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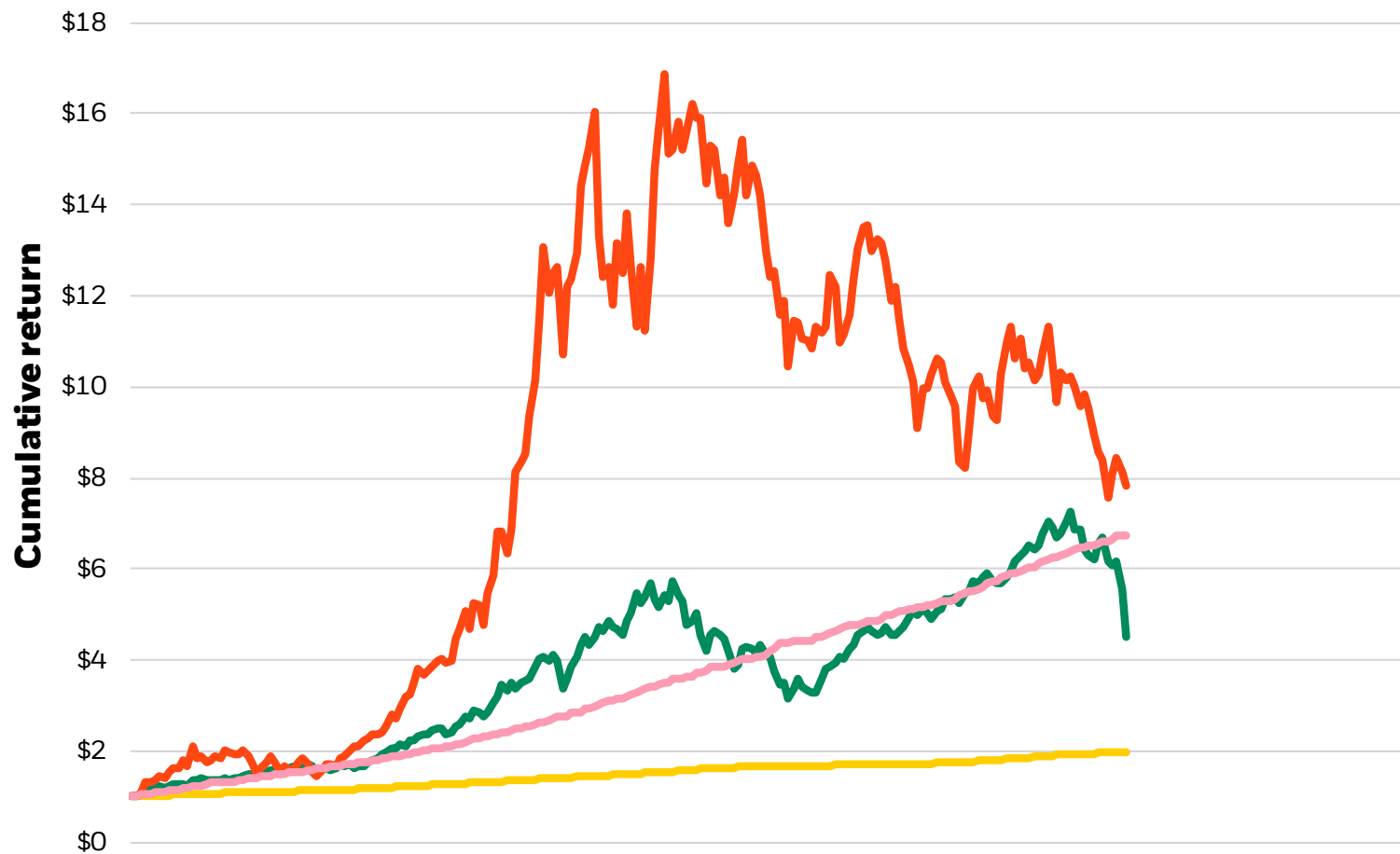
The psychology of investing

Keeping calm amid market turbulence





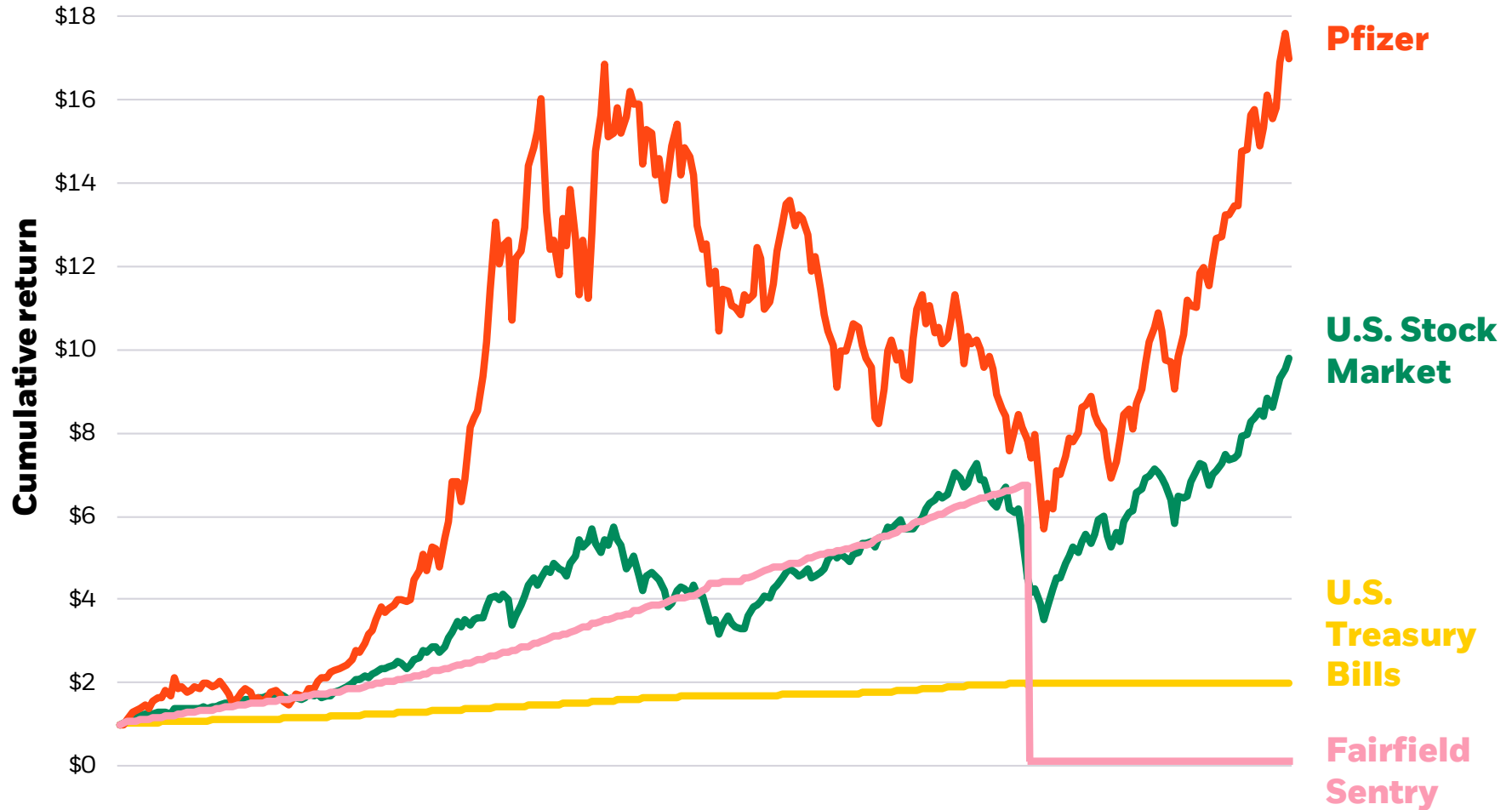
Which would you pick?



