

Special Report

LISA SHALETT

*Head of Wealth Management Investment Resources
Head of Investment & Portfolio Strategies
Morgan Stanley Wealth Management*

DANIEL HUNT, CFA

*Senior Asset Allocation Strategist
Morgan Stanley Wealth Management*

ZI YE, CFA

*Quantitative Strategist
Morgan Stanley Wealth Management*

STEPHANIE WANG

*Quantitative Analyst
Morgan Stanley Wealth Management*

Tax Efficiency: Getting to What You Need by Keeping More of What You Earn

Taxes are a substantial drag on investment returns that compound over time. Because of this, even small reductions in tax costs can have enormous consequences for wealth accumulation. In an example drawn from this report, an improvement of 0.6% per year in aftertax returns resulted in a remaining wealth difference of 75% after 30 years of distributions. At a time when interest rates are low, and conservative and balanced portfolios don't deliver the returns they once did, investors can often improve their progress toward their financial goals by enhancing their tax efficiency. We outline strategies for doing so, ranging from the simple and commonly used to the underutilized, less well-known and more complex; evaluate each to ascertain its appropriateness for different investors; and assess their potential impact on investors' bottom lines.



Executive Summary

The prospect of generally lower-than-average investment returns has made attaining financial goals more difficult than it was in the past. To tackle the challenge, investors need to take advantage of every avenue by which they may be able to improve their odds, especially finding ways to offset the headwinds to investment returns. There are several potential ways to boost net-to-investor returns to help meet goals, including increasing portfolio risk, incorporating illiquid investments and using active managers. Another way, which often involves less risk or uncertainty, uses products and strategies that can improve tax efficiency. As significant as tax costs can be in a single year—more than 50% of gross investment returns in particularly egregious cases—their effect on investor's ability to accumulate wealth over time is more significant because they impede upon the compounding of returns. In other words, money lost today to taxes is worth more than its face value because investors will never earn additional returns on those dollars lost to taxes.

In this report, we identify several approaches to reducing tax costs. Some of these are structures and investments that are tax exempt, others are structures and strategies that defer taxes to a later date and

still others are more complex, integrated strategies that combine deferral and exemption. The approaches cited range from the simple to the complex, with the usefulness of each type depending greatly on the applicable marginal tax rates and the investor's affluence. For the least-affluent investors, simple strategies utilizing qualified retirement and spending accounts can be highly tax efficient.

When marginal tax rates creep higher and savings levels start to exceed the contribution limits of qualified accounts, the path to tax efficiency becomes more challenging and requires a broader set of solutions; for example, municipal bonds and tax-efficient asset location and withdrawal sequencing across different account types.

At peak marginal tax rates and with substantial taxable savings, the use of lesser-known products such as investment-only variable annuities and universal life insurance can extend tax deferral and tax exemption benefits past the contribution limits on tax-advantaged accounts. Yet more complex integrations of these and other such products with asset location and withdrawal strategies can yield additional benefits for these investors.

Exhibit 1 (see page 3) lists the products, strategies and account types evaluated in this report, together with a description of

the types of investors for whom they are most appropriate and a quick summary of how they work. The final column in the exhibit illustrates their potential to increase aftertax returns, based on the case studies that follow in this report, which utilize Monte Carlo simulation and the Morgan Stanley Wealth Management Global Investment Committee's capital market assumptions.¹ A full detailing of the assumptions used in each analysis is in the endnotes (see page 14). Note that while the largest impacts are associated with the simplest and most common account types, such as qualified retirement accounts, other strategies can provide substantial value-added as well. In our asset location case study, the most effective strategy adds about 0.6% of annualized return. In our life insurance example, the annual value-added is about 0.2% annually. Finally, for withdrawal sequencing, the value-added is approximately 0.6% of equivalent aftertax return. Note that these annual returns would compound to very large numbers over the long investment horizons of many financial goals. In the case of withdrawal sequencing, for example, the difference in returns in the case study is equivalent to nearly a 75% difference in final wealth accumulation.

Exhibit 1: Approaches for Improving Aftertax Returns

Strategies	Recommended for Investors Who	How It Works	Illustrative Incremental Added Return (per year)*
Tax Exemption			
Municipal Bonds	Need for immediate income Have a high marginal tax rate Have a conservative-to-moderate risk tolerance	Interest payments are exempt from federal (and often state and local) taxes. Illustrative value-added based on top marginal federal tax rates and prevailing yields	0.92%
Roth Individual Retirement Account	Everyone	Returns are generally not taxed and qualified withdrawals are tax exempt. Contributions, however, are not tax deductible. Illustrative value-added based on top marginal federal tax rates, yearly contributions and a 50% equity/50% bond portfolio held for 40 years	2.06
Tax Deferral			
Tax-Advantaged Retirement Plan	Everyone	Contributions are typically tax deductible and investments generally grow tax deferred. Withdrawals after age 59½ are usually taxed as ordinary income. Illustrative value-added based on top marginal federal tax rates, yearly contributions and a 50% equity/50% bond portfolio held for 40 years	2.06
529 Education/Health Care Savings Account	Have qualifying expenditures/low medical expenses	Investments generally grow tax deferred and qualified withdrawals are tax exempt. Contributions to 529 Plans are not tax deductible (in some cases they are state-tax deductible). Contributions to Health Care Savings Accounts may be tax deductible, but their availability is restricted to high-deductible health insurance plans. Illustrative value added based on a 529 plan, top marginal federal tax rates, yearly contributions and a 50% equity/50% bond portfolio for 18 years	1.83
Investment-Only Variable Annuity	Have a long investment horizon Have no plan to take income in the short term Expect to be in a lower tax bracket after retirement Have high-growth but tax-inefficient investments Have savings above contribution limits on qualified retirement plans Want to leave a legacy	Not subject to contribution limits or maximum income requirements from the IRS, though insurers may impose limits. Investments grow tax deferred and nonprincipal withdrawals are taxed as ordinary income. Gains are assumed to be distributed prior to principal, i.e., "last in, first out," unless the contract is annuitized, after which all payments include a prorated principal component. Illustrative value-added based on a 1% per annum fee, top marginal federal tax rates, a lump-sum contribution and a 50% equity/50% bond portfolio held for 40 years	0.12
Tax-Managed Investments	Have a long investment horizon Have a high marginal tax rate	Portfolios of liquid securities, typically equities, in which losses are actively "harvested" to create tax losses and proceeds reinvested in similar securities. Illustrative value-added based on top marginal federal tax rates and continuous tax-loss harvesting for 30 years*	0.30
Integrated Tax			
Tax-Efficient Asset Location	Have savings above contribution limits on qualified retirement plans	Arrange investment types across taxable and tax-advantaged accounts as to maximize the tax benefits conferred by tax-advantaged accounts. Increase asset location leverage through use of an investment-only variable annuity. Illustrative value-added based on top marginal tax rates for 20 years before retirement and a 25% federal tax rate at retirement. Overall portfolio strategy based on a 60% equity/40% fixed income allocation	0.59
Universal Life Insurance	Need life insurance Have a long investment horizon Don't plan to take income in the short term Have a high marginal tax rate Have high-growth but tax-inefficient investments Have savings above contribution limits on qualified retirement plans Want to leave a legacy	Premiums grow tax free net of the cost of insurance and fees. Original premium amounts can be withdrawn tax free and gains can be similarly withdrawn in the form of loans against death benefits. Illustrated value added based on top marginal federal tax rates for 20 years before retirement and a 25% federal tax rate for 20 years after retirement. Overall portfolio strategy based on a 60% equity/40% fixed income allocation. Additional benefits conferred through providing a means to reduce average tax rates by smoothing reported income not quantified here	0.28
Withdrawal Sequencing	Have adequate savings relative to spending needs Have a high marginal tax rate Have sources of low-tax distributions with which to smooth income	Investment liquidations to support retirement spending sequenced in order to increase tax efficiency. Withdrawals from taxable account come first to extend tax-deferred/tax-exempt growth of other investments. Income smoothing and partial Roth conversion conducted to lower effective tax rates and minimize spikes in taxable income driven by required minimum distributions. Illustrated value-added based on top marginal federal tax rates for 20 years pre-retirement, and a 5% initial withdrawal rate for 30 years in retirement. Overall portfolio strategy based on a 60% equity/40% fixed income allocation assuming an efficient tax allocation across accounts	0.64

*See endnotes on page 14 for details of the calculations of incremental return in this exhibit, as well as case studies within this report whose results are detailed in Exhibits 4, 5, 8, 10 & 12.

Source: Morgan Stanley Wealth Management GIC

Introduction

For most people, investing is what you do because you want to retire with your lifestyle, put your kids through college or build a legacy to bequeath to loved ones or to charity. In other words, investing is a means to an end, not a goal of itself. In many cases, the margin between achieving goals and not doing so is slim, and closing any deficit that might be there can be difficult.

