Investment Performance, Inflation, and Taxes: Redefining History’s Bear Markets

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The Great Depression of the 1930s created the worst environment for U.S. individual investors in the past 100 years—or so it is commonly believed. If the peak-to-trough decline in U.S. stocks is the sole criterion, this common view is correct: The U.S. stock market, as measured by the S&P 500 Index (and reconstructed by Ibbotson), dropped by more than 80% during the Depression, and nothing so severe has been seen since. Other periods of steep drops in the stock market are also widely considered to be among the worst of times: the 2000s saw stock market declines of roughly 50% twice (in 2000–2002 and 2008–2009), and the 1970s, once (1973–1974). But this simplistic approach fails to consider the broader context of individual investors and the financial goals that their investments exist to serve. When all three of the key aspects of investors’ experience—pretax nominal return, taxes, and inflation—are considered concurrently, outcomes can be quite different than they appear based on total return alone. In fact, the interaction of taxes and inflation can have a dire effect on the qualified savings of retired Americans.

Exhibit 1 illustrates the rolling 10-year annualized performances, from 1926–1935 through 2002–2011, of a prototypical 60/40 stock/bond portfolio in three distinct ways: in terms of pretax nominal return, post-tax nominal return, and post-tax real return.¹ The tax rates used correspond to the income tax rates that applied historically, given a married, filing jointly (MFJ) investor with a taxable income equivalent to $250,000 in 2011 dollars.² These marginal income tax rates, along with the 10-year rolling annualized inflation rates experienced over the period, are shown in Exhibit 2.

Note that the rolling 10-year pretax nominal return dipped below 5.0% only three times during the entire period: during the 1930s, the 1970s, and the 2000s. These are the same three decades that saw the large stock market declines mentioned previously, and the pretax nominal return low points for each decade (3.16%, 2.97%, and 3.36%, respectively) are so close to each other that one might think a 60/40 investor would have had roughly the same experience in all three. But that is not at all the case when taxes and inflation are considered.

The pretax nominal return for the 1929–1938 period—which included the famous stock market crash—was 3.16%, the second lowest of all the 10-year periods (and it would have been far lower without the inclusion of bonds in the portfolio, since bonds performed much better than stocks during the Depression). But because of the relatively low tax rates and persistent deflation that prevailed during the 1930s, the post-tax real return of 4.87% for 1929–1938 was higher than the pretax nominal return—a relationship...
that has not been seen since. Viewed in the context of the entire sample set, the post-tax real returns for the 10-year periods ending in the 1930s were all—contrary to conventional wisdom—relatively high: Every one was comfortably above the average of 2.98% for all the 10-year periods.

In contrast, the 1970s were a perfect storm. There were near-simultaneous and very sharp rises in taxes and inflation, and these, along with the stock market decline in 1973–1974, resulted in the lowest post-tax real returns of any period in the entire sample. The pretax nominal return nadir of 2.97% in 1965–1974 was only slightly lower than the 3.16% for 1929–1938. But in post-tax real terms, the 1965–1974 experience was much worse: –3.52%, compared with 4.87% for 1929–38.

Expressed as the growth of a dollar invested, the difference between the 1929–1938 period and the 1965–1974 period seems tiny when viewed on a pretax nominal basis, but huge when viewed on a post-tax real basis, as shown in Exhibit 3. However, the 1965–1974 period was not the post-tax real return low point; that came in 1972–1981, when post-tax real return fell to –4.68%. The drop was driven largely by the peaking rates of tax and inflation in the late 1970s and early 1980s, not by the pretax nominal return, which had already begun to recover sharply.

The two sharp stock market declines during the 2000s drove the rolling pretax nominal down to 3.36% in 1999–2008, but relatively low taxes and inflation ensured that post-tax real returns were not nearly as bad as those seen in the 1970s. In the 1999–2008 period, post-tax real return reached –0.16%, but it was not below zero for any other 10-year period ending in the 2000s.

