



The Principle of Effective Demand: Aggregate Demand and Aggregate Supply*

The logical starting point of Keynes's theory of employment is the principle of effective demand.¹ In a capitalist economy the level of employment depends on effective demand. Thus unemployment results from a deficiency of effective demand and the level of employment can be raised by increasing the level of effective demand.

Meaning

In ordinary parlance demand means desire. It becomes effective when income is spent in buying consumption goods and investment goods. Keynes used the term 'effective demand' to denote the total demand for goods and services at various levels of employment. Different levels of employment represent different levels of aggregate demand. But there can be a level of employment where aggregate demand equals aggregate supply. This is the point of effective demand. In Keynes's words, "The value of D (Aggregate Demand) at the point of Aggregate Demand function, where it is intersected by the Aggregate Supply function, will be called the effective demand." Thus according to Keynes, the level of employment is determined by effective demand which, in turn, is determined by aggregate demand price and aggregate supply price.

Aggregate Demand Price

"The aggregate demand price for the output of any given amount of employment is the total sum of money or proceeds, which is expected from the sale of the output produced when that amount of labour is employed."² Thus the aggregate demand price is the amount of

*We have confined our analysis to Keynes's method of deriving aggregate demand and aggregate supply functions. For an alternative analysis refer to E. Shapiro, *op. cit.*, Ch. 13.

¹D. Dillard, *op. cit.*

²*Op. cit.*

Table III shows that so long as the aggregate demand price is higher than the aggregate supply price, it is profitable for the entrepreneurs to employ more workers, when the entrepreneurs expect to receive Rs 230 crores, Rs 240 crores and Rs 250 crores than the proceeds necessary amounting to Rs 215 crores, Rs 230 crores and Rs 245 crores, they will provide increasing employment to 20 lakh, 25 lakh and 30 lakh workers respectively. But when the proceeds necessary and proceeds expected equal Rs 260 crores the level of employment rises to 35 lakhs. This is the point of effective demand. If we assume the level of full employment to be 40 lakh workers in the economy, it will necessitate the drawing up of a new aggregate demand price schedule as shown in Table III last column. As a result, the new point of effective demand is 40 lakh workers because both the aggregate demand price and the aggregate supply price equal Rs 275 crores. Beyond this point there is no change in the level of employment which is steady at 40 lakh workers.

TABLE III: SCHEDULE OF AGGREGATE DEMAND AND AGGREGATE SUPPLY PRICES

Level of Employment (N) (in lakhs)	Aggregate Supply Price (Z) (Rs crores)	Aggregate Demand Price (D) (Rs Crores)	
		Old	New
20	215	230	235
25	230	240	245
30	245	250	255
35	260	260	265
40	275	270	275
40	290	280	285
40	305	290	295

Figure 7.1 illustrates the determination of effective demand where AD is the aggregate demand function and AS the aggregate supply function. The horizontal axis measures the level of employment in the economy and the vertical axis, the proceeds expected (revenue) and the proceeds necessary (costs). The two curves AD and AS intersect each other at point E . This is effective demand where ON workers are employed. At this point the entrepreneurs' expectations of profits are maximised. At any point other than this, the entrepreneurs will either incur losses or earn subnormal profits. At ON' lev. of employment the proceeds expected (revenue) are more than the proceeds necessary (costs), i.e., $RN' > CN'$. This indicates that it is profitable

employment. According to Keynes, the aggregate supply function is an increasing function of the level of employment and is expressed as $Z = \phi N$, where Z is aggregate supply price of the output from employing N men.⁶

The aggregate supply curve can be drawn on the basis of the schedule. It slopes upward from left to right because as the necessary expected proceeds increase, the level of employment also rises. But when the economy reaches the level of full employment, the aggregate supply curve becomes vertical. Even with the increase in the aggregate supply price, it is not possible to provide more employment as the economy has attained the level of full employment.

Determination of Effective Demand

We have studied the two determinants of effective demand separately and now are in a position to analyse the process of determining the level of employment in the economy. The level of employment is determined at the point where the aggregate demand price equals the aggregate supply price. In other words, it is the point where what the entrepreneurs expect to receive equals what they must receive and their profits are maximised. This point is called the *effective demand* and here the entrepreneurs earn normal profits. So long as the aggregate demand price is higher than the aggregate supply price, the prospects of getting additional profits are greater when more workers are provided employment. The proceeds expected (revenue) rise more than the proceeds necessary (costs). This process will continue till the aggregate demand price equals the aggregate supply price and the point of effective demand is reached. This point determines the level of employment and output in the economy. The point of effective demand is, however, not necessarily one of full employment but of underemployment equilibrium. If the entrepreneurs try to provide more employment after this point, the aggregate supply price exceeds the aggregate demand price indicating that the total costs are higher than the total revenue and there are losses. So the entrepreneurs will not employ workers beyond the point of effective demand till the aggregate demand price rises to meet the aggregate supply price at the new equilibrium point which may be one of full employment. If the aggregate demand price is raised still further, it will lead to inflation for no increase in employment and output is possible beyond the level of full employment. The following table explains the determination of the point of effective demand.

⁶J.M. Keynes, *op. cit.*, p. 25.

Table III
than the a
to employ
Rs 230 cr
necessary
crores, th
and 30
and proc
rises to
same th
nomy,
price s
point d
Beyon
is stea

capital, raw material, etc. which will be paid remuneration along with labour. Thus each level of employment involves certain money costs of production including normal profits which the entrepreneur must cover. At any given level of employment of labour aggregate supply price is the total amount of money which all the entrepreneurs in the economy, taken together, must expect to receive from the sale of the output produced by that given number of men, if it is to be just worth employing them.⁴ If brief, the aggregate supply price refers to the proceeds necessary from the sale of output at a particular level of employment. Thus each level of employment in the economy is related to a particular aggregate supply price and there are different aggregate supply prices for different levels of employment.

A statement showing the various aggregate supply prices at different levels of employment is called the aggregate supply price schedule or aggregate supply function. In the words of Prof. Dillard, "The aggregate supply function is a schedule of the minimum amounts of proceeds required to induce varying quantities of employment."⁵ Table II shows the aggregate supply schedule.

TABLE II: AGGREGATE SUPPLY SCHEDULE

Level of Employment (N) (in lakhs)	Aggregate Supply Price (Z) (Rs crores)
20	215
25	230
30	245
35	260
40	275
40	290
40	305

The above table reveals that the aggregate supply price rises with the increase in the level of employment. If the entrepreneurs are to provide employment to 20 lakh workers, they must receive Rs 215 crores from the sale of the output produced by them. It is only when they expect to receive the minimum amounts of proceeds (Rs 230 crores, Rs 245 crores and Rs 260 crores) that they will provide employment to more workers (25 lakhs, 30 lakhs and 35 lakhs respectively). But when the economy reaches the level of full employment (at 40 lakh workers) the aggregate supply price (Rs 275, 290 and 305 crores) continues to increase but there is no further increase in

⁴Stonier and Hague, *A Text Book of Economic Theory*, p. 381.

⁵D. Dillard, *op. cit.*, p. 31.

money which the entrepreneurs expect to get by selling the output produced by the number of men employed. In other words, it refers to the expected revenue from the sale of output produced at a particular level of employment. Different aggregate demand prices relate to different levels of employment in the economy.

A statement showing the various aggregate demand prices at different levels of employment is called the aggregate demand price schedule or aggregate demand function. "The aggregate demand function," according to Keynes, "relates any given level of employment to the expected proceeds from that level of employment." Table I shows the aggregate demand schedule.

The Table reveals that with the increase in the level of employment, the proceeds expected (ADP) rise and at lower levels of employment, the aggregate demand price is Rs 280 crores and when 25 lakh people are provided jobs, it is Rs 240 crores. According to Keynes, the aggregate demand function is an increasing function of the level of employment and is expressed as $D = F(N)$, where D is the proceeds which entrepreneurs expect from the employment of N men.

TABLE I: AGGREGATE DEMAND SCHEDULE

Level of Employment (N) (in lakhs)	Aggregate Demand Price (D) (Rs crores)
20	230
25	240
30	250
35	260
40	270
45	280
50	290

The aggregate demand curve can be drawn on the basis of the above schedule. It slopes upward from left to right because as the level of employment increases aggregate demand price also rises, shown as AD curve in Figure 7.1.