If at any point, savings are considered inadequate to fund future spending, there are several options: Save more, but that may not be possible or desirable if it limits current spending; reduce the ambitiousness of your goal (e.g., delay retirement), which also may not be possible or desirable; or look to increase portfolio returns, which may involve things like taking more investment risk, which can be discomfiting. What’s more, investors may have already adjusted strategy to take full advantage of risk positioning, illiquidity premiums and active management to the point where additional exposure isn’t advisable. What then?

One alternative: Become more tax efficient. That means utilizing products, strategies and account types to reduce the bite that taxes can take from investment returns. Consider an investor in the upper-income bracket in a high-tax state who just sold an investment that will be treated as a short-term capital gain (held less than one year). For every dollar of profit, the investor netted less than 50 cents. Longer term, investors lose even more to taxation because of the compounding of investment returns. Exhibit 2 shows what happens if after-tax proceeds are continuously reinvested and the target investments continue to generate short-term returns of 10% per year for 10 years. In that instance, the investor keeps less than 40 cents of every dollar she earns.

This exhibit also suggests that investors might be able to enhance their returns by utilizing tax-reduction strategies, which in many cases can be done without an attendant increase in risk. The rest of this report is devoted to a discussion and analysis of the strategies and products that

Exhibit 2: Taxes Reduce Investment Earnings*



*Based on upper-income investor in a high-tax state, earning 10% a year in short-term returns and reinvesting profits.

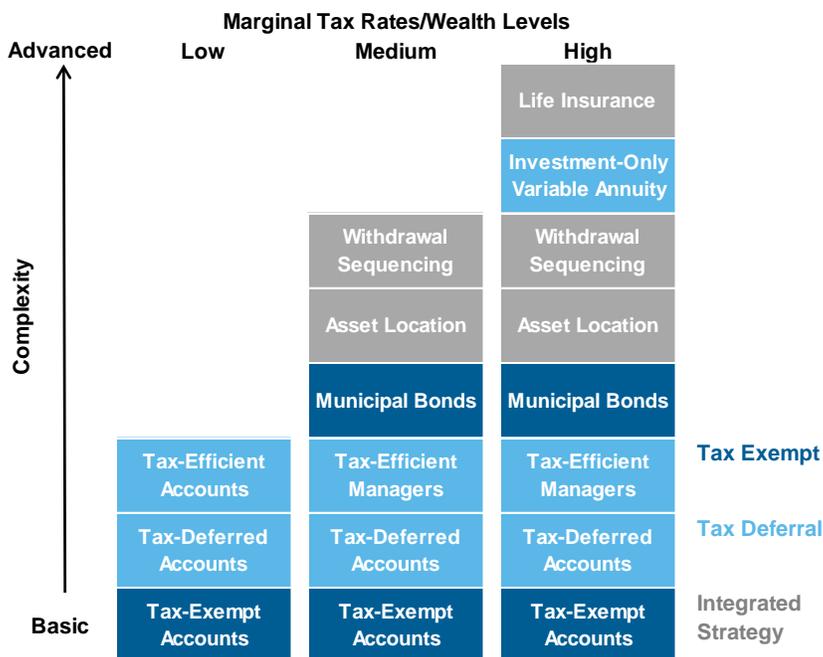
For illustrative purposes only

Source: Morgan Stanley Wealth Management GIC

can do so. These approaches range from the simple and commonly utilized to the complex and esoteric and from low to high impact in their effect on taxes. Note that we focus our analysis here on wealth accumulation for the primary purpose of attaining investor spending goals and stop short of a deeper dive into estate planning

and the use of trust accounts for multigenerational tax efficiency. The latter subject requires a still deeper level of intricacy and nuance than the strategies discussed here. We plan to address it within the context of our goals-based framework in subsequent work, which will be focused exclusively in those areas.

Exhibit 3: Taxonomy of Strategies for Achieving Tax Efficiency



Source: Morgan Stanley Wealth Management GIC

On the simple side, utilizing tax-exempt securities or tax-advantaged accounts is one of the straightforward approaches to reducing tax drag, but may have significant limitations for some investors. By contrast, tax-deferral strategies that postpone the tax liabilities—the longer the deferral the greater the benefit—can reduce the impact of taxes on investments because it allows investors to earn compound returns on deferred tax liabilities during the deferral period. Tax deferral can be done with common and simple methods, such as individual retirement accounts (IRA) and 401(k)s, as well as with the use of more complex and less well-known products and strategies.

At its most impactful, tax deferral can also reduce the effective tax rates themselves through judicious timing of taxable distributions and capital gains. This is especially so for affluent investors for whom IRAs and 401(k)s accommodate a small fraction of their income. We refer to these complex strategies as “integrated tax strategies,” as they require a systematic approach to the range of investments, account types, distributions and other client circumstances and call for less-known, more complex products and investment types. Exhibit 3 (see page 4) shows the broad avenues by which tax efficiency can be enhanced.

Municipal Bonds

The simplest way to defray taxes, of course, is through the use of securities and account, insurance or trust structures that make it so you don’t have to pay them.

One such example that most will be familiar with are municipal bonds—or “munis”—that are issued by US states and municipalities and whose interest payments are generally exempt from federal income taxes and often, if the investor resides in the state of the issuer, from state and local taxes as well. These securities are historically analogous to high quality, investment grade bonds, and thus have relatively low credit risk—though not zero, as municipal issuers have declared bankruptcies in several instances in the past.

The value of the muni tax exemption depends on a bond’s yield and the investor’s marginal tax rate. Investors in the top tax brackets, especially those in high-tax states, will find the most benefit from the exemption (see Exhibit 4). Note that a municipal bond that pays a 3% coupon provides the same amount of aftertax income as a taxable investment grade bond that yields 4.48%, if we assume a 33% marginal tax rate; in other words, an investor with a 33% marginal tax rate would have to find a comparable-credit taxable bond that pays more than 4.48% to beat the bond paying 3%. As the table shows, the tax exemption’s value is a function of an investor’s tax bracket.

It’s because of the tax exemption that municipalities can raise money at lower rates than the US Treasury. Historically, 10-year municipals have yielded about 83% of that of 10-year US Treasuries, even though Treasuries have greater liquidity and higher credit quality. That percentage, known as the relative-value ratio, fluctuates depending on market

conditions, and has been elevated somewhat consistently during the present cycle, making munis more attractive than they would otherwise be. Regardless, investors in higher marginal tax brackets have usually been able to enhance aftertax returns with municipal bonds.

Roth IRAs

Municipal bonds are just one tax-efficient investment, and they can be of limited use for more growth-oriented investors or those in the lower tax brackets. Roth IRAs, by contrast, are a type of account, which like traditional IRAs confers tax benefits on those that use them. Unlike traditional IRAs, investment returns in Roth IRAs generally grow tax-free and, if certain conditions are met, are not subject to income tax when they are withdrawn. Also, Roth IRAs are not subject to lifetime required minimum distributions (RMD) which can make managing tax costs in retirement more challenging.² There is a catch, of course, and it’s a big one. There is no upfront tax deduction for contributions to a Roth IRA. As such, the degree to which a Roth IRA can enhance tax efficiency relative to a traditional IRA, which does have an upfront deduction, is nuanced.

The way the basic arithmetic works, if the tax rate an investor would avoid by making tax-deductible contributions today is lower than the tax rate she would pay on distributions, it would make sense on purely growth terms to utilize a Roth IRA. However, if today’s rate is higher than those that will be faced in retirement, which is often the case, a Roth IRA actually reduces wealth relative to a traditional IRA even as both continue to add value over a taxable account. This, along with the built-in restrictions of retirement accounts with respect to contribution amounts and accessing savings prior to age 59½, makes the attractiveness of a Roth IRA far more limited than it would otherwise be. On a stand-alone basis, it will be most attractive to younger investors in lower tax brackets who are more likely to be in higher tax brackets in retirement. Some wealthier

Exhibit 4: Tax-Equivalent Yields of Municipal Bonds

	To Equal A Tax-Exempt Yield of					
	1.00%	2.00%	3.00%	4.00%	5.00%	6.00%
Federal Tax Bracket	You Must Earn a Taxable Yield of*					
15.0%	1.18%	2.35%	3.53%	4.71%	5.88%	7.06%
25.0	1.33	2.67	4.00	5.33	6.67	8.00
28.0	1.39	2.78	4.17	5.56	6.94	8.33
33.0	1.49	2.99	4.48	5.97	7.46	8.96
35.0	1.54	3.08	4.62	6.15	7.69	9.23
39.6	1.66	3.31	4.97	6.62	8.28	9.93

*State and local tax not included, Medicare surtax not included. If included, they will drive equivalent taxable yield higher.

Source: Morgan Stanley Wealth Management GIC

investors, may find it useful in estate planning because it extends tax-exempt growth and withdrawal benefits to heirs. As we will see, some of the less-appreciated elements of a Roth IRA, like its lack of RMDs during the owner's lifetime and investor's ability to contribute to it into retirement, can be quite beneficial. In the context of those more complex, actively managed, integrated tax strategies, Roth IRAs can be very useful for most investors.

