

Buyer's Guide to the Lowest Cost No Load Mutual Funds 2023

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Section 1.1: Overview and objectives

Greater experience and knowledge can lead to wisdom, but of course, that depends upon the individual. You might have found this book, because your experience with personal investing has been less than satisfying, and you are looking for a better way to invest and build up your wealth.

This book summarizes how individuals can invest efficiently, using highly cost conscious methods that are widely supported by objective research. By reducing your investment costs dramatically, you can more reliably achieve superior performance net of investment costs and taxes. When you invest in the lowest cost mutual funds, you retain a greater portion of your gross returns, and you build a larger portfolio over time.

Unfortunately, this wiser road to wealth runs counter to the gut instincts of most people who chase past performance winners. Only a minority of investors eventually come to realize the fundamental truth about investing: Superior past performance relative to the market's return is random and short-lived, but you can absolutely rely on excessive investment costs to bleed your portfolio year after year after year.

This book discusses why a very low cost index investment strategy is the best wealth building approach for individual investors throughout their lives. The lowest cost no load mutual funds simply deliver superior net returns over the long run, while they also reduce investment risk through the inherently greater diversification of index funds.

When you buy and hold the lowest cost mutual funds, you also find that investing is both easier and take much less of your valuable time. You only need to know where to find the lowest cost funds and how to buy them, and this book addresses those questions. The lists in this book

provide a quick, up-to-date, and efficient means to identify the full range of the very lowest cost, most broadly diversified no load index mutual funds grouped by asset classes.



Executive summary of chapter contents:

Chapter 2: How to buy the lowest cost no load mutual funds

On your own, you have to be proactive and seek out the lowest cost investment funds. Brokers and investment advisors get paid more to promote the more expensive funds. Therefore, do not expect their unbiased help, if you only want to buy the lowest cost no load mutual funds. There is good news, however. Once you know where to look, the lowest cost mutual funds are easy to buy directly.

Chapter 3: The lowest cost no load mutual funds available for direct purchase

This chapter lists over 250 lowest cost, diversified index mutual funds available for direct purchase by US individual investors.

These low cost funds are listed in thirty tables, grouped into these asset classes:

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The lowest cost mutual funds listed in Chapter 3 were selected using the seven rational screening criteria discussed in Chapter 4. This chapter helps you to understand why the vast majority of investment funds promoted by the investment fund industry do not serve your best interests. After all this industry fund chaff has been removed using these seven rational fund screening criteria, only the lowest cost, diversified, low turnover, index funds remain.

Note: As the author of this book, I have not accepted and will not accept any compensation in any form from any of the listed mutual fund companies. These lowest cost mutual funds are listed solely because they meet the screening criteria explained in this book.

Chapter 5: Other stock, bond and cash investment fund considerations

This chapter discusses topics of frequent investor interest, including buy-and-hold strategy, the number of investment funds to own, dividend stock funds, and target date mutual funds. It also emphasizes research on bond mutual funds, since bonds are complex, the bond markets are opaque, and bond trading is costly. You should only buy the lowest cost bond index funds, or you will just waste your money. This chapter also discusses how to evaluate money market mutual funds.

Section 1.2: An example of this book's low cost no load mutual fund tables

To give you a better sense of this book from the outset, this section provides an example of one of the thirty low cost no load mutual fund tables that you will find later in this book. The sample table in this section provides a listing of the lowest cost mutual funds benchmarked against the Standard and Poors (S&P) 500 stock market index, which is the largest US stock fund segment.

The S&P 500 stock index includes 500 stocks that account for 70% to 75% of US stock market capitalization. This index does not cover the entire US stock market and therefore it does not provide complete US stock market diversification. Nevertheless, the S&P 500 stock index is the still most popular US stock market index for investment funds. There are over one thousand investment funds that benchmark their performance against the S&P 500 stock index.

If you want to invest in the US large capitalization stocks tracked by the S&P 500 stock index, you should understand that the simple average annual management expense ratio of the average mutual fund tracking the S&P 500 index is over 1%. In contrast, the most expensive fund in the table below is one-fifth of that and many on this list are less than 1/10th of that ridiculously high investment management fee. Do your S&P 500 investment funds have such low fees? If you are paying higher fees, why are you paying so much, when instead you could invest in one of these lower cost S&P 500 index funds?