Aggregate Supply Price

When an entrepreneur gives employment to certain amount of labour, it requires certain quantities of co-operant factors like land,

capital, raw material, labour. Thus each unit of production is covered. At any price is the total economy, takes output produced the proceeds to a particular employment. A statement of aggregate supply price or aggregate proceeds Table II

function which is composed of consumption expenditure and investment expenditure. A fundamental principle is that when income increases consumption also increases but less than proportionately (*i.e.*, the marginal propensity to consume is less than one). This creates a gap between income and consumption which must be filled up by the required investment expenditure. If the appropriate investment is not forthcoming to fill this gap, it leads to a deficiency of effective demand resulting in unemployment.

It follows that in a poor community, the gap between income and consumption is small because the marginal propensity to consume is high. It will, therefore, have little difficulty in employing all its resources by filling the gap through small investment expenditure.

On the contrary, in a wealthy community the gap between income and consumption is very large because the marginal propensity to consume is low. It will, therefore, require large investment expenditure to fill the gap between income and consumption in order to maintain a high level of income and employment. But in a rich community investment demand is not adequate to fill this gap and there emerges a deficiency of aggregate demand resulting in widespread unemployment. When the aggregate demand falls the potential wealthy community will be forced to reduce its actual output until it becomes so poor that the excess of output over consumption will be reduced to the actual amount of investment. Further, in such a community there is an accumulated stock of capital assets which weakens the inducement to invest because every new investment competes with an already existing large supply of old capital assets. This inadequacy of investment demand reacts in a cumulative manner on the demand for consumption and will, in turn, lead to a further fall in employment, output and income. Thus as Keynes said, "The richer the community, the more obvious and outrageous the defects of the economic system that lead to unemployment on a mass scale in the midst of potential plenty because of the deficiency of effective demand."⁷

employment, the same can be achieved by government expenditure. Thus the principle of effective demand is the basis of the theory of employment.

Repudiation of Say's Law and Full Employment Thesis

The principle of effective demand repudiates Say's Law of Market that supply creates its own demand and that full employment equilibrium is a normal situation in the economy. This principle points out that underemployment equilibrium is a normal situation and full employment equilibrium is accidental. In a capitalist economy supply fails to create its own demand because the whole of the earned income is not spent on the consumption of goods and services. Moreover, the decisions to save and invest are made by different people. As a result, the existence of full employment is not a possibility and the point of effective demand at any time represents underemployment equilibrium.

The Pigovian view that full employment can be achieved by a reduction in money wage-cut is also repudiated by this principle. A money wage-cut will bring about a reduction in expenditure on goods and services leading to a fall in effective demand and hence in the level of employment. Thus the importance of this principle lies in repudiating Say's Law and the classical thesis of full employment equilibrium.

Role of Investment

The principle of effective demand highlights the significant role of investment in determining the level of employment in the economy. The two determinants of effective demand are the consumption and investment expenditures. When income increases consumption expenditure also increases but by less than the increase in income. Thus there arises a gap between income and consumption which leads to decline in the volume of employment. This gap can be bridged by an increase in either consumption expenditure or investment expenditure in order to achieve full employment level of effective demand in the economy. Since the propensity to consume is stable during the short-run, it is not possible to raise the consumption expenditure. Therefore, the level of effective demand and hence of employment can be raised by an increase in investment. In this lies the importance of investment.

The Paradox of Poverty in the Midst of Potential Plenty

The importance of effective demand lies in explaining the paradox of poverty in the midst of potential plenty in the modern capitalism. Effective demand is mainly determined by the aggregate demand

function which
ment expendi
increases cons
the marginal
gap between
the required
not forthcoming
demand resu

It follows
consumption
high. It wi
sources by

On the c
and consu
consume i
to fill the
tain a hig
investment
a deficien
ment. W
community
poor th
the act
is an a
ment t
existin
ment
sump
outp
the r
that
pler

the raising of the point of effective demand. This is possible by raising the aggregate demand curve to AD' (last column of Table III) where it intersects aggregate supply curve AS at E' . This is the new point of effective demand which provides an optimum level of employment ON_1 to the economy. If the aggregate demand function is raised beyond this point the economy will experience inflation because all the existing resources are fully employed and their supply cannot be increased during the short run, as is apparent from the vertical portion of the AS curve in the Figure 7.2.

Importance of Effective Demand

The principle of effective demand is the most important contribution of Keynes. It is the soul of the Keynesian theory of employment. Dr Klein attributes the Keynesian revolution solely to the development of a theory of effective demand.

Determinant of Employment. Effective demand determines the level of employment in the economy. When effective demand increases, employment also increases, and a decline in effective demand decreases the level of employment. Thus unemployment is caused by a deficiency of effective demand. Effective demand represents the total expenditure on the total output produced at an equilibrium level of employment. It indicates the value of total output which equals national income. National income equals national expenditure. National expenditure consists of expenditure on consumption goods and investment goods. Thus the main determinants of effective demand and the level of employment are consumption and investment. In brief, $\text{Effective Demand} = \text{Value of National Output} = \text{Volume of Employment} = \text{National Income} = \text{National Expenditure} = \text{Expenditure on consumption goods} + \text{Expenditure on investment goods.}$

In the Keynesian analysis of effective demand consumption and investment expenditures relate to the private sector because Keynes considers government expenditure as autonomous. But the post-Keynesian economists include government expenditure as a component of effective demand. Thus, effective demand $(D) = \text{Private consumption expenditure } (C) + \text{Private investment } (I) + \text{Government expenditure } (G)$ on both.

We may conclude that the importance of the principle of effective demand lies in pointing out the cause and remedy of unemployment. Unemployment is caused by a deficiency of effective demand and it can be removed by an increase in consumption expenditure or/and investment expenditure and in case the private expenditures are insufficient and ineffective in bringing about the required level

for the entrepreneurs to provide

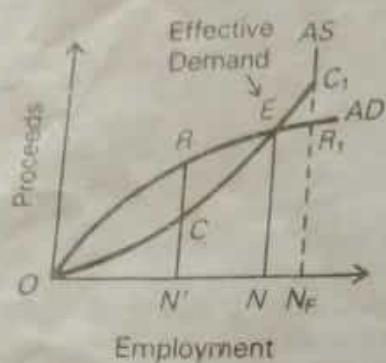


FIG. 7.1

Of the two determinants of effective demand, Keynes regards the aggregate supply function to be given because it depends on the technical conditions of production, the availability of raw materials, machines, etc. which do not change in the short run. It is, therefore, the aggregate demand function which plays a vital role in determining the level of employment in the economy. According to Keynes, the aggregate demand function depends on the consumption function and investment function. The cause of unemployment may be a fall in either consumption expenditure or investment expenditure, or both. The level of employment can be raised by increasing either consumption expenditure or investment expenditure, or both. Thus, it is the aggregate demand function which is the "effective" element in the principle of effective demand. Prof. Dillard regards this as the core of the principle of effective demand.

It follows that to raise the economy to the level of full employment requires the raising of the point of effective demand by increasing the aggregate demand. This is illustrated in Figure 7.2, where E is the point of effective demand which determines ON level of employment. If ON_F is the level of full employment for the economy, it requires

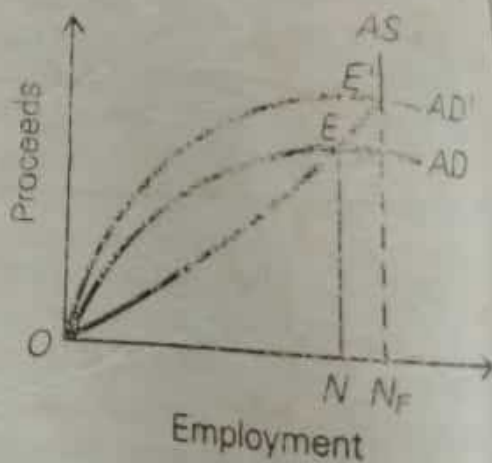


FIG. 7.2

increasing employment to work till ON level is reached where the proceeds expected and necessary equal at point E . It would not be, however, profitable for the entrepreneurs to increase employment beyond this to ON_F level because the proceeds necessary (costs) exceed the proceeds expected (revenue), i.e., $C_1 N_F > R_1 N_F$ and they incur losses. Thus E , the point of effective demand, determines the actual level of employment in the economy which is of underemployment equilibrium.

the raising of the aggregate demand where it intersects the new point of effective demand $O E'$ is raised beyond ON because all the proceeds cannot be increased in the vertical portion.

Importance of the principle of Keynes

The principle of Keynes is that Dr Klein attempted to determine the level of employment in the economy.

