



# An Analysis of Investor Behavior

Christopher Gowe

Regional Vice President

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# Agenda

- > Investor psychology
- > Investor behavior
- > Investor results



# It's Not Just About Knowledge, It's About Know-How

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Knowledge + Know-how

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Our aim is to be a trusted ally, **combining knowledge and know-how** to deliver the most innovative financial solutions available.



## Reptilian brain

- > Autonomic responses (heartbeat, breathing)

## Mammalian brain

- > Visual response to fear (fight or flee)

## Cortical brain

- > Controls speech/critical thinking

Source: IMCA Conference, 2004.

## Two systems for reasoning/decision-making

### Prefrontal Cortex

Analytical “logic”

Reflective

Slower

Serial

Effortful

Deliberately controlled



### Amygdala

Experiential “gut”

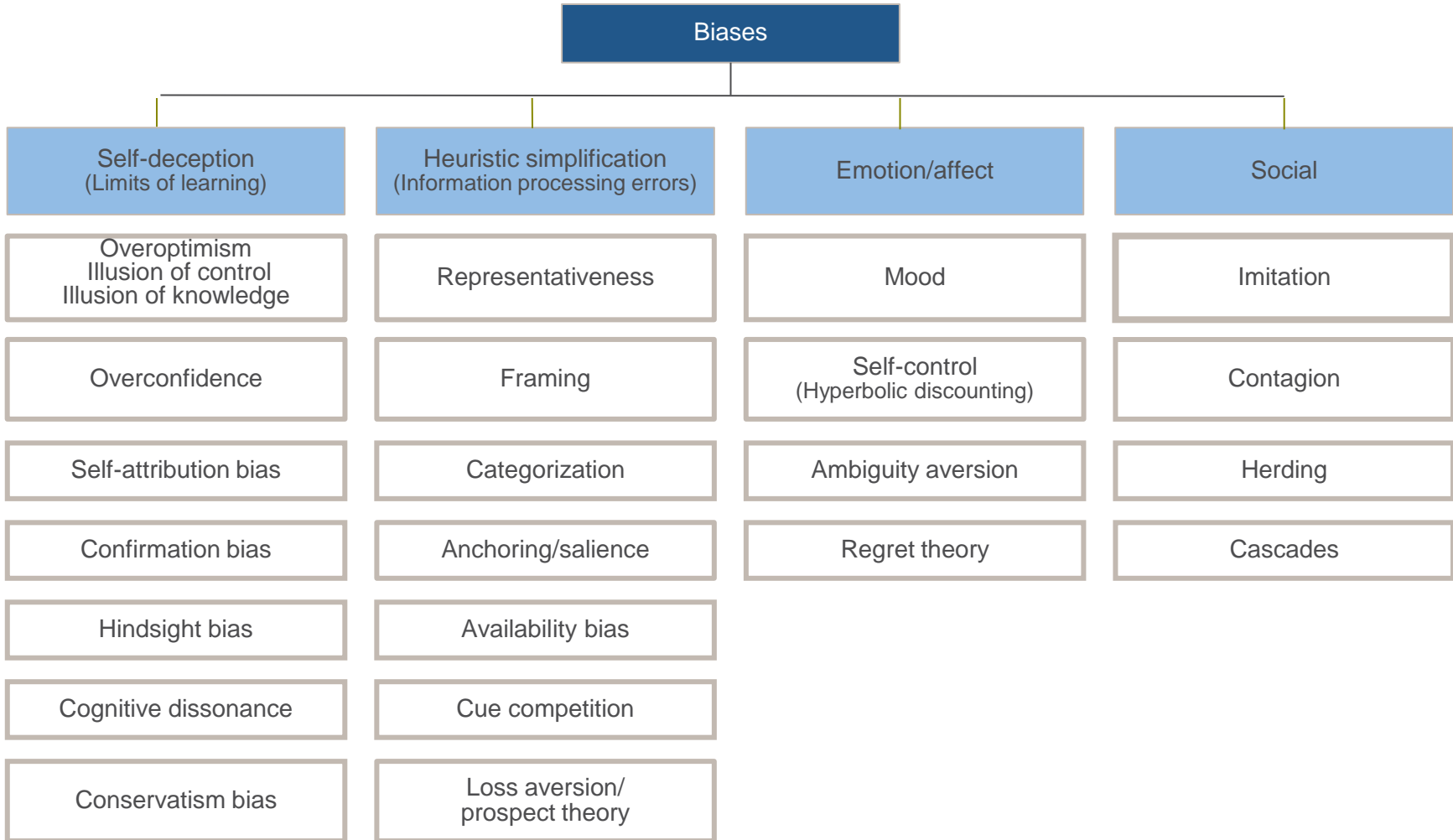
Reflexive

Fast

Associative

Effortless

Difficult to control/modify



Source: Behavioural Investing, James Montier, Wiley Publishing, 2007.

