

**[Academic Script]**

**Advances in Business Cycle Theory**

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## **Academic Script**

### **1. Introduction**

The output of an economy increases so the employment through which standard of living increases and finally there is growth in Gross National Production (GNP). The growth is steady, smooth or growing can be measured and observed with the help of business cycle. The business cycle randomly moves, but this is not at a regular or same interval. It has been observed that there has been a long run upward trend in GNP and large short run fluctuations in the activity of an economy. These changes noticed in long run due to output, income, employment and prices. The trend of high income, output and employment has been called the period of expansion. The trend of low income, output and employment has been called as contraction. After every interval the fluctuation occurs recurrent in the economy. So, the activity is called as the trade cycle or business cycle.

### **Meaning**

The trend of any country's economic activity which randomly goes for expansion and contraction is called 'business cycle' or 'Trade cycle'.

### **Types of Business cycle**

There are two types of business cycle namely Without growth trend and growth trend.

**a) Without growth trend** shows fluctuation occur but the equilibrium remains stable i.e., level of growth of GNP remains stable as the time passes. In the diagram, there is steady growth in business cycle. That clear indicates that as time passes, the fluctuations occur and every time the GNP growth is steady.

**b) With growth** trend shows fluctuation occurs and equilibrium does not remain same. It moves up which shows growth in GNP. This happens due to various reasons according to J.R. Hicks like autonomous investment due to growth in population and technological progress.

## **Phases of Business Cycle**

### **Expansion (Boom, Upswing or Prosperity)**

In this phase, people enjoy high standard of living. Price increases for the commodity which does not affect the population of an economy as a result there is increase in the employment and the output of various goods. There is no involuntary unemployment but the frictional and structural unemployment prevails. The movement we have expansion, we have prosperity. In this phrase, there are zero gaps between potential Gross National Production and Actual Gross National Production finally has high production. As per Keynes, when the profit margin of the businessman reduces then the investment reduces, and also the bankers reduce credits then the businessman reduces the investment as a result downswings in the economic activity.

### **Contraction and Depression**

During this period, the price of output reduces due to aggregate demand reduces as a result the output goes down which affect GNP and finally the problem of unemployment increases. The direct effect can be seen on the investment which is negative, as a result the rate of interest goes down, and that means the demand for money holding increases. The excess capacity increases due to lack of demand for consumer goods to the

demand for the capital goods. This brings contraction in the economy.

### **Trough and Revival (Lower turning Point)**

The limit for the lowest level of economic activity is **Trough**. This lasts for small period. During this period without replacement, the capital stock is allowed to depreciate which exists for short period. Due to this there is progress in technology, banking system starts expanding credit, investment increases due to emergence of scarcity of capital. The new technology brings recovery because of this excess capacity used fully, employment increases and finally the cycle gets completed.

### **Features of Business Cycle**

1. It is a cyclical movements or fluctuations.
2. These movements or the changes are recurrent.
3. The period of recurrent is irregular.
4. Trade cycles occur in aggregate variables such as output, income, employment and prices.
5. The industries of durable goods, are relatively had a wide fluctuation in output and employment, but small fluctuation in price. The industries of nondurable goods are relatively having wide fluctuation in price compare to output and employment.
6. The trade cycles are not seasonal fluctuation.
7. The variables like income, employment, output, and prices move for sometime in the same direction but at different rates.
8. Business cycles are not secular trends.
9. The waves of business cycle are cumulative in their effects.

### **Causes of Business Cycle**

The people from the society during various jobs gave various causes of trade cycle. These causes group in monetary, non-

monetary factors and others are psychological factors. The economist Prof. Samulson, groups business cycle into external and internal factors.

**External Factors:** The factors which are not involved in the economic system are called external factors. These factors are war, political events, gold discovery, sun spot population growth, innovations, migrations, discoveries etc. These external factors brings boom in the trade cycle.

**Internal Factors:** The factors which are involved within the country are internal factors. Prof. Haberler has categorised in the monetary factors and non-monetary factors. Examples are bank credits, excess saving, excess investment, competition, psychological causes, innovation and marginal efficiency of capital.

## **2. Theories of Business Cycle**

There are various theories of business cycles given by various economists which discuss the various phases of business cycle in different views.

### **1. Sun-Spot Theory** (Prof. Stanley Jevons, 1875)

He talked about 'the fluctuation in the agricultural sectors takes place due to sun-spot, i.e., due to change in the climate. He said, "Agriculture sector is important because it serves the human beings in the form of food. It also contributes to the industrial sector for the further production. Hence, the agricultural output fluctuates then the output of the other sectors also gets affected because they are dependent on agriculture sector".