Determination of employment

employment determines the level of deficiency expenditure in the economy. National income and investment and the brief, Employment on consumption. In investment consumption of the economy.

and investment and the brief, Employment on consumption. In investment consumption of the economy.

Employment on consumption. In investment consumption of the economy.

In investment consumption of the economy.

consumption of the economy.

of the economy.

ture

V

Un

in

8. Money wages and real wages are directly related and proportional.

9. Capital stock and technological knowledge are given in the short run.

Say's Law of Markets. Say's Law of Markets is the core of the classical theory of employment. Jean Baptiste Say, an early 19th century French Economist, enunciated the proposition that "supply creates its own demand." This is known as Say's Law. In Say's words, "It is production which creates markets for goods. A product is no sooner created than it, from that instant, affords a market for other products to the full extent of its own value." Nothing is more favourable to the demand of one product, than the supply of another.¹ In its original form, the law is applicable to a barter economy where goods are ultimately sold for goods. Every good brought to the market is a demand for some other goods. According to Say, work being unpleasant no person will work to make a product unless he wants to exchange it for some other product which he desires. Therefore, the very act of supplying goods implies a demand for them. In such a situation there cannot be general overproduction because supply of goods will not exceed demand as a whole. But a particular good may be overproduced because the producer incorrectly estimates the quantity of the product which others want. But this is a temporary phenomenon for the excess production of particular product can be corrected in time by reducing its production. James Mill supported Say's Law in these words, "Consumption is co extensive with production and production is the cause, and the sole cause of demand. It never furnishes supply without furnishing demand, both at the same time and both to an equal extent . . . whatever the amount of annual produce, it can never exceed the amount of annual demand." Thus supply creates its own demand and there cannot be general overproduct and hence general unemployment.

The existence of money does not alter the basic law. "Say's law, in a very broad way, is," as Professor Hansen has said, "a description of a free-exchange economy. So conceived, it illuminates the truth that the main source of demand is the flow of factor income generated from the process of production itself."² When producers obtain the various inputs (land, labour and capital) to be used in the production process, they generate the necessary income accruing to the factor-

¹J.B. Say, *Political Economy*, (4th ed.), Vol. 7, pp. 144, 167, 170.

²A.H. Hansen, *A Guide to Keynes*, p. 3.

owners in the form of rent, wages and interest. This, in turn, causes demand for the goods produced. In this way, supply creates its own demand. This reasoning is based on the assumption that all income earned by the factor-owners is spent in buying commodities which they help to produce.

What is not spent is saved which is automatically invested. Thus saving must equal investment. If there is any divergence between the two, the equality is maintained through the mechanism of the rate of interest. To the classicists, interest is a reward for saving. The higher the rate of interest, the higher the saving, and vice versa. On the contrary, the lower the rate of interest, the higher the demand for investment funds, and vice versa. If at any given period, investment exceeds saving, the rate of interest will rise. Saving will increase and investment will decline till the two are equal at the full employment level. This is because saving is regarded as an increasing function of the rate of interest and investment as a decreasing function of the rate of interest.

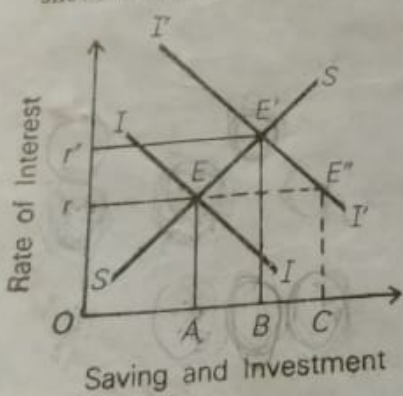


FIG. 6.1

saving and investment, the rate of interest will rise. This is shown to rise to Or' in the figure. At this interest rate, the saving curve SS intersects the investment curve $I'I'$ at E' . Consequently, both saving and investment equal at OB .

The validity of Say's Law in a money economy also depends on the classical quantity theory of money which states that price level is a function of the supply of money. Algebraically, $MV = PT$ where M , V , P , and T are the supply of money, velocity of money, price level and the volume of transactions (or total output). The equation

tests that the total money supply M (the total output) to be constant. Assuming V (the total output) to be constant, (M) causes a proportional change in the relation between quantity and price level is depicted in Figure 6.2(A).

The horizontal axis and the total money supply curve which because the equation $MV = P$ on all points of this curve. C output level OQ , there would one price level QP consistent quantity of money as shown on the MV curve. If the of money increases, the MV shift to the right as M_1V result, the price level would OP to OP_1 , given the output OQ . This rise in is exactly proportional the quantity of money.

Having determined with the help of the money MV and the wage consistent with it is possible to determine. This is explained where W/P is the level is OP , the money OP_1 the money wage level W/P of Fig.

Pigou's Version final version at of labour market tendency of employment in the wage market economy passing mirror

in turn, causes
creates its own
that all income
modities which

invested. This
between the
of the rate of
g. The higher
On the con-
nd for invest-
ment exceeds
and invest-
ment level
tion of the
the rate of

vestment is
the invest-
curves inter-
of interest
nd invest-
here is an
e invest-
ght as $I'I'$
rate Or
han OA
classical
urve SS
el when
stment.
between
own to
ve SS
saving

on the
l is a
where
price
ation

tells that the total money supply MV equals the total value of output PT in the economy. Assuming V (the velocity of money) and T (the total output) to be constant, a change in the supply of money (M) causes a proportional change in the price level (P). This is based on the assumption that money acts as a medium of exchange.

The relation between quantity of money, total output and price level is depicted in Figure 6.2(A) where the price level is taken on the horizontal axis and the total output on the vertical axis. MV is the money supply curve which is a rectangular hyperbola. This is because the equation $MV = PT$ holds on all points of this curve. Given the output level OQ , there would be only one price level QP consistent with the quantity of money as shown by point m on the MV curve. If the quantity of money increases, the MV curve will shift to the right as M_1V curve. As a result, the price level would rise from OP to OP_1 , given the same level of output OQ . This rise in the price level is exactly proportional to the rise in the quantity of money, i.e., $PP_1 = mm_1$.

Having determined the price level with the help of the total quantity of money MV and the total output OQ , it is possible to determine the money wage consistent with a given real wage. This is explained in Figure 6.2(B), where W/P is the real wage line or wage-price line. When the price level is OP , the money wage is OW . When the price level rises to OP_1 , the money wage also rises to OW_1 . The wage-price combination $OW_1 = OP_1$ is consistent with the full employment real wage level W/P of Figure 6.3(A).

Pigou's Version. The classical theory of employment received its final version at the hands of Pigou who formulated Say's Law in terms of labour market. According to Pigou, under free competition the tendency of the economic system is to automatically provide full employment in the labour market. Unemployment results from rigidity in the wage structure and interferences in the working of the free market economy. When the state intervenes by recognising trade unions, passing minimum wage laws, etc., and labour adopts monopolistic

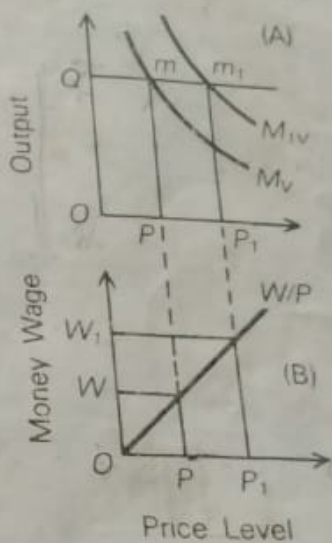


FIG. 6.2

behaviour, wages are pushed up and unemployment ensues. If government interferences are removed and forces of competition are allowed to work freely, the manipulation of wage rates will lead to full employment. As pointed out by Pigou, "With perfectly free competition... there will always be at work a strong tendency for wage rates to be so related to demand that everybody is employed." The Pigou equation $N = \frac{qY}{W}$ explains the entire proposition. In this equation N is the number of workers employed, q is the fraction of income earned as wages and salaries, Y is the national income and W is money wage rate. N can be increased by a reduction in W . Thus the key to full employment is a reduction in money wage. This is explained in the adjoining Figure 6.3. In panel (A), S is the supply curve of labour and D is the demand curve of the two curves at E shows the point of full employment N_f and the real wage W/P at which full employment is secured. If the real wage is maintained at a higher level W/P_1 , supply exceeds the demand for labour by sd . $N_0 N_f$ labour is unemployed. It is only when the wage is reduced to W/P that unemployment disappears and the level of full employment is attained. This is shown in panel (B), where MPL is the marginal product labour curve which slopes downward as more labour is employed. Since every worker is paid wages equal to his marginal product, therefore the full employment level N_f is reached when the wage rate falls from W/P_1 to W/P .

