Planning Perspectives 1Q 2022

Integrity in Investing
Planning Informed Investment Allocations

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Wealth Management Certified Professional™ ©2022

Professional Financial
Purposeful Wealth Management

*"**Bull Market, n.** A period of rising prices leading many investors to believe that their IQ has risen at least as much as the market value of their portfolios. After the inevitable market fall in prices, this new investor group learns that both increases were temporary."*
– **Jason Zweig,** *The Devil's Financial Dictionary* (2015)

This is part of a series exploring integrity in professional wealth planning

Key takeaways:

- Robust investment principles should guide planning asset allocations
- Define your investing goals and identify key risks relevant to those goals
- Systematically pursue sources of higher expected return in structured portfolios
- Investors must be aware of asset allocation limitations and stay disciplined

In ever uncertain times, with instant access to information, with stock markets hitting record highs, with media touting investing fads, I remind myself that I'm not suddenly smarter because our investment accounts have risen to heights previously unseen. It isn't *investments* that make or lose money, it's *investors*. The greatest risk isn't your potential downward portfolio volatility; your greatest risk is when you think that you know a lot more than you do. Are gains secure?

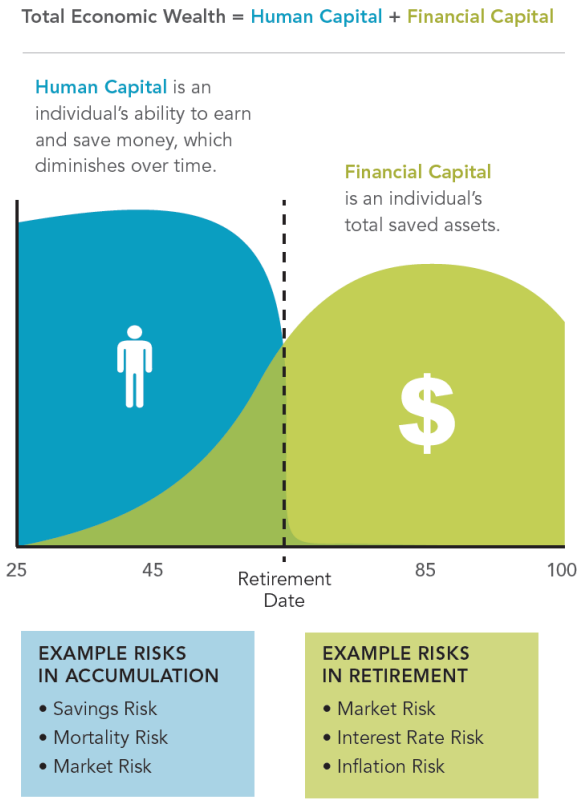
With so many solutions and schemes promoted for portfolio allocations, with dozens of daily emails/calls claiming better, brighter, brainier "investments"—how do you even begin to sort through all the noise among a myriad of choices for serious goal planning such as retirement income or college funding with realistic confidence of successful outcomes during troubled times? What most clients seek is peace of mind. At the core of a professional complex investment management process is having a sensibly-planned investment policy strategy suitable for you.

An investment policy broadly identifies your investment goals and objectives. It considers your values, situation, and preferences as well as relevant investing, income, and tax risks. Your policy outlines in general terms the asset allocation approach to be employed for you. It should be coordinated and integrated with financial resources such as Social Security and employer pensions and tax location of assets. Asset allocation is the primary determinate of long-term outcomes in a broadly diversified portfolio. Your investment policy strategy guides a CFP® professional for structuring the overall asset allocation and the particulars of portfolio construction, including selecting solution providers.

Professional Financial employs research-based solutions primarily from Dimensional Fund Advisors.[1] Those systematically pursue reliable sources of higher expected returns, astutely taking relevant investing risks into account. Dimensional provides a thoughtful, research-based framework for pursuing a wide range of client financial and wealth planning goals. Where retirement is a primary planning goal for many and a secure income must last a lifetime, trusted partners are critical. Dimensional has four decades of expertise applying the great ideas in finance for asset allocation that complements our wealth planning.

- **One philosophy for planning and process.** Professional Financial's asset allocation strategies are

Exhibit 1: Typical Life Cycle of Human Capital and Financial Capital



For illustrative purposes only.

grounded in an integrated market philosophy and management process. Our reporting platform tracks progress made over time against relevant benchmarks, giving you confidence that financial planning goals are on track, so as to stay better disciplined.

- **Providing a consistent, transparent framework.** Asset allocation working closely with Dimensional provides a highly systematic approach to portfolio design and construction for making more informed management decisions. A minimum number of component funds provide greater account simplicity and efficiency. Most firms only offer an array of overlapping funds with allocations that inconsistently mix investment objectives, characteristics, and expected outcomes.
- **Informed by modern financial science.** Dimensional was the first firm seriously committed to applying academic science to portfolios with research factors. Dimensional has provided our firm for decades access to advanced economic thinking and techniques. Asset allocation through Dimensional is a most effective avenue for apply a philosophy that relies on bits of information imbedded in market prices without the need for forecasting or other guesswork.
- **Targeting sources of higher expected returns.** Across the universe of equities and fixed income securities, Dimensional focuses on the most reliable drivers of higher expected returns. Useable information about interactions among those premiums is integrated with extremely broad diversification for risk reduction while keeping costs low. Alternative providers are less effective targeting those drivers or do so in a non-integrative way.

Fixed Income is Separate from Equity Allocations

Fixed income serves an essential role when planning an integrative asset allocation strategy. While fixed income vehicles like bonds are often viewed in isolation and purposed simply to provide income based on yield and maturities, fixed income components can be devised to better balance the expected volatility and returns of the total portfolio approach, and specifically arranged to structure funding year-by-year retirement income liabilities. The appropriate amount of fixed income for the overall allocation of client portfolio structure should be guided by the goals, preferences, and constraints described in the client's investment policy strategy.

