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The perils of making predictions

Foreword

Making accurate predictions isn't easy. Even the experts frequently get it wrong, and you don't have to look far to find a recent example.

After months of speculation, the UK general election was called for 4 July. And despite many thousands of words being written by political commentators, pollsters and media outlets about possible election dates, the timing took virtually everyone by surprise.

As discussed in our last *Quarterly Letter* – 'Navigating political noise' – we believe that our investment philosophy and strategy can navigate periods of political turbulence around the world.

We avoid placing too much faith in our ability to predict the future here at Rothschild & Co. Instead, we use in-depth research to try to identify investment opportunities that are resilient over the long term, meaning they can survive and grow even during periods of change.

That is also an approach we take as we look at our own business and the investment we make to ensure we are best placed to support our clients over the long term.

In recent years we have seen more clients entrusting us with a greater proportion of their wealth and referring family, friends or colleagues. To help ensure we meet that need over the long term I am delighted to let you know that James Morrell has been appointed Deputy CEO.

James and I have worked closely together for two decades and he has led our client teams for the last seven years. James is passionate about the service we deliver to clients and has been central to our efforts in this area. His move to Deputy CEO is the natural and right next step for us as a business. It also helps bolster the management stability which I'm so proud of and our own long-term succession planning, i.e. practising what we preach.

In this *Quarterly Letter*, we'd like to explain why our approach is to preserve and grow wealth using long-term planning and research, and why we avoid being over-reliant on predictions.

Wishing you all a lovely and, hopefully, restful summer.



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The perils of making predictions

We all want to know what the future holds. You could even say that people have a preoccupation with predictions, given that there's always a captive audience for political polls, weather forecasts and 'futurists'.

Our appetite for knowing the unknowable is seemingly insatiable, and yet evidence suggests that our powers of prophecy are reliably unreliable.

American civil engineer John Elfreth Watkins is a good example. In 1900, he made a series of predictions about what the world would look like in one hundred years' time after consulting with some of the leading scientific minds of his era.

Many of his visions for the year 2000 are remarkably prescient. Watkins correctly predicted ready meals, televisions, the internet and mobile phones. He also saw a future where trains would travel at least 150 miles per hour and photographs could 'reproduce all of nature's colours'.

However, not all of his forecasts were quite as accurate. The letters C, X and Q are still in the alphabet, for instance, despite Watkins' belief they would be abandoned by the turn of the millennium because they are 'unnecessary'.

He also anticipated that mosquitos, cockroaches, houseflies and horses would become practically extinct, with almost all wild animals only existing in zoos. His prediction that all major cities would be devoid of cars and 'free from all noises' similarly missed the mark.

Even with a generous reading, only half of Watkins' visions for the future were in the right ballpark.¹ If we're being pedantic, some of the innovations he mentioned, such as colour photography, were also already well on their way to becoming a reality in 1900.

In fairness to Watkins, his predictions were published in *Ladies' Home Journal*, which was a popular US magazine, rather than a scientific publication.

But Watkins isn't the only expert whose predictions have been hit and miss over the years. In 1950, Associated Press writer Dorothy Roe used what she described as 'scientific evidence' to predict that all women would be six feet tall by the year 2000.

Even today, the track record for most forecasters is decidedly underwhelming. Political scientist Philip Tetlock, co-author of the bestselling book *Superforecasting*, finished a near two-decade-long experiment in the early 2000s to test whether academics, pundits and forecasters were able to precisely predict the future.

The upshot? The vast majority of expert predictions are only slightly more accurate than random guesses.

It's not just academics who can make incorrect predictions. In the 16th century, clairvoyant and soothsayer Ursula Southeil, better known as Mother Shipton, predicted many events.

After her death in 1561 a book of her prophecies was published, including the supposedly definitive prediction that 'the end of the world will surely come' in 1801.

¹ Predictions of the Year 2000, *The Ladies' Home Journal*, December 1900

Admittedly, these results came from individual experts, and mostly at the tail-end of the last century. It may therefore be tempting to dismiss them, given that we now live in an age of information abundance, with sophisticated technologies and modern processing power at our fingertips.

Unfortunately, technology hasn't proven to be a panacea for our prediction problems. Miscalculations are still commonplace, and nowhere is this more evident than in the field of economic forecasting.

