Rational expectations and why they matter

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Abstract

This article discusses existing behavioral economics theory, focused on Rational Expectations. Macroeconomic and market consequences are considered, especially monetary policy on inflation.

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The concept of 'rational expectations' asserts that outcomes do not differ systematically (i.e., regularly or predictably) from agent's expectations (Thomas, 1976). The theory has roots in one of the most prevalent and basic economic theory assumptions: all the entities in an economic environment maximize their utility. When applied to forecasting, 'maximizing utility' implies making optimal use of all the available information, including information about government policies.

John Muth (1960) initially suggested the rational expectations hypothesis to explain how the expectations are predictions from relevant economic theory. He applied this to commodity fluctuations to prove that agents do not 'waste' information, and expectations depend on the structure of the system. Thus, economic outcomes are dependent on the agent's expectation of the future. The influence between expectations and outcomes flows both ways. Rational expectations theory asserts how people's expectations about the future should be an essential part of any economic model. As agents have to forecast about the future repetitively, they adjust their forecasting methods to remove avoidable errors. It does not say that agents always make the correct forecasts but that if there are errors, then they are random. Mathematically:

$$P = P^{*} + \epsilon$$
$$E[P] = P^{*}$$

where, P, the market equilibrium price, is derived from P* (rationally expected price level) and ϵ (random error term) The error term stems from unexpected changes in information ("shocks"), and is expected to be 0, since we cannot predict what we don't know. The expected price can be reverse-written as a function of the current market price – E(P).

For a long time, economists relied on the Phillips curve (the observed inverse correlation between unemployment and inflation) to advise policymakers. The relation held because of the errors agents make in their forecasts of the price level. However, Robert Lucas (1960) showed that if expectations are rational, it will not be possible for the government to manipulate those forecast errors predictably, as the errors are themselves unpredictable.

Understanding rational expectations has crucially improved our comprehension of several economics fields. It is essential behind the efficient market hypothesis, which says that the current stock price gives the best possible forecast for the future prices (Fama, 1970). It also significantly impacted the permanent income theory of consumption (Friedman, 1967) and has led to a change in belief about the impact of short term tax cuts and stabilization policies to stimulate the economy.

Kydland and Prescott(1977) studied inflation using rational expectations, concluding that independent central banks and not the governments should wield monetary policy. An optimal policy plan at one time may not be optimal any longer for the government (time inconsistency), and any binding commitments made by the government may not be in the government's interest at a later time (credibility problem).

These ideas had a revolutionary impact on policy decision making across countries. Many central banking reforms undertaken in the 1990s and low worldwide inflation regime have been credited to the research using rational expectations (Kydland, Prescott, 2004).

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