Buffett's Asset Allocation Advice: Take It … With a Twist

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Abstract
One of the most important decisions retirees need to make is the asset allocation of their portfolios. They can have a static or a dynamic allocation, and simplicity usually favors the former. Warren Buffett recently added another vote for static allocations by revealing that he had advised a trustee to split the bequest his wife will receive 90% in stocks and 10% in short-term bonds. The evidence discussed here shows that, relative to other static allocations, a 90/10 split has a very low failure rate and provides investors with very good upside potential and downside protection. The evidence also shows that two minor twists to the 90/10 split result in two very simple dynamic strategies with even better upside potential and downside protection.

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1. Introduction

Retirees need to carefully balance the risk of spending too much and outliving their savings with the risk of spending too little and lowering their lifestyle unnecessarily. The two main tools they can use to avoid falling on either side of the cliff are the portfolio's withdrawal rate and asset allocation. Regarding the latter, in his 2013 letter to Berkshire Hathaway shareholders, Warren Buffett discussed the simple advice he gave to the trustee that will manage the bequest his wife will receive:

> "*What I advise here is essentially identical to certain instructions I've laid out in my will. One bequest provides that cash will be delivered to a trustee for my wife's benefit … My advice to the trustee could not be more simple: Put 10% of the cash in short-term government bonds and 90% in a very low-cost S&P 500 index fund. (I suggest Vanguard's.) I believe the trust's long-term results from this policy will be superior to those attained by most investors – whether pension funds, institutions or individuals – who employ high-fee managers*." (Page 20)

Buffett does suggest in his letter that investors should follow a simple approach, passively investing in a broadly-diversified, low-cost portfolio; he does not suggest or imply, however, that investors should have a 90/10 stock/bond allocation. And yet his comment begs the question: Is the asset allocation Buffett advised for his wife appropriate for other investors? If yes, why? If not, why not?

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An obvious distinction between Buffett's wife and the average investor quickly comes to mind. The average investor needs to implement an asset allocation that carefully balances the two risks already mentioned, overspending and underspending. Buffett's wife, however, is likely to receive a nest egg large enough so that she will not have to worry about either risk. Put differently, just about any asset allocation will enable Buffett's wife to live comfortably and still outlive her portfolio, which is not the case for most investors.

That said, this article evaluates the merits of the 90/10 allocation that Buffett advised for his wife, relative to other static allocations with different stock/bond proportions, for investors at large. Furthermore, it explores two minor twists to the 90/10 allocation, one that accounts for the behavior of the stock market, and the other that accounts for the relative behavior of the stock and bond markets.

In a nutshell, the evidence discussed here suggests that, besides having a very low failure rate, the 90/10 allocation results in an interesting middle ground between the upside potential of more aggressive static allocations and the downside protection of more conservative static allocations. Perhaps more interestingly, the minor twists considered result in two very simple dynamic strategies that increase both the upside potential and the downside protection of the 90/10 allocation suggested by Buffett.

The rest of the article is organized as follows. Section 2 discusses in more detail the issue at stake; section 3 discusses the evidence, first considering several static strategies, and then considering two simple twists to the 90/10 allocation; and section 4 provides an assessment.

2. The Issue

A retiree's proper management of his nest egg requires a careful balancing of two financial risks. On the one hand, the retiree may spend too much and outlive his savings; on the other hand, the retiree may unnecessarily lower his lifestyle and end up with an unintended bequest. A massive literature on sustainable retirement portfolios ultimately seeks to guide retirees on how to properly balance these risks. It is widely acknowledged that Bengen (1994) is the seminal article that inspired the vast amount of research produced on this topic.