FORECASTING FRUSTRATIONS

'The only function of economic forecasting is to make astrology look respectable.'
– Ezra Solomon, economist

Economic forecasting has a bad rap. A quick glance at the Financial Times website reveals a slew of articles decrying the lack of accuracy within the industry.

'An astonishing record of complete failure', reads one headline. 'Central banks rethink forecasting after their failures on inflation', announces another. 'Economic forecasting – little more than performance art' is particularly damning, as it was written by Andy Haldane, a former Bank of England chief economist.

Why all the bad press? Well, even the International Monetary Fund (IMF) has indicated economic forecasting doesn't have the best track record.

IMF macroeconomist Prakash Loungani studied more than two decades' worth of GDP forecasts produced by his own organisation, the World Bank and private firms to see how accurate they were.²

The results were not encouraging. They showed that economic forecasts are terrible at predicting both market booms and downturns. For example, of the 77 countries Loungani and his colleagues analysed, 49 of them sank into recession in 2009 as the Global Financial Crisis took hold.

However, economists had predicted none of these recessions by April 2008, despite the recent nationalisation of Northern Rock in the UK and the collapse of US investment bank Bear Sterns.³ Immediately prior to Lehman Brothers going bust in September the same year, the general consensus among forecasters continued to be that none of the countries surveyed would be in recession in 2009.

'The record of failure to predict recessions is virtually unblemished,' Loungani said.

Economic forecasting isn't alone in missing big shocks. In our last *Quarterly Letter*, we discussed the problems political polls often have in getting things right.⁴ Weather forecasts also have a spotty history of success.

Some of our readers may remember the ill-fated words of BBC weatherman Michael Fish in October 1987 who said a viewer had 'heard that there was a hurricane on the way'. He replied: 'Well don't worry if you're watching, there isn't.'

A few hours later, the Great Storm of 1987 hit the UK's South West, which the Met Office described as the worst storm in nearly three centuries.

While it may seem unfair of us to pick out only the most glaring errors, we do so for a good reason. For investors, major booms and busts often present both the biggest risks and opportunities to a portfolio, and yet it's these unexpected outliers – the unknown unknowns – that forecasting seems so poor at predicting.

² How Well Do Economists Forecast Recessions?, International Monetary Fund, 5 March 2018

³ An astonishing record – of complete failure, Financial Times, 30 May 2014

⁴ For more information, please read our Quarterly Letter 'Navigating political noise'

Unfortunately, technology hasn't proven to be a panacea for our prediction problems.



This is not the fault of forecasters. Their predictive models are usually robust, but they are built on historic data, so it's hardly a surprise they struggle to predict never-before-seen events.

As you will hear us say frequently at Rothschild & Co, past performance is no indicator of future results. We believe this is just as true for predictions as it is for portfolio performance.

CHAOTIC CUE PATHS

To understand why making accurate predictions is so challenging, let's talk about billiards. How difficult do you think it is to calculate the movement of billiard balls around a standard table?

Fortunately, we don't have to work it out for ourselves. British mathematician Michael Berry has already done the legwork, and the mind-bending computations behind his efforts were summarised in mathematical statistician Nassim Nicholas Taleb's 2007 book *The Black Swan*.

As it turns out, predicting the motion of the balls is fairly easy on the first strike. If you know the strength of the shot, the resistance of the table, the relevant angles and various other parameters, you can be reasonably sure where each ball will end up.⁵

The placement of the balls after the second shot is much trickier to predict, but still possible. With every consecutive strike, however, the difficulty increases exponentially, and any errors made in your previous calculations are compounded.

After a dozen shots have passed, your predictions are probably no better than guesswork.

'Forecasting the motion of a billiard ball on a pool table requires knowledge of the dynamics of the entire universe, down to every single atom,' Taleb explains.

His statement may sound hyperbolic, but it nonetheless illustrates how much uncertainty is involved when trying to foresee the future when hundreds of variables are continually interacting with one another across multiple timeframes.

And this is only a game of billiards. A billiard ball has no free will, and its movement is constrained by the boundaries of the table (catastrophic miscues aside).

In a global economy, where billions of people are making decisions each day, not all of them rational, then the variables and potential interactions are too numerous to count – for human brains at least.

Here is where forecasters turn to computers and modelling to help them crunch the numbers. Technology can be an invaluable tool in this respect, but computers only analyse the information we give them.

