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Irrational Expectations, Unclearing Markets and a Business Cycle That Won't Go Away:

The Recent School of New Classical Economists Comes a Cropper on Basic Economic Facts

By DIPENDRA SINHA*

ABSTRACT. The assumptions and conclusions of *New Classical Macroeconomics* (NCM) are critically examined. NCM grew out of the alleged failure of the *Keynesian* school to deal with the problems of *stagflation* of the 1970s. The two fundamental ideas of the NCM are the *rational expectations hypothesis* and the theory of instantaneous *market clearing*. According to the NCM, *fiscal* and *monetary policies* will achieve desired results if they are unanticipated. *Business cycles* are thought to be results of *imperfect information* on the part of *rational agents* (people). The NCM has been severely criticized by such prominent economists as *Arrow*, *Tobin* and *Thurow*.

I

Introduction

CLASSICAL AND NEOCLASSICAL ECONOMICS explained economic phenomena satisfactorily up to the time of the Great Depression. In other words, neoclassical economics was the ruling paradigm in economics. Quantity theory and Say's Law formed the main pillars of neoclassical economics. Full employment was taken care of in the neoclassical world by wage-price flexibility. This paradigm prevailed till the anomalies came by.

The greatest blow to neoclassical economics came in the form of the Great Depression of 1929 and the consequent massive unemployment. The situation could not be explained by neoclassical economics. An alternative theory was offered by John Maynard (Lord) Keynes who, for the first time since the 19th century, pointed to the possibility of the prevalence of involuntary mass unemployment. The idea that the market does not necessarily clear was brought out clearly by Keynes. The three main elements of the Keynesian system are the consumption function, the liquidity function and the investment function. Keynes's ideas gave rise to the new paradigm—the Keynesian paradigm which

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prevailed roughly from the end of World War II to the end of the 1960s. This has been called "the age of Keynes" by Hicks.¹

However, the alleged inability of Keynesian economics to deal with the problem of stagflation of the 1970s has given rise to several new theories of macroeconomics. One has been called the "new classical macroeconomics."² Others, not considered in this paper, include "post-Keynesian economics," "post-industrial economics" and "political economics."

II

New Classical Economics: Main Propositions

THE TWO FUNDAMENTAL IDEAS of the new classical macroeconomics are the rational expectations hypothesis and the theory of instantaneous market clearing.³

The starting point of the rational expectations hypothesis is the seminal piece of work by John Muth. To quote him,

I should like to suggest that expectations, since they are informed predictions of future events, are essentially the same as the predictions of the relevant economic theory. At the risk of confusing this purely descriptive hypothesis with a pronouncement as to what firms ought to do, we call such expectations "rational."⁴

Muth argued that existing economic models did not assume enough rational behavior.

Muth's hypothesis asserts three things: (1) Information is scarce, and the economic system does not waste it. (2) The way expectations are formed depends specifically on the structure of the relevant system describing the economy. (3) A "public prediction" will have no substantial effect on the operation of the economic system unless it is based on inside information.

The new classical economics was developed by Robert Lucas⁵ by essentially combining the Friedman-Phelps analysis of the Phillips curve with the rational expectations hypothesis of Muth. But whereas Muth applied the rational expectations hypothesis only to the commodity markets at the microeconomic level, Lucas applied the idea to the entire macroeconomy. Sargent and Barro also contributed important work supporting the new classical economics.

The central theme of the rational expectations hypothesis is that consumers and business managers are more than just passive observers of the economic scenery. People are active observers; they think. In decision making, a person not only takes objective economic data into account, but will also form "rational" expectations about the future course of economic activity and government policy.⁶

A forecast (an "expectation") of a future variable is considered rational if the forecaster makes optimal use of all information that is both "available" and

“relevant.” Rational expectationists recognize that information is limited. Also, not all information is important. Some publicly available facts may be irrelevant to predicting the variables of interest. If so, a rational forecaster can afford to be ignorant of them. Finally, optimal use means using proper statistical inference to process all relevant information that is available for making a forecast.

Sargent and Wallace⁷ have listed the reasons for using the hypotheses of rational expectations.

First, it is consistent with the findings that large parts of macroeconomic models typically fail tests for structural change.

Second, in estimating econometric models, it is a source of identifying restrictions.

