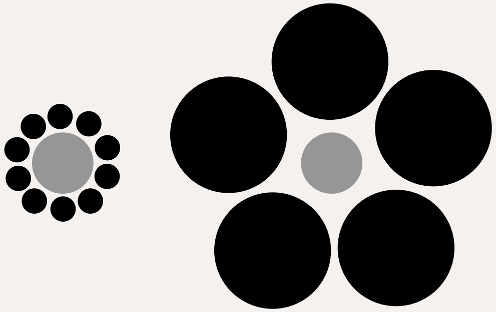
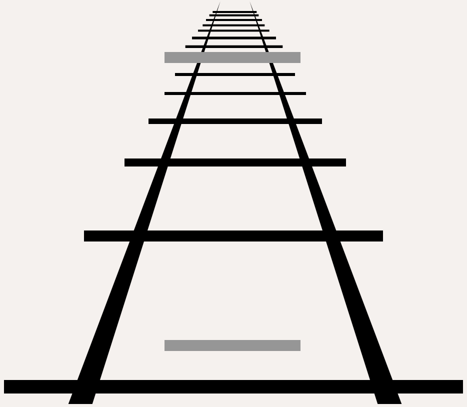
Investor Behavior

Seeing Is Not Believing

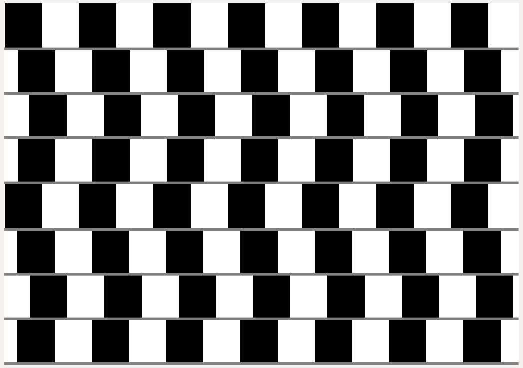
Which gray circle is bigger?



Which gray bar is longer?

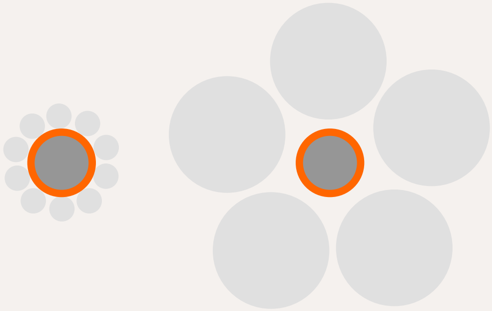


Are the gray horizontal lines parallel?

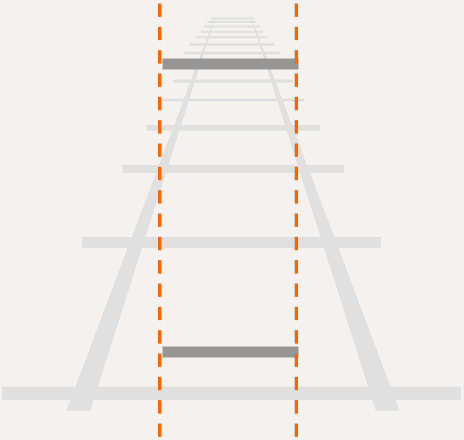


Rational Minds Can Act Irrationally

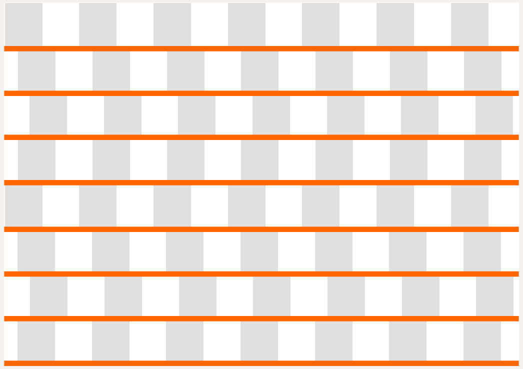
They are the same size



They are the same size



The horizontal lines are parallel



The Efficient-Market Theory

- Security prices efficiently incorporate all public information
- They reflect their true investment value at all times
- Asset allocation relies on market efficiency and rational investor behavior
- However, investors do not always behave rationally

