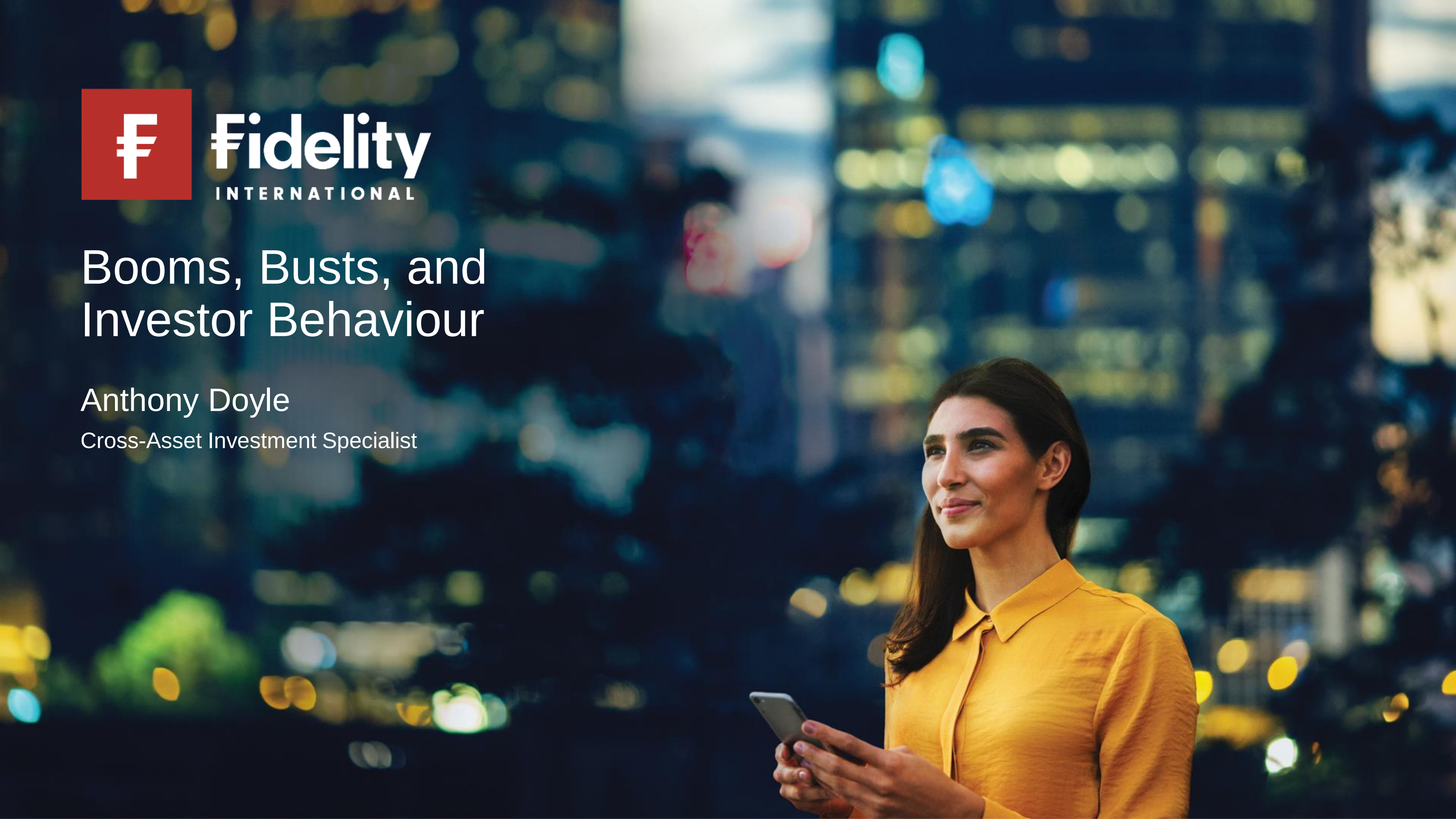


Booms, Busts, and Investor Behaviour

Anthony Doyle

Cross-Asset Investment Specialist

Anthony Doyle

Cross-Asset Investment Specialist

- Based in: Sydney, Australia
- Years of Investment Experience: 18
- Education: MBA, University of London
- MEconSt, University of New England
- BCom, Macquarie University

- 18 years experience in global financial markets
- Assists and advises Fidelity's clients on investment strategies, macroeconomic themes and asset allocation
- Covers the Australian and New Zealand economies on behalf of the Global Macro and Strategic Asset Allocation team
- A regular speaker and market commentator in the media
- Previously worked at Macquarie Bank (Sydney, AU), Pioneer Investments (Dublin, IE) and M&G Investments (London, UK)

in anthonywdoyle

@DoyleAUD

"If you look at economics textbooks, you will learn that homo economicus can think like Albert Einstein, store as much memory as IBM's Big Blue, and exercise the willpower of Mahatma Gandhi. Really. But the folks that we know are not like that. Real people have trouble with long division if they don't have a calculator, sometimes forget their spouse's birthday, and have a hangover on New Year's Day. They are not homo economicus; they are homo sapiens."

Richard Thaler, Nobel Prize in Economic Sciences (2017)

Who is Homo Economicus?

A human or a computer?

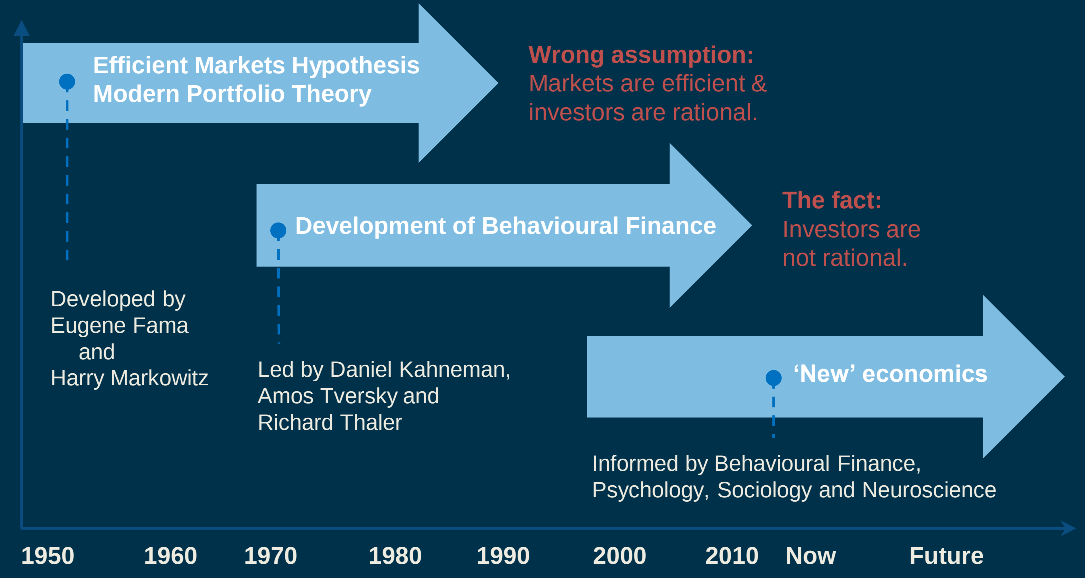
- Makes decisions in a perfectly rational manner
- Not influenced by any biases
- Can process any amount of information that they have regardless of quantity, quality or complexity
- Has access to all the relevant information related to the decision they have to make
- Only interested in helping themself and doesn't care about anyone else
- Focuses on maximising utility as a consumer and profit as a producer
- Preferences and goals are consistent over time

Source: Fidelity International, April 2021.

