PRICEVALUEPARTNERS

Three years down the toilet

"You think the odds look right, that they are in your favour ?

This is a billiard table. An easy, flat, green billiard table. And you have hit your white ball and it is travelling easily and quietly towards the red. The pocket is alongside. Fatally, inevitably, you are going to hit the red and the red is going into that pocket. It is the law of the billiard table, the law of the billiard room.

But outside the orbit of these things, a jet pilot has fainted and his plane is diving straight at that billiard room, or a gas main is about to explode, or lightning is about to strike.

And the building collapses on top of you and on top of the billiard table. Then what has happened to that white ball that could not miss the red ball, and to the red ball that could not miss the pocket ? The white ball could not miss according to the laws of the billiard table. But the laws of the billiard table are not the only laws in this particular game."

- Extract from the novel *From Russia with Love*, by Ian Fleming.

"In the 1970s, the Yale economist Herbert Scarf determined that the time to equilibrium scales exponentially with the number of products and services in the economy to the power of four. The intuition behind this relationship is straightforward: the more products and services, the longer it takes for all the prices and quantities to adjust.. if we optimistically assume that *every* decision in the economy is made at the speed of the world's fastest supercomputer (currently IBM's Blue Gene, at 70.72 trillion floating-point calculations per second), then using Scarf's result, it would take a mere 4.5 quintillion (4.5×10^{18}) years for the economy to reach general equilibrium after each exogenous shock. Given that shocks from factors such as technological change, political uncertainty, weather and changes in consumer tastes buffet the economy every second, and the universe is only about 12 billion (1.2×10^{10}) years old, this clearly presents a problem."

- Eric Beinhocker, *The Origin of Wealth*.

Up and down the land, hundreds of thousands of students have been receiving their A-level grades. Some of them will doubtless plan to read PPE at Oxford. Others will doubtless aspire to studying Economics at Cambridge (note: at the time of writing, the Cambridge economics

web page was broken, much like the spirit of its students soon will be). In any event, in each of these cases, those economics-minded students will be flushing three irreplaceable years of their young lives down an intellectual toilet.

There are fundamental limitations to economic and investment theory, not least because they can only ever tell you about the past. They can never give you an accurate picture of the future. They have no predictive value. The great Austrian economist Ludwig von Mises made the point that you can only use the techniques of natural sciences such as physics if you can use things like empirical observation drawn from scientific experiments and then apply mathematical techniques to analyse the data. But financial data – prices, if you will – are the result not of physical phenomena but of human action (Mises' magnum opus was titled *Human Action* for good reason), which is in turn caused by human decision making, which is influenced in turn by human emotion. So the business of investing is behavioural, not physical.

As Guy Fraser-Sampson puts it:

> [Finance] is at best a social science studying human behaviour, like psychology or sociology, and can never be a physical science such as physics. It is for this reason that neither observation nor mathematical techniques can ever offer any valid universal guide to future outcomes.

At the trough of the Great Depression, Keynes famously wrote that

> ..we have involved ourselves in a colossal muddle, having blundered in the control of a delicate machine, the working of which we do not understand. The result is that our possibilities of wealth may run to waste for a time – perhaps for a long time.

Keynes was looking for a lever to move the economy. But the lever does not exist. The economy as machine does not exist. The metaphor he used is not grounded in objective reality.

Perhaps the biggest danger associated with traditional Keynesian economics is that it remains unaware of its fundamental limitations, of its overconfidence in a scientific reality that does not actually exist.

After the precepts of Keynesianism, the next most notorious example of specious science in economics came in the form of modern portfolio theory, born under highly questionable circumstances in 1952. Harry Markowitz published his article 'Portfolio Selection' in the *Journal of Finance* in March of that year. The article would go on to achieve cult status within financial circles.

Markowitz at the time was a young mathematician with no experience of investment. This would not prevent him from advocating the bold investment argument at the heart of his portfolio theory: that a diversified portfolio is always preferable to an undiversified one. This was in turn based on the presumption that "variance of return [volatility] is an undesirable thing" – and a mathematical proof that variance of return may be reduced within a portfolio of stocks and shares by holding a number of different shares.

But even by holding a large number of shares, it is not possible to eliminate variance of returns altogether. Nor is it possible for any one portfolio to exhibit both the maximum return and the minimum variance. As Markowitz wrote, once an investor has achieved effective diversification, then, "There is a rate at which the investor can gain expected return by taking

on variance [reducing the number of shares he owns], or reduce variance by giving up expected return [by diversifying his portfolio again]."

Markowitz did not explicitly state that risk and volatility (variance) are the same thing. But as a result of his article, the financial industry would go on to treat volatility and risk as synonymous, and the financial regulators would then join them in that erroneous belief. Thus the more volatility in price that a given investment incurs, the "riskier" it is. But that is overly simplistic. Once again, the Austrians were on a more reliable track. Another substantive insight from the Austrian School is that risk – whatever risk might even be and however we might define it – is entirely subjective. It is subject to context. Your risk and my risk are not the same. *Markowitz assumed that they were*. As did the legions of financial professionals who followed in his wake.