Even when high-quality data has been collected and analysed in good faith, there's still a risk of inaccuracy due to human error or cognitive biases.

BLACK SWANS AND BLACK BOXES

Could AI provide answers? Sophisticated machine learning algorithms can certainly identify trends in massive datasets in an attempt to make predictions more accurate, and some of the results are impressive.

Last year, DeepMind's GraphCast AI was able to outperform conventional weather forecasting methods for the first time after analysing more than 40 years of data on how weather systems develop and move.⁶

The technology still has its limitations though. Most notably, GraphCast appears to suffer a similar problem to traditional forecasting – AI struggles to expect the unexpected, or what Taleb would call 'black swan' events.

They are events that are completely unexpected, that make significant shockwaves, and their occurrence seems obvious in hindsight, but this is usually due to cognitive biases.

Because of their unpredictability, black swans are impossible to model precisely and can have a huge impact on markets.

According to the Financial Times, GraphCast performed no better than conventional forecasting methods at predicting the intensity of Hurricane Otis, which caused approximately \$12–16 billion worth of damage across Mexico in October last year.⁷

Nearly 40 years have passed since Michael Fish made his infamous forecasting faux pas, but we are clearly still some way away from predicting the weather with perfect precision.

⁵ The Black Swan: The Impact of the Highly Improbable, p178 (Kindle Edition), Nassim Nicholas Taleb, 2007.

⁶ AI outperforms conventional weather forecasting methods for first time, Financial Times, 14 November 2023

⁷ Hurricane Otis, National Hurricane Center, 2 April 2024

Another issue with AI is that many machine learning platforms are designed using ‘black box’ development. This means the internal workings of the model are not easily visible or interpretable, even to the programmers who built them.

The results may appear accurate, but it’s difficult to understand how the AI is arriving at its answers. And if the system is making incorrect assumptions or basing its predictions on poor-quality data, it can result in outputs that reflect and reinforce the biases expressed in the data and by developers.

In her book *Invisible Women*, for example, Caroline Criado Perez discusses how gender bias can be perpetuated by AI technologies.⁸

An analysis of a Google News dataset commonly used for AI training found that some of the professions most commonly linked to women were ‘homemaker’, ‘socialite’ and ‘receptionist’. Meanwhile, the top careers for men included ‘maestro’, ‘captain’ and ‘protégé’.

MANAGING EXPECTATIONS

Given the patchy track record of forecasts, should investors ignore them? Not necessarily. At Rothschild & Co, we welcome any information or analysis that can help us make better investment decisions.

Our goal is to preserve and grow our clients’ wealth for future generations, so we must always be mindful of what that future may look like. As such, our strategy team regularly reviews global macroeconomic trends and capital markets to inform our in-house views.

However, we also recognise that we live in a complex, uncertain world with outcomes that can’t always be captured accurately within the confines of a model or algorithm.

A common problem with predictions isn’t just how they are made either, it’s how they are used. Often, people expect too much precision from the results, and then do little, if anything, with the information.

Economist Tim Harford described an incident where he was taking questions in front of a live audience and was asked to make an economic forecast. The questioner said a previous keynote speaker from 2019 had predicted a global pandemic in the near future – did Harford have similar powers of clairvoyance?

‘My interlocutor would never hear a more consequential forecast than what he was told in 2019, but had he done anything differently? I knew the answer was no. Why, then, was he so interested in hearing another prediction?’ Harford wondered.

Even if investors react to predictions, they can’t ever be sure their response will be the right one. In our view, trying to time the markets in this way is like building a house of cards – it’s prone to collapse with the smallest misstep.

And if history has shown us anything, it’s that being overconfident in one’s predictions can lead to complacency, as well as an inability to adapt when circumstances change.

AVOIDING OVERCONFIDENCE

In 2007, the then-CEO of Microsoft Steve Ballmer made a bullish prediction that would quickly come back to haunt him.

‘There’s no chance that the iPhone is going to get any significant market share. No chance. It’s a \$500 subsidised item,’ he told *USA Today*.⁹

Ballmer also predicted Apple would only achieve a 2–3% share of the global mobile phone market and that the iPhone wouldn’t appeal to business customers because it didn’t have a keyboard.

