SOME ASPECTS OF KEYNESIAN REVOLUTION REVISITED

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DECLARATION

This dissertation titled "SOME ASPECTS OF KEYNESIAN REVOLUTION REVISITED" being submitted to the **Centre for Economic Studies and Planning, School of Social Sciences, Jawaharlal Nehru University,** by **MR.ANKAN BANERJEE** , in partial fulfillment of the requirements of the degree of **MASTER OF PHILOSOPHY** , is entirely his own work and has not been considered for the award of any other degree either at this or any other university. We recommend that the dissertation be forwarded to the examiners for evaluation.

PRADIPTA CHAUDHARY

Supervisor

D.N.RAO

Chairperson

To my parents

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Thanking individuals in words is certainly inadequate and, hence, unjust for it undermines their enormous contribution to my present work. But still, since acknowledging someone's help is considered to be noble, I will try my best, at least to mention their warm help, if not to elaborate on their great deed.

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INTRODUCTION

Probably no economist has ever been involved as intensely in the economic problems of his time, or in all their diversity and range, as John Maynard Keynes. His participation in domestic and international economic matters reflected his character. He was a man who assumed a personal commitment to argue forcibly his opinion on any question he deemed of importance to his country or to good and harmonious international relations. (Vicarelli, 1984, p.(xiii)).

The range of this commitment was undoubtedly derived from his privileged intellectual background and was in part a result of the historical period that confronted him. Few periods could have offered more opportunities to analyse the workings, advantages, and limitations of the capitalist economic system than the years between 1910 and 1946. The British decision to abandon the gold standard on the outbreak of World War I, the economic negotiations of the Paris Peace Talks, the "return of gold" halfway through the 1920s, the Great Depression of the 1930s, the shattering devastation of World War II, and then the unparalleled opportunities for the setting up of a new international monetary system once peace returned: a historical concatenation of events as profound as these could hardly have failed to incite a mind such as Keynes' to identify the key mechanisms in the workings of a market economy and thus indirectly to seize on the possible flaws and chinks that could lead these mechanisms to falter and even fail. (Meek, 1956, p.2).

Keynes' intellectual legacy was huge. His writings range from an important contribution to the logical foundations of the calculus of probability ("A Treaties on Probability", 1921) to a lucid analysis of Indian monetary and financial institutions ("Indian Currency and Finance", 1913) and of the British financial system on the eve of the First World War (1914). Included is his more or less merciless attack on the political follies in economic policy perpetrated by the Allies at the Paris Peace Conference ("The Economic Consequences of the Peace", 1919) and those committed by the British government in its ill-advised "return to gold" ("The Economic Consequences of Mr. Churchill", 1925).

Dwelling aside but finally to be pushed on to centre stage are his fundamental works of economic theory ("*A Tract on Monetary Reform*", 1923; "*A Treatise on Money*", 1930; and "*the General Theory of Employment, Interest, and Money*", 1936). (Vicarelli, 1984, p.(xiv)).

The "*General Theory of Employment, Interest and Money*", in particular, is undoubtedly regarded as the most important book on economics in the twentieth century, and this view is shared both by those who are wholly opposed to its teaching as well as by its adherents. (Littleboy, 1990, p.3) However, although more than half a century has elapsed since the publication of the General Theory, despite the wide acceptance of Keynes' ideas of the General Theory, its significance and vitality still remain controversial; it unquestionably marked a break, as a breath of fresh air, from the consolidated theoretical tradition, and from the contemporary systematic approaches to the analysis of economic reality. Given its timing in the midst of market capitalism's most traumatic unemployment tragedy in the modern century - and Keynes' own considered verdict on his accomplishment - the General Theory must be assigned the top priority as the definitive systematisation of Keynes' theoretical thinking. It emerged as the final published statement in a vigorous, yet tormented intellectual process, the legacy of a process during which Keynes was not afraid to alter course when he felt he had been led by his own reasoning to a cul-de-sac. (Vicarelli, 1984, p.(xiv)).

Keynes' main message in General Theory ran counter to the basic tenet of the respectable practitioners of the art (classical economists) which always has been that production, in general, was confined by the scarcity of human and material resources; that human welfare can be improved only by "economising" in the use of scarce resources (whether land, labour, or capital) which means securing the best allocation of what is available. This meant that an "economy" - a term which implied a community which satisfies its wants by mutual co-operation between its members - was necessarily constrained in its activities by its resource endowment: it was the poverty (or insufficiency) of resources which limited the satisfaction of wants. Since the endowment of resources

available to a community was supposed to be determined exogenously, the welfare of the community could be maximised only by the free play of market forces under a free enterprise system, with the minimum of government interference ad regulation. (Kaldor, N., in Trevithick and Worswick ed. *"Keynes and the Modern World"*, 1983, pp.1-2)

Keynes asserted the contrary. His main proposition was that in normal circumstances, production, in general, was limited by effective demand which determined how much of potential resources were effectively utilised. Hence, there was scope (in normal circumstances) for securing greater material welfare through the purposeful direction of the economy by a combination of fiscal and monetary policies which could secure full employment whilst avoiding inflation. (Kaldor, N., in Trevithick and Worswick ed. *"Keynes and the Modern World"*, 1983, pp.1-2)

In order to explain how this could be done, Keynes put forward a model of the interaction of a limited number of strategic variables operating on the economy which serve to explain how, in given circumstances, the level of output as a whole and its movements were determined. This gave birth to a new branch of economics, macroeconomics, distinguished by the fact that unlike the prevailing economic theory, it made empirical hypotheses concerning the behaviour of groups or categories of individuals, the validity of which could be refuted, by observation if not by experiment, and which made it possible to make quantitative forecasts of how the economy would behave in response to either policy changes introduced by the government, or to external changes due eg. to new inventions or spontaneous changes in expectations. (Dimand, 1948, p.1).

Thus, the main reason why the General Theory found such a widespread echo so soon after its publication was that it brought economics "back to earth" - back to its original purpose of being an instrument for formulating rational policies concerning the economy. In this sense, Keynes' economic vision as incorporated in this book proved to be "revolutionary" and, therefore, a study of Keynesian economics assumed critical significance. (Dimand, 1948, p.2).

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Although there have been many works written about Keynes with particular reference to his General Theory thereafter, there is room for another to re-examine Keynes' thought in light of new controversies about what the General Theory is and in light of extremely important new evidence. This work is, accordingly, an exposition of the economics of John Maynard Keynes from the perspective of the efforts of economists to assimilate, develop and refine Keynesian economic ideas. The Keynesian theory is viewed in the following pages as a "revolutionary doctrine" in the sense that it produces theoretical results entirely different from the body of economic thought existing at the time of its development. The "Revolution" discussed here is a revolution in thought, not in the economic policies of governments.

The **first chapter** of this work entitled, **"Theory of Output and Employment : Effective Demand"**, sets out Keynes' revolutionary new theory of the macro-economy in which the equilibrium level of output and income is made a function of the level of effective demand. With respect to the Keynesian principle of effective demand, a discussion is undertaken to focus on the forces which determine the volume of effective and, in this context, its two main components - consumption and investment-are analysed. Various controversies relating to the dependence of the consumption and investment functions on the level of income and the rate of interest are also discussed in the light of the views put forward by different economists. Finally, the conflict between Keynes and the classical economists relating to their concepts of savings and investment is analysed with regard to the distinction between *"schedules"* and *"observables"*.

Chapter 2 of this work, entitled, **"Theory of Output and Employment : Labour Market"**, briefly exposes the classical doctrine on the labour market and thereby undertakes an extensive review relating to Keynes' criticism of this classical doctrine. In this chapter, the debate between the classical economists and Keynes has been viewed with respect to one critical question and that is "Will a cut in money-wage rates cure the problem of unemployment in an economy?" While answering this question Prof. Pigou's "Real Balance Effect" has also been extensively discussed.

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In the **third chapter,** entitled, **"Interest Rates and Money",** this work focuses on the divergence of Keynes' Liquidity Preference Theory of interest rates from the Classical Savings-Investment Theory of interest rates. In this discussion, exclusive attention has been paid to define the three motives advocated by Keynes which compel economic agents to hold money inspite of the fact that it does not yield any interest income. A critical evaluation of Keynes' method of interest rate determination through his Liquidity Preference Theory has also been undertaken by coordinating his theories of demand and supply of money. Such an evaluation has led to the conclusion that Keynes' interest theory based solely on monetary factors, is not wholly satisfactory since it involves circular reasoning; therefore, a new outlook is necessary, for propounding a theory of interest rates which incorporates both the real and the monetary factors for determining the equilibrium rate of interest in an economy.

It is with this idea of reviewing a new theory of interest rates, that Hicks's IS-LM model has been discussed in **Chapter 4** entitled, **"The IS-LM Apparatus."** In this chapter, it has been noted as to how Hicks filtered out the essential tenets of Keynes' General Theory to put forward a model where both the equilibrium level of income and the rate of interest are determined simultaneously by the interaction of the real as well as the monetary forces in an economy. Further, an analysis of Hicks's Extended IS-LM model has been undertaken in an attempt to show how Hicks tried to reconcile the Keynesian and the Classical theories.

Chapter 5 of this work entitled, **"Money and Prices",** contrasts the classical theory of prices based on the Quantity Theory of Money with the Keynesian theory of prices based on the "Mark-up" pricing rule. It has been shown in this chapter, that the Keynesian theory of prices has, infact, proved to be a "contra-quantity theory of causation" since it has reversed the direction of causation in the Quantity Theory of Money as propounded by the classical economists. An attempt has also been made to show how Keynes' theory of prices integrates the classical theory of value with the theory of money as also the theory of output

with the theory of money. Keynes' theory on long-run price movements has also been briefly exposed in this chapter.

Finally, the **concluding chapter** of this work brings all the main Keynesian propositions together with the help of a schematic diagram so as to provide a consistent picture of the economics of Keynes.

At the end, it must be noted that, while it has, certainly, not been possible to discuss all the aspects of Keynesian economics, effort has been made to deal with most of the issues in substantial detail.

CHAPTER 1

THEORY OF OUTPUT AND EMPLOYMENT:
EFFECTIVE DEMAND

The Keynesian revolution concerned itself solely with the development of a theory of effective demand i.e. a theory of the determination of the level of output as a whole (Klein, 1966, p. 56.). In his endeavor to develop the theory of effective demand, Keynes had talked about the determinants of effective demand and it is in this context, that the economic variables such as consumption, savings and investment play a major role.

There are two major economic problems - the problem of achieving full employment, and the problem of allocating resources in a full employment economy. Keynes had shown how the level of employment and output get determined through the combined action of consumption, savings and investment in the economic system and, thus, had provided a theory with which to attack the first problem. He did not presume to advance a solution to the second problem, except in so far as the first must necessarily be cleared away before thinking about the second can start (Keynes, 1936, p. 6).

The task of this chapter is to develop the Keynesian theory of effective demand and its determinants, namely, consumption, savings and investment from the most fundamental and elementary economic considerations, to compare this theory with the classical model and to discuss the most fundamental tenets relating to the various controversies that have emerged with regard to savings and investment in the Keynesian model over the years.

In order to understand the theory of effective demand in the Keynesian system, it is necessary to go deeper into the analysis of the problems inherent in Keynesian economics. The central problem of Keynesian economics is concerned with the operation of the system as a whole, unlike most economic theories which have been concerned with the behaviour of individual households and business firms (Klein, 1966, p. 56). Accordingly, Keynesian theory is couched in terms of aggregative concepts like aggregate demand, aggregate supply, total consumption, employment, income ,etc. (Klein, 1966, p. 57).

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As we know, the total production of goods and services in the national economy in a given period of time is commonly called the national income. This income is made up of two parts - the production of consumer goods and the production of producer goods. Our first task is to show that consumption, savings and investment influence the total demand for each of these two types of goods in the Keynesian system.

1.1. Consumption Demand

Since Keynesian economics deals with economic aggregates, the term "demand", as used by Keynes, refers to aggregate demand of the whole economic system (Dillard, 1948, p. 38). From the accepted theories of consumer behaviour, it is learned that if a household maximises its satisfaction subject to the constraint that its budget does not exceed its income, then the demand for each type of good consumed by a particular household will depend upon the household income and the prices of all goods in the household budget. By appropriate aggregation methods, we can develop the analogue of these demand schedules which say that the demand of each household for real consumer goods depends on the general price level of consumer goods, the interest rate (which relates the prices of future consumer goods to the prices of current consumer goods), and the household's money income. Matters can further be simplified by assuming that households would not alter their expenditures on consumer goods if all prices and incomes were to change by the same proportion. Then the relevant variable affecting consumption is real income, i.e. income corrected for price changes (Klein, 1966, p. 58). Therefore, the Keynesian consumption function embodies the dependence of aggregate demand on realised real household incomes (Leijonhufvud, 1968, p. 194). The interest rate is also one of the variables affecting consumption, because it is not related to the units of measurement of income and consumption. Thus, community consumption depends upon the rate of interest and the level of real community income (Klein, 1966, p. 59). However, as far as statistical results are concerned, when tests were conducted using the available data on consumption, income and the rate of interest to ascertain whether or not there is any influence of the latter variable, no

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econometrician could find a significant correlation between consumption and interest rates. From such econometric exercises, the early Keynesians concluded that Keynesian consumption function is interest inelastic, that is, consumption is not sensitive to changes in the rate of interest and that consumption function depends solely on the aggregate real incomesof the economy which was assumed to be stable even in the long run (Klein, 1966, p. 60).

1.1.1. Influence of the Rate of Interest on Consumption Demand : Wealth-Effect on Consumption Function

Leijonhufvud, however, in opposition to such a contention claimed that the early Keynesian treatment of the consumption function which depended solely on income and not on the rate of interest obscured the distinction between the short run and the long run consumption-income relation (Leijonhufvud, 1968, p. 187). He argued that the post war forecasting debacle based on Kuznet's findings clearly demonstrated the necessity of distinguishing between the long run consumption-income relation and the short run reaction of consumption to cyclical changes in income. The post-war theories relying increasingly on capital theory emphasised the longer run income prospects, or the value of wealth, as the variables explaining the shifts over time of the short run consumption-income relation. To the proponents of such post-war theories, the early "Keynesian" literature's preoccupation with flows appeared as its major analytical weakness. They recognised that Keynes did provide for a wealth effect on consumption in the very long run (Leijonhufvud, 1968, p. 191). According to them, in Keynes' discussion of possible stationary states, the effect of the growth in the stock of capital was considered (Leijonhufvud, 1968, p. 188). Keynes, in their opinion, had concluded that, even with rigidity of money wages and the disappearance of investment opportunities yielding a positive return, stagnation with unemployment may be avoided if:

"...... a situation in which a stock of capital sufficiently great to have a marginal efficiency of zero also represents an amount of wealth sufficiently great to satiate to the full the aggregate desire on the part of the public to make provision for the future" (Keynes, 1936, p. 218).

Thus, Keynes did seem to have an implicit wealth effect incorporated in his very long run consumption function although he had neglected it in his short period approach assuming "real net worth" to be constant in the short run which is defined in such a way that both expected return streams and the interest rate are assumed not to change (Leijonhufvud, 1968, p. 191).

Countering these aforementioned views held by the post-war Keynesians, Klein, a disapprover of Keynes' wealth effect on the consumption-income relationship, contended that income entered the consumption function via its position as a budget constraint in the theory of consumer behaviour (Klein, 1966, p. 60). It is, of course, arbitrary to state that households plan their budget so that consumer expenditures do not exceed their current incomes. They may well spend more than their current incomes by drawing upon their accumulated liquid savings and liquid assets. However, taking personal cash balances as a representative of liquid assets in the inter-war period, he found that there is no significant correlation between consumer expenditures and wealth or cash balances when the consumption-income correlation was taken into account. Therefore, according to him, it may be true in the post-war world that a large amount of liquid assets in the hands of individuals, coupled with a dearth of durable consumer goods, have had a great influence on the consumption level of the individuals in the system. But this is not to be expected as a normal peacetime relationship. Thus, in Klein's judgment, Keynesian consumption function is solely dependent on current incomes and not on cash balances or wealth and, hence, not on interest rates (Klein, 1966, p. 61).

It does seem that Leijonhufvud's argument stands on a stronger edifice than that of Klein and early Keynesians who had failed to distinguish between the short and the long run Keynesian consumption-income relationship and for this misconception, Keynes himself is partly to be blamed. Keynes' preoccupation with short-run problems led him to develop certain analytical habits inappropriate to the analysis of long run problems and he was not

sufficiently aware of their limitations. He, therefore, showed a tendency to generalise in a rather reckless fashion from the results of his short-run analysis to problems of the long run (Leijonhufvud, 1968, p. 189). Moreover, the dynamic structure of Keynes' short-run model whereby he neglected the distinction between physical and financial non-money assets (to be studied in Chapter 3) predisposed him to overlook the consequences of changes in real value of financial assets due to proportional variations in money prices (Leijonhufvud, 1968, p. 190). All these led to an ambiguity in the interpretation of the Keynesian literature and the consequent misconception of Klein and early Keynesians on the negligible role of wealth and, hence, interest rates in the determination of the level of consumption in the economy.

Leijonhufvud had tried to rectify this misconception by arguing that in Keynes' theory, the intertemporal substitution effect of interest rate movements is not entirely absent, but is assumed to be very weak (Leijonhufvud, 1966, p. 239). But his wealth effect is assumed to affect current consumption in the same direction as the substitution effect. There remains, therefore, a significant inverse relationship between consumption and interest rates. He substantiated his claim by contending that this dependence of the propensity to save out of current income on (long) rates of interest was one analytical reason for Keynes' life-long belief in the efficacy of low rates in stimulating economic activity. Hence, it is also one of the reasons why the *General Theory* devotes so much space to the exposition of the factors which in Keynes' view cause long rates to be inflexible in the short-run and thus tend to "neutralise" the interest rate mechanism which would otherwise contribute to the stabilisation of aggregate demand and employment. In this context, Leijonhufvud, however, argued that a reduction in the rate of interest may have a positive, negative, or a zero wealth effect depending on the relation between the Average Periods[1] of the receipt stream (production plan) and the "standard stream" (consumption plan) (Leijonhufvud, 1968, p. 244). A reduction in interest rates raises the present value of any receipt stream which includes some future receipt, but also raises the "present cost" of a given standard stream. The individual is better off only if he can purchase a greater number of unit standard streams than before at the new interest rate. Thus, if the cost of a unit

the head near retirement, would normally be in the opposite direction. The substitution effects would go in the direction of increased current consumption for all households. The net interest effect on aggregate current consumption might then be weak or non-existent within the normal range (Leijonhufvud, 1968, p. 248).

Thus, Leijonhufvud concluded that the Keynesian consumption function is not interest-inelastic in the sense that was propounded by the early Keynesians, especially Klien, but, the effects of changes in the interest rates on the aggregate consumption function can be ignored on the premise that wealth effects ought to cancel on the aggregate (Leijonhufvud, 1968, p. 249). Hence, the only variable which explicitly significantly affects the Keynesian consumption function is the aggregate income of the economic system.

1.1.2. Influence of Income on Consumption Demand: Marginal Propensity to Consume

The relation between consumption and income is obviously such that an increase in income leads to an increase in consumption. At different levels of national income, the amount of consumption will change, and the proportion which total consumption bears to total income will also change. The absolute amount of consumption will increase as income increases, and will decrease as income decreases. A schedule showing the various amounts of consumption which correspond to different levels of income was called the "propensity to consume" by Keynes. It is a functional relationship indicating how consumption varies when income varies. A special characterisation of this consumption-income relationship based on Keynes' Psychological Law (Keynes, 1936, p. 116) is the proposition that a small increment in income will be accompanied by a smaller increment in consumption. In technical Keynesian terms, this states that the marginal propensity to consume is less than unity. This idea is an important feature of the Keynesian system, because it is one of the stabilising forces of the economy (Klein, 1966, p. 60). If consumers customarily increased their spending by more than an increase in income, the dynamical course of the system throughout time would probably be explosive. Increasingly greater fluctuations would be

experienced through history. The fact that the marginal propensity to consume is less than unity counteracts the disturbing forces which make for ever greater fluctuations (Dillard, 1948, p. 60).

Such a concept of the marginal propensity to consume and the aggregate consumption function is often said to be the distinguishing feature of Keynesian Economics (Leijonhufvud, 1968, p. 115). In fact, Keynes himself had insisted that the consumption function embodied the chief innovation of his General Theory (Keynes, 1936, p. 115).

1.2. Savings

Whatever is said about consumption and its explanatory variables can be immediately translated into statements about savings, since there is, in the Keynesian system, a simple definitional relation between consumption and savings. "Savings" is defined as income not consumed. Whatever income is paid out to factors of production, plus undistributed profits that do not get spent on consumer goods, is exactly defined as savings (Klein, 1966, p. 61). If consumption depends upon interest and income, then savings depend upon interest and income. If the marginal propensity to consume is positive and less than unity, then the marginal propensity to save is also positive and less than unity. The marginal propensity to consume plus the marginal propensity to save is, by definition, equal to unity. The fundamental fact about savings in Keynesian economics is that its volume depends upon income. At varying levels of national income, the community will want to save amounts which are more or less stable and predictable at any given time. In other words, the propensity to save is stable (Dillard, 1948, p. 62). The variation of savings in response to changes in the rate of interest will be opposite in direction to the variation of consumption, but equal in absolute value. Income less consumption is identically equal to savings for all levels of income, virtual and observed. Income minus consumption schedule is identically the savings schedule (Klein, 1966, p. 61).

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1.3. Investment Demand

The other type of good which is produced in the economic system is the producer good which is demanded by business firms rather than households. Such a demand for producer goods by business firms is known as investment. Investment is the addition to the existing stock of real capital assets, such as the construction of new factories, new office buildings, transportation facilities, and addition to inventories as also addition to fixed capital. These additions may be either intentional or unintentional. Intended increases are motivated by larger volume of sales or by anticipation of price changes or by other related factors which are part of the ordinary planning activities of business enterprise. Unintended investment is the accumulation of unsold finished goods arising from unforeseen changes in the market (Dillard, 1948, p. 61).

The simplest type of economic theory describing the demand for producer goods or investment is that which says that the economist can say nothing quantitative about it. This theory maintains that the demand for producer goods depends upon subjective anticipations regarding future markets, technological developments, population growth, and various other uncertain forces about which the economist has no adequate theory. However, this view is undoubtedly very extreme (Klein, 1966, p. 62). While it is probably true that much investment activity is autonomous and depends on factors that are unrelated to the economic quantities that are to be studied here, it is still true that business firms in a capitalist economy try to make as much profit as possible and will adapt their demand for capital goods to the beaviour of prices, sales, capital accumulation etc. Therefore, it is indeed possible to formulate a theory of investment within the framework of Keynesian economics.

1.3.1. Marginal Efficiency of Capital

The basic Keynesian theory of the demand for capital goods falls under the heading of marginal efficiency of capital. This theory is based on the most classically accepted doctrine of profit maximisation (Klein, 1966, p. 62). Keynes defined the marginal

efficiency of a capital asset as the highest rate of return over cost expected from producing one more unit (a marginal unit) of a particular type of capital asset (Keynes, 1936, p. 136). In common language, it may be thought of as the expected rate of percentage profit per year on real investments of the most efficient type (Klein, 1966, p. 62). In Keynes' words:

"When a man buys an investment or capital asset, he purchases the right to the series of prospective returns, which he expects to obtain from selling its output, after deducting the running expenses of obtaining that output, during the life of the asset. This series of annuities is conveniently called the Prospective Yield of the investment.

Over against the prospective yield of the investment, we have the Supply Price of the capital-asset, meaning by this, not the market-price at which an asset of the type in question can actually be purchased in the market, but the price which would just induce a manufacturer newly to produce an additional unit of such assets, i.e. what is sometimes called its Replacement Cost. The relation between the prospective yield of a capital-asset and its supply price or replacement cost, i.e. the relation between the prospective yield of one more unit of that type of capital and the cost of producing that unit, furnishes us with the Marginal Efficiency of Capital of that type. More precisely, I define the marginal efficiency of capital as being equal to that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital-asset during its life just equal to its supply price. This gives us the marginal efficiencies of particular types of capital-assets. The greatest of these marginal efficiencies can then be regarded as the marginal efficiency of capital in general.

... It (Marginal Efficiency of Capital) depends on the rate of return expected to be obtained on money if it was invested in a newly produced asset; not on the historical result of what an investment has yielded on its original cost if we look back on its record after its life is over" (Keynes, 1936, p. 135)

In order to understand this Keynesian concept of marginal efficiency of capital, it is best to develop a treatment from the behaviour of an individual unit following an optimal principle, and then to derive the aggregative relationship for the economy as a whole.

According to Keynes, an individual firm will purchase capital goods as long as the expected future earnings from this good, properly discounted, exceed the price of additional capital goods. The marginal efficiency of capital is the discount rate which will just equate the discounted stream of anticipated earnings to the price of new capital goods. The individual firm tries to maximise its expected profits subject to the constraint that it operates within the framework of certain technological conditions. The profits depend upon prices, sales, the use of factors of production and the costs of these factors. Furthermore, the technological constraint establishes a definite relation between the input of the factors of production and the output of the final product. The maximisation of profit subject to the constraint leads immediately to Keynes' proposition that more capital goods will be demanded as long as their price is less than the discounted value of their expected future earnings. The corresponding relation which holds for the economy as a whole, provided we have measured the aggregates properly, states that the community of entrepreneurs will demand more capital goods as long as their average price is less than the discounted value of their anticipated earning stream (Klein, 1966, p. 63).

Thus, to sum up, what Keynes argued was that if the technological (input-output) relations for the economy as a whole follow certain very well established empirical forms, then the equilibrium (profit maximising) demand for capital goods depends upon the ratio of the discounted future national income to the average price of capital goods and upon the accumulated stock of capital. If we make the further assumption that the expected national income depends upon the most recently observed levels of national income and that there is only one price level in the system, then, we have the following fundamental Keynesian relationship: *The demand for capital goods depends upon the real value of national income, the interest rate and the stock of accumulated capital* (Klein, 1966, p. 63).

According to Keynes, if there is increased investment in any given type of capital during any period of time, the marginal efficiency of that type of capital will diminish as the investment in it is increased, partly because the prospective or expected future yield will fall as the supply of that type of capital is increased, and partly because, as a rule, pressure on the facilities for producing that type of capital will cause its supply price to increase; the

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second of these factors being usually the more important in producing equilibrium in the short run, but the longer the period in view the more does the first factor take its place. Thus, for each type of capital, a schedule can be built showing by how much investment in it will have to increase within the period, in order that its marginal efficiency should fall to any given figure. These schedules can then be aggregated for all the different types of capital, so as to provide a schedule relating the rate of aggregate investment to the corresponding marginal efficiency of capital in general which that rate of investment will establish. This, Keynes called the investment demand-schedule or the schedule of the marginal efficiency of capital. Keynes further maintained that the actual rate of current investment will be pushed to the point where there is no longer any class of capital asset of which the marginal efficiency exceeds the current rate of interest. In other words, the rate of investment will be pushed to the point on the investment demand-schedule where the marginal efficiency of capital in general is equal to the market rate of interest.(Keynes,1936,p.136).

1.3.2. Influence of the Rate of Interest on Investment Demand

In the context of this Keynesian investment theory based on the marginal efficiency of capital, Klein contended that Keynes used the term "marginal efficiency of capital" rather than expected rate of profit or some other conventional term like the marginal productivity of capital because he wished to emphasise the dynamic setting in which the present and future are linked by the expectations of investors (Klein, 1966, p. 64). In this dynamic setting, the investors are extremely cautious about investments that will realise their values in the years to come. The longer the period invested, the greater the chance that unforeseen events will intervene to disappoint today's investors. Therefore, just as it was concluded above that consumer expenditures are insensitive to changes in the rate of interest, it should also be concluded that producer expenditures for capital equipment are insensitive to changes in the rate of interest. This Keynesian doctrine is in sharp contrast to the classical theory which argued that investment expenditures depend upon the rate of interest (Klein, 1966, p. 64). According to Keynes, the rate of interest enters the demand relations for

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producer goods or investment through its influence on the discount rate applied to expected future earnings. In a perfectly behaved world where individuals possess much foresight, the discount rate would be precisely equal to the interest rate. However, in the case of the real world, great risks and uncertainties accompany investment opportunities in a capitalist universe. The appropriate discount rate must then account for these risks and uncertainties and hence must be greater than the interest rate. This appropriate discount rate would be made up of an interest rate component and a subjective risk component. The non-interest component of the discount variable may far outweigh the interest component, making any fluctuations in the interest rate of little importance. This fact, according to Klein, is a fundamental Keynesian innovation (Klein, 1966, p. 64).

Klein further argued that because of the great risks involved in the present-day world of affairs, businessmen have been led to act very "bearishly" in their investment decisions. They require that a capital asset must pay for itself in one to five years, although they know that the useful life of the asset is likely to be much longer than five years. In such a case, when investment decisions are guided by discounting future returns over a very short horizon of less than five years, interest calculations are not given a chance to be important. A discount factor computed at present interest rates cannot possibly grow to significant proportions unless the horizon of businessmen is considerably longer than five years. The engineering and other costs of investment will heavily outweigh any costs which arise from discounting an income stream at current interest rates over a five year horizon. It may be true that in certain sectors of the economy where the horizon is long, interest charges are more important. Public utilities and transportation are examples of industries with horizons longer than the average. But, according to Klein, in the system as a whole, it does not seem that investment should be sensitive to changes in the rate of interest (Klein, 1966, p. 65).

In Klein's opinion, another reason, in addition to that of the short horizon, which causes entrepreneurs to disregard interest fluctuations when making investment decisions is linked to the new phenomenon of internal financing. Businessmen appear to have psychological preferences for financing their investment operations from surplus funds which have been accumulated through undistributed profits, depreciation, and other

reserves. Theoretically, the rational entrepreneur should charge himself imputed interest costs when he uses his internal funds for investment, but he does not behave that way. The use of internal funds for financing will lead investors to ignore fluctuations in the market rate of interest (Klein, 1966, p. 65).

It is not true that every small firm which buys capital equipment is able to do so from internal accumulated funds, but large corporations which carry out a significant part of the investment decisions in the economy have huge sums of working capital upon which they can draw for expenditures on new plant and equipment (Klein, 1966, p. 65).

These remarks about the interest inelasticity of investment, according to Klein, have been well substantiated by different types of empirical investigations.[2] Two studies made on the basis of questionnaires submitted to a large sample of businessmen show conclusively that the interest rate is largely neglected when investment decisions are made (Klein, 1966, p. 66). Also econometric studies have been made to determine the quantitative significance of the different factors affecting investment. Tinbergen found in his investigations that the interest rate is an insignificant variable in the investment equation of his statistical model (Tinbergen, 1952, p. 85). Other statistical calculations have also been carried out of the investment equation for the economy as a whole and for various subsections such as agriculture, manufacturing and mining, public utilities and transportation, housing etc. In few cases has the interest rate, in several trial formulations, proved to be a statistically significant variable. Thus, Klein accorded almost negligible significance to the effects of interest rates on the investment behaviour of the economic agents in the Keynesian system (Klein, 1966, p. 66).

Leijonhufvud, on the other hand, did not agree to such a claim put forward by Klein (Leijonhufvud, 1968, p. 163). He argued that, if, by the interest rate, we mean the observed rate on government bonds, the slope of the marginal efficiency of capital schedule depends on the magnitude of the following four elasticities:-

(i)   the elasticity of the demand price for capital goods, for some given rate of discount, with respect to the rate of growth of the capital stock;

(ii)   the interest-elasticity of the discount rate applied to the evaluation of income-streams accruing to physical capital;[3]

(iii)   the discount rate elasticity of the present value of a given anticipated "capital stream" or "investment prospect"; and

(iv)   the price-elasticity of the rate of supply of new capital goods. (Leijonhufvud, 1968, p. 163).

According to Leijonhufvud, with everything else equal, a decline in the applicable rate of discount will shift the demand price schedule for capital goods upwards. The extent of the shift will depend upon elasticities (ii) and (iii). The rate of investment is determined by the condition that the demand price will be driven to the point of equality with the supply price. For a given upward shift in the demand-price schedule, the change in the rate of investment will depend upon elasticities (i) and (iv) (Leijonhufvud, 1968, p. 164).

Leijonhufvud then argued that, in Keynes' *General Theory*, elasticity (i) is considered to be zero (the curve is a horizontal line), i.e. entrepreneurs expect each successive investment to their capital stock to yield the same stream of revenues over its life as that expected on the average from already existing units of capital. In other words, Keynes ignored any downward slope of the demand-price schedule and treated it as horizontal. His discussion simply equated the current market valuation of existing units of capital with the demand price for new units facing the capital goods producing sector.[4] Similarly, Keynes' *General Theory* characterised the value of (ii) as unity, i.e., the elasticity of substitution of bond streams for capital streams was considered to be infinite on the proviso that the expected return streams to capital goods are "adjusted for risk".[5] In *General Theory*, elasticity (iii) - that of capital goods values with respect to the required rate of return - is quite significant by the virtue of the assumption that the representative capital good is long lived. Thus, a decline in the interest rate, in Keynes' model, does imply a very considerable increase in the demand price for capital goods, given the expected returns to such goods and the "confidence" with which these expectations are held. The price-elasticity of the flow-supply of new capital goods, i.e. elasticity (iv), was considered to be quite high in the Keynesian framework. However, Keynes commented on this elasticity to

note that its value should be less than infinite even in a situation of unemployment. He noted that, it is a condition for the stability of the system, and that "a moderate change in the prospective yield of capital-assets or in the rate of interest [should] not involve an indefinitely great change in the rate of investment" (Keynes, 1936, p. 251). The capital goods industry operates under conditions of increasing costs. But if the volume of unemployment is substantial, "there may be considerable instability within a certain range"[6] (Keynes, 1936, p. 252). Thus, Leijonhufvud contended that the fact that Keynes saw a need to argue that the interest-elasticity of investment, though quite high, will not be infinite showed clearly that Keynes' conception of this issue was quite different from that of Klein and others who accorded negligible significance to that effect (Leijonhufvud, 1968, p. 167).

According to Leijonhufvud, the basic fault of Klein's analysis of the Keynesian theory was the fact that he considered capital goods in the Keynesian model to be short lived and treated bonds and capital goods as imperfect substitutes; consequently, the interest elasticity of capital goods values was found to be insignificant (Leijonhufvud, 1968, p. 162). The interest rate was, therefore, seen to be far more important as a determinant of the current rate of investment in Keynes' framework by Leijonhufvud than in Klein's interpretation of Keynes. This controversy over the role of interest in the determination of investment in the Keynesian literature can be solved and concluded in the following words of Keynes:- "... we are ... entitled [to regard the rate of interest] as exercising, ... a great, though not decisive, influence on the rate of investment"[7] (Keynes, 1936, p. 164).

1.3.3. Influence of Income on Investment Demand

Moving on from the contentious issue of the effect of the rate of interest on investment in the Keynesian model, we recognise that Klein had contended that the relation between the level of investment and the level of real income is, according to theory and observation, such that investment is positively related to income, with the marginal propensity to invest less than unity.[8] In fact, most dynamic models of the Keynesian system require that for the system to be dynamically stable, the marginal propensity to consume

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plus the marginal propensity to invest must be less than unity (Klein, 1966, p. 67). Extensive calculations of econometric models by several authors have led to the conclusion that the relationships of investment and consumption to income satisfy the stability conditions (Klein, 1966, p. 67).

1.3.4. Influence of Capital Accumulation on Investment Demand

One of the most important, and unfortunately neglected, factors influencing investment decisions is capital accumulation. This factor has long been stressed by the Marxist writers, but never adequately incorporated into the models of bourgeoisie economics. But it is an extremely important issue in the present day world around us since, in reality, it seems that the best arguments for the existence of a mature economy run in terms of capital accumulation. As a system accumulates more and more productive plant and equipment, the rate of return on new and existing capital becomes depressed[9] (Klein, 1966, p. 68). Feverish building activity in the capital goods industries that marks an expansionary stage of the economy results from the optimistic expectations of investors. For sometime the increased activity brings larger profits and adds fuel to prevailing optimism. Meanwhile, however, great additions to the existing supply of capital goods force down the expected rate of return below the rate of interest. With this lower rate of return on capital in a society of abundance, investment opportunities fade away (Dillard, 1948, p. 40). Unless higher levels of consumption are there to fill the gap, a state of economic stagnation sets in. For example, the housing boom of the 1920s in the United States led to such an accumulation of residential capital that rents began to fall, and new housing investment remained low for a long period of time. The same phenomenon occurred in other industries. Unless rapid growth in population or the existence of great underdeveloped geographical frontiers or great technological innovations like the railroad or some other type of external shocks (e.g. War) providing unprecedented demands for new capital are imposed upon the system, the level of investment activity is likely to remain low. In support of this fact, statistical investigations also reveal a very strong negative correlation

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between investment activity and the stock of capital (Dillard, 1948, p. 42). Keynes had, however, treated the role of capital stock in the determination of investment in an exceedingly superficial manner (Klein, 1966, p. 68). He had only briefly touched upon this subject while constructing his marginal efficiency of capital schedule by maintaining that, "if there is an increased investment in any given type of capital during any period of time, the marginal efficiency of that capital will diminish as investment in it is increased" (Keynes, 1936, p. 136). But, according to Klein, overall, Keynes had neglected this variable altogether on the ground that he was dealing with a short-run theory for which the capital stock cannot vary appreciably; he considered capital as given at any point of time by the historical pattern of the system in the past, i.e. the capita stock is a predetermined variable in Keynes. Thus, Klein argued that Keynes' marginal efficiency of capital is characterised by short term instability and a tendency towards long term decline (Klein, 1966, p. 68). This was attributable to Keynes' preoccupation with short-run problems which led him to develop certain analytical habits inappropriate to the analysis of long run problems about which he was not sufficiently aware (Leijonhufvud, 1968, p. 188).

