Our Investment Principles
Market Equilibrium

I. What’s Your Guess?

II. Markets Integrate the Combined Knowledge of All Participants

III. People Trust Market Pricing Every Day

IV. What Affects a Stock’s Current Price?

V. Markets React to Events

VI. Stock Prices Adjust Quickly

VII. Picking the Fastest Lane Is a Stressful Guessing Game

VIII. Few Mutual Funds Survive and Beat Their Benchmarks

IX. Let the Market Work for You
What’s Your Guess?

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

The average estimate of all participants was very close to the actual count.

Together, we know more than we do alone.

Range: 409–5,365
Average: 1,653
Actual: 1,670
Markets Integrate the Combined Knowledge of All Participants

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.

### World Equity Trading in 2016

<table>
<thead>
<tr>
<th></th>
<th>Number of Trades</th>
<th>Dollar Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Average</td>
<td>82.7 million</td>
<td>$346.4 billion</td>
</tr>
</tbody>
</table>

In US dollars.
Source: World Federation of Exchanges members, affiliates, correspondents and non-members. Trade data from the global electronic order book. Daily averages were computed using year-to-date totals as of December 31, 2016, divided by 250 as an approximate number of annual trading days.
People Trust Market Pricing Every Day

The daily price of fish may vary based on buyer and seller expectations of market forces. We accept the price as an accurate estimate of current value and make decisions accordingly.

The same is true of a stock price, which reflects all known information about a company.
What Affects a Stock’s Current Price?

Given all information, a stock’s current price reflects aggregate expectations about risk and return.
Markets React to Events

“Orange juice futures surge to record on fungicide fears”
– Reuters, January 10, 2012

Prices adjust when unexpected events alter the market’s view of the future.

In US dollars.
Source: Dow Jones-UBS Orange Juice Subindex. Dow Jones data provided by Dow Jones indices.
Stock Prices Adjust Quickly

Heinz, 2/14/2013

“Heinz agrees to buyout by Berkshire Hathaway, 3G”
– USA Today, February 14, 2013

News travels quickly, and prices can adjust in an instant.
Picking the Fastest Lane Is a Stressful Guessing Game

Likewise, trying to anticipate the movement of the market adds anxiety and undue risk.
Outsmarting other investors is tough
Few mutual funds survive and beat their benchmarks
15-year performance period ending December 31, 2016

EQUITY FUNDS

- Beginners: 57%
- Survivors: 18%
- Outperformers: 17%

FIXED INCOME FUNDS

- Beginners: 48%
- Survivors: 18%
- Outperformers: 57%

Past performance is no guarantee of future results.
In US dollars. The sample includes funds at the beginning of the five-, 10-, and 15-year periods ending December 31, 2016. Survivors are funds that had returns for every month in the sample period. Winners are funds that survived and outperformed their respective Morningstar category benchmark over the period. US-domiciled open-end mutual fund data is from Morningstar and Center for Research in Security Prices (CRSP) from the University of Chicago. See Data Appendix for more information.
Let the Market Work for You

When you try to outwit the market, you compete with the collective knowledge of all investors.

By harnessing the market’s power, you put their knowledge to work in your portfolio.
Diversification

I. Diversification Helps You Capture What Global Markets Offer
II. Diversification Reduces Risks That Have No Expected Return
III. Diversification May Prevent You from Missing Opportunity
IV. Diversification Smooths Out Some of the Bumps
V. Diversification Helps Take the Guesswork out of Investing

Diversification does not eliminate the risk of market loss.
Diversification Helps You Capture What Global Markets Offer

Percent of world market capitalization as of December 31, 2016

The global equity market is large and represents a world of investment opportunity.

Data provided by Bloomberg. Market cap data is free-float adjusted and meets minimum liquidity and listing requirements. Many nations not displayed. Totals may not equal 100% due to rounding. For educational purposes; should not be used as investment advice. China market capitalization excludes A-shares, which are generally only available to mainland China investors.
Diversification Reduces Risks That Have No Expected Return

Concentrating in one stock exposes you to unnecessary risks.

