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Plan Not to Panic: Navigating Market Volatility with Financial Planning

Lisa Shalett
Chief Investment Officer

Daniel Hunt, CFA
Senior Investment Strategist

Eve Pickhardt
Investment Strategist

Stephanie Wang
Investment Strategist

Thomas V. Caruso
Financial Planning Specialist

When faced with a market drawdown, investors are best served by focusing on the facts and not giving in to panic. Those investors equipped with a financial plan can do just that: identify what impact market turmoil has had on the long-term achievability of their goals.

During the market's COVID crash in early 2020, we find that over three-quarters of clients with an active financial plan rated as "On Track" prior to the event were still on track at the market's trough. In fact, the typical impact on key metrics of plan health was minimal, despite significant declines in asset prices.

Though it can be tempting to take dramatic action in such circumstances, it's usually unnecessary and typically counterproductive. We find that small steps, such as postponing retirement for a few months or marginally increasing saving rates, are often enough to get investors back on track, giving them license to stay the course and not risk missing out when markets recover.

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Key Findings

On-track investors usually stay on track through market volatility.

- Over three-quarters of investors whose plans were designated "on track" before the 2020 COVID crash remained in this category at the trough of the market. While the **median portfolio among these plans declined 16%, the median plan was only 2% less likely to achieve stated goals.**

Life stage matters too.

- Mid/late retirement investors typically **did not suffer damage** to their goal achievability when they were **on track before the drawdown**. If they were designated **"at risk,"** however, their plans were **heavily impacted**: as they have less time to recover and fewer levers to get back when compared to younger investors.

Small steps can get you back on track while staying invested.

- Delaying retirement by a few months, modest increases in monthly savings, small decreases in one's spending rates, or even just postponing big-ticket expenses, **can often be sufficient to get investors back on track after major drawdowns**.

Introduction

Market drawdowns can be a distressing experience for investors, especially when they impact funds earmarked for critical goals such as retirement. While finance gurus assure us that drawdowns are a normal part of investing and that investors are better served by patience than by panicked selling, that is cold comfort for investors watching their nest egg drop precipitously in value. It can be tempting in such circumstances to sell one's growth assets, which typically see the sharpest declines in these environments, at deeply discounted prices. What's more, investors who do sell often continue to keep their money on the sidelines while markets recover, in fear that a renewed drawdown may be imminent. This dynamic accounts for why so many retail investors deeply underperform simple, static strategies that remain fully invested—a fact with unfortunate consequences for their financial goals.

In our experience, the best way to avoid making rash decisions in the face of market volatility is having a clear strategy rooted in a goals-based financial plan. A long-term financial plan can help understand the facts about how short-term portfolio losses may impact personal goals, such as buying a home or sustaining income throughout retirement.

The reality is that such portfolio declines, while often unsettling, are rarely cause for panic—not least when considering the tendency for reactive decisions to short-term losses to backfire. Sure enough, our data indicates that investors that are "on track" (a grade bestowed on plans with a high likelihood of achieving their goals) generally remain in good shape during market turmoil, even when the drawdowns are as deep as the 2020 COVID sell-off. (For further detail on plan status, see the section titled "Tracking Progress" and the Appendix.)

Consider the real-world evidence: Looking across nearly 120,000 financial plans through the 2020 COVID crash, during which the stock market fell by 34% in just 33 days, we found that over three-quarters of plans that were on track to achieve their goals at the market peak remained so at the market trough—before equities began their subsequent recovery.[1] Indeed, portfolio declines tended to have a relatively small impact on the probability that on-track investors could achieve their stated goals: Despite the median peak-to-trough portfolio decline of 16%, the median decrease in probability of success (POS) was just 2%.

Another financial rule of thumb was borne out in this data: Portfolio declines generally impacted investors with shorter time horizons—such as those already well into retirement—much more than they did those with longer time horizons, where there is a greater potential for recovery. This dynamic highlights why it's essential to anchor one's investment strategy decisions in the applied mathematics of a financial plan, especially for investors in the more-vulnerable mid/late-retirement life stage. To wit, the median investors in this life stage had *no change* in the probability of achieving their goals when their plans were designated "On Track" before the drawdown. For plans whose margins of error were low enough to merit an "At Risk" designation before the drawdown, however, the median impact of market turmoil on their probability of success was a distressing 33%.

When an investor does fall off track, a financial plan can also help devise a strategy for getting back on course that doesn't depend on a quick recovery in asset prices. Crucially, this enables investors to stay invested in case a quick rebound occurs. We find that investors are often able to remedy the impact of large market drawdowns by making slight adjustments to their plans, such as modestly increasing their savings rates, waiting a little longer to retire or slightly lowering their retirement spending goals. While investors in retirement may have fewer levers to pull than those who are still in the workforce, they too have options to mend their finances without needing to alter their investment strategy. We find that simply postponing discretionary, big-ticket spending plans until markets have recovered can go a long way toward mitigating the risk of facing an ultimate shortfall relative to one's goals.

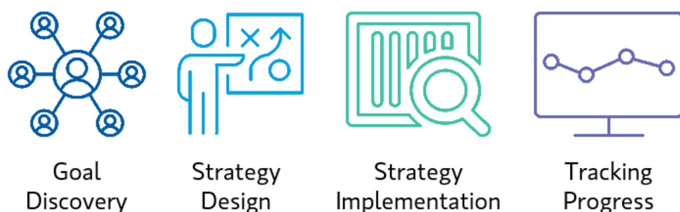
Building a Financial Plan

Goal Discovery

Goal discovery, the first stage of building a financial plan, asks the most fundamental question every investor faces: "What am I investing for?" While generating and sustaining income through retirement is typically an investor's most significant and high-stakes objective, it's common to have a range of goals. These may range from leaving a meaningful legacy for heirs and charity, through building up the requisite funds for major purchases such as a primary or secondary residence, to saving for a child's education. Though the focal point of this paper is retirement investing, the principles of financial planning can be applied to any financial goal. In fact, they can be especially helpful when navigating complex situations, such as how to save for multiple purposes at the same time.

Of course, translating a life goal into a financial one requires a focus on the dollars and cents. While your ambition may be to have a comfortable retirement, it helps to be specific about what that means and what spending it may entail. Retirement spending generally includes both essential expenses, such as mortgage payments and healthcare expenses, as well as more discretionary costs, such as those associated with travel and entertainment.

