

DEPTT. OF COMMERCE
SEMESTER II
SUBJECT- MICRO ECONOMICS
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THEORIES OF INTEREST

Interest, in finance and economics, is payment from a borrower or deposit-taking financial institution to a lender or depositor of an amount above repayment of the principal sum (that is, the amount borrowed), at a particular rate.^[1] It is distinct from a fee which the borrower may pay the lender or some third party. It is also distinct from dividend which is paid by a company to its shareholders (owners) from its profit or reserve, but not at a particular rate decided beforehand, rather on a pro rata basis as a share in the reward gained by risk taking entrepreneurs when the revenue earned exceeds the total costs.

For example, a customer would usually pay interest to borrow from a bank, so they pay the bank an amount which is more than the amount they borrowed; or a customer may earn interest on their savings, and so they may withdraw more than they originally deposited. In the case of savings, the customer is the lender, and the bank plays the role of the borrower.

The rate of interest is equal to the interest amount paid or received over a particular period divided by the principal sum borrowed or lent (usually expressed as a percentage).

Compound interest means that interest is earned on prior interest in addition to the principal. Due to compounding, the total amount of debt grows exponentially, and its mathematical study led to the discovery of the number e .^[4] In practice, interest is most often calculated on a daily, monthly, or yearly basis, and its impact is influenced greatly by its compounding rate.

THEORIES OF INTEREST

CLASSICAL THEORY OF INTEREST

The classical theory of interest also known as the demand and supply theory was propounded by the economists like Marshall and Fisher. Later on, Pigou, Cassel, Knight and Taussig worked to modify the theory. According to this theory rate of interest is determined by the intersection of demand and supply of savings. It is called the real theory of interest in the sense that it explains the determination of interest by analyzing the real factors like savings and investment. Therefore, classical economists maintained that interest is a price paid for the supply of savings.

Demand for Savings:

Demand for savings comes from those who want to invest in business activities. Demand for investment is derived demand. Any factor of production is demanded for its productivity. The demand for the factor is high when there are higher expectations from it. Since, all the factors are not equally productive, so, capital demand will be high for more productive uses first and then gradually with the increase in its supply, will shift to less productive uses.

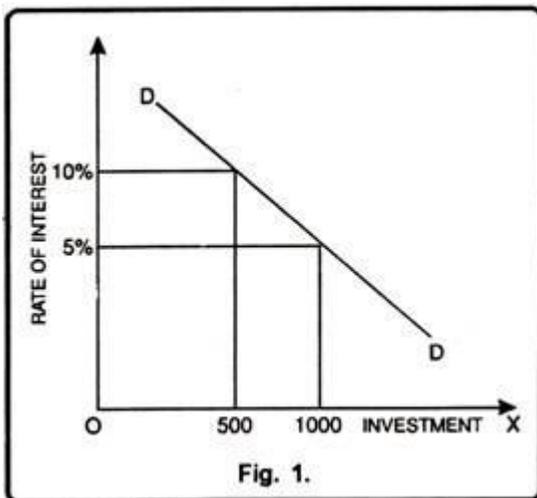
demand for capital can be raised to a point where marginal productivity of capital becomes equal to the interest paid on it. Thus, if marginal productivity of capital is more than the interest paid, then it is beneficial to borrow money and vice-versa. Equilibrium will prevail at a point where marginal productivity of capital equals the rate of interest. This shows that there exists inverse relationship between demand for capital and the interest rate.

This fact can be made clear with the help of the following table 1 and diagram 1:

Table 1

Rate of Interest	Investment (in crores)
10%	500
9%	600
8%	700
7%	800
6%	900
5%	1000

Table 1 shows that rate of interest and investment are inversely related to each other. As the rate of interest increases, the level of investment declines and vice-versa. As in the table, initially, the rate of interest is 10%, investment is Rs. 500 crores. When the rate of interest decreases to 8%, the level of investment increases to Rs. 700 crores from Rs. 500 crores. Further, as the rate of interest again falls to 5%, the level of investment increases to Rs. 1000 crores.



