

Managing a Concentrated Stock Position

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Ultra-high net worth individuals often end up holding large amounts of their wealth in the common shares of a single company. Whether acquired through equity-based compensation, inheritances or other avenues, these concentrated stock positions will often have generated a great deal of wealth for these investors. However, concentrated positions can also pose significant risks.

Consider the example of Sears. With the rapid shift from brick-and-mortar retail toward e-commerce, the once-largest retailer in the world saw its stock price collapse from \$40 per share in mid-2015 to less than \$1 upon filing for bankruptcy in 2018. For Sears executives with large amounts of their net worth concentrated in their employer's stock, this disruptive change erased much of their wealth and greatly imperiled their financial goals. While few investors are likely to find themselves in the exact same shoes as Sears executives, the inherent risks of holding concentrated stock positions are ever-present.

The good news is that there are several actionable strategies that can help mitigate these risks. The most straightforward approach, of course, is an outright sale of a concentrated position. However, while this strategy provides immediate liquidity, it can expose investors to large tax liabilities and often runs up against constraints on what the investor is free to do. Alternatively, US investors can pursue more tax-efficient strategies, such as placing their shares in equity exchange funds or making charitable contributions. Indeed, investors don't always need to dispose of the shares at all to potentially offset loss; for example, they may be able to engage in option strategies that offer support against downside risk or potentially generate liquidity around the concentrated position.

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Ultimately, investors can take many different approaches to manage a concentrated position. It is crucial to first understand the risks that concentrated positions pose. Once investors recognize that concentrated positions demand careful attention, they can pursue a risk-mitigation strategy tailored to their unique goals and circumstances.

Mentions of specific securities in this material are for illustrative purposes only and are not to be deemed a recommendation.

Why Investors Have Concentrated Positions

Investors end up with concentrated stock positions for a variety of reasons. Equity-based compensation and inheritances are among the most common. Concentrated positions may also simply be the byproduct of investing in stocks that experience dramatically stronger growth than other portfolio holdings. Regardless of how they arise in an investor's portfolio, a reasonable rule of thumb is that when a position comes to account for 10% or more of an investor's total wealth, the risk imparted by that concentration tends to be disproportionate to any incremental return it could deliver relative to a more diversified portfolio.

This can be counterintuitive for investors who have a strong conviction in the stock's future performance and therefore naturally want to hold onto it. Indeed, this is a common viewpoint expressed by investors with concentrated positions, not least because their experience with the position is likely to have been positive. But while expectations about future performance should absolutely factor into the decision about how to manage a concentrated position, it is important to distinguish well-reasoned bullish sentiment from overconfidence based on historically strong performance or proximity to management.

Overconfidence is just one of many psychological barriers that may increase investors' reluctance to reduce concentrated positions. Another common phenomenon is regret aversion, or the fear of making a decision that will later be regretted. If investors worry about missing out on future appreciation that may occur after selling their position, they might hold onto it to avoid feeling regretful. In addition to regret aversion, emotional attachment to a stock can make it difficult for investors to sell. Emotional attachment is especially likely to occur among investors who acquired their stock through family gifts or as long-term employees. These psychological barriers, for better or worse, can prompt

investors to hold onto concentrated positions.

Many investors also feel reluctant to sell concentrated stock positions due to concerns about the tax implications of liquidation. These concerns are especially salient when investors hold highly appreciated shares because investors owe taxes on the difference between the cost basis of the shares and the price at which the shares are sold. Consider an investor who paid \$2 million for stock that has appreciated to \$12 million in value. With the current long-term capital gains tax rate of 20%, the investor would owe \$2 million in federal taxes on an outright sale of the stock. An investor who does not feel comfortable footing a tax liability of this magnitude may choose to keep their concentrated position.






In such cases, the upfront tax liabilities incurred when selling should be weighed against the potential benefits of liquidation. Although upfront taxes can loom large in investors' decision-making, the long-term benefits of liquidating and pursuing an alternative strategy may outweigh these costs. Moreover, investors should be aware that the tax liabilities of selling a concentrated position can be minimized by applying carefully crafted liquidation strategies. We discuss the benefits of diversification and explore tax-efficient liquidation strategies later in this report.

In addition to tax concerns and behavioral factors, unique regulatory considerations for corporate insiders may further complicate the decision to sell concentrated positions. The Securities and Exchange Commission (SEC) imposes several restrictions on the trading of securities by corporate insiders—including senior executives, directors and individuals who hold more than 10% equity in a publicly traded company. Corporate insiders can also typically engage in preplanned stock sales through 10b5-1 plans to seek an affirmative defense against insider trading. It is imperative for investors and Financial Advisors to be aware of the full landscape of trading restrictions—both government regulations and corporation-specific rules—before liquidating concentrated stock positions.