### **2. Monetary Theory of Business Cycle**

This theory was on 'Gold Standard'. As time got passed, economy started dealing in gold. The economist talked about the

fluctuations in the money supply which affect the economic activity through changes in price level and the rate of interest. According to the economist Hawtrey, as quantity of money increases, the bank credit for investment also increases. Due to this, bank credit investment or supply of credit expands and also the money supply expands. As a result rate of interest goes down. In this situation, the businessman borrows more money and investment done on new technology, innovative technique of production and finally the output increases and expansion observed. This expansion remains for short duration because as the demand increases, so the price rises. This price rise affects the output and investment to increase. On the other hand, as the price rises, the real value of idle money balance with the consumer gets reduced. The expansion process brings the trade deficits due to import increase and the out flow of gold increases which brings reduction in money supply. Hence, the bank rate reduces and the rate of interest rises which results less investments brings contraction. As the price falls the output will fall due to which people will hold larger money holdings. Thus the contraction brings depression. Depression will stop in short duration because import reduces, gold comes in, a deficit in balance of trade reduces and finally this leads to expansion in business cycle.

### **3. under Consumption Theory (Malthus and Sismodi)**

They said that consumption of goods and consumption of services should be reduced, and then only, the demand for goods and services produced will be generated sufficient and also said that as per the consumer demand, the production should be done otherwise over production brings recession in the market. They say this is not a recurring business cycle, but to explain that how

a free enterprises economy enters a long run economy slow down. They talked about the rich and the poor people of the society. They said richer get more income than the poor in the form of real property and the financial assets own by themselves. So they save more and consume less from their income compare to poor. They have also assumed that during expansion, the rich people's income gets increased compare to poor and the average propensity to save by the rich fall. That means the consumption demand falls and the process of saving increases.

In this expansion period, saving increases, leads to more investment expenditure on capital and later as these goods stock increases, stops the economy to produce more consumer goods and services. This leads to shortage and to overcome form this, the economy expands and the supply of goods is more compare to demand for goods, which leads to price fall. As the price falls the production reduces and the economic activity of an economy goes into recession.

#### **4. over Investment Theory (Prof. Hayek)**

**a.** He discussed on monetary forces which show fluctuations in investment. Believed that at present the economy is in recession and business man demand for bank credit which is very low. This pushes down the money rate of interest below the natural rate. In this situation, the businessman will be able to borrow money and go for capital goods investment. This leads to huge output employment generation, increase in saving, increase in income and finally expansion of the economy and the production of consumer goods rises.

As for the investment, businessman has taken the advantage of bank reserve and this excess bank reserve is come to an end, the bank credit goes up and the supply of a credit in front of

demand is less which brings money rate of interest to go up than the natural rate of income. This brings the losses for the businessman. This situation shows the over investment, less savings, need for finance and decline in investment. This causes the income and consumption to fall and the economy goes down.

### **Over investment Theory by wicksell**

**b.** Wicksell's 'Over Investment Theory' is based on non monetary aspects. He says that as the investment increases and brings the innovation, opening of new market by the entrepreneurs is the cause of cyclical fluctuation and brings the profit for them. This profit can be generated by reducing cost or increasing demand for the products. Expansion causes due to bank credit gets lower, so, the investment rises and after some period over investment can be seen due to lack of bank credit, which lowers the income and consumption brings the recession. Later as again the innovation takes place, the economy expands.

### **5. Keynes's Theory of Business Cycle**

This theory is dependent on the theory developed by himself, 'General Theory of Employment, Interest and Money'. He said, 'the level of aggregate effective demand determines the level of income, output and employment. If the aggregate demand is large then the entrepreneurs will get more profit and they will produce more. As the production increases, the problem of unemployment will be solved and the optimum utilisation of material is observed. The reverse can be seen as the aggregate demand will be lower. Hence, the expansion and contraction observed respectively. According to him these fluctuations of aggregate demand depend upon the aggregate expenditure of



consumer for the consumer goods and entrepreneur investment for consumer goods material and capital assets.

He said, 'In short run the propensity to consume is being more or less stable. The fluctuation of aggregate effective demand primarily depends upon investment demand, so the business cycle fluctuates'. He indicated three important points for the fluctuations. Firstly he said, 'the fluctuation occurs in the business cycle due to change in the aggregate demand which bring about changes in economic activity. He also said due to changes in expectation for profit by the businessman investment fluctuation occurs. And finally he kept Multiplier Theory to explain the change in investment brings change in income and employment'.