A quick history guide

Introducing behavioural finance

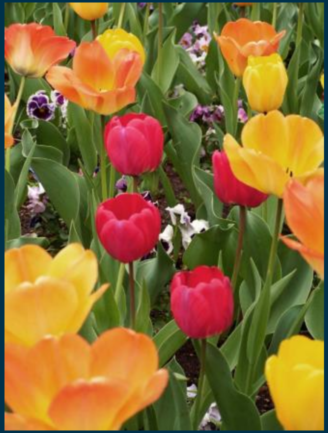
- Traditional economic models developed in the 1950s assumed markets were efficient and investors were rational.
- Growing doubts about 'efficiency' after stock market crashes accelerated interest in the field of behavioural finance, which had its origins in psychology experiments in the 1970s.



Source: Fidelity International, April 2021.

Why behavioural finance is important

Studying booms and busts



Tulipmania (1630s)

Railway mania (1630s)

Dot.com bubble (1999-2000)

Global credit bubble (2003-2007)

Bitcoin?
NASDAQ?
SPACs?
Housing?
Government bonds?

Covid-19 (2020-???)

Behavioural finance offers reasons why market pricing swings away from intrinsic value based on sustained moves in investor sentiment

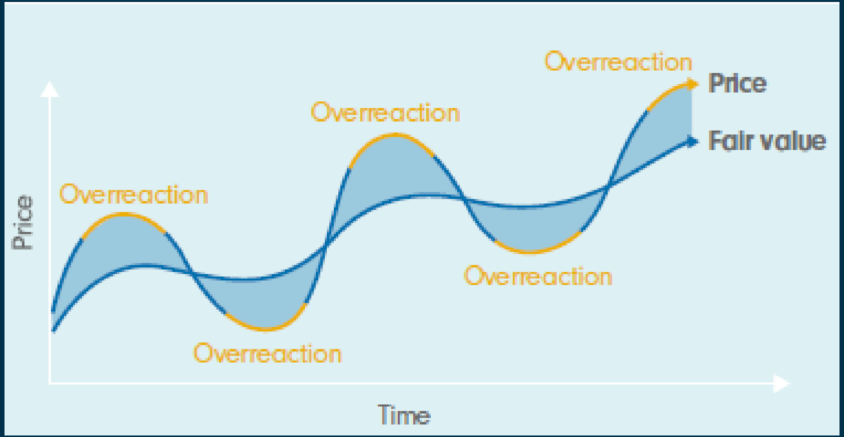
Source: Fidelity International, April 2021.

Knowing how our brains are wired

Can make us better investors

Human psychology can have a big impact on investing.

We make ‘cognitive’ errors on a routine basis by using rules of thumb and over-simplifications.



Source: Fidelity International, April 2021.

A framework for understanding our biases

Thinking fast and slow

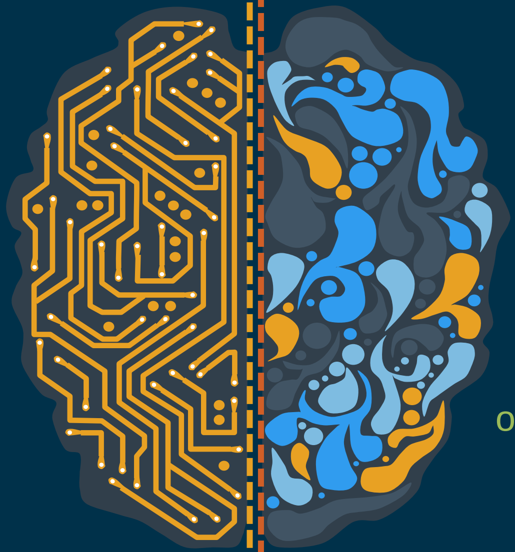
Thinking Fast: System 1

Quick
Automatic
Intuitive
Practical
Emotional

Default option for information processing

Examples:
Detecting hostility in someone's voice.

Judging which object is more distant.



Thinking Slow: System 2

Slow
Conscious
Rational
Logical
Deductive
Structured

Deliberate effort required means we often defer to System 1.

Examples:
Parking in a narrow space.

Multiplying several numbers

Understanding the decisions we make

Source: Fidelity International, Kahneman, April 2021.

System 1 jumps to conclusions

Automatic but far from infallible

Your brain reads these as ABC and 12, 13, 14.

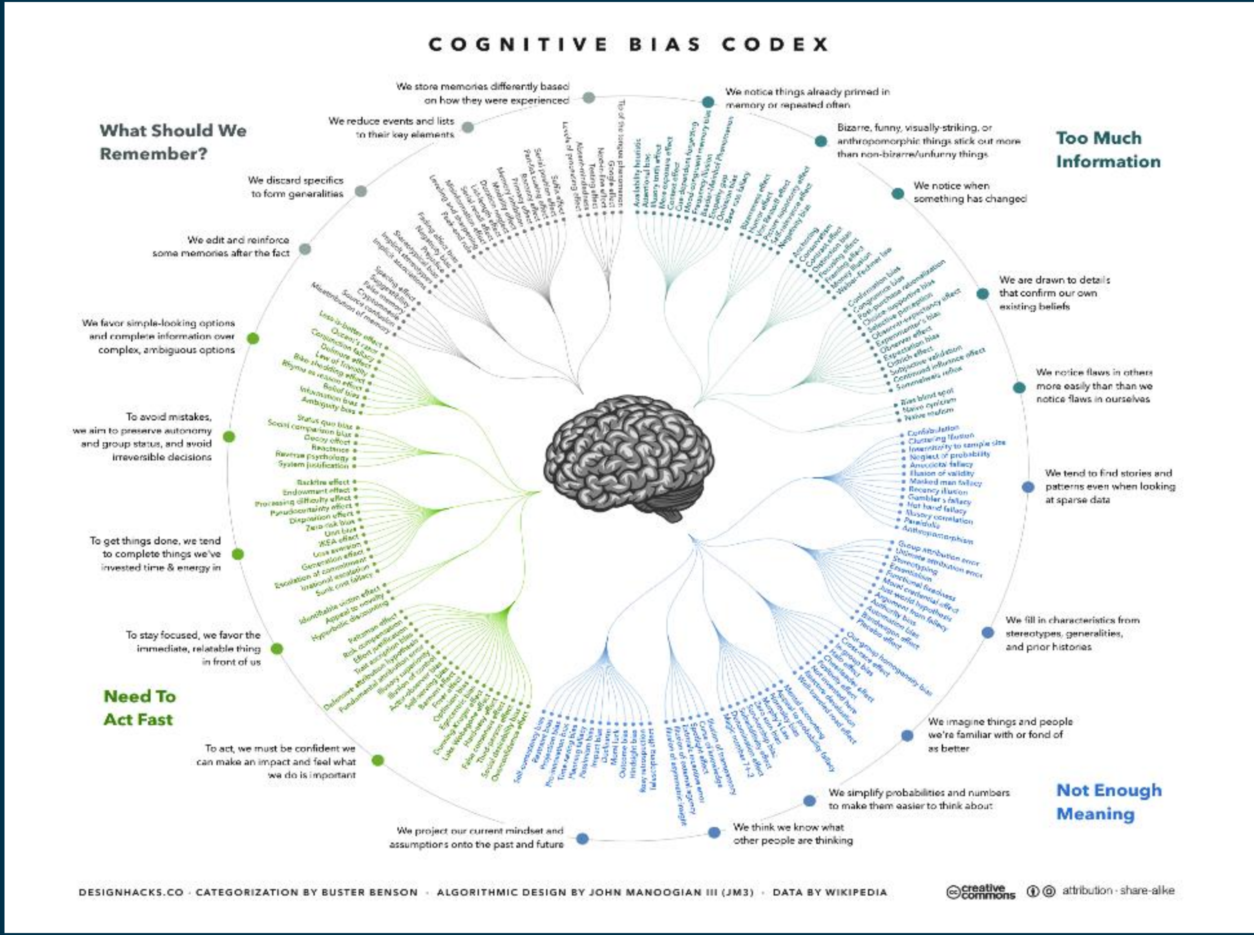
Yet the middle item is identical and ambiguous. Why not A,13, C?