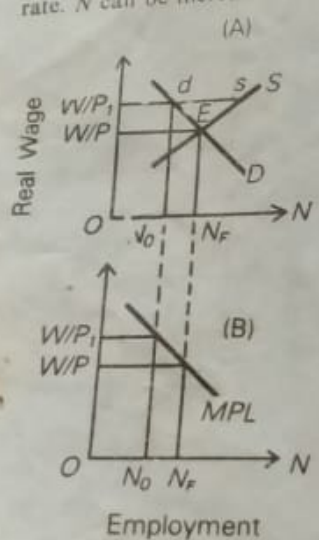


FIG. 6.3

every worker is paid wages equal to his marginal product, therefore the full employment level N_f is reached when the wage rate falls from W/P_1 to W/P .

[In the classical model of employment, changes in money wages and real wages are directly related and are proportional.] When there is a cut in the money wage, the real wage is also reduced to the same extent which reduces unemployment and ultimately brings full employment in the economy. This relationship is based on the assumption that prices are proportional to the quantity of money. It is argued that in a competitive economy a reduction in the money wage reduces the

*A.C. Pigou, *Theory of Employment*, p. 252.

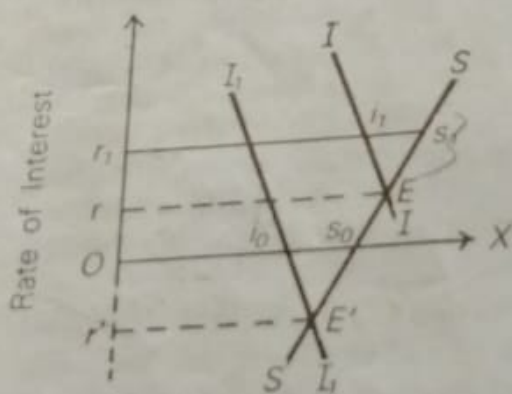
cost of production an
In order to meet the
are employed to pro
As employment in
employment is reached
level, total output
technological know
ces, a precise relat
total output and th
employment. Total o
ing function of th
This is shown in F
(K, T, N), that is,
function of ' f ' of
of technological
the number of
duction function
short run the
of workers give
Figure, the to
level N_f (of F
The classical
full employm
tion among e
the full empl
tion in the e
full employ
It is the inc
mechanism
crease mor
increase in
ed by the
increase i
level and
inflation

A Sum
In it

*Ar
Shap

purposes related to idle balances. But Keynes did not agree with this view. He emphasised the importance of speculative demand for money. He pointed out that the earning of interest from assets meant for transactions and precautionary purposes may be very small at a low rate of interest. But the speculative demand for money would be infinitely large at a low rate of interest. Thus the rate of interest will not fall below a certain minimum level, and the speculative demand for money would become perfectly interest elastic. This is Keynes 'liquidity trap' which the classicists failed to analyse.

As a corollary, Keynes pointed out that it was possible for saving to exceed investment while the rate of interest was positive. The liquidity prevents the rate of interest from falling below certain minimum level. This may, in turn, prevent the equality of saving and investment. This is illustrated in Figure 6.5 where SS is the saving curve and II the investment curve. If the liquidity trap is at Or_1 rate of interest, it would prevent the interest rate from falling to Or and the equality between saving and investment will not be brought about at point E . At the liquidity trap level Or_1 saving exceeds investment by $i_1 s_1$. So the economy will not settle at the full employment level (E) where saving and investment are equal but at underemployment equilibrium where saving exceeds investment.



Saving and Investment

FIG. 6.5

has shifted to the extreme left as I_1I_1 showing fall in investment. Such a possibility exists under a depression. At zero interest rate saving exceeds investment by i_0s_0 . In this situation, the classical saving and investment curves intersect at point E' when the rate of interest Or' is negative. This is an absurd situation.)

(6) The classical economists regarded money as neutral. Therefore they excluded the theory of output, employment and interest rate from the monetary theory. According to them, the level of output and employment, and the equilibrium rate of interest were determined by

real forces. Keynes theory was separate domain of monetary theory through the interest rate. For interest fall demand increase, and

(7) Keynes wage control policy in the economy wage rate and increase in economy wage-control demand

From which consequence and it be a Keynesian problem. According to monetary theory is what

(2) Keynes refuted Say's Law of markets that supply always creates its own demand. He maintained that all income earned by the factor-owners would not be spent in buying products which they helped to produce. A part of the earned income is saved and is not automatically invested because saving and investment are distinct functions. So when all earned income is not spent on consumption goods and a portion of it is saved, there results a deficiency of aggregate demand. This leads to general overproduction because all that is produced is not sold. This, in turn, leads to general unemployment. Thus Keynes invalidated Say's Law by invoking the principle that marginal propensity to consume is less than one.

(3) Keynes did not agree with the classical view that the *laissez-faire* policy was essential for an automatic and self-adjusting process of full employment equilibrium. He pointed out that the capitalist system was not automatic and self-adjusting because of the non-egalitarian structure of its society. There are two principal classes, the rich and the poor. The rich possess much wealth but they do not spend the whole of it on consumption. The poor lack money to purchase consumption goods. Thus there is general deficiency of aggregate demand in relation to aggregate supply which leads to overproduction and unemployment in the economy. This, in fact, led to the Great Depression. Had the capitalist system been automatic and self-adjusting this would not have occurred. Keynes, therefore, advocated state intervention for adjusting supply and demand within the economy through fiscal and monetary measures.

(4) The classicists believed that saving and investment were equal at the full employment level and in case of any divergence the equality was brought about by the mechanism of rate of interest. Keynes held that the level of saving depended upon the level of income and not on the rate of interest. Similarly investment is determined not only by rate of interest but by the marginal efficiency of capital. A low rate of interest cannot increase investment if business expectations are low. If saving exceeds investment, it means people are spending less on consumption. As a result, demand declines. There is overproduction and fall in investment, income, employment and output. It will lead to reduction in saving and ultimately the equality between saving and investment will be attained at a lower level of income. Thus it is variations in income rather than in interest rate that bring the equality between saving and investment.

(5) The classical economists believed that money was demanded for transactions and precautionary purposes. They did not recognise the speculative demand for money because money held for speculative

IS and LM Functions

level where the IS and LM curves intersect. The primary effect of increase in the money supply is to shift the LM curve downwards from LM₁ to LM₂. This leads to a fall in the interest rate from R₁ to R₂ and an increase in output from Y₁ to Y₂.

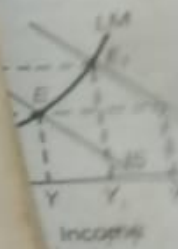


FIG. 29.7

R₁ in the model of income and interest rate. The LM function

in classical theory occurs in labour, goods and money markets of the economy.

In the labour market, the demand for labour and the supply of labour determine the level of employment in the economy. Both are functions of the real wage rate (W/P). It is the point of intersection of the demand and supply curves of labour which determines the equilibrium wage rate and the level of full employment. They are W/P and N_f respectively in Figure 6.3.

The total output, in turn, depends upon the level of employment, given the capital stock and technological knowledge. It is shown by the production function $Q=f(K, T, N)$ which relates total output OQ to N_f level of full employment in Fig. 6.4 which exactly equals N_f in Figure 6.3. Further, it is the mechanism of the rate of interest which brings about the equality of saving and investment so that the amount of commodities demanded should remain equal to the amount supplied at the full employment level, as shown in Figure 6.1.

Equilibrium in the money market is represented by the equation $MV=PT$. It explains the price level corresponding to the full employment level of output. It is OP_1 corresponding to OQ level of output in Figure 6.2(A).

Keynes's Criticism of Classical Theory

Keynes vehemently criticised the classical theory of employment for its unrealistic assumptions. He wrote in his *General Theory* that "the characteristics of the special case assumed by the classical theory happen not to be those of the economic society in which we actually live, with the result that its teaching is misleading and disastrous if we try to apply it to the facts of experience . . . It represents the way in which we should like our economy to behave. But to assume that it actually does so is to assume difficulties away." (Keynes attacked the classical theory on the following counts.)

(1) Keynes rejected the fundamental classical assumption of full employment equilibrium in the economy. He considered it as unrealistic. He regarded full employment as a special situation. The general situation in a capitalist economy is one of underemployment. This is because the capitalist society does not function according to Say's law, and supply always exceeds its demand. We find millions of workers are prepared to work at the current wage rate, and even below it, but they do not find work. Thus the existence of involuntary unemployment in capitalist economics (entirely ruled out by the classicists) proves that underemployment equilibrium is a normal situation and full employment equilibrium is abnormal and accidental.