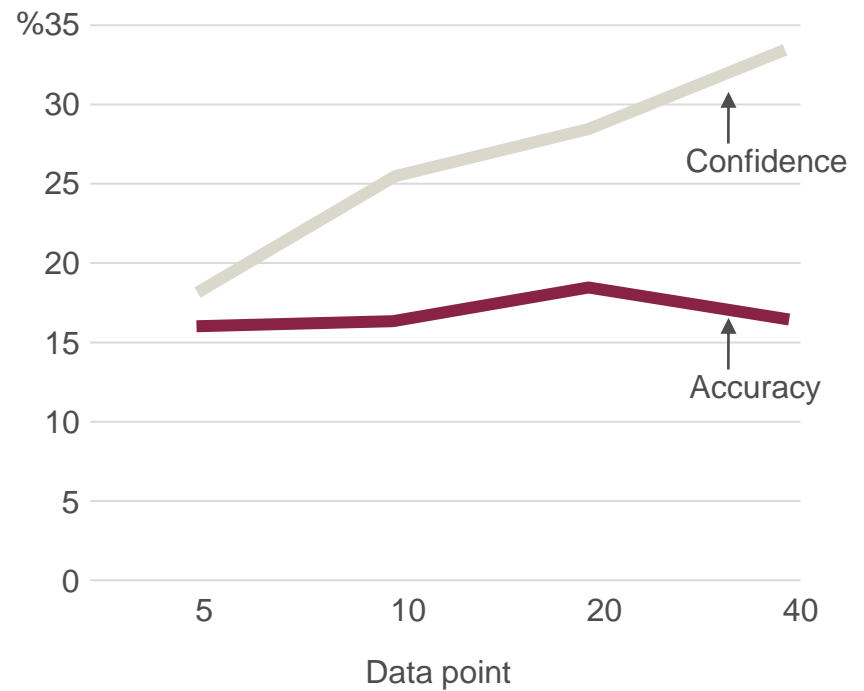


## An example of overconfidence/optimism

### Driver survey<sup>1</sup>



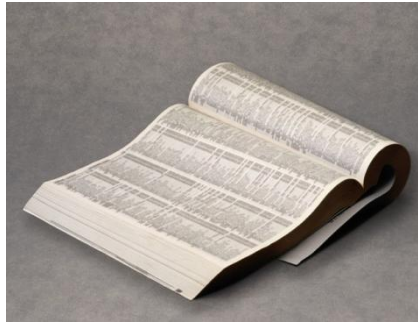
### The role of experts<sup>2</sup>



<sup>1</sup> Source: "Aspects of Investor Psychology," Journal of Portfolio Management, Summer 1998.

<sup>2</sup> Source: Behavioural Investing, James Montier, Wiley Publishing, 2007.

## An example of anchoring



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Which sells?

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An example of representativeness:

- > Susan is quiet, scholarly and passionate about social issues. She graduated from Stanford with a focus on English literature and environmental studies.

Which of the following three cases is most probable?

- A. Susan is a librarian
- B. Susan is a librarian and a member of an environmental organization
- C. Susan works in the banking industry

Source: Undiscovered Managers, "Introduction to Behavioral Finance," 1999.

An example of framing

> Are anecdotes more important than antidotes?