System 1 jumped to the conclusion using the context.

Uncertainty is only properly considered by the more deliberate thinking of System 2.

Which system did you use?

Source: Fidelity International, Kahneman, April 2021.



Source: Fidelity International, designhacks.co, April 2021.

Bias 1: Framing

The deadly virus experiment

You are offered the choice of two programmes to deal with a deadly virus. Each programme has 600 patients. Which one do you choose?

Experiment One

Programme A: 200 people will be saved.

Programme B: There is a 1/3 probability that 600 people will be saved and a 2/3 probability that nobody will be saved.

72% of patients chose A

Experiment Two

Programme C: 400 people will die.

Programme D: There is a 1/3 probability that nobody will die, and a 2/3 probability that 600 people will die.

Only 22% of patients chose C

A and C are the same.

As are B and C.

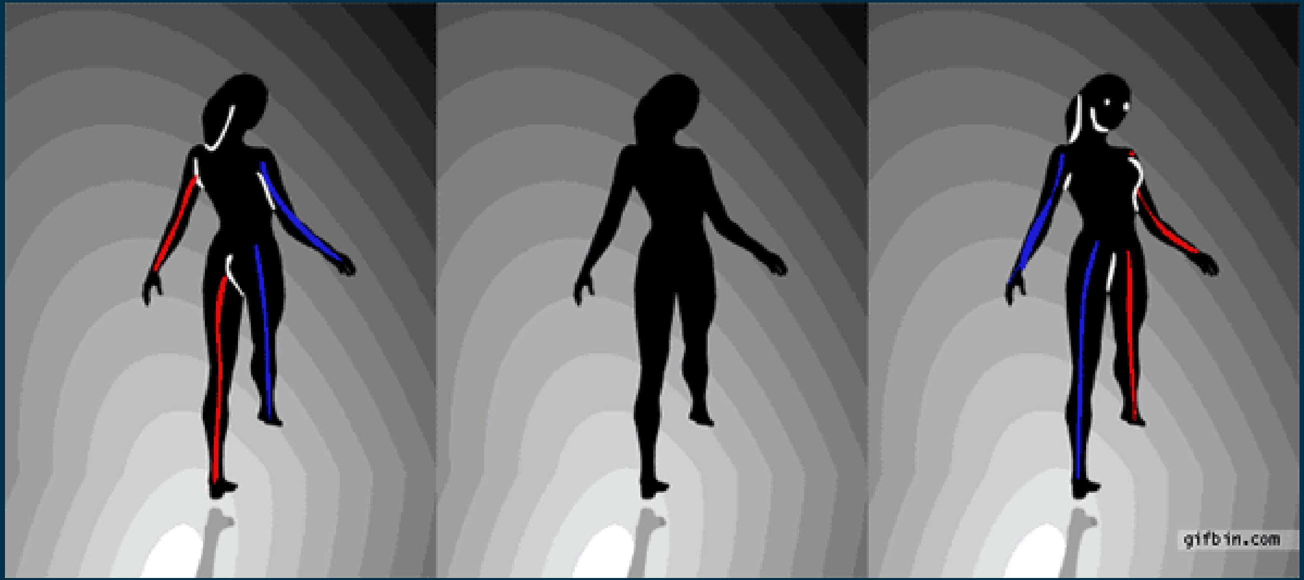
Just worded differently!

Source: Fidelity International, Tversky & Kahneman, April 2021.

Framing in action

Which way is the figure rotating?

The pictures to the left and right frame our perception



Framing influences our perception

Source: Fidelity International, April 2021.

Framing in action

How does the risk of serious side-effects from the AstraZeneca vaccine compare with other risks?

Chance in a million of...	25-year-old	55-year-old
serious harm due to vaccine side-effects	11 in a million	4 in a million
dying with coronavirus	23 in a million	800 in a million
dying due to an accident or injury	110 in a million	180 in a million
dying in a road accident	38 in a million	23 in a million
being hit by lightning this year	1 in a million	1 in a million

Source: Winton Centre for Risk and Evidence Communication, University of Cambridge, https://www.bbc.com/news/explainers-56665396. Figures show the chance of dying with coronavirus since the start of the pandemic. Figures for accidents and car crash fatalities are for 2018. All figures are for the UK.

Bias 2: Nudging

Charity website illustration

I would like to make a single donation of:

$25	$50	$250	Own amount
○	●	○	$50
too low	**just right**	too high	

- Charities carefully chose which amounts to show when asking for an online donation
- The choice above is structured to encourage us to donate $50.
- A default of $50 is also automatically placed in the ‘Own amount’ category to further **nudge** us towards this figure.

Organisations give a lot of thought to how choices are framed

Source: Fidelity International, April 2021.

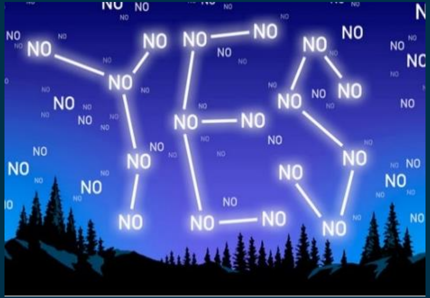
Bias 3: Confirmation bias

We see what we want to see

- Decisions made under uncertainty are not always reliable.
- We selectively filter and focus on information that supports our existing beliefs and opinions.
- We're twice as likely to seek information that confirms what we already believe.

"What the human being is best at doing is interpreting all new information so that their prior conclusion remains intact."

- Warren Buffett



Opinions are formed on past events

Source: Fidelity International, April 2021.

Confirmation bias in action

Tips for investors

- Investment decisions can be influenced by the choices we made in the past
  - Beware of pre-existing beliefs or sunk costs.
- Positive affirmation is sought to support ideas that may be outdated
  - This happens sub-consciously.
- The range of opportunities considered can be limited by this kind of thinking.
- Avoiding this bias requires a deliberate effort to seek opposing views.

"People almost always find what they are expecting to find if they allow their expectations to guide their search."

- Bart Ehrman

Always review your investments from first principles

Source: Fidelity International, Ehrman, April 2021.

Bias 4: Hindsight bias

“I knew it all along”

Students were asked to predict a share price one week ahead

They provided a forecast and two bounds that represented 90% certainty.

A week later they recollected what figures they gave now that they knew the actual price.

Result: their recollected forecasts moved closer to the actual value and the range provided shrank!

Hindsight bias is hard to feel and recognise when it’s happening

Source: Bruno Biais and Martin Weber, 2009.

