A Study of *Real* Real Returns

Now in its third decade

The creation of real wealth depends on the bottom line.

Nominal Return

Real Real Return

$100

1984 1989 1994 1999 2004 2009 2014

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Keeping Perspective:
Investor Pitfalls Amid Headlines, Herd Behavior, and Moving Targets

If generals always fight the last war, investors all too often chase past performance and mistime the market. Despite the age-old admonition to buy low and sell high, few actually do, to the detriment of their portfolios and wealth. Why? No one wants to be the first to the party or the last to leave. Yet upswings in one asset class may not be all that apparent until well under way. By the time many market analysts and financial media notice, relative valuations may already have reached lofty levels. Loathe to miss out, investors pile in anyway, hoping there may be some steam left. More often than not, there isn't. They get burned by high prices on the way in and low prices on the way out. That leaves them wary when market valuations are actually attractive. By the time greed overcomes fear and they jump back in, valuations can be so high that little upside is left, just the attendant downside risk remains.

In 2015 this was painfully evident in China. By mid-June, China's major stock exchanges had rallied well over 100% in the previous 12 months, as urban retail investors piled into the stock market after the property bubble lost air, many buying on margin. But with average price-to-earnings ratios at stratospheric levels—at the end of the first half, the small, growth-stock-focused ChiNext Composite Index was trading at a trailing P/E of 118x and 12-month forward P/E of 79x—most Chinese stocks didn't have anywhere to go but down. As the broad market corrected, driving losses of well over 30%, authorities in Beijing, despite a flurry of supportive stock purchases, resorted to suspending trading in more than half the country's publicly listed companies. "The investor of today does not profit from yesterday's growth," as Warren Buffett has pointed out.

Investors should keep headlines about record highs and lows in this or that asset class in perspective. Trying to time the market and following the herd in chasing performance is rarely a winning strategy.

Indeed, closer to home, market research firm Dalbar for two decades has measured the performance of U.S. investors in mutual funds, documenting how shareholders generally lag the performance of the mutual funds themselves due to the timing of their decisions to sell one fund and buy another. The results of such jumps between mutual funds over shorter and longer periods "consistently show the average investor earns less—in many cases, much less—than mutual fund performance reports would suggest."[1] To take just one period in the study, at the end of 2014 the 20-year annualized return of the S&P 500 Index amounted to 9.85%, while that of the average equity mutual fund investor totaled just 5.19%, a significant difference.

Clearly, investors have a hard time resisting big emotive headlines and herd behavior, which consensus views among market analysts often spur in one direction or another. At the beginning of 2015, most investment firms were once again predicting faster growth in the U.S. economy, which had failed to rebound much more than 2% a year since the 2008 financial crisis. During that same period, U.S. large-cap stocks had rebounded dramatically, driven by U.S. Federal Reserve (the "Fed") asset purchases and ground-hugging benchmark interest rates. Notwithstanding the huge equities rally over the previous half dozen years, a number of Wall Street firms argued that U.S. stocks had further to run, despite rich valuations. Six months into 2015, the S&P 500 Index was up just 1.23%. By contrast, international stocks (as measured by the MSCI EAFE Index), which had badly lagged U.S. large-caps from 2008 to 2015, were up 5.52% in dollar terms, and in local currency terms, much more than that in Europe and Japan.

Investor behavior can have a huge impact on returns, well beyond individual asset class performance. Investors should keep headlines about record highs and lows in this or that asset class in perspective. Trying to time the market and following the herd in chasing performance is rarely a winning strategy. With the help of your financial advisor, you can work toward a more rational and disciplined approach to asset allocation—one that weighs tax treatment and inflation concerns, as well as expenses and fees, to help gauge the *real* returns of what you own. All are critical considerations in the pursuit of real wealth. ■

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1. *21st Annual Quantitative Analysis of Investor Behavior,* 2015 Advisor Edition, www.dalbar.com.