Perhaps the most surprising result, however, is the experience of the 1940s. That decade did not see a stock market decline of the same magnitude as those of the 1930s, 1970s, or 2000s, and the rolling 10-year pretax nominal returns remained above 5.0% throughout the 1940s. But the sharp and almost perfectly concurrent rise in taxes and inflation, which is very obvious in
**EXHIBIT 2**

**Rolling 10-Year Annualized Inflation vs. Marginal Income Tax Rate**

Inflation and marginal income tax rates have varied widely and have tended to move together.

*Applied to MFJ investors with taxable income equivalent to $250K in constant 2011 dollars, as of Dec. 31, 2011.

**EXHIBIT 3**

**Growth of a Dollar Invested in a 60/40 Portfolio**

Investment performance in periods with similar nominal returns can differ greatly when taxes and inflation are considered.


Exhibit 2, caused post-tax real returns to drop sharply even while pretax nominal returns were rising in the second half of the decade. The post-tax real return in the 1939–1948 period fell to −2.30%, a level not seen again until the 1965–1974 time frame.

**FOR RETIREES, WITHDRAWALS CAN FURTHER EXACERBATE THE COMBINED EFFECTS OF INFLATION AND TAXES**

The preceding analysis demonstrates that if post-tax real return is the true measure of performance for individual investors, bear markets are not always found where expected, or expected where found. But even average post-tax real return may fail to fully reflect the impact of inflation and taxes on retirees (or others who make large withdrawals from their investment portfolios) when the investor’s primary goal is defensive—to avoid asset exhaustion. This is true for two reasons: 1) The investment portfolios of retirees tend to be different from those of other investors, and 2) if inflation and taxes were to rise at the same time, and for several years in a row—as they have done at least three times since the advent of the U.S. income tax in 1913—retired investors might see their qualified portfolios’ value eroded.
particularly quickly as the size of their withdrawals gets driven rapidly upward.3

First, consider the question of portfolio composition. Retirees typically are more conservative than other investors, and conventional wisdom holds that this calls for holding fixed-income investments in higher weights and equity investments in lower weights than investors who are still accumulating assets. Therefore, instead of the 60/40 portfolio shown in Exhibit 1, for purposes of examining retirees’ experience we use a 40/60 portfolio. 4 Exhibit 4 is otherwise similar to Exhibit 1.

Note that in all three of the traditionally defined bear market low points of the 1930s, 1970s, and 2000s, the 40/60 portfolio held up better than the 60/40 portfolio, and this is true in both pretax nominal and post-tax real terms. However, during the low points in post-tax real return that accompanied the sharp rise in inflation and taxes during the 1940s and 1970s/1980s, the 40/60 portfolio underperformed the 60/40 portfolio.5 So one may reasonably ask: Which of the two portfolios has less risk? Which is more conservative? The answer depends on the definition of risk, and the definition of risk depends on the definition of return.

Bear in mind that while historical analysis is a useful guide, it doesn’t provide proof about developments in the future. Also, while 85 years of historical data were used in this analysis, from the perspective of an investor’s life cycle (which spans decades, not months or even years), the available history provides only a handful of relevant data points. It could be argued that since 1926, there have been essentially three bear markets when viewed from a conventional, pretax nominal perspective, and two bear markets as measured by post-tax real returns. So the available data could be regarded as just five relevant events—a fairly limited data set. But whatever the caveats, the available history does show that while the model portfolio with a higher allocation to equities held up relatively poorly during bear markets defined in the traditional way, it actually provided slightly better protection against the biggest bear markets in terms of post-tax real returns, which were characterized by spikes in taxes and inflation.

**EXHIBIT 4**

Rolling 10-Year Returns in a 40/60 Portfolio*

The 40/60 portfolio outperformed the 60/40 portfolio during traditional bear markets but underperformed it during the periods of rising inflation and taxes in the 1940s and the 1970s.

![Graph showing rolling 10-year returns](image)

**Notes:** Taxes are applied at the applicable ordinary rate for MFJ filers with taxable income equal to the equivalent of $250K in constant 2011 dollars, with deferral over each 10-year rolling period.

*Based on a weighted composite of the Ibbotson total return indexes: 35% S&P 500, 5% U.S. Small Stock, 30% LT Corp, 30% US IT Govt.

