

Trade Cycles

Trade cycles refer to regular fluctuations in the level of national income. It is a well-observed economic phenomenon, though it often occurs on a generally upward growth path and has a variable time span, typically of three years.

In trade cycles, there are upward swings and then downward swings in business. The periods of business prosperity alternate with periods of adversity. Every boom is followed by a slump, and vice versa. Thus, the trade cycle simply means the whole course of trade or business activity which passes through all phases of prosperity and adversity.

Several suggestions have been put forward as to the cause of cycles. The most well known are developed by Samuelson, Hicks, Goodwin, Phillips and Kalecki in the 1940s and 1950s, combine the multiplier with the accelerator theory of investment. More recently, attention has been paid to the effects of shocks to the economy from technology and taste changes.

Phases of Trade Cycles:

Typically economists divide business cycles into two main phases – depression and recovery. Boom and slump mark the turning points of the cycles:

(a) Depression: In this phase, the whole economy is in depression and the business is at the lowest ebb. The general purchasing power of the community is very low. The productive activity, both in the production of consumer goods and the production of capital goods, is at a very low level. Business settles down at a new equilibrium point with a low level of prices, costs and profits. It may last for a number of years. Following are the characteristics of depression:

- (i) The volume of production and trade shrinks,
- (ii) Unemployment increases,
- (iii) Overall prices fall,
- (iv) Profits and wages fall, thus, the income of the community falls to a very low level,
- (v) Aggregate expenditure and the effective demand come down,
- (vi) There is a general contraction of credit and little opportunity to invest,
- (vii) Stock markets show that prices of all shares and securities have fallen to a very low level,
- (viii) Interest rates decline all round,
- (ix) Practically, all construction activity – whether in buildings or machinery, comes to an end.

(b) Recovery: This phase is also known as '*expansion*'. The depression period of trade cycle ends in the recovery period. The economic situation has now become favourable. Money is cheap and so are the other materials and the factors of production. Productive activity has been increased. The entrepreneurs have now

sufficient financial backing. Constructional and allied industries are receiving orders and employing more workers, thus creating more income and employment. This stimulates further investment and production. The whole economy is moving faster towards the boom.

(c) Boom: Boom or peak is the turning point of the trade cycle. It is the highest point of economic recovery. The typical features of boom are as follows:

- (i) A large number of production and trade,
- (ii) A high level of employment and job opportunities in sufficient amount to permit a good deal of labour mobility,
- (iii) Overall rising prices,
- (iv) A rising structure of interest rates, so that a bullish tendency rules stock exchanges,
- (v) A large expansion of credit and borrowing,
- (vi) High level of investment, i.e., manufacturing or machinery
- (vii) A rise in wages and profits so that the community's income rises, and
- (viii) Operation of the economy at optimum capacity.

(d) Recession: It is a sharp slow down in economic activity, but it is different from depression or slump which is more severe and prolonged downturn.

Just as depression created the conditions of recovery, similarly, the boom conditions generate their own checks. All idle factors have been employed and further demand must raise their prices, but the quality is inferior. Less efficient workers have to be taken on higher wages.

Rate of interest rises and so also of the necessary materials. The costs have after all started the upward swing. They overtake prices ultimately and the profit margins are first narrowed and then begin to disappear. The boom conditions are almost at an end.

Then starts the downward course. Fearing that the era of profits has come to a close, businessmen stop ordering further equipment and materials. The prudent businessmen want to get out altogether and cuts down his establishment ruthlessly. The government applies the axe mercilessly. The bankers insist on repayment. The bottlenecks appear, stocks accumulate. Desire for liquidity all round. This accentuates the depression.

