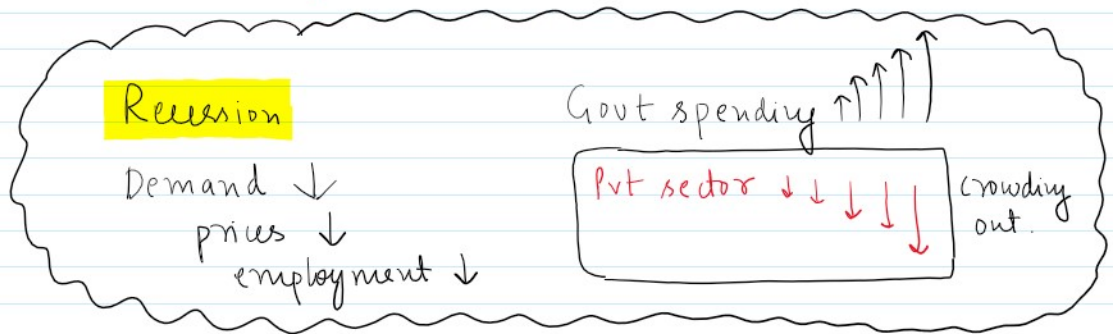


economic growth)

* However during deep recessions, crowding out is less likely to happen as private investments are already minimal.



CH 8

MONEY MARKET

(8-10 Marks)

UNIT 1: The concept of Money Demand

1 INTRODUCTION

→ Money can be anything that can serve as :-

- (i) store of value
 - (ii) unit of account -----> common base for prices
 - (iii) medium of exchange
- you can save it for future
- which can be used to buy + sell goods or services

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

Cowry Shells

Barley
(cereal grain)

Peppercorns

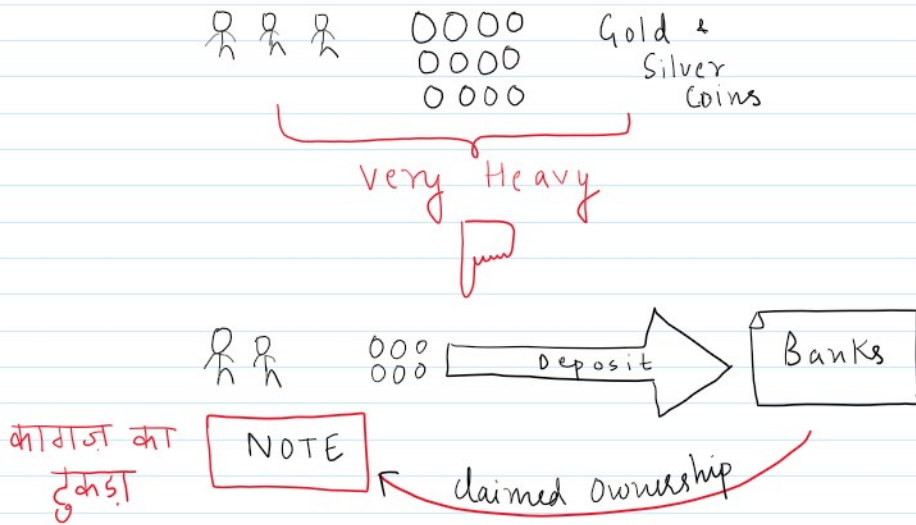
Gold + Silver

shells

(cereal
Grain)

Silver

→ FIAT MONEY



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)

①

Money can be defined 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

→ Functions of Money (Characteristics of Money)

- (i) Generally acceptable
- (ii) Durable i.e long lasting
- (iii) Effortlessly recognisable
- (iv) Difficult to counterfeit --- "duplicate का कागद"
- (v) Relatively Scarce [but has elasticity of supply]

(v) Relatively Scarce [but has elasticity of supply]

Supply zero नहीं होती चाहिए

(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.

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

International Monetary Fund

IMF

Broad money consists :-

- Narrow Money
- National Currencies (generally issued by central government)
 - Transferable deposits (which include demand deposits, cheques, etc) Current A/c
 - Other deposits (such as Non transferable savings deposits, term deposits, repurchase agreements* etc) F.D

