Fi360

Investing Amid a Crisis

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Drivers of Long-Term Asset Allocation

Dimensional

Company Size

SIZE PREMIUM
small vs. large companies

Relative Price[1]

VALUE PREMIUM
value vs. growth companies

Profitability[2]

PROFITABILITY PREMIUM
high vs. low profitability companies

To be considered a dimension of expected return, a premium must be:

Sensible, Persistent, Pervasive, Robust, and Cost-effective

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.

Agenda

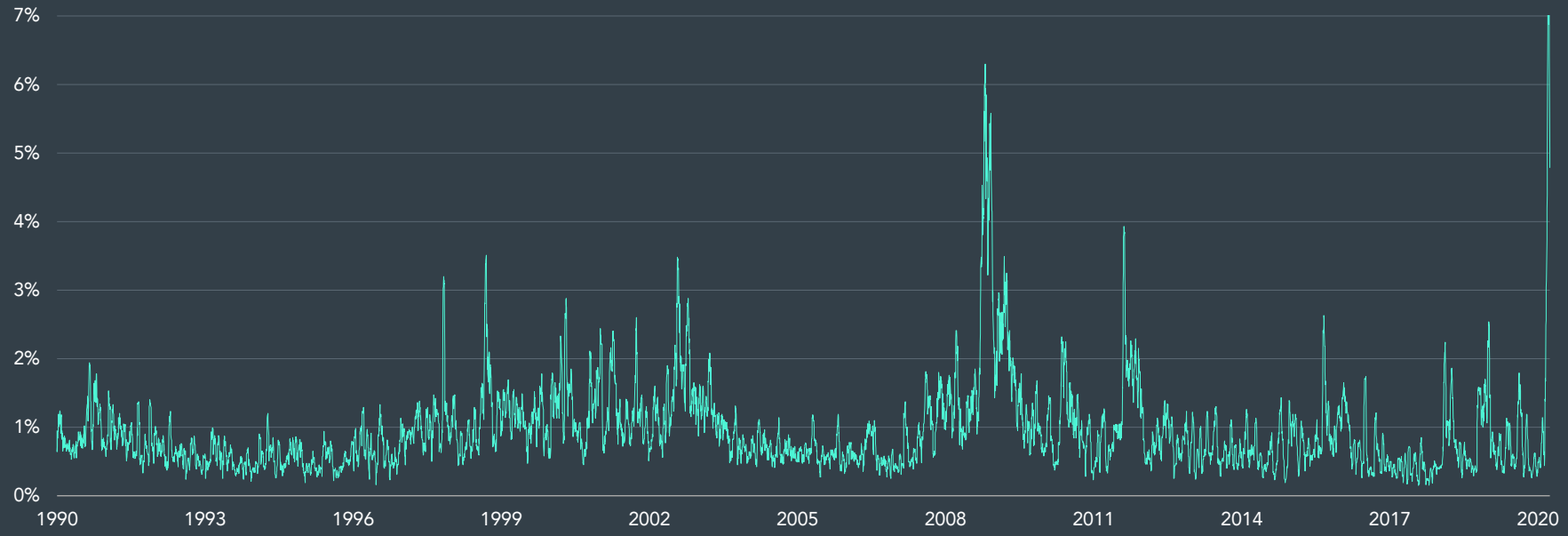
- Stock Performance During Uncertain Times
- Are Recessions Bad For Stock Markets?
- Avoid Exacerbating the Downturn
- A Case Study in Risk Management Framework

Dimensional

Stock Performance During Uncertain Times

10-Day Rolling Standard Deviation

S&P 500 Index, January 1990–March 2020



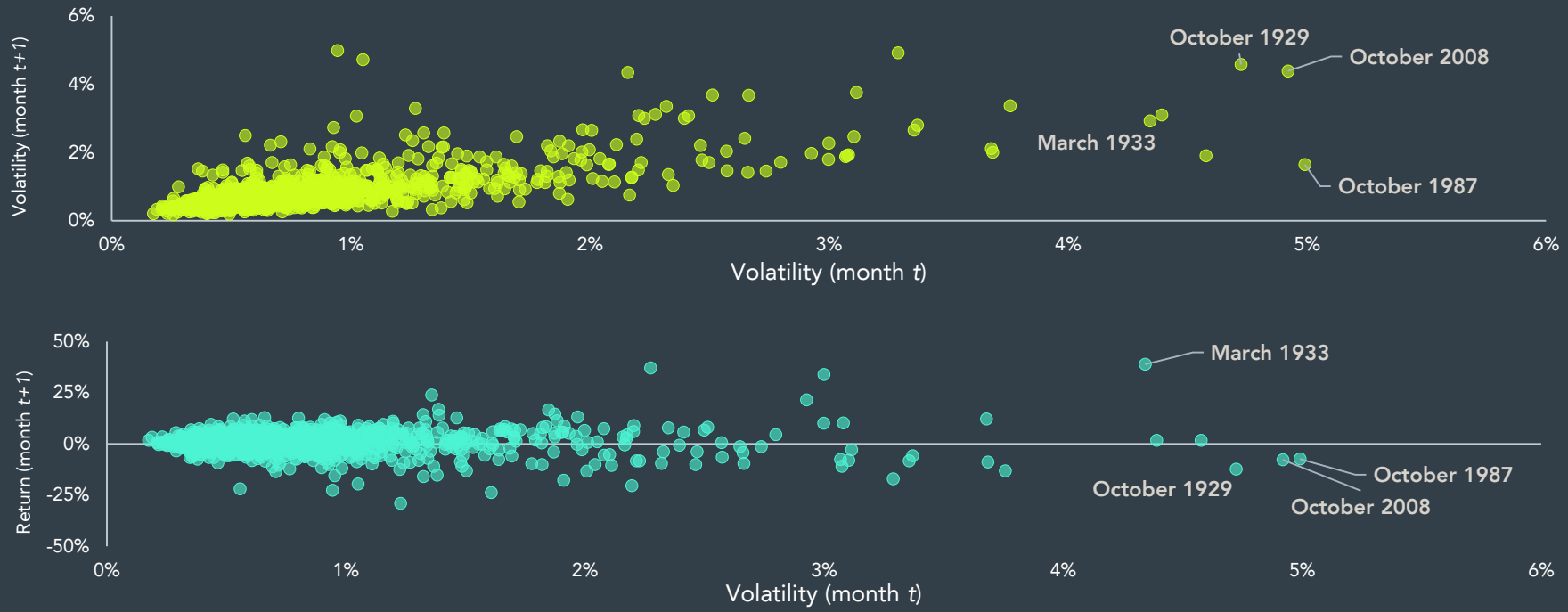
Past performance is not a guarantee of future results. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

Standard Deviation is a measure of the variation or dispersion of a set of data points. Standard deviations are often used to quantify the historical return volatility of a security or portfolio.

Volatility Predicts Volatility But Not Returns

Dimensional

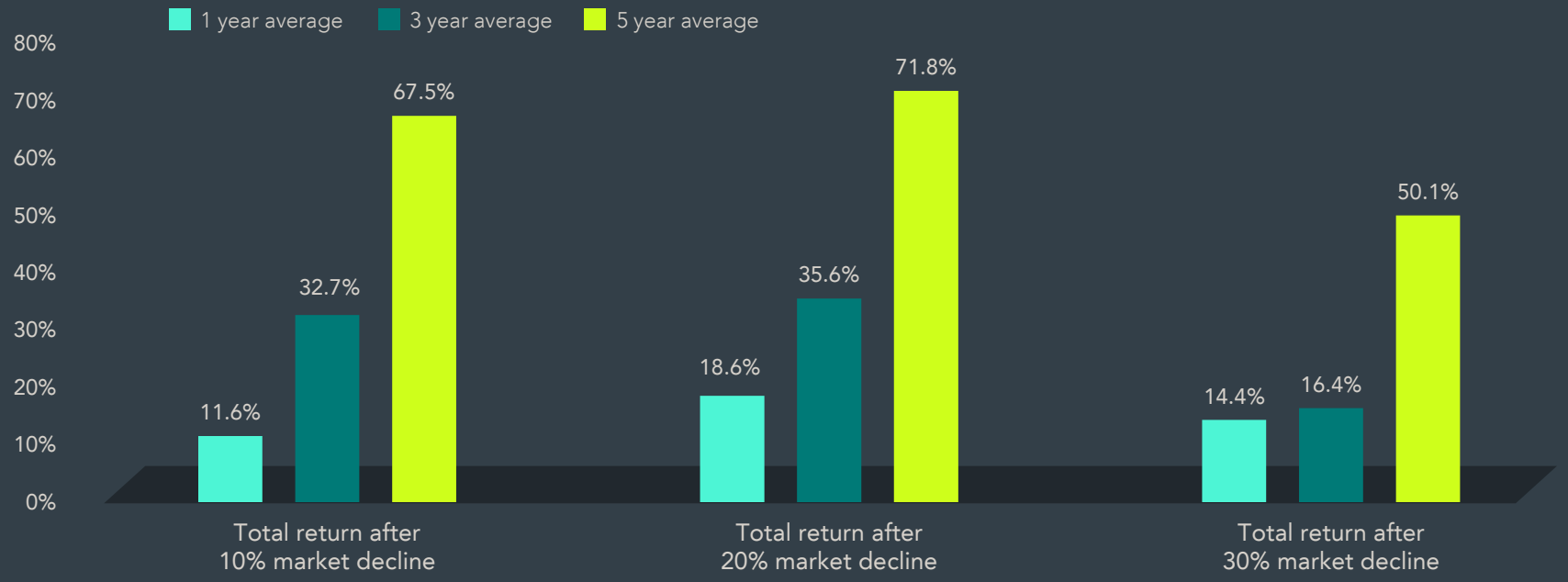
Fama/French Total US Market Research Index Returns, July 1926–December 2019