Bengen (1994) pioneered the idea of considering withdrawal rates over all possible historical rolling (overlapping) periods. He aimed to find how many years a portfolio would have lasted given an initial withdrawal rate and subsequent inflation-adjusted withdrawals, performing the evaluation at the beginning of every year starting in 1926.[1] Given a 50-50 stock-

[1] The initial withdrawal rate is defined as the initial withdrawal relative to the value of the portfolio at the beginning of retirement. Unless otherwise stated, in this literature a 'withdrawal rate' typically refers to the *initial* withdrawal rate, implicitly assuming subsequent inflation-adjusted withdrawals. Note that this implies that the *current* withdrawal rate (the withdrawal relative to the value of the portfolio at any point in time) can fluctuate widely over time.

bond allocation he found that a 3% withdrawal rate would have never exhausted a portfolio in less than 50 years, and a 4% withdrawal rate would have never exhausted a portfolio in less than 33 years. He called a 5% withdrawal rate 'risky' and withdrawal rates 6% or higher 'gambling' because they would have exhausted a portfolio much sooner over many historical periods. He also called the 4% withdrawal rate 'safe' because it never exhausted a portfolio in less than 30 years, which he thought of as the minimum requirement of portfolio longevity. This was the origin of the well-known and widely-used '4% rule.'

2.1. Some Relevant Differences

The vast literature spanned by Bengen (1994) does not offer a consensus regarding a sustainable withdrawal rate for retirees. This is the case because different articles consider different methodologies, time periods, assets, asset allocations, acceptable failure rates, and retirement periods, to name but some differences, and therefore reach very different conclusions both on the sustainability of the 4% withdrawal rate and on the specific withdrawal rate recommended to retirees.

Most of the articles in the literature rely on one of two methodologies, historical rolling (overlapping) periods and Monte Carlo (or bootstrapping) simulations. Bengen (1994, 1996, 1997) and Cooley et al (1998) are early applications of the first methodology; Pye (2000) and Ameriks et al (2001) are early applications of the second. Cooley et al (2003*b*) compare both approaches and find that their results and recommendations sometimes are similar and sometimes differ. They do not take sides on which methodology is better and ultimately argue that whichever approach happens to more accurately reflect the (unknown) distribution of future returns will produce the more plausible results and recommendations.

The articles in the literature also differ in the assets they consider. Although most articles focus on stocks and bonds, different types of stocks and bonds and different asset classes were introduced over time. Bengen (1997) considers small-cap stocks; Pye (2000) considers TIPS; Cooley et al (2003*a*) consider international (EAFE) stocks; Guyton (2004) considers value stocks; and Cassaday (2006) considers real estate and commodities.

An important aspect, which differs widely across the articles in the literature, is the failure rate considered to be acceptable to a retiree. In other words, different withdrawal rates imply different probabilities of portfolio depletion before the end of the retirement period, some of which a retiree may find acceptable and some of which he may not. On one extreme, Cooley et al (2003*b*, 2011) argue that a 25% failure rate is reasonable; on the other, Terry (2003) argues that failure rates 5% or higher are unacceptable. Spitzer et al (2007) plot a relationship between withdrawal rates and failure rates and highlight that a 4% withdrawal rate can be thought of as safe as long as a 6% probability of failure is acceptable.

The retirement periods considered in the literature also vary widely. Although 30 years seems to be by far the most widely-used alternative (and the one used in this article), on one extreme Cooley et al (2005) focus on a five-year period, and on the other Blanchett and Frank (2009) consider up to 50 years. Some articles take a different approach and base the *expected* retirement period on mortality tables, such as Milevsky and Robinson (2005), Stout and Mitchell (2006), and Sheikh et al (2014).

Finally, many articles in the literature consider an initial withdrawal rate and subsequent inflation-adjusted withdrawals, such as Bengen (1994, 1996), who pioneered the approach. Many other articles, however, consider a wide variety of dynamic withdrawal rules, most of them depending on portfolio performance. Some add simple floors and ceilings to the withdrawals, such as Bengen (2001) and Jaconetti et al (2013); some add more complex floors and ceilings, such as Guyton and Klinger (2006) and Stout (2008);[2] some make periodic re-evaluations of life expectancy (Dus et al, 2005), the probability of failure (Blanchett and Frank, 2009), or several variables (Sheikh et al, 2014); and some link the withdrawal rate to fundamental variables such as the cyclically-adjusted P/E ratio (Kitces, 2008; Pfau, 2011; and Kitces and Pfau, 2014).

