



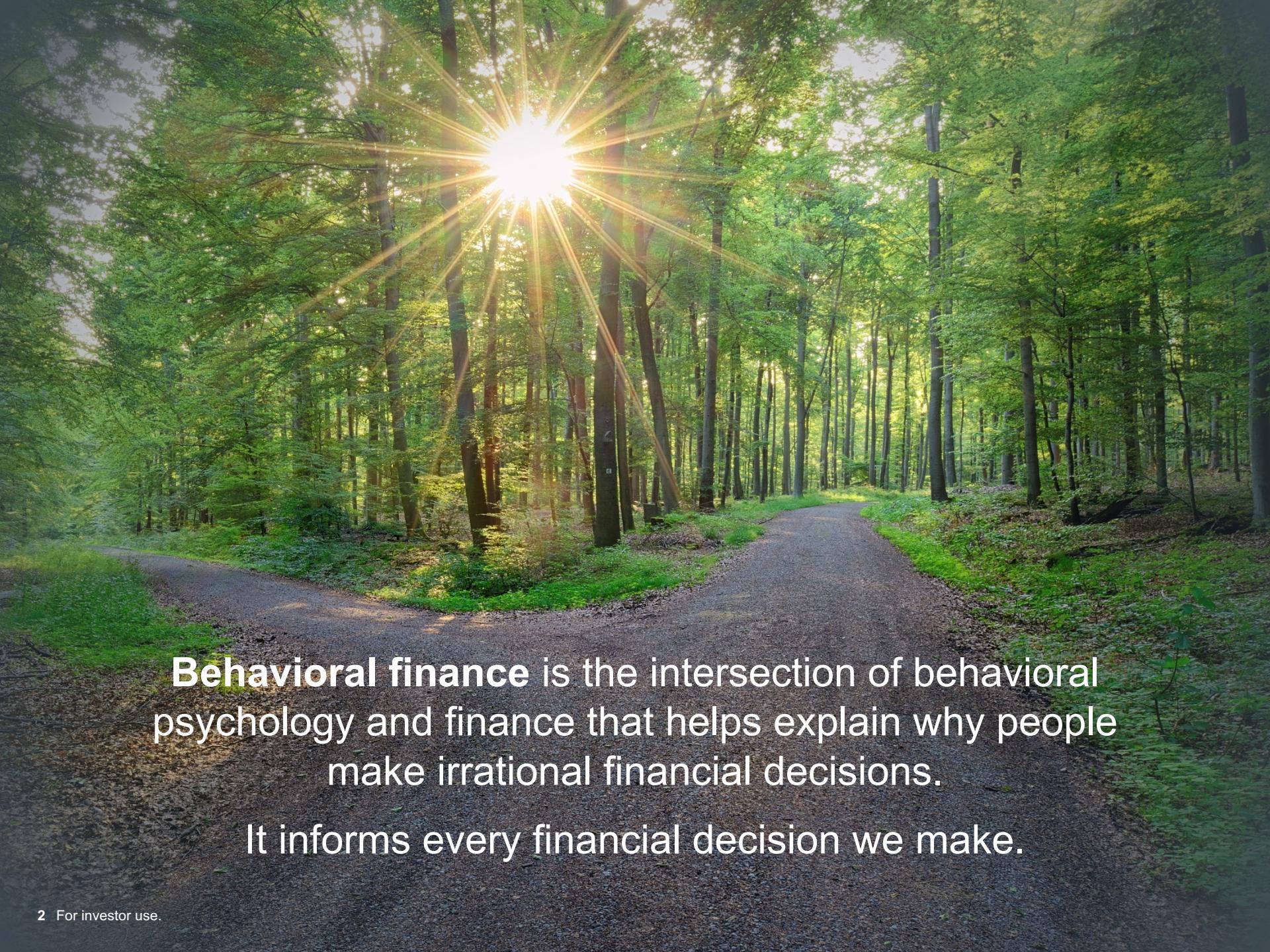
Behavioral Finance

Why investors make the decisions they do

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Behavioral finance is the intersection of behavioral psychology and finance that helps explain why people make irrational financial decisions.

It informs every financial decision we make.

Behavioral Evolution

Changes over time affect decision-making

Understanding behavioral finance helps to avoid emotion-driven decisions that can lead to unnecessary losses.