The usual method [Sargent and Wallace write] of modelling expectations in macroeconomic models—via a distributed lag on the own variable—leaves it impossible to sort out the scalar multiplying the public's expectations from the magnitude of the weights in the distributed lag on own lags by which expectations are assumed to be formed. Therefore, the coefficients are generally underidentified econometrically.⁸

Third, it accords with the economist's usual practice of assuming that people behave in their own best interests. It thus implies maximizing or optimizing behavior which is the basis of microeconomic theory. The roots of this principle can be traced to the Benthamite principle of Utilitarianism. Rational expectationists do not deny that some people are irrational and neurotic. But they do not believe that those irrationalities cause systematic and predictable deviations from rational behavior that a macroeconomist can model and tell the monetary authority how to compensate for.

The fourth reason for adopting the hypothesis is the value of the questions it forces us to face. We must specify exactly the horizon over which the expectations are cast and what variables people are assumed to see and when—things that most macroeconomic models are silent on. In doing a policy analysis under an assumption of rational expectations, it must be specified whether a given movement in a policy variable was foreseen beforehand or unforeseen.

Since the rational expectations hypothesis hinges to a great extent on using “available” and “relevant” information, a relevant question to ask is whether information is costless. More recent writers on the subject have emphasized that information is not costless. Begg,⁹ for example, has argued that because of the costs involved in obtaining the information, information should be gathered only up to the point where marginal benefits from such information are equal to the marginal cost of obtaining it.

Along with the rational expectations hypothesis, the other pillar of new classical economics is the theory of continuous market clearing. This is basically the old

neoclassical idea about the existence of general equilibrium which was first developed by Léon-Marie Walras. To this was added the theory of efficient markets which emerged from Muth's work.¹⁰

Walras showed that given competitive markets, a general equilibrium will be established in which all prices are equilibrium prices and these prices will be determined simultaneously. Walras assumes the existence of a super-auctioneer who calls a given set of prices and receives transaction offers from the agents in the economy. If these do not match, he calls for another set of prices; but no transactions are allowed to take place.

Tatonnement or groping is a central part of the Walrasian general equilibrium. In Walras's own words, as translated,

Such is the continuous market, which is perpetually tending towards equilibrium without ever actually attaining it, because the market has no other way of approaching equilibrium except by groping, and before the goal is reached, it has to renew its efforts and start over again, all the basic data of the problem, *e.g.* the initial quantities possessed, the utilities of goods and services, the technical coefficients, the excess of income over consumption, the working capital requirements, etc., having changed in the meantime. Viewed in this way, the market is like a lake agitated by the wind, where the water is incessantly seeking its level without ever reaching it.¹¹

Walrasian general equilibrium has been refined in the efficient market theory. As indicated earlier, the rational expectations hypothesis emphasizes using all relevant information. "An efficient market not only processes all relevant information, but it does so quickly, almost instantaneously."¹² Rational expectationists believe that the efficient market theory can be applied not only to the financial markets but also to the markets for goods and services generally, including labor. The implication of this assumption is that the possibility of involuntary unemployment is ruled out.

According to James Tobin,¹³ the assumption of continuous market clearing is important. Most of the models, including Muth,¹⁴ Barro and Grossman¹⁵ and Grossman¹⁶ have used the above concept of instantaneous market clearing. But Begg¹⁷ does not think that instantaneous market clearing is essential to a rational expectations approach. Unfortunately, Begg does not elaborate on this issue. It is not at all clear how one can do without assuming instantaneous market clearing in the new classical economics.

III

Views on Effectiveness of Policy

REGARDING THE EFFECTIVENESS of monetary and fiscal policy, new classical economists believe that the desired result will be achieved only if people are surprised

or fooled. For the effect to be long lasting, people must be continuously fooled. Thus, they distinguish between anticipated and unanticipated policies. Even if the government embarks on a fully anticipated countercyclical monetary or demand-side fiscal policy, real Gross National Product (GNP) and, hence, unemployment will not change. Only the rate of inflation or the price level will be affected. Thus, for example, according to Mullineaux,¹⁸ the rational expectations case against an activist monetary policy is founded on three basic premises. First, people form expectations rationally. Second, expected changes in money growth do not affect output and employment decisions. Lastly, while unexpected changes in money growth do influence output and employment, the Federal Reserve System cannot systematically bring about unanticipated shifts in money growth.

IV

Views on Business Cycles

ONE OF THE IMPLICATIONS of the assumption of continuous market clearing is that full employment prevails in all markets including the labor market.¹⁹ The “natural” rate of unemployment in classical economics means that rate of unemployment at which the quantity of labor demanded and supplied are in balance at an equilibrium real wage. Thus, a deviation of actual unemployment rate from the natural rate will be either nonexistent or very short-lived. Thus, there is no need for any policy to influence the actual unemployment rate.