in which one party sells a security and agrees to buy it back at fixed price

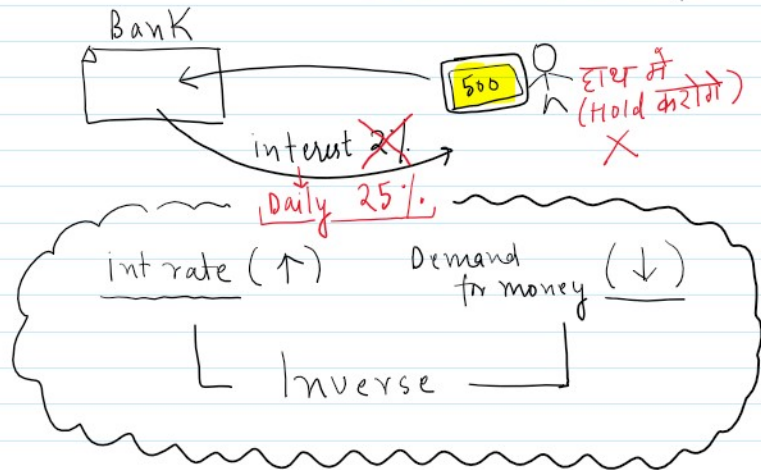
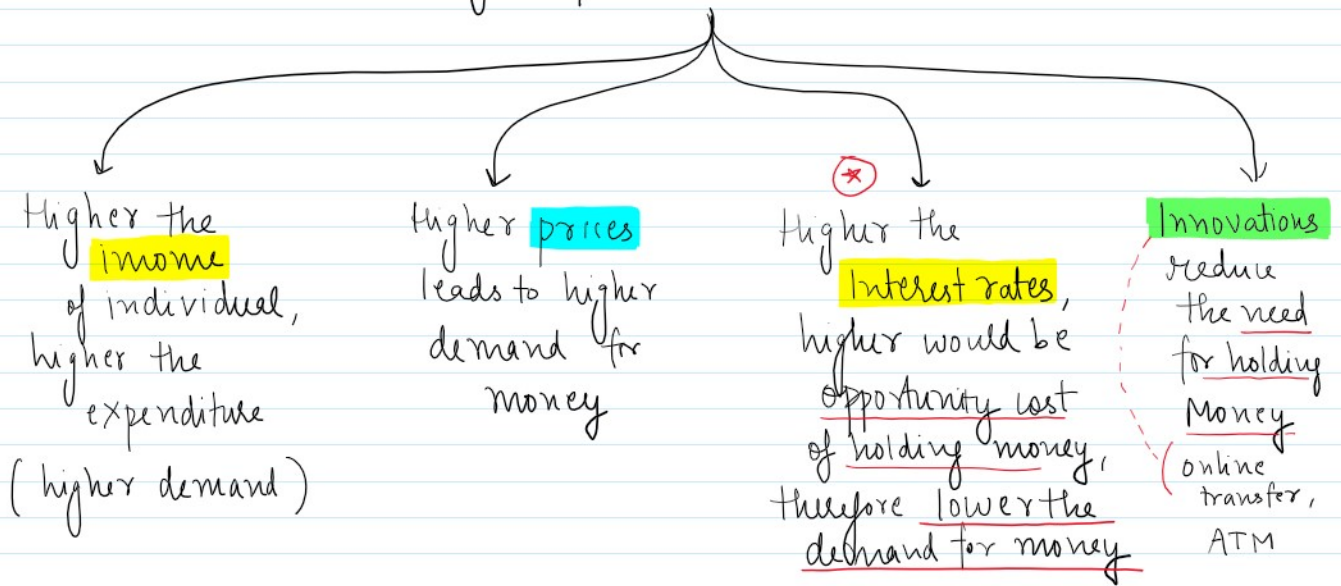
* Securities other than shares (like tradeable certificates of deposit, commercial papers etc)

2

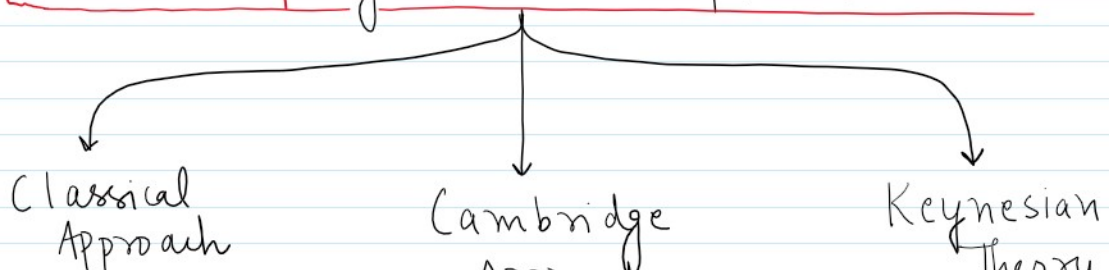
Demand for MONEY

- If people desire to hold money, we say there is demand for money
- The demand for money is in nature of

- 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 :-



3 Theories of Demand for MONEY



Classical Approach

Cambridge Approach

Keynesian Theory
(V-Imp)

I. CLASSICAL APPROACH

(Quantity Theory of Money - OTM)

Irving
Fisher



(Yale University)

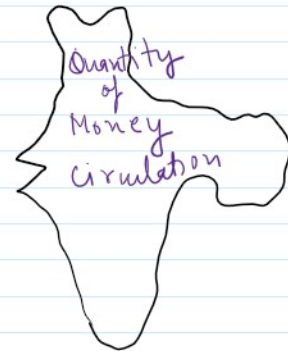


The Purchasing Power of Money

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"