The trade cycle is depicted in the following diagram:

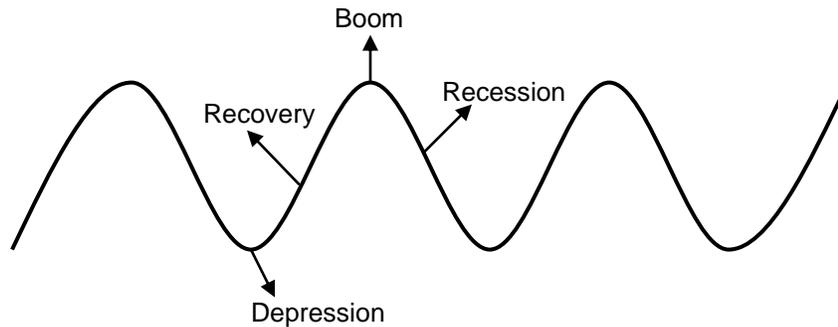


Figure 1 – Phases of Trade Cycle

Theories of Trade Cycle:

(a) Climatic Theory: It is said that there are cycles of climate. For some years the climate is favourable and then comes an unfavourable turn. Changes in climate bring about changes in agricultural production. The cycle of agricultural production results in a cycle of industrial activity, for industry is deeply affected by the state of agricultural production.

One of the famous climatic theories is '*Jevons' Sunspot Theory*'. According to Stanley Jevon, spots appear on the face of the sun at regular intervals. These spots affect the emission of heat from the sun, which, in turn, conditions the degree of rainfall. The rain affects agriculture, which, in turn, affects trade and industry. That is how trade cycles are caused.

(b) Psychological Theory: According to psychological theory of trade cycle, there are moods of optimism alternating the moods of pessimism in the economy, without any tangible basis. At some stage, people just think that trade is good and that it is going to remain good. Business activity is intensified and becomes feverish. Then, all of a sudden, people start thinking that the period of prosperity has lasted long enough and adversity is round the corner. Thus, although there was no valid reason for depression to come about, but it is brought about by the people themselves. It is all psychological.

(c) Under-Consumption Theory: According to under-consumption theory, there is too much of saving during a boom and further additions to saving reduce the level of consumption. A reduction in the level of consumption, in the face of increasing productive capacity, must sooner or later lead to the collapse of the boom. This theory is associated with the names of J. A. Hobson and Major Douglas.

(d) Monetary Theory: R.G. Hawtrey was a firm believer in monetary theory. According to him, variations in flows of money are the sole and sufficient

determinants of business activity and account for alternating phases of prosperity and depression. When the business prospects are good, the banks freely extend credit facilities. The businessmen go on expanding their business, entering into further and further commitments with the banks. A huge superstructure of credit is built up and this superstructure can be maintained by cheap money conditions. But a point reached, when banks think that they have gone a bit too far in the matter of advances. Probably their reserve ratio fallen dangerously low. In self-defence, they apply the brake, curb further expansion of credit, and begin to recall advances. This sudden suspension of credit facilities proves a bombshell in the business community. Businessmen have to sell their stocks in order to repay. This general desire for liquidity depresses the market, and may even led to bankruptcy for certain firms.

(e) Over-Investment Theory: According to over-investment theory, fluctuations in the rate of investment are the main causes of trade cycles. Investment becomes excessive during the boom. That investment during the boom is borne out by the fact that investment goods industries expand faster than consumption goods industries during the upward phase of the cycle. During the depression, investment goods industries suffer more than consumption goods industries.

(f) Keynes' Theory: According to Keynes, the business cycle is a rhythmic fluctuation in the overall level of income, output and employment. According to him, fluctuations in economic activity are caused by fluctuations in the rate of investment. And fluctuations in the rate of investment are caused mainly by fluctuations in the marginal efficiency of capital. The rate of interest, which is the other determinant of investment, is more or less stable and does not play a significant role in cyclical fluctuations in investment.

Fluctuations in MEC or the expected rate of profit on new investment are due to:

- (i) changes in the prospective yields, and
- (ii) changes in the cost or supply price of the capital goods.

Towards the end of the boom, the decline in the prospective yields on capital is due, in first instance, to the growing abundance of capital goods which lowers the MEC. The turning point from expansion to contraction is, thus, explained by the collapse of MEC. As investment falls, because of the decline in MEC, income also falls. The multiplier works in reverse direction.

