Macroeconomic theories: not even wrong

Flawed and inconsistent mainstream macroeconomic theories such as efficient market hypothesis are dangerous to society, says Alexander Lipton

Quants must try to build better theories explaining market dynamics

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Austria-born physicist and Nobel prizewinner Wolfgang Pauli, who was well known for his dry wit and sharp tongue, once described a theory as "not even wrong" – that is, it was so fundamentally flawed that it could not even be used to make meaningful predictions.

Today, the same could be said about mainstream macroeconomic theories – including the dynamic stochastic general equilibrium model (DSGEM), modern portfolio theory (MPT), efficient market hypothesis (EMH) and a few others cut from the same intellectual cloth – that completely miss the point and cannot be used in practice.

These theories are not only pointless; they are dangerous. They adversely affect both academic discourse and the practical actions of regulators and politicians. The latter effect, in particular, is crucial and has enormous implications for society at large.

For instance, central banks use DSGEM to shape monetary policy and design banking regulations, but the model omits the banking sector completely and relies on the unconvincing concept of financial intermediation instead. Furthermore, DSGEM has been used by the European Central Bank to forecast the dynamics of the entire European market, rather than individual countries, thus neglecting their obvious differences.

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From such a bird's-eye view, the introduction of the euro in 1999 looked like a great idea, while it turned out to be a flawed concept threatening the European project as a whole, partly because politicians and central bankers were lacking adequate tools for analysing stocks and flows across Europe.[1]

Likewise, the rapid proliferation of robo-advisers, who rely almost exclusively on MPT and its variations, is rather worrisome. It is common knowledge that MPT allocations are unstable and do not work out-of-sample; in fact, a simple equal allocation of funds beats MPT-based allocations hands down.

This list can easily be extended further. There are many explanations of macroeconomic theories' flaws – some epistemological, some technical, and some political – but the main reason is clear. Originators of these theories and their disciples have been enamoured of relatively simple physical theories and tried to extend them to the realm of what is essentially social science, rather than physical science, by assuming that asset returns are governed by simple stochastic processes and modelling them accordingly.

At the same time, precisely because they have been dealing with social systems, some of the natural safeguards that have faithfully served physics and mathematics for centuries have been suppressed. In particular, the power of counter-example has been conveniently ignored.

Let's look at EMH. How could it be taken at face value if sudden, unexplained market plunges, such as those that happened in 1973–74 (or, for that matter, in 1873), October 1987, and, more recently, during the infamous flash crash of May 2010, contradict its main premise unequivocally?

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How could one seriously talk about efficiency knowing full well about the tulip mania of 1636–37, the South Sea bubble, the sub-prime crisis, the Bitcoin bubble and numerous others? EMH confuses the indisputable fact that it is extremely difficult to beat the market with market efficiency. In fact, they are two completely different concepts. The power of these counter-examples alone would have forced physicists to go back to the drawing board and reconsider their main premises, but economists decided to push forward regardless.[2]

A well-known former chairman of the Federal Reserve testified in a Congressional hearing that he was "in a state of shocked disbelief" because markets turned out to be inefficient. As a result of these misguided views, a number of sensible regulations were abolished, the Glass-Steagall Act was repealed, and the global financial crisis of 2008–09 unfolded. New regulations were introduced after the crisis, including the Dodd-Frank Act. But additional regulations are still required – potentially the reinstatement of the Glass-Steagall Act, or at least an explanation of why it should not be reinstated.

The time has come for quants to look into some of the more ambiguous aspects of macroeconomics and try to build better theories explaining market dynamics and their salient features, propose better asset allocation methods, and generally add muchneeded rigour to the discourse. This will help not only their employers and themselves, but also society at large.

1. See, for example, J. Stiglitz, The euro: and its threat to the future of Europe*, 2016. I have been opposed to the euro from day one, advocating instead the digitization of national currencies, thus removing frictions – and fighting financial crime along the way – while preserving necessary safety valves. Recent developments in blockchain-related technologies might help to make sovereign-issued digital currencies a reality.*

2. By now, true believers in EMH have to rely on the "credo quia absurdum" line of defence first devised by Tertullian in the third century AD.