A Different Way to Invest





Why Invest?



Your Money Today Will Likely Buy Less Tomorrow

1913 1963 2015

\$0.09 = Quart of milk \$0.09 = 1 Small Glass of milk \$0.09 = 7 Tablespoons of milk



Investing means taking risks.

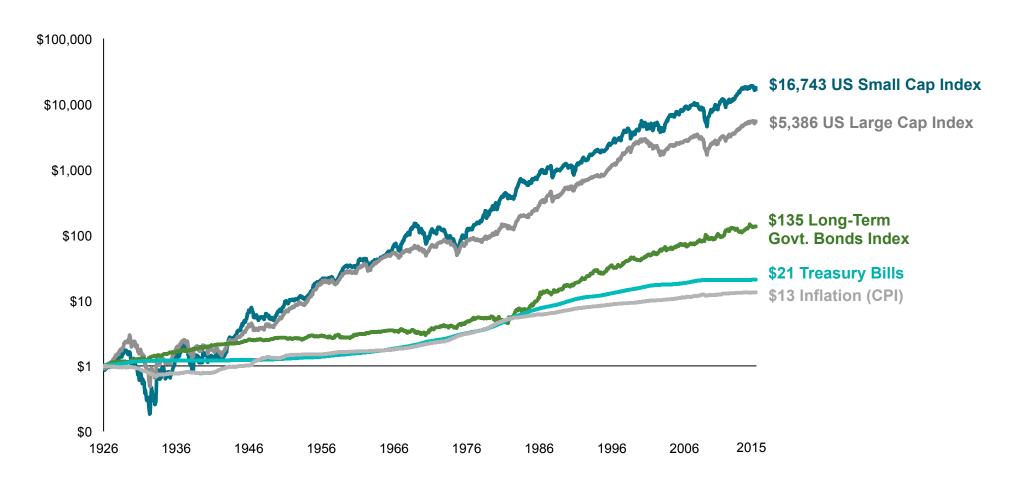


Not investing means taking risks, too.



Capital Markets Have Rewarded Long-Term Investors

Monthly growth of wealth (\$1), 1926-2015

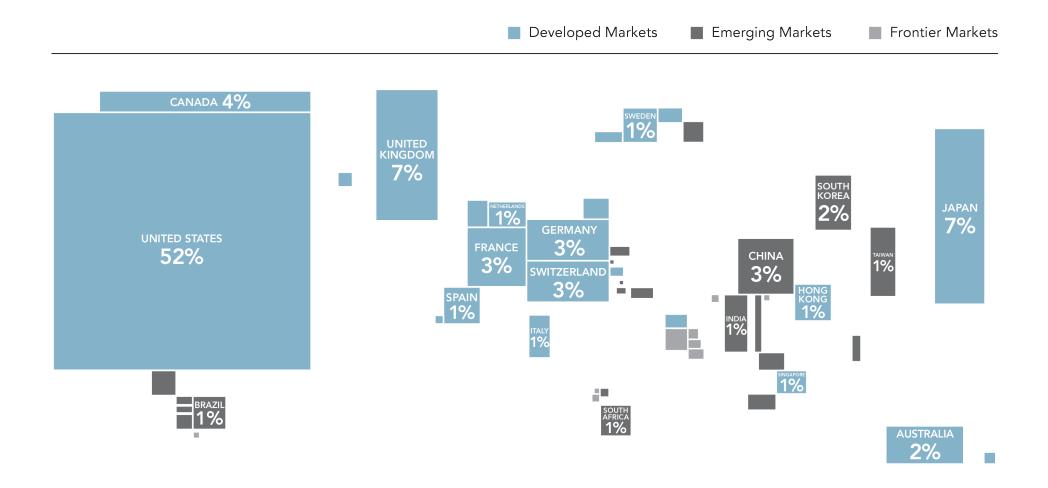


Past performance is no guarantee of future results. In US dollars. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. See "Growth of Wealth Indices" page in the Appendix for more information. US Small Cap Index is the CRSP 6−10 Index; US Large Cap Index is the S&P 500 Index; Long-Term Government Bonds Index is 20-year US government bonds; Treasury Bills are One-Month US Treasury bills; Inflation is the Consumer Price Index. CRSP data provided by the Center for Research in Security Prices, University of Chicago. Bonds, T-bills, and inflation data © Stocks, Bonds, Bills, and Inflation Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefield).