1.4. Establishment of Equilibrium Using Savings-Investment Model

Having discussed the basic tenets of the Keynesian approach towards the determinants of effective demand, namely consumption, savings and investment, we now move on to analyse Keynes' approach towards the establishment of an equilibrium in the economic system using the saving-investment model.

In Keynes' *General Theory* aggregate investment always equals aggregate savings (Dillard, 1948, p. 59). This equality is a condition of equilibrium regardless of what the level of employment happens to be. This equality between investment and savings is a consequence of changes in the level of income. As discussed earlier, Keynes' procedure was to do away with the classical savings-investment theory of interest and replace it with a savings-investment theory of output or income. The principal difference between Keynes' and the classics which centres around their theories of savings and investment is that,

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according to the classics, both the volumes of savings and investment are dependent on the rate of interest, while according to Keynes, the volume of savings depends on income and investment depends mainly on dynamic factors like income, growth of population, geographical expansion and technological progress as these growth factors affect the profit expectations of entrepreneurs. Thus, the theory of determination of the equilibrium rate of interest is the classical savings-investment theory, while the theory of the determination of effective demand is the Keynesian savings-investment theory (Klein, 1966, p. 86). According to Keynes, if investment increases, then income will increase until the savings out of the higher income is equal to the increased investment and if investment falls, income will fall until the savings out of the lower income is equal to the reduced investment (Dillard, 1948, p. 60).

To elaborate, let us suppose, by following Klein, that savings are completely interest-inelastic; that is, that the fluctuations of the rate of interest have no influence on the rate of savings (Klein, 1966, p. 76). Empirically and theoretically, this is a sound assumption. Savings will be taken to depend upon income alone. As income increases, savings will increase, but the increment of the latter will always be less than that of the former - the marginal propensity to save is positive, but less than unity. We suppose further that investment is completely autonomous, something unpredictable from the behaviour of other economic quantities, or determined by forces acting outside the strict economic sphere, like innovations (Klein, 1966, p. 76).

The equilibrium condition for this system is that there is an equation between autonomous investment and savings, which depend upon income. This is one equation in one variable, income; hence it is sufficient to determine the level of income. Thus is set up a basic theory which replaces the classical savings-investment theory of interest (Klein, 1966, p. 76). Graphically, the relation between income, investment and savings in the Keynesian model is shown in the following figure:-[10]
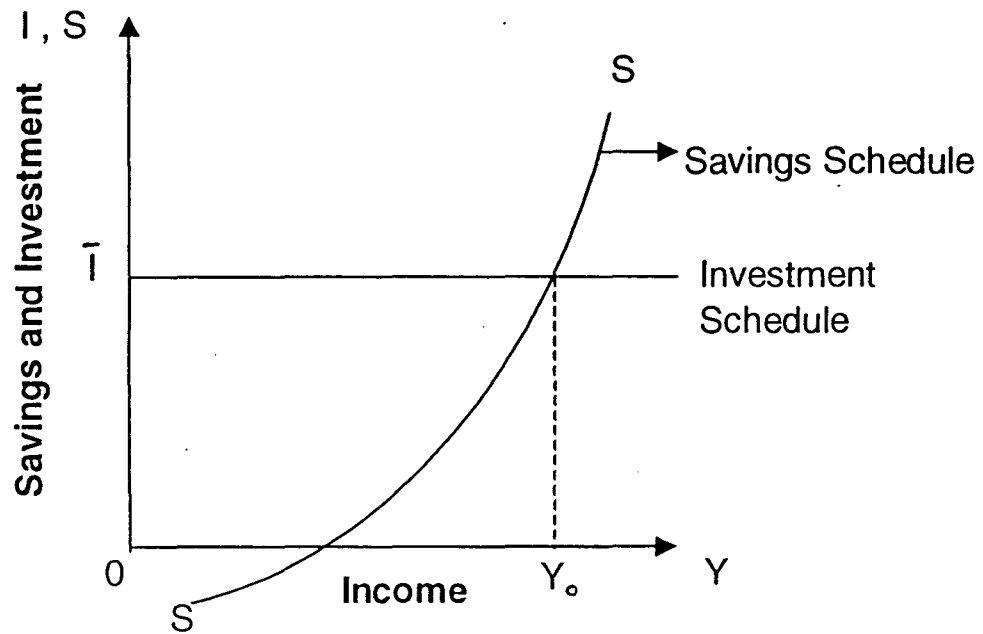
Fig. 1.1

The curve SS is the savings schedule showing how the amount of savings increases with income along the horizontal axis and savings-investment along the vertical axis. At low levels of income people must dissave or spend more than their income in order to maintain minimum standards of consumption; thus the savings schedule is negative for low level of income. It slopes upward, showing that savings increase with income. The slope should always be less than unity if the system is to be dynamically stable.

The investment schedule is merely a horizontal straight line at the existing level of autonomous investment, $\bar{I}$. Since investment is autonomous, it does not vary with income, but is constant for each level of income. This means that changes in investment take the form of spontaneous shifts in the entire schedule. The real world facts seem to be that while

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investment is not completely autonomous, it will not increase as rapidly as savings when income rises. This is fundamental to Keynes' entire theory (Dillard, 1948, p. 63).

Our graphical system says that $\overline{I}$ is that level of investment which offsets just enough savings to generate a level of national income, Y_0. In other words, Y_0 is the equilibrium level of income which is determined so that $S(Y_0) = \overline{I}$. This is the clearest picture of the theory of effective demand.

Having shown that the equality of the volume of investment and the volume of savings is a condition of equilibrium, we may now restate the relations which lead to this equality in terms of an identity. Employment results in the production of output on the one hand and the creation of income on the other. The value of total output is equal to total income. Total income (Y) is equal to the sum of the income created by the production of consumers' output plus the income created by the production of investment output ($Y = C+I$). Investment is that part of current output which is in excess of the value of consumption goods. Savings is the excess of income over expenditure for consumption. Therefore, investment must be equal to savings since they are both equal to the excess of equal values (output and income) over consumption. Thus:

$Y = C + I$ Income = Consumption + Investment

$S = Y - C$ Savings = Income - Consumption

Transposing:

$Y = C + S$ Income = Consumption + Savings

Therefore,

$I = S$ Investment = Savings

This is an identity .(Dillard, 1948, p. 65).

Thus, in Keynesian economics, the equilibrium condition is stated in such a way that, ex-post, savings and investment are always equal. The novelty of Keynes' treatment of savings and investment lies not in the fact that they are equal, but that they can be and normally are equal at less than full employment. As said above, whereas the classical school, which assumes full employment as a norm rather than an exception, associated the equality between investment and savings with automatic changes in the rate of interest,

Keynes associated it with changes in the level of income. The fault which Keynes found with the classical theory was the inference that every act of non-spending (saving) by an individual will increase aggregate investment by the same amount. If this was true, any failure to spend for consumption would be offset by a corresponding increase in investment, and unemployment would not exist (Dillard, 1948, p. 65)

1.5 . Paradox of Thrift

There appears to be a tendency to think of depression as a situation in which savings is in excess of investment. Most people are so accustomed to viewing savings from their own individual point of view that it is difficult for them to think of savings from the social or community point of view. Savings is to most people putting money in the bank, or into securities. However, according to Keynes, in reality, saving is a two-sided affair. Attempts to save, which are successful so far as the individual is concerned since he adds to his individual wealth, may be self defeating and even positively harmful so far as society at large is concerned. We plan to save for society as well as for ourselves, but in the absence of cooperation from entrepreneurs we do not assist society even when we attain our personal objectives. Putting part of a monthly salary into a savings account means only that an individual has not spent all his income. The effect of not spending as such is to reduce the demand for consumption below what it would have been if the money which is saved had been spent. In the absence of some entrepreneurs' action to invest, an act of individual saving will prove abortive for the community. It will merely reduce effective demand for consumption without any compensating increase in the demand for investment. The decrease in effective demand for consumption reduces employment and income. Therefore, one of the important lessons of Keynes' *General Theory* is that spending rather than individual saving is the essential condition of production and prosperity in an exchange economy where one man's spending is another man's income. Individual saving is a mere residual and is no part of effective demand. Individual saving per se is a withdrawal of potential effective demand. In the absence of adequate offsets to savings, thrift produces

poverty and not wealth. A reluctance to spend takes on a different social significance when it is regarded not as a factor which tends to increase investment, but as a factor which tends to cause unemployment. This classical anti-thesis was an important contribution of Keynes to the economic literature of the 1930s and formed a vital part of the Keynesian revolution at that time (Dillard, 1948, pp. 66-67).

1.6. Savings-Investment Controversy: Distribution Between Schedules and Observables

This entire debate in connection with the savings-investment controversy between the classics and Keynes can be traced to a failure to distinguish between *schedules* and *observables.*(Klein,1966,p.110). The savings schedule is a relation between savings, income, and the interest rate which gives the amount of savings corresponding to each possible pair of values of the interest rate and national income. The investment schedule is similarly a relation between investment, income and the interest rate which gives the amount of investment corresponding to each possible pair of values of the interest rate and national income. Suppose that savings and investment are independent of the interest rate. There is then one relationship between savings and income, and an independent relationship between investment and income. If these two schedules are smooth curves, then there will exist a unique level of national income such that savings calculated from the savings schedule equal investment calculated from the investment schedule. This is the savings-investment equation in the schedule sense (Klein, 1966, p. 110).

The term "*observable savings*" refers to that particular level of savings calculated from the savings schedule from a knowledge of the unique equilibrium value of national income which equates savings and investment. Observable investment is calculated from the investment schedule at the same level of national income. The observable values of savings and investment are single points, while the schedules of savings and investment form continuous series of points along curves (Klein, 1966, p. 111).

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The economic process is viewed as made up of a series of intersection or equilibrium points of savings and investment schedules. The observed levels of national income for each time point can be considered as the equilibrium level of income corresponding to a set of savings-investment schedules. The observed levels of savings and investments are those two values on the schedules corresponding to the observed level of income. All the other values of savings and investment along the schedules are not observed; they are virtual levels of savings and investment corresponding to levels of national income other than that level which actually takes place. The virtual levels of savings and investment are not equal (Klein, 1966, p. 111).

Keynes is somewhat to blame for not making the proper distinction himself. When Keynes showed the equality between savings and investments $(Y = C + I, S = Y - C$ and therefore $S = I)$[11], he was talking about savings and investment as observables. But elsewhere he said, "The traditional analysis has been aware that savings depend upon income, but it has overlooked the fact that income depends on investment, in such fashion that, when investment changes, income most necessarily change in just that degree which is necessary to make the change in savings equal to the change in investment" (Keynes, 1936, p. 184). This latter statement referred to a process of adjustment which achieves an equilibrium and hence considers savings and investments in the schedule sense (Klein, 1966, p. 111).

According to Klein, the idea of regarding any observed value of national income as the equilibrium value corresponding to an equation between savings and investments, in the schedule sense, is somewhat artificial. A more realistic view is that the observed levels of national income are observed as the result of a continuous dynamic process whereby savings depend upon the level of income; investment depends upon the level of income; the rate of change of income depends upon the difference between savings and investment such that income rises when investment exceeds savings, and income falls when savings exceed investment. In equilibrium, income has a zero rate of change; it is neither rising nor falling. The equilibrium, in this sense, implies that there is no difference between savings and investment. Thus, the Keynesian savings-investment equation can be looked upon as the

equilibrium solution of a dynamic system. This dynamic model aimed at achieving equilibrium solution in the Keynesian system, according to Klein, stands on a firmer edifice to counter the classical doctrine of savings-investment equality based on the adjustment of interest rates (Klein, 1966, p. 113).

1.7. Conclusion

Thus, having identified the basic tenets of controversy relating to the savings-investment equality in the Keynesian system, we conclude that Keynes had indeed brought about a revolutionary change in the economic thinking dealing with the economic variables, namely, savings and investments by replacing the classical proposition of savings-investment theory being the theory of determination of interest rates with his doctrine of savings-investment theory being the theory of determination of effective demand or income even at less than full employment.

NOTES AND REFERENCES

1. The concept of Average Periods of the receipt stream and the standard stream was borrowed by Leijonhufvud from Hicks's, "*Value and Capital*," p.184.

2. Franklin Ebersole, "*The Influence of Interest Rates upon Entrepreneurial Decisions in Business - a Case Study*," Harvard Business Review, Vol.XVII, 1938, p.35; H.D. Henderson, "*The Significance of the Rate of Interest*," Oxford Economic Papers, No.1, 1938, p.1; J.E. Meade and P.W.S. Andrews, "*Summary of Replies to Questions on Effects of Interest Rates*", Oxford Economic Papers, No.1, 1938, p.14.

3. The latter rate is the "socially required rate of return to capital" of Ando and Modigliani or the "supply price of capital" of Friedman and Tobin.

4. For example, in "*The General Theory of Employment*", p.183 : "The mischief is done when the rate of interest... leads to a market-capitalisation of [an] asset which is less than its cost of production." Statements which, like this one, make no reference to the rate of investment (where this would be absolutely necessary if the demand price were assumed to depend on it), appear very frequently in Keynes' writings.

5. The assumption of perfect elasticity of substitution between bond-streams and certainty-equivalent capital-streams, in conjunction with the assumption that the market value of existing assets is also the demand price for newly produced assets, is quite relevant to the fiscal vs. monetary policy issue : An open market purchase of long bonds will be just as stimulating to aggregate demand as a direct purchase of capital goods by the government financed by "new" money. It will naturally be more effective than the same government investment financed by borrowed money, and still more effective than when financed by new taxes.

6. The above concedes that in a situation of unemployment, the capital goods producing sector may find itself operating in a range of approximately constant costs. Nonetheless, Keynes argued that the supply schedule was "usually the more important in producing equilibrium in the short-run."

7. While "great", the influence is not "decisive" since shifts of the marginal efficiency of capital schedule will generally be of a magnitude that is not offset by movements along the schedule, taking into account the "practicable changes in the rate of interest."

8. The marginal propensity to consume plus the marginal propensity to save equals unity, by definition.

9. The theory of the declining marginal efficiency of capital in the Keynesian language or the theory of the falling rate of profit in the Marxian system.

10. Diagrams similar to Figure 1.1 have appeared frequently in the economics literature to explain Keynes' theory, although Keynes himself did not use such a diagram. See, for example, P.A. Samuelson, "Economics, An Introductory Analysis", p.259, New York : Mc Graw - Hill Book Company, Inc., 1948; L.R. Klein, "The Keynesian Revolution", p.76, New York : The Macmillan Company, 1966. Numerous attempts have been made to derive statistically the schedules for savings and investment. On the American data see, for example, M. Ezekiel, in the American Economic Review, March and June, 1942, Vol.XXXII, Nos. 1 and 2, p.22-49 and 272-307.

11. Keynes, "The General Theory of Employment, Interest and Money", 1936, p.63.

CHAPTER 2
THEORY OF OUTPUT AND EMPLOYMENT :
LABOUR MARKET

Perhaps the most important contribution of Keynes to the macroeconomic literature of his times was his innovative and path breaking views relating to the labour markets, in general, and his concept of unemployment, or, rather involuntary unemployment, in particular.

Most of the treatises on the Theory of Value and Production before Keynes were primarily concerned with the distribution of a given volume of employed resources between different uses and with the conditions which determine their relative rewards and the relative values of their products.[1] The question of the volume of the available resources, in the sense of the size of the employable population, the extent of natural wealth and accumulated capital equipment, had also often been treated descriptively. But, the pure theory of what determines the actual employment of the available resources had seldom been examined in great detail. (Keynes, 1936, p.4). It was in an attempt to solve this basic question in an environment of widespread unemployment associated with the Great Depression of the late 1920s and early 1930s, that, Keynes distinguished himself as an economist of great insight and intellect. ·

As is well known in the macroeconomics literature relating to labour markets, the classical economists advocated full employment of labour in the economy on their basic presumption of wages being perfectly flexible; consequently, the only kind of unemployment which concerned them, was "frictional unemployment". (Ackley, 1978, p.28). Keynes' brilliance, in this context, lay in refuting this classical doctrine which had been outdated by the economic reality of acute unemployment during the Great Depression, and his apt analysis of unemployment and its causes of that time. Keynes' contention of the possibility of an unemployment equilibrium had made a "clean break" with the past and thereby represented a "Revolution" in some sense.

This chapter attempts to first lay the ground work for a proper analysis of labour markets in the economy by undertaking a brief exposition of the classical theory of employment and thereby compare it with the Keynesian analysis of this issue. An attempt is also made to focus especially on Keynes' concept of "involuntary unemployment" and its causes in relation to the wage-cut controversy in the macroeconomic literature besides undertaking an extensive review of the existing literature on this issue. The chapter finally concludes with a brief comment on Pigou's Real Balance Effect and Keynes' analysis of this effect.

2.1. Classical Theory of Employment

Classical economic theory rests on the assumption of full employment of labour and other resources. There may be lapses from full employment, but these are regarded as abnormal and their explanation does not constitute a basic part of the subject matter of classical economics. If, at any time, there is not actually full employment, the classical theory asserts that there is always a tendency towards full employment. Therefore, the normal situation is a stable equilibrium at full employment. If disturbance does persist, it is attributed by the classical school to interference by government or private monopoly with the free play of market forces. As a general rule to which there are minor exceptions, the social policy which guarantees full employment, according to the classical school, is *laissez-faire*, i.e., the absence of government control of private enterprise. (Dillard, 1948, p.25).

Acceptance of full employment as the normal condition of an exchange economy, was justified in classical economics by the assumption of the Say's Law, which states that, supply creates its own demand. By Say's Law, it was meant that every producer who brings goods to markets does so only in order to exchange them for other goods. In such an exchange economy, therefore, whatever is produced represents the demand for another product. Additional supply is, therefore, additional demand. Thus, Say's Law of markets is a denial of the possibility of deficiency of aggregate demand. Therefore, the employment of more resources will always be

profitable and will take place upto the point of full employment. (Ackley, 1978, pp.109-113).

The classical theory of employment was based on two further fundamental postulates (Keynes, 1936, p.5):-

(i)   The wage is equal to the marginal product of labour. That is to say, the wage of an employed person is equal to the value which would be lost if employment was to be reduced by one unit; subject, however, to the qualification that the equality may be disturbed, in accordance with certain principles, if competition and markets are imperfect.

(ii)   The utility of the wage when a given volume of labour is employed is equal to the marginal disutility of that amount of employment. That is to say, the real wage of an employed person is that which is just sufficient to induce the volume of labour actually employed to be forthcoming; subject to the qualification that the equality for each individual unit of labour may be disturbed by combination between employable units analogous to the imperfections of competition which qualify the first postulate. Disutility must be here understood to cover every kind of reason which might lead a man to withhold his labour rather than accept a wage which gives him a utility below a certain minimum.

This postulate is compatible with what may be called "frictional" unemployment: for example, unemployment due to a temporary want of balance between the relative quantities of specialised resources as a result of miscalculation or intermittent demand; or, to time-lags consequent on unforeseen changes; or, to the fact that the change-over from one employment to another cannot be effected without a certain delay, so that there will always exist in a non-static society a proportion of resources unemployed "between jobs". In addition to "frictional" unemployment, the postulate is also compatible with "voluntary" unemployment due to the refusal or, inability of a unit of labour, as a result of legislation or social practices or of combination for collective bargaining or of slow response to change or of mere human obstinacy, to accept a reward corresponding to the value of the product attributable to its marginal productivity. The classical postulates do not admit of the

possibility of a third category of unemployment, called "involuntary" employment (Keynes, 1936, p.6.) - a concept put forward by Keynes, which we shall discuss later.

Thus, to sum up, "full employment", as defined in classical economics, is consistent with "voluntary" unemployment and allows for a certain amount of "frictional unemployment." This full employment exists in the absence of involuntary unemployment and is a norm rather than an exception, in the economy according to the classical economists. (Klein, 1966, p.80).

The classical theorists used the abovementioned two fundamental postulates to determine the volume of employed resources in the economy. The first postulate gave the demand schedule for employment, the second gave the supply schedule and the amount of employment was fixed at the point, where, the utility of the marginal product balanced the disutility of the marginal employment. (Keynes, 1936, p.6).

The following figure shows that the supply and the demand equations for labour give the level of equilibrium employment and real wages in the classical system (Klein, 1966, p.82):-
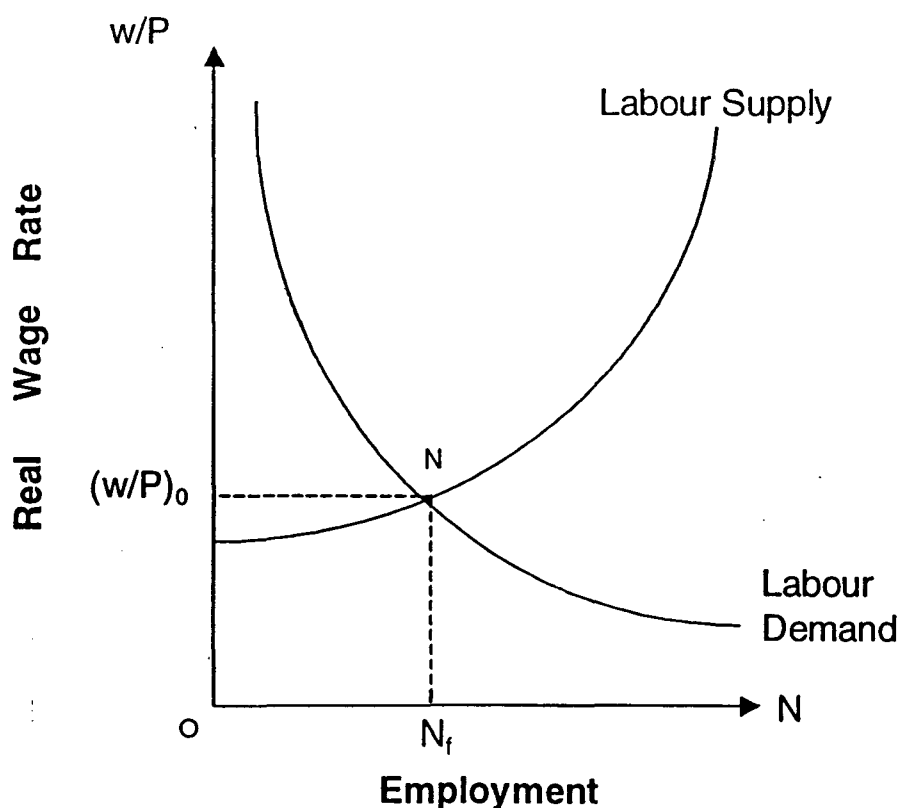
Fig. 2.1

By substitution of the level of employment into the production function, real output can be determined and this output level can be substituted into the quantity equation to get the price level. The rate of interest follows from the saving-investment relation. (Klein, 1966, p.82).

The values of output and employment, thus, determined represent full employment levels, according to the classical economists, since this value of employment lies on the supply curve of labour. All those who want to work at the going real wage are employed. If any maladjustment occurs within this system so that there is not full employment, a wage cut can always restore the economy to its full employment equilibrium. The competitive bargaining among workers will always be remunerative. Since the amount of money and the velocity are given in the quantity equation, total spending is given. At lower wages, certainly, more workers can be hired with total spending constant. Wage cutting will continue upto the full employment level. Thus, classical economists had contended that flexible wage rates will cure unemployment, or, in other words, unemployment is not possible as long as there exist wage flexibilities. (Ackley, 1978, pp.124-135).

2.2. Keynes' Criticism of the Classical Theory of Employment

In contention with the classical theory of employment, Keynes had attacked the classical system on its three basic fundamental premises (Leijonhufvud, 1968, p.101):-

a.   that, the real wage is equal to the marginal disutility of the existing employment;

b.   that, there is no such thing as involuntary unemployment in the strict sense; and,

c.   that, supply creates its own demand.

The *General Theory* opens with Keynes' critique of *"The Postulates of the Classical Economics"*. Initially, his attack focussed on the abovementioned Second Postulate of the classical theory of employment; but, by the end of Chapter 2 of this

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book, the attack was seen to have been but the preliminary opening of the breach through which an all-out assault on Say's law was launched. (Keynes, 1936, pp.5-21).

Keynes had put the Second Classical Postulate as follows :-

"The utility of the wage when a given volume of labour is employed is equal to the marginal disutility of that amount of employment". (Keynes, 1936, p.5).

This postulate, according to Keynes, suggested that the Classical Theory recognised only "voluntary" unemployment which embraced "frictional" unemployment and seasonal unemployment in the broadest sense, i.e., unemployment due to frictions or market imperfections. (Keynes, 1936, p.6). With respect to this definition of unemployment put forward by the classical theory, Keynes charged the classical economists for having "selectively" ignored the third and the most important category of unemployment widely prevalent in the modern world, where potential workers are willing to work, but, do not find work, not due to frictions or market imperfections, but, due to a general deficiency in the demand for labour. Keynes called this third category of unemployment as "Involuntary" unemployment (Keynes, 1936, p.15) and his entire analysis of labour markets was concerned with this type of unemployment.

Specifically, Keynes defined "Involuntary" unemployment as :

"Men are involuntarily unemployed if, in the event of a small rise in the price of wage-goods relatively to the money-wage, both the aggregate supply of labour willing to work for the current money-wage and the aggregate demand for it at that wage would be greater than the exiting volume of employment." (Keynes, 1936, p.15).

In other words, according to Keynes, workers are "involuntarily" unemployed if a small fall in the real wage brought about by a small rise in the price level (of wage-goods), results in both the demand for and supply of labour to increase beyond the existing volume of employment. By this definition, Keynes did not envisage workers in the aggregate, supplying labour services in accordance with a standard upward-sloping supply curve. In fact, it is hard to see why Keynes mentioned labour supply at all, for the import of his definition is not that the supply of labour behaves perversely, but, rather that it is irrelevant to the processes by which employment is determined. The only role that the labour supply function plays in the Keynesian

short-run, is to determine, as a residual, the volume of unemployment. Therefore, "involuntary" unemployment of Keynes is just another name for "demand deficient unemployment". (Alan Coddington, 1983, p.38).

It follows from Keynes' definition of "involuntary" unemployment that the equality of the real wage to the marginal disutility of employment presupposed by the second postulate corresponds to the absence of "involuntary" unemployment. Apparent unemployment must, therefore, be the result either of temporary loss of work of the "between jobs" type, or, of intermittent demand for highly specialised resources, or, of the effect of a trade union "closed shop" on the employment of free labour. Thus, writers in the classical tradition, by overlooking the special assumption underlying their theory, according to Keynes, have been driven inevitably to the conclusions, that apparent unemployment must be due at the bottom to a refusal by the unemployed factors to accept a reward which corresponds to their marginal productivity. Keynes maintained that a classical economist may sympathise with labour in refusing to accept a cut in its money-wage, and he will admit that it may not be wise to make it to meet the conditions which are temporary; but scientific integrity forces him to declare that this refusal is, nevertheless, at the bottom of the trouble. (Keynes, 1936, p.16).

Keynes further argued that if the classical theory does not admit the possibility of "involuntary" unemployment and is only applicable to the case of full employment, it is fallacious to apply it to the problems of involuntary unemployment which is, indeed, the economic reality of the present day world. Therefore, according to Keynes, we need to throw over the second postulate of the classical doctrine and work out the behaviour of a system in which "involuntary" unemployment in the strict sense, is possible. (Keynes, 1936, p.17).

Besides the implied denial of the possibility of "involuntary" unemployment, Keynes further had two separate objections to the Second Classical postulate. The first of these "relates to the actual behaviour of labour" and "is not theoretically fundamental". It concerns the resistance to money wage cuts, or, rather downward rigidity of money wages. (Leijonhufvud, 1968, p.95).

Keynes had strongly objected to the classical notion that wages are flexible and that unemployment will disappear if workers accept sufficiently low wage rates. He had repudiated the assumption that the labour market is always a seller's market in which labour can be sold if workers will just be willing to accept wage cuts. (Dillard, 1948, p.24). According to Keynes, the classical solution of lower wage rates for curing unemployment could only be realised in a freely competitive labour market, or, in a completely authoritarian economy. But, in democratic societies, labour unions are not likely to be eliminated, minimum wage laws are not likely to be repealed, unemployment compensation is not likely to be lowered, and public opinion, as to what constitutes a reasonable living wage, is not likely to be revised downwards in the light of the tremendous productivity of modern technology. Consequently wage reduction in the labour market is likely to encounter extreme resistance. Therefore, Keynes had charged the classical theory of employment for its irrelevance as a guide to policy under conditions as they have come to exist in the actual world of the past several decades and as they will probably continue to exist in the foreseeable future. (Dillard, 1948, p.25).

Further, arguing in favour of the downward rigidity of wages in the real world, Keynes maintained that the immediate reservation price of a worker will be set on the basis of his expectations of obtainable prices. (Leijonhufvud, 1968, p.95). The information relevant to these expectations which will be most cheaply available to him are:-

(a)   past (money) prices received for the same services, and

(b)   prices currently obtained by successful sellers of such services. (Leijonhufvud, 1968, p.95).

Keynes asserted that the worker who is threatened with a lay-off will not offer to take any wage cut necessary to retain his job. Nor, having been laid off, will he immediately resign himself to "shining shoes or selling apples". One reason, of course, is that his views of what his services should be worth unavoidably are related to what he was paid only yesterday. His expectations are "inelastic" in the Hicksian sense and his decision to withhold his services from the market may, therefore, be

described as speculation on the future course of (obtainable) wages.[2] (Keynes, 1936, pp.50-51).

The second reason, according to Keynes, as to why the unemployed worker will not accept an arbitrarily large wage cut in order to regain employment immediately, is that, he sees many of his former mates still at their jobs at much the same money wage as before. (Leijonhufvud, 1968, p.96). In Keynes' words :

"Since there is imperfect mobility of labour ... any individual or group of individuals, who consent to a reduction of money-wages relative to others, will suffer a relative reduction in real wage, which is a sufficient justification for them to resist it." (Keynes, 1936, p.14).

This, and other similar statements, in the General Theory, however, fail to make clear as to which of the following two hypotheses Keynes stressed the most : (a) the worker takes the wages of others purely as a piece of information of the remuneration that it is possible to obtain, or (b) his self respect is involved - be simply will not accept that he suddenly is "worth" less than those with whom he worked so recently. Here, however, a third interpretation, for which Keynes' text hardly gives more evidence, has gained some currency, namely, that he meant to invoke a "relative income hypothesis". This is a static version of (b) above - current usage bases the "relative income hypothesis" on the assumption that other people's earnings enter into the steady-state utility function of individuals. This third interpretation seems implausible in view of the fact that Keynes' two chapters on the consumption function show no trace of such a "keep up with the Joneses" hypothesis. (Leijonhufvud, 1968, pp.96-97).

In any case, the fact that workers watch each others' wages imparts sluggishness to the behaviour of the general money wage level despite the classical assumption of the readiness of labour collectively to accept a required general wage cut. According to Keynes, this is because "... there is, as a rule, no means of securing a simultaneous and equal reduction of money wages in all industries (that) it is in the interest of all workers to resist a reduction in their own particular case".[3] (Keynes, 1936, p.264).

Besides the abovementioned criticism of the classical theory of employment by Keynes based on the "actual behaviour of labour", Keynes' "theoretically fundamental" objection to this theory of the labour market is that, it misrepresents the nature of the wage bargain in presuming that it does not matter whether the analysis of the determination of wages is conducted in "real" or money terms (and in opting for the former as more convenient). (Leijonhufvud, 1968, p.97). That Keynes regarded this point as pivotal in his attack on Classical economics is unmistakable, for he hammers away at it, again and again, using the same language:

"But there is a more fundamental objection. The second postulate flows from the idea that the real wages of labour depend on the wage bargains which labour makes with the entrepreneurs. It is admitted, of course, that the bargains are actually made in terms of money ... Nevertheless, it is the money-wage thus arrived at which is held to determine the real wage. Thus, the classical theory assumes that it is always open to labour to reduce its real wage by accepting a reduction in its money wage.

The traditional theory maintains, in short, that the wage bargains between the entrepreneurs and the workers determine the real wage; so that, assuming free competition amongst employers and no restrictive combination amongst workers, the latter can, if they wish, bring their real wages into conformity with the marginal disutility of the amount of employment offered...

But the ... more fundamental objection .. flows from our disputing the assumption that the general level of real wages is directly determined by the character of the wage bargain ... [This is] an illicit assumption. For there may be no method available to labour as a whole... There may exist no expedient by which labour as a whole can reduce its real wage to a given figure by making revised money bargains with the entrepreneurs."[4] (Keynes, 1936, pp.12-13).

Thus, to repeat, the fact that there exists a potential barter bargain of goods for labour services that would be mutually agreeable to producers as a group and labour as a group is irrelevant to the motion of the system. In economies, relying on a means of payment, the excess demand for wage goods corresponding to an excess supply of labour is, but "notional" - it is not communicated to employer as effective demand for

output. The resulting miseries are "involuntary" all round. This is the only possible construction of Keynes' meaning. (Leijonhufvud, 1968, p.98).

In this context, Keynes, in his General Theory, had also tried to analysis the relation between the time paths of money and real wages. (Keynes, 1936, p.106). He conjectured that historical time series would show a negative correlation between the rates of change of money wage rates and of real wage rates. In a later article[5], Keynes revealed that this conjecture was based on three general propositions:

(i)   the added cost of producing an extra unit of output (marginal cost) increases in the short run;

(ii)   for a closed system, short-run marginal costs are not very different from short-run marginal wage costs;

(iii)   prices are governed roughly by marginal costs.

However, in opposition to Keynes' proposition, later results have indicated that the short-run marginal cost curve is probably constant in the neighbourhood of the existing levels of output and that there is so much imperfection in the system that prices are not at all equal to marginal costs. (Klein, 1966, p.106). At any rate, Keynes' conjecture has not been found to be correct in the statistical investigations that have been made.

J.T. Dunlop[6] and L. Tarshis[7], both investigated the behaviour of the time series of real and money wage rates. Dunlop found that, in England, increased money wage rates have been usually associated with increased real wage rates, but decreased money wage rates have been associated with both increased and decreased real wage rates. Tarshis' results were for the United States, where he found a high positive correlation between percentage changes in money wage rates and in real wage rates for the period 1932-1938. While these statistical investigations are not of the nature of "rigorous proofs", it appears that Keynes was backing the wrong horse.

The main concern of Keynes, however, was not with this empirical problem, but, with the much more important issue of the theoretical relation of the effects of money wage cuts upon unemployment.

In this connection, Keynes had argued that, wages enter as a cost in profit calculations, and thus, may have some influence on investment decisions. But, wages

enter also as a component of personal income, and thus, have some influence on the demand for output, which, in turn, affects the level of investment. (Klein, 1966, p.108)

If a wage cut transfers income from the wage earners to the non-wage earners of the population, then, consumption will fall and savings will rise. The extent of the rise or fall depends upon the differences in the marginal propensities to consume out of wage income and non-wage income. It is well known that wage earners, on the whole, occupy the lower income classes where people spend a very large proportion of their extra income. The section of the population which receives income from dividends, rents, interest, profits and royalties, does not spend as much from extra income, because its members are largely in the high income brackets. The initial impact of a wage cut, then, may be a reduction in the level of consumption on the part of the high spenders in the population and an increase in consumption on the part of the low spenders. (Klein, 1966, p.109).

Keynes, therefore, contended that the entire consumption schedule will depend on the distribution between wages and non-wage income. If the distribution pattern is radically altered, a shift can occur in the position of the schedule. In the case, where income is transferred away from the wage earners, the consumption schedule will fall and there will be a depressing influence on the level of prosperity. In the other case, the consumption schedule will rise. The end result is questionable. (Klein, 1966, p.109)

According to Keynes, since investment depends on so many things other than current demand and costs, it is difficult to see the influence of wage cuts on the investment schedule. But, in so far as, wage cuts set up unfavourable expectation of the future, investment will receive a very adverse shock. Large scale wage cuts intended to alleviate unemployment are likely to cause a postponement of investment in anticipation of further wage cuts. Wage cuts could conceivably stimulate expectations, but such cases are rare. (Klein, 1966, p.109).

Keynes further maintained that, in order for the net influence of wage cuts on income and employment to be significant, there must be a shift of the investment function relative to the savings function. If there is a shift towards more investment

but also towards more savings the two effects may cancel each other. But, in order to make an unequivocal argument in favour of wage cuts, it will be necessary to show that there would be an upward shift of the investment schedule and a downward shift of the savings schedule. This particular shift pattern seemed unlikely to Keynes and, therefore, he remained unconvinced by the classical arguments that wage cuts cure unemployment and depression in the economy. (Klein, 1966, p.110).