Given the historical vulnerability of fixed income to inflation, some investors and their advisors may seek to include real return assets—assets designed to pace inflation—in place of some of the traditional fixed-income assets. Exhibit 5 shows the performance of a 40/60 portfolio that has been modified in that way. Half the allocations to each of the fixed-income asset classes have been replaced with a hypothetical real return asset that is assumed to deliver a pretax nominal return equal to the annual inflation rate plus 1.0% every year. Before thinking about what asset or combination of assets might have provided such a performance (a subject for future research), let us first consider the question of whether it’s even worth trying to find them.

Replacing conventional fixed-income assets with the real return asset generally has the effect of depressing pretax nominal returns, or at least it has historically: The compound annual pretax nominal return of the conventional 40/60 portfolio shown in Exhibit 4 is 8.08% for the overall 1926–2011 period, compared to 7.58% for the Real Return 40/60 shown in Exhibit 5. This is hardly surprising, given that the hypothetical real return asset delivered significantly lower pretax nominal return than either of the conventional fixed income assets that it replaced, as shown in Exhibit 6.

In addition, as one might expect, the Real Return 40/60 provided less protection from the sort of disinflationary bear markets seen in the 1930s and 2000s. The post-tax real returns of the conventional 40/60 portfolio during the 1929–1938 and 1999–2008 periods of 6.09% and 0.64%, respectively, compare favorably with the corresponding figures of 4.20% and –0.07% for the Real Return 40/60 during the same periods. But during the sharp rises in inflation and taxes in the 1940s and 1970s/80s, the Real Return 40/60 provided better protection: During the 1939–1948 period, the conventional 40/60 had a post-tax real return of –3.07% versus –2.44% for the real return version, and during 1972–1981, the conventional 40/60 delivered –5.19% versus –4.34% for the real return version.

However, the impact of inflation is only part of the difference between pretax nominal returns and post-tax returns.
real returns, and as mentioned earlier, a simultaneous rise in inflation and tax rates can be particularly deleterious to retirees because of the impact that can have on the size of the withdrawals a retiree is forced to make from his or her investment portfolio. Therefore, let us consider a simplified retirement scenario, which examines the impact of pretax nominal returns, inflation, and taxes on the ability of qualified assets to maintain the lifestyle spending of a high-net-worth retiree.

Exhibit 7 illustrates the way inflation and taxes could have combined to force retirees to rapidly increase the size of their withdrawals merely to keep them steady in post-tax real terms if inflation and taxes were to rise at the same time, as they have done a number of times historically. The specific period reflected in Exhibit 7 is 1940–1971, and to support their lifestyle our retirees need $150,000, in real after-tax 2011 dollars, from their qualified accounts. The taxes applied reflect the taxes, including the rates applicable to each bracket, that would have been levied by the IRS in each year between 1940 and 1971, based on data from the Tax Foundation. In other words, we are examining the outcome for a hypo-
A hypothetical couple with a $150,000 lifestyle that retires in 2011 but experiences the tax rates, inflation, and asset returns seen in the 1940–1971 period.8

The black bars in Exhibit 7 represent the nominal size of a withdrawal that stays fixed at $150,000 in real terms. They grow each year by the historical rate of inflation that is indicated by the light-gray bars at the bottom of the chart. The dark-gray bars show the same withdrawal values in gross (i.e., pretax) nominal terms, so they indicate the amount our retirees would have had to withdraw each year from an IRA, 401(k), Keogh plan, or similar pretax qualified account in order to be left with the amount indicated by the black bars. The effective income tax rate applicable to the amount of taxable income indicated by the dark-gray bar for each year is indicated by the black dots. Note that while the inflation rates are the same as those shown in the corresponding parts of Exhibit 2, the effective tax rates shown in Exhibit 7 are somewhat different from the marginal rates used in Exhibit 5 (and the preceding charts), because the effective rate is a weighted composite of several different tax brackets. However, the movements in effective rates shown in Exhibit 7 and those of marginal rates shown in Exhibit 5 are very similar in direction and timing.