Patterns of Investor Irrationality

- Overconfidence
- Hindsight bias
- Short-term focus
- Regret
- Mental accounting
- Hot-hand fallacy

Overconfidence

Definition

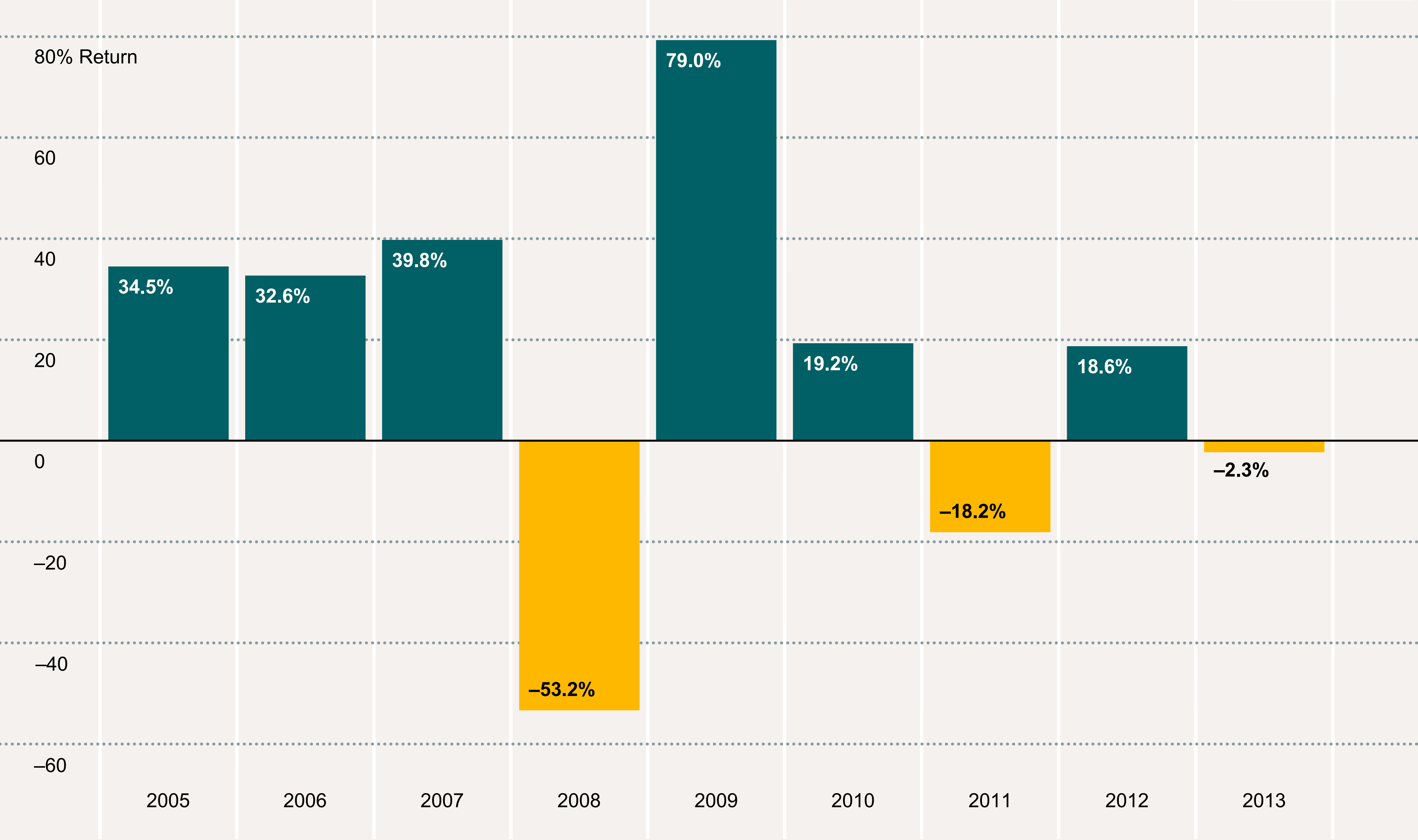
- Rating oneself as above average when it comes to selecting investments

