



JAYOTI VIDYAPEETH WOMEN'S UNIVERSITY, JAIPUR

Government of Rajasthan established

[Through ACT No. 17 of 2008 as per UGC ACT 1956](#)

[NAAC Accredited University](#)

Faculty of Education and Methodology

Faculty Name- JV'n Dr. Md Meraj Alam

Program- BA (Hons) Economics 2nd Semester

Course – Macroeconomics II

Digital session name – Rational Expectation

Introduction:

The new classical macroeconomics is based on the rational expectations hypothesis. This means that people have rational expectations about economic variables. The implication is that people make intelligent use of available information in forecasting variables that affect their economic decisions.

According to this hypothesis, forecasts are unbiased and based on all available information. The hypothesis holds that people make unbiased forecasts. A more controversial assumption is that people use all available information and economic theory in making decisions.

This implies that people understand how the economy works and how the government policies alter macroeconomic variables such as the price level, the level of employment and aggregate output. And because of rational expectations, the government cannot fool the people with systematic economic policies.

The idea of rational expectations was first discussed by John F. Muth in 1961. However, the idea was not widely used in macroeconomics until the new classical revolution of the early 1970s, popularized by Robert Lucas and T. Sergeant. No doubt, the theory of rational expectations is a major breakthrough in macroeconomics.

Until the early 1970s, macroeconomists thought of expectations in one of two ways:

1. Animal Spirits:

The term 'animal spirits' was coined by J.M. Keynes to refer to movements in investment that could not be explained by movements in current variables. In other words, shifts in expectations were considered important but unexplained.

2. Adaptive Expectations:

The second one was the result of simple, backward-looking rules. For example, people were often assumed to have static expectations, that is, to expect the future to be like the present. This assumption is used while discussing the Phillips curve and explaining investment decisions. In other words, people were assumed to have adaptive expectations.

If, for example, their forecast of a given variable in a given period turned out to be too low, people were assumed to "adapt" by raising their expectation for the value of the variable for the next period. For example, seeing an inflation rate higher than they had expected, led people to revise upward their forecast of future inflation upward.

In the early 1970s, Robert Lucas and Thomas Sargent argued that their assumptions did not reflect the way people form expectations. They argued that in thinking about the effect of alternative policies, economists should assume that people have rational expectations, that people look into the future and try to predict the future as best (accurately) as they can. This is not the same as assuming that people know the future, but rather that they use the information they have, in the best possible way.

Practical Implications: Policy Ineffectiveness:

One of the most important contentions of rational expectations is the ineffectiveness of systematic fiscal and monetary policies in reducing unemployment. The basic idea is that a predictable attempt to stimulate the economy would be known in advance, and would have no effect on the economy. This is known as the policy ineffectiveness theorem. With rational

expectations and flexible prices and wages, anticipated government policy cannot affect real output or employment.

Lucas and Sergeant showed how replacing traditional assumptions about the formation of expectations, by the assumption of rational expectations, could fundamentally alter the results. In particular, Lucas challenged the notion that disinflation necessarily required an increase in unemployment for some time. This is known as the Lucas critique.

Lucas pointed out that when trying to predict the effects of a major policy change—like the change considered by the central bank at the time—it could be very misleading to take as given the relations estimated from past data.

Lucas argued that, if wage setters believed that the central bank was committed to lower inflation, they might well expect inflation to be lower in the future than in the past. If they lowered their expectations of inflation, then actual inflation would decline without the need for a protracted recession.

The logic of Lucas's argument can be explained briefly. If wage setters kept forming expectations of inflation (π^e) by looking at the last year's inflation (π^e), i.e., $\pi^e = \pi_{t-1}$ then the only way to decrease inflation would be to accept high unemployment for some time.

But, if wage setters could be convinced that inflation was indeed going to be lower than in the past, they would decrease their expectations of inflation. This would, in turn, reduce actual inflation, without any change in the rate of unemployment.

For example, if wage setters were convinced that inflation, which had been running at 10% in the past, would be only 3% in the future, and if they formed their expectations accordingly, then inflation would fall to 3%, even if the actual rate of unemployment was the same as its natural rate.

Nominal money growth, inflation, and expected inflation could all be reduced even in the absence of a recession. Alternatively stated, decreases in nominal money growth could be neutral not only in the medium term, but also in the short run.

Lucas and Sergeant did not believe that disinflation could really be achieved without tolerating more unemployment. But Sergeant argued that increase in unemployment could be small. The sacrifice ratio—the amount of excess unemployment needed to achieve disinflation— might not be much lower than that suggested by the traditional approach.

Credibility of Policy:

The essential ingredient of successful disinflation is credibility of monetary policy—the belief by wage setters that the central bank is truly committed to reducing inflation. The credibility view is that, fast disinflation is likely to be more credible than slow disinflation. Credibility decreases the unpleasant cost of disinflation. So it is judicious for the central bank to go for fast disinflation.