Exhibit 1: The Planning Process



Source: Morgan Stanley Wealth Management Global Investment Office

Many people struggle to estimate their retirement needs, especially younger savers who don't yet know important details about their future families and careers. Nevertheless, there are good rules of thumb for estimating what you may spend in retirement based on what you know now. For example, your current financial picture, including one's salary, savings and liabilities, is usually a good starting point to identify what you may need later on and whether you can set your sights toward higher levels of discretionary spending. Such information can also help estimate other important details of your financial future, such as potential income from Social Security and likely tax expenses. Even investors whose primary goal is maximizing wealth accumulation generally benefit from an in-depth process to identify their desires, needs, and constraints.

Perhaps most importantly, a financial plan can act as a north star that you periodically revisit, updating the specifics as life circumstances evolve and retirement objectives come into focus.

Translating Goals to Investment Strategy

The next stage of the planning process translates your goals and circumstances into a concrete investment strategy. The fundamental question at this stage is this: "What level of investment return is necessary to achieve your goals—and what level of risk may jeopardize it?"

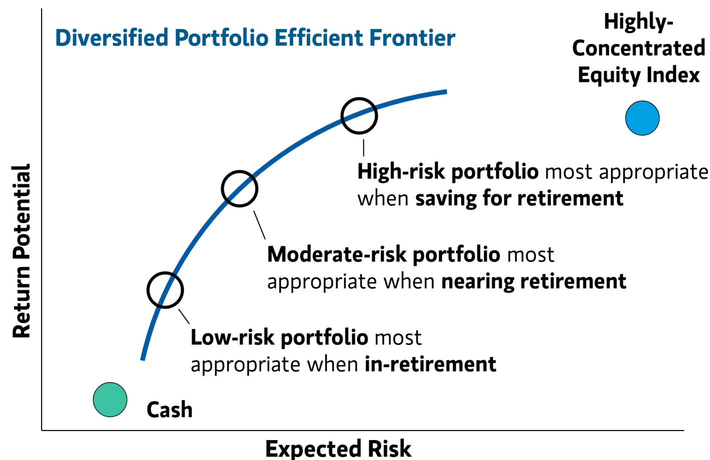
The right level of risk and return will vary for each investor. It's of little benefit to know you've beaten a popular market index if you don't have enough money to meet your financial goals. Conversely, a strategy that enables you to achieve your targets by taking less risk than such indexes may be considered a success. The fact that such a strategy may also have lower annual returns than these highly concentrated equity indexes is ultimately unimportant when investors stay focused on what really matters to them.

Though the right strategy may differ depending on personal circumstances, two factors are paramount to every retirement investor: firstly, identifying how much return is needed to achieve your goal given your current funding situation and an appropriate margin of error; and secondly, knowing how long you have before your retirement begins—in other words, your time horizon.

Unless they are extremely well-funded, investors in retirement are typically best served by a lower level of risk, since market volatility typically has a greater impact on the ability of their nest egg to sustain income payments. Younger retirement investors, on the other hand, have a greater capacity to wait out drawdowns. Accordingly, these investors are often best served by high-risk, high-return portfolios.

These insights translate directly to deciding what asset allocation is most appropriate for each investor. As illustrated in Exhibit 2, balancing growth-oriented assets, such as equities, and income-generating assets, such as bonds, in a diversified portfolio can help investors target a risk/return profile aligned with their ability to withstand risk, need for return and personal preference for security versus potential upside.

Exhibit 2: Planning Can Help Identify What Risk/Return Profile Is Most Appropriate for Your Goals



Note: For illustrative purposes only.
Source: Morgan Stanley Wealth Management Global Investment Office

A goals-based approach to investment strategy has another benefit: It enables investors to consider how the unique characteristics of each asset type may benefit them in the context of their goals and circumstances. For example, investors with an ongoing need for income may eschew illiquid assets, while those with a longer horizon may benefit from their potential illiquidity premium. Similarly, life insurance can often be an effective, tax-advantaged vehicle when saving for a bequest goal, while lifetime-income annuities often serve as a highly efficient component of a retirement income strategy—especially in the event of unexpected longevity.

Planning also helps investors through other important financial decisions by providing a holistic view of their balance sheet and potential consequences of each path they may take. Social Security, for example, is often a key source of retirement income—but timing when a retiree claims those benefits can have a significant impact on one's strategy for spending out of savings. A holistic approach to such decisions can mitigate key retirement risks and even unlock the potential for larger overall spending rates. Other major decisions, such as starting a business, buying or selling a home, financing a child's college education or monetizing an equity-based compensation package, often have a similar impact.

Implementation

Once an appropriate strategy for your goals has been laid out, it must be put into practice. While there are potential pitfalls throughout the process of implementation, executing the plan offers opportunities for investors to add value across their financial lives.

For example, every investor must navigate the wide range of investment products that offer exposure to the different asset categories in one's strategy. Deciding which to use requires examining the product manager's skill, fees, and the tax implications of their approach. How different products are combined in a portfolio matters, too: Complementary products may provide portfolio efficiency and risk control when used in concert, while products that don't complement one another may concentrate portfolio exposure and amplify risk.

Implementation also requires determining what accounts should hold the various investment types used in one's strategy. A time-tested approach to this decision known as "asset location" can enable investors to achieve tax savings which can compound over time. Through efficient asset location, the tax profile of each investment, including its growth potential, turnover and yield, is aligned with the tax characteristics of the account it goes in. For example, tax-advantaged municipal bonds may be a strong choice for fixed income exposure in a taxable account, while volatile, high-growth equities may be best held in a tax-deferred account, such as a 401k, or a tax-exempt account, such as a Roth IRA. Similarly, tax efficiency can be a key question when determining how to draw down one's portfolio in retirement, as assets are usually spread across many investments and account types.

The implementation phase is also an ideal time to make decisions regarding the ongoing maintenance of one's strategy. For example, automatic portfolio rebalancing can help keep one's asset allocation on track. Similarly, dollar-cost averaging can be an effective approach to deploying fresh capital—and tax-loss harvesting can be used to offset taxable gains elsewhere in one's portfolio.