Implications

- Miscalculating the probability of good outcomes
- Focusing on the potential upside of investments
- De-emphasizing the potential downside of investments

Overconfidence: False Perception

Historical performance of emerging-market stocks 2005–2013



Hindsight Bias

Definition

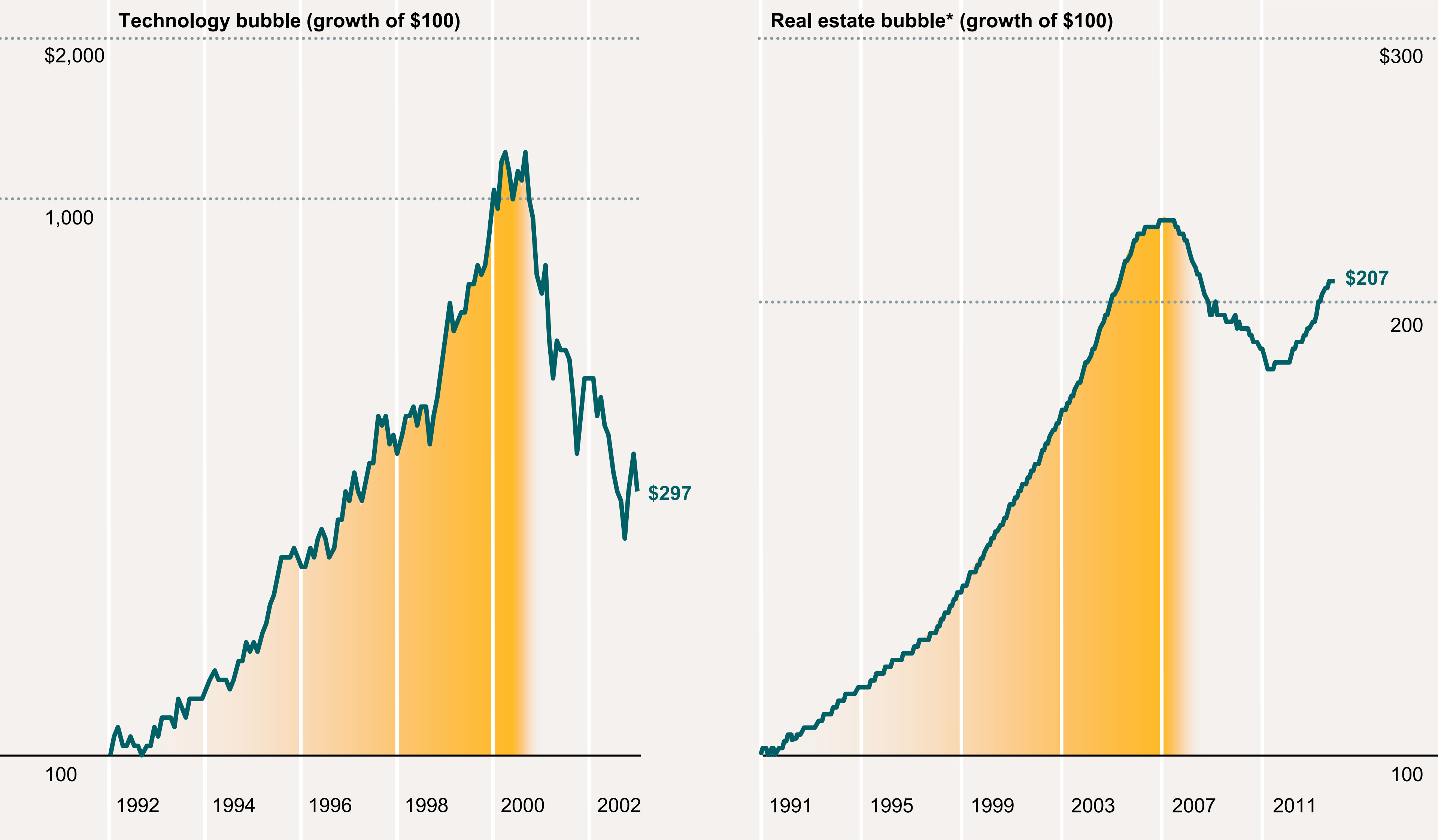
- Believing that unpredictable past events, in retrospect, were obvious and predictable

Implications

- Feelings of anger and regret
- Failure to avoid what appears to have been foreseeable
- Overconfidence

Hindsight Bias: Technology and Real Estate Bubbles

An examination of technology stocks and home values



Past performance is no guarantee of future results. *Data available through November 2013. This is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index.