## **6. Samuelson's Model of Business Cycle: Interaction between Multiplier and Accelerator**

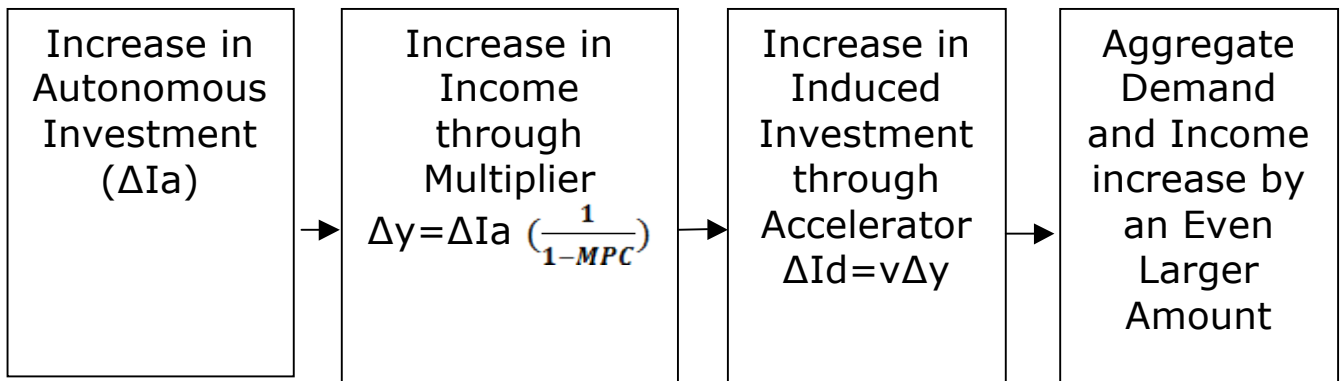
Samuelson says that the cyclical fluctuation in the economy occurs due to the interaction between the multiplier and accelerator. The level of investment increases, income rises by a smaller amount and this depends upon the value of the multiplier. This helps in income rise which leads to further investment to rise by the acceleration effect. As the income increases the aggregate demand for goods and services rises, to fulfil the need of aggregate demand of an economy, it needs more capital goods which make extra investment. So he says investment and income are one of mutual interaction. Investment affect income and this affect investment demand and the process of income and employment have a cyclical manner fluctuation. These cyclical fluctuation came after Prof. Samuelson

combined accelerator with Keynesian Multiplier and showed the effect in the chart.

$\Delta y$  = Increase in income,  $\left(\frac{1}{1-MPC}\right)$  = Size of Multiplier

MPC = Marginal Propensity of Consume

$\Delta Id$  = Increase in Induce Income,  $v$  = Size of Accelerator



In the free private enterprise economy, the fluctuation is caused by investment. The instability occurs due to accelerator and multiplier interaction. The variation in the aggregate demand gives rise to multiplier effect which depends on the marginal propensity to consume. As the consumption, income and output rises, by the multiplier effect further changes in investment occurs and to the extent the investment depends upon the capital output ratio. To conclude, the interaction between the multiplier and the accelerator gives rise to business cycles without any influence of external factors. The pattern of fluctuation depends upon the magnitudes of marginal propensity to consume and capital output ratio.

### 3. Advances in Business Cycle Theory

New two theories have been introduced in recent time, namely, 'The Real Business Cycle Theory' and 'New Keynesian's Economics'. These theories have explained short run fluctuations in output and employment, the respond of monetary and Fiscal

Policy for Business Cycle Fluctuation. Let's have a brief explanation on these theories one by one.

### **1. The theory of Real Business Cycle:**

This theory is based on few assumptions mentioned:

- a. Even in short run price are fully flexible.
- b. The price itself adjusts to clear the market.
- c. The nominal variables, as supply of money and level of price do not influence the real variable as output and employment.
- d. The technological progress and economic growth occurs unevenly.

This theory emphasizes real changes in the production technologies of the economy. According to the assumptions, the technological progress and economic growth unevenly occurs. To explain this theory, they have taken a story of Robinson Crusoe, who was a sailor and staying alone in a desert island. And life of his is simple, then also he has to make many economic decisions, regarding, changes to be brought according to circumstances.

He does only a few activities, swimming at his island, enjoying the leisure, and rest of time he works. He catches fishes or collects vines to make fishing nets. If noticed both are the goods and valuable goods. The fish for the consumption and the vines net for the investment. The calculation of Gross Domestic Production (GDP) of Crusoe's island will be number of fishes caught and number of vines net prepared. The result says that Crusoe is optimizing the time properly in his daily activity.

One day, if school of fish passes then the GDP rises for two reasons. Firstly, productivity rises (catches more fishes) and secondly, his employment rises and he decides to reduce the productivity, temporarily enjoys the leisure more, here the economy is booming. Secondly, if a storm comes for a day and

make an outdoor activity difficult then the productivity falls. This happens each hour spending for fishing and making nets gives a smaller amount of output and here he thinks to spend less time on working and wait for the storm gets out of his hut. In this situation GDP falls due to production falls and to conclude the economy contracts or faces recession.