Table 1.1 -- S&P 500 Stock Index Mutual Funds with the Lowest Costs

Fidelity 500 Index Fund -- 0.02% expense ratio -- FXAIX

Schwab S&P 500 Index Fund -- 0.02% expense ratio -- SWPPX

Vanguard 500 Index Fund Admiral -- 0.04% expense ratio -- VFIAX

Northern Stock Index Fund -- 0.05% expense ratio -- NOSIX

T. Rowe Price Equity Index Fund 500 -- 0.20% expense ratio -- PREIX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

If you pay more for your S&P 500 investment fund, you undoubtedly hope you will get a better return, because you have paid higher fees. However, you are much more likely to be surprised and not in a good way. Investment research clearly shows that you are much more likely to get lower rather than higher net returns. Furthermore, the cumulative negative effect on your portfolio will increase, because you will keep paying excessive fees year after year.

Standard and Poors keeps track of the performance of investment funds that use the S&P 500 index as a performance benchmark. These SPIVA reports are available online for anyone to read here: <https://us.spindices.com/spiva/>

Generally, the Standard and Poors SPIVA active versus passive mutual fund scorecards show that the longer the time horizon, the greater the advantage provided by lower cost passive funds. Particularly when measured over longer periods, the superior performance mirage of higher cost active funds disappears.

These effects are even more pronounced, when you look at the SPIVA data on the lack of superior performance persistence regarding individual active funds – versus just comparing active and passive fund group averages. Furthermore, the inferiority of active strategies is not just a US phenomenon. Uniformly across the various countries that have SPIVA reports available on line for other S&P indices, when the time horizon increases higher cost active strategies are increasingly inferior to lower cost passive strategies.

The reason why some mutual funds have even higher fees is simply that they are price-gouging their customers and are not likely to deliver the value-added that they imply they will provide. High cost investment fund vendors hide behind market volatility, random chance performance results, and the shell game of naïve investor performance chasing and personal portfolio churning.

Many active mutual fund investors move from one former winner to another former winner – often egged on by their brokers and financial advisors. Unfortunately, superior historical performance is simply not a predictor of superior future performance, while lower costs and fees are the best predictors of superior net performance that you have. The increasing shift of investor assets into low cost no load index mutual funds and away from higher cost funds indicates that at least a significant minority of investors has caught on to this sham.

A research article, “S&P 500 Index Mutual Funds,” by John A. Haslem, H. Kent Baker, and David M. Smith published in the March/April 2007 issue of the Journal of Indexes (pages 34-38) studied the investment management expenses and sales fees associated with all S&P 500 index mutual funds. They found a very wide range of management fees and total expense ratios among the 202 index funds tracking the Standard and Poors composite that they studied. Haslem, Baker, and Smith also found that higher fees were not justified by superior performance. In fact, higher fees lead to lower net portfolio performance after investment costs. They found that higher index fund expenses simply lowered investors’ net returns.

Note that this study was only about passive index funds tracking the Standard and Poors 500 composite index as index funds. It did not include the much larger number of mutual funds that benchmark their performance against the S&P500 that are analyzed in the SPIVA reports. These were just index funds attempting to replicate the index, which should have been a very low cost affair. This study demonstrates that even with index funds, you have to pay close attention to costs. The mutual fund industry offers a broad array of higher priced index funds that are designed just to take away some of your returns. Simply avoid higher cost index funds.

Section 1.3: Characteristics of these low cost, no load mutual funds

The lowest cost mutual funds listed in this book were screened from the universe of investment funds that are available to individual investors in the United States. The screening and selection process involved applying these seven research-based investment fund selection criteria:

1) Never pay broker or financial adviser sales loads or 12b-1 sales fees

A primary objective of this book is to list only those lowest cost no load mutual funds that can be purchased directly from a mutual fund company or via a discount broker. To buy these

funds, you do not have to pay to an advisor any front-end, ongoing, or back-end sales loads or 12b-1 fees and the like. You can buy directly and cut out these expensive intermediaries.

Sales loads and 12b-1 fees simply pay financial advisors to sell a higher cost fund to you. Advisors will encourage you to buy higher cost funds with recent superior performance, but that performance record is usually due to random chance rather than skill. In the future, these higher cost funds are more likely to underperform after higher costs and taxes are considered.

Research clearly demonstrates that financial advisors cannot identify superior funds beforehand. The investment research literature does not indicate that financial advisors and brokers have any better insight or any consistent skill in picking superior actively managed funds.

The high fees of financial advisors and brokers will just erode your returns and cause you to fall further behind a passive, buy-and-hold, no load index fund strategy that uses mutual funds purchased directly from mutual funds or through very low cost discount brokers. Zero is the maximum load or 12b-1 sales fee that you should pay. Buy the lowest cost no load mutual funds and bypass all these unjustified adviser charges. Note that I have published many additional articles on investment cost control here:

<https://www.theskilledinvestor.com/financial/cost-control.html>

2) Choose investment funds with very low management expenses

Some no load index funds have very low management expense ratios. Favor them exclusively. At the top of each of the low cost mutual fund tables, the average management expense ratio is listed for that category of mutual fund. This information is provided in part so that you can understand clearly how expensive even the average mutual fund is in a particular category.

