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Direct Indexing: Opportunities for Customization and Potential Tax Alpha

Direct indexing¹ strategies, which typically seek to replicate the pretax performance of well-established indexes, can deliver tangible value to investors through their flexibility, allowing for customization and tax-loss harvesting. Delivered through customized separately managed accounts (SMAs) with direct ownership of underlying index constituents, direct indexing strategies can be tailored to avoid or feature certain exposures, such as sectors, factors, themes or environmental, social and governance (ESG) metrics.

Beyond the benefits of customization, direct indexing can offer tax efficiency for investments in taxable accounts. Direct ownership unlocks opportunities to harvest capital losses at the single-security level, while maintaining a consistent exposure to the intended reference index, as measured by tracking error. Tax-loss harvesting can bolster investors' post-tax returns, particularly in efficient asset classes, where active management may show more limited prospects for security selection alpha. As such, direct indexing may provide similar pretax returns to a passive exchange-traded fund (ETF) strategy but deliver intermediate realized capital losses, which observers have termed (positive) "tax alpha." Direct indexing also affords thoughtful portfolio onboarding, including existing holdings, and tax-optimized charitable giving through appreciated securities.

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In these pages, we investigate direct indexing's mechanics, potential benefits and potential limitations. We evaluate its effectiveness in improving post-tax returns through hypothetical testing, both in historical scenarios and on a forward-looking basis. We conclude that, viewed through the appropriate lens and after looking below the surface of pretax returns, direct indexing has the potential to add value for taxable investors.

Delivering Equity Index Exposure With Potential Enhancements

As the name suggests, direct indexing strategies traditionally aim to deliver the pretax returns of reference equity index—such as the S&P 500, the Russell 3000 or the MSCI EAFE—much like a passive ETF strategy. Investment managers implement direct indexing strategies through SMAs, allowing for security-level purchases and sales. That SMA structure affords customization and potential tax efficiencies for taxable investors. Below, we consider the strategy's mechanics, potential benefits and potential limitations.

Mechanics for implementation

As a starting point, an investment manager could replicate a reference index by establishing positions in the underlying constituents according to the then-current weights. The manager could update those positions periodically as index membership shifts due to corporate actions or index reconstitution. Major equity indexes have well-established constituent requirements and periodic reassessments to maximize their continued relevance in tracking equity market performance.

With the rise of modern portfolio optimization, practitioners recognized that investment managers could closely follow an equity index's returns through a thoughtful sampling of the underlying positions. That is, the optimization process can identify a subset of the index constituents to minimize the resulting portfolio's tracking error, a measure of the divergence of its returns versus the reference index. Mathematically, lower expected tracking errors suggests a high likelihood of delivering return and risk characteristics in line with the reference index. Optimization processes can even wrestle with concentrated positions, such as those arising from an employee stock grant, or consider the effects of screening out unwanted exposures, such as stocks with unfavorable ESG ratings.

Upon incepting a strategy for a specific investor, a direct indexing manager executes purchases and sales to construct an initial portfolio, guided by the portfolio optimization process. On a periodic basis thereafter, typically daily, the manager evaluates the drifting portfolio's tracking error and other characteristics and runs a refreshed optimization, with the goal of minimizing tracking error, turnover and the

resulting transaction costs. For taxable investors, the manager may pursue the additional objective of maximizing realized capital losses, termed "tax-loss harvesting." Based on the optimization calculations, the manager may rebalance the portfolio to achieve those goals, with the transactions tailored for the investor-specific portfolio and independent of any security-level fundamentals. Importantly, the manager will only make rebalancing trades when it makes economic sense, weighing the prospective benefits (lower tracking error or realized capital losses) against potential costs (transaction costs).

Direct indexing applies principally to equity asset classes, where well-studied implementation methodologies permit a robust index replication, while maintaining low investment minimums and favorable tax consequences. Within fixed income asset classes, the breadth of underlying index constituents makes full index replication impractical. As a result, even ETF strategies often take advantage of sampling techniques in tracking major fixed income indexes, such as the Bloomberg Barclays US Aggregate Index. Individual investors commonly use SMA strategies that ladder municipal bonds, a scaled-down version of direct indexing that offers the potential to harvest capital losses in the event of rising yields.

Following the Global Financial Crisis, active investment strategies across many asset categories have struggled in pretax terms, as measured by the percentage of managers outperforming their benchmarks. This disappointing showing would become further magnified if we were to evaluate active investment strategies' recent after-tax returns versus benchmarks or passive strategies.

While taxes pose an additional obstacle for active managers, however, that hurdle is not insurmountable. For taxable investors, active strategies must seek to deliver sufficient value-added to overcome both their typically higher fees and any potential tax drag. With taxes, many factors intermingle to affect relative after-tax performance, including tax rates, dividend yields, embedded gains and time horizons.

Potential benefits

As a result of their SMA implementation, direct indexing strategies can offer customization, including a tax-loss harvesting overlay, at competitive expense ratios (see Exhibit 1 on page 3).

With direct indexing, investment managers can customize the portfolio construction in pursuit of investors' specific goals along three dimensions: index selection, exposure tilting and tax-loss harvesting. First, investors can select an appropriate reference index, typically driven by the strategy's place in an overall asset allocation. Second, investors can identify any exposure tilts, either to feature or avoid. As an example, some investors might wish to avoid companies with high levels of carbon emissions while featuring stocks with more favorable

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environmental impacts. Another investor with a concentrated position in a Communication Services sector constituent may prefer an index-tracking strategy that limits additional exposures to that sector. Finally, the investor may request a tax-loss harvesting overlay, which we review in detail below.

Direct indexing's flexibility for customization and tax-loss harvesting has attracted increasing interest from Financial Advisors and clients. Institutional investors have leveraged these flexible mandates for several decades. With technological advances, particularly to unified managed account (UMA) platforms, individual investors can enjoy these benefits—in a more streamlined fashion and at accessible minimum investment levels—as part of a holistic portfolio implementation. Ongoing developments with fractional share technology, which may reduce minimum investment levels below today's typical \$250,000 investment level, may further democratize the availability of direct indexing.

Potential Limitations

Although direct indexing provides attractive benefits, it does face some limitations, which we detail below:

- Although optimization techniques can reduce concentration risks for investors' existing positions, direct indexing cannot fully mitigate this issue. Empirically, most single-security positions exhibit higher realized volatility than a diversified index. As such, concentrated positions will typically account for an outsized share of total portfolio risk, which direct indexing cannot overcome
- The strategy may struggle when the underlying index constituents are less liquid. Highly liquid securities tend to result in tight bid-offer spreads; wider bid-offer spreads can contribute to tracking error versus the reference index.