Data provided by Fama/French. Eugene Fama and Ken French are members of the Board of Directors of the general partner of, and provide consulting services to, Dimensional Fund Advisors LP.

Average Returns after Downturns Have Been Positive

Fama/French Total US Market Research Index Returns, July 1, 1926–December 31, 2019



Past performance is no guarantee of future results. Short term performance results should be considered in connection with longer term performance results. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

Annualized returns are calculated for the 1-, 3-, and 5-year periods beginning the day after a downturn of 10%, 20%, or 30% from a new all-time high for the market. The bar chart shows the average total returns for the 1-, 3-, and 5-year periods following the 10%, 20% and 30% thresholds. For the 10% threshold, there are 28, 27, and 26 observations for the 1-, 3-, and 5-year periods, respectively. For the 20% threshold, there are 14, 13, and 6 observations for the 1-, 3-, and 5-year periods, respectively. For the 30% threshold, there are 6 observations for 1-, 3-, and 5-year periods. Data provided by Fama/French. Eugene Fama and Ken French are members of the Board of Directors of the general partner of, and provide consulting services to, Dimensional Fund Advisors LP. Please see Appendix Index Descriptions for a description of the Fama/French index data.

Performance of Premiums: Average Cumulative Return Differences Following Market Declines

US Stocks, July 1963–December 2019

	Small Minus Large			Value Minus Growth			High Profitability Minus Low Profitability		
	1YR	3YR	5YR	1YR	3YR	5YR	1YR	3YR	5YR
10% Decline (N=13)	6.31%	29.11%	49.11%	2.27%	20.82%	48.64%	4.46%	10.65%	21.88%
20% Decline (N=5)	4.16%	4.83%	40.55%	7.49%	8.47%	29.82%	2.75%	13.21%	14.44%
30% Decline (N=4)	13.79%	26.80%	77.60%	-2.47%	9.78%	46.00%	0.50%	8.16%	-5.23%

Past performance is no guarantee of future results.
Returns are calculated for the 1-, 3-, and 5-year periods beginning the month after a downturn of 10%, 20%, and 30%, respectively, from a new all-time high for the market. There are thirteen, five, and four observations of downturns that compose each average return for the 10%, 20%, and 30% thresholds, respectively. Market represented by the Fama/French Total US Market Research Index. Small cap and large cap stocks represented by the Dimensional US Small Cap Index and the S&P 500 Index, respectively. Value and growth stocks represented by the Fama/French US Value Research Index and the Fama/French US Growth Research Index, respectively. High profitability and low profitability stocks represented by the Fama/French US High Profitability Index and the Fama/French US Low Profitability Index, respectively. Eugene Fama and Ken French are members of the Board of Directors of the general partner of, and provide consulting services to, Dimensional Fund Advisors LP. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. See "Index Descriptions" in the appendix for descriptions of Dimensional and Fama/French index data.

Agenda

Stock Performance During Uncertain Times

Are Recessions Bad For Stock Markets?

Avoid Exacerbating the Downturn

A Case Study in Risk Management Framework

Stock Returns Contain Information about Future GDP Growth

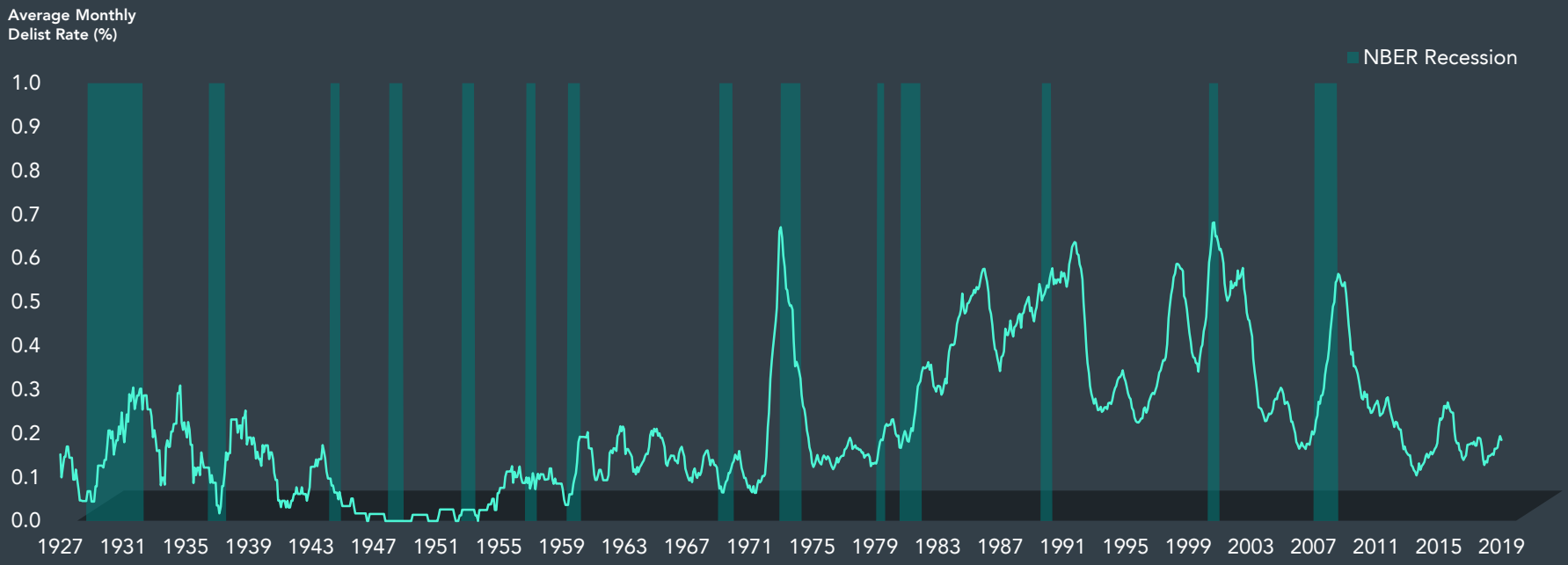
Scatter plot of future annual GDP growth and current annual US stock returns, 1930–2019

Past performance is no guarantee of future results. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.

Annual GDP growth rates obtained from the US Bureau of Economic Analysis. GDP growth numbers are adjusted to 2012 USD terms to remove the effects of inflation. Data provided by Fama/French. Eugene Fama and Ken French are members of the Board of Directors of the general partner of, and provide consulting services to, Dimensional Fund Advisors LP. Please see Appendix Index Descriptions for a description of the Fama/French index data.