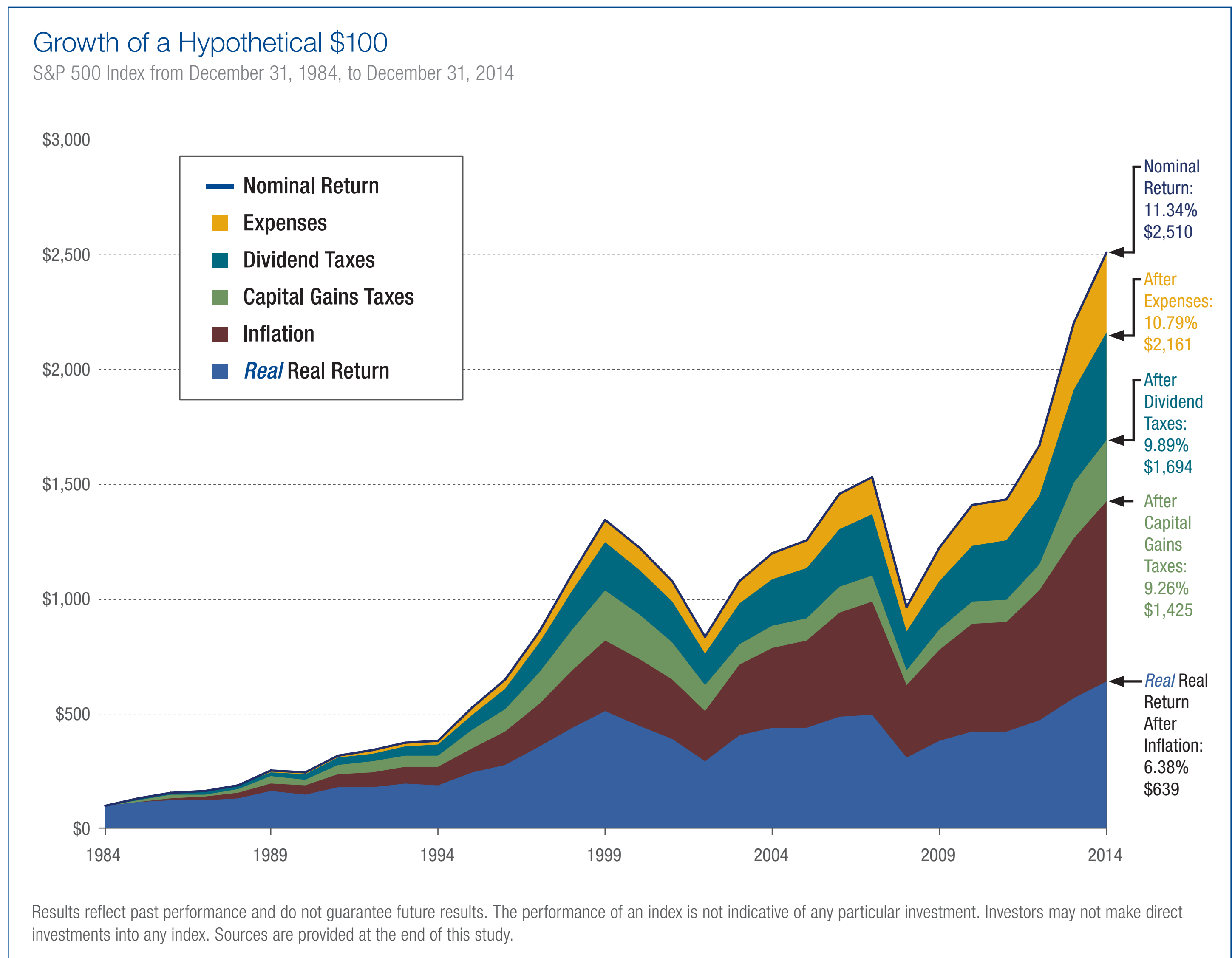
Thornburg's View of *Real* Real Returns

All too often investors chase nominal returns after much of the upside is gone. Quite apart from poor timing, nominal returns are a misleading driver of an investor's investment and asset-allocation planning. That's because they don't reflect the erosion from taxes, expenses, and inflation. Moreover, allocation strategies that heavily rely on nominal returns may take insufficient advantage of different investment vehicles that potentially offer valuable diversification benefits, sheltering portfolios during the inevitable periods of market volatility. That can reduce knee-jerk reactions and better position investors for subsequent upturns. Examining the *real* real returns of individual asset classes over longer periods can help investors build more successful portfolios. More broadly, understanding the importance of *real* real returns facilitates informed investment decisions, improving investor chances for higher portfolio returns over time.

The chart below illustrates the erosion of nominal returns from taxes, expenses, and inflation. It uses the nominal returns of the S&P 500 Index and real-world data for the past 30 years.

Death and Taxes

"In this world nothing can be said to be certain, except death and taxes," in Benjamin Franklin's oft-cited formulation. In last year's edition of "*Real* Real Returns," we examined the dramatic increase in investment taxes in 2013 as part of the American Taxpayer Relief Act. While we won't revisit all the details here, we remind readers that the hit, while especially hard for those in the top tax bracket, included people with adjusted gross income of at least $200,000 and married joint filers making $250,000. "Since taxes are the single biggest expense



Results reflect past performance and do not guarantee future results. The performance of an index is not indicative of any particular investment. Investors may not make direct investments into any index. Sources are provided at the end of this study.

In his 2004 letter to shareholders, Warren Buffett advised investors to "remember that excitement and expenses are their enemies."

an investor must pay over an investment lifetime—greater than health care, household expenses, and all other expenses combined—they are a critical contributor in determining what the investor accumulates and has to spend or pass on," the Money Management Institute pointed out in a report.[2] Citing research from Morningstar and Ernst & Young, the report noted that tax optimization strategies incorporated across model portfolios can generate up to 1.83% per year in improved after-tax outcomes. Over an investor's lifetime, that can translate into an improvement in outcomes as high as 33%.

Tax rates do, of course, change over time, as does the tax treatment of different types of investment income. Over the last three decades, the highest marginal income tax rates have run from 28% to 50%. In calculating real returns, we use the maximum marginal rate in effect at a given time. We assume that dividends were taxed at the maximum rate in the year they were received. As for capital gains—the difference between the price paid for an investment and the higher price at which it was sold—we assume they are long term, the tax treatment of which is more favorable than that involving short-term capital gains.

The 2013 tax hikes and additional levies are significant and complex. Investors should consult a financial or tax advisor.

The Phoenix of Inflation

If central bank asset purchases and rock-bottom interest rates in the U.S., Europe, and Japan have boosted financial asset prices, consumer inflation has remained scant in recent years, including so far in 2015. It appears monetary rainmakers have been more successful stimulating supply than demand, depressing prices in sundry commodities, from energy and iron ore, to platinum and palladium, to sugar and coffee. In mid-July, gold, a traditional store of value when fiat currencies start weakening, was trading at its lowest point in more than five years. At the end of June, the U.S. consumer price index increased a seasonally adjusted 0.3% from May, and just 0.1% from the year earlier.

Alongside supply overhangs, as economic, job, and wage growth have been sub-par in recent years, U.S. consumers have been more interested in bolstering their personal balance sheets than taking on more debt, despite its low cost. The dollar, meanwhile, has been strong relative to its major peers, and early in the second half of 2015 was up around 10% against the euro and some 3% against the yen. That makes imports cheaper, helping put a damper on domestic goods prices. As the European Central Bank and Bank of Japan continue to expand their balance sheets, the Fed ended its "quantitative easing" in late 2014 and is looking to begin "lifting" its key rate in the fall of 2015, which would mark its first monetary tightening in nine years. While U.S. economic growth this year is more robust than in other advanced economies, at a projected 2.5%, it is hardly overheating.

Tame inflation suggests "influences that are likely to be transitory, particularly the earlier steep declines in oil prices and in the prices of non-energy imported goods," Fed Chief Janet Yellen said in mid-July. If U.S. growth remains on track, "that will warrant gradual increases in the Federal Funds rate as the headwinds that still restrain real activity continue to diminish and inflation rises," she added.