Evolutionary changes naturally impact decision-making over time:

- Human nature and hard wiring
- Means of processing information
- Coping mechanisms



Technological Evolution

Major advancements have altered the process

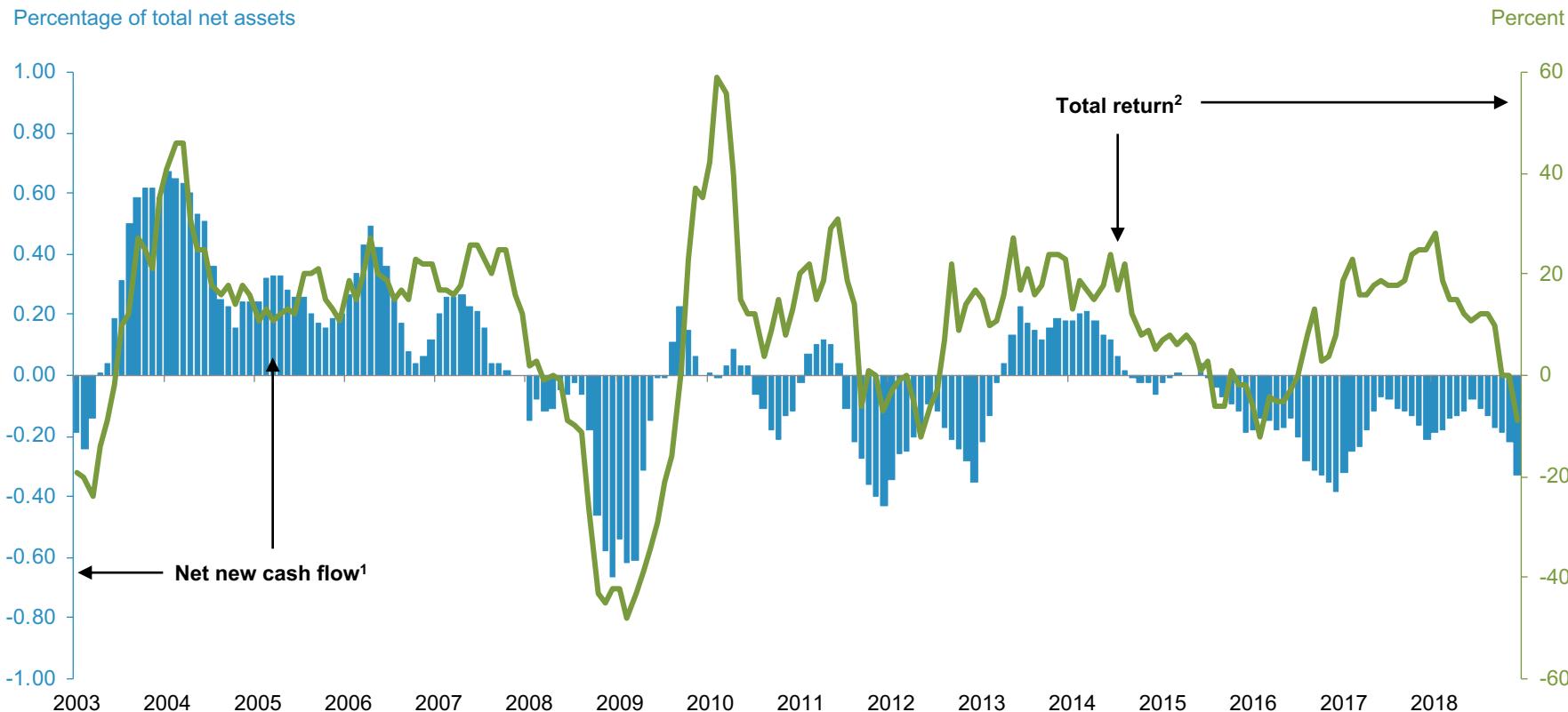
Decades of constant technological advancements have shaped the way humans interact with one another and make decisions.

- Computer revolution, 1980s–present
- Internet and smart phone adoption
- Algorithmic trading and artificial intelligence



Net New Cash Flow to Equity Mutual Funds

NET NEW CASH FLOW TO EQUITY MUTUAL FUNDS TYPICALLY IS RELATED TO WORLD EQUITY RETURNS
Monthly, 2002–2018



Past performance is no guarantee of future results. It is not possible to invest directly in an index. All market indices are unmanaged.

¹ Net new cash flow is the percentage of previous month-end equity mutual fund total net assets, plotted as a six-month moving average.