Tracking Progress

For a financial plan to deliver results, tracking progress is essential. We can't always predict what the time and tide may bring. It's inevitable that unexpected events will impact your plan, whether it's good news, such as a big promotion or the birth of a child, or bad news, such as unanticipated legal expenses or—as is the focus in this report—a major market drawdown. When investors track their progress and update their plan as circumstances evolve, they can be sure their strategy is relevant, informative and on track for their goals throughout the ups and downs of life.

But what does it mean to be on track, at risk or off track with one's goals? While there are different approaches to assessing plan health, most common approaches anchor on a key metric known as "probability of success" (POS). To calculate the POS of each investor's plan, we simulate 10,000 hypothetical scenarios of capital market outcomes to assess whether their current and planned future savings, income streams and investment strategy are likely to meet their anticipated needs in each one.

These metrics do not comprehensively capture every element of an investor's concerns, but they do constitute an effective and straightforward way for investors to track their progress over time. As in the example of the COVID drawdown, this can be especially important when investors need to know just how much a market drawdown is likely to matter for their long-term goals. To wit: Though the median portfolio decline among on-track plans in our analysis was a significant 16% drawdown, the median decline in POS was just 2%.

Our analysis categorizes plans as "On Track," "At Risk," and "Off Track" according to specific thresholds in the likelihood they can achieve both their total goal and the portion of the total goal that is deemed to be essential (see Exhibit 3), an approach that accounts for the fact that not all goals are equally important. While some spending needs are generally considered non-negotiable, such as health care and some basic level of entertainment expenses, others, such as home renovations or some travel, can be postponed in the event of particularly adverse market returns, without a significant impact on one's quality of life. To be considered on track, both metrics must be within their respective target POS thresholds.

Exhibit 3: On-Track Plans Have a High Probability of Success

	Probability of Success Thresholds	
	Total Goal	Essential Goal
On Track	>70%	>85%
At Risk	50%-70%	75%-85%
Off Track	<50%	<75%

Note: See Appendix for full methodological notes.
Source: Morgan Stanley Wealth Management Investment Platforms, Morgan Stanley Wealth Management Global Investment Office

Some investors may wonder how they can be on track with less than 100% probability of success. The reality is that achieving a 100% probability of success is impractically expensive for the vast majority of investors when compared to a marginally lower probability of 90%-95%. To achieve a sufficient buffer against the potential for adverse outcomes to impact one's goal in every simulated scenario, an investor would need to set a significantly lower goal relative to their savings. What's more, aiming for 100% probability of success would ignore the degree to which potential course corrections down the road have the power to rectify circumstances, often with relatively small changes to one's plan. We revisit this point in greater detail later in this report.

Staying on Track: The More You Know…

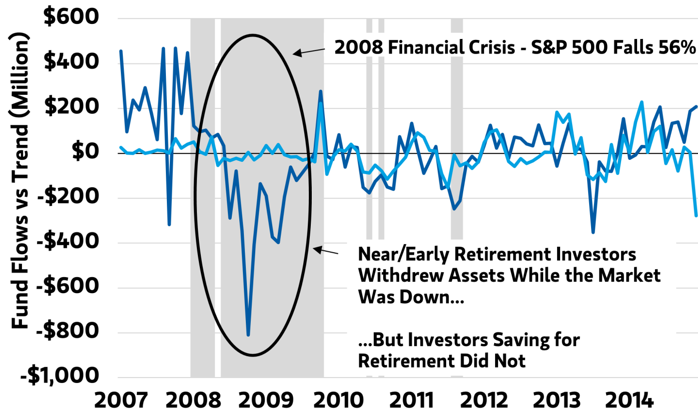
Knowing whether you are still on track can be crucial information when navigating market volatility—particularly when fighting the temptation to attempt to time the market by selling assets as their prices are falling. Take, for example, the worst market event in most investors' lifetimes: the 2008-2009 financial crisis. The ensuing turmoil and uncertainty led many investors who were nearing or just starting their retirements to make an unfortunate decision: selling out of their investments near the trough of the market, in which, for example, US equities had fallen 57%.

One telltale sign of how powerful this temptation can be, particularly for the most vulnerable investors, can be found in the historical behavior of diversified, goal-oriented retirement investors during that time period. We measure that behavior by charting the net buys and sells for target date funds, which has proved to be a reliable barometer for such investors. Firstly, these funds are explicitly created as retirement investing vehicles and are mostly used as a vehicle for individual retirement savings within defined contribution pension plans. And secondly, the basic design of these funds divides investors into age cohorts that align with their target retirement date. In other words, we know that investors in a near vintage are older and getting closer to retirement, while those in a distant vintage are younger and further away from retiring. Consequently, the buying and selling behavior across different vintages can tell us a lot about how much investor behavior depends on the need to access savings in the short term.

To that end, Exhibit 4 focuses on two populations, those who are near retirement age or have just begun retirement (2000-2010 vintages), and those who are still far from retirement (2046-2050 vintages). Younger investors generally stayed the course throughout the volatility of the financial crisis, but many near/early retirement investors—one of the cohorts most vulnerable to market drawdowns—liquidated and exited the market during this period of extraordinary decline. As is so often the case, these investors ended up missing out on a substantial portion of the relief rally that followed, essentially locking in significant losses in the savings they ultimately will need to fund their imminent income needs.

The misfortune behind decisions like this is that historically, equity markets have recovered from even their deepest losses over time, eventually going on to reach new highs. This, of course, was also true of the 2008-2009 financial crisis. As bad as that event was, just three years later equity markets had retraced those losses and began notching new highs again.

Exhibit 4: Behavioral Mistakes Are Likely When Investors Are Most Vulnerable



Note: See Appendix for full methodological notes.
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To quantify the cost of this market-timing decision gone wrong, we created a simple example that traces the behavior of a hypothetical near-retirement investor. We assume this investor held a 40% US equity and 60% bond portfolio, and sold out of the market at the point of maximum fear, as measured by the trough fund flows shown in Exhibit 4. At this point, US equities had fallen 38% of their eventual 57% peak-to-trough drawdown, and the investor's portfolio was down nearly 14%. We then assume this investor remained entirely in cash for one year, the point at which fund flows returned to trend. While out of the market, this investor missed out on the subsequent recovery—and roughly 17% of portfolio gains that would have occurred if they had not sold.[2] That would leave this investor with materially less wealth heading into retirement than one who held tight—a difference that would likely require a significant reduction in spending for decades to come.