For planning resources over a human life cycle, equity-heavy allocations may be most suitable in the earlier years when human capital is most valuable. As human capital begins decreasing in value as years pass and people move closer and closer to retirement, increasingly portfolio volatility need to be dampened. Consequently, over a complete human lifecycle, a greater allocation to fixed income is appropriate the closer the client is to their expected retirement date. By mid-career, a total return portfolio made up of 60% equity and 40% fixed income for capital appreciation and some current income is likely to be recommended. For those who are already retired, 40% equity and 60% fixed income or less would be appropriate for managing sequence of return risk from equity allocations, depending anticipated Social Security and employer pensions available for planning the income necessary for that family.

For those families with only a moderate risk tolerance but with current income needs, or those with substantial near-term capital requirements, such as for college or nursing home expenses, their preservation of capital would be an asset allocation consideration. Asset allocations more conservatively invested predominantly in fixed income

securities like bonds would limit potential equity market losses relative to portfolios with much more highly-weighted equity allocations.

Allocating Globally by Regions and Countries

The economic science behind our investment philosophy believes that competition among many market participants worldwide causes prices in public capital markets to quickly reflect any new information and expectations. Allocations among most country regions around the world are a sensible starting point for an equity investor's strategy. The aggregate of all equities globally complements the theoretical diversified market basket that should hold all equity securities in the investible universe consisting of all industries and countries according to their market capitalization weights. This market portfolio incorporates the aggregate expectations of all market participants and provides a continuously updated, instantaneous snapshot of publicly-traded capital globally.

Financial theory strongly implies that global diversification manages country-specific risks. It provides investors a good rationale to hold the equity and fixed income securities of both U.S. and non U.S. firms, reducing investor's natural home bias who habitually over-allocate to more familiar territory. While all regions potentially offer positive expected returns in the long run, different regions do perform very differently short-term. Still, no reliable evidence indicates that the performance of one country or region relative to another is predictable. Just because the U.S. is at the top this year, tells us nothing about next year. Financial theory further implies that holding multiple regions near their market cap weights is a more sensible asset allocation approach.

There are, however, sensible reasons to deviate from a purely market-weighted global portfolio and allocate more than market cap weight to the U.S. One reason is related to differences in transaction and trading costs. Another is due to client sensitivity with regard to increased taxes due to holding certain non-U.S. investments. For example, foreign dividend tax withholding can create a performance drag on non-U.S. investments held in non-taxable such as IRAs or pension trusts. Or for those with substantial taxable accounts, over-weighting to U.S. municipal bonds may be better.

One major advantage investing globally offers is currency hedging. Research shows that currency hedging effectively reduces the portfolio volatility of portfolios highly allocated to fixed-income.[2] However, for equity-heavy allocations, hedging currencies does not meaningfully reduce return volatility, except for those impacted by large short-term currency swings. Asset allocations for planning specific goals and personal preferences should drive any currency hedging decisions.

Allocating by Drivers of Expected Returns

As we have discussed, Dimensional solutions actively take advantage of up-to-date information embedded in the latest market prices to pursue added value opportunities. Identifying and evaluating factors from highly sophisticated regression studies is done daily to identify systematic differences in expected returns across securities to find information contained in security prices. Asset allocation positions are adjusted daily by trading small amounts to improve potential outcomes. This approach robustly reduces the negative trading impact of indexing rigidities due to infrequent rebalancing while avoiding typical active management forecasting.

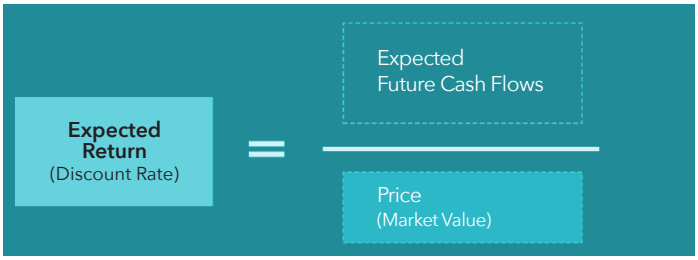
Valuation theory provides investors a meaningful framework for thinking about the drivers of expected stock returns. Expectations about a firm's future cash flows are linked to its current value through a discount rate (equivalent to a stock's expected return). As we see in **Exhibit 2**, the valuation framework provides usable insights for developing asset allocations for portfolio strategies. One important insight is that all else equal, the lower the price paid for a security, the higher the expected return. Another insight is that, for a given price, the higher the expected future cash flows, the higher the expected return.

Equity Allocations

Market capitalization and stock returns contain information about the prices investors pay. Profitability contains information about the cash flows they expect to receive.[3] Using the valuation framework, systematic differences in expected stock returns along the company size, relative price, and profitability dimensions can be identified and then applied to investment strategies. That is, we expect small cap stocks to have higher expected returns than large cap stocks *(size premium)*; stocks with low relative

