
Building Global Asset Allocation Portfolios

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Determining an appropriate asset allocation is a critical step in helping investors achieve their long-term investment goals. However, there is no single right answer when it comes to asset allocation. Different asset allocations may be appropriate for different investors, depending on their needs, sensitivities, and risk tolerances. Some general guidelines are useful. For example, the portfolio's return potential should be supported by robust theoretical and empirical evidence. Further, portfolios should be well diversified and managed in a cost-effective manner. Using Dimensional's Global Allocation Portfolios as case studies, this paper illustrates how Dimensional builds asset allocation solutions that incorporate these principles while providing choices to meet varying client needs.

Dimensional's Global Allocation Portfolios

Dimensional manages Global Allocation Portfolios designed to help investors with different preferences and risk tolerances meet their long-term goals. These portfolios leverage Dimensional's systematic, value-added approach, offering broad diversification, emphasis on stocks and bonds with higher expected returns, and flexible, cost-conscious implementation. Introduced in December 2003, they have live track records spanning over 20 years. As shown in **Exhibit 1**, from inception through September 30, 2024, all three portfolios outperformed their respective benchmarks.

EXHIBIT 1: Portfolio Performance

Annualized Returns for Periods ending September 30, 2024

	YTD	1 Year	3 Years	5 Years	10 Years	Since January 2004
DFA Global Allocation 25/75 Portfolio	7.41%	12.24%	3.06%	4.54%	3.96%	4.37%
Global 25/75 Composite Index (SP/ICE)	7.34%	12.30%	3.47%	4.40%	3.68%	3.91%
DFA Global Allocation 60/40 Portfolio	12.06%	20.93%	5.58%	8.57%	6.91%	6.75%
Global 60/40 Composite Index (SP/ICE)	12.10%	20.68%	5.33%	7.94%	6.32%	6.10%
DFA Global Equity Portfolio	17.29%	30.35%	8.99%	12.93%	9.90%	9.01%
MSCI All Country World IMI Index (net div.)	17.83%	30.96%	7.44%	11.87%	9.20%	8.25%

Performance data shown represents past performance and is no guarantee of future results. Current performance may be higher or lower than performance shown. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost.

To obtain the most current month-end performance data, visit dimensional.com

- 1. The Global 25/75 Composite Index (SP/ICE) is an unmanaged hypothetical index composed of 25% S&P Global BMI Index (net dividends) and 75% ICE BofA 1-3 Year Global Government Index (hedged to USD).*
- 2. The Global 60/40 Composite Index (SP/ICE) is an unmanaged hypothetical index composed of 60% S&P Global BMI Index (net dividends) and 40% ICE BofA 1-3 Year Global Government Index (hedged to USD).*

Performance includes reinvestment of dividends and other earnings. See "Appendix: Standardized Performance Data and Disclosures" to learn how to obtain complete information on performance objectives, risks, advisory fees, and expenses of Dimensional's funds. Indices are not available for direct investment. MSCI data © 2024, all rights reserved. FTSE fixed income indices © 2024 FTSE Fixed Income LLC. All rights reserved.

Exhibit 2 illustrates the composition of Dimensional's Global Allocation Portfolios. Each provides diversified exposure to stocks and bonds by drawing from numerous underlying funds that cover a wide range of markets and asset classes. The underlying funds are combined using a thoughtful and disciplined approach to asset allocation. Important considerations include the split between equity and fixed income, the allocation across countries and regions, the degree of emphasis on higher expected returns across stocks and bonds, and the approach to hedging currencies.

EXHIBIT 2: Dimensional's Global Allocation Portfolios

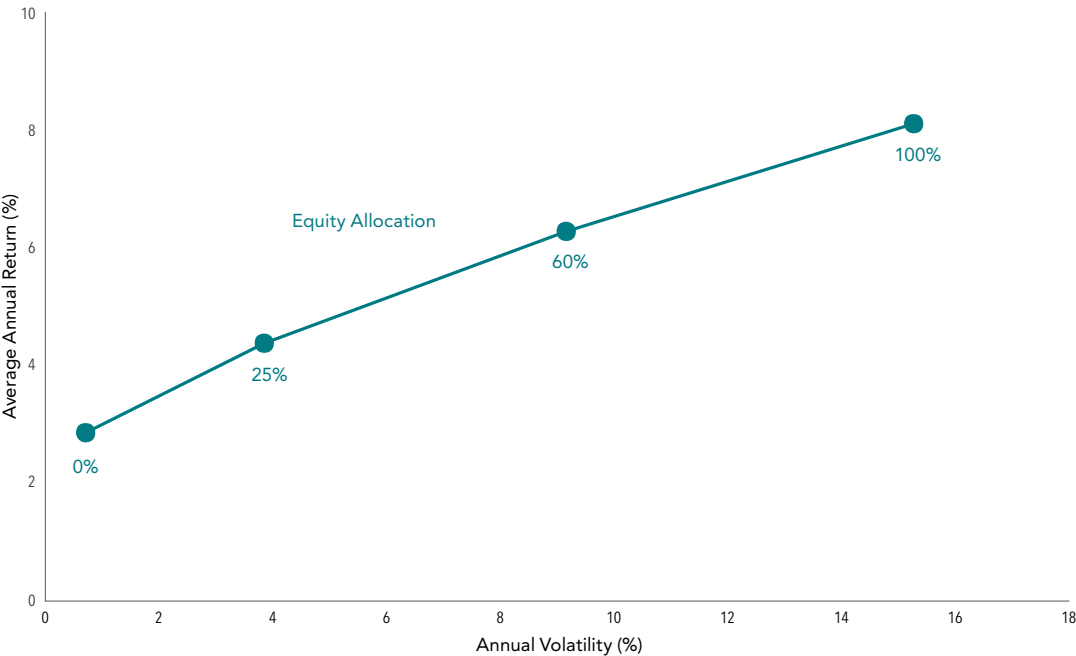


As of December 31, 2023. Holdings are subject to change.