Hindsight bias in action

Tips for investors

Investors can protect against hindsight bias by:

- Being wary of linear and single-factor explanations of complex events.
- Conducting forward-looking research.
- Seeking opposing views.
- Considering a range of future scenarios.
- Diversifying investments.
- Regularly reviewing portfolios.

Source: Fidelity International, April 2021.

Bias 5: Representativeness

Making judgements that are statistically unlikely

Linda is a single, outspoken and bright 31 year old, who majored in philosophy, was deeply concerned with issues of social discrimination and participated in anti-nuclear demonstrations as a student.

Which is more likely?

A) Linda is a bank teller.

B) Linda is a feminist bank teller.

85% of Stanford Business School graduates wrongly answered B.

Don't stereotype based on specifics.
Use reference base rates to inform basic probabilities.

Source: Tversky and Kahneman, 1983.

Representativeness in action

Tips for investors

What are the investment implications:

- We might wrongly assume a company is ‘hot’ because of the sector it’s in.
- We might wrongly expect good companies to stay good or bad ones to stay bad.
- We might wrongly see ‘boring’ companies as boring investments – not the case!

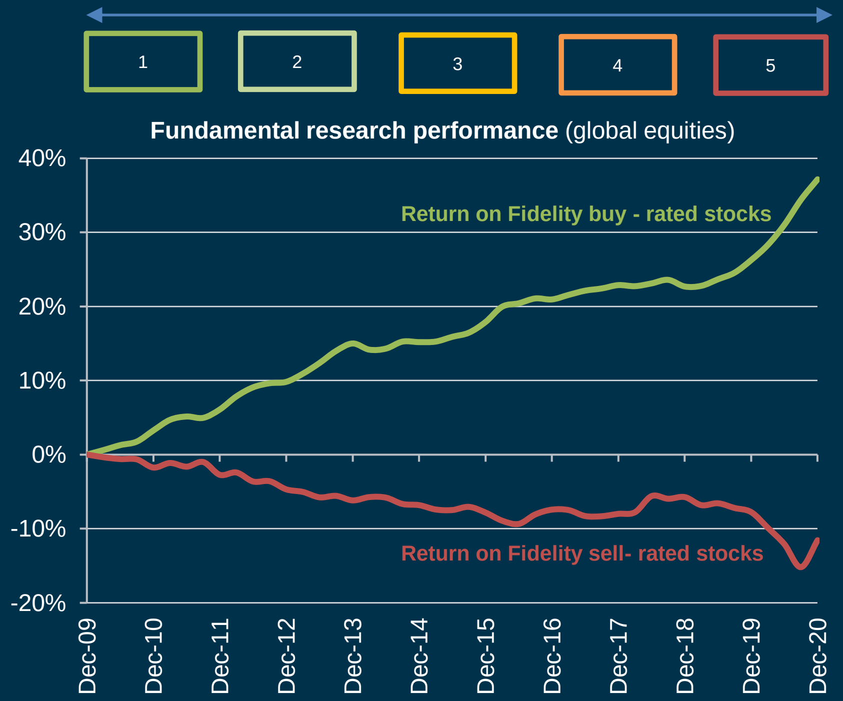
How to avoid mental shortcuts:

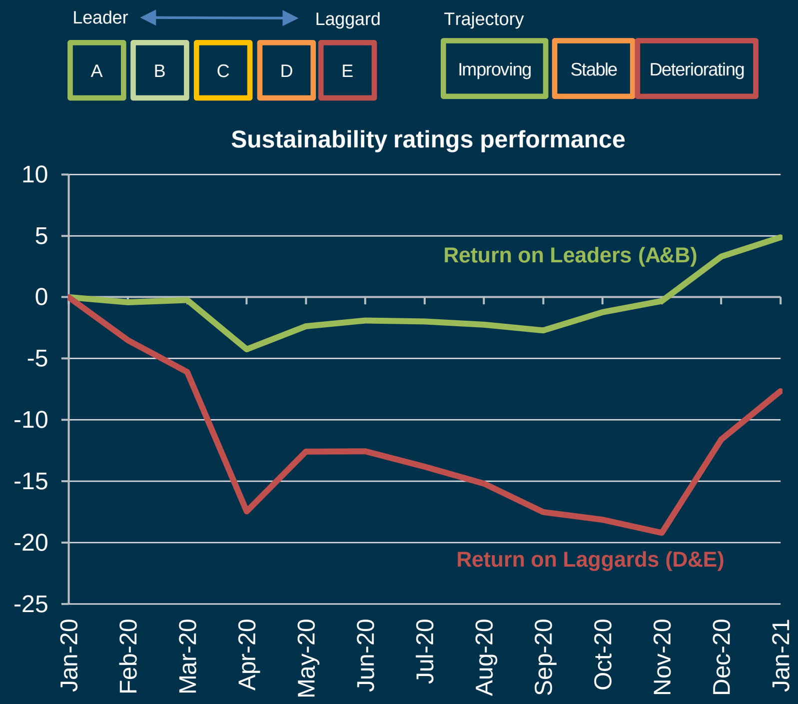
- Make decisions based on actual data rather than stereotypes.
- Do your research!
- Use detailed stock-specific research to move beyond the stereotypical view to reveal ‘hidden gems’.

Source: Fidelity International, April 2021.

Fidelity’s equity research performance outcomes

Delivering performance through valuable research insight





Source: Fidelity International. Data as at 31 December 2020. Regional returns weighted by market cap of companies rated either buy or sell. Value-add calculated vs. regional indices 1&5 weightings are double-weighted. Sustainability ratings relative average of A&B and D&E stocks, equal weighted, to MSCI World. The Fidelity Sustainability Ratings were launched in June 2019. As at 31 March 2021, they cover a universe of c. 4,900 issuers in equity and fixed income. Please remember past performance is not a reliable indicator of future performance.

Bias 6: Anchoring

The roulette wheel

A modified roulette wheel (1-100) was spun in front of two sets of students.

The wheel was rigged to land on 10 for one set, and 65 for the other set.

Both groups were then asked a question:

"What percentage of the United Nations is made up of African countries?"

First set (10): Median forecast = 25%

Second set (65): Median forecast = 45%

Forecasts were biased by students anchoring to these random numbers despite their irrelevance!

Source: Kahneman and Tversky, 1974.

Anchoring in practice
Tips for investors

- We subconsciously anchor to information – sometimes irrelevant numbers.
- This can affect future decisions – as we remained wedded to these numbers.
- Anchors include **share prices, growth rates** and **stock market levels.**

The dangers

- Share prices are poor anchors.
- Dividends make better anchors, giving a better indication of a company's health.
- Beware holding onto losing stocks due to being anchored on the price you bought at.
- Don't wait to sell at a round number that may not be relevant to your sell decision.

Source: Fidelity International, April 2021.

Bias 7: Overconfidence

How good a driver are you?

On a scale of one to 10, you probably think you're a seven – you're not alone!

93% of American drivers rate themselves as better than the median*

94% of professors rated themselves above average relative to their peers**

Overconfidence is common – yet the best investors have humility

Source: Svenson, 'Are we all less risky and more skilful than our fellow drivers?', 1981. ** K. Patricia Cross, 'New Directions for Higher Educations', 1977.