The rapid growth in the required withdrawal (that is, the gross nominal withdrawals shown as the dark-gray bars) during the early years of retirement would be a particular challenge to investors if they had an experience like that of the 1940s. Withdrawals would shoot up from $162,491 in 1940 to $636,852 by 1948, which is also the year in which the rolling 10-year post-tax real return reached a low point, as shown in Exhibit 5. The sharp reduction in taxes in 1949 caused the net withdrawal to fall that year to $403,175, but by then the damage would have been done. (Note: given demobilization, reconstruction aid, and other costs, taxes remained high for several years after WWII ended in 1945.) It would be very difficult for a retirement portfolio to recover from such rapid depletion, even with relatively good pretax nominal return performance. This is illustrated in Exhibit 8, which shows the effects of those withdrawals under four different scenarios.

**Exhibit 8**
Nominal Balances in a Retirement Simulation: Returns, Taxes, and Inflation, 1940–1971

A Real Return 40/60 allocation and Roth IRA may combat the effects of both rising inflation and taxes.

Real Return 40/60, Roth IRA

Conventional 40/60, Roth IRA

Real Return 40/60, Traditional IRA

Conventional 40/60, Traditional IRA

Notes: Portfolio and Roth IRA are hypothetical and used for illustrative purposes only. IRA balance in all cases is $5 million in pretax terms; Roth scenarios show fewer dollars but the same value. The period shown is not intended to be predictive. It is intended to illustrate how a retirement plan can be affected by varying tax and inflation levels and account types.

The first scenario, illustrated in Exhibit 8 with the solid black line, represents retirees with $5 million invested in a conventional IRA (or similar pretax qualified account) and the conventional 40/60 asset allocation that was used in Exhibit 4. The portfolio’s returns are pretax nominal, since the portfolio itself is not taxed and its nominal value is not affected directly by inflation, but the account balance is dragged down by the rapidly growing size of the gross nominal withdrawals (the dark-gray bars in Exhibit 7). As a result, the retirees’ assets are unable to cover the required withdrawals by 1965.

The second scenario, illustrated with the solid gray line, represents the same retirees with the same assets and the same withdrawals, but instead of the conventional 40/60 portfolio from Exhibit 4, they are instead invested in the Real Return 40/60 from Exhibit 5. The rapid withdrawals are a large drag on it as well, but it just manages to remain solvent through the end of the simulation in 1971.

The third scenario, illustrated with the dashed black line, assumes investment in the conventional 40/60 portfolio, but instead of a traditional IRA, the retirees are assumed to have held their assets in a Roth IRA. Note that the starting value is $4.05 million in this case, because that was the post-tax equivalent of $5.0 million in 1940. In this case, the retirees no longer have to withdraw the amounts indicated by the dark-gray bars (the gross nominal amounts), because qualified withdrawals from Roth IRAs are not subject to income tax. They can instead withdraw the much smaller amounts represented by the black bars. Because the tax rates are rising rapidly in the early part of retirement, this is highly beneficial, and as a result the retirees’ portfolio actually rises in value despite the effects of withdrawals.

Finally, the fourth scenario, illustrated with the dashed gray line, assumes the use of both the Real Return 40/60 and of the Roth IRA. It is therefore the only scenario in which the investor has taken explicit

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**Exhibit 9**

Pretax Nominal Returns, 1940–1971

A Real Return 40/60 portfolio beat a conventional 40/60 portfolio amid rising inflation and taxes in 1940–1971.

$TR = Total Return.$

*Note: Hypothetical portfolio, for illustrative purposes only.*

steps to combat the effects of both rising inflation and taxes, and the benefits of this are very obvious. It dominates the third scenario, delivering higher portfolio values at all points of the simulation.