(2) Keynes refuted Say's Law of its own demand. He maintained that owners would not be spent in to produce. A part of the earned automatically invested because saving tions. So when all earned income and a portion of it is saved, the demand. This leads to general oduced is not sold. This, in turn, Keynes invalidated Say's Law. propensity to consume is less t

(3) Keynes did not agree w policy was essential for an au employment equilibrium. He was not automatic and self- structure of its society. The whole of it on consumption sumption goods. Thus the in relation to aggregate unemployment in the eco sion. Had the capitalist s would not have occurred tion for adjusting suppli fiscal and monetary m

(4) The classicists b at the full employment lity was brought abou held that the level of not on the rate of in by rate of interest rate of interest can are low. If saving c less on consumptio duction and fall i will lead to reduc saving and inves Thus it is variati the equality bet

(5) The class for transaction the speculative

cost of production and prices of products thereby raising their demand. In order to meet the increased demand for the products, more workers are employed to produce them.

As employment increases, total output also increases till full employment is reached. But when the economy is at the full employment level, total output becomes stable. Thus given the stock of capital,

technological knowledge and resources, a precise relation exists between total output and the amount of employment. Total output is an increasing function of the number of workers. This is shown in Figure 6.4 where $Q=f(K,T,N)$. This is shown in Figure 6.4 where $Q=f(K,T,N)$, that is, total output Q is a function of 'f' of the capital stock K , of technological knowledge T , and of the number of workers, N . This production function shows that in the

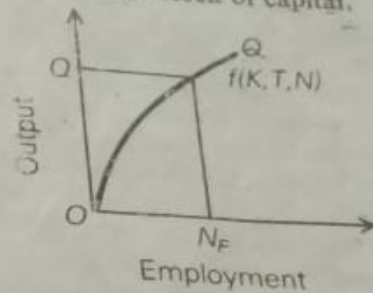


FIG. 6.4

short run the total output is an increasing function of the number of workers given the capital stock and technological knowledge. In the Figure, the total output OQ , corresponds to the full employment level N_F (of Figure 6.3).

The classicists believed that under normal competitive conditions full employment will be maintained without inflation. Even competition among employers to hire more workers will not bid wages above the full employment level, and there will be no possibility of cost inflation in the economy. Further, due to the operation of Say's law, the full employment level of output will create demand equal to that level. It is the increase in aggregate demand which causes inflation. But the mechanism of the rate of interest prevents aggregate demand to increase more than the total output. Again, inflation is caused by the increase in the quantity of money by more than what can be absorbed by the expanding output. But this is also not possible because an increase in the quantity of money increases only the absolute price level and not relative prices. Hence there is full employment without inflation in the classical system.

A Summary of the Complete Classical Model⁴

In its simplest form, the determination of output and employment

⁴Another method is to place all the interrelated figures together. See E. Shapiro, *op. cit.*, Ch. 14.

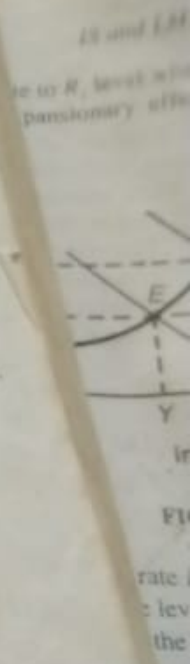
real forces. Keynes criticised the classical view that the monetary theory was separate from the value theory. He integrated monetary theory with value theory, and brought the theory of interest in the domain of monetary theory (by regarding the interest rate as a monetary phenomenon). He integrated the value theory and the monetary theory through the theory of output. This he did by forging a link between the quantity of money and the price level via the rate of interest. For instance, when the quantity of money increases, the rate of interest falls, investment increases, income and output increase, demand increases, factor costs and wages increase, relative prices increase, and ultimately the general price level rises. Thus Keynes integrated monetary and real sectors of the economy.

(7) Keynes refuted the Pigovian formulation that a cut in money wage could achieve full employment in the economy. The greatest fallacy in Pigou's analysis was that he extended the argument to the economy which was applicable to a particular industry. Reduction in wage rate can increase employment in an industry by reducing costs and increasing demand. But the adoption of such a policy for the economy leads to a reduction in employment. When there is a general wage-cut, the income of the workers is reduced. As a result, aggregate demand falls leading to a decline in employment.

From the practical view point also Keynes never favoured a wage-cut policy. In modern times, workers have formed strong trade unions which resist a cut in money wage. They would resort to strikes. The consequent unrest in the economy would bring a decline in output and income. Moreover, social justice demands that wages should not be cut if profits are left untouched.

Keynes also did not accept the classical view that there was a direct proportionate relationship between money wages and real wages. According to him, there is an inverse relation between the two. When money wages fall, real wages rise and vice versa. Therefore, a reduction in the money wage would not reduce the real wage, as the classicists believed, rather it would increase it. This is because the money wage-cut will reduce cost of production and prices by more than the former. Thus the classical view that fall in the real wages will increase employment breaks down. Keynes, however, believed that employment could be increased more easily through monetary and fiscal measures rather than by reduction in money wage. Moreover, institutional resistances to wage and price reductions are so strong that it is not possible to implement such a policy administratively.

(8) Keynes did not agree with Pigou that "frictional maladjustments alone account for failure to utilise fully our productive power." The



capitalist system is such that left to itself it is incapable of using productive power fully. Therefore, state intervention is necessary. The state may directly invest to raise the level of economic activity or to supplement private investment. It may pass legislation recognising trade unions, fixing minimum wages and providing relief to workers through social security measures. "Therefore", as observed by Dillard, "it is bad politics even if it should be considered good economics to object to labour unions and to liberal labour legislation." So Keynes favoured state action to utilise fully the resources of the economy for attaining full employment.

(9) The classicists believed in the long-run full employment equilibrium through a self-adjusting process. Keynes had no patience to wait for the long period for he believed that "In the long-run we are all dead". As pointed by Schumpeter, "His philosophy of life was essentially a short-term philosophy." His analysis is confined to short-run phenomena. Unlike the classicists, he assumes tastes, habits, techniques of production, supply of labour, etc. to be constant during the short period and so neglects long-run influences on demand. Assuming consumption demand to be constant, he lays emphasis on increasing investment to remove unemployment. But the equilibrium level so reached is one of underemployment rather than of full employment.

(Thus the classical theory of employment is unrealistic and is incapable of solving the present day economic problems of the capitalist world.)

SELECTED READING

- D.C. Rowan, *Output, Inflation and Growth*, 2/e, 1971.
- Michael C. Lovell, *Macroeconomics*, 1975, Ch. 12.
- Paul Wonnacott, *Macroeconomics*, 1974, Ch. 2.
- Edward Shapiro, *Macroeconomics Analysis*, 4/e, 1978.
- E. E. Hagen, "The classical theory of the level of Output and Employment", in M.G. Mueller (ed.), *Readings in Macroeconomics*, 2/e, 1972.
- W.H. Branson, *Macroeconomic Theory and Policy*, 1972.

EXERCISES

1. Why did the classical economists assume that full employment will be automatic? On what assumption?
2. Explain the classical theory of employment. How does Keynes criticise it?
3. State and explain Say's Law. On what does it depend?

SAY'S

Say's law of market equilibrium. An early 19th century economist stated the proposition. Therefore, there can be no general overproduction of unemployment in a free market.

be asked to leave employment in the economy will automatically adjust.

In Say's words, "Production creates its own demand." A product affords a market value. Nothing is more important than the supply of goods.

Production
obtain the value of goods generated through the sale of labour and goods from the market. Demand for goods is determined by the supply of goods.

Barter
applicable to all goods. All goods are sold in a market. Say's Law is applicable to all goods.

PART THREE
MACROECONOMIC THEORY

Chapter 6

The Classical Theory of Employment

INTRODUCTION

John Maynard Keynes in his *General Theory of Employment, Interest and Money* published in 1936, made a frontal attack on the classical postulates. He developed a new economics which brought about a revolution in economic thought and policy. The *General Theory* was written against the background of classical thought. By the "classical" Keynes meant "the followers of Ricardo, those, that is to say, who adopted and perfected the theory of Ricardian economics." They included, in particular, J.S. Mill, Marshall and Pigou. Keynes repudiated traditional and orthodox economics which had been built up over a century and which dominated economic thought and policy before and during the Great Depression. Since the Keynesian Economics is based on the criticism of classical economics, it is necessary to know the latter as embodied in the theory of employment.