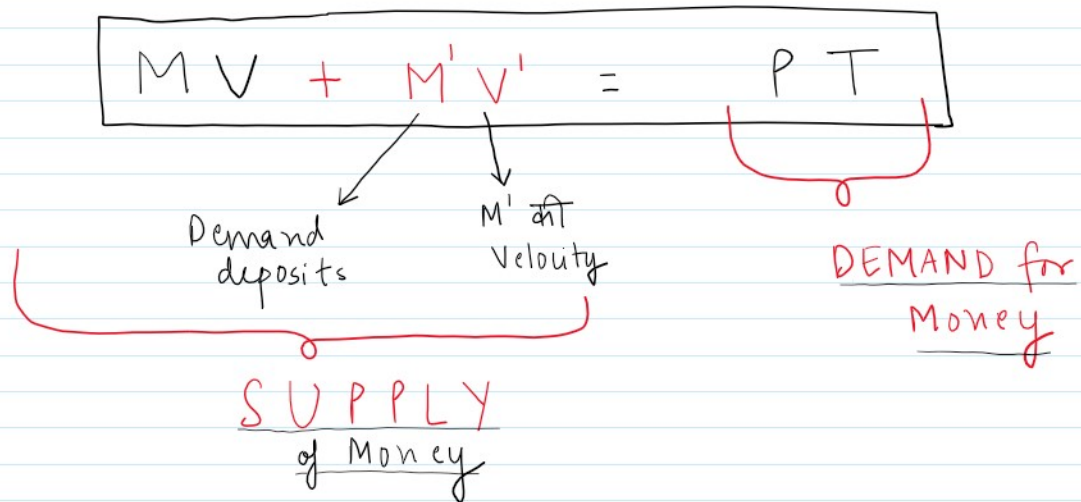
$$MV = PT$$

M = Total money in circulation (on an average)
V = "transaction velocity" of circulation

V = "transaction **velocity**" of circulation
 (i.e. **average** number of times across all transactions a unit of money is spent)

P = Average **Price** level
 T = "**Total number**" of transactions

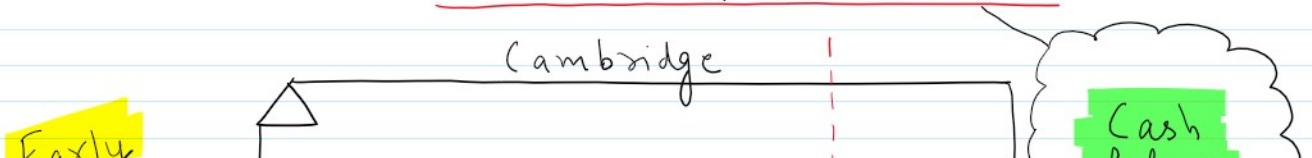
→ Later economists replaced 'T' by **Real Output** Y
 → After some time, Fisher extended the equation



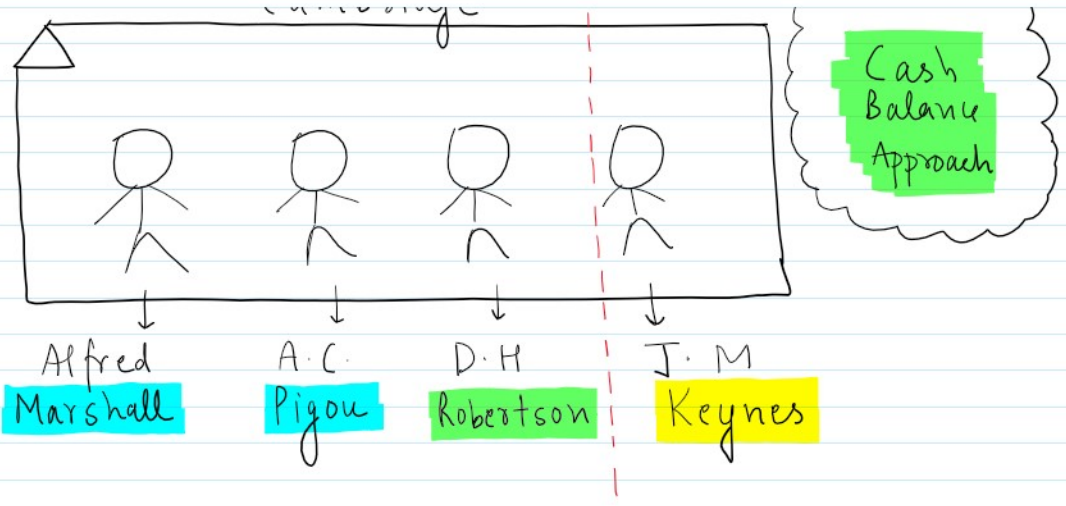
→ Velocity of Money in circulation (V) and velocity of credit money (V') remain constant
 (demand deposits)

T is a function of National Income and since Fisher assumed the full employment levels in the economy, T also remains constant in short run.