While sustained bear markets of this magnitude are relatively uncommon, equity drawdowns of at least 10% are quite frequent, when looking at market history. In fact, an intra-year decline in US equities of 14% has been *average* since 1980. In other words, a bumpy ride is the cost of potentially higher returns, which can only be realized by staying the course with a consistent strategy that is designed to meet your needs.

Despite the substantial history of intra-year declines in US equities, the average annual total return since 1980 is 13%, and, over the last 100 years, 12.2%. In fact, equities rebounded shortly after the 2020 COVID crash as well, with prices ending the year up over 16% —nearly 70% higher than their March 2020 trough.

What's more, attempts to time the market to avoid losses run a high risk of causing investors to miss out on the market's best days, which have historically clustered during periods of extreme market volatility. In fact, over 80% of the US equity market's best days since 1980 have appeared during down markets, and more than 75% of them have occurred within a month of one of the market's worst days. Perhaps most importantly, history shows that missing just the 15 best days of US equity performance over the past 30 years would have resulted in a shocking reduction in total return from 10.5% to 6.7% annualized.

Looking Through Volatility

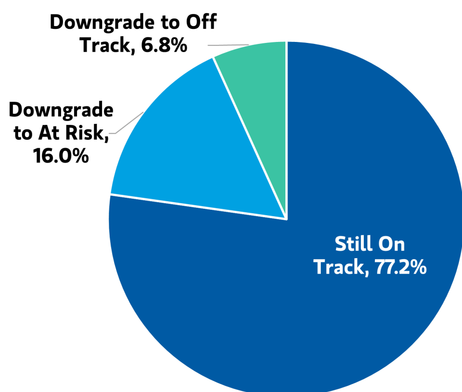
Our empirical analysis of investor experiences during the 2020 COVID drawdown provides strong evidence that a well-designed financial plan can help steer investors against potential mistakes by helping them focus on what really matters: whether they remain on track to achieve their goals.

Though staying the course though market downturns may sound simple or obvious, in practice, it is not. Investors tend to overlearn some lessons and under-learn others, the same way that generals tend to prepare for the last war. The playbook formulated in moments of calm often feels insufficient to the task of helping one through dramatic and unexpected circumstances. And indeed, this pattern was just as true in 2020.

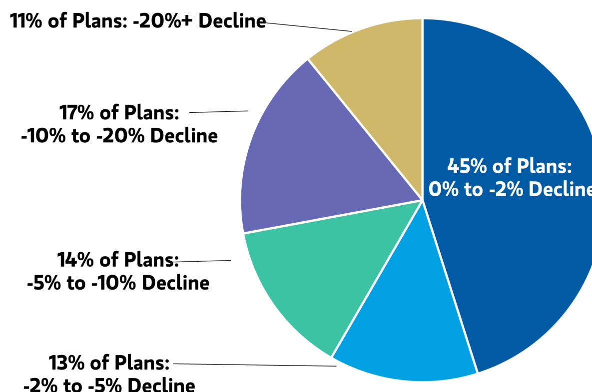
Uncertainty was ubiquitous as the novel coronavirus swept the world, leaving its mark on more than just the global economy and financial markets—our health and that of our loved ones was put in question, too. As shelter-in-place announcements swept the country and headlines tallied the exponential case counts, investors anxiously refreshed their account balances and watched market indexes fall lower and lower. The potential that the shock to the real economy would be amplified through the financial channel via a wave of credit defaults was high. This would have created systematic stresses on the order of the 2008-2009 financial crisis, albeit with the causality reversed. As newscasters, economists and politicians braced for a repeat of that financial disaster, millions of everyday investors felt their goals were in jeopardy. Who could have known what was to come—and what this market turmoil would mean for the retirement they had been so diligently saving for?

Exhibits 5 and 6: Over Three-Quarters of On-Track Investors Remained On Track at Market Trough

Plan Status at Market Trough



Peak-to-Trough Decline in Probability of Success



Note: All plans designated "On Track" at market peak included in this analysis. See Appendix for full methodological notes.
Source: Morgan Stanley Wealth Management Investment Platforms, Morgan Stanley Wealth Management Global Investment Office

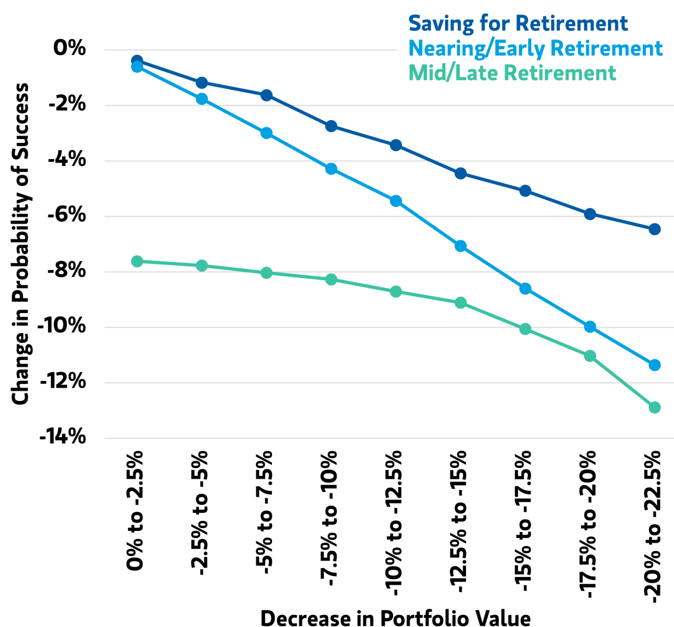
Investors with a financial plan were able to answer one important aspect of that critical question. Among the nearly 120,000 real-world financial plans that we examined, the vast majority that were "On Track" at the peak of the market remained so even at the market trough (see Exhibit 5). Indeed, 58% of these plans showed only minimal declines in the probability of achieving their stated goals at the market trough (0% to -5% change), providing these investors with a strong rationale to stay the course. There was a minority of plans where the market drawdown led them to be downgraded from "On Track" status at the trough of the market, but these were roughly twice as likely to fall only a single notch into the "At Risk" category, rather than being "Off Track" (see Exhibit 6).