² The total return on equities is measured as the year-over-year percent change in the MSCI All Country World Daily Gross Total Return Index.

Sources: Investment Company Institute, MSCI, and Bloomberg.

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Personal Experience



Major Investor Behavior Challenges

The roots and reasons behind decision-making



Anchoring Bias



Confirmation Bias



Recency Bias



Herding Bias



Ambiguity Aversion



Myopic Loss Aversion

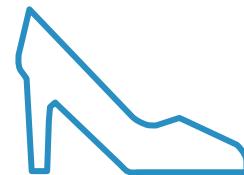
■ Anchoring Bias

Relying too heavily on information received first

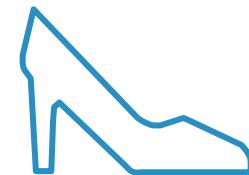
WHAT IS ANCHORING?

Anchoring is most commonly used in facets of retail shopping, such as groceries, clothing, and car shopping.

No one buying



Everyone dying to buy



■ Confirmation Bias

Seeking out information that confirms an existing belief

WHAT IS CONFIRMATION BIAS?

Confirmation bias is the natural tendency to filter out information to retain only what confirms one's original belief.



Working against
good behavior
every day



Searching out the
answers that you want
to hear rather than
the right answers

“ I don’t always know
what I’m talking about,
but I know I’m right. ”

Muhammad Ali

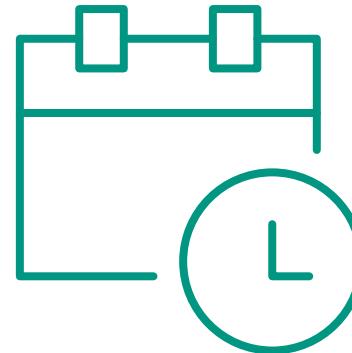


Recency Bias

Basing decisions only on the most recent information

WHAT IS RECENCY BIAS?

Recency bias is when individuals make decisions based on recent results, or on their perspective of recent results, which may lend itself to making incorrect conclusions based on the recent past.



What we learn from history is that **people don't learn from history**. When investors get either too fearful or too greedy, they sometimes hide behind the notion that, 'This time it's different.' Usually, they regret it.

Warren Buffet



■ Herding Bias

Following the crowd instead of making decisions independently

WHAT IS HERDING BIAS?

Herding bias is the tendency to follow the actions of a larger group, whether those actions are rational or irrational.

It is rooted in early human behavior.



Ambiguity Aversion

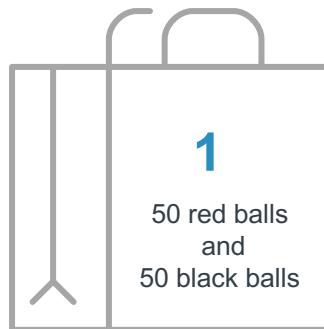
A tendency to avoid the unknown

WHAT IS AMBIGUITY AVERSION?

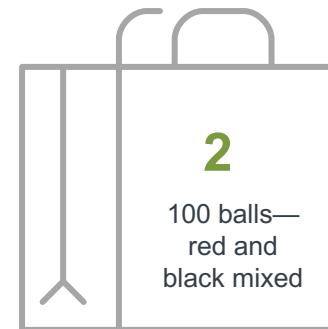
Ambiguity aversion is the tendency to avoid the unknown by having a preference for known risks over unknown risks.

Daniel Ellsberg Paradox:

Select a ball from either bag and guess the color.



Probability of success: 50%



Probability of success: ?

Result

More people chose bag 1, where there was more certainty in the outcome (50% chance of guessing correctly).

Fewer people chose bag 2, where there was more uncertainty (ambiguity) in the outcome.

Source: Graham, Harvey, and Huang, "Investor Confidence, Trading Frequency, and Home Bias," *Management Science*, July 2009.