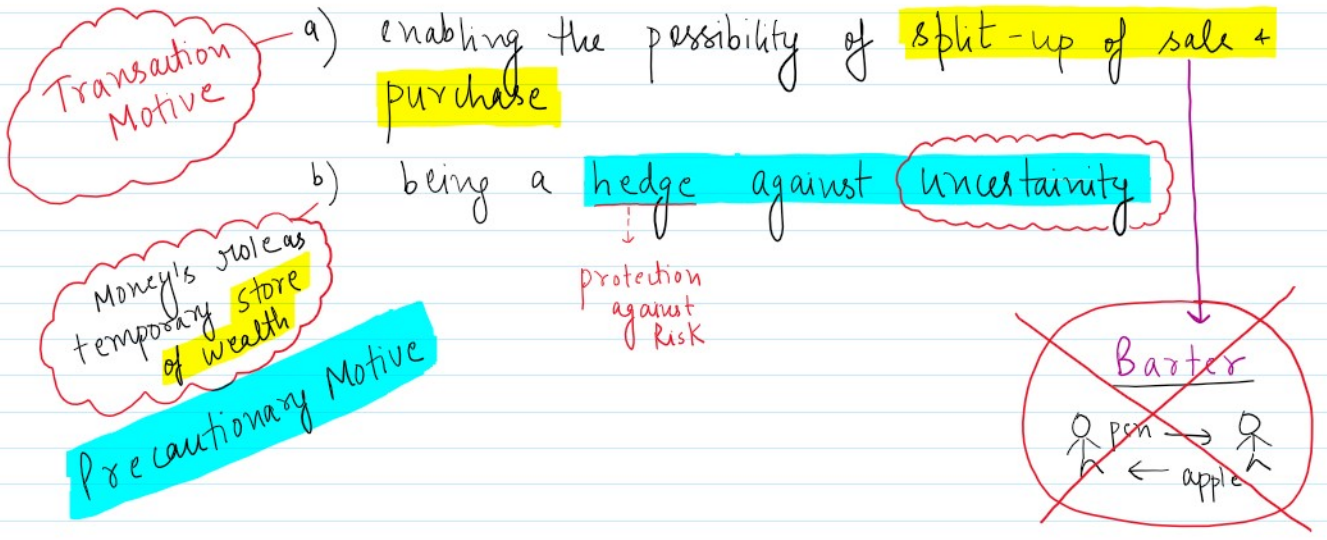
II CAMBRIDGE APPROACH



Early 1900s



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



→ 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 :-

$$M_d = KPY$$

1500 M_d = Demand for Money

100 Y = Real Nation Income / Real Output

$$\begin{aligned}
 100 \quad Y &= \text{Real Nation Income / Real output} \\
 \text{£}20 \quad P &= \text{Average Price level of currently produced goods \& services} \\
 \text{£}2000 \quad PY &= \text{NOMINAL Income}
 \end{aligned}$$

75% K = proportion of Nominal Income that people want to hold as cash balances

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

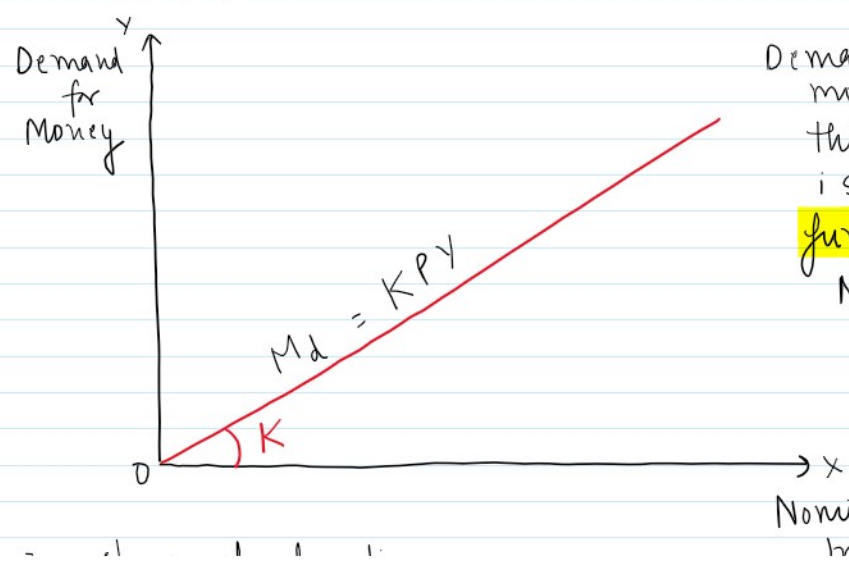
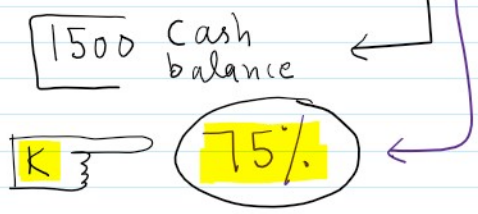
$$\begin{aligned}
 \text{Real Output} \times \text{Current prices} &= \text{Nominal Income} \\
 100 \text{ units} \times \text{£}20 \text{ p.u.} &= \text{£}2000
 \end{aligned}$$

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

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

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

$$M_d = KPY$$



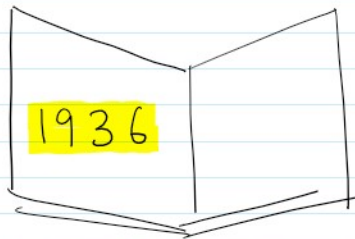
Demand for money in this equation is a linear function of Nominal Income

$0 \xrightarrow{\quad} x$
 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) Transaction Motive

→ relates to the need for cash for current transactions for personal + business exchange



"Bread"

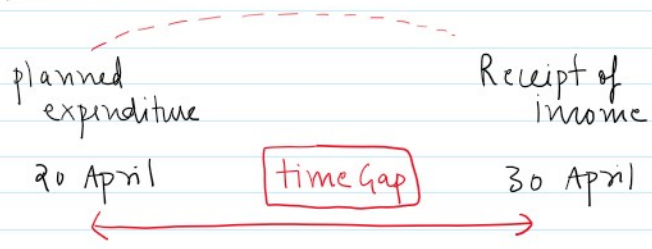


"Machine"