Tax-Deferred Accounts

Compared to the more restricted availability and usefulness of tax-exempt account types and investments, there are many ways to defer when tax liabilities are incurred. This provides value to investors by giving their money more time to grow unimpeded and by the ability to realize income in a manner that lowers the effective tax rates that will be assessed against it. One way to accomplish tax deferral is through tax-deferred accounts, such as 401(k) and 403(b) plans, traditional IRAs, and health care savings and 529 education accounts. Investments in such vehicles can grow without incurring tax, which is typically assessed only when funds are withdrawn. Aside from the benefit of tax-deferred compounding, contributions to these accounts may be tax deductible, which magnifies their potential impact. Indeed, an individual in a 28% tax bracket who was assumed to invest at a 10% growth rate for 40 years would accumulate double the wealth in a tax-deferred account than in a taxable account.³ That number can actually be understated, when you consider that most investors will fall into a lower tax bracket during retirement than they had prior to retirement, which can provide further tax benefits—albeit uncertain ones, given that tax rates often change.

Investment-Only Variable Annuities (IOVAs)

Many fully deductible tax-deferred accounts for retirement and other such accounts for education and health care were created to make it easier for

Americans to achieve these important goals, and consensus best practices for investors is to contribute as much as they can to them before saving elsewhere. For more affluent investors, however, annual contribution caps on these vehicles come into play after which additional savings must go to nonqualified, or taxable, accounts.

One alternative for investors in this situation is a variable annuity. It's not subject to IRS contribution limitations and it still shelters investments from tax liabilities until funds are distributed, just like other tax-deferred accounts. Another feature is that, unlike traditional tax-deferred retirement accounts, variable annuities purchased in nonqualified accounts are not subject to RMDs.⁴ Such required distributions can have significantly negative tax consequences.

Historically, the attractiveness of variable annuities was offset by charges for features ancillary to wealth accumulation, like income guarantees, and their narrower investment options. Those concerns have been lessened substantially since the introduction of investment-only variable annuities (IOVA). IOVAs don't come with a guaranteed lifetime income or a death benefit, features that entail significant annual fees. These products usually have access to a broad selection of investment products, which can be rebalanced to target allocations seamlessly without incurring a taxable event, which further enhances their usefulness.

Other hurdles for this strategy remain, however. While contributions to an IRA or 401(k) can be made pretax (i.e., are tax deductible), contributions to annuities are typically made with aftertax funds to leverage their tax-deferral feature. This is made more relevant because, unlike regular taxable accounts, for partial withdrawals from an IOVA, the earnings, which are taxable, come out first and the principal is the last money withdrawn. The effect of this tax treatment is to push tax liabilities forward toward the beginning of the distribution period, when fund withdrawals will often face higher effective tax rates than taxable accounts

would face, because ordinary income tax rates will apply rather than often lower long-term capital gains tax rates. Alternatively, if the investor is willing to annuitize the contract, all payments will include a prorated principal component that is not taxable. That option enhances tax efficiency, but may have undesirable implications for growth and liquidity. For these reasons, IOVAs are less likely to be tax efficient over short periods relative to taxable accounts; a rule of thumb is that for a balanced portfolio, tax benefits can begin to accrue after a 15-year holding period. A second hurdle involves the fees associated with IOVAs, which, while lower than in other types of variable annuities, remain sufficiently material to consider in any cost-benefit analysis.

The time horizon over which IOVA investments grow is critical. The more time, the higher the growth rate, the more tax liability they would generate in a taxable account—and the more scope for an IOVA to add value. Also material is the spread between the investor's ordinary income tax rate and the capital gains tax rate. When it comes to time horizon, the good news is that the lack of RMDs when the IOVA has been purchased in a nonqualified account affords investors across a wide variety of ages the potential for an extended time horizon.

Exhibit 5 (see page 7) illustrates the difference in the internal rate of return (IRR) of the same set of investments as placed into an IOVA and a taxable brokerage account, respectively. Note that an IRR measures investment returns but also accounts for the timing of cash flows. For example, an investment that grows at a 10% annual rate for 20 years and is charged a 1% annual fee (a level representative of the fees typically charged on IOVAs) will produce an aftertax rate of return that is 1.1% higher than the same investment in a taxable account would generate. In this example, it equates to 22% greater wealth accumulation with the IOVA than with the taxable account. Clearly, IOVAs hold out the promise of material improvements in investors' capacity to attain their long-term goals.

Exhibit 5: IOVA Standalone Tax-Efficiency Benefits

Improvement of Aftertax Internal Rate of Return with an Annual IOVA Fee of 1%

Investment Horizon/ Pretax Portfolio Return	10 Years	15 Years	20 Years	25 Years	30 Years
2.5%	-1.0%	-1.0%	-1.0%	-1.0%	-0.9%
5.0	-0.6	-0.5	-0.4	-0.4	-0.3
7.5	-0.1	0.1	0.3	0.4	0.5
10.0	0.5	0.8	1.1	1.3	1.5
12.5	1.1	1.6	1.9	2.2	2.5
15.0	1.8	2.4	2.8	3.2	3.5

Relative Aftertax Improvement in Ending Balances

Investment Horizon/ Pretax Portfolio Return	10 Years	15 Years	20 Years	25 Years	30 Years
2.5%	-9%	-14%	-17%	-21%	-24%
5.0	-6	-7	-8	-8	-8
7.5	-1	1	5	10	17
10.0	5	12	22	35	53
12.5	11	24	42	67	99
15.0	18	38	67	107	157

For illustrative purposes only. Hypothetical performance should not be considered a guarantee of future performance or a guarantee of achieving overall financial objectives. **For more information about the risks to hypothetical performance, please see the Risk Considerations section at the end of this material.**

Source: Morgan Stanley Wealth Management GIC

Tax Deferral in a Taxable Account

To a certain extent, it is possible to defer taxes even for a taxable account. This can be done by reducing turnover such that positions are held for longer before sales that can generate tax liability; and when trimming positions, by selecting tax lots with higher-cost bases. All things being equal, managers with high portfolio turnover are much less likely to provide market-beating returns after taxes than those with low turnover. Some “tax-managed” strategies also employ so-called “tax-loss harvesting” in which losing positions are “harvested” or sold to realize losses and temporarily replaced with similar investments while continuing to hold winners. The net effect is to generate tax deductions while systematically increasing the unrealized gains of the portfolio, which defers the associated tax liabilities into the future.

Tax-managed strategies require managers to actively monitor capital gains and avoid wash sales on transactions while monitoring drift from the underlying investment exposure. The primary source

of value-added in this instance is that tax savings are reinvested to generate additional returns, while the significant difference between short-term and long-term capital gains tax rates is leveraged to raise net-to-investor returns. This type of strategy is more commonly found within funds focusing on a specific asset class such as US large-cap equities. More-sophisticated strategies, such as unified managed accounts that utilize tax management, can bring these different techniques to bear across a balanced portfolio with multiple managers, asset classes and passive and active strategies, multiplying the potential tax impact.

Note that tax deferral in a taxable account can take on the properties of tax exemption when wealth is transferred to beneficiaries as the cost basis on inherited investments is generally stepped up to fair market value at the date of the investor’s death. What’s more, the present value of the remainder interest in taxable investments placed in a charitable remainder trust or similar vehicle is fully deductible,⁵ subject to any phase-outs for charitable deductions—and these structures can also be utilized for dual

purposes of charitable causes and, in certain cases, tax-free income.

Tax-Efficient Asset Location

One of the ways an integrated tax strategy seeks to enhance tax efficiency is by taking advantage of differences in tax treatment across investment types within a multiple-account framework that includes tax-advantaged accounts. Locating investment types across taxable and tax-advantaged accounts in order to maximize the benefit of their tax advantages is a process known as “tax-efficient asset location.” As the definition implies, asset location is applicable only when investors have both taxable and tax-deferred or tax-exempt accounts, and when their investment strategies incorporate different categories of investment.

Making judicious asset location decisions requires an understanding, or at least expectation, of how the characteristics of different investments, e.g., their current yield, will impact their tax treatment, as well as some sense of their growth potential. Based on these two sets of factors and some assumptions around the timing of the distribution phase for these investments, it is possible to project the tax benefits of varying asset locations. For example, taxable fixed income investments are generally tax-inefficient for high-income earners because the majority of their total return comes from interest that is taxed as ordinary income. They are also lower growth. A very low turnover equity manager, on the other hand, is likely to both have higher growth and be more tax efficient, as the manager will tend to create unrealized gains and be taxed at lower effective tax rates.

Relative tax efficiency is critical to understanding asset location. The benefits from placing taxable fixed income securities in a tax-deferred vehicle may not be any greater than more tax-efficient equity investments. This is because absolute growth rates matter in addition to standalone efficiency, and in this case, equities historically have higher long-term returns and thus a greater potential to add

Exhibit 6: Tax Efficiency and Growth Potential of Common Investments

	Tax Efficient	Tax Inefficient
Low Growth	Municipal Bonds	Cash Treasury Inflation Protected Securities Investment Grade Commodities
High Growth	Passive/Low Turnover Equity Master Limited Partnerships	High Yield Emerging Market Debt Real Estate Investment Trusts Actively Traded Equity Hedge Funds

Source: Morgan Stanley Wealth Management GIC

value through compounding of deferred tax liabilities. Exhibit 6 categorizes several common investment types based on the two keys to asset location, tax efficiency and growth potential.