Classical Theory of Employment

The classical theory assumes the existence of full employment without inflation. Given wage-price flexibility, there are automatic forces in the economic system that tend to maintain full employment, and produce output at that level. Thus full employment is regarded as a normal situation and any deviation from this level is something abnormal which automatically tends toward full employment. The classical theory of output and employment is based on the following assumptions:

1. There is the existence of full employment without inflation.
2. There is a closed *laissez faire* capitalist economy without foreign trade.
3. There is perfect competition in labour and product markets.
4. Labour is homogenous.
5. Total output of the economy is divided between consumption and investment expenditures.
6. The quantity of money is given.
7. Wages and prices are flexible.

8. Money wages are rational.

9. Capital stock is in short run.

Say's Law of Market

classical theory of 19th century French Economists creates its own definition. "It is produced words, "It is produced is no sooner created other products to the favourable to the economy." "In its brought to the market to Say, work being done unless he wants desires. Therefore for them. In such because supply particular good estimates the cost a temporary product can be consumed supported Say's with production demand. It is not at the same time of annual production demand." The general overproduction

The existence of a very broad of a free-exchange that the market from the price various input process, the

¹J.B. Say

²A.H. H

the raising of the point of effective demand. This is possible by raising the aggregate demand curve to AD' (last column of Table III) where it intersects aggregate supply curve AS at E' . This is the new point of effective demand which provides an optimum level of employment ON_f to the economy. If the aggregate demand function is raised beyond this point the economy will experience inflation because all the existing resources are fully employed and their supply cannot be increased during the short run, as is apparent from the vertical portion of the AS curve in the Figure 7.2.

Importance of Effective Demand

The principle of effective demand is the most important contribution of Keynes. It is the soul of the Keynesian theory of employment. Dr Klein attributes the Keynesian revolution solely to the development of a theory of effective demand.

Determinant of Employment. Effective demand determines the level of employment in the economy. When effective demand increases, employment also increases, and a decline in effective demand decreases the level of employment. Thus unemployment is caused by a deficiency of effective demand. Effective demand represents the total expenditure on the total output produced at an equilibrium level of employment. It indicates the value of total output which equals national income. National income equals national expenditure. National expenditure consists of expenditure on consumption goods and investment goods. Thus the main determinants of effective demand and the level of employment are consumption and investment. In brief, $\text{Effective Demand} = \text{Value of National Output} = \text{Volume of Employment} = \text{National Income} = \text{National Expenditure} = \text{Expenditure on consumption goods} + \text{Expenditure on investment goods}$.

In the Keynesian analysis of effective demand consumption and investment expenditures relate to the private sector because Keynes considers government expenditure as autonomous. But the post-Keynesian economists include government expenditure as a component of effective demand. Thus, effective demand (D) = Private consumption expenditure (C) + Private investment (I) + Government expenditure (G) on both.

We may conclude that the importance of the principle of effective demand lies in pointing out the cause and remedy of unemployment. Unemployment is caused by a deficiency of effective demand and it can be removed by an increase in consumption expenditure or/and investment expenditure and in case the private expenditures are insufficient and ineffective in bringing about the required level of

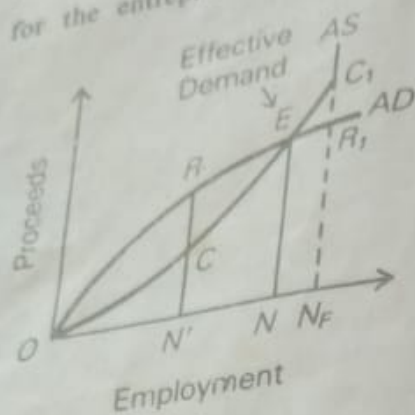


FIG. 7.1

Of the two determinants of effective demand, Keynes regards the aggregate supply function to be given because it depends on technical conditions of production, the availability of raw materials, machines, etc. which do not change in the short run. It is, therefore, the aggregate demand function which plays a vital role in determining the level of employment in the economy. According to Keynes, the aggregate demand function depends on the consumption function and the investment function. The cause of unemployment may be a deficiency of either consumption expenditure or investment expenditure, or both. The level of employment can be raised by increasing either consumption expenditure or investment expenditure, or both. Thus, it is the aggregate demand function which is the "effective" element in the principle of effective demand. Prof. Dillard regards this as the core of the principle of effective demand.

It follows that to raise the economy to the level of full employment requires the raising of the point of effective demand by increasing aggregate demand. This is illustrated in Figure 7.2, where E_1 is the new point of effective demand which determines ON level of employment. If ON_f is the level of full employment for the economy, it requires

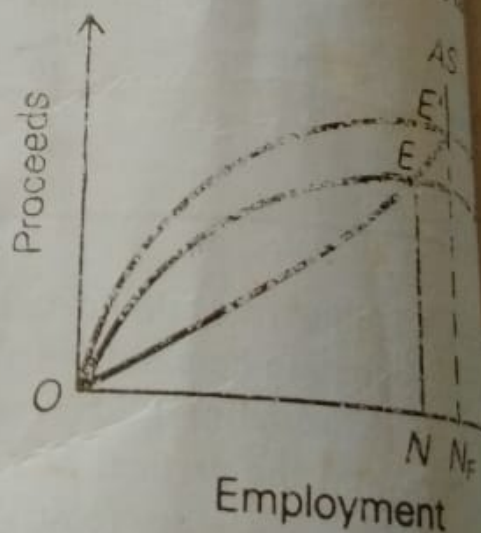


FIG. 7.2

increasing employment to the level of full employment till ON level is reached. If the proceeds expected are not equal at point E , the entrepreneurs will not employ beyond this level because the proceeds (revenue) expected (revenue), i.e., R_1N_f and they incur losses. E , the point of effective demand, determines the actual employment in the economy which is of underemployment equilibrium.

the raising of the point of effective demand where it is raised because it cannot be raised vertically.

Important The position of the economy is determined by the level of effective demand.

Determination of employment level depends on the aggregate demand function. A deficiency in either consumption or investment expenditure leads to unemployment. National income and its distribution are affected by the level of employment. In Keynesian theory, investment and consumption are the two main components of aggregate demand.

de U ca in in

Table III shows that so long as the aggregate demand price is higher than the aggregate supply price, it is profitable for the entrepreneurs to employ more workers, when the entrepreneurs expect to receive Rs 230 crores, Rs 240 crores and Rs 250 crores than the proceeds necessary amounting to Rs 215 crores, Rs 230 crores and Rs 245 crores, they will provide increasing employment to 20 lakh, 25 lakh and 30 lakh workers respectively. But when the proceeds necessary and proceeds expected equal Rs 260 crores the level of employment rises to 35 lakhs. This is the point of effective demand. If we assume the level of full employment to be 40 lakh workers in the economy, it will necessitate the drawing up of a new aggregate demand price schedule as shown in Table III last column. As a result, the point of effective demand is 40 lakh workers because both the aggregate demand price and the aggregate supply price equal Rs 275 crores. Beyond this point there is no change in the level of employment which is steady at 40 lakh workers.

TABLE III: SCHEDULE OF AGGREGATE DEMAND AND AGGREGATE SUPPLY PRICES

Level of Employment (N) (in lakhs)	Aggregate Supply Price (Z) (Rs crores)	Aggregate Demand Price (D) (Rs Crores)	
		Old	New
20	215	230	235
25	230	240	245
30	245	250	255
35	260	260	265
40	275	270	275
40	290	280	285
40	305	290	295

Figure 7.1 illustrates the determination of effective demand where AD is the aggregate demand function and AS the aggregate supply function. The horizontal axis measures the level of employment in the economy and the vertical axis, the proceeds expected (revenue) and the proceeds necessary (costs). The two curves AD and AS intersect each other at point E . This is effective demand where ON workers are employed. At this point the entrepreneurs' expectations of profits are maximised. At any point other than this, the entrepreneurs will either incur losses or earn subnormal profits. At ON' level of employment the proceeds expected (revenue) are more than the proceeds necessary (costs), i.e., $RN' > CN'$. This indicates that it is profitable

employment. According to Keynes, the aggregate supply function is an increasing function of the level of employment and is expressed as $Z = \phi N$, where Z is aggregate supply price of the output from employing N men."