Exhibit 2: Valuation Equation for Expected Return

Expected returns are driven by prices investors pay and cash flows expected

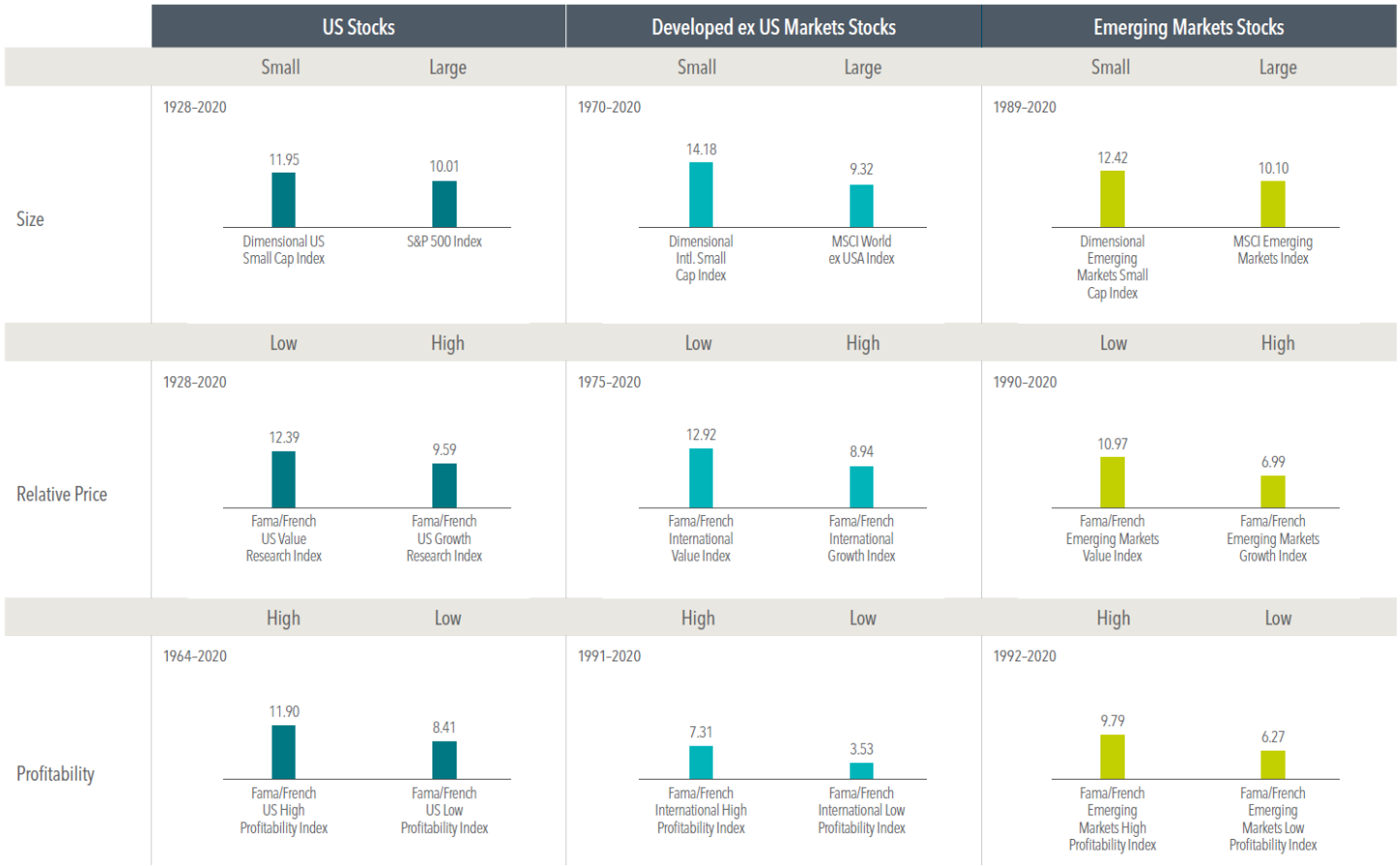


price—as measured, for instance, by the price-to-book ratio—to have higher expected returns than high relative price stocks *(value premium)*; and high profitability stocks to have higher expected returns than low profitability stocks *(profitability premium)*.

Therefore, if that is true, studies of past performance should show small cap stocks outperforming large cap stocks, low relative price stocks outperforming high relative price stocks, and stocks with higher profitability outperforming low profitability stocks. Empirically, we find this to be true. Extensive literature links firm size, relative price, and profitability to the cross-section of expected stock returns.[4] **Exhibit 3** shows the historical annualized compound returns across size, relative price, and profitability groups in the U.S., developed ex U.S., and emerging markets.[5] Consistent with valuation theory, size, value, and profitability premiums are sizable and have been pervasive across different markets around the world. Dimensional has a history of capturing these return dimensions in its portfolio solutions going back 40 years.

Dimensional's core equity strategies for integrating those return dimensions in various ways, efficiently target size, value, and profitability premiums for asset allocations. By spreading investments across the entire market with differing tilts and with trading flexibility, these strategies reduce unnecessary turnover and so reduce implementation costs. Targeting dimensions with differing allocations of return dimensions, core solutions systematically overweight stocks with higher expected returns (those with lower market capitalizations, lower relative prices, and higher profitability) relative to their market weights and underweight stocks with lower expected returns (those with higher market capitalizations, higher relative prices, and lower profitability) across each eligible country entire market.[6] Additionally, Dimensional's the daily implementation process also incorporate short-term drivers of returns, such as investment,

Exhibit 3: Return Dimensions Around the World
Illustrative Index Performance (%)



Source: *Dimensional Fund Advisors.* ***Past performance is not a guarantee of future results. Index returns are not representative of actual portfolios and do not reflect costs and fees associated with an actual investment. Actual returns may be lower.***

Annualized compound returns(%) in US dollars. MSC/ indices are gross div. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. 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. S&P data© 2021 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. MSC/ data© MSC/ 2021, all rights reserved.

momentum, and information from the securities lending market to further enhance investor returns.

Realized returns (as opposed to expected returns) vary widely across the premiums as well as across regions, countries, and sectors over different years. Research, however, has not found evidence that these differences are statistically reliable for planning purposes.[7] Research future shows that broad diversification reduces stock-, sector- and country-specific risk and increases the reliability of outcomes of the aggregate asset allocation strategy.[8] We conclude that an integrated and balanced focus on all three reliable long-term drivers of expected returns coordinated with broad diversification across regions with Dimensional core equity strategies provides an excellent opportunity for outperforming the market equity-weighted portfolios of index funds for planning.