US Small Cap Delistings Have Been Higher in Recessions

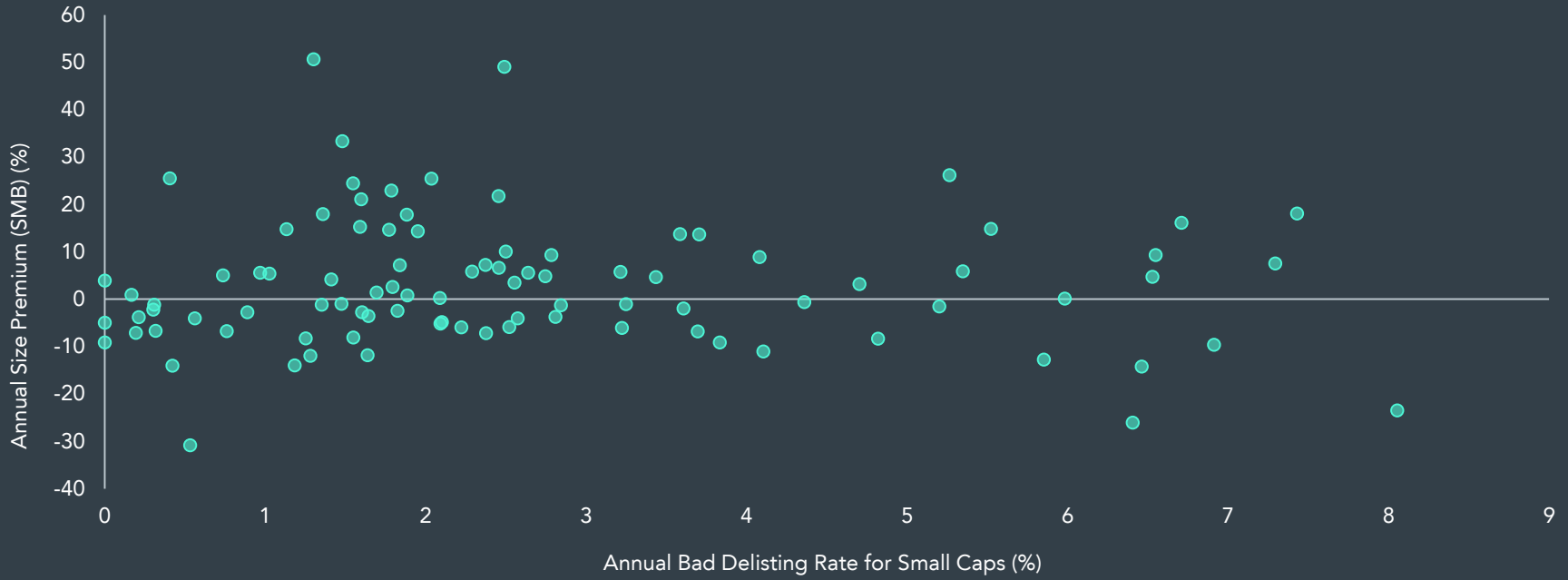
Rolling 12-Month Average Bad Delisting Rate for US Small Cap Stocks, December 1927–December 2019



Source: Dimensional, using CRSP and Compustat. Shaded regions indicate months falling during recessions as designated by the National Bureau of Economic Research (NBER). Small caps are defined as approximately the bottom 8% of the market capitalization, rebalanced annually at the end of each June. The monthly delisting rate of a month between July of Year T and June of Year T+1 is the number of delisting in the month, divided by the number of names in the small cap universe in July of Year T. The one-year rolling delisting rate is computed as the average of the monthly delisting rates over 12 months. Bad delisting events are identified with those with the first digit of the delisting code four, five, or seven, which captures liquidations, delisting by the exchanges, and delisting by the SEC. A firm can be delisted by the exchanges for various reasons including bankruptcies and stock prices falling below the minimum requirement. The detailed description of delisting code is available at: http://www.crsp.org/products/documentation/data-definitions-d#delisting-code.

Size Premium Has Not Been Correlated With Delist Rate

Size Premium vs. Bad Delistings for Small Cap Stocks, January 1927–December 2019



Source: Dimensional, using CRSP and Compustat. Small caps are defined as approximately the bottom 8% of the market capitalization, rebalanced annually at the end of each June. The monthly delisting rate of a month between July of Year T and June of Year T+1 is the number of delisting in the month, divided by the number of names in the small cap universe in Julyof Year T. The annual delisting rate is computed as the sum of monthly delisting rates over each calendar year. Bad delisting events are identified with those with the first digit of the delisting code four, five, or seven, which captures liquidations, delisting by the exchanges, and delisting by the SEC. A firm can be delisted by the exchanges for various reasons including bankruptcies and stock prices falling below the minimum requirement. The detailed description of delisting code is available at: http://www.crsp.org/products/documentation/data-definitions-d#delisting-code. Size premium data provided by Ken French, available at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

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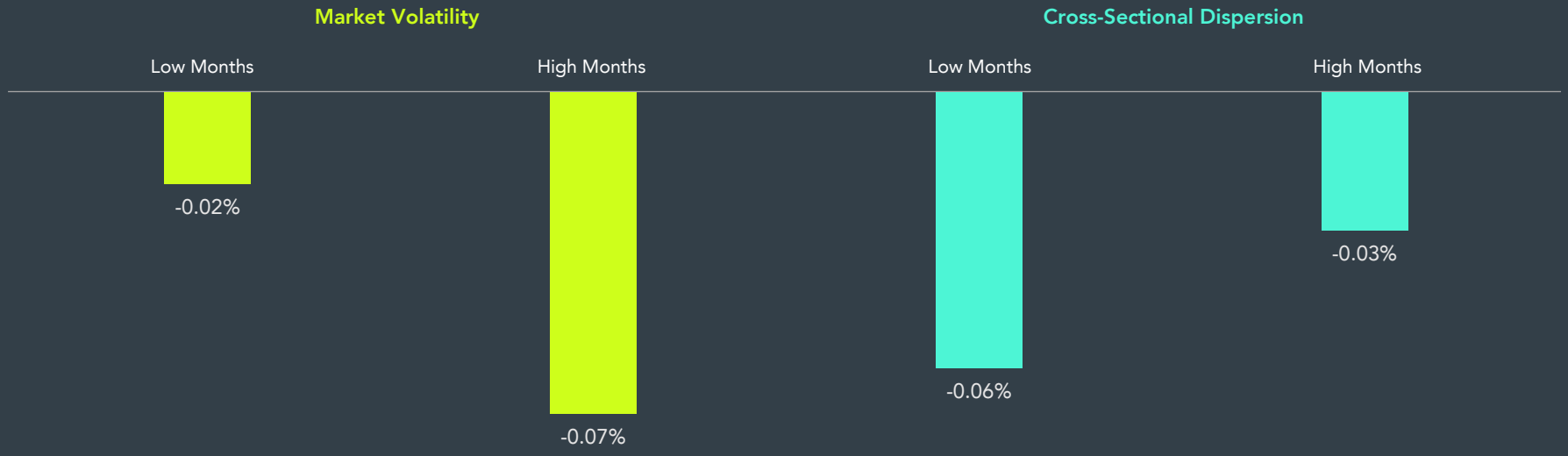
Stock Picking Fares No Better During High Volatility

Active US Equity Fund Performance vs. Benchmarks, 1999–2019



Past performance is no guarantee of future results. Source: Dimensional using Morningstar data. Average monthly excess return over Morningstar category benchmark of AUM-weighted portfolio of active US equity mutual funds (excluding fund of funds), months with below median vs. above median monthly market volatility (left panel) and cross-sectional stock return dispersion (right panel), 1999–2019. Monthly stock market volatility is defined as the standard deviation of daily stock market returns in a given month. Cross-sectional stock return dispersion is defined as the standard deviation of monthly stock returns in a given month.

Market Timing Can Be Costly

Dimensional

Hypothetical timing strategies withdrawing from stocks after downturns,
US Equities, July 1, 1926–December 31, 2019