## Option A

Treatment with 50% effectiveness

- or -

Percent of subjects choosing the treatment

Option B	Base Rate			
	90%	70%	50%	30%
Positive anecdote	88	92	93	78
Neutral anecdote	81	81	69	29
Negative anecdote	39	43	15	7

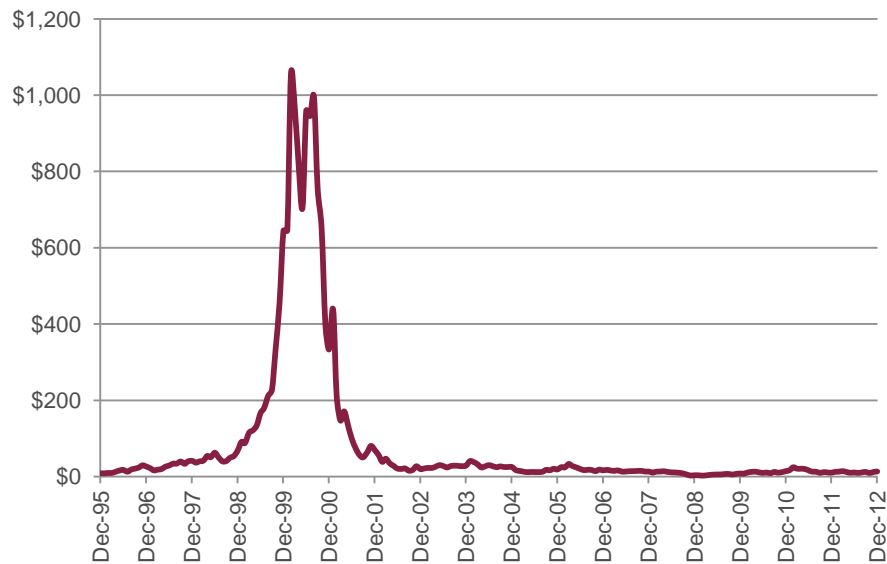
Source: Angela K. Freymuth and George F. Ronan, "Modeling Patient Decision-Making: The Role of Base-Rate and Anecdotal Information," Journal of Clinical Psychology in Medical Settings 11, no. 3 (2004): 211-216

Reprinted with permission from "Think Twice: Harnessing the Power of Counterintuition," Michael J. Mauboussin, Harvard Business Press, 2009.

# Investor Psychology

## Aversion to loss Hold or sell?

### JDSU Stock Price (1995 – 2012)<sup>1</sup>



Past performance is no guarantee of future results. Charts are based on historical data and are intended for illustrative purposes only and should not be construed as a recommendation.