- Direct indexing for international equity indexes can translate into higher expected tracking errors than for US equity indexes. First, Morgan Stanley Wealth Management's Select UMA program limits single-security equity holdings to those listed on US exchanges, including American Depository Receipts (ADRs). Consequently, within the Select UMA program, direct indexing's exposures to international equities are restricted to available ADRs. While ADRs exist for equities covering a significant percentage of total market capitalization, there may be lower representation beyond the largest companies. Certain countries may impose restrictions on companies' ADR listings. For instance, China introduced regulatory changes in July 2021, with the goal of cutting back on Chinese ADRs.
- With its focus on index replication, direct indexing does not explicitly address issues related to index concentration. That is, should a certain sector or factor come to dominate index performance, direct indexing does not inherently mitigate that concentration risk.
- Direct indexing typically requires minimum levels of \$250,000 and typically have management fees of close to 0.30%, which may be in excess of those for comparable ETF strategies. Investors may bear transaction costs associated with portfolio rebalancing.
- From a practical standpoint, a direct indexing strategy requires investors to hold many underlying securities, which translates into greater complexity in account statements and tax preparation.

Exhibit 1: Direct Indexing Compares Favorably to Other Passive and Active Strategies

Implementation Strategy	ETF, Index-Tracking	ETF, Factor Investing	Direct Indexing, SMAs	Active, SMAs	Active, Commingled
Objective	Index replication	Factor tilts	Tax-loss harvesting; factor or ESG tilts	Security selection; factor tilts; (potential) tax-loss harvesting	Security selection; factor tilts
Expense Ratio	Lowest	Low	Lowest to low	Low	Highest
Allowable Customization	None	Beyond initial exposure selection, none	Yes, including factor or ESG tilts, sensitivity to existing holdings, and tax-loss harvesting	Beyond initial exposure selection, typically limited to negative screening	Beyond initial exposure selection, none
Tax-Loss Harvesting	Limited to entity level	Limited to entity level	Yes, effective to the single-security level	Yes, but more limited than direct indexing	Limited to entity level
Tracking Error	Lowest	Medium	Low	Highest	Highest
Liquidity	T+1	T+1	T+1	T+1	T+1

Source: Morgan Stanley Wealth Management Portfolio Analytics

Comparing Implementation Strategies for Equity Asset Classes

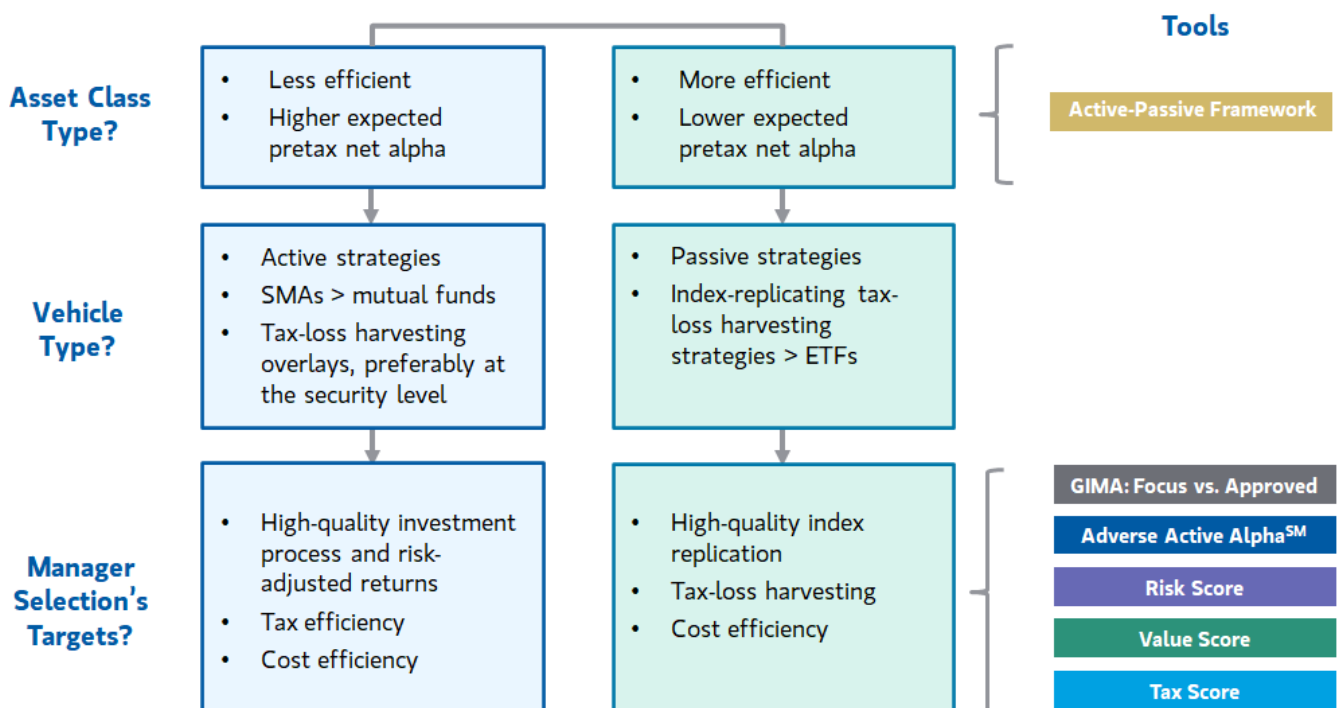
In Exhibit 1, we compare several implementation strategies in equity asset classes. While investors commonly think of active and passive as their two implementation options, we break down this decision more finely, given important distinctions. As such, we separate “passive” strategies into three categories: index-tracking ETFs, factor ETFs and direct indexing. For “active,” we consider both commingled vehicles, such as mutual funds, and SMAs.

Direct indexing aligns most closely with index-tracking ETFs. For sizable institutional mandates, direct indexing may involve full replication of an underlying index, and expense ratios can match or fall below those for comparable ETFs. For individual investors, direct indexing typically leverages optimized replication, which helps to limit minimum investment levels but slightly increases tracking errors versus similar ETFs. Given its implementation through SMAs, direct indexing permits security-level purchases and sales, which allows for both customization and tax-loss harvesting. According to our analysis, active tax-loss harvesting can generate positive “tax alpha,” leading to a high probability of achieving higher post-tax returns with direct indexing versus an ETF, as evidenced by our hypothetical historical testing (see Exhibit 4) and forward-looking simulations (see pages 11 and 12 for results).

Active strategies seek to deliver value to investors through active decision-making—for example, through sector or factor exposures, or via individual security selection. As we discuss in the next section, Morgan Stanley Wealth Management has developed several investment frameworks to determine which asset classes and managers are more likely to add value. While direct indexing forfeits opportunities for active decision-making, the “tax alpha” from tax-loss harvesting can lead to improved post-tax returns, particularly for efficient asset classes. Actively managed SMA strategies can offer hybrid benefits to investors: 1) the potential of investment alpha through active management; and 2) opportunities for security-level tax-loss harvesting, though less frequently and less surgically than with direct indexing.