Lo, Andrew, 2017, *Adaptive Markets: Financial Evolution at the Speed of Thought*(Figure 10.3). Princeton University Press. For illustrative purposes only. Not meant to represent a specific recommendation for any security listed. Past performance is no guarantee of future results.



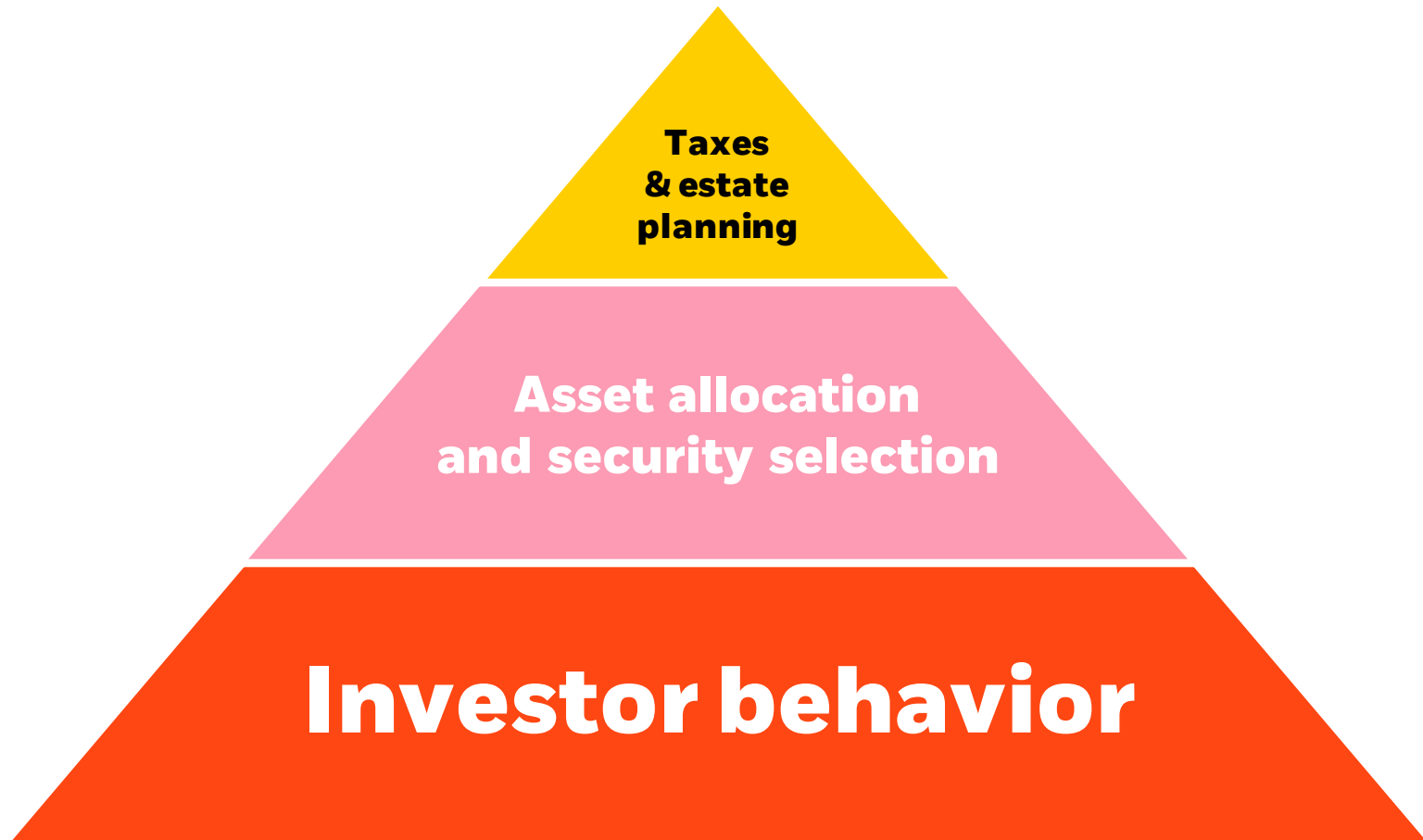
Which would you pick?