Short-Term Focus

Definition

- Inappropriately focusing on short-term risk versus long-term risk

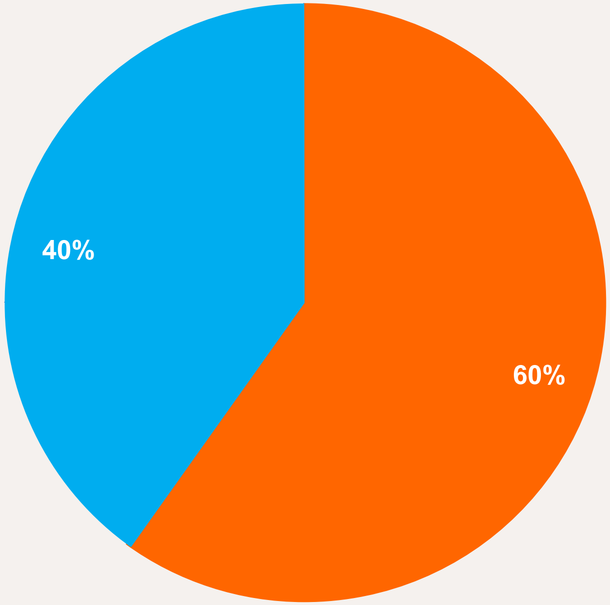
Implications

- Many investors talk long term but act short term
- Overly sensitive to interim volatility regardless of time horizon
- May tend to behave as though their time horizon is far shorter than it truly is

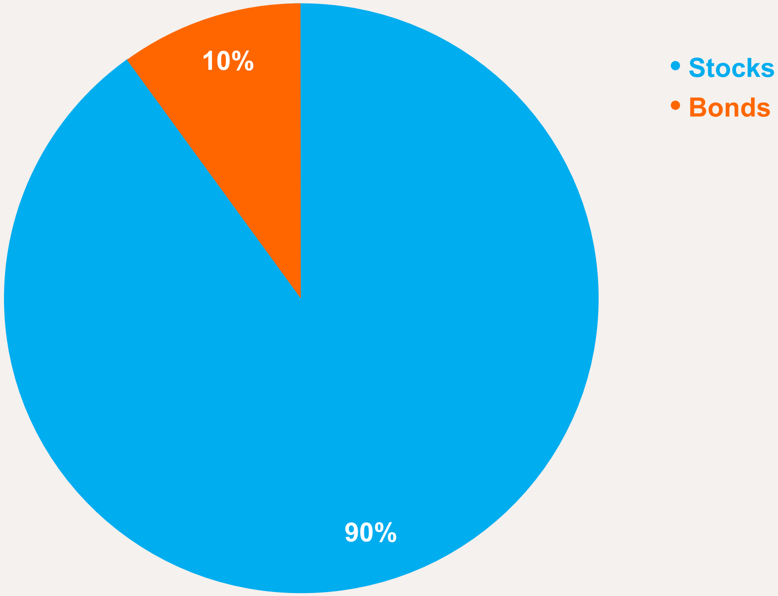
Short-Term Focus: Avoiding Potential Near-Term Losses

Choice of asset allocation after examining different return distributions

When shown a distribution of **one-year returns**, investors allocated 40% to stocks.



