Breaking Bad for Boomers

The documented dangers of a reliance on Modern Portfolio Theory and what plan sponsors and plan participants can do about it

Timothy H. Scherman, for the Compass Institute

EXECUTIVE SUMMARY

"Breaking Bad for Boomers" begins with a broad survey of articles and editorial from a wide variety of financial experts declaring the grave reality of the retirement crisis in the United States: as the Baby Boomer generation retires, large numbers of retirees are discovering they have not saved enough to maintain anything like their current standard of living, while the great majority of employees (not only Boomers but later generations as well) testify to woefully inadequate retirement plans and often little hope of repairing the damage before they are forced to retire through illness or downsizing.

As bad as all that sounds, the actual focus of this paper is the inadequacy of the strategies behind the funds plan participants are relying upon to be "retirement-ready:" "Balanced," "Target Date" or "Life Cycle" funds informed by Modern Portfolio Theory (MPT) formulaically calculated to safely grow their value over time by allocating a variety of assets that hedge against each other to avoid losses in volatile markets. Even if one's retirement savings is a serious investment that one cannot afford to lose, our argument is that MPT's focus on avoiding *Investment risk* should be replaced by an emphasis on what Kevin Coppola, founder of the Compass Institute, calls *Retirement Income Security Risk*, or the possibility (for most current employees in the United States, the sad likelihood) of outliving our retirement savings.

The reason most 401(k) plans are exposed to this risk is twofold: first, an unrealistic or inadequate estimate of what Retirement Income Security requires in an era of increased longevity and increasingly costly healthcare, among other factors; and second, a lack of clarity (or an inattention to mathematical possibilities) over what factors in the management of an employee's retirement account can make the difference between attaining Retirement Income Security and falling short. In the end, we argue, only *increased investment return* can give employees a chance of success in reaching their retirement goals. The compromise or "balance" that ensures the "safety" of MPT-guided funds also ensures lower investment returns (6-8% on average), which all but ensures most plan participants' chances of failure.

Established in 1997, the Compass Institute assumes a strict conception of what we call "True" Retirement Income Security, defining it as a *sufficient investment savings that, invested at a guaranteed 5% rate, will provide 100% of one's final salary for as long as one lives.* While that estimate may seem too radical for some, a section of this paper is dedicated to the factors that make this not overly conservative but closer to a *minimum standard* necessary to continue one's accustomed lifestyle. Compelling evidence is presented that in the current environment twenty times one's final salary is a fair estimate of what investors will need to accumulate to achieve this goal. Once this standard is set, a series of hypothetical scenarios is used to demonstrate the mathematical improbability of achieving Retirement Income Security with MPT-guided strategies.

Published surveys and even the subtexts of some of our most popular TV shows indicate that most employees in the U.S. are very concerned about the risk of reaching retirement or being forced to retire without enough money, and thus the "funding gap" left by plan participants' reliance on MPT-guided investment strategies reaches beyond the individual employee to the broader work environment, damaging productivity. Moreover, the clearer the inadequacy of a "default" investment in MPT-guided products becomes, the more the issue becomes an ERISA liability for plan sponsors to consider in their plan design—or redesign.

Research at the Compass Institute has developed a solution to these problems in its *Adaptive Asset Allocation*™ model. While for financial advisors

and mutual fund companies, the "set it and forget it" style of retirement investing may be convenient and profitable, ultimately it is only a departure from this model and its "passivity," we argue, that will enable plan participants to achieve True Retirement Income Security. Rather than balancing equities and debt securities against one another in order to minimize investment risk and gain the opportunity *not to think about retirement until it happens*, this new research calls for a *more active management* of 401(k) accounts to adjust investments to align with market conditions over limited time frames and continuing such adaptive asset allocation on a regular basis.

Detailing the advantages of an "adaptive" strategy over formulaic MPT-guided models, the paper concludes with two sections of results:

- audited returns of adaptive allocation models researched by the Compass Institute and back-tested[1] between 1997 and 2012, with an average performance of 12.4% per year, as compared to the best performing Fidelity Target Date Fund, which yielded 6.5%, and
- the author's *actual* investment results which demonstrate the superior performance of adaptive asset allocation over TDFs in the two most recent market downturns, September 2008 and July 2011.

Finally, we provide an action plan for individual plan participants and fiduciaries under five headings:

1. **Adopt Strict Realism.** Plan Sponsors should educate and encourage their plan participants to adopt realistic estimates for the total savings required to achieve *Retirement Income Security* and seriously consider 20 times final salary as a minimum standard. Fiduciaries should encourage employees to investigate the real costs of retirement and to soberly consider the consequences of easy answers to a financial situation that for younger employees may seem too distant to worry about.
2. **Focus on the Endgame.** The focus on Investment Risk that informs MPT-guided investment strategies should be replaced by the broader and most critical concern of *Retirement Income Security Risk,* or the possibility of retirees running out of money before they die.
3. **Be Active.** This new focus requires investors to be more vigilant and more active in their portfolio management. For investors planning not to "settle for less" in their golden years, the days of "set it and forget it" are over.
4. **Demand Performance.** Individuals and plan sponsors should seek out providers with expertise and investing strategies that allow plan participants to grow their retirement accounts both safely and effectively, focusing on long-term annual returns that consistently exceed the expected long-term 6 - 8% average annual return of MPT-guided managed accounts and funds (balanced, Target Date, Life Cycle).
5. **Make Options Available.** Plan fiduciaries should investigate the cost/benefit, in terms of both potential fiduciary liability and worker productivity and morale, of directing third-party providers to offer active *Adaptive Asset Allocation*™ investment advice and programs as required and prudent supplements to MPT-guided portfolio options.

---

[1] In their research report, "Fairies, Pixie Dust, and Backtests" (March, 2010) Morningstar Investment Services, Inc. present the major problems with back-testing and why they do not endorse back-tested models. A discussion of how the Compass Institute's evidence differs from typical back-tested model is provided in this paper, beginning with an independent audit demonstrating that the model is run purely by algorithms, and that those algorithms have not been altered since the model's inception in 1997. That back-tested data match the performance of these algorithms in "real life" is evidenced by the author's own actual results investing with this model in the most relevant recent "test" period for retirement plans, March 2008-present.

Breaking Bad for Boomers

The documented dangers of a reliance on Modern Portfolio Theory and what plan sponsors and plan participants can do about it

Timothy H. Scherman, for the Compass Institute

Badly Broken: What Primetime TV Tells Us About Retirement Anxiety

Whether it's zombies looking for a bite out of our necks or aliens falling from the skies, the one thing today's primetime television series seem to have in common is an anxiety about our future. Images of scarcity, hunger, and deprivation predominate, sending us into dark fantasies about protecting our homes from predators, searching for food, or the electricity going out for good.

But if all the fake blood and make-up in shows like *The Walking Dead* and *Falling Skies* silently assure viewers that what they are watching is just fantasy (something we can enjoy because it "could never happen" in real life) the horror that motivates Vince Gilligan's *Breaking Bad* resonates much closer to our pockets, revealing the very real basis for the high anxiety of the more fantastic shows—that is, *our collective fear of a future with not enough money in the bank*.

The first episode of Gilligan's creation presents the main character, Walter White, as an aging Chemistry teacher, evidently highly skilled—even over qualified—but not well enough paid to make ends meet. Forced to work a second job at a local car wash, one afternoon White is asked by the manager to move from his place behind the cash register to work a shift actually washing cars, rag in hand, on his knees in the suds and spray. For this accomplished academic, the humiliation is finally overwhelming, and not fifteen minutes later in the show we seem him desperately seeking a way out of his economic trap, even if it means finding employment with one of his former students cooking meth-amphetamine.

Obviously that is not the path most of us would take, or could take, and that is what links *Breaking Bad* to the other fantasies of today's TV landscape (the show is actually listed in the TV guide as "comedy"), but two other plot developments ring undeniably true to life. Viewers will recall it is not only his humiliation, both at the school and at the car wash, that drives Walter White to desperation. We learn Walter and his wife are expecting another child, at the very same time as he has been diagnosed with cancer, at age forty-nine.

> ***…the very real possibility that he will not be able to provide for his own health care and his family's future, given his age, his condition, and his present economic difficulties, is no viewer fantasy, but an anxiety all too familiar to majority of Americans.***

The clock is now ticking, and the very real possibility that he will not be able to provide for his own health care and his family's future, given his age, his condition, and his present economic difficulties, is no viewer fantasy, but an anxiety all too familiar to a majority of Americans. [2]

---

[2] Since the original drafting of this paper, Bill Bonner, Founder and President of Agora, Inc., published "Breaking Bad," an article that analogizes the situation described in Gilligan's hit show to our nation's approach to the "fiscal cliff." Bonner's emphasis on the hero's "addiction" to his new-found power as a drug lord (which he compares to our addiction to deficits) works as a clever metaphor, but monetary policy is not something an individual investor values directly.