The other situation says Crusoe is attacked by natives, he defends himself, gets less time for leisure, and he reduces fishing and makes net more for survival that means the GDP goes up as the production increases. Here there is a war time boom. Through this story the expansion and recession happen because of its simplicity. The fluctuation in the output employment, consumption, investment and productivity, these all are natural and desirable response of an individual person to the inevitable changes in his environment. The monetary policy, sticky prices or market failure have nothing to do with the fluctuation of the island economy.

The economist says that according to the situation or the circumstances, the economy fluctuates. This theory of business cycle puts more emphasis on the idea that the labour supply depends on the incentives provided to them. According to the circumstances workers work more when they get the high incentives and vice a versa, and temporarily ignores to the work for short period. The reallocation of overtime work is called 'Intertemporal Substitution of Labour'. Labour is one of the factor of production earns wages and intertemporal Relative wage is calculated as:

$$\text{Intertemporal Relative Wage} = \frac{(1+r)W_1}{W_2}$$

From the above formula the  $W_1$  is the wage of first summer and  $W_2$  is the wage of second summer. On the basis of this, the intertemporal relative wage can be calculated.

If a person has the option of working overtime, in the first summer or the second summer, then he chooses the first summer to work because if he saves the amount then he receives interest on it compare to earning in the second summer. If he receives more incentives in second summer compare to the wage earned plus the rate of the interest of first summer then he will choose to work in second summer.

According to this theory, the labour performs on the basis of cost benefit analysis In short, wage is high, rate of interest is high, and so it's good time to work. The reverse situation low wages and low interest rate, time of leisure. The very next theory by New Keynesian Economics takes some other factors to explain Business Cycle fluctuations. Let's study these variables through which Business Cycle fluctuates.

#### **4. New Keynesian Economics**

When the prices and wages remain sticky, then in short run, fluctuation in output and employment shows various deviations from the natural rate. This believed by various economists. The New Keynesian research has tried to explain by examining the macro economics of price adjustment.

##### **a) Small Menu Cost and Aggregate Demand Externality**

There are various externalities for the price adjustment. According to Albeit Slightly, when one firm reduces the price, everywhere price level fall. This raises the real money balance with the consumer and increases the aggregate demand. This

benefits the other firms and this known as aggregate demand externality.

The prices do not adjust immediately for one reason i.e., in short run there is costs to price adjustment. The costs to price means the various expenditures done to aware the customer, sales staff, etc. about the new prices. 'The costs of changing prices are menu cost'. This leads firms to adjust prices not continuously but intermittently. Keynes said there are externalities to price adjustment which raises real money balances. When there is rise in real money balance, it expands aggregate income. The expansion raises the demand for the product of all firms. The macroeconomic impact of one single firm's price adjustment on the demand for all other firms is called 'an aggregate demand externality'. When the aggregate demand externality is present then small menu costs makes the price sticky and these costs large to society. He also said that while making a decision, the firm ignores the externality. They may decide not to pay the menu cost and cut its prices, but, price cut is socially desirable. Finally "the sticky prices may be optimal for those second prices, even though they are undesirable for the economy as a whole". After this the second theory talks about coordination Failure is the cause of recession.

### **b) Recession as Coordination Failure**

Some of the Keynesian economists think that recession as a result of lack of coordination among economic decision makers. During the recession, the output is low, workers are unemployed and the factories sits idle. The optimum utilization of resources should be done. If the society is unable to come out with feasible and prefer by everyone decision then the member of the society has failed to coordinate their behaviour in some way. The

problem of coordination arises in the setting of wages and prices. Recession as coordination failures have parables firstly the economy is made up of two firms. When there is the fall in the money supply, the firm decides to cut prices, so to earn more profit. Profit does not depend on price cut, but also the decision taken by other firms.

- If none of the firm cuts price then real money balance reduces, hit the recession and earns little profit
- If both the firms cuts price then real money balance increases, recession avoided and earns more profit.
- If one firm reduces its prices and the other do not then recession hits and price cut firm will earn less compare to the other firm which avoids cutting the price. This means one firm cut its price and helps other firm to earn more profit.

The outcome of this theory is both the firms will cut a price for preferable outcome in which each firm make good profit. On the other hand, if expects other firm to maintain the price, both will maintain and gets result, both will earn similar profit. The final and last thoughts about the business cycle are The Staggering of Wages and Prices.

### **c) The Staggering of Wages and Prices**

At the same time, in the economy, everybody does not change the prices and wages. The adjustment of both is staggered. This staggering reduces the speed in the process of coordination and price adjustment.

'Staggering makes the overall level of wages and prices adjust gradually, even when individual wages and prices changes frequently'.

## **5. Summary**

In the above chapter, we have studied the meaning of Business Cycle, various theories of business cycle which talks about different phases of an economy and the two new theories of Advances in Business Cycle Theories i.e "The Real Business Cycle Theory" and "the New Keynesian Economics". Both the theories have explains about the short run fluctuation in output and employment.