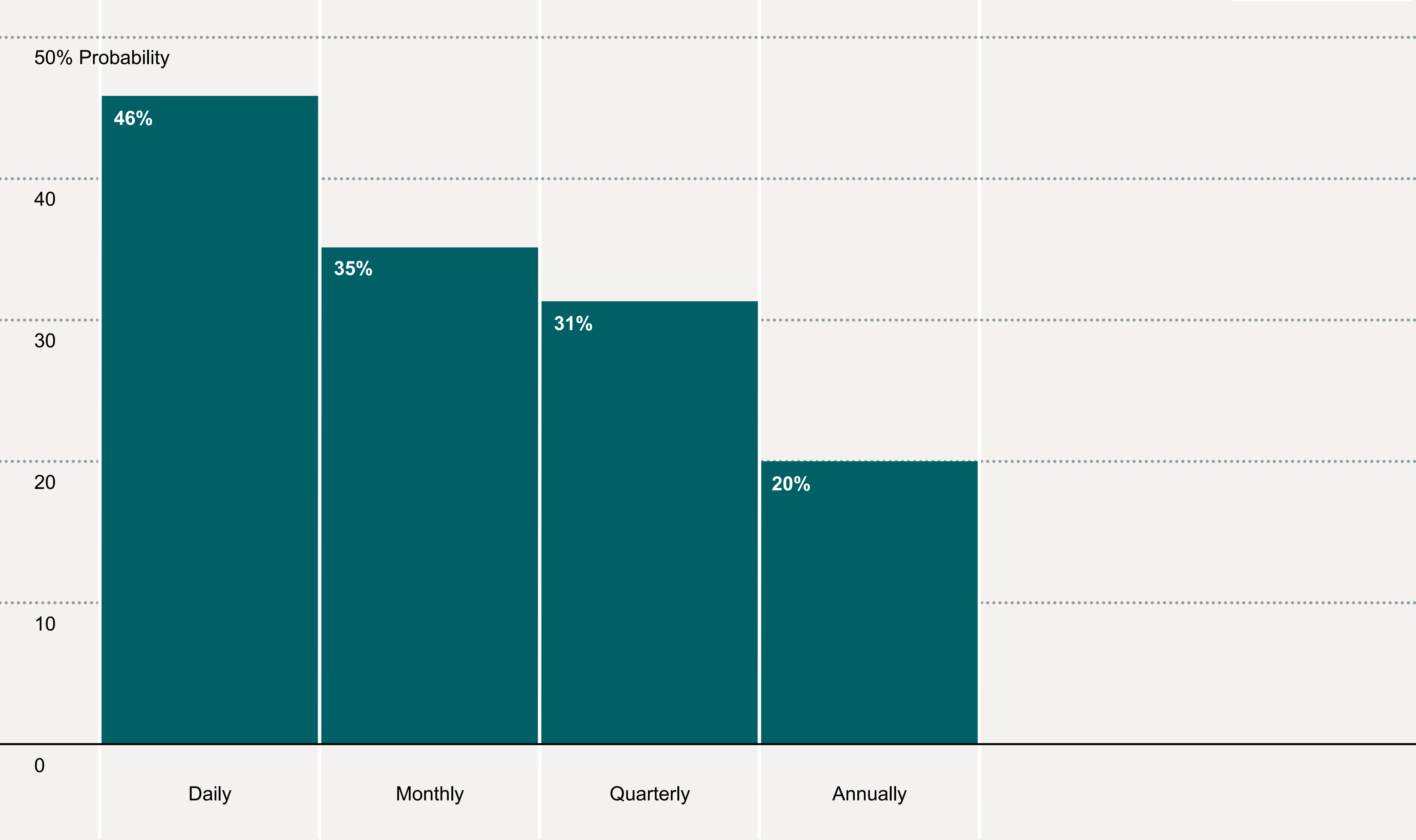
When shown a distribution of **30-year returns**, investors allocated 90% to stocks.



Source: Shlomo Benartzi and Richard H. Thaler, “Risk Aversion or Myopia? Choices in Repeated Gambles and Retirement Investments,” March 1999.