Overconfidence in practice

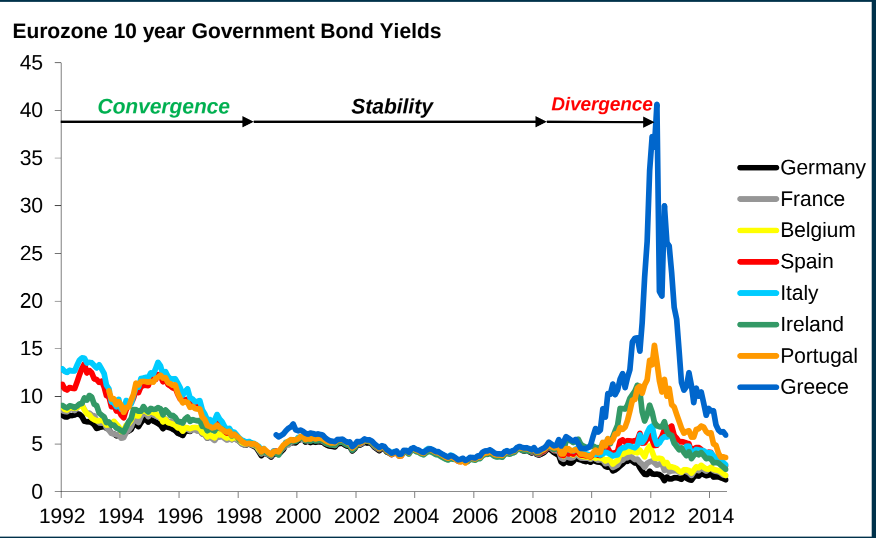
Stability begets instability

Overconfidence can become a growing problem in a period of stability

Stability can breed financial and investment overconfidence.

The chart shows European government bonds enjoyed a long period of stability.

..until the **financial crisis** happened.



Overconfidence is common – yet the best investors have humility

Source: Datastream, July 2014.

Overconfidence in practice

Tips for investors

Underestimating market volatility: the ‘good times’ will last forever…

Having the illusion of control over the direction of your investments.

Over estimating skill and trading too often creates unnecessary costs.

Source: Fidelity International, April 2021.

Bias 8: Herding

The lure of doing what everyone else is doing

Investors often act together

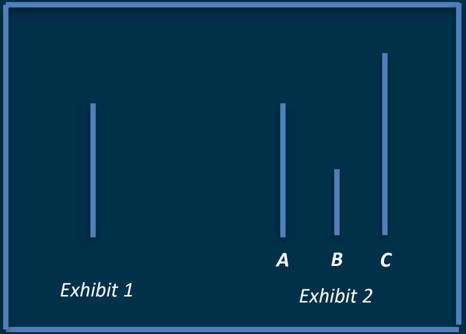
- There can be wisdom in crowds, but crowds also suffer from behavioural biases.
- This can lead to extended rallies and sell-offs based on limited fundamental evidence like the dot.com bubble.

Source: Fidelity International, April 2021.

Herding in practice

The urge to fit in

One participant was placed in a group where all the others were in on the experiment. Each person in the group was asked to judge which line on the right (A, B or C) was equal to the line on the left.



The participant was asked last within the group. After a couple of rounds of correct answers, those in on the experiment deliberately answered incorrectly to see if the participant would conform.

33% of participants always went with the incorrect majority.
75% conformed at least once.

- **Herding:** the urge to do as others do, to conform to group & societal norms.
- We prefer the safety of the crowd to the risk of being wrong on our own
- Many CEOs give their opinions last for fear that if they didn't, everyone would simply agree with their view if stated at the outset.

Source: Fidelity International, Solomon Asch, 1950s.

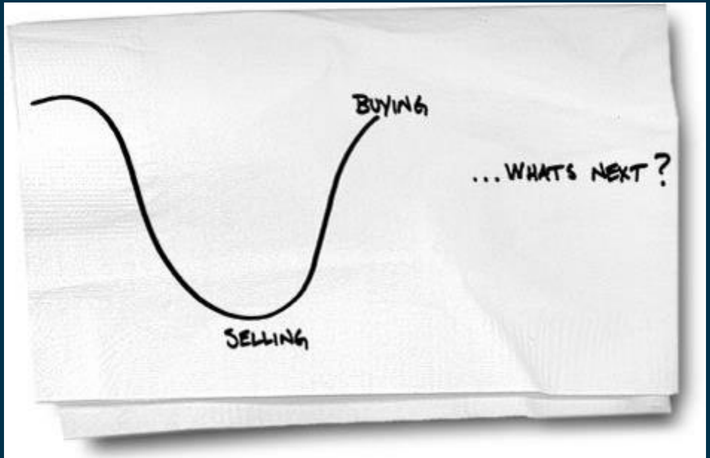
Herding in practice
Tips for investors

Herding in financial markets can push up the values of certain sectors or stocks to extreme levels, causing bubbles.

Following the crowd can mean **buying when prices are high** and **selling when prices are low**, also known as **'chasing the market'.** This is a poor strategy.

While the crowd may be right in momentum-driven markets, it is wrong-footed at turning points.

Best to buy low when others are selling and sell high when others buying. In investment, this is being a **contrarian.**



Source: Fidelity International, April 2021.

Not following the herd can be costly too

Far more money has been lost by investors preparing for corrections, or trying to anticipate corrections, than has been lost in corrections themselves.

- *Peter Lynch, Fidelity Magellan Fund (1977-90)*

Source: Fidelity International, April 2021.

Avoiding the herd

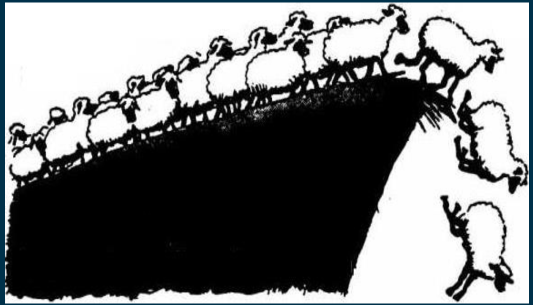
Don’t be afraid to take an alternative position

Make your own decisions, do your own research and explore alternative views instead of simply following the crowd.

Buy investments when they are lowly valued versus history.

An **unconstrained approach** is one way to move away from the market cap index-tracking herd.

Consider investment styles that target **value** stocks, which often move differently to the broader market.



Don’t be a sheep when it comes to investing…

> **“It is impossible to produce a superior performance unless you do something different from the majority”**
>
> **- Sir John Templeton**

Source: Fidelity International, April 2021.

Bias 9: Loss aversion

Our disproportionate fear of losses

Which would you choose?

Win $900 for sure **or**
take a 90% chance of $1000?

Lose $900 for sure **or**
take a 90% chance to lose $1000?

Most people take the safe option in the first example but the gamble in the second

Why? The two situations are mirror images… but the second is framed as a loss.
Faced with the prospect of a loss, we latch onto the possibility of avoiding it.

We will act irrationally by risking what would be a bigger loss to avoid it.
We feel the sting from a loss about twice as strongly as the happiness from a gain of the same amount.

Source: Fidelity International, April 2021.

Loss aversion in practice

Tips for investors

We need to understand **loss aversion** in order to avoid making irrational decisions

- Don’t run losers to avoid ‘taking a loss’.
- Instead, run the winners and cut the losers.
- Review your investments from first principles as if you didn’t own them. Would you still buy?
- Stick to a consistent investment philosophy and process (or invest in a product which does).

Source: Fidelity International, April 2021.