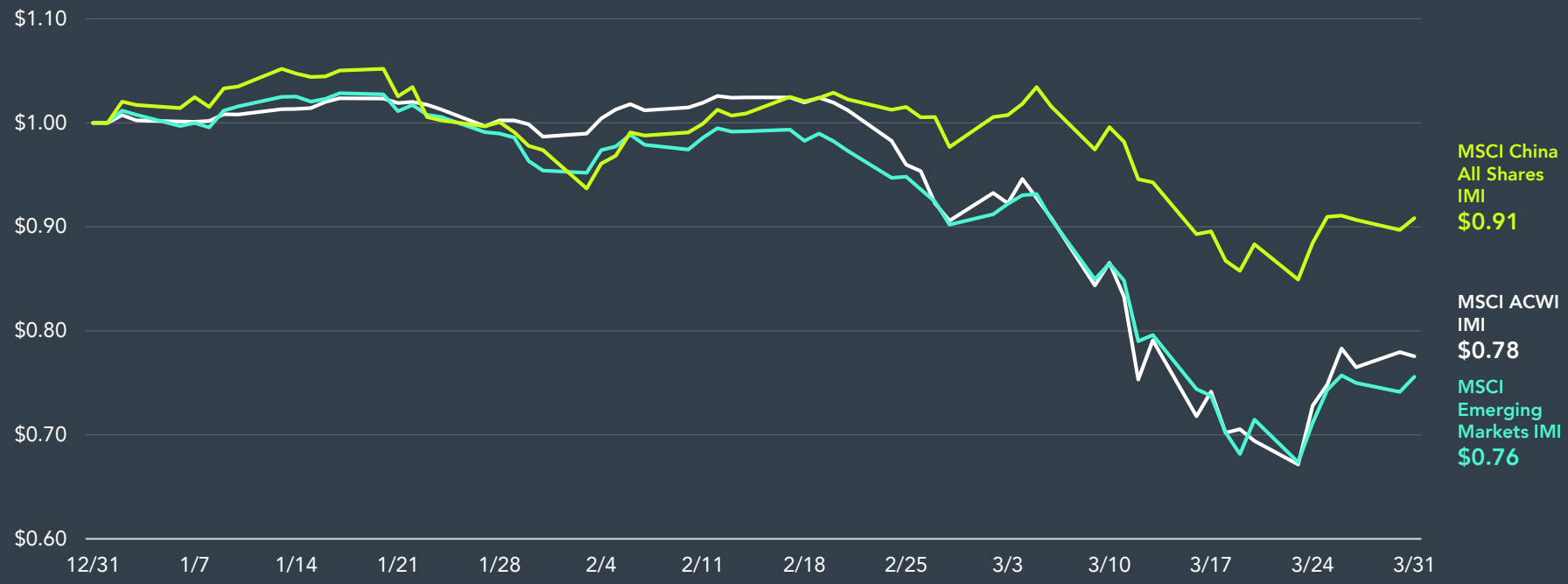
	TIMING STRATEGIES									BUY AND HOLD MARKET
Threshold for Switch	-10%			-20%			-30%			—
Days Out of Market	100	200	300	100	200	300	100	200	300	—
Annualized Return (%)	7.11	6.67	5.89	6.80	6.08	5.75	8.71	8.55	8.66	9.57

Performance shown is hypothetical and for illustrative purposes only. The performance was achieved with the retroactive application of a model designed with the benefit of hindsight; it does not represent actual performance and it does not take into account any individual investor circumstances. Hypothetical performance does not reflect trading in an actual portfolio and may not reflect the impact that economic and market factors may have had on trading decisions.
Market represented by Fama/French Total US Market Research Index. Downturns are defined as the first instance of a cumulative return meeting the -10%, -20%, or -30% threshold following a day when the index has reach's a new all-time high level. Timing strategies switch from the US stock market (represented by the Fama/French Total US Market Research Index) to One-Month US Treasury Bills (represented by the IA SBBI US 30 Day TBill TR USD provided by Ibbotson Associates via Morningstar Direct) following each downturn and switch back to the market following the number of trading days denoted. Past performance is not a guarantee of future results. No costs included.

Predicting Market Outcomes Can Be Difficult

Dimensional

Growth of a Dollar, 1st Quarter 2020



Past performance is no guarantee of future results.

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

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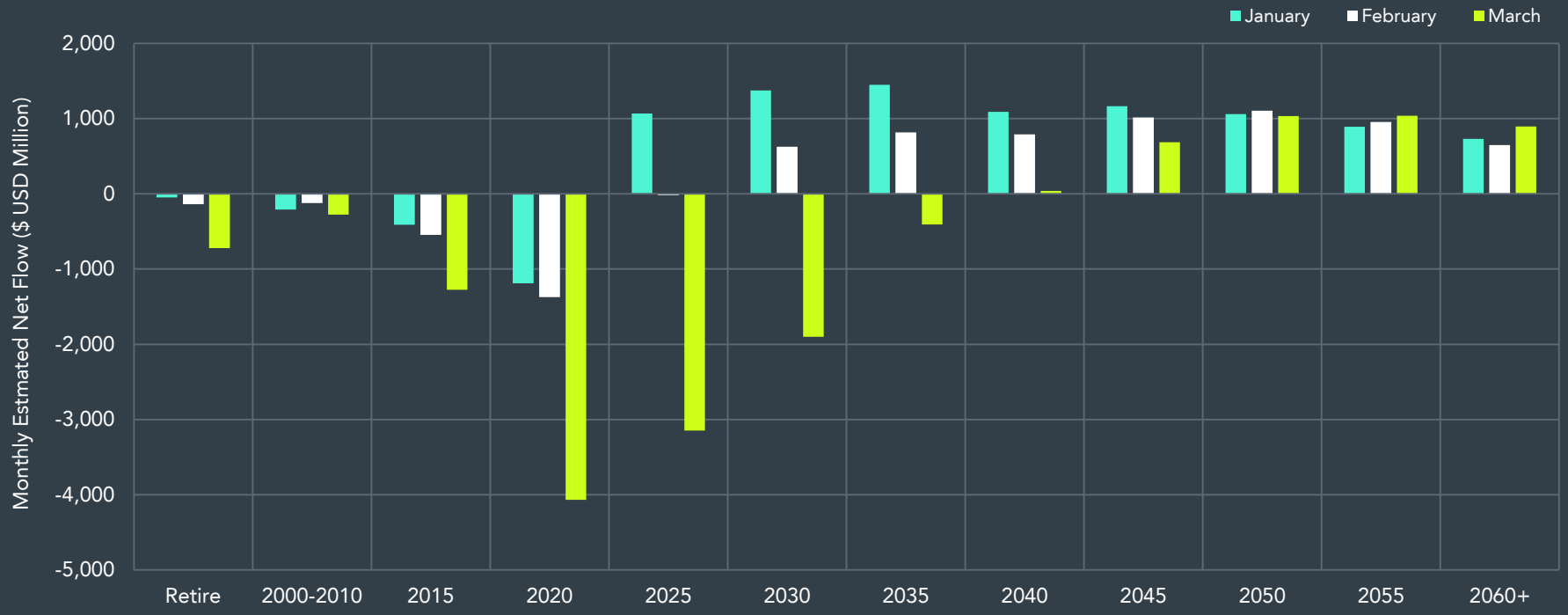
Target-Date Strategy Industry Cashflows

Dimensional

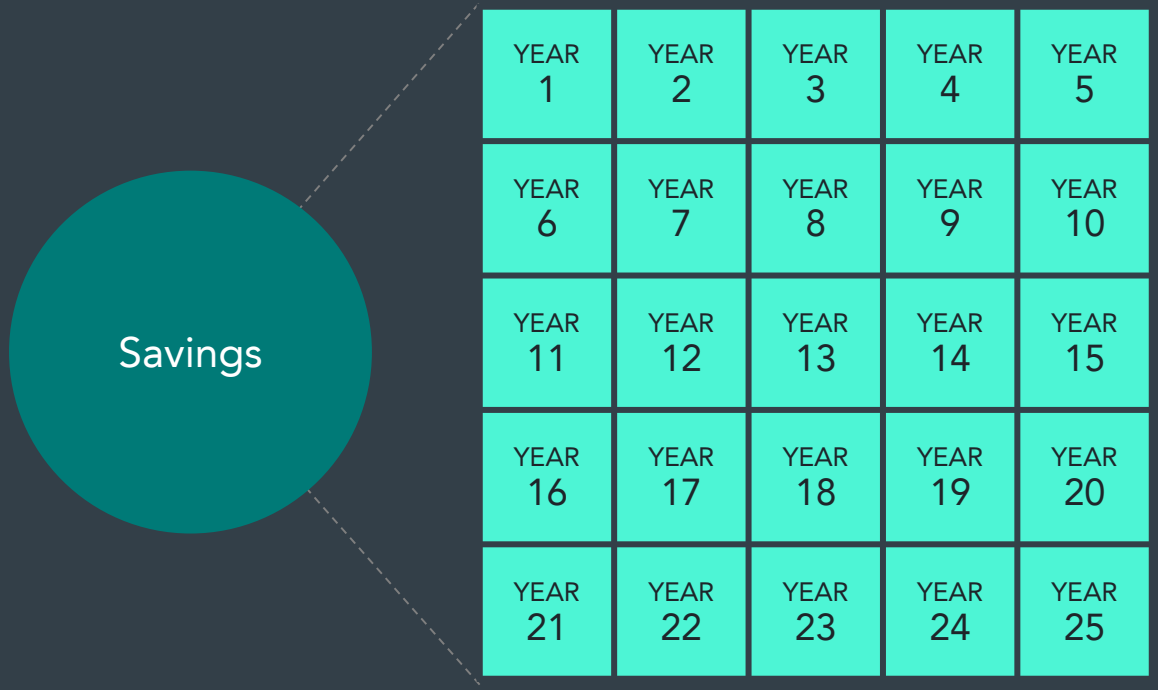
Morningstar: Total Target-Date Strategy Assets, Q1 2020



The numbers of distinct funds for the Morningstar categories are as follows: Target-Date 2060 is 228 for 1 year. Target-Date 2055 is 232 for 1 year. Target-Date 2050 is 244 for 1 year. Target-Date 2045 is 232 for 1 year. Target-Date 2040 is 244 for 1 year. Target-Date 2035 is 232 for 1 year. Target-Date 2030 is 244 for 1 year. Target-Date 2025 is 235 for 1 year. Target-Date 2020 is 233 for 1 year. Target-Date 2015 is 129 for 1 year. Target-Date 2000–2010 is 129 for 1 year. Target-Date Retirement is 186 for 1 year.
Source: Morningstar Direct. Data as of 3/31/2020.