There's a World of Opportunity in Equities

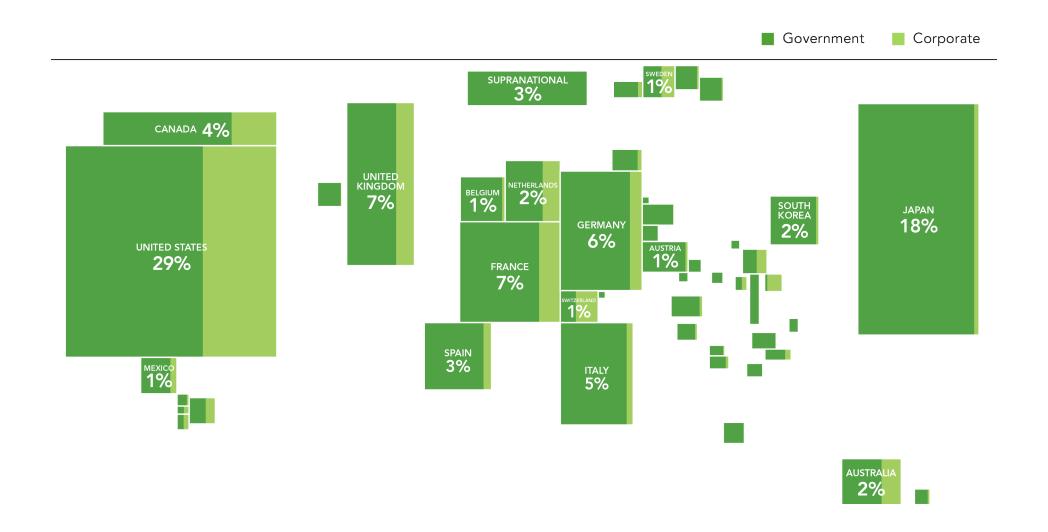
Percent of world market capitalization as of December 31, 2014





There's a World of Opportunity in Fixed Income

Percent of global investment grade bond market as of December 31, 2014





How Do Many People Invest?



They Try to Predict the Future

"I have a proven system for picking winning stocks."

"That sector will continue advancing through next year."

"The market is primed for a retreat."



They Act on Impulse

"I can't take this bear market— I'm getting out!"

> "Everyone's making money— I want a piece of the action."



They Bet their Savings on Tips and Hunches

"I heard it on the news. I'd better sell!"

"I got a hot tip from my neighbor. It's a slam dunk."

"My friend works in the industry—he's got the inside scoop."



They Are Swayed by the Media

"The Death of Equities"

Business Week, 08/13/1979

"The Crash of '98
Can the US Economy Hold Up?"

FORTUNE, 09/28/1998

"Retire Rich – A Simple Plan to Have it All"

FORTUNE, 08/16/1999

"How to Reach \$1 Million"

Money, 08/2012



What Have We Learned?



Many of the Greatest Advancements in Finance Have Come from Academia

1952 **Diversification**and **Portfolio Risk**

HARRY MARKOWITZ

Nobel Prize in Economics, 1990

1966

Efficient Markets Hypothesis

EUGENE FAMA

Nobel Prize in Economics, 2013

1984

Term Structure of Interest Rates

EUGENE FAMA

2012

Profitability

ROBERT NOVY-MARX EUGENE FAMA KENNETH FRENCH

1964

Single-Factor Asset Pricing Risk/Return Model

WILLIAM SHARPE

Nobel Prize in Economics, 1990

1981

The Size Effect

ROLF BANZ

1992-1993

Value Effect and Multifactor Asset Pricing Model

EUGENE FAMA KENNETH FRENCH



Together, We Know More Than We Do Alone



Participants were asked to estimate the number of jelly beans in a jar.

Range: 409-5,365

Average: 1,653

Actual: 1,670



Markets Integrate the Combined Knowledge of All Participants

World Equity Trading in 2015

	Number of Trades	Dollar Volume
Daily	98.6	\$447.3
Average	million	billion

The market effectively enables competition among many market participants who voluntarily agree to transact.

