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## WHAT ARE RATIONAL EXPECTATIONS?

5/99

**G.R. Steele**

**Q:** What are rational expectations?

**A:** To answer that, we must first talk about action. All action affects the future ...

**Q:** ... otherwise it wouldn't be action!

**A:** That's right; when someone acts, something is expected to happen.

**Q:** We have some expectation of the likely effects.

**A:** Exactly; but no one can be certain about those effects.

**Q:** So that's the relevance of expectations; but where does rationality come in?

**A:** It might help if you were to consider the exact opposite.

**Q:** You mean irrational expectations?

**A:** Yes. If your expectations were systematically wrong, they would not be rational.

**Q:** So if I make a mistake, I am irrational.

**A:** No, if you make *systematic* mistakes you are irrational.

**Q:** What do you mean by *systematic* mistakes?

**A:** Take incorrigible optimists, for example. Optimists make systematic mistakes because they tend to over-estimate the beneficial outcome of their actions.

**Q:** It's good to be optimistic.

**A:** You might feel good, but if your optimism is generally unfounded (systematically wrong) actual outcomes will tend to be inferior to what might have been achieved.

**Q:** By whom?

**A:** By individuals whose expectations are rational.

**Q:** So expectations are rational ...

**A:** ... when they are formed upon a sound basis of relevant and available information.

**Q:** What if no information is available?

**A:** If there is nothing to go on, any decision - even one based upon the spin of a coin - would be entirely rational.

**Q:** But there would be mistakes,

**A:** Of course, but they would not be systematic.

**Q:** I don't see it.

**A:** If your decisions were determined by spinning a fair coin, correct and incorrect decisions would be equally likely; and the distribution of correct and incorrect decisions would be random.

**Q:** What possible relevance has this for economics?

**A:** Economic decisions are (nearly) always taken on the basis of some degree of ignorance of the situation which we face.

**Q:** I thought economists assumed perfect foresight.

**A:** Sometimes. Economists use that assumption to show certain technical relationships. But forget that.

**Q:** Fair enough.

**A:** Even where there is some ignorance, decisions can be guided by rational expectations.

**Q:** But there can be no guarantee that the decisions will be correct decisions?

**A:** The only guarantee is that mistakes will not be systematic.

**Q:** I still don't see the relevance.

**A:** Consider a situation where individuals are focused upon the same events.

**Q:** Events in the economy?

**A:** Yes, events like the future course of unemployment, inflation, growth, and so on.

**Q:** There is certainly some ignorance there.

**A:** Suppose that a large number of individuals are forming expectations, say, about unemployment next year.

**Q:** So?

**A:** Some may be spot-on, but more will get it wrong. How will their errors be distributed?

**Q:** You tell me.

**A:** Well, by what is known as the 'principle of insufficient reason', we can only suppose that over-estimates and under-estimates are equally likely; there is insufficient basis to make a more positive supposition ...

**Q:** Yes, I see that.

**A:** ... and the same principle also suggests that the errors will be random rather than systematic.

**Q:** So?

**A:** So, you now have an exact definition of rational expectations. There are no systematic errors. Over-estimates are as likely as under-estimates.

**Q:** I still don't see the relevance. Give me a specific illustration.

**A:** An early application of rational expectations was in an investigation of the relationship between unemployment and inflation.

**Q:** I know something about that. It's related to the 'Phillips curve', isn't it?

**A:** Yes. Data which show that inflation rises as unemployment falls were first investigated by the New Zealand economist Bill Phillips.

**Q:** A graph showing the relationship between inflation and unemployment has a negative slope?

**A:** Yes, that's right. With inflation and unemployment on the respective axes, the graph is a downward sloping curve.

**Q:** Go on.

**A:** Subsequent investigations showed that this relationship vanished when governments tried to use it to guide monetary policy.

**Q:** How can a graph be useful in guiding monetary policy?

**A:** The relationship suggested that unemployment might fall if inflation were increased ...

**Q:** ... or that inflation might fall if unemployment were increased?

**A:** Yes. But governments were tempted by the former, presumably by the thought of gaining electoral approval.

**Q:** You are very cynical. How is it supposed to work?

**A:** It works something like this. The government issues new currency to finance new expenditure. New jobs are created and unemployment falls.