Conceptualizing Income Needs in Retirement

Hypothetical gross income breakdown



Consumption in Retirement

The goal for most retirees is to support consumption in retirement.

Providing information on how much a portfolio can provide in terms of consumption (or income) in retirement can improve the overall investor retirement experience.

For illustrative purposes only.

Inflation History: 1926–2019

US CPI

1. A 25-year retirement horizon is assumed. Reduction in purchasing power is the purchasing power at the end of retirement compared to purchasing power initially.
US bills and inflation data from *Stocks, Bonds, Bills, and Inflation Yearbook*, Ibbotson Associates, Chicago. Roger Ibbotson is an Independent Director of Dimensional's US mutual fund board.

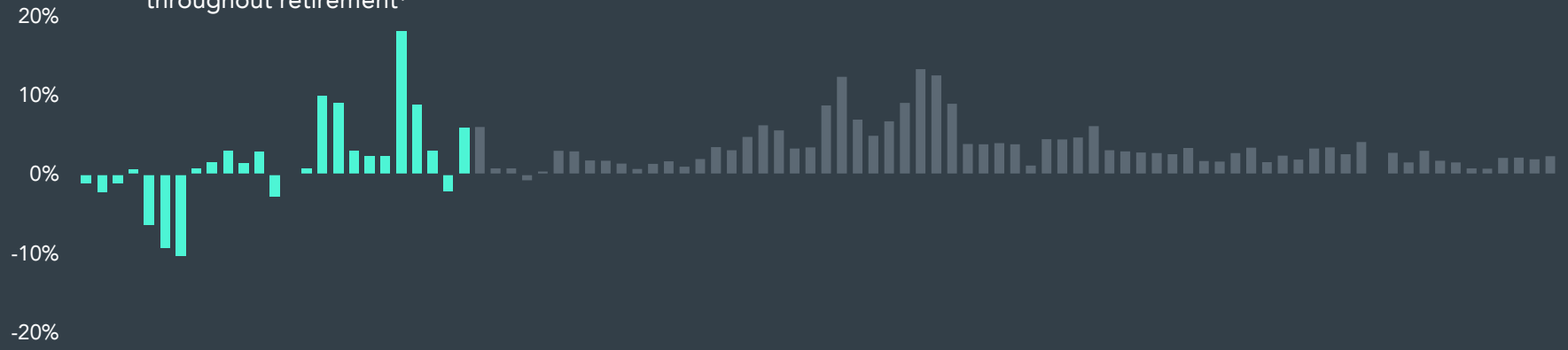
Inflation History: 1926–2019

US CPI

RETIREMENT: 1926–1950

28%

Reduction in purchasing power throughout retirement[1]



1. A 25-year retirement horizon is assumed. Reduction in purchasing power is the purchasing power at the end of retirement compared to purchasing power initially.
US bills and inflation data from *Stocks, Bonds, Bills, and Inflation Yearbook*, Ibbotson Associates, Chicago. Roger Ibbotson is an Independent Director of Dimensional's US mutual fund board.

Inflation History: 1926–2019

US CPI

RETIREMENT: 1926–1950

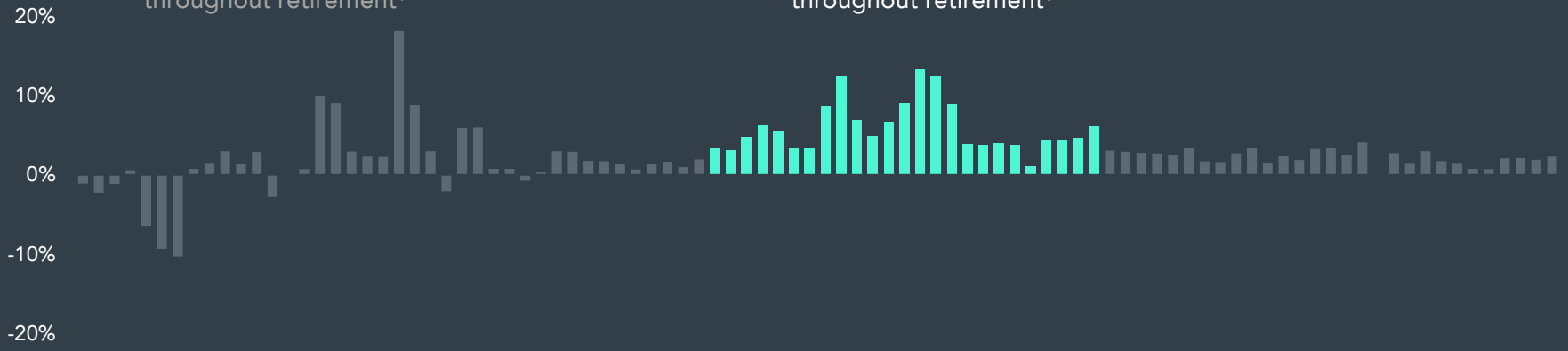
28%

Reduction in purchasing power throughout retirement[1]

RETIREMENT: 1966–1990

76%

Reduction in purchasing power throughout retirement[1]



1. A 25-year retirement horizon is assumed. Reduction in purchasing power is the purchasing power at the end of retirement compared to purchasing power initially.
US bills and inflation data from *Stocks, Bonds, Bills, and Inflation Yearbook*, Ibbotson Associates, Chicago. Roger Ibbotson is an Independent Director of Dimensional's US mutual fund board.

Inflation History: 1926–2019

US CPI

RETIREMENT: 1926–1950

28%

Reduction in purchasing power throughout retirement[1]

RETIREMENT: 1966–1990

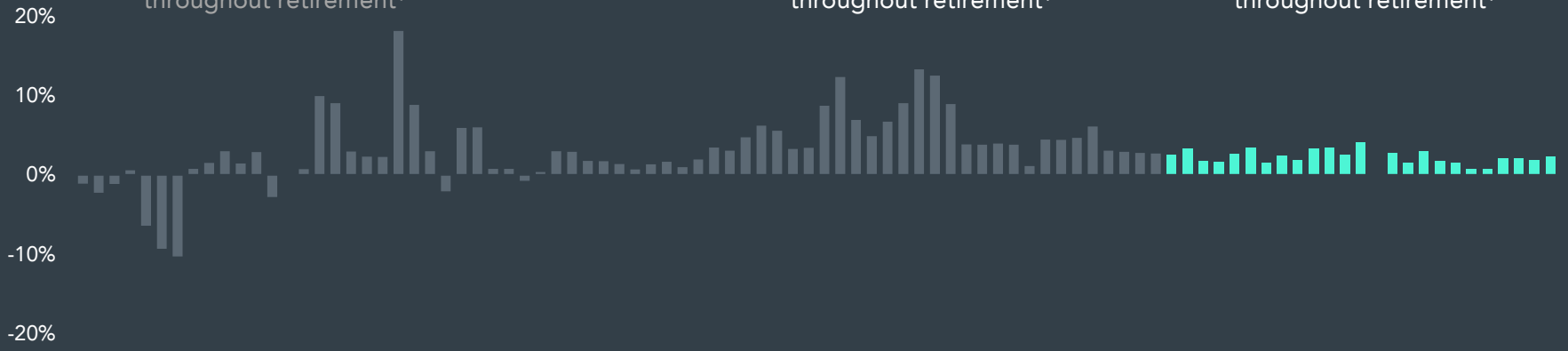
76%

Reduction in purchasing power throughout retirement[1]