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Keys to investment success



A photograph of a snowy mountain range under a night sky with a vibrant aurora borealis. The aurora displays horizontal bands of green and yellow light against a dark blue and purple sky filled with stars. The mountains in the foreground are covered in snow and appear in shades of blue and white.

**1720, Sir Isaac Newton
lost a fortune in the
South Sea Company, the
hottest stock in England.**

Newton concluded...

***[That he] 'can calculate the
motions of the heavenly bodies,
but not the madness of people.'***



**“We don’t have to be
smarter than the rest.
We have to be more
disciplined than the rest.”**

-Warren Buffett



Agenda



1

Envy



2

Loss



3

**Building
discipline**

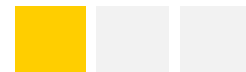
Envy

Regret

Lottery ticket effect

Miscalculating the risks





Bronze medal winners are happier than silver medal winners

Happiness levels of each winner

(1 to 10 happiest)

7.1



Bronze Winner

4.8









Silver Winner

Source: [Journal of Personality and Social Psychology](#), November 1995.

S&P Envy: A diversified portfolio is ripe for regret

40% U.S. stocks, 15% international stocks, 5% small cap stocks
30% U.S. bonds, 10% high yield bonds

| Years | S&P 500 | Diversified portfolio |
|---------------------|------------------|-----------------------|
| 2000*-2002 | -39.0% | -17.7% |
| 2003-2007 | 82.9% | 73.8% |
| 2008 | -37.0% | -24.0% |
| 2009-2019 | 351.0% | 191.7% |
| 2020** | -19.6% | -13.1% |
| Total Return | 154.8% | 175.6% |
| Gr \$100k | \$254,794 | \$275,556 |

-  "I lost money"
-  "I didn't make as much"
-  "I lost money"
-  "I didn't make as much"
-  "I lost money"
-  "Diversification can work even when it feels like it's losing"

Source: Morningstar as of 3/31/20. *Performance is from 3/31/2000 to 12/31/2002. Past performance does not guarantee or indicate future results. **Performance is YTD as of 3/31/20. Diversified Portfolio is represented by 40% S&P 500 Index, 15% MSCI EAFE Index, 5% Russell 2000 Index, 30% Bloomberg Barclays US Aggregate Bond Index, and 10% Bloomberg Barclays US Corporate High Yield Index. **Past performance does not guarantee or indicate future results.** Index performance is for illustrative purposes only. You cannot invest directly in the index.



Americans spend \$73 billion on lottery tickets every year (\$223 per person).

The odds of winning the Powerball lottery are 1 in 292,000,000.

Implications:

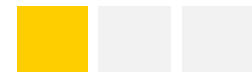
Single stocks

Next great company

Hot investment trend



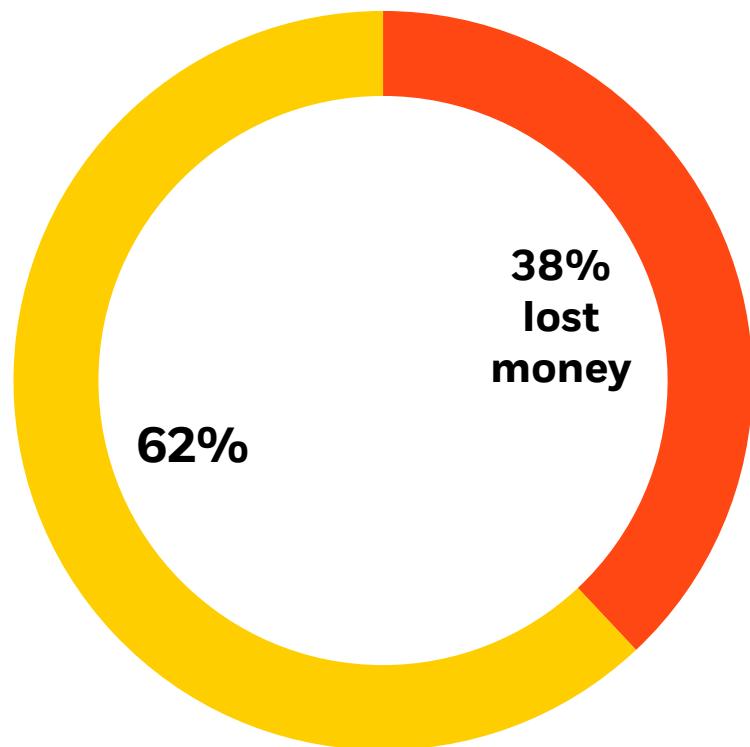
Source: US Census Bureau and North American Association of State and Provincial Lotteries as of 12/31/19. Past performance does not guarantee or indicate future results.



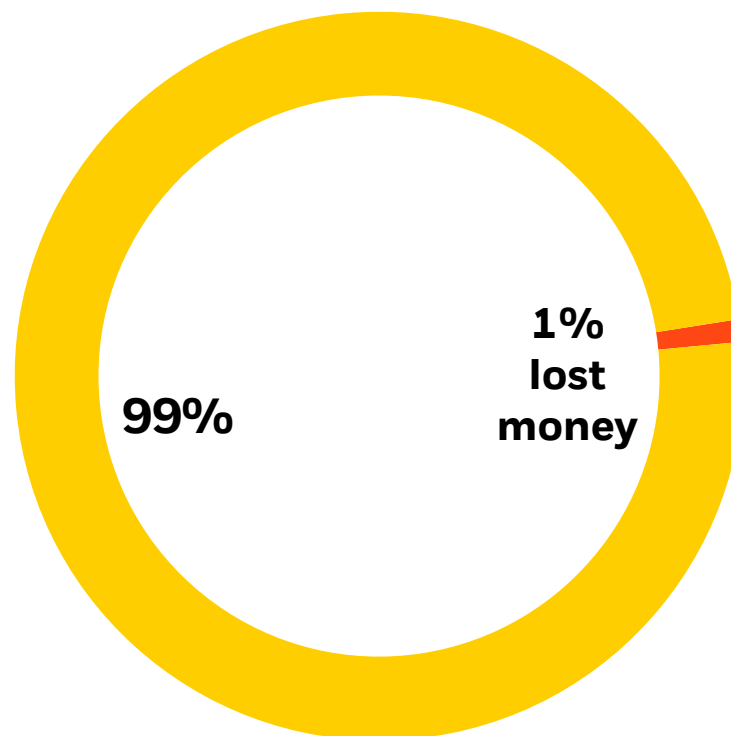
Individual U.S. stocks versus U.S. stock mutual funds