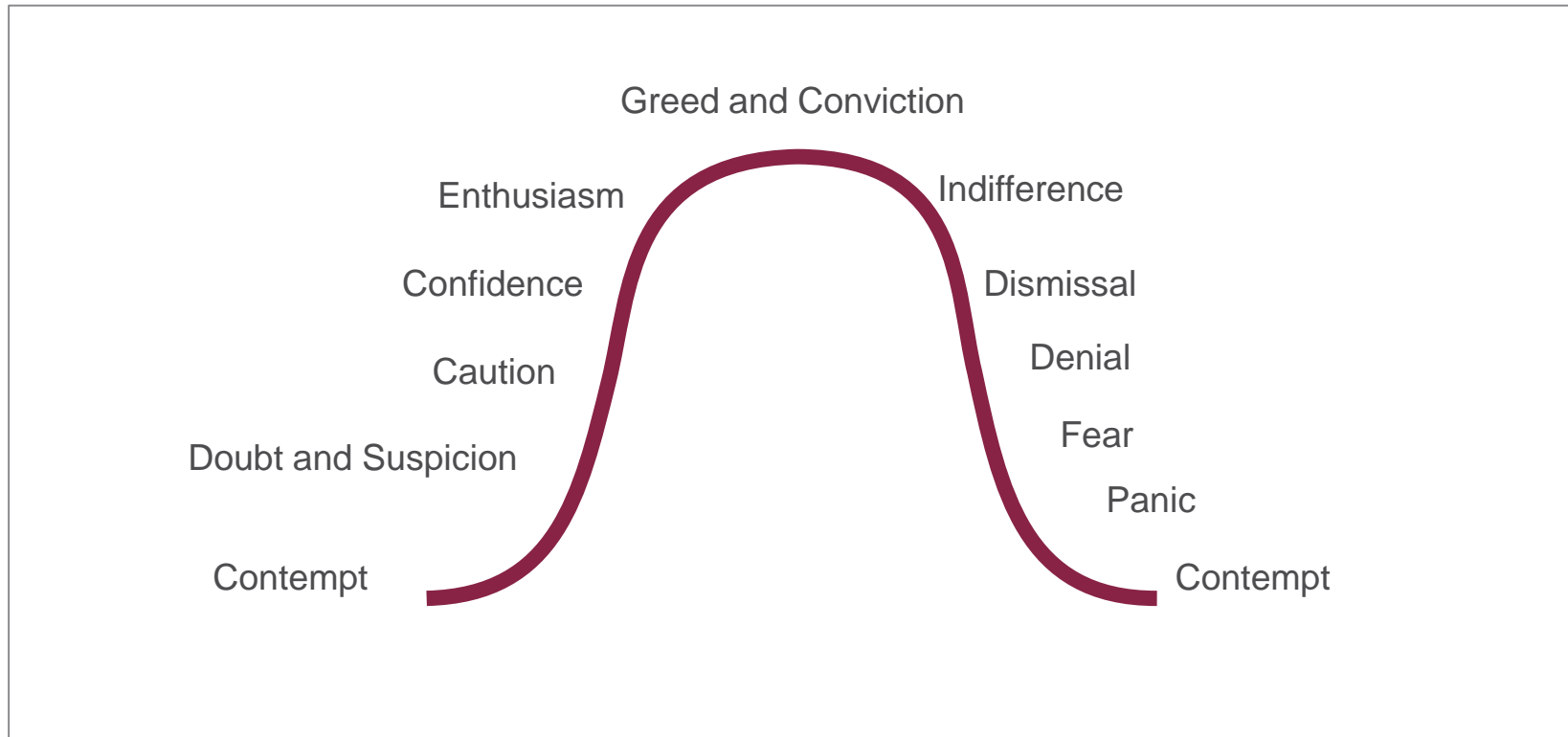
<sup>1</sup>Source: FactSet, 2013.

<sup>2</sup>Source: Amit Goyal and Sunil Wahal, "The Selection and Termination of Investment Management Firms by Plan Sponsors," Journal of Finance 63, no. 4 (2008): 1805-1847 Reprinted with permission from "Think Twice: Harnessing the Power of Counterintuition," Michael J. Mauboussin, Harvard Business Press, 2009.