→ the transaction motive is further classified into Income motive and business (trade) motive

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

bridge the time gap between receipt of income & planned expenditure



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



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

$$L_r = K Y$$

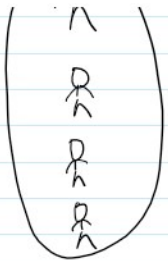
Demand for Transaction money (Transaction Demand for money) is the ratio of earnings which is kept for transactions purposes

assume

$$\begin{matrix} \text{£25} \\ L_r \end{matrix} = \begin{matrix} 25\% \times \text{£100} \\ K \quad Y \end{matrix}$$

→ 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

	earnings (income)	K	transaction demand for money
	£100	25%	£25
	£200		£50



£ 200

£ 300

£ 400

"National Income" £ 1000

£ 15

£ 50

£ 70

£ 10

£ 155

Aggregate Transaction demand

(B) Precautionary Motive

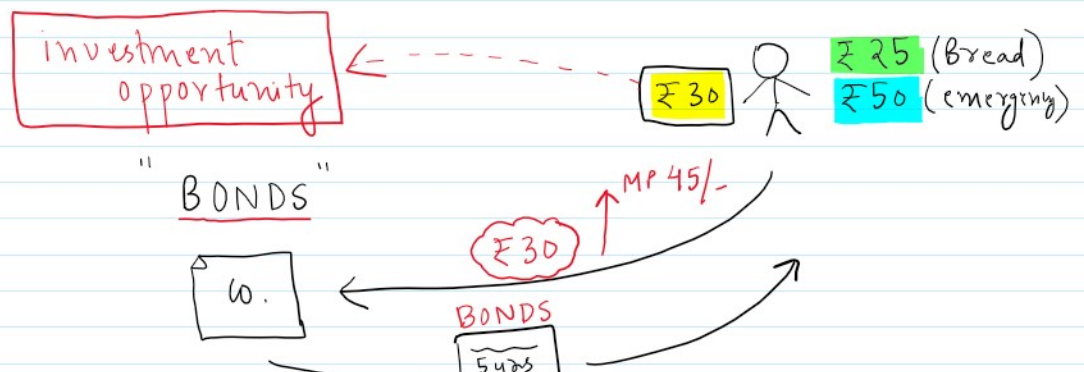
- The amount of money demanded under precautionary motive depends on size of income, prevailing economic or political conditions, personal characteristics (like optimism, pessimism, farsightedness etc)
- It is also not very sensitive to rate of interest.

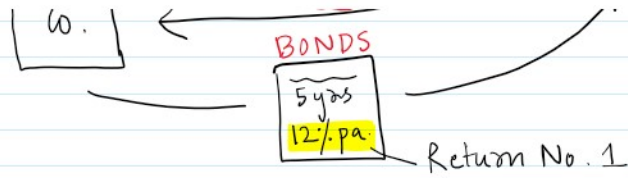
~~Bank Int 25%~~

£50 emergency

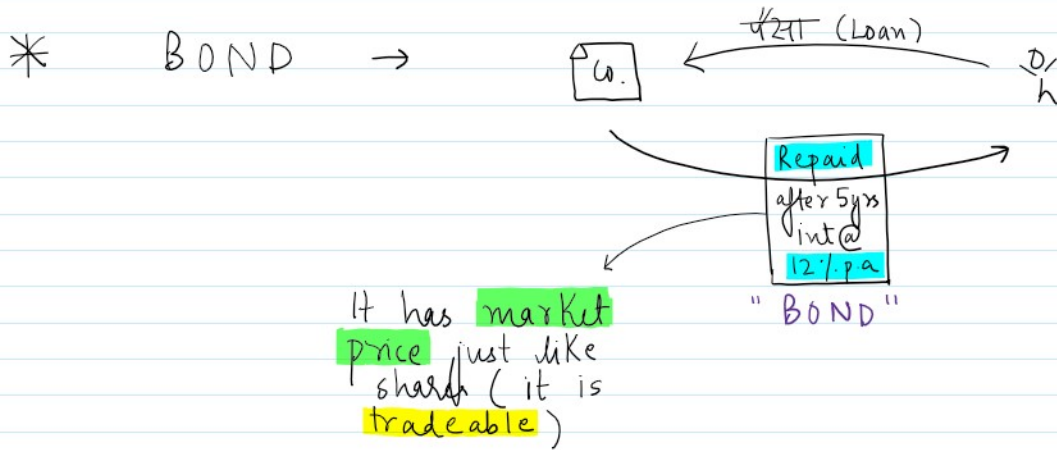
(C) Speculative Motive

- 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 bonds are of two types :-
 - Interest payments
 - expected Rate of Capital Gains Market price increases.





* Market Rate of Interest \rightarrow Interest rate offered in market on cash deposit



* Current Rate of Interest vs Critical Rate of Interest

"ACTUAL" (₹) 6% p.a.