Turn from primetime television to recent studies surveying the attitudes of Americans toward their retirement years and any remaining hints of fantasy quickly disappear.

- In one major study, we find "Americans are unprepared and fearful" of retirement, with thirty-nine percent of American workers either planning to retire after age 70 or "not retire at all," and 54% of workers planning to work in retirement "because they have to."[3]
- Given the claims of a similar study, that "45 percent of current retirees say they retired earlier than they intended, mainly because of a health problem or disability," plans for continuing to work into what used to be "retirement age" might be another fantasy.[4]
- In another study, 92 percent of participants asked if they "believe there is a retirement crisis in this country" answered either "somewhat" or "absolutely." That number rose to *100 percent* when limited to respondents with lower incomes ($30,000-$45,000 and investable assets of under $50,000).[5]
- Indeed, these fears are borne out, says another study, as Baby Boomers try to put their 401(k) savings into action, discovering that in 2011, "the median household headed by a person aged 60 to 62 with a 401(k) account has less than one-quarter of what it would need in that account to maintain its standard of living in retirement."[6]
- "America's Retirement System is Failing Us," runs the cover-story of Yahoo's on-line Daily Ticker of August 6, 2012,[7] which about says it all.

While the financial consulting industry might say the respondents to these various studies have just been watching too much dystopian TV, a whole host of economists, policy makers, nationally elected officials and Baby Boomers either remaining at work or in new jobs to make ends meet in a tough economy—are now all beginning to agree.

In fact, experts studying the phenomenon are coming to realize that the more obvious sources of our current economic ills—European debt, two decades of inflated housing prices, the Iraq and Afghan wars, the national deficit, the health care crisis—may have little to do with the situation. The main problem, explains Teresa Ghilarducci, economics professor at the New School for Social Research, may well be the assumptions behind the general exodus of the 1980s, at least in the private sector, from traditional pension packages to what she labels the "do-it-yourself" pension system of 401(k) plans.

Many do, however, see their possible future in a character driven to desperate financial circumstances, though few would take to selling drugs to solve the problem. "Breaking Bad," Inside Investing Daily, October 31, 2012, (http://www.insideinvestingdaily.com/articles/bonner-breaking-bad.html).

[3] Ruthie Ackerman, "Americans Unprepared and Fearful of Retirement," Employee Benefit News online, May 23, 2011 (http://ebn.benefitnews.com/news/retirement-unprepared-2713613-1.html).

[4] Heather Trese, "Retirement confidence sinks to all time low," March 21, 2011, Benefits Pro online, (http://www.benefitspro.com/2011/03/21/retirement-confidence-sinks-to-all-time-low).

[5] Heather Trese, "92 percent of baby boomers believe in a retirement crisis," June 23, 2011, Benefits Pro online, (http://www.benefitspro.com/2011/06/23/92-percent-of-baby-boomers-believe-in-a-retirement).

[6] E. S. Browning, "Boomers find 401 (k) plans fall short," March 1, 2011, *The Wall Street Journal* online, (http://money.msn.com/how-to-invest/boomers-find-401k-plans-fall-short-wsj.aspx).

[7] Morgan Korn, "America's Retirement System is Failing Us: Economist," Daily Ticker online, August 6, 2012, (http://finance.yahoo.com/blogs/daily-ticker/america-retirement-system-failing-us-economist-153445894.html).

For Ghilarducci, it is not the average employee's business to manage money, much less to accrue returns that would accumulate the 10 to 20 times an employee's final salary she calculates will be necessary to maintain their current standard of living in retirement, but as both state governments and corporations have trashed the pension system, that is increasingly part of every employee's reality.[8] Since 2008, pensions for state employees and teachers have been gutted or eliminated in no less than 43 states, reports one national news source,[9] and as an increasing number of lawmakers from both sides of the isle in Washington support reducing or curtailing government spending on Medicare and social security benefits to balance the budget, Ghilarducci concludes, "the specter of downward mobility in retirement is a looming reality for both middle- and higher-income workers."

New Challenges for Retirement Income Security…

Obviously how much money one actually needs in retirement is to some extent a matter of personal preference. Not all employees would prefer to continue living the same lifestyle to which they have become accustomed at the end of their careers, but most individuals surveyed would, even if they are no longer very sanguine about the possibility of saving what's needed.

A "common yardstick" of one's yearly needs has been 85% of one's final working salary available to the retiree for 15 to 20 years, with a retirement plan balance equal to roughly 8 times final salary in total savings.[10] But the yardstick is now clearly lengthening. If American expectations for retirement now vacillate between wishful thinking and doomsday drama, the costs of actually leaving the workplace are steadily increasing. Taking into account advances in health care and consequent increases in longevity, especially for middle- and upper class Americans, [11] experts have begun to agree on much higher estimates for what we call hereinafter *Retirement Income Security*, defined by a recent Compass Institute publication as *receiving an amount of money equivalent to your final salary, every year of your retirement, for as long as you live.*

The new costs are numerous, but health care is now widely acknowledged as the new double-edged sword cutting into any retiree's savings. On the bright side, living a longer life as a result of a more active lifestyle, healthier diet, and new medical technologies is an undeniable plus; but living longer means both more years to pay for in retirement, likely along with more health care in later years, at ever increasing costs. Studies by Fidelity Investments and the Employee Benefits Institute estimate health care costs for a 65 year-old couple retiring in 2009 might be between $240,000 and $376,000, for starters—costs that can hardly be defrayed by the maximum of $3,000 per year each individual can stash away in a tax-free Health Savings Account.[12] Another study postulates that a 50 year-old today planning to live only four years longer than

---

[8] Corporate bankruptcies have even led to demands that retirees return thousands in pension earnings. See Barbara Rose, "Retirees' pensions slashed," May 29, 2008, Chicago Tribune online, (http://articles.chicagotribune.com/2008-05-29/business/0805281015_1_retirees-pension-benefit-guaranty-corp-monthly-benefit).

[9] "Pension Predicament: New York just the latest state to cut retirement benefits," March 15, 2012, NBCNEWS online, (http://usnews.nbcnews.com/_news/2012/03/15/10703520-pension-predicament-new-york-just-the-latest-state-to-cut-retirement-benefits).

[10] For reference to this rate as a "common yardstick," see Browning, above.

[11] See Fred Reish, Pat Byrnes and Bruce Ashto, "The Problem With Living Too Long," May 2011, DrinkerBiddle online; archived at the Compass Institute, (http://www.compass-institute.com/CINST_Article_DINK_11-05-01.htm).

[12] Patrick Regnier, "Your health care costs in retirement--$240,000?" March 30, 2009, More Money online, (http://moremoney.blogs.money.cnn.com/2009/03/30/your-health-care-costs-in-retirement-240000/).

expected would have to save an additional $160,000 to pay for it.[13]

Other studies have shown additional new concerns for prospective retirees, with survey respondents 55 and over six times more likely to be factoring in the financial needs of adult children and other dependents in their retirement plans than they were ten years ago, while at the same time weighing the possibility of "doing without that vacation home" or whether or not they should "kick in for their grand-daughter's wedding."[14] Even the extremely low levels of inflation we have experienced over the past decade have a real effect on buying power in the long run, and those rates can hardly be expected to remain.

…and Why Traditional Pie-Chart Investing Will Never Get You There

Given these much more robust (and realistic) expectations for Retirement Income Security more and more agreed upon by experts, it becomes clearer why so many Boomers, even those who use investment advice, are failing to attain it. Average investment return rates for self-managed 401(k) plans range from -2% to 5% annual return overall, but as a recent SunAmerica study shows, fewer and fewer Americans are trying to manage their retirement accounts alone. In this sense, Ghilarducci's dark view of the now dominant "do-it-yourself" pension plan isn't exactly fair to the financial consulting industry, which has been, on one hand, an enormous beneficiary of that paradigm, and on the other hand, a real resource for those unprepared but still expected to manage their own retirement savings (a recent *Wall Street Journal* article called the 401(k) boom a "gold mine for money-management firms…growing from a small program to a multi-trillion-dollar industry" in 30 years).[15] In fact everyone, writes Ghilarducci, "has a guy."[16] The question is, what have our "guys" been telling us, and why hasn't it led to better results for the majority of Americans?

The answer seems to be investors' continued reliance on a theory of asset allocation that almost by design leaves retirees short of what they need.