U.S. stocks are up 11.7% over the last 5 years

Individual U.S. stocks

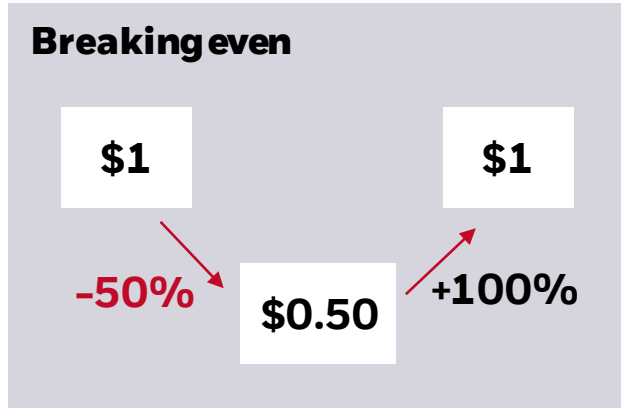
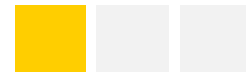


U.S. mutual funds and ETFs

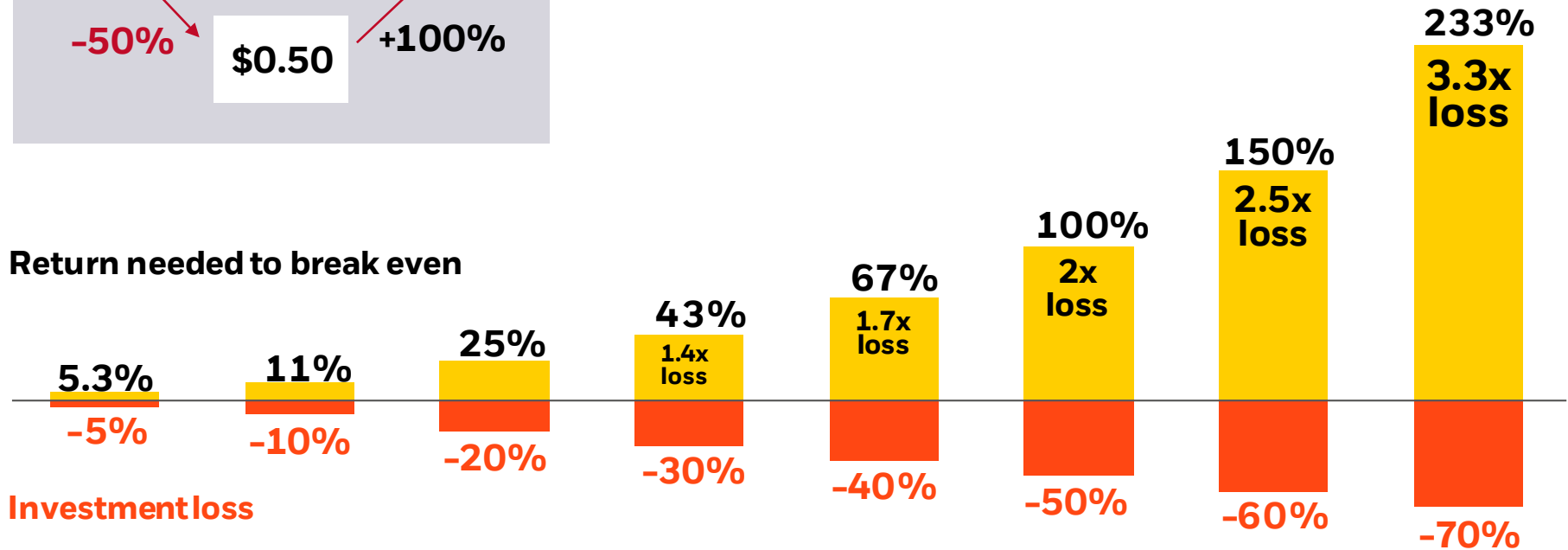


Source: Morningstar as of 12/31/19. Mutual Funds and ETFs are the Morningstar US Equity Category, oldest share class only. US Individual Stocks are the Morningstar US Stock Universe, all securities on the NYSE and NASDAQ. Analysis does not include obsolete mutual funds, ETFs or stocks as defined by Morningstar. Performance is historical and does not guarantee or indicate future results.

Do we really know how severe the risks can be?



Return needed to break even



Source: BlackRock. For illustrative purposes only.



LOSS

Tendency to act

Sideline sitting

Following the herd





Our tendency to take action



Statistics show that the best penalty kick strategy for goalkeepers is to stay in the middle. But they jump left or right 94% of the time.