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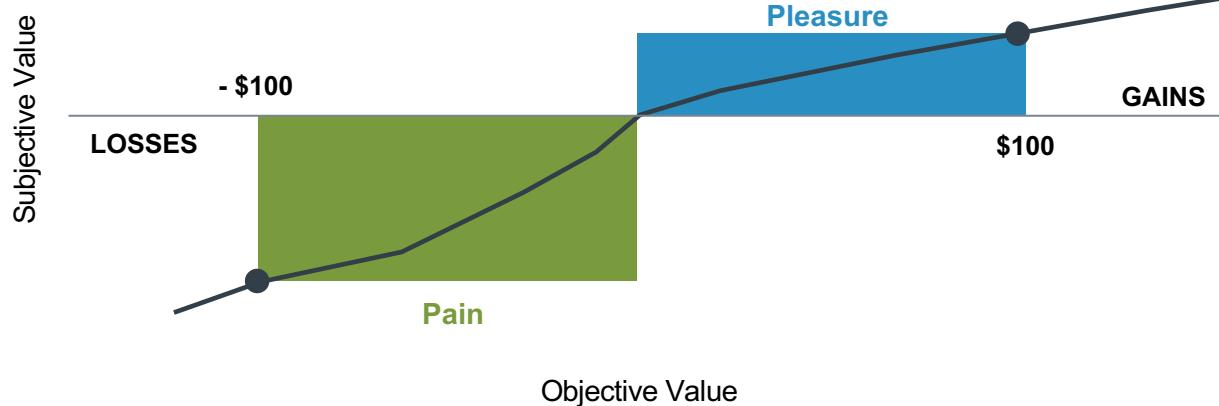
Myopic Loss Aversion

Experiencing more sensitivity to losses than gains

WHAT IS MYOPIC LOSS AVERSION?

Myopic loss aversion is the combination of a greater sensitivity to losses than to gains, and a tendency to evaluate outcomes frequently.

Losing \$100 hurts twice as much as the feeling you'd experience by gaining \$100.

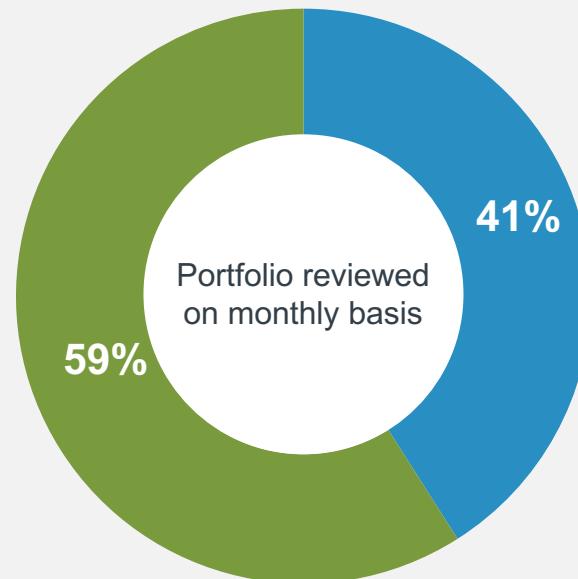
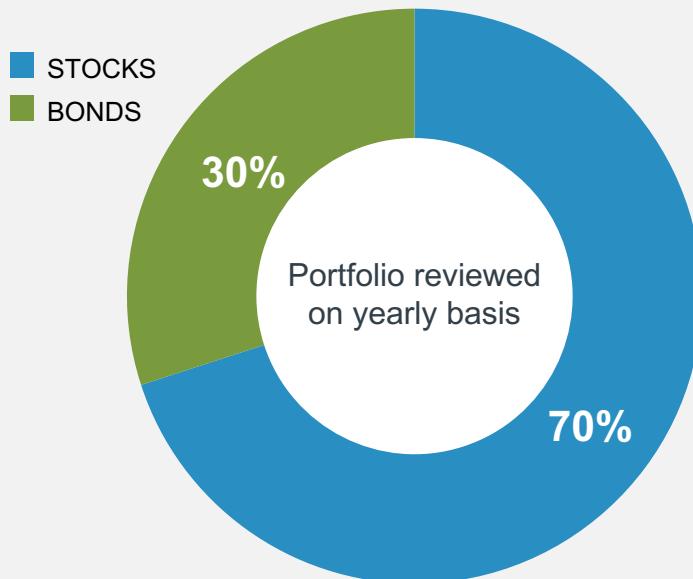


Studies showed that people chose to take a risk **only when the potential gain is 2x greater than the expected loss.**

Frequent Portfolio Evaluation Can Lead to Risk-Averse Behavior

A short-term focus can lead to investing too conservatively

Constant reminders of volatility may cause investors to
seek more conservative investments—
regardless of objectives or time horizon.