The MPT Paradigm

Since Harry Markowitz's Modern Portfolio Theory was converted from theory to practice in the late 1980s, most employees experience their first meeting with a retirement investment advisor as a simple interview, whether in person or on-line, involving questions about one's attitude toward risk, age, planned retirement date, health history, and the like—the results of which determine the advisor's calculation of what has been called *formulaic asset allocation* (FAA) determining an "ideal" percentage of each major asset type in one's retirement portfolio. Particular forms of FAA products have emerged over the past decades, including Life Cycle and Target Date funds which may adjust their balance of asset classes over time (loading up on bonds, for example, toward the date of the participant's retirement), but in all FAA products, percentages of each primary asset class are *predetermined*, with the "balance" of equities and debt securities designed to hedge against major losses in times of market volatility.

Emphasizing the long-term nature of these investments, advisors often caution their clients strongly against trading assets in their retirement portfolio (often exaggerated by the advisor as "churning"), to avoid both fees associated with trading securities and penalties imposed by

---

[13] Charles Passy, "The Cost Of Living Longer—Much Longer," Feb 20, 2012, SmartMoney Online (Cover Story) (http://www.smartmoney.com/retirement/planning/the-cost-of-living-longer--much-longer-1328897162395/#article_tab_article).

[14] Marli D. Riggs, "Survey shows advisers must factor family support into retirement needs," July 13, 2011, Employee Benefits Advisor online (http://eba.benefitnews.com/news/retirement-financial-SunAmerica-consumers-planning-2715532-1.html).

[15] See for example E.S. Browning's analysis, cited above.

[16] Teresa Ghilarducci, "Our Ridiculous Approach to Retirement," July 21, 2012, New York Times Sunday Op-Ed, online (http://www.nytimes.com/2012/07/22/opinion/sunday/our-ridiculous-approach-to-retirement.html).

mutual fund companies for holding particular funds for less than 90 or even 120 days, as well as the supposed negative impact on funds themselves. It's better, most of Ghilarducci's "guys" tell you, to "set it and forget it. You won't even notice how much money you're saving until you need to retire, and there it will be, waiting for you!"

But given the results of the FAA strategy for Baby Boomers who adopted it early on, these words could not be more portentous. Having waited for the results of their "set it and forget it" approach, only when they planned to retire have so many plan participants realized that their contributions and investment returns do not amount to nearly enough to continue in the lifestyle to which they've become accustomed, at least not for long.

Retirement Income Security Risk and FAA vehicles

Granted, if a Retirement Income Security that takes into account the increased costs of longevity, health care, dependents and cost of living increases *requires at least a double-digit average annual return*, results look bleak for traditional pie-chart strategies yielding an average of only 6 to 8% annually. History tells us the stock market has seen increases of roughly 10% a year over time, but recall the emphasis, in this strategy, on avoiding Investment Risk, or major losses in a market downturn. In MPT-guided products, the balance between equities and debt securities is meant as a hedge against volatility, supposedly insuring the plan participant that even if his metaphorical ship makes the trip across the ocean more slowly with reefed sails, at least no storm will upset it, and it will arrive intact.

One immediately understands the problem with such a reassuring metaphor if one names that ship "The Mayflower," and places it on the ocean in the 17th century. Indeed, if *that* ship made the crossing of the Atlantic too slowly, it would run out of provisions, its passengers would starve, and it would never make it to Plymouth Rock. Likewise, MPT-guided products, committing to a formula by which a portfolio will *always* include an asset that works against others in the portfolio, fate themselves never to achieve the returns necessary for Retirement Income Security.

If the Mayflower metaphor is too literary for you, perhaps you play golf. The story goes that a well-known former professional would be invited by business associates, from time to time, to play rounds with their colleagues or clients. He didn't mind doing this favor for his friends, since it enabled him to keep playing at some of his favorite courses.

MPT-guided products, committing to a formula by which a portfolio will always include an asset that works against others in the portfolio, fate themselves never to achieve the investment returns necessary for True Retirement Income Security.

What he did mind was the way some of them—too many, in his estimation—would watch him make a difficult shot and then ask, "so what'd you hit there?" After some time he began to respond "seven iron," automatically, to each of these requests. Finally, he would stop responding altogether and merely hold the club head level with the inquirer's eye, on the heel of which he had the number "7" engraved—not just for his seven iron but for every club in his bag. It wasn't long into the round before everyone got the joke and stopped asking.

What's meant to be funny—ridiculous—impossible—of course, is the way a golfer would use the same club on every shot during his round, regardless of the particular conditions that determined what was needed—the weather, his lie, distance from the hole, his own skill and experience, or whether he and his partner were being "pushed" on their Nassau bet. Granted, it would be possible to *complete* the round in this way, but in so doing a player would be disregarding the whole point of the game and replacing it with something else. Comparisons to the MPT strategy for retirement savings are obvious: it makes no sense to approach each investment of your savings on your way to retirement as if market conditions were always the same. Doing so (or doing nothing) will certainly produce some kind of balance in your 401(k) when you reach the age you wish to

retire, but it completely abandons the goal of attaining Retirement Income Security in an era in which many middle- and upper class Americans are leading more healthy, active, longer, and more expensive lives.

A Fair Test Case

If these logical comparisons (and the litany of evidence already for a deepening crisis in retirement security) are not enough for some skeptics, a mathematical example might help.

Given new norms for time-to-degree and the difficulties of the current job market even for college graduates, it would be fair to consider a young woman who finally lands her first career job with a salary of $45,000 per year at age 28, and in the meantime has saved $10,000. She hopes to retire at age 65 as her parents did, so she enrolls immediately in her company's 401(k) plan, begins contributing 6% of her salary to her retirement savings account and is lucky enough to get a 3% match from her employer. Although she does not consider herself wealthy enough to hire a financial advisor, her company has followed Federal guidelines by investing her money by "default" into a Target Date Fund (TDF).

Her situation and background are not unreasonable, nor is the actual performance of her investment. Given the rising costs of health care, especially, along with the fact that her parents and many of her relations have lived into their 90s, our employee is concerned enough about Retirement Income Security to consider twenty times her final salary her savings goal. And since she has begun her saving as soon as it became possible for her, she sees no reason why she would not succeed.

And yet she will not—not by a long shot.

Given the fact that her goal of Retirement Income Security is based on a multiple of her final salary, we can postulate for our example a modest series of regular inflation-based increases and promotions that average out to 3% a year, giving her a final salary, at age 65, of $130,000. Multiply that number by 20 and we find her goal to be a nest egg of $2,600,000. And yet beginning at age 28, contributing a total of 9% of her salary toward retirement and investing it at 6% per year—a conservative yield for Target Date vehicles—she will have amassed only $872,000, short of her goal by over 1.7 million dollars. At that rate, in fact, she would have to work until age 94 to amass what she had needed for Retirement Income Security at 65.[17] Even considering an ideal circumstance where she could ensure retirement at the peak of a bull market with the corresponding expected 8% long-term return on her TDF investment, she would still fall over $1.2 million short and need to work 11 years beyond her desired retirement age of 65.

In our current economic environment, some companies and financial advisors are beginning to caution future retirees to readjust their expectations for retirement (travel and leisure, for some, seem on permanent hold), but adjustments to *goals* in the present example do not change the facts enough to matter.

For example,

- dismissing the rising costs of living in retirement and adjusting her expectation to live on only 85% of her final salary only decreases her shortfall to 1.3 million dollars;
- adding 3% to both her and her employer's contributions (if that were possible) would still leave her over $800,000 short.

FAA's "Passive" Retirement Saving as Traditional Pension Hangover

If the math doesn't work, why then are FAA products—or the "set it and forget it" strategy of retirement savings—so enduring? Despite the number of opinion pieces, surveys, research studies and news articles from all quarters of the financial community revealing that the *average performance of mutual funds relying on Modern Portfolio Theory will not provide Retirement Income Security for the vast majority of American retirees*, a gradually shrinking but still significant number

---

[17] See AARP's calculator via their webpage at (http://www.aarp.org/work/retirement-planning/retirement_calculator/). Another convenient Retirement Income Security Calculator is available at the Compass Institute (http://www.compassinvestors.com/CIH/CIH_Calculator_Web_Version_Source_V2_Charts_Inline.xls).

of financial advisors still believe that the FAA model only needs to be adjusted. Or worse, they settle for the claim (correct, as far as it goes) that the effectiveness of FAA strategy in defending against market downturns, along with the relative ease of managing such an account, somehow makes a Target Date Fund (with an average annual return of 6-8%) "desirable" if only because it is better than what *they* may see as the only alternative (picking your own funds and perhaps even losing money on your way to retirement).