Infact, Keynes recognised that money wage cuts will lead merely to a *pari passu* fall in aggregate demand in money terms and hence equiproportionate fall in money prices (maintaining real-wages constant) as long as there do not emerge "indirect effects due to a lower wage-bill in terms of money having certain reactions on the banking system and the state of credit."[8] (Keynes, 1936, p.11). Such a fall in aggregate demand in money terms accompanying a money-wage cut, in Keynes' opinion, would lead to an equiproportionate fall in money prices thereby maintaining real wages constant. In such a situation, with real wages constant, money-wage cuts would not lead to any increase in employment in the economic system. Therefore, instead of wage cuts, Keynes advocated the use of public works programme for stimulating effective demand, and, hence, employment in the economy. (Dillard, 1948, p.26).

Thus, in sum, the most important contribution of Keynes to the macroeconomic literature relating to labour markets, was to show that full employment is not automatically assured in an economy as the classical theory assumed. The irrationality of businessmen's expectations about investment in durable capital assets in conjunction with low levels of effective demand, inevitably leads to unemployment of the involuntary type. In such a situation, wage flexibilities (if at all possible in the imperfect real world) cannot correct unemployment and leads merely to hyperdeflation and further reduction of effective demand if carried out to its logical conclusion.(Dillard, 1948, p.27). But, the fact that in the real world, one observes neither hyper-deflation nor full employment is because wages are sticky; they are not flexible. Therefore, the solution to the Keynesian system which gives a value of employment not on the supply schedule persists even when wage costs do not occur because workers do not bid against one another and hence do not experience the

hopeless downward spiral. As a result, when imperfections and rigid money wages are incorporated into the economic system, the results of under-employment equilibrium follow in the Keynesian system quite easily, providing a more realistic picture of how the economic system looks. (Klein, 1966, p.90).

The post Keynesians, however, argued that even in a perfect and frictionless system, Keynesian equations do not always yield a full employment solution. (Klein, 1966, p.83). Unemployment is extremely likely even under perfect competition.[9] In order to show this, these post Keynesians supposed that we live in a Euclidean world in which there exists a perfectly competitive capitalist system. They sought to argue that this Utopia will not automatically solve the unemployment problem under the conditions of Keynesian economics, though, full employment will always be insured in a classical situation in this world. (Klein, 1966, p.83).

The post-Keynesians imagined a model economic system in which there is perfect competition, with no inflexibilities or rigidities. All quantities are reckoned in terms of wage units.[10]

The background relationships are those of classical economies, i.e., there is production function for real output, and the supply-demand relations for labour in terms of real wages. The other relations are of a general form. There are savings (dependent upon interest rates and income) equal to investment (dependent upon interest rates and income). Finally, the supply of the stock of cash balances (measured in wage units) is equated to the demand for such balances as a function of interest rates and income. (Klein, 1966, p.84).

The post-Keynesians argued that this is a perfectly classical system which represents a perfect equilibrium of perfect competition. According to them, any classical economist would naturally proceed to obtain a solution to this system as follows: From the background relations, find the real wage, the level of employment, and the amount of output. Next, convert full-employment output to income measured in terms of wage units. This can be done by dividing real output by real wages. Substitute full employment income into the savings-investment relation and get the rate of interest. This gives everything except the absolute level of wages and prices. But the supply and demand for money will produce a solution for these variables.

Since the interest rate and income are already calculated, the value to which the supply of cash balances (measured in wage units) must be equaled is known. The stock of monetary cash balances as an autonomously given variable is also known; therefore, the absolute level of wages can be calculated. Knowing real wages, already, and absolute wages, it is possible to obtain immediately the absolute price level. (Klein, 1966, p.84).
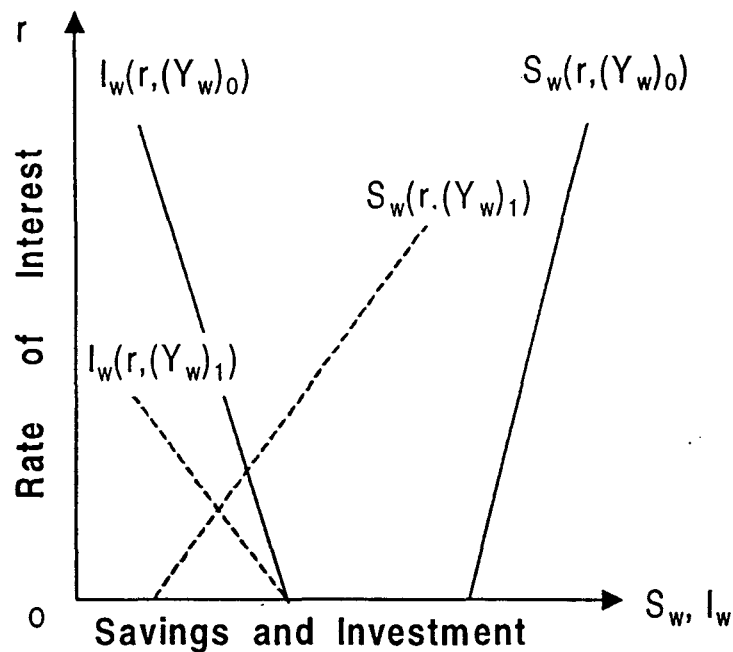
Fig. 2.2

Having determined the classical solution in this system, the post-Keynesians thereafter, analysed the Keynesian solution of the given system. As before, they solved the background equations for real wages, employment, and output. Then, they substituted full-employment income into the savings-investment equation. But, they argued that, even then, a solution for the interest rate may not exist in the Keynesian framework. This is because, the Keynesian Revolution rejected the classical theory of interest and denied that the equation, $S_w (r, (Y_w)_o) = I_w (r, (Y_w)_o)$, need always have a

positive solution for the interest rate, r, when $(Y_w)_o$ (income) is given at the full employment level.[11] When the savings process is analysed, the slope of the savings function with respect to the interest rate might be negative or positive and will probably be small in absolute value. Investment function is also considered interest-inelastic. It is, then, more likely than not that there will be no positive value of r which satisfies this equation. Perfect equilibrium of perfect competition, therefore, is not in general compatible with the system of Keynesian economics according to the post-Keynesians. (Klein, 1966, p.85).

A feasible graphic presentation of this situation is given in Figure 2.2 above. (Klein, 1966, p.85).

When income is at the full-employment level, $(Y_w)_o$, it is both possible and probable that the savings-investment schedule as functions of the interest rate will appear as the two solid lines. The relative positions of the two schedules mean, in this case that, no matter how low the interest rate is pushed, savings out of a full-employment income exceeds investment out of that same income. (Klein, 1966, p.85).

Employment
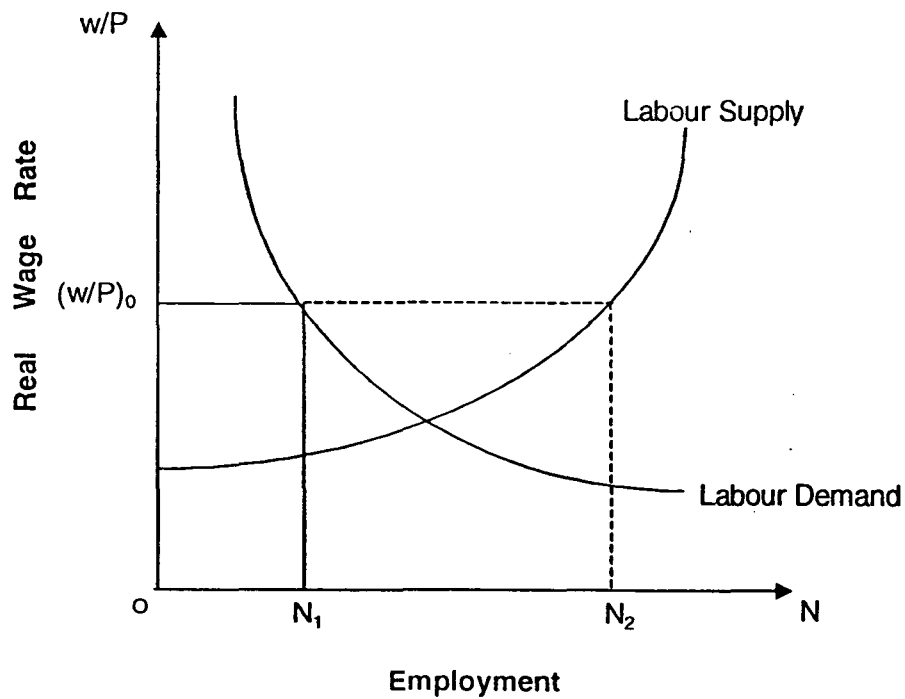
Fig. 2.3

But, according to the post-Keynesians, there is an adjustment which takes place within the Keynesian system, so that, a positive interest rate can be determined. If income falls from $(Y_w)_o$ to $(Y_w)_1$, then, the two schedules of the above figure will shift to the positions of the dotted lines. Incomes will have to adjust to that level, $(Y_w)_1$, at which savings out of that income will be equal to investment out of that income, i.e., income has to fall in order to bring savings and investment into equilibrium. But, if income falls from $(Y_w)_o$ to $(Y_w)_1$ then, output and employment will be forced to lower levels. But, workers will not remain on their supply curve of labour for an amount of employment less than the full-employment equilibrium. The employed worker can always get higher real wages by moving along the demand curve for labour. The final position will be that of the following figure, with the supply of labour in excess of the demand at the going real wage rate. The excess of supply over demand, (N_2-N_1), is a measure of unemployment. (Klein, 1966, pp.86-87). See Figure 2.3 above.

The superior bargaining power of the employer over the employee explains easily why the supply-demand relation for labour is the one relationship of the system which can have a solution that is not at an intersection point. Thus, according to the post-Keynesians, Keynes' real contribution to the theory of employment was to show that if savings are not offset by legitimate investment outlets, failure to generate a high level of employment will follow leading to unemployment in the economy. (Klein, 1966, p.87).

The non Keynesian economists will argue now that, if workers compete for jobs and cut money wage rates, full employment will be restored. But, the post-Keynesians argued that, this proposition is correct only under the conditions of classical economics. In the Keynesian system, lower wages need not do any good.

According to the post-Keynesians, an analysis of the true picture of the economic world shows that interest rates have been pushed to very low levels, so that, the liquidity preference function (to be discussed in Chapter 3) may be interest-elastic. But, more importantly, all statistical information leads to the belief that lower interest rates will have little, if any, influence on the rate of investment. The post-Keynesians contended that if the liquidity- preference schedule is elastic and/or the marginal

efficiency schedule inelastic, wage cuts will not raise the level of output, and thus, employment, via the production function. (Klein, 1966, p.88). They presented their argument on a diagram due to Hicks (the diagram showing the IS and LM curves will be discussed in Chapter 4). On the vertical axis, the interest rate is measured and income is measured on the horizontal axis as shown in the following diagram:
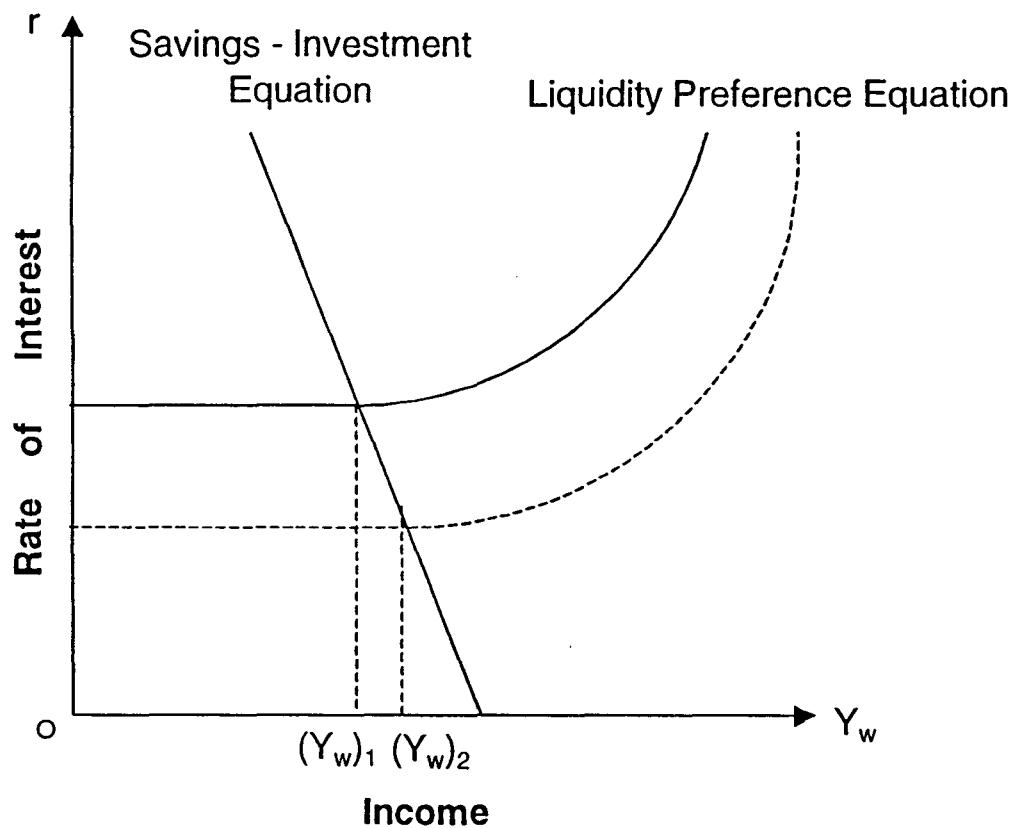
Fig. 2.4

The liquidity-preference equation, then, for a given value of cash balances, describes a two-dimensional relation between the interest rate and income. Similarly, the savings- investment equation also gives a curve in the same plane. The intersection of the two curves determines the equilibrium level of income. The curves in the above figure are drawn under the assumption of interest-elastic liquidity

preference and interest-inelastic schedules of the marginal efficiency of capital and savings. (Klein, 1966, p.87).

Now, the question is, if the two curves intersect, so that, the Keynesian system yields a solution of an unemployment level of income, will wage flexibility quickly restore economic life to full employment?   The post Keynesians argued that the most direct effect of wage-cuts is to increase the stock of real balances, provided the banking policy is such that the money stock of cash balances is not lowered. This is true, obviously, because real cash balances are the ratio of money balances and the wage rate. Wage cuts, viewed as an easy money policy, cause a shift in one of the schedules of the system. The liquidity-preference equation, now moves to the dotted curve in the above diagram, and, therefore, equilibrium income changes from $(Y_w)_1$ to $(Y_w)_2$, practically no change at all. Thus, there are very serious limitations to the employment- creating effects of wage cuts. In the limiting case, in which, the savings and investment schedules have zero elasticity with respect to interest rates, and, in which, the liquidity-preference schedule has infinite elasticity, there is no employment-creating effects at all. The savings-investment equation becomes horizontal in the range of low interest rates. (Klein, 1966, p.89).

Thus, the post-Keynesians contended that unemployment is possible even in a perfect system inspite of wage cuts and that perfect equilibrium of perfect competition is not compatible with the Keynesian conditions; whereas, the achievement of full employment in the classical world is automatic. In other words, wage cuts fail to cure unemployment in the Keynesian system even under the assumption of perfect competition. Hence, Keynes had criticised the denial of involuntary unemployment implied in the second postulate of the classical theory of employment. (Klein, 1966, p.89).

We will discuss the Wage-Cut controversy in greater detail in the latter part of the chapter when we lay more emphasis on the Real-Balance Effect of Pigou than we have done above, while analysing the effects of wage cuts in a perfectly competitive system; but, for the moment, we now move onto Keynes' criticism of the third premise of the classical system, namely, the Say's Law, which states that, supply creates its own demand.

According to Keynes, this Say's Law, "in some significant, but not clearly defined sense" means that the whole of the costs of production must necessarily be spent in the aggregate, directly or indirectly, on purchasing the product. (Keynes, 1936, p.18). ˙ Keynes' attack on Say's Law follows directly upon the definition of involuntary unemployment. There are two prongs to the attack. Both arguments dispute the same "classical" notion: that excess supplies must have their counterpart somewhere (if only in the future) in effective excess demands of the same total value. (Leijonhufvud, 1968, p.98).

The first argument again concerns the nature of the wage bargain. Keynes singled out a passage from J.S. Mill, the wording of which seems most flagrantly to assert that the offer of labour services constitutes effective demand for commodities :

"What constitutes the means of payment for commodities is simply commodities. Each person's means of paying for the productions of other people consist of those which he himself possesses. All sellers are inevitably, and by the meaning of the word, buyers. Could we suddenly double the productive powers of the country, we should double the supply of commodities in every market; but, we should, by the same stroke, double the purchasing power. Everybody would bring a double demand as well as supply; everybody would be able to buy twice as much, because everyone would have twice as much to offer in exchange". (Keynes, 1936, p.18).

As a corollary of the "same doctrine", Keynes' second argument contends that, "in the classical theory, it has been supposed that any individual act of abstaining from consumption necessarily leads to, and amounts to the same thing as, causing the labour and commodities, thus released from supplying consumption to be invested in the production of capital wealth."[12] (Keynes, 1936, p.19). The "same" doctrine is, of course, Say's Law applied in the latter case, to an intertemporal general equilibrium construction. (Leijonhufvud, 1968, p.99). In order to illustrate his second argument relating to the traditional approach, Keynes quoted the following passage from Marshall's *"Pure Theory of Domestic Values"* in *extenso* :

"The whole of a man's income is expended in the purchase of services and of commodities. It is, indeed, commonly said that a man spends some portion of his

income and saves another. But, it is a familiar economic axiom that, a man purchases labour and commodities with that portion of his income which he saves just as much as he does with that he is said to spend. He is said to spend when he seeks to obtain present enjoyment from the services and commodities which he purchases. He is said to save when he causes the labour and the commodities which he purchases to be devoted to the production of wealth from which he expects to derive the means of enjoyment in the future". (Keynes, 1936, p.19).

Keynes contended that this is the doctrine which underlies the whole of the classical theory, which would collapse without it." (Keynes, 1936, p.19). Keynes further maintained that the conviction that money makes no real difference except frictionally and that the theory of production and employment can be worked out (like Mill's) as being based on "real" exchanges with money introduced perfunctorily, is the modern version of the classical tradition. This modern version, therefore, in Keynes' opinion, suggests that Say's Law is irrelevant to a money economy. (Keynes, 1936, p.20).

Having noted the basic doctrines of the classical theory, Keynes argued that, these conclusions may have been applied by the classical economists to the kind of economy in which we actually live by false analogy from some kind of non exchange, Robinson Crusoe economy, in which the income which individuals consume or retain as a result of their productive activity is, the output of that activity. But, apart from this, the conclusion that the costs of output are always covered in the aggregate by the sale proceeds resulting from demand, has great plausibility, because it is difficult to distinguish it from another proposition which is indubitable, namely, that the income derived in the aggregate by all the elements in the community concerned in a productive activity necessarily has a value exactly equal to the value of the output. (Keynes, 1936, p.20).

Similarly, Keynes maintained that it is natural to suppose that the act of an individual, by which he enriches himself without apparently taking anything from anyone else, must also enrich the community as a whole; so that, an act of individual saving inevitably leads to a parallel act of investment. For, once more, it is indubitable that the sum of the net increments of wealth of individuals must be exactly

equal to the aggregate net increment of the wealth of the community. (Keynes, 1936, p.21).

According to Keynes, however, the classical economists, who think in this way, are deceived by an optical illusion, which makes two essentially different activities appear the same. He contended that the classical economists fallaciously suppose that there is a nexus which unites decisions to abstain from present consumption with decisions to provide for future consumption; whereas, the motives which determine the latter are not linked with the motives which determine the former. Thus, according to Keynes, Say's Law is based on a fallacious premise and does not really hold good in a real exchange based economy. (Keynes, 1936, p.21).

Leijonhufvud argued that this attack of Keynes on the classical theory has been interpreted in the standard Keynesian literature as Keynes' accusations towards the classical economists of being addicted to Say's Law in the sense of Lange. (See Tsiang, S.C., 1966, pp.89-95). It is assumed, in other words, that Keynes sought to reaffirm Walras' Law, not to attack it. Say's Law in Lange's sense asserts that the sum of the values of the (n-1) notional excess demands for the system's non-money goods is identically equal to zero, whereas, Walras' Law is the same proposition applied to all n goods. Now, according to Leijonhufvud, traditional general equilibrium model do not accord "money" a special status-it is just one of n equally "liquid" goods. The point of distinction between the two "Laws" has nothing specifically to do with the means of payment function of money. Walras' law is logically correct simply because it reckons with all n goods. Therefore, Leijonhufvud argued that, to assert that the sum of (n-1) excess demands is identically zero violates the principle of the theory of exchange for a barter system, just as it does for a money using system. Say's Law is just as invalid if some non-money good is excluded from the summation. The standard interpretation of Keynes, in Leijonhufvud's opinion, consequently fails to explain, why Keynes should insist that the crucial error of the Classical economists lay in their misrepresentation of the nature of the wage bargain and in their conviction "that the theory of production and employment can be worked out as being based on 'real' (i.e. barter) exchanges". If there is money in the system, Say's law is just as invalid whether wage bargains are settled or not. (Leijonhufvud, 1968, p.100).

Leijonhufvud further maintained that from the perspective of the standard interpretation, moreover, Keynes' statement that, "Nevertheless, (Say's Law) underlies the whole classical theory, which would collapse without it", is simply incomprehensible.[13] According to Leijonhufvud, however many statements suggestive of the "invalid dichotomy", etc. may be found in pre-Keynesian writings, it is absurd to suggest that summing over (n-1) excess demands was an accepted convention "underlying the whole classical theory". And, even had this been true, in Leijonhufvud's opinion, Keynes could never have argued that the theory "would collapse without it." Leijonhufvud contended that, "elimination of this error from the standard interpretation of Keynes could only have strengthened the received doctrine." (Leijonhufvud, 1968, p.101).

Thus, to sum up, Keynes' attack on the classical theory of employment had been two pronged. The first was the argument phrased in exceedingly polemical language, that a *pari-passu* fall in money wages and, hence, aggregate demand and thereby money prices, would not get us anywhere. The second was the argument relating to the refutation of Say's Law which had been the fundamental premise of the classical doctrine of full employment. But, more importantly, the crux of Keynes' positions on the issue of unemployment, based on his first argument, is simply that balanced deflation will not do, if, relative values are wrong to begin with. (Leijonhufvud, 1968, p.319). This is the position which we will seek to explain while discussing Keynes' diagnosis of the causes of unemployment in the economy latter in the chapter.

2.3. Review of Reviews

Relating to Keynes' criticism of the classical theory of employment and his own analysis of unemployment based on his theory of effective demand determined by savings and investment, an immense amount of literature and reviews have been generated and we would now review some of them.

Two of the well known reviews of the General Theory were made by A.P. Lerner[14] and W.B. Reddaway.[15] Lerner's review is generally cited as an approved,

condensed version of Keynes' book. Lerner supported Keynes on the latter's views of the effects of wage cuts on employment. He attempted to show that whenever there is a uniform money wage cut, prices will fall by exactly the same proportion as wages, thus, leading to no change in real wage rates. He, then, followed Keynes with the proposition that, since real wage rates have not fallen, employment cannot be increased. (Lerner, 1936, p.435). As discussed earlier, this doctrine of equiproportional wage and price declines had never been accepted by the classical minded economists who had advocated wage cuts as an anti-depression policy.

Reddaway's article was one of the best reviews of the General Theory. Reddaway saw clearly the fundamental contributions of the new economics and was one of the first to be able to formulate a mathematical model of the skeleton system. According to 'Reddaway, Keynes was primarily attacking one of Ricardo's basic assumptions - Say's Law, or, the proposition that supply creates its own demand. Reddaway argued that the incompatibility of Say's Law with the determinate Keynesian theory was great, and it would be hopeless to try to derive the Keynesian results with a theory based on such principles. (Reddaway, 1936, p.28).

The reviews of Lerner and Reddaway were hardly typical. The mere fact that personalities were not spared in Keynes' sarcastic attack upon the classical economists would lead one to expect many hostile reviews. Professor Pigou was cited in the General Theory as a particular exponent of the theory which Keynes was attacking, since Pigou had formulated, most explicitly and elegantly, the classical model. Pigou returned the blow with a bitter argument against the General Theory.[16]

Pigou stated that the fundamental charge against the classics, by Keynes, was that of the assumption of an equilibrium position built up around an intersection of a real demand and a real supply schedule for labour. He repeated the classical view that unemployment is not an equilibrium position in the classical system, because, money wage cuts would always lead to a decline in real wages, and, hence, to more employment. What Pigou objected to, in Keynes' argument, was the claim that a cut in money wages would entail a fall in prices exactly by an amount which would leave real wages unchanged. (Pigou, 1936, p.115) Pigou may have been correct in disputing this Keynesian view, but, he did not consider adequately the effect of

money-wage-cuts on other variables of the system, such as, interest rates, investment and saving. An interesting point to be noted is that, in the world of concrete policy, Keynes and Pigou were not entirely at opposite ends since the latter agreed that there would be many practical difficulties in carrying out a wage-cut. But, on the whole, Pigou firmly believed that,with the proper banking policy, wage cuts in practice, could be relied upon to raise the level of employment and he remained quite conservative and refused to give up this view. (Klein, 1966, p.94).

Pigou was not the only follower of the classical tradition who felt injured by Keynes' assault. Professors Knight and Cassel joined the mob in the stoning of the revolutionary dissenter.

Knight[17], in the first place, denied that Keynes actually refuted anything that can be called the "classical doctrine", in the modern sense. He looked upon the General Theory as an attack upon straw men. (Knight, 1937, p.100). However, it would be very strange to consider Ricardo, Marshall, Pigou, Wicksell, Hawtrey, Hayek, Mises, Robbins etc., as straw men! Keynes was revolting against all these theories which did not explain the phenomenon of effective demand.

Knight further argued that, there was something asymmetrical in Keynes' analysis due to the assumption, first of unemployment and, then, of the presence of obstacles to a return to full employment. Knight recognised that historically, full employment has been the most usual state of affairs; therefore, he argued that we should not assume unemployment, but, instead, full employment, and then explain how such a happy situation could end. This methodology works in the reverse direction to that advocated by Keynes. According to Knight, we should assume full employment to begin with, and, then, if investment opportunities wear out due to a high level of capital accumulation, while saving habits persist, the multiplier equation will be in operation with the multiplicand negative.[18] Income will fall, and employment will decrease. Thus, from a full employment, we reach a state of unemployment; not the other way round. (Knight, 1937, p.100).

Knight also claimed that all the Keynesian results follow only from the assumptions of unemployment and rigidities. (Knight, 1937, p.100). But, in Klein's judgement, it does not seem that they are essential to the Keynesian theory. Infact, it

would be much more fruitful to shift the discussion from the assumptions of rigidities to realistic assumptions about the shapes of the important schedules of the Keynesian system. (Klein, 1966, p.98).

Cassel[19] was another who defended the established doctrines. He contended that there always exists a solution to the general equilibrium equations which gives full employment, and, that, there is no such thing as a general theory of unemployment. The following proof is taken from Cassel : Ideas such as the propensities to save or consume cannot possibly explain unemployment. Suppose the existence of a propensity to save such that there is unemployment. Now if all the unemployed die., there will be full employment and the same propensity to save; ergo Keynes is wrong. (Cassel, 1937, p.437).

While Pigou, Knight and Cassel seemed to have criticised Keynes' theory of unemployment, there were other authors who were by no means of the Keynesian persuasion and, yet, who gave reviews of the General Theory which were certainly not hostile, an example being Professor Viner.[20] He concluded that the only difference between Keynes and the classical economists, with regard to such matters as the supply of labour and wage rates, was the former's denial that a cut in money wages will reduce unemployment. (VIner, 1936, p.147). This conclusion was, indeed, quite true, although the proper understanding of the difference depends upon one's view of the *modus operandi*; of the wage cut as well as the final effect. (Klein, 1966, p.101). Viner was one of the first critics to question Keynes' readiness to follow the classical correlation between real wage cuts and unemployment. He pointed out that this resulted from a too unqualified application of the principle of diminishing returns. However, Keynes would have countered this with the argument that some where before full employment is reached, diminishing returns must set in, and, then, there will be the positive correlation between real wage cuts and increments in employment. Viner also pointed out at this time a pitfall in Keynes' definition of involuntary unemployment. He said that this definition implies a monotonically increasing supply curve of labour, something that can be doubted empirically and theoretically. (Viner, 1936, p.148).

Viner further believed that Keynes did not actually refute the classical economists, but, merely pointed out that money wage cuts might lead to adverse expectations and stifle investments. (Viner, 1936, p.148). But, in Klein's view, it seems that, actually, Keynes had enabled economists to demonstrate more than this, namely, that the classical mechanism is not the automatic lever which it was thought to be. Pigou, at least, has admitted that there may be practical difficulties in obtaining wage cuts, and that adverse expectations may set in, but on a higher level of abstraction, he has argued that, in the absence of these obstacles, money wage cuts will always lead theoretically to full employment. (Pigou, 1941, p.145). This, he had explained, with the help of the Real Balance Effect which we intend to discuss later. However, one who really understands the working of Keynesian economics must dispute this classical point of view which we will do while criticising Pigou's Real Balance Effect.

To conclude this review of reviews, it seems fitting to consider the attitudes of a Keynesian convert and a contemporary rival. No better choice can be found for the former category, than, Professor Hansen, who is, undoubtedly, one of the most famous Keynesian disciples. Hansen held many views prior to 1936 which were not in agreement with the developments of the General Theory, and, when he came to review this work, he was not yet a confirmed Keynesian. But, in his review of the General Theory[21], Hansen did recognise immediately the important contributions of the General Theory and saw, especially, the divergence from the classical system. He pointed out that Keynes' criticism of the classics was not connected with the theory of prices, or, distribution, but, with the notion that there is a unique equilibrium point for output - at full employment. He recognised that the classical economists had no theory of output and employment as a whole. (Hansen, 1936, p.667) He went along entirely with Keynes on the view that the causal forces are found outside the price system in the psychology, expectations, habits and institutions of the population. (Hansen, 1936, p.667).

2.4. Pigou's Real-Balance Effect

In this review of the Keynes and the classics debate on the theory of employment, another subject which has attracted a surprising amount of theoretical attention, was the "Pigou-Effect" or the "Real-Balance Effect." This has been referred to twice in the chapter - once, while contending the post-Keynesian proposition that even in a perfectly competitive system, money-wage cuts would not lead to full employment, and, another time, while advocating Pigou's argument that, in the absence of obstacles, money- wage cuts will always theoretically lead to full employment. In view of these two opposing statements of Pigou and the post-Keynesians, an analysis of the Pigou-Effect assumes extreme importance.

As a background to the Pigou-Effect, it must be recollected that, according to the classical economists, full employment is the norm and if unemployment occurs, real wages are reduced to bring about full employment. (Ackley, 1978, p.125). In this framework, it does not really matter whether the analysis of the determination of wages is conducted in "real" or money terms and the classical economists opted for the former, as more convenient.(Ackley, 1978, p.125). But, in opposition to such a classical contention, Keynes had argued that this classical mechanism did not have the automatic lever to ensure full employment. According to him, it is wrong to assume that money-wage cuts would automatically ensure real wage cuts for when money wages are reduced, money effective demand declines leading to an equiproportionate fall in money prices and, thus, real wages remain unchanged with no consequent effects on employment. Therefore, according to Keynes, in such a situation, we may have multiple equilibria in the system - different money wages, different prices, but the same quantity of money. Pigou, in an attempt to eliminate this possibility of multiple equilibria in the classical system, propounded the "Real-Balance Effect" which is popularly known as the "Pigou-Effect." (Pigou, 1943, pp.345-51).

Pigou, a proponent of the "Classical" theory of employment, attempted to show that a sufficient reduction in money wages, allowing also a substantial decline of money out put prices, would restore real output to the full employment level. The argument hinged on the adjustments to increases in the real purchasing power of the

money supply brought about by a fall in money prices. At some level of money prices, an excess supply of money must develop which spills over into increased demand for output. There must, then, also be one level of money prices, low enough, for real demand for output to correspond to full employment. This is referred to as the "Pigou-Effect", or, the "Real-Balance Effect" in the macroeconomic literature.[22] (Pigou, 1943, pp.345-51).

This "Pigou Effect" can be explained in the following way :- A cut in money wages implies lower costs and assuming cost-plus pricing, it implies lower prices. The prices of assets, such as, goods, buildings, land and common- stock shares may be expected to fall with other prices, so that, there will be no change in their real values. However, the fall in the price level means a rise in the real value of assets that are fixed in dollar terms, such as, money, savings-deposits, and bonds. This increase in the real value of fixed-dollar assets makes the holders less anxious to continue to build up their asset holdings. They devote a smaller fraction of their current income to savings and a larger fraction to consumption, which amounts to a downward shift in the savings function, or, an upward shift in the consumption function. Because of this effect, the quantity of goods demanded is higher than before. Thus, according to Pigou, a large enough decline in the price level will raise the real value of a given stock of fixed dollar assets sufficiently so as to reduce savings and increase consumption and thereby increase the effective demand in the economy to achieve full employment level of output. Hence, in effect, money wage cuts leads to the attainment of full employment in the economy. (Shapiro, E., 1984, pp.273-74).

2.4.1. Limitations of Pigou's Real-Balance Effect

The proponents of the Pigou-Effect were, however, cautious not to claim too much for they realised that the process incorporated in the Pigou-Effect itself might create expectations of further wage and price declines. (Leijonhufvud, 1968, p.318). An initial fall in wages and prices will often generate pessimistic forecasts and cause business people and consumers to reduce their expenditures. Moreover, a once-and-for all deflation may not work, for the public might, well view the lower

price level as a temporary situation. A return to the earlier higher price level may be expected as unemployment declines and the economy moves into a recovery. This means that the public will also view the increase in the real value of their fixed-dollar assets as a temporary increase. Although a permanent increase in the value of these assets is another matter, it is doubtful, that such a temporary increase will raise expenditures above the level they would otherwise attain. (Shapiro, E., 1984, p.274-75).

Besides this, the significance of the Pigou Effect was even further circumscribed. This is because, deflation causes redistribution of real wealth from debtors to creditors. If the distribution effects on aggregate real demand are adverse, the decline in the price level must proceed even further, to extreme low levels, for the real balance effect to swamp the effect of bankruptcies, etc. But, even so, there would exist a hypothetical price level restoring real aggregate demand to full employment levels. On the other hand, one could, for the sake of the argument, assume that distribution effects are neutral. In that case, Kalecki pointed out, that the fulcrum on which the Pigou-Effect could exert expansionary leverage appears to be very narrow indeed : the increase in the real value of the banking system's demand liabilities will have to be offset against the increase in the real value of their holdings of private sector debts. Thus, "money" was defined as the volume of high-powered money for the analysis of this effect. According to Kalecki, matter could be made to look a little better however, if the "real financial effect" of the increases in the real value of the private sector's holdings of outside debt, is also recognised. (Leijonhufvud, 1968, p.318). The significance of this modification hinges upon the magnitude of government bond liabilities and on the extent to which they can be regarded as properly "outside" in nature. Contemplating this adjustment process, therefore, even the adherents to the Pigou-Effect, concluded that a passive government policy relying on the Pigou-Effect was definitely not to be recommended. (Leijonhufvud, 1968, p.318).

2.4.2. Keynes' Critique of Pigou's Real-Balance Effect and Keynes-Effect

Keynes had undertaken an extensive critical review of the Pigou-Effect in his General Theory. (Leijonhufvud, 1968, p.319). The statement most pertinent to the Pigou-effect debate follows a number of pages in which Keynes had considered a long list of possibilities: the feedback effect on aggregate money demand of a fall in money wage rates, the distributive effects, the effects through short-run price expectations on the imputed holding yield on money, and the effects on the marginal efficiency of investment in the case of inelastic long-run money price expectations:

"It is, therefore, on the effect of a falling wage and price level on the demand for money that those who believe in the self adjusting quality of the economic system must rest the weight of their argument; though, I am not aware that they have done so. If the quantity of money is, itself a function of the wage and price level, there is indeed, nothing to hope in this direction". (Keynes, 1936, p.266). This latter sentence is, especially, noteworthy. Characteristically, Keynes' period-analysis assumes that quantity adjustments will, at least, keep pace with price adjustments. If banks, following for example, an old-fashioned "real bills" policy, adjust their private sector credit to the money value of output, the money supply, conventionally defined, will, indeed, decline almost *pari-passu* the wage and price levels. (Leijonhufvud, 1968, p.320). Therefore, Keynes' implied conclusion is much the same as Kalecki's : the relevant fulcrum is at best a most narrow one, namely, the quantity of high-powered money in the system.[23] Since the volume of "outside money" and "outside" assets, of fixed nominal par-value, is small, a truly tremendous deflation would be required for the real-balance effect to become significant as long as the money prices of consumer goods, capital goods, and labour services fall roughly in the same proportion. (Leijonhufvud, 1968, p.320).