Savers in short-term instruments, such as Treasury bills (T-bills) and money market funds, will no doubt welcome an increase in rates, as they have experienced negative real returns over the past seven years between low inflation and near-zero nominal yields on the securities. Whether the Fed will raise rates at the pace necessary to keep an eventual reappearance of inflation in check without choking off the modest economic recovery remains to be seen. In the meantime, investors should factor the threat of inflation into their long-term planning.

Expenses Incurred, and Paid

In his 2004 letter to shareholders, Warren Buffett advised investors to "remember that excitement and expenses are their enemies." We've already touched on the risks investors run when reacting to headlines depicting market volatility and consensus views. Expenses are another critical component of returns over time. Trading in and out of individual securities and mutual funds, as Dalbar's research has indicated, diminishes returns, mainly because investors time their jumps from one vehicle to another poorly. But also because of expenses and fees associated with holding and trading between securities and funds.

This study employs a 0.50% rate for investment expenses, which we consider a reasonable long-term proxy for overall expenses of varying types of investments, from higher-cost international equities to lower-cost asset classes such as U.S. government bonds. We don't apply this rate to real estate, of course. On homes held more than a year, we deduct the typical 6% commission. Though we can't build them into our calculations, as homeowners know, maintenance expenses on housing can run into the thousands of dollars a year.

2. *Improving Investor Outcomes Through Goals-Based Wealth Management: A New Model in the Delivery of Financial Advice,* Money Management Institute, October 2014.

Nominal Outcomes and Net Results 2014: The Year in Review

Upside Volatility Reigned in 2014

U.S. large-cap stocks chalked up another banner year in 2014, adding 13.7% in nominal returns on top of the 32% advance posted in 2013. Among most of the other asset classes we review, though, volatility in year-over-year nominal returns was the predominant feature. International stocks comprising the MSCI EAFE Index lost 4.9% last year after jumping 23% the year before. Long-term government bonds posted the biggest nominal advance among reviewed asset classes, leaping 24% in nominal terms after dropping 11% in 2013. Municipal bonds also had a strong nominal run in 2014, gaining 9.1% after sagging 2.6% the previous year. Corporate bonds also did well, gaining a nominal 7.5% following a 1.5% slip in 2013. Small-cap stocks added 4.9%, capping a huge 39% top-line gain the year earlier. Intermediate government bonds managed to rebound, with a 3.1% nominal return after shedding 1.1% in 2013. Given near-zero short-term interest rates, T-bills again returned a truly nominal 0.02% return, the same as the year before.

Real estate's rebound continued last year, but at a more moderate pace. After climbing 11.1% in 2013, the asset class added another 4.4% in 2014. The decline in commodities also continued, with the asset class posting the deepest loss among those reviewed, falling a whopping 17% in 2014 after tumbling 10% the year before.

The big picture of mostly positive nominal returns in 2014 wasn't quite as bright once taxes, fees, and inflation were taken into consideration. The *real* real return of the S&P 500 Index lost nearly four percentage points at 9.96%, while corporate bonds lost about the same, at 3.69%. Long-term government bonds, at 17.39%, saw seven percentage points lopped off their nominal return, while the bottom-line return in munis shriveled to 7.03%. Small-cap stocks' *real* real return amounted to a diminished 2.72%, while that of real estate was about the same. Intermediate government bonds ended up returning just 0.96%.

The other asset classes were pushed into negative territory, or, if already there, fell even deeper after taxes, fees, and inflation.

Real Real Returns

Annual Returns after Taxes, Inflation, and Expenses as of 12/31/2014

	Large Cap Stocks (S&P 500)	Small Cap Stocks (Russell 2000)	Int'l Stocks (EAFE)	Municipal Bonds	Long-Term Gov Bonds	Corp Bonds	Intermediate Gov Bonds	Real Estate*	T-Bills	Commodities	Inflation
30 Years	6.38%	5.56%	4.68%	3.68%	3.56%	1.93%	1.54%	0.78%	-0.91%	-2.75%	2.71%
20 Years	5.55%	5.31%	1.51%	2.98%	3.38%	1.59%	1.30%	0.83%	-1.13%	-3.02%	2.28%
15 Years	0.71%	3.31%	-0.43%	2.69%	3.42%	1.43%	1.25%	0.50%	-1.56%	-2.10%	2.25%
10 Years	3.74%	3.71%	1.28%	2.05%	2.88%	0.82%	0.70%	-0.89%	-1.67%	-5.76%	2.12%
5 Years	10.62%	10.42%	2.27%	2.87%	5.51%	2.19%	1.05%	0.96%	-2.12%	-7.63%	1.69%
1 Year	9.96%	2.72%	-6.63%	7.03%	17.39%	3.69%	0.96%	2.67%	-1.24%	-18.08%	0.76%

Sources and descriptions of each index and asset class are provided at the end of this study.

* For the one-year *real* real return, the 6% real estate commission was not deducted.

Past performance does not guarantee future results.

T-bills yielded a net negative 1.24%. The MSCI EAFE Index return dropped nearly 2% deeper into the red to negative 6.63%, while commodities saw its negative 17% nominal return fall another point, for an 18.08% loss in 2014.

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Long-Term Reality Check

Equities remained the best-performing asset class over the last three decades in both nominal terms and after adjusting for taxes, inflation, and expenses. They were followed by munis and long-term government bonds, both of which managed to improve their long-term net returns. But corporate bonds and intermediate-term government bonds saw their 30-year *real* real returns decline marginally, while real estate was still slightly above water.

The same can't be said of T-bills, which saw their slightly negative 30-year return sink further. Bringing up the rear, commodities were once again the worst long-term performing asset class in both nominal and real terms.