RETIREMENT: 1995–2019

42%

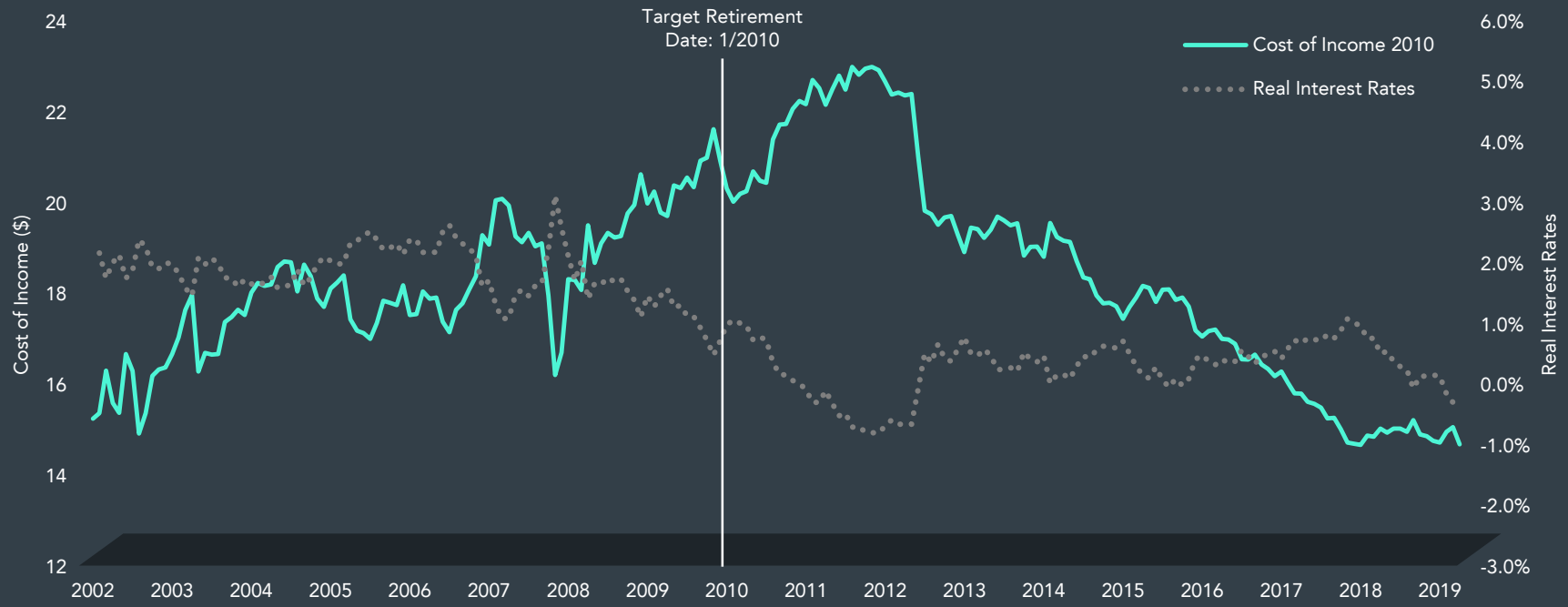
Reduction in purchasing power throughout retirement[1]



1. A 25-year retirement horizon is assumed. Reduction in purchasing power is the purchasing power at the end of retirement compared to purchasing power initially.
US bills and inflation data from *Stocks, Bonds, Bills, and Inflation Yearbook*, Ibbotson Associates, Chicago. Roger Ibbotson is an Independent Director of Dimensional's US mutual fund board.

From Wealth to Income

S&P STRIDE: The Cost of Income Over Time, January 1, 2003–March 31, 2020



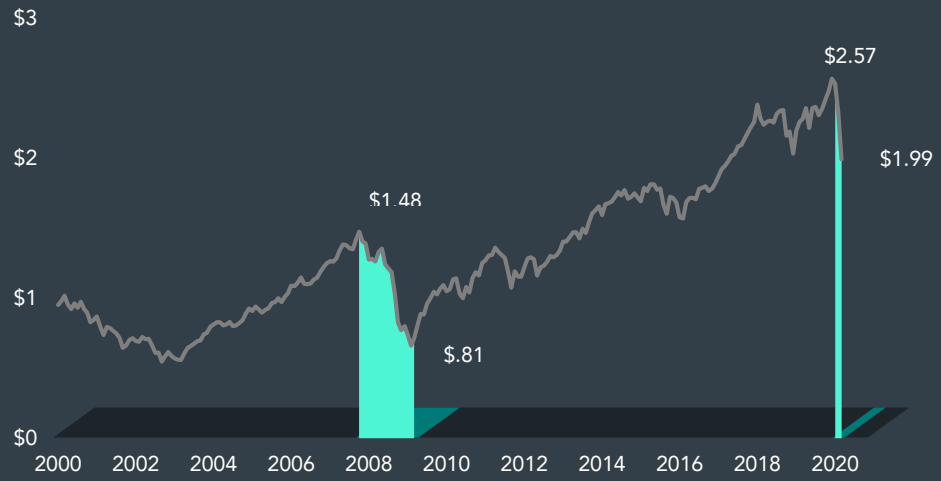
Cost of Income data from S&P Dow Jones Indices. See "Cost of Income Data Appendix" in Appendix.
Real Interest rates represented by the 10-year par yield published by the Federal Reserve System, statistical release H15. Interest Rate data provided by Board of Governors of the Federal Reserve System (US), 10-Year Treasury Inflation-Indexed Security, Constant Maturity [DFII10], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DFII10.

The Global Financial Crisis and COVID 19 Market Volatility

S&P STRIDE 2010 and 2020 Indices vs. Industry Peers

Global Equity Growth

(Jan 2000–Mar 2020)[1]



Peak-to-Trough Loss

Nov 1, 2007–Feb 28, 2009

2010 Industry TDF asset-weighted average[2]	S&P STRIDE 2010 Index
-34%	-15.5%

First Quarter Performance

(Jan 2020–March 2020)

2020 Industry TDF asset-weighted average[3]	S&P STRIDE 2020 Index
-11.3%	-2.4%

Short term performance results should be considered in connection with longer term performance results.

 Performance does not reflect the expenses associated with the management of an actual portfolio. S&P STRIDE 2019 Index was launched on January 11, 2016. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. See "S&P STRIDE Index Series Descriptions and Disclosures" and "S&P Stride Index Series. Hypothetical Performance Disclosure" in Appendix.

1. Global equities based on monthly nominal returns of the MSCI All Country World Index (net div.) from 1/1/2000–3/31/2020. Shaded periods denote losses for global equities between 11/1/2007–12/28/2009 and 1/1/2020–3/31/2020.
2. Fund share classes in the 2010 target date fund Morningstar universe as of 10/31/2007. Each month, from 11/1/2007–2/28/2009, asset-weighted average returns are computed. Peak-to-trough losses are computed using compound returns over the time period. Average 2010 target date fund loss is the weighted-average loss of all 2010 target date funds as computed from Morningstar universe. The weighted-average equity allocation was 57%.
3. Fund share classes in the 2020 target date fund Morningstar universe as of 3/31/2020 calculated similar to the above. The weighted-average equity allocation was 49.7%

S&P STRIDE 2020 Index and Cost of Income

	S&P STRIDE Glide Path 2020 Index	Asset-Weighted 2020 Industry TDF Average
Q1 2020 Return (wealth units,%)	-2.4	-11.3
12/31/2019 Equity Allocation (%)	25.9	49.7
S&P STRIDE 2020 Cost of Income Change (%)	3.9	
Q1 2020 (income units, %)	-6.1	-14.6