Corporate insiders may also need to consider the public perception implications of liquidating concentrated stock positions. Given that corporate insiders are typically required to disclose stock transactions, the public might react negatively to news headlines indicating that a senior executive is selling a large fraction of their own company's stock. These public perception risks can deter insiders from selling concentrated positions.

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Exhibit 1: Factors That Inhibit Investors from Selling Concentrated Stock Positions

FACTOR	IMPLICATION
 TAXES	Investors may face an uncomfortably large tax bill when selling a concentrated stock position, especially with highly appreciated shares
 BULLISH EXPECTATIONS	Investors may believe that their stock position is likely to perform well in the future, offering opportunities for continued appreciation
 PSYCHOLOGICAL BARRIERS	Psychological phenomena such as overconfidence, regret aversion, and emotional attachment can make investors reluctant to sell
 REGULATIONS	Corporate insiders are subject to several government and company-specific restrictions on the timing and volume of stock sales
 PUBLIC PERCEPTION	Corporate executives may want to avoid any negative public reactions that can result from large sales of their own company's stock

Source: Morgan Stanley Wealth Management Global Investment Office

Risks of Holding a Concentrated Position

Concentrated stock positions expose investors to several risks, the most prominent of which is idiosyncratic risk. Unlike systematic risk, which refers to the broader risk of the market, idiosyncratic risk refers to the factors that can negatively impact specific stocks or other individual securities. Investors that hold greater amounts of their wealth in a single stock are exposed to higher levels of idiosyncratic risk because price movements for that stock impact a greater fraction of their net worth.

To better understand this concept, consider the recent drop in the share price of Meta Platforms (FB), the parent company of Facebook, Instagram and WhatsApp. On February 3, 2022, the share price of Meta plummeted 26%, marking the largest one-day stock decline in terms of market capitalization in US history. As a result, Mark Zuckerberg—who owned approximately 13% of Meta stock at the time—saw his net worth plunge by \$29 billion in a matter of hours. If part of his concentrated position in Meta had instead been invested in a more diversified basket of assets such as a proxy for the S&P 500 Index, which declined by 2.4% that day, Zuckerberg

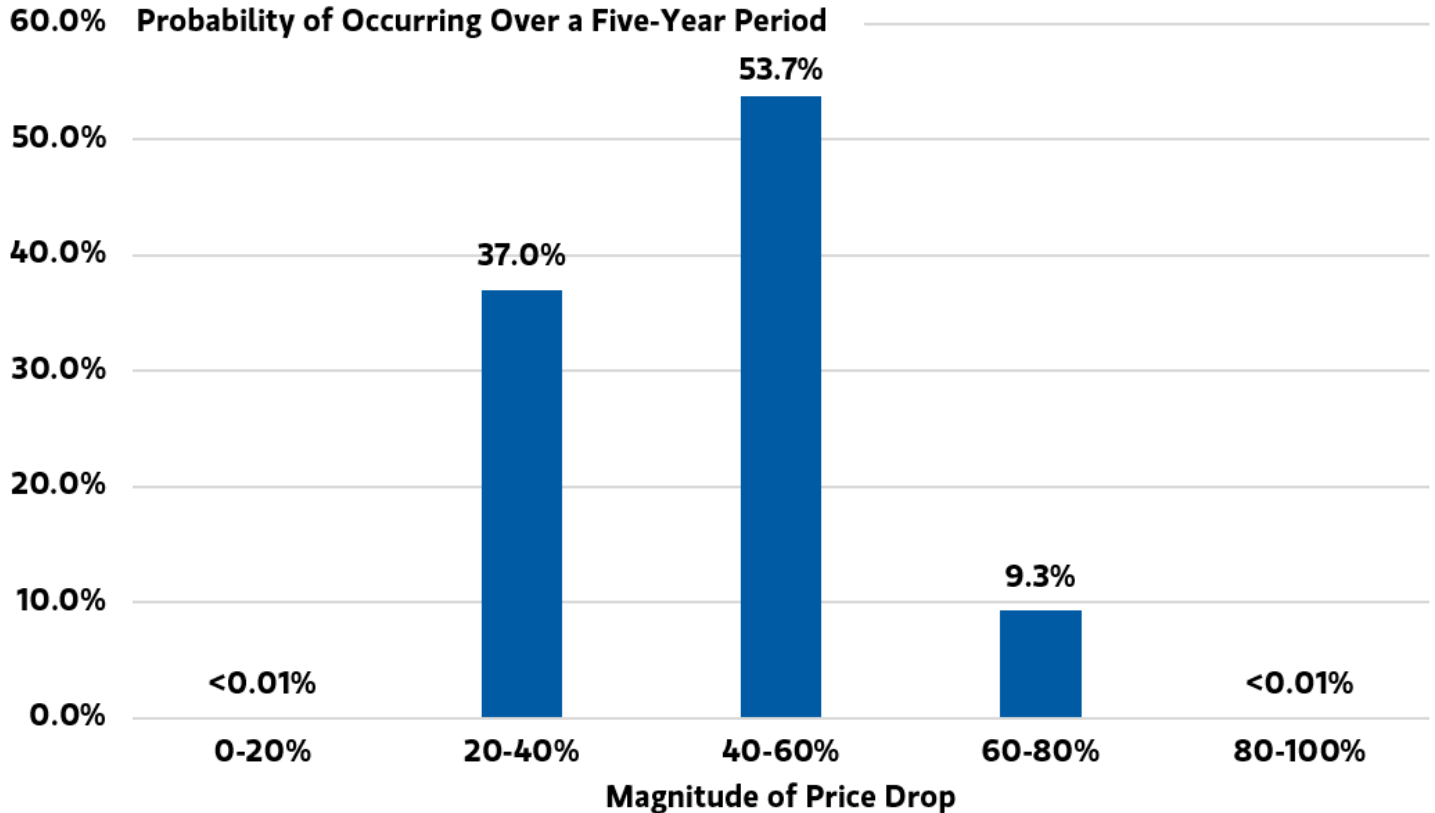
would have been better insulated against such a staggering loss. The case of Mark Zuckerberg illustrates how concentrated stock positions can cause an investor's net worth to significantly fluctuate based on the price movements of a single stock.