The S&P 500 Index posted an average annual nominal return of 11.34%, and a *real* real return of 6.38% in the 30 years through 2014, again making U.S. large-cap stocks the best-performing asset class in our study. After running neck-and-neck in last year's long-run tally, U.S. small-cap stocks pulled ahead of international stocks in both nominal and net terms. The Russell 2000 Index returned a nominal 10.27% since 1984, and a *real* real annual average 5.56%, while the MSCI EAFE Index's nominal return amounted to 9.38% and a net 4.68% return in the period.

Long-term government bonds actually outperformed in nominal terms the MSCI EAFE Index's long-term nominal return last year, at 9.69%, but with an average annual *real* real return of 3.56%, it fell more than one point short of international stocks' net result over the 30 years through 2014. Municipal bonds, meanwhile, remained the top performer within fixed income, with a 7.07% nominal and 3.68% average annual *real* real return during the period. T-bills again proved a losing proposition, as their nominal 3.68% return shrank to a *real* real negative return of 0.91%.

Although residential real estate has enjoyed a nice jump over the last few years, its three-decade average annual nominal return in 2014 was still rather low, at 4.24%, while its net return inched lower to 0.78%. Commodities continued to lag badly in the longer timeframe, with a nominal return of just 0.52% and a *real* real negative return of 2.75%.

What accounts for equities' long-run outperformance? Certainly in recent years the extraordinary monetary stimulus has helped equities and artificially boosted demand for long-term government bonds, pushing down their yields and total returns. The source and timing of returns also, of course, have a significant impact. Bonds generate most of their return from interest income, and for taxable bonds, the income is taxed in the year in which it is received, at higher ordinary income tax rates. Moreover, if taxes are paid annually from interest income, it reduces the amount available to compound over time.

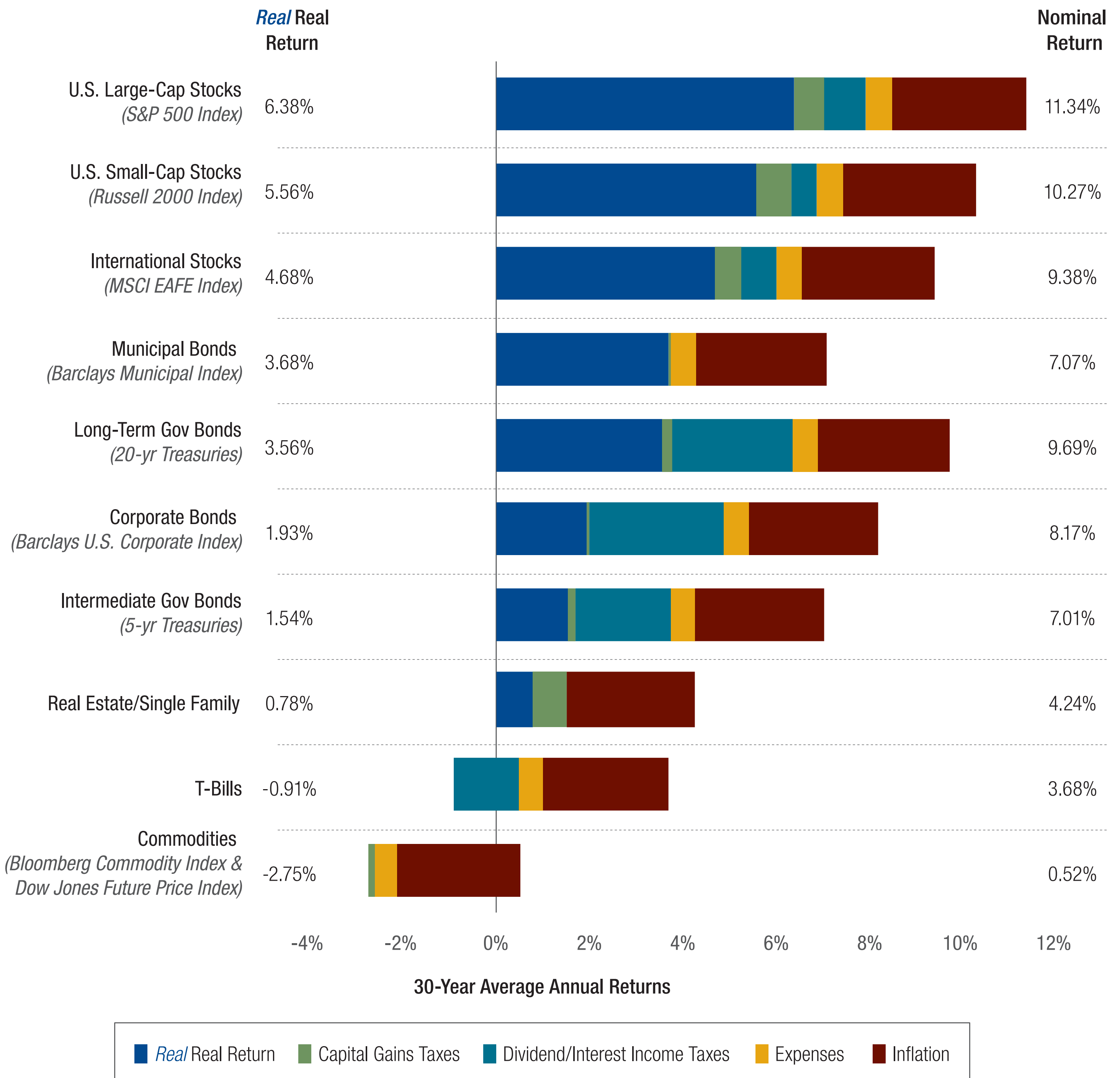
Equities, by contrast, generate most of their returns from capital gains, which are not taxed until they are actually realized—as the stocks are sold. Qualifying capital gains and dividend income are now effectively taxed at the total 23.8% rate for individuals making at least $200,000 a year, or couples making $250,000. While a significant increase from levels before the 2013 tax increases, that's still nearly 20 points less than the total levy on interest income of top earners that's generated outside of tax-advantaged accounts.