Just as the collapse of MEC is the main cause of the upper turning point in the trade cycle, similarly the lower turning point, i.e., change from recession to recovery, is due to the revival of MEC. The interval, between the upper turning point and the start of recovery, is conditioned by two factors:

- (i) the time necessary for wearing out of durable capital assets, and

- (ii) the time required to absorb the excess stocks of goods left over from the boom.

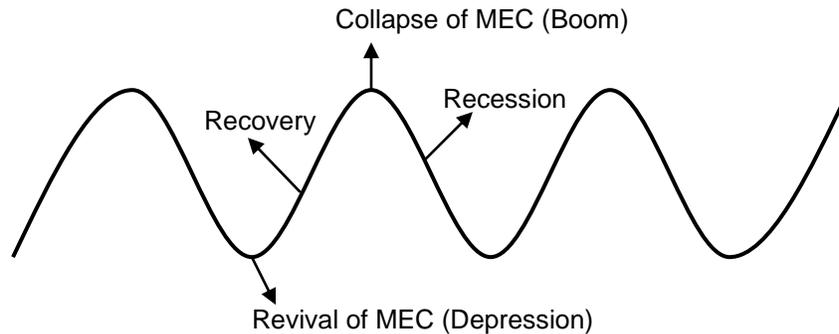


Figure 2 – Phases of Trade Cycle and MEC

(g) Theory of Interaction Between Multiplier and Accelerator: The Keynes theory has ignored the acceleration effect on trade cycle. According to this theory, trade cycle is result of the interaction between multiplier and accelerator. An autonomous increase in the level of fixed investment raises income by a marginal amount according to the value of the multiplier. This increase in total income will induce further increase in investment through acceleration effect. When this happens, the chain of causation is linked round in a 'loop'; investment affects income, which in turn affects investment. Take a look of the following table:

(All figures in billion Rs.)

Period	Autonomous Investment (Deviation from Base Period)	Induced Consumption $C = Y \times mpc$	ΔC	Induced Investment $I = \Delta C \times \text{Accelerator}$	Total Deviation of Income from Base Period $Y = C + I$
(1)	(2)	(3)	(4)	(5)	(6)
	Rs.	Rs.	Rs.	Rs.	Rs.
0	0	0	0	0	0
1	10	0	0	0	10
2	10	6.7	6.7	13.4	30.1
3	10	20.0	13.3	26.6	56.6
4	10	37.8	17.8	35.6	83.4
5	10	55.6	17.8	35.6	101.2
6	10	67.5	11.9	23.8	101.3
7	10	67.6	0.1	0.2	77.8
8	10	51.8	-5.0	-10.0	51.8
9	10	34.6	-5.0	-10.0	34.6
10	10	23.0	-5.0	-10.0	23.0
11	10	15.4	-5.0	-10.0	15.4
12	10	10.2	-5.0	-10.0	10.2
13	10	6.8	-3.4	-6.8	10.0
14	10	6.6	0.1	0.2	16.8

In the above table, the mpc is assumed to be $2/3$, accelerator to be 2 and there is one-period lag. One-period lag means that an increase in income in one period induces an increase in consumption in the succeeding period. In the above table, an autonomous investment of Rs.10 billion is added up each period. In the first period, an autonomous increase in investment of Rs.10 billion gives rise to an increase in income of only Rs. 10 billion. It does not induce increase in consumption in period 1, as we have assumed a lag of one period.

Now with mpc of $2/3$, the increase in income of Rs. 10 billion in period 1 induces an increase in consumption of Rs. 6.7 billion ($10 \times 2/3$) in period 2. With the value of accelerator as 2, there will be induced investment of Rs. 13.4 billion (6.7×2) in the period 2. Now the total increase in income in period 2 over the base period will be equal to the autonomous investment of Rs. 10 billion which is maintained in the second period plus induced consumption of Rs. 6.7 billion plus induced investment of Rs. 13.4 billion (total increase in income in period 2 = Rs. 30.1 billion). Now in the third period, the consumption would be $30.1 \times 2/3 =$ Rs. 20 billion. The formula for income for this purpose is follows:

$$\text{Income} = \text{Autonomous Investment} + \text{Induced Investment} + \text{Induced Consumption}$$

The increase in consumption (ΔC) in period 3 is Rs. 13.3 billion (i.e., Rs. 20 billion – Rs. 6.7 billion). This increase in consumption of Rs. 13.3 billion will induce investment of the value of Rs. 26.6 billion in period 3. Thus, the total increase in the income in period 3 over the base period is equal to Rs. 56.6 billion. Under the combined effect of multiplier and accelerator, the income increases up to the 6th period, but, beyond the 6th period, it begins to decrease. 1st to 6th is the stage of expansion or upswing. The 6th one is a turning point and from 6th onward is the phase of contraction or down swing.