2.2. The Evolution of Asset Allocation During Retirement

Most of the articles in the literature consider different asset allocations. In his pioneering article, for example, Bengen (1994) bases most of his discussion on a 50-50 stock-bond allocation but also considers portfolios with 0%, 25%, 75%, and 100% in stocks (and the rest in bonds). Considering different asset allocations, however, is different from considering how the asset allocation should *evolve* during retirement, which is the focus of this article.[3] Three possibilities are considered here, namely, declining-equity (DE) strategies, rising-equity (RE) strategies, and static strategies.

Bengen (1994) does not explicitly consider the evolution of the asset allocation during retirement, but he does recommend a 50-75% exposure to stocks and argues that it "can be maintained throughout retirement." Bengen (1996), in turn, explicitly considers whether the asset allocation should be adjusted during the retirement period. More precisely, he considers annual reductions in the allocation to stocks between 0.5% and 3%; finds a negative relationship between the rate of decrease of the allocation to stocks and sustainable withdrawal rates; and

[2] It is far from clear that more complex rules improve upon simpler ones. In fact, some of the complex rules in the literature seem to be meticulously designed to work well (or better than simpler alternatives) in sample. This overfitting of the data often leads to poor behavior out of sample.

[3] The articles that consider different asset allocations, but not its evolution during the retirement period, tend to agree that a higher exposure to stocks is more likely to support a higher withdrawal rate. Early recommendations, such as Cooley et al (1998), suggest an exposure to stocks of at least 50%; Bengen (1994) recommends a 50-75% exposure, and Milevsky et al (1997) argue that many retirees would benefit from a 70-100% exposure.

ultimately recommends to phase down the exposure to stocks at the annual rate of 1% (as the 'age in bonds' rule would). Sheikh et al (2014) also recommend a DE strategy, and therefore an increasingly-conservative portfolio, during retirement.

Unsurprisingly, not everybody agrees with this recommendation. In fact, some argue just the opposite and recommend an RE strategy. Spitzer and Singh (2006, 2007) suggest that retirees should first make withdrawals from the bond portion of their portfolios, and start withdrawing from stocks only after bonds are depleted. This recommendation would gradually reduce the exposure to bonds in the portfolio, thus implying an RE glidepath and an increasingly aggressive portfolio. Pfau and Kitces (2014) explicitly compare DE and RE strategies during retirement and find that the latter, which they recommend, expose retirees to a lower probability of failure.

An intermediate possibility is a static or constant-equity strategy. Blanchett (2007) considers several types of rising/declining/static-equity strategies; finds that despite their simplicity static allocations are "remarkably efficient" distribution strategies; and concludes that a 60-40 stock-bond allocation is likely to be optimal for most retirees. Cohen et al (2010) argue that for any given DE strategy, a static strategy with a higher risk-adjusted return can be created and ultimately recommend a 32-68 stock-bond static allocation for retirees. Kitces and Pfau (2014) also consider several types of rising/declining/static-equity strategies and find that a 60-40 stock-bond allocation is nearly optimal in most situations. The results discussed in the next section also yield support both to static strategies in general and (the all-equity strategy notwithstanding) to a 60-40 stock-bond allocation in particular.

A final possibility is a strategy in which the exposure to stocks neither declines or rises at a predetermined rate nor does it remains constant; rather, the asset allocation is dynamically adjusted depending on the value of some observable (technical or fundamental) variable. Garrison et al (2010), for example, use a 12-month moving average of large-cap stocks to determine whether a portfolio should be fully invested in bonds or stocks. Pfau (2012), in turn, uses the cyclically-adjusted P/E ratio to determine whether the exposure to stocks should be 25%, 50%, or 75%, with the rest invested in bonds. Both articles find support for a dynamic, valuation-based asset allocation approach.

Needless to say, both static and dynamic strategies have pros and cons. Static strategies are simple and require little information. However, they may get increasingly difficult for retirees to maintain if the allocation is aggressive (think a 90/10 split for an 70-year old individual with a modest portfolio) and ignore valuation considerations even in extreme situations (think December, 1999).