If the above is true, then the new classical economists have to explain why business cycles—a fact of life—do occur. Lucas²⁰ argues that business cycles are sufficiently alike to offer the hope that they can be explained by a unified theory.

The rational expectationists explain the existence of business cycles in terms of the so-called equilibrium business cycle theory. This theory argues that basically the business cycle is a result of misperceptions on the part of the economic agents.

Okun²¹ has clearly brought out the position of the new classical economics in this respect. Microeconomics is concerned with the purely competitive market in which buyers and sellers participate atomistically as price takers and where supply and demand are equated continuously by variations in price. These individual markets aggregate into a Walrasian general equilibrium model. Macroeconomics, on the other hand, points out that output and employment display significant deviations around their supply determined trends. These fluctuations around the trend are business cycles. Aggregated classical microeconomics (*i.e.*, general equilibrium analysis) does not allow business cycles. Thus, new classical

economists have to come up with a way to bridge this gap between microeconomics and macroeconomics.

The explanation provided by the rational expectationists in this regard relies upon market hypotheses. They assume that buyers and sellers in a particular market may have imperfect information about prices in other markets. Business cycles are the result of the imperfect information about other markets. Imperfect information on the part of rational agents about markets in which they are not operating stem from the fact that some pieces of information have costs that exceed their perceived value.

V

Critical Evaluation of the New Classical Economics

THE NEW CLASSICAL ECONOMICS has a very strong appeal to the economics profession. The assumption of rationality, *i.e.*, maximizing behavior, has been used very extensively in microeconomics. The apparent attraction of the new classical economics lies in applying this assumption to the field of macroeconomics as well. Moreover, the recent trend in economics, in general, has been to use more and more mathematics and statistics, often at the cost of sacrificing reality. Thus, the new classical economics which relies heavily on mathematical tools fits into this trend. However, a number of prominent economists have questioned the assumptions and conclusions of this school.

The most severe criticism is with regard to the assumption of continuous market clearing. As Tobin points out, this assumption is not based on new empirical evidence for the assumption. To quote him,

It is based rather on the feelings that the model is the 'only game in town.' In other words, if you have lost a purse on a street at night, look for it under the lamp post.

. . . The Walrasian Auctioneer is a great myth; I emphasize both words. She must collect all the demand and supply schedules for m commodities and n agents. She must solve the simultaneous equations, announce the market-clearing prices and see that the scheduled transactions are consummated at those prices. For continuous market-clearing the whole process must be repeated every quarter or day or second. . . .²²

As Nordhaus²³ points out, the assumption is at variance with considerable empirical work on actual price and wage behavior.

The second criticism concerns the rational expectations hypothesis. The assumption seems to be very strong because it is assumed that people have sufficient knowledge and they use this knowledge efficiently. The hypothesis will require people to process mountains of information and understand adequately complex economic matters, including matters that economists themselves cannot always agree upon.

Again, information is not free. As Peterson observes,

On the contrary, the gathering and the processing of the kind of information necessary to understand what is going on in the economy and interpret what decision-makers are doing is a costly process. It is quite possible that the benefits to be derived from doing this may, in many instances, far outweigh the costs involved.²⁴

Here again, the school of rational expectations is generally uninterested in empirical work on how expectations are formed, how they change and what might be done to influence them. To quote Lester Thurow,

. . . (this) is hardly surprising if you really believe that expectations are as perfect as expectations can be expected to be. They are rational and not adaptive, not because it has been proven so, but because they must be so if the individual decision maker is to act as *Homo economicus* is supposed to act. And he must be acting *homo economicus*, or else opportunities would exist to earn extra profits—something that cannot by definition, occur in the price-auction model.²⁵

Another shortcoming of the rational expectations hypothesis has been brought out by Leonard Foreman.²⁶ One must also consider the concept of uncertainty as opposed to risk. While risk can be quantified by probability rules, uncertainty cannot be measured exactly. Or, many times, even approximately. Rational expectationists seek to translate the future entirely into a framework of expected probability where there is risk but no uncertainty. This cannot be done, however, if the real world is uncertain, with unknown outcomes and unknown probabilities.

It may be interesting to see what psychological studies show about rational expectations. Tversky and Kahneman, who worked on learning theory, give us no evidence that human beings constantly arrive at specified rational decisions. To quote Thurow,

Psychologists have found instead that people often make systematic mistakes, that they take time to move from one mode of behavior to another. For example, shoppers often misjudge relative supermarket prices by basing them on store characteristics rather than actual prices.²⁷

This clearly does not support the rational expectations hypothesis.