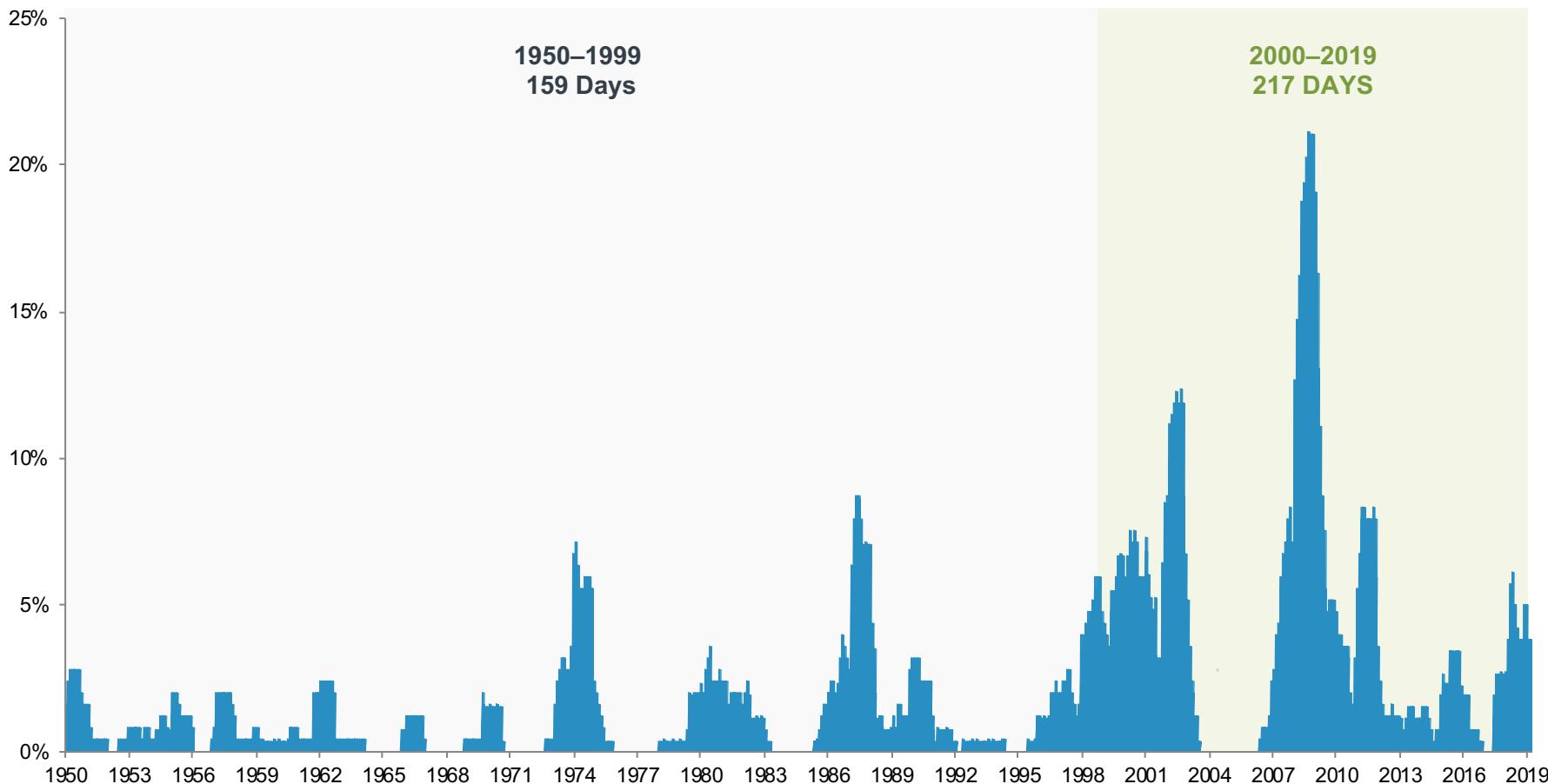


In the study, subjects were assigned simulated conditions that were similar to making portfolio decisions on a monthly or yearly basis. Source: Thaler, R. H., A. Tversky, D. Kahneman, and A. Schwartz. "The Effect of Myopia and Loss Aversion on Risk Taking: An Experimental Test." *The Quarterly Journal of Economics* 112.2 (1997), used by permission of Oxford University Press.