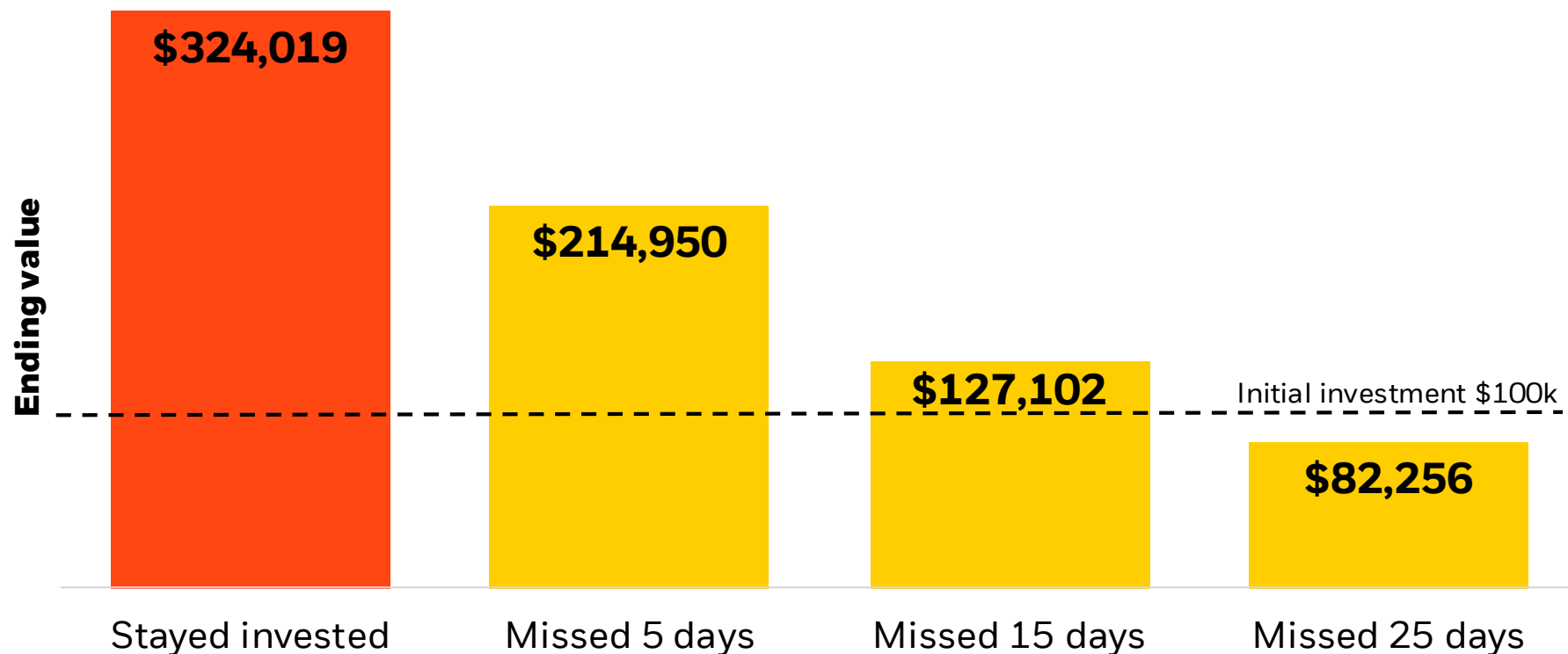
Source: The New York Times Magazine, "Goalkeeper Science", 2008.



Time in the market vs. timing the market

Missing top-performing days can hurt your return

Hypothetical investment of \$100,000 in the S&P 500 Index over the last 20 years (2000-2019)



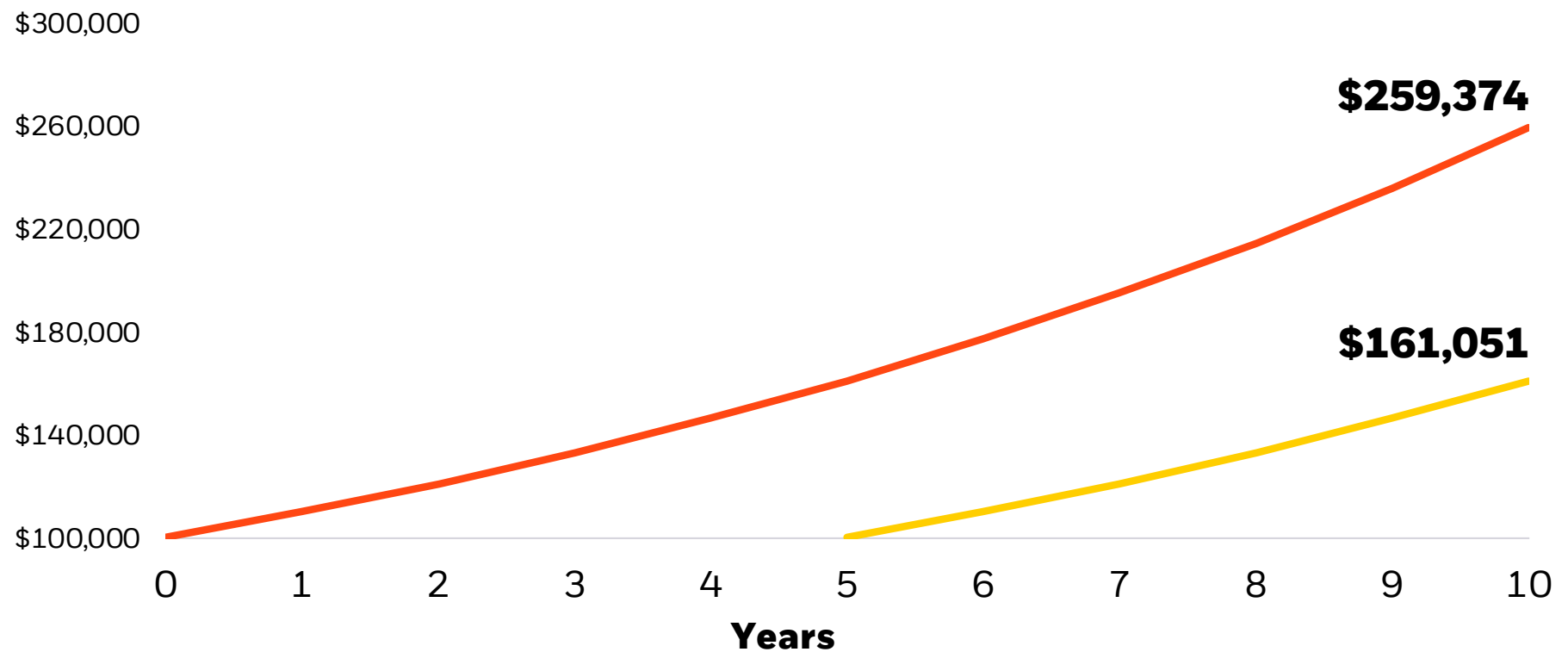
Source: Morningstar as of 12/31/19. Past performance does not guarantee or indicate future results. Index performance is shown for illustrative purposes only. You cannot invest directly in an index.