In the above table, it has been assumed that there is no limitation of productive resources. In other words, there is no full employment ceiling. The above table conveys the idea about interaction between the multiplier and accelerator and its impact on national income.

As there is a limit to the increase in NI set by the full employment ceilings, Professor Hicks explains the different phases of trade cycle with the help of following diagram in Figure 3:

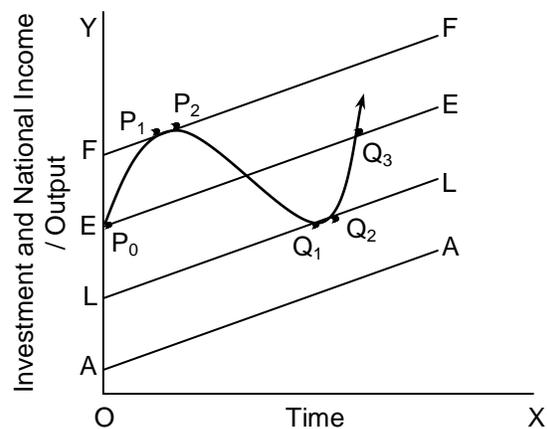


Figure 3 – Phases of Trade Cycle

In the above diagram, AA is the line representing autonomous investment. The multiplier and autonomous investment together determine the equilibrium level of income shown by the line LL. This line is also known as '*floor line*'. The national income grows from one year to the next along with this floor line. The line EE shows the equilibrium time path of national income determined by autonomous investment and the combined effect of multiplier and accelerator. FF is the full employment ceiling. It is the line that shows the maximum national output at any period of time.

Starting from point E, the economy will be in equilibrium moving along the path EE determined by the combined effect of multiplier and accelerator and the growing level of autonomous investment. When the economy reaches P_0 along the path EE, suppose there is an external shock. There is an outburst of investment due to certain innovations or jump in government investment. When the economy experiences such an outburst of autonomous investment, it pushes the economy above the equilibrium path EE after point P_0 . The rise in autonomous investment due to external shock causes NI to increase at a greater rate than shown by the slope of EE. This increase in NI will cause further increase in induced investment through acceleration effect. The increase in induced investment causes NI to increase by a magnified amount through multiplier.

Thus, under the combined effect of multiplier and accelerator, NI or output will rapidly expand along the path from P_0 to P_1 . But this expansion must stop at P_1 , because this is the full employment ceiling. The limited human and material resources of the economy do not permit a greater expansion of NI. Therefore, when point P_1 is reached, the rapid growth of NI must come to an end. It is assumed that the full employment ceiling grows at the same rate as autonomous investment. Therefore, FF slopes gently unlike the greater slope of the line from P_0 to P_1 . When point P_1 is reached, the economy must grow at the same rate as the usual growth in the autonomous investment.

For a short time, the economy may crawl along the full employment ceiling FF. But because NI has ceased to increase at the rapid rate, the induced investment via accelerator falls off to the level consistent with the modest rate of growth. But the economy cannot crawl along its full employment ceiling for a long time. The decline in induced investment, when NI, and hence consumption, ceases to increase rapidly, initiates a contraction in the level of income and business activity. Thus, there is a slackening off at P_2 and the level of NI moves towards EE. Investment falls off rapidly and multiplier works in the reverse direction.