Dynamic strategies, on the other hand, seem to 'feel right' in the sense that they may get progressively more conservative (think the age-in-bonds rule) or take valuation considerations into account, thus aiming to avoid high exposure to overvalued assets. However, they may be

difficult for retirees to implement and require information about valuation that retirees may not have or understand.

Both static and dynamic strategies are considered in this article. Among the former, eight asset allocations with varying stock/bond proportions are evaluated, with special attention to the 90/10 split suggested by Buffett. Among the latter, two minor (valuation-based) twists to the 90/10 allocation are evaluated and compared to both the 90/10 and the 60/40 allocations; the first twist focuses on the valuation of the stock market and the second on the relative valuation of the stock and bond markets.

Importantly, the two dynamic twists considered in this article are trivial to implement. Retirees only need information about the performance of stocks, or that of stocks and bonds, over the previous year, which is publicly and widely available. Retirees do not need to know tools of fundamental analysis (such as the P/E or CAPE) or technical analysis (such as moving averages or charts), nor do they need to make judgements on the valuation of stocks and bonds.

3. Evidence

This section discusses the evidence as it applies to the US market over the 115-year period between 1900 and 2014. The first part discusses the data and methodology; the second part evaluates static strategies; and the third part evaluates two simple dynamic twists to the 90/10 allocation.

3.1. Data and Methodology

The analysis is based on the two asset classes suggested by Buffett, stocks and short-term government bonds (US Treasury bills), both represented by Dimson-Marsh-Staunton indices, described in detail in Dimson et al (2002, 2015). Returns are annual, adjusted by inflation, and account for capital gains/losses and cash flows. Over the 1900-2014 period considered here stocks and bonds had mean annual compound (real) returns of 6.5% and 0.9%, with annual volatility of 20.0% and 4.6%.

Because Buffett does not intend to recommend the 90/10 allocation to all investors and is therefore sketchy on details, a few assumptions will be made to evaluate the performance of this strategy. It will be assumed, first, that Buffett suggests to maintain the 90/10 allocation constant over time; second, that in order to maintain the 90/10 allocation constant the portfolio is rebalanced once a year; and third, that the annual withdrawal is made proportional to the asset allocation, which implies withdrawing 90% from stocks and 10% from bonds. The last two assumptions, annual rebalancing and proportional withdrawals, will be applied to all the other static strategies considered. The second assumption, annual rebalancing, will also be applied to the two dynamic twists to the 90/10 allocation.

The analysis is based on a $1,000 nest egg at the beginning of retirement, an initial withdrawal of 4% of the nest egg, subsequent withdrawals annually adjusted by inflation, and a 30-year retirement period. At the beginning of each year the annual withdrawal is made, the portfolio is then rebalanced (should the strategy call for rebalancing) to the target allocation for the year, and then it compounds at the observed return of stocks and bonds for that year. This process is repeated at the beginning of each year during the 30-year retirement period, at the end of which the portfolio has a terminal wealth or bequest that may be positive or 0. The first 30-year retirement period considered is 1900-1929 and the last one is 1985-2014, for a total of 86 rolling (overlapping) periods.

The analysis focuses on the failure rate, as well as on the upside potential and downside protection provided by the strategies considered. The failure rate is defined as the proportion of the 86 retirement periods considered in which the portfolio was depleted before 30 years; if history is any guide, this failure rate should be a good proxy for the expected probability of portfolio failure. Both upside potential and downside protection are assessed from the distribution of terminal wealth or bequest, which results from aggregating the 86 wealth levels at the end of each of the 86 periods considered.

3.2. Static Strategies

The first step in order to assess Buffett's advice is to consider several static stock/bond allocations that can be compared to the 90/10 allocation suggested by Buffett. To that purpose, Exhibit 1 reports the results for eight static strategies with stock/bond allocations ranging from 100/0 to 30/70, in all cases rebalanced annually to the stated proportions. The analysis of upside potential and downside protection follows along the lines suggested by Estrada (2014*a*, 2014*b*, 2014*c*, 2016).