⁸ *Invisible Women: Exposing data bias in a world designed for men*, p165 (Kindle Edition), Perez, Caroline Cried, 2019

⁹ After pooh-poohing the iPhone years ago, Steve Ballmer just praised Apple, *Yahoo Finance*, 4 November 2016

Given the patchy track record of forecasts, should investors ignore them? Not necessarily.



As we now know, the iPhone was an immediate success and within just a year of being launched it had captured a 9% market share.¹⁰ Today that figure stands at approximately 17%.¹¹

With the gift of hindsight, it's easy to scoff at Ballmer's misjudgement. However, history is littered with similar stories of people being confidently wrong about the future.

Take Hollywood film producer Darryl Zanuck for example. In 1946, the 20th Century Fox executive claimed televisions were a short-term fad that wouldn't have an audience for longer than six months.

'People will soon get tired of staring at a plywood box every night,' he stated.

Both Ballmer and Zanuck were likely suffering from a case of wishful thinking – a cognitive bias that encourages people to form beliefs that are comforting rather than objective. The iPhone and TV were competitor products, after all, so it was no doubt pleasing to predict their downfall.

Both men also exhibit the overconfidence effect. As the name suggests, this is when a person's confidence in their own opinions is greater than the available evidence warrants. It is most noticeable when people provide absolute statements, such as 'no chance' or 'will', when making predictions about an uncertain future.¹²

Ballmer and Zanuck may have benefited from taking a page out of Nostradamus' book. The French astrologer's prophecies continue to be discussed today, more than 450 years after his death, mostly because they are so enigmatic it's hard to prove them wrong.

That said, we do not expect investors to have much luck if they're looking to astrologers for inspiration on market movements. Perhaps an astronaut may provide better words of wisdom. Six months after walking on the moon, Neil Armstrong stated: 'Science has not mastered prophesy. We predict too much for the next year yet far too little for the next ten.'¹³

As investors with a generational perspective, we couldn't agree more. We aim to rise above the day-to-day market noise that can cause some investors to lose focus and instead look to deliver superior performance over the long term.

FORECASTING FUTURES

Predicting the future is full of pitfalls. Even the best forecasters with the latest data and the most sophisticated models struggle to make consistently accurate and timely predictions.

Amanda Rees, a historian of science at the University of York, believes people make a common mistake when forecasting. Namely, they focus too much on the idea of a singular, fixed future.¹⁴

'A much more productive strategy is to think about *futures*,' she explains. 'Rather than "prediction", it pays to think probabilistically about a range of potential outcomes and evaluate them against a range of different sources.'

The same ideas can be applied to investing. Rather than be preoccupied by predictions, we believe our time is better spent balancing our portfolios in a way that delivers prudent growth when markets are good and adequate protection when they are inevitably bad.

Our 'bottom-up' investment approach means we thoroughly analyse the fundamentals of companies prior to investment, while remaining up to date with their performance and, if necessary, changing course when new information comes to light.

In other words, our vision of the future isn't fixed. We recognise there will always be uncertainties. But by investing in what we believe are strong, robustly managed companies and funds with sustainable competitive advantages, we can nevertheless feel confident they will deliver our investment objectives over the long-term.

To offer downside protection, we also own 'diversifying assets'. These typically act either independently of our growth-oriented investments – our 'return assets' – or they are directly negatively correlated to them.

Ultimately, our aim is to look beyond any single 'prediction' or 'future' by taking a more holistic approach. In doing so, we seek to preserve and grow wealth across a multitude of possible futures, good or bad.

¹⁰ Apple iPhone Market Share, Counterpoint Research, 29 May 2024

¹¹ Worldwide Smartphone Market Up 7.8% in the First Quarter of 2024 as Samsung Moves Back into the Top Position, According to IDC Tracker, IDC, 15 April 2024

¹² Within the field of cognitive biases, this behaviour is called 'overprecision'

¹³ Joint Meeting of the Two Houses of Congress to Receive the Apollo 11 Astronauts, NASA, 16 September 1969

¹⁴ The History of Predicting the Future (our emphasis), Wired, 27 December 2021

Important information

Notes

At Rothschild & Co Wealth Management we offer an objective long-term perspective on investing, structuring and safeguarding assets, to preserve and grow our clients' wealth.

We provide a comprehensive range of services to some of the world's wealthiest and most successful families, entrepreneurs, foundations and charities.

In an environment where short-term thinking often dominates, our long-term perspective sets us apart. We believe preservation first is the right approach to managing wealth.

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