NORMAL (दोना चाहेद) 6.5% or 5.5%



if Current Rate $>$ Critical Rate

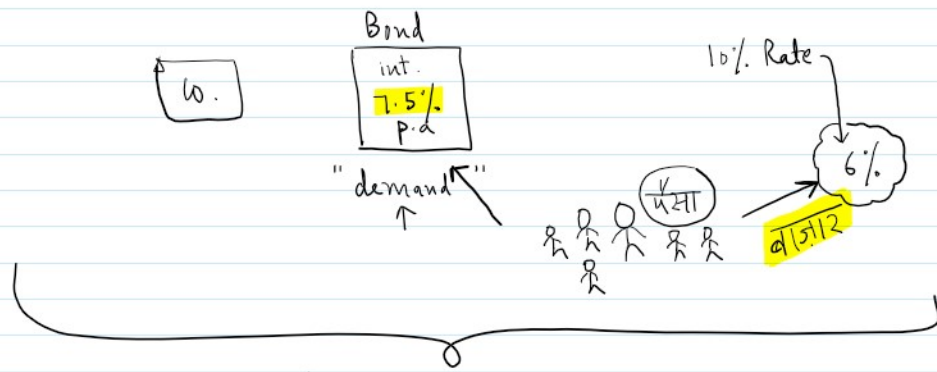
actual ₹ 10% $>$ Normal दोना चाहेद 6%

then he expects the rate of interest to fall in future

and when Rate of Interest falls \rightarrow Inverse relation between interest rates & Bond prices.

Bond Prices Rises

* bond prices.



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

(i) they can earn higher interest rate

(ii) they expect "Capital Gain".

"₹2"

रकरीदा	₹10
M.P	₹12

*

wealth holder \$\$\$\$\$

if Current Rate (6%) < 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 :-

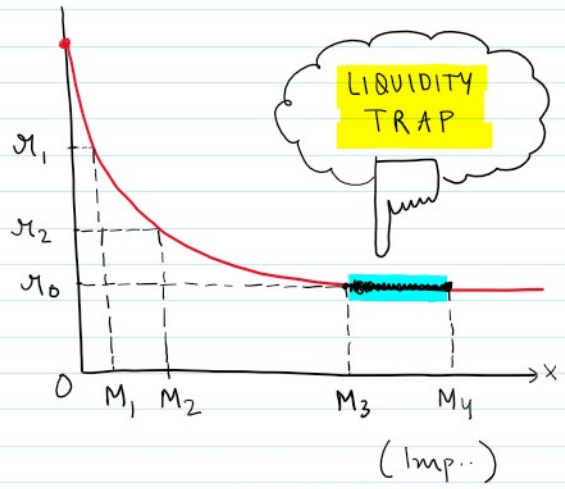
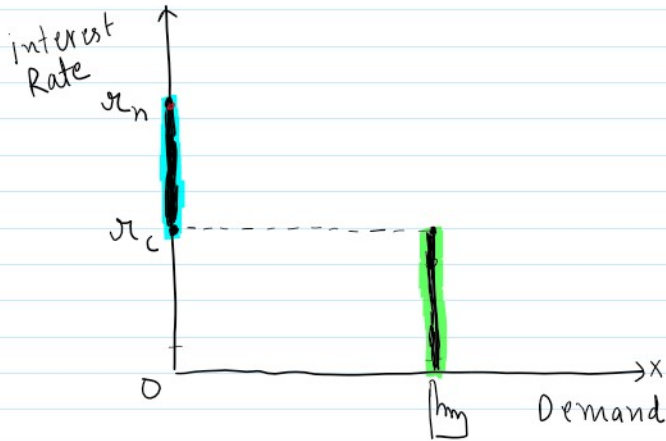
- Less of Interest forgone is small
- they can avoid capital loss.
- they can later buy bonds at lower prices

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

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

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

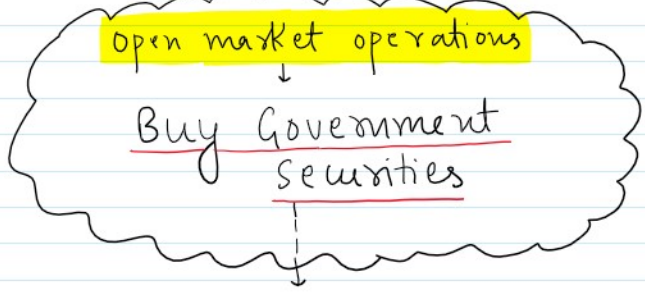
INVERSE RELATION



Individual **Aggregate**
SPECULATIVE DEMAND FOR MONEY

* **LIQUIDITY TRAP** [or Ineffective Monetary Policy]

RBI → follows **expansionary** Monetary Policy



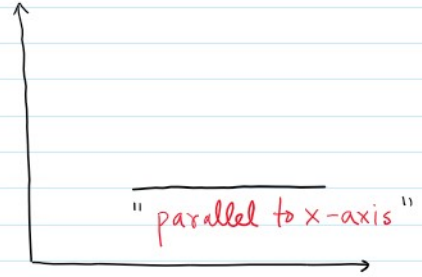
- To Increase money supply
- To Increase Income
- To Increase AD
- To Stimulate economic Growth.