Uniquely, direct indexing can provide other tax efficiencies related to onboarding and charitable giving. Taxable investors may have existing positions in individual securities, such as those received as equity compensation from a publicly traded company. In the event these securities have appreciated, leaving investors with unrealized capital gains, it may make sense to incorporate them into a direct indexing strategy rather than realizing gains and triggering a taxable event. Likewise, taxable investors may wish to donate appreciated securities as a tax-efficient means of charitable giving. The portfolio optimization that powers direct indexing can support these goals, unlike other implementation strategies.

Exhibit 2: Prudent Implementation Can Improve Taxable Investors’ Probabilities of Post-Tax Success



Source: Morgan Stanley Wealth Management, Global Investment Committee

Connecting Direct Indexing to Our Portfolio Construction Frameworks

Before evaluating direct indexing's tax-loss harvesting benefits, we would like to provide context for direct indexing's potential role in investor portfolios. Where would it make sense to introduce direct indexing? Or active management?

Morgan Stanley Wealth Management's Global Investment Committee (GIC) indicated in its March 31 report, "[Annual Update of GIC Capital Market Assumptions](#)," that expected seven-year returns for major asset classes appear modest and well below realized historical returns over the previous 12 years. This lower-return environment highlights the value of improving overall portfolio returns through thoughtful implementation, spanning active-passive decisions, manager selection and risk management.

For taxable investors, effective portfolio implementation requires a careful consideration of tax implications. In December 2020, we published two special reports on the tax consequences of active-passive decisions and manager selection for taxable investors. "[Taxes and Active Management: Return Drivers and Portfolio Implications](#)" addressed the drivers of post-tax returns for active managers and provided an implementation guide for taxable investors, shown in Exhibit 2. The second report, "[Tax Score: Assessing Investment Strategies by Quality and Tax Efficiency](#)," introduced the concept of the Tax Score, which ranks investment strategies within each of 57 categories on the quality of their prospective active-tax returns.

Exhibit 2 suggests that taxable investors consider their active-passive and manager selection decisions concurrently and on an asset class-by-asset class basis, tracking the insights from our Active-Passive Framework 2.0:

- For less efficient asset classes (with 50% or greater active weight recommendations from the Active-Passive Framework 2.0), such as US small-cap value equities, active managers tend to deliver higher pretax net alpha. In those cases, we recommend that taxable investors consider allocating to high-quality active strategies, preferably through SMAs, to avoid the "tax drag" associated with mutual funds' embedded gains and take advantage of security-level tax-loss harvesting overlays. We illustrate this path on the left-hand side of Exhibit 2, in the blue boxes.

- For more efficient asset classes (with less-than-50% active weight recommendations from the Active-Passive Framework 2.0), such as US large-cap core equities, active managers typically struggle to generate pretax net alpha. Here, passive strategies may lead to more favorable post-tax returns. Where available, direct indexing, with its tax-loss harvesting benefits, can offer an attractive alternative to passive ETF strategies. This logic corresponds to the right-hand side of Exhibit 2, shown in the green boxes.

Evaluating the Benefits of Tax-Loss Harvesting

While customization may deliver value for certain investors, the potential for tax-loss harvesting stands out as direct indexing's most quantifiable potential benefit for taxable investors.

In essence, direct indexing takes advantage of the dispersion in performance of individual index constituents. When certain constituents experience intermediate downside volatility, selling appropriate tax lots can realize capital losses. Through portfolio optimization, direct indexing strategies can replace those liquidated exposures with other index constituents, with the goal of maintaining a consistent tracking error to the reference index. In tax accounting, investors may apply those capital losses against capital gains, either from the direct indexing strategy or elsewhere in the portfolio. The resulting "tax alpha" from these capital losses can accrue to investors' overall, post-tax total returns but will not readily appear in pretax returns.

Both practitioners^{2,3} and academics⁴ have investigated the magnitude of this tax alpha. Given the multiple underlying drivers, including index total returns, volatility, constituent dispersion, tax rates and holding periods, it can be difficult to pinpoint a specific estimate for tax alpha. Moreover, dedicated tax-loss harvesting strategies may become less able to realize losses after multiple years with a rising index level. As a result, studies with longer implied holding periods tend to produce lower values for annualized tax alpha than those with shorter implied holding periods.

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Running Historical Scenarios to Assess the Drivers of Post-Tax Returns

Using results from the MSCI Barra portfolio optimizer, a common industry tool, we generated historical simulations for direct indexing strategies intended to track the performance of four common US equity benchmark indexes: the S&P 500, Russell 1000 Growth, Russell 1000 Value and Russell 2000. The simulations selected a subset of the index constituents (approximately 40%) to achieve an initial replication, subject to a tracking error threshold. For subsequent days, the MSCI Barra engine recommended rebalancing trades to achieve tax loss harvesting and to maintain an acceptable tracking error. These simulations covered 255 rolling five-year periods, beginning with July 1995 to June 2000 and concluding with January 2016 to December 2020. For each period, we computed the post-tax returns for the direct indexing strategies and ETF proxies tracking the same indexes. For each strategy, we assumed a 0.30% annual expense ratio; for the ETF proxies, we assumed variable expense ratios. Please find a summary of these historical simulation inputs, including moderate tax rate assumptions, in Exhibit 3.

In the historical simulation analysis, we considered outcomes both prior to and after a period-ending liquidation. This period-ending liquidation triggers potentially significant tax consequences, which can play an outsized role in determining relative attractiveness.

In each historical case, we evaluated the level of tax alpha (post-tax premium) that accrued to the tax-loss harvesting strategy and the incidence of its outperforming the ETF proxy. Exhibit 6 summarizes the premium's variability across the historical periods, considering the fifth, 25th, 50th, 75th and 95th percentile results. Direct indexing strategies added significant premium across the pre-liquidation cases, ranging from 1.21% to 1.98% at the 50th percentile (median) level. Moreover, the tax alpha remained positive at the 25th percentile for each index and approached zero at the fifth percentile level. Furthermore, the direct indexing strategies showed a high incidence of outperforming the ETF proxies, achieving that goal in 79% to 96% of the underlying "Pre-Liquidation" cases (summarized in the "Outperform?" row in Exhibit 4).