Although the example of Meta may appear extreme, it is common for publicly traded companies to experience significant drawdowns. When computing the maximum drawdowns (i.e., the largest peak-to-trough declines in share prices) for S&P 500 stocks over rolling five-year periods from 2000 to 2021, we found that over a five-year holding period every single S&P 500 stock had an average maximum drawdown of 20% or more (see Exhibit 2). Additionally, 63% of S&P 500 stocks experienced average maximum drawdowns of 40% or more over a five-year holding period. The message is clear: Even the largest, most successful companies in the US are not immune to major drops in stock prices. Over a five-year holding period, individual stocks regularly experience large drawdowns, which can significantly reduce the net worth of investors who are heavily concentrated in these positions.

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Exhibit 2: Stocks Commonly Experience Major Price Drops

Probabilities of Large Drawdowns for S&P 500 Stocks Over a Five-Year Holding Period*



*Calculated as a rolling average of maximum drawdowns for each S&P 500 stock over continuous five-year periods from 2000 to 2021. See endnotes for additional details.

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, nor a recommendation. Past performance of indices does not guarantee future results. Source: Morgan Stanley Wealth Management Global Investment Office, Bloomberg as of March 31, 2022

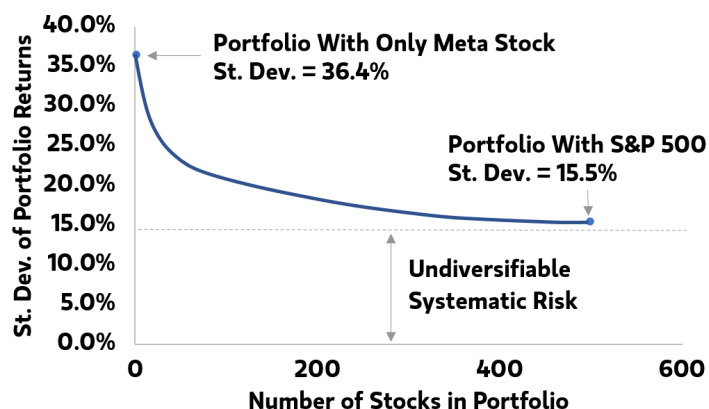
The idiosyncratic risk of holding concentrated positions can also foster liquidity constraints. As we saw with the Zuckerberg example, negative stock price movements can rapidly diminish the overall net worth of investors holding a significant amount of wealth in a single stock. If investors need access to cash to cover a major expense, such as the purchase of a new home, they may need to sell part of their concentrated position at a lower price than they would like. These liquidity constraints can impede investors' spending goals, particularly investors who are nearing retirement or

heavily invested in illiquid asset classes.

Diversifying a concentrated stock position can therefore be critical to helping ensure that investors meet their goals. Modern portfolio theory holds that as investors add more stocks to their portfolio, idiosyncratic risk decreases and the total portfolio risk asymptotically approaches the level of systematic risk that cannot be diversified away (see Exhibit 3). Investors with diversified portfolios will generally be better prepared to weather idiosyncratic risks.