While more complex modeling can provide greater tax savings, a simple strategy that places more tax-efficient assets in taxable accounts and more tax-inefficient assets in tax-deferred and/or tax-exempt accounts can also improve net returns. Consider an example of a 45-year-old investor in the top tax bracket. The individual is invested in a moderate balanced investment strategy with 60% diversified equity and 40% investment grade taxable, high yield and municipal bonds, which is allocated identically across his \$1 million in taxable accounts and his \$500,000 in tax-deferred accounts. Exhibit 7 lays out how different adjustments to his baseline strategy would affect his tax efficiency and ultimately wealth accumulation based on Morgan Stanley Wealth Management Global Investment Committee’s capital market assumptions.

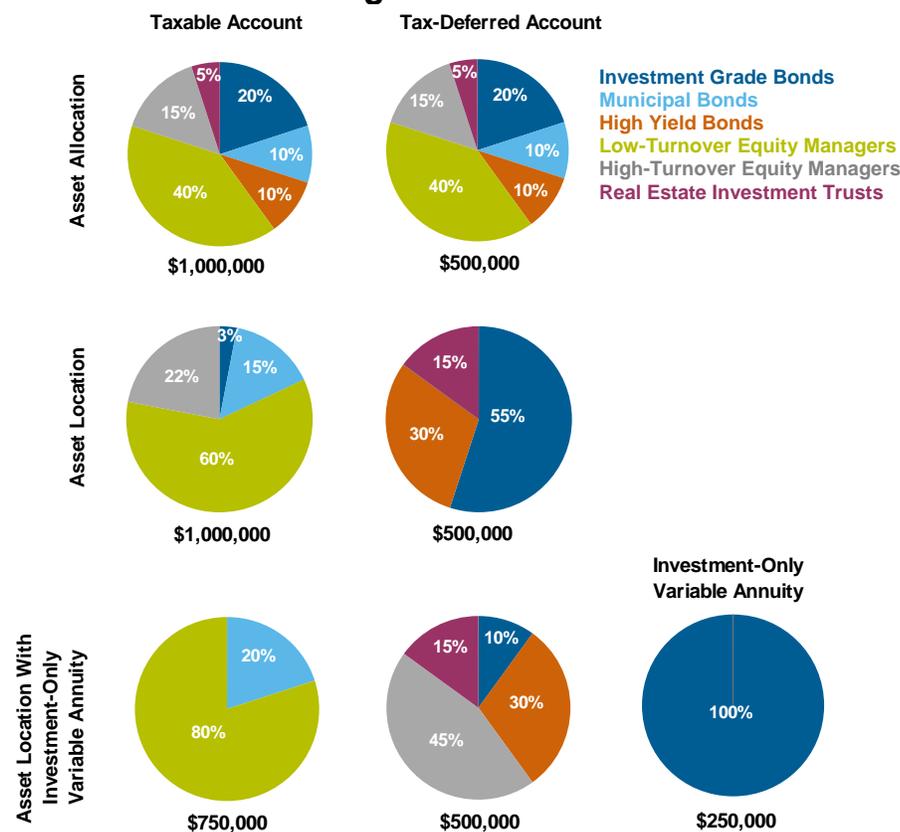
There are two additional scenarios illustrated there. The asset location strategy assumes he places high yield bonds, REITs and a portion of his investment grade bonds in his tax-deferred account and the remainder in his taxable accounts. A third strategy assumes he purchases a \$250,000 IOVA in nonqualified accounts and uses it to house the majority of his investment grade bonds, places his high-turnover equity

investments in a tax-deferred account and leaves only low-turnover equity index funds and municipal bonds in the taxable account. That will maximize his tax savings.

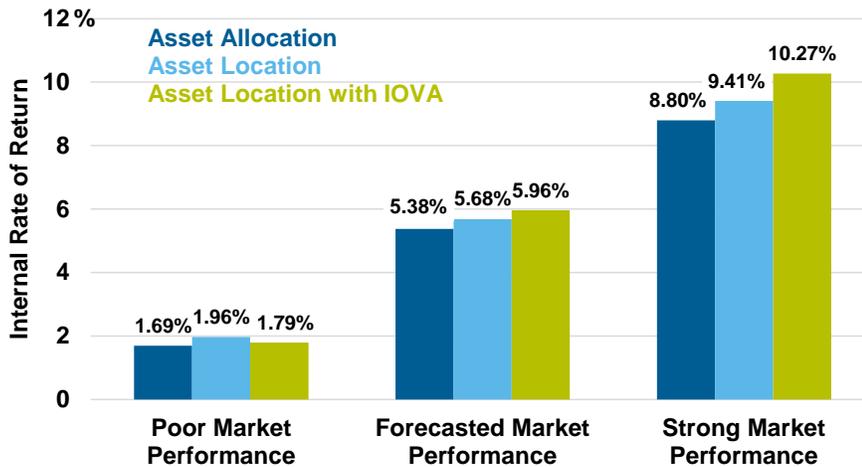
What’s the long-term impact? After 20 years, the first approach results in an

aftertax IRR equal of 5.38% annualized (see Exhibit 8, page 9). In the second approach, which uses a basic asset location strategy, the aftertax IRR jumps to 5.68% annualized. The final case illustrates the benefits of more complex approaches that bring together different tax-efficiency strategies. In the IOVA example, the median IRR tops 5.96% annualized. An improvement in aftertax returns of this magnitude can easily make the difference between, for example, running out of money in retirement and having sufficient funds. Furthermore, this value-added does not depend on the level of investment performance, as can be seen by the improvement in the case of both poor investment results, which we model at the fifth percentile of forecasted outcomes, and strong investment results, which we model at the 95th percentile of forecasted outcomes.

Exhibit 7. Asset Allocation and Asset Location Strategies



For illustrative purposes only
 Source: Morgan Stanley Wealth Management GIC

Exhibit 8: Tax-Equivalent Internal Rate of Return

For illustrative purposes only
Source: Morgan Stanley Wealth Management GIC

Universal Life Insurance

Under the right circumstances, universal life insurance (ULI) can be a powerful part of a tax-efficient strategy. A ULI policy is a type of cash value insurance that combines both tax deferred saving and a death benefit. The excess of premium payments above the cost of insurance and other fees and expenses are credited to the cash value of the policy, where it is invested and can grow tax free. The tax benefits of universal life insurance include the tax-deferred accumulation of the cash value of the policy, income-tax-free death benefits and tax-free loans and withdrawals. Importantly, as with variable annuities, the IRS does not impose contribution limits on ULI policies, which make them useful for high income investors who have maxed out their contributions to their qualified retirement accounts. Note that some ULI policies are considered by the IRS to be modified endowment contracts (MECs), whose tax treatment is much less favorable and therefore not of interest for our discussion.

Indexed universal life insurance (IUL) policies and variable universal life insurance (VUL) policies invest the premiums in the capital markets and thus are most appropriate when the main purpose of the life insurance is to enhance wealth accumulation. IUL products do not confer direct ownership of stocks and bonds on the policyholder, but link the

interest credited to the cash value to either a fixed interest rate or to the performance of an equity market index, most commonly with minimum appreciation guarantees. VUL policies allow policyholders to directly invest in equity and bond portfolios, similarly to an IOVA or another investment account.

As with IOVAs, these types of policies are constructed to emphasize wealth accumulation because they minimize costly protection-oriented features, meaning more of the premium gets invested. Thus, the death benefits in IULs and VULs are as low as IRS guidelines will permit.⁶ One benefit of life insurance relative to other tax-advantaged vehicles is that most of a policy's cash value can be accessed at any time without penalty, regardless of a policyholder's age. This is possible first because withdrawals from a life insurance policy are treated as cost basis first, before the gains, making partial withdrawals from the policy up to the amount of cost basis tax free. Second, to the extent the policyholder wishes to access gains beyond paid-in principal, she can also take a loan from the policy secured against the death benefit that effectively permits access to these funds without triggering a taxable event. Of course, the death benefits of these policies are a feature and a cost throughout their tenure, which has to be considered when purchasing a policy. Other complicating

factors include that borrowing against life insurance policies increases the risk that a policy can lapse if premiums can't be covered, an event that triggers fees such as surrender charges and converts outstanding loan amounts or cash-surrender values above the cost basis to ordinary income, creating potentially significant tax liabilities.

To see how these policies can enhance tax efficiency, consider a 45-year-old man who has \$1 million of taxable savings in addition to his tax-deferred and tax-exempt accounts. In this hypothetical, we will evaluate three options to help him with his two objectives: saving for retirement and providing an adequate death benefit to his young family in the event of his premature death. In the first instance, he purchases a universal life policy with premiums of \$40,000 per year for 10 years and an initial death benefit of \$870,659. After 10 years, both the policy's cash value and its death benefit will grow tax-deferred until he retires at 65. Then, he will start taking distributions from the policy of \$75,000 per year for 20 years, adjusted for inflation. Since these distributions are actually loans against the policy, they are tax free as long as the policy is in force. We evaluate this case separately for VUL and IUL policies.