Exhibit 4, *Global Equity Market Overview* for 2021 offers insight how realized dimensions of returns are distributed for a given year of the stock markets aggregated globally. The final annual outcome we see reported by the media can be explained by a combinations of size, relative price (value), and profitability factors. **Exhibit 5** illustrates how factors could be titled for a model Dimensional integrated core equity strategy similar to that of Professional Financial's internal models. (The exhibit targets the weighted average profitability as the market index used as a control.) To understand how the portfolios differ, the Dimensional model has an aggregate price to book ratio nearly 25% less, weighted average market capitalization is about 40% less, and nearly ten times as many companies are in its portfolio. This helps explains why a Dimensionally-structured outcome can differ significantly from popular benchmarks from commercial indexes.

Fixed Income Allocations

Our economic philosophy also uses market prices of fixed income securities to identify and sort systematic differences in drivers of expected returns. But instead of premiums from risk factors, expected returns across bonds vary by duration, credit quality, and currency of issuance. Portfolio implementation integrates research, portfolio design, and portfolio management as well as trading, all with the objective of more effectively enhancing overall returns as well as efficiently avoiding unnecessary costs, such as coordination with anticipated cash flows.[9] Dimensional daily monitors information from market prices for managing risks and avoiding unnecessary trading activity.

Dimensional's unique fixed income management approach is it's focus on the components of a bond's expected return

Exhibit 4: Global Equity Market Overview for 2021

All Country Markets Returns (USD), 1 Year as of December 31, 2021

	SIZE	RELATIVE PRICE		PROFITABILITY	
		VALUE	GROWTH	HIGH PROF	LOW PROF
Large	18.9%	19.8%	17.6%	19.5%	18.1%
Small	14.4%	21.8%	7.2%	20.5%	8.5%
	Small caps underperformed large caps	Value stocks outperformed growth stocks within both large and small caps		High profitability stocks outperformed low profitability stocks within both large and small caps	

Source: *Dimensional Fund Advisors.* ***Past performance is no guarantee of future results.***

Market Returns are computed from MSCI All Country World IMI Index published security weights and Dimensional computed security returns and Dimensional classification of securities based on size, value, and profitability parameters. Within the US, Large Cap is defined as approximately the largest 90% of market capitalization in each country or region; Small Cap is approximately the smallest 10%. Within the non-US developed markets, Large Cap is defined as approximately the largest 87.5% of market capitalization in each country or region; Small Cap is approximately the smallest 12.5%. Within emerging markets, Large Cap is defined as approximately the largest 85% of market capitalization in each country or region; Small Cap is approximately the smallest 15%. Designations between value and growth are based on price-to-book ratios. Value is defined as the 50% of market cap with the lowest price-to-book ratios by size category and growth is the highest 50%. Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book. High profitability is defined as the 50% of market cap with the highest profitability by size category and low profitability is the lowest 50%. REIT s and utilities, identified by GICS code, and stocks without size, relative price, or profitability metrics are excluded from this analysis. GICS was developed by and is the exclusive property of MSCI and S&P Dow Jones Indices LLC, a division of S&P Global. Countries not in the Dimensional investable universe are excluded from the analysis. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio. MSCI data © MSCI 2022. all rights reserved.

Exhibit 5: Contrasting a Multi-Factor Integrated Allocation Model to a Commercial Global Market Benchmark

Dimensional Equity Core Plus Wealth Strategy (gold) vs. MSCI World Index (gray).

Size, relative price, and profitability definitions are determined by Dimensional. In the US, Large Cap is defined as approximately the largest 90% of market capitalization and Small Cap is approximately 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 is approximately 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 is approximately the smallest 15%. Growth is defined as approximately the highest 50%, by market capita1ization, of securities based on price-to-book within each size grouping and country or region and Value is approximately the lowest 50%. Profitability ("PROF") is measured as operating income before depreciation and amortization minus interest expense, scaled by book. High Prof is defined as approximately the highest 50%, by market capitalization, of securities based on profitability within each size grouping and country or region and Low Prof is defined as approximately the lowest 50%. Securities without a price-to-book or profitability metric are excluded. REITs and utilities, identified by GICS code, are excluded from this analysis.

The indices are intended for comparative purposes only and may differ significantly from the models. Dimensional makes no representations as to the appropriateness of any of the indices shown in comparison to the models. For educational purposes only. As of December 2021.

that are known and observable. It does not concentrate efforts on getting higher yields or better yield to maturity without due regard to credit quality. The key components driving Dimensional's variable maturity strategy are the bond's current yield and expected capital appreciation over the holding period, based on the current term structure of interest rates. The larger the sum of those two components (i.e., the higher the forward rate of a bond), the larger the bond's expected return. Hence, the larger the differences in expected returns among bonds of different durations—as captured, for example, by term spreads—the larger the expected future term premiums. **Exhibit 6** illustrates the historical relation between current term spreads and term premiums in the U.S. and globally. Ample research shows that, like changes in stock prices, changes in interest rates are largely unpredictable.[10] Hence, Dimensional makes no effort to forecast future interest rate changes in forming portfolios but instead maintains a focus on reliable drivers of expected bond returns that are observable in today's prices.