Allocating Between Equity and Fixed Income

Dimensional’s Global Allocation Portfolios offer three distinct combinations of equities and fixed income: a portfolio invested 100% in stocks, a 60/40 balanced blend of stocks and bonds, and a 25/75 blend more heavily weighted in fixed income. The split between equities and fixed income is one of the most effective tools an investor can use to balance expected returns and risk. **Exhibit 3** shows the historical average annual return and volatility of portfolios that combine one-month Treasury bills and global equities from 1988 to 2023. Different investors may hold portfolios that fall anywhere along this spectrum of equity allocations.

EXHIBIT 3: Average Annual Return and Volatility of Portfolios Containing One-Month US Treasury Bills and Global Equities, 1988–2023



Past performance is not a guarantee of future results. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio. Equities are represented by the MSCI All Country World Index (gross div.). MSCI data © MSCI 2024, all rights reserved. Bloomberg data provided by Bloomberg.

The three Global Allocation Portfolios are designed to satisfy the asset allocation needs for several broad investor cohorts. The Global Equity Portfolio, which is an all-equity option, may be suitable as a stand-alone solution for investors who are focused on growth of wealth and are willing to tolerate higher volatility for potentially greater returns. At the other end of the spectrum, the Global Allocation 25/75 (the 25/75 Portfolio) may be more appropriate for investors who prioritize capital preservation or are highly sensitive to volatility but still seek some capital appreciation. The Global Allocation 60/40 (the 60/40 Portfolio) represents a balance between the two. **Exhibit 4** compares historical annualized returns and standard deviations for the three Global Allocation Portfolios.

EXHIBIT 4: Historical Returns and Volatility of the Global Allocation Portfolios

Since portfolio first full month ending September 30, 2024¹

	Annualized Return (%)	Annualized Standard Deviation (%)
Global Allocation 25/75 Portfolio	4.4%	4.7%
Global Allocation 60/40 Portfolio	6.8%	10.4%
Global Equity Portfolio	9.0%	16.5%

1. Portfolio first full month is 1/2004.

These portfolios can be blended together or with other funds to tailor allocations that address the needs and sensitivities of many investors. For example, investors may combine the Global Equity Portfolio with the 60/40 Portfolio to target equity allocations between 60% and 100% or blend the 60/40 Portfolio with the 25/75 Portfolio to target equity allocations between 25% and 60%. In addition to customizing the equity versus fixed income split, investors may have needs or preferences for specific types of equities or fixed income. The Global Allocation Portfolios can be combined with individual funds to customize the asset allocation within equities and fixed income.

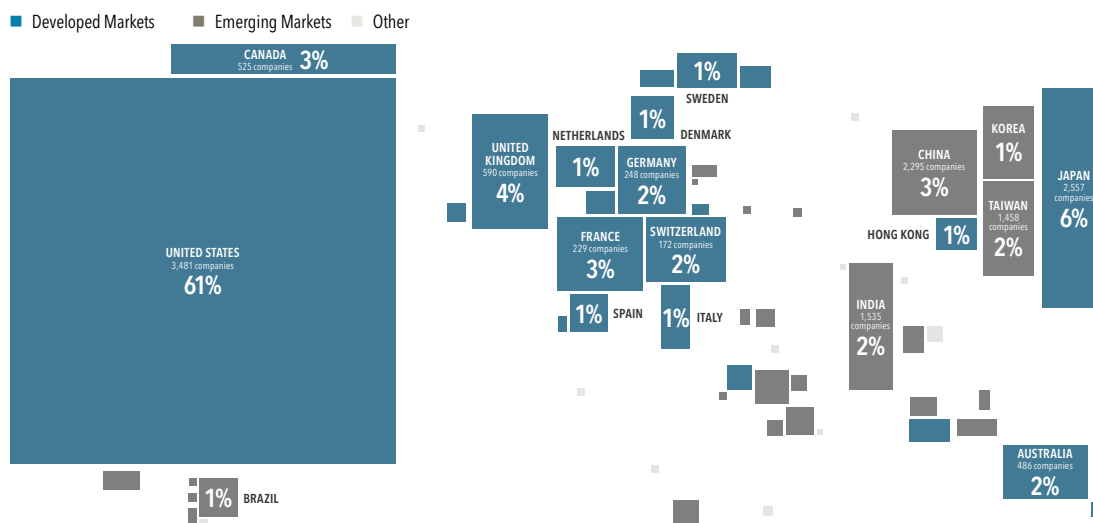
Asset allocation decisions extend beyond the broad split between equity and fixed income. Within equity markets, for example, investors must decide the appropriate allocation across regions and markets.

The Global Allocation Portfolios offer broad exposure to global stock markets. Dimensional believes that global diversification is an effective way to mitigate country-specific risks. It can also meaningfully expand an investor's opportunity set. From the standpoint of a US investor, for example, non-US developed and emerging markets together represented 39% of global stock markets as of the end of December 2023 and included thousands of listed companies.

A logical starting point for allocating across global stock markets is market capitalization weights. The global market portfolio holds all securities, and therefore all countries, according to their market capitalization weights. It is well diversified and incorporates the aggregate forward-looking expectations of all market participants. Weighting countries by market capitalization also lends itself to efficiency from a trading and turnover standpoint, as country weights linked to market capitalization naturally adjust as market prices change. **Exhibit 5** shows the country weights as of the end of 2023 in the global market portfolio.

