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Being objective

Rish assessors will always have to supplement mathematical formulae with tried and tested methods

"There is a theory," wrote English humorist Douglas Adams, "which states that if ever anybody discovers exactly what the Universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable. There is another theory which states that this has already happened."

The idea that the universe, were a physicist to find an equation which describes it, would suddenly rearrange itself into a new and even more confounding configuration, is of course absurd. However something like that happens all the time with the economy.

Suppose that the stockmarket exhibits some regular, predictable feature. Then it is only a matter of time before investors notice it, at which point it tends to disappear.

For example, investors in the US used to have a habit of selling stocks at year end in order to write off the losses on their taxes. The price of stocks would then dip, but rebound in January.

While the January effect, as it became known, was real if rather subtle, it became much harder to detect after the publication of a book called The Incredible January Effect (Haugen and Lakonishok 1992). Everyone started buying in January to take advantage of it, so naturally the price went up and any anomaly disappeared. The economy constantly evolves in such a way that it becomes even more inexplicable.

Another example comes from risk models such as Value at Risk (VaR). This computes the maximum expected loss for a particular financial position, based on the variability of the relevant assets over the past few months or years. My previous column "Why Risk Models Don't Work" discussed the statistical drawbacks of this approach, but there is also another problem. Because different financial institutions, such as banks, use the same formula with only slight variations, they all tend to react in the same way to events – which creates a new kind of risk.

In good times, when the economy is growing smoothly, computed VaR will be low. Banks are free to increase their leverage. When tremors appear, for whatever reason, then the banks will have to deleverage by selling assets. Because they all do this is at the same time, the result is increased volatility, and even higher VaR. They therefore need to sell even more assets into a declining market, which increases VaR, etc.

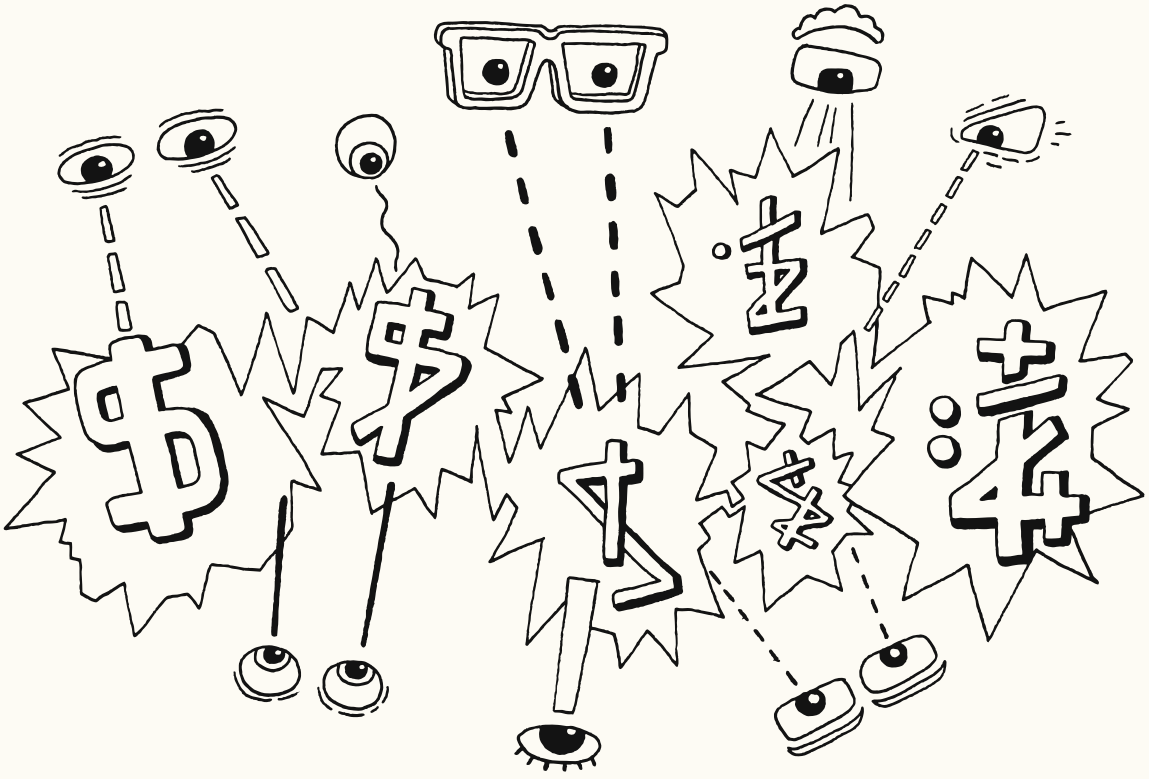
A formula which was designed to control risk, therefore actually has the effect of increasing it. Again, the economy discovers a way to elude neat formulisation by reconfiguring itself into something even more hard to understand.

Perhaps the most graphic example of this contrariness was the subprime housing meltdown in the United States. Subprime mortgages were bundled into Collateralised Mortgage Obligations, which were divided into tranches of different investment grade. In order to value the CMOs, it was necessary to compute the risk of many mortgages defaulting at the same time. This task was assigned to a formula known as the Gaussian copula.

As its inventor acknowledged, the model was only an approximation and had many flaws – but that didn't stop it from being accepted by the main credit rating agencies, or by the financial institutions involved in the housing boom, or by individual investors. As with VaR, the model assumed that risk was based on recent history. While house prices climbed, the computed risk went down. The price of credit therefore decreased, which further fuelled the boom in a positive feedback loop. But when new homeowners on $15K a year started to default on their freshly purchased mansions, everyone's risk model flashed red at the same time.

One implication is that any risk model or formula based on past events is potentially misleading and can add to systemic risk to the economy. Risk assessors will always have to supplement mathemati-

THE RESULT OF DEREGULATION, OF COURSE, IS THAT THE ECONOMY HAS BECOME HIGHLY UNSTABLE



cal formulae with tried and tested methods like common sense and good judgement.

But there is also a deeper problem – because all of this presents a fundamental challenge to mainstream economics.

Economics prides itself on being a hard, objective science, like physics. It searches for laws and principles, of the kind described by the neoclassical economist Vilfredo Pareto in his Cours d'Economie Politique (1896): "Above, far above the prejudices and passions of men soar the laws of nature. Eternal and immutable, they are the expression of the creative power; they represent what is, what must be, what otherwise could not be. Man can come to understand them: he is incapable of changing them."

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Now, when Newton discovered the law of gravity, the universe didn't decide that apples would no longer fall down. When Einstein discovered relativity, it didn't become unrelativistic just to annoy him. But when some math whiz discovers a clever risk formula, and it catches on, then the economy changes as a direct result. It is therefore impossible for economists to take a detached, objective stance, because they too are part of what they are trying to model.

One can go even further, and argue that the entire field of economics has visibly changed the economy. Mainstream economics is based on a number of assumptions, including the ideas that markets are (to a good approximation) efficient, stable, fair, and self-regulating. Because of these beliefs, regulatory safeguards have been systematically removed in recent decades. The result of this deregulation, of course, is that the economy has become highly unstable.

Once again, the theory has affected the economy. Instead of being smooth and stable, like a well-designed machine, the economy has reconfigured itself into something, to use the words of Douglas Adams, that is bizarre and inexplicable.

So what can we about this? The answer, of course, is that we must change our theories – and model the economy as a wild and inherently unstable system.

And then it will reshape itself into something a little calmer.

That's the theory, anyway. ◇