Waiting for the “right time to invest” can leave you behind

Compound interest... “The eighth wonder of the world” – Albert Einstein

Hypothetical growth of \$100,000 assuming 10% annual yield

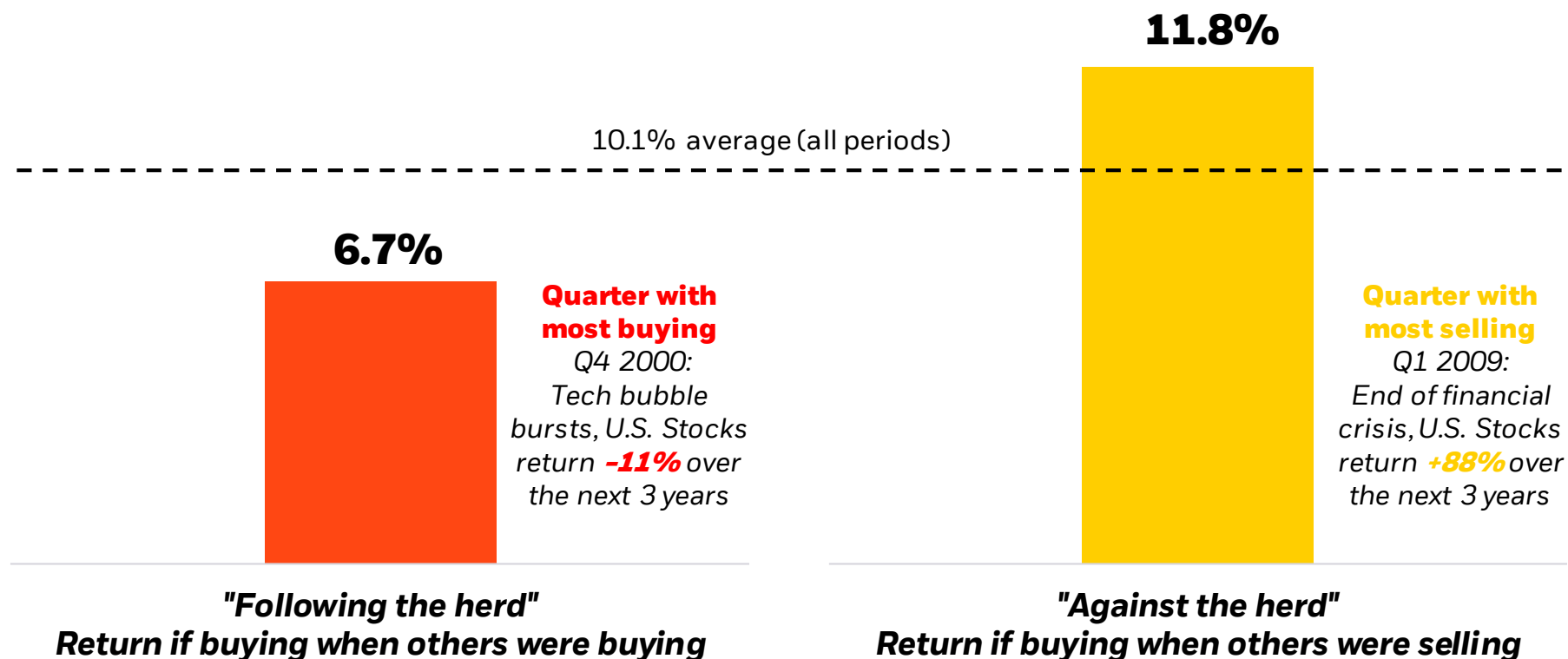


Source: BlackRock as of 12/31/19. For illustrative purposes only.

“Herding”: We confuse the actions of others with the right actions

The crowd often gets the timing wrong

Quarterly U.S. equity mutual funds and ETFs flows with 3-year performance average of the S&P 500 (1993–2019)



Source: Morningstar as of 12/31/19. "Following the Herd" represents the average of the following 3-year returns of the S&P 500 Index for each of the largest 20 quarters of inflows for US equity mutual funds and ETFs, as defined by Morningstar. "Against the Herd" represents the average of the following 3-year returns of the S&P 500 Index for each of the largest 20 quarters of outflows for US Equity mutual funds and ETFs, as defined by Morningstar. Past performance does not guarantee or indicate future results. Index performance is shown for illustrative purposes only. You cannot invest directly in an index.



“Be fearful when others are greedy. Be greedy when others are fearful.”