## Reversion to the mean<sup>2</sup> Hold or sell?



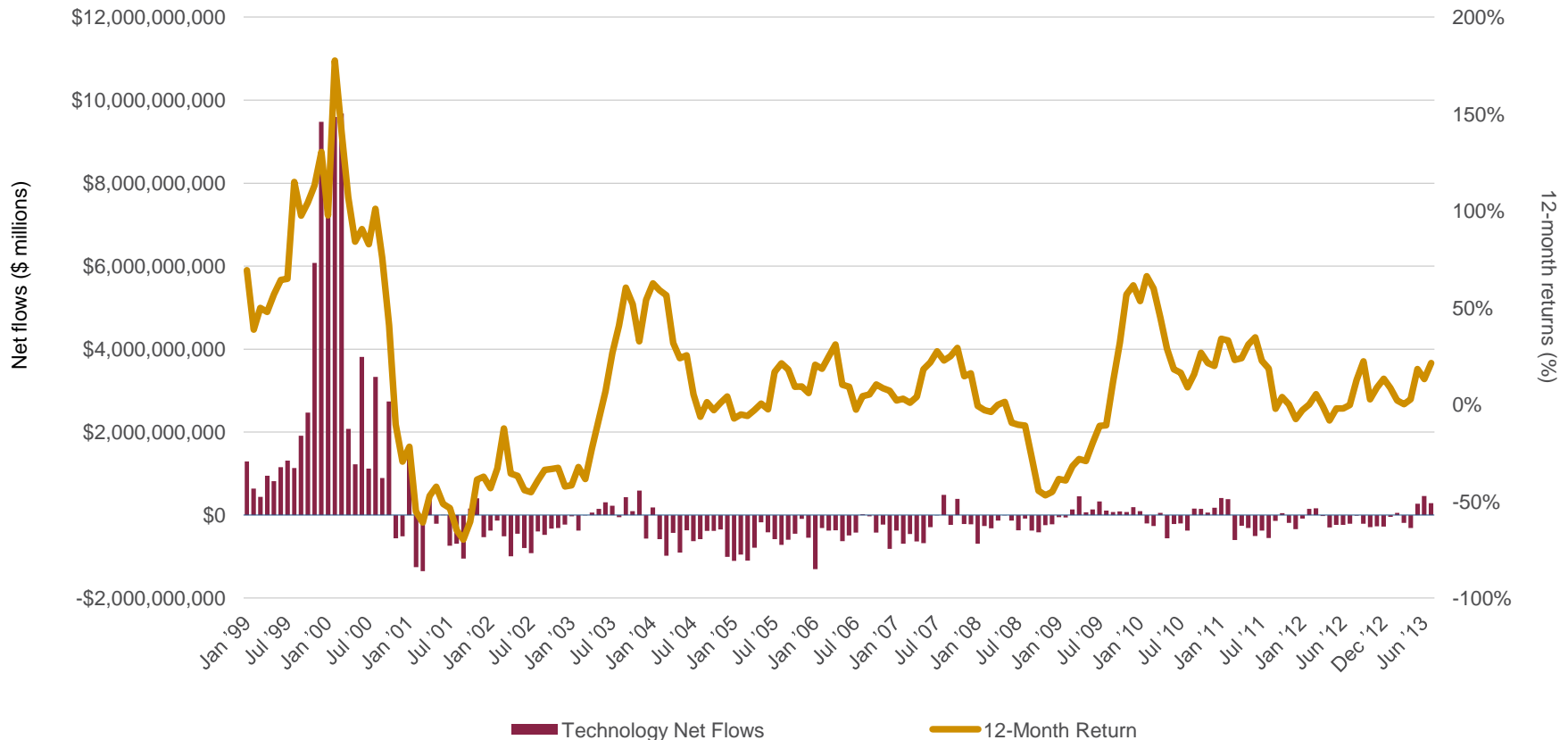
## The investor psychology cycle



Source: [www.investmentpostcards.com](http://www.investmentpostcards.com), "Investor Psychology Cycle – Are We “There “ Yet?," Dr. Prieur de Plessis, April 25, 2010.

# Investor Behavior

## Net flows peak as performance of technology funds hits high (1999 – 2013)



Past performance is no guarantee of future results.

Source: FRC; used with permission. For illustrative purposes only. Technology mutual fund sales, redemptions, exchanges, reinvested dividends and assets under management are based on monthly data calculated by FRC. Performance information based on Technology category provided to FRC by Morningstar. UBS104.2526C, 2009. The share price of a fund that invests primarily in one sector will likely be subject to more volatility than the overall stock market.