Percent of world market capitalization as of December 31, 2023

Percent of world market capitalization as of December 31, 2023



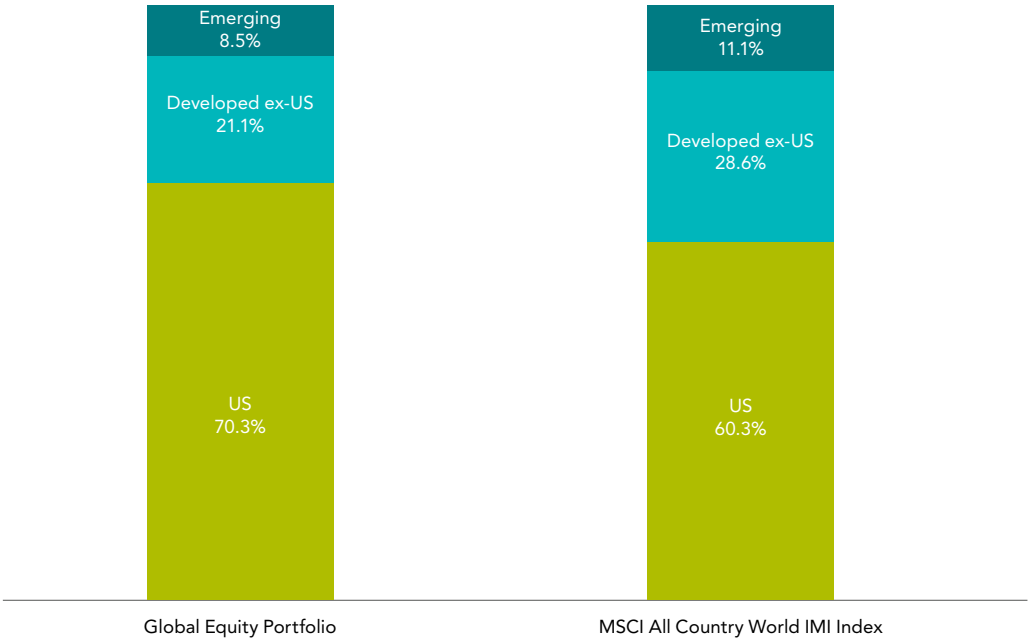
Diversification neither assures a profit nor guarantees against loss in a declining market. Market cap data is free-float adjusted and meets minimum liquidity and listing requirements. Dimensional makes case-by-case determinations about the suitability of investing in each emerging market, making considerations that include local market accessibility, government stability, and property rights before making investments. China A-shares that are available for foreign investors through the Hong Kong Stock Connect program are included in China. 30% foreign ownership limit and 25% inclusion factor are applied to China A-shares. Many nations not displayed. Totals may not equal 100% due to rounding. For educational purposes; should not be used as investment advice. Data provided by Bloomberg.

Free float: In general, describes the number of publicly traded shares of a company.

Investors all around the world tend to overweight their home markets in their portfolios relative to market capitalization weights. Market frictions associated with investing abroad mean that some level of home bias may make sense. For example, foreign dividend tax withholdings can create a performance drag on international investments for tax-deferred investors.

The Global Allocation portfolios start with market capitalization weights but incorporate some home bias, while maintaining broad global diversification across more than 40 countries. US equities are overweighted in the portfolio relative to the US weight in the world market, and this allocation will evolve over time as the US market capitalization weight changes to maintain a relative, rather than absolute, level of home bias. For example, in the Global Equity Portfolio, the weight in US equities was 70.3% as of December 31, 2023. By comparison, the US weight was 60.3% in the MSCI All Country World IMI Index, as shown in Exhibit 6.

EXHIBIT 6: Regional Weights
Global Equity Portfolio vs. MSCI All Country World IMI Index as of December 31, 2023



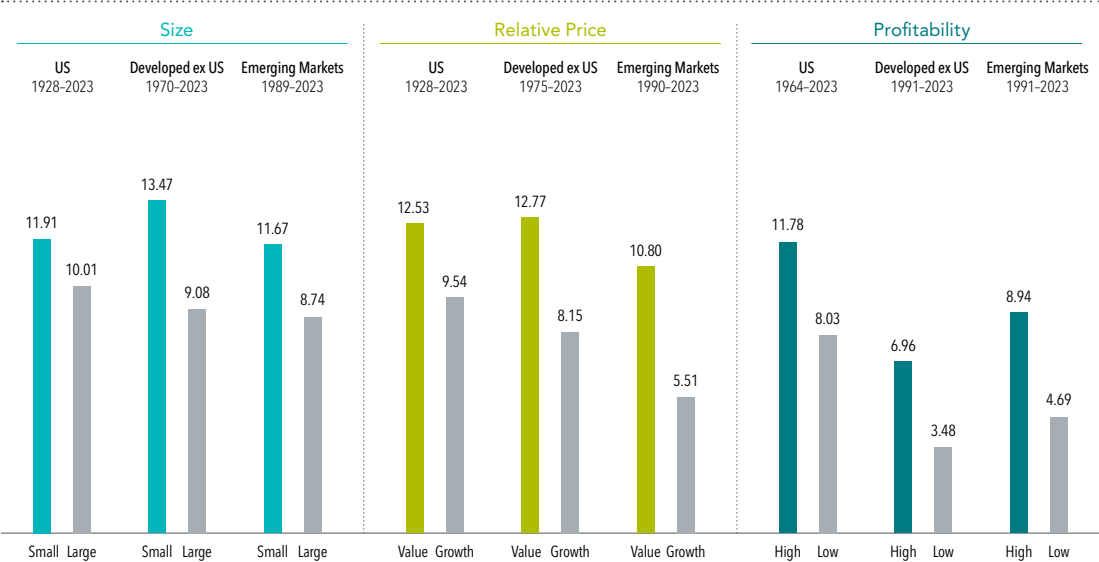
Holdings subject to change. Totals may not equal 100% due to rounding. MSCI data © 2024, all rights reserved.