This trading aggregates a vast amount of dispersed information and drives it into security prices.



What Is the Best Way to Invest?



There Are Differing Approaches

CONVENTIONAL MANAGEMENT

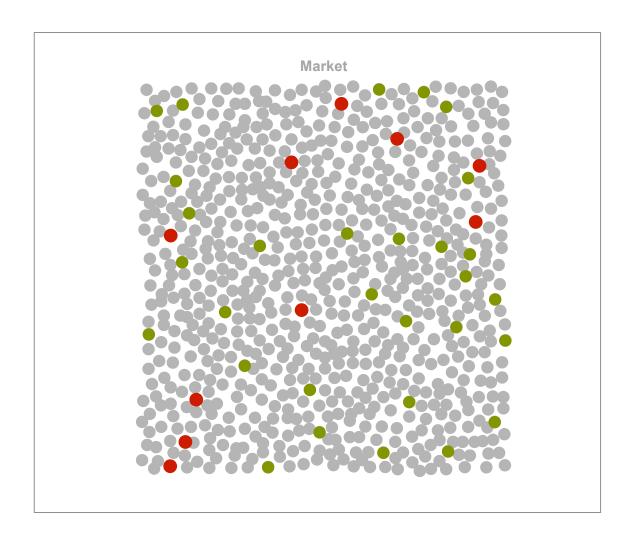
Attempts to identify mispricing in securities

Relies on forecasting to select "undervalued" securities or time markets

Generates higher expenses, trading costs, and risks



The Conventional Approach Attempts to Outguess the Market



Buys a selection of individual securities manager thinks will outperform.

Sells securities when deemed overvalued.

Can lead to high turnover and excess costs.



Conventional Investment Methods Have Low Odds of Success

Fraction of mutual funds that survived and beat their index for 15 years, ending December 31, 2014





There Are Differing Approaches

INDEXING

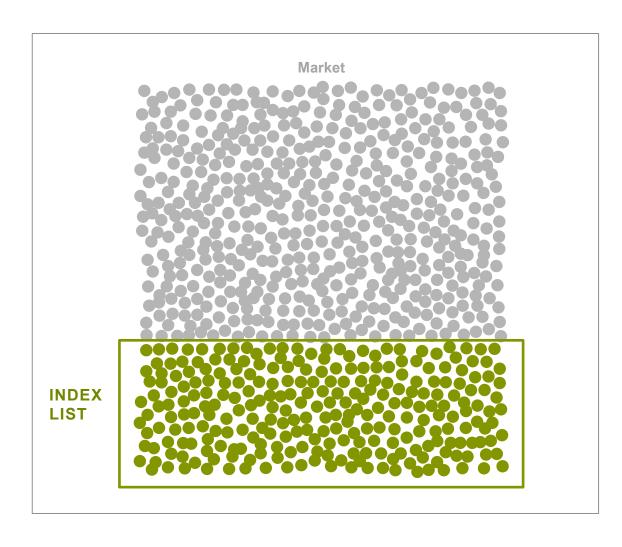
Allows commercial index to determine strategy

Attempts to match index performance, restricting which securities to hold and when to trade

Prioritizes low tracking error over higher expected returns



The Indexing Approach Attempts to Match the Returns of a Commercial Benchmark

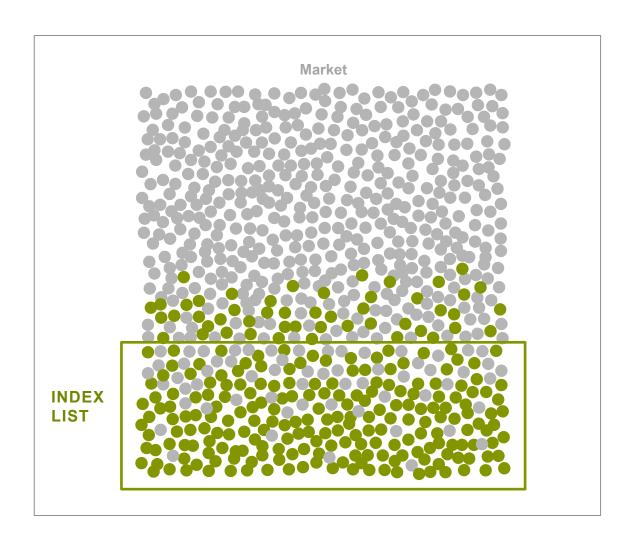


Holds a basket of securities represented in the index.