The aggregate supply curve can be drawn on the basis of the above data. It slopes upward from left to right because as the level of employment increases, the level of full employment also rises. When the economy reaches the level of full employment, the aggregate supply curve becomes vertical. Even with the increase in the aggregate supply price, it is not possible to provide more employment as the economy has attained the level of full employment.

Determination of Effective Demand

We have studied the two determinants of effective demand separately and now are in a position to analyse the process of determining the level of employment in the economy. The level of employment is determined at the point where the aggregate demand price equals the aggregate supply price. In other words, it is the point where what entrepreneurs expect to receive equals what they must receive and their profits are maximised. This point is called the effective demand. Here the entrepreneurs earn normal profits. So long as the aggregate demand price is higher than the aggregate supply price, the prospect of getting additional profits are greater when more workers are provided employment. The proceeds expected (revenue) rise more than the proceeds necessary (costs). This process will continue till the aggregate demand price equals the aggregate supply price and the point of effective demand is reached. This point determines the level of employment and output in the economy. The point of effective demand is, however, not necessarily one of full employment but of underemployment equilibrium. If the entrepreneurs try to provide more employment after this point, the aggregate supply price exceeds the aggregate demand price indicating that the total costs are higher than the total revenue and there are losses. So the entrepreneurs will not employ more workers beyond the point of effective demand till the aggregate demand price rises to meet the aggregate supply price at the new equilibrium point which may be one of full employment. If the aggregate demand price is raised still further, it will lead to inflation for no increase in employment and output is possible beyond the level of full employment. The following table explains the determination of the point of effective demand.

*J.M. Keynes, *op. cit.*, p. 25.

Table
than the
to emp
Rs 230
necessa
crores,
and 3
and pr
rises t
sume t
nomy,
price
point
gate c
Beyo
is ste

Al
fu
th
ar
se
ar
a
e
n
n

The Principle of Effective Demand: Aggregate Demand and Aggregate Supply*

The logical starting point of Keynes's theory of employment is the principle of effective demand.¹ In a capitalist economy the level of employment depends on effective demand. Thus unemployment results from a deficiency of effective demand and the level of employment can be raised by increasing the level of effective demand.

Meaning

In ordinary parlance demand means desire. It becomes effective when income is spent in buying consumption goods and investment goods. Keynes used the term 'effective demand' to denote the total demand for goods and services at various levels of employment. Different levels of employment represent different levels of aggregate demand. But there can be a level of employment where aggregate demand equals aggregate supply. This is the point of effective demand. In Keynes's words, "The value of D (Aggregate Demand) at the point of Aggregate Demand function, where it is intersected by the Aggregate Supply function, will be called the effective demand." Thus according to Keynes, the level of employment is determined by effective demand which, in turn, is determined by aggregate demand price and aggregate supply price.

Aggregate Demand Price

"The aggregate demand price for the output of any given amount of employment is the total sum of money or proceeds, which is expected from the sale of the output produced when that amount of labour is employed."² Thus the aggregate demand price is the amount of

*We have confined our analysis to Keynes's method of deriving aggregate demand and aggregate supply functions. For an alternative analysis refer to E. Shapiro, *op. cit.*, Ch. 13.

¹D. Dillard, *op. cit.*

²*Op. cit.*

money which the entrepreneurs expect to get by selling the output produced by the number of men employed. In other words, it refers to the expected revenue from the sale of output produced at a particular level of employment. Different aggregate demand prices relate to different levels of employment in the economy.

A statement showing the various aggregate demand prices at different levels of employment is called the aggregate demand price schedule or aggregate demand function. "The aggregate demand function according to Keynes, "relates any given level of employment to the expected proceeds from that level of employment." Table I shows the aggregate demand schedule.

The Table reveals that with the increase in the level of employment the proceeds expected (ADP) rise and at lower levels of employment the proceeds fall. When 45 lakh people are provided employment the aggregate demand price is Rs 280 crores and when 25 lakh people are provided jobs, it is Rs 240 crores. According to Keynes, the aggregate demand function is an increasing function of the level of employment and is expressed as $D = F(N)$, where D is the proceeds which entrepreneurs expect from the employment of N men.

TABLE I: AGGREGATE DEMAND SCHEDULE

Level of Employment (N) (in lakhs)	Aggregate Demand Price (D) (Rs crores)
20	230
25	240
30	250
35	260
40	270
45	280
50	290

The aggregate demand curve can be drawn on the basis of the above schedule. It slopes upward from left to right because as the level of employment increases aggregate demand price also rises, shown as AD curve in Figure 7.1.

Aggregate Supply Price

When an entrepreneur gives employment to certain amount of labour, it requires certain quantities of cooperant factors like land,

¹J.M. Keynes, *op. cit.*, p. 89.

capital, raw material and labour. Thus each unit of production requires a certain amount of these factors. "At any price is the total value of output produced in the economy, taken into account the proceeds received by the entrepreneur from the sale of output produced at a particular price." A statement showing the various aggregate supply prices at different levels of employment is called the aggregate supply price schedule or aggregate supply function. "The aggregate supply function according to Keynes, "relates any given level of employment to the proceeds required to produce that level of employment." Table II shows the aggregate supply schedule.

The Table reveals that with the increase in the level of employment the proceeds required (ASP) rise and at lower levels of employment the proceeds fall. When 45 lakh people are provided employment the aggregate supply price is Rs 280 crores and when 25 lakh people are provided jobs, it is Rs 240 crores. According to Keynes, the aggregate supply function is an increasing function of the level of employment and is expressed as $S = G(N)$, where S is the proceeds which entrepreneurs require from the employment of N men.

The above aggregate supply curve can be drawn on the basis of the above schedule. It slopes upward from left to right because as the level of employment increases aggregate supply price also rises, shown as AS curve in Figure 7.2.

²Stonier and D. Dillar

capital, raw material, etc. which will be paid remuneration along with labour. Thus each level of employment involves certain money costs of production including normal profits which the entrepreneur must cover. "At any given level of employment of labour aggregate supply price is the total amount of money which all the entrepreneurs in the economy, taken together, must expect to receive from the sale of the output produced by that given number of men, if it is to be just worth employing them."⁴ If brief, the aggregate supply price refers to the proceeds necessary from the sale of output at a particular level of employment. Thus each level of employment in the economy is related to a particular aggregate supply price and there are different aggregate supply prices for different levels of employment.

A statement showing the various aggregate supply prices at different levels of employment is called the aggregate supply price schedule or aggregate supply function. In the words of Prof. Dillard, "The aggregate supply function is a schedule of the minimum amounts of proceeds required to induce varying quantities of employment."⁵ Table II shows the aggregate supply schedule.

TABLE II: AGGREGATE SUPPLY SCHEDULE

Level of Employment (N) (in lakhs)	Aggregate Supply Price (Z) (Rs crores)
20	215
25	230
30	245
35	260
40	275
40	290
40	305

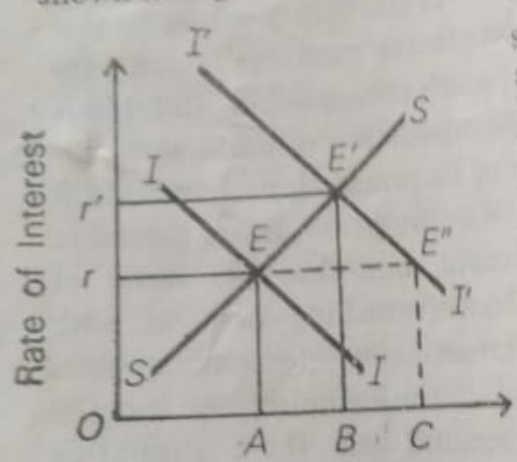
The above table reveals that the aggregate supply price rises with the increase in the level of employment. If the entrepreneurs are to provide employment to 20 lakh workers, they must receive Rs 215 crores from the sale of the output produced by them. It is only when they expect to receive the minimum amounts of proceeds (Rs 230 crores, Rs 245 crores and Rs 260 crores) that they will provide employment to more workers (25 lakhs, 30 lakhs and 35 lakhs respectively). But when the economy reaches the level of full employment (at 40 lakh workers) the aggregate supply price (Rs 275, 290 and 305 crores) continues to increase but there is no further increase in

⁴Stonier and Hague, *A Text Book of Economic Theory*, p. 381.

⁵D. Dillard, *op. cit.*, p. 31.

owners in the form of rent, demand for the goods produced on the earned by the factor-owners is based on they help to produce.