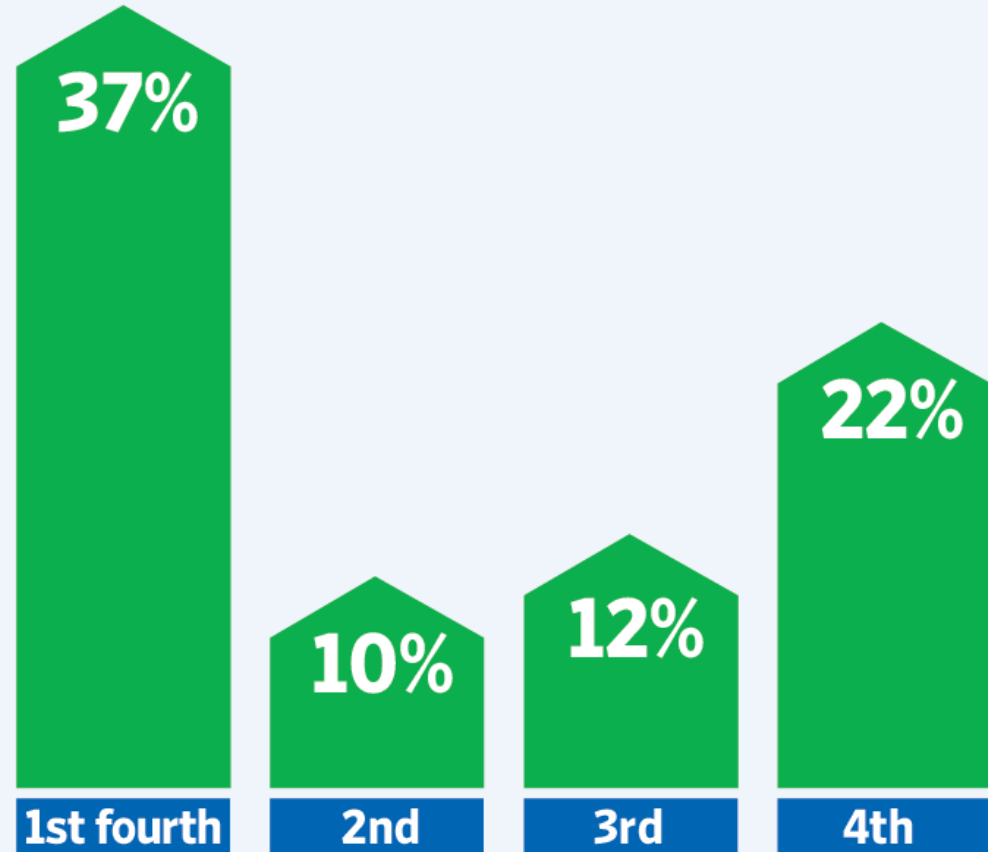


## Biggest gains are in early bull market

### Less Juice

The biggest gains usually come when a bull market is starting. Dividing the past nine bull markets into fourths, chart shows average gain for each quarter. Data since 1962. Based on Standard & Poor's 500-stock index.

Source: Birinyi Associates



Source: "Bull Looks Long in the Tooth," Wall Street Journal, February 1, 2010. Used with permission from Dow Jones & Company.

## The cost of being on the sidelines — S&P 500 (1983 to 2013)

Total market days between 06/29 and 06/28 is 7,570 days

Buy and hold strategy	7.81%
Missing 5 best days	6.26%
Missing 10 best days	5.22%
Missing 15 best days	4.34%
Missing 20 best days	3.52%
Missing 25 best days	2.76%

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# Investor Results

## DALBAR study — Long-term returns<sup>1</sup>%

Source: "Quantitative Analysis of Investor Behavior, 2013," DALBAR, Inc.

Year	S&P 500*	Avg Equity Fund Investor <sup>2</sup>	Difference
1998	17.90	7.25	-10.65
1999	18.01	7.23	-10.78
2000	16.29	5.32	-10.97
2001	14.51	4.17	-10.34
2002	12.22	2.57	-9.65
2003	12.98	3.51	-9.47
2004	13.20	3.70	-9.50
2005	11.90	3.90	-8.00
2006	11.80	4.30	-7.50
2007	11.81	4.48	-7.33
2008	8.35	1.87	-6.48
2009	8.20	3.17	-5.03
2010	9.14	3.83	-5.31
2011	7.81	3.49	-4.32
2012	8.21	4.25	-3.96

\*The S&P Index is an unmanaged index of 500 widely held common stocks. The S&P 500 covers 80% of the U.S. market and encompasses more than 100 different industry groups.

Past performance is no guarantee of future investment results.

<sup>1</sup> The original analyses began in 1984, so that between 1998 and 2002, the period covered was less than 20 years. Since 2003, however, the long-term analysis has covered a 20-year timeframe.

<sup>2</sup> Using monthly fund data supplied by the Investment Company Institute, QAIB calculates investor returns as the change in 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 the period.

## Five concepts for consideration

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1	Be skeptical of experts	Confidence vs. accuracy
2	Is it luck or skill?	Reversion to the mean
3	Is it news or entertainment?	CNBC, Mad Money, nightly news
4	Am I prepared for gut checks?	Participating in the early bull market
5	Can I really time the market?	Cost of missing just the 25 best days

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## Q&A





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