Emphasis on Higher Expected Returns

Decades of theoretical and empirical research have provided investors with valuable insights about drivers of expected returns in equity markets. Valuation theory provides a framework, linking expectations about a firm’s future cash flows to its current value through a discount rate (or, equivalently, the expected return on the stock.) Using the valuation framework, we can expect small capitalization stocks to outperform large capitalization stocks, low relative price stocks to outperform high relative price stocks, and stocks with higher profitability to outperform low profitability stocks. **Exhibit 7** shows that in markets around the world, stocks with these characteristics have exhibited higher average returns.

EXHIBIT 7: Dimensions of Expected Returns

Illustrative index performance: annualized compound returns (%) in US dollars



Past performance is no guarantee of future results. Actual returns may be lower. Indices are not available for direct investment; therefore their performance does not reflect the expenses associated with the management of an actual portfolio. In USD. Bars are represented by the following indices, in order. Dimensional US Small Cap Index, S&P 500, Dimensional International Small Cap Index, MSCI World ex USE Index (gross div.), Dimensional Emerging Markets Small Index, MSCI Emerging Markets Index (gross div.), Fama/French US Value Research Index, Fama/French US Growth Research Index, Fama/French International Value Index, Fama/French International Growth Index, Fama/French Emerging Markets Value Index, Fama/French Emerging Marketing Growth Index, Fama/French US High Profitability Index, Fama/French US Low Profitability Index, Fama/French International High Profitability Index, Fama/French International Low Profitability Index, Fama/French Emerging Markets High Profitability Index, Fama/French Emerging Markets Low Profitability Index. S&P data © 2024 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. MSCI data © 2024, all rights reserved. Dimensional and Fama/French Indices represent academic concepts that may be used in portfolio construction and are not available for direct investment or for use as a benchmark. See "Appendix: Index Descriptions" for descriptions on Dimensional and Fama/French index data.

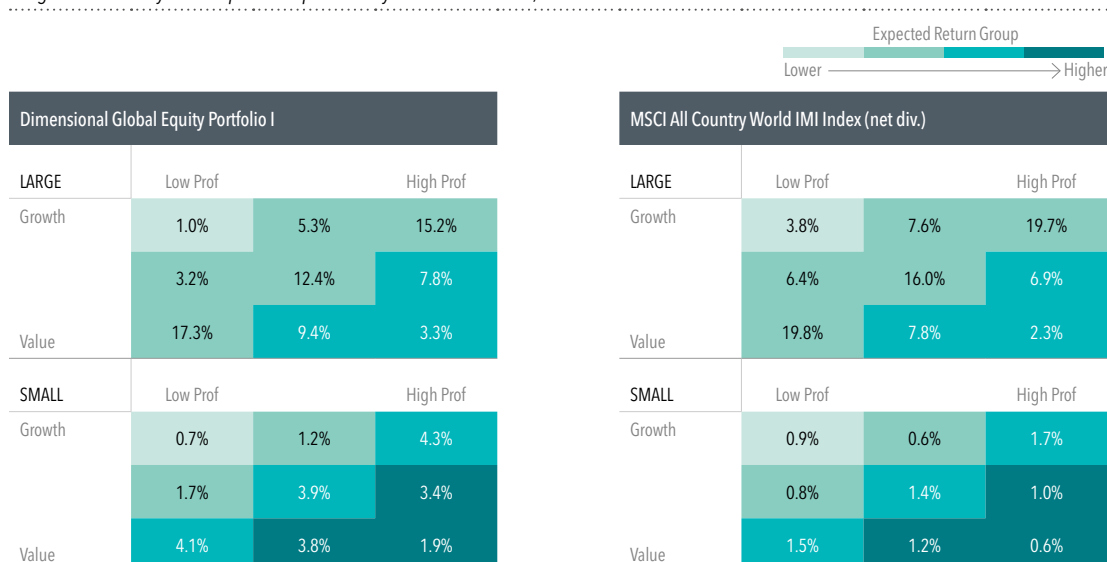
Well-structured portfolios that pursue premiums associated with small market capitalization, low relative price, and high profitability have higher expected returns than the market portfolio. The equity portions of the Global Allocation Portfolios consist of Dimensional core equity portfolios that invest in the US, developed markets outside the US, and emerging markets. Together, these core equity funds create a global total market solution with an integrated emphasis on stocks with higher expected returns.

By illustration, Exhibit 8 shows the weight of the Global Equity Portfolio in areas of the market defined by their size, relative price, and profitability characteristics. The shading of the squares is darker in parts of the market with higher expected returns. For example, the darkest squares are those that represent small capitalization stocks with higher profitability and more of a value orientation. Compared to the market-capitalization-weighted benchmark shown, the portfolio intentionally tilts toward parts of the market with higher expected returns and away from areas with lower expected returns.

Dimensional also seeks to add value in the Global Allocation Portfolios through a flexible, cost-conscious portfolio management approach. This daily process allows portfolio managers to consider multiple inputs, such as market liquidity, potential trading costs, and short-term drivers of return while maintaining the portfolio's intended characteristics.

