

A “modest” intellectual discipline

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Has economics failed us? Should economists have seen this crisis coming? This column offers a defence of contemporary economics against those demanding forecasts of crises and complaining about the profession's mathematical intensity. It says that the economy's extraordinary complexity necessitates that economists remain modest, not that they abandon their training for a multidisciplinary melting pot.

The current crisis has spurred a debate on the training and usefulness of economists. Some contend that economists are useless since they failed to forecast the crisis. Others claim that their training is inadequate because it relies heavily on applied mathematics at the expense of a broad view of how the economy works, informed by other disciplines such as psychology, sociology, and political science. Hence, ten British institutional economists have written a [letter to the Queen](#), in response to that of [Besley](#) and Hennessy, where they state that “economics has turned virtually into a branch of applied mathematics, and has become detached from real world institutions and events.”

“Consequently a preoccupation with a narrow range of formal techniques is now prevalent in most leading departments of economics throughout the world, and notably in the UK. The letter by Professors Besley and Hennessy does not consider how the preference for mathematical technique over real-world substance diverted many economists from looking at the vital whole. It does not consider the typical omission of psychology, philosophy or economic history from the current education of economists in prestigious institutions. It mentions neither the highly questionable belief in universal ‘rationality’ nor the ‘efficient markets hypothesis’ – both widely promoted by mainstream economists. It also fails to consider how economists have also been ‘charmed by the market’ and how simplistic and reckless market solutions have been widely and vigorously promoted by many economists. What has been scarce is a professional wisdom informed by a rich knowledge of psychology, institutional structures and historical precedents.”

In France, a similar debate has been going on for years between mainstream economists trained in micro, macro, and econometrics and a variety of critics who usually complain that economics is immoral, too mathematical, not pluridisciplinary enough, or sometimes too right-wing.

While economics is admittedly quite a “dry” discipline, I firmly believe that replacing the training of economists by some soft transdisciplinary melting pot would be a catastrophe.

It is not the job of economists to forecast crises

This claim will surprise many, yet it is true. Economists work in many places, including academic institutions, public administration, and firms. If they are academics, they are supposed to move the frontier of research by providing new theories, methodologies, and empirical findings. If they work for a public administration, they will quite often evaluate policies. Sometimes they will do forecasts, but such forecasts have to be understood as routine projections that are mostly used to get an idea

of the likely evolution of the budget deficit. Finally, those who work at firms are quite often involved in providing arguments in anti-trust or discrimination trials. Those who do forecasting at places such as Goldman Sachs provide guidance to the traders about the prospects for say, Brazilian public debt or the evolution of commodity prices. Goldman would have made a lot of money if it had been able to correctly forecast the crisis, but the market economists are involved in routine activities and not in the modelling of rare systemic events.

One might think that since economists did not forecast the crisis, they are useless. It would be equally ridiculous to say that doctors were useless since they did not forecast AIDS or mad cow disease. Furthermore, even if the usual forecasting is of some use, I do not believe it is the place where economists can be most useful. Policy evaluation and principled discussion of the causes of observed phenomena are, in my view, far more important.

A crisis is by nature not forecastable

The criticism also ignores that economics is a science that interacts with the object it is studying. Economic knowledge is diffused throughout society and eventually affects the behaviour of economic agents. This in turn alters the working of the economy. Therefore, a model can only be correct if it is consistent with its own feedback effect on how the economy works. An economic theory that does not pass this test may work for a while, but it will turn out to be incorrect as soon as it is widely believed and implemented in the actual plans of firms and consumers. Paradoxically, the only chance for such a theory to be correct is for most people to ignore it.

One example of a consistent theory is the Black-Scholes option pricing model. Upon its introduction, the theory was adopted by market participants to price options, and thus became a correct model of pricing precisely because people knew it. This is so because such a pricing rule is consistent with the “efficient markets” hypothesis, meaning that no profitable arbitrage opportunity is left once the rule is applied. By contrast, any theory of pricing that leaves arbitrage opportunities would instantaneously be defeated by the markets as soon as they believe it. The attempts by participants to make profits by exploiting the arbitrage opportunity would alter prices in a direction that will invalidate the theory.