Thus a recent study by the Putnam Institute confirms the major weakness of the MPT-guided strategies, and correctly (albeit indirectly) identifies that weakness in projected investment return, arguing that the only method of improving returns given the "pie chart" or "balanced" asset mix is to increase one's contribution or "deferral rate" of income.[18] In the "best case" example presented by the Putnam study, when an employee increases her contribution rate of 4.5% (3% plan participant, 1.5% company match) to 11% (8% plan participant, 3% matching), their projected balance shifts from $136,400 to $334,000—a 244% increase, both in the overall contribution rate and the final plan balance.[19] The question is, would that be enough for even the average retiree? To be so (depending on a retirement savings goal of 10x to 20x final salary), the case would have to involve a final, now replicating salary of between $16,000 and $30,000.[20]

Their specific "best case" scenario aside, the Putnam Institute's strategy for improved retirement portfolio balances quickly runs up against a number of practical problems, among them federal limitations governing income deferral. More important to note (as we saw in our own hypothetical example above) is the mathematical fact that such increases in the "best case," or any case following this strategy, follows a simple *linear* function. While increased contributions certainly lead to higher total savings in retirement [Figure 1 below], that total is limited by the same problem that makes real Retirement Income Security (20 times ones final salary in total savings) impossible to reach with all MPT-guided products: an investment return rate hobbled by asset allocations that *by definition* work against one another.

Another defense of FAA funds brings evidence that since the crash of 2008, mutual fund managers whose Target Date funds lost heavily in that downturn have tweaked formulas to better withstand volatility, especially as the fund reaches its target date. According to a recent Morningstar analysis, losses "during the recent market meltdown [of August 2011] were less severe for 2010 and 2015 TDF series."[21] Still, SecondAct.com columnist Mark Miller's endorsement of this improvement sounds like a back-handed compliment: "The basic idea is sound, since many investors don't rebalance or pay attention to reducing risk as retirement approaches," or in other words, since no one's cooking, we might as well warm-up these leftovers. The fact remains that the "advantage" of an improved TDF—its resistance to loss (an obviously important element of any retirement strategy)—is a necessary but not sufficient condition for achieving Retirement Income Security. Without significantly improved return alongside such resistance to loss, any retirement strategy based on the formulaic approach of MPT performs less like a time capsule full of money than a ticking bomb. Time to retire? Boom. You don't have enough.

---

[18] W. Van Harlow, "Defined contribution plans: Missing the forest for the trees?" quoted in Plansponsor.com, August 13, 2012 (http://www.plansponsor.com/DC_Plan_Sponsors_Should_Focus_More_on_Deferral_Rates.aspx).

[19] It is notable that the author seems wary of the employer's willingness to increase contributions equally: in fact the employee has increased her individual contributions by 267%.

[20] To put these numbers in perspective, consider the *US Federal Poverty Line* for a single person in 2012 is just over $11,000.

[21] Mark Miller, "Target date funds perform better in downturn," September 1, 2011, Secondact.com online (http://www.secondact.com/2011/09/target-date-funds-have-performed-better-in-latest-market-downturn/).

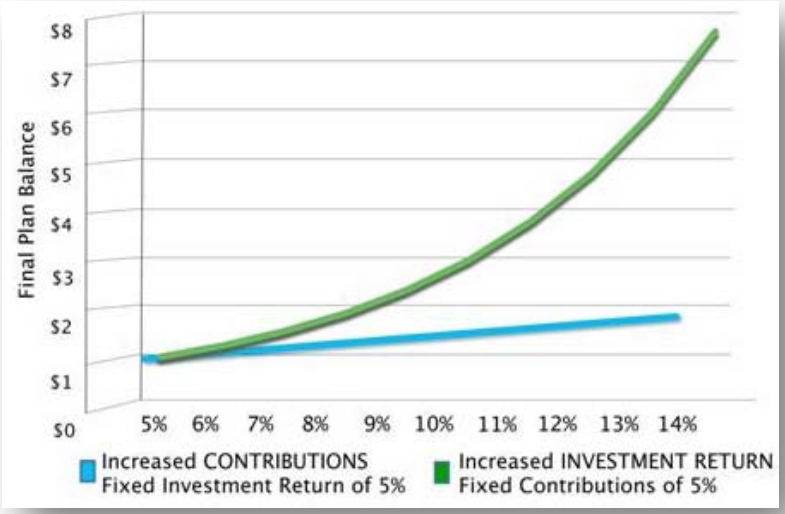

Figure 1—Investment Return vs. Contributions

And yet Americans persist in demanding or expecting success in a savings strategy that requires little or none of our own expertise or attention. Whether MPT is seen, somewhat cynically, as the theory behind reducing the work involved in consulting clients, or more seriously as a strategy meant to attain the highest average return given a fixed mix of assets in a retirement portfolio, the dominance of the *idea* of a "passive" approach to 401(k) management ("set it and forget it!") is striking.

> ***Without significantly improved return alongside such resistance to loss, any retirement strategy based on formulaic asset allocation performs less like a time capsule full of money than a ticking bomb. Time to retire? Boom. You don't have enough.***

Historically, of course, traditional pension plans did offer employees a pure benefit, with little or no sacrifice made by the employee for this benefit on the way to retirement. Few such plans still exist, but remembering them, it is not surprising that Baby Boomers expect at least the "passivity" of this long-awaited benefit to be preserved in the system that replaces it. And a persistent cultural memory may even reach beyond the industrial setting, back to earlier domestic relationships where the elderly could take for granted the support of an extended family in a homestead or neighborhood, though it is clear the elderly in the United States have never enjoyed the status of their counterparts in Eastern or Native American societies. In any case, it is notable that in this era, as elsewhere in American history (see for example the Gettysburg Address), the citizen/employee's attitude toward the future is proleptic—acting, in the present, in anticipation of a future possibility, seeking ultimately an ideal, not a real, solution. Thus it is, perhaps, that we anticipate, in our relaxed management of our investments for our retirement (set it, forget it), the relaxation of retirement.

Psychology and history aside, in the vast majority of cases, what should be clear at this point in our analysis is that it is not any specific bad advice provided by a financial consultant or the plan participant's inconsistency in his or her contribution or contribution level that leads to the financial disaster of running out of money in one's retirement years.

Two more fundamental errors, both of which are built into investment strategies spawned by MPT, have not been sufficiently corrected:

- Unrealistic estimates of what total retirement savings Retirement Income Security will require, especially in light of a health-care system that promises longer life (an undeniable good) along with the double-edged liability of more years of necessary income in retirement *and* the rapidly increasing cost of life-saving and prolonging treatment.

- An acute sensitivity to *Investment Risk* (the possibility of losing a large part of your nest-egg in a bear market) that completely obscures *Retirement Income Security Risk* (the possibility of running out of money before you die, or becoming unable to support yourself and your dependents).

Do We Really Need That Much?

The despair of working people quoted in the surveys with which we began this paper brought us two related ideas, one hopeful, one depressing: 1) Americans are beginning to take the Retirement Security Crisis seriously, but 2) now that they are facing their real needs seriously, many have concluded that they will never make it. If one is required to amass twenty times one's final salary in savings in order to continue to enjoy one's standard of living in retirement, well, then, maybe retirement, like so many other good things, is quickly becoming (or has already become) the property of the infamous "1%."

Recall, for example, our hypothetical scenario of a 28 year-old woman with a projected final salary of $130,000 at age 65. If she is to ensure that salary as long as she lives in retirement, she faces the task of saving $2,600,000. Despite a respectable average annual return of 6% from the TDF funds in her 401(k), and a solid 9% of her salary going to retirement savings, she was still well over 1.2 million dollars from Retirement Income Security. Reading these figures, many—perhaps most—readers shook their heads in skepticism, thinking to themselves "impossible. The woman has done her part—in fact done it far better than 99% of people I know are doing it. These figures must be wrong—especially this magical goal of 20 times ones final salary. No one making that kind of salary could save that much."

(This is what I thought, anyway, and *I was the one inventing the scenario*).

