

Chapter-8 [Money Market]

Unit-1 / Demand for Money

Page

Date

Unit-1 : [The Concept of Money Demand]

[INTRODUCTION]

① → Money can be anything that can serve as:-

(i) Store of value → [you can save it for future]

(ii) Unit of account → [Common base for Prices]

(iii) Medium of exchange → [which can be used to buy & sell goods & services]

→ Money is something that holds its value over time, can be easily transferred translated into prices, and is widely accepted. Many different things have been used as money over the years.

Cowry Shells

Barley (Cereal grain)

Peppercons

Gold & Silver etc.

→ FIAT MONEY

Very Heavy

↓

Paper Note

deposit →

Banks

claimed ownership

Eventually, the paper claim on the precious metals was delinked from the metal when that link was broken, fiat money was born.

Fiat money is materially worthless, but has value simply because a nation collectively agrees to ascribe a value to it. (in short, money works because people believe that it will)

② → Money can be define for policy purposes as the set of liquid financial assets, the variation in stock of which could impact on aggregate economic activity. As statistical concept money could include certain liquid liabilities of a particular set of financial intermediaries or other issuers.

— RBI Manual on Financial & Banking Statistics, 2007

→ Function of Money (Characteristic of Money)

- (i) Generally acceptable
- (ii) Durable i.e. long lasting
- (iii) Effortlessly recognisable

+ ... Duplicate

(v) Relatively Scarce [but has elasticity of supply]
Supply zero or at least very low

(vi) Portable

(vii) Possess Uniformity

(viii) Divisible into smaller parts.

→ How is money measured?

In official statistics, the amount of money in an economy is generally measured through what is called broad money.

IMF (International Monetary Fund)

which encompasses everything that provides a store of value and liquidity.

Broad Money consists :-

→ National currencies (generally issued by central govt)

→ Transferable deposits (which includes demand deposits, cheques, etc)

→ Other deposits (such as non-transferable savings deposits, term deposits, repurchase agreement etc)

↓
F.D
↓
(in which one party sells a security & agrees to buy it back at a fixed price)

* Securities other than shares (like tradeable certificates of deposit, commercial papers etc)

② DEMAND FOR MONEY

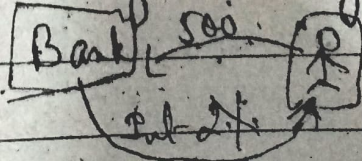
- If people desire to hold money, we say there is demand for money
- The demand for money is in nature of DERIVED DEMAND, it is demanded for its purchasing power.
- Demand for money is actually demand for liquidity and demand to store value.
- Some important variables on which demand for money depends on are :-

Higher the income of individual, higher the expenditure (higher demand)

Higher prices leads to higher demand for money

Higher the interest rates, higher would be opportunity cost of holding money, therefore lower the demand for money

Innovation reduce the need for holding money (online banking, ATM)



③ THEORIES OF DEMAND FOR MONEY

Classical Approach

Cambridge Approach

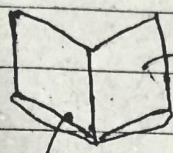
Keynesian Theory (V. Inf)

① Classical Approach

(Quantity Theory of Money - QTM)

Irving Fisher
Yale

(Yale university)



The purchasing power of Money (1911)

Demand for money is for transaction purpose

→ Changes in general level of commodity prices or changes in value or purchasing power of money are determined first and foremost by change in the quantity of money in circulation.

→ Fisher's version, also termed as "equation of exchange" or transaction approach

$$MV = PT$$

supply side
M = Total money in circulation (on an average)
V = Transaction velocity of circulation
(i.e. average number of times across all transaction a unit of money is spent)

Demand $\left\{ \begin{array}{l} P = \text{Average price level} \\ T = \text{Total number of transactions} \end{array} \right.$