The fall in NI and output resulting from the sharp fall in induced investment will not stop on touching the level EE but will go further down. The economy must consequently move all the way down from point P_2 to point Q_1 . But at point Q_1 , the floor has been reached. NI will not fall further, because this is the equilibrium level given by the working of ordinary multiplier and autonomous investment free

from simultaneous operation of the accelerator. The economy may crawl along the floor through the path Q_1 to Q_2 . In doing so, there is a growth in the level of NI. This rate of growth as before induces investment and both the multiplier and accelerator come into operation, and the economy will move towards Q_3 and the full employment ceiling FF. This is how interaction between multiplier and accelerator causes economic fluctuations as explained by Professor Hicks.

(h) Kaldor's Contribution to Modern Trade Cycle Theory: Kaldor has also used a modified and more realistic form of accelerator and investment function in trade cycle theory. According to the conventional concept of accelerator, the investment or demand for capital depends upon the rate of change of the level of economic activity (i.e., the level of income and employment). Whereas, according to Kaldor's point of view, the demand for investment or capital goods depends upon the level of activity rather than the rate of change of that level. It should be remembered that in Kaldor's analysis the level of activity means the level of national output, income and employment. In Kaldor's model of trade cycle, the capital accumulation by raising the productive capacity affects the investment decisions of the entrepreneurs. The effect of the capital accumulation on the investment decision of the entrepreneurs makes the investment function non-linear in the real world (that is, investment-incomes or investment-employment curve is not a straight line). Through this non-linear investment function, Kaldor has explained the conditions of stability and instability of an economy, which are described as below:

In his theory, Kaldor has used ex-ante concepts of saving and investment, i.e., ex-ante saving and ex-ante investment. Ex-ante investment means planned net addition to the stock of fixed capital and inventories of goods. This ex-ante investment differs from the realised, actual or ex-post investment by the amount of unintended accumulations or dis-accumulations of inventories of goods which arise due to difference between the planned and realised sales goods. Ex-ante saving means the savings planned by the people for a period if they had accurately forecast their incomes. Therefore, unexpected changes in the level of income will make the realised or ex-post saving different from the planned or ex-ante saving.

When ex-ante investment exceeds the ex-ante saving, the level of activity or income and employment will rise and vice versa. The equilibrium level of activity (income and employment) is determined at which ex-ante investment is equal to ex-ante saving.

Linear Saving and Investment Functions: Let us now see how Kaldor explains the stability and instability of the level of economic activity and the course of trade cycle. Kaldor takes first the cases of linear (straight line) saving and investment functions.

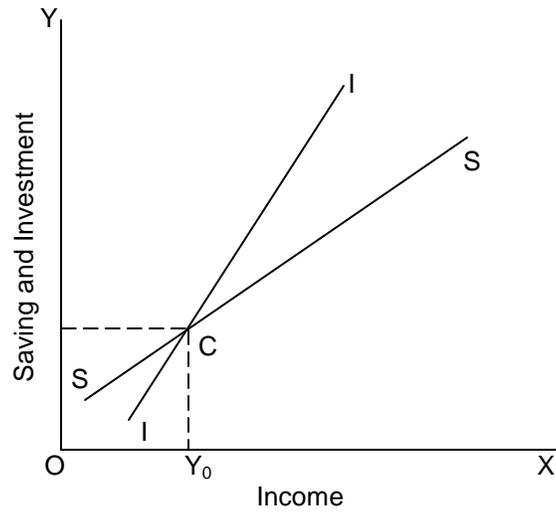


Figure 4 (a) – Linear investment and saving functions
Unstable equilibrium

In the above diagram, linear investment and saving function is shown. The investment curve I is steeper than saving curve SS . The two functions intersect each other at the equilibrium point C , at which the income is determined to be Y_0 . But this equilibrium between ex-ante saving and ex-ante investment is unstable, because, if once this equilibrium is disturbed, the economy will move either towards hyper-inflation or towards collapse.