-Warren Buffett



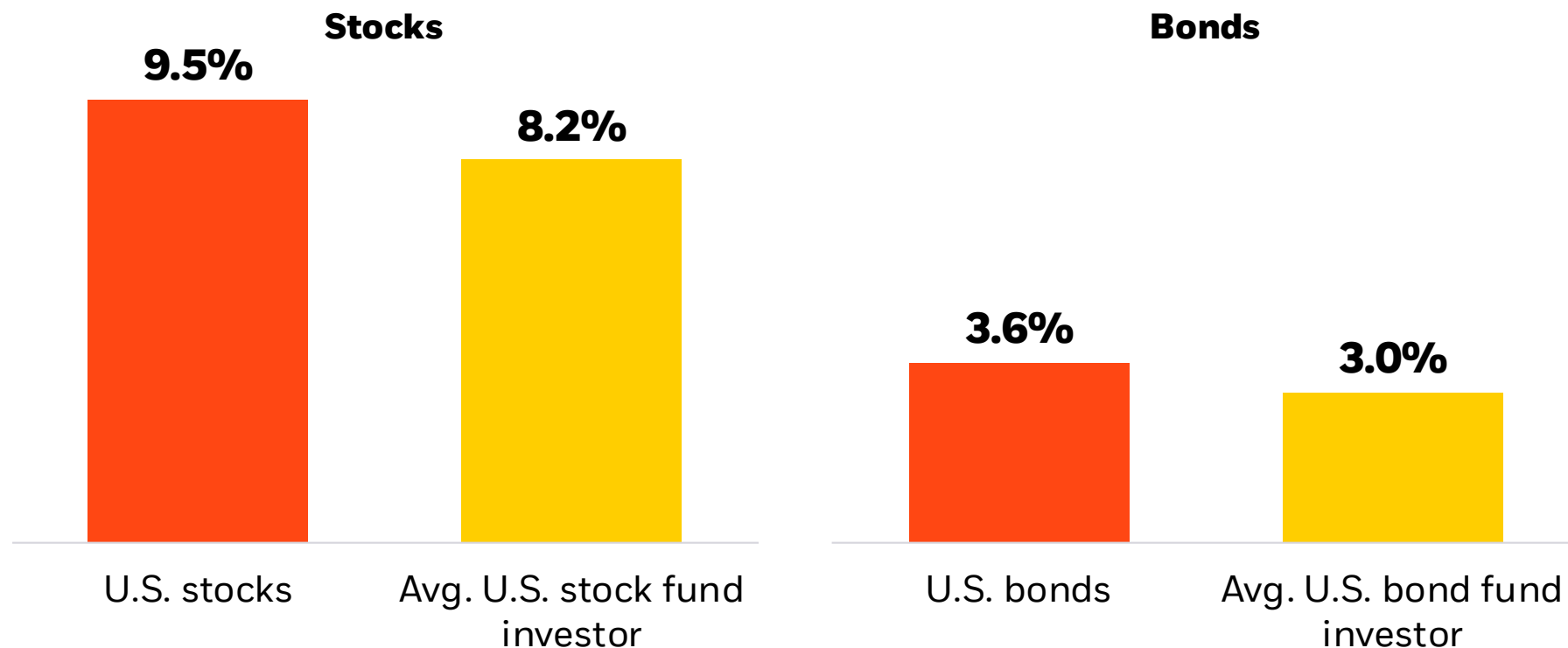
Building Discipline



A lack of discipline erodes investment results

The average investor trails the market

Morningstar's "Mind the Gap" study annualized returns (2008-2018)*

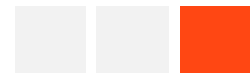


Sources: BlackRock, Morningstar, Informa Investment Solutions; *Morningstar returns based on performance between 4/1/2008 to 3/31/2018. Asset classes represented by the following indexes: U.S. stocks by the S&P 500 Index, Average U.S. stock fund investor by the Morningstar "Mind the Gap" Study U.S. stock s & sector fund average, U.S. bonds by the U.S. Aggregate Bond Index and Average U.S. bond fund investor by the Morningstar "Mind the Gap" Study U.S. taxable bond fund average. For illustrative purposes only. **Index performance returns do not reflect any management fees, transaction costs, or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results.**