Twenty times one's final salary seems like too much until one thinks of what its purpose might be. With that nest-egg, our retiree could *literally stop worrying about making money*, investing the principal easily at a guaranteed 5% yearly payout (or perhaps a bit more), and simply live on the interest, year after year, even if she lived to be 105. This is true Retirement Income Security, one might think. Indeed it is, until one contemplates the fact that the longer she lives, the deeper a dent inflation will take out of what used to be a lifestyle of those making $130,000 when she retired. Add one catastrophic accident or illness whose costs would exceed Medicare, or perhaps an adult child who experiences financial ruin and needs support, and what seemed like a ridiculously conservative estimate starts to sound just "OK."[22]

> ***"...for most plan participants, there is only so much money one can set aside in the monthly budget. Success should not be a question of increasing what we go without as we advance in our career, but one of making sure that what we can afford to set aside, month to month, performs well enough to provide us with a comfortable retirement."***

As we have seen in the example of the Putnam Study's "best case," adjustments to her contribution rate, even if she reaches the maximum allowed, will never make enough difference in her savings success, nor do adjustments to her expectations for lifestyle in retirement or for her age of retirement. In fact, the only element in the equation that can make a significant change in her ability to reach Retirement Income Security is her *average annual rate of return on her investment*.[23]

---

[22] If the accumulation of twenty times last salary derives a steady and still robust income, it also makes it more possible for retirees to compensate for unforeseen or extraordinary expenses well into retirement—high inflation, improved quality of life, donations to favorite charity organizations, etc.

[23] For the Putnam study "best case," the tremendous difference between income deferral (it must be recalled that the employee is actually reducing her present salary to make this strategy work for her future) and *an improved rate of return on investment* is made easily clear. According to the assumptions of the report, we can calculate a 6.4% average annual return in this case. If the employee were able to increase not her own contributions, but her annual rate of return by 244% (from 6.4% to 15.6%), her final balance would have grown to $1,519,903, or a 1,110% increase in plan value at retirement. Again, see Figure 1.

Do the math (or use the Compass Institute calculator at www.compass-institute.org/RIS/), and one discovers that in order to accumulate her needed nest-egg of $2,608,000, she can continue to contribute 6%, her employer 3%, and she can continue to rely on salary increases of 3% per year, but her average annual return needs to increase to *at least 11%*.

Granted, there is a well-known investment vehicle that since its inception has yielded an average of 10% per year over time, but that vehicle is the stock market—not as risky a place to invest one's money as say, the commodities floor, but still far too risky, conventional wisdom tells us, for investments that we cannot afford to lose. Put your money in the stock market, but don't plan on retiring in 1930, 1977, 1983, 1997, 2003, 2008, 2011 and who knows what year down the road.

And thus we circle back to the philosophy behind FAA vehicles, built to counter Investment Risk but not to overcome Retirement Income Security Risk.

Alternatively, financial advisors sometimes suggest, employees should look to other assets and other methods of retirement savings beyond their 401(k) plan. One actually suggested to me that if plan participants are not satisfied with their plan performance, perhaps they can save the money they would "normally" spend on golf club memberships, lavish vacations and or other discretionary spending to supplement their 401(k) with IRA or other savings investments. But as Kevin Coppola put the issue in a recent radio interview with Mark Berube, founder of the Patriot Advisory Group and host of "Smart Money Solutions," for the vast majority of employees in the United States, the 401(k) plan, in terms of tax benefits and asset flexibility, offers the best savings vehicle for retirement now available. "Besides," he continued, "for most plan participants, there is only so much money one can set aside in the monthly budget. Success should not be a question of increasing *what we go without* as we advance in our career, but one of making sure that *what we can afford* to set aside, month to month, performs well enough to provide us a comfortable retirement."[24]

Fiduciary Implications: ERISA's "prudent expert" standard, and how much time do your employees spend at work worrying about their financial future?

As defined benefit pensions have disappeared, the implications of the Employee Retirement Income Security Act of 1974 (ERISA) have taken on new importance for plan sponsors and fiduciaries. Although "voluntary," the guidelines of ERISA 404c remind employers that by transferring the *duties* of retirement savings to employees, they do not escape responsibility for providing investment options, information, and support for plan participants. Protecting themselves from legal liability in the event of participant losses, fiduciaries must demonstrate that they have made decisions in this area with the skill and care appropriate not only to prudent persons but to *prudent experts*.

In its October 2011 publication of "Final Rules" for "Investment Advice—Participants and Beneficiaries," the Employee Benefits Security Administration was reluctant to define what such "expertise" actually amounts to.[25] Even so, given

---

[24] Radio interview, "Smart Money Solutions," June 17, 2012.

[25] In its discussion of what investment strategies would be appropriate for fiduciaries or their representatives to use in advising plan participants, the Department of Labor seems to demur:

> In response to the Department's solicitation, commenters indicated that ["]generally accepted investment theories["] is a term defined by wide usage and acceptance by investment experts and academics, and is subject to change over time. Most did not believe, however, that the Department should specifically define or identify generally accepted investment theories, or prescribe particular practices or computer model parameters.

- the increasing number of publications in a variety of financial and general media declaring a retirement "crisis,"
- an increasing consensus that the previously accepted estimates for the amount needed to achieve Retirement Income Security should be greatly increased or in many cases doubled, and
- mathematical models based on the historical performance of MPT-guided portfolios that demonstrate consistent shortfalls in accumulated retirement savings for plan participants,

it seems less and less feasible for fiduciaries or their representatives to tell plan participants to "set it and forget it"[26] and then argue (in the event of legal challenges) that acting as "prudent experts" they remained unaware of the likelihood that this investment strategy might well leave retirees in danger of running out of money in their retirement years.[27]

While many fiduciaries feel secure in the investment options and information they have made available, or in the third-party support services they have invested in for their employees, the legal cost of complacency may appear only after retirees find themselves in "crisis" in more significant numbers in future years. In an interview last year, Elaine Sarsynski, chairman and CEO of MassMutual International and Executive VP of Mass Mutual's Retirement Services Division, warned plan sponsors against focusing on "static metrics" alone:

> They look at a 94 percent participation rate and say, 'Great I don't need to do anything.' But that participant level may be disguising who will actually be retirement ready. If they roll up those participants they might find only a 40 percent probability for participant success, and that's when plan sponsors will look to their advisors for plan redesign.[28]

Moreover, if corporate leaders are sadly likely to defer action on *future* ERISA problems, the question of the *current* costs of what Charles Schwab's study *New Rules of Engagement for 401(k) Success* calls "Workplace Worry" should be seriously considered. In the Schwab study, 68% of participants admitted they worry about their personal finances at work—a loss of productivity and retention that, according to the Pension Finance Employee Education Foundation, may be costing US employers much as 4.5 billion dollars annually.[29]

For our purposes, the key phrase agreed upon is "change over time." Modern Portfolio Theory, in other words, may well need modernizing.

See "EBSA Rules: Investment Advice—Participants and Beneficiaries" (October 25, 2011) *Federal Register,* Volume 76, number 206, (http://webapps.dol.gov/FederalRegister/HtmlDisplay.aspx?DocId=25414&AgencyId=8&DocumentType=2).

[26] More specifically, the Pension Protection Act (2006) has extended ERISA 404c protection to situations where plan participants' savings contributions are invested in a "default" option.

[27] The Compass Institute's 50-page white paper on the topic, published September 17, 2004, is entitled "The Fiduciary Trap: Plan Participants and the 4th Metric," available through reports@compass-institute.com. Subsequently, the Institute has issued two shorter papers on the topic responding to recent DOL publications and the development of ERISA law, "Ticking Fiduciary Time-Bombs" (September 1, 2007) (www.compass-institute.com/CINST_Fiduciary_Time_Bomb.htm) and "Qualified Default Investment Rules May Spark Legal Action" (October 3, 2007) (www.compass-institute.com/CINST_QDIA_Rules.htm).

[28] Jenny Ivy, "A 'perfect storm' for retirement readiness" [interview with Elaine Sarsynski], April 14, 2011, Benefitspro, (http://www.benefitspro.com/2011/04/14/a-perfect-storm-for-retirement-readiness).

[29] See also Ginny Kipling, "The link between employee stress and financial wellness," (May 31, 2011), Benefitspro, (http://www.benefitspro.com/2011/05/31/the-link-between-employee-stress-and-financial-wel).

Reducing Retirement Income Security Risk: New Alternatives to Modern Portfolio Theory

In sum, if

- The costs of health care, longevity, inflation have greatly increased the needed sums necessary to achieve Retirement Income Security,
- Additional contributions to retirement accounts may be necessary but never sufficient to meet Retirement Income Security Needs, and
- Formulaic, "balanced" or Target Date and other MPT-guided funds or strategies have proven insufficient in achieving the required average annual return to achieve a sufficient accumulated retirement savings to maintain ones accustomed standard of living in retirement, for as long as needed,

then what options are left?