The Fig. 1 depicts that there exists inverse relationship between the investment and the rate of interest. Initially, the rate of interest is 10%, the level of investment is Rs. 500 crores. Now the rate of interest falls to 5%. With this decrease in the interest rate, level of investment increases to Rs. 1000 crores. It indicates that more capital is demanded at a low interest rate and vice versa.

Supply of Savings:

Supply of capital is the result of savings. It comes from those who have the excess of income over consumption. Thus, savings is the main source of capital which depends on the capacity to save, willingness to save, level of income and rate of interest etc. Capacity to save depends on the size of national income, size of personal income, size of family, price level and purchasing power of money etc. Willingness to save depends on the family affection, further expectations etc.

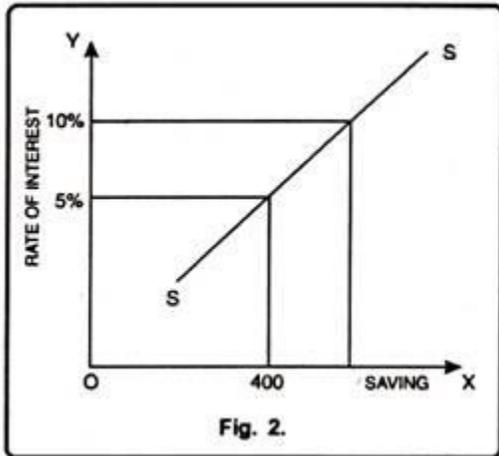
To a large extent, willingness to save is affected by the rate of interest. On a higher rate of interest people save more to earn the benefits of high rate of interest. On the other hand, at the low rate of interest, people save less. Thus, we may say that there is a direct relationship between the supply of savings and the rate of interest. The following table and diagram justifies this fact in a more vivid way.

Table 2

Rate of Interest	Savings (in crores)
10%	1000
9%	800
8%	700
7%	600
6%	500
5%	400

It is clear from the table 2 that rate of interest and savings have a positive relationship. As the rate of interest increases, savings will also increase. On the other hand, a fall in rate of interest leads to a decrease in savings. When the rate of interest is 10%, the savings are of Rs. 1000 crores.

In the successive periods, as rate of interest falls from 10% to 5%, the total savings also decline. Suppose as the rate of interest falls to 5%, savings also decrease to Rs. 400 crores.



In Fig. 2 savings have been represented on X-axis and interest rate on Y-axis. SS is the supply curve which moves upward from left to right. It shows that supply of savings is interest elastic. Higher the interest rate, more will be saved and vice-versa. With 5% rate of interest money savings are Rs. 400 crores. As the interest rate increases to 10% people are persuaded to save more and the money savings rise to Rs. 1000 crores. This signifies that there is a direct relationship between savings and the rate of interest.

Equilibrium Rate of Interest:

According to classical theory, equilibrium interest rate is restored at a point where demand for and supply of capital are equal i.e.

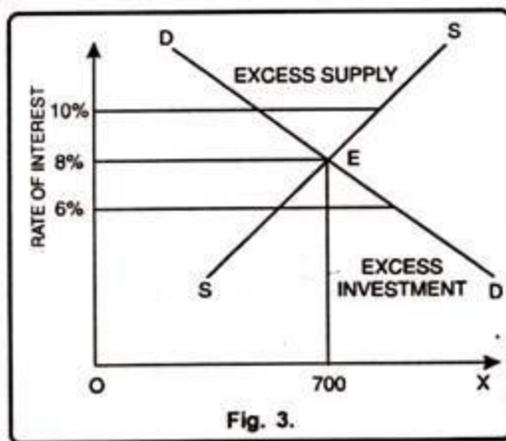
Table 3

Rate of Interest	Investment	Savings
10%	500	1000
9%	600	800
8%	700	700
7%	800	600
6%	900	500
5%	1000	400

The table 3 reveals that equilibrium rate of interest will be determined at a point where demand for and supply of capital are equal. As is clear from the table that equilibrium interest rate 8% is determined because at this level demand for and the supply of capital are equal i.e. Rs. 700 crores.