Exhibit 3: Assumptions for Historical Simulations

Asset Class	Benchmark Index	ETF Proxy's Expense Ratio	Tax Rates	
US Large-Cap Core	S&P 500	0.05%	Dividend	18.8%
US Large-Cap Growth	Russell 1000 Growth	0.15%	Long-Term Capital Gains	18.8%
US Large-Cap Value	Russell 1000 Value	0.15%	Short-Term Capital Gains	27.8%
US Small-Cap Core	Russell 2000	0.25%	State	5.0%

Source: Morgan Stanley Wealth Management Portfolio Analytics

Exhibit 4: Direct Indexing Strategies Delivered Tax Alpha in Historical Simulations, Showing a High Likelihood of Outperforming ETF Proxies

Tax Alpha (ann.): Direct Indexing vs. ETF Proxy, Pre-Liquidation					Tax Alpha (ann.): Direct Indexing vs. ETF Proxy, Post-Liquidation				
Percentile	S&P 5000	R1000 Growth	R1000 Value	R2000	Percentile	S&P 5000	R1000 Growth	R1000 Value	R2000
5th	0.09%	(0.19%)	(0.37%)	0.18%	5th	(0.23%)	(0.20%)	(0.14%)	0.61%
25th	0.46%	0.33%	0.11%	1.22%	25th	(0.03%)	0.10%	0.08%	0.90%
50th	1.21%	1.30%	1.01%	1.98%	50th	0.27%	0.46%	0.38%	1.21%
75th	2.87%	2.87%	2.28%	3.11%	75th	0.85%	0.85%	1.14%	1.66%
95th	4.47%	4.58%	4.48%	5.26%	95th	2.10%	2.22%	2.15%	3.26%
Outperform?	98%	89%	79%	96%	Outperform?	73%	83%	84%	100%

Source: Morgan Stanley Wealth Management Portfolio Analytics

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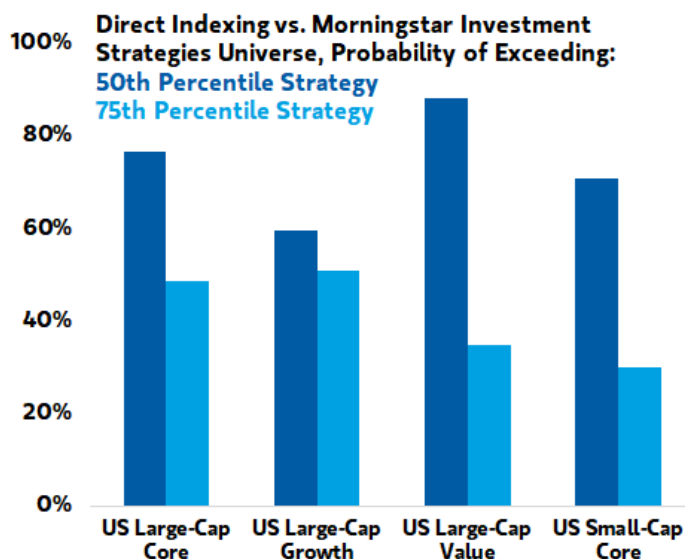
Exhibit 4 also presents the impact of incorporating a period-ending liquidation. Overall, the period-ending liquidation tended to reduce the direct indexing strategies' historical tax alpha versus the ETF proxies. The median (50%-level) tax alpha remained positive for each of the four indexes, spanning from 0.27% to 1.21%, and the incidence of outperforming the ETF proxy indicated a high likelihood for a favorable outcome.

In addition to excluding or including liquidation, our historical simulations afforded us the opportunity to adjust the tax rate assumptions. We observed that higher tax rates increased the efficacy of the direct indexing strategies, raising both the tax alpha and probability of outperforming the ETF proxy. Meanwhile, lower tax rate assumptions produced results that trended in the opposite direction.

In addition to evaluating tax alpha, we examined how the direct indexing strategies stacked up against the estimated post-tax performance of active investment strategies in the same asset classes. Leveraging techniques introduced in "[Tax Score](#)," we estimated the Morningstar universe's post-tax returns, given the tax rate assumptions in Exhibit 3. With these post-tax returns, we assessed the direct indexing strategies' relative performance. As indicated in Exhibit 5, the direct indexing strategies achieved post-tax returns above the median investment strategy, ranging from 60% for Large-Cap Growth to 88% for Large-Cap Value.

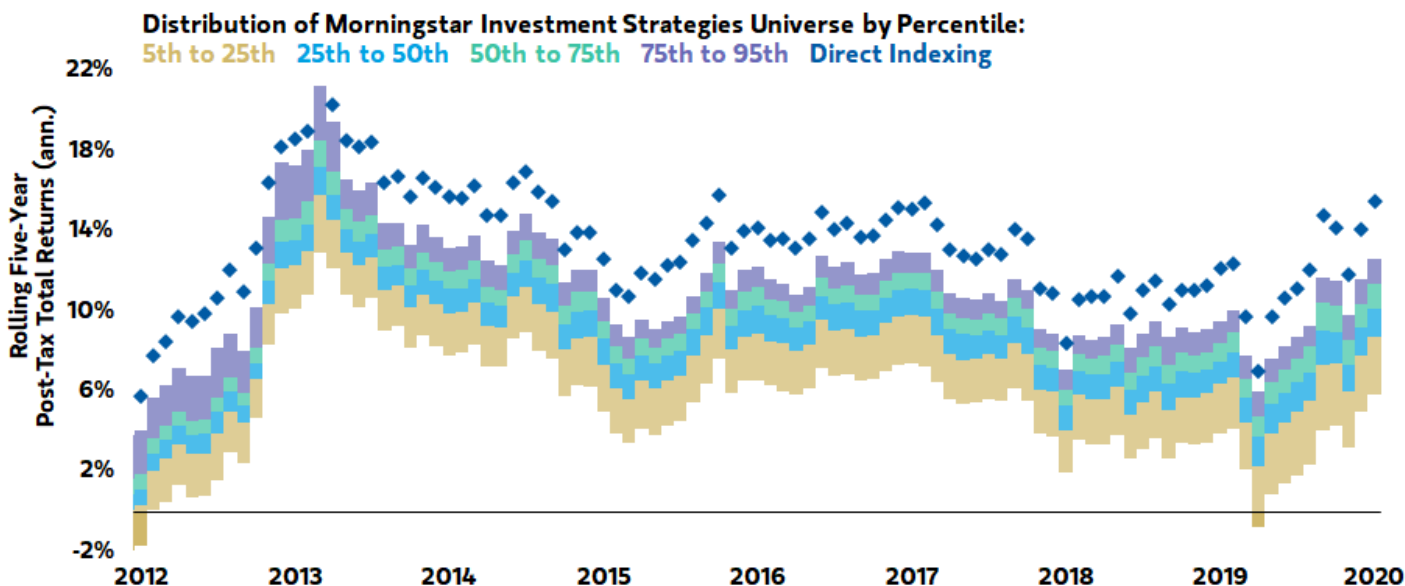
Meanwhile, direct indexing strategies outperformed even the 75th percentile investment strategy with a 30% to 51% probability.