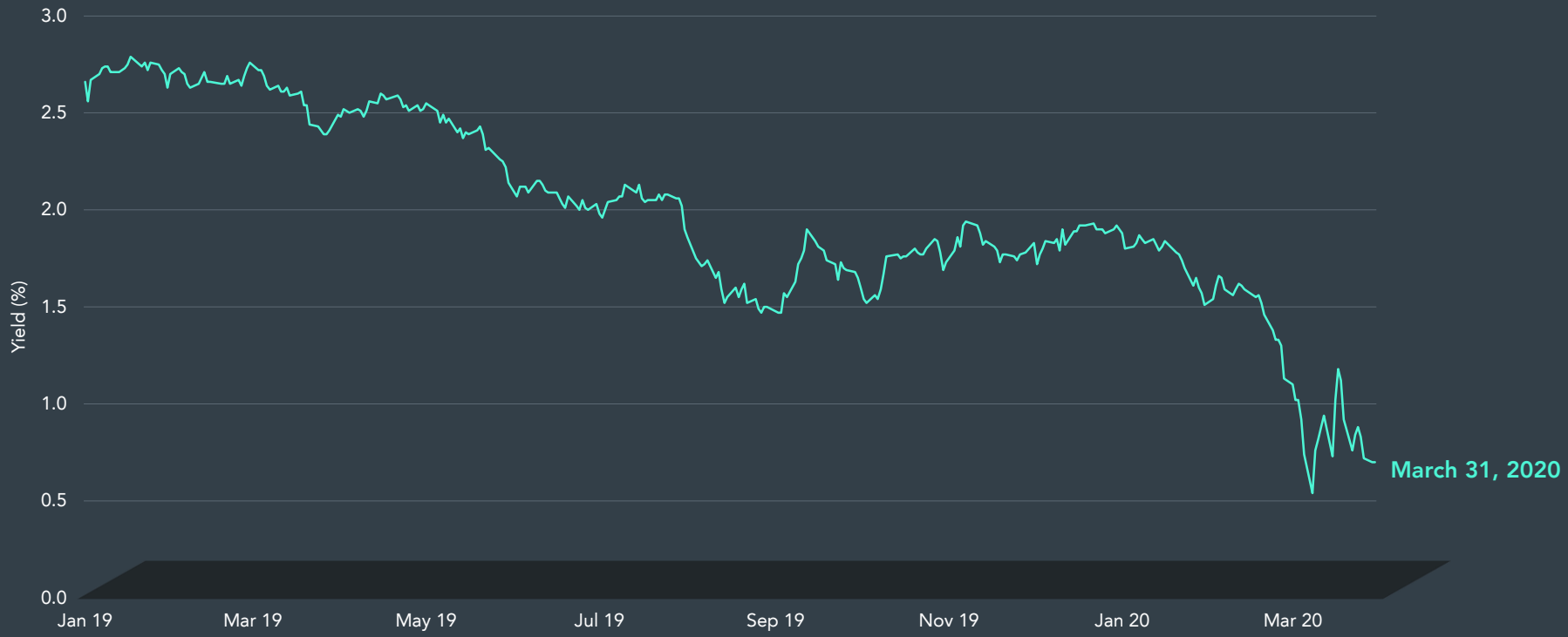
Asset-Weighted Industry Average data is composed of open-end target date 2020 mutual funds using Morningstar data. Short term performance results should be considered in connection with longer term performance results.
In USD. Open-end mutual fund data is from Morningstar.

Performance does not reflect the expenses associated with the management of an actual portfolio. S&P STRIDE 2019 Index was launched on January 11, 2016. See "S&P STRIDE Index Series Descriptions and Disclosures" in Appendix.

Appendix

Interest Rates Have Fallen

10-Year US Treasury Constant Maturity Rate, January 2019–March 2020



Source: Dimensional, using data from the Federal Research Bank of St. Louis.

Interest Rate Changes and Stock Market Returns

Monthly Fama/French Total US Market Index Returns Against Contemporaneous Monthly Bond Yield Changes

Sources: US Treasury data provided by FRED, Federal Reserve Bank of St. Louis. The sample period is from August 1954 to December 2019 for Federal Funds rate, and from February 1962 to December 2019 for the 1-, 5- and 10-year Treasury constant maturity rates. Fama/French Total US Market Index data provided by Ken French. Eugene Fama and Ken French are members of the Board of Directors of the general partner of, and provide consulting services to, Dimensional Fund Advisors LP.

Appendix: Index Descriptions

Dimensional US Small Cap Index was created by Dimensional in March 2007 and is compiled by Dimensional. It represents a market-capitalization-weighted index of securities of the smallest US companies whose market capitalization falls in the lowest 8% of the total market capitalization of the eligible market. The eligible market is composed of securities of US companies traded on the NYSE, NYSE MKT (formerly AMEX), and Nasdaq Global Market. Exclusions: non-US companies, REITs, UITs, and investment companies. From January 1975 to the present, the index excludes companies with the lowest profitability and highest relative price within the small cap universe. The index also excludes those companies with the highest asset growth within the small cap universe. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Asset growth is defined as change in total assets from the prior fiscal year to current fiscal year. Source: CRSP and Compustat. The index monthly returns are computed as the simple average of the monthly returns of 12 subindices, each one reconstituted once a year at the end of a different month of the year. The calculation methodology for the Dimensional US Small Cap Index was amended on January 1, 2014, to include profitability as a factor in selecting securities for inclusion in the index.

Dimensional International Small Cap Index was created by Dimensional in April 2008 and is compiled by Dimensional. July 1981–December 1993: It Includes non-US developed securities in the bottom 10% of market capitalization in each eligible country. All securities are market capitalization weighted. Each country is capped at 50%. Rebalanced semiannually. January 1994–present: Market-capitalization-weighted index of small company securities in the eligible markets, excluding those with the lowest profitability and highest relative price within their country's small cap universe. The index also excludes those companies with the highest asset growth within their country's small cap universe. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Asset growth is defined as change in total assets from the prior fiscal year to current fiscal year. The index monthly returns are computed as the simple average of the monthly returns of four subindices, each one reconstituted once a year at the end of a different quarter of the year. Prior to July 1981, the index is 50% UK and 50% Japan. The calculation methodology for the Dimensional International Small Cap Index was amended on January 1, 2014, to include profitability as a factor in selecting securities for inclusion in the index.

Dimensional International Market Index is compiled by Dimensional from Bloomberg data. Market capitalization-weighted index of all securities in the eligible markets. The index monthly returns are computed as the simple average of the monthly returns of four sub-indices, each one reconstituted once a year at the end of each quarter of the year. Maximum index weight of any one company is capped at 5%. Countries currently included are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and United Kingdom. Exclusions: REITs and Investment Companies. The index has been retrospectively calculated by Dimensional Fund Advisors and did not exist prior to April 2008.

Dimensional Emerging Markets Small Index was created by Dimensional in April 2008 and is compiled by Dimensional. January 1989–December 1993: Fama/French Emerging Markets Small Cap Index. January 1994–present: Dimensional Emerging Markets Small Cap Index composition: Market-capitalization-weighted index of small company securities in the eligible markets, excluding those with the lowest profitability and highest relative price within their country's small cap universe. The index also excludes those companies with the highest asset growth within their country's small cap universe. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Asset growth is defined as change in total assets from the prior fiscal year to current fiscal year. The index monthly returns are computed as the simple average of the monthly returns of four subindices, each one reconstituted once a year at the end of a different quarter of the year. Source: Bloomberg. The calculation methodology for the Dimensional Emerging Markets Small Cap Index was amended on January 1, 2014, to include profitability as a factor in selecting securities for inclusion in the index.

The Dimensional Indices have been retrospectively calculated by Dimensional Fund Advisors LP and did not exist prior to their index inception dates. Accordingly, results shown during the periods prior to each index's index inception date do not represent actual returns of the index. Other periods selected may have different results, including losses. Backtested index performance is hypothetical and is provided for informational purposes only to indicate historical performance had the index been calculated over the relevant time periods. Backtested performance results assume the reinvestment of dividends and capital gains.

Appendix: Index Descriptions

Fama/French Total US Market Research Index: July 1926–present: Fama/French Total US Market Research Factor + One-Month US Treasury Bills. Source: Ken French Website.

Fama/French US Value Research Index: Provided by Fama/French from CRSP securities data. Includes the lower 30% in price-to-book of NYSE securities (plus NYSE Amex equivalents since July 1962 and Nasdaq equivalents since 1973).

Fama/French US Growth Research Index: Provided by Fama/French from CRSP securities data. Includes the higher 30% in price-to-book of NYSE securities (plus NYSE Amex equivalents since July 1962 and Nasdaq equivalents since 1973).

Fama/French US High Profitability Index: July 1963–present: Fama/French US High Profitability Index. Courtesy of Fama/French from CRSP and Compustat securities data. Includes all stocks in the upper 30% operating profitability range of NYSE eligible firms; rebalanced annually in June. OP for June of year t is annual revenues minus cost of goods sold, interest expense, and selling, general, and administrative expenses divided by book equity for the last fiscal year end in t-1. Fama/French and multifactor data provided by Fama/French.

Fama/French US Low Profitability Index: July 1963–present: Fama/French US Low Profitability Index. Courtesy of Fama/French from CRSP and Compustat securities data. Includes all stocks in the lower 30% operating profitability range of NYSE eligible firms; rebalanced annually in June. OP for June of year t is annual revenues minus cost of goods sold, interest expense, and selling, general, and administrative expenses divided by book equity for the last fiscal year end in t-1. Fama/French and multifactor data provided by Fama/French.

Fama/French International Market Index: January 1975–present: Fama/French International Market Index. Source: Ken French website. Simulated from MSCI and Bloomberg data.