→ Later economists replaced 'T' by
Real output $\rightarrow Y$

→ After some time, Fisher extended the equation

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

Demand deposits M' on Velocity

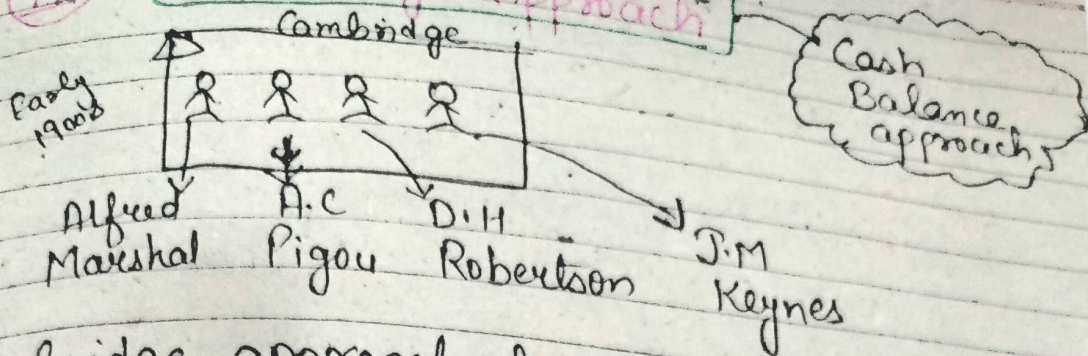
Supply of Money

→ Velocity of money in circulation (V) and velocity of credit money (V') remain constant.
(demand deposit)

This is the function of National income and since Fisher assumed the full employment levels in the economy, P also remains constant in short run.

(II)

Cambridge Approach



→ Cambridge approach holds the view that money increases utility in the following ways:-

(a) Enabling the possibility of split-up of sale & purchase.

(b) Being a hedge against uncertainty.

↓
Protection against risk

Precautionary Motive

Money as temporary store of wealth

→ Now, the question is how much money will be demanded ?? → The answer is - it depends partly on income and partly on other factors like wealth, interest rates etc.

→ The Cambridge money demand function is:-

$$M_d = KPY$$

M_d = Demand for Money

Y = Real National Income / Real output

P = Average price level of currently produced goods & services.

K = Nominal Income

K = Proportion of National Income that people want to hold as Cash Balance

This K is also known as "Cambridge K " - it is a parameter reflecting economic structure and monetary habits, namely the ratio of total transactions to income and the ratio of desired money balances to total transactions.

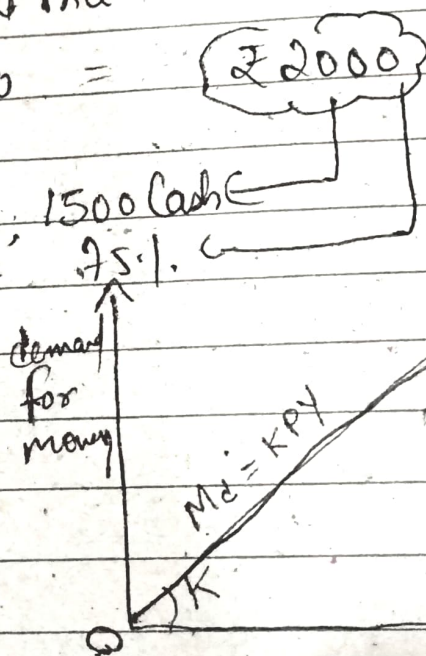
E.g. Real ~~X~~ Current Price.
100 units $\times$ £20 = £2000

$$1500 = 75\% \times 2000$$

$$1500 = 75\% \times \text{Real} \times \text{Current Price} \times K$$

$$M_d = K \times Y \times P$$

$$M_d = KPY$$



Demand for money in this equation is a linear function of nominal income.

K = slope of function

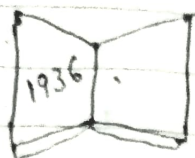
$$K = \frac{M_d}{PY}$$

III

The Keynesian Theory of Demand for Money

(Liquidity Preference Theory)

J.M. Keynes



The General Theory of
Employment Interest
& Money

"People want to hold money rather than investing in securities."