The results shown in Exhibit 8 represent a highly simplified simulation, with many complicating elements assumed away. It also assumes an investor requires lifestyle spending that is fixed in real, after-tax terms. This may or may not be a good assumption for a given individual, and it is important to note that if an investor is willing to adjust his or her lifestyle and modify the size of withdrawals in response to fluctuations in market returns, tax rates, and inflation, it is often possible to greatly improve the sustainability of a spending plan. Also, the analysis is relevant only to qualified assets and the ordinary income taxes associated with them—the behavior of taxable assets, which are also subject to capital gains taxes of various types, would be quite different, and would depend greatly on cost basis, the character of distributions, and many other factors.¹⁰

In addition, the analysis speaks only to a very specific period in history, one that was particularly advantageous to both the real return asset and to the use of Roth accounts. The applicable tax rate and 10-year rolling inflation rate started this period at historically low points and then rose more rapidly than at any other time, and it included the highest single-year rate of inflation (18.16% in 1946) of the entire 1926–2011 period. Finally, note that 1940–1971 was also unusual in that the Real Return 40/60 actually outperformed the conventional 40/60, even though the conventional 40/60 outperformed the Real Return 40/60 in pretax nominal terms over the entire available history of 1926–2011, as noted earlier. This temporary outperformance is illustrated in Exhibit 9.

Given the unique circumstances of 1940–1971, it would seem only fair to also consider a period that demonstrated exactly the opposite trends: 1980–2011. During that period, tax rates and inflation both started at historically very high levels and then dropped very

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**EXHIBIT 10**

**Pretax Nominal Returns, 1980–2011**

Conversely, the conventional 40/60 portfolio beat the Real Return 40/60 portfolio amid falling tax rates and inflation from 1980–2011.

Note: Hypothetical portfolio, for illustrative purposes only.
EXHIBIT 11
The growth in the size of gross and net nominal withdrawals is largely dependent on the tax and inflation environment of a particular period in time.

EXHIBIT 12
Nominal Balances in a Retirement Simulation: Returns, Taxes, and Inflation, 1980–2011
A conventional 40/60 portfolio allocation and traditional IRA outperformed from 1980–2011.

Note: Hypothetical portfolio, for illustrative purposes only.

sharply, falling further than at any other time, and the conventional 40/60 strongly outperformed the Real Return 40/60, as the generally declining trend in inflation over the period led to sharply falling interest rates, propelling conventional fixed income investments to extraordinarily high returns. The outperformance of the conventional 40/60 during the 1980–2011 period
is shown in Exhibit 10, which provides a very sharp contrast to Exhibit 9.

Exhibits 11 and 12 are analogous to Exhibits 7 and 8: Exhibit 11 illustrates the growth in the size of the gross and net nominal withdrawals corresponding to $150,000 in real net terms over the 1980–2011 period, as implied by the tax and inflation experience over the 1980–2011 period; and Exhibit 12 depicts the effects of these withdrawals on our hypothetical retirees, using the same four scenarios used in Exhibit 8.11

But while the scenarios shown in Exhibit 12 are the same as those shown in Exhibit 8, their order is exactly reversed. Now the conventional 40/60 outperforms the Real Return 40/60, whether using traditional or Roth IRA; and the traditional IRA outperforms the Roth IRA, whether using the conventional 40/60 or the Real Return 40/60. However, the difference in performance between the different scenarios in Exhibit 12 is not as dramatic as the differences between those in Exhibit 8.

Critically, in Exhibit 12, no scenario results in exhaustion of the portfolio before the end of the simulation, but in Exhibit 8, two of them—those based on the traditional IRA—ended badly: one in exhaustion, the other very nearly so. It isn’t difficult to see why. In the 1940–1971 simulation shown in Exhibit 7, the simultaneous jumps in taxes and inflation cause the size of the gross nominal withdrawals to leap so quickly that the portfolios subject to them cannot recover, even when the withdrawals fall off after the 10th year. Note that in Exhibit 7, the gross nominal withdrawals exceed $400,000 starting in the seventh year, while in the 1980–2011 simulation in Exhibit 11, this doesn’t occur until the 18th year.