The view of the rational expectationists that anticipated fiscal policy and monetary policies will not produce any desired results has also come under attack. Here again, the basis for such conclusions is not empirical studies. It is assumed that optimizing private agents will offset these policies in order to remain in their preferred position. "Markets, like the mind of God, are as perfect as they can be no matter how imperfect they may appear to be, not because anyone has proved it empirically, but because it has to be so by definition."²⁸ Tobin does not find any sense in this assertion of the new classical economists. He observes, "In a chess opening, for example, I may foresee accurately my opponent's sequence of responses; that does not deprive his moves of their effectiveness."²⁹

Lucas concedes that modest policies might help. Thus, he prefers the establishment of declared and permanent rules. He thinks that an annual rate of growth for the money supply should be fixed and we should stick with it. Tax rates should be such that on average the budget is balanced. He is of the view that by recommending such modest policies, economists would be making clear the limitations of their profession.³⁰ However, here what Lucas believes may not happen in practice. For, policy makers may continue to make policies. Then the decision-making process would be deprived of the expertise of the economists who have sometimes contributed valuable inputs into the process.

Gottfried Haberler raises an interesting point regarding the claim of the new classical economics that expected or systematic macroeconomic policies are ineffective.

To me, it seems a little artificial to distinguish sharply between fully systematic and predictable policies on the one hand, and entirely unsystematic and unpredictable policies on the other. Policies are almost always somewhere in between—it is a matter of more or less, not either-or.³¹

The rational expectationist explanation of the business cycle makes it very hard to accept that the phenomenon is only due to mistaken information. It is too simplistic, for example, to explain persistent unemployment as a result of mistaken information. Thurow asks:

How could everyone have been systematically misinformed for the twelve years of the Great Depression? How could misinformation have produced four years of no economic growth from the first quarter of 1979 to the first quarter of 1983? How could labor be so systematically misinformed that unemployment rose above 10 percent in 1982, with every prospect of its staying at high levels for a long period of time? Productivity and real wages rise in a recession when they should be falling if mistakes (for example, that real wages are too high) cause recessions.³²

Given the dubious nature of the assumptions, many of the policy prescriptions of the new classical economics have been viewed as elegant but irrelevant. The view of the world perceived by the rational expectationists seems to be far removed from what is actually happening. In Solow's words,

. . . the new classical school has no single empirical success to its credit, nothing that could count as a statistical verification . . . No one has discovered a Phelpsian Island or even a message in a bottle. No one has bothered to check if misperception is rife, in the right sequence, in the right direction, with the right people. I am not sure that anyone wants to.³³

In a way, rational expectationists assume away all the problems that macroeconomics deals with. It is, in this sense, as Peterson remarks, "the new classical economics abolishes macroeconomic theory."³⁴