People hold money (M) in cash for 3 motives

- Transaction Motive
- Precautionary Motive
- Speculative Motive

(A) Transactive Motive

→ Relates to the need for cash for current transactions for personal & business exchange

↓
Bread

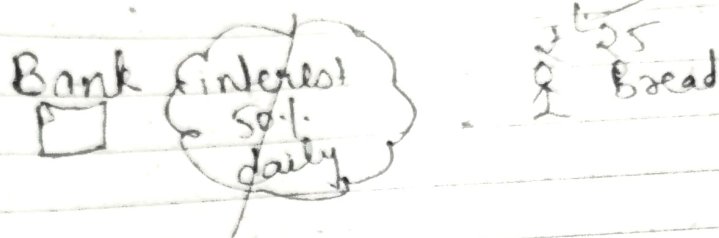
↓
Machine

→ The transaction motive is further classified into income motive and business (trade) motive

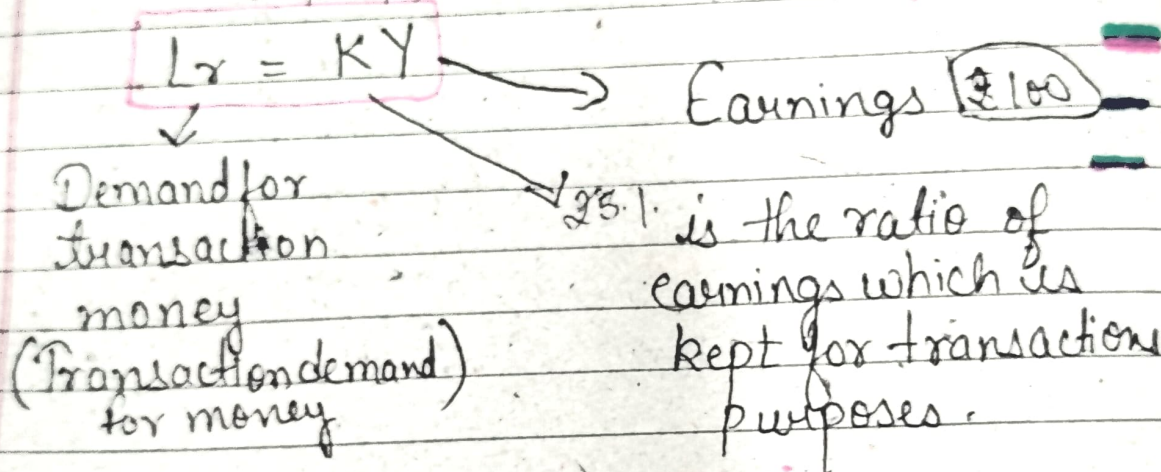
→ Both the above motives stressed on the requirements of individuals and business respectively to bridge the time gap between receipt of income & planned expenditure

30 April Receipts Income

→ Keynes did not consider the transaction balances as being affected by interest rates



→ The transaction demand for money is directly proportional to income levels.



assume $225 = 25\% \times £100$
 $L_r = K \cdot Y$

→ Keynes considered the aggregate demand for money for transaction purpose as sum of individual demand, therefore aggregate transaction demand for money is function of National Income.

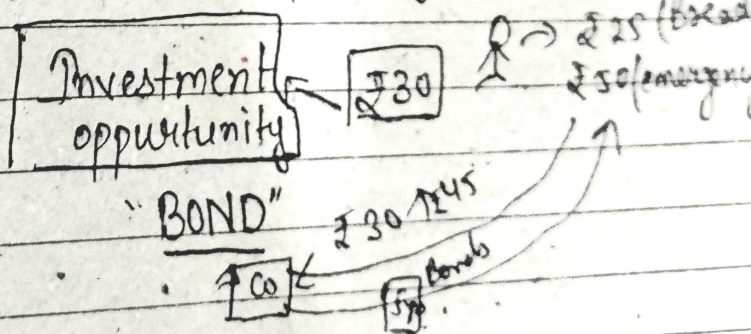
Earning (Income)	K	transaction demand for money
£100	25%	£25
£200		£50
		£70 (145)

(B) Precautionary Motive

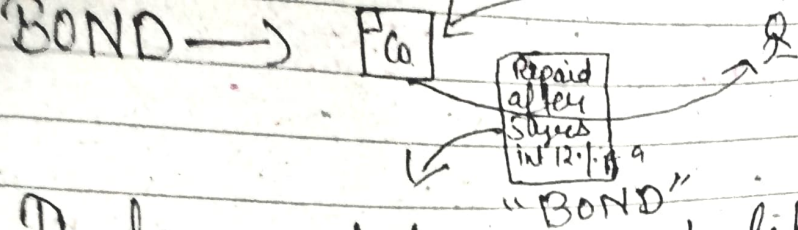
- The amount of money demanded under precautionary motive depends on size of income, prevailing economic or political conditions, personal characteristics (like optimism, pessimism, farsightedness etc).
- It is also not very sensitive to rate of interest.