Keynes further argued that, even then, "[The position will not improve significantly] since the spending power of the public will be reduced by just as much as the aggregate costs of production. By however much entrepreneurs reduce wages, and however many of their employees they throw out of work, they will continue to make losses so long as the community continues to save in excess of new investment.

Thus, there will be no position of equilibrium until... etc." (Keynes," A Treatise on Money", Vol.I, pp.177-78, 1930).

However, it seems that, Keynes did admit the "logical possibility" of the real-balance effect, (Leijonhufvud, 1968, p.323). if not its practical feasibility, as is evident from the following passage of the General Theory : "But if the quantity of money is virtually fixed, it is evident that its quantity in terms of wage-units can be indefinitely increased by a sufficient reduction in money-wages; and, that, its quantity in proportion to incomes generally can be largely increased..." (Keynes, 1936, p.266).

But, Keynes insisted that the "only hope" from the real-balance effect must lie in the effect on the interest rate of the increase in real balances, for example,

"... if competition between unemployed workers always led to a very great reduction of the money wage, there would be a violent instability in the price level. Moreover, there might be no position of stable equilibrium except in conditions consistent with full employment; since the wage-unit might have to fall without limit until it reached a point where the effect of the abundance of money in terms of the wage-unit on the rate of interest was sufficient to restore a level of full employment. At no other point could there be a resting place." (Keynes, 1936, p.253).

In the above passage, what Keynes meant was that, an increase in real balances, whether by injection or deflation, would have a significant effect on employment only by lowering the rate of interest and thereby affecting aggregate demand. This adjustment possibility is known as the "Keynes-Effect" in macroeconomic literature. (Leijonhufvud, 1968, pp.324-25). The "Keynes-Effect" is an effect on aggregate demand (i.e., on both consumption and investment) due to a fall in the rate of interest which, in turn, has been brought about specifically by an increase in real balances - and the increase in real balances, finally, should be due to all-round deflation. (Leijonhufvud, 1968, p.325).

With the "Keynes-Effect", therefore, Keynes conceded that, as a matter of logic, deflation could work. But, from that point on, he restricted himself to arguing against a policy of relying on deflation on the twin grounds of "social justice" and "social expediency". (Leijonhufvud, 1968, p.325).

2.4.3. Neoclassical Critique of Keynes-Effect

This position of Keynes on the subject of the economic system's capacity for self adjustment through deflation based on "Keynes-Effect", had been severely criticised by the neoclassical economists. Patinkin was one such neoclassical economist who attacked Keynes on this issue by insisting that Keynes' system does contain some "outside" money, and, in addition, government bonds which are to be regarded as "outside." (Patinkin, 1965, p.635). A fall in the money prices of commodities should, therefore, have both a "real-balance" and a "real-financial effect." Patinkin proceeded to "speculate on the train of reasoning which caused Keynes to ignore" these effects:

"It seems likely that he (Keynes) did recognise the influence of wealth on consumption..., but thought of this influence only in terms of (physical) assets. Correspondingly, in his main discussion of the short-run consumption function - where, by assumption, the stock of (physical) assets is fixed - he did not even consider the possible influence of wealth. On the other hand - and this is what our interpretation leads us to expect - as soon as Keynes discussed a period long enough for noticeable capital growth, he immediately recognised that the resulting increase in wealth causes a decrease in the propensity to save. But this, unfortunately, did not bring him to realise that, an analogous influence could exist even in the short run, provided one took account of... assets (the normal quantity of which is fixed) as well as (physical) ones."[24] (Patinkin, 1965, p.636).

We can evaluate this attack of Patinkin on Keynes by considering the "real-financial effect" apart from the "real- balance effect." It can hardly be denied that Keynes ignored any explicit analysis of the increase in the real value of "outside" bonds due to deflation. The fact that Keynes apparently did not bother with this distinction between "physical" and "financial" long assets, but implicitly, continued to regard his non money assets as a homogenous aggregate, may simply indicate that, for various reasons, he had but, little interest, in the possibility of automatic adjustment through deflation. It is also possible, however, that he made a mistake and thought that the matter was taken care of, however cursorily, by the assumptions he had

adopted in order to make all non-money assets homogenous in terms of anticipated holding yield at a point in time.[25] (Keynes, 1936, pp.227-28).

But still, the fact that the "real-financial effect" was ignored by Keynes must be conceded. However, Patinkin's critique of Keynes, really centered upon another point, namely that, Keynes implicitly assumes "that the real-balance effect does not directly influence the commodity market...[26] (Keynes') model... has both inside and outside money and should, accordingly, have provided for a... real- balance effect in all markets." (Patinkin, 1965, p.635).

This critique of Keynes by Patinkin with regard to the General Theory, is entirely misconceived. (Leijonhufvud, 1968, p.327). Patinkin's theory deals with a four-good world containing commodities, labour services, bonds, and money. He discussed the General Theory with reference to this model. Having just considered Keynes probable error with regard to the "real-financial effect", we can presently ignore the bonds of Keynes' model. The Keynes model relevant to Patinkin's criticism is, then, one which contains : consumer goods, capital goods, labour services and money. (Leijonhufvud, 1968, p.327).

We can now consider Keynes' repeated insistence that an increased supply of money in terms of wage units works through lowering the rate of interest. This means that the effects on commodity markets are, as "direct" as, can be desired. Given the State of Long Term Expectations,a decline in the rate of interest implies a rise in the price of capital goods in terms of wage units. The demand prices of augmentable capital goods rise relative to their cost of production at the output rate of the moment. Investment will increase with further "multiplier effects" on aggregate demand, given the initial marginal propensity to consume. But, the propensity to consume will also be directly affected-it will increase through the wealth-effect of the rise in the "real net worth". Thus, in both commodity markets, excess demand appears immediately as the rate of interest declines. The consumer goods market does not have to "await the working of the multiplier" - the wealth effect is direct. General deflation, then, will help - if, at some point, the decline in money asset prices starts to lag significantly behind the fall in money wages and consumer goods prices. What Keynes denied was that a proportional fall of all money prices could be of significant help. Thus,

Patinkin's critique of Keynes with regard to the latter's views on the real-balance effect was, indeed, quite misconceived. (Leijonhufvud, 1968, p.328).

Besides Patinkin, the tangled misconceptions underlying the neoclassical appraisal of Keynes stand out most clearly in Kuenne's discussion. (Kuenne, 1960, p.355). His basic preconception concerned the intent behind Keynes' argument - Keynes, he postulated, intended to prove that wage - deflation provides no possible way out of an unemployment situation. Thus, when Keynes argued that a reduction in money wages (the marginal efficiency of capital constant) will not help if it does not serve to reduce the rate of interest, Kuenne regarded the proviso merely as a "hedge" obscuring Keynes' basic contention - that money-wage reductions do not help:

"Common sense obstructs logical consistency at crucial points. Keynes' hedge concerning the constant rate of interest in his conclusion above is one such example." (Kuenne, 1960, pp.355-56).

Kuenne went on to remove all such "obstructions" by constructing a model with a "complete dichotomy", not between money and all other goods as in the case of "Say's Identity", but, between "paper and real sectors." This construction, he labelled, "Keynes's Identity." It involved the postulate that the effect of an increase in real balances due to deflation "is confined to the securities markets or is absent... all potential effects... on the real goods sector must be effectively nullified to preserve Keynes' Identity." (Kuenne, 1960, p.358). This last requirement, according to Kuenne, can be fulfilled only in the familiar ways: either by assuming the Liquidity - Trap, or, by assuming complete interest - inelasticity of both consumption and investment demand.[27] (Kuenne, 1960, pp.360-61).

Clearly, "Keynes's Identity" is grotesquely mislabeled. Nothing could be more foreign to Keynes' theory than this dichotomy between "real goods" and "paper." If his analytical procedure is to be criticised, it is because, he does not take care to distinguish clearly between physical and financial non-money assets, even when, the problem at hand so requires. (Leijonhufvud, 1968, p.331).

2.5. Keynes' Diagnosis of the "Causes of Unemployment"

In order to disentangle the misconception of the Keynesian literature inherent in the neoclassical critique, it is important to deal with and dig deeper into Keynes' diagnosis of the maladjustments which lead to depressions and, hence, unemployment.

In a deflationary disequilibrium, the economy develops symptoms of unemployment very rapidly. The "Classical" diagnosis of such disequilibrium was "too high money-wages" and the "Classical" prescription-"deflation." To Keynes, this "Classical" cure "smacked of leeches and bloodletting". (Leijonhufvud, 1968, p.335). Keynes maintained that, though widespread unemployment is the most drastic symptom of deflationary disequilibria, the cause of depression should be sought in other markets. In a situation of actual or threatening contraction, the ruling price vector differ from the appropriate vector. The essence of Keynes' diagnosis of depression is this : "the actual disequilibrium price vector, initiating the contraction, differs from the appropriate, hypothetical equilibrium vector in one major respect - the general level of long-term asset prices is lower than warranted." (Leijonhufvud, 1968, p.336).

Thus, the "Classical" and the Keynesian diagnoses are juxtaposed. Observing unemployment, the "Classical" economist draws the conclusion that wages are too high and ought to be reduced. In Keynes' theory, the maintenance of full employment depends upon the maintenance of a "right" relation between the general level of asset prices and the wage-unit. High asset prices imply high levels of demand for both new investment and consumption. At high asset prices, the anamoly of the traders in the aggregate not feeling "wealthy" enough to absorb the full employment rate of output will not occur. Keynes' point is that, when the appropriate price relation is not obtained, it is, in general, not wages, but asset-demand prices that are out of line. (Leijonhufvud, 1968, p.336).

From this diagnosis stems Keynes' fundamental objection to the "Classical" medicine of deflation: although the most eye-catching symptom of maladjustment is that of great excess supply in labour markets, money wage rates may very well be

"correct", i.e., roughly equal to the money wages that the system would have in equilibrium. Once demand prices for augmentable assets have moved to "too low" a level, the pressure of excess supply in the productive sectors of the economy will rapidly be transferred back to the labour market over the whole front. Although this has been allowed to occur, in Keynes' view, the burden of adjustment should not be thrown on this market.[28] Asset prices are "wrong" and it is to asset markets that the cure should, if possible, be applied. (Leijonhufvud, 1968, p.336).

By such a diagnosis of depression and unemployment and its possible cure, it is evident that, Keynes had approached the disequilibrium problem from a general equilibrium perspective unlike the "Classical" stand which, by laying the "blame" of unemployment on the obstinate behaviour of labour, is based on a partial-equilibrium analysis, inappropriate to the problem at hand. (Leijonhufvud, 1968, p.337).

This observation is particularly pertinent to the appraisal of Keynes' analysis of the hypothetical consequences of a "regime" of flexible money prices and wages. Keynes' diagnosis of how deflationary pressure emerge does not involve the contention that no hypothetical price vector exists which would bring about full employment. Infact, Keynes' position is consistent with the existence of a whole class of price vector capable of bringing about full utilisation of resources in the current period. His assertion rests on a conception of a "quite Classical" nature - i.e., that, could the set of all full employment price vectors be known, and studied, it would be found that for each relative price, there is a more or less restricted range of values consistent with full resource utilisation. He concentrated, specifically, on the case, where, given the history of the system up to the period in question and the resultant State of Entrepreneurial Expectations, there is a definite upper bound to the range of long rates of interest consistent with full employment. His discussion of money-wage flexibility proceeds on the assumption that the State of Liquidity Preference is such that "the" interest rate lies above this range. The question to which he addressed himself is, whether, given the resulting inappropriately low value of non-money assets in terms of wage units, a fall in money wages will help to restore full employment, and his answer to such a question was in the negative. (Leijonhufvud, 1968, pp.337-338).

Till now, we have regarded Keynes' diagnosis of unemployment as based on a comparison of the actual vector of observed prices ruling at the onset of a contraction with the hypothetical vector which would pertain in a system characterised by perfect information. Now, we will consider a case, where, the two vectors to be considered contain not just spot prices, but, both spot and forward prices. (Leijonhufvud, 1968, p.338). The hypothetical "perfect" vector contains a full set of forward prices; the actually observed vector contains only bond rates of interest for various maturities and current money prices for other assets from which unique inferences about forward values cannot be made. According to Keynes' diagnosis, it is fundamentally the inter-temporal relative values observed, or, implicit, in the actual vector which are "wrong". (Leijonhufvud, 1968, p.338).

This case starts from the assumption that current full utilisation of resources requires the establishment of a unique inter-temporal price vector. This would mean that the set of equations representing the inter-temporal general equilibrium system has only one solution. (Leijonhufvud, 1968, p.338). However, in this case, Keynes was not quite categorical as to whether, if inter-temporal relative values are out of line, there is nothing to guarantee that there exist values for the other unknowns of the problem (current money wages and prices) such that, clearance of factor services markets will, nonetheless, be ensured : "there might be no position of stable equilibrium except in conditions consistent with full employment." (Keynes, 1936, p.220).

The condition that Keynes regarded as necessary for full employment is that, "real" asset values be maintained at a specific level. This condition may be fulfilled with a too low, "pessimistic" marginal efficiency of capital schedule if the interest rate is correspondingly low, or, conversely, one might observe a boom "in which over - optimism triumphs over a rate of interest which, in a cooler light, would be seen to be excessive." (Keynes, 1936, p.322). But, if these factors combine to make "real" asset values too low, Keynes could see no hope in a balanced deflation in which money asset prices and money wages fall *pari-passu*. (Keynes, 1936, p.323).

Since in Keynes' analysis, entrepreneurial expectations and Liquidity-Preference are treated as (almost) independent co-determinants of asset

values, there are two routes through which a fall in the money wages might turn the deflation "unbalanced" in such a way as to restore full resource utilisation. One possibility is that, current money prices fall faster than future expected prices. This change in some of the unobserved inter-temporal price relations would "increase the marginal efficiency of capital; whilst, for the same reason, it may be favourable to consumption". (Keynes, 1936, p.263). The other possibility is the "Keynes-Effect" proper - that the rise in the value of the money stock in terms of wage units will bring about a fall in "the" interest rate. (Leijonhufvud, 1968, p.340).

Moreover, of the two factors which combine to make asset-demand prices too low, Keynes generally blamed too high long rates rather than, too pessimistic entrepreneurial expectations for the onset of depression. In Keynes' words, "Whenever money income, output, and employment decline, too high long rates are *ipso-facto* to blame." (Keynes, 1936, p.159). Keynes justified his stand by maintaining that, when income declines it is because entrepreneurs do not create real assets to the same value that savers try to accumulate. Coordination of the two types of decisions breaks down because "bear" speculators step in and supply savers with assets from their portfolios and "hoard" the proceeds. By doing so, they prevent the interest rate from declining to a level sufficiently low to induce entrepreneurs to undertake the full employment amount of investment. (Keynes, 1936, pp.153-160). Once the income-constrained process has been allowed to gather momentum, of course, expectations would no longer be such as to sustain full employment even in conjunction with a "right" interest rate.[29] (Leijonhufvud, 1968, p.340). But, this is a derivative phenomenon. Therefore, in effect, Keynes asserted that, whenever investors do not passively acquiesce in a rise in bond prices, but, counteract the decline in long rates by bearish sales, they are always "in the wrong". If they did not gamble on transitory fluctuations in asset- prices, but, seriously tried to evaluate the lifetime yield prospects, they would come to realise that higher securities prices are, indeed, warranted. (Leijonhufvud, 1968, p.304). Thus, to Keynes, too high long rate was the "fundamental trauma" and its correction an all, but necessary, condition for recovery. Over many years, this conception formed the basis for his pronouncements on matters of public policy.[30] (Leijonhufvud, 1968, p.341).

This, of course, is the whole point of Keynes-Effect. Keynes' neoclassical critics have brushed it aside because they have not understood his diagnosis. The Keynes-Effect will work because it relieves the fundamental "cause" of the type of disequilibrium that Keynes postulated.[31] (Leijonhufvud, 1968, p.341).

Thus, Keynes' diagnosis of the conditions leading to a downturn in activity and unemployment focussed on the relation between the money prices of non-money assets and the money wage rate. If this relation was out of line, moreover, he put the "blame" on too low asset values as a rule, not on too high wages.[32] The conclusion is that deflation will help only if it changes this relative price in the appropriate direction , i.e., only if it cures the malady that underlies the emergence of excess supply of commodities in the first place : "we must base any hopes of favourable results to employment from a reduction in money- wages" on an increase in the value of non-money assets in terms of wage unit. (Leijonhufvud, 1968, p.342). Such a favourable result might occur through one or the other of the possibilities outlined above. Of the two, however, Keynes stressed the possibility of a reduction in the rate of interest - that of a favourable shift of the marginal efficiency of capital was generally held imprisoned in the *ceteris-paribus* assumptions of his short-run analysis. Directly, the stimulating effects will fall "mainly on investment"; the wealth-effect on consumption demand is regarded as definitely subsidiary. (Leijonhufvud, 1968, p.342). In expressing such views relating to his diagnosis of the causes of unemployment, Keynes marked a distinct break from the past and, hence, represented a "Revolution" in some sense.

NOTES AND REFERENCES

1. This is in the Richardian tradition. For Ricardo expressly repudiated any interest in the amount of the national dividend, as distinct from its distribution. In this, he was assessing correctly the character of his own theory. But his successors, less clear - sighted, have used the classical theory in discussions concerning the causes of wealth. Vide Ricardo's letter to Malthus of October 9, 1820 : "Political Economy you think is an enquiry into the

nature and causes of wealth - I think it should be called an enquiry into the laws which determine the division of the produce of industry amongst the classes who concur in its formation. No law can be laid down respecting quantity, but a tolerably correct one can be laid down respecting proportions. Everyday I am more satisfied that the former enquiry is vain and delusive, and the latter only the true objects of the science."

2. "For although output and employment are determined by producer's short-term expectations and not by past results, the most recent results usually play a predominant part in determining what these expectations are..." etc. *General Theory*, p.50-51.

3. Whereas, on the other hand, each worker knows that all are equally affected by a rise in the price of wage goods.

4. See also the Appendix to Chapter 19, pp.272-79: Eight entire pages lambasting Professor Pigou with interminable variations on a single theme : Professor Pigou knows "... that workpeople in fact stipulate, not for a real rate of wages, but for a money rate"; yet, "in effect [he assumes] that the actual money-rate of wages divided by the price of wage-goods can be taken to measure the real rate demanded."

5. See *"Relative Movements of Real Wages and Output,"* Economic Journal, Vol.XLIX, 1939, p.34.

6. *"The Movement of Real and Money Wage Rates,"* Economic Journal, Vol.XLVIII, 1938, p.413.

7. *"Changes in Real and Money Wages,"* Economic Journal, Vol.XLIX, 1939, p.150.

8. See also p.278, where the attack on Pigou's presumption that real wages can be adjusted directly by money wage adjustments is followed up : "There is no hint or suggestion [in Professor Pigou's argument] that this comes about through reactions on the rate of interest."

9. See *"The General Theory of Employment,"* Quarterly Journal of Economics, Vol.LI, 1937, p.209, where, even Keynes had said that Leontief was correct in pointing out that

the Keynesian system differs mainly from the classical system in not being homogenous of order zero in prices.

10. With the obvious exceptions of price, interest rate, and employment.

11. The subscript w represents measurement in terms of wage units.

12. Compare, *General Theory*, e.g. pp.104-5, where Keynes explicitly notes that "present provision for future consumption" will be a source of aggregate demand, except "in so far as our social and business organisation separates financial provision for the future from physical provision for the future so that efforts to secure the former do not necessarily carry the latter with them..." etc. The problem is explicitly regarded as one of the effective transmittal of the relevant information (p.210): "If saving consisted not merely in abstaining from present consumption but in placing simultaneously a specific order for future consumption, the effect might indeed be different."

13. By implication this interpretation also asserts that, having selected his quote from J.S. Mill's *"Principles"*, Keynes did not bother to finish reading the paragraph : "Besides, money is a commodity..." - much less the rest of that very brief chapter : "At such times there is really an excess of all commodities above the money demand: in other words, there is an under-supply of money... so that there may really be... an extreme depression of general prices, from what may be indiscriminately called a glut of commodities or a dearth of money." For, surely, had he seen these statements, Keynes could not have attributed Say's Law in the sense of Lange to Mill.

14. *"Mr. Keynes' 'General Theory of Employment, Interest and Money,"* International Labour Review, Vol.XXXIV, 1936, p.435.

15. *"The General Theory of Employment, Interest and Money,"* Economic Record, Vol.XII, 1936, p.28.

16. *"Mr. J.M. Keynes' General Theory of Employment, Interest and Money,"* Economica, N.S. Vol.III, 1936, p.115.

17. *"Unemployment : and Mr. Keynes' Revolution in Economic Theory,"* Canadian Journal of Economics and Political Science, Vol.III, 1937, p.100.

18. The multiplicand is the change in investment with which the multiplied change in income is associated. Unlike the multiplier, the multiplicand can be either positive or negative.

19. *"Mr. Keynes' General Theory,"* International Labour Review, Vol.XXXVI, 1937, p.437.

20. *"Mr. Keynes, on the Causes of Unemployment,"* Quarterly Journal of Economics, Vol.LI, 1936, p.147.

21. *"Mr. Keynes on Underemployment Equilibrium,"* Journal of Political Economy, 1936, Vol.XLIV, p.667.

22. See A.C. Pigou, *"The Classical Stationary State"*, Economic Journal, Dec. 1943, pp.345-51, and *"Economic Progress in a Stable Environment"*, Economica, Aug. 1947, pp.180-88. As is commonly done, the terms, Pigou-effect and real-balance effect, are here used as synonyms, although this is not altogether proper. For an explanation of the difference between them, see G.E.Makinen, *"Money, the price level, and Interest Rates"*, Prentice-Hall, 1977, pp.160-62.

23. The pressure on banks to undertake a "real expansion" of their deposit liabilities, which arises from deflation, will also be less the larger the proportion of initial nominal high-powered money consisting of borrowed reserves. The Central Bank may be faced with a "reflux" of these reserves.

24. We have changed the quote to avoid Patinkin's usage of "monetary" versus "non-monetary assets," since his definition of the latter is different from the similar-sounding term which will be used latter in this dissertation. We will use "non-money assets" as a convenient label for all assets which are not "money" (according to some definition of the latter). Patinkin uses "non-monetary" to denote assets which do not have a par-value fixed in nominal terms. The above use of "physical" instead of "non-monetary" follows Patinkin's Note K of the 1st edition, and also his discussion of the

same topic in *"Price Flexibility and Full Employment,"* in *"Readings in Monetary Theory,"* pp.269-70.

25. Keynes' aggregation of the capital accounts made use of "risk" and "liquidity premia" to "adjust" the anticipated yields on different kinds of non-money assets. He also made an adjustment for the expected "percentage appreciation or depreciation" of one asset in terms of another. This does not help in the present context, where the appreciation of money is realised within the unit period. Keynes' analytical habit of lumping together "bonds" and physical assets was well ingrained - it goes back at least to the very first pages of the "Tract".

26. Patinkin, 2nd edn., p.634. See also, e.g., p.21n, 180, 188, 241, 264,-65, Note K : 1, etc. That this is the point considered by Patinkin the central one is indicated on p.636 : "For this reason our criticism of Keynesian economics on this score has concentrated exclusively on the commodity market."

27. This being so, Kuenne can only end up with the same old "terms of the truce," i.e. : "To the extent that Keynes focussed attention upon the slowness, or weakness, of... adjustments, his analysis contributes fruitful insights. But in the field of static general equilibrium theory... his performance was essentially a failure." (pp.360-61).

28. Note that this is an argument to the Keynesian case for recommending the pursuit of a policy aimed at stabilising wages. Patinkin considered this policy conclusion to follow from Keynes' investigation of the "probable effects of wage flexibility" and this is part of Keynes' case. The other part, which we are now emphasising, is perhaps even more important and rests on the "probable causes" of an excess supply of labour.

29. The longer the system wallows in depression, one must also surmise, the farther would the "dry rot" eat into the all-important long-term end of expectations making the demand price schedules for durable capital assets more elastic with respect to the rate of investment, and, therefore, the rate of investment in Fixed Capital less and less susceptible to control through the rate of interest. The longer a depression has lasted, the less safe is Keynes' habit of simply identifying present asset values with the asset demand price.

30. See Harrod's "Life", p.399: "Most important of his contributions during this year (1930) was his article in the September issue of the *"Svenska Handelsbanken Index"* on the future of the rate of interest. He had become convinced that the time was ripe for a large and permanent reduction throughout the world. This was to be the basis of all his future thinking on economic policy : it also determined his investment policy on his own behalf and that of the institutions which he advised." " Since Keynes put his money where his mouth was, one cannot very well regard his Keynes - Effect just as a hedge of a merely academic argument. " (Leijonhufvud, 1968, p.341).

31. It is instructive to note, for example, the disturbance considered by Kuenne in his appraisal of Keynes' contribution to "pure" theory (p.349): "From a position of general equilibrium, we suppose the economy to be jarred by an increase in the excess demand for money to a positive level..." Also, p.356: "Now, let us start with a full general equilibrium and assume that the public suddenly desires increased real balances, obtaining them by reducing excess demands for consumption and investment goods. Let all markets but those for labour and money be re-equilibrated..." etc. While this is the premise from which Kuenne departs, it is also the conclusion Modigliani, among others, arrives at : "It is true that a reduced level of employment and a reduced level of investment go together, but, this is not, in general, the result of [a] causal relationship. It is true instead that the low level of investment and employment are both the effect of the same clause, namely, a basic maladjustment between the quantity of money and the wage-rate." F. Modigliani, *"Liquidity Preference and the Theory of Interest and Money,"* Econometrica, Jan., 1944.

32. Harrod puts the matter succinctly : "He did not think that the high wage was the cause of unemployment or that lowering the wage would-subject to [the Keynes effect, etc.] - increase employment." Note that two "beliefs" are involved-Keynes' neoclassical critics have concentrated on the second to the exclusion of the first.

CHAPTER 3

INTEREST RATES AND MONEY

The phenomena of interest and money presents one of the most difficult problems of economic theory. An in-depth study of interest and money, therefore, assumes great significance in this context. Keynes had opened the road to such studies and future economists must pursue this endeavour with great zeal in times to come.

Interest, as defined in most arithmetic books, is a payment for the use of money. (Dillard, 1948, p.163). But, such a crude definition of interest does not say much as to what that special characteristic of money is, for which it becomes inevitable to pay for its use, and hence, this definition of interest appears to be of little use in the economic theory pertaining to interests and money.

It is with the objective of removing this discrepancy of the general description of the concept of "interests" in mind, that various theories relating to interest rates have been propounded. It is in this context, that Keynes' contribution to this field through his advocacy of the Liquidity Preference Theory of interest, assumes great importance and thereby makes it inevitable for any Keynesian analyst to study this subject. This is what we wish to do in the present chapter.

. This chapter first presents a brief exposition of the various "classical" and neoclassical concepts and theories of interest in an attempt to provide a historical outlook to the concept of interest rates. Secondly, it incorporates a critique of the "classical" and the neoclassical theories of interest undertaken by Keynes and thereby discusses the Keynesian proposition of the Liquidity Preference Theory of interest before comparing it with the important neoclassical Loanable Funds Theory of interest rates. The chapter, then, undertakes an analysis of the Keynesian theory of demand for money with special focus on the role played by expectations in the economic decisions relating to demand for money before commenting on the different criticisms which have been put forward by various economists in contention to Keynes' views regarding the demand for money, in general, and the speculative

demand for money, in particular. The chapter concludes with a deeper analysis of Keynes' Liquidity Preference Theory using the Keynesian money demand and supply functions with a view to expose the limitations of the Liquidity Preference Theory of interest rates and the need to move on to a new theory, namely, to the Hicks and Hansen propounded IS-LM theory of the determination of interest rates.

3.1. The Classical Theory of Interest

The classical economists visualised "interest" as the marginal productivity of physical capital; but, since physical capital has to be purchased with monetary funds, the classical concept of the rate of interest is the rate of return over money invested in physical capital. Moreover, since money to be invested in physical capital has to be saved, interest, in classical economics also becomes the price for abstinence or waiting. (Dillard, 1948, p.189). Such a view on interest rates from the stand point of the supply side was advocated by Naspau Senior, who pointed out that savings involve a sacrifice of abstinence and interest is a price for this sacrifice. Any one who saves some money and is, therefore, able to lend it to others abstains from consuming a part of his income and in order to induce him to do so, he must be paid interest by the borrower. Thus, according to Senior, interest arises because of the abstinence involved in the act of saving. (Keynes, 1936, p.176).

The idea of abstinence was criticised by Karl Marx, who pointed out that the rich people who are the main source of savings are able to save without making any real sacrifice of abstinence. (Dillard, 1948, p.192). In order to avoid this criticism, Marshall substituted the word "waiting" for "abstinence". According to him, when a person saves money and lends it to others, he does not abstain from consumption for all the time; he merely postpones consumption. But the individual who lends his saving has to wait until he gets back the money. Thus, the person who saves money and lends it others undergoes the sacrifice of "waiting". According to Marshall, interest, therefore, is a price for waiting. (Keynes, 1936, pp.175-76).

In contrast to this supply side concept of interest rates, other classical economists, such as Knight and J.B. Clark, explained the phenomenon of interest from the viewpoint of demand for capital and laid stress on the productivity of capital as a determining factor of interest. (Keynes, 1936, p.176).

Bohm Bawerk, Irving Fisher and some others explained the nature and determination of interest rates taking into account both the productivity of capital (demand) and the time preference (supply) According to the Austrian economist, Bohm Bawerk, interest arises because people prefer present goods to future goods of the same kind and quantity, i.e., people prefer present enjoyment to future enjoyment. In other words, future satisfaction when viewed from the present undergoes a discount. Interest is this discount which must be paid in order to induce people to lend money and, therefore, postpone present satisfaction to a future date. Bohm Bawerk listed three reasons for the emergence of the rate of interest. First, demand for goods is greater in the present than in the future. Second, people underestimate future wants. Third reason for the emergence of interest rates given by Bohm Bawerk is what he called, "technical superiority of present over future goods". This is so because the present goods can be used so as to make capital which involves round about and time consuming methods of production and is more productive. Because of the greater productivity of capital, people prefer to have present goods which can be used as capital so that they have more goods in the future. (Dillard, 1948, p.190).

Irving Fisher formulated another theory of interest, where he laid greater emphasis on "time preference" and marginal productivity of capital on the rate of return over cost as factors determining interest rates. (Ackley, 1978, p.145). According to Fisher the concept of the rate of interest arises because people prefer present satisfaction to future satisfaction. They are therefore impatient to spend their incomes in the present. Fisher argued that, interest is a compensation for the time preference of the individuals. The greater the impatience to spend money in the present, ie., greater the preference of individuals for the present enjoyment of goods to future enjoyment of them, the higher will have to be the rate of interest to induce them to lend money. The degree of impatience to spend income in the present

depends upon the size of income, the distribution of income over time, the degree of certainty regarding enjoyment in the future and the temperament and character of the individual. (Ackley, 1978, p.146).

Thus, in sum, the classical economists emphasised the role of real factors, such as thrift, time preference, and productivity of capital in the determination of interest rates. Therefore, the classical theory is also known as the Real Theory of Interest Rates. (Ackley, 1978, p.158).

According to the classical theory of interest, the rate of interest is determined by the supply of savings and the demand for savings for investment. The rate of interest is considered as the factor which brings the demand for investment and the willingness to save into equilibrium with one another. (Keynes, 1936, p.175). Investment represents the demand for investible resources and saving represents the supply, whilst the rate of interest is the "price" of investible resources at which the two are equated. Just as the price of a commodity is necessarily fixed at that point where the demand for it is equal to the supply, similarly, the rate of interest necessarily comes to rest under the play of market forces at the point where the amount of investment at that rate of interest is equal to the amount of savings at that rate. (Keynes, 1936, p.175).

Now, the supply of savings comes from mainly the household sector and the higher the rate of interest, the larger is the volume of savings. The supply curve of savings, therefore, slope upward to the right. On the other hand, the demand for savings comes from the entrepreneurs or firms which desire to invest in capital goods. Lower the rate of interest, the higher is the investment. Thus, investment demand curve slopes downward to the right. The rate of interest, according to classicists, is determined by the intersection of the investment demand curve and the supply of savings curve. Therefore, the classical theory of interest is a real phenomenon, which is determined in the commodity market by savings and investment at a level which equates the two. (Dillard, 1948, p.189). This may be represented by a diagram showing the rate of interest along the vertical axis and savings and investment along the horizontal axis as shown in the following figure (Dillard, 1948, p.189). :-
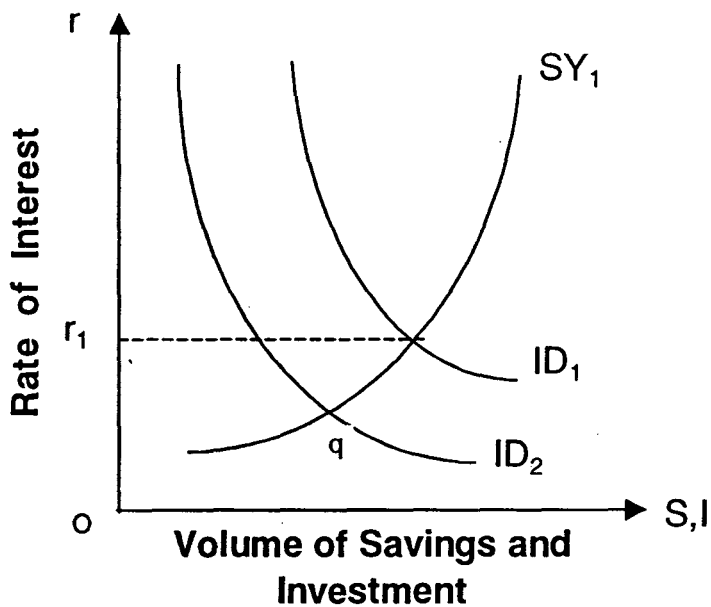
Fig. 3.1

The rate of interest is thus determined by the point of intersection of the investment-demand schedule, ID_1 and the supply of savings schedule, SY_1. The investment-demand schedule is Keynes' schedule of the marginal efficiency of capital. The line SY_1 represents the amount of savings out of a level of income Y_1 which, under classical assumptions, presumably would be the level of income corresponding to full employment. (Dillard, 1948, p.190).

The above point relating to the classical methodology of the determination of interest rates, can be substantiated by putting forth the views of some selected classical economists who had talked on this issue. Marshall, in one of the passages in his *"Principles"* said, "Interest being the price paid for the use of capital in any market, tends towards an equilibrium level such that the aggregate demand for capital in that market, at that rate of interest, is equal to the aggregate stock forthcoming at that rate". Similarly, Professor Cassel in his, *"Nature and Necessity of Interest"*, explained that investment constitutes the "demand for waiting" and savings the

"supply of waiting", whilst interest is a "price" which serves to equate the two. In the same way, Professor Carver's, *"Distribution of Wealth"* clearly envisages interest rate as the factor which brings into equilibrium the marginal disutility of waiting with the marginal productivity of capital.[1] Sir Alfred Flux *(Economic Principles,* p.95) wrote, "If there is justice in the contention of our general discussion, it must be admitted that an automatic adjustment takes place between savings and the opportunities for employing capital profitably ... Savings will not have exceeded its possibilities of usefulness ... so long as the rate of net interest is in excess of zero." Professor Taussig *(Principles,* Vol.(ii) p.29) drew a supply curve of savings and a demand curve representing "the diminishing productiveness of the several instalments of capital", having previously stated (p.20) that, "the rate of interest settles at a point where the marginal productivity of capital suffices to bring out the marginal instalment of saving".[2] Walras, in Appendix I.(III) of his" *elements d' Economie pure"* argued expressly that, corresponding to each possible rate of interest, there is a sum which individuals will save and also a sum which they will invest in new capital assets, and that these two aggregates tend to equality with one another, and that the rate of interest is the variable which brings them to equality; so that the rate of interest is fixed at the point where saving, which represents the supply of new capital, is equal to the demand for it. (Keynes, 1936, pp.175-77).

3.1.1. Criticisms of the Classical Theory of Interest

The classical theory of interest has been criticised by Keynes for its assumption of full employment of resources. Further, according to Keynes, the classical economists ignored the changes in the level of income and their effects on savings and investment. (Keynes, 1936, p.177). The classicists established a direct functional relationship between the interest rate and the volume of savings and investment in the economy. According to the classical theory, whenever an individual performs an act of saving he does something which automatically brings down the rate of interest; this automatically stimulates the output of capital, and the fall in the

rate of interest is just so much as is necessary to stimulate the output of capital to an extent which is equal to the increment of saving; and, further, this is a self regulatory process of adjustment which takes place without the necessity for any special intervention. Similarly, an act of investment, in Keynes', opinion, will necessarily raise the rate of interest, if it is not offset by a change in the readiness to save. Thus, Keynes argued that, by neglecting the all-important changes in the level of income, the classical school is led into the error of viewing the rate of interest as the factor which brings about the equality of savings and investment, that is, the equality of demand for investible funds and the supply of funds provided by savings. (Keynes, 1936, p.177).