Only credibility would cause wage setters to change the ways they formed their expectations. In addition, a clear and quick disinflation programme was much more likely to be credible than a protracted one that offered plenty of opportunities for reversal.

Implications:

The rational expectations assumption has important implications. For example, if monetary non-neutrality is due to temporary misperceptions of the price level and people have rational expectations about prices, monetary policy does not affect the real economy systematically.

According to Lucas, the central bank cannot systematically surprise the public if the public has rational expectations. 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.

If people have rational expectations they will eventually understand the central bank's general pattern of behaviour. If expectations are rational, purely random changes in the money supply may be unanticipated and non-neutral. However, because the central bank would not be able to surprise the public systematically it cannot use monetary policy to stabilise output. Thus, even if control of business cycles were desirable, according to rational expectations, the central bank cannot use monetary policy to do so.

Monetarist Rules and the Lucas Critique:

The rational expectations hypothesis has challenged the key assumption of the monetarist school, namely, stability (constancy) of the velocity of money. The monetarists believe that it is possible to stabilise $MV = PY$, nominal GDP, by imposing a fixed-money rule.

But Lucas argues that people may change their behaviour when policy changes. The apparently constant velocity may change if the central bank adopts a fixed-money growth rule. Lucas's argument is a stern warning to monetarists that economic behaviour can change when policymakers rely too heavily upon past regularities.

A Complete Rethinking:

In a more general sense, Lucas and Sergeant's research showed the need for a complete rethinking of macroeconomic models under the assumption of rational expectations. And this is exactly what had happened over the next two decades.

A Challenge to the Phillips Curve Hypothesis:

In a sense, the rational expectations hypothesis threw a challenge to the Phillips curve hypothesis on the short-run trade-off between inflation and unemployment. If economic agents simply adapt their behaviour to the difference between expected and realised events, they will be constantly disappointed during periods of rising inflation.

So they are instead conceived as forming their expectations on the basis of exactly the same information that is available to policymakers. An expansionary fiscal policy or an easy monetary policy, designed to reduce unemployment, is correctly perceived to lead to higher prices; in consequence, private spending accelerates.

As a consequence, there is instant inflation without much effect on real variables such as GDP and employment. This is a refutation of the Phillips curve conjecture that there is a trade-off between inflation and unemployment even in the short run.

The only way a government can bring about deviations from the 'natural rate of unemployment' is by surprising people. But if people learn from experience, this will only

work once or twice; sooner or later people will learn correctly to anticipate any systematic government policy and, at that point, unemployment will never deviate, except momentarily, from its natural rate.

Theory and Practice:

Most macroeconomists today use rational expectations as a working assumption in their models and analysis of policy. When thinking about the likely effects of a particular economic policy, the best assumption to make seems to be that people and firms will do the best they can to work out its implications. Designing a policy on the assumption that people will make systematic mistakes in responding to it is unwise.

Under rational expectations, what happens today depends on expectations of what will happen in the future. But what happens in the future also depends on what happens today. The success of Lucas and Sargent in convincing most macroeconomists to use rational expectations comes not only from the strength of their argument, but also from showing how it could actually be done.

An Application of the Re-Hypothesis: Accuracy of Inflation Forecasts:

The rational expectations approach has been used by economists to test the accuracy of inflation forecasts. Suppose P_t^e is an individual's forecast, made in year $t - 1$ of the price level in year t . Suppose also the actual price level in year t be P_t . Then the difference between the actual price level and the individual's forecast measures his forecast error for year t . $P_t - P_t^e = r_t$ = the individual's forecast error in year t .

If people have rational expectations, these forecast errors are due to exogenous factors, i.e., unpredictable random numbers. However, if errors are consistently positive or negative implying that people systematically tend to under predict or over predict the price level expectations are not rational. If forecasts follow a systematic pattern for example, if people tend to over predict the price level when prices have been rising in the recent past again, expectations are not rational.

Conclusion:

Much progress has been made in the last three decades in developing solution methods for larger and larger models. Today, a number of macroeconomic models are solved under the assumption of rational expectations.

In the ultimate analysis, it appears that the rational expectations assumption is attractive to economists including many new-Keynesian and new-classical economists because it fits well economists' presumption that people systematically, logically and intelligently pursue their economic self-interests. If people's expectations are not rational, the economic plans that individuals make would not be generally as good as they could be.

However, the theoretical effectiveness of rational expectations obviously is not enough. Economists would like to know whether people really do have rational expectations about important economic variables such as the money supply growth, the price level and stock prices.

Course Outcome: The goal of this paper will be to expose the students to the basic principles of macroeconomics. The emphasis will be on thinking like an economist and course will illustrate how economic concepts can be applied to analyse real-life situations. In this course, the students are introduced to money and interest, theories of inflation, rate of interest, trade cycle and growth models.