Despite the long-run outperformance of equities, investors would be well-advised not to put all their money into that, or any single asset class. As recent times have shown, return dispersion among asset classes can vary dramatically from year to year. Fixed-income returns, particularly of investment-grade debt, often correlate negatively with equity returns—in other words, they move in opposite directions, which helps smooth portfolio volatility. Lastly, consistent income from a well-managed compilation of bonds can anchor portfolios.

Equities remained the best-performing asset class over the last three decades …followed by munis and long-term government bonds.

Erosion of Total Returns Over 30 Years

in a Taxable Account, as of 12/31/2014



Methodology: This chart shows how fees, taxes on dividends and capital gains, and inflation erode real wealth. The amount at the far right shows the nominal return of an investment, while the area in gold reflects the amount eaten away by fees (in our example, fees of 50 basis points (0.50%) were applied to the investment, with the exception of real estate, which includes a one-time 6% commission). The impact of taxes on income from the investment (either dividend or interest income) is represented by the area in teal. Taxes on capital gains provide a further drag on performance and are represented by the area in green, while the silent tax of inflation, in burgundy, can often turn a positive nominal return into a negative *real* real return. Sources and descriptions of each index and asset class are provided at the end of this study.

Past performance does not guarantee future results.

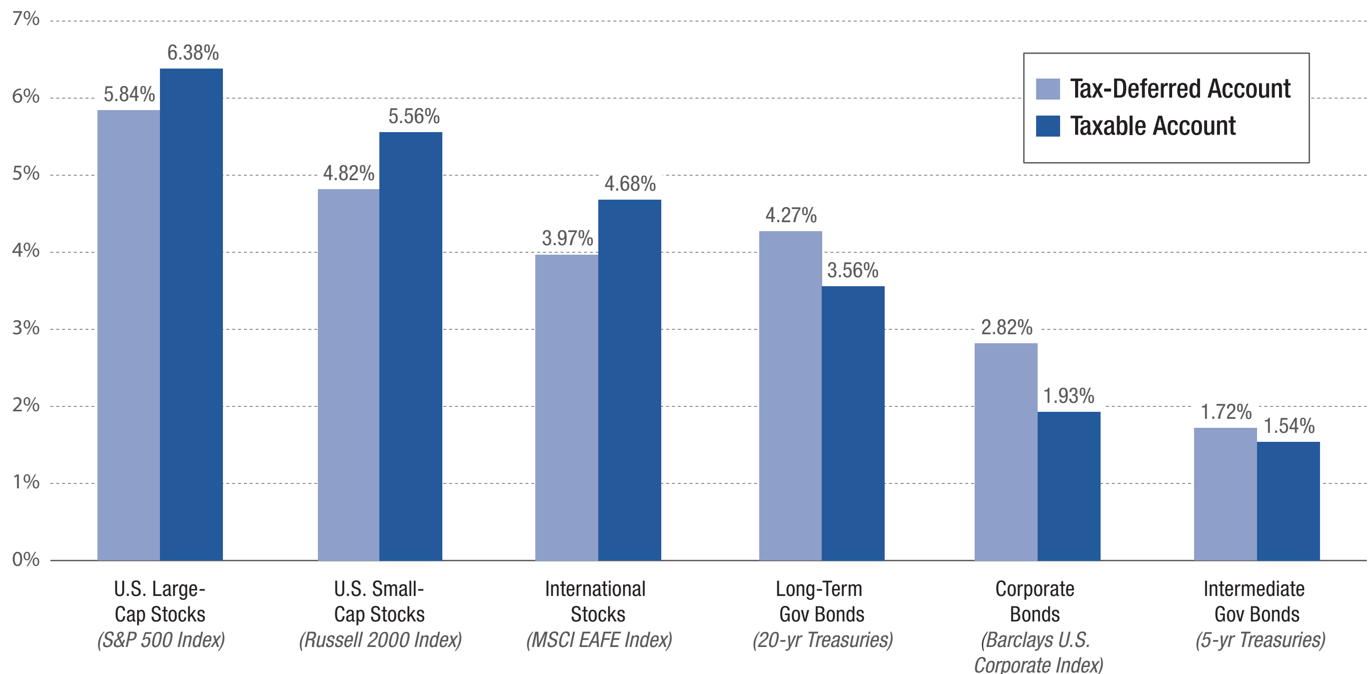
The Upshot of *Real* Real Returns for Planning

Alongside the appropriate investment mix, portfolio construction must take into account tax, inflation, and expense considerations to maximize real wealth generation. Even small moves to optimize portfolio allocation and efficiency can significantly improve returns over time. According to the Morningstar research cited in the Money Management Institute study,[3] "an additional 54 basis points in incremental annual after-tax returns can be achieved" by optimally locating assets in tax-qualified or taxable accounts.

On the equities front, the taxable dividend yield of U.S. large-cap stocks is relatively low, so the average return differential between the two account types is minor. The same applies to U.S. small-cap and international stocks.

Tax-Deferred Accounts versus Taxable Accounts

The type of account in which investments are held can have a huge impact on their *real* real returns. In an IRA or employer-sponsored retirement account, taxes on interest, capital gains, and dividend income are deferred until an investor receives account distributions, which are then taxed at the ordinary income tax rates in effect. If the rate is lower than that in effect during the accumulation



Performance data quoted represents past performance and does not guarantee future results.

Methodology: The chart above shows how the *real* real return of investments can shift when held in a tax-deferred account. In the tax-deferred account, taxes are deferred until the end of the 30-year period. Sources and descriptions of each index and asset class are provided at the end of this study.

3. *Improving Investor Outcomes Through Goals-Based Wealth Management: A New Model in the Delivery of Financial Advice*, Money Management Institute, October 2014.

phase, this can produce significant savings. Beginning in 2013, the maximum marginal rate for interest income became 39.6%. When taxes are deducted from an account each year, this reduces the amount available for reinvestment. In tax-deferred accounts, income and capital gains are allowed to compound without taxation, having a potentially profound cumulative effect.