Now, if the rate of interest increases to 10%, investment is Rs. 500 crores and savings are of Rs. 1000 crores i.e. savings exceed the investment. On the other hand, if the rate of interest falls to 5% investment is Rs. 1000 crores and savings are Rs. 400 crores.

This fact is clearer from the diagram below:



In Fig. 3, rate of interest is determined by the intersection of demand and supply curves. Equilibrium is restored at point E which determines rate of interest as 8% and demand and supply of capital as Rs. 700 crores. Now, if the rate of interest increases to 10% supply of savings exceeds the demand for capital i.e. supply is more than demand. This will lead to a fall in interest rate to the level of 8%.

On the other hand, when the interest rate falls to 6%, demand for savings exceeds the supply of savings which will push up the rate of interest to restore an equilibrium rate i.e. 8%. Therefore, rate of interest is in equilibrium only at a point where the demand for capital equals the supply of capital.

Criticism:

The classical theory of rate of interest has been criticized on the basis of the following shortcomings as discussed below:

1. Indeterminate Theory:

Keynes has maintained that the classical theory is indeterminate in the sense that it fails to determine the interest rate. In this theory, interest is determined by the equality of demand and supply. But the position of savings varies with the income level. Thus, unless we know the income, interest rate cannot be determined.

2. Fixed Level of Income:

Classical theory assumes that the level of income remains constant. But in actual practice income changes with a small change in investment. Thus, it is not correct to assume a fixed level of income.

3. Long Run:

Classical theory determines the interest rate through the interaction of demand and supply of capital in the long run. Keynes pointed out that in the long run we all are dead. Therefore, there was an urgent need of a theory which determines rate of interest in the short-run.

4. Full Employment:

This theory assumes that there is full employment of resources in the economy. But, in reality, unemployment or less than full employment is a general situation. Full employment is only an abnormal case... Thus, this theory does not apply to the present world.

5. Savings and Investment:

Classical economists assume that savings and investment are interdependent. But actually investment changes, income also changes which leads to a change in savings. Thus, both are interdependent on each other.

6. Ignores Monetary Factors

Classical theory takes into consideration only the real factors for determining the rate of interest and ignores the monetary factors.

KEYNES'S LIQUIDITY PREFERENCE THEORY

Keynes's Liquidity Preference Theory of Interest or Interest is Purely a Monetary Phenomenon.

According to Keynes, Interest is purely a monetary phenomenon. It is the reward of not hoarding but the reward for parting with liquidity for the specified period. It is not the 'Price' which brings into equilibrium the demand for resources to invest with the readiness to abstain from consumption. It is the 'Price' which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash.

Here Liquidity Preference Theory is determined by the supply of and demand for money. Supply of money comes from banks and the government. On the other hand, demand for money is the preference for liquidity. According to Keynes people like to hoard money because it possesses liquidity.

Hence, when somebody lends money he has to sacrifice this liquidity. A reward which is offered to make him prepared for parting with liquidity is called Interest. Therefore, in the eyes of Keynes—"Interest is the reward for parting with liquidity for a specific period."

Liquidity Preference or Demand for Money:

Liquidity preference means demand for cash or money. People prefer to keep their resources "**Liquid**". It is because of this reason that among various forms of assets money is the most liquid form. Money can easily and quickly be changed in any form as and when we like. Suppose, you have a ten rupee note now you can change it into either wheat, rice, sugar, milk, book or in any other form you like. It is because of this feature of liquidity of money, people generally prefer to have cash money.

The desire for liquidity arises because of three motives:

- (i) The transaction motive;
- (ii) The precautionary motive; and
- (iii) The speculative motive.

(i) Transactions Motive:

The transactions motive relates to “the need of cash for the current transactions of personal and business exchanges”. It is further divided into the income and business motives. The income motive is meant “to bridge the interval between the receipt of income and its disbursement”, and similarly, the business motive as “the interval between the time of incurring business costs and that of the receipt of the sale proceeds.” If the time between the incurring of expenditure and receipt of income is small, less cash will be held by the people for current transactions and vice-versa.