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Exhibit 3: Diversification Potentially Reduces Portfolio Risk



Note: Standard deviation of monthly portfolio returns reflects monthly volatility. See endnotes for details. 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, nor a recommendation. Past performance of indices does not guarantee future results.

Source: Morgan Stanley Wealth Management Global Investment Office, FactSet as of March 31, 2022

Strategies for Managing a Concentrated Position

If an analysis of the risks and prospective returns leads an investor to conclude they are overexposed to a particular security, there are many options available to reduce that concentration. These options differ in the degree to which they furnish diversification, liquidity and tax benefits, as well as along other dimensions, such as impact on gifting for philanthropies and heirs. It is also prudent to investigate whether a combination of such strategies is the best way to align with an investor's objectives and to optimize risk, returns and tax efficiency. Careful consideration should be given to an investor's entire financial situation, including their capacity to pay any taxes associated with a given strategy, remaining exemption allowances, charitable inclinations, and several other factors.

Part of determining which cocktail of strategies makes the most sense for any particular investor is understanding the pros and cons that come with each and how they vary for certain investors, portfolios and situations. In this section, we will walk through a comprehensive list of strategies and discuss their strengths and weaknesses in different circumstances.

Exhibit 4: Overview of Strategies for Managing a Concentrated Stock Position

Category	Associated Strategies	Pros	Cons
Partial Liquidation	Targeted stock sales	Immediate liquidity	Lack of tax benefits
Charitable Strategies	Charitable remainder trusts, pooled income funds, donor-advised funds, charitable gift annuities	Popular strategies for those looking to combine charitable giving with tax optimization	May limit liquidity; may also require legal and administrative fees
Options-Based Strategies	Protective puts, collars, covered calls	Potential to mitigate downside risk and/or generate income	Concentrated position typically remains intact despite greater liquidity. Option premiums may become costly over time.
Tax-Efficient Diversification	Managed accounts, equity exchange funds, securities-backed borrowing and lending	Methodical way of diversifying while attempting to reduce tax bill	Success may depend heavily on market conditions
Transfer to Heirs	Annual and lifetime gifting exemptions, bequeathing via stepped-up basis, swap power	Leverages relevant tax provisions to maximize value transferred	Limitations on maximum transferrable value without having gift/estate tax imposed

Source: Morgan Stanley Wealth Management Global Investment Office as of March 31, 2022

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Partial Liquidation

Targeted Stock Sales

While not necessarily the most tax-efficient strategy for diversification, liquidating a portion of a concentrated stock position provides immediate liquidity and diversification benefits. While the benefit of immediate liquidity may be compelling, it should be carefully weighed against the tax bill associated with selling shares that in many cases have high levels of embedded capital gains. This strategy should only be considered in scenarios under which capital gains are not a primary concern and liquidity is required in the short term. Investors with concentrated positions in tax-advantaged accounts, for example, are likely to consider this a leading option.

Charitable Strategies

Charitable Remainder Trusts (CRT)

In a CRT, the investor transfers cash, property or, in this case, stock to an irrevocable trust. After the creation of the trust, the investor receives an income stream for the term of the trust based on a predetermined annuity rate. The investor receives an immediate income tax deduction at the inception of the CRT based on the actuarial value of the assets that will ultimately go to charity at the end of the trust term. Additionally, income and capital gains realized in the CRT account are not subject to taxes. This strategy is often employed by investors with concentrated stock positions and proves effective in a plurality of scenarios.

Pooled Income Funds

Another option for diversification through charitable gifting is pooled income funds, which offer the benefit of a partial immediate tax deduction as well as income for the remainder of the investor's life. The investor makes a gift to a qualified nonprofit organization and receives an upfront partial tax deduction. The funds are then invested alongside other donors, and an income stream is paid to the investor for the rest of their life, at the end of which the remainder is transferred to charity. Distributions from the fund are treated as ordinary income, and investors receive a Schedule K-1 each calendar year. The advantages of a pooled income fund versus a CRT are that there is no upfront cost to set up the fund and it may exist in perpetuity. However, the assets will be subject to federal estate or gift tax if the retained income interest is transferred to someone other than the donor, the donor's US citizen spouse or a charity.

Donor-Advised Funds (DAF)

For investors who are particularly charitably inclined, donor-advised funds may be an appropriate strategy. In a donor-advised fund strategy, an investor makes an irrevocable gift to the fund and receives an immediate income tax deduction. The investor can make recommendations as to how the fund

then invests the gifted funds using strategies made available by the fund, which has the latitude to donate to other charities immediately or over time. Investments in the donor-advised fund are generally not taxable, though there may be instances where an excise tax is triggered and unrelated business taxable income (UBTI) can be a byproduct of the investments and vehicles chosen. The fund can also be transferred to a successor at the end of the investor's life to continue the gift-giving legacy, potentially for generations. The donor surrenders ultimate control over the investment, management and disposition of assets, and the investment options are usually limited to mutual funds.

