

The Nobel Prize in Economics

The Nobel Prize in Economics - Established in 1968 in celebration of the Bank of Sweden's three hundred anniversary. The gesture caused great consternation among the Swedish stewards of the Nobel prize, who saw it as an effort by a "non-rigorous discipline to cloak itself in the trappings of objectivity it did not and could not possess." (Nobel himself never accepted economics as a science.) One authority on the prizes has suggested that too many of the "Nobelized achievements" in economics "seem perilously close to scientizing the commonsensical."

Another fact: The medals (struck from gold) bear on one side a visage of Alfred Nobel, on the other side an image symbolizing the subject of the award along with the name of the recipient. For economists, their names appear only on the rim of the medal.

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The Royal Swedish Academy of Sciences has decided to award the Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel, 1995, to

Professor **Robert E. Lucas, Jr.**, University of Chicago, USA,

for having developed and applied the hypothesis of rational expectations, and thereby having transformed macroeconomic analysis and deepened our understanding of economic policy.

Robert Lucas is the economist who has had the greatest influence on macroeconomic research since 1970. His work has brought about a rapid and revolutionary development:

- Application of the rational expectations hypothesis,
- emergence of an equilibrium theory of business cycles,
- insights into the difficulties of using economic policy to control the economy, and
- possibilities of reliably evaluating economic policy with statistical methods.
- In addition to his work in macroeconomics, Lucas's contributions have had a very significant impact on research in several other fields.

Rational expectations are genuinely forward-looking. The rational expectations hypothesis means that agents exploit available information without making the systematic mistakes implied by earlier theories. Expectations are formed by constantly updating and reinterpreting this information.

In a series of path-breaking articles, Lucas demonstrated the far-reaching consequences of rational expectations formation, particularly concerning the effects of economic policy and the evaluation of these effects using econometric methods, that is, statistical methods specifically adapted for examining economic relationships.

The change in our understanding of the so-called Phillips curve is an excellent example of Lucas's contributions. The Phillips curve displays a positive relation between inflation and employment. In the late 1960s, there was considerable empirical support for the Phillips curve; it was regarded as one of the more stable relations in economics. It was interpreted as an option for government authorities to increase employment by pursuing an expansionary policy which raises inflation.

Milton Friedman and Edmund Phelps criticized this interpretation and claimed that the expectations of the general public would adjust to higher inflation and preclude a lasting increase in employment: Only the short-run Phillips curve is sloping, whereas the long-run curve is vertical. This criticism was not quite convincing, however, because Friedman and Phelps assumed adaptive expectations. Such expectations do in fact imply a permanent rise in employment if inflation is allowed to increase over time.

In a study published in 1972, Lucas used the rational expectations hypothesis to provide the first theoretically satisfactory explanation for why the Phillips curve could be sloping in the short run but vertical in the long run. In other words, regardless of how it is pursued, stabilization policy cannot systematically affect long-run employment.

Lucas formulated an ingenious theoretical model which generates time series such that inflation and employment indeed seem to be positively correlated. A statistician who studies these time series might easily conclude that employment could be increased by implementing an expansionary economic policy. Nevertheless, Lucas demonstrated that any endeavor, based on such policy, to exploit the Phillips curve and permanently increase employment would be futile and only give rise to higher inflation. This is because agents in the model adjust their expectations and hence price and wage formation to the new, expected policy.

Experience during the 1970s and 1980s has shown that higher inflation does not appear to bring about a permanent increase in employment.

This insight into the long-run effects of stabilization policy has become a commonly accepted view;

it is now the foundation for monetary policy in a number of countries in their efforts to achieve and maintain a low and stable inflation rate.

The short-run sloping and long-run vertical Phillips curve illustrates the pitfalls of uncritically relying on statistically estimated so-called macroeconomic models to draw conclusions about the effects of changes in economic policy.

In a 1976 study, introducing what is now known as the "Lucas critique", Lucas demonstrated that relations which had so far been regarded as "structural" in econometric analysis were in fact influenced by past policy. Two decades ago, virtually all macroeconomic models contained relations which, on closer examination, could be shown to depend on the fiscal and monetary policy carried out during the estimation period.

Obviously, then, the same relations cannot be used in simulations designed to predict the effect of another fiscal or monetary policy.

Yet this was exactly how the models were often used.

How could researchers avoid the mistakes forewarned by the Lucas critique? Lucas's own research provided the answer by calling for a new research program.

The objective of the program was to formulate macroeconometric models such that their relations are not sensitive to policy changes;

otherwise, the models cannot contribute to a reliable assessment of economic-policy alternatives. It is easy to formulate this principle: the models should be "equilibrium models" with rational expectations.

This means that all important variables should be determined within the model, on the basis of interaction among rational agents who have rational expectations and operate in a well-specified economic environment.

In addition, the models should be formulated so that they only incorporate policy-independent parameters (those coefficients which describe the relations of the models).

This, in turn, requires sound microeconomic foundations, i.e., the individual agents' decision problems have to be completely accounted for in the model. The parameters are then estimated using econometric methods developed for this purpose.

Interesting attempts to derive and estimate such models have subsequently been made in several different areas, such as the empirical analysis of investment, consumption and employment, as well as of asset pricing on financial markets. The program can be difficult to implement in practice however, and not all attempts have been successful.