Short-Term Focus: Coping with Near-Term Fluctuations

Probability of losing money in the market 1994–2013



Regret

Definition

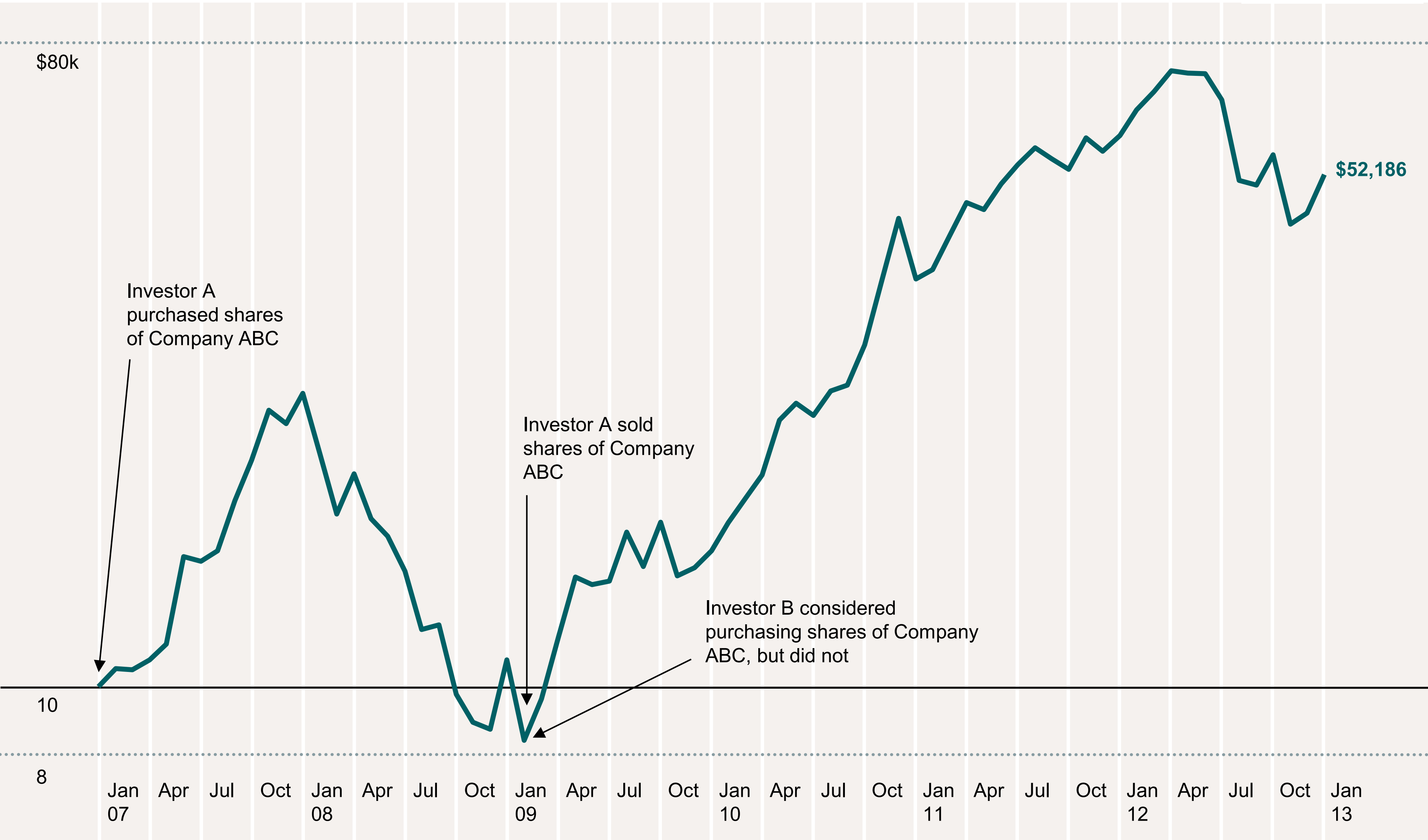
- Having illogical feelings of guilt because of a poor outcome

Implications

- Investors' future investment decisions might be affected
- Can cause investors to become more risk averse/risk tolerant
- These individuals may blame advisors for perceived mistakes

