest\ rate$

## 2. Friedman's Restatement of Quantity Theory

This theory was By – Friedman (1956)

As per this **Approach –** demand for money is treated as demand for capital assets

- Demand for money is affected by same factor as demand for any other asset such as
  - Permanent income
  - Relative return for assets (incorporates risk)
- Demand for money is determined by permanent income and not current income
- 4 Determinant for demand for money
  - 1. Function of total wealth = $\frac{Permanent\ income}{Discount\ rate}$

    It includes average return on 5 assets classes-money, bonds, equity, physical capital and human capital
  - 2. Positively related to price level
  - 3. Inversely related to opportunity cost of money holding
  - 4. Influenced by inflation

## 3. Demand for Money as Behaviour towards Risk

This theory was given By - James Tobin

- **Preference:** Emphasizes individual preference for more wealth and balance between non interest earning assets and investments
- **Portfolio:** Individuals diversifies their portfolios by holding a balanced combination of safe and risky assets
- **Risk:** individual's behavior shows risk aversion , which means they prefer less risk to more risk
- **Balance:** People prefer mix portfolio of money, bonds and shares with each person opting for a little different balance between risk and return

| Tobin's Liquidity Preference Function | |
|---|---|
| **Function** | • Tobin's liquidity preference function links interest rate and money demand |
| **Investment** | • Higher bond interest leads to higher investment and less cash |
| **Demand** | • Increased interest rate reduces money demand and increases bond investments |
| **Slope** | • Depicts downward sloping demand function for money against interest rate |
| **Observation** | • As bond interest rates decline, the demand for money in portfolios rises |
| **Conclusion** | • Interest rate impacts money demand elasticity |