(ii) Precautionary Motive:

The precautionary motive relates to “**the desire to provide for contingencies requiring sudden expenditures and for unforeseen opportunities of advantageous purchases.**” Both individual and businessmen keep cash in reserve to meet unexpected needs. Individual hold some cash to provide for illness, accidents, unemployment and other unforeseen contingencies. Similarly, businessmen keep cash in reserve to tide over unfavorable conditions or to gain from unexpected deals.

(iii) Speculative Motive:

Money held under the speculative motive is for “securing profit from knowing better than market what the future will bring forth.” Individuals and businessmen have funds, after keeping enough for transactions and precautionary purposes, like to gain by investing in bonds.

Money held for speculative purposes is a liquid store of value which can be invested at an opportune moment in Interest bearing bonds on securities. There is an inverse relationship between interest rate and the demand for money i.e., more demands for money at lower Interest rate and less demand at higher interest rate. Hence, the liquidity preferences curve becomes a downward sloping curve.

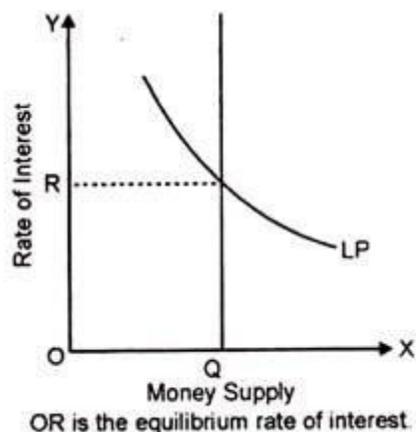
Supply of Money:

The supply of money refers to the total quantity of money in the country for all purposes at any time. Though the supply of money is a function of the rate of Interest to a degree, yet it is considered to be fixed by the monetary authorities, that is, the supply curve of money is taken as perfectly inelastic.

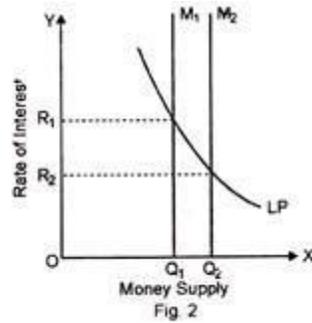
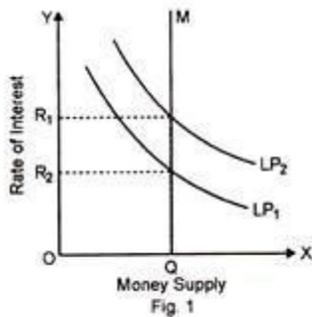
The supply of money in an economy is determined by the policies of the government and the Central Bank of the country. It consists of coins, currency notes and bank deposits. The supply of money is not affected by the Interest rate, hence, the supply of money remains constant in the short period.

Determination of Interest Rate:

According to the Liquidity-Preference Theory the equilibrium rate of interest is determined by the interaction between the liquidity preference function (the demand for money) and the supply of money, as presented in figure below:



OR is the equilibrium rate of interest. The theory further states that any change in the liquidity preferences function (LP) or change in money supply or changes in both respectively cause changes in the rate of interest. Thus as shown in figure below, it given the money supply the liquidity preference curve (LP) shifts from LP_1 to LP_2 implying thereby an increase in demand for money, the equilibrium rate of interest also rises from to $R\%$.



Similarly, assuming a given liquidity preference function (LP) as in fig. (b) when the money supply increases from M_1 to the rate of interest falls from R_1 to R_2 .

Its Criticisms:

The following major criticisms have been levelled against the Keynesian Liquidity Preference theory of interest. By Hansen, Robertson, Knight and Hazlitt etc. This theory has been characterised as “a college bursar’s theory”, “at best an inadequate and at worst a misleading account”.

Important among them are as follows:

1. This theory is indeterminate, inadequate and misleading:

Prof. Hansen and Robertson maintain that the Keynesian theory of interest rate, like the classical theory is indeterminate, inadequate and misleading. In the Keynesian version, the liquidity preference function will shift up or down with changes in the level of income. Particularly the liquidity preference for transactions and out of precautionary motive. This being the function of income and with this we know the income level. And to know the level of income we must know the rate of interest. Robertson regards the liquidity preference theory, “as at best inadequate and at worst a misleading account.”