Risk is not, realistically, volatility – the extent to which a price wobbles around an average level. Risk is, for example, the risk that you incur a permanent capital loss. You worked for Lehman Brothers and had all your pension fund invested in Lehman Brothers stock – and then the firm collapsed and you lost your job ***and*** your life savings ? Now *that* is risk.

Older economists than Markowitz never even dared to define risk. Although there was keen discussion among economists, before World War One, as to what risk might be, and whether it was the same thing as uncertainty, there was complete agreement that whatever risk was, it was probably too complex a thing ever to be fully understood and, crucially, that it was incapable of mathematical calculation.

But Markowitz essentially put a figure on risk. Risk, post-Markowitz, equated to the annualised standard deviation of a portfolio's return – in other words, how much its net asset value wobbled, over time. Not the likelihood of complete financial failure for the portfolio's owner, but merely the extent to which its net asset value oscillated around a mean.

Peter L. Bernstein, in his excellent historical biography of risk, *Against the Gods*, suggests that the sea change in attitude towards risk came about because of widespread revulsion at the horrific slaughter of the Second World War. The awful toll on human life bred an attitude that international cooperation could and should be organised so as to prevent any recurrence of that tragedy, and to try and improve the human condition in general. This attitude gave rise to new international organisations like the United Nations, the World Health Organization and the World Bank.

If science could give us the atom bomb, the thinking went, it could also define risk. Unfortunately it just wasn't able to identify it properly. Or deploy it within a model that might actually be of use to investors.

Consider this presentation by Gerd Gigerenzer, Director at the Max Planck Institute for Human Development and Director of the Harding Centre for Risk Literacy in Berlin. Mr Gigerenzer distinguishes between risk and uncertainty:

RISK: How should we make decisions when all relevant alternatives, consequences, and probabilities are known ? *requires statistical thinking.

UNCERTAINTY: How should we make decisions when NOT all alternatives, consequences, and probabilities are known ? *requires smart rules of thumb (heuristics) and intuition.

How best to describe financial markets ? Modern portfolio theorists would describe them as risky. We would describe them as uncertain.

In this interview between Gerd Gigerenzer and Michael Covel, the following magical phrase pops up:

The art of knowing what one doesn't have to know.

Since we are all drowning in information but starved of knowledge, it helps to be able to filter all the myriad distractions of Finance World down into a circle of competence and then never depart from that circle. For ourselves, that circle of competence comprises three types of assets:

- Shares in high quality businesses run by principled, shareholder-friendly managers who are also adept at capital allocation, ***particularly*** when those shares can be acquired at a discount to those companies' inherent worth;
- Systematic trend-following funds that are uncorrelated to the major asset classes of stocks and bonds, and that offer the potential for portfolio protection during market shocks;
- Real assets – tangible, non-financial assets that offer the potential for portfolio protection during market shocks and also the potential for protection against inflation and ongoing fiat currency debauchery.

There will doubtless be times during which our client portfolios will then be tested by adverse markets. At those times, two qualities are required. In the words of Gerd Gigerenzer:

> We need our brains, we need our guts. More precisely, we need deliberate thinking, but also sometimes we need to trust our intuition. The only question is when. It's not a question whether intuition is superior to deliberate thinking, or if deliberate thinking is superior to intuition, as many of my dear colleagues believe. No, that's not the point.
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> You can show that good expertise is almost impossible without good intuitions. A composer needs intuition to compose. He or she cannot calculate the piece. A chicken sexer needs intuition – do you know what chicken sexing is? Chicken sexing is the art of finding out whether a one-day-old chicken is male or female. If you ask a chicken sexer how they do what they do, they cannot tell. It's intuitive. But nevertheless, they can do this. And then there are other problems where it's better to calculate, to do explicit pro and con lists.
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> And the unlucky attitude in much of social science is to put the one against the other one and look down at one of these. The intuition is based, according to my own research, often on simple heuristics. Why? Because intuition mostly has to do with real world problems that are characterized by uncertainty, not by known risk. If you play in the casino, roulette, you can calculate how much you will lose in the long run. You don't need any intuition. But if you want to find out whom to trust, whom to marry, what job to take, what to do with the rest of your life, you can't calculate that.
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> Only parts can be calculated. There is a risk, and this is what we usually call experience. But it's an experience that is not in language, that we cannot express, and this is why many people are suspicious of it.

Tim Price is co-manager of the VT Price Value Portfolio and author of 'Investing through the Looking Glass: a rational guide to irrational financial markets', extracts from which appear in this article. You can access a full archive of these weekly investment commentaries here.

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