Keynes accepted the classical position of the equality of savings and investment, but attributed this equality to changes in the level of income rather than the rate of interest. (Dillard, 1948, p.190). Keynes also agreed with the classical theory that if the level of income is assumed to be given, the current rate of interest lies at the point of intersection of the investment-demand schedule and the schedule of savings which will be made at varying rates of interest out of that level of income. However, Keynes parted company with the classicists when the latter went a step further and assumed that if the investment-demand schedule shifts to the position ID_2 in Figure 3.1., the intersection of this new investment-demand schedule and the old SY_1 at the point q (Figure 3.1) will determine the new rate of interest. (Dillard, 1948, p.190). In Keynes' words, "The classical theory assumes that it can proceed to consider the effect on the rate of interest of (e.g.) a shift in the demand curve for capital without abating or modifying its assumption as to the amount of the given income out of which the savings are to be made. The independent variables of the classical theory of the rate of interest are the demand curve for capital and the influence of the rate of interest on the amount saved out of a given income; and when (e.g.) the demand curve for capital shifts, the new rate of interest, according to this theory, is given by the point of intersection between the new demand curve for capital and the curve relating the rate of the interest to the amounts which will be saved out of the given income. The classical theory of the rate of interest seems to suppose that, if

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the demand curve for capital shifts or, if the curve relating the rate of interest to the amounts saved out of a given income shifts or if both these curves shift, the new rate of interest will be given by the point of intersection of the new positions of the two curves. But this is a nonsense theory. For the assumption that income is constant is inconsistent with the assumption that these two curves can shift independently of one another. If either of them shift, then, in general, income will change; with the result that the whole schematism based on the assumption of a given income breaks down". (Keynes, 1936, p.179).

Therefore, according to Keynes' analysis of the classical theory of the rate of interest, the error of the classicists lay in assuming that the investment-demand schedule can change without causing the level of income to change. (Dillard, 1948, p.190). We know from Keynes' theory that a fall in the schedule of the marginal efficiency of capital will cause investment to fall. The fall in investment leads to a decrease in income, and out of the reduced income less will be saved. Thus, it is inconsistent to assume that the investment demand schedule can shift without at the same time causing a shift in the savings schedule. Since the savings schedule also shifts, we cannot determine what the rate of interest will be nor what the volume of savings and investment will be. Therefore, according to Keynes, there are not enough data in the classical scheme to yield this information. (Dillard, 1948, p.190).

In order to find the savings schedule which is relevant to the new investment schedule associated with a change in investment demand, Keynes argued that the rate of interest must first be determined by introducing the state of liquidity preference (demand for money) and the quantity of money (supply of money). The appropriate savings curve will be that which intersects the new investment schedule immediately opposite the new rate of interest, whatever it may be. (Dillard, 1948, p.190). If the new rate of interest is r_2, the relevant savings schedule is SY_2 as shown in the following figure[3]:-
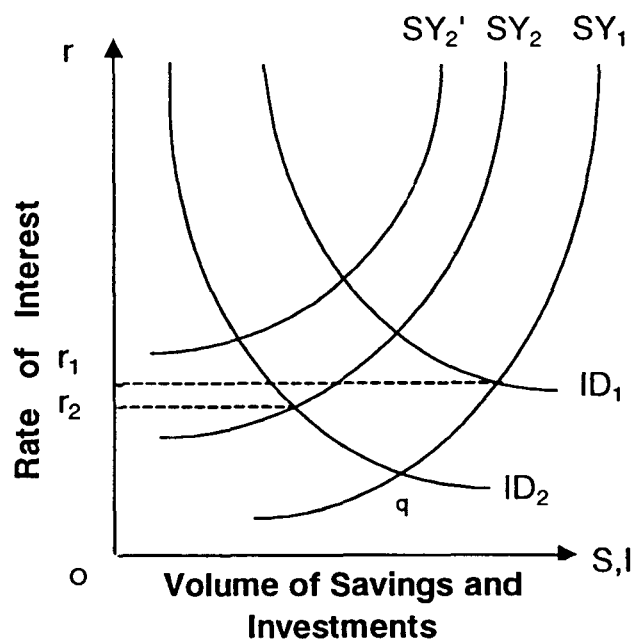
Fig. 3.2

The amount of investment (and savings) is now determined on the horizontal axis immediately below the point of intersection of the ID_2 line and the SY_2 line. If the rate of interest remains unchanged at r_1 because the state of liquidity preference and the quantity of money for the speculative motive (to be studied latter is this chapter) remain the same - the relevant saving-out-of - income schedule will be SY_2, and the point at which this line intersects the ID_2 line will indicate the amount of savings and investment. The point q in the above figure corresponds to the same point in Figure 3.1. It indicates the solution given by the classical theory, which assumes that income and saving-out-of-income remain unchanged when the rate of investment changes, and on the basis of this special assumption, views the rate of interest as the balancing factor which equates the volume of saving to the volume of investment. (Dillard, 1948, p.191). Therefore, according to Keynes, "the (classical) position (relating to its theory of interest rates associated with changes in the demand for capital) can only be saved by some complicated assumption providing for an automatic change in the wage-unit of an amount just sufficient in its effect on liquidity-preference to establish a rate of interest which would just offset the supposed

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shift, so as to leave output at the same level as before." (Keynes, 1936, p.180). But, in fact, Keynes argued that, there is no hint to be found in the classical writers as to the necessity for any such assumption; "at best it would be plausible only in relation to long period equilibrium and cannot form the basis of a short-period theory; and there is no ground for supposing it to hold even in the long period. In truth, the classical theory has not been alive to the relevance of changes in the level of income or to the possibility of the level of income being actually a function of the rate of investment". (Keynes, 1936, p.180).

Thus, Keynes contended that the functions used by the classical theory, namely, the response of investment and the response of the amount saved out of a given income to changes in the rate of interest, do not furnish material for a theory of the rate of interest; but, they can be used to tell us what the level of income will be, given the rate of interest; and, alternatively what the rate of interest will have to be, if the level of income is to be maintained at a given figure (e.g. the level corresponding to full employment.) (Keynes, 1936, pp.181-182).

To sum up, on a more general plane, the distinctive aspect of Keynes' views relating to his criticism of the classical theory of the rate of interest, is represented in Fig. 3.2 by the SY curves. There is a different SY curve for each level of income. In assuming continuous full employment, the classical theory deals only with the SY_1 curve, and in this manner escapes the necessity of having to discover a general explanation for interest rates. By assuming that the investment-demand schedule (ID) can shift without affecting the level of income, and therefore the schedule of saving out of income (SY), the classical school is led to view interest as the "price" which equates the demand for investment to the supply of savings. (Dillard, 1948, p.192). This, however, is not an explanation of interest rates, but a special condition which follows from the special assumption of full employment and a fixed level of income. Nevertheless, the classical school goes on to work out a view of the interest rate as an automatic, self-regulating mechanism for equating savings to investment. When the demand for investment falls, the rate of interest is supposed to fall and lessen the supply of savings to correspond to the reduced demand for investment. Or, if the

public decides to save more, the rate of interest is supposed to fall to a point where investment will increase to take care of the increase in savings. Thus, a decrease in the demand for consumption (increase in the desire to save) is supposed to be compensated for by an increase in investment through the mechanism of the rate of interest. (Dillard, 1948, p.192). This is just another way of saying that there will be no change in aggregate income or aggregate employment when the demand for consumption declines. But, in reality, Keynes argued that a fall in the demand for consumer goods is more likely to diminish than to increase the demand for investment because the demand for investment is a derived demand; it is derived from the demand for consumer goods. Therefore, a decrease in the demand for consumer goods, will adversely affect the demand for capital goods and will thus lessen the inducement to invest. (Dillard, 1948, p.182). Empirical verification for this may be gleaned from the statistical fact that, except in war, and other rare periods of strained resources, consumption and investment move in the same direction and not in opposite directions.(Dillard, 1948, p.192). Therefore, according to Keynes, the classical analysis is faulty because it fails to isolate correctly the independent variables of the system. Savings and investment are the determinates of the system, not the determinants. They are the twin results of the system's determinants, namely, the propensity to consume, the schedule of the marginal efficiency of capital and the rate of interest. These determinants are, indeed, themselves complex and each is capable of being affected by prospective changes in the others. But, they remain independent in the sense that their values cannot be inferred from one another. The traditional analysis had been aware that saving depends on income, but it overlooked the fact that income depends on investment, in such a fashion that, when investment changes, income must necessarily change in just that degree which is necessary to make the change in savings equal to the change in investment. (Keynes, 1936, pp.183-84).

A glance at the SY curves in Figures 3.1 and 3.2 indicates that Keynes is willing to accept the view that more will be saved at a higher rate of interest than at a lower rate of interest out of a given income, although saving is not very sensitive to

changes in the rate of interest (the SY curves are steep, or interest inelastic).(Dillard, 1948, p.192). This is not to be interpreted to mean that more will be saved at a higher rate of interest than at a lower rate of interest when changes in income related to changes in the rate of interest are brought into the picture, as Keynes insisted they must be. A rise in the rate of interest will actually lead to a decrease in the amount of saving. For when the interest rate rises, investment falls, and a fall in investment causes a decline in income, and out of a smaller income less will be saved. The fall in saving will be just equal to the fall in investment since the two were equal before income fell and must be equal after income falls. Just as surely as a rise in the rate of interest leads to a decrease in investment so must it also lead to a decrease in savings. This divergence of views between Keynes and the classical school boils down once again to the differences between the logic of an economics of full employment and the logic of an economics of less than full employment. (Dillard, 1948, p.193).

3.2. The Neoclassical Theory of Interest Rates : Loanable Funds Theory of the Rate of Interest

In view of the wide ranging discrepancies in the classical theory of interest based on the classical economists' emphasis on the role played by only the real factors in the determination of interest rates, another school of thought comprising of neoclassical economists, such as, Wicksell, Ohlin, Bertil, Haberler, Robertson, Myrdal, Lindahl and Viner, developed the Loanable Funds Theory of interest rates.

The Loanable Funds Theory of interest is an extension of the classical savings and investment (or real factor) theory of interest. The exponents of the Loanable Funds Theory saw the interplay of monetary and non-monetary factors in the determination of the rate of interest. (Gupta, 1990, p.333). According to this theory, real forces such as, thriftness, waiting, time- preference and productivity of capital alone do not go to determine the rate of interest; monetary forces, such as, hoarding and dishoarding of money, money created by banks, monetary loans for consumption purposes also play a part in the determination of the rate of interest. In this sense, this theory combines both the monetary and the non-monetary factors for the

determination of interest rates and it is because of this, that the Loanable Funds Theory is claimed to be an improvement over the classical savings and investment theory of interest rates. (Gupta, 1990, p.333).

The Loanable Funds Theory of interest rates opines that the rate of interest is determined by the demand for and the supply of funds in the economy at that level at which the two (demand and supply) are equated. Thus, it is a standard demand-supply theory as applied to the market for loanable funds (credit), treating the rate of interest as the "price" (per unit time) of such funds. (Gupta, 1990, p.333). The theory is based on the following simplifying assumptions :-

(i)   That, the market for loanable funds is one fully integrated market, characterised by perfect mobility of funds throughout the market;

(ii)   That, there is perfect competition in the market, so that each borrower and lender is a "price-taker" and one and only one pure rate of interest prevails in the market at any time. The forces of competition are also supposed to clear the market pretty fast, so that the single rate of interest is the market-clearing (or the equilibrium) rate of interest. (Gupta, 1990, p.333).

The theory uses partial-equilibrium approach in which all factors other than the rate of interest that might influence the demand or supply of loanable funds are assumed to be held constant. In other words, it assumes that the rate of interest does not interact with other macro variables. (Gupta, 1990, p.333).

In its popular form, the theory is stated in 'flow' terms, considering flow demand and supply of funds per unit time. As such, the theory hypothesises that it is the 'flow equilibrium' (or the equilibrium between two flows) of loanable funds which determines the rate of interest. (Gupta, 1990, p.333).

Given the above assumptions, the determination of interest rate is easily explained, once the demand and supply of loanable funds is specified.

The supply of loanable funds (LS) is usually taken to be given by:

$$LS = S + DH + \Delta M$$

where,   S =   aggregate savings of all households and firm net of their dissaving,

DH = aggregate dishoarding (of cash), and

ΔM = incremental supply of money.

Following standard economic theory, both S and DH are hypothesised to be increasing functions of the rate of interest, M to be autonomously given, and so LS also an increasing function of the rate of interest. (Gupta, 1990, p.334).

The demand for loanable funds (LD) is usually taken to be given by :

$$LD = I + \Delta MD \dots$$

where,   I = gross investment expenditure, and

ΔMD = incremental demand for money (or hoarding).

Following standard economic theory, each component of LD and so total LD is hypothesised to be a declining function of the rate of interest. (Gupta, 1990, p.334).

The equilibrium rate of interest is determined at a level where,

$$LD (r) = LS (r),$$

or, where, $I + \Delta MD = S + DH + \Delta M \dots$ (i)

Note : In contrast, in the classical theory, the interest determining equilibrium condition is given by:- $I (r) = S (r) \dots$ (ii)]

This is illustrated in the following figure, where, the above two equations, (i) and (ii), are shown (Gupta, 1990, p.335) :
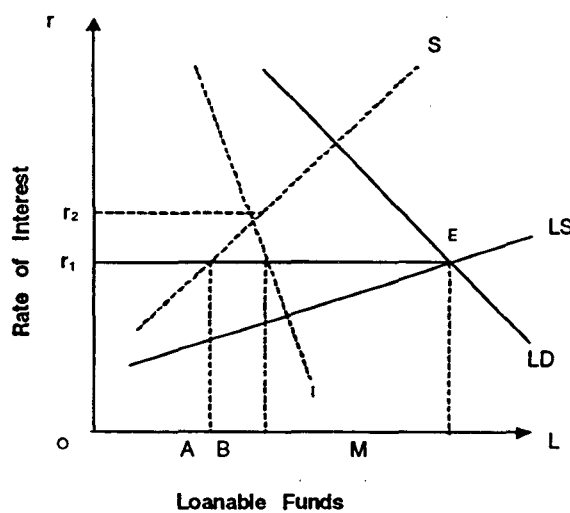

Loanable Funds

Fig. 3.3

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In this figure, only LD, LS, I and S are directly shown as functions of the rate of interest. ΔMD is not shown separately, but can be derived as the horizontal distance between the LD and I lines. This distance increases as the rate of interest falls, becauseΔMD is hypothesised to be a declining function of the rate of interest. The horizontal distance between the LS and S lines represents the sum of DH andΔM. This distance is shown to increase with increase in the rate of interest, becauseΔM is taken as exogenously given and DH is hypothesised as an increasing function of the rate of interest. To keep the diagram simple,ΔM (or DH) is not shown separately. The equilibrium between LD and LS yields the equilibrium rate of interest, r_1, whereas the savings-investment equilibrium of the classical theory yields r_2 as the equilibrium rate of interest. Also, at the equilibrium rate of interest r_1 in the Loanable Funds Theory, the loanable funds supplied and demanded are equal to OM. (Gupta, 1990, p.335).

3.2.1. Critique of the Loanable Funds Theory

The Loanable Funds Theory (as stated above) has been criticised on several counts as discussed below:-

(i)   The Loanable Funds Theory misspecifies various sources of supply and demand of loanable funds (Gupta, 1974, p.235). Let us take the supply side first. It is well known that not all savings are routed through the loan market; some are invested directly into physical assets by firms as well as households. Similarly, all dishoarding (of cash balances) is not lent to others; some is spent directly by the dishoarders. The demands side, too, it misspecified. All investment or hoarding in not financed by borrowed funds; a part of it is financed by owned funds. Then, funds are borrowed for several purposes other than investment and hoarding as well, such as, for consumption spending, purchases of old financial and non-financial assets. (Gupta, 1990, p.335).

(ii)   The flow-equilibrium approach of the theory has been criticised on the ground that in the bond (or securities) market, it is the "stock equilibrium" that dominates the

behaviour of the rate of interest, at least in any short period, because, in this market, the volume of outstanding bonds is many times over the flow of new demand and supply of bonds (loanable funds) during any short period of time. For the Loanable Funds Theory to be true, therefore, it must somehow be assumed that the outstanding stock of debt does not exert any influence on interest-rate determination. This will be true only if either all claims are non- marketable, or, for whatever reason, the claimholders (creditors) consider themselves locked into the claims they hold till the date of maturity of such claims.

Neither of the above two conditions is easily satisfied in actual life because in any financially-developed economy, the stock of marketable claims is quite large. (Gupta, 1990, p.336). Therefore, in any financial equilibrium, stocks cannot be neglected.[4] What is required is stock-flow analaysis in which both stocks and flows interact with each other and jointly determine a rate of interest at which the conditions for stock equilibrium as well as for flow equilibrium are satisfied.

(iii)   The Loanable Funds Theory of the rate of interest necessarily postulates that all borrowing and lending is done through perfectly homogeneous bonds in one fully integrated market. This is not true of even the most well-developed financial markets, where a wide variety of loan contracts and instruments are used in several imperfectly competitive and segmented markets. Thus, the working of credit markets generates a bewildering variety of interest rates and loan contracts and not *the* rate of interest. (Gupta, 1990, p.337).

(iv)   Criticising the partial-equilibrium approach of the theory, it is said that since the rate of interest affects all other macro variables, like, savings, investment, real income, prices, demand and supply of money and, in turn, is affected by them, it cannot be determined independent of all these variables. That is, for explaining the interest-rate determination, a general-equilibrium model should be used. (Gupta, 1990, p.336).

The importance of this argument becomes clear when we note that by ignoring the savings-investment equilibrium condition, the theory neglects the simultaneous clearance of the commodity market. In Figure 3.3, it can be seen that

the economy cannot be in macro equilibrium at the rate of interest r_1, because at this rate, there is excess of investment over savings (or, excess demand in the commodity market). It will be seen from the figure that at the equilibrium rate of interest, r_1 the savings are equal to OA and investment to OB. Investment OB exceeds savings OA. As a result of investment being greater than savings, income will increase. With the increase in income, the savings curve(S) and the aggregate supply of loanable funds curve (LS), will shift to the right. And this shift in the savings and the aggregate supply of loanable funds curve will cause a change in the rate of interest. We thus see that, the rate of interest as determined by the demand for and supply of loanable funds will not be a stable one if there is inequality between savings and investment at that rate. Thus, the loanable funds theory was criticised on the ground that the theory does not provide a determinate solution to the interest rate determination and involves, what is called, "circular-reasoning". According to Keynes, since saving is an important constituent of the supply of loanable funds, the supply of loanable funds curve will vary with the level of income. Unless the rate of interest is known, it is not possible to determine the level of income, since the rate of interest affects investment, which, in turn, determines the level of income. (Dillard, 1948, p.192).

Wicksell had noted this problem and tried to resolve it through his well-known dynamic analysis of the cumulative process in which prices, (not real income), continuously rise on fall whenever the market (or money) rate of interest is different from the "natural rate" (given by the savings- investment equilibrium). (Gupta, 1990, p.336). However, after Keynes' General Theory (1936), changes in real income were invariable brought into the analysis of dynamic adjustment.

(v)   The exponents of the loanable funds theory also assumed full employment of resources in the economy. Further, they had also taken into account, the increases in the level of income as a result of investment and their influence on savings. But, the question is, if full employment is the assumption, how can income increase? Therefore, on this aspect, the Loanable Funds Theory is shrouded with a logical inconsistency. (Keynes, 1936, p.184).

Thus, the Loanable Funds Theory, which was proposed to overcome the discrepancies of the classical theory of the rate of interest, was also not logically sound and involved a misrepresentation of the real world phenomenon of the determination of the rate of interest.

3.3. Keynes' Liquidity Preference Theory of Interest Rates

It was in the face of such theoretical inadequacies and controversies among economists relating to the issue of finding an "appropriate" and "logically correct" theory of the determination of the rate of interest, that Keynes, in his book, *"The General Theory of Employment, Interest and Money"*, gave a new view of interest. The rate of interest, according to Keynes, is a purely monetary phenomenon, a reward for parting with liquidity for a specified period which is determined in the money market by the demand and supply of money. (Keynes, 1936, p.163). Money, Keynes argued, is demanded because it is the only perfectly liquid asset. People who need money for personal and business reasons and do not possess it, are willing to pay a price for its use. Before a holder of money will surrender the advantages that attach to the ownership of the only perfectly liquid asset, he must be paid a reward. Interest is the reward paid for parting with liquidity, or in slightly different terms, the reward for not hoarding. (Dillard, 1948, p.164). In other words, since people prefer liquidity or want to hold money to meet their various motives, they need to be paid some reward for surrendering liquidity or money and this reward is the rate of interest that must be paid to them in order to induce them to part with liquidity or money.

The rate at which interest will be paid depends on the strength of the preference for liquidity in relation to the total quantity of money available to satisfy the desire for liquidity. The stronger the liquidity preference, the higher is the rate of interest; the greater the quantity of money, the lower is the rate of interest. A decrease in liquidity preference will tend to lower the rate of interest and a decrease in the quantity of money will tend to raise the rate of interest. The rate of interest, like any price in a free market, is established at a level at which the demand will be

equilibrated with the supply available to meet the demand. (Dillard, 1948, p.165). At any time, an increase in the desire of the public to hold cash - that is, an increase in its liquidity preference-may be met either by an increase in the price paid (interest), or, by an increase in the quantity available. Since money cannot be produced by the public (money supply is exogenously given), the direct result of an increase in its desire for money will not be to increase the quantity available but to increase the premium paid to those who give up their cash holdings. An increase in the rate of interest means a larger reward is paid for not hoarding, and people who otherwise would not be satisfied except to increase their cash holdings will be satisfied as a result of the higher premium they receive for not holding cash. If the rate of interest did not rise when liquidity preference increased, the total amount of cash the public would wish to hold at the existing rate of interest would exceed the available supply. If the rate of interest did not fall when liquidity preference decreased; there would be a surplus of cash which no one would be willing to hold. Thus, if the rate of interest tends to be too high or too low, an adjustment takes place whereby the demand is equated to the available supply. (Dillard, 1948, p.165).

Keynes further argued that, since the quantity of money is the other factor which, along with the state of liquidity preference, determines the rate of interest, it is possible for the monetary authority to meet an increase in the desire on the part of the public to hold money with an actual increase in the supply of money. If people want to hold more money, the monetary authority, and only the monetary authority, can give them what they want. If the quantity of money is increased in proportion to the increase in liquidity preference, the rate of interest will not rise as it does when the quantity of money remains unchanged and liquidity preference increases. (Dillard, 1948, p.165).

The relationship between the rate of interest, the quantity of money, and liquidity preference may be represented by means of the following figure:-
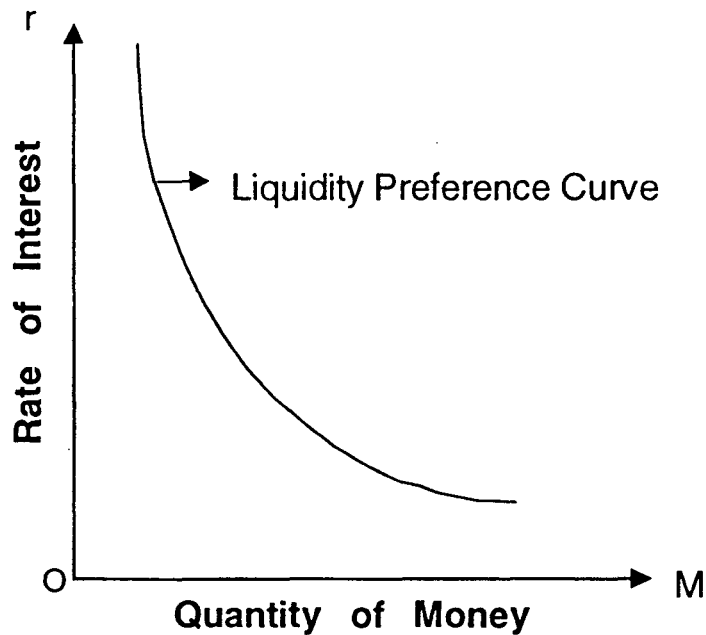
Fig. 3.4

In Figure 3.4 (Dillard, 1948, p.166), the quantity of money is shown along the horizontal axis and the rate of interest along the vertical axis. The liquidity-preference schedule will then appear as a smooth curve which decreases towards the right as the quantity of money increases. It is obvious from the figure, that larger quantities of money will be associated with lower rates of interest as long as the liquidity-preference schedule remains unchanged.

Thus, the determination of the rate of interest in Keynes' Liquidity Preference Theory of interest rates, is purely in terms of monetary forces and not in terms of real forces, like, productivity of capital and thrift which form the foundation stones of both classical and loanable fund theories. In this context, it must be said that although Keynes had agreed that the marginal revenue product of capital tends to become equal to the rate of interest, the rate of interest is not, as such, determined by the marginal revenue product of capital. Further, Keynes asserted that, it is not the rate of interest which equalises savings and investment; but, rather, this equality is brought about through changes in the level income. (Keynes, 1936, p.165).

3.3.1. Criticisms of Keynes' Liquidity Preference Theory of Interest Rates

Keynes' Liquidity Preference Theory of interest rates was criticised on the ground that it ignored the real factors in the determination of interest. (Gupta, 1990, p.247). It ignored the effect of the availability of savings on the rate of interest. For instance, if the propensity to consume of the people increases, savings would decline and, as a result supply of funds in the market will decline, which will raise the rate of interest.

Also, according to Keynes, interest is a reward for parting with liquidity and in no way a compensation and inducement for saving or waiting. But, the question is without savings, how can the funds be available so as to be able to be kept as liquid and how, then, there be the question of surrendering liquidity, if one does not have the saved money. In this context, Jacob Viner rightly remarked, "Without savings there can be no liquidity to surrender". (Viner, 1936, p.148). Therefore, the rate of interest is vitally connected with savings which is neglected by Keynes in the determination of interest rates.

We will return to further discuss Keynes' method of establishing the equilibrium rate of interest through his Liquidity Preference Theory and the associated critique of the special features involved in it after we have analysed Keynes' demand function for money, but, for now, it can safely be contended that the Keynesian theory of interest is also not without flaws. But, the importance Keynes gave to liquidity preference, as a determinant of interest, is correct. In fact, the exponents of the loanable funds theory incorporated liquidity preference in their theory by laying greater stress on hoarding and dishoarding. We are, therefore, inclined to agree with Prof. D.Hamberg, who rightly remarked, "Keynes did not forge nearly as new a theory as he and others at first thought. Rather, his great emphasis on the influence of hoarding on the rate of interest constituted an invaluable addition to the theory of interest as it has been developed by the loanable funds theorists who incorporated much of Keynes' ideas into their theory to make it more complete". (Hamberg, 1948, p.93).

3.4. Interest - Rate Controversy: Comparison between the Loanable Funds Theory and the Liquidity Preference Theory of Interest Rates

Considering Hamberg's above contention that Keynes' Liquidity Preferences Theory of interest rates was not as much a new theory as it was at first believed to be and, that, this theory of Keynes bore stark similarities with the Loanable Funds Theory, especially, with regard to its emphasis on the influence of hoarding on the rate of interest, the following two critical questions, which have generated great controversy, have been asked in the literature relating to the theory of the rates of interest:-

(i)   Are the two theories the same?

(ii).   If they are not the same, which theory is better? (Keynes, 1936, p.118).

It shall be shown below that, it is quite simple to answer question (i) when certain specific definitions that have been used by loanable-funds theorists are assumed. The other question is less easy to handle, but the liquidity- preference theory is preferable under those definitions where the two theories are not the same.

There have been at least three attempts in the literature to prove that the two theories give identical results, but all three proofs must be rejected as unsatisfactory.(Keynes, 1936, p.118).   Hicks[5] had argued that interest, like all other prices, is determined as a solution of a general- equilibrium system of n equations. He made the old argument that one equation follows from all the rest and that it can be eliminated. As far as Hicks was concerned, this was all the apparatus that he needed to prove his point, since he then had the choice of eliminating either the equation of supply and demand for money, or, the equation of supply and demand for credit. Depending upon which equation he eliminated, he could be either a loanable-fund theorist or, a liquidity preference theorist. If, as Lerner had publicly remarked, he had eliminated the supply of and demand for peanuts, what then? (Lerner, 1938, p.211).

In this case, he cannot claim to be either a loanable-funds theorist or a liquidity-preference theorist, and yet the rate of interest gets determined. Hicks was quite correct in stating that the same rate of interest is obtained as a solution to the

system of equations no matter what single equation is eliminated, but, nothing has been proved by this argument. It does not tell whether the rate of interest is the mechanism which allocates funds into idle hoards as opposed to earning assets or which brings the supply and demand for loans into equilibrium. It does not tell which building-block should be fitted into a determinate system. (Klein, 1966, pp.118-19).

The mere enumeration of equations and variables is misleading. It is necessary to the Keynesian theory that the shapes as well as the number of schedules be taken into account. The liquidity-preference theory, being a genuine part of the completely determined Keynesian system, is always consistent with the conditions imposed upon the shapes of the schedules. Since the loanable-funds theory has never been made part of a completely determined system, there is no assurance that it will be consistent with the conditions of the Keynesian system. In fact, according to certain definitions, the supply and demand for loanable funds reduces, in some cases, to the savings-investment equation. (Klein, 1966, p.119). It was shown in Chapter 1, that the savings-investment theory of interest rates does not satisfy the Keynesian conditions. In this context, we can imagine the case where all investment is made from borrowed capital and all funds to finance this borrowing are made from current savings. The supply of loanable funds, in some version of the theory, is the same as savings, and the demand for loanable funds, is the same as investment. A loanable-funds theory of interest should imply that regardless of the levels of other variables influencing savings and investment, there should always exist a rate of interest which will equate savings and investment. The Keynesian theory shows that, there do exist levels of the other variables, namely, full employment income, such that, no positive rate of interest will equate savings and investment (Klein, 1966, p.119). (discussed in Chapter 1).

Another reconciliation of liquidity preference with loanable funds was attempted by Lerner.[6] He defined the supply of credit, as, savings plus the net increase in the amount of money during a period, and the demand for credit as, investment plus the net hoarding during the period. These are precise definitions of the supply and demand for loanable funds, and, moreover, have been approved by an

eminent loanable-funds theorist, Professor Haberler.[7] Using these definitions, Lerner denoted the net increase in the amount of money byΔM and the net hoarding byΔL; Lerner's version of the reconciliation been graphically illustrated as in the accompanying figure (Lerner, 1938, p.212) :-
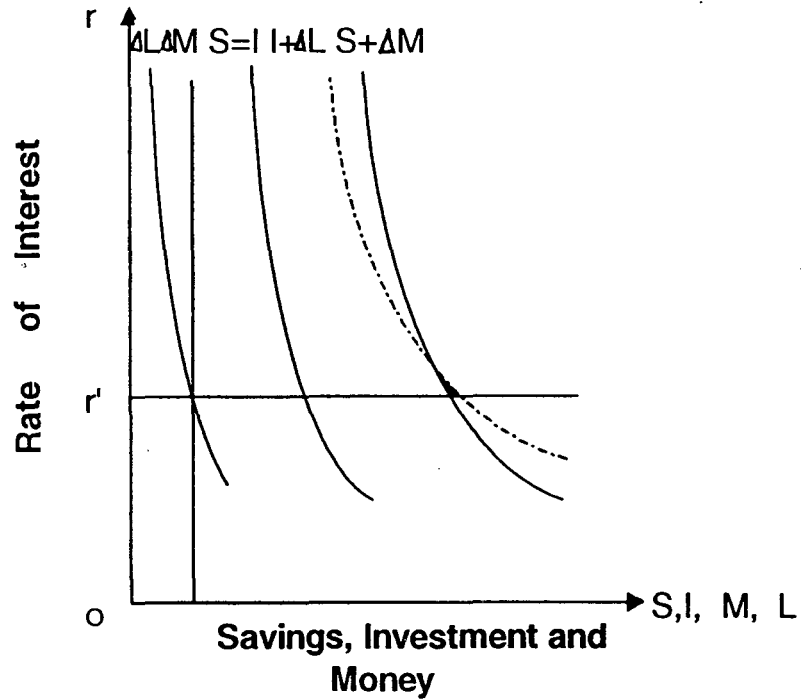
Fig. 3.5

Lerner argued that the supply of loanable funds (S+ΔM) during the current period is brought into equilibrium with the demand for loanable funds (I+ΔL) during the current period at the rate, r'. He, then, went on to say that this same rate will equate the demand and supply for money, giving consistency with the liquidity-preference theory. This latter result was achieved by adding a constant, M_o, the amount of money held at the beginning of the period, to both the ΔM and ΔL curves. (Lerner, 1938, p.212). There is a serious pitfall in his procedure. It was an error to make the savings and investment schedules coincident. If this was the correct presentation of the savings-investment process, then, there might not be a determinate

system, and the theoretical base might rest upon Say's Law, in the sense, that savings are automatically the same as investment without there being a mechanism which brings them into equilibrium. In Lerner's graph, income is treated as an arbitrary constant. Let it be supposed that income is at the full-employment level. Then, the S-curve and the I-curve are as drawn in Figure 2.3 of the preceding chapter. They do not intersect in the relevant portion of the graph. Consequently, when the curves,ΔM andΔL, are added to them respectively, the resulting curves will not intersect along the line r'. We cannot, therefore, accept Lerner's two dimensional theorem, which leaves out of account the level of income. (Klein, 1966, pp.120-21).

The above demonstration is certainly in agreement with the intuitive idea that the liquidity-preference theory, because it is stated in dimensions of stocks, cannot be identical with the loanable-funds theory, which is stated in terms of flows.(Klein, 1966, p.121).

A third attempt was made by Fellner and Somers to prove that the two theories amount to the same thing.[8] Perhaps this attempt was successful, but, if it was, then, definitions of supply and demand for loanable funds take on some new connotations. (Klein, 1966, p.121). Working with a building-block theory and assuming income as given, these writers broke up the liquidity-preference function into three parts:-

(i)   the demand for goods other than claims;

(ii)   the demand by people for their own money;

(iii)   the demand for claims; (Fellner and Somers, 1941, p.44).

The entire problem revolved around the definition of claims, for these define the demand for loanable funds in their analysis. They handled this problem as follows:-

"The definition of claims is admittedly arbitrary and must depend on what we want to call "the rate of interest" (i.e., on what we want to include, by definition, in the interest structure). But once we have decided on any definition of "claims" we must, of course, be consistent in what we regard as "the rate of interest", since the

latter is but a slightly different expression for the price of claims". (Fellner and Somers, 1941, p.45).

It is possible to define claims so that the two theories become identical. (Klein, 1966, p.121).

On the supply side, they also separated three categories :

(i)   the supply of goods other than claims;

(ii)   the supply by people of their own money;

(iii)   the supply of claims. (Fellner and Somers, 1941, p.46).

Then they took the supply of goods other than claims and the demand for goods other than claims as independent of the interest rate and equal in any general-equilibrium situation.[9] Also they used the identity that the demand by people for their own money equals the supply by people of their own money regardless of the interest rate. With these two relations, it followed that the sum of their three supply categories is equal to the sum of their three demand categories at the same interest rate for which the demand and supply of claims are equal. The first equality, they called the "liquidity-preference equation", and the second equality, they called the "loanable-funds equation", and both equalities lead to the same interest rate. (Fellner and Somers, 1941, p.46). This procedure, in effect, amounts to defining that part of the equation of the supply of and demand for money which depends on the interest rate as the supply of and demand for loanable funds. If this is what the loanable funds theorists mean, then, they have a theory which is quite consistent with the liquidity - preference theory, but, they cannot characterise the loanable-funds theory in this guise as a theory of flows. (Klein, 1966, p.122). Fellner and Somers had defined "claims", as the stock of earning assets other than that which one supplies and demands of his own earning assets.

If the two theories are stated in terms of stock dimensions rather than flow dimensions, then, they will come to the same thing and there is nothing to chose between them. But, the more usual treatment of the loanable-funds theory is in terms of flows, while, the liquidity-preference theory is, unequivocally, one of stocks. In the more usual cases, there do exist reasons for the superiority of the Keynesian

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theory. (Klein, 1966, p.122). T.de Scitovszky[10] had stated, better than anyone else. the economic reasons why an interest theory should be a theory of stocks rather than of flows.

Scitovszky had pointed out that in ordinary supply and demand analysis, price is the allocating mechanism between two flows, and that this approach is legitimate when dealing with commodities for which there are not large stock, or, for which the stocks are independent of the price. But, in the case in which stocks are significant and are dependent upon price, he claimed that the equation of supply-demand flows may not lead to the correct result. (Scitovszky, 1940, p.293). His argument amounts to the following : Suppose that current production and consumption flows for some good are in equilibrium at the current market price and that this price is also an equilibrium point for the supply and demand for stocks. If now, there is a shift of consumer demand for the good, the establishment of a new price at which the two flows will be in equilibrium, will be retarded by the adjustment of stocks to the new price. If the shift of demand represents a decrease in consumers' desires for the good, price will tend to fall in order to bring the flow schedules into equilibrium. But, then, the holders of stocks may want to increase their holdings at the lower price. Hence, the stockholders' behaviour may counteract the flow adjustment and can prevent it from taking place. (Klein, 1966, p.123).