Performance of Asset Classes in Different Types of Accounts

The chart on page 8 shows the performance of the study's various asset classes over time. While the *real* real return of corporate bonds in a taxable account was 1.93% over the past 30 years, it jumped to 2.82% in a tax-deferred account. The 0.89% difference may seem small, but it's actually far larger than the differentials between equity returns in taxable and tax-deferred accounts. Furthermore, over 30 years of compounding, the financial impact of such a difference, which is also quite evident in the *real* real returns of taxable and tax-deferred long- and intermediate-term bonds, adds up significantly.

On the equities front, the taxable dividend yield of U.S. large-cap stocks is relatively low, so the average return differential between the two account types is minor. The same applies to U.S. small-cap and international stocks.

What accounts for the disparate impact on *real* real returns of bonds in the two types of accounts? Remember that interest income is taxed annually in taxable accounts, and at an individual's highest marginal income tax rate. So the long-run erosion in returns from bonds held in tax-deferred accounts isn't nearly as extensive as it is in taxable accounts.

Taxable or Municipal Bonds?

Investors should consider the implications of tax rates in determining whether taxable or municipal bonds make the most sense for their portfolios. Municipal bonds are fewer in variety and generally pay lower interest rates than taxable bonds, but the interest is usually free from federal taxes (though it may be subject to the Alternative Minimum Tax).

A simple way to compare these returns is to calculate the taxable equivalent yield, which shows what a taxable bond would have to yield to equal the tax-free yield of a municipal bond. The formula:

$$\frac{\text{Tax-free yield}}{\text{1 - ordinary income tax bracket}}$$

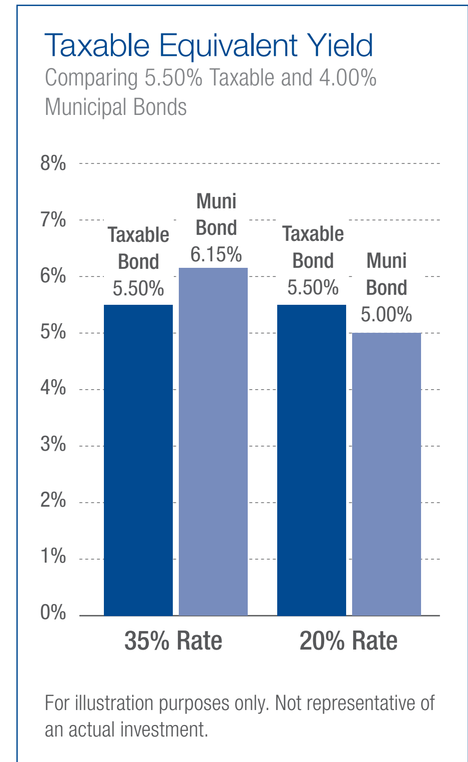
In the example on the right, we compare yields for two hypothetical bonds—a taxable bond yielding 5.50% and a municipal bond yielding 4.00%. The municipal bond is generally more sensible for an investor in the higher tax brackets, while an investor in the lower tax brackets would be better off with the taxable bond.

Asset Allocation

Asset allocation is a primary driver of investment outcomes. When possible, allocation should emanate from a long time horizon. Too often we see investors stung in their pursuit of short-term returns. In the aftermath of the financial crisis, many investors grew fearful of risk and shifted portfolios to cash. Only after a strong rally in late 2012 and early 2013 did they rotate back into equities. If they had held onto their equity positions, they would have more than fully recovered. For example, since its previous high point in October 2007 through the first half of 2015, the S&P 500 Index has produced annualized returns, with reinvested dividends, of 6.1%. Those investors who bought at the market bottom in March 2009 through June 2015 would have realized annualized returns of 19% and a cumulative return of 195%.

The same challenge of poor timing—investors chasing performance after asset prices have already risen and fleeing after prices have already fallen—applies just as much to fixed-income investors, who tend to purchase bond funds at the wrong time, just as interest rates are about to rise and prices are about to fall. Most investors are best served by holding both equity and fixed income, enabling them to ride out volatile markets psychologically and financially.

Asset allocation is a primary driver of investment outcomes. When possible, allocation should emanate from a long time horizon.



For illustration purposes only. Not representative of an actual investment.

Political Risk

Changes in tax, regulatory, fiscal, and monetary regimes can have a severe impact on the economy and the markets. The Affordable Care Act, passed in 2010, affects roughly one-sixth of the U.S. economy and is partly financed by significant new taxes on investment income. As noted, marginal income tax rates also increased sharply for top earners in 2013. In response to the financial crisis, financial sector regulation has increased markedly and retarded loan growth and banks' dividend distributions, crimping economic recovery and shareholder returns. Evolving financial sector regulation has also crimped liquidity in fixed income markets. Meanwhile, monetary policy entered uncharted territory with the Fed's near-zero interest rates and unprecedented "quantitative easing" program, the unwinding of which remains an untested work in progress. The Fed's balance sheet is nearly five times larger than it was in 2008. Offloading the assets will take considerable time, as Fed Chief Yellen suggested.[4]

While inflation may not currently seem a threat, its potential to become one to investors' purchasing power and real returns can't be dismissed. Investors must also remain cognizant of new regulatory and tax proposals involving health care, financial services, and other sectors. They should pay special attention to the impact from higher individual marginal income tax rates and new taxes on investment income. Such changes can dramatically affect broad economic as well as individual portfolio performance—and the generation of real wealth.