The no load mutual funds listed in the tables of this book are the lowest cost funds available from the standpoint of their management expense ratio. Very low cost management expense ratios tend to be highly correlated with other important investment cost-efficiency factors, such as very low fund portfolio turnover, and the absence of unwarranted financial advisor fees.

While these lists include the lowest cost mutual funds available directly to “retail” investors, some judgment was involved when establishing the cutoff point for the fund with the highest

expense ratio that would be included in each list. Some types or categories of securities inherently involve greater or lesser management costs, so an arbitrary numerical maximum expense ratio cut-off would not be appropriate across all categories.

A longer list of the lowest cost funds is provided, if the gap between expense ratios is relatively narrow. However, when a variety of substantially very low cost funds from various vendors is already available, there is little justification to include even moderately higher cost funds to a particular table.

Because this book screens for lower and lowest cost mutual funds by asset category, you can research the various funds listed and make a judgment as to which fund or funds you might choose. If the funds listed in a specific asset category table have a wider expense ratio range than .25%, you will see that the following line has been inserted:

===== **Note: This category's lowest expense fund +.25%** =====

Obviously, you can do the math, so you might interpret this line to raise the question:

“When you can pay less, what justifies paying more?”

3) Look for investment funds with very low portfolio turnover

Portfolio trading costs are lower, when portfolio turnover is lower. The more the portfolio manager buys and sells, the more you lose. Look for single-digit and very low double-digit portfolio turnover rates.

Passively managed index funds are designed to track a market index. They do not need to repeatedly buy and sell securities and thus turn over their portfolios in pursuit of superior returns. Therefore, index funds do not need to incur the increased trading costs that are associated with higher “alpha-seeking” portfolio turnover.

With investment portfolios, trading can be very costly, and less trading is better than more trading. Pay attention to turnover and other factors as you evaluate any particular investment. If you do not have a compelling reason to choose a fund with higher turnover, then do not buy that fund.

Note that turnover is a less relevant measure of trading cost for money market funds and shorter-term bonds. Of necessity, money market funds and relatively short-term bonds must have

higher turnover rates. This is simply due to the inherently short-lived nature of the underlying securities within these funds, when compared to stocks or intermediate and longer-term bonds. Even if the portfolio management strategy is completely passive, shorter-duration securities must be replenished more frequently, as they mature more quickly.

4) Avoid large actively managed investment funds

When trading their overly large portfolio positions, large actively-managed funds negatively affect market prices and reduce performance. Furthermore, many large actively-managed mutual funds hold portfolios that are very similar to their underlying indexes. You pay a very high price to hold an investment portfolio that is only modestly different from the index, because these funds are far more likely to under-perform the index due to excessive management fees, trading expenses, and taxes.

5) Choose mature investment funds

The great majority of the funds listed in this book have been in existence for at least three years and many have been available for much longer. Every year the fund industry introduces many new mutual funds with high costs to attract performance-chasing investors. Unfortunately, most of these new funds will not take off and fund companies will merge them into inferior funds so that they can keep on extracting excessive fees. Avoid being part of this process.

6) Avoid very small investment funds

Small funds cannot operate efficiently. They need a minimum critical mass of assets to fund required expenses. In terms of total assets invested in each of the mutual funds listed in this book, the majority of listed funds have at least \$1 billion invested and all but a few exceed \$100 million in assets. If a fund is included with less than \$100 million in assets, that fund is a very low cost index fund offered by Fidelity, Schwab, Vanguard, or another vendor that has shown a commitment to low cost investment funds and therefore it reasonably can be expected to build-up assets rapidly and exceed \$100 million in net assets within a year.

7) Screen only to eliminate inferior investment fund performance

Only after using other screening criteria should you evaluate historical investment fund performance. Superior or average past fund performance tells you **ABSOLUTELY NOTHING**

about how a fund will perform in the future. Better than average performance tends to occur for brief periods and then revert toward the average. In contrast, high costs are constant and forever.

While the presumption might be that higher cost mutual funds lead to superior returns, the research literature indicates that the opposite is the case. High cost mutual funds do NOT justify their existence through better risk-adjusted results. While there is a great deal of variability in performance outcomes across mutual funds, these results predominantly demonstrate just random chance patterns.