The strategies that call for equity holdings between 100% and 40% have very similar failure rates, not higher than 3.5%. Only when the proportion of stocks is at or below 30% the failure rate increases considerably, in all cases above 10%.[4] Although there are varied opinions regarding what is an acceptable failure rate, most practitioners seem to agree that failure rates below 5% should be viewed as acceptable by most retirees. In short, although the 60/40 strategy never failed, the 100/0 and 40/60 failed 3.5% of the time, and Buffett's 90/10 failed 2.3% of the time, there does not seem to be a substantial difference in the failure rates of portfolios holding at least 40% in stocks.

[4] As the exhibit shows, the 30/70 strategy has a failure rate of 12.8%. Strategies with lower proportion of stocks (20-80, 10-90, and 0-100) have substantially higher failure rates (25.6%, 43.0%, 67.4%) and are neither reported in the exhibit nor further considered in the analysis.

Exhibit 1: Static Strategies

This exhibit shows summary statistics for eight static strategies evaluated over 86 rolling 30-year retirement periods, beginning with 1900-1929 and ending with 1985-2014. All strategies consider a starting capital of $1,000, annual withdrawals of $40 in real terms, and annual rebalancing to the stock/bond allocations indicated in the first row. The failure rate (Failure) is the proportion of the 86 retirement periods in which the portfolio was depleted before 30 years. The statistics that describe the distribution of terminal wealth across the 86 retirement periods include the mean; median; standard deviation (SD); average bequest in the lower 1% (P1), 5% (P5), and 10% (P10) tail; and average bequest in the upper 1% (P99), 5% (P95), and 10% (P90) tail. Returns over the 1900-2014 period are annual, real, and account for capital gains/losses and cash flows. All figures in dollars except for failure rates (in %).

Stocks/Bonds	100/0	90/10	80/20	70/30	60/40	50/50	40/60	30/70
Failure	3.5	2.3	2.3	1.2	0.0	1.2	3.5	12.8
Mean	3,232	2,638	2,116	1,661	1,267	930	647	423
Median	2,881	2,485	2,005	1,494	1,129	746	557	282
P99	12,064	8,625	5,990	4,011	3,208	2,493	1,875	1,355
P95	10,882	7,820	5,529	3,943	2,837	2,161	1,613	1,196
P90	8,997	6,695	4,930	3,620	2,647	2,007	1,507	1,104
SD	2,747	2,022	1,476	1,073	786	589	456	352
P1	0	0	0	0	2	0	0	0
P5	20	42	58	86	93	38	1	0
P10	182	219	236	241	204	152	36	0

The mean and median bequest of the strategies with a failure rate lower than 5% increase monotonically with the proportion of stocks in the portfolio; put differently, the higher the proportion of stocks in the portfolio, the higher the expected bequest. The same is the case with the upside potential in particularly good retirement periods (those occurring less than 1%, 5%, or 10% of the time and quantified by P99, P95, and P90 in Exhibit 1), which monotonically increases with the proportion of stocks in the portfolio. In short, the upside potential variables favor portfolios heavily invested in stocks, which implies that from this perspective Buffett's suggested strategy ranks second only to an all-equity portfolio.

Needless to say, risk is an essential component in the evaluation of any investment strategy. Exhibit 1 quantifies risk in two ways. The first is with the standard deviation of the distribution of terminal wealth (SD), which measures uncertainty about the bequest, and suggests that the higher the proportion of stocks in the portfolio, the more uncertain a retiree will be about his bequest. In this regard, it is important to keep in mind that deviations from the mean in *either* direction increase the standard deviation; hence, the high upside potential of strategies heavily invested in stocks contributes substantially to the large standard deviations of these strategies.

