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*M.A. Economics (Semester II)*

*Module 5 : New Classical Macroeconomics*

## **CC-8 : Macro Economic Analysis-II**

### **RATIONAL EXPECTATIONS THEORY**

#### **Introduction**

The new classical model of rational expectations is a more basic critique of Keynesian theory than the monetarist model which seemingly asserts the coexistence of both high rate of inflation and high rate of unemployment that prevailed in the US economy in the 1970s. However, the actual theory of rational expectations was proposed by **John F. Muth** in his seminal paper, “*Rational Expectations and the Theory of Price Movements*” published in 1961. Muth used the term to describe the many economic situations in which an outcome depends partly on what people expect to happen. The concept also asserts that outcomes do not differ systematically (i.e., regularly or predictably) from what people expected them to be. Yet the theory did not catch on until the 1970s with **Robert E. Lucas, T. Sargent** and the neoclassical revolution in Economics. No doubt, the theory of rational expectations is a major breakthrough in macroeconomics.

#### **Meaning of Rational Expectations**

According to rational expectations hypothesis, economic agents such as workers and firms do not know the future with certainty and therefore base their decisions on their expectations of the future. The economic agents make rational expectations of future if they use all available information to meet best possible forecasts. New classical economics is based on rational expectations hypothesis put forward by Robert Lucas of the University of Chicago.

#### **Following are the two important aspects of rational expectations model :**

- (i) Markets clear immediately, i.e., they have no faith in either money-wage stickiness or price-stickiness.
- (ii) There is no any strong desirability of activist fiscal and monetary policy for achieving macroeconomic stability both in the short run and long run.

### **Assumptions:**

- (i) With rational expectations, people always learn from past mistakes.
- (ii) Forecasts are unbiased, and people use all the available information and economic theories to make decisions.
- (iii) People understand how the economy works and how government policies alter macroeconomic variables such as price level, level of unemployment and aggregate output.

**Note:** Prior to Lucas, analysis of relation between inflation and unemployment relied on simplistic Philips curve model which visualized higher inflation led to lower unemployment. But Lucas's basic point is that public's forecasts of various economic variables, including money supply, the price level and the GDP are based on reasoned and intelligent examination of available economic data.

### **THE NEW CLASSICAL (LUCAS) RATIONAL EXPECTATIONS MODEL**

The crucial departure that the new classical economists make from Keynesian and monetarists rests on the variables that determine position of labour supply curve of output. It is therefore important to mention on what factors these curves depend.

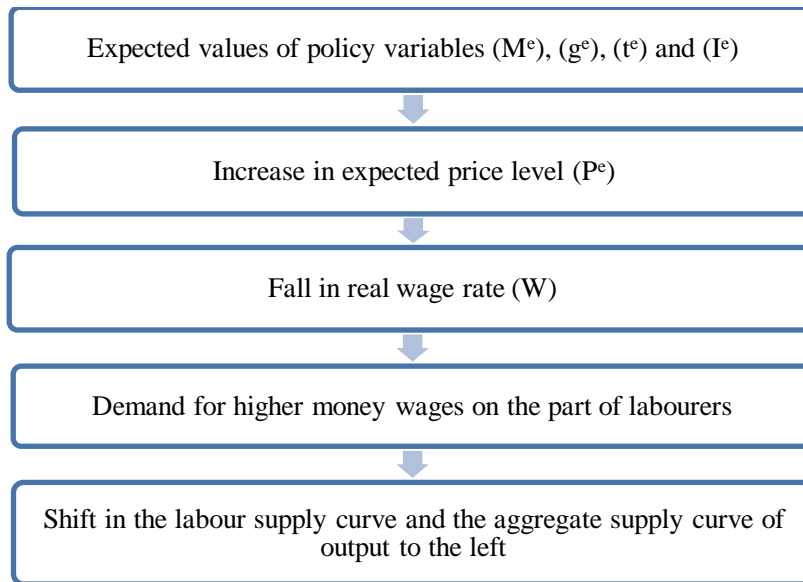
As in the Keynesian theory, in rational expectations model also labour supply curve depends on the *expected real wage*. Thus,

$$N^S = f(W/P^e)$$

**where,**

$N^S$  = labour supply ,  
 $P^e$  = expected price level,  
 $W$  = real wage rate,  
 $f$  = function

As such, the labour supply curve ( $N^S$ ) is the function of real wage rate ( $W$ ) and expected price level , ( $P^e$ ). It has a positive relationship with Real wage rate ( $W$ ) and a negative one with Expected Price level, ( $P^e$ ).