Exhibit 5: Direct Indexing Strategies Achieved Favorable Historical Post-Tax Returns versus the Morningstar Investment Strategies Universe



Source: Morgan Stanley Wealth Management Portfolio Analytics

Exhibit 6: Direct Indexing's Post-Tax Performance Has Ranked Above the 90th Percentile of US Large-Cap Core Strategies for Most Rolling Five-Year Periods Since 2008



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 Source: Morgan Stanley Wealth Management Portfolio Analytics

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We also focused on how direct indexing strategies have fared more recently, in the postcrisis period. Exhibit 6 displays the rolling five-year post-tax returns for the simulated direct indexing strategy in US large-cap core and those for the Morningstar investment strategies universe, spanning from the fifth to 95th percentile. This analysis pointed out how often the direct indexing strategy has exceeded even the 95th percentile strategy. This historical evidence underscored the guidance presented in the right-hand side of Exhibit 2: direct indexing strategies' tax-loss harvesting benefits become more valuable in more efficient asset classes.

Running Hypothetical Scenarios to Assess the Drivers of Post-Tax Returns

In "Taxes and Active Management: Return Drivers and Portfolio Implications," we introduced an estimator tool for evaluating the post-tax returns of different hypothetical investment strategies, including passive; active; and active, tax-managed investments. This Monte Carlo simulation-based tool allowed us to make quantitative comparisons across these different implementation types under various conditions by "stress-testing" key variables, such as expected pretax alpha, index return and investment horizon.

In preparing this report, we expanded this estimator tool to consider the post-tax performance of a hypothetical direct indexing strategy. This simulation-based approach allowed for flexibility in our stress-testing and produces comparative post-tax returns for the three implementation strategies: an

index-tracking ETF; an active, tax-managed SMA; and direct indexing.

In each test, we create a hypothetical benchmark index with 200 constituents. We implement our hypothetical returns for the three implementation strategies as follows, with baselines summarized in Exhibit 7.

- The index-tracking ETF nearly matches the benchmark index's returns, only due to its 0.05% expense ratio.
- The direct indexing strategy seeks to replicate the benchmark by initially holding 140 of its 200 constituents. Each month, this strategy applies a rules-based tax-loss harvesting overlay to sell any tax lots with unrealized losses exceeding a 10% threshold each quarter. The strategy then systematically reallocates the proceeds to other index constituents selected to minimize tracking error versus the hypothetical benchmark index.
- The active, tax-managed SMA starts with a more concentrated portfolio of 40 stocks, selected to deliver some level of pretax alpha. The strategy assumes ongoing turnover, with its impact randomized to track real-life implementation. On a quarterly basis, as with the direct indexing strategy, we apply a tax-loss harvesting overlay to sell any tax lots with unrealized losses greater than 10%. To comply with wash-sale rules, the strategy then reinvests those proceeds into the passive ETF strategy for one month before redeploying the proceeds to the active strategy's desired holdings.

Exhibit 7: Key Inputs to and Assumptions for Post-Tax Returns Estimator

Inputs/Variables	Benchmark Index	ETF, Index-Tracking	Active Tax-Managed	Direct Indexing Tax-Managed
Investment Horizon (years)	5	5	5	5
No. of Constituents or Positions	200	200	40	140
Price Return (ann.)	4.0%	4.0%	4.0%	4.0%
Total Return (ann.)	6.0%	6.0%	6.0%	6.0%
Distribution Rate ⁵ (ann.)	2.0%	2.0%	2.0%	2.0%
Volatility (ann.)*	15.0%	~15.0%	~15.0%	~15.0%
Correlation to Benchmark Index		0.99+	0.95	0.99+
Expense Ratio (ann.)		0.05%	0.30%	0.30%
Net Alpha (Pretax, ann.)		N/A	1.00%	N/A
Beta to Benchmark Index		1.00	1.00	1.00
Turnover (ann.)		0%	40%	0%
Tax Management Overlay		No	Yes	Yes
Loss-Harvesting Frequency			Quarterly	Monthly
Loss Threshold			10.0%	10.0%

Source: Morgan Stanley Wealth Management Portfolio Analytics. Distribution rate is defined as the most recent distribution paid, annualized, and then divided by the current market price. Distribution rate may consist of investment income, short-term capital gains, long-term capital gains, and/or return of capital.

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After setting these baseline values in Exhibit 7, we then designed multiple scenario tests in which we changed the values of specific variables, in order to observe the effect on relative post-tax performance. By applying this methodology for different scenarios, we intended to gain insights into the factors influencing a direct indexing strategy's relative post-tax performance.

In addition to the variables listed in Exhibit 7, we considered the impact of variable tax rates. Exhibit 8 below presents three hypothetical sets of tax rates for three representative investors. We computed these tax rates for a married household, filing jointly, at three levels of Adjusted Gross Income (AGI). In several tests, we defaulted to the \$400,000 income level as our baseline. In another test, we studied the impact of shifting to the \$150,000 and \$1 million AGI levels.

We isolated and stress-tested the strategies based on those factors that directly influence relative post-tax returns: tax rates, investment horizon, index price return, pretax net alpha, turnover and volatility. We compared the hypothetical direct indexing strategy, which applies tax-loss harvesting, to one of two alternatives: (1) an index-tracking ETF, or (2) an active, tax-managed SMA. For each comparison, we analyzed multiple scenarios under which we modified key variables in order to study the effects on post-tax outcomes. In each case, we assumed a period-ending liquidation for each strategy. Exhibit 9 outlines four specific scenarios for which we share results.

For each scenario, we computed the implementation strategies' post-tax returns by modifying two factors' values simultaneously—and holding other variables constant. This approach allowed us to visualize the outcomes in a two-dimensional table, or "heat map," with the rows and columns referring to specific combinations for the tested variables (see Appendix, Exhibits 10.1 to 10.4). For each variable combination, the post-tax returns estimator performed 500 simulations and recorded the probability of success for one implementation strategy over the other, based on post-tax returns. For each scenario test, we present two heat maps, which display direct indexing's probabilities of success versus

either the index-tracking ETF or an active, tax-managed SMA, as specified and defined in Exhibit 10. We gauged success for any given simulation in which the direct indexing strategy produced either a higher post-tax return or a smaller maximum drawdown over the investment horizon.