BUT

g.
JAPAN
 10 year yield
0.2% p.a

Interest rates are too low that people do not want to hold bonds and only

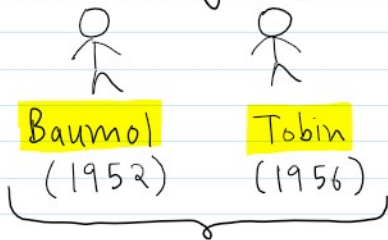
Interest rates are too low that people do not want to hold bonds and only want to keep liquid cash i.e. Speculative demand becomes **PERFECTLY ELASTIC** with respect to Interest rates.



4 Post Keynesian Developments

"Keynes के बाद"

(i) Inventory Approach to Transaction Balances



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

emphasises on Store of Value

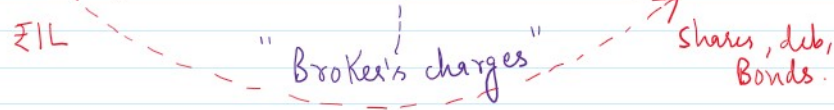
In this approach, money (real cash balance) was essentially viewed as inventory held for transaction purposes

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

- दोष में
- Money and
 - Interest bearing alternative financial asset
जिस पर Interest मिले ("Bank, Bond, share")

→ There is a fixed cost of making transfers between

→ There is a **fixed cost** of making transfers between **money** and such alternative **financial assets**



→ Baumol asserts that individuals hold money for transaction purposes

→ They also incur "**lost**" when they hold the inventories of money

₹100,000

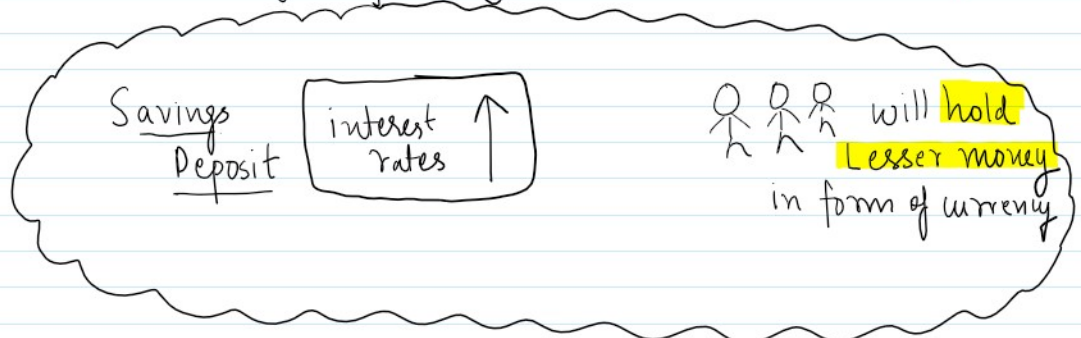
Opportunity lost

lost 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.

→ Bonds + 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 lost is given by:-

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

b is broker's fee
 Y is individual's income
 r is rate of interest

→ This approach also suggests that the demand for money and bonds depends on the lost of making transfer between the two.

↓
Broker's fee

Broker's fee ↑ lost of transfer ↑

It will lead to lower transactions.

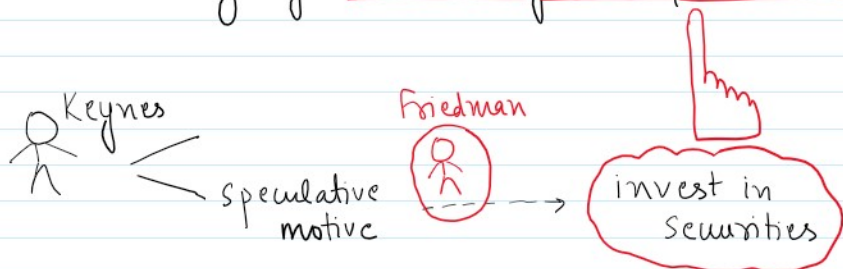
<p>→ Money (cash) (Demand deposit) Returns 0%. Risk free</p>	<p>Bonds / Shares etc Returns (↑) Risk (↑)</p>
---	--

Asset allocation is individual's choice

② Friedman's Restatement of the "Quantity Theory"

Stick figure Milton Friedman → He extended Keynes's speculative money demanded within the framework of asset price theory.
 (1956)

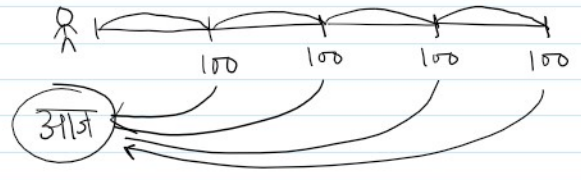
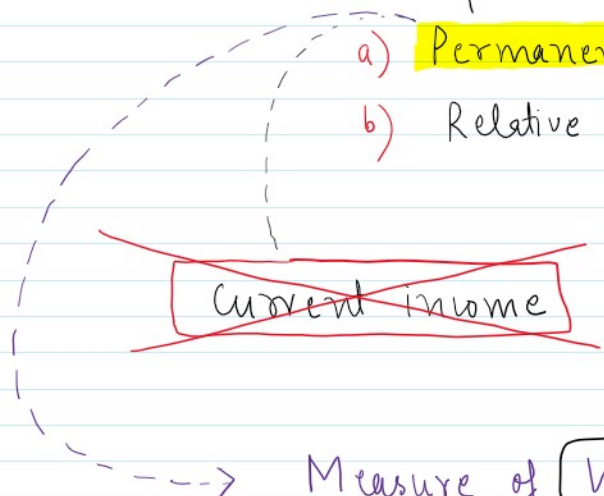
→ He treats the demand for money as nothing more than the application of a more general theory of demand for capital assets.