Charitable Gift Annuities

A charitable gift annuity has many similarities to a donor-advised fund in terms of the benefits to the investor. One difference is that upon the donor's death, the balance of the invested funds is transferred directly to the charity. In exchange for the gift, the donor receives a partial tax deduction and a fixed annuity for the remainder of their life.

Options-Based Strategies

Protective Puts

To potentially reduce downside market risk, an investor may consider employing a protective put strategy, which involves maintaining the long stock position while simultaneously purchasing put options. Protective puts effectively limit the downside potential while allowing for continued capital appreciation. Over time, the options premiums associated with a protective put strategy may become costly and should be carefully considered as part of a larger risk-reward calculation. Protective puts offer defined mitigation of downside risk and do not limit the upside return potential. In exchange, the investor pays a premium to the option writer.

Collars

Also referred to as a protective collar, this strategy may be used when an investor with a concentrated position wants to earn income on a concentrated stock position while also mitigating downside risk. Collars are created by holding the long stock position, purchasing a put option and selling a call option on the same stock. The upside capital appreciation potential is limited by the upside call, and the downside risk is limited by the put option. The premium from the short call helps to offset the premium from the long put. Collars offer mitigation of downside risk but also limit the upside capital gain potential. The investor pays a premium for the downside support and receives a premium for writing the upside calls on the underlying asset.

Covered Calls

An investor who has reason to believe volatility will be muted in their concentrated position may look to generate income as a source of liquidity by writing covered calls on the

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underlying stock. The investor will receive the option premium and, assuming the option is not exercised, will maintain their position in the underlying stock. Careful consideration should be paid to the risk-reward tradeoff and planning for any tax consequences in the event the option is exercised. Ultimately, the long-term success of the strategy depends almost entirely on the level of future volatility. Covered calls offer no downside support and limit the investor's upside potential. In exchange for this limited upside potential the investor earns a premium for writing the upside calls.

Tax-Efficient Diversification

Managed Accounts

With separately managed accounts, an investor can employ a staged diversification strategy to reduce concentration over time while managing sector and industry exposure and taking advantage of any tax-loss harvesting opportunities. These portfolios can be constructed to complement a client's concentrated stock exposure, and losses harvested in separate accounts may be used to offset gains from the sale of concentrated stock.

Equity Exchange Funds

Equity exchange funds may be attractive to investors who are looking for tax-deferred diversification and do not need immediate liquidity. In an equity exchange fund, an investor places their highly appreciated asset into a pooled vehicle with other investors in similar situations. Each investor then receives interests in the exchange fund representing a proportional share of the newly created basket of securities. If the investor holds the interests for seven years, the investor can withdraw their contribution in the form of their proportional share of the diversified pool of securities with cost basis distributed across the entire portfolio. Liquidity is a primary concern when assessing the viability of equity exchange funds, as there is no opportunity for liquidity during the fund term.

Securities-Backed Borrowing and Lending

Generally seen as a temporary method for increasing liquidity and providing short-term purchasing power, borrowing and lending may enable holders of concentrated stock positions to borrow against their positions and use the proceeds to fund investments in other securities or to cover lifestyle expenses. While this strategy, notably, has been employed by some high-profile holders of concentrated positions, it is important to consider the potential for market movements to severely impact it. For example, an investor who, on the day of Meta's 26% decline, had a concentrated position in the stock and was engaged in security-based lending, would likely have been forced to very quickly come up with significant liquidity to meet the margin requirements of their lending agreement. This strategy may be appropriate and useful when

volatility is concentrated to the upside or when the stock is not expected to be volatile in the short term. During periods of heightened volatility or amid downside moves, however, it may exacerbate the exact risks the investor is seeking to mitigate.

Transfer to Heirs

Gifting to Family

Investors may choose to take advantage of current US tax law, which includes exemptions for annual and lifetime gifting. While securities gifted using these exemptions are transferred tax free to the beneficiary, the stocks maintain their original cost basis and thus would still be subject to any relevant capital gains taxes when sold in the future. In 2022 the estate and gift tax exemptions are as follows: annual gifting: \$16,000 per individual or \$32,000 per couple; lifetime estate and gift tax exemption: \$12,060,000 per individual or \$24,120,000 per couple.

Stepped-Up Basis

The stepped-up basis provision adjusts the cost basis of an asset once an investor bequeaths it to heirs after death. The cost basis is increased to the market value on the date of death, which reduces the capital gains tax owed by the recipient. While this strategy has significant tax advantages for heirs, it does not help investors gain any diversification benefits while living and does not remove the assets from the investor's taxable estate.