Loss aversion in practice

"3 strikes an I'm out"

The rule of 3: why some investors sell at exactly the wrong time (using the Covid-19 crisis of 2020 for illustration)

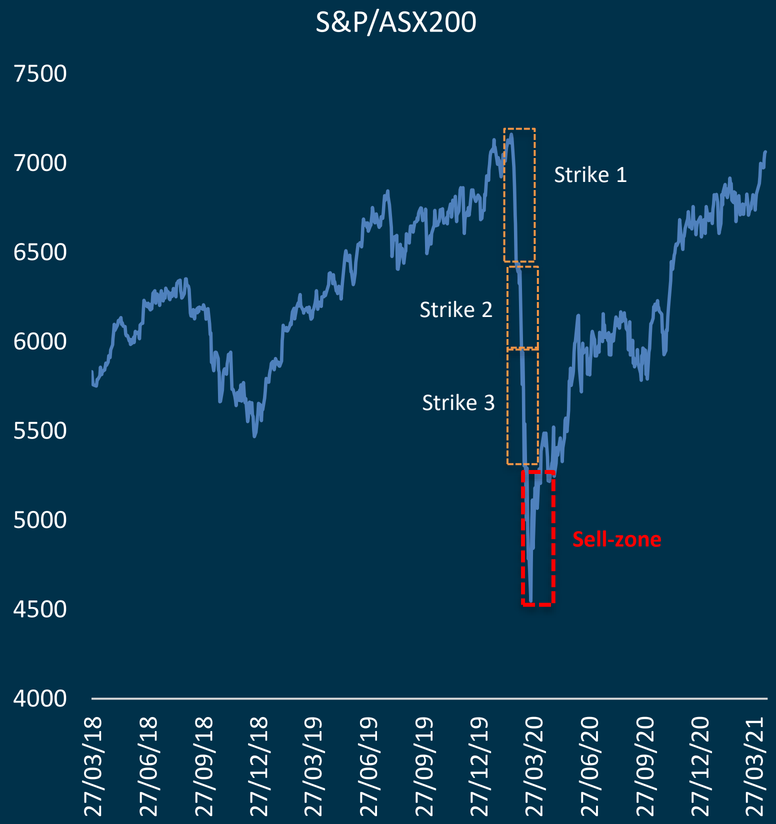
There is some evidence that investors use a rule of 3 for dealing with losses:

Strike 1: They are prepared to ride out the first correction in the market.

Strike 2: They are pained by the second correction but hold on.

Strike 3: Finally, they capitulate after the third wave of selling pressure.

The irony is that stock markets often correct in three downward waves meaning investors sell at the bottom. **Precisely the wrong time.**



Source: Fidelity International, Bloomberg, April 2021.

Bias 10: Familiarity bias

We prefer the familiar

Mere exposure effect: repeated exposure to a word or stimulus can affect our preferences and cause us to form a more positive view.

Our brains are comfortable with the safe and familiar; but suspicious of novelty.

Subliminal advertising and branding are very effective.

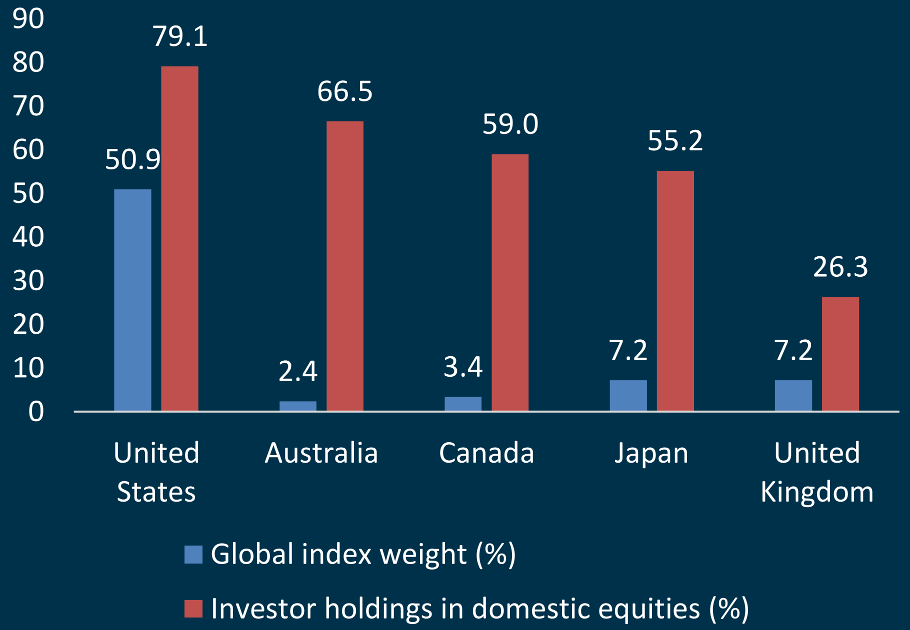
Source: Fidelity International, April 2021.

Familiarity bias or home bias

Tips for investors

Mere exposure can cause us to be biased towards more familiar assets, stock markets, or individual securities.

- Invest in a wide range of assets and geographies.
- With ever-shifting market leadership, it's important to have a **diversified global portfolio.**
- Consider if you have enough exposure to international markets.

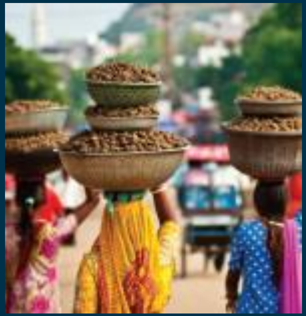


Source: Fidelity International, IMF, Barclays, Datastream, Factset as at December 2014.