It is the "Mayflower" metaphor of retirement savings that actually suggests the key to moving beyond MPT-guided strategies and their limited returns. Recall, the suggestion was that if the Mayflower set sail for the New World with shortened sails, just to be safe, no matter what weather or wind-direction, the ship would have run out of food before the Pilgrims reached land. It is fortunate for American history that the Mayflower's captain was not sailing by formula. Rather, he was sailing according to what the weather allowed, only shortening his sails when necessary for the passengers' safety. What the metaphor suggests is that rather than pre-determine and maintain the mix of assets in a retirement portfolio, or hope that the "glide path" of asset adjustment formulated in advance "lands" on the right market when it's time to retire, the only strategy that can avoid the most fundamental risk—that of running out of money in retirement, or never reaching one's necessary destination—is one that *adapts itself* to the "weather" of the market.

A "common sense" approach to investing, this strategy is not exactly new.30 In 2009 William Sharpe, Stanford's Professor of Finance, Emeritus and the winner of the 1990 Nobel Memorial Prize in Economic Sciences described it as "an alternative approach, in which an asset allocation policy adapts as markets move, taking into account changes in the outstanding market values of major asset classes."[31]

Predating Sharpe by nearly seven years, the Compass Institute in 2002 distinguished what it began calling Adaptive Asset Allocation™ (AAA)[32] as superior to the formulaic approach of MPT, in two ways:

- AAA reviews and modifies an investment mix more frequently (what Adam Butler and Mike Philbrick have more recently dubbed "rebalance frequency"), and
- AAA determines asset allocation in a given portfolio based on current market realities rather than on a fixed and arbitrary ratio of stocks to bonds determined by an investor's answers to a "risk tolerance" profile (what Butler and Philbrick call "rebalance input").[33]

---

[30] Many readers may recognize the contours of "momentum" theory here. For a thorough analysis, see Dimitri Vayanos and Paul Woolley, "A Theoretical Analysis of Momentum and Value Strategies," White Paper, July 5, 2012 (http://personal.lse.ac.uk/vayanos/WPapers/TAVMS.pdf) and more recently, Shannon Zimmerman, "Big Mo," October 9, 2012, Morningstar Advisor (http://www.morningstar.com/advisor/t/64793015/big-mo.htm).

[31] William F. Sharpe, "Adaptive Asset Allocation Policies" (November 2009) (www.stanford.edu/~wfsharpe/retecon/wfsaaap.pdf).

[32] For an overview of Adaptive Asset Allocation™ strategies initiated at the Compass Institute, see http://www.adaptiveassetallocation.net/.

[33] Adam Butler and Mike Philbrick, "Adaptive Asset Allocation™: A True Revolution In Portfolio Management," May 12, 2012, Advisor Perspectives (http://www.advisorperspectives.com/commentaries/bp_51412.php). The Compass Institute has detailed this approach on its "Adaptive Asset Allocation™" website (http://www.adaptiveassetallocation.net).

In these two characteristics, performance and safety are effectively combined. Where the returns of MPT-guided strategies are compromised by the necessity of always carrying some assets moving *against the market* (bonds in a bull market, equities in a bear market), AAA's freedom to adjust asset allocations on a regular basis so that a 401(k) portfolio is moving consistently *with the market* (stock-rich in bull markets, bonds and fixed income funds for bears) brings the average annual return of AAA products beyond the double-digit returns required to reach the seemingly astronomical sums necessary for Retirement Income Security according to more recent experts.

Moreover, by encouraging investors to monitor their accounts on a regular basis,[34] AAA strategies will avoid the losses of prolonged down markets (or by loading up in bonds, even turn them into gains) and begin positive runs from higher account balances, leading to larger overall gains over time. Butler and Philbrick find the results of AAA so promising, they conclude their article with the claim that financial managers who embrace this adaptive strategy "will increasingly dominate traditional managers; those who fail to adapt will, inevitably, face extinction."

Stark Differences from "Market Timing"

At first blush, this two-pronged strategy might produce more questions than answers, or even lead skeptics back to Teresa Ghilarducci's complaints about the complexities of money management that the average worker is usually not prepared to take on. Even if I leave the "set it and forget it" style and monitor my account more closely, how do I know when to make changes? And when I do make changes, how will I know what funds are moving "with the market" and which might go down? In a word, this sounds like market "timing" more than anything else—a suspect strategy even in a professional's hands.

But of course market "timing" as it is usually understood is guided by competitive emotions: greed, or the hope of being the "first in" on a rising stock and making more than everyone else on it; and fear—getting out before you lose, or getting out before everyone else does and thus comparatively "winning." As such, most researchers would not consider it an investing "strategy" at all. (One might note the latter emotion—fear—is actually the centerpiece of MPT-guided attempts to avoid Investment Risk).

The results of Adaptive Asset Allocation have been proven to *outperform* those of MPT strategies for retirement accounts (see Figure 2 below), but those results, happily, emerge less from anything like luck, or will, or even financial acumen, than the regular, objective application of *common sense*. It is not that AAA can avoid or predict the housing market crisis of 2008 or the European Debt crisis of 2011 (anymore than the Mayflower captain can avoid a sudden squall). In fact, in some cases, formulaic asset management will outperform AAA in the short term.[35] But without the requirement of "staying the course," no matter what happens, or the assurance of long-term inattention, AAA's freedom to *change course* when such crises do occur—even a matter of weeks after a major downturn—will almost always produce better results in the long run. In the end, what makes AAA superior is *activity* (or merely paying attention!), as opposed to passivity—not the timing of its moves, but its ability to move at all.

Investors using the AAA strategy find the requirement of *rebalance frequency* or the regular monitoring of asset allocation in a 401(k) account the real key to improved results. Even if a sharp market downturn occurs the day after one's scheduled "check" (assuming, for example, the investor is on his honeymoon and not necessarily reading the newspaper), the worst that can happen *can only happen* for four to six weeks, at which time he is *scheduled to notice what's going on* and will move his money out of any aggressive funds and into bonds for the time being. When the market turns again, his scheduled "check" may not coincide with a

[34] For Butler and Philbrick, every four weeks. Research at the Compass Institute concludes that investors should schedule a review of their portfolio every four to six weeks.

[35] See Figure 3 below for a *direct comparison of actual results* of a popular TDF and one plan participant's results with an AAA strategy, specifically focused on the months after the sharp market downturns in 2008 and 2011.

banner day on Wall Street, but he won't miss more than a month of the run-up.

Now. If you're twitching about his "missing out" or his early losses, you need to check your emotions at the door and read the last sections below.

Performance of Adaptive Asset Allocation: Hypothetical, Actual

Measured Performance 1: Audited Back-Tests

In 1998, research initiated at the Compass Institute resulted in a series of algorithms for the analysis of the optimum combination of available mutual funds in any 401(k) portfolio over a limited time period. Back-tests of 401(k) management based on these algorithms were initiated, and the results were promising enough to begin marketing their product commercially in 2003.[36] One of the chief findings of this research was that if asset allocations were re-analyzed every four to six weeks, the standard disclaimer appended to every mutual fund's report could be reversed: when viewed within the context of AAA's rebalancing schedule of four to six weeks, *past performance can be treated as a good indication of short-term future performance.*

The Adaptive Asset Allocation™ (AAA) Computer Model used by the Compass Institute in its research follows a 5-step process:

1. Charts of each mutual fund in a given portfolio are divided into multiple time slices.
2. Next, the Direction (up or down), Degree (angle of movement) and the Duration (elapsed time) of each time slice are evaluated.
3. A weighting is then applied to each time slice.
4. The sum of the time slice weightings is used to rate each fund in the portfolio (the "Score").
5. A percentage-holding amount is then determined for each fund based on the relative Scores of each of the fund choices.

Ideally, only 25%- 30% of the funds available in any 401(k) plan are allocated to or utilized in any five-week period. Extensive research has demonstrated that as you increase the number of funds utilized per five-week period and approach the 50%-plus utilization level of the funds in the portfolio, performance decreases and ultimately deviates to the average performance of the entire portfolio. The number of time slices, the weighting algorithms and the percentage amounts are the results of five years of extensive study by the Compass Institute.

Using this procedure, the Compass Institute has calculated returns for its Adaptive Asset Allocation strategy on 40 sets of mutual funds available to various corporations, private individuals and state pension systems across the country between 1997 and the present day. Figure 2 represents the average performance of an initial $100,000 investment in all 40 fund groups back-tested with the Compass Institute's research compared to that same amount invested in a money market fund, the S&P 500 Index, and the best and worst performing Fidelity Freedom Target Date funds (as proxies for the performance range of MPT-guided funds). As the audited back-test reaches its 16th anniversary, the average annual return remains over 12%.