As the measurement time horizon lengthens, a larger and steadily increasing majority of supposed performance winners cease to be winners. Research demonstrates that as the time horizon increases, more expensive, actively managed mutual funds will lag behind the net performance results of very low cost no load index mutual funds. Note that I have published numerous articles on investment returns and risk premiums that you can read here:

<https://www.theskilledinvestor.com/financial/investment-returns.html>

Mutual funds purchased directly from fund companies

This low cost mutual fund book lists no load mutual funds that are purchasable by “retail” individual investors directly from the mutual fund company and/or via a low cost, discount broker that will facilitate the mutual fund purchase for a low brokerage fee. Therefore, these lists do not include institutional class investment mutual funds that might be available to you through an employer-sponsored retirement plan, such as a 401k, 403b, 457, SIMPLE-IRA, SEP-IRA, or another retirement plan.

Including institutional funds would have added hundreds of mutual funds to these lists that would not be available for direct investment, unless you happened to have access to particular retirement plan that offered a particular institutional fund. Many readers would waste a lot of time investigating such institutional funds only to realize later that these funds are not available to them for direct investment.

However, in many cases you will still be able to use the low cost retail mutual fund lists in this book for guidance regarding the corresponding institutional funds from the same mutual fund company, which may be available in your employer-sponsored retirement plan. In general, investment fund companies that offer very low cost investments directly to the retail public, also

tend to offer the lowest cost institutional investment funds that you might find offered in your employer's retirement plan.

The good news is that if you see a mutual fund listed below which is available to retail investors, you might find the corresponding low cost institutional mutual fund share class within your retirement plan. Simply read the mutual fund prospectus to find the various share classes available within that fund.

If you do not find similar low cost institutional funds in your retirement plan and especially if your plan does not offer a low-cost mutual fund in each major category, you might want to ask the appropriate managers in your company why. Most mutual fund companies are profit seeking, and they most charge far more than is justifiable. Nevertheless, your employer actually has a fiduciary obligation to offer a retirement plan to you that is in your best interests. It is doubtful that any retirement plan that lacks a reasonably broad slate of low cost index mutual funds is really considering your best interests.

Far too many employer-sponsored retirement plans fail to offer low cost investment options. Since under law employers are responsible for their employee's retirement plan, when they do not provide low cost index mutual funds, they are de facto complicit in padding the profits of financial firms to the detriment of the financial welfare and retirement savings of their own employees.

Never purchase high cost investment funds through financial advisors or brokers.

Financial advisors and brokers tend to recommend significantly more expensive investment funds that often add purchase loads and/or higher ongoing sales fees to compensate that advisor for recommending such funds. These advisor charges reduce your expected net investment returns after investment costs and taxes. Advisor recommended mutual funds most often tend to be actively managed with higher risk and higher turnover and trading costs. Advisor recommended funds often are less diversified, and this adds more risk to your overall portfolio unnecessarily.

Despite their confident assertions, financial advisors and brokers historically have not demonstrated any competence in choosing "better" mutual funds for their clients. Instead, financial advisors, brokers, and their firms had demonstrated an uncanny ability to siphon away

very substantial portions of the wealth and investment returns of retail investors – primarily by promoting excessively and needlessly expensive and risky investments.

One study demonstrating the lack of advisor competence is “*Assessing the costs and benefits of brokers in the mutual fund industry*,” which is detailed later in this book in a section entitled titled: "Financial advisors sell mutual funds that pay them not you." Authors and Professors Daniel Bergstresser (Harvard Business School), John Chalmers (University of Oregon), and Peter Tufano (University of Oxford) concluded:

"We find that the brokered channel sells funds with inferior pre-distribution-fee returns. The channel does not show any evidence of superior aggregate market timing ability, and shows the same return-chasing behavior as observed among direct channel funds. Finally, more sales are directed to funds whose distribution fees are richer. This work leaves us with the puzzle of why investors continue to purchase funds that appear to be no better at substantially higher costs."*

* Bergstresser, Daniel B., Chalmers, John M.R. and Tufano, Peter, “*Assessing the Costs and Benefits of Brokers in the Mutual Fund Industry*” (January 16, 2006). AFA 2006 Boston Meetings

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=616981

Section 1.4: The perspective of this book

Millions of do-it-yourself investors want to do a better job of managing their own finances

Investors get very little unbiased or objective help from a financial services industry that will just feed on their assets over their lifetimes. The financial industry largely complicates matters, while charging excessively for those unnecessary complications.