Buys and sells the same securities at the same time as all other funds tracking the index.



The Indexing Approach Attempts to Match the Returns of a Commercial Benchmark



Six months later:

Securities have moved in and out of the index's targeted range

As a result, your investment may have drifted from what you intended.



There Are Differing Approaches

AN ALTERNATE APPROACH

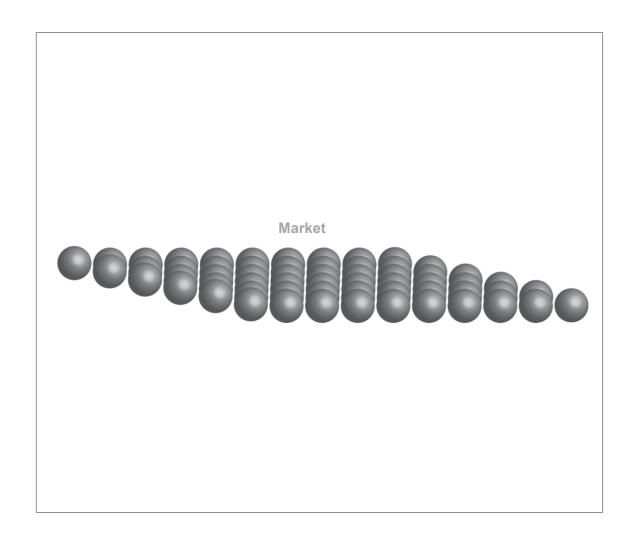
Gains insights about markets and returns from academic research

Structures portfolios along the dimensions of expected returns

Adds value by integrating research, portfolio management, and trading

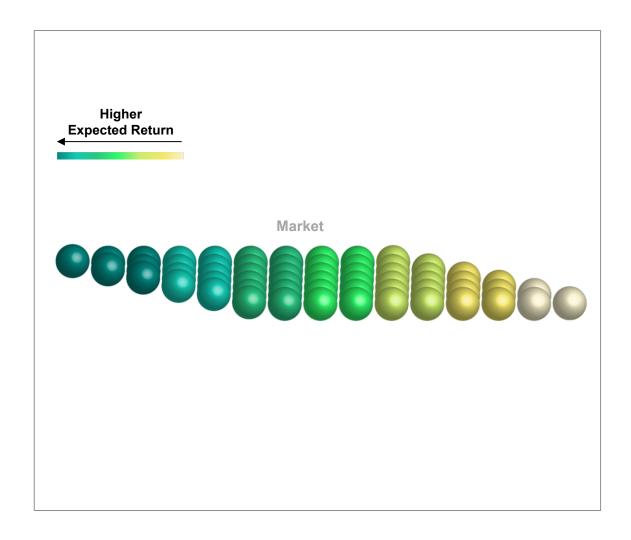


Viewing the Market in a Different Dimension





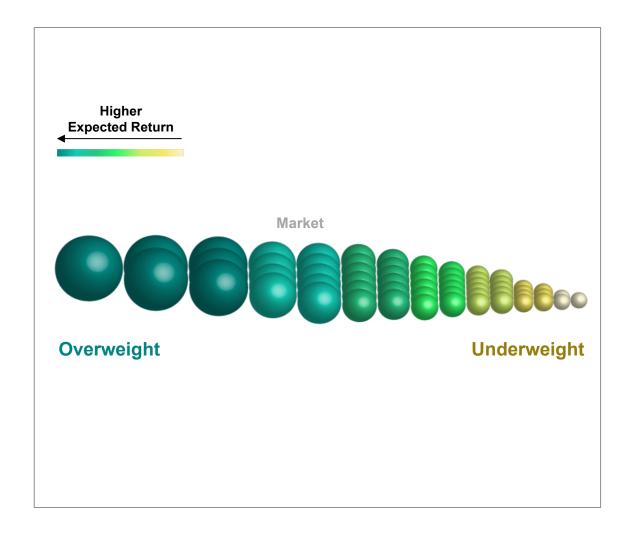
Viewing the Market in a Different Dimension



Decades of academic research have identified relevant dimensions that point to differences in expected returns.