The alternative choice is to purchase a 20-year term insurance policy with the same initial death benefit as in the case of the universal life policies. The cost of that coverage is a \$1,416 premium per year for 20 years, which will protect his family until he retires. In this example, the remainder of the \$1 million will also be invested in a taxable account composed of 60% equity index funds and 40% investment grade bonds. We will target the same investment risk throughout this example consistent with a 60% equities/40% bond portfolio.

Note that the IUL is somewhat different in that its underlying investments are not traditional, and generally employ downside protection and upside caps. The combination actually makes the investor's exposure more bond-like. As such, to maintain like-for-like risk exposure for our

case study, we will allocate the \$600,000 remaining for the taxable account after each premium paid for the IUL purchase by assuming the IUL's contract value to be a fixed income allocation. Consequently, the taxable account in this case study will have, on average across the horizon and capital-market scenarios, approximately a 75% allocation to equities, which is higher than the targeted equity allocation for the entire portfolio. More specifically, the allocation increases and decreases over the specified horizon to match an overall portfolio-level equity allocation of 60%; in general, it increases during accumulation as premiums are paid and decreases thereafter, but that will depend on the investment performance in any scenario.

The results of the three case studies are laid out in Exhibits 9 and 10. Note that as there are more moving parts in this case study, there are different ways to examine the effectiveness of the three strategies. The first is simply what insurance benefits would be passed to beneficiaries in the event of the premature death of the breadwinner before retirement. The results here, listed in Exhibit 9, are not well-differentiated across strategies. In the median projection, death benefits in the cases that incorporate IUL policies are higher when the insured is younger and marginally less generous as he approaches retirement.

While the death benefits of the three strategies are close, the effects on wealth accumulation and ultimate legacy are more pronounced (see Exhibit 10). The results there are examined 20 years into retirement (age 85), and separated between wealth accumulation and legacy, with wealth accumulation represented by the investor's spending power and legacy measured by the assets that would be passed into the estate in the event of the investor's death. We evaluate these two metrics in three different scenarios of investment performance, the first of which corresponds to our market forecasts, the second a measure of strong market performance (the 95th percentile), and the last a measure of poor market performance (the fifth percentile). Spending power is

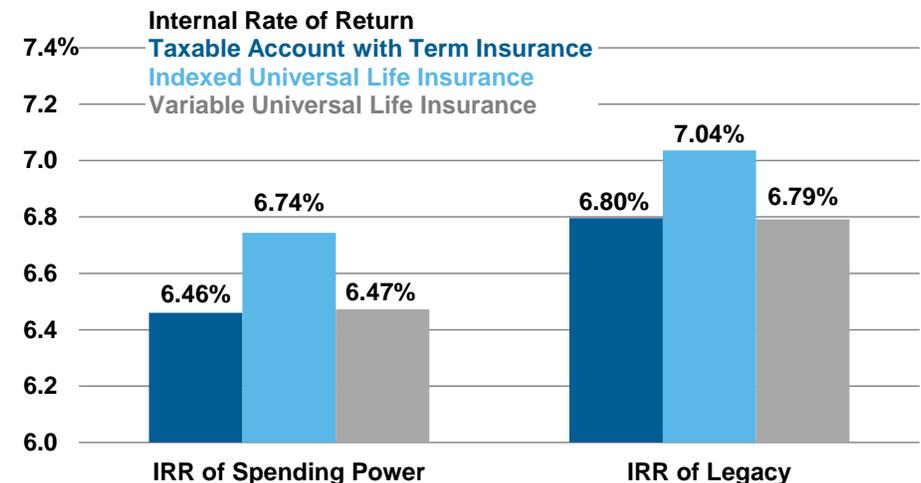
Exhibit 9: Median Bequests to Beneficiaries Given Policyholder Death Before Retirement

Legacy			
Age	Taxable-Only + Term Life	Indexed Universal Life	Variable Universal Life
46	\$1,910,206	\$1,909,815	\$1,912,755
50	1,886,746	1,905,080	1,895,354
55	1,976,134	2,031,437	1,998,230
60	2,202,633	2,191,715	2,079,359
65	2,529,938	2,451,951	2,356,375

For illustrative purposes only
Source: Morgan Stanley Wealth Management GIC

Exhibit 10: Wealth Accumulation and Legacy Results Assuming a 20-Year Withdrawal Phase

	Market Performance	Taxable Account + Term	Indexed Universal Life	Variable Universal Life
Spending Power	Strong	\$10,973,454	\$12,970,271	\$11,866,518
	Forecasted	2,970,272	3,510,828	2,992,841
	Poor	56,446	0	0
Legacy	Strong	13,646,916	15,916,132	13,796,963
	Forecasted	3,617,866	4,138,158	3,609,769
	Poor	56,446	0	0
Probability of Success		95%	93%	93%



For illustrative purposes only
Source: Morgan Stanley Wealth Management GIC

calculated as the amount of resources the policyholder can apply to spending at any time, net of tax liability and expenses and including loans from life insurance accounts. This means that the cash surrender value of a universal life policy is not fully available to the investor, because we assume the maximum loan amount would still leave sufficient funds in the policy to pay for future expenses, such as

the death benefit. The amount left in the policy is calibrated to provide a high degree of confidence that the policy will not lapse, which as discussed previously would cause significantly adverse tax consequences. Because assets passed into an estate work differently than those accessed while still alive, the two measurements will differ.

As we can see in Exhibit 10, with forecasted or strong market performance, the strategies that incorporate a universal life policy outperform the purely taxable account strategy; the IUL strategy is the most differentiated, with nearly \$500,000 more in spending power and legacy gifting, respectively. This illustrates the leverage to be gained from its investment guarantees, which allows the investor to increase risk elsewhere in the portfolio with no net effect on long-term volatility and average credit quality.

Note there are risks in using an IUL in place of bonds which are not expressed in the exhibit. These are the credit and liquidity risk associated with the creditworthiness of the insurance provider and the ability to liquidate the policy. Historically, these have not been great risks when the policies have been appropriate for the investors.

That said, with poor market performance, IUL-based strategies underperform compared to a taxable investment-only strategy. This is because tax-deferral benefits of the insurance policies are proportional to the appreciation of the underlying investments, such that when the market does particularly poorly, the cost of life insurance can exceed its tax benefits. Sure enough, the probability of having enough money at the end of 20 years is slightly lower in the universal life cases than in the taxable-only case. The implication is that an approach utilizing an IUL policy to enhance goal probabilities is effective but is more appropriate for an investor with a moderate-to-high risk tolerance than one with a low risk tolerance.

One caveat to these results refers to the potentially enormous tax benefits of using universal life insurance to smooth taxable income levels in retirement. In particular, because universal life policies, unlike taxable and tax-deferred accounts, allow investors to access funds without creating taxable income or gains, they are particularly helpful in allowing investors to target taxable income levels at consistent levels that, over time, can substantially lower average tax rates. By

not incorporating those potential features of these policies in this case study, we understate their potential to impart positive wealth accumulation effects.

Withdrawal Sequencing

To this point, we have approached the issue of tax efficiency through the lens of wealth accumulation. However, many of the same tax-cost dynamics are applicable when it comes to making decisions about how to distribute wealth. Indeed, tax strategy around distribution can make a bigger impact than tax strategy around wealth accumulation. This is especially the case for retirement goals, where retirees will typically make periodic withdrawals from financial portfolios to cover spending needs. In doing so, the account they choose to tap first, and the investment strategy they institute around it, makes a difference. A common approach is to withdraw first from taxable accounts until they are exhausted, and then from tax-deferred accounts, and finally from tax-exempt accounts, in order to maintain the tax benefits of the tax-advantaged accounts for longer.

One issue with that approach is that affluent investors with more savings in taxable accounts than needed for expenses early in their retirement may find they end up with lumpy realized income and adverse tax consequences. This is especially so if they take large RMDs from their tax-deferred accounts while still getting taxable income from other sources. A better approach is to time withdrawals from tax-deferred accounts when those withdrawals would be subject to a lower tax rate, which often will be early in retirement, before RMDs begin. Those distributions could then be “topped up” as necessary using principal withdrawals from a taxable account or life insurance policy, which would considerably reduce future tax liability, when the RMDs force much of that income to be taxed at higher marginal rates.