To return to our hypothetical case, we find that as impossible as it seemed for our 28 year-old making $45,000 a year in salary to accumulate the $2,600,000 she needed for Retirement Income Security at age 65, in fact with Adaptive Asset Allocation™ that performed along the lines of the Compass Institute research, yielding just 11%, she not only *attains* her goal but *exceeds* it by $246,000 *and* could even enter her golden years a few years sooner at age 63.

[36] The Compass Investors Horizon™ service is available at www.compassinvestors.com.

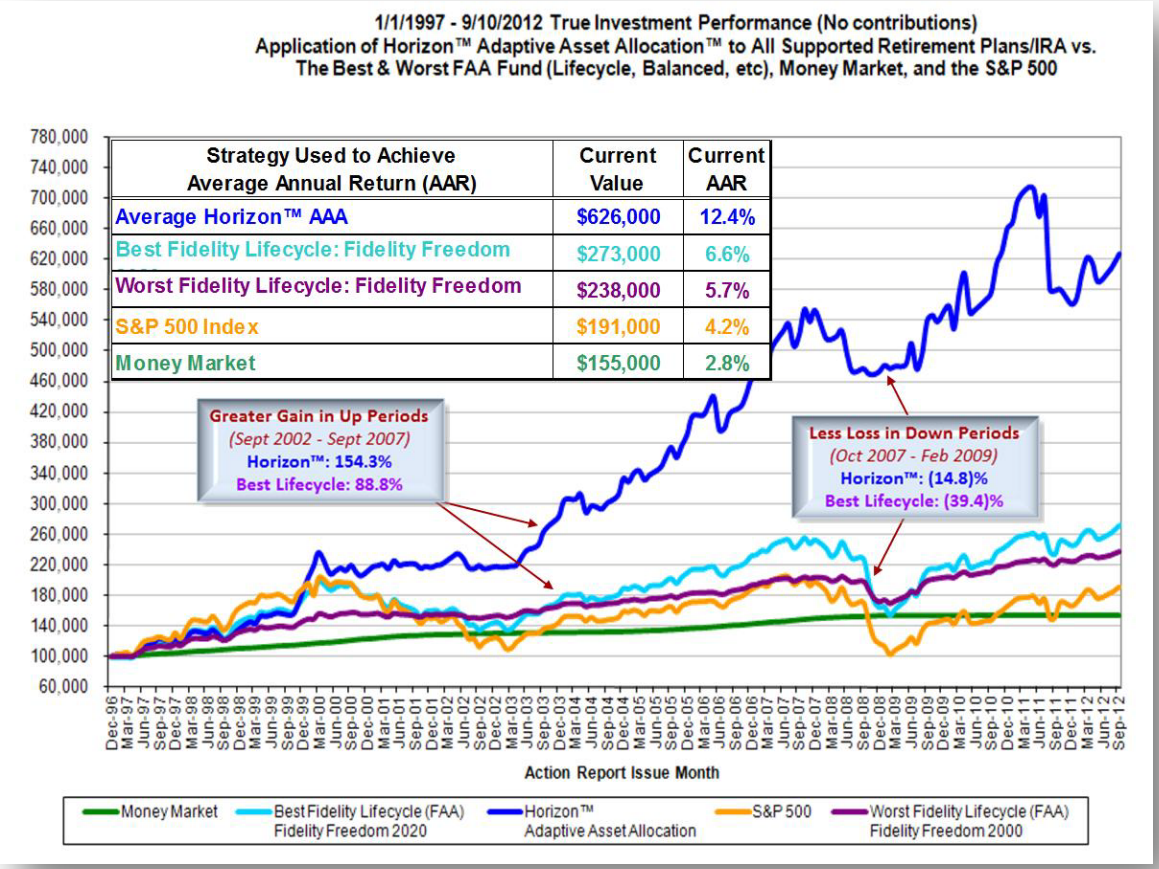

Figure 2—Horizon™ Adaptive Asset Allocation™ vs. Other Strategies

A Word about Back-Testing, and The Professor's Return

Innovation is inevitably accompanied by skepticism. Before concluding, it's important to address some basic objections:

1. Audited back-tests, hypothetical cases, and illustrative metaphors may be convincing to some, but these do not involve actual investments made for anyone's retirement savings. Until we see actual results, this sounds "too good to be true."

2. Piling up on assets-of-the-week is dangerous business, especially for untrained investors; those who try to "follow the market" on a four to six week cycle will always get burned, especially in marked downturns such as occurred in 2008 and 2011.[37] As one of the leaders in risk management at a major investment firm put it, "after 2008, all people want to find out is how you did in the crash, and why going with you means they won't take a hit like that again."

In their research report, "Fairies, Pixie Dust, and Backtests," (March, 2010) Morningstar Investment Services, Inc. presents the major problems with back-testing and why they do not endorse back-tested models—that is, beyond the common-sense notion that "past results are not a guarantee of future performance."[38] To begin with, back-tested models are removed from real-life pressures that commonly affect the investing strategies and decisions not only of individuals but of portfolio managers and investment

[37] For a bitter critique of momentum theory, see Frank Armstrong, "Greater Fool Theory on Steroids," Investor Solutions, (http://www.investorsolutions.com/news/342/120/Momentum-Investing---Greater-Fool-Theory-On-Steroids/).

[38] "Fairies, Pixie Dust, and Backtests," (March, 2010) Morningstar Investment Services, Inc.

committees, and in a variety of ways: "there are no pesky investors demanding to know why the strategy has underperformed over the trailing month, no bouts of fear amid uncertainty, no career risk, and no transaction costs, to name a few." More important, consciously or not, back-tests favor strategies that have been successful over the real "goats," and the conditions that enabled that success may or may not be present in the future, or in "real time;" thus, we often see models that back-tested sensationally produce mediocre results when the "selection" process that results from hindsight is eliminated.

Last, the predictability of any back-test of "tactical allocation" strategies is made nearly impossible due to the multiplicity of moving (and often-times hidden) parts. In fact "tactics" that remain constant given whatever market conditions (and thus provide consistency and measurability), cease to deserve the term "tactical" at all, which implies strategic changes made in response to changes in the market.

It is not that [Adaptive Asset Allocation™] can avoid or predict the housing market crisis of 2008 or the European Debt crisis of 2011 (anymore than the Mayflower captain can avoid a sudden squall), but without the requirement of "staying the course," no matter what happens, or the assurance of long-term inattention, AAA's freedom to change course when such crises do occur—even a matter of weeks after a major downturn—will always produce better results.

Certainly these reservations are justified in many cases, but the quality of evidence of our research and procedures at the Compass Institute—and thus the reliability of the results demonstrated by Figure 2 above—differ markedly from those described in Morningstar's demurral. First, our results and procedures have been verified by Ashland Partners and Company, LLP, a leading compliance firm auditing investment management results.

The results of that audit demonstrate not only that the algorithms behind our strategy have not changed since 1997 but that our procedures and reporting processes are equally constant. Since the initial strategy yielded an algorithmic solution, whatever the market, no "emotion," "competitive need" or "fear" factors into our calculations. Nor have we chosen, for reporting purposes, favorable periods to track results. Covering a period of time that witnessed three bear markets—two of them quite spectacular—Figure 2 shows moments when our strategy not only lost money but lost it a bit faster, in some cases, than our benchmarks, only to gain back those losses faster than other strategies did. Finally, and perhaps most powerfully, far from "picking and choosing" only the strongest plans to include in the chart, Compass has allowed the interests of our associates and clients of Compass Investors' Horizon™ service to determine which fund groups to use in our research, since the point of Adaptive Asset Allocation™ has never been to produce the best theoretical result but to *improve the actual results of retirement investments for plan participants, whatever their choices may be.*

Measured Performance II:
Actual Performance of AAA vs. FAA in the Downturns of 2008 and 2011

For those still skeptical, or those who would prefer evidence involving "real money," I might present my own situation and actual results using Compass's AAA strategy.

I began working with Kevin Coppola at the Compass Institute in 1997, just after the State of Illinois made it possible for public university employees like myself to convert their pensions from a defined benefit model controlled by the State Universities Retirement System to a self-managed plan that worked more like a 401(k). The cost was a *complete sacrifice* of one's accrued retirement balance to that point, but given Springfield's already established policy of deferring pension obligations, I had little confidence that my pension guarantee would amount to much by the time I retired. Changes in the State of Illinois' pension policy in 2012, which eliminate formula options, lengthen the vesting period, and begin to reduce actual annual payouts by increasing actuarial estimates, have proven my instinct correct.