speculative motive \rightarrow invest in securities

\rightarrow Demand for money is affected by :-

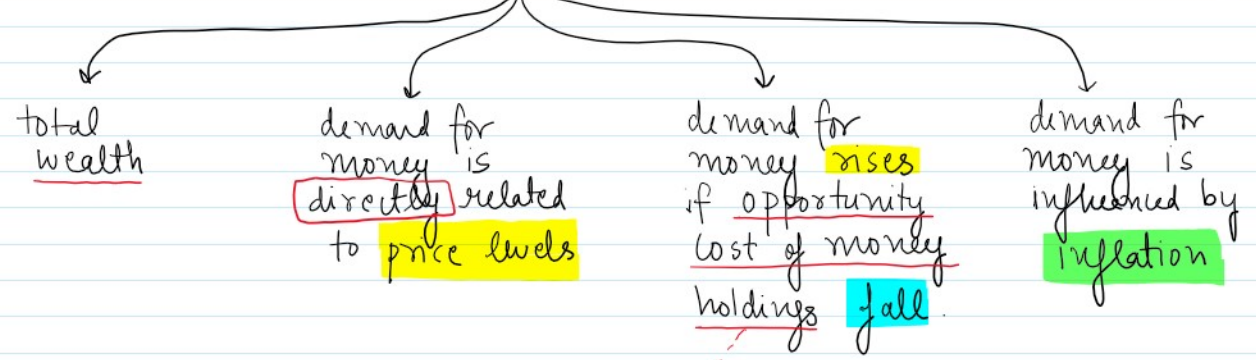
- a) Permanent Income
- b) Relative "returns" on assets.



\rightarrow Measure of **Wealth** - Present Value of all future incomes

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

\rightarrow He determines 4 determinant of demand for money

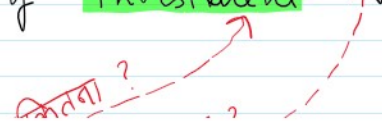


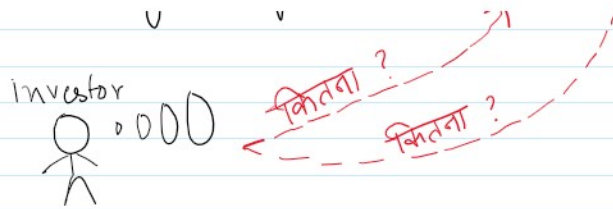
interest on bonds/shares (foregone) \downarrow

③ Demand for Money as Behavior toward Risk

James Tobin \rightarrow According to him, an investor is faced with a problem of what proportion of his portfolio of financial assets he should keep in form of ready money and in form of investment

investor





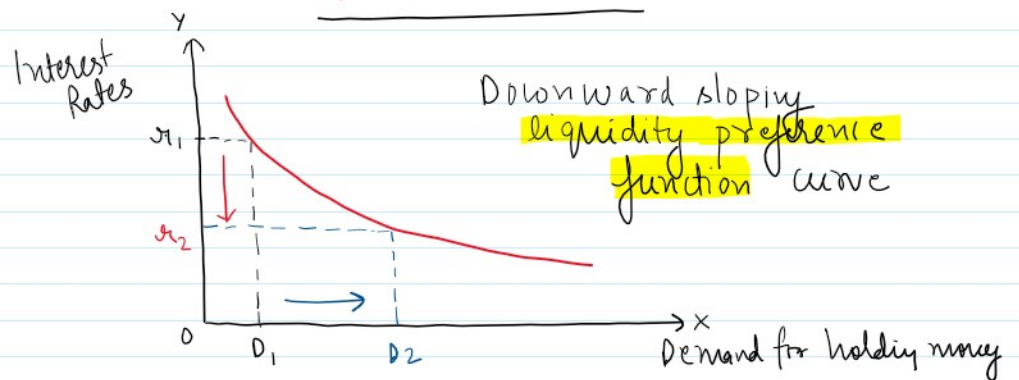
→ According to him, an individual's behaviour shows **RISK AVERSION**, which means they prefer less risk

<u>Bonds or shares</u>	<u>Ready Money</u>
Risk (↑)	Risk (x)
Return (↑)	Return (x)

→ Interest Rate (↑) Demand for holding money (↓)

→ Interest rate (↓) Demand for holding money (↑)

" **INVERSE** "



x ——— x ——— x ——— x ——— x ——— x ——— x

CH 8 **Unit 2**

Concept of Money Supply

(V.V.V. Simple)

① Introduction

→ In real world, Money can be defined for policy purposes as a **set of liquid financial assets**, the variation in stock of which could impact aggregate economic activity.