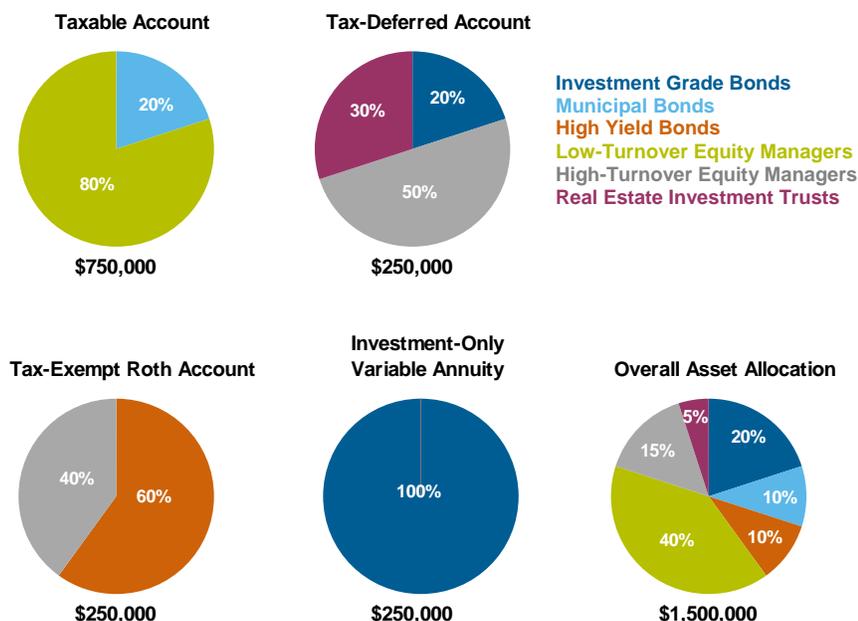
More-complex strategies can potentially have a greater impact, such as transferring a part of tax-deferred savings into a Roth IRA account. The relative order of

withdrawals and conversions between tax-deferred accounts and tax-exempt accounts provide an opportunity to smooth reported income and thus lower the average effective tax rate the investor faces during the withdrawal period. IOVAs and life insurance in nonqualified accounts are particularly valuable in managing this process. Because they are not subject to RMDs, their tax benefits can generally be extended until funds are needed. In addition, life insurance provides a potentially large pool of available funds whose withdrawal does not create taxable income. The availability of such funds is an advantage in the ability to smooth reported income during withdrawal, such that life insurance holds potentially large benefits for investors in this context.

To illustrate the potential of smoothing reported income for defraying tax costs, let's go back to our 45-year-old investor. To enrich the example, let's assume instead having a \$500,000 tax-deferred account he held a \$250,000 tax-deferred account and a \$250,000 tax-exempt Roth account. Recall that this individual had purchased an IOVA equal to 25% of his taxable portfolio of \$1 million. He has allocated his 60% equity/40% bond strategy across his taxable account, his \$250,000 tax-deferred account and \$250,000 tax-exempt accounts in a manner consistent with the asset location strategy outlined (see Exhibit 11, see page 12). The exception here is that he places relatively low-growth investment grade bonds beyond those in the IOVA in his tax-deferred account and splits the remaining high-growth, tax-inefficient assets between his tax-deferred and tax-exempt accounts. Rather than evaluating the tax strategy at age 65, we do so deep in retirement at age 85 in order to examine the impact on tax efficiency of different distribution strategies across different investment return scenarios.

The four scenarios we examine are as follows. First, a simple one that assumes no withdrawal strategy but systematically draws proportionally from each of the different account types. The second option is a common sense withdrawal strategy

Exhibit 11. Asset Allocation and Asset Location for Withdrawal Sequencing



For illustrative purposes only
Source: Morgan Stanley Wealth Management GIC

that is ordered according to account type, with taxable accounts first, then tax-deferred accounts, then the IOVA and finally, the tax-exempt account (in this scenario there are no life insurance accounts). In the third scenario, withdrawals start from the tax-deferred account immediately, but only up to the point where realized income hits the top of the 15% marginal tax bracket (together with Social Security, assumed to be \$20,000 per annum), with additionally required withdrawals following the sequence outlined in the second scenario. In the fourth and final scenario, distributions are funded as per the second scenario, but a portion of the tax-deferred account is converted to a tax-exempt Roth account every year, again until realized income hits the top of the 15% marginal tax bracket. Needed withdrawals are then funded as per the original sequence.

Note that because the focus of this example is tax efficiency, we have not fixed the individual's income requirements,

but instead fix an initial withdrawal rate of 5% at retirement, with inflation-adjusted withdrawals thereafter. The tax rate varies because it is calculated on the amount of withdrawal for each iteration of the simulation. We calculate and compare the IRR for each strategy. The results, illustrated in Exhibit 12 (see page 13), show the potential that sophisticated withdrawal strategies have for increasing tax efficiency. Note that the baseline strategy with no approach to withdrawal sequencing has a relatively low 5.80% median IRR, though that is unlikely to be the approach of the average investor. More likely, investors will follow a path that targets tax-advantaged accounts for withdrawal last, the results of which are showing in the second line as 6.08%. The strategies that look to smooth the income stream to avoid punitive progressivity in tax rates add the most value to 6.17% IRR, with the conversion strategy superior to others at 6.45%. The 64 basis-point-difference between best and worst strategy

might sound modest, but compounded for 50 years (from age 45 to age 95), it makes a huge impact—in simple terms, a difference in return of that magnitude would equate to approximately a 75% difference in final wealth after 50 years, easily large enough to mean the difference between achieving a goal and not doing so.

The results are reported for the median case and for two extreme percentiles, the fifth and 95th, which test the effect on the strategy of different levels of investment portfolio performance. The rationale for that is the importance of distinguishing these methods from approaches to improving returns by adding risk. Indeed, the IRRs for more tax-efficient withdrawal strategies are substantially better in the case of poor market returns as well as when markets are more favorable.

Forecasted IRRs for different withdrawal rates, reflecting differing levels of spending as a fraction of savings, are also reported in Exhibit 13 (see page 13). These illustrate that the value of these strategies is independent of how sufficient an investor's savings are for the goal; in each case, the tax-efficiency enhancement strategies are ranked in the same order with similar value added.

Finally, we look at the effect of these strategies in the context of an assumed retirement plan. What we see there is consistent with the IRR reporting, where greater tax efficiency increases the probability of not running out of money in retirement, from 70.6% to 77.3% in this instance, assuming a 30-year retirement. It also increases expected gifting at age 95 (with the median gift passed to beneficiaries from this pool of assets improving to an inflation-adjusted \$3.6 million from an inflation-adjusted \$2.1 million). What's more, the number of years of withdrawals the portfolio can cover in poor market environments, which in the case of a partial Roth conversion strategy, are stretched for an additional year and a half over the baseline.

Exhibit 12: Internal Rate of Return Portfolio Results With 5% Withdrawal

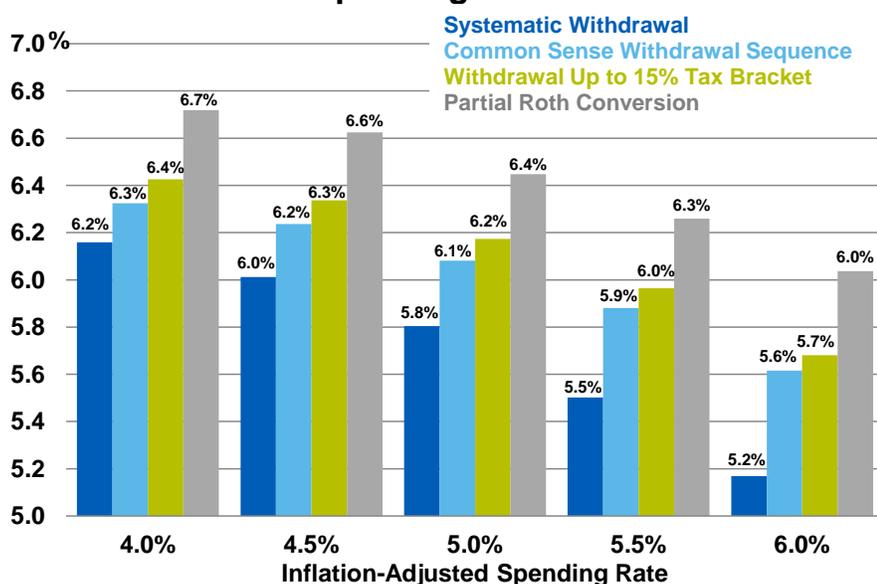
Internal Rate of Return	Market Performance			Improvement	Relative Improvement
	Poor	Forecasted	Strong		
Systematic Withdrawal	0.51%	5.80%	9.24%	N/A	N/A
Common Sense Withdrawal Sequence	0.45	6.08	9.85	0.28%	4.8%
Withdraw Up to 15% Tax Bracket	0.58	6.17	9.88	0.37	6.4
Partial Roth Conversion	1.12	6.45	10.14	0.64	11.1

Withdrawal Strategy	Probability of Success	Market Performance			Years of Withdrawal With Poor Returns
		Poor	Forecasted	Strong	
Systematic Withdrawal	70.6%	\$0	\$2,051,491	\$32,910,999	19.30
Common Sense Withdrawal Sequence	70.7	0	2,678,782	42,047,361	19.24
Withdraw Up to 15% Tax Bracket	72.4	0	2,854,029	42,220,251	19.40
Partial Roth Conversion	77.3	0	3,577,240	47,136,240	20.67