Swap Power

Assets gifted or transferred to an irrevocable trust do not receive a step-up in basis at the time of the donor's death; instead, they retain the basis from the date of asset acquisition. By taking advantage of swap power, the donor can exchange highly appreciated assets held within the irrevocable trust for high-basis assets currently owned by the donor as part of their taxable estate. To illustrate the potential benefits, consider a donor who purchased Amazon stock in 2010 with a basis of \$250,000 and gifted the property to his irrevocable trust in 2015 when it had a market value of \$750,000. At the time of the donor's death in 2022, the shares have a market value of approximately \$6.75 million. If before the donor's death they took advantage of swap power in the irrevocable trust and exchanged the highly appreciated Amazon stock for similarly valued cash or another high-basis asset, the stock would receive an adjusted basis at the time of death of \$6.75 million, and thus the beneficiary would only be responsible for capital appreciation above this value. Alternatively, had the donor not utilized this provision, the beneficiary would be responsible for all the appreciation from \$250,000 through the date of sale. It is, of course, important to consider lifetime exemption amounts and relevant estate taxes as part of this calculation.

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Case Studies

In order to quantify the potential benefits of the strategies detailed above, Financial Advisors can employ proprietary analytical tools such as the Wealth Strategies Analysis, which is specifically designed to answer questions regarding asset allocation and asset location for ultra-high net worth clients. To get a sense of the power of the tool and its usefulness in client conversations, consider the following two scenarios.

Case Study 1: Charitable Remainder Trusts

Consider a client with a total liquid net worth of \$35 million. A significant portion of the client's wealth was created during her time as an executive of a publicly traded company, and she currently remains in possession of \$10 million of zero-basis company stock in her personal account, as well as \$5 million of zero-basis company stock in a tax-advantaged account. While the client still believes in the long-term prospects of the company, after close consultation with her Financial Advisors she understands the need to reduce idiosyncratic risk and diversify away from this concentrated position. As the \$5 million position in the tax-advantaged account will not be subject to capital gains taxes, the client's primary concern is the tax liability on the \$10 million of taxable shares.

In order to reduce the tax liability associated with attaining the client's diversification goals, her Financial Advisor suggests opening a charitable remainder trust. Given the client's age, 55, and desire to maintain some exposure to the company, the decision is made to place the \$10 million taxable position into a 10-year CRT and immediately reallocate it to a diversified portfolio (2021 Morgan Stanley Wealth Management Global Investment Committee Asset Allocation Market Growth Model for investors with more than \$25 million in investable assets). The client benefits immediately from a tax deduction based on the actuary terminal value of the charitable contribution, and the trust assets have the potential to grow tax-free. After 10 years the client would be expected to have the outcomes displayed in Exhibit 5 below, depending on whether she chooses to employ the CRT strategy.

Exhibit 5: Selling a Concentrated Position With, Versus Without, a CRT

Percentile Outcome	Portfolio Value After 10 Years	
	Sell \$10M Without CRT	Sell \$10M With CRT
95th Percentile	\$76.0 million	\$80.3 million
50th Percentile	\$52.9 million	\$55.6 million
5th Percentile	\$37.0 million	\$39.4 million

Note: Derived from proprietary Morgan Stanley software (Wealth Strategies Analysis). See endnotes for details of the assumptions used in analysis. Source: Morgan Stanley Wealth Management Global Investment Office as of March 31, 2022

In the base case outcome (50th percentile), the client and the CRT's expected combined total portfolio value is \$2.7 million higher using the CRT strategy, including \$500,000 more in personal assets and a \$1.9 million transfer to charity. As displayed, CRTs can enable investors with concentrated positions to do better for themselves and for charity. The primary takeaway is that in every market scenario, when dealing with a zero-basis stock, the strategy employing a CRT performs better than the strategy without a CRT. In comparison, when we adjust the position to reach an 80% capital gain rather than a 100% capital gain, the CRT strategy still outperforms the non-CRT strategy at the 5th, 50th, and 95th percentiles.

Case Study 2: Stepped-Up Basis

While it makes sense to employ one or more of the strategies detailed in this paper in most situations involving a highly concentrated position, in select scenarios it is better to hold the position until end of life and take advantage of the stepped-up basis tax provision. Given the current lifetime estate and gift tax exemption of \$12,060,000 per individual, or \$24,120,000 per couple, an investor could decide that rather than diversifying their portfolio through targeted stock sales or going through the administrative process associated with setting up some of the other strategies mentioned above, it may make more sense to hold the position until end of life and take advantage of the stepped-up basis.