It is, certainly, obvious that money and earning assets are commodities which do possess very large stocks. We know that interest is earned on existing stocks of assets as well as on the current flows. Interest is not the allocating mechanism between the supply and demand for credit flows, rather the allocating mechanism between the holdings of stocks of earning and non earning assets. (Klein, 1966, p.123).

By a very neat argument based on the theories of consumer behaviour and utility, Scitovszky was, thus, able to show that the demand for the holding of securities is a decreasing function of price. (Scitovszky, 1940, p.294). The argument gives a formal substantiation of Keynes' assumptions about the shape of the liquidity function.

In essence, the Keynesian contribution was to point out that people can make two distinct types of decisions. They may decide upon saving or consuming their incomes, and they may decide upon holding idle cash or non-liquid securities. Each decision requires an economic calculation. In the former case, individuals decide on the basis of their incomes, how much they want to spend on consumption, and, at the same time, how much they want to save. In the latter case, they must decide on the basis of alternative rates of return (i.e, interest rates) whether they want to hold their historically accumulated savings in the form of cash or securities. The distinction between these two sets of decisions clearly calls for a liquidity-preference theory of interest. (Klein, 1966, p.123).

3.5. Demand for Money

The Liquidity-Preference Theory of interest can be better understood when viewed against Keynes' theory of the demand for money. In understanding Keynes' theory of the demand for money, two questions need to be separated: One is, why is money demanded when money does not earn its holders any income, whereas, there are competing non-money financial assets in the economy which yield some income to their holders? The other is, what are the key determinants of the demand for money?

3.5.1. Why is Money demanded?

One general answer to the first question can be that, money yields its holders convenience yield of non-pecuniary nature. This yield is rooted in the peculiar characteristic of money as the only generally acceptable means of payment and so its perfect liquidity. (Laidler, 1977, p.89). In this context, the classical economists considered money, simply, as a means of payment, or, medium of exchange and argued that the demand for money is simply, a demand for liquidity. In the classical model, people, therefore, demand money in order to make payments for their

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purchases of goods and services. In other words, in the classical model, people want to hold money for transaction purposes or transaction motives. Therefore, the transactions motive gives rise to the transactions demand for money which refers to the demand for cash of the public for making current transactions of all kinds. (Laidler, 1977, p.89).

Besides the transactions demand for money which is inextricably bound with the use of money as a medium of exchange in a money-exchange economy, Keynes also laid stress on the store of value function of money. (Klein, 1966, p.155). According to him, money also serves as a store of value, ie, members of the public can hold their wealth in the form of money. This property of money gives rise to another motive for demanding money by the public, namely, the precautionary motive. This precautionary motive induces the public to hold money to provide for contingencies requiring sudden expenditures and for unforeseen opportunities of advantageous purchases. This motive (demand) is a product of uncertainties of all kinds and incorporates the use of money both as a medium of exchange and a store of value. (Keynes, 1936, p.155).

In addition to the transactions and precautionary motives Keynes emphasised another motive for holding money, which he called the speculative motive. (Keynes, 1936, p.156). The speculative motive giving rise to the speculative demand for money is the most important contribution Keynes made to the theory of the demand for money. (Gupta, 1990, p.202). It explains why the public may hold surplus cash (over and above that demanded due to the other two motives) in the face of interest-earning bonds (and other financial assets). The reason is that, under speculative motive people expect to take advantages from the future changes in the rate of interest, or, what means the same thing, from the future changes in bond prices. The holders of speculative balances. may anticipate such fall in future bond prices as will make the loss of foregone interest earning look relatively smaller. So they wait with cash for bond prices to fall, avoid expected capital losses, and switch into bonds when the anticipated fall in bond prices has been realised. The speculative demand for money is inextricably linked solely to the use of money as a store of value and is

sometimes also called the asset-demand for money because, money being an asset, the entire demand for it, is an asset demand. (Gupta, 1990, p.201).

Thus, more concretely, Keynes said that, money is demanded due to three main motives:-

(i)   the transactions motive,

(ii)   the precautionary motive, and

(iii)   the speculative motive. (Keynes, 1936, pp.154-161).

Ever since, this threefold classification of motives has become standard stock-in-trade of monetary economists. Later efforts to add other motives such as the finance motive by Keynes (1937) and Robertson (1940) and the diversification motive by Gurley and Shaw (1960) have not been successful. ·

3.5.2. The Determinants of the Demand for Money

Having identified the three basic motives for holding money and the associated components of the demand for money in the Keynesian literature, we now move onto answer the second question in the money demand theory of Keynes, namely, what are the key determinants of the demand for money?

Keynes made the demand for money a function of two variables, namely, income $(Y)^{11}$ and the rate of interest(r). (Gupta. 1990, p.202). In order to explain this Keynesian stand relating to income and the rate of interest being the two key determinants of the demand for money, we have to again undertake a deeper analysis of the three different components of the Keynesian demand for money, namely, the transactions demand, the precautionary demand and the speculative demand for money.

(i)   Transactions Demand for Money

The transactions motive, as discussed earlier, relates to the demand for money or the need for money balances for the current transactions of individuals and business firms. (Gupta, 1990, p.201). Individuals hold cash in order "to bridge the

interval between the receipt of income and its expenditure". In other words, people hold money or cash balances for transactions purposes, because, receipt of money and payments do not coincide. Most of the people receive their incomes weekly or monthly, while the expenditure goes on day by day. A certain amount of ready money, therefore, is kept in hand to make current payments. This amount will depend on the size of the individual's income, the interval at which the income is received and the methods of payments prevailing in the society. (Keynes, 1936, p.154).

The businessmen and the entrepreneurs also have to keep a proportion of their resources in money form in order to meet daily needs of various kinds. They need money all the time in order to pay for raw materials and transport, to pay wages and salaries, and to meet all other current expenses incurred by any business firm. It is clear that the amount of money held under this business motive will depend to a very large extent on the turnover (ie., the volume of trade of the firm in question). The larger the turnover, the larger, in general, will be the amount of money needed to cover current expenses. This demand for money for transactions motive arises primarily because of the use of money as a medium of exchange (i.e., means of payment). (Gupta, 1990, p.201).

Since the transactions demand for money arises because individuals have to incur expenditure on goods and services during the receipt of income and its use of payment for goods and services, money held for this motive depends upon the level of income of an individual. A poor man will hold less money for transactions motive as he spends less because of his small income. On the other hand, a rich man will tend to hold more money for transactions motive as his expenditure will be relatively greater.(Gupta, 1990, p.201).

According to the Cambridge tradition, people hold a constant fraction of their nominal income in the form of money. This is written in the equation form as (Gupta, 1990, p.223) :
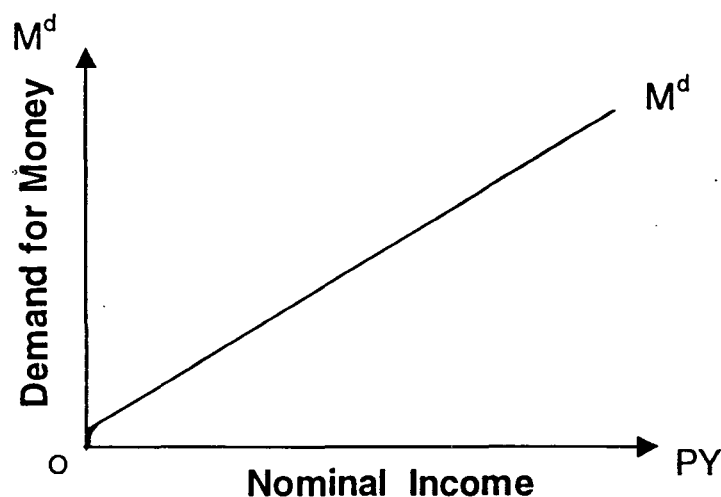
$$M^d = k\,PY$$

where, M^d = demand for money,

k = the proportion of nominal income which is

held in the form of money,

PY = nominal income which is obtained from

multiplying the real income (Y) by the

price.

We can illustrate this money-demand equation diagrammatically as in the following figure (Gupta, 1990, p.223) :-

Fig. 3.6

M^d is shown to be a linear function of PY. It goes through the origin. The tangent of the angle which it makes with the horizontal axis = $M^d/(PY)$ = k. The key feature of the Cambridge equation is that it makes the demand for money a function of money income, and only of it. (Laidler, 1977, p.90).

Noting the essential characteristics of the transaction demand for money, Keynes, therefore, in accordance to the Cambridge tradition, argued that the transaction demand for money depends only on the nominal income and is not influenced by the rate of interest. (Keynes, 1936, p.155). However, in recent years, it has been observed empirically and, also, according to the theories of Tobin and Baumol (Tobin, 1956, pp.214-47 and Baumol, 1952, pp.545-56). that transactions

demand for money also depends on the rate of interest. This can be explained in terms of opportunity cost of money holdings. Holding one's asset in the form of money balances has an opportunity cost. The cost of holding money balances is the interest that is forgone by holding money balances rather than other assets. The higher the interest rate, the greater the opportunity cost of holding money rather than non-money assets. Individuals and business firms economise on their holding of money balances by carefully managing their money balances through transfer of money into bonds or short-term income yielding non-money assets. Thus, at higher interest rates, individuals and business firms will keep less money holdings at each level of income. (Tobin, 1956, and Baumol, 1952).

(ii)   Precautionary Demand for Money

Precautionary motive for holding money refers to the desire of the people to hold cash balances for unforeseen contingencies. People hold a certain amount of money to provide for the danger of unemployment, sickness, accidents, and the other uncertain perils. The amount of money demanded for this motive, according to Keynes, depends on the psychology of the individuals and the conditions in which he lives as also on the level of income. (Keynes, 1936, p.159).

Thus, Keynes contended that the fact that the demand for money is a function of income (as maintained by the classical economists) explains only the transactions and the precautionary demand for money,[12] and not the entire demand for money. (Keynes, 1936, p.159). The truly novel and revolutionary element of Keynes' theory of the demand for money is the component of the Speculative Demand for Money. (Gupta, 1990, p.202). Through it, Keynes made (a part of) the demand for money a declining function of the rate of interest, the latter a purely monetary phenomenon and the sole carrier of monetary influences in the economy. (Gupta, 1990, p.202). Thus, the speculative demand for money constitutes the main pillar of Keynes' revolution in monetary theory. This is explained below :-

(iii) Speculative Demand for Money

The speculative demand for money arises from the speculative motive for holding money. (Gupta, 1990, p.202). The speculative motive of the people relates to the desire to hold one's resources in liquid form in order to take advantage of market movements regarding the future changes in the rate of interest. This speculative motive, according to Keynes, arises from the variability of interest rates in the market and uncertainty about them. Keynes assumed that perpetual bonds are the only non-money financial asset in the economy, which compete with money in the asset portfolio of the public. (Keynes, 1936, pp.161-62). Money does not earn its holders any interest income, but its capital value in terms of itself is always fixed. Bonds, on . the other hand, yield interest income to their holders. But, this income can be more than wiped out if bond prices fall in future. The price of a (perpetual) bond is given by the reciprocal of the market rate of interest times the coupon rate of interest. (Dillard, 1948, p.167). This can be shown algebraically in the following way: Suppose the coupon rate (i.e., interest payable on a bond) is Re 1 per year and the market rate of interest is 4% per year. Then, the market price of the bond will be :-

$$Rs. \ \frac{1}{0.04} \ x \ 1 = Rs. \ 25.$$

If the market rate of interest rises to Rs. 5% per year, the market price of the bond will fall to:-

$$Rs. \ \frac{1}{0.05} \ x \ 1 = Rs. \ 20.$$

Thus, the bond price is seen as an inverse function of the rate of interest. (Dillard, 1948, pp.167-68). Economic units/individuals hold a part of their wealth in the form of financial assets. In the two asset model of Keynes, these assets are, money and (perpetual) bonds. (Gupta, 1990, p.203). Bond prices keep on changing from time to time. Therefore, they are subject to capital gains or losses. Thus, to a bond-holder, the return from bond-holding per unit period (say, a year) per rupee is the rate of interest ± capital gain or loss per year. At the time of making investment in bonds, the market rate of interest will be a given datum to an individual, but the future

rate of interest or bond price, and so the expected rate of capital gain or loss will have to be anticipated. (Gupta, 1990, p.203). The cash held under the speculative motive is used to make speculative gains by dealing in such bonds whose prices fluctuate. If bond prices are expected to rise which, in other words, means that the rate of interest is expected to fall, businessmen will buy bonds to sell when their prices actually rise. If, however, bond prices are expected to fall, i.e., the rate of interest is expected to rise, businessmen will sell bonds to avoid capital losses. Nothing being certain in the dynamic world, where guesses about the future course of events are made on a precarious basis, speculators keep cash to speculate on the probable future changes in bond prices (or, the rate of interest) with a view to making profits. Thus, the speculative demand for money is based on expectations relating to an uncertain future level of bond prices (or the rate of interest). (Gupta, 1990, p.203).

These concepts of "uncertainty" and "expectations", as incorporated in the Keynesian monetary theory relating to the speculative demand for money are fundamental Keynesian innovations and form integral parts of the Keynesian Revolution. (Leijonhufvud, 1968, p.353). In Keynes' words:-

"The whole object of the accumulation of wealth is to produce results, or potential results, at a comparatively distant, and sometimes at an indefinitely distant, date. Thus, the fact that our knowledge of the future is fluctuating, vague and uncertain, renders wealth a peculiarly unsuitable subject for the methods of the classical economic theory. This theory might work very well in a world in which economic goods are necessarily consumed within a short interval of their being produced. But it requires, I suggest, considerable amendment if it is to be applied to a world in which the accumulation of wealth for an indefinitely postponed future is an important factor; and, the greater the proportionate part played by such wealth accumulation, the more essential does such amendment become.

By "uncertain" knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty; nor, is the prospect of a Victory Bond being drawn. Or, again, the expectation of life is only slightly uncertain. Even the weather

is only moderately uncertain. The sense in which I am using the term is that in which the prospect of an European war is uncertain, or, the price of copper and the rate of interest twenty years hence, or, the obsolescence of a new invention, or, the position of private wealth-owners in the social system in 1970. About these matters there is no scientific basis on which to form any capable probability whatever. We simply do not know. Nevertheless, the necessity for action and for decision compels us, as practical men, to do our best to overlook this awkward fact and to behave exactly as we should if we had behind us a good Benthamite calculation of a series of prospective advantages and disadvantages, each multiplied by its appropriate probability waiting to be summed. It is then, that we anticipate or expect the uncertain future." (Keynes, 1936, pp.210-11).

Hence, Keynes contended that, speculators are one such group of individuals who "anticipate" or "expect" the uncertain rate of interest (or, the level of bond prices) of the future to make capital gains or losses on their bonds/money holdings.

The speculators, according to Keynes, one of two kinds: "bulls" and "bears". "Bulls" are those who expect the bond prices to rise in the future. "Bears" expect these prices to fall. In Keynes' model, these expectations are assumed to be held with certainty. Bulls, then, are assumed to invest all their idle cash into bonds. Bears, instead, will move out of bonds into cash if their expected capital losses on bonds exceed interest income from bond-holding. Thereby they minimise their losses. Thus, the speculative demand for money arises only from bears. It is the demand for bearish hoards. These bears build up their cash balances to move into bonds when, either bond prices have fallen as expected, or, when they come to expect that bond prices will rise in future. (Gupta, 1990, p.203).

The above model implies an all-or-nothing behaviour on the part of individual asset-holders. Either they are entirely into bonds (bulls), or, entirely into cash (bears). That is, their portfolios are pure and not diversified. (Gupta, 1990, p.203). This result of Keynes has been revised by Tobin (1958), an explained later in this chapter. To move to the aggregate speculative demand for money, Keynes assumed that different asset-holders have different interest-rate expectations. (Keynes, 1936,

p.191). Thus, at a certain very high rate of interest (and very low price of bonds) all may be bulls. Then, the speculative demand for money will be equal to zero. But, at a lower rate of interest (higher bond price) some bulls will become bears and positive demand for speculative balances will emerge. At a still lower rate of interest (and still higher bond price), some more bulls will become bears and the speculative demand for money will be higher still. Therefore, given the expectations about the changes in the rate of interest in future, less money will be held under the speculative motive at a higher current rate of interest and more money will be held under this motive at a lower current rate of interest. (Gupta, 1990, p.203). The reason for this inverse correlation between money held for speculative motive and the prevailing rate of interest, is that, at a lower rate of interest, less is lost by not lending money or investing it, that is, by holding on to money, while at a higher current rate of interest, holders of cash balances would lose more by not lending or investing. (Laidler, 1977, p.101). Thus, Keynes derived a downward sloping aggregate speculative demand curve for money with respect to the bond rate of interest based on the negative correlation between money held for speculative motive and the prevailing bond rate of interest as shown in the following figure (Gupta, 1990, p.204) :
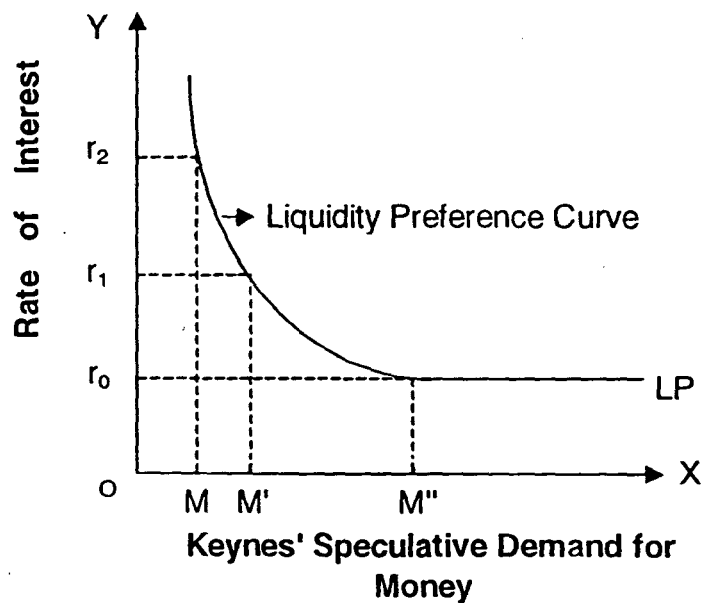

Keynes' Speculative Demand for
Money

Fig. 3.7

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In the figure above, along OX is represented Keynes' speculative demand for money, and, along OY, the current bond rate of interest. The speculative demand for money, LP, is downward sloping towards the right signifying that the higher the bond rate of interest, the lower the demand for money for speculative motives, and vice versa. Thus, at the high current bond rate of interest, Or_2, a very small amount of money, OM, is held for speculative motive. This is because, at a high current rate of interest, much money would have been lent out or used for buying bonds and, therefore, less money would be kept as inactive balances. If the rate of interest falls to Or_1, then, a greater amount of money, OM', is held under speculative motive. With the further fall in the rate of interest to Or_0 money held under speculative motive increases to OM".

Keynes also suggested the possibility of the existence of what is called the "Liquidity Trap". (Keynes, 1936, pp.201-2). This refers to a situation when, at a certain very low rate of interest, the (speculative) demand for money becomes perfectly elastic. This will come about when, at that rate, all the asset- holders turn bears, so that, none is willing to hold bonds and everyone wants to move into cash. In the above figure (Figure 3.7), such a situation occurs at the rate of interest, r_0. Then, no amount of expansion of money supply can lower the rate of interest further. The public would be willing to hold the entire extra amount of money at r_0. The extra liquidity created by the monetary authority gets trapped in the asset portfolios of the public without lowering the rate of interest. (Gupta, 1990, p.204). The r_0 serves as the minimum rate of interest below which it cannot be lowered. Thus, the speculative demand for money curve (LP) becomes horizontal or perfectly elastic at the minimum rate of interest, r_0. This portion of the speculative demand for money curve, with absolute liquidity preference, is called, the "Liquidity Trap" by the economists because expansion in money supply gets trapped in the sphere of Liquidity Trap, and, therefore, cannot affect the rate of interest and, therefore, the level of investment. (Laidler, 1977, p.115).

Another element in Keynes' theory of the speculative demand for money is the concept of the "normal" rate of interest. (Gupta, 1990, p.204). Keynes postulated

that, at any moment, there is a certain rate of interest which the asset-holders regard as "normal" - as the rate of interest which will tend to prevail in the market under "normal conditions". This "normal" rate of interest acts as the benchmark with respect to which any actual rate of interest is judged as high or low. Differences of interest expectations among asset-holders, then, can be interpreted as differences about the level of the "normal" rate of interest. (Gupta, 1990, p.204). The amount of money demanded for speculative purposes depends on the current level of the rate of interest relative to this "normal" rate of interest as seen by various individuals. If the latter changes, the quantity of money demanded at any particular rate of interest will also change. Since "normal" rate of interest, or, people's expectations about it, cannot be taken as a time constant, Keynes' argument implies that the relation between the demand for money and the rate of interest will not be stable over time. (Dillard, 1948, p.165-66). This is an important result which has not been fully appreciated even by Keynes' followers. It can be seen to damage Keynes' own theory of the interest rate determination, for, changes in the expectations regarding the future "normal" rate of interest, can shift the whole speculative demand curve for money overtime rendering instability to the equilibrium rate of interest determined by Keynes' theory of Liquidity Preference. (Laidler, 1977, p.116).

3.5.2.1 Criticisms of Keynes' theory of the Speculative Demand for Money

Keynes' micro theory of the speculative demand for money had been called into question by Tobin (1958). It was noted above that for an individual Keynes' explanation leads to a pure asset portfolio of either money or bonds. This is contrary to experience. In actual life mixed asset portfolios are the rule. (Tobin, 1958, p.66). Tobin's alternative formulation yields such portfolios even at individual level. For this, unlike Keynes, he assumed that an individual does not hold his interest-rate expectations with certainty. Then, liquidity-preference is analysed as behaviour towards risk under uncertainty. (Tobin, 1958, p.69). Acting on uncertain interest-rate expectations means assuming some risk of capital loss. The degree of risk increases with every increase in the proportion of bonds in the asset portfolio. Normally, asset-

holders are risk averters, so that they will require a higher compensation (rate of interest) for undertaking higher risk. Thus, at a higher rate of interest, more bonds and less money will be held in the portfolio and at a lower rate of interest, less bonds and more money will be preferred. The result is a diversified asset portfolio and a downward sloping asset demand curve for money with respect to the rate of interest even at the micro level. On suitable assumptions, the aggregate asset demand for money is also shown as a declining function of the rate of interest. (Tobin, 1958, pp.76-79).

Keynes' theory of the speculative demand for money has also been criticised on the ground that it treats all non money financial assets (NMFAs) as bonds. (Gupta, 1990, p.205). Such treatment is an unwarranted simplification, because a large number of such assets are unlike bonds in that their capital values are nominally fixed and do not vary (inversely) with the rate of interest. In India, the examples of such NMFAs are, fixed deposits with commercial banks, post offices, and public limited companies, national savings certificates, UTI units, etc. Substitution between them and money does not entail Keynes' speculative motive, because they are not subject to variation in their nominal capital values. In their case, their rates of return influence demand for money as simple opportunity-cost variables without any element of speculation. (Gupta, 1990, p.205).

Gurley and Shaw (1960) also did not favour keeping the money demand function confined to a simple two-asset world. In their analysis of the effects of financial growth, exhibited by security differentiation and the growth of secondary securities, they had stressed the growing competition or asset substitution which money has to face from the NMFAs in the asset portfolios of wealth-holders. (Gurley and Shaw, 1960, p.109). According to them, other things being the same, this ever-growing asset substitution has led to downward displacements of the demand for money, has made this demand less stable, and made monetary policy less effective than before. (Gurley and Shaw, 1960, p.100). Much systematic empirical work has not been done on these hypotheses. Most empirical studies on the demand for money have tended to ignore them. What little empirical work has been done for the USA

(Fiege, 1964) does not lend definite support to the Gurley and Shaw hypotheses. (Gupta, 1990, p.205).

Another authoritative criticism of Keynes' speculative demand for money stemmed from Fellner and Leontief (Leijonhufvud, 1968, pp.377-379). who regarded Keynes' speculative motive as an "ad-hoc explanation of the interest elasticity of the money demand function." (Fellner, 1941, p.146). The allegedly ad-hoc element of Keynes' theory, according to them, was the fact that, Keynes did not say much about how the markets' view of the "normal rate" which is fundamental to Keynes' monetary theory is determined at any time. (Leijonhufvud, 1968, p.374). They also argued that the set of assumptions, underlying the speculative theory of hoarding, is highly artificial. "The assumptions are not logically inconsistent, but, they lack plausibility because they imply that the public is consistently and obstinately wrong and that a certain type of "incorrect" behaviour is limited to one market." (Fellner. 1941, pp.150-51).

Thus, Keynes' theory relating to speculative demand for money is not free from problems.

Anyway, after a fairly long detour, we come back to Keynes' theory of the aggregate demand for money. This is summed up in the following equation:

$$M^d = L_1 (Y) + L_2 (r) .. (i)$$

It is an additive demand function with two separate components. (Gupta, 1990, p.206). $L_1(Y)$ represents the transactions and precautionary demand for money. Keynes made both an increasing function of the level of money income. In the Cambridge tradition, he tended to assume that L_1 (Y) had proportional form of the kind represented in Figure 3.6. The second component, $L_2(r)$, represents, the speculative demand for money, which Keynes argued to be a declining function of the rate of interest. As shown in Figure 3.7, this relation was not assumed to be linear. (Gupta, 1990, p.206).

Keynes' additive form of the demand function for money of equation (i) above has been discarded by Keynesians and other economists. It has been argued that money is one asset, not two, three, or many. The motives to hold it may be of any

number. The same unit of money can serve all these motives. So the demand for it cannot be compartmentalised into separate components independent of each other. (Gupta, 1990, p.206). Also, as argued in Baumol (1952) - Tobin (1956) earlier, theory the transactions demand for money also in interest elastic. The same can be argued for the precautionary demand for money too. The explanation of the speculative demand for money shows that this kind of demand will be an increasing function of total assets or wealth. If income is taken as a proxy for wealth, the speculative demand also becomes a function of both income and the rate of interest. These arguments have led to the following revised form of the Keynesian demand function for money:

$$M^d = L (Y,r), \ldots \ldots \text{ (ii)}$$

where, it is hypothesised that the demand for money is an increasing function of income and a declining function of the rate of interest. (Gupta, 1990, p.206).

The replacement of the simple Classical money demand function, where, the demand for money depended sole on the level of nominal income, by the above money demand equation, which makes the demand for money a function of both the level of income and the rate of interest, has been one of the most important revolutionary development undertaken by Keynes in the field of monetary theory. (Gupta, 1990, p.206).

3.6. Keynes' Theory of the Rate of Interest using his Revolutionary Demand Function for Money

Having discussed the demand function for money in Keynesian economics, we, once again, revert back to a deeper analysis of the determination of interest rates in Keynesian literature based on Keynes' theory of Liquidity Preference.

It may be recalled from our earlier discussion that Keynes' Liquidity Preference Theory of the determination of interest rates suggests that the rate of interest is a purely monetary phenomenon, a reward for parting with liquidity, which is determined in the money market by the demand and supply of money.

Now, according to Keynes' theory of the demand for money, the money demanded is an increasing function of the level of money income and a declining function of the rate of interest and the aggregate money demand function is an additive function comprising of these two components. (Gupta, 1990, p.242). Thus, the Keynesian equation for aggregate demand for money is:

$$M^d = L_1 (Y) + L_2(r)$$

Like other economists, Keynes also assumed the supply of money to be exogenously given by the monetary authority, so that,

$$M^s = \overline{M}$$

Then, the money market, according to Keynes, will be in equilibrium when

$$M^d = M^s$$

i.e., $\qquad\qquad L_1(Y) + L_2(r) = \overline{M}$. (Gupta, 1990, p.242).

Implicitly assuming Y and so L_1 (Y) to be already known, Keynes argued that the above equation would give the equilibrium value of r, the rate of interest. (Keynes, 1936, p.170). That is, for the money market to be in equilibrium, the value of the rate of interest has to be such at which the public is willing to hold all the amount of money supplied by the monetary authority. (Keynes, 1936, p.171). There is a serious analytical flaw in this model which we shall discuss later. But, before this, let us study Keynes' theory diagrammatically.
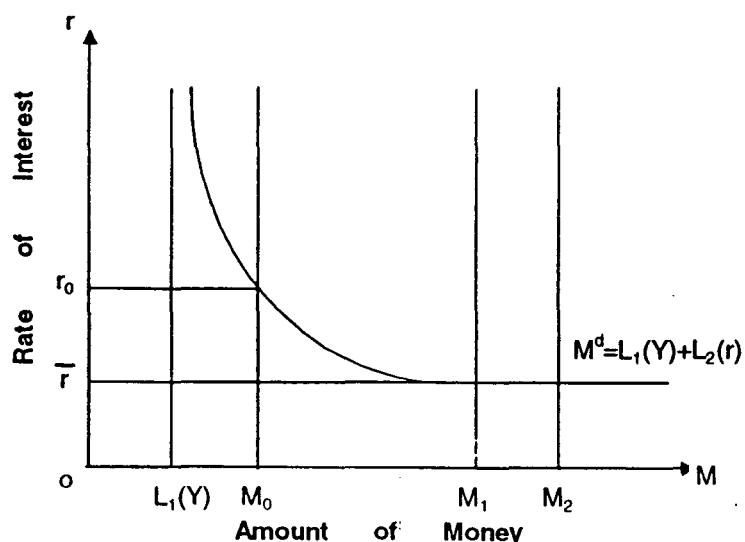

Fig. 3.8

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Considering the above figure, (Gupta, 1990, p.243). it is evident that the total demand for money is represented by the downward- sloping curve labelled, $M^d = L_1(Y) + L_2(r)$. The first component of the demand for money, namely, $L_1(Y)$, representing Keynes' transactions and precautionary demand for money is assumed to be autonomous of the rate of interest. Therefore, it is shown by the vertical line $L_1(Y)$. $L_2(r)$ represents Keynes' speculative demand for money. It has not been shown separately in our figure, because the M^d curve itself becomes the $L_2(r)$ curve when it is read with $L_1(Y)$ as the origin in place of O, which amounts to subtracting $L_1(Y)$ horizontally from the M^d curve. The other three vertical lines represent alternative supplies of money at M_0, M_1, M_2, all of which are assumed to be given autonomously. (Gupta, 1990, p.243).

Given the M^d curve, when the supply of money is M_0, the money market will be in equilibrium only at one rate of interest, r_0. At any other rate of interest, there will be disequilibrium in the money market and the working of market forces will push the rate of interest towards r_0. For example, at a lower rate of interest (say) $\bar{r}$, there will be excess demand for money. In the two-asset world of Keynes' model, with money and bonds as two assets between which alone asset-holders make their portfolio choices, this will mean excess supply of bonds in the market for bonds. (The bond market is not considered explicitly in Keynes' model, it is eliminated implicitly by using Walras' Law). Therefore, the price of bonds will fall and the rate of interest go up. The process will continue till the rate of interest goes up to r_0. The reverse will happen if a chance disturbance pushes the rate of interest above r_0. Thus, r_0 represents the stable equilibrium value of the rate of interest under the circumstances. Moreover, this value of the rate of interest is determined by purely monetary forces. Hence Keynes concluded that the rate of interest is a purely monetary phenomenon. Equally important, variations in the rate of interest, serve as the adjustment mechanism for the money market, whenever it is in disequilibrium. (Gupta, 1990, pp.243-44).

Now we can easily work out the consequences of autonomous changes in the supply of money or the demand for it. The analysis is limited to only

comparative-static exercises. First, let us suppose that the demand for money remains unchanged, but the supply of money is increased (autonomously) from M_0 to M_1. Then, the equilibrium value of the rate of interest will fall from r_0 to $\bar{r}$. Any further increase in the supply of money, say to M_2, will not lower the rate of interest because at $\bar{r}$ it is caught in the liquidity trap. Thus, $\bar{r}$ serves as the absolute minimum below which the rate of interest will not fall in a money-using economy. According to the 'liquidity-trap' hypothesis (as discussed earlier) there is some rate of interest, low enough, at which the public is willing to hold any amount of money instead of bonds. (Gupta, 1990, p.244).

There can also be autonomous shifts in the liquidity preference of the public due to any number of reasons, such as change in expectations or in uncertainty around them. Consequently, the M^d curve can shift up or down. Then, using Figure 3.8, and holding the supply of money unchanged (at, say, Mo), the resulting increase or decrease in the rate of interest can be easily worked out, keeping in mind the liquidity trap at $\bar{r}$. (Gupta, 1990, p.244).

The implications of Keynes' theory for the effectiveness of monetary policy are briefly noted. Two things are important : one is the interest elasticity of the demand for money; the other is the initial position of the economy. (Gupta, 1990, p.244). The said interest-elasticity varies from one point on the M^d curve to the other; it is assumed to be infinite at some very low value of the rate of interest ($\bar{r}$ in Figure 3.8), which defines Keynes' liquidity trap. If the economy is caught up initially in this trap, no amount of increase in the supply of money by the monetary authority can lower the rate of interest any further. Monetary policy operating through increases in the supply of money, then becomes totally ineffective in reducing the rate of interest and thereby having any expansionary effect on investment and income. This happens because, according to the liquidity-trap hypothesis, the public is willing to hold all the extra quantities of money at the same rate of interest. This is an extreme situation, which as yet has not been empirically identified in any country. A less extreme situation occurs to the left of the liquidity trap. For some quantities of money, the interest elasticity of demand for them may be very high, though not infinite. This

would imply that to attain a given reduction in the rate of interest very large increase in the supply of money will be required or, which is the same thing, for a given increase in the quantity of money the reduction in the rate of interest will be very small. Looked at either way, monetary policy does not have much effectiveness in lowering the rate of interest, especially during depression. Presumably it was this incapacity of monetary policy to lower the long-term rate of interest significantly that had made Keynes lose faith in monetary policy for fighting depression.[13] (Leijonhufvud, 1968, pp.374-75). Thus, the interest-elasticity of the demand for money became the key issue in the Keynesian monetary theory.

Modern quantity theorists, like Friedman, do not deny the theoretical case for the influence of the rate of interest on the demand for money. But how important, this influence is or what is the value of the interest elasticity of the demand for money (infinite, high or very low) is an empirical matter. Empirically, this elasticity has been found to be either quite low or statistically insignificant. (Gupta, 1990, p.245).

3.6.1. Special Features of Keynes' Theory of the Rate of Interest

Now we will evaluate critically the special features of Keynes' theory of the rate of interest:-

(i)   Keynes' theory of the rate of interest, like the classical and loanable funds theories is indeterminate. The money market equilibrium equation: $L_1(Y) + L_2(r) = \overline{M}$, which Keynes used to determine to rate of interest cannot be so used, because it is one equation in two unknowns r and Y. Only if the value of Y is already known, or known independently of r, can L_1 (Y) be treated as a known quantity as Keynes did, and the equation : $L_1(Y) + L_2(r) = \overline{M}$ can be reduced to one equation in one unknown, r. But, this is not so in Keynes' model, where the rate of interest (r)affects the rate of investment (I) which in turn affects the equilibrium level of income (Y). Thus, Y not only affects r through $L_1(Y)$, but, is also affected by r through I; the two (r and Y) are interdependent or jointly-determined variables.   Therefore, Keynes' solution procedure suffers from circularity of reasoning, because to determine r, it assumes a

given Y, and to determine Y, it assumes a given r and so a given I. Hence, "in the Keynesian case, the supply and demand for money schedules cannot give the rate of interest, unless, we already know the income level; in the classical case, the demand and supply schedules for saving offer no solution until the level of income is known. Precisely the same is true of the loanable funds theory. Therefore, Keynes' criticism of the classical and loanable-funds theories applies equally to his own theory." (Gupta, 1990, p.246).

(ii) Through $L_1(Y)$ Keynes admitted the influence of income, a commodity-market variable, on the demand for money. This is very much in the tradition of the Cambridge cash-balances theory which Keynes had inherited from his early days. But, Keynes' (unwarranted) assumption of a given Y for his analysis of the money market ruled out completely any role for quantity-theory-type adjustment of money income in bringing about equilibrium in the money market. Consequently, the money-market-equilibrium condition that gave Cambridge cash-balances theory its theory of money income was converted by Keynes into a theory of interest rate determination. The former result was achieved by neglecting totally any influence of r on M^d; the latter result was attained (by Keynes) by admitting the influence of Y on M^d, but by freezing Y at some predetermined value. Analytically, therefore, each of the two theories is a special case of a more general theory in which, both the rate of interest and income, are allowed to influence the demand for money as well as adjust to clear the money market. The Cambridge theory (or the QTM) suppresses the role of the rate of interest and Keynes' theory the role of Y. (Gupta, 1990, pp.245-246).

(iii) Keynes had assumed the money wage rate (W) to be a historically-given datum (and not a variable for his short- run model) and had used it (W) as the *numeraire* or the deflator for converting all nominal values into real values.[14] This made the distinction between nominal values and real values totally irrelevant for monetary analysis - an anti- QTM stance, because in the QTM changes in prices and through them changes in the real value of a given quantity of money play the most important role. This ruled out, by assumption, all adjustment in the money market

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that might come through changes in prices, P (or W) even in the upward direction. (Gupta, 1990, p.246).