Now consider the following diagram for a stable condition:

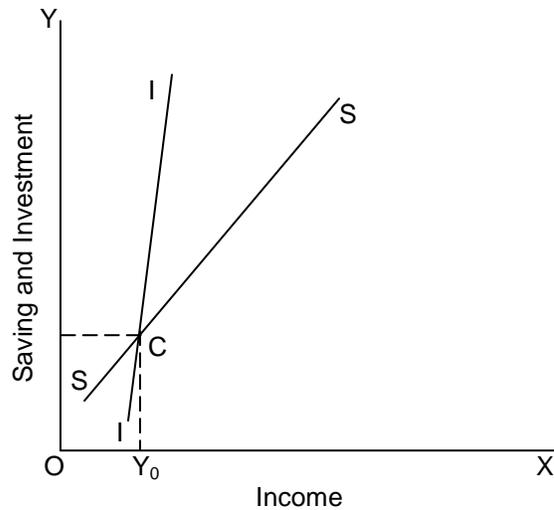


Figure 4 (b) – Linear investment and saving functions
Stable equilibrium

In the above diagram, the investment curve II is less steeply inclined than the saving curve SS. In this case any disturbance, which sends the economy on either side of the equilibrium level, will not reinforce itself and the economy will tend to come back to its equilibrium level Y_0 . But such a stability is also not realistic because economic system in the real world shows great instability. Both the cases of linear ex-ante saving and ex-ante investment functions are quite unrealistic and therefore Kaldor has ruled them out. According to him, in the real world, both the saving and investment functions are non-linear, that is, they are not straight lines. The trade cycles or the fluctuations in the economy are explained by non-linear saving and investment functions.

Non-Linear Saving and Investment Functions: The following figure describes the non-linear saving and investment functions:

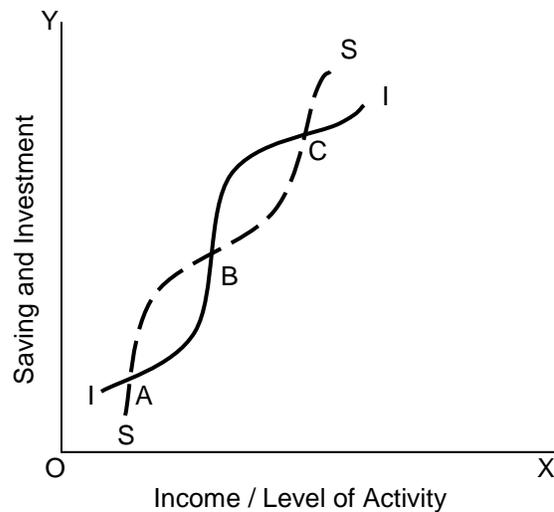


Figure 5 – Non-linear investment and saving functions

In the above diagram, the shapes of the investment curve II and the saving curve SS are not straight. They are cyclical and fluctuating. Both the functions intersect each other at three different points, i.e., A, B and C. Equilibrium at point B is quiet unstable. Above point B, investment exceeds saving and, therefore, once as a result of some disturbing investment exceeds saving, the income (i.e., the level of activity) will go on moving upward till point C is reached, and below point B saving exceeds investment and any disturbance which moves the system below point B, the level of activity or income will go on moving downward till point A is reached. Above point C, saving exceeds investment and, therefore, if the system does above point C, it will come back to it. Therefore, the system is stable upward. On the other hand, below point C, investment exceeds saving and, therefore, any disturbance which sends the system below point C, it will be corrected by the return to the point C. Thus, the level of activity or income at point C is also stable downward. It, therefore, follows that the level of activity or income is in stable equilibrium at point C.

Point A also represents a stable equilibrium. Above point A, saving exceeds investment and below point A, investment exceeds saving, which means that the level of activity will tend to return to point A if any disturbance, causing movement either upward or downward, occurs. It, therefore, follows that both the extreme points C representing boom period and A representing depression, are stable equilibrium points. This means that economy should tend to be in stable equilibrium at either a very high or a very low level of activity. This is, however, a quiet unlikely and improbable result since in the real world the economy is not found to be stable at these extreme levels of activity. This trade cycle is also known as 'self-generating trade cycle'.