2. Hazlitt’s Criticism:

Professor Hazlitt has vehemently criticised the Keynesian theory of interest on the following grounds:

(i) It is one sided theory:

According to Hazlitt, the Keynesian theory of interest appeared to be one sided as it ignored real factors. Keynes considered Interest to be a purely monetary phenomenon and refused to believe that real factors like

productivity and time preference, had any influence on the rate of interest. Similarly, the classicists also were wrong in considering Interest purely as a real phenomenon and ignoring the monetary factors.

(ii) Role of saving has been ignored:

Keynes has ignored the element of saving, which he considered Interest as a reward for parting with liquidity. Professor Jacob Viner has said that “without saving there can be no liquidity to surrender. The rate of interest is the return for saving without liquidity.” As such the element of saving cannot be ignored in any theory of Interest.

(iii) The theory has completely failed to explain depressionary situation:

It goes directly contrary to the facts that it presumes to explain. If the theory were right, the rate of interest would be the highest precisely at the bottom of a depression when, due to falling prices, people’s preference for liquidity is the strongest. On the contrary the rate of interest is at the bottom during a depression.

(iv) This theory is vague and confusing:

This concept is vague and confusing, because when a man holds funds in the form of time deposits, he will be paid Interest on them; therefore he receives both i.e., Interest cum Liquidity.

3. This theory furnishes narrow explanation of the rate of interest:

Keynes’ Liquidity-Preference Theory of Interest furnishes too narrow an explanation of the rate of interest. In his view the desire for liquidity—an important factor in determining the rate of interest—arises not only from three main motives (transactions, precautionary and speculative) mentioned by Keynes, but also from several other factors which he has not mentioned in his theory.

4. This theory ignores productivity of capital:

Some critics are of this opinion that Interest is not a reward for parting with liquidity as stressed by Keynes. They have written that Interest is the reward paid to the lender for the productivity of capital. As such, Interest is mostly paid because capital is productive.

5. It focuses attention on short-run ignores the long-period:

The Keynesian theory concentrates only on the short-run and completely ignores the long-period of time. But from capital investment point, it is a long-term rather than a short-term rate of interest which is of course significant.

6. There is fundamental error in Keynesian analysis:

There is confusion in Keynes's analysis about the relation between rate of interest and the amount of money. On the one hand, he says that the demand for money is inversely dependent on the rate of interest and on the other, that the equilibrium rate of Interest is inversely dependent upon the amount of money. Keynes has not made any distinction between the two propositions and often uses them in an identical manner.

In the end it can be said that the Keynesian Theory of Interest is not only indeterminate but is also an inadequate explanation of the determination of the rate of interest. He has emphasised that Interest is purely monetary phenomenon. That is why his theory has been named as "narrow and unrealistic theory."

Can Interest Rate Ever Fall to Zero?

No, the Interest rate, cannot fall to zero, because in the ordinary business of life, I think there is no possibility of the rate of interest ever falling to zero. As we see from the point of view of the demand for loans, zero rate of interest means that marginal net product of capital is nil. As marginal net product is nil, we cannot therefore increase the product further by employing more capital.

We have reached a state in which our productivity has reached the peak. It also means that all our wants have been satisfied. But we cannot conceive of a state of society in which men will have no wants and no desires, so long as these remain, there will always be endless possibilities for employing capital. The rate of interest cannot fall to zero.

Similarly, from the side of supply, a zero rate of interest means that people go on lending without expecting any reward. But there are certain reasons why liquidity-preference will not drop to zero.

As the rate of interest falls, more money will be absorbed to satisfy liquidity-preference on account of the transactions—motive, while the fall in the rate of interest will diminish the loss that one would sustain in keeping larger cash balances in hand.

Hence, “institutional and psychological factors are present which set a limit much above zero to the practical decline in the rate of interest.”