For this reason, a more plausible way to assess the risk of the strategies considered is by focusing on the terminal wealth in particularly bad retirement periods (those occurring less than 1%, 5%, or 10% of the time and quantified by P1, P5, and P10 in Exhibit 1), which provides a measure of downside protection when tail risks strike.[5] As the exhibit shows, if risk is assessed this way, the 60/40 and 70/30 strategies have a slight edge. In the worst 1% of retirement periods (which in our case amounts to the worst-case scenario), all strategies but the 60/40 allocation

[5] These figures are what Estrada (2014*b*, *c*) defines as lower-tail terminal wealth, a measure of long-term risk that focuses on extreme and unlikely adverse scenarios.

fail; in the worst 5% of retirement periods, the 60/40 allocation yields the highest terminal wealth; and in the worst 10% of retirement periods, the 70/30 allocation yields the highest terminal wealth.

Importantly, the 90/10 strategy suggested by Buffett does not perform much worse in terms of downside protection. To put the figures above in perspective, recall that the analysis is performed in real terms and that the annual withdrawal is $40. Hence, in the worst 5% of retirement periods (P5), the 90/10 allocation underperforms the 60/40 split by just a bit more than the value of one annual withdrawal (which follows from comparing $42 to $93); and in the worst 10% of retirement periods (P10), the 90/10 allocation underperforms the 70/30 split by just a bit more than the value of half an annual withdrawal (comparing $219 to $241).

In short, then, as far as static strategies is concerned, Buffett's suggested allocation has a very low (although not the lowest) failure rate; a very high (although not the highest) upside potential; and provides very good (but not the best) downside protection when tail risks strike. Put differently, Buffett's suggested allocation seems to provide a middle ground between the best-performing strategy (100/0) in terms of upside potential and the best-performing strategies (60/40 and 70/30) in terms of downside protection.

3.3. Tweaking Buffett's Advice

The evidence discussed so far suggests that Buffett's advice is (perhaps unsurprisingly) both sound and simple enough for any retiree to implement, at least as far as static strategies is concerned. That said, it may be worth exploring two minor dynamic twists, both of which are very simple to implement.

The first twist (T1) relates the annual withdrawal to the behavior of the stock market in the previous year. More precisely, if stocks have gone up, the retiree takes the annual withdrawal from stocks and then rebalances the portfolio back to the 90/10 allocation; if stocks have gone down, the retiree takes the annual withdrawal from bonds and does not rebalance the portfolio.

The second twist (T2) relates the annual withdrawal to the *relative* behavior of the stock and bond markets in the previous year. More precisely, if the return of stocks has been higher than that of bonds, the retiree takes the annual withdrawal from stocks and then rebalances the portfolio back to the 90/10 allocation; if the return of stocks has been lower than that of bonds, the retiree takes the annual withdrawal from bonds and does not rebalance the portfolio.

These dynamic twists aim to avoid withdrawing from stocks when these have gone down (T1) or performed worse than bonds (T2). From this perspective, they are inspired in the bucket approach widely discussed by Christine Benz in several Morningstar articles, and are ultimately based on the concept of mean reversion in stocks. Withdrawing from bonds when stocks have performed badly, in absolute or relative terms, buys the time that stocks need to sooner or later

stage their recovery. Exhibit 2 reports the performance of these two dynamic strategies, together with the benchmark 90/10 split and the pervasive 60/40 allocation for further reference.

Exhibit 2: Tweaking the 90/10 Allocation

This exhibit shows summary statistics for four strategies evaluated over 86 rolling 30-year retirement periods, beginning with 1900-1929 and ending with 1985-2014. All strategies consider a starting capital of $1,000, annual withdrawals of $40 in real terms, and annual rebalancing. The two dynamic strategies consider the behavior of stocks (T1) and the relative behavior of stocks and bonds (T2) in the way stated in the text. The failure rate (Failure) is the proportion of the 86 retirement periods in which the portfolio was depleted before 30 years. The statistics that describe the distribution of terminal wealth across the 86 retirement periods include the mean; median; standard deviation (SD); average bequest in the lower 1% (P1), 5% (P5), and 10% (P10) tail; and average bequest in the upper 1% (P99), 5% (P95), and 10% (P90) tail. Returns over the 1900-2014 period are annual, real, and account for capital gains/losses and cash flows. All figures in dollars except for failure rates (in %).