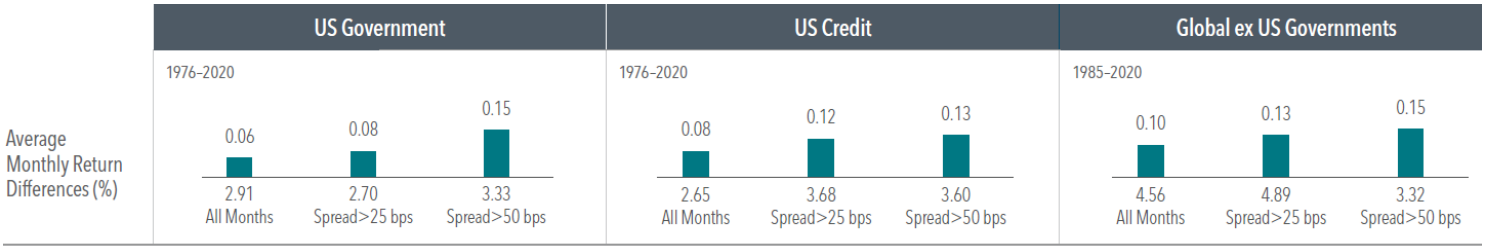
Rigorous empirical research from the 1970s[11] to now[12] continue to show that differences in forward rates across bonds of different duration, credit quality, and currency of issuance contain most reliable and substantial information about differences in their average subsequent returns. Accordingly, Dimensional uses information in global yield curves dynamically to vary a portfolio's duration (the composite maturity adjusted for timing of income payouts). For instance, when global yield curves are upwardly sloped and term spreads are wide (or forward rates are high), Dimensional may extend durations due to larger expected term premiums. When global yield curves are flat or inverted and term spreads are narrow (or forward rates are low), Dimensional may shorten durations due to lower expected term premiums. This enhances the currently very low yields.

Research further shows that the expected return of credit risk in bonds is similarly related to its yield and expected capital appreciation (forward rate). In particular, the larger the differences in expected returns among bonds of different credit quality—as typically reflected in credit spreads—the larger the expected credit premium. **Exhibit 7** shows the reliable relationship between credit spreads and credit premiums in the U.S. Accordingly, Dimensional incorporates this additional information found in from current yield curves to dynamically vary credit quality of portfolios to enhance expected returns.

Finally, the opportunity set of non-U.S. bonds is part of most fixed income allocations. Investing in global bonds has been shown to increase expected returns, diversify term and credit exposure, and reduce idiosyncratic risks. Considering a global fixed income strategy makes it possible to pursue higher expected returns while effectively managing risk prudently for more risk-adverse investors who accept tolerate or accept a substantial loss of fixed income principal due to excessive volatility. This means not chasing the returns with the attendant risks of high-yield "junk" bonds, an asset class excluded from our portfolios.

Exhibit 7, *Global Fixed income Market Overview* for 2021

Exhibit 6: Term Spreads and Future Term Premiums
Intermediate minus Short Duration



Source: *Dimensional Fund Advisors.* ***Past performance is no guarantee of future returns. Asset class filters were applied to data retroactively and with the benefit of hindsight. Actual returns may vary.***

Source for return differences between US short and intermediate bonds: Dimensional calculation based on Bloomberg Barclays US Government 1-3 Year and Intermediate Indexes. Returns in USD. Source for return differences between Global Ex-US short and intermediate bonds: Dimensional calculation based on FTSE World Government Bond Index 1-3 Years and 1-10 Years Indexes of Australia, Canada, France, Gennany, Japan, the Netherlands, Great Britain, and Switzerland. Average returns and average t-stats are calculated by taking averages across eligible countries. Returns are hedged to USD. Average monthly return difference for "Spread> 25" and "Spread> 50" represents the average returns difference between bonds with an intermediate or long duration and those with a shorter duration for the months when the term spread is greater than 25 basis points and 50 basis points, respectively. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio. For illustrative purposes only.

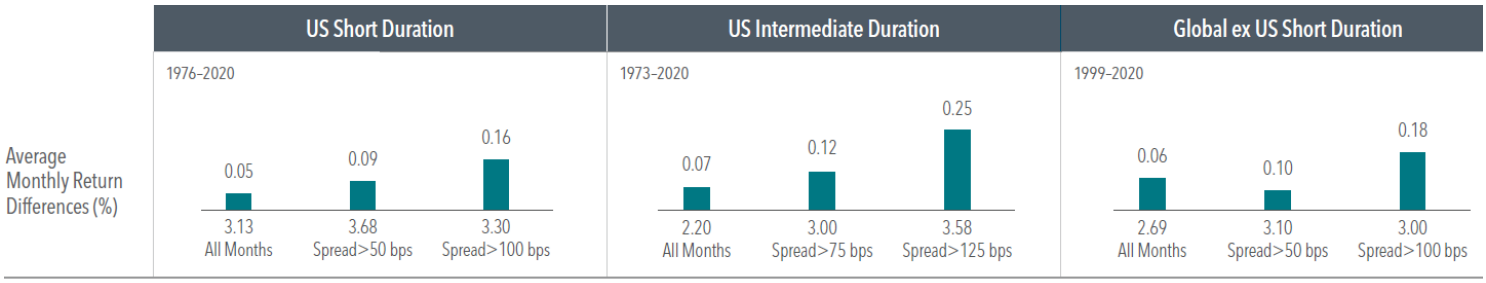
offers insight how are duration, credit quality, and currency of issuance interacted during last year to create the aggregate global composite return of -1.39% (seen on the left-hand side of the exhibit) for the entire global fixed income market. The detailed components composing the Bloomberg Global Aggregate Bond Index return were modestly negative for most segments, and the weighted composite had a small loss as interest rates began to rise. Clients who review the breakdown of asset class returns for last year in their annual statements, may favorably note that despite fixed income returns being generally negative, their Dimensional outcomes benefitted from 5 percent or greater returns for many of their portfolios due to their variable maturity process while still holding investment grade risks.

Planning a Perfect Asset Allocation?

You may be aware that many Americans—not only younger, but older as well—have abandoned sound investing approaches like asset allocation and bought into approaches popular with social media networks. Financial markets are unpredictable, prone to fads, bubbles, and crashes. This is partly due to zero interest rates, partly due to trillions in government giveaways. Newly created SPACs and cryptocurrencies will provide an expensive education for a new cohort of "investors."