Notes

1. John Hicks, *The Crisis in Keynesian Economics* (New York: Basic Books, 1974), p. 1.
2. For an interesting discussion of the views of eleven prominent economists for and against the new classical economics, see Arjo Klamer, *Conversations with Economists: New Classical Economists and Their Opponents Speak on the Current Controversy in Macroeconomics* (Totowa, NJ 07512: Towman & Allenheld, 1983). For a critique of the work, see Will Lissner, "A New School of Economic Theorists: The 'New Classical Economists,'" *American Journal of Economics and Sociology* April, 1985. pp. 255–56.
3. James Tobin, "Are New Classical Models Plausible Enough to Guide Policy?" *Journal of Money, Credit and Banking*, November, 1980, p. 788.
4. John Muth, "Rational Expectations and the Theory of Price Movements," *Econometrica*, Vol. 29, No. 6, 1961, pp. 315–35.
5. Robert Lucas, Jr., "Some International Evidence on the Output-Inflation Trade Off," *American Economic Review*, June, 1973, pp. 326–34.
6. William J. Baumol and Alan Blinder, *Economics: Principles and Policy*, 3rd ed. (Chicago: Harcourt Brace Jovanovich, 1985), p. 323.
7. Thomas Sargent and Neil Wallace, "Rational Expectations and the Theory of Economic Policy," *Journal of Monetary Economics*, April, 1976, pp. 169–83.
8. *Ibid.*, p. 179.
9. David Begg, *The Rational Expectations Revolution in Macroeconomics* (Baltimore: Johns Hopkins Univ. Press, 1982), p. 67.
10. Wallace Peterson, *Income, Employment and Economic Growth*, 5th ed. (New York: W.W. Norton & Company Inc., 1984), p. 406.
11. Leon Walras, *Elements of Pure Economics* (London: George Allen and Unwin, 1954), trans. by William Jaffé, p. 380.
12. Wallace Peterson, *op. cit.*, p. 410.
13. James Tobin, *Capital Accumulation and Economic Activity*, (Chicago: Univ. of Chicago Press, 1980), Ch. 2.
14. John Muth, "Rational Expectations and the Theory of Price Movements," *Econometrica* Vol. 29, (1961), pp. 315–35.
15. Robert Barro and Herschel Grossman, "A General Disequilibrium Model of Income and Employment," *American Economic Review*, March, 1971, pp. 82–93.
16. Herschel Grossman, "Rational Expectations, Business Cycles, and Government Behavior," in *Rational Expectations and Economic Policy*, Stanley Fisher, ed. (Chicago: Univ. of Chicago Press, 1980). pp. 5–22.
17. David Begg, *op. cit.*, p. 264.
18. Donald Mullineaux, "On Active and Passive Monetary Policies: What Have We Learned from the Rational Expectations Debate?" *Federal Reserve Bank of Philadelphia Business Review*, November/December, 1979, pp. 11–19.
19. James Tobin, *op. cit.*, Ch. 2.
20. Robert Lucas, Jr., "An Equilibrium Model of the Business Cycle," *Journal of Political Economy*, December, 1975, pp. 1113–44.
21. Arthur Okun, "Rational-Expectations-with-Misperceptions as a Theory of the Business Cycle," *Journal of Money, Credit and Banking*, November, 1980, pp. 817–25.
22. James Tobin, *op. cit.*, p. 34.
23. William Nordhaus, "Macroconfusion: The Dilemmas of Economic Policy," in *Macroeco-*

nomics, Prices and Quantities, James Tobin, ed. (Washington, D.C.: Brookings Institution, 1983). p. 257.

24. Wallace Peterson, *op. cit.*, p. 416.

25. Lester Thurow, *Dangerous Currents: The State of Economics* (New York: Random House, 1983), p. 167.

26. Leonard Foreman, "Rational Expectations and the Real World," *Challenge*, November/December, 1980, pp. 36–39.

27. Lester Thurow, *op. cit.*, p. 156.

28. Lester Thurow, *op. cit.*, p. 157.

29. James Tobin, *op. cit.*, p. 34.

30. Walter Guzzardi, Jr., "The New Down-to-Earth Economics," *Fortune*, December 31, 1978, pp. 72–79.

31. Gottfried Haberler, "Critical Notes on Rational Expectations," *Journal of Money, Credit and Banking*, November, 1980, pp. 833–36.

32. Lester Thurow, *op. cit.*, p. 162.

33. Robert M. Solow, comment on William Nordhaus's paper called "Microconfusion: The Dilemmas of Economic Policy," in *Macroeconomics, Prices, and Quantities*, James Tobin, ed., p. 283.

34. Wallace Peterson, "Contemporary Macroeconomics: A House Divided," lecture given at Gustavus Adolphus College, St. Peter, Minnesota, March 13, 1985. Unpublished Manuscript. p. 28.

A Challenge: Rediscovering Classics

JONATHAN YARDLEY REPORTS that when *American Heritage Magazine* assigned him to write about the ten books that shaped the American character, "the books chose themselves," the results were so obvious: Thomas Paine's *Common Sense*, Harriet Beecher Stowe's *Uncle Tom's Cabin*, Upton Sinclair's *The Jungle*, Rachel Carson's *Silent Spring*, Ralph Nader's *Unsafe at Any Speed*, Hamilton, Madison and others' *The Federalist*, Henry George's *Progress and Poverty*, Edward Bellamy's *Looking Backward*, Lincoln Steffens' *The Shame of the Cities* and David Halberstam's *The Best and the Brightest*.

But then he realized there were notable omissions, Paine's *The Rights of Man*, Charles A. Beard's *An Economic Interpretation of the Constitution*, and others, like Henry David Thoreau's *Walden*.

Whether, in religion, we are ultra-liberals (like me), liberals, moderates, conservatives or ultra-fundamentalists, we have been shaped, I think, by the Bible, too. Altogether, the most influential books in the United States make a small library, too many to be compressed into a list of ten, but few enough to be nameable.

W.L.