If these two scenarios, based on 1940–1971 and 1980–2011, which represent the extremes of the available historical experience, are a reasonable guide to the range of possible future outcomes for returns, taxes, and inflation, there are some interesting and useful implications. In particular, it suggests an asymmetry that would tend to favor the use of the Real Return 40/60 and a Roth IRA. If the most important goal is avoiding a complete depletion of assets, then the analysis suggests using the Real Return 40/60 and a Roth IRA would be much less detrimental in a scenario like 1980–2011 than not using them would be in a scenario like 1940–1971. In other words, historically, the cost of hedging against a spike in taxes and inflation when that spike doesn’t occur was much less than the cost of not hedging against a spike when it does. Of course, there can be no guarantee that the two scenarios illustrated here are in fact a good guide to the range of possible future experience. And even if they are, one may be more likely than the other. So, in choosing a strategy for qualified assets, investors and advisors should ask themselves which scenario is more likely in the future—a period of falling interest rates, taxes, and inflation, like 1980–2011; or a period of rising interest rates, taxes, and inflation, like 1940–1971.

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**EXHIBIT 13**

**Inflation-Corrected History of Marginal Income Tax Rates**

Since the 1990s, inflation-adjusted marginal tax rates have been lower and flatter compared with previous decades.

![Inflation-Corrected History of Marginal Income Tax Rates](image)

*Source: Tax Foundation, as of Dec. 31, 2011.*
EXHIBIT 14
Rolling 10-Year Inflation vs. 10-Year Change in Marginal Income Tax Rate

Major inflation outbreaks have largely been concurrent with rising marginal tax rates.


DETAILS ON THE HISTORY AND RELATIONSHIP OF INFLATION AND TAXES

Data from the Tax Foundation\textsuperscript{12} show the federal income tax rate since its inception in 1913. The marginal rates applicable to MFJ investors with taxable incomes equivalent to $50,000, 100,000, $250,000, $500,000, and $1 million in 2011 dollars are shown in Exhibit 13. The middle line represents the marginal rates applied to taxable incomes of $250,000, which is used for Exhibit 14. Note that rates over the past few decades, in addition to being generally low compared with the period from WWII through the early 1980s, are also relatively close to each other. For example, since 2003, the 35% marginal rate applied to a taxable income of $1 million has been only 20 percentage points higher than the 15% rate applied to a taxable income of $50,000. However, as recently as 1981, the difference was more than 40 percentage points, and the difference reached 63 percentage points in 1948, when the rate applicable to $1 million was more than three times as high as the rate applied to $50,000.

Exhibit 14 shows the rolling 10-year rate of inflation overlaid with the change in the tax rates applied to MFJ taxable incomes of $250,000 (the middle line in Exhibit 13). In other words, Exhibit 14 shows the relationship between the change in the price level and the change in taxes over all possible rolling 10-year periods.

Note that all three of the major inflation outbreaks were accompanied by a more or less concurrent succession of rising tax rates; whenever inflation subsided, tax rates also tended to do so. However, there does not appear to be a direct size correspondence between the rise in inflation and the roughly simultaneous rise in tax rates. While there are a variety of possible macroeconomic and political explanations for this repeated coincidence, it is impossible to prove whether the rise in inflation contributes to or causes taxes to rise, or vice versa, or whether some other underlying factor causes both taxes and inflation to rise. And even if there was a causal link (of whatever nature and direction) between historical movements in tax rates and inflation, there is no guarantee that such a relationship will endure. It may be that tax rates and inflation will someday move in opposite directions, and the impact on retirement strategies of such a change could be dramatic. However, the data are sufficient to show that inflation and taxes can rise and fall together, because they have done so at least three times in the past.
ENDNOTES

1 All three returns are shown as annual compound rates. The pretax nominal returns are based on a weighted composite, rebalanced annually, of Ibbotson total return indices with the following weights: S&P 500, 50%; U.S. small-cap stocks (U.S. Small Stock), 10%; U.S. long-term corporate bonds (U.S. LT Corp), 20%; and U.S. intermediate-term government bonds (U.S. IT Govt), 20%. The post-tax nominal returns are based on post-tax terminal values computed by first determining the pretax terminal value at the end of each 10-year period and then reducing it by taxing all growth at the applicable ordinary income tax rates. Thus, all investments are treated as tax-deferred (if they were fully taxable, the differences between the pretax nominal and post-tax nominal/post-tax real returns could have been larger than those shown). The post-tax real returns are computed by further reducing post-tax terminal values by the cumulative inflation (i.e., the change in U.S. Consumer Price Index, All Urban Consumers (CPI-U)) as reported by the Bureau of Labor Statistics over each 10-year period.