Market Volatility Exacerbates the Effects

During the past 20 years, the equity market had more days of >2% declines than the prior 50-year period

NUMBER OF DOWN TRADING DAYS PER CALENDAR YEAR WITH DECLINES OF MORE THAN 2%



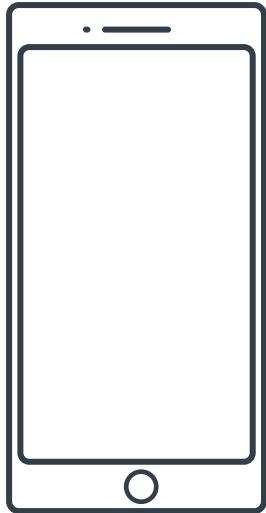
Past performance is no guarantee of future results. You cannot invest directly in an index. Index performance includes the reinvestment of dividends and interest income.

EPS = earnings per share, P/E = price-to-earnings ratio. All EPS and P/E data are trailing unless otherwise noted.

Source: Standard & Poor's, FactSet, Fidelity Investments (AART), as of 12/31/19.

Information Overload

The amount to process is rising exponentially



The average person spends approximately **five hours per day** on their mobile devices.¹

More than 570 new websites are created every minute.²

There are over **3.5 billion searches** per day on Google.²

The amount of technical information is doubling every two years.

For students starting a four-year technical or college degree, this means **half of what they learn** in their first year of study will be outdated by their third year of study.²

¹ Flurry Analytics, "U.S. Consumers Time-Spent on Mobile Crosses 5 Hours a Day," March 2017.

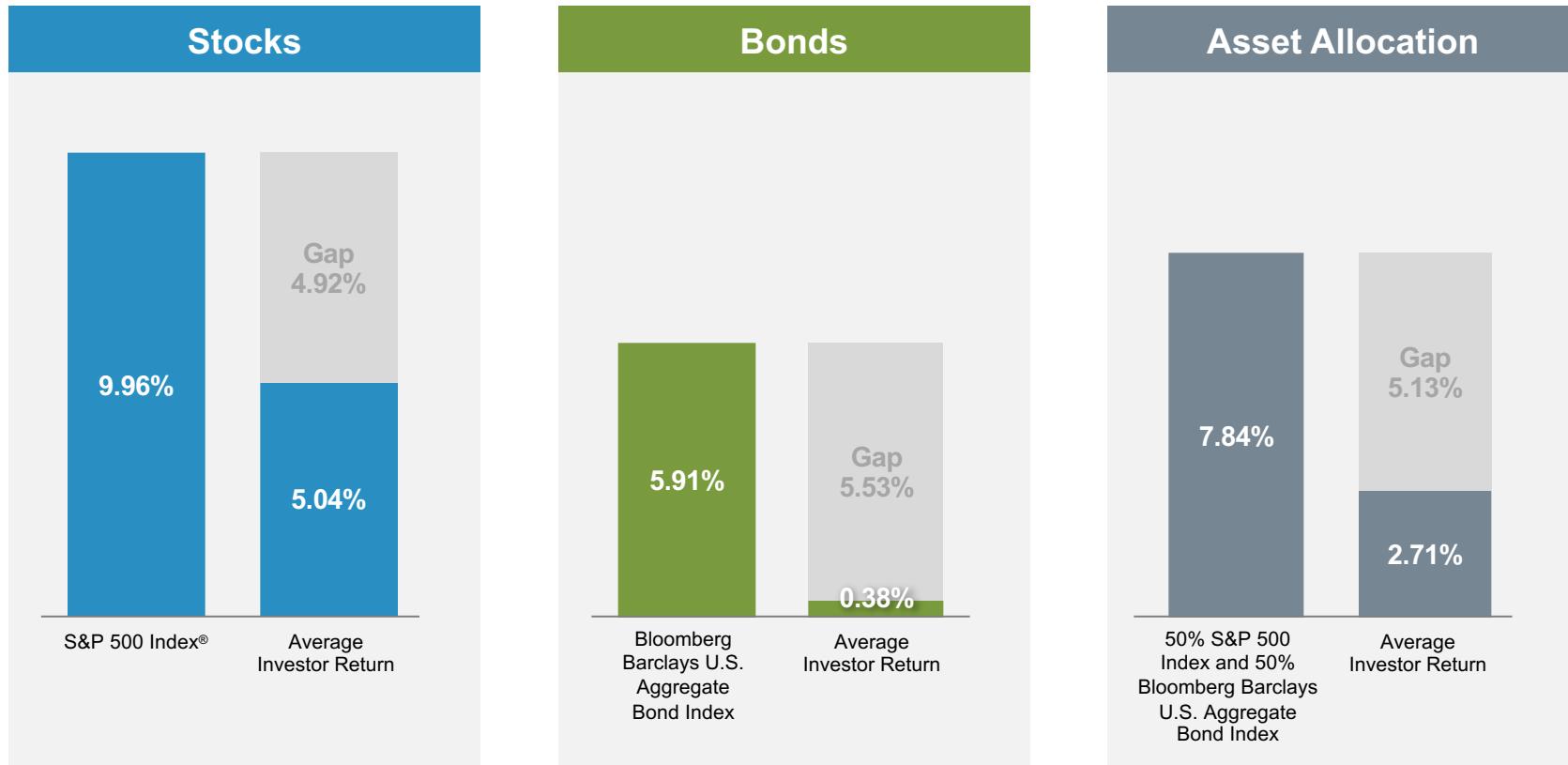
² Orleans Marketing Group, Technology Facts and Stats 2020, January 2018.