	90/10	T1	T2	60/40
Failure	2.3	2.3	2.3	0.0
Mean	2,638	2,726	2,711	1,267
Median	2,485	2,605	2,534	1,129
P99	8,625	8,683	8,770	3,208
P95	7,820	7,919	7,881	2,837
P90	6,695	6,817	6,751	2,647
SD	2,022	2,037	2,011	786
P1	0	0	0	2
P5	42	110	110	93
P10	219	284	300	204

The results of the two twists considered are very similar. Both strategies have the same failure rate (2.3%), T1 has a slightly higher overall upside potential, and T2 provides a slightly better overall downside protection. Regarding the upside potential, the only exception to the slightly better performance of T1 is in the best 1% of retirement periods ($8,683 versus $8,770). Regarding downside protection, T1 and T2 yield the same terminal wealth in the worst 1% and 5% of retirement periods, but T2 offers a slightly better protection in the worst 10% of retirement periods ($300 versus $284).

More interestingly, both T1 and T2 outperform the 90/10 allocation. Although the three strategies have the same failure rate (2.3%), T1 and T2 provide retirees with both a higher upside potential (as measured by the mean, median, P90, P95, and P99) and better downside protection (as measured by both P5 and P10) than does the 90/10 allocation. In terms of the expected bequest, the outperformance of T1 over 90/10 is between slightly more than two and three annual withdrawals ($88 and $120, as measured by the mean and median). In terms of downside protection, the outperformance of T2 over 90/10 is between slightly more than 1.5 and two annual withdrawals ($68 and $81, as measured by P5 and P10).

Also interestingly, both T1 and T2 outperform the 60/40 allocation. Although the two dynamic strategies have a slightly higher failure rate than 60/40 (2.3% versus 0%), they also provide retirees with an expected bequest over twice as large, and upside potential in particularly good retirement periods well over twice as large. Furthermore, except in the worst retirement period (P1), T1 and T2 provide retirees with better downside protection.

Finally, although it can hardly be argued that observing the performance of the stock and bond markets is challenging, it is in fact simpler to just observe the performance of the stock market (which, in general, is more readily available than that of the bond market). Thus, given the very similar performance of the two twists considered, T1, which only requires to observe the performance of stocks, may be viewed as having a slight edge over T2, which requires to observe the performance of both stocks and bonds.

4. Assessment

There is a massive literature that discusses two of the most important financial decisions retirees need to make, namely, the withdrawal rate and the asset allocation of their portfolios. This article focused on the latter, and more specifically on the performance of the 90/10 allocation Warren Buffett advised a trustee to implement for the bequest his wife will receive.

This 90/10 allocation was evaluated first relative to other static strategies, and then relative to two very simple, dynamic, valuation-based strategies. Each of the latter only add a minor twist to the allocation suggested by Buffett, based on the performance of stocks or the relative performance of stocks and bonds.

When compared to other static allocations, the 90/10 split suggested by Buffett performs well in terms of the failure rate, upside potential, and downside protection. In fact, it provides an interesting middle ground between the upside potential of more aggressive static allocations and the downside protection of more conservative static allocations. Put differently, Buffett's advice proves to be (unsurprisingly) not only simple but also sound.

That said, the two simple twists considered here improve both the upside potential and the downside protection of the 90/10 allocation. These two twists require retirees neither to collect vast amounts of information nor to make any valuation judgments but only to observe the performance of the stock market, or the relative performance of the stock and bond markets. Either way, retirees can, with little effort, improve upon the results of the 90/10 allocation. In fact, because the performance of the two twists considered is so similar, retirees may want to lean towards the first one (T1) and simply adjust their asset allocation according to the observed performance of stocks.

Buffett's asset allocation advice is sound and simple, and yet many retirees may balk at the thought of holding such an aggressive portfolio. If that is the case, the two twists considered here may help a little, but probably not enough. However, those retirees that find a 90/10 portfolio acceptable are likely to find that with an insignificant additional effort, observing the performance of stocks and implementing the first twist discussed, they are likely to improve the performance of their portfolios.

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