Hypothetical performance should not be considered a guarantee of future performance or a guarantee of achieving overall financial objectives. **For more information about the risks to hypothetical performance, please see the Risk Considerations section at the end of this material.**

Source: Morgan Stanley Wealth Management GIC

Exhibit 13: Internal Rate of Return Based on Different Spending Rates



For illustrative purposes only. Hypothetical performance should not be considered a guarantee of future performance or a guarantee of achieving overall financial objectives. **For more information about the risks to hypothetical performance, please see the Risk Considerations section at the end of this material.**

Source: Morgan Stanley Wealth Management GIC

Conclusion

Investors stretching to meet financial goals need all the help they can get from their investments. While strategies such as targeting higher risk levels and looking to nonmarket risk and active managers for help are reasonable, they are not always reliable, and in any case, expose investors to additional risk—in some cases more than is prudent. Strategies to improve tax efficiency are not always robust to poor investment performance, but they are generally more so, and regardless, hold out the potential for a considerable increase in net returns. More importantly, they accomplish this largely without exposing investors to additional investment risks. While investment diversification may still be the only “free lunch” available to investors, enhancing tax efficiency is perhaps the one approach that offers the best value of those that are not free. That being the case, investors who need more fuel to reach their financial goals would be well advised to consider the potential of such strategies.

As that goes, each of the approaches we reviewed can increase the tax efficiency of an investment portfolio under certain conditions. Moreover, the benefits of many of the strategies are additive, indeed more than additive given some inherent synergies between them that can multiply their effects when combined together. One good example from this report was use of the IOVA with asset location and a thoughtful withdrawal strategy. When considering the sheer number of permutations of investment strategy, client circumstances and product and account types, the potential to enhance a goals-based investment plan is considerable. ■

Footnotes

¹See *Inputs for GIC Asset Allocation: Annual Update of Capital Market Assumptions*, March 2016.

²Note that Roth IRA beneficiaries are subject to the post-death RMD rules once the owner dies.

³Assumes gains in taxable accounts are taxed at 28% per year for 40 years. Each \$1 earns a 10% pretax return per year for 40 years generates \$32.59 aftertax amount in tax-deferred account and \$16.14 in taxable

account. Therefore wealth in tax-deferred account is doubled.

⁴Nonqualified annuities are subject to after-death required distribution rules similar to the post-death RMD rules applicable to Roth IRAs.

⁵Trust structures involve additional legal costs and there may be limitations on the number of generations eligible for tax deferral.

⁶These products are designed to carry the minimum death benefit required by IRS while contributing the maximum amount allowed into its cash value account. The exact amount of maximum premium is determined by either guideline premium test or cash value accumulation test. Furthermore, premiums paid should pass a seven-day test that categorizes the policy as a nonmodified endowment contract (non-MEC) to receive full tax benefits.

Endnotes

This report is based on tax law in effect at the time of its publication. Subsequent changes in tax law may have an impact on the strategies outlined.

Source of added return illustrated in Exhibit 1:

Municipal Bonds: Spread between aftertax equivalent yield of 10-year US Treasury bonds and 10-year municipal bonds as of Feb. 17, 2017.

Roth Individual Retirement Account: \$5,500 inflation-indexed contribution per year for 40 years invested in GIC Balanced Growth asset allocation model. Internal rate of returns are calculated for the same investment in both taxable brokerage account and Roth IRA account and the difference of internal rate of return is added return. Capital markets assumptions used refer to footnote 1.

Tax-Advantaged Retirement Plan: Retirement account has \$5,500 inflation-indexed contribution per year and taxable brokerage account has an aftertax equivalent amount of \$5,500 inflation-indexed contribution per year. Money in both accounts is invested in GIC Balanced Growth asset allocation model for 40 years. At retirement, portfolio value of retirement account is adjusted for income tax to get aftertax retirement account value. Internal rate of returns are then calculated and the difference of IRR is added return. Capital markets assumptions used refer to footnote 1.

529 Education/Health Care Saving Account: 529 plan has \$10,000 inflation-indexed contribution per year and taxable brokerage account has net of state tax-equivalent amount of \$10,000 inflation indexed contribution per year. Money in both accounts is invested in GIC Balanced Growth asset allocation model for 18 years. Difference of internal rate of return is added return. Capital markets assumptions used refer to footnote 1.

Investment-Only Variable Annuity: Equivalent amount of aftertax funds contributed to IOVA-bought in nonqualified

accounts and taxable brokerage account. Both accounts are invested in GIC Balanced Growth asset allocation model for 40 years. IOVA charges 1% of assets under management based account fee per year. After 40 years, gains in IOVA are taxed at an ordinary income tax rate and an aftertax equivalent portfolio value is calculated for IOVA. Internal rate of returns are then calculated and the difference of IRR is added return. Capital markets assumptions used refer to footnote 1.

Tax-Managed Investments: Sourced from “Evaluating The Tax Deferral And Tax Bracket Arbitrage Benefits of Tax Loss Harvesting,” Michael Kitces, Dec 3, 2014.

Asset Location: See Exhibit 8 based on forecasted market performance

Universal Life Insurance: See Exhibit 10 based on IRR of spending power

Withdrawal Sequencing: See Exhibit 12 based on forecasted market performance

Model Calculation Assumptions: The analyses in this publication are based, in part, on a Monte Carlo simulation, which involves repeated sampling of asset class returns from a known distribution.

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.

1. The analysis in Exhibit 2 depicts the ratio of aftertax gains to pretax gains for investors in high tax bracket. The hypothetical investor is assumed in 39.6% federal tax bracket, with 3.8% Medicare tax, and 12.7% state and local tax rate. Investment gross returns are assumed to be 10% per year for 10 years and after tax proceeds are reinvested each year. Cost basis equals initial investment amount.
2. The analysis in Exhibit 4 depicts tax-equivalent yields of municipal bonds

compared to taxable bonds. Marginal federal income tax rates are used to compute equivalent yields. State and local taxes are not included in this illustration.

3. The analysis in Exhibit 5 depicts the improvement in internal rate of return and ending wealth by investing aftertax money in investment only variable annuity verses in a taxable brokerage account. Portfolio gross returns are listed in the table, with 100% turnover rate. Cost basis equals initial investment amount. During the asset accumulation period, investors stay in the 39.6% federal tax bracket, with 5.2% in state tax and a 3.8% Medicare tax. At the end of investment horizon, portfolio values are evaluated as aftertax equivalent amount and investors are in 25% federal tax bracket, with 5.2% state tax.
4. The analysis in Exhibit 7 and 8 depicts the improvement in internal rate of return by following tax-efficient asset location strategy for 20 years in a 10,000-iteration Monte Carlo simulation. Investment only variable annuity fee is assumed to be 1% per annum based on assets under management at 1% per annum. Aggregated asset allocation is 60% equities and 40% fixed income in all three scenarios. The reason for choosing a 60% equity/40% bond allocation is because it’s a common allocation in balanced portfolios as well as in multiasset funds. If a different balanced allocation is selected, results would be different than those depicted in Exhibit 8. Various assets growth rates are based on Global Investment Committee forecasted capital markets assumptions as of March 2016, with the first seven years assuming strategic assumptions and subsequent 13 years assuming secular assumptions. Turnover rates are assumed to be 50% for investment grade bonds, 30% for municipal bonds, 60% for high yield bonds, 10% for low-turnover equity managers, 100% for high-turnover equity managers and 60% for real estate

investment trusts. During the asset accumulation period, investors stay in the 39.6% federal tax bracket, with a 5.2% state tax and a 3.8% Medicare tax. At the end of investment horizon, portfolio values are evaluated as after tax-equivalent amount and investors are in 25% federal tax bracket and 5.2% state tax.

5. The analysis in Exhibit 9 and 10 depicts the effect on family protection and wealth accumulation by investing in different type of insurance contracts. During the asset accumulation period, investors stay in the 39.6% federal tax bracket, with a 5.2% state tax and a 3.8% Medicare tax. During retirement phase, investors are in 25% federal tax bracket with a 5.2% state tax. Taxable accounts are invested in investment grade bonds with 50% turnover and equities with 10% turnover. Asset growth rates are based on Global Investment Committee forecasted capital markets assumptions as of March 2016, with the first seven years assuming strategic assumptions and subsequent 13 years assuming secular assumptions. A 2.3% inflation rate is used to discount ending values to today's dollars.

Term and life insurance quotes are based on 45-year male non-tobacco users. Term insurance premium is \$1,415.80 per year for 20 years with death benefit \$870,649. Indexed and variable life insurance premium is \$40,000 per year for 10 years with same initial death benefit \$870,649. After 10 years, death benefit option in life insurance contracts is switched from increasing to level, subject to the minimum required death benefit defined in U.S. Code §7702. Both indexed and variable life insurance assume \$120 policy expense per year, premium charge is 8% for the first payment and 6% for subsequent payment. Per 1,000 charge on premiums are 6.46%. Monthly cost of insurance rate varied by

age ranges from 0.00327% at age 46 to 1.5962% at age 99, sourced from Nationwide YourLife Indexed UL Accumulator illustration as of Dec 15, 2016. Both loan interest and credit are assumed to be 3% per year. In indexed life insurance, subaccount credit rate is linked to the performance of MSCI All Country World Index, which is floor at 0% and capped at 9% per year multiplied 1.15 times.