Keeping Emotions in Check

The average investor's portfolio consistently underperforms

AVERAGE ANNUAL RETURNS (1990–2019)

Gap by Which the Average Investor's Portfolio Consistently Underperforms the Index



Past performance is no guarantee of future results. It is not possible to invest directly in an index. All market indices are unmanaged.

Returns are for the period ending December 30, 2019. Average equity investor, average bond investor, and average asset allocation investor performance results are calculated using data supplied by Investment Company Institute. Investor returns are represented by the change in total mutual fund assets after excluding sales, redemptions, and exchanges. This method of calculation captures realized and unrealized capital gains, dividends, interest, trading costs, sales charges, fees, expenses, and any other costs. After calculating investor returns in dollar terms, two percentages are calculated for the period examined: total investor return rate and annualized investor return rate.

Total return rate is determined by calculating the investor return dollars as a percentage of the net of the sales, redemptions, and exchanges for each period.

Dealing with Behaviors That May Hinder Success

How to address behavioral challenges

Anchoring Bias	Confirmation Bias	Recency Bias
<ul style="list-style-type: none">• Acknowledge the anchor when making decisions.• Understand, address, and remember the goal—not the dollars.• Recognize that the ways choices are presented will affect the decision.	<ul style="list-style-type: none">• Admit that different situations call for different expertise.• Seeking out confirmation of options is a surefire way to “group think.”	<ul style="list-style-type: none">• Yesterday’s truth is not tomorrow’s.• No pattern continues forever.
Herding Bias	Ambiguity Aversion	Myopic Loss Aversion
<ul style="list-style-type: none">• Running with the crowd may prevent solitary embarrassment, but won’t keep you from being wrong.• By the time everyone is heading a particular direction, it’s usually time to start heading the other way.	<ul style="list-style-type: none">• Goal-based planning is key to success.• Outcomes should drive your actions, not fear of the unknown.	<ul style="list-style-type: none">• Financial losses are often “locked in” by panic selling.• Keep a focus on the long-term goals in order to drive success.

Breaking the Behaviors

Four strategies to help investors

1 Get to know yourself.

Become more aware of how your tendencies can influence financial decisions.

2 Avoid panic selling.

Stay invested during times of market volatility and uncertainty.

3 Stay focused.

Don't dwell on the past; focus on your long-term goals and time horizon.

4 Consult with your financial representative regularly.

Your financial representative can help take the emotion out of investing.

Make a Plan

Working with a financial representative can be invaluable

How can a financial representative help?

Tailor an investment plan

aligned to your goals, risk tolerance, and time horizon.

Maximize

your retirement income potential and minimize your tax exposure.

Guide you through

emotional financial decisions.