Emerging markets and Asia

Long-term trends

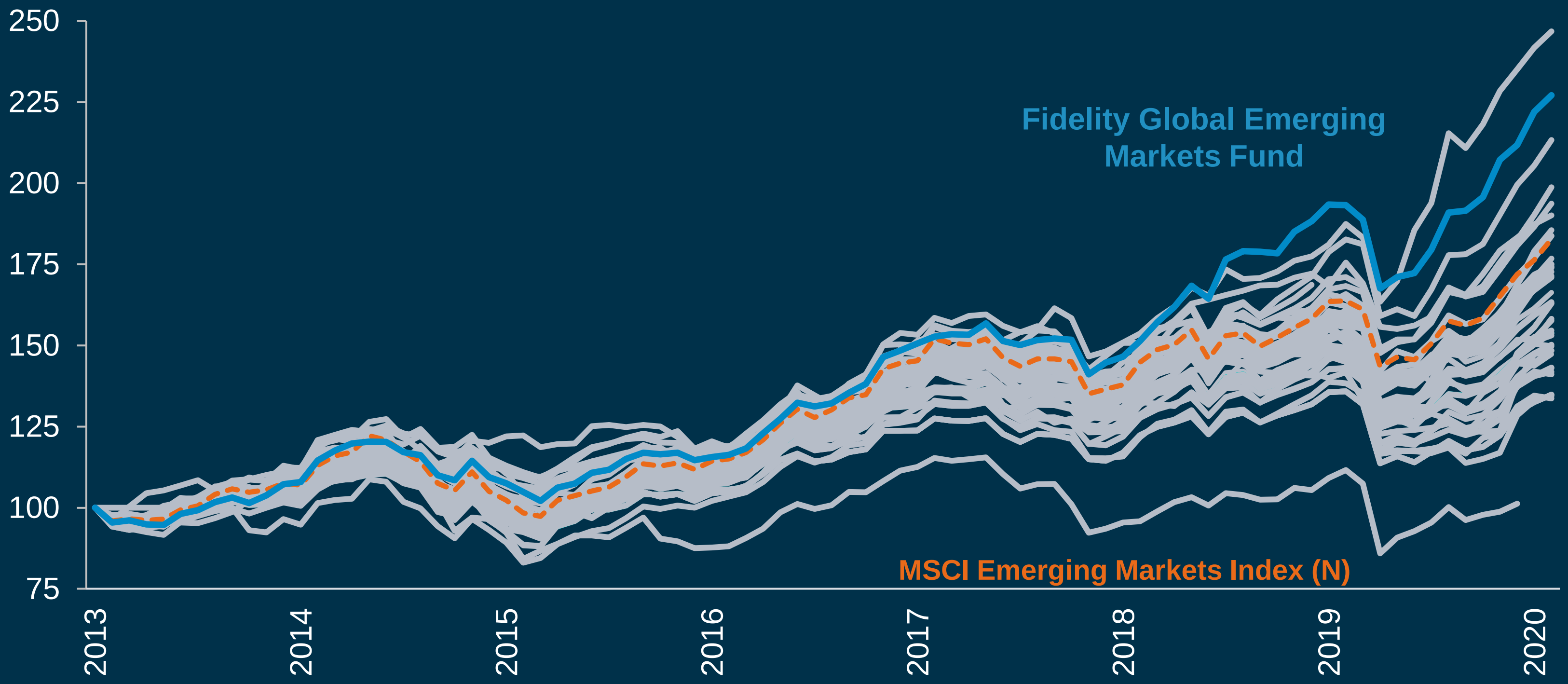
1. …will drive global growth;
2. …are more resilient to capital outflows;
3. …are becoming technology innovators;
4. …have younger and larger populations;
5. …are experiencing rising wealth;
6. …have less debt;
7. …have growing consumer markets;
8. …offer attractive valuations.



Source: Fidelity International, April 2021.

Fidelity Global Emerging Markets Fund

Strong performance since inception

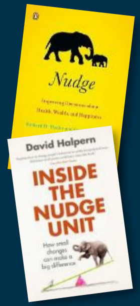


Source: Fidelity International, Morningstar, January 2021. The index is MSCI Emerging Markets (N). Fund inception 16 December 2013.Total net returns represent past performance only. Performance returns are shown net of fees in AUD terms. Past performance is not a reliable indicator of future performance. Returns of the Fund can be volatile and in some periods may be negative.

Fidelity Behavioural Insights: our approach

- Tools that provide live insight on portfolios, securities and other market participants from a behavioural perspective

- Contrasts with alternative behavioural approaches:
  - Is *not* pure social data mining, e.g. twitter sentiment analysis
  - Is *not* simply enhanced analytics, e.g. focusing on past errors, early/late selling
  - *Is* using behavioural finance as a framework for thinking about FIL internal decision-making processes, and seeking to address them using technology

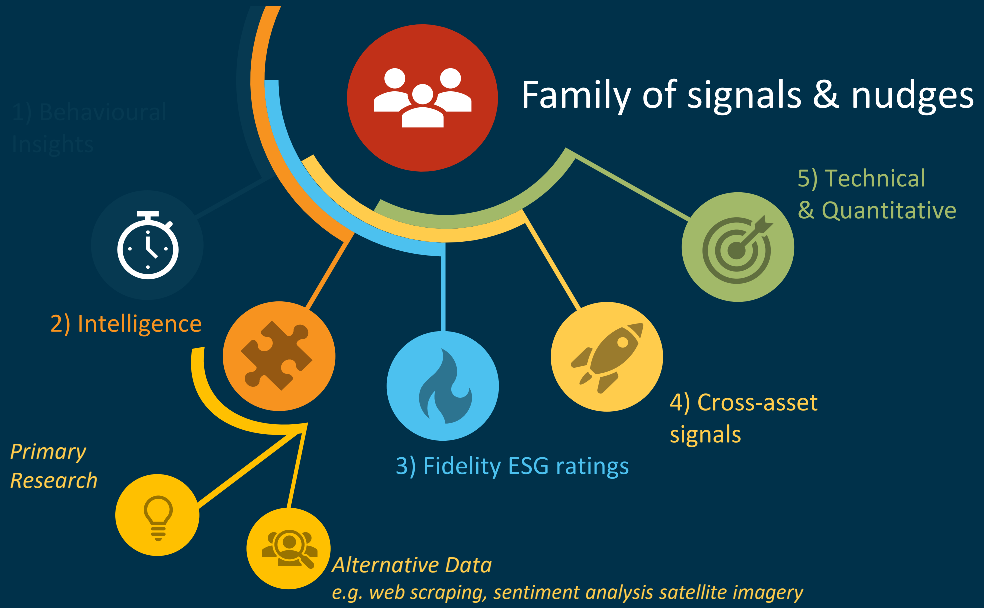


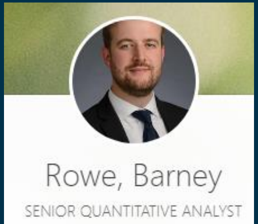
- Promoting human decision-making: automatically-generated nudges containing charts & visualisations designed to stimulate desired behaviour, rather than ‘Good’ / ‘Bad’ signals

- Targeting key marginal gains across the Fidelity investment process, complementing fundamental investment analysis

Source: Fidelity International, April 2021.

Introducing the Fidelity Augmented Research Centre





MPhys – University of Oxford
PhD, Astrophysics – Edinburgh University
Chartered Financial Analyst

Source: Fidelity International, April 2021.

Strategies for long-term investing

The only certainty is that there will be more uncertainty

1. Exploit a long-run time horizon
2. Diversify
3. Cash is now return-free
4. Minimising costs can come at a cost
5. Be selective

Fidelity INTERNATIONAL

Strategies for long-term investing

Anthony Doyle
Cross Asset Specialist

June 2020

Given the inherent volatility of security prices in capital markets, it is useful to remind ourselves of strategies that investors can utilise to meet their investment goals. This is important when constructing and positioning a diversified portfolio of assets, a challenge that most financial advisers face daily. Reminding ourselves of the fundamentals of portfolio construction can help investors position portfolios appropriately in times of crisis and volatility.

Exploit a long-run time horizon

Investors with a long horizon do not need short-term liquidity, giving them an edge during market sell-offs. As markets fall, long-run investors have often generated excellent returns by buying quality distressed assets across major asset classes.

Additionally, if the market rewards illiquid assets with a higher risk premium, it makes sense that investors over-allocate to such assets, as it is unlikely that they will need to sell during bouts of market volatility. Pockets of traditional asset classes like corporate bonds, small-cap equity, and emerging market equity offer the opportunity for long-run investors to generate superior returns over time.

Whilst many would like to describe themselves as long-term investors, this time horizon can shorten very quickly. During financial and economic turmoil, both institutional and individual investment horizons tend to shorten due to immediate cash flow needs or because of psychological factors. The last thing that any investor wants to do is sell an asset into a volatile and illiquid market, where bid–offer spreads can widen materially, and asset prices can fall well below fair value.