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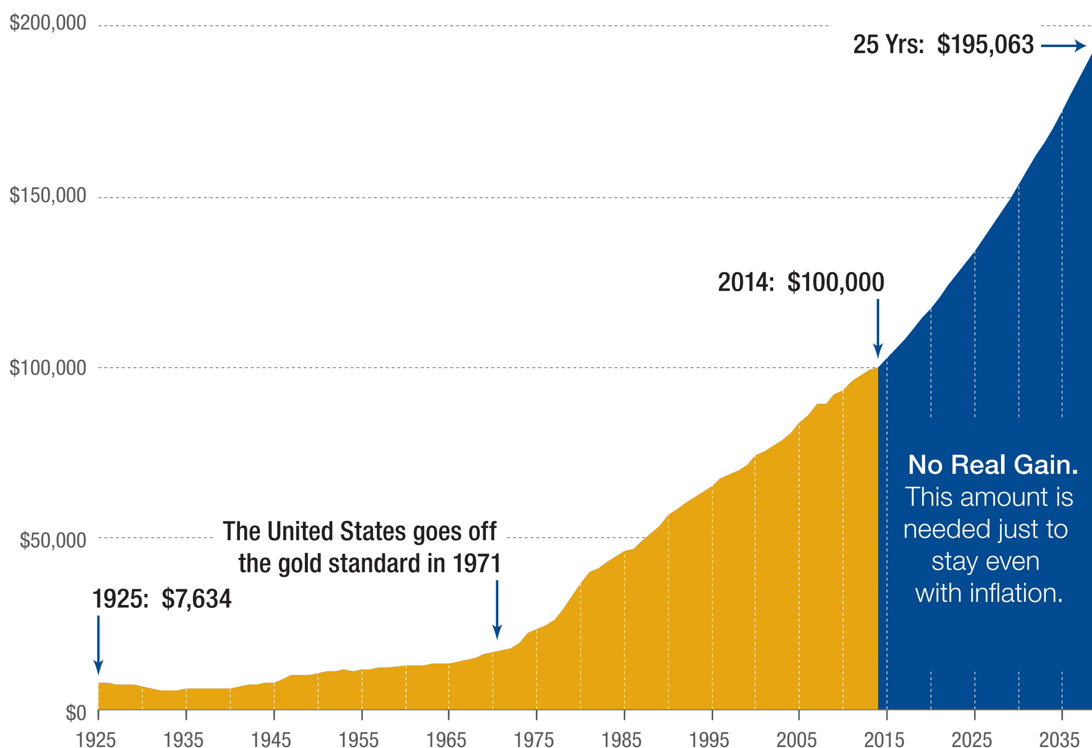
A Picture of Inflation



The gold area in the graph shows the equivalent of $100,000 in 2014 dollars, based on CPI, for each year. So, $100,000 in 2014 had the same purchasing power as $7,634 in 1925.

The blue area represents a projection based upon the 30-year average rate of 2.71%, showing 2014's $100,000 inflating to $195,063 in 25 years.

Source: Calculated by Thornburg Investment Management using data presented in the Ibbotson SBBI® 2014 Classic Yearbook, ©2014. All rights reserved. Used with permission.

4. Chair Yellen's Press Conference, June 18, 2014.

Shortsighted and Farsighted

Investors should also keep in mind the potential effects of three common timing and time-horizon points.

1. Actively managed mutual funds buy and sell securities, potentially generating profits that must be paid to investors as capital gains distributions. Those who purchase a fund shortly before such distributions are paid without having participated in most of the preceding gains still suffer the tax implications if the purchase was made for a taxable account. This is especially important for purchases late in the calendar year. Before a purchase, investors should ask their investment managers if a near-term capital gain distribution is in the pipeline. Also, investors are usually better served by placing higher-turnover equity funds in tax-deferred accounts, and lower-turnover funds in taxable accounts.

2. The benefits of tax-deferred accounts are well known. But investors also need to consider their short- and longer-term liquidity needs. For example, young people saving for a down payment on a house shouldn't use a tax-deferred account, as federal regulations heavily penalize, with limited exceptions, early distributions from them.

3. Liquidity considerations are also a key component of comprehensive financial planning.

An experienced investment professional can help guide your asset allocation approach and is an excellent first step to understanding the real impact that taxes, inflation, and expenses have on various investment types and on your long-term financial goals.

The Bottom Line

Investors often focus only on nominal returns for portfolio construction, without considering the impact on inflation, taxes, and expenses. Tax rates can change. As we saw in 2013, new and sharply higher taxes can seriously erode real returns. That impacts the relative attractiveness of different asset classes. A spike in inflation would do much the same by undermining the purchasing power of investment returns. As the Fed slowly exits its ultra-easy monetary policy and at some point starts to gradually reduce the size of its balance sheet, investors should closely consider whether it is doing so in a timely and prudent way so as to avoid a build in inflationary pressures or asset price bubbles. Expenses, of course, eat into returns as well.

Optimal asset allocation and investment location can greatly contribute to portfolio returns over time by potentially helping to reduce imprudent investor attempts to time the market. Buying into rallies late and exiting after the market turns lower have a significant impact on performance.

Instead of focusing on nominal returns, investors should consider the potential *real* real return of each asset class. The generation of real wealth, depends on it.

And there is no more effective tool to help you navigate your options than your financial advisor. An experienced investment professional can help guide your asset allocation approach and is an excellent first step to understanding the *real* impact that taxes, inflation, and expenses have on various investment types and on your long-term financial goals. ■

Important Information

This information should not be considered tax advice. Any tax statements contained herein are not intended to be used, and cannot be used, for the purpose of avoiding tax penalties. Please consult your independent tax advisor as to any tax, accounting or legal statements made herein.

Statements contained herein are based upon information furnished from independent sources. While we do not guarantee their correctness, we believe them to be reliable and have ourselves relied upon them.

The performance of an index is not indicative of the performance of any particular investment. Unless otherwise noted, index returns reflect the reinvestment of income dividends and capital gains, if any, but do not reflect fees, brokerage commissions or other expenses of investing. Investors may not make direct investments into any index.

Diversification does not ensure a profit or guarantee against a loss.

Glossary

Alternative Minimum Tax (AMT) – A federal tax aimed at ensuring that high-income individuals, estates, trusts, and corporations pay a minimal level income tax. For individuals, the AMT is calculated by adding tax preference items to regular taxable income.

ChiNext – A NASDAQ-style board of the Shenzhen Stock Exchange in China. The ChiNext Composite Index is mostly comprised of innovative and fast-growing companies, especially high-tech firms.