81%

of pre-retirees think a retirement income plan is important*

yet

77%

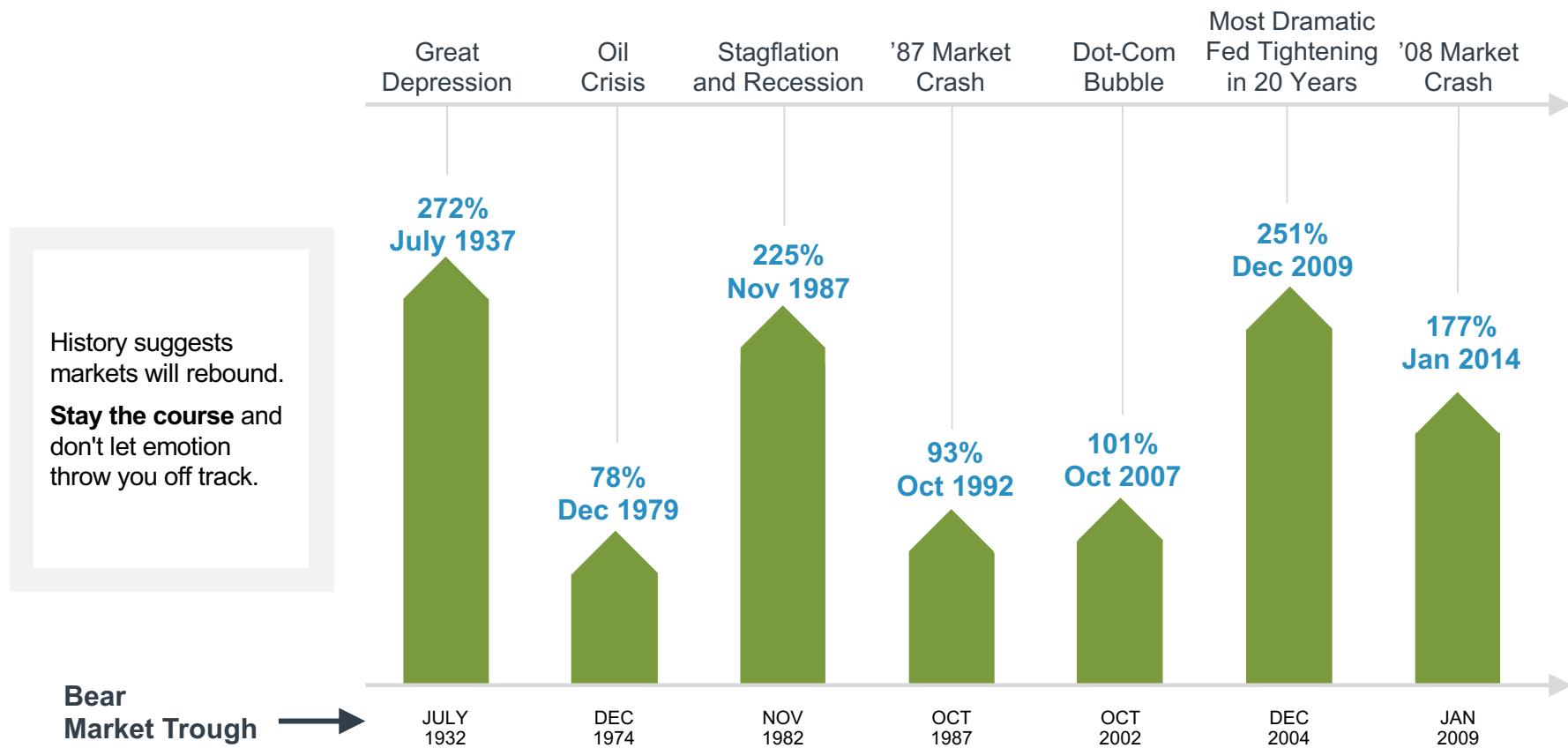
of pre-retirees have no plan*

The 2016 Fidelity® Millionaire Outlook survey was an online, blind study conducted by TNS, a third-party independent research firm not affiliated with Fidelity Investments, from January 5, 2016, to January 22, 2016. It was focused on understanding investors' attitudes, behaviors, and preferences related to investing, wealth management, and advice usage. It was held among a target sample of 1,287 respondents of all affluence levels.

Markets Are Resilient

Over the long term, the stock market has recovered from economic crises and world events

5-YEAR RETURNS FROM BEAR MARKET TROUGHS



Past performance is no guarantee of future results.

Source: Standard & Poor's, Compustat, FactSet, Fidelity Investments, as of 12/30/19.

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Index Definitions

MSCI ACWI (All Country World Index) Index is a market capitalization-weighted index that is designed to measure the investable equity market performance for global investors of developed and emerging markets. MSCI ACWI (All Country World Index) ex USA Index is a market capitalization-weighted index designed to measure the investable equity market performance for global investors of large and mid-cap stocks in developed and emerging markets, excluding the United States.

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