Kaldor has explained this 'self-generating trade cycle' through the shifts or changes in the investment function and saving function. According to Kaldor, when the level of investment is very high, production of consumer goods increases and as a result both consumption and saving increase. This means that saving function SS will shift upward when the high level of activity is reached. Besides, with a high level of investment the opportunities for further investment may become temporarily restricted and as a result of this investment function curve II tends to shift downward. Thus, when the economy is at a high level of activity, i.e., at point C, the saving function curve SS tends to move upward and the investment function curve II tends to move downward and consequently the point C tends to move down and point B tends to move up as in the following figure (a), until they meet each other at the combined point BC as in figure (b). at the combined point BC, the economy is in unstable downward position. The contraction in the level of activity will continue further until point A is reached.

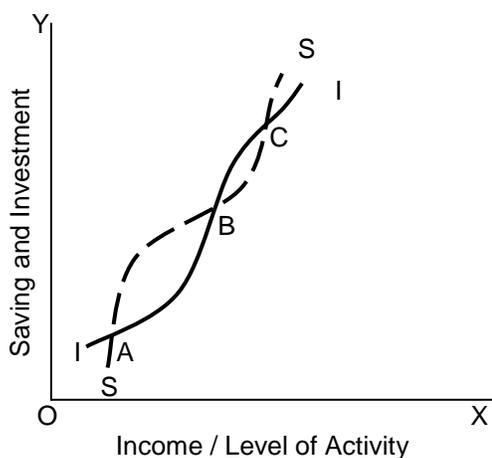


Figure 6 (a) – Investment and saving functions

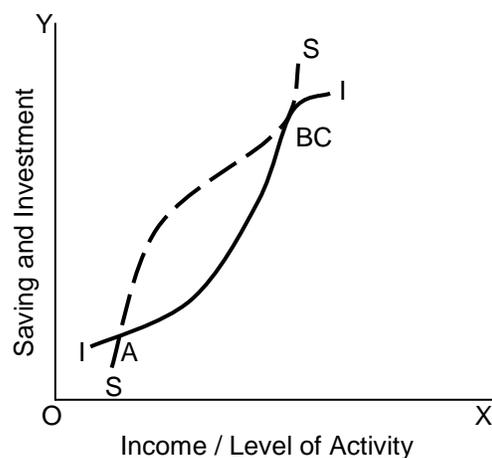


Figure 6 (b) – Investment and saving functions

The economy will not go below point A, because, saving and investment are in stable equilibrium at this point. But according to Kaldor, reversal movement of the cycle will start because the investment function curve will shift downward. Given the level of activity at A, investment in machines or equipment may not be

sufficient to cover the depreciation. This creates opportunities for more investment, which causes the investment function curve to move upward. With the level of activity A, as the investment function curve II moves upward relative to the saving function curve SS, the point B will separate from point C and tend to move towards A as in the following figure 7 (a). The investment function curve II will go on shifting upward till combined point AB is reached in figure 7(b).