Capacity for Risk Varies by Life Stage

A deeper look at our real-world planning data illustrates another basic insight of financial planning techniques: Risk capacity declines over the course of one's life. As shown in Exhibit 7, younger investors in the saving for retirement phase (defined here as more than 10 years before stated retirement age) generally registered a much smaller impact on their probability of success than did investors nearing and in retirement—regardless of how large the decline in their portfolio.

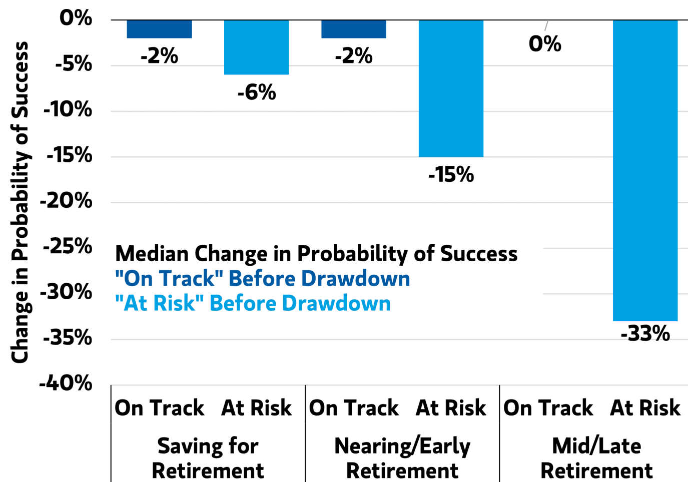
The reason is simple: Younger investors have less of their ultimate capital in the markets and more time to wait out the turbulence, benefitting from compounding returns over a long time horizon. On the other hand, investors closer to or in retirement have less time to benefit from a potential market recovery as they are at a point where ongoing asset sales are (or are about to be) necessary to fund distributions, aside from the most well-funded of the cohort. In other words, when distributions begin, some portion of any market-driven decline in investment values will be locked in for these investors. (For an in-depth discussion of this topic, see our 2022 Primer "Retirement Income and Sequence of Returns Risk.")

Exhibit 7: The Impact of Drawdowns Varies by Life Stage



Note: See Appendix for full methodological notes.
Source: Morgan Stanley Wealth Management Investment Platforms, Morgan Stanley Wealth Management Global Investment Office

Exhibit 8: On-Track Investors Fared Well; At-Risk Investors Less So



Note: See Appendix for full methodological notes.
Source: Morgan Stanley Wealth Management Investment Platforms, Morgan Stanley Wealth Management Global Investment Office

The picture can be more complicated for investors in mid/late retirement (more than five years into retirement). During the 2020 market crash, even small declines in portfolio value entailed much larger decreases in investors' probability of success. These investors have the shortest investment horizons to wait out losses and, all else being equal, had the largest withdrawal rates relative to the size of their portfolios needed to fund ongoing spending.

Fortunately, investors in this life stage with plans that are on track generally do not suffer such significant declines in their ability to achieve their goals. In fact, as we show in Exhibit 8, the median on-track plan for investors in mid/late retirement had *no change* in the likelihood of achieving goals. This is due, in large part, to the fact that most on-track investors had already implemented a lower-risk strategy in their portfolio, making significant drawdowns in portfolio value much less likely.

Getting Back on Track: Easier Than You Might Think

Among the most useful benefits of a financial plan is that it can provide a road map back to financial health if a major shock does push your plan into an off-track or at-risk category. This may be particularly valuable for investors with highly aspirational financial goals and lower probabilities of success.

Having an at-risk plan is not necessarily a problem in and of itself, particularly in earlier life stages (for example, the median difference in POS for younger, at-risk investors in Exhibit 8 is only 4% less than those who are on track). Nevertheless, a lower probability of success does leave your plan more vulnerable to future shocks. Accordingly, it may make sense for such investors to consider making small adjustments to their plan. In many cases, they may find that bringing a plan all the way back to on track doesn't require drastic reductions in quality of life.

We illustrate how this can work in Exhibit 9, which compares hypothetical drawdown scenarios across three different exemplary retirement situations. The early-career and mid-career couples in this example have somewhat aspirational spending goals. Accordingly, they enter the hypothetical drawdown with plans that are close to the threshold for being at risk, though they are initially on track. After experiencing a portfolio decline comparable to the magnitude of the COVID market crash, these investors fall into the at-risk category.

The hypothetical retirees who are several years into retirement, on the other hand, have learned from experience what their retirement spending needs are and have aligned their plans and investment strategy accordingly. Therefore, they enter the crash with a higher POS than their younger, more aspirational peers—and remain in the on-track category at the market trough.

While the likelihood of achieving essential goals remains above 90% for each of these hypothetical investors, we explore what steps they could take to get their plans back to their original probability of success for their total goals. Importantly, we note that this analysis assumes an asset shock comparable to the full peak-to-trough decline in the COVID crash. If these investors were to check their probability of success just a month or two later, the recovery in asset prices would make the required adjustments significantly less painful—or even unnecessary. Of course, ongoing monitoring of their plan status would help these investors understand if and when they could unwind these changes in case markets improve.

Perhaps most important is the fact that such plan adjustments, including modest delays in beginning retirement and/or small changes to one's saving and spending plans, can enable an investor to stay the course with their investment strategy through challenging markets. It's much easier to avoid the temptation of panic selling when there's a clearly defined and highly achievable alternative to securing one's goals.

Please refer to important information, disclosures and qualifications at the end of this material.