Exhibit 8: We Varied Our Tax Rate Assumptions, Based on Three Levels for Investors' Adjusted Gross Income

Income Level: Investors' Annual AGI			
Tax Rates	(1) \$150,000	(2) \$400,000	(3) \$1,000,000
Dividend	6.9%	15.8%	20.1%
Long-Term Capital Gains	6.9%	15.8%	20.1%
Short-Term Capital Gains	16.3%	26.2%	34.5%
State	0.0%	5.0%	10.0%

Source: Internal Revenue Service, Morgan Stanley Wealth Management Portfolio Analytics

Exhibit 9: We Designed Four Scenarios to Evaluate the Drivers of Direct Indexing's Relative Post-Tax Performance

Scenario	Variables Considered	Implementation Strategies
1	Income Level vs. Index Price Return	A) Direct Indexing vs. B) Index-Tracking ETF
2	Index Price Return vs. Investment Horizon	A) Direct Indexing vs. B) Index-Tracking ETF
3	Income Level vs. Pretax Net Alpha	A) Direct Indexing vs. C) Active, Tax-Managed SMA
4	Index Price Return vs. Investment Horizon	A) Direct Indexing vs. C) Active, Tax-Managed SMA

Source: Morgan Stanley Wealth Management Portfolio Analytics

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Exhibit 10: We Stress-Tested and Evaluated the Following Input and Output Variables

Input or Output	Definition
Alpha	The residual return associated with an investment above its market exposure, or beta, typically expressed as an annualized value. A passive index-tracking strategy typically shows an alpha close to zero, while an active strategy may have positive or negative alpha
Excess Return	The differential between two return streams, such as between an investment strategy and its benchmark
Income Level	The investor's assumed adjusted gross income, which impacts the set of tax rates used to compute intermediate and period-end taxes payable on investment streams, including capital gains and dividends
Index Price Return	The price return of the benchmark index. An investment strategy's beta and alpha will determine if its return exceeds or falls below the market return over a specified period
Investment Horizon	The term in years that an investment is held prior to final liquidation occurring at the end of the period
Maximum Drawdown	The largest observed percentage decline from peak to trough over the investment horizon

Source: Morgan Stanley Wealth Management Portfolio Analytics

Conclusion

Given their flexibility for customization and tax-loss harvesting, direct indexing strategies provide a potentially attractive alternative to index-tracking ETFs and actively managed mutual funds or SMAs in equity asset classes. Potential tax alpha represents the most quantifiable benefit of direct indexing. Through a series of historical and

hypothetical tests, we evaluated direct indexing's probability of success in terms of post-tax total returns and maximum drawdowns. Our analysis suggested that direct indexing compared favorably in the presence of higher tax rates, shorter investment horizons and lower expected pretax net alpha. When viewed through the appropriate lens, weighing the tangible and intangible benefits of customization and the post-tax probability of success, direct indexing may make sense for investors with taxable accounts.

Appendix

Scenario 1: Income Level vs. Index Price Return for A) Direct Indexing vs. B) Index-Tracking ETF

In this scenario, we estimated the relative probability of success for the direct indexing strategy versus an index-tracking ETF, based on variable levels of tax rates and index price returns. Unsurprisingly, higher assumed tax rates translated into higher probabilities of success for the direct indexing strategy. Direct indexing's relative advantage amid higher tax rates proved to be consistent for varying levels of index price return, in terms of both total returns and maximum drawdowns. The results indicated that a direct indexing strategy appeared 14% to 20% more likely to outperform the index-tracking ETF on a post-tax basis for an investor with \$1 million in AGI (Income Level 3) versus one with \$150,000 (Income Level 1).

Exhibit 10.1: Post-Tax Probability of Success

Post-Tax Total Return (ann.): Direct Indexing > Index-Tracking ETF				Post-Tax Maximum Drawdown: Direct Indexing < Index-Tracking ETF					
		Income Level					Income Level		
		1	2	3			1	2	3
Index Price Return (ann.)	-5%	78%	89%	94%	Index Price Return (ann.)	-5%	71%	83%	91%
	0%	76%	89%	95%		0%	69%	84%	87%
	5%	74%	88%	92%		5%	71%	82%	88%
	10%	77%	85%	93%		10%	71%	80%	89%
	15%	74%	89%	95%		15%	72%	86%	88%
	20%	79%	89%	93%		20%	70%	81%	85%

Source: Morgan Stanley Wealth Management Portfolio Analytics

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Scenario 2: Index Price Return vs. Investment Horizon for A) Direct Indexing vs. B) Index-Tracking ETF

We next estimated direct indexing's probability of success compared to the index-tracking ETF, subject to changes in the index price return and the investment horizon. From this analysis, it appeared that changing the index price return did not markedly influence direct indexing's probability of success. Seemingly, the direct indexing's greater tax efficiency translated into proportionally similar advantages regardless of the index price return level. That is, the tax alpha apparently scaled up and down proportionately with the index price return.

In contrast, increasing the investment horizon dampened the direct indexing strategy's probability of success, both in terms of post-tax total returns and maximum drawdowns. Intuitively, the direct indexing strategy may realize its benefits in earlier years, with fewer appreciated securities, and particularly in cases of greater volatility. After realizing capital losses in early years, the direct indexing strategy may have comparatively fewer opportunities to realize losses in later years. Thus, while the benefits of direct indexing diminished somewhat over longer horizons, the results indicated the strategy enjoys advantages over an index-tracking ETF, even out to 10 years.

Exhibit 10.2: Post-Tax Probability of Success

		Post-Tax Total Return (ann.): Direct Indexing > Index-Tracking ETF						Post-Tax Maximum Drawdown: Direct Indexing < Index-Tracking ETF					
		Index Price Return (ann.)						Index Price Return (ann.)					
		-5%	0%	5%	10%	15%	20%	-5%	0%	5%	10%	15%	20%
No. of Years	3	96%	82%	80%	82%	84%	84%	81%	81%	81%	81%	81%	83%
	4	78%	77%	76%	77%	80%	77%	82%	83%	84%	84%	87%	83%
	5	71%	76%	73%	73%	73%	71%	79%	84%	81%	83%	82%	82%
	6	70%	71%	71%	68%	68%	68%	85%	81%	82%	81%	82%	81%
	7	65%	62%	63%	64%	65%	61%	79%	82%	80%	78%	80%	76%
	8	58%	59%	63%	53%	59%	62%	77%	72%	76%	71%	77%	79%
	9	59%	59%	52%	59%	56%	58%	75%	75%	74%	76%	76%	74%
	10	56%	55%	52%	52%	51%	52%	74%	72%	72%	72%	70%	74%

Source: Morgan Stanley Wealth Management Portfolio Analytics

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Scenario 3: Income Level vs. Index Price Return for A) Direct Indexing versus C) Active, Tax-Managed SMA

In the third test, we estimated the direct indexing strategy's probability of success relative to an active, tax-managed SMA by changing the income level and the SMA's expected pretax net alpha. The results showed that higher-income investors, facing higher tax rates, could likely benefit from direct indexing, even compared to an active SMA with a tax-harvesting overlay. Indeed, even when assuming a high level of pretax net alpha, high-income investors appeared more likely to benefit from the direct indexing strategy. For lower-income investors with lower tax rates, the active SMA appeared to be more effective than direct indexing once pretax net alpha levels exceeded 1% or 2% for Income Level 1 and 2, respectively. As we indicated in Exhibit 2, taxable investors should weigh the level of expected pretax alpha from active strategies in each asset class, alongside direct indexing's potential "tax alpha," which hinges on income level and resulting tax rates. Note that for mutual funds, or active SMAs that do not take advantage of tax-loss harvesting overlays, direct indexing's probabilities of success would move even higher.