Portfolios Can Be Structured along Dimensions of Expected Returns



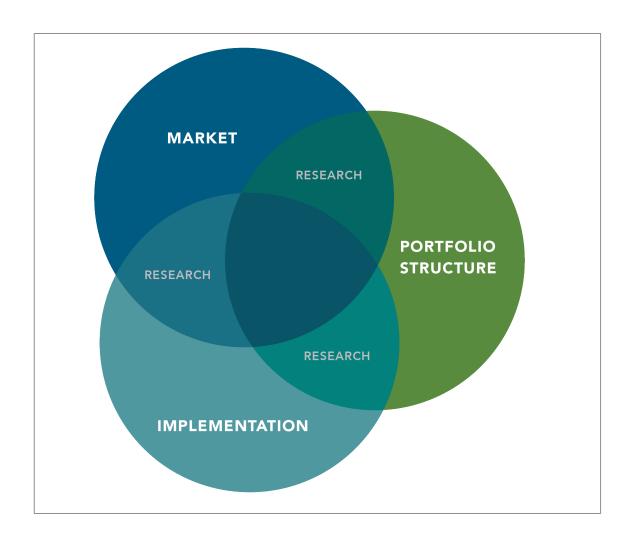
A well-diversified portfolio can emphasize market areas offering higher expected return potential.



Applied to Practical Investing



From Insights to Implementation



An integrated investment process adds value at each step.

Research can be applied throughout the process for an advanced understanding of all aspects of investing.



Balancing Investment Tradeoffs

A COST NET RETURN EXPECTED RETURN

NET RETURN

INVESTMENT OPPORTUNITY

COST

CONDITIONS

Broad diversification and patient, flexible trading lead to **lower turnover and costs**.

Concentrated holdings and urgent, inflexible trading result in higher turnover and costs.

Two investment opportunities can have the same expected return but invite very different conditions.

These conditions result in different costs, which impact net returns.

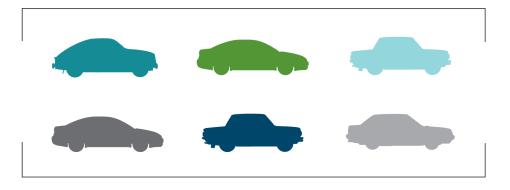
For illustrative purposes only.



Adding Value through Flexible, Patient Trading

"I want this one—today!"







Focus On What You Can Control



A financial advisor can help you create a plan and focus on actions that add value.



Appendix



Growth of Wealth Indices

Small Cap Value Index is the Fama/French US Small Value Index (ex utilities).

Small Cap Index is the CRSP 6-10 Index.

Large Cap Index is the S&P 500 Index®.

Long-Term Government Bonds Index is 20-year US government bonds.

Treasury Bills are One-Month US Treasury bills.

Inflation is the Consumer Price Index.



Data Appendix

Research conducted by Dimensional Fund Advisors LP. US-domiciled mutual fund data is from the CRSP Survivor-Bias-Free US Mutual Fund Database, provided by the Center for Research in Security Prices, University of Chicago.

Certain types of equity and fixed income funds were excluded from the performance study. For equities, sector funds and funds with a narrow investment focus, such as real estate and gold, were excluded. Money market funds, municipal bond funds, and asset-backed security funds were excluded from fixed income.

Funds are identified using Lipper fund classification codes and are matched to their respective benchmarks at the beginning of the 10-year sample period. Winner funds are those whose cumulative return over the period exceeded that of their respective benchmark. Loser funds are funds that did not survive the period or whose cumulative return did not exceed their respective benchmark. Non-survivors include funds that were either liquidated or merged.

Benchmark data provided by Barclays, MSCI, and Russell. Barclays data provided by Barclays Bank PLC. MSCI data copyright MSCI 2016, all rights reserved. Russell data © Russell Investment Group 1995–2016, all rights reserved.

Benchmark indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

Mutual fund investment values will fluctuate, and shares, when redeemed, may be worth more or less than original cost. Diversification neither assures a profit nor guarantees against a loss in a declining market. Past performance is no guarantee of future results.