Exhibit 9: Getting Back on Track After Market Drawdowns Is Easier Than You Might Think

Retiree Profile	Equity Allocation	Hypothetical Portfolio Decline	Initial Probability of Success	Post-Drawdown Probability of Success	Remedy Option 1:	Remedy Option 2:	
					Delay Retirement	Increase Savings…	…And Decrease Spending Goal
Mid-Career Couple **Age**: Both 35 **Combined Salary**: $225,000/Year **Retirement Income Goal**: $180,000/year	80%	-20%	73%	68%	7.5 months	0.8% of salary ($167/month)	1.4% of spending goal ($208/month)
Late-Career Couple **Age**: Both 55 **Combined Salary**: $375,000/Year **Retirement Income Goal**: $210,000/year	60%	-15%	76%	67%	9 months	3.2% of salary ($1,000/month)	2.3% of spending goal ($417/month)
Retired Couple **Age**: Both 70 **Current Spending**: $140,000/year	25%	-6%	95%	90%	N/A	N/A	1.9% of current spending ($222/month)

Note: Retirement spending is gross of additional retirement income sources, including Social Security payments. Probability of Success shown represents total goal. For full details see Appendix.
Source: Morgan Stanley Wealth Management Investment Platforms, Morgan Stanley Wealth Management Global Investment Office

Nevertheless, it's also true that our hypothetical investors who are already in retirement have fewer levers to pull, as they have already begun portfolio withdrawals and have exited the workforce (though part-time consulting in retirement can also be a powerful—and often rewarding—tool to gain more financial flexibility). While the magnitude of the spending cut proposed in Exhibit 9 is likely achievable for most retirees, some may find the prospect of lower spending disheartening.

A deeper look at market history brightens the picture significantly. When investors routinely monitor and update their financial plan, they can take a more flexible and adaptive approach to retirement spending that can dramatically improve outcomes. To demonstrate the power of such a strategy, consider a hypothetical retiree, age 65, who began her retirement with a $1 million Roth IRA invested in a balanced portfolio of 60% equities and 40% bonds. In addition to other sources of income, such as Social Security, she plans to withdraw $50,000 in her first year of retirement and increase that withdrawal amount every year to account for anticipated inflation. With an adaptive withdrawal strategy, however, she could institute guardrails based on a set of general rules based on each year's portfolio performance. In bad years, she lowered her withdrawals by 10%, and by an additional 15% in especially bad years. To make up for these reductions, this strategy also built in withdrawal increases of 10% in good years and another 15% in particularly good years (see Appendix for full methodology). To help mitigate excessive spending cuts, we cap cumulative withdrawal reductions at 20% of her initial target withdrawal amount. What's more, her other sources of steady income, such as Social Security and employer pensions, would go a long way to help cover essential expenses during the more difficult years.

To compare these spending strategies, let's assume she experiences a very poor sequence of market returns in her retirement based on what occurred from 1926 through 1950. With the adaptive withdrawal strategy, her portfolio value at age 90 would be *27% higher* than the baseline strategy—a difference in value equivalent to another 2.4 years of withdrawal needs. The years in which she could increase her withdrawals come close to completely offsetting the years in which she had to decrease them: The overall difference in cumulative withdrawals was just 2.4%. While postponing one's spending in tough years is never an exciting proposition, the power of such guardrails is clear. This investor was able

to weather returns drawn from one of the worst economic periods in the past century—the Great Depression—with significantly better outcomes.

Conclusion

Investing is a life-long journey with few guarantees. In fact, one of the few certainties there is on this journey is that it will have both highs and lows through the twists and turns of life. The key to successfully arriving at your intended financial destination is by charting a course that makes the most sense for you and staying true to it, even when market turmoil abounds. In other words, by making a financial plan. As our analysis of the 2020 market crash makes clear, a well-designed financial plan can serve as a reliable north star to keep you on track, arming you with the knowledge to make important decisions at critical moments and the fortitude to stay the course.

Endnotes

[1]Stock market performance measured using daily peak-to-trough price data of the S&P 500 index. Data regarding financial plans and their associated portfolio value are based on week-end data from the Goals Planning System analytic tool. Using week-end data, the corresponding equity market peak-to-trough decline based on week-end data is 24%. See Appendix for full methodology, including how On Track, At Risk and Off Track plans are identified.

[2]Measured using daily total return data, assuming daily rebalancing. Investment grade bonds represented by the Bloomberg US Aggregate index; equities by the S&P 500; and cash by three-month T-bills. Data sourced from Bloomberg.

Appendix

Empirical Analysis of Financial Plans

Our analysis of financial plan performance is comprised of all retirement plans made using the Goals Planning System (GPS) that were enrolled in progress to goals reporting during the time period in question (February 21, 2020 through March 27, 2020). These dates represent the peak and trough of the US equity market during the 2020 COVID crash when measured using week-end data, as is necessitated by source data availability.

Accounts with large cash inflows or outflows during this time period were removed to control for the potential impact on plan status of unrelated cash flow activity, as were accounts that were closed or removed during this time period. Plans with less than $50,000 in assets were removed as outliers.

Our analysis comprised 119,813 plans that met these conditions, with portfolio values ranging from $50,000 through about $303 million measured on March 27, 2020. The average portfolio value across the plans measured was $1.2 million, and 90% of plans considered in our analysis had values of roughly $2.6 million or less on this date.

Life stage (saving for retirement, nearing/early retirement and mid/late retirement) was defined relative to the specified retirement age for each plan. Those with more than 10 years before the stated age of retirement were designated as saving for retirement; those with 10 or fewer years to retirement or in the first five years of retirement were put in the nearing/early retirement category; and those with over five years since beginning retirement were designated as mid/late retirement.

Probability of success (POS) for each plan was calculated in GPS using Monte Carlo analysis and the Global Investment Committee's capital market assumptions at the time.

Additional Adaptive Withdrawal Case Study Assumptions

We implement a 10% reduction in withdrawals if the hypothetical retiree's funding ratio falls below 90%, and an additional 15% reduction if the funding ratio dips below 75%. Withdrawals increase 10% from the initially planned withdrawal amount when the funding ratio is 110%, and an additional 15% when her funding ratio hits 125%. Cumulative spending reductions are capped at 20% of target spending. Based on the historical data used, the 60/40 portfolio will generate average annual returns around 7% per year and an annualized volatility of 15%. Anticipated inflation is assumed to be 2.3% per year. Funding ratios are calculated without reference to steady income sources, such as Social Security, or spending needs covered by those steady income sources.

Additional Notes on Exhibit Methodology

Exhibit 3: These thresholds align with those used in our Goals Planning System (GPS) analytic tool, from which this data is sourced.

Exhibit 4: 10%+ market declines measured against the highest value in the S&P 500 within the trailing year. Trend measured using the best fit line for fund flows for these vintages from 2007-2014.

Exhibits 5 and 6: See notes above for full methodology used to identify plans.

Exhibit 7: Analysis drawn from fully specified plans, which enumerate both total and essential-only goals. This exhibit also focuses only on plans that declined in portfolio value between the peak and trough of the 2020 COVID crash. See notes above for full methodology used to identify plans.