Exhibit 10.3: Post-Tax Probability of Success

Post-Tax Total Return (ann.): Direct Indexing > Active, Tax-Managed SMA				Post-Tax Maximum Drawdown: Direct Indexing < Active, Tax-Managed SMA					
		Income Level					Income Level		
		1	2	3			1	2	3
Alpha (pretax net, ann.)	-2%	84%	95%	97%	Alpha (pretax net, ann.)	-2%	77%	86%	88%
	-1%	76%	89%	95%		-1%	68%	73%	81%
	0%	64%	82%	92%		0%	57%	67%	74%
	1%	45%	69%	87%		1%	45%	56%	64%
	2%	29%	59%	82%		2%	34%	50%	57%
	3%	16%	42%	74%		3%	24%	38%	48%

Source: Morgan Stanley Wealth Management Portfolio Analytics

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Scenario 4: Pretax Net Alpha vs. Investment Horizon for A) Direct Indexing vs. C) Active, Tax-Managed SMA

In this final scenario, we tested direct indexing's probability of success versus the active, tax-managed SMA strategy, by changing the SMA's expected pretax net alpha and the investment horizon, assuming Income Level 2. As one might anticipate, higher expected pretax net alpha favored the active SMA versus direct indexing. Consistent with Scenario 2, the direct indexing strategy's relative post-tax performance declines somewhat over longer time horizons. While the trade-off between the active SMA's pretax net alpha and the effective level of tax alpha should remain an investor's primary consideration, it may be helpful to gauge the expected investment horizon in deliberating between direct indexing and an active SMA. Note that for mutual funds, or active SMAs that do not take advantage of tax-loss harvesting overlays, direct indexing's probabilities of success would move higher.

Exhibit 10.4: Post-Tax Probability of Success

		Post-Tax Total Return (ann.): Direct Indexing > Active, Tax-Managed SMA						Post-Tax Maximum Drawdown: Direct Indexing < Active, Tax-Managed SMA					
		Alpha (pretax net, ann.)						Alpha (pretax net, ann.)					
		-2%	-1%	0%	1%	2%	3%	-2%	-1%	0%	1%	2%	3%
No. of Years	3	96%	92%	89%	85%	75%	64%	79%	74%	65%	62%	53%	50%
	4	94%	94%	89%	76%	68%	54%	81%	76%	72%	59%	51%	43%
	5	95%	90%	84%	76%	58%	45%	82%	76%	65%	59%	46%	37%
	6	94%	89%	76%	69%	53%	36%	83%	74%	61%	53%	48%	34%
	7	90%	88%	76%	64%	50%	31%	80%	73%	61%	53%	40%	30%
	8	90%	85%	72%	62%	43%	29%	77%	71%	58%	46%	38%	27%
	9	93%	84%	69%	56%	37%	23%	80%	70%	57%	41%	31%	23%
	10	89%	84%	69%	53%	35%	18%	79%	66%	53%	40%	32%	22%

Source: Morgan Stanley Wealth Management Portfolio Analytics

Endnotes

¹ Investment managers have adopted "direct indexing" as a branding name for the strategies described in this report. While clients cannot invest directly in an index, the term refers to direct investment in index constituents via a separately managed account, which can be customized to address client preference and deliver potential tax benefits.

² Santodomingo, Rey, and Tim Atwill. "Tax-Managed SMAs: Better Than ETFs?" Parametric Portfolio Associates, 2018.

³ Arnott, Robert D., Andrew L. Berkin, and Jia Ye. "Loss Harvesting: What's It Worth to the Taxable Investor?" *The Journal of Wealth Management*: Vol. 3, Issue 4 (Spring 2001), 10–18.

⁴ Chaudhuri, Shomesh E., Terence C. Burnham, and Andrew W. Lo. "An Empirical Evaluation of Tax-Loss Harvesting Alpha." *Financial Analysts Journal*: Vol. 76, No. 3, 99–108.

⁵ "Distribution rate" is defined as the most recent distribution paid, annualized, and then divided by the current market price. For commingled strategies, distribution rate may consist of investment income, short-term capital gains, long-term capital gains, and/or return of capital. For SMA strategies, we intend distribution rate to refer explicitly to dividend income.

Disclosure Section

The **Global Investment Committee (GIC)** is a group of seasoned investment professionals from Morgan Stanley & Co. and Morgan Stanley Wealth Management who meet regularly to discuss the global economy and markets. The committee determines the investment outlook that guides our advice to clients. They continually monitor developing economic and market conditions, review tactical outlooks and recommend asset allocation model weightings, as well as produce a suite of strategy, analysis, commentary, portfolio positioning suggestions and other reports and broadcasts.

Daniel Hunt, Steve Edwards and Spencer Cavallo 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

Alpha is the excess return of an investment relative to the return of a benchmark index.

Beta is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole.

Correlation This is a statistical measure of how two securities move in relation to each other. This measure is often converted into what is known as correlation coefficient, which ranges between -1 and +1. Perfect positive correlation (a correlation coefficient of +1) implies that as one security moves, either up or down, the other security will move in lockstep, in the same direction. Alternatively, perfect negative correlation means that if one security moves in either direction the security that is perfectly negatively correlated will move in the opposite direction. If the correlation is 0, the movements of the securities are said to have no correlation; they are completely random. A correlation greater than 0.8 is generally described as strong, whereas a correlation less than 0.5 is generally described as weak.

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.

Expense ratio a measure of what it costs an investment company to operate an exchange-traded fund or mutual fund.

Tracking error is a divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark.

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 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.

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, fund 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.

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.

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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 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.

Direct indexing may only be appropriate for people who have a considerable amount to invest in a taxable account and want a level of customization they couldn't otherwise obtain through a portfolio of funds or individual securities. If you invest in a tax-deferred account, such as a 401(k) or IRA, the tax-harvesting benefits of direct indexing may provide no additional benefit to you. There is no guarantee that you will maximize value by tax-loss selling; holding onto slumping stock may have resulted in value greater than that obtained through tax-loss harvesting via direct indexing. In addition you will incur asset-based fees and expenses in a direct indexing account that may be higher than those for other investments, as well as transaction costs arising from customization and frequent rebalancing.

International securities may carry additional risks, including foreign economic, political, monetary and/or legal factors, changing currency exchange rates, foreign taxes and differences in financial and accounting standards. International investing may not be for everyone. These risks may be magnified in **emerging markets** and **frontier markets**.

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

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

An investment in an **exchange-traded fund or mutual fund** involves risks similar to those of investing in a broadly based portfolio of equity securities traded on an exchange in the relevant securities market, such as market fluctuations caused by such factors as economic and political developments, changes in interest rates and perceived trends in stock and bond prices.