(C) Speculative Motive

- The speculative motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure.
- Keynes assumed that expected returns on bond are of two types :-
 - (a) Interest payments
 - (b) Expected rate of capital gains.



Market Rate → Interest rate offered in market of Interest on Cash deposit

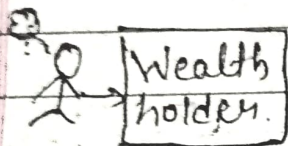


It has market price just like share
(it is tradeable)

★ **Current Rate of Interest** Vs. **Critical Rate of Interest**

↓
Actual
e.g. 6% p.a.

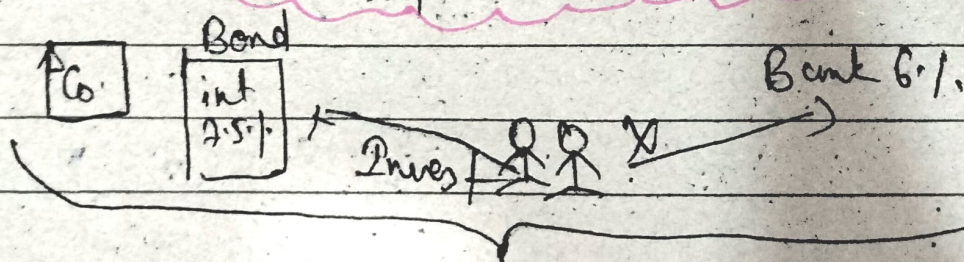
↓
NORMAL
(जितना चाहिए)
e.g. 8.5%, 5.5%



if current rate is greater than Critical Rate
Current rate > Critical Rate
e.g. actual 10% > Normal 6%

Then he expects the rate of interest to fall in future.

and when **Rate of interest falls** → **Inverse relation**
Bond prices Rises



So, they will try to convert their cash holdings into bonds because :-

- (i) they can earn higher interest rate
- (ii) they expect capital gain

* Wealth holder

If Current Rate (8%) < Critical Rate (10%)

Then, he expects the rate of interest to rise in future,
and when rate of interest rises
then Bond price falls

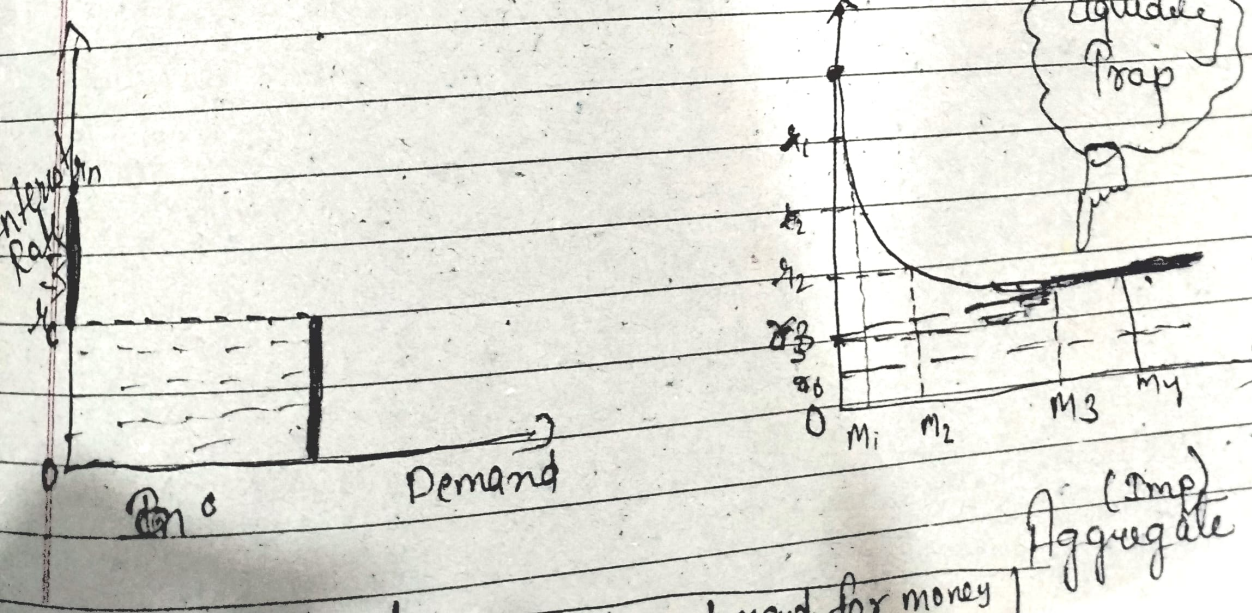
So, they will try to hold liquid cash rather than bonds because :-