EXHIBIT 8: Positioned for Higher Expected Returns

Weight Allocation by relative price and profitability as of December 31, 2023



Actual returns may be different than expected returns. There is no guarantee that the strategy will be successful. Expected return groups used in this analysis determined by Dimensional and consider size, value, and profitability jointly in determining expected return groups across the market. Indices are not available for direct investment. MSCI data® 2024, all rights reserved. Source: Dimensional using Dimensional data. Size, Relative Price, and Profitability defined by Dimensional as follows. In the US, Large Cap is defined as approximately the largest 90% of market capitalization and Small Cap the smallest 10%. In developed markets except the US, Large Cap is defined as approximately the largest 87.5% of market capitalization in each country or region and Small Cap the smallest 12.5%. In emerging markets, Large Cap is defined as approximately the largest 85% of market capitalization in each country or region and Small Cap the smallest 15%. Designations between value and growth are based on price-to-book ratios. Value is defined as the 33% of market cap with the lowest price-to-book ratios by size category and growth is the highest 33%. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. High profitability is defined as the 33% of market cap with the highest profitability by size category and low profitability is the lowest 33%. REITs and Utilities, identified by GICS code, and stocks without size, relative price, or profitability metrics are excluded. Weights may not total 100% due to rounding. Holdings are subject to change. The criteria Dimensional uses for assessing securities on company size, relative price, and profitability are subject to change from time to time and may differ from the criteria a third-party manager may use.

Investors should consider balancing the pursuit of higher expected returns with their tolerance for deviations from market capitalization weights. An important consideration is the risk that the size, value, and profitability premiums will not materialize over the relevant investment period. Although these premiums appear on average in historical data, they can be volatile and at times have experienced long periods of underperformance. History shows that the

individual premiums do not necessarily move in lockstep, so blending multiple premiums in the same portfolio can help smooth the volatility of the individual premiums and thus improve the potential reliability of performance over time.

In addition to integrating multiple premiums, Dimensional believes that controlled tilts and broad diversification across countries, stocks, and sectors are important risk controls. The Global Allocation Portfolios focus on equities with higher expected returns while maintaining broad diversification. As of June 2024, the equity portion of these portfolios included over 15,000 securities across 47 countries.

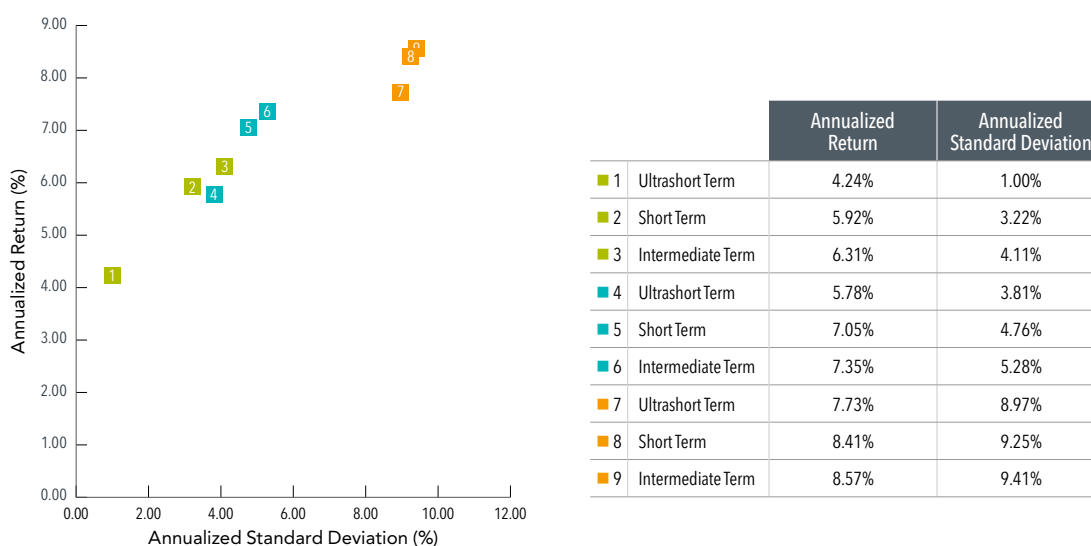
Portfolio volatility is another common risk metric. However, the volatility of well-diversified portfolios that emphasize the size, value, and profitability premiums need not be much higher than the overall market portfolio. For example, the annualized standard deviation of the Global Equity Portfolio was 16.7% vs. 15.9% for the MSCI All Country World IMI Index (net dividends) for the 20 years ending December 31, 2023.

Fixed Income Allocation

Fixed income solutions can be customized to meet a wide range of investor goals. One common use for fixed income is to control overall portfolio volatility. Investors can tailor their fixed income solution to pursue term and credit premiums while staying consistent with a desired portfolio risk profile. Portfolios with large equity allocations can typically afford larger exposures to term and credit risk without significantly impacting the volatility of the portfolio. More risk-averse investors can reduce their equity allocations and take a more conservative approach within fixed income.

Exhibit 9 illustrates the impact of additional term and credit risk on overall portfolio return and volatility. Portfolios in light green are 100% invested in fixed income. Light blue and orange represent portfolios that are invested 75% and 40% in fixed income, respectively, with the remainder in global equities. The fixed income portion of the portfolio is invested in either one-month T-bills (“Ultrashort”), the Bloomberg US Government/Credit Index 1–5 years (“Short Term”), or the Bloomberg Intermediate US Government/Credit Index (“Intermediate Term”).

EXHIBIT 9: Impact of Term and Credit on Strategies Containing 100%, 75%, and 40% Fixed Income, 1976–2023



Equities represented by the MSCI World Index (net div.) from 1976 to 1998 and the MSCI All Country World Index (net div.) from 1999 to 2023. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio. Past performance is not a guarantee of future results. Ultra Short Term is one-month US Treasury bills. Data provided by Morningstar, Inc. Short Term is the Bloomberg US Government/Credit Index 1-5 Years. Intermediate Term is the Bloomberg US Government/Credit Bond Index Intermediate. MSCI data © MSCI 2024, all rights reserved. Bloomberg data provided by Bloomberg.