Please consider the investment objectives, risks, charges and expenses of the fund(s) carefully before investing. The prospectus contains this and other information about the fund(s). To obtain a prospectus, contact your financial advisor. Please read the prospectus carefully before investing.

Companies paying **dividends** can reduce or cut payouts at any time.

Investing in smaller companies involves greater risks not associated with investing in more established companies, such as business risk, significant stock price fluctuations and illiquidity.

Stocks of medium-sized companies entail special risks, such as limited product lines, markets, and financial resources, and greater market volatility than securities of larger, more-established companies.

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.

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.

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.

Bonds rated below investment grade may have speculative characteristics and present significant risks beyond those of other securities, including greater credit risk and price volatility in the secondary market. Investors should be careful to consider these risks alongside their individual circumstances, objectives and risk tolerance before investing in high-yield bonds. 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

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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. **Technology stocks** may be especially volatile. Risks applicable to companies in the **energy and natural resources** sectors include commodity pricing risk, supply and demand risk, depletion risk and exploration risk. **Health care sector stocks** are subject to government regulation, as well as government approval of products and services, which can significantly impact price and availability, and which can also be significantly affected by rapid obsolescence and patent expirations.

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.

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.

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.

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Morgan Stanley's proprietary Risk Score methodology gauges managers' effectiveness in risk management. Based on extensive historical analysis, we evaluate over 18,000 strategies across 54 categories by ranking them according to several quantitative markers. We take a weighted average of these individual rankings to compute each manager's Risk Score, having found that managers with higher Risk Scores have historically produced more attractive subsequent risk adjusted returns, particularly under adverse conditions. For more information on Risk Score, please see the Risk Score whitepaper.

Morgan Stanley's proprietary Value Score methodology considers active investment strategies' value proposition relative to their costs. We

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measure perceived benefit from several quantitative markers and compute (1) “fair value” expense ratios for over 10,000 managers across 40 categories and (2) managers’ perceived “excess value” by comparing the fair value expenses ratios to actual expense ratios. We then rank managers within each category by their excess value to assign a Value Score, having found that greater levels of excess value have historically corresponded to attractive subsequent performance. For more information on Value Score, please see the Value Score whitepaper.

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GIMA defines the Adverse Active Alpha (AAA) ranking model as follows:

Global Investment Manager Analysis provides comprehensive manager analysis for Morgan Stanley’s investment advisory platforms on a wide range of investment products, including separately managed accounts, mutual funds and exchange-traded funds in the equity, fixed income and alternative investment categories.

Adverse Active Alpha (AAA)

Adverse refers to the demonstrated ability to outperform in a variety of market environments and when conditions were difficult for active manager relative performance. “Difficult” periods were times when active management did not perform well relative to the index, as opposed to down market periods. At various times, active management has experienced difficult relative performance periods in up, down, and flat markets. We developed a set of factors to help discern which periods were more difficult for active managers that we utilize to identify managers that were able to overcome these headwinds and outperformed in the face of adversity.

Active refers to managers with portfolios that looked different from the index and had moderate to low tracking error. For all products, r_2 is used to measure the degree of differentiation from the benchmark in conjunction with tracking error. The ranking seeks to find managers that were active, but not taking outsized bets, and that had some degree of style consistency. The combination of r_2 and low tracking error is fairly uncommon among active managers, but we believe these traits may point toward managers with strong stock picking skills.

Alpha refers to the demonstrated ability to add value relative to an index and/or peers. Back tests indicate that highly ranked managers as a group outperformed the index and style peer group over subsequent periods and relative to active share alone. By combining the “adverse” component with the “active” component, we believe we increase the odds of finding some of the most proficient stock pickers.

Important Considerations Regarding the Adverse Active Alpha and Value Score ranking models:

In our view, the Adverse Active Alpha and Value Score manager rankings are an important part of evaluating managers for consideration. However, we do recognize that these ranking models cannot, in and of themselves, tell us which managers’ strategies to invest in or when to buy or sell the strategies. While highly ranked managers historically performed well as a group in our analysis, past performance is not a guarantee of future results for any manager or strategy. Index returns assume reinvestment of dividends and, unlike fund or strategy returns, do not reflect any fees or expenses.

Indices are unmanaged and not available for direct investment.

GIMA strives to evaluate other material and forward looking factors as part of the overall manager evaluation process. Factors such as but not limited to manager turnover and changes to investment process can partially or fully negate a positive Adverse Active Alpha or Value Score ranking. Additionally, highly ranked managers can have differing risk profiles that might not be appropriate for all investors. For more information on the ranking models, please see Adverse Active Alpha 2.0: Scoring Active Managers According to Potential Alpha. This Special Report is available by request from your Financial Advisor or Private Wealth Advisor.

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***High Adverse Active Alpha is generally defined as falling into the top two quintiles (40%) within the ranking model.** Separately Managed Account and mutual fund rankings could differ. In some cases where the separately managed account product and mutual fund are substantially similar, the separately managed account rating may be applied to the mutual fund and vice versa.

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GIMA evaluates certain investment products for the purposes of some – but not all – of Morgan Stanley Smith Barney LLC’s investment advisory programs (as described in more detail in the applicable Form ADV Disclosure Document for Morgan Stanley Wealth Management). If you do not invest through one of these investment advisory programs, Morgan Stanley Wealth Management is not obligated to provide you notice of any GIMA status changes even though it may give notice to clients in other programs.

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GIMA uses two methods to evaluate investment products in applicable advisory programs: Focus (and investment products meeting this standard are described as being on the Focus List) and Approved (and investment products meeting this standard are described as being on the Approved List). In general, Focus entails a more thorough evaluation of an investment product than Approved. Sometimes an investment product may be evaluated using the Focus List process but then placed on the Approved List instead of the Focus List. Investment products may move from the Focus List to the Approved List, or vice versa. GIMA may also determine that an investment product no longer meets the criteria under either process and will no longer be recommended in investment advisory programs (in which case the investment product is given a “Not Approved” status).

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GIMA has a "Watch" policy and may describe a Focus List or Approved List investment product as being on "Watch" if GIMA identifies specific areas that (a) merit further evaluation by GIMA and (b) may, but are not certain to, result in the investment product becoming "Not Approved." The Watch period depends on the length of time needed for GIMA to conduct its evaluation and for the investment manager or fund to address any concerns. GIMA may, but is not obligated to, note the Watch status in this report with a "W" or "Watch" next to the "Status" on the cover page.

Certain investment products on either the Focus List or Approved List may also be recommended for the Tactical Opportunities List based in part on tactical opportunities existing at a given time. The investment products on the Tactical Opportunities List change over time.

For more information on the Focus List, Approved List, Tactical Opportunities List and Watch processes, please see the applicable Form ADV Disclosure Document for Morgan Stanley Wealth Management. Your Financial Advisor or Private Wealth Advisor can also provide upon request a copy of a publication entitled "GIMA at a Glance".

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