Exhibit 8: Analysis drawn from fully specified plans, which enumerate both total and essential-only goals. See notes above for full methodology used to identify plans.

Exhibit 9: Hypothetical retiree profiles and analysis created using the Goal Planning System (GPS). Full detail on each couple's profile can be found in the table below.

All retirements are assumed to begin at age 65. Eighty percent of total spending needs are designated as essential.

For simplicity, we assume a flat effective income tax rate of 32% before retirement and 22% after retirement. We assume a long-term capital gains tax rate of 15% and assume that short-term gains are taxed in line with effective income tax rate.

We assume that the salaries and spending needs of each person grow in line with inflation.

The magnitude of the shock experienced by each couple's portfolio, which is comprised of investment grade US bonds

and US equities, is based on the historical performance of these asset classes between February 21, 2020 and March 27, 2020—the time period used elsewhere in this analysis.

Probability of success (POS) calculations created in GPS using the GIC's capital market assumptions at the time of analysis. Life expectancy assumptions used in the analysis are based on each retiree's current age.

Exhibit 10: Hypothetical Retiree Profile Details

Retiree Profile	Asset Allocation	Initial Probability of Success	Post-Drawdown Probability of Success	Total Annual Savings	Total Assets	Other Retirement Income Sources
Mid-Career Couple	20% US Investment Grade Bonds 80% US Equities	Total Goal: 73% Essential-Only: 94%	Total Goal: 68% Essential-Only: 92%	Taxable: $20,000 Tax-Deferred: $24,000 Tax-Exempt: $3,000	$400K	Social Security Benefits: $92K (combined, file at full retirement age)
Late-Career Couple	40% US Investment Grade Bonds 60% US Equities	Total Goal: 76% Essential-Only: >95%	Total Goal: 67% Essential-Only: >95%	Taxable: $50,000 Tax-Deferred: $79,750	$1.85M	Social Security Benefits: $87K (combined, file at full retirement age) $23,000 annual annuity income (beginning at 65)
Retired Couple	75% US Investment Grade Bonds 25% US Equities	Total Goal: 95% Essential-Only: >95%	Total Goal: 90% Essential-Only: >95%	N/A	$1.65M	Social Security Benefits: $66K (combined) Rental Income: $29K Pension: $14K

Source: Morgan Stanley Investment Platforms, Morgan Stanley Wealth Management Global Investment Office

Disclosure Section

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Daniel Hunt, Eve Pickhardt, Stephanie Wang and Thomas Caruso are not members of the Global Investment Committee and any implementation strategies suggested have not been reviewed or approved by the Global Investment Committee.

For index, indicator and survey definitions referenced in this report please visit the following: https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions

Glossary

Drawdown refers to the largest cumulative percentage decline in net asset value or the percentage decline from the highest value or net asset value (peak) to the lowest value net asset value (trough) after the peak.

Efficient frontier is a set of investment portfolios that are expected to provide the highest returns at a given level of risk. A portfolio is said to be efficient if there is no other portfolio that offers higher returns for a lower or equal amount of risk.

Funding ratio reflects a pension fund's current financial position, expressing the ratio between available assets and liabilities. In other words: it shows whether the pension fund holds enough reserves to pay out pension benefits – to its current and future members.

Illiquidity premium is the extra yield investors expect to earn for giving up control to liquidate their capital for a certain period of time.

Volatility This is a statistical measure of the dispersion of returns for a given security or market index. Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index. Commonly, the higher the volatility, the riskier the security.

Risk Considerations

Hypothetical Performance

General: Hypothetical performance should not be considered a guarantee of future performance or a guarantee of achieving overall financial objectives. Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets.

Hypothetical performance results have inherent limitations. The past performance shown here is simulated performance based on benchmark indices, not investment results from an actual portfolio or actual trading. There can be large differences between hypothetical and actual performance results achieved by a particular asset allocation. Actual performance results of accounts vary due to, for example, market factors (such as liquidity) and client-specific factors (such as investment vehicle selection, timing of contributions and withdrawals, restrictions and rebalancing schedules). Clients would not necessarily have obtained the performance results shown here if they had invested in accordance with any GIC asset allocation, idea or strategy for the periods indicated.

Despite the limitations of hypothetical performance, these hypothetical performance results may allow clients and Financial Advisors to obtain a sense of the risk / return trade-off of different asset allocation constructs.

Indices used to calculate performance: The hypothetical performance results in this report are calculated using the returns of benchmark indices for the asset classes, and not the returns of securities, funds or other investment products.

Indices are unmanaged. They do not reflect any management, custody, transaction or other expenses, and generally assume reinvestment of dividends, accrued income and capital gains. Past performance of indices does not guarantee future results. Investors cannot invest directly in an index.

Performance of indices may be more or less volatile than any investment product. The risk of loss in value of a specific investment is not the same as the risk of loss in a broad market index. Therefore, the historical returns of an index will not be the same as the historical returns of a particular investment a client selects.

Fees reduce the performance of actual accounts: None of the fees or other expenses (e.g. commissions, mark-ups, mark-downs, advisory fees) associated with actual trading or accounts are reflected in the GIC asset allocation strategy or ideas. Fees and/or expenses would apply to clients who invest in investments in an account based on these asset allocations, and would reduce clients' returns. The impact of fees and/or expenses can be material.

Investing in the market entails the risk of market volatility. The value of all types of securities may increase or decrease over varying time periods.

This analysis does not purport to recommend or implement an investment strategy. Financial forecasts, rates of return, risk, inflation, and other assumptions may be used as the basis for illustrations in this analysis. They should not be considered a guarantee of future performance or a guarantee of achieving overall financial objectives. No analysis has the ability to accurately predict the future, eliminate risk or guarantee investment results. As investment returns, inflation, taxes, and other economic conditions vary from the assumptions used in this analysis, your actual results will vary (perhaps significantly) from those presented in this analysis.

The assumed return rates in this analysis are not reflective of any specific investment and do not include any fees or expenses that may be incurred by investing in specific products. The actual returns of a specific investment may be more or less than the returns used in this analysis. The return assumptions are based on historic rates of return of securities indices, which serve as proxies for the asset classes. Moreover, different forecasts may choose different indices as a proxy for the same asset class, thus influencing the return of the asset class.