What is not spent is saved which is automatically invested. If there is any divergence between the equality is maintained through the mechanism of the rate of interest. To the classicists, interest is a reward for saving. The rate of interest, the higher the saving, and vice versa. On the other hand, investment funds, and vice versa. If at any given period, investment exceeds saving, the rate of interest will rise. Saving will increase and investment will decline till the two are equal at the full employment level. This is because saving is regarded as an increasing function of the rate of interest and investment as a decreasing function of the rate of interest.



Saving and Investment
FIG. 6.1

saving and investment, the rate of interest will rise to Or' in the figure. At this interest rate, the saving curve intersects the investment curve $I'I'$ at E' . Consequently, both saving and investment equal at OB .

The validity of Say's Law in a money economy also depends on the classical quantity theory of money which states that price level is a function of the supply of money. Algebraically, $MV = PT$ where M , V , P , and T are the supply of money, velocity of money, price level and the volume of transactions (or total output). The equation

in the total causes the assumption is depreciation horizon money cause the all point input level price level quantity of money. It is the result, the input O exactly quantity. Having the money is possible to get credit is here level is the level in O level. Fig. 6.1 shows that at any level of interest rate, both saving and investment are equal to OA . If there is an increase in investment, the investment curve shifts to the right as $I'I'$ and at the interest rate r , investment OC is greater than saving. According to the classic economists, the saving curve remains at its original level while there is any increase in investment. To maintain the equality between saving and investment, the rate of interest will rise. This is shown in the figure where the investment curve intersects the saving curve at E' . Consequently, both saving and investment are equal to OB . The equation $MV = PT$ where M is the supply of money, V is the velocity of money, P is the price level and T is the total output. The equation

tion and prices of products thereby raising their demand. To meet the increased demand for the products, more workers are employed to produce them.

As employment increases, total output also increases till full employment is reached. But when the economy is at the full employment level, total output becomes stable. Thus given the stock of capital, technology, and resources, a functional relation exists between total output and the amount of employment.

This relation is an increasing function of the number of workers, as shown in Figure 6.4 where $Q = f(N)$.

Thus, total output Q is a function of the capital stock K , technological knowledge T , and the number of workers, N . This functional relation shows that in the short run,

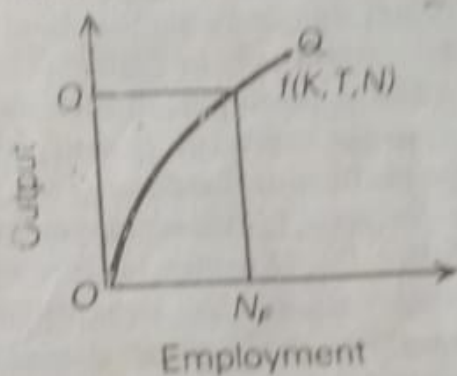


FIG. 6.4

total output is an increasing function of the number of workers, given the capital stock and technological knowledge. In the long run, total output OQ , corresponds to the full employment level (see Figure 6.3).

It is believed that under normal competitive conditions, full employment will be maintained without inflation. Even competitive bidding by employers to hire more workers will not bid wages above the market level, and there will be no possibility of cost inflation in the economy. Further, due to the operation of Say's law, the level of output will create demand equal to that level. There is no excess in aggregate demand which causes inflation. But the high rate of interest prevents aggregate demand to increase beyond the total output. Again, inflation is caused by the excessive quantity of money by more than what can be absorbed by the total output. But this is also not possible because an excessive quantity of money increases only the absolute price level and not relative prices. Hence there is full employment without inflation in a classical system.

The Complete Classical Model⁴

The main form of the determination of output and employment

behaviour, wages are pushed up and unemployment caused. If government interferences are removed and forces of competition are allowed to work freely, the manipulation of wage rates will lead to full employment. As pointed out by Pigou, "With perfectly free competition... there will always be at work a strong tendency for wages to be so related to demand that everybody is employed." The equation $N = \frac{qY}{W}$ explains the entire proposition. In this equation, N is the number of workers employed, q is the fraction of income as wages and salaries, Y is the national income and W is the money wage rate. N can be increased by a reduction in W . Thus the key to increasing employment is a reduction in the money wage. This is explained in the following Figure 6.3. In panel (A), the supply curve of labour and the demand curve for labour. The intersection of the two curves at E is the point of full employment. The real wage W/P at which full employment is secured. If the real wage is maintained at a higher level W/P_1 , the supply exceeds the demand for labour. The class by sd . N_0N_f labour is unemployed. It is only when the wage is reduced to W/P that unemployment disappears and the level of full employment is attained. This is shown in panel (B) where MPL is the marginal product of labour curve which slopes downward as more labour is employed.

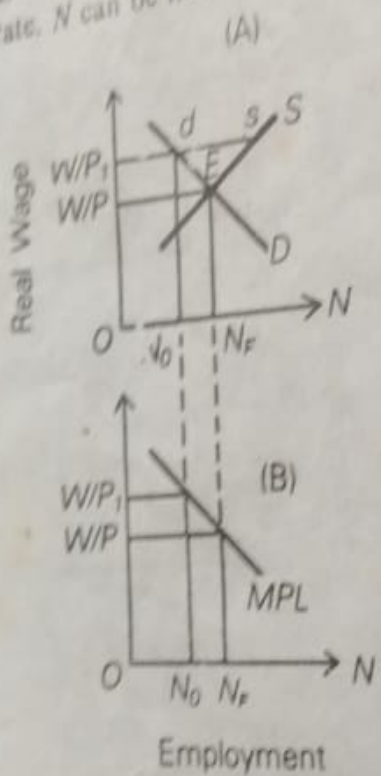


FIG. 6.3

every worker is paid wages equal to his marginal product, then the full employment level N_f is reached when the wage rate falls from W/P_1 to W/P .

In the classical model of employment, changes in money wages are directly related and are proportional. A cut in the money wage, the real wage is also reduced, which reduces unemployment and ultimately brings about full employment in the economy. This relationship is based on the fact that prices are proportional to the quantity of money. It is in a competitive economy a reduction in the money wage re-

*A.C. Pigou, *Theory of Employment*, p. 252.

money supply MV equals the total value of output PT . Assuming V (the velocity of money) and T (the total quantity of money) to be constant, a change in the supply of money results in a proportional change in the price level (P). This is based on the fact that money acts as a medium of exchange between quantity of money, total output and price level. Figure 6.2(A) where the price level is taken on the vertical axis and the total output on the horizontal axis. MV is a curve which is a rectangular hyperbola. This is the equation $MV = PT$ holds.

Given the price level, there would be only one quantity of money consistent with the equation as shown by point m on the curve. If the quantity of money increases, the MV curve will shift outwards to M_1V curve. As a result, the price level would rise from P to P_1 even though the same level of total output OQ is maintained. A rise in the price level is proportional to the rise in the quantity of money, i.e., $PP_1 = mm_1$. This determines the price level for a given total quantity of money and the total output OQ , which in turn determines the money wage with a given real wage.

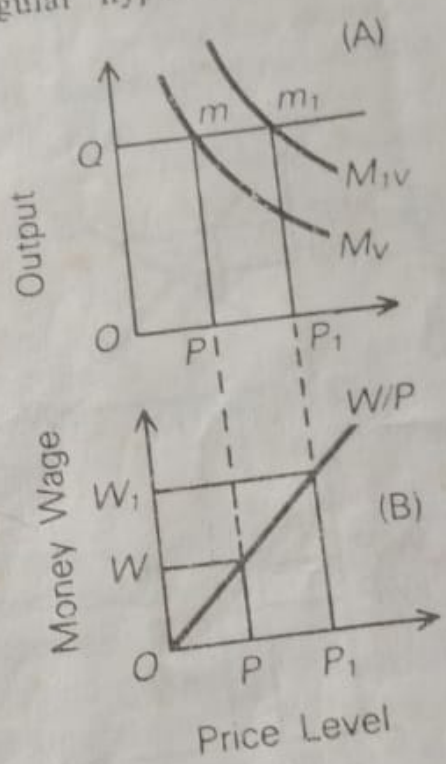


FIG. 6.2

As shown in Figure 6.2(B), the real wage line or wage-price line. When the price level rises, the money wage is OW . When the price level rises to P_1 , the money wage also rises to OW_1 . The wage-price combination OW_1 is consistent with the full employment real wage.

Conclusion. The classical theory of employment received its final form in the hands of Pigou who formulated Say's Law in terms of the market. According to Pigou, under free competition the economic system is to automatically provide full employment in the labour market. Unemployment results from rigidity in the labour market. When the state intervenes by recognising minimum wage laws, etc., and labour market rigidities...