Riskier fixed income investments can have a large impact on volatility when the fixed income allocation is evaluated in isolation, or in portfolios with large fixed income allocations. For example, the annualized standard deviation of the 100% fixed income portfolio was 1.00% when invested in one-month T-bills, but 4.11% when invested in intermediate-term bonds,

an increase of over four times. However, the volatility impact diminishes substantially in portfolios with larger allocations to equity. In the hypothetical 60/40 Portfolio, the annualized standard deviation only increased from 8.97% to 9.41% when one-month T-bills were replaced by intermediate-term bonds. Meanwhile, annualized returns increased from 7.73% to 8.57%. An increase of 0.44% in volatility to pursue higher returns might be an appealing tradeoff for investors who are already bearing meaningful volatility risk from equities.

Dimensional's 25/75 Portfolio and 60/40 Portfolio illustrate how investors might customize the composition of their fixed income allocations depending on their goals. Both portfolios employ broad diversification as they seek to increase the reliability of outcomes, add flexibility to improve execution, and help reduce single-issuer risk. Both employ a dynamic, market-based approach to target term and credit premiums when it makes sense to do so. However, they seek different levels of term and credit exposure.

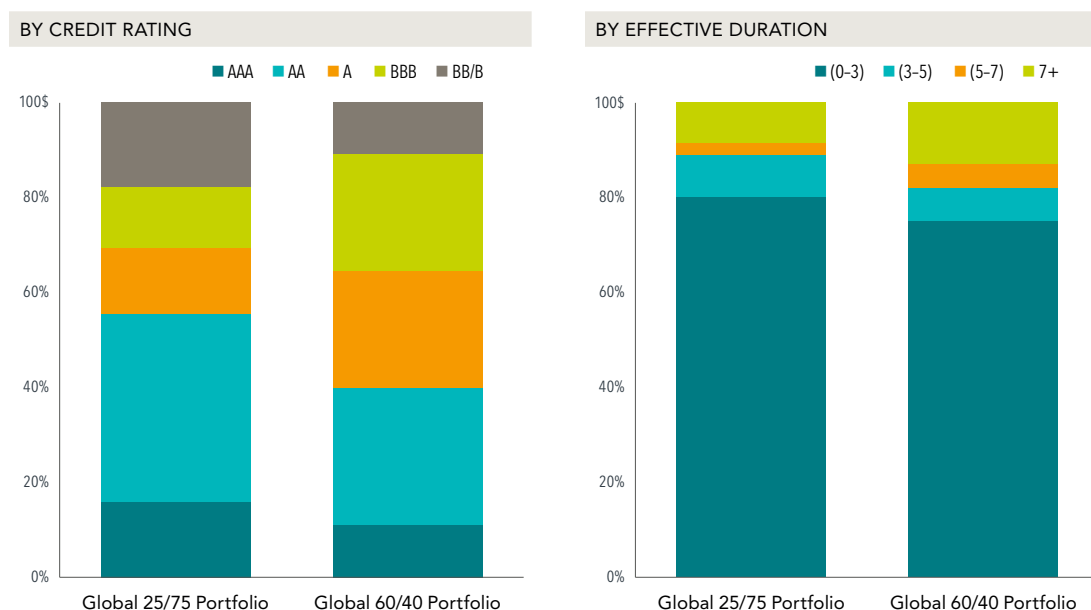
The 25/75 Portfolio is designed to meet the needs of a more conservative investor who may have an overall goal of capital and purchasing power preservation, with some capital appreciation. Given these goals, the composition of its fixed income portion focuses on higher credit quality and constrains the portfolio's duration. The portfolio also includes an allocation to inflation-sensitive securities to help protect against the corrosive effects of inflation.

In comparison, the 60/40 Portfolio, with its higher weight in equities, is designed for investors seeking more capital appreciation. Consistent with this goal, the combination of fixed income funds held by the 60/40 Portfolio may pursue longer duration and a greater allocation to lower credit quality securities than that of the 25/75 Portfolio. This gives the 60/40 Portfolio greater flexibility to target term and credit premiums in both short- and intermediate-grade fixed income. Like the 25/75 Portfolio, the 60/40 Portfolio also has an allocation to inflation-sensitive securities.

Exhibit 10 compares the allocations of the two portfolios by credit and by effective duration. These allocations will vary over time depending on the environment and the opportunity to pursue higher expected returns by taking on additional term or credit exposure.¹ For example, as of the end of 2023, a period when the yield curve in the US was inverted, both portfolios had their largest allocations in bonds with effective durations of less than three years. However, even in this environment, the average maturity of a bond in the 60/40 Portfolio was longer than that in the 25/75 Portfolio, 2.6 years vs. 2.0 years, respectively.

EXHIBIT 10: Global Allocations: Fixed Income Component

As of December 31, 2023



Credit quality is subject to change. Credit ratings do not eliminate market risk. Credit quality is a measure of an issuer's ability to make timely repayments of interest and principal. Rating service Standard & Poor's uses a letter grade to indicate credit quality.

Credit rating agencies Moody's Investor Service, Fitch Ratings, and Standard & Poor's Corporation rate the credit quality of debt issues. For reporting purposes, we generally assign a composite rating based on stated ratings from Nationally Recognized Statistical Ratings Organizations ("NRSROs"). For example, if Moody's, Fitch, and S&P all provide ratings, we assign the median rating. In certain instances, such as Pre-Refunded Municipals and US Treasury and Agency securities, we will assign the internal Dimensional rating. The internal Dimensional rating can only be as high as the highest stated credit rating from an NRSRO.