Diversification reduces the impact of any one company’s performance on your wealth.
Diversification May Prevent You from Missing Opportunity

Compound average annual returns: 1994-2016

Attempting to identify that group of future winners is a guessing game.

Diversification improves the odds of holding the best performers.

All stocks

- Excluding the top 10% of performers each year: 2.9%
- Excluding the top 25% of performers each year: -5.2%

The “All stocks” portfolio consists of all eligible stocks in all eligible Developed and Emerging Markets. The portfolio for January to December of year t includes stocks whose free float market capitalization as of December t-1 is greater than $10bn in developed markets and $5bn in emerging markets and with non-missing price returns for December of year t. Annual portfolio returns are value-weighted averages of the annual returns on the included securities. The portfolios “Excluding the top 10%” and “Excluding the top 25%” are constructed similarly. Individual security data are obtained from Bloomberg, I/B/E/S, Institutional Brokers Estimate System, and Datastream for Research in Finance. The weightings countries are: Australia, Austria, Belgium, Brazil, Canada, Chile, China, Colombia, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Ireland, Israel, Italy, Japan, Republic of Korea, Malaysia, Mexico, Netherlands, New Zealand, Norway, Peru, Philippines, Poland, Portugal, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Kingdom, and the United States. Diversification does not eliminate the risk of market loss. Past performance is no guarantee of future results.
Diversification Smooths Out Some of the Bumps

A well-diversified portfolio can provide the opportunity for a more stable outcome than a single security.

Illustrative examples. Diversification does not eliminate the risk of market loss.
Diversification Helps Take the Guesswork out of Investing

Annual returns (%): 2002–2016

You never know which markets will outperform from year to year.

By holding a globally diversified portfolio, investors are positioned to capture returns wherever they occur.
Dimensions of Returns

I. Financial Capital Plays a Vital Role in Wealth Creation
II. Stocks and Bonds Are Conduits for Capital
III. The Capital Markets Have Rewarded Long-Term Investors
IV. Markets Compensate Non-Diversifiable Risk
V. Dimensions Point to Differences in Expected Returns
VI. Portfolios Can Be Structured to Pursue Dimensions
Financial Capital Plays a Vital Role in Wealth Creation

Using financial capital and other resources, a business produces goods or services that can be sold for a profit.

As providers of financial capital, investors expect a return on their money.
Stocks and Bonds Are Conduits for Capital

Bondholders are lenders to a company. Stockholders are equity owners in the business. Both expect an adequate return for the terms and risk of their investment.
The Capital Markets Have Rewarded Long-Term Investors

Monthly growth of wealth ($1), 1926–2016

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. Past performance is no guarantee of future results. 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. The S&P data is provided by Standard & Poor’s Index Services Group. Bonds, T-bills, and inflation data provided by Morningstar.
Markets Compensate Non-Diversifiable Risk

Risk is a complex concept—it is always present, even if it has not been realized, and it cannot be directly observed until it occurs.

The sources of return are directly observable, and decades of academic research have advanced our understanding of them.

Investors balance risk and return by incorporating their expectations and preferences into securities prices.
Dimensions Point to Differences in Expected Returns

Academic research has identified these dimensions, which are well documented in markets around the world and across different time periods.

- **Market**: Equity premium—stocks vs bonds
- **Company Size**: Small cap premium—small vs large companies
- **Relative Price**: Value premium—value vs growth companies
- **Profitability**: Profitability premium—high vs low profitability companies
- **Term**: Term premium—longer vs shorter maturity bonds
- **Credit**: Credit premium—lower vs higher credit quality bonds

Diversification does not eliminate the risk of market loss. 1. Relative price as measured by the price-to-book ratio; value stocks are those with lower price-to-book ratios. 2. Profitability is a measure of current profitability, based on information from individual companies’ income statements.
Portfolios Can Be Structured to Pursue Dimensions

1. Beta: A quantitative measure of the co-movement of a given stock, mutual fund, or portfolio with the overall market.

2. Price-to-Book Ratio: A company's capitalization divided by its book value. It compares the market's valuation of a company to the value of that company as indicated on its financial statements.