Academics and other researchers have been on a long quest for the perfect portfolio, hoping to discover scientific laws derived from modern finance theory. Alas, Newtonian physics it is not. The most important and well-known theory to emerge from academic finance is the efficient-market hypothesis of Nobel laureate Eugene Fama. Surprisingly, practitioners and even many academics are frequently confused about what the EFH really says, and how to apply

Exhibit 7: Credit Spreads and Future Credit Premiums
Credit minus Government

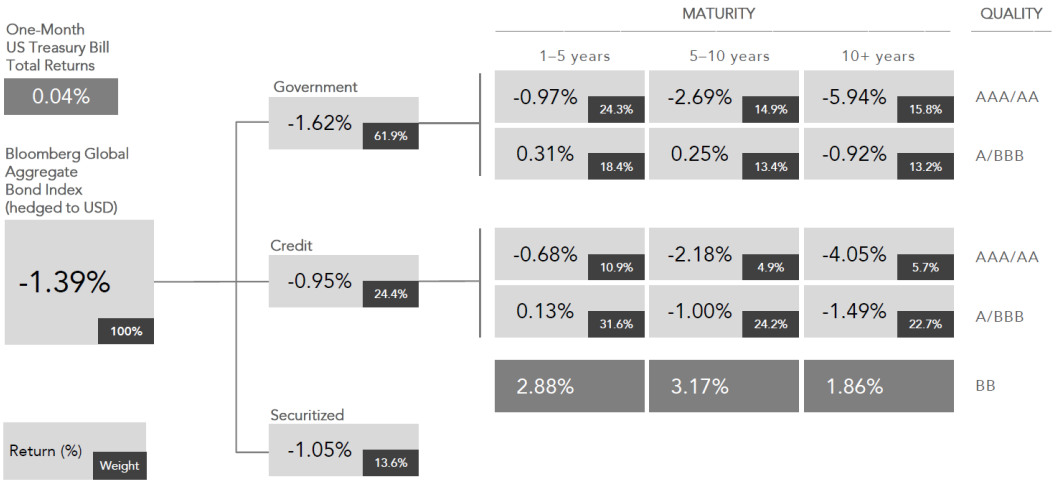


Source: *Dimensional Fund Advisors.* ***Past performance is no guarantee of future returns. Asset class filters were applied to data retroactively and with the benefit of hindsight. Actual returns may vary.***

Monthly data in US dollars. Bloomberg Barclays US Indices for US bond returns. Bloomberg Barclays Global Aggregate 1-3 Year Upper Tier (AAA+AA) Government and Global Aggregate Corporate 1-3 Year indices for Global ex US Short Term Credit returns. Bloomberg Barclays data provided by Bloomberg Finance LP For each month, credit spread is measured as the yield difference between investment grade credit and government bonds, as represented by the Bloomberg Barclays indices as of the beginning of the month. Average monthly return difference for "Spread> 50" and "Spread> 100" represents the average returns difference between investment grade credit and government bonds for the months when the credit spread is greater than 50 basis points and 100 basis points, respectively. Average monthly return difference for "Spread> 75" and "Spread> 125" represents the average returns difference between investment grade credit and government bonds for the months when the credit spread is greater than 75 basis points and 125 basis points, respectively. Indices are not available for direct investment; therefore, their performance does not reflect the expenses associated with the management of an actual portfolio. For illustrative purposes only.

Exhibit 8: Global Fixed Income Market Overview for 2021

Global Markets Returns (USD), 1 Year as of December 31, 2021



Source: *Dimensional Fund Advisors.* ***Past performance is no guarantee of future results.***

Source: *Bloomberg. Bond types based on original Bloomberg three-pillar government, credit, and securitized sectors classification scheme. Credit and maturity breakouts represent returns for the corresponding categories of the Bloomberg Global Aggregate Index for investment grade and Bloomberg Global High Yield Index (hedged to USD) for BB rated bonds (hedged to USD). Rating categories represented use Bloomberg composite ratings. The Bloomberg category returns use parent index constituent data with corresponding maturity and credit rating ranges to internally calculate returns that are hedged to USD using WM/Reuters London Close FX rates. Indices are not available for direct investment. Their performance does not reflect the expenses associated with the management of an actual portfolio.*

it in the real-world. Fama, with a long-term Dimensional connections, seems to be among those who can apply it well.

Much scholarship and ink over the last fifty years has been focused on challenging Fama's thesis. A common misinterpretation is that EMH holds that the price of a security is "the best estimate of its intrinsic value." That is wrong. Professor Fama explains it as, "I take the market efficiency hypothesis to be the simple statement that security prices fully reflect all available information."[13] Fama doesn't think his hypothesis has been disproved. But academics and the industry still argues "the price is not always right"—confusing informational efficiency with operational efficiency. Markets do work and, for your investing purposes, stocks are fairly priced for allocating assets.

The best vindication of EMH theory lies in the success of low-fee passive index mutual funds—the brainchild of John Bogle, the late founder of the Vanguard colossus. Index funds today comprise more than half of institutional and retail ETFs and mutual funds. Bogle first argued many years ago that, as a group, active investment managers must always fall short of the market return by their fees and trading costs. Nobel laureate William Sharpe made this the point of his famous paper, "The Arithmetic of Active Management."[14] Vanguard's Total Stock Market Fund at $1.3 trillion in assets of all share classes is guided by the CRSP U.S. Total Market Index. With more than 4000 stocks, it accounts for 10% of all U.S. stock mutual fund and ETF assets according to Morningstar.[15]

Conventional indexing has become a religion that prioritizes low tracking error by matching commercial index performance, thereby restricting which securities to hold and when to trade. Low-cost index funds are the default safe haven of most 401k plans because of onerous Department of Labor fiduciary standards. Trustees of big plans don't like getting sued, and index funds are a safe bet—at least as long as U.S stock prices continue to hit new records. But nothing continues forever.