Consumer Price Index (CPI) – Measures prices of a fixed basket of goods bought by a typical consumer, including food, transportation, shelter, utilities, clothing, medical care, entertainment, and other items. The CPI, published by the Bureau of Labor Statistics in the Department of Labor, is based at 100 in 1982 and is released monthly. It is widely used as a cost-of-living benchmark to adjust Social Security payments and other payment schedules, union contracts, and tax brackets. CPI is also known as the cost-of-living index.

Fiat Currency – Legal tender authorized by a government but not based on or convertible into a physical commodity, such as gold or silver.

P/E – Price/Earnings ratio (P/E ratio) is a valuation ratio of a company's current share price compared to its per-share earnings. P/E equals a company's market value per share divided by earnings per share. Forecasted P/E is not intended to be a forecast of the fund's future performance.

Quantitative Easing – The Federal Reserve's monetary policy used to stimulate the U.S. economy following the recession that began in 2007/08.

Sources

Real real returns were calculated by Thornburg Investment Management using data obtained from the following sources:

Inflation/Consumer Price Index–Urban (CPI-U) and Treasuries data were obtained from the Ibbotson SBBI 2014 Classic Yearbook, © 2014. All rights reserved. Used with permission.

Commodity data were obtained from Bloomberg.

Real estate data were obtained from the U.S. Census Bureau.

Corporate and municipal bond data were obtained from Barclays.

Index data for the S&P 500, MSCI EAFE, and Russell 2000 were obtained from FactSet.

Tax rates were obtained from the Internal Revenue Service. The taxable account scenario applied the highest marginal tax rate in each calendar year allowable per the IRS to compute hypothetical dividend and interest taxes. The study assumes that all equity dividends are qualified for the periods covered under The Jobs and Growth Tax Relief Reconciliation Act of 2003. The tax deferred account scenario applied the highest marginal tax rate at the end of the 30-year period and does not include the benefit of a tax deduction upon the initial contribution.

Asset Classes Examined in the Study

Bonds are debt investments in which an investor loans money to an entity (corporate or governmental) which borrows the funds for a defined period of time at a fixed interest rate. Bonds are subject to certain risks including loss of principal, interest rate risk, credit risk, and inflation risk. The value of a bond will fluctuate relative to changes in interest rates; as interest rates rise, the price of a bond falls.

Government bonds, or Treasuries, are negotiable debt obligations of the U.S. government, secured by its full faith and credit and issued at various schedules and maturities. Income from Treasury securities is exempt from state and local, but not federal, taxes. Treasury bill data is based on a one-bill portfolio containing, at the beginning of each month, the bill having the shortest maturity not less than one month. Intermediate government bond data is based on a one-bond portfolio with a maturity near five years. Long-term government bond data is based on a one-bond portfolio with a maturity near twenty years.

Municipal bonds are debt obligations issued by states, cities, counties, and other governmental entities. Municipal bonds offer a predictable stream of income which is free from federal and, in some cases, state and local taxes, but may be subject to the alternative minimum tax. Because of these tax savings, the yield on a muni is usually lower than that of a taxable bond. Higher grade munis have higher degrees of safety with regard to payment of interest and repayment of principal and marketability in the event you must sell before maturity. This study uses the Barclays Municipal Bond Index as a general representation of the investment grade municipal bond market.

A corporate bond is a debt security issued by a corporation. Corporate bonds are taxable and have more credit risk compared to Treasuries. This study uses Barclays U.S. Corporate Investment Grade Index, which is a general representation of the investment-grade corporate bond market.

A stock is a share in the ownership of a company. As an owner, investors have a claim on the assets and earnings of a company as well as voting rights with the shares. Compared to bonds, stock investors are subject to a greater risk of loss of principal. Stock prices will fluctuate, and there is no guarantee against losses. Stock investors may or may not receive dividends. Dividends and gains on an investment may be subject to federal, state or local income taxes.

The S&P 500 Index is an index consisting of 500 stocks chosen for market size, liquidity and industry grouping, among other factors. The S&P 500 is designed to be a leading indicator of U.S. equities and is meant to reflect the risk/return characteristics of the large-cap universe.

The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The unmanaged index is a subset of the Russell 3000 Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership. Small-cap stocks are subject to greater volatility than large-cap stocks.

The MSCI EAFE (Europe, Australasia, Far East) Index is an unmanaged index. It is a generally accepted benchmark for major overseas markets. Index weightings represent the relative capitalizations of the major overseas developed markets on a U.S. dollar adjusted basis. The index is calculated with net dividends reinvested in U.S. dollars. There are special risks associated with international investing, including currency fluctuations, government regulation, political and economic risks, and differences in liquidity.

Compared to the other investments in this study, single-family homes are relatively illiquid. Property values can fluctuate and there are no guarantees. Gains on the sale of a property may be taxable at the federal, state, or local level. Real estate data in this study uses U.S. Census Bureau's Survey of Construction single-family homes sold. For the one-year *real* real return, the real estate commission was not deducted. For longer periods, a 6% commission was applied to approximate the economic reality of a typical real estate investment transaction.

A commodity is a physical good – such as food, grain, oil, natural gas, and metals – which is interchangeable with another product of the same type, and which investors buy or sell in an active market, usually through futures contracts. If you buy a futures contract, you are basically agreeing to buy something that a seller has not yet produced for a set price on a specific future date. The futures market is extremely liquid, risky, and complex. Commodity prices can be affected by uncertainties such as weather and war and there are no guarantees against losses. In this study, commodities are represented by the Bloomberg Commodity Index, from 1999 to present. Prior to that, returns are represented by the Dow Jones Futures Price Index. The index is designed to be a highly liquid and diversified benchmark for commodities traded on U.S. exchanges. For purposes of this study, it is assumed that commodity exposure is obtained through a vehicle tracking the index and not by purchasing the underlying futures contracts.

Before investing, carefully consider the Fund's investment goals, risks, charges, and expenses. For a prospectus or summary prospectus containing this and other information, contact your financial advisor or visit thornburg.com. Read them carefully before investing.

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