3. Profitability: A measure of a company's current profits. We define this as operating income before depreciation and amortization minus interest expense, scaled by book equity.

Investors can pursue higher expected returns through a low-cost, well-diversified portfolio that targets these dimensions.
Investor Discipline

I. Humans Are Not Wired for Disciplined Investing
II. Many Investors Follow Their Emotions
III. Reacting Can Hurt Performance
IV. Markets Have Rewarded Discipline
V. Focus on What You Can Control
Humans Are Not Wired for Disciplined Investing

When people follow their natural instincts, they tend to apply faulty reasoning to investing.
Many Investors Follow Their Emotions

People may struggle to separate their emotions from their investment decisions.

Following a reactive cycle of excessive optimism and fear may lead to poor decisions at the worst times.
Reacting Can Hurt Performance


Missing only a few days of strong returns can drastically impact overall performance.

<table>
<thead>
<tr>
<th>Annualized Compound Return</th>
<th>$11,510</th>
<th>$10,315</th>
<th>$7,636</th>
<th>$4,494</th>
<th>$2,894</th>
<th>$2,175</th>
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</thead>
<tbody>
<tr>
<td>Total Period</td>
<td>9.38%</td>
<td>8.94%</td>
<td>7.75%</td>
<td>5.67%</td>
<td>3.98%</td>
<td>2.89%</td>
</tr>
<tr>
<td>Missed 1 Best Day</td>
<td></td>
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<tr>
<td>Missed 5 Best Single Days</td>
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<tr>
<td>Missed 15 Best Single Days</td>
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<tr>
<td>Missed 25 Best Single Days</td>
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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. Past performance is not a guarantee of future results. S&P data provided by Standard & Poor’s Index Services Group. “One-Month US T-Bills” is the IA SBBi US 30 Day TBill TR USD, provided by Ibbotson Associates via Morningstar Direct. Data is calculated off rounded daily index values.
Markets Have Rewarded Discipline


A disciplined investor looks beyond the concerns of today to the long-term growth potential of markets.

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. Past performance is no guarantee of future results. MSCI data © MSCI 2017, all rights reserved.
Focus on What You Can Control

No one can reliably forecast the market’s direction or predict which stock or investment manager will outperform.

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

### Creating an investment plan to fit your needs and risk tolerance

### Structuring a portfolio around dimensions of returns

### Diversifying broadly

### Reducing expenses and turnover

### Minimizing taxes
Appendix
US-domiciled open-end mutual fund data is from Morningstar and Center for Research in Security Prices (CRSP) from the University of Chicago.

Equity fund sample includes the Morningstar historical categories: Diversified Emerging Markets, Europe Stock, Foreign Large Blend, Foreign Large Growth, Foreign Large Value, Foreign Small/Mid Blend, Foreign Small/Mid Growth, Foreign Small/Mid Value, Japan Stock, Large Blend, Large Growth, Large Value, Mid-Cap Blend, Mid-Cap Value, Miscellaneous Region, Pacific/Asia ex-Japan Stock, Small Blend, Small Growth, Small Value, and World Stock. For additional information regarding the Morningstar historical categories, please see “The Morningstar Category Classifications” at morningstardirect.morningstar.com/clientcomm/Morningstar_Categories_US_April_2016.pdf.


Index funds and fund-of-funds are excluded from the sample. Net assets for funds with multiple share classes or feeder funds are a sum of the individual share class total net assets. The return, expense ratio, and turnover for funds with multiple share classes are taken as the asset-weighted average of the individual share class observations. Fund share classes are aggregated at the strategy level using Morningstar FundID and CRSP portfolio number.

Each fund is evaluated relative to the Morningstar benchmark assigned to the fund’s category at the start of the evaluation period. Surviving funds are those with return observations for every month of the sample period. Winner funds are those that survived and whose cumulative net return over the period exceeded that of their respective Morningstar category benchmark. Loser funds are funds that did not survive the period or whose cumulative net return did not exceed their respective Morningstar category benchmark.

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

Dimensional Fund Advisors LP is an investment advisor registered with the Securities and Exchange Commission.

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. There is no guarantee investment strategies will be successful. Past performance is no guarantee of future results.