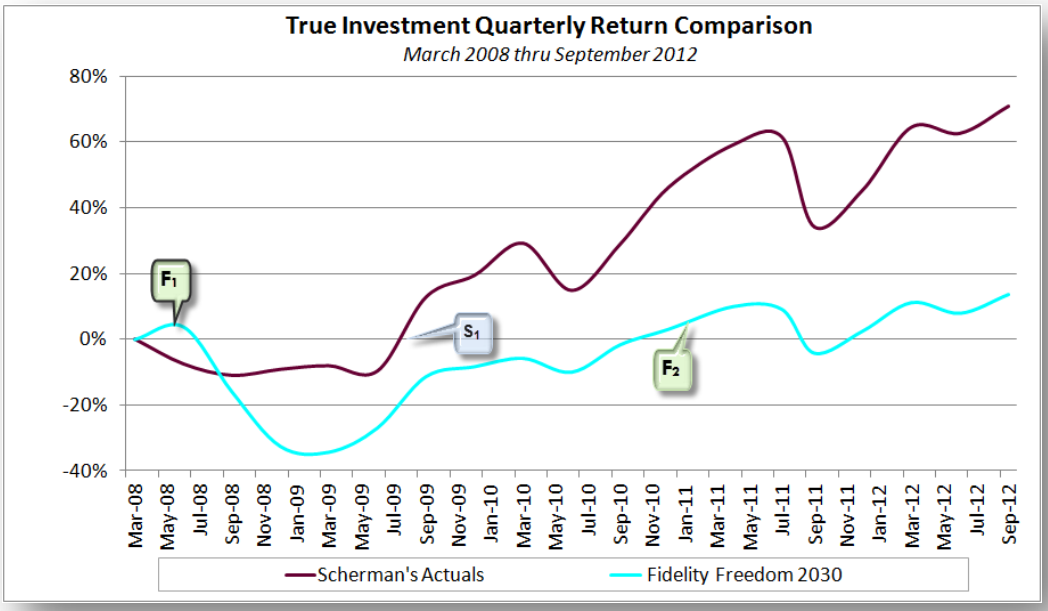

Figure 3—Scherman Actuals Comparison[39]

With the State still billions in debt, this promises to be only the beginning of sweeping changes for public employees in Illinois planning to retire in coming years. Of course, hundreds of thousands of state employees across the nation are facing similar downgrades.

Converting to the Self-Managed Plan back in 1997 lost me time and all the money I'd accrued since 1993. Having struggled to find a tenure-track position like so many other Ph.Ds in the early 90s, I was already late to start saving, and my background is not economics or finance but American literature. In other words, I would seem to be one of those employees Ghilarducci identified as *least able* to manage my retirement investments, with a late start and no specific training in financial management.

Even so, I did have advantages that would ensure *this* professor would never have to go the Breaking Bad route and learn to cook crystal meth. Illinois makes a generous match of 6.5% to my own 8% contribution to my retirement account with each paycheck (not a promise down the road), and with a robust set of Fidelity funds to choose from, my retirement account was in my own control.

Especially as a state employee whose self-managed retirement account options at Fidelity closely resemble that of a very large number of plan participants in the U.S., a comparison of my *actual results*, which derive from using the Horizon™ Adaptive Asset Allocation™ service, with those of Fidelity's highest-performing TDF—the 2030 Freedom Fund—might be instructive. And since both AAA's vulnerability to market volatility and its capability of weathering the recent market downturns in the market in 2008 and 2011 are in question, we can take a look at quarterly data points from early 2008 to the last reported quarter of 2012, and then focus particularly on the investment performance of the Freedom 2030 TDF and my actual portfolio around two key moments, June 2008 and July 2011, comparing where balances returned from their precipitous drops in severe market downturns.

As indicated in Figure 3, between June 2008 (marked F_1 on the chart) and January of 2009, Freedom 2030 lost 37% of its value and did not return to its June 2008 value until December of 2010 (F_2). Using an AAA strategy developed at the Compass Institute, my own account was never down more than 11% between March 2008 and May of 2009, and began the month of July 2009 (S_1) on a footing to make new gains)—some fourteen months earlier than the Freedom 2030 fund. In the downturn of 2011, Freedom 2030 performed better, losing only 9% of its

[39] Unaudited, real return, excluding contributions made. Freedom 2030 values are derived from the Compass Institute's audited back-tests.

value between June and September 2011 and returning to its June 2011 level by March of the following year. This time, my adaptive allocation portfolio took a greater hit than the TDF, losing 17% between July and September 2011, but it had returned to its July 2011 level by the end of March 2012, again ready to advance (and at a faster clip) no later than I would have been in even a high-performing TDF.

All of these gyrations are interesting, but most important are the longer-term results. Having recovered from the 2008 crash over 14 months ahead of Freedom 2030, my AAA-governed retirement portfolio realized a much greater return over the 54 month period between March 2008 and September 2012: over 70% true investment return in my overall portfolio, as compared to just a 14% gain in the Freedom Fund over the same time-frame.

Having recovered from the 2008 crash over 14 months ahead of Freedom 2030, my AAA-governed retirement portfolio realized a much greater return over the 54 month period between March 2008 and September 2012: over 70% true investment return in my overall portfolio, as compared to just a 14% gain investment return in the Freedom Fund over the same time-frame.

Conclusions and Action Plan

Gathering together evidence from a broad variety of experts, this paper has identified several points of consensus:

- The "retirement crisis" in the United States is widespread, with the vast majority of employees reporting in myriad published surveys that they have not saved enough and feel helpless to get on track to achieve retirement security. Even reputed financial advisors are including "lower your expectations" as a realistic response to this crisis.
- Given new estimates for longevity (especially in middle- and higher-income employees), increasing costs of health care, inflation and the increasing probability of the need to support a spouse and/or extended family in retirement, more experts are now advising employees to greatly increase their retirement savings goal. Twenty times one's final salary may be the new minimum required to ensure the continuation of one's standard of living through one's retirement years.
- Mathematically, even employees making the allowed maximum contribution to their retirement savings plan will still have to realize double-digit or near double-digit average annual investment returns on their retirement investments to reach this new standard by age 65.
- While "balanced" MPT-guided investment strategies are widely popular today, even informing the majority of "default" investment options for employees beginning their retirement savings, their average annual return of 6-8% falls far short of what is required for Retirement Income Security.

From these new assumptions, the following Action Plan for 401(k) management follows:

1. **Adopt Strict Realism.** Plan Sponsors should educate and encourage their plan participants to adopt realistic estimates for the total savings required to achieve *Retirement Income Security* and seriously consider 20 times their final salary as a minimum standard. Fiduciaries should encourage employees to investigate the real costs of retirement and to soberly consider the consequences of easy answers to a financial situation that for younger employees may seem too distant to worry about.
2. **Focus on the Endgame.** The focus on Investment Risk that informs MPT-guided investment strategies should be replaced by the broader and most critical concern of *Retirement Income Security Risk,* or the possibility of retirees running out of money before they die.

3. **Be Active.** This new focus requires individuals and financial advisors to be more vigilant and more active in their portfolio management. For investors planning not to "settle for less" in their golden years, the days of "set it and forget it" are over.

4. **Demand Performance.** Individuals and plan sponsors should seek out providers with expertise and investing strategies that allow plan participants to grow their retirement accounts both safely and effectively, focusing on long-term annual returns that consistently exceed the expected 6 - 8% average annual return of MPT-guided managed accounts and funds (balanced, Target Date, Life Cycle).

5. **Make Options Available.** Plan fiduciaries should investigate the cost/benefit, in terms of both potential fiduciary liability and worker productivity and morale, of directing third-party providers to offer active *Adaptive Asset Allocation*™ investment advice and programs as required and prudent supplements to MPT-guided portfolio options.

About the Author:

Professor Scherman teaches at Northeastern Illinois University, serving as Chairman of the University Planning and Budget Council from 2008 to 2012 and NEIU representative to the Faculty Advisory Council to the Illinois Board of Higher Education from 2004 to 2012.

Contact Information:

Professor Scherman can be reached through the Compass Institute at www.compass-institute.com.

For more information on Adaptive Asset Allocation™: www.adaptiveassetallocation.net.

For more information about the Horizon™ service: www.compassinvestors.com.

Disclaimer:

The views expressed herein are those of Professor Scherman, writer and editor for the Compass Institute, as of November 15, 2012. His opinions are subject to change at any time based on market and other conditions.

This is not a solicitation for the purchase or sale of any security or service and should not be construed as such.

Descriptions of the writer's portfolio performance are unaudited but presented as accurately as possible as of November 2012. They are not a guarantee of that portfolio's future performance or that of any other.