**Chris Dillow** July 25, 2019

❝ Not seeing risk

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Here's a question. My chart below shows the price performance of three different assets in the past 12 months. Which one do you prefer? Security A looks like a recovery play. Security B seems more stable. And security C did well for a long time, but has since lost momentum.

If you have a preference, something very odd is afoot because statistically speaking the three are identical. Security A is the All-Share index. Securities B and C are simply two different random shufflings of the weekly changes in the index. All three have not just identical returns but also identical weekly volatility, skewness and kurtosis. The only difference between them is the sequence in which those returns occurred.
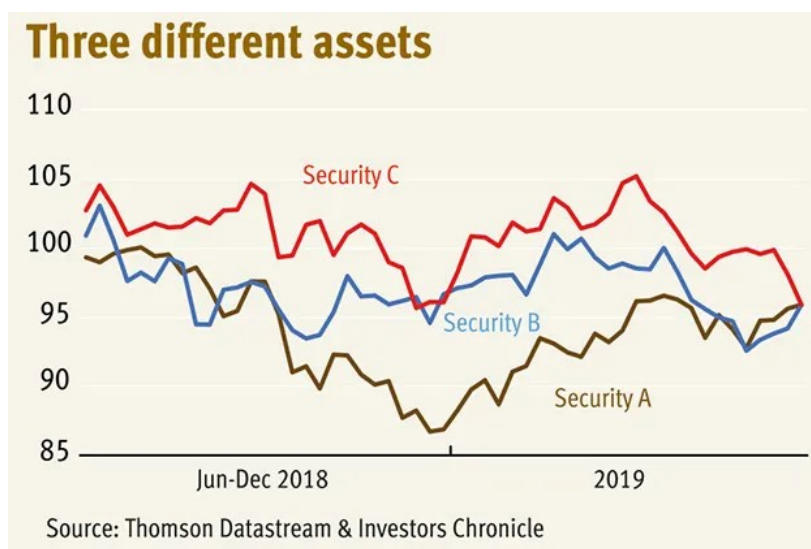
Because these sequences – by construction – are random for B and C, they should tell us nothing at all about future risks and returns on the assets. There should, therefore, be no basis for choosing between the three.

Which poses the question: how, then, is it possible for anybody to prefer one to the others? New research by Charlotte Borsboom at Radboud University and Stefan Zeisberger at the University of Zurich helps answer this question. They showed subjects charts like mine, with different price paths drawn from the same returns and volatility. And they found that people did indeed prefer some to others.

One fact that affected their choice was recent returns. They found that people preferred assets that had risen in price recently – security A rather than C in my chart – because they thought these were less risky. To conventional economics, this is weird, because if a price can rise a lot it can also fall a lot.

This perhaps helps explain why we sometimes see bubbles and often see momentum. People interpret recent rises as a sign that an asset is less risky, and so they buy more of it, pushing its price up even further in the near term.

They also found that big price falls and low price lows add to perceived riskiness. Security C looks riskier than B because it has two significant drops. And A looks riskier because its price low is lower than the others.

To infer anything from such differences would, though, be a mistake. It is a sampling error. Security C's falls are merely the result of dumb luck – of price falls happening by chance to follow others whereas B looks more stable because falls are by chance interspersed with rises. You cannot logically infer that such differences will exist in future data: it could be that with the same distribution of returns B will see sequences of losses in future and C not.

What's going on here is a common error – which I deliberately committed in my opening paragraph – of seeing patterns in what is in fact random data. Psychologists call this apophenia. And we also like to tell stories that give meaning to what is in fact randomness. Charts such as mine can therefore mislead us. Had I shown you instead a table of returns and risk, the numbers would have been identical and there would have been no basis for any preference.

These, however, are not the only ways in which we misperceive risk. Experiments by Maren Baars and Michael Goedde-Menke at the University of Munster show us another. They asked people to bet on three different gambles in which they were told the odds of winning: a lottery draw, roulette and a dice game. They found that people preferred the game with which they were most familiar, even though such familiarity made no difference to the chances of winning. They trusted their knowledge even though it added nothing to what they knew about the risk and return of these gambles.

This fits some research by Nick Powdthavee of Warwick Business School and Yohanes Riyanto at Nanyang Technical University in Singapore. They got students to bet on tosses of a fair coin and found that people were willing to pay to back the bet of students who had correctly called previous tosses. Remarkably, this finding has been corroborated by other experiments conducted at the Autonomous University of Barcelona.

The message of all this different research is the same. People deny the reality of risk and of our ignorance of the future. They look instead for patterns in what is really random data, or to an illusory expertise.

And of course it is not just in laboratories that people do this. Investors put too much money into unit trusts that have done well in the recent past even though such performance might well be due to dumb luck. They "confuse risk-taking with skill", says Christoph Merkle at Kuehne Logistics University.

Hard facts and numbers do not, therefore, determine our attitudes to risk. The same bets can be accepted or rejected, depending on how they are framed and seen.

This is not necessarily entirely irrational. It's important to have investments you feel comfortable with. The problem is that such comforts can sometimes be false ones based on poor reasoning.