To quantify this impact, consider a client who has an actuarial expected lifetime of two more years and is trying to determine whether he should outright sell \$5.5 million of highly appreciated stock, which equates to 55% of his overall portfolio, or hold the position for two more years and then bequeath the shares to his heirs as part of his estate. By holding onto the shares, the client's heirs can avoid paying capital gains taxes through the stepped-up basis.

Exhibit 6: Benefits of Stepped-Up Basis for Estate Transfer

Percentile Outcome	Amount Transferred to Family	
	Diversify Immediately	Take Advantage of Stepped-Up Basis
95th Percentile	\$ 8.9 million	\$11.1 million
50th Percentile	\$7.7 million	\$8.7 million
5th Percentile	\$6.5 million	\$6.4 million

Note: Derived from proprietary Morgan Stanley software (Wealth Strategies Analysis). See endnotes for details of the assumptions used in analysis. Source: Morgan Stanley Wealth Management Global Investment Office as of March 31, 2022

In the base case outcome (50th percentile), the client ends up with nearly an additional \$1 million to transfer to his heirs. This demonstrates that although investors will often want to diversify their concentrated positions, in some scenarios it

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makes sense to hold onto these positions to reap the benefits of a stepped-up basis.

Ultimately, there are a myriad of strategies that investors can pursue. Setting up a CRT and bequeathing assets that will benefit from stepped-up basis are just two of these strategies. It is critical for investors to take a rigorous quantitative approach to understanding which action plan is most appropriate. The optimal strategy depends on a variety of factors that are particular to each investor, such as age and risk tolerance.

Conclusion and Next Steps

Investors accumulate concentrated stock positions for a wide variety of reasons and many face barriers to immediately diversifying those positions and mitigating the risks

associated with them. Investors and their Financial Advisors have numerous strategies available to them that take advantage of a variety of financial products, trust and estate planning techniques, and portfolio management capabilities to optimize client outcomes.

Analyzing each of the different options and formulating a comprehensive strategy can be a complex and sometimes intricate process, but Morgan Stanley Wealth Management can help. In particular, the Wealth Strategies and Planning Tools team has developed a range of proprietary analytical tools to quantify the impact of different strategies. Additionally, the Family Office Resources group has deep subject matter expertise in the trust and estate planning strategies detailed in this document. If you would like to discuss further, please reach out to your Morgan Stanley Financial Advisor.

Endnotes

Exhibit 2: For each stock that is presently in the S&P 500, we calculated the average maximum drawdown (largest peak-to-trough decline) over rolling five-year periods from 2000 to 2021. In other words, for each stock, we calculated the maximum drawdown from Jan. 1, 2000, to Dec. 31, 2004, then we did the same for Jan. 2, 2000, to Jan 1, 2005, and so on and so forth, up to Jan. 1, 2017, to Dec. 31, 2021. As a result, for each stock we were able to compute a series of maximum drawdowns for every five-year period from 2000 to 2021. For each stock, we then averaged the maximum drawdowns across all five-year periods to come up with an average five-year maximum drawdown. We were then able to determine what percent of the S&P 500 experienced average five-year maximum drawdowns of various magnitudes (0-20%, 20-40%, 40-60%, 60-80% and 80-100%). It is worth noting that we performed this analysis only for the S&P 500 stocks that were continuously traded from 2000 to 2021. We excluded stocks that stopped trading after going bankrupt or being delisted. As a result, our estimates of the likelihood of large drawdowns are conservative. If we had also included stocks that were only traded for part of the period from 2000 to 2021, more would have had average maximum drawdowns of 60% to 80% and 80% to 100%.

Exhibit 3: We computed the standard deviation of monthly annualized returns for Meta and the S&P 500 Index from the Facebook initial public offering (IPO) date of May 18, 2012, to March 30, 2022. These computations produced the two endpoints of the asymptotic curve. The line between these two points was fitted to illustrate an asymptotic curve, but this line does not represent data points that we computed ourselves.

Exhibit 4: The tax-advantaged strategies outlined here are primarily geared toward US tax residents who are subject to US federal tax laws. The benefits of these strategies might not apply to investors in foreign tax jurisdictions.

Exhibit 5 (Case Study 1): For this analysis, we used a 55-year-old client based in California with \$35 million in total liquid net worth. This client had \$10 million of zero-basis company stock in a taxable account and \$5 million of company shares in a retirement account. We assumed that the client was in the highest tax bracket, that the client reinvested CRT distributions into the 2021 GIC Asset Allocation Market Growth Model for investors with more than \$25 million in investable assets and that the remainder of the client's liquid portfolio was invested in the same model. The 5th, 50th and 95th percentile estimates were computed using a Monte Carlo analysis feature of the Wealth Strategies Analysis tool.