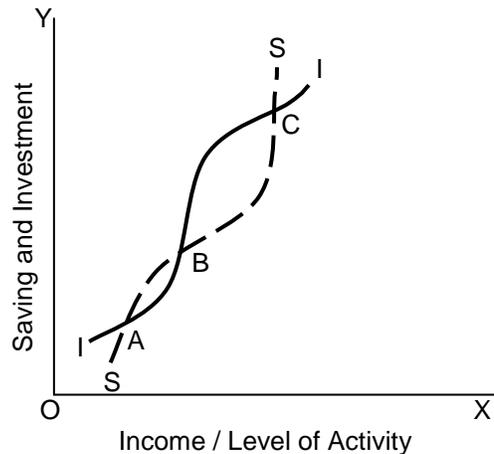


Figure 7 (a) – Investment and saving functions

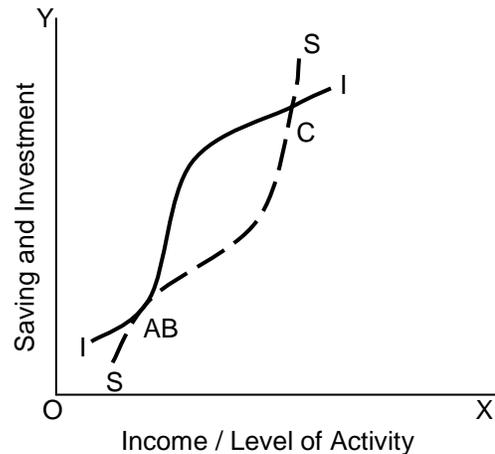


Figure 7 (b) – Investment and saving functions

But the combined point AB is unstable upward, for above combined point AB, investment exceeds saving. As a result, the expansion in the level of activity will not stop at point AB but will continue until once again point C is reached. Now, with the point C representing again the situation of boom having been reached, the investment opportunities once again will become restricted and as a result the movement of contraction in the level of activity will start once again and the whole process of contraction and then expansion will be repeated again. This is how Kaldor shows that the occurrence of trade cycles in a free market economy is self-generating.

Policy for Trade Cycle:

(a) Monetary Policy: A country must always formulate and follow an appropriate monetary policy so as to avoid the occurrence of booms and slumps. Monetary policy embraces banking and credit policy relating to loans and interest rates as well as the monetary standard and public debt and its management. It influences the volume of credit base and, through it the volume of bank credit and thus the general level of prices and of economic activity. When boom conditions are developing, bank rate is raised and thus credit is contracted with the consequent brake upon the undue expansion of business activity. In a depression, a policy of cheap money may be adopted to stimulate business investment and thus assist recovery.

The bank credit policy involves two types of controls, i.e., the qualitative and the quantitative. The quantitative control is aimed at general tightening or easing of

the credit system as the situation may demand. It is exercised by influencing the reserves of the banks. The qualitative or selective control seeks to regulate particular type of credit. Its object is to stimulate, restrict or stabilise bank advances for specific business schemes.

But there are limitations of monetary policy relating to bank rate and open market operations. Its success will depend on how far certain assumptions are true. For example, how far the various member of the banking system are prepared to accept the lead given by the central bank; how far the banks can make their borrowers use their credits for purposes for which such credits have actually been created; further, how far monetary causes are responsible for the economic fluctuations; and still further, and most important, whether the business community will adjust their investment exactly in accordance with the altered rates of interest.

(b) Fiscal Policy: Since public expenditure in all modern states constitutes a fairly respectable proportion of the total national income, fiscal policy is bound to affect the level of prices, production and employment, irrespective of the fact whether this policy is deliberately aimed at this or not. Fiscal policy consists of two elements, i.e., public spending or the policy of public works, and appropriate taxation.

In a year of depression, that is, when private investment is at a low ebb, the deficiency in investment will have to be made up by large capital outlay by the state, and conversely, during the upward swing of the cycle, the state will have considerably to cut down its spending programme. Thus, during the depression years, the state must be ready to spend beyond its current revenues. In other words, the state should be prepared to have deficit budgets during depression. Conversely, there should be surplus budgets during the years of prosperity. To put it another way, instead of having balanced budgets every year, the state should aim at budget-balancing over a series of years.

On the revenue side, rates and taxes should be lowered during depression, while they should be raised during boom years. To stimulate business investment during depression, not only the rates of taxes should be lowered but also more liberal allowances for depreciation and obsolescence, etc., should be granted.

Thus, fiscal policy, which is also known as the contra-cyclical management of public finance, may be operated both through public revenues and public expenditure.

(c) International Measures: So far we have discussed individual national efforts at economic stabilisation. But trade cycle is an international phenomenon and no country is hermetically sealed from the rest of the world. In fact, this international aspect creates complications and makes crisis control all the more difficult.

The measures which are suggested to be adopted on an international scale are: International Production Control, International Buffer Stocks and International Investment Control. International Production Control envisages control of production and prices of the importance primary products. The difficulties of such control are indeed formidable, notably because agriculture in countries like India and Pakistan is usually carried on a small scale and more as a mode of living than business, so that even though it ceases to be profitable, it will be continued. But production control, as far as possible, combined with buffer stocks to counteract sudden changes in supply and demand, will go a long way in preventing rise or fall in their prices, which give rise further to serious fluctuations in the entire economy.

An international investment control for developing backward regions would help in raising the standards of living of their people and thus reduce the inequalities in the standard of living of different peoples. Such reduction in those inequalities is bound to strengthen the forces of stabilisation.