Similarly, any macroeconomic theory that, in the midst of the housing bubble, would have predicted a financial crisis two years ahead with certainty would have triggered, by virtue of speculation, an immediate stock market crash and a spiral of de-leveraging and de-intermediation which would have depressed investment and consumption. In other words, the crisis would have happened immediately, not in two years, thus invalidating the theory. Thus, most crises are by nature unforecastable. Believing that they should be forecast is actually a positivist fallacy based on a false analogy between economics and the physical world. While the physical world is deterministic except at the very microscopic level, meaning that knowledge of initial conditions implies knowledge of the entire subsequent trajectory of the object under study, this is not true of the economic world where beliefs about the future and about how the economy works affect the trajectory. So it is paradoxical that some complain that the crisis should have been forecast and at the same time that economics is too mathematical and is plagued by unwarranted scientific pretence. It is precisely because economics is different from natural sciences that crises are not forecastable – and most economists know it and do not pretend otherwise.

One of the reasons many people sneer at the economists’ efficient markets hypothesis is that there are far more arbitrage opportunities in real world markets than implied by that hypothesis. Indeed,

unlike Black and Scholes, most quantitative trading models that have been applied by market participants in recent decades were inconsistent with that hypothesis – and yet made a lot of money. But those models would collapse if by some mechanism market participants were able to identify the most profitable technique and use it widely. And while many of these trading strategies tend to increase volatility, this is not the case of the “efficient markets” pricing rules implied by economics, which instead tends to bring prices back to the fundamental value of the assets.

In other words, if market participants had been more literate in, or more trustful of economics, the asset bubbles and the crisis might have been avoided. It is therefore strange to advocate that the efficient market hypothesis should not be taught because it fails to explain the actual behaviour of markets. The actual behaviour of markets, unlike an immutable deterministic law of nature, depends on the beliefs of the markets, including their understanding of economic phenomena and their consequences for asset prices. While it is valuable to understand how the economy actually works, it is also valuable to understand how it would behave in an equilibrium situation where the agents’ knowledge of the right model of the economy is consistent with that model, which is what we call a “rational expectations equilibrium”. Just because such equilibria do not describe past data well does not mean they are useless abstraction. Their descriptive failure tells us something about the economy being in an unstable regime, and their predictions tell us something about what a stable regime looks like.

It is hard to see how forecasting ability could be improved by means other than mathematical techniques

Those considerations aside, it is strange to complain about inadequate forecasting and use of mathematics at the same time. While a “broad view” may offer insights about the institutional environment or the role of human nature, forecasting is a precise quantitative exercise which must be formulated mathematically and use mathematical technique. It is in the area of forecasting that the most sophisticated mathematical techniques (spectral analysis, cointegration, etc.) are used.

“Looking at the broad picture” does not imply a demonstrable understanding of how the economy works

There is no scarcity of economists who adopt the broad view and offer their opinion on what will happen and what should be done. Indeed economists are more eager than ever to take a broad view, in newspapers, policy briefs, or journals geared toward an informed general audience. Some are mainstream, orthodox economists who are proficient in math and underwent the “narrow-minded” training about which the above-mentioned authors complain, yet they are aware that maths should be complemented with actual economic thinking and therefore devote a substantial fraction of their time discussing broad issues and policy matters. Others are more of a literary kind. The problem with the “broad picture” approach, regardless of the intellectual quality of those contributions, is that it mostly rests on unproven claims and mechanisms. And in many cases, one is merely speculating that this or that could happen, without even offering a detailed causal chain of events that would rigorously convince the reader that this is an actual possibility. I believe it is impossible to avoid such “sloppiness” if one is trying to take stock and exert one’s judgement. But that does not mean that such an attitude should be imported into the actual professional work of economists, much less their training.

Understanding the working of the economy as whole is extremely difficult

It is naive to assume that if economists were only more open-minded, well read, and in tune with other disciplines, they would be able to develop an operational understanding of how the macroeconomy works. The economy is an extremely complex system – fully understanding it, as of now, is beyond our individual and collective intelligence. Given the role of beliefs, institutions, and so on, that system is surely far more complex than say, the system that describes the evolution of the distribution of matter throughout the universe. Yet physicists have trouble coming up with a satisfactory model since they have to introduce the unobserved “dark matter” to make the data compatible with their theories. And this despite that only one force, gravitation, is at work. No wonder we are ten times more in the “dark” than physicists when trying to understand the interplay of the many forces that drive the economy.

To conclude, economics is a “modest” intellectual discipline, which hopes to be helpful in understanding how the real world works. While we may sometimes sound arrogant in the public debate, it is because we tend to believe that having devoted our whole professional life to thinking about those issues, we are in a better position to talk about them than outsiders. This presumption may be proven wrong, but to my knowledge proponents of alternative approaches have not yet succeeded in offering us an operational framework with a stronger predictive power.

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