Once we get out of the framework of a static world into a real dynamic world, price expectations become important. In the present-day real world, inflation has become a common experience. This generates inflationary expectations, that is, on the basis of actual experience of inflation, the public comes to expect a certain rate of inflation in the future as well. Once the public comes to expect a certain rate of inflation, the market rate of interest will tend to rise over what this rate will be in the absence of inflationary expectations. This happens because in the presence of inflationary expectations both the supply curve and the demand curve for loans with respect to the rate of interest will shift up. The upward shift in the upward- sloping supply curve of loans shows that lenders are willing to lend any real amount at only a higher rate of interest than before so that they can get compensated for the real loss they expect to suffer due to inflation. The upward shift in the downward-sloping demand curve for loans arises because borrowers would also be willing to pay higher interest rates than before since they expect to recoup it from expected inflation. This kind of argument is widely accepted and the marked rise in the market rate of interest experienced in most countries, including India, over the past 10-15 years is usually attributed to inflationary expectations generated by actual inflation in these countries. (Gupta, 1990, pp.246-247). This phenomenon has very damaging consequences for Keynes' theory of interest rates which says that monetary expansion can be used to lower the rate of interest. This theory of Keynes will be true, at most, in a short run and for only moderate increases in the supply of money-more correctly, for increases in the supply of money which a growing economy can absorb at stable prices. Larger increases of money supply, by causing inflation and inflationary expectations, will tend to raise, rather than lower, the rate of interest. (Friedman, 1968, pp.1-17).

(iv)   Keynes, as discussed earlier, denied completely the influence of real factors, represented by real savings and investment (so much emphasised by both classical and neo-classical economists) in the determination of the rate of interest. (Gupta, 1990, p.247). This is an extreme view which neo-Keynesians do not share. They

argue that the rate of interest is not purely a monetary phenomenon. Real forces, like, productivity of capital and thriftness, or, savings, also play an important role in the determination of the rate of interest. Keynes made the rate of interest independent of the demand for investment funds. But according to the post-Keynesians, it is not so independent. They contend that the cash balances of the businessmen are largely influenced by their demand for capital-investment. This demand for capital-investment depends upon the marginal revenue productivity of capital. Therefore, the rate of interest is not determined independently of the marginal revenue product of capital (marginal efficiency of capital) and investment demand. When investment demand increases due to greater profit prospects, or, in other words, when marginal revenue productivity of capital rises, there will be greater demand for investment funds and the rate of interest will go up. But Keynesian theory does not account for this. Similarly, Keynes ignored the effect of the availability of savings on the rate of interest. For instance, if the propensity to consume of the people increases, savings would decline and as a result, supply of funds in the market will decline which will raise the rate of interest. Such an effect of the availability of savings on the rate of interest was neglected by Keynes. (Gupta, 1990, p.247).

3.7. Conclusion

Thus, both the classical Savings-Investment theory and Keynes' Liquidity Preference Theory of the rate of interest failed to give an adequate theory of interest rates. It was, then, with a view to remove the various pitfalls in both the classical theory and Keynes' Liquidity Preference Theory of the rate of interest and to develop an adequate theory of interest rates that economists, like Hicks and Hansen, brought about a synthesis between the classical and the Keynesian theories of interest rates and thereby propounded a determinate theory of interest rates through the intersection of IS and LM curves (deriving IS curve from the classical theory and LM curve from Keynes' Liquidity Preference Theory). But, this is a subject which we wish to discuss in the following chapter.

NOTES AND REFERENCES

1. Professor Carver's discussion of interest is difficult to follow (i) through his inconsistency as to whether he means by "marginal productivity of capital" quantity of marginal product or value of marginal product, and (ii) through his making no attempt to define quantity of capital.

2. In a discussion of these problems ("Capital, Time and the Interest Rate", by Prof. F.H. Knight, Economica, August, 1934), a discussion which contains many interesting and profound observations on the nature of capital, and confirms the soundness of the Marshallian tradition as to the uselessness of the Bohm-Bawerkian analysis, the theory of interest is given precisely in the traditional, classical mould. Equilibrium in the field of capital production means, according to Professor Knight, "such a rate of interest that savings flow into the market at precisely the same time-rate or speed as they flow into investment producing the same net rate of return as that which is paid savers for their use."

3. This diagram was suggested to Keynes by Mr. R.F. Harrod. See also a partly similar schematism by Mr. D.H. Robertson, Economic Journal, December, 1934, p.652.

4. It might be added that, impressed by the importance of stock demand and stock supply of bonds, several neoclassical economists prefer to explain the determination of the rate of interest by the simple stock-equilibrium theory as applied to the market for bonds.

5. See "Value and Capital", London, Oxford, 1939, Chapter XII.

6. "Alternative Formulations of the Theory of Interest," Economic Journal, Vol.XLVIII, June, 1938, p.211. In a later article, Lerner had restated his views on interest theory, but there seems to be no change of his position on the consistency of the loanable-funds and liquidity-preference theories. See "Interest Theory : Supply and Demand for Loans or Supply and Demand for Cash," Review of Economic Statistics, Vol.XXVI, May, 1944, p.88.

7. See "Prosperity and Depression," League of Nations, Geneva, 1939, p.184.

8. "Alternative Monetary Approaches to Interest Theory," Review of Economic Statistics, Vol.XXIII, 1941, p.43.

9. This is, of course, unsatisfactory because it follows only from the enumerating of variables and equations without considering the influence of the shape and position of all schedule relations.

10. "A Study of Interest and Capital," Economica, N.S., Vol.VII, p.293.

11. In Keynes' theory, the distinction between nominal income (Y) and real income (y) loses its relevance, because Keynes assumed his numeraire (i.e. unit of measurement), the money wage rate, to be a short-run constant. Most Keynesians use P as the deflator instead and assume P to be a short-run constant.

12. Note the clubbing together of the two components of the demand for money.

13. It is the long-term rate of interest in which Keynes was mainly interested because in his theory the rate of interest's effect on income was conceived to operate through investment in fixed capital.

14. Most Keynesians use the general price level or the price index number (P) as the deflator, instead. Which of W or P is used as the deflator and is assumed to be historically given is important for the determination of the other variable (P or W). But for the rest of Keynes' theory, the choice of the deflator does not make any difference. In the text, we are sticking to Keynes' practice of using W as the deflator.

CHAPTER 4

IS - LM APPARATUS

In the previous chapter, while concluding our discussion on Keynes' Liquidity Preference Theory of interest rates, we had concluded that neither the classical theory of interest rates (which concerns itself solely with the real factors, such as, savings and investment with a benign neglect towards the monetary factors), nor Keynes' Liquidity Preference Theory of interest rates (which deals solely with the monetary factors, such as, the demand and supply of money, while ignoring the real factors), is an adequate theory of the rate of interest. Both the classical and the Keynesian theories of the determination of interest rates, yield an indeterminate solution for an equilibrium rate of interest. It was, in this context, that we had argued that both the real and the monetary sectors collaborate to yield a complete and a determinate theory of the rate of interest and that the IS-LM apparatus of Hicks (and Hansen) which does precisely that, assumes great significance in this light.

In this chapter, we want to analyse this Hicksian IS-LM apparatus with reference to Hicks's famous article entitled, "Mr. Keynes and the 'Classics'," in an attempt to simultaneously determine the equilibrium level of income and the rate of interest in the economic system. The purpose of this chapter is to examine Hicks's contribution to macroeconomic theory, in those respects in which it constitutes a response to, or a development of, the work of Keynes. Thus, while it is narrower in scope than an attempt to assess Hicks's contribution to macroeconomic theory, it is broader in scope than an attempt to see Hicks as Keynes' interpreter : for an interpreter is judged only by the faithfulness with which he translates the material given to him; he is not required to extend, recast, criticise or reconstruct that material. We shall be concerned, then, with what Hicks got out of Keynes' writings and what he did with it; not with what was really there.

Hicks was from the late 1930s onwards, a Keynesian of some variety. Hicks's Keynesianism was sufficiently whole-hearted for him to be prepared to countenance a degree of analytical laxity in the interests of fostering Keynesian ideas at an early

stage of their development. It is of some significance, then, to see the point at which Hicks found he had to dig in his heels and say that Keynes was simply mistaken and this point essentially related to Keynes' theory of the determination of interest rates based on solely the monetary factors. (Coddington, 1983, p.65).

Hicks reviewed Keynes' General Theory when it appeared and in a way he had gone on reviewing it throughout his career. His work had been animated directly or indirectly by a determination to digest its contents : to bring it into focus and to accommodate its message within some more robust and coherent framework than that which Keynes had provided. It can be said that Hicks had attempted to gain first an analytical, later a historical and finally a practical perspective on the General Theory. The first task was that of distilling the analytical core of the General Theory as an embodiment of the 'Keynesian system' (this concern became central in *"Mr. Keynes and the 'Classics'"*); the second task was that of providing an embodiment of the classical system such that appropriate comparisons between the two systems can be made (this concern became central in *"The 'Classics' again"*); and the third task was that of reconstructing the analytical core of the General Theory in the light of the practical experience gained in the attempts to use this framework as a guide to policy-making (this concern became central in *"The Crisis in Keynesian Economics"*).

The object of this inquiry is, accordingly, to piece together Hicks's analytical, historical and practical perspectives on the General Theory in the form of a story with reference to the IS-LM model as propounded by him for the first time in his famous article, "Mr. Keynes and the 'Classics'". The need to establish this story is a matter of indisputable importance for it expresses Hicks's major contribution to Keynesian economics through his attempt to make the General Theory more accessible to the economic profession at large. (Coddington, 1983, p.66).

"Mr. Keynes and the 'Classics'" arose out of Hicks's dissatisfaction with his Economic Journal review of the General Theory (1973; 1936). The question Hicks addressed to in this later paper is the following : In so far as there is, in the General Theory, some coherent, systematic analytical scheme or model, what is it? The problem was one of distillation : of rendering down a whole book full of theoretical

discussion into some kind of underlying model or framework, from the properties of which the major part of the discussion can be deduced or derived. Thus, the IS-LM model that Hicks provided as the solution to this problem was presented as an interpretation of the 'analytical core' of the General Theory. It was evidently not intended to capture everything that was in that book; it quite obviously disregarded the polemical passages and a great deal of discursive and speculative material and thereby failed to capture the inspirational qualities and the feeling of boundless intellectual possibilities that many found in Keynes' work of the 1930s. (Coddington, 1983, p.69). Therefore, the IS-LM framework was offered, accordingly by Hicks, not as a substitute for the General Theory, not as a translation of it into geometry, nor even as a summary of its arguments, rather it was offered, as the opening paragraphs of Hicks's article make plain, "as a guide to the reader of what without it, is an exceedingly bewildering and vexatious book". (Hicks, 1937, p.126). This Hicksian IS-LM apparatus has provided an analytical receptacle of quite astonishing versatility and resilience within which even the antagonists in protracted controversies have been able to find a common framework for their disputes. (Coddington, 1979, p.976), This will be evident as we discuss this IS-LM framework in the following section.

4.1 IS-LM Framework

As remarked earlier, the IS-LM framework was formulated by Hicks through an extraction of the essential characteristics of the General Theory in an attempt to incorporate the basic tenets of both the classical and the Keynesian theories relating to income and interest rate determination so as to yield an adequate and coherent theory of the determination of income and the rate of interest in an economy.

Hicks had identified the following three fundamental relationships/equations in the Keynesian theory as incorporated in the General Theory (Hicks, 1937, p.132):-

(i) $M^d = L(Y, r)$, that is, the demand for money depends both on the level of income and the rate of interest and at equilibrium, this demand for money is necessarily equal to the supply of money.

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(ii)   I=I(r), that is, the amount of investment (looked at as demand for capital) depends upon the rate of interest. This is what, according to Hicks, becomes the Marginal Efficiency of Capital schedule in Keynesian economics.

(iii)   I=S(Y), that is, the amount of savings depends upon the level of income and at equilibrium, amount of savings is equal to the amount of investment.

From this above set of three fundamental equations, Hicks formulated his IS-LM model in order to arrive at the simultaneous determination of the equilibrium rate of interest and the level of income in an economy.

4.1.1. LM Curve

Hicks argued that, against a given quantity of money, the first equation : $M^d = L (Y, r)$, gives a relation between income (Y) and the rate of interest (r). (Hicks, 1937, p.134). The curve which can be drawn out of this relationship was called the **LM Curve** by Hicks. This LM Curve is obtained from a family of liquidity preference curves corresponding to various income levels together with a given stock of money supply. As the level of income increases, people like to hold more money under the transaction motive. With a given supply of money, the different levels of liquidity preference curves corresponding to various levels of income determine different rates of interest. (Yorg, 1987, p.79). This yields Hicks's LM Curve which depicts the various combinations of interest and income levels at which the money market is in equilibrium. (Hicks, 1937, p.134). Hicks derived the LM Curve from the Keynesian Liquidity Preference Theory of interest in the following way :-

4.1.1.2.   Derivation of the LM Curve

Hicks's interpretation of Keynes' General Theory suggested that liquidity preference or demand for money depends upon the transactions motive and the speculative motive. (Hicks, 1937, p.245). A family of liquidity preference curves at various levels of income can be drawn. The intersection of these various liquidity preference curves corresponding to different income levels with supply curve of money fixed by monetary authority, would give the LM Curve which relates the rate of interest with the level of income as determined by the money-market equilibrium

corresponding to different levels of liquidity preference curves. (Shapiro, E., 1984, p.240).

The derivation of Hicks's LM Curve is explained with the help of the following diagram (Dornbusch, R. and Fischer, S., 1994, pp.105-107) :
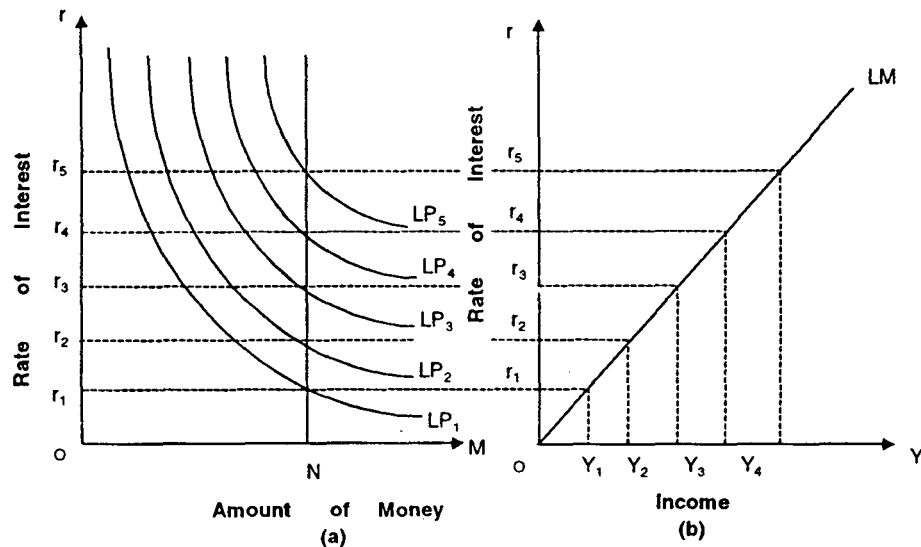

Fig. 4.1

In Fig 4.1, panel (a) shows the intersection of various liquidity preference curves with the given supply of money. In panel (b), we measure income on the horizontal axis and plot the income levels corresponding to the various interest rates determined at these income levels through money market equilibrium by the equality of the demand for and supply of money. (Dornbusch, R. and Fischer, S., 1994, p.107).

According to Hicks, the slope of the LM Curve depends upon two factors. First, the responsiveness of the demand for money (liquidity preference) to changes in income. As income increases, say from Y_1 to Y_2, the liquidity preference curve shifts from LP_1 to LP_2. With an increase in income, demand for money held for transactions motive would increase. This extra demand for money would disturb the money market equilibrium and for the equilibrium to be restored, the rate of interest need to rise to the level where the given money supply curve intersects the new liquidity preference curve corresponding to the higher income level.(Dornbusch, R. and Fischer, S., 1994, pp.107-108).

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The second factor which, in Hicks's opinion, determines the slope of the LM Curve is the elasticity or responsiveness of the demand for money (liquidity preference for speculative motive) to the changes in the rate of interest. The lower the elasticity of liquidity preference with respect to the changes in the rate of interest, the steeper will be the LM Curve. On the other hand, if the elasticity of liquidity preference, to the changes in the rate of interest, is high, the LM Curve will be relatively flat or less steep. But, in general, the LM Curve will be upward sloping since an increase in income tends to raise the demand for money, and an increase in the rate of interest tends to lower it. (Dornbusch, R. and Fischer, S., 1994, p.108).

Further, Hicks opined that, the LM Curve tends to be nearly horizontal to the left (Keynesian Range) and nearly vertical to the right (Classical Range). This is because, there is :

(i)   some minimum below which the rate of interest is unlikely to go, and there is

(ii)   a maximum to the level of income which can possibly be financed with a given amount of money. (Hicks, 1937, p.135).

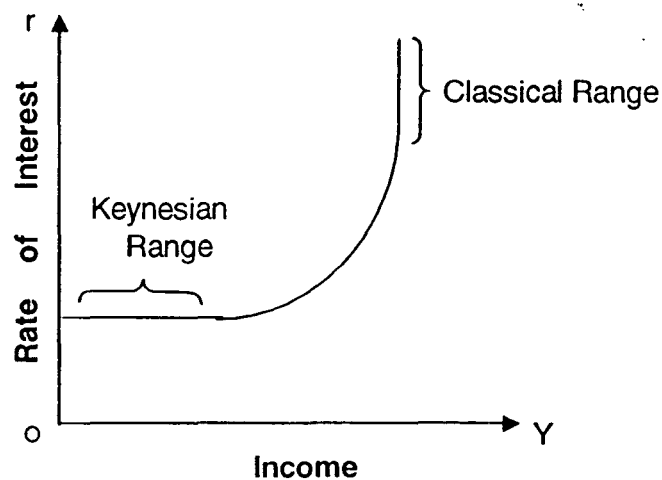The LM Curve approaches these limits asymptotically as shown in the following figure :-

Fig. 4.2

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Hicks argued that the fact that there exists a certain minimum below which the rate of interest is unlikely to fall (Liquidity Trap) is of central importance in the Keynesian theory and this is the basic cause of the horizontal stretch towards the left of the LM Curve. Consequently, this part of the LM curve was called, the "Keynesian Range" - by Hicks. (Hicks, 1937, p.136). Hicks interpreted the Liquidity Trap or the inability of the rate of interest to fall below a minimum level in Keynesian economics, in the following way : - "If the costs of holding money can be neglected, it will always be profitable to hold money rather than lend it out, if the rate of interest is not greater than zero. Consequently, the rate of interest must always be positive. In an extreme case, the shortest short-term rate may perhaps be nearly zero. But if so, the long rate must lie above it, for the long rate has to allow for the risk that the short rate may rise during the currency of the loan, and it should be observed that the short rate can only rise, it cannot fall.[1] This does not only mean that the long rate must be a sort of average of the probable short rates over its duration, and that this average must lie above the current short rate. There is also the more important risk to be considered, that the lender on long term may desire to have cash before the agreed date of repayment, and then, if the short rate has risen meanwhile, he may be involved in a substantial capital loss. It is this risk which provides Mr. Keynes' 'speculative motive' and which ensures that the rate for loans of indefinite duration (which he always has in mind as the rate of interest) cannot fall very near zero"[2]. (Hicks, 1937, p.137). Consequently, Hicks argued that the LM Curve becomes horizontal at the minimum positive rate of interest showing that the elasticity of liquidity preference with respect to the changes in the rate of interest is perfectly elastic at this minimum rate of interest. (Hicks, 1937, p.137).

Similarly, Hicks demonstrated that the LM Curve is nearly vertical on the right implying that, at a certain maximum level of income, the elasticity of liquidity preference with respect to the changes in the rate of interest would be nearly perfectly inelastic. Hicks called this range of the LM Curve as the "Classical Range". Hicks argued that, as income increases, more money is demanded for transaction purposes and with a fixed money supply, this implies a fall in the speculative demand for money. At a sufficiently high level of income, nearly the entire money demanded is

for transaction purposes and the speculative component of the demand for money falls nearly to zero. Since, in the Keynesian analysis, transaction demand for money depends only on income and not on the rate of interest, at this sufficiently high level of income, the demand for money becomes nearly perfectly interest inelastic. Consequently, Hicks contended that, the LM Curve becomes vertical at this sufficiently high level of income. (Shapiro, E., 1984, p.255).

Having, thus, derived the shape of the Hicksian LM Curve, it is important to know, what determines the position of this LM curve.

4.1.1.3.   Shifts in the LM Curve

Hicks had argued that, a LM Curve is drawn with a given stock of money supply. Therefore, when money supply is reduced, given the liquidity preference function, it will raise the rate of interest at a given level of income and will thereby cause the LM Curve to shift above and to its left. On the other hand, if money supply increases, given the liquidity preference function, it will lower the rate of interest at a given level of income and will, therefore, cause the LM Curve to shift down and to its right. However, in the horizontal stretch of the LM Curve defined by the existence of the "liquidity trap", increases in the supply of money, given the liquidity preference function, is unable to lower the rate of interest, since the rate of interest is already at its minimum positive level. Consequently, inspite of an increased money supply, the LM Curve in this horizontal stretch remains unchanged. (Branson, 1978, pp.63-64).

The other factor which, according to Hicks, causes a shift in the LM Curve is the changes in liquidity preference for a given level of income. If the liquidity preference function for a given level of income shifts upward, given the stock of money, it will lead to a rise in the rate of interest. This will bring about a shift in the LM Curve above and to its left. On the contrary, if the liquidity preference function for a given level of income declines, it will lower the rate of interest and will shift the LM Curve down and to the right. (Dornbusch, R. and Fischer, S., 1994, pp.108-109).

4.1.2. IS Curve

Moving on from an analysis of Hicks's LM Curve to Hicks's IS Curve, it can be said that, according to Hicks, the second two equations of Keynes' three fundamental equations, namely, I=I(r) and I = S(Y)

where ,   I = amount of investment,

           r =   rate of interest,

           S =   amount of savings, and

           Y =   level of income,

yield another relation between income and the rate of interest, called the **IS Curve.** (Hicks, 1937, p.134).

The IS Curve shows the interest rates at different levels of income, given the investment demand curve and a family of savings curve at different levels of income so that the commodity market equilibrium condition of the equality between savings and investment is maintained. (Shapiro, E., 1984, p.239).

Hicks derived the IS curve from the equilibrium condition of the savings - investment equality in the following way:-

4.1.2.1.   Derivation of the IS Curve

In the figure (Fig. 4.3) given below, panel (a) represents the equality between savings and investment, where the horizontal axis shows savings and investment and the vertical axis, the rate of interest. In panel (b), the horizontal axis measures, income and plots the corresponding rates of interests determined by the equality of savings and investment on the vertical axis. (Dornbusch, R. and Fischer, S., 1994, p.93). Thus, the IS curve depicts the various combinations of the levels of interest and income at which intended savings equals investment and the goods market is in equilibrium.
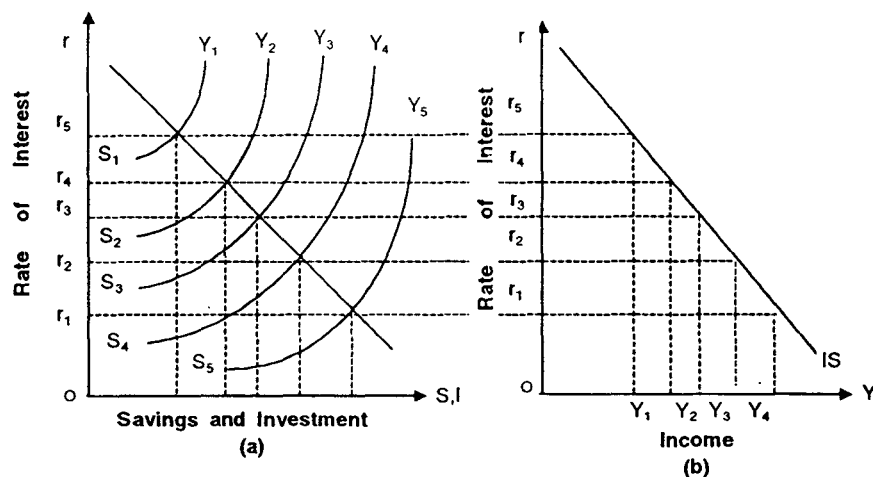
Fig. 4.3

It can be seen from the above figure that the IS curve slopes downward to the right. This is because, as income increases, savings rise. For the maintenance of the savings - investment equality, then, investment has to rise to equal the increased savings. This can happen only when the rate of interest declines for investment is inversely related to the rate of interest. Thus, for the goods market to be in equilibrium, an inverse relationship must exist between the level of income and rate of interest, thereby implying that the IS curve must be downward sloping. (Shapiro, E., 1984, p.239).

The slope of the IS curve depends upon its elasticity, which, in turn, depends on the responsiveness of investment spending to changes in the interest rate and on the magnitude of the multiplier. If the investment spending schedule is perfectly inelastic (indicating that investment spending is completely insensitive to the interest rates) the IS curve will be perfectly inelastic, regardless of the magnitude of the multiplier. If, on the other hand, the investment demand schedule shows some elasticity, as seems to be the case, the IS curve will be move elastic, the lower the marginal propensity to save. The lower the marginal propensity to save, the higher will be the multiplier and the greater will be the change in income for any increase in investment resulting from a fall in the interest rate. (Shapiro, E., 1984, p.255).

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Having derived the shape of the IS curve, Hicks tried to answer the following two basic questions: What determines the position of the IS curve and what would cause changes in its level?

4.1.2.2. Shifts in IS Curve

According to Hicks it is the level of autonomous expenditures (such as government expenditure and transfer payments) and the amount of income leakages (such as savings and taxes) in the economy, which determine the position of the IS curve. (Branson, 1978, p.57). If government expenditure or any other type of autonomous expenditure increases, it will increase the equilibrium level of income at the given rate of interest. This will cause the IS curve to shift to the right. How much the IS curve shifts following on increase in expenditure depends on the size of the multiplier. (Dornbusch, R. and Fischer, S., 1994, p.95). A reduction in government expenditure or transfer payments will shift the IS curve to the left. Similarly if the amount of income leakages, in the form of savings and taxes in the economy decreases, it will increase the equilibrium level of income at the given rate of interest as a result of which the IS curve shifts to the right. In the same way, an increase in income leakages (savings and taxes) will shift the IS curve to the left. (Branson, 1978, p.57).

4.1.3. Determination of the equilibrium levels of Income and the Rate of Interest

After determining the shapes, the positions and the causes of shifts of both the IS and the LM curves, Hicks propounded his theory of the simultaneous determination of both the equilibrium levels of income and the rate of interest in the economy at the point of intersection of the IS and the LM curves as shown in the figure below (Hicks, 1937, p.134) :
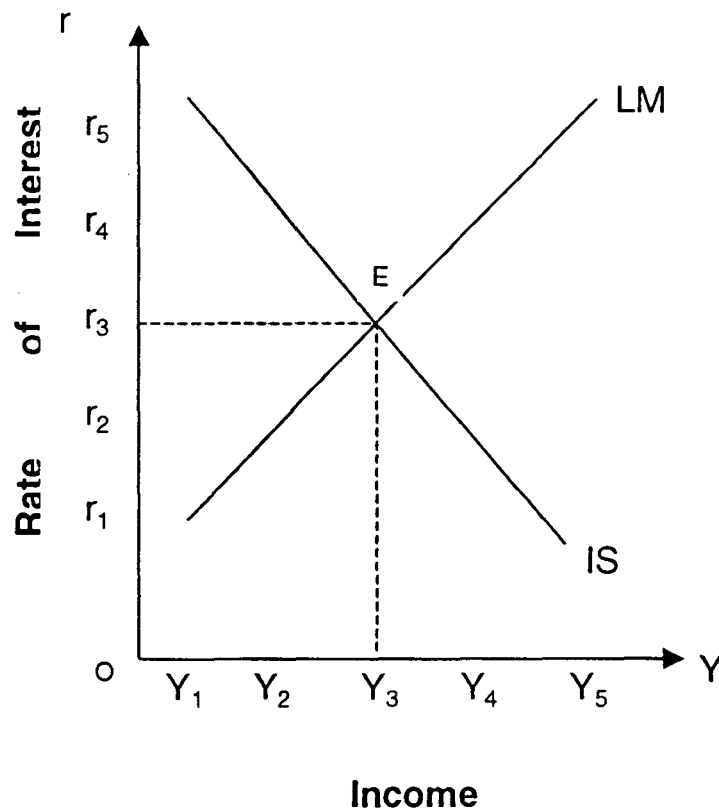
Fig. 4.4

As shown in Fig. 4.4, Hicks argued that the equilibrium rate of interest and income is determined simultaneously at the point E, defined by the intersection of the IS and the LM curves where both the money market and the commodity market are completely cleared Therefore, in Fig. 4.4, Or_3 is the equilibrium rate of interest and Or_3, the equilibrium level of income. (Hicks, 1937, p.134).

Thus, according to Hicks, a determinate theory of interest is based on:

(1)   the investment-demand function,

(2)   the savings function,

(3)   the liquidity preference function ,and

(4)   the quantity of money.

In other words, in Hicks's opinion, both the monetary and the non monetary factors play equally important role in determining the rate of interest. Any change in these factors will cause a shift in either the IS or the LM curve and will, therefore,

change the equilibrium level of the rate of interest and income. (Shapiro, E., 1984, pp.244-245). Thus, through the IS-LM approach, Hicks brought about a synthesis between the classical theory which neglected the monetary factors and the Keynesian theory which ignored the real factors in the determination of interest rates, by incorporating both the monetary and the real factors in the establishment of a determinate equilibrium rate of interest and income.

4.2. Economic Analysis using the IS-LM Apparatus

Hicks used his IS-LM apparatus for analysing the economic systems in the world and for advocating the "appropriate" economic policy framework for each of these systems.

4.2.1. Keynesian Range

Hicks argued that (Hicks, 1937, p.138). if an economic system is characterised by the "**Keynesian Range**" of the IS-LM framework where by, the IS curve interests the LM curve in the latter's horizontal stretch, then, no matter, by how much the money supply is increased, it will have no effect on the level of income, employment and the rate of interest in the economy as shown in the figure below (Shapiro, E., 1984, pp.256-257) :
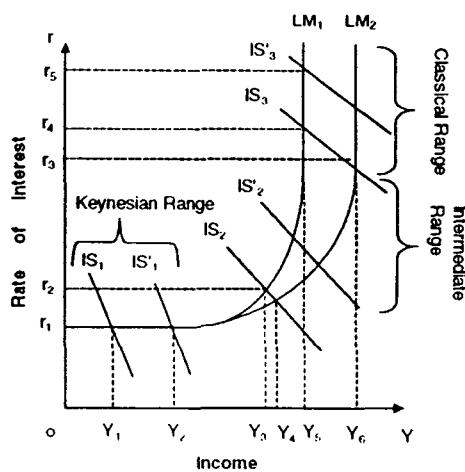

Fig. 4.5

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In Fig. 4.5, if the initial equilibrium is defined by the intersection of IS_1 and LM_1, then, an increase in the money supply shifts the LM curve to the right from LM_1 to LM_2; but, still, the equilibrium remains unchanged at (Y_1,R_1) defined by the intersection of LM_2 and IS_1 since, LM_2 coincides LM_1 in the Keynesian Range. In other words, monetary policy becomes ineffective in such a condition where an economic system is characterised by the "Keynesian Range". This, according to Hicks, is the special form of Keynes' Theory, which he called the "Economics of (Deep) Depression". (Hicks, 1937, p.138).

Hicks, however, maintained that although monetary policy is ineffective in the Keynesian Range, fiscal policy which reduces savings and increases the inducement to invest in the economy by tax cuts and increased government spending, can shift the IS curve to the right form IS_1 to IS'_1, and can thereby increase the income and employment in the economy from Y_1 to Y_2 as shown in Fig 4.5 (In this case, the elasticity or inelasticity of the IS curve is not relevant). Hicks, thus, explained Keynes' faith in Public Works to bring an economy out of a depression. (Shapiro, E., 1984, p.257).

4.2.2. Classical Range

Hicks, then, considered the **"Classical Range"** of the IS-LM framework whereby the IS curve intersects the LM curve in the latter's vertical stretch. Hicks argued that, if an economic system is characterised by the "Classical Range", then, fiscal policy is completely ineffective in expanding the level of income and employment in the economy. (Hicks, 1937, p.138). In Fig. 4.5, an upward shift of the IS curve from IS_3 to IS'_3 brought about through fiscal measures of reduced taxes and increased government spending and investment, raise only the interest rate from r_4 to r_5, while leaving the income level unchanged at Y_5. Given the increase in government spending that lies behind the upward shift in the IS function, the interest rate rises sufficiently to "crowd out" an amount of private spending equal to the rise in government spending so as to leave aggregate spending unchanged. The greater the inelasticity of the IS curve, the larger will be this "crowding out" effect. Thus, the

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level of income is as high as a given money supply can support and, hence, with an unchanged money supply, the level of income remains unchanged. (Shapiro, E., 1984, p.258).

Hicks, however maintained that, although fiscal policy proves ineffective in raising the level of income and employment in the economy in the "Classical Range", monetary policy which aims at increasing the supply of money will shift the LM curve, in Fig. 4.5, from LM_1 to LM_2 which would result in an increase in the level of income from Y_5 to Y_6 and a fall in the rate of interest from r_4 to r_5. According to Hicks, in the classical range, the interest rate is so high that speculative balances are zero; money is held for transaction purposes only. Under these circumstances, if the monetary authority enters the market to purchase securities, security-holders can be induced to exchange securities for cash only at higher prices. As security prices are bid up and the interest rate is pushed down, investment is stimulated. Because nobody chooses to hold idle cash, expansion of the money supply will produce a new equilibrium only by reducing the interest rate by whatever amount is necessary to increase the income level sufficiently to absorb the full increase in the money supply in transaction balances. Thus, Hicks concluded that, in the classical range, an increase in income is impossible without an increase in the money supply, and that, monetary policy becomes an all-powerful method of controlling the income level in an economy. (Shapiro, E., 1984, p.257).

4.2.3. Intermediate Range

Hicks, thereafter, identified an "Intermediate Range" in the IS - LM framework where the LM curve is neither completely horizontal (interest elastic) nor completely vertical (interest inelastic). In such an "Intermediate Range", Hicks argued that, both monetary and fiscal policies would achieve some increase in the level of income and employment in the economy. In the Intermediate Range, the increase in the money supply is partially absorbed in both speculative and transaction balances. The level of income rises, but by an amount less than that which would require the full increase in the money supply for transactions purposes. The closer

the equilibrium intersection of the IS and LM curves to the classical range, the more effective monetary policy becomes; the closer the intersection is to the Keynesian range, the less effective it becomes. (Shapiro, E., 1984, p.258).

Similarly, according to Hicks, within this Intermediate Range, fiscal policy is also effective to some extent. Fiscal measures that shift the IS function from IS_2 to IS'_2 in Fig. 4.5, for example, will raise the level of income and the interest rate to the new equilibrium defined by the intersection of IS'_2 and LM_1. If this shift in the IS function stems from a deficit-financed increase in government spending, the interest rate must rise. But, since Hicks assumed a fixed money supply described by LM_1 in order to deal with the effect of fiscal policy in isolation, increased government spending in this case, is financed by borrowing from the public. The sale of additional securities by the government, therefore, depresses security prices, raises the interest rate and chokes off some amount of private spending. The rise in the interest rate following any given increase in government spending will be greater or smaller depending on how high in the Intermediate Range the equilibrium happens to be. Although fiscal policy is somewhat effective anywhere in the Intermediate Range, in general, it will be more effect the closer the equilibrium is to the Keynesian range and less effective, the closer the equilibrium is to the Classical Range. (Shapiro, E., 1984, p.259).

Hicks further argued that, although both monetary and fiscal policies have varying degrees of effectiveness in the Intermediate Range, the relative effectiveness of each depends in large part on the elasticity of the IS function. If the IS function is inelastic, monetary policy can do very little to raise the level of income, even in the Intermediate Range; fiscal policy alone is effective in such a situation. Furthermore, an expansionary fiscal policy need not be concerned with adverse monetary effects in this case. A shift in an inelastic IS function will raise the interest rate, but this higher rate will have little feedback on spending. As discussed in Chapter 1, some economists, like Klein, had contended that Keynes had maintained that the investment schedule (as well as the savings-schedule) was interest inelastic. If this is the case, then, Hicks contended that, the IS schedule must also be interest inelastic, and fiscal policy, which is completely effective in the Keynesian Range, must be

almost as effective in the Intermediate Range. If the IS schedule is, indeed, interest inelastic then, the Keynesian Range, according to Hicks, becomes, in effect, the complete LM curve, more applicable at the lower end than at the upper end, but with some applicability throughout. (Shapiro, E., 1984, p.259).

Thus, in sum, Hicks gave a fairly detailed analysis of the economic systems and the associated remedies for raising the level of income and employment in each of them using his IS-LM framework.