"Indexing" originated with Professor Sharpe, winner of the 1990 Nobel prize for his work in the 1960s related to investment decision-making that captured Wall Street's imagination. It was simple to understand and to explain. Sharpe's capital asset pricing model (CAPM) proposed a linear mathematical relationship between a stock's expected return and its riskiness. Simply stated, more volatile stocks should reward investors more than less volatile stocks. Young Fama was the first to test that theory with actual data back in the 1970s. To his surprise, Fama found that the CAPM's central prediction never worked. The relation between the average returns and beta was simply too flat. Other academics also found "anomalies" that did not conform with CAPM predictions.

If the CAPM theory held, then the best approach would be to embrace low-cost, passive all-stock-market investing as the perfect approach for portfolio allocation. However, early in his academic career, Professor Fama joined forces with David Booth who understood Fama's version of EMH. Booth had

been a grad student of Fama but decided that becoming a professor was not for him. Booth founded Dimensional Fund Advisors out of his Brooklyn brownstone about 40 years ago.

Collaborating with Professor Kenneth French, Fama went on to develop a multifactor model that would reshape an industry as Dimensional Fund Advisors adopted those ideas and applied them to investing. Fama's research and Dimensional research over succeeding years have greatly improved our understanding of fundamental market pricing "factors" driving equity performance way beyond simple indexing. Fama eventually won that Nobel prize to honor his life's work, and in contrast with Bogle, Booth won fame, fortune and has Fama's Chicago business school named in his honor.

Toward a More Perfect Approach

When it comes to planning your asset allocation, valuation theory using drivers of expected returns and not Sharpe's CAPM provides the most robust framework for portfolio strategy. That is, if you assume that a stock's current market price reflects information about future cash flows discounted by the expected stock return, you most likely will a better outcome than indexing. As we showed above, numerous studies that cover over 40 countries and spanning nearly a century confirm this.

The alternative popular with most investors, traditional active management, in the final analysis is forecasting for security selection and market timing. That approach is highly profitable for those who sell it, but not for most investors. Decades of research has found little evidence that short-term performance differences across premiums, regions, countries, or sectors can be reliably predicted with any consistency.[16] Such activity increases volatility and incur higher turnover and trading costs compared to indexing, increasing substantially performance hurdles required for success.[17]

We have found over many years for clients that a structured asset allocation strategy with a Dimensionally diversified portfolio is a highly reliable and sensible approach. Constructing global asset allocation strategies from Dimensional funds focused on those persistent drivers of expected returns with strong research evidence behind them, where there is a continuous and sensible tradeoff among competing premiums and costs, we believe is likely to provide the most successful wealth planning outcomes when a lifetime of retirement income and financial security is essential.

Planning for Income in Allocations

It should be no surprise that Professional Financial structures asset allocations with Dimensional solutions systematically targeting size, value, and profitability dimensions, and incorporating advances in information about investment, momentum, and securities lending. Equity allocations typically enhance portfolio returns far more than the fixed income component in this era of historically low interest rates. How should fixed income ideally be positioned in investing strategy?

When the primary planning goal is long-term accumulation for funding retirement or legacy goals, where equity allocations dominate overall portfolio allocations, fixed income allocations with more term and credit exposure (by focusing on bonds with longer durations or lower credit quality, respectively) can complement the higher expected returns of the equities without materially increasing overall portfolio volatility. Such bonds can add substantial volatility relative to their shorter-term and higher-quality counterparts. But higher volatility does not matter since the volatility of the equity component dominants the portfolio structure. The fixed income is there primarily for rebalancing and incidental cash flow purposes when equities substantially decline.

When the primary planning goal is providing lifetime income and cash flow for a retiree, or in five or so years of anticipated retirement, fixed income allocations should balance (by at least fifty percent) or even dominate the total asset allocation. The objective here is to moderate losses in consumption power by preserving capital with modest growth, not seeking opportunities for greater wealth accumulation. While the equity allocations may be similar a growth portfolio, fixed income allocations would emphasize shorter to intermediate durations, higher credit quality, and inflation protection as well as be a greater proportion of the portfolio.

Financial and wealth planning requires professionally developing and then selecting from among a series of asset allocation models for a range of client risk preferences, capacities, and horizons. Asset class returns for planning models should not be based on historical ex post investment outcomes or ex ante return assumptions as are typically used in opaque optimization techniques. Professional Financial does not employ optimization for asset allocation in its modeling. Our models and the asset class return assumptions are based on a thoughtful framework from financial science. Models following the old CAPM as is typical of much planning is likely to result in poorly understood or misleading conclusions. For more on this, see Lee (2013) and Davis (2008).[18]

Perfect Planning for an Investor

Enduring uncertainty in life is a challenge for us all. While our choices define our outcomes, we lack complete information when making investment decisions for asset allocation that impact outcomes.

In investing, as well as in life, a sound philosophy is essential. Whether the market is at a new high or a new low, today's share price reflects investors' collective judgment of what tomorrow's earnings and dividends for a firm may be—and could be in the future. Every day, the market prices stocks to deliver a positive expected return for the prospective buyer. Otherwise, no trade takes place. A situation where a buyer invests expecting to lose money is difficult to imagine.

The secret for investors is to have informed expectations for portfolio allocations and stay disciplined.

Every day I go to work believing that markets will go up a little but prepared if they should drop. You should too. Markets will go up and down, but long-term, the outcome to expect should be positive. Historically, markets have gone up. Stocks as whole are up more years than down. And in the years when they are up, stocks are up much more than the fewer years when they are down.

When you live in America with all its opportunities for progress, it's hard not to be optimistic. Do your best. Have faith, endure, and don't quit. Not only can today's uncertainty lead to something better but planning wisely can lead to the fulfilment of your deepest hopes, goals, and dreams.