- (a) Less of interest forgone is small
- (b) they can avoid capital loss.
- (c) they can later buy bonds at lower prices

* Current rate is HIGH :- Low speculative demand for money

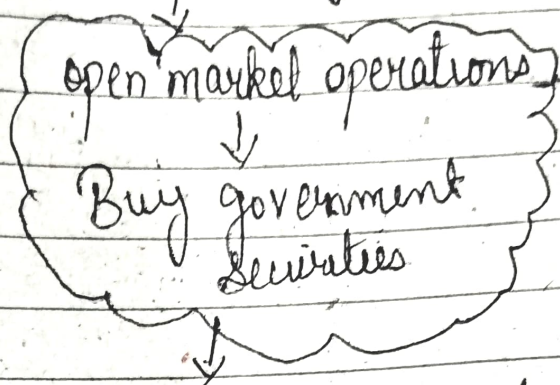
* Current rate is LOW :- HIGH speculative demand for money

Inverse relation



Liquidity TRAP [or ineffective monetary policy]

RBI $\rightarrow$ follows expansionary monetary policy



To increase money supply.

To increase income

To increase AD demand

To stimulate economic growth

BUT

Interest rates are too low that people do not want to hold bonds are only want to keep liquid cash. i.e. speculative demand becomes Perfectly elastic with respect to interest rates.

Parallel to x-axis

(4) Post Keynesian Developments

(i) Inventory approach to transaction Balances

↑
Baumel
(1952)

↑
Tobin
(1956)

→ They determined a theory of demand for money, known as Inventory Theoretic approach.

In this approach, money (real cash balance) was essentially viewed as inventory held for transaction purposes.

Emphasises
on store of value

→ Inventory model assumes that there are two media of store of value :-

- (a) Money and
- (b) Interest bearing alternative financial asset
(Bank, Bond, share)

There is a fixed cost of making transfers between money and such alternative financial assets.
#11 Broker's charges

Shares, deb, Bond

→ Baumol asserts that individual hold money for transaction purposes.

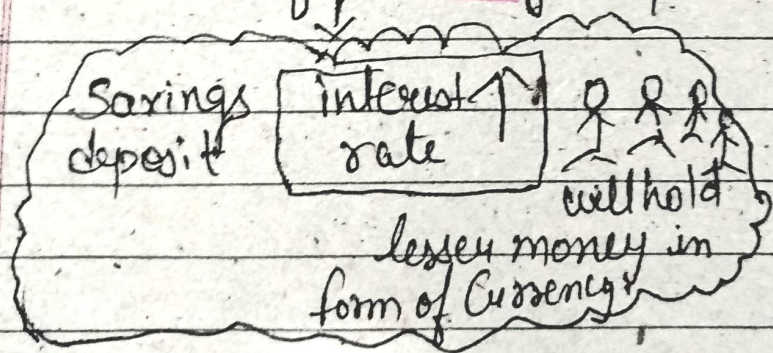
→ They also incur "cost" when they hold the inventories of money
→ opportunity cost

cost forgone is the interest rate which they could have earned, if they invest their wealth in savings deposit or fixed deposits or bonds or shares.