2 For example, the rate applied for the year 1957 is 47%, because in that year MFJ incomes from $28,000 to $32,000, corresponding to incomes from $223,581 to $255,521 in 2011 dollars, were taxed at that rate. See the concluding section at the end of this article. Note that for investors with taxable incomes higher or lower than $250,000, the pattern of relationships between the different forms of return are generally similar to those shown in Exhibit 1, although there are differences in magnitude.

3 See the concluding section at the end of this article for a view of the history of U.S. income tax rates and a comparison of their trends with those of inflation.

4 The 40/60 portfolio uses the same Ibbotson total return indices as the 60/40 portfolio, but with the following weights: S&P 500, 35%; U.S. Small Stock, 5%; U.S. LT Corp, 30%; and U.S. IT Govt, 30%.

5 Based on a weighted composite of the Ibbotson total return indices: 35% S&P 500, 5% U.S. Small Stock, 30% long-term corporate bonds (LT Corp), 30% U.S. IT Govt. Note: Taxes are applied at the applicable ordinary rate for MFJ filers with taxable income equal to the equivalent of $250K in constant 2011 dollars, with deferral over each 10-year rolling period. Sources: Ibbotson, Bureau of Labor Statistics, Tax Foundation, as of Dec. 31, 2011.

6 Therefore, the asset allocation is: S&P 500, 35%; U.S. Small Stock, 5%; U.S. LT Corp, 15%; U.S. IT Govt, 15%; and Real Return Asset, 30%.

7 There can be no assurance that such a performance is realistic. Note that as of the end of June 2012, the (real) yield on 10-year Treasury inflation-protected securities (TIPS) was −0.50%, suggesting it may be difficult to deliver inflation + 1.0% annually using TIPS, although that low yield may be a temporary aberration; the average yield on 10-year TIPS since first offered in 1997 is 2.33%, based on monthly data from Bloomberg. However, even assuming TIPS deliver the needed real yield, their total returns do not pace inflation on a year-by-year basis, as do those of this hypothetical real return asset. A discussion of investment strategies that might deliver such a performance is largely beyond the scope of this article, which instead considers the potential benefits of and most appropriate role for such strategies.

8 Note that this simulation is highly simplified, with the gross withdrawal from the qualified account(s) corresponding directly to the level of taxable income. In reality, other sources of taxable income (such as Social Security) as well as various tax deductions and exemptions would almost certainly make the situation much more complex than is depicted here, even in the absence of non-qualified accounts.

9 To reflect the cost of Roth conversion (or of equivalent after-tax contributions directly into a Roth account), the starting Roth balance is 19% smaller than the starting traditional IRA balance of $5.0 million. This is because 19% was the MFJ applied to a taxable income of $15,599 in 1940, and $15,599 in 1940 is the equivalent of $250,000 in 2011 dollars. Note, however, that if an investor were to convert $5.0 million from a traditional IRA into a Roth IRA all at once, it could force the investor into a higher tax bracket and thus reduce the resulting value in the Roth IRA. There are a number of possible strategies investors could pursue to avoid this, depending on the specific circumstances. On the other hand, the analysis shown in Exhibit 8 implicitly assumes the use of qualified assets to pay the tax liability associated with the conversion, and using taxable assets instead could actually increase the size of the benefit derived from the use of the Roth account.

10 In scenarios like those depicted in Exhibits 8 and 12, the performance of taxable accounts is likely to fall (depending on certain assumptions) somewhere in between the performance of traditional IRAs and that of Roth IRAs, since the former have all distributions taxed at ordinary income rates and the latter aren’t subject to taxes on qualified distributions at all.

11 Starting balances in the Roth accounts in this scenario are reduced by 59%, because that was the marginal income tax rate applied to the equivalent of $250,000 in that year. Doing so puts the Roth scenarios at a very large disadvantage, because rates dropped so precipitously immediately afterwards—the marginal rate applied to the equivalent of $250,000 was down to just 28% by 1988.

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