ENDNOTES

1 "Dimensional" in this article always refers to Dimensional Fund Advisor, an investment advisor registered with the Securities and Exchange Commission. Professional Financial Strategies, Inc. is independent of, and not an affiliate of, Dimensional. Professional Financial is not endorsed by Dimensional.

2 Wei Dai and Warwick Schneller, "To Hedge or Not to Hedge: A Framework for Currency Hedging Decisions in Global Equity & Fixed Income Portfolios" (October 1, 2020). Available at SSRN: https://ssrn.com/abstract=3703333.

3 Profitability is measured as operating income before depreciation and amortization minus interest expense scaled by book equity.

4 For example, see: Eugene F. Fama, Kenneth R. French, "The Cross-Section of Expected Stock Returns," *Journal of Finance* 47, No. 2, (June 1992); Eugene F. Fama, Kenneth R. French, "Common Risk Factors in the Returns on Stocks and Bonds," *Journal of Financial Economics* 33, No. 1, (February 1993); Eugene F. Fama, Kenneth R. French, "Profitability, Investment and Average Returns," *Journal of Financial Economics* 82, No. 3 (December 2006); Eugene F. Fama, Kenneth R. French, "A Five-Factor Asset Pricing Model," *Journal of Financial Economics* 116, No. 1 (April 2015); Eugene F. Fama, Kenneth R. French, "International Tests of a Five-Factor Asset Pricing Model," *Journal of Financial Economics* 123, No. 3 (March 2017); Robert Novy-Marx, "The Other Side of Value: The Gross Profitability Premium," *Journal of Financial Economics* 108, No. 1 (April 2013); and Gerard O'Reilly and Savina Rizova, "Expected Profitability: A New Dimension of Expected Returns" (white paper, Dimensional Fund Advisors, June 2013).

5 Note that the time periods reported in the exhibit differ depending on the region and the dimension, based on data availability.

6 For further discussion, see the following Dimensional white papers: Stanley Black, Eric Geffroy, and Lukas Smart, "Understanding the Performance of Small Cap Stocks" (June 2018); Joe Hohn, Mary Phillips, and Savina Rizova, "Applying Profitability to Large Caps" (May 2017); Namiko Saito, "The Impact of Implementing Profitability in Equity Strategies: A Four-Year Study" (September 2018); Namiko Saito, "Value and Profitability Premiums Across Sectors" (September 2018); and Savina Rizova and Namiko Saito, "Investment and Expected Stock Returns" (October 2019).

7 For example, see Eugene F. Fama, Kenneth R. French, "Industry Costs of Equity," *Journal of Financial Economics* 43, no. 2 (February 1997); and Stanley Black and Wei Dai, "Assessing the Relative Magnitude of Premiums" (white paper, Dimensional Fund Advisors, 2021).

8 Wei Dai, "How Diversification Impacts the Reliability of Outcomes" (white paper, Dimensional Fund Advisors, November 2016).

9 For further discussion, see the following Dimensional white papers: David Plecha and L. Jacobo Rodríguez, "A Market-Driven Approach to Fixed Income" (June 2016); and Wei Dai, Joseph Kolerich, and Douglas Longo, "Pursuing Higher Expected Returns with Duration Constraints" (October 2017).

10 For example, see: Eugene F. Fama (1976); Eugene F. Fama, "The Information in the Term Structure," *Journal of Financial Economics* 13, No. 4 (December 1984); Eugene F. Fama, "Term Premiums in Bond Returns," *Journal of Financial Economics* 13, No. 4 (December 1984); Eugene F. Fama and Robert R. Bliss, "The Information in Long-Maturity Forward Rates," *The American Economic Review* 77, No. 4 (September 1987); John Y. Campbell and Robert J. Shiller, "Yield Spreads and Interest Rate Movements: A Bird's Eye View," *Review of Economic Studies* 58, No. 3 (May 1991); Gregory R. Duffee, "Term Premia and Interest Rate Forecasts in Affine Models," *The Journal of Finance* 57, No. 1 (February 2002).

11 See, for example, Eugene F. Fama, "Forward Rates as Predictors of Future Spot Rates," *Journal of Financial Economics* 3, No. 4 (October 1976).

12 Marlena Lee, Philipp Meyer-Brauns, Savina Rizova, and Samuel Yusun Wang, "The Cross-Section of Corporate Bond Returns," (February 2020).

13 *35 Quotations on a Better Way to Invest*, Dimensional Fund Advisors (July 2016), #3

14 William F. Sharpe, "The Arithmetic of Active Management," *Financial Analysts' Journal* (Vol. 47, No. 1, January/February 1991).

15 Randall Smith, "The Mutual Fund That Ate Wall Street–Based on an Index Few People Know About," *Wall Street Journal* (Journal Reports: Funds/ETFs, December 5, 2021). See Andrew W. Lo and Stephen R. Foerster, *In Pursuit of the Perfect Portfolio*, Princeton (2022).

16 Warwick Schneller, "Market Timing: The Built-in Hurdle" (white paper, Dimensional Fund Advisors, 2017).

17 For example, see: Wei Dai, "Premium Timing with Valuation Ratios" (white paper, Dimensional Fund Advisors, September 2016) and Jim Davis, "Mean Reversion in the Dimensions of Expected Stock Returns" (white paper, Dimensional Fund Advisors, November 2014). See also: "The Randomness of Global Equity Returns" (Dimensional Fund Advisors, June 2019) and "Why Should You Diversify?" (Dimensional Fund Advisors, December 2018).

18 Marlena Lee, "Stress Testing Monte Carlo Assumptions" (Pension Research Council Working Paper October 2013); James L. Davis, "Efficient Frontiers Constructed with Historical Data Can Be Misleading" (October 2008).