The free lunch

Diversification is the rare free lunch available for all investors: it can reduce portfolio volatility without reducing its return. A key challenge to achieving diversification is reducing the dominance of equity risk in a balanced portfolio. Even if diversification tends to fail in crises (as correlations spike across asset classes), it can still be useful in the long run. This matters more for long-run investors who face less liquidation pressure during market drawdowns.

Most portfolios have positive exposures to the equity market and to economic growth. This directional risk is difficult to diversify away, making those assets with a negative correlation to equities a valuable addition. Despite yields being at all-time lows, cash and high-quality government bonds and gold can play an important role to play in most portfolios.

Diversification of course has limitations, one of which is the tendency for correlations to approach one during crises. Many good fund managers distinguish themselves by managing downside risk instead of just relying on diversification. A strong risk management framework and avoidance of large drawdowns is key in generating good long-run compounded returns.

Risk-free is return-free

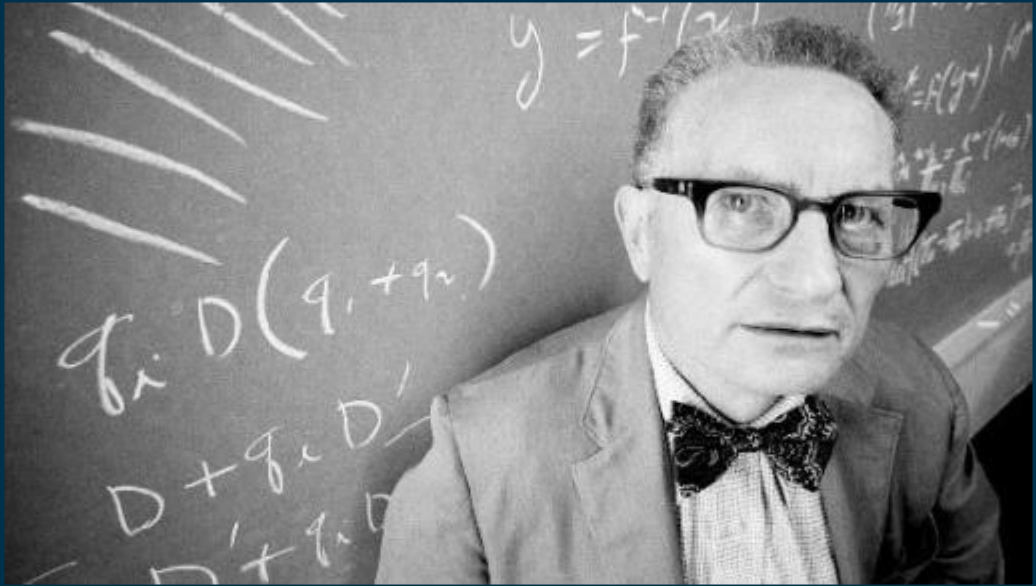
Developed market central banks have taken the actions that they have with a defined monetary policy transmission mechanism in mind. One of the channels of monetary policy is the asset prices and wealth channel, with lower interest rates and quantitative easing expected to spur demand for higher risk assets. Risk-free assets like cash and government bonds no longer generate a positive inflation-adjusted yield and are return-free. Long-run investors can position for 'the portfolio rebalancing effect' that is likely to dominate investment flows in the next decade.

Expected portfolio returns can be improved by increasing the weight of the most volatile asset class. The classic approach is to raise the weight of 'high-risk, high-return' equities and reduce the weight of 'low-risk, low-return' assets such as cash and government bonds. Taking more risk in this way, and getting rewarded for it, is an easy way to boost long-run returns for investors.

Minimising costs can come at a cost

Passive investing minimises trading costs. However, some costs are worth paying. For example, buying an equity index fund costs more than investing in a bank deposit, but the equity risk premium should make the cost worthwhile in the long run. In general, investors should allocate more to active products the less they believe in market efficiency. Minimising costs is not always smart; being cost-effective and avoiding wasteful expense is.

Source: Fidelity International, April 2021.



“I tell people investing should be dull. It shouldn’t be exciting. Investing should be more like watching paint dry or watching grass grow. If you want excitement, take $800 and go to Las Vegas”

Paul Samuelson, Nobel Prize in Economic Sciences (1970)

Source: Fidelity International, April 2021.

Summary: be alert to your biases

- There are many biases and systematic thinking errors we are prone to as investors.
- It may not be possible to change the way our brains are wired, but recognising we are susceptible to errors is the first step in learning from them.
- There are practical steps you can take to minimise the influence of biases.
- A robust and consistent investment process with clear buy and sell principles can be a valuable defence against many behavioural biases.

Source: Fidelity International, April 2021.

Explore the Fidelity Learning Hub

Investor information

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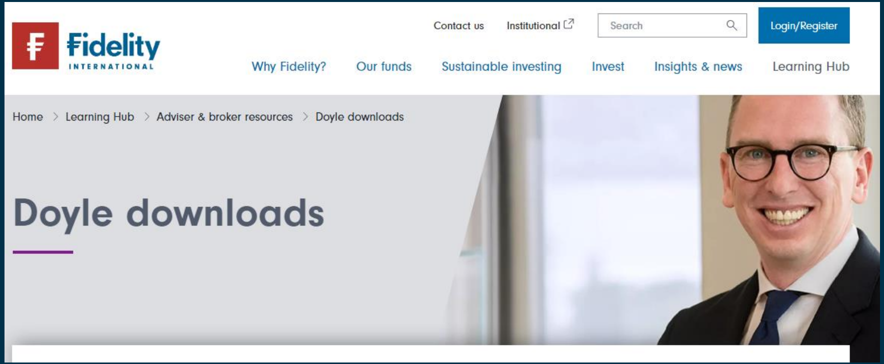
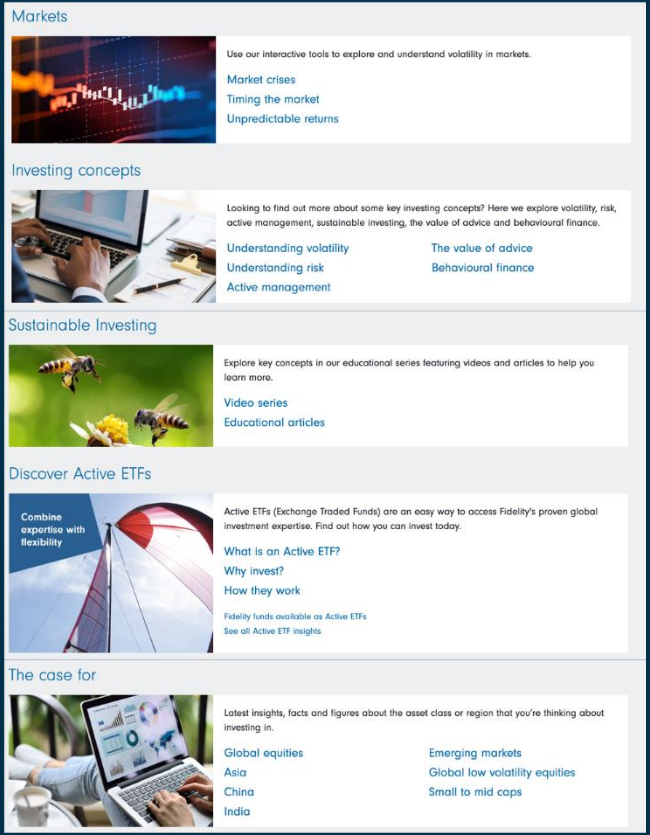
https://www.fidelity.com.au/learning-hub/





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