Monte Carlo Analysis Assumptions: As indicated above, the hypothetical analysis uses a Monte Carlo simulation to generate randomized, correlated returns that overall have similar characteristics to the Global Investment Committee's 2020 strategic (seven-year capital markets assumptions. The Monte Carlo simulation involves sampling from those monthly returns for the constituent asset classes. From those monthly returns, we can compute hypothetical monthly returns for portfolios constructed with a lump-sum investing or dollar-cost averaging approach as of any month in the simulated returns data.

IMPORTANT: The projections or other information generated by this Monte Carlo simulation analysis regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results and are not guarantees of future results. Results may vary with each use and over time.

Investments in **target-date funds** are subject to the risks associated with their underlying funds. The year in the fund name refers to the approximate year (the target date) when an investor in the fund would retire and leave the workforce. The fund will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. An investment in a target date fund is not guaranteed at any time, including or after the target date. These funds are based on an estimated retirement age of approximately 65. Should you choose to retire significantly earlier or later, you may want to consider a fund with an asset allocation more appropriate to your particular situation.

Annuities are long term tax-deferred retirement savings vehicles. Annuities are generally subject to surrender charges. A surrender charge is a penalty you have to pay if you sell or withdraw money from an annuity before it matures. The time before an annuity's maturity is called the surrender period and usually lasts for several years after purchase. Surrender charges reduce the value of your annuity and its returns. Early withdrawals will reduce the death benefit and cash surrender value. Under current law, a nonqualified annuity that is owned by an individual is generally entitled to tax deferral. IRAs and qualified plans—such as 401(k)s and 403(b)s—are already tax-deferred. Therefore, a deferred annuity should be used only to fund an IRA or qualified plan to benefit from the annuity's features other than tax deferral. These include lifetime income and death benefit options.

Equity securities may fluctuate in response to news on companies, industries, market conditions and general economic environment.

Investing in foreign markets entails risks not typically associated with domestic markets, such as currency fluctuations and controls, restrictions on foreign investments, less governmental supervision and regulation, and the potential for political instability. These risks may be magnified in countries with emerging markets and frontier markets, since these countries may have relatively unstable governments and less established markets and economies.

Investing in small- to medium-sized companies entails special risks, such as limited product lines, markets and financial resources, and greater volatility than securities of larger, more established companies.

Bonds are subject to interest rate risk. When interest rates rise, bond prices fall; generally the longer a bond's maturity, the more sensitive it is to this risk. Bonds may also be subject to call risk, which is the risk that the issuer will redeem the debt at its option, fully or partially, before the scheduled maturity date. The market value of debt instruments may fluctuate, and proceeds from sales prior to maturity may be more or less than the amount originally invested or the maturity value due to changes in market conditions or changes in the credit quality of the issuer. Bonds are subject to the credit risk of the issuer. This is the risk that the issuer might be unable to make interest and/or principal payments on a timely basis. Bonds are also subject to reinvestment risk, which is the risk that principal and/or interest payments from a given investment may be reinvested at a lower interest rate.

High yield bonds (bonds rated below investment grade) may have speculative characteristics and present significant risks beyond those of other securities, including greater credit risk, price volatility, and limited liquidity in the secondary market. High yield bonds should comprise only a limited portion of a balanced portfolio.

Interest on **municipal bonds** is generally exempt from federal income tax; however, some bonds may be subject to the alternative minimum tax (AMT). Also, municipal bonds acquired in the secondary market at a discount may be subject to the market discount tax provisions, and therefore could give rise to taxable income. Typically, state tax-exemption applies if securities are issued within one's state of residence and, if applicable, local tax-exemption applies if securities are issued within one's city of residence. The tax-exempt status of municipal securities may be changed by legislative process, which could affect their value and marketability.

Yields are subject to change with economic conditions. Yield is only one factor that should be considered when making an investment decision.

Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets.

Because of their narrow focus, **sector investments** tend to be more volatile than investments that diversify across many sectors and companies. Risks applicable to companies in the **energy and natural resources** sectors include commodity pricing risk, supply and demand risk, depletion risk and exploration risk.

Nondiversification: For a portfolio that holds a concentrated or limited number of securities, a decline in the value of these investments would cause the portfolio's overall value to decline to a greater degree than a less concentrated portfolio. Portfolios that invest a large percentage of assets in only one industry sector (or in only a few sectors) are more vulnerable to price fluctuation than those that diversify among a broad range of sectors.

Growth investing does not guarantee a profit or eliminate risk. The stocks of these companies can have relatively high valuations. Because of these high valuations, an investment in a growth stock can be more risky than an investment in a company with more modest growth expectations.

Value investing does not guarantee a profit or eliminate risk. Not all companies whose stocks are considered to be value stocks are able to turn their business around or successfully employ corrective strategies which would result in stock prices that do not rise as initially expected.

The returns on a portfolio consisting primarily of **environmental, social, and governance-aware investments (ESG)** may be lower or higher than a portfolio that is more diversified or where decisions are based solely on investment considerations. Because ESG criteria exclude some investments, investors may not be able to take advantage of the same opportunities or market trends as investors that do not use such criteria.

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Rebalancing does not protect against a loss in declining financial markets. There may be a potential tax implication with a rebalancing strategy. Investors should consult with their tax advisor before implementing such a strategy.

Any type of **continuous or periodic investment plan** does not assure a profit and does not protect against loss in declining markets. Since such a plan involves continuous investment in securities regardless of fluctuating price levels of such securities, the investor should consider his financial ability to continue his purchases through periods of low price levels.

Active or frequent trading to effectuate a dynamic allocation strategy entails greater risk and is more speculative, but also entails the possibility for above-average returns, compared with a long-term investment strategy. It may also entail more costs and fees, as well as a larger and more immediate tax liability.

IRS rules stipulate that if a security is sold by an investor at a **tax loss**, the tax loss will not be currently usable if the investor has acquired (or has entered into a contract or option on) the same or substantially identical securities 30 days before or after the sale that generated the loss. This so-called "wash sale" rule is applied with respect to all of the investor's transactions across all accounts.

The indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment.

The **indices selected by Morgan Stanley Wealth Management** to measure performance are representative of broad asset classes. Morgan Stanley Wealth Management retains the right to change representative indices at any time.

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