4.3 Hicks's Extended (Generalised) IS-LM Framework

Hicks invented an extended IS-LM model in an attempt to make Keynes' *General Theory* more "general" by eliminating certain simplifications which Keynes had incorporated in his exposition. (Hicks, 1937, p.138).

According to Hicks, Keynes had asserted that the amount of investment depends solely on the rate of interest and that income is the only factor which affects savings. But, Hicks argued that, the sole dependence of investment upon the rate of interest and savings upon income in the real world looks rather "suspicious" and that mathematical elegance would suggest that we ought to have both income and interest rates in all the three fundamental equations of Keynes (mentioned earlier) to treat Keynesian theory as truly "general". (Hicks, 1937, p.138). In other words, Hicks arranged the three fundamental equations of Keynes in the following way :-

$$M^d = L(Y, r), \quad I = I(Y, r) \quad \text{and} \quad I = S(Y, r).$$

Hicks justified the inclusion of income as a factor affecting investment in Keynesian economics, by contending that an increase in the demand for consumer goods, arising from an increase in employment and hence income, will often directly stimulate an increase in investment, at least as soon as an expectation develops that the increased demand will continue. If this is so, then, according to Hicks, we ought to include income as a factor affecting the amount of investment, though the effect of income on the marginal efficiency of capital would be "fitful and irregular". (Hicks, 1937, p.139).

Similarly, Hicks borrowed the classical concept (which Keynes had eliminated as a simplification) whereby the amount of savings is directly related to the rate of interest and thereby sought to include this rate of interest as a factor affecting the amount of savings in the economy in an attempt to provide a more general theory than Keynes had propounded. (Hicks, 1937, p.138).

Having made such rearrangements in Keynes' theory, Hicks set out the "Generalised" *General Theory* in the following way (Hicks, 1937, p.139). :-

Hicks assumed a given total money income. He drew a CC curve showing the marginal efficiency of capital (in money terms) at that given income; a curve showing the supply curve of savings (SS) at that given income as shown in the figure below:
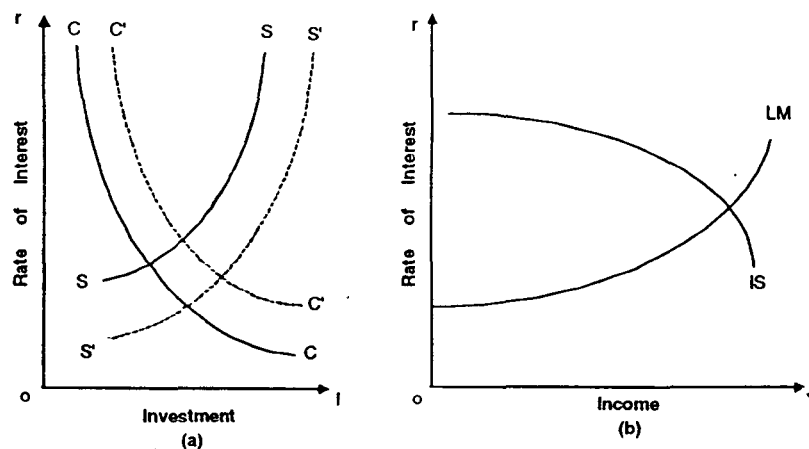
Fig. 4.6

Hicks contended that, in panel (a) of Fig. 4.6 the intersection of the CC and SS curves will determine the rate of interest which makes savings equal to investment at that level of income and this, he called, the "Investment Rate." (Hicks, 1937, p.139).

Then, according to Hicks, if income rises, both the SS and CC curves move to the right. If SS moves more than CC, the investment rate of interest falls; if CC moves more than SS, then the investment rate of interest rises. How much the investment rate rises or falls, depends upon the elasticities of the CC and the SS curves. (Hicks, 1937, p.139).

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Hicks further maintained that in panel (b) of Fig. 4.6, the IS curve shows the relation between income and the corresponding investment rate of interest and this has to confront with an LM curve showing the relation between income and the "money rate of interest". Instead of assuming, as before, a given supply of money, Hicks, in his 'Generalised' model assumed that there is a given monetary system - that upto a point, monetary authorities will prefer to create new money rather than allow interest rates to rise. In this model, then, LM curve slopes upwards only gradually - the elasticity of the curve depending on the elasticity of the monetary system. (Hicks, 1937, p.140).

As before, in the extended IS-LM model of Hicks, income and interest are determined where the IS and LM curves intersect - where the investment rate of interest equals the money rate. Any change in the inducement to invest or the propensity to consume will shift the IS curve; any change in liquidity preference or monetary policy will shift the LM curve. If as a result of such a change, the investment rate is raised above the money rate, income will tend to rise; in the opposite case, income will tend to fall; the extent to which income rises or falls depends on the elasticities of the curves.[3] (Hicks, 1937, p.140).

When Keynes' theory is generalised in this way, Hicks argued that this theory begins to look very much like that of Wicksell's.[4] If there is full employment in the sense that any rise in income immediately calls forth a rise in money wage rates; then, it is possible according to Hicks, that the CC and SS curves may be moved to the right to exactly the same extent, so that IS is horizontal. If IS is horizontal, then, we have a perfectly Wicksellian construction whereby the investment rate becomes Wicksell's "natural rate"; if there is a perfectly elastic monetary system, and the money rate is fixed below the natural rate, there is cumulative inflation; cumulative deflation if it is fixed above.(Hicks, 1937, p.141). Thus, Hicks, in effect, contended that a reconciliation of the classical and Keynesian theories is possible, provided Keynesian theory is generalised further.

Similarly, according to Hicks, if there is a great deal of unemployment, it is likely that $\frac{\partial I}{\partial Y}$ will be quite small; in that case, IS can be relied upon to slope downwards signifying the "Slump Economics" with which Keynes was largely

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concerned. However, when expectations are tinder and when a slight inflationary tendency lights them up very easily, then, $\frac{\partial I}{\partial Y}$ may be large and an increase in income tends to raise the investment rate of interest. In these circumstances, the situation is unstable at any given money rate; it is only an imperfectly elastic monetary system - a rising LM curve -. that can prevent the situation getting out of hand altogether. (Hicks, 1937, p.141).

These, then, are a few things that we can get out of Hicks's extended skeleton apparatus which go to show that the conflict between classical and Keynesian economics is more a matter of emphasis, focus and analytical procedure than of substance. Both the classical and the Keynesian economists would get almost the same result, provided only that each followed the analysis through rather than abandoning it after the first step. At this level of generality, the difference between the classical and the Keynesian approach is, thus, merely a matter of methodology than anything else. (Coddington, 1983, p.69).

4.4 Criticisms of Hicks's IS-LM Apparatus

Hicks's IS-LM apparatus is a terribly rough and ready sort of affair and has been criticised on the following grounds:-

(i)   The IS and LM curves are not determinate unless something is said about the distribution of income as well as its magnitude. Indeed, what these curves express is something like a relation between the price-system and the system of interest rates; we cannot get that into a curve. (Hicks himself acknowledged this in his article, "*Mr Keynes and the 'Classics'*", p.141).

(ii)   All sorts of questions about depreciation have been neglected in Hicks's IS-LM model.

(iii)   All sorts of questions about the timing of the processes under consideration are ignored in the IS-LM apparatus of Hicks. Hicks's IS-LM model is a static model and is not useful for dynamic analysis of the real world economic systems.

NOTES AND REFERENCES

1. It is just conceivable that people might become so used to the idea of very low short rates that they would not be much impressed by this risk; but, it is very unlikely. For the short rate may rise, either because trade improves, and income expands; or, because trade gets worse, and the desire for liquidity increases. A monetary system so elastic as to rule out both of these possibilities, is not really thinkable.

2. Nevertheless something more than the "speculative motive" is needed to account for the system of interest rates. The shortest of all short rates must equal the relative valuation, at the margin, of money and such a bill; and the bill stands at a discount mainly because of the "convenience and security" of holding money-the inconvenience which may possibly be caused by not having cash immediately available. It is the chance that one may want to discount the bill which matters, not the chance that one will then have to discount it on unfavourable terms. The "precautionary motive", not the "speculative motive," is here dominant. But the prospective terms of rediscounting are vital, when it comes to the difference between short and long rates.

3. Since $I(Y, r) = S(Y, r)$

$$\frac{dY}{dr} = -\frac{dS/dr - dI/dr}{dS/dr - dI/dY}$$

The savings - investment market will not be stable unless $dS/dr + (-dI/dr)$ is positive. Hicks assumed that this condition is fulfilled.

If dS/dr is positive, dI/dr negative, dS/dy and dI/dY positive (the most probable state of affairs), we can say that the IS curve will be more elastic, the greater the elasticities of the CC and SS curves, and the larger is dI/dY relatively to dS/dY. When $dI/dY > dS/dY$, the IS curve is upward sloping.

4. See Keynes', *General Theory*, p.242.

CHAPTER 5

MONEY AND PRICES

So long as classical economists were concerned with what is called the Theory of Value, they had been accustomed to teach that prices were governed by the conditions of supply and demand; and, in particular, changes in marginal cost and the elasticity of short period supply had played a prominent part. But, when these economists passed on to the Theory of Money and Prices, they no longer talked about these homely, but intelligible concepts and moved into a world where prices are governed by the quantity of money, by its income-velocity, by the velocity of circulation relative to the volume of transactions, by hoarding, by forced savings and by inflation and deflation. (Keynes, 1936, p.292). This latter classical theory of Money and Prices advocated the way in which changes in the quantity of money react upon the price level whereby individual prices are individual values expressed in terms of money, and the level of prices, in general, is related in some systematic manner to the total quantity of money in the economic system. In general, according to this theory, this relationship is such that an increase in the quantity of money is associated with a rise in the level of prices, and a reduction in the quantity of money with a fall in the level of prices. The details of this relationship between the quantity of money and the level of prices were studied in connection with what classical economists called the Quantity Theory of Money which propounded the following fundamental equation (Gupta, 1990, p.220) :

$$MV = PY$$

where,   M = total quantity of money in the economy,

V = velocity of circulation of money,

P = general price level,

Y = level of output in the economy.

In the classical theory of money and prices, Y was assumed to be fixed at the full employment level of output, and, V, the velocity of circulation of money was assumed to be an institutional or a natural constant - thus, according to the classical theory, changes in M lead to equiproportionate changes in P. (Gupta, 1990, p.220). But, having put forward the Quantity Theory of Money, classical economists made little or no effort to relate this theory to their former notions of the elasticities of supply and demand. (Keynes, 1936, p.292). Thus, in classical economics, monetary theory remained outside the main body of economic theory, which was concerned with value and output. (Dillard, 1948, p.226).

5.1. Keynes' Short Run Theory of Money and Prices

Keynes sought to redress this dichotomy in classical economics by advocating his own theory of prices, which, like the rest of his theory, is of a more general nature than the classical or traditional doctrine.[1] This characteristic Keynesian analytic procedure may, itself, be thought of as a dichotomy whereby output is determined by aggregate demand and prices are determined by costs. In this context, Shapiro (1977, p.550) noted :

"Demand takes on its Keynesian role as effective demand as the determinant of output, only to the extent that it is separated from the movement of prices".

Further, Robinson (1978, p.6) contended that,

"The other half of the Keynesian revolution was to recognise that, in an industrial economy, the level of prices is governed primarily by the level of money wage-rates" . Again, Godley (1976, p.308) maintained, "In other words, in the short term, the pressure of demand makes no difference to the price level." Thus, as far as, we are interested, the second part of the dichotomy involving the determination of prices by costs or rather "Mark-up" pricing or "Full-Cost" pricing is the one that has been the key Keynesian novelty in the literature relating to the theory of prices.

This Keynesian model of "Mark-up" pricing introduced a notion of "normal costs", by which is meant, what costs would be, if the economy were operating at some standardised level of capacity utilisation, rather than at the level that corresponds

to the actual cyclical state that it happens to be in. (Coddington, 1983, p.14). The essential idea of the mark-up principle in Keynesian economics is accordingly, that prices are related to the underlying trend of costs rather than to their cyclically fluctuating manifestations: "normal" costs are to be understood, therefore, as "decycled" costs (Coddington, 1983, p,.15). Prices that are based on such de-cycled costs will evidently not fluctuate as much over the cycle as would prices that were continuously adjusted to cyclical variations in cost conditions.

The rationale of all this actually hinges on the supposed behaviour of money wages. The stylised fact here is that money wages, which is an essential element of the cost of production, is impervious to cyclical fluctuations : that there is simply an underlying trend in money wages, which, as far as pricing rules are concerned, must be taken as given. The qualified version of this stylised fact would be that any cyclical variation in money wages is far less than would be implied by the degree of money-wage flexibility (and thereby real-wage flexibility) sufficient to eliminate continuously any excess supply of labour. This behaviour of money wages must then be taken in conjunction with one further stylised fact : namely, that output varies proportionately more than employment over the cycle. Given these assumptions, about the cyclical behaviour of money wages, output and employment, it follows that unit labour costs will vary cyclically. Hence, if prices were continuously adjusted to cyclical conditions, one would expect them to move cyclically as well (unless, of course, there was a cyclical variation of demand just sufficient to offset the cyclical variation in unit costs). To the extent, therefore, that this cyclical variation is not observed in the real world (and the variation in unit labour costs shows up in profits), it follows that prices are set in relation to some concept of "decycled" costs, and, in particular, to some notion of unit labour costs calculated at a standardised ("normal") level of capacity utilisation. (Coddington, 1983, p.15).

Thus, in sum, according to Keynes' Mark-up pricing model, prices of individual commodities as well as the general price level of output as a whole correspond closely to "normal" costs of production. The "normal" cost of production, in turn, depends partly on the rate of remuneration of the factors of production and partly on the scale of output as a whole, i.e. (taking equipment and technique as given)

on the volume of employment. Therefore, in effect, in Keynesian economics, the price level depends both on the rate remuneration of the factors of production which enter into marginal costs and on the volume of employment. (Keynes, 1936, p.294).

Keynes, for simplification, assumed that the rates of remuneration of the different factors of production which enter into marginal costs all change in the same proportion, i.e., in the same proportion as the wage unit. Then, it follows that the general price level (taking equipment and technique as given) depends partly on the wage-unit and partly on the volume of employment. Hence, the effect of changes in the quantity of money on the price level was seen, by Keynes, as being compounded of the effect on the wage-unit and the effect on employment. (Keynes, 1936, p.295).

Keynes, thereafter, further made the following two simplifying assumptions:

(i)   that all unemployed resources are homogeneous and interchangeable in their efficiency to produce what is wanted, and

(ii)   that the factors of production entering into marginal cost are content with the same money-wage so long as there is surplus of them unemployed. (Keynes, 1936, p.295).

With these assumptions, therefore, Keynes formulated an economic model where there are constant returns and a rigid wage-unit, so long as there is any unemployment. (Keynes, 1936, p.295). In this model, therefore, the aggregate supply curve is perfectly horizontal upto the full-employment level of output and vertical thereafter.

It follows from this, then, that in Keynesian economics, an increase in the quantity of money will have no effect whatever on prices, so long as there is any unemployment, and that employment will increase in exact proportion to any increase in effective demand brought about by the increase in the quantity of money; Whilst as soon as full employment is reached, it will thence - forward be the wage-unit and prices which will increase in exact proportion to the increase in effective demand. Thus, if there is perfectly elastic supply so long as there is unemployment, and perfectly inelastic supply as soon as full employment is reached, and if effective demand changes in the same proportion as the quantity of money, the Quantity Theory of Money, according to Keynes, can be enunciated as follows: "So long as there is

unemployment, employment will change in the same proportion as the quantity of money; and, when there is full employment, prices will change in the same proportion as the quantity of money." (Keynes, 1936, p.296). Thus, with this formulation of the Quantity Theory of Money, Keynes advocated as to when to fear and when not to fear inflation. He contended that, subject to the qualifying assumptions, inflation is not to be feared when there is large scale unemployment; but once full employment has been attained, inflation does become a threat. Therefore, Keynes relieved the world of the dread of inflation when it was plagued with mass unemployment, but warned everyone that once we have conquered unemployment, we must be on guard against inflation. Keynes, in this context, maintained that those who cry "inflation" in criticising the policies of monetary expansion during the depths of depression like that of the 1930s, are either guilty of political propaganda or lack understanding of the most elementary truths of monetary theory and policy. For what is needed in depression is expansion of output, and the way to expand output is to increase effective demand. Hence, Keynes argued that, monetary expansion by means of public investment, low interest rates, and the encouragement of spending rather than not spending are all part of economic policy designed to increase output and employment in a period of depression. (Dillard, 1948, p.227).

The proposition that changes in the quantity of money will affect employment when there is unemployment and will affect prices when there is full employment is, however according to Keynes, no more than a rough approximation to the truth. It is a generalised statement subject to so many qualifications that there is reasonable doubt as to its usefulness as a leading proposition of monetary theory. Prices may rise substantially before full employment is reached, especially in the later stages of expansion. These are not mere chance increases arising from fortuitous circumstances. The increases in prices that occur as output expands are more or less inevitably associated with expanding output and can be explained in terms of well-established principles of economic analysis. (Dillard, 1948, pp.227-228). In Keynes' opinion,[2] the most important reasons as to why costs and prices rise as employment increases are:-

(i)   the enhanced bargaining position of workers,

(ii)   diminishing returns in the short run, and

(iii)   bottlenecks in production. (Keynes, 1936, pp.296-304).

(i)   Enhanced Bargaining Position of Workers as Unemployment Declines

An increase in the demand for labour will tend to increase the money wages of workers. Both organised and unorganised workers, and especially the former, find themselves in a better bargaining position when employment is rising. The extent to which money-wage rates will rise depends, of course, upon the relative bargaining strengths of employers and wage earners; but, regardless of their relative positions, a growing scarcity of labour will tend to enhance the position of wage earners and to weaken that of the employer, just as growing unemployment tends to have the opposite effect in periods of contraction. Entrepreneurs will be more willing to meet the demands of workers when business is improving because it is feasible to pass on increased costs by raising prices. (Keynes, 1936, p.297). This is true not only of competitive, but also of various forms of monopolistic pricing. Monopolists and oligopolists may even welcome wage increases because they can use them as an excuse for price gouging which would otherwise be inexpedient because public opinion, which will tolerate higher prices when wages rise, will not tolerate unprovoked price increases. It is always easy for the monopolists and oligopolists to confuse the public on the question of how much a given wage boost will increase unit costs of production. Moreover, although money-wage rates will rise in this situation, real-wage rates for workers generally may not rise because the increase in prices may be more than sufficient to offset higher money-wage rates. However, any particular group of workers which can push up its money-wage rates more rapidly than workers, in general, will gain at the expense of other workers and may be able to increase their money-wage rates more rapidly than the cost-of-living and thereby increase their real-wage rates. In this context, organised workers, as a whole, will probably gain larger concessions than unorganised workers as a whole. Of course, unorganised workers will also be in a better bargaining position in an expanding labour market,

but, in relation to unionised or organised labour, they will probably find themselves falling behind. But, according to Keynes, one thing is clear and that is that an expanding economy will lead to higher money wages and, hence, to larger costs of production which will, in turn, reflect itself in higher prices in a "Mark-up" pricing regime. (Dillard, 1948, pp.228-30).

(ii)   Diminishing Returns in the Short Run

Keynes contended that prices will rise before full employment is attained also because of the tendency towards diminishing returns in the short run. Diminishing return means that costs per unit of output rises as the volume of output increases. The short run is a period in which the amount of equipment is assumed to be given. (Keynes, 1936, pp.298-99). When more men are employed to operate the existing equipment, there will tend to be a less than proportionate increase in output. If to start with, there is a large amount of idle equipment of the best quality, as well as large number of idle workers, the tendency towards diminishing return will develop slowly. This will be especially characteristic of large-scale industries which operate on a mass-production basis. There may be a range, in fact, over which unit variable costs will decline. But, in reality, neither men nor machines are of equal efficiency, and if it is assumed that the more efficient men and equipment are the first to be employed, then, those subsequently employed will add a less than proportionate return. If the newly employed workers are less efficient than those previously employed and if the less efficient are paid the same time-wage as the more efficient, then, the prime cost per unit of output must rise even though the equipment is of equal efficiency. Similarly, if the additional machinery put into use is less efficient than that already in service, increasing costs per unit of output will result even if the workers are rewarded in strict proportion to their efficiency. Thus, according to Keynes, the lack of uniformity or homogeneity of resources in the real world is one important reason as to why the cost of production and the price based upon cost of production will rise as employment increases. (Dillard, 1948, pp.230-31).

(iii)   "Bottlenecks" in Production

Even if all resources were perfectly homogeneous, Keynes maintained that, increasing costs from diminishing return would set in prior to full employment because all types of resources would not reach a point of full employment simultaneously. Skilled labourers may be fully employed when there still remain many unskilled workers in the ranks of the unemployed. Full employment of all resources requires that resources be available in certain proportion, which can be varied within limits; but beyond these limits real bottlenecks exist because the substitution of one resource for another is beyond the limits of technical feasibility. (Keynes, 1936, p.299). This disproportionality of available resources is especially serious in a recovery that follows a prolonged and severe depression like that of the 1930s. During that depression, there was a great decline in the number of skilled labourers because of death, retirement, loss of skill through idleness, and the small number of new apprentices coming into the skilled trades during the depressed years. In the upswing of the business cycle in the spring of 1937, an acute shortage of skilled workmen developed at a time when there were millions of unemployed among the unskilled workers of the nation. Keynes further argued that bottlenecks are accentuated by a rapid increase in output. For example, in the great defence and war expansion from 1940 to 1943, shortages developed in many types of labour, material, and equipment. (Dillard, 1948, pp.213-32). According to Keynes, when a bottleneck is reached in one line of production, the price of the item in question tends to rise sharply, in the absence of price control, even though other prices are rising only gently. In short, supply is inelastic in the short run in the sense that output does not respond immediately to increases in prices. The increase in demand is diverted into a rise in price until the output has time to expand to meet the demand. Increases in prices of this sort are referred to, by Keynes, as "bottleneck inflation" and this, according to Keynes, occur primarily because resources are not perfectly homogeneous. (Keynes, 1936, pp.301-2).

Thus, Keynes acknowledged these factors as the chief parameters which count for rising costs and rising prices in the phase of expansion short of full employment

and thereby modified his simplified Quantity Theory of Money, in an attempt to incorporate the above mentioned real world complications which influence events. In particular, Keynes considered the following five complications while modifying his theory (Keynes, 1936, p.296) :-

a)   Effective demand will not change in exact proportion to the quantity of money.

b)   Since resources are not homogeneous, there will be diminishing, and not constant, returns as employment gradually increases.

c)   Since resources are not inter changeable, some commodities will reach a condition of inelastic supply whilst there are still unemployed resources available for the production of other commodities.

d)   The wage-unit will tend to rise, before full employment has been reached.

e)   The remunerations of the factors entering into marginal cost will not all change in the same proportion.

Under such a set of complications, Keynes argued that the aggregate supply curve is upward sloping upto the full employment level of output and vertical thereafter. (Keynes, 1936, p.296). In this situation, Keynes accepted the traditional conclusion that increases in the quantity of money will be associated with increases in the level of prices, but differed fundamentally from the traditional analysis of the causal process by which changes in the quantity of money react upon the level of prices. (Keynes, 1936, p.297). According to Keynes, the initial impact of an increase in the quantity of money is to lower the rate of interest by increasing the amount of money available to satisfy liquidity preference for the speculative motive. Keynes argued that a lowering of the rate of interest tends to increase effective demand for investment, which, in turn, is associated with rising income, employment and output. As income employment, and output begin to rise, prices also begin to rise because of increasing costs resulting from the earlier discussed real world complications such as the enhanced bargaining position of labour, diminishing returns in the short run and other supply bottlenecks. Employment and price both rise, with the emphasis at first almost exclusively on increases in employment, but, shifting morve and more to prices as the point of full employment is approached. Once full employment has been

attained, no further increases in employment is possible, by definition, and further increases in effective demand become truly inflationary in the sense that they spend themselves entirely in rising prices. (Dillard, 1948, pp.222-223).

Keynes thereby contended that changes in the quantity of money do not affect prices directly, because prices are determined primarily by the costs of production. The initial impact of changes in the total quantity of money falls on the rate of interest rather than on prices. The level of prices is affected indirectly through the effect of changes in the quantity of money upon the rate of interest acting as one of the three main determinants of the volume of output and employment (the other two main determinants being the marginal efficiency of capital and the propensity to consume). As output changes, costs of production change, and prices adjust to changing costs of production. The demand for money for transactions increase because prices and output rise. Thus, Keynes' analysis is sometimes spoken of as the "contra quantity theory of causation" because it treats rises in prices as a cause of the increase in the quantity of money for transactions, instead of, treating the increases in the quantity of money (for transactions) as a cause of the rise in prices. (Dillard, 1948, pp.224-25). Of course, the distinction between money for transactions and money as a store of value is absolutely essential to this contra-quantity causation.

The great merit of Keynes' theory of prices is that, it integrates monetary theory with the formerly discussed Theory of Value. As mentioned earlier in the chapter, the theory of value teaches us that price, which is expressed in terms of money, is governed by the conditions of supply and demand. In connection with supply and demand the most important concepts are marginal costs and marginal revenue (which determine the extent to which output will be carried since their equality designate the point of maximum profit), and elasticity of short period supply and elasticity of demand (which determine the relative changes in output which correspond to relative changes in the price of a commodity in question). When Keynes advocated his theory of prices, in general, he emphasised cost of production, elasticity of supply, demand, and the other concepts which are important in the theory of value or individual price. In Keynesian economics, prices rise as costs of production rise; costs of production rise partly because of the inelasticity of short-

period supply of output and employment; and the theory of demand is all-important in calling forth the increased output and employment. Thus, Keynesian theory of prices, integrates monetary theory with the theory of value. (Dillard, 1948, p.224).

In addition to integrating the theory of value with the theory of money, Keynes also integrated the theory of output with the theory of money. Infact, it is through the theory of output, that value theory and monetary theory were brought into juxtaposition with each other in Keynesian economics. For changes in the quantity of money are capable of changing the level of output. As the level of output varies, costs change and as costs vary, values (prices) are affected. Since the theory of money is part and parcel of the theory of interest in Keynes' theory, and interest is intimately related to expectations concerning the future, it follows that discussions of the effects of changing expectations about the future must be stated in monetary terms. (Dillard, 1948, pp.224-25). The emphasis in Keynesian economics, therefore, shifts to money as a store of value, "as a link between the present and the future". (Keynes, 1936, p.293).

This Keynesian emphasis of money as store of value is found to be lacking in the traditional presentations of the general economic theory of value and output and monetary theory, and accounts to no small degree for the lack of integration of monetary theory with general economic theory in classical economics. The traditional statement of the theory of money and prices overlooked the influence of the quantity of money in the determination of the rate of interest, and thereby upon output, and went directly from increases in the quantity of money to increases in the level of prices. (Dillard, 1948, p.225). This important omission in classical economic theory arises from its assumption of full employment of resources. If full employment is assumed form the beginning there is no possibility that an increase in the quantity of money, or anything else for that matter, can increase employment and output in the short run. In ruling out, by assumption, changes in output, there is no need in the theory of price levels for the concepts that figure so prominently in the theory of value, such as, marginal cost, elasticity of supply, and the theory of demand. In a sense, therefore, there is no occasion for integrating the theory of value with the theory of money in classical theory. Since money cannot affect employment, it can

influence only prices. This leads to the fundamental classical conclusion, that all increases in the quantity of money tend to be inflationary, a conclusion quite valid under the assumption that resources are fully employed, but a nonsense when this special assumption is dropped. The theory of prices in classical economics, therefore, consequently becomes nothing more than a theory of price levels, that is, of the value of money. (Dillard, 1948, p.225). Money is essentially a lubricant which is useful because it is more efficient than barter. The extremely important relations between changes in the quantity of money and changes in employment were ignored by the classical economists. Also, in traditional economics, the theory of the value of individual commodities is divorced from the theory of prices of commodities in general. Thus, in sum, monetary theory remains outside the main body of classical economic theory, which is concerned with value and output. Whatever this traditional presentation may have been, it is clear that the Keynesian theory based upon the assumption that unemployment is the normal circumstance in the universe and full employment the exception, offers an excellent opportunity for bringing together the theory of money and prices with the theory of value and output in the short run. (Dillard, 1948, p.226).

5.2. Keynes' theory on Long Run Price Movements

So far, we have been primarily concerned with the way in which changes in the quantity of money affect prices in the short period. In the long run, however, there is no simple relationship between changes in the quantity of money and the level of prices in the Keynesian theory.

Keynes[3] argued that, if there is some tendency of long- run uniformity in the state of liquidity preference, then, there may well be some sort of rough relationship between the national income and the quantity of money required to satisfy liquidity preference, taken as a mean over periods of pessimism and optimism together. There may be, for example, some fairly stable proportion of the national income more than which people will not readily keep in the shape of idle balances for long periods together, provided the rate of interest exceeds a certain "psychological" minimum; so

that, if the quantity of money beyond what is required in the active circulation is in excess of this proportion of the national income, there will be a tendency, sooner or later, for the rate of interest to fall to the neighbourhood of this minimum. The falling rate of interest will, then, increase effective demand, and the increasing effective demand will reach a point at which the wage-unit will tend to show a discontinuous rise, with a corresponding effect on prices. The opposite tendencies will set in if the quantity of surplus money is an abnormally low proportion of the national income. (Keynes, 1936, pp.306-307).

Thus, according to Keynes, "the net effect of fluctuations over a period of time will be to establish a mean figure in conformity with the stable proportion between the national income and the quantity of money to which the psychology of the public tends sooner or later to revert". (Keynes, 1936, p.307).

Keynes further contended that these tendencies will probably work with less friction in the upward than in the downward direction. But, if the quantity of money remains very deficient for a long time, the escape will normally be found in changing the monetary standard or the monetary system so as to raise the quantity of money, rather than in forcing down the wage unit and thereby increasing the burden of debt. Thus, the very long-run course of prices in the real world, according to Keynes, has almost always been upward. For when money is relatively abundant, wage unit rises; and when money is relatively scarce, some means is found to increase the effective quantity of money. (Keynes, 1936, p.307).

Another question associated with the long run, which Keynes sought to answer, was whether with rising productivity per man hour and falling unit costs of production, prices in the long run should fall as costs fall or remain constant as money (and real) wages rise. Keynes acknowledged that there is no easy answer to this question, but, recommended a stabilisation of price, within limits, and rising money wages (so as to increase the effective demand in the economy) as the most desirable policy. (Dillard, 1948, p.235).

5.3. Conclusion

After carrying on a fairly detailed discussion on Keynes' theory of prices, both in the short and the organs, it can be concluded that Keynes' "Mark - up" pricing theory marked a significant departure from the earlier classical theory of prices based on the Quantity Theory of Money. This Keynesian theory of prices, thereby proved a novelty in a distinct way.

NOTES AND REFERENCES

1. Keynes' purpose in referring to the traditional theory of prices is to contrast his own position with the generally accepted theory laid down in treatises on the principles of economics. He does not attempt to assess the theory of money and prices contained in the work of specialists in monetary and business cycle theory. Typical of the type of theory against which Keynes directs his criticism is the work of Professor Taussig who says, "We may brush aside not only the notion that interest rate arises from the use of money, but that the rate of interest depends on the quantity of money. More money makes higher prices, not lower interest." in "Principles of Economics," Fourth Edition, Vol.II, p.8. New York : The Macmillan Company, 1939.

2. "General Theory of Employment, Interest and Money", J.M. Keynes, 1936, p.296-304.

3. "General Theory of Employment, Interest and Money", J.M. Keynes, 1936, p.306.

CONCLUSION

We have undertaken a reasonably extensive review of the macroeconomic literature relating to some aspects associated with the Keynesian Revolution in substantially great detail. It has been noted that in a majority of these macroeconomic issues, Keynes had made a marked departure from the existing theories with a view to provide an apt and coherent explanation of the economic disorders of his times associated with the Great Depression of the 1930s. Consequently, his theories relating to effective demand, labour markets, money, interest rates prices and a host of other macroeconomic parameters represented a pioneering effort and have thereby aptly been described as a "Revolution" by later economists. To the extent that the Keynesian theories were, indeed, path-breaking with respect to the macroeconomic literature prevalent during those times, Keynes stood out as a brilliant and intellectual mind who was not only logically sound, but an innovator in many senses. His major contributions to macroeconomic theory represented in his famous books - *"A Treatise on Money"*, and more importantly, *"The General Theory of Employment, Interest and Money"* provide a sound justification of his brilliant analysis of the economic system of his time and the concomitant remedies.

Before, we end, it will be worthwhile, in this context, to enumerate the major Keynesian conclusions as discussed in this book.

In the real sector, the major Keynesian propositions are the following:-

i. Consumption and investment together determine the level of effective demand in an economy.

ii. Consumption depends on the level of income and the rate of interest, though, the effect of the latter on consumption is negligible owing to the fact that the "Wealth Effect" on consumption tends to cancel out in the aggregate in the economic system.

iii. Investment depends on the level of income and the rate of interest. However, the rate of interest exercises "a great, though not a decisive influence on investment demand."

iv. Savings, in an economy, depend on the level of income.

v. Effective demand determines the equilibrium level of output, income and employment in an economy. The equilibrium level of output is obtained by the equality of savings and investment in an economy.

vi. The equilibrium rate of interest is determined outside the real sector (unlike that in classical economics).

vii. Unemployment prevalent in an economy is the norm and full employment is only an exception.

viii. Since the level of employment in an economy is determined by the volume of effective demand, a reduction in money-wage rates which lead to a fall in effective demand does not cure the problem of unemployment in the economy.

Moving on from the real to the monetary sector, it can be said that the key proposition of Keynes' monetary theory is that changes in the demand or supply of money (and both can change) operate on the level of economic activity not directly (as in the classical Quantity Theory of Money), but, indirectly through changes in the rate of interest and thereby through changes in real investment in the economy. This Keynesian monetary theory may be represented schematically thus (Gupta, 1990, p.241) :

$$M^s \rightarrow r \rightarrow I \rightarrow Y \rightarrow N \rightarrow MP_L \rightarrow P$$
$$\uparrow \qquad\qquad\qquad\qquad \uparrow$$
$$M^d \qquad\qquad\qquad\qquad W$$

where, M^s and M^d stand for the supply and demand for money respectively, r, I, Y and N for the rate of interest, investment, income and employment respectively, MP_L for the marginal product of labour, and P and W for the price level and the money-wage rate respectively.

The above scheme represents the main propositions of Keynes' monetary theory in the simplest and briefest possible manner. It also highlights the sequential nature of Keynes' analysis. The main propositions of Keynes' monetary theory are:-

(i) Money supply is exogenously given.

(ii) Demand for money depends on the transactions motive (directly related to the level of income) and the speculative motive (inversely related to the rate of interest) for holding money by the economic agents.

(iii) The equilibrium rate of interest in the economy is determined by the demand for and the supply of money in accordance with Keynes' Liquidity Preference Theory of interest rates.

(iv) The rate of interest determines the level of investment in an economy via the investment-demand function.

(v) Investment influences income via the multiplier.

(vi) Income determines the level of employment via the aggregate production function.

(vii) Given the aggregate production function and the stock of capital, employment will give the value of the marginal product of labour, and

(viii) Given the money-wage rate, the marginal product of labour will determine price via the equilibrium condition :

$$MP_L = \frac{W}{P}$$

These main conclusions of Keynesian economics are, however, far too simple to be applied to the present day real world economics. Knowing what we do now about several aspects of economics behaviour, it is hard to be satisfied with a model couched solely in terms of three pillars involving the propensity to consume, marginal efficiency of capital and liquidity preference, all of which are stated in their simplest form. The Keynesian theory, viewed as a model that can explain the determination of output, employment, wage rate, price level, interest rate and other variables, must be larger so as to be applicable to the present day

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economic systems. In the first place, it must include production, labour-demand, and labour-supply functions. Secondly, it must be extended in a number of directions in order to approach realism and usefulness. These extensions will involve disaggregation, dynamisation, and expansion of the scope of endogeneity. The systems that are now built by econometricians to describe economic activity in the United States, Canada, the United Kingdom, Netherlands, India, Japan and other countries are actually members of the Keynesian family of models, but they do not closely resemble the parent system on the surface. They are much larger and are more complicated. It requires careful examination by consolidation and tracing of main lines of causation to show that they are extensions of the Keynesian system. Most of the extensions are straight forward and can be traced to their Keynesian roots. (Klein, 1966, pp.212-213).

Thus, to conclude although the Keynesian model aptly described the economic system of the 1930s, it has to be modified by incorporating numerous present day complications to enhance its contemporary usefulness. However, this suggestion should, in no way, take away the enormous credit that must accrue to such a brilliant economist, like Keynes, for it must be recognised that in the first place it was solely the simplicity of Keynes' final construct that led to such wide acceptance of the theory at an early stage. If Keynesian theory had been stated in terms of a 30, 50 or 100 equation model such as we use in today's econometric analysis, it is doubtful whether many students would have paid close attention to it. Most people would have ignored it, leaving it as a problem of analysis for specialists willing to linger over its details.

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