Fama/French International Value Index: January 1975–present: Fama/French International Value Index. Simulated strategy of international developed countries with securities in the lower 30% price-to-book range. Source: Ken French website. Simulated from MSCI and Bloomberg data.

Fama/French International Growth Index: January 1975–present: Fama/French International Growth Index. Simulated strategy of international developed countries with securities in the higher 30% price-to-book range. Source: Ken French website. Simulated from MSCI and Bloomberg data.

Fama/French International High Profitability Index: July 1990–present: Fama/French International High Profitability Index. Courtesy of Fama/French from Bloomberg securities data. Includes stocks in the upper 30% operating profitability range in each region; companies weighted by float-adjusted market cap; rebalanced annually in June. OP for June of year t is annual revenues minus cost of goods sold, interest expense, and selling, general, and administrative expenses divided by book equity for the last fiscal year end in t-1. Fama/French and multifactor data provided by Fama/French.

Fama/French International Low Profitability Index: July 1990–present: Courtesy of Fama/French from Bloomberg securities data. Includes stocks in the lower 30% operating profitability range in each region; companies weighted by float-adjusted market cap; rebalanced annually in June. OP for June of year t is annual revenues minus cost of goods sold, interest expense, and selling, general, and administrative expenses divided by book equity for the last fiscal year end in t-1. Fama/French and multifactor data provided by Fama/French.

Results shown during periods prior to each index's index inception date do not represent actual returns of the respective index. Other periods selected may have different results, including losses. Backtested index performance is hypothetical and is provided for informational purposes only to indicate historical performance had the index been calculated over the relevant time periods. Backtested performance results assume the reinvestment of dividends and capital gains. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Eugene Fama and Ken French are members of the Board of Directors of the general partner of, and provide consulting services to, Dimensional Fund Advisors LP.

Appendix: Index Descriptions

Fama/French Emerging Markets Index: July 1989–present: Fama/French Emerging Markets Index. Courtesy of Fama/French from Bloomberg and IFC securities data. Companies weighted by float-adjusted market cap; rebalanced annually in June. Fama/French and multifactor data provided by Fama/French.

Fama/French Emerging Markets Value Index: July 1989–present: Fama/French Emerging Markets Value Index. Courtesy of Fama/French from Bloomberg and IFC securities data. Includes stocks in the upper 30% book-to-market range in each country; companies weighted by float-adjusted market cap; rebalanced annually in June. Fama/French and multifactor data provided by Fama/French.

Fama/French Emerging Markets Growth Index: July 1989–present: Fama/French Emerging Markets Growth Index. Courtesy of Fama/French from Bloomberg and IFC securities data. Includes stocks in the bottom 30% book-to-market range in each country; companies weighted by float-adjusted market cap; rebalanced annually in June. Fama/French and multifactor data provided by Fama/French.

Fama/French Emerging Markets High Profitability Index: July 1991–present: Fama/French Emerging Markets High Profitability Index. Courtesy of Fama/French from Bloomberg and IFC securities data. Includes stocks in the upper 30% operating profitability range in each country; companies weighted by float-adjusted market cap; rebalanced annually in June. OP for June of year t is annual revenues minus cost of goods sold, interest expense, and selling, general, and administrative expenses divided by book equity for the last fiscal year end in t-1. Fama/French and multifactor data provided by Fama/French.

Fama/French Emerging Markets Low Profitability Index: July 1991–present: Fama/French Emerging Markets Low Profitability Index. Courtesy of Fama/French from Bloomberg and IFC securities data. Includes stocks in the lower 30% operating profitability range in each country; companies weighted by float-adjusted market cap; rebalanced annually in June. OP for June of year t is annual revenues minus cost of goods sold, interest expense, and selling, general, and administrative expenses divided by book equity for the last fiscal year end in t-1. Fama/French and multifactor data provided by Fama/French.

Results shown during periods prior to each index's index inception date do not represent actual returns of the respective index. Other periods selected may have different results, including losses. Backtested index performance is hypothetical and is provided for informational purposes only to indicate historical performance had the index been calculated over the relevant time periods. Backtested performance results assume the reinvestment of dividends and capital gains. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. Eugene Fama and Ken French are members of the Board of Directors of the general partner of, and provide consulting services to, Dimensional Fund Advisors LP.

Cost of Income Data Appendix

Cost of income (or Generalized Retirement Income Liability "GRIL") is calculated by S&P using available market and index data and is defined as the equivalent of an inflation-adjusted stream of cash flows equal to USD 1 per year that starts at the target retirement date and ends 25 years later. Cost of income is subject to certain limitations including the use of implied yields for maturities unavailable at the time of calculation. Prior to January 11, 2016, the cost of income results were calculated retroactively and with the benefit of hindsight. Estimated retirement income and cost of income results change with time and are never guaranteed. Some of the underlying index data used in the cost of income calculation is derived from backtested performance for period prior to the index launch.

Estimated Annual Retirement Income results are hypothetical, are not representative of actual investments or actual strategies managed by Dimensional.

Actual Retirement Income will vary.

Please refer to the methodology paper for the S&P STRIDE Index Series available at http://spindices.com/documents/methodologies/methodology- sp-stride-index-series.pdf for more details about the cost of income methodology.

S&P STRIDE Index Series Description and Disclosures

In response to the need for income-focused benchmarks within defined contribution plans, on January 11, 2016, S&P Dow Jones Indices (S&P DJI) launched the S&P Shift to Retirement Income and Decumulation (STRIDE) Index Series.[1]

The series features multi-asset class income-based indices tied to target retirement dates. Dimensional Fund Advisors worked collaboratively with S&P DJI to develop the glide path, inflation hedging, and duration hedging techniques used in these indices.

INDEX SERIES DESCRIPTION

The S&P Shift to Retirement Income and Decumulation (STRIDE) Index Series comprises 12 multi-asset class indices, each corresponding to a particular target retirement date. The asset allocation for each index in the series is based on a predetermined lifecycle glide-path. Each index is fully investable, with varying levels of exposure to equities, nominal fixed income securities, and inflation-adjusted bonds.

The S&P STRIDE Index Series represents a strategy that builds a portfolio of assets to support a hedged stream of inflation-adjusted retirement income. The indices also provide a new framework for benchmarking target date funds that focus on delivering similar results. The indices are individually composed of asset class indices (an index of indices), and the index series includes target date years in five-year increments (vintages). Each index vintage covers a full lifecycle of accumulation (during what are generally considered working years), and decumulation in retirement years. Beginning 20 years before each target date, the indices gradually re-allocate some of their weight from accumulation constituents to inflation-adjusted income constituents. This process is analogous to dollar cost averaging into income producing assets. The income portion consists of a duration-hedged combination of Treasury Inflation-Protected Securities (TIPS) indices. The duration of the combined TIPS indices is matched monthly to the duration of a hypothetical retirement income cash flow stream that begins at the target date and lasts for 25 years.

1. "Introducing the S&P STRIDE Index Series," S&P Dow Jones Indices, January 2016.

FOR MORE INFORMATION

General: http://us.spindices.com/index-family/multi-asset/sp-stride

Index Series Methodology: http://us.spindices.com/documents/methodologies/methodology-sp-stride-index-series.pdf?force_download=true

Example and more data: http://us.spindices.com/indices/multi-asset/sp-stride-glide-path-2005-index-total-return

Dimensional Fund Advisors LP receives compensation from S&P Dow Jones Indices in connection with licensing rights to S&P STRIDE Indices.

S&P STRIDE Index Series Hypothetical Performance Disclosure

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S&P STRIDE (the "index") was launched on January 11, 2016. All information presented prior to the launch date is backtested. Backtested performance is not actual performance, but is hypothetical. The backtest calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spdji.com. It is not possible to invest directly in an index.

S&P Dow Jones Indices defines various dates to assist clients in providing transparency on their products. The First Value Date is the first day for which there is a calculated value (either live or backtested) for a given index. The Base Date is the date at which the index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered backtested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indicates introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the index's public release date.

Past performance of the index is not an indication of future results. Prospective application of the methodology used to construct the index may not result in performance commensurate with the backtest returns shown. The backtest period does not necessarily correspond to the entire available history of the index. Please refer to the methodology paper for the index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using backtested information is that the backtested calculation is generally prepared with the benefit of hindsight. Backtested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been, accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices LLC maintains the index and calculates the index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or investment funds that are intended to track the performance of the index. The imposition of these fees and charges would cause actual and backtested performance of the securities/fund to be lower than the index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).