→ Bond & Shares provide higher returns but are RISKY

→ Savings deposit are quite safe and riskfree but returns are low

→ Baumol and Tobin proclaim that transaction demand for money depends on Rate of Interest



→ Baumol has proved that the average amount of cash withdrawal which minimises cost is given by

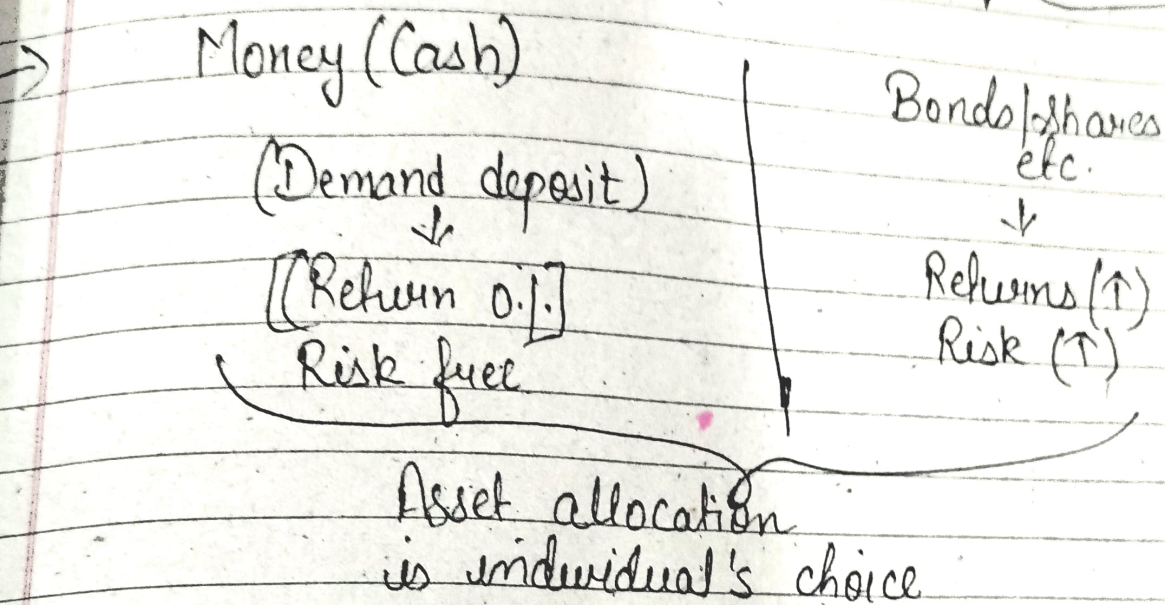
$$C = \sqrt{\frac{2bY}{4}}$$

b = broker's fee

Y = Individual's Income

→ This approach also suggests that the demand for money & bonds depends on the cost of making transfer between the two

Broker's fee ↑ Cost of transfer
It will lead to lower transaction



Friedman's Restatement of the Quantity Theory

Milton Friedman
(1956)

→ He extended Keynes's speculative money demanded within the framework of asset price theory

He treats the demand for money as nothing more than the application of a more general theory of demand for capital assets

Keynes

speculative motive

Friedman

Invest in securities

→ Demand for money is affected by :-

- (a) Permanent Income
- (b) Relative returns on asset
↑ ↓

[Current Income]

→ Measure of [Wealth] - Present value of all future incomes.

→ Friedman maintains that it is the permanent income which affects demand for money

→ He determines (4) determinant of demand for money

Total Wealth

Demand for money is directly related to price levels

Demand for money rises if opportunity cost of money holdings fall

Demand for money is influenced by inflation

(iii) Demand for Money as Behaviour toward Risk

James Tobin

→ According to him, an investor is faced with the problem of what proportion of his portfolio of financial assets he should keep in form of ready money & in form of Investments

→ According to RISK & Return

Bonds

Risk

Return

Interest Rate

→ According to him, an individual's behaviour shows RISK AVERSION, which means they prefer less risk.

<u>Bonds or shares</u>	<u>Ready Money</u>
Risk ($\uparrow$)	Risk (x)
Return ($\uparrow$)	Return (x)

→ Interest Rate ($\uparrow$) Demand for holding money ($\downarrow$)
 & viceversa

"Inverse Relation"