Exhibit 6 (Case Study 2): For this analysis, we used a New York resident with an actuarial expected remaining life of two years and a concentrated zero-basis position of \$5.5 million. We assumed that the client had remaining capacity in their lifetime estate and gift tax exemption. We did not include any hedging costs. We also assumed that in the scenario with immediate diversification the assets were invested in the 2021 GIC Asset Allocation Market Growth Model for investors with less than \$25 million in investable assets. The 5th, 50th and 95th percentile estimates were computed using a Monte Carlo analysis feature of the Wealth Strategies Analysis tool.

Disclosure Section

Risk Considerations

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

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 performance shown here is simulated performance not investment results from an actual portfolio or actual trading. There can be large differences between hypothetical and actual performance results.

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.

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 hypothetical 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 (forward-looking) analysis uses a Monte Carlo simulation to generate randomized, correlated returns that overall have similar characteristics to the Global Investment Committee's 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.

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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.

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.

Standard deviation This statistic quantifies the volatility associated with a portfolio's returns by measuring the variation in returns around the mean return. Unlike beta, which measures volatility relative to the aggregate market, standard deviation measures the absolute volatility of a portfolio's return.

Asset Class Risks

Exchange funds are private placement vehicles that enable holders of concentrated single-stock positions to exchange those stocks for a diversified portfolio. Investors may benefit from greater diversification by exchanging a concentrated stock position for fund shares without triggering a taxable event.

These funds are available only to qualified investors. Before investing, investors should consider the following:

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- Dividends are pooled
- Investors may forfeit their stock voting rights
- Investment may be illiquid for several years
- Investments may be leveraged or contain derivatives
- Significant early redemption fees may apply
- Changes to the U.S. tax code, which could be retroactive (potentially disallowing the favorable tax treatment of exchange funds)
- **Investment risk and potential loss of principal**

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

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.

Performance of indices may be more or less volatile than any investment product. The risk of loss in value of a specific investment (such as with an investment manager or in a fund) 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 product.

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

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.

Options may not be appropriate for all investors. Before engaging in the purchase or sale of options, clients should understand the nature and extent of their rights and obligations and be aware of the risks involved, including, without limitation, the risks pertaining to the business and financial condition of the issuer of the underlying security/instrument. Options investing, like other forms of investing, involves tax considerations, transaction costs and margin requirements that can significantly affect clients' potential profits and losses. The transaction costs of options investing consist primarily of commissions (which are imposed in opening, closing, exercise and assignment transactions), but may also include margin and interest costs in particular transactions. Transaction costs are especially significant in options strategies calling for multiple purchases and sales of options, such as multiple leg strategies, including spreads, straddles and collars. Prior to opening an options account you should receive and review the "Characteristics and Risks of Standardized Options" (ODD) booklet published by the Options Clearing Corporation. Clients may not enter into options transactions until they have received, read and understood the ODD Disclosure Document. Prior to investing in options you should determine that options are an appropriate investment for you based on your investment needs and risk profile and have discussed transaction costs with your Financial Advisor or Private Wealth Advisor. A copy of the ODD is also available online at: <https://www.theocc.com/Company-Information/Documents-and-Archives/Options-Disclosure-Document>.

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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. The companies identified and investment examples are for illustrative purposes only and should not be deemed a recommendation to purchase, hold or sell any securities or investment products. They are intended to demonstrate the approaches taken by managers who focus on ESG

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criteria in their investment strategy. There can be no guarantee that a client's account will be managed as described herein.

This Wealth Strategies Analysis Tool may contain historical asset class return data and statistically generated data from 1990-2017 which are not used to forecast potential return but rather to identify relative patterns of behavior among asset classes which when put in different combinations assume various levels of risk.

Important: The projections or other information generated by the Wealth Strategies Analysis Tool 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 generated by a Monte Carlo analysis will vary with each use and over time because each portfolio simulation is randomly generated.

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Important Risk Information for Securities Based Lending: You need to understand that: (1) Sufficient collateral must be maintained to support your loan(s) and to take future advances; (2) You may have to deposit additional cash or eligible securities on short notice; (3) Some or all of your securities may be sold without prior notice in order to maintain account equity at required maintenance levels. You will not be entitled to choose the securities that will be sold. These actions may interrupt your long-term investment strategy and may result in adverse tax consequences or in additional fees being assessed; (4) Morgan Stanley Bank, N.A., Morgan Stanley Private Bank, National Association or Morgan Stanley Smith Barney LLC (collectively referred to as "Morgan Stanley") reserves the right not to fund any advance request due to insufficient collateral or for any other reason except for any portion of a securities based loan that is identified as a committed facility; (5) Morgan Stanley reserves the right to increase your collateral maintenance requirements at any time without notice; and (6) Morgan Stanley reserves the right to call securities based loans at any time and for any reason.

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