**Q:** So why does the relationship vanish?

**A:** Consider the situation without government intervention: monetary policy is inactive.

**Q:** The government is simply a spectator?

**A:** That's right, it simply watches as the economy runs its course. During a boom there are modest price increases; during a slump, modest price reductions. And so, over the business cycle taken as a whole, prices are more-or-less stable.

**Q:** Inflation is offset by deflation ...

**A:** ... so that rationally formed expectations would be of a zero inflation rate on average.

**Q:** What happens if the government intervenes on the basis of the Phillips curve?

**A:** Then the sequence might be something like this. Monetary policy is used to stimulate demand which, initially, is met from stock holdings.

**Q:** Stocks of goods?

**A:** Yes. Stocks are depleted and employers attempt to recruit more workers to meet the extra demand. Wages tend to rise and unemployed job-seekers find acceptable job offers more readily than before. Unemployment falls.

**Q:** How does this differ from your earlier description?

**A:** The difference is in the monetary boost to economic activity, which eventually feeds through to prices.

**Q:** Wages rise and then prices rise?

**A:** Yes.

**Q:** This sounds like the argument that excessive wage demands are the cause of inflation.

**A:** Indeed it does. But I have described only the working of a free market. Wages are prices (of labour) and the inflation (of all prices) is a consequence of excessive monetary expansion.

**Q:** So what then happens?

**A:** This is not the normal business cycle. This is a deliberate attempt to use monetary expansion to hold demand at a permanently higher level.

**Q:** And so?

**A:** With prices rising generally, demand is affected unless wage levels are again raised.

**Q:** Demand falls unless wages are increased in line with prices?

**A:** Yes.

**Q:** We have a wages, prices, wages ... spiral?

**A:** Yes, but the spiral is only kept in motion by repeated doses of monetary expansion. And now we must account for expectations.

**Q:** Expectations would be of a positive inflation rate?

**A:** Yes. In labour markets, the tendency would be for the wage demands of job-seekers to be raised in line with prices. Can you see what this does to the Phillips curve?

**Q:** Wages have increased and unemployment has fallen. Prices have risen and, if the intention is to keep unemployment permanently lowered, wages will have to rise again.

**A:** Excellent!

**Q:** And the Phillips curve ...

**A:** ... will rise. For any given level of unemployment, percentage wage increases will be higher than previously.

**Q:** And all because of rational expectations.

**A:** Yes, and just as the inflation/unemployment relationship changes when attempts are made to use it as a fulcrum for policy, other evidence indicates that many other changes also coincide with changes in monetary policy.

**Q:** I'll take your word for that. What are the implications?

**A:** The implications are very profound. From the evidence, the conclusion is that rational expectations mean that it is impossible to manipulate the economy in any purposeful way.

**Q:** Economic policy is impossible?

**A:** Economic policy can succeed only where there are robust relationships between economic variables which themselves are unaffected by policy.

**Q:** Huh?

**A:** Without immutable laws for the economy, attempts to manipulate the system are frustrated by changes in the relationships.

**Q:** And it's all down to rational expectations?

**A:** If specialist advice is valuable, the notion of non-rational expectations must be untenable.

**Q:** If you don't know, you can pay to find out?

**A:** If there is an efficient market in information - provided by analysts, brokers, journalists, *etc.* - decisions are driven towards rationality.

**Q:** In the same sense as rational expectations?

**A:** Of course; and this makes it very difficult for the government to 'out-manoeuvre' the general public upon the basis of its own expertise.

**Q:** Government advisors are no better than private sector advisors?

**A:** That's right. And if price changes and other distortions caused by government intervention are fully anticipated (no systematic errors) policy changes can be understood, anticipated and countered.

**Q:** So government policy can be rendered impotent ...

**A:** ... by rational expectations.

**Q:** Can we stop there?

**A:** Perhaps we should!