Each year, taxable accounts are rebalanced in a way such that overall asset allocation is closed to 60% equity/40% bond as much as possible. The reason for choosing a 60% equity/40% bond allocation is because it's a common allocation in balanced portfolios as well as in multiasset funds. If a different balanced allocation is selected, results would be different than those depicted in Exhibit 9 & 10. After 20 years during retirement, \$75,000 withdrawals adjusted for the cost of living are made each year from taxable account first then borrowed from life insurance contracts after taxable account is depleted. A 10,000-iteration Monte Carlo simulation is carried to evaluate each strategy and results are assessed through spending power and legacy. Spending power is defined as aftertax equivalent amount of taxable account plus maximum borrowed amount from life insurance with enough remaining subaccount balance to pay for contract fees, cost of insurance and loan interests. Legacy is defined as gross amount of taxable account after cost-asis step up, plus simulated death benefit in each iteration.

6. The analysis in Exhibit 11 and 12 depicts the improvement of withdrawal capability following tax efficient withdrawal sequence among multiple account types in a 10,000-iteration Monte Carlo simulation. Retirement income starts after 20 years' asset accumulation. The withdrawal amount is

calibrated to be 5% of portfolio value minus unrealized tax liability in each iteration, adjusted for the cost of living for 30 years. During the asset accumulation period, investors stay in 39.6% federal tax bracket, with a 5.2% state tax and 3.8% a Medicare tax. During retirement phase, investors' federal tax bracket is determined by the withdrawal amount together with \$20,000 inflation-adjusted Social Security payment each year, subject to additional 5.2% state tax. Tax brackets are based on 2016 married filed jointly status and assumed to grow with inflation rate. Asset growth rates are based on Global Investment Committee forecasted capital markets assumptions as of March 2016, with the first seven years assuming strategic assumptions and subsequent 13 years assuming secular assumptions. Inflation rate is assumed to be 2.3% per year. Portfolios are rebalanced each year across multiple account types to maintain overall asset allocation close to 60% equities and 40% fixed income as much as possible after yearly spending amount being withdrawn. The reason for choosing a 60% equity/40% equity/bond allocation is because it's a common allocation in balanced portfolios as well as in multiasset funds. If a different balanced allocation is selected, results would be different than those depicted in Exhibit 12 & 13. Unrealized tax liabilities are subtracted from portfolio ending values to calculate internal rate of return. Probability of success is defined as having at least \$1 in any of the account types at the end of 50 years simulation. Partial years of withdrawal are recorded if combined portfolio value at any year is not enough to support expected retirement spending at any year.

The **Global Investment Committee (GIC)** is a committee of six senior Morgan Stanley & Co. and Morgan Stanley Wealth Management thought leaders who meet regularly to discuss the global economy and markets, set asset allocation recommendations and portfolio weightings, and produce a suite of strategic and tactical market publications.

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

Risk Considerations

Variable Annuities and Life Insurance Products

Morgan Stanley Smith Barney LLC offers annuities and life insurance products in conjunction with its licensed insurance agency affiliates.

Withdrawal and distributions of taxable amounts from annuity contracts are subject to ordinary income tax and, if made prior to age 59 ½, may be subject to an additional 10% federal income tax penalty. Early withdrawals will reduce the death benefit and cash surrender value of the annuity.

Variable annuities and variable life insurance are sold by prospectus only. The prospectus contains the investment objectives, risks, fees, charges and expenses, and other information regarding the variable annuity contract or the variable life insurance policy and their respective underlying investments, which should be considered carefully before investing. Prospectuses for both the variable annuity contract or the variable life insurance policy and their respective underlying investments are available from your Financial Advisor. Please read the prospectus carefully before investing.

Variable annuities are long-term investments designed for retirement purposes and may be subject to market fluctuations, investment risk, and possible loss of principal. All guarantees, including optional benefits, are based on the financial strength and claims-paying ability of the issuing insurance company and do not apply to the underlying investment options.

Optional riders may not be able to be purchased in combination and are available at an additional cost. Some optional riders must be elected at time of purchase. Optional riders may be subject to specific limitations, restrictions, holding periods, costs, and expenses as specified by the insurance company in the annuity contract.

If you are investing in a variable annuity through a tax-advantaged retirement plan such as an IRA, you will get no additional tax advantage from the variable annuity. Under these circumstances, you should only consider buying a variable annuity because of its other features, such as lifetime income payments and death benefits protection.

Taxable distributions (and certain deemed distributions) are subject to ordinary income tax and, if taken prior to age 59 ½, may be subject to a 10% federal income tax penalty. Early withdrawals will reduce the death benefit and cash surrender value.

Life insurance policy cash values can be accessed through withdrawals and loans. In general, loans are not taxable. Withdrawals are taxable to the extent they exceed basis in the policy. If you take a loan and do not pay it back before the policy lapses or is canceled or the insured dies, this will cause immediate taxation to the extent of gain in the policy. Any withdrawal or unpaid policy loan balance and interest will reduce the life insurance policy's death benefit and cash value. Interest on loans will be billed annually. If you do not pay the amount due, it will be added to the amount of the loan and next year's interest will be based on this new loan amount. Policy loan repayments may be made at any time.

If the life insurance policy is a MEC (Modified Endowment Contract), you may be subject to additional taxes and penalties on any distributions from your policy during the lifetime of the insured. Any distribution from a life insurance policy that is a MEC will be taxed on an "income-first" basis. Distributions for this purpose include a loan (including any increase in the loan amount to pay interest on an existing loan or an assignment or a pledge to secure a loan) or withdrawal. Any such distributions will be considered taxable income to you to the extent there is gain in the policy at the time of distribution. That is, the distribution will be includible in income up to the amount your account value exceeds your basis in the policy. A 10% penalty tax also will apply to the taxable portion of most pre-age 59 1/2 distributions from a policy that is a Modified Endowment Contract.

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 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.

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.

Asset Class Risks

Master Limited Partnerships (MLPs) Individual MLPs are publicly traded partnerships that have unique risks related to their structure. These include, but are not limited to, their reliance on the capital markets to fund growth, adverse ruling on the current tax treatment of distributions (typically mostly tax deferred), and commodity volume risk. For tax purposes, MLP ETFs are taxed as C corporations and will be obligated to pay federal and state corporate income taxes on their taxable income, unlike traditional ETFs, which are structured as registered investment companies. These ETFs are likely to exhibit tracking error relative to their index as a result of accounting for deferred tax assets or liabilities (see funds' prospectuses). The potential tax benefits from investing in MLPs depend on their being treated as partnerships for federal income tax purposes and, if the MLP is deemed to be a corporation, then its income would be subject to federal taxation at the entity level, reducing the amount of cash available for distribution to the fund which could result in a reduction of the fund's value. MLPs carry interest rate risk and may underperform in a rising interest rate environment. MLP funds accrue deferred income taxes for future tax liabilities associated with the portion of MLP distributions considered to be a tax-deferred return of capital and for any net operating gains as well as capital appreciation of its investments; this deferred tax liability is reflected in the daily NAV; and, as a result, the MLP fund's after-tax performance could differ significantly from the underlying assets even if the pre-tax performance is closely tracked.

Investing in commodities entails significant risks. Commodity prices may be affected by a variety of factors at any time, including but not limited to, (i) changes in supply and demand relationships, (ii) governmental programs and policies, (iii) national and international political and economic events, war and terrorist events, (iv) changes in interest and exchange rates, (v) trading activities in commodities and related contracts, (vi) pestilence, technological change and weather, and (vii) the price volatility of a commodity. In addition, the commodities markets are subject to temporary distortions or other disruptions due to various factors, including lack of liquidity, participation of speculators and government intervention.

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). 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.

Treasury Inflation Protection Securities' (TIPS) coupon payments and underlying principal are automatically increased to compensate for inflation by tracking the consumer price index (CPI). While the real rate of return is guaranteed, TIPS tend to offer a low return. Because the return of TIPS is linked to inflation, TIPS may significantly underperform versus conventional U.S. Treasuries in times of low inflation.

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

A taxable equivalent yield is only one of many factors that should be considered when making an investment decision. Morgan Stanley Wealth Management and its Financial Advisors do not offer tax advice; investors should consult their tax advisors before making any tax-related investment decisions.

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

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

REITs investing risks are similar to those associated with direct investments in real estate: property value fluctuations, lack of liquidity, limited diversification and sensitivity to economic factors such as interest rate changes and market recessions.

Investing in foreign emerging markets entails greater risks than those normally associated with domestic markets, such as political, currency, economic and market risks. These risks are magnified in **frontier markets**.

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.

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.

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