These examples illustrate how the targeting of term and credit premiums can be tailored for investors who want to customize the overall volatility of their portfolios. However, investors may have other goals for fixed income. For example, short-term, high-quality fixed income can help investors meet capital preservation goals. Investors with tax sensitivities may prefer to hold municipal bond securities. Investors who want to manage specific future liabilities may need a solution that matches the duration of their liabilities. In summary, asset allocation in fixed income should consider the investor's overall investment objective.

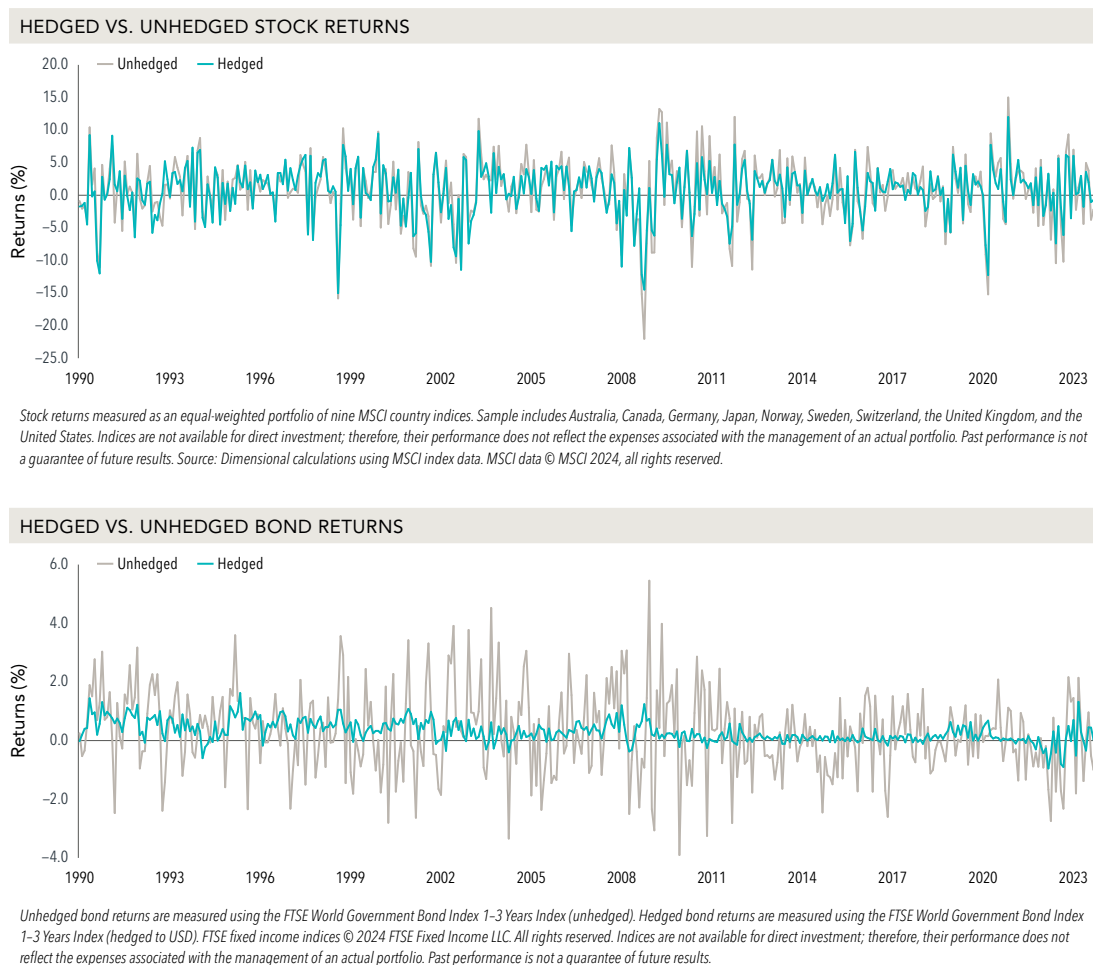
¹ For additional information, see Katie Hendrix, "Dimensional Models: Low Turnover plus Active Implementation" (research paper, Dimensional Fund Advisors, November 2023).

Currency Hedging

The return on global portfolios depends both on the return of the asset and on the return of the currency. How should investors decide if and when to hedge their currency exposure?

One important consideration for the hedging decision is the impact of currency volatility on overall portfolio volatility. The standard deviation of an unhedged equity portfolio is primarily driven by the volatility of equity; thus, unhedged and hedged equity portfolios have similar standard deviations. Conversely, the standard deviation of unhedged fixed income is dominated by currency volatility. Therefore, hedging currencies can meaningfully reduce the volatility in fixed income portfolios. **Exhibit 11** illustrates this result. The top panel shows monthly returns for hedged versus unhedged equities, while the bottom panel shows monthly returns for hedged versus unhedged bonds.

EXHIBIT 11: Impact of Currency Hedging on return Volatility



The equity funds held by the Global Allocation Portfolios are unhedged. Since the volatility of hedged and unhedged equities is similar, this decision does not significantly affect the overall volatility of these portfolios. By contrast, Dimensional hedges currency exposure in most of the fixed income portfolios held by the Global Allocation Portfolios, aligning with the role of fixed income allocations in mitigating overall portfolio volatility.

The primary goal of the 25/75 Portfolio is to provide capital preservation, and therefore the currency exposure of the fixed income allocation is entirely hedged in order to reduce the volatility of the overall portfolio. In comparison, the 60/40 Portfolio is designed to provide more capital appreciation. In keeping with this goal, the portfolio blends fully hedged fixed income funds with the Selectively Hedged Global Fixed Income Portfolio, which may opportunistically hedge certain currency exposures based on information in current currency spot and forward rates. The selective hedging strategy aims to increase expected returns by hedging in markets where the forward currency premium is positive, leaving other exposures unhedged.² The 60/40 Portfolio's volatility is largely driven by its equity allocation, so additional volatility that may result from selectively hedging in a portion of its fixed income allocation does not have a large impact on overall volatility.