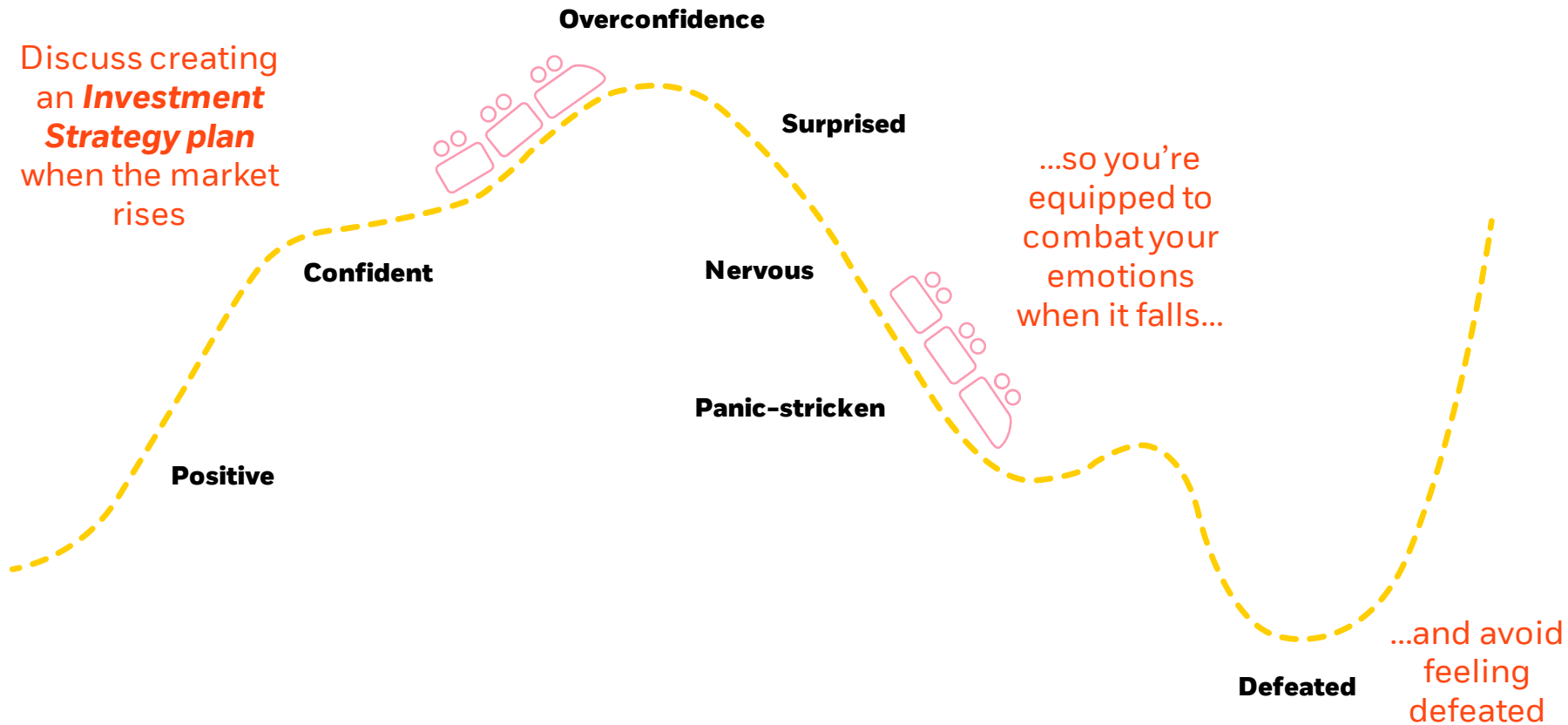
Talk to a financial advisor



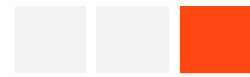


Prepare for the worst before it happens

Riding the ups and downs of the market

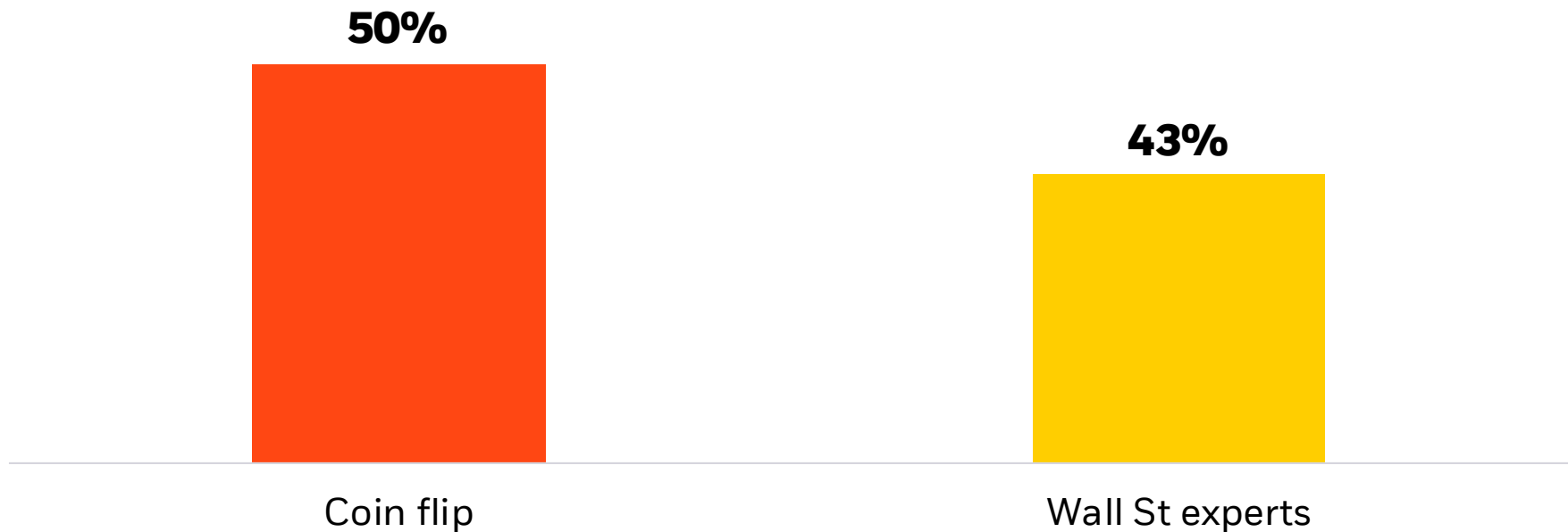


Hypothetical example.



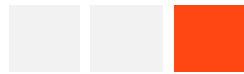
Forecasting folly: Turn off financial TV & news

Predicting the direction of interest rates



“It's tough to make predictions, especially about the future.” — Yogi Berra

Morningstar, Federal Reserve Bank of Philadelphia as of 12/31/19. Past performance does not guarantee or indicate future results. Median annual forecast used; the median forecast for the direction of the 10 yr US Treasury Bond was correct in 12 of 28 years. “Wall Street experts” refers to the 40+ financial professionals and professors surveyed by the Federal Reserve Bank of Philadelphia.



The psychology of investing

1

Proper investor behavior is critical to investment success

2

Common investor biases are a challenge (for everyone)

- **ENVY:** Regret, S&P Envy, Lottery Ticket Effect
- **LOSS:** Compounding, Time vs Timing, Following the Herd

3

Work with your financial advisor to build in discipline and ensure you are reacting to the market rationally

- Be critical, even when times are good
- Be opportunistic, even when times seem bad

Become a disciplined investor, the sooner the better.



**Save your emotions
for the moments
that really matter.**

Important notes

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Investment involves risks. International investing involves additional risks, including risks related to foreign currency, limited liquidity, less government regulation and the possibility of substantial volatility due to adverse political, economic or other developments. The two main risks related to fixed income investing are interest rate risk and credit risk. Typically, when interest rates rise, there is a corresponding decline in the market value of bonds. Credit risk refers to the possibility that the issuer of the bond will not be able to make principal and interest payments. Index performance is shown for illustrative purposes only. Commodities' prices may be highly volatile. Prices may be affected by various economic, financial, social and political factors, which may be unpredictable and may have a significant impact on the prices of precious metals. Concentrated investments in specific industries, sectors, markets or asset classes may underperform or be more volatile than other industries, sectors, markets or asset classes and the general securities market. A significant portion of the aggregate world gold holdings is owned by governments, central banks and related institutions. One or more of these institutions could sell in amounts large enough to cause a decline in world gold prices. Should there be an increase in the level of hedge activity of gold producing companies, it could cause a decline in world gold prices. Should the speculative community take a negative view towards gold, it could cause a decline in world gold prices. You cannot invest directly in an index.

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