Regret: Action Versus Inaction

Analyzing various types of regret



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Mental Accounting

Definition

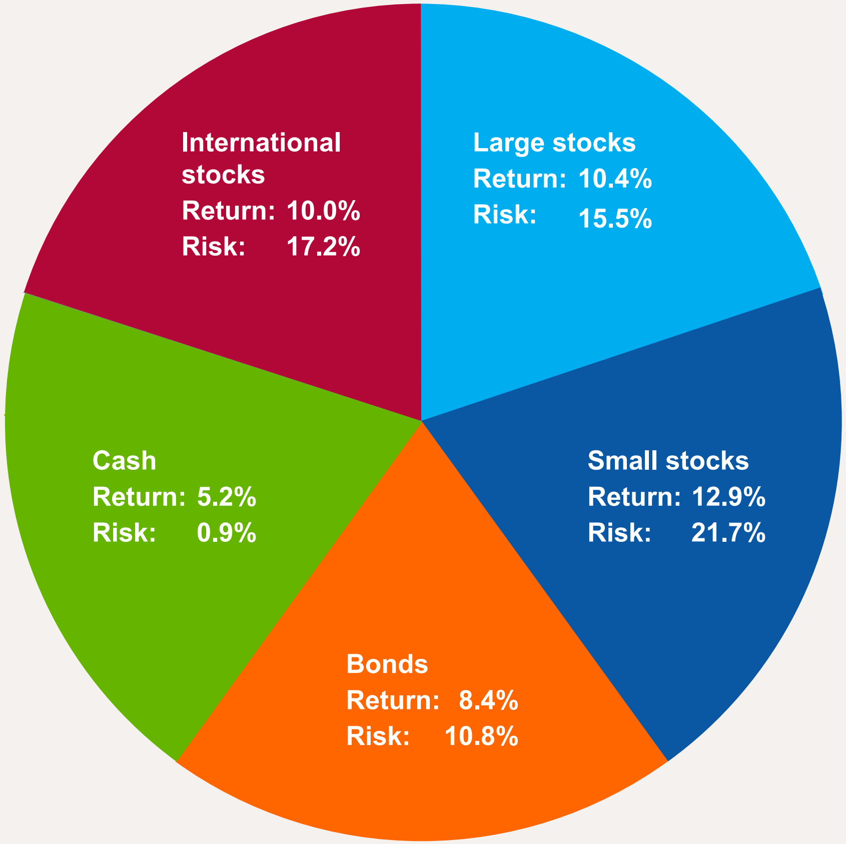
- Mentally compartmentalizing investments while ignoring the aggregate portfolio

Implications

- Investors tend to disaggregate a diversified portfolio
- Risk and return components viewed in a vacuum
- Leads to heightened concern about the riskiness of a component of a portfolio

Mental Accounting: Sum of the Parts

Risk and return characteristics 1970–2013



Total portfolio
Return: 10.1%
Risk: 9.9%

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Hot-Hand Fallacy

Definition

- Perceiving trends where none exist and consequently taking action on this faulty observation

Implications

- Investors desire to invest in last year's winners
  - Favoring a "hot" money manager or asset class
- Skill is inferred from a random pattern of chance
- Can lead to erroneous assumptions and predictions