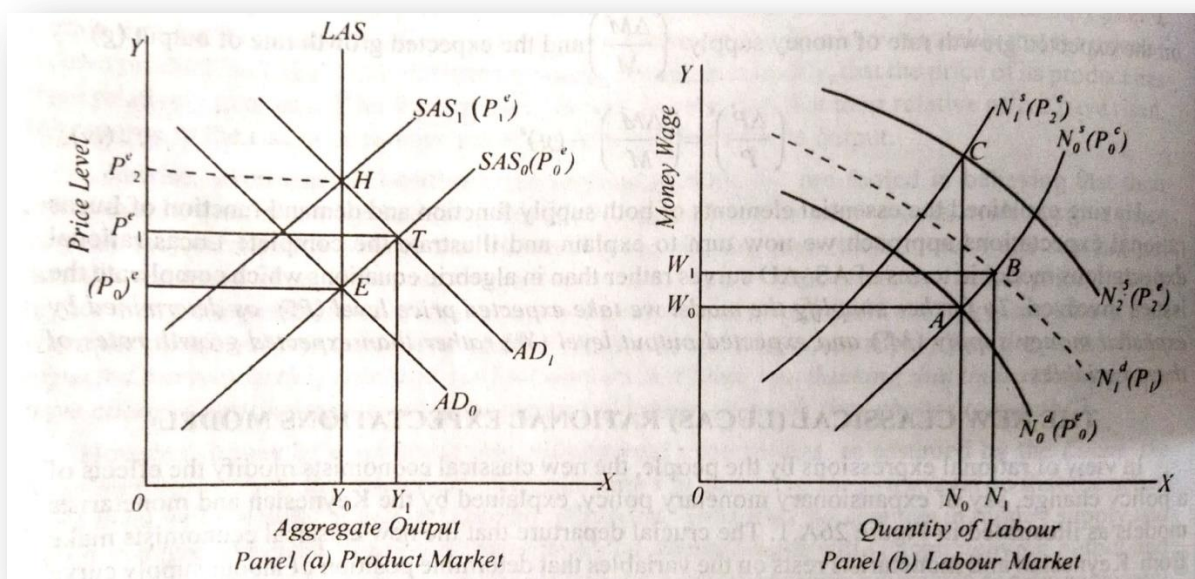
**Note:** Here,  $M^e$  - expected value of money supply  
 $g^e$  - government expenditure  
 $t^e$  - tax collected  
 $I^e$  - the amount of autonomous investment

**Inferences:**

- The position of labour supply curve ( $N^S$ ) and therefore short-run aggregate supply curve of output depends on the expected price level,  $P^e$ .
- The increase in the expected price level will automatically shifts the labour supply curve to the left.
- **On the demand side**, the position of labour supply curve and aggregate supply of output depends on the expected values of policy variables such as  $M^e$ ,  $g^e$ ,  $t^e$  and  $I^e$ .
- **On the supply side**, oil prices, custom duties, excise duties, prices of raw materials and capital goods are important factors determining price level of output.

## RATIONAL EXPECTATION MODEL: THE EFFECT OF EXPANSIONARY MONETARY POLICY

The effect of a fully-anticipated expansion in money supply, say from  $M_0$  to  $M_1$  can be explained as under.



**Figure :** *Rational Expectations Model: The Effect of Expansionary Monetary Policy*

To begin with, AD is the aggregate demand curve which is determined by the given money supply  $M_0$ , government expenditure  $g_0$ , tax collection  $t_0$  and autonomous investment  $I_0$ .  $SAS_0$  is the aggregate supply curve which depends on price level which is determined by money supply ( $M_0$ ).

With the increase in money supply from  $M_0$  to  $M_1$ , other determining variables remaining the same, aggregate demand shifts to  $AD_1$ . As a result, price level rises to  $P_1^e$ , short-run aggregate supply curves remaining the same at the level  $SAS_0$ . With the rise in price level to  $P^e$ , labour demand curve shifts leftwards to  $N_1^d$  which intersects the labour supply curve  $N_0^s$  at point B and determine wage rate  $W_1$  and as a result labour employment increases to  $N_1$ . In the Keynesian model where the expected price level is related to the *current* level of policy variables and therefore aggregate supply curve remains fixed in the short run. However, in the rational expectations model, the positions of aggregate supply and labour supply curves do not remain fixed in the short run because the adoption of expansionary policies are fully anticipated in response to the situation of recession or rise in unemployment that may emerge (the workers who supply their labour services fully know that increase in money supply would cause rise in the price level to  $P_1^e$ ).

As such, it can clearly be seen from *panel (a)* that the new short-run aggregate supply curve  $SAS_1$  intersects the new aggregate demand curve  $AD_1$  at point H and hence determines a higher price ( $P^e_2$ ). With the rise in price level to ( $P^e_2$ ), the labour demand curve will further shift left to the new position  $N_2^d(P^e_2)$ .

\_With these changes, the new equilibrium in the labour market and product market will be established where the output and labour employment are restored to their original levels, namely,  $N_0$  and  $Y_0$  respectively.

\_Wage rate rises to the same extent as the rise in price level.

Thus, it can be inferred that in the rational expectations model, the original levels of output and employment are restored (or unaffected) in the short run itself without any time lag. It is only price level and money wage rate which rise permanently. Hence, this model leads to the conclusion of ineffectiveness (or irrelevance) of economic policy.

## CRITICAL APPRAISAL

- Economists like *Dornbush, Fisher and Startz* (using the US data of quarterly M2 growth from 1960 to 1996 and its effect on output growth) have found that “*there is a strong positive relation between anticipated money growth and output growth.*” This fully contradicts the rational expectations wherein the anticipated changes in monetary policy will have no effect on output and employment.
- Econometricians and economists even argue that it’s highly unrealistic to believe that decision makers such as firms and workers know as much they are required to know to form rational expectations.
- It is also argued that in order to form a rational expectation of the future inflation rate, households and firms must be able to predict the future rate of money growth . But at the same time economists like *Roger Farmer* also opined that predicting future money growth is quite difficult.
- Several critics also pointed out that unlike rational expectations theory, economic policies (monetary and fiscal policies) do matter and hence influences the working of the market economy and help in stabilizing it.

## CONCLUSION

Despite criticisms, rational expectations is a building block for the “*random walk*” or “*efficient markets*” theory of security prices, the theory of the dynamics of hyperinflations, the theories of consumption and the design of economic stabilization policies. Lucas rational expectations approach also asserts that people’s forecasts may not always be correct but in forming expectations they do not make systematic errors. The new classical economists also regard the discretionary demand management policies, both monetary and fiscal, to achieve economic stability as ineffective or irrelevant in view of rational expectations by labour-suppliers and other economic agents.

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#### **Websites:**

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