Conclusion

Using Dimensional's Global Allocation Portfolios as examples, this paper highlights some of the key considerations that go into building an asset allocation solution. Along with the broad split between equities and fixed income, it is important to consider the specific characteristics within the equity and fixed income allocations, such as exposure to drivers of higher expected returns. Investors should consider their investment goals, risk tolerances, and time horizons when determining an appropriate asset allocation. While no portfolio is appropriate for every investor, Dimensional's Global Allocation Portfolios are designed to be effective, value-added solutions that can help many investors pursue their investment goals.

Appendix

Standardized Performance Data and Disclosures

	Symbol	Average Annual Total Returns* (%)				Inception Date
		1 Year	5 Years	10 Years	Since Inception	
Global Allocation 25/75 Portfolio	DGTSX	12.24	4.54	3.96	4.39	12/24/03
Global Allocation 60/40 Portfolio	DGSIX	20.93	8.57	6.91	6.80	12/24/03
Global Equity Portfolio	DGEIX	30.35	12.93	9.90	9.10	12/24/03

*Performance information as of 09/30/2024

Performance data shown represents past performance and is no guarantee of future results. Current performance may be higher or lower than the performance shown. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. To obtain performance data current to the most recent month-end, visit dimensional.com. Performance includes reinvestment of dividends and other earnings.

² A forward currency premium is when the expected future price of a currency is higher than its current spot price. See Wei Dai and Warwick Schneller, "To Hedge or Not to Hedge?" (research paper, Dimensional Fund Advisors, October 2020).

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 also excludes companies with the lowest profitability and highest relative price within the small cap universe. Profitability is measured as Operating Income before Depreciation and Amortization minus Interest Expense scaled by Book. Source: CRSP and Compustat. The index monthly returns are computed as the simple average of the monthly returns of 12 sub-indices, 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 US High Profitability Index was created by Dimensional in January 2014 and represents an index consisting of US companies. It is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three high-profitability subgroups. It is rebalanced twice per year. Profitability is measured as Operating Income before Depreciation and Amortization minus Interest Expense scaled by Book. Source: CRSP and Compustat.

Dimensional US Low Profitability Index was created by Dimensional in January 2014 and represents an index consisting of US companies. It is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three low-profitability subgroups. It is rebalanced twice per year. Profitability is measured as Operating Income before Depreciation and Amortization minus Interest Expense scaled by Book. Source: CRSP and Compustat.

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 the small cap universe. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. 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 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 Low Profitability Index was created by Dimensional in January 2013 and represents an index consisting of non-US Developed companies. It is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization of each eligible country. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three low-profitability subgroups. The index is rebalanced twice per year. Profitability is measured as Operating Income before Depreciation and Amortization minus Interest Expense scaled by Book. Source: Bloomberg.

Dimensional International High Profitability Index was created by Dimensional in January 2013 and represents an index consisting of non-US Developed companies. It is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization of each eligible country. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three high-profitability subgroups. The index is rebalanced twice per year. Profitability is measured as Operating Income before Depreciation and Amortization minus Interest Expense scaled by Book. Source: Bloomberg.

Dimensional Emerging Markets Low Profitability Index was created by Dimensional in April 2013 and represents an index consisting of emerging markets companies and is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization of each eligible country. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three low-profitability subgroups. The index is rebalanced twice per year. Profitability is measured as Operating Income before Depreciation and Amortization minus Interest Expense scaled by Book. Source: Bloomberg.

Dimensional Emerging Markets High Profitability Index was created by Dimensional in April 2013 and represents an index consisting of emerging markets companies and is compiled by Dimensional. Dimensional sorts stocks into three profitability groups from high to low. Each group represents one-third of the market capitalization of each eligible country. Similarly, stocks are sorted into three relative price groups. The intersections of the three profitability groups and the three relative price groups yield nine subgroups formed on profitability and relative price. The index represents the average return of the three high-profitability subgroups. The index is rebalanced twice per year. Profitability is measured as Operating Income before Depreciation and Amortization minus Interest Expense scaled by Book. Source: Bloomberg.

Dimensional Emerging Markets Small Cap 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 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 the small cap universe. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. 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 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.

Fama/French US Value 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 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 International Value Index, 2008–present Provided by Fama/French from Bloomberg securities data. Simulated strategy of MSCI EAFE countries in the lower 30% price-to-book range. 1975–2007: Provided by Fama/French from MSCI securities data.

Fama/French International Growth Index, 2008–present Provided by Fama/French from Bloomberg securities data. Simulated strategy of MSCI EAFE countries in the higher 30% price-to-book range. 1975–2007: Provided by Fama/French from MSCI securities data.

Fama/French Emerging Markets Value Index, 2009–present Provided by Fama/French from Bloomberg securities data. Simulated strategy using IFC investable universe countries. Companies in the lower 30% price-to-book range; companies weighted by float-adjusted market cap; countries weighted by country float-adjusted market cap; rebalanced monthly. 1989–2008: Provided by Fama/French from IFC securities data. IFC data provided by International Finance Corporation.

Fama/French Emerging Markets Growth Index, 2009–present Provided by Fama/French from Bloomberg securities data. Simulated strategy using IFC investable universe countries. Companies in the higher 30% price-to-book range; companies weighted by float-adjusted market cap; countries weighted by country float-adjusted market cap; rebalanced monthly. 1989–2008: Provided by Fama/French from IFC securities data. IFC data provided by International Finance Corporation.

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. The Dimensional Indices have been retrospectively calculated by Dimensional Fund Advisors LP and did not exist prior to their index inception dates. 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.

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