Hot-Hand Fallacy: Asset-Class Winners and Losers

Annual performance of various asset classes 1994–2013

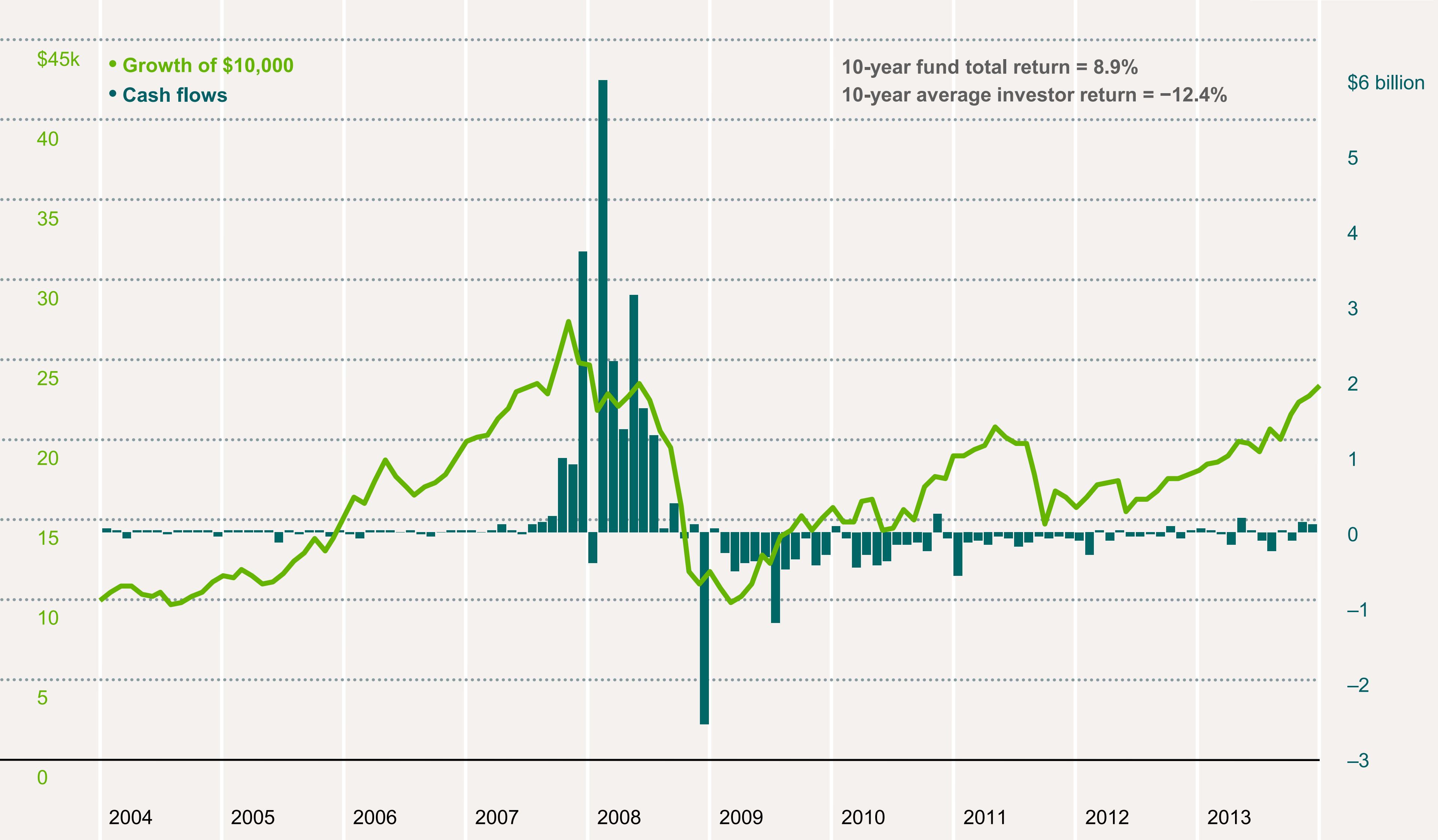
consilium WEALTH ADVISORY

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Highest return	8.1%	37.6	23.0	33.4	28.6	29.8	21.5	22.8	17.8	60.7	20.7	14.0	26.9	11.6	25.9	32.5	31.3	28.2	18.2	45.1
	3.9	34.5	17.6	22.8	20.3	27.3	5.9	3.8	1.6	39.2	18.4	7.8	16.2	9.9	1.6	28.1	15.1	3.1	17.9	32.4
	3.1	31.7	10.2	15.9	13.1	21.0	0.1	3.7	–6.3	28.7	11.9	7.1	15.8	5.5	–17.9	26.5	13.0	2.1	16.0	23.3
	1.7	24.2	6.4	15.9	11.9	14.8	–3.6	–0.6	–13.3	26.2	10.9	5.7	13.0	5.3	–36.7	14.4	10.1	0.0	11.1	17.9
	1.3	11.6	5.2	5.3	4.9	4.7	–9.1	–11.9	–15.7	1.4	8.5	4.9	4.8	4.7	–37.0	0.1	8.2	–3.3	3.3	0.0
Lowest return	–7.8	5.6	–0.9	2.1	–7.3	–9.0	–14.0	–21.2	–22.1	1.0	1.2	3.0	1.2	–5.2	–43.1	–14.9	0.1	–11.7	0.1	–11.4

• Small stocks • Large stocks • International stocks • Long-term government bonds • Treasury bills • Diversified portfolio

Hot-Hand Fallacy: Chasing Fund Performance

Wealth versus cash flows 2004–2013



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Summary

- Investor misconceptions can be dangerous
- They need to be identified early and countered in an appropriate manner
- Markets and investing must be viewed in a rational and productive manner