This book is my contribution to those investors who are trying to do the best they can on their own, when they do not have access to objective advice. The information in this book will increase your financial and investment knowledge, and it can help you to improve your ability to manage your own investment affairs efficiently and optimally. The core of this book provides convenient information about the lowest cost index mutual funds that individuals can purchase directly.

Of course, this book contains my personal thoughts and opinions. This book's content is based upon my extensive reading of the personal finance, financial planning, and investment research literature during the past fifteen plus years. I hope that this book will help you to understand valid investment concepts and that it will help to counteract widespread misconceptions fostered by the financial industry and media that can lead you astray and stunt your portfolio wealth.

Do not expect the financial industry to take into account your best interests

This book focuses on the best interests of individuals and their families. To focus solely on a client's best interests is known as fiduciary care. Fiduciary care of people's financial interests requires knowledge, experience, and the complete absence of financial conflicts of interest that distort the quality of information and the advice given to people. While many investors naively assume that their financial advisors and brokers place their client's interests first, the sad fact is that this is simply not the case with most of the financial industry. The financial industry treats individuals as profit centers and milks their assets repeated over their lives.

Global securities markets have a dog-eat-dog ethos with winners and losers. Highly competitive and ruthless securities markets are absolutely necessary for efficient price setting and capital allocation. I applaud when full-time financial professionals engage in competition among themselves with knowledge, resources, and skill.

However, when similar strategies are applied to individuals who lack knowledge, education, and resources, then this is just an unfair fight. When the inadequacies, ignorance, biases, and misperceptions of individuals are exploited systematically, this is deplorable. Unfortunately, this approach is standard operating procedure for many parts of the financial services industry.



Diogenes searching for an honest man

Statue, Sinop, Turkey

When financial industry marketing and promotions imply an advisory partnership, but actions taken indicate that this is not the case, then this is moral bankruptcy. When the financial industry is so strong that it disrupts and distorts fairness in governmental regulation, then many deplorable behaviors are not criminal, simply because laws, regulations, and enforcement are weaker than they should be.

I believe that enlightened individuals should never naively expect fairness, when they deal with much of the financial services industry. Despite the financial industry's recent self-induced credit crisis, self-immolation, and taxpayer bailout, there is no reason to believe that this industry will ever change voluntarily. The game is just too profitable for the financial services industry and its excessively compensated employees to expect things ever to change fundamentally.

Unfortunately, the mass of American financial consumers are trusting, docile sheep regarding their personal financial affairs. The hundreds of billions of dollars they are willing to waste every year on overpriced financial services is astonishing. Far too many US consumers

pay far too much and get woefully little value in return from the financial services industry. The industry repeatedly scrapes the consumer excess off the table and stuffs it into its salaries, bonuses, and corporate earnings reports. The only salvation for most individuals is that eventually some of them will wake up and decide to stop paying tribute to this beast.

Note that I have published numerous articles about the financial services industry and whether it serves the best interests of retail investors that you can find here:

<https://www.theskilledinvestor.com/financial/best-interests.html>

Learning how to invest on your own without a financial advisor

If you appreciate this book's convenient information on finding the lowest cost mutual funds, but you are not sure how to invest on your own, I have a solution. I have published another ebook entitled “*Sensible and Sound Lifetime Investing*” that is free to download. You can download a free copy of this other book by going to the webpage that lists all of my books and software here: <https://www.theskilledinvestor.com/VeriPlan/financial-planning/>

Just look for the book with the yellow cover and scroll down to get the free download. I made this other book free to download, because writing it was a one-time process. In contrast, this lowest cost mutual funds book has a modest price, because it takes much more of my time to update four times a year.

“*Sensible and Sound Lifetime Investing*” acts as a companion to this low cost mutual funds book. It discusses the key principles of lifetime and retirement investing and explains why you should:

- a) always diversify completely,
- b) manage investment risk management through asset allocation,
- c) cut your investment costs and taxes to the bone,
- d) avoid investment fund illusions, and
- e) set your lifetime investing on autopilot to get on with your real life.

Chapter 2: Buy the lowest cost no load mutual funds

Section 2.1: Too few low cost funds and far too many high cost funds

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Section 2.1: Too few low cost funds and far too many high cost funds

Most mutual funds are inferior investments. Most are created to serve the business interests of the financial industry rather than to deliver net investment returns that serve the best interests of individual investors. Low cost, no load index mutual funds are a much better choice for any individual investor pursuing a long-term buy-and-hold-and-hold strategy to build greater wealth.

Screening and selecting funds for this book's lowest cost mutual fund lists involves sorting thousands of mutual funds using databases from Bloomberg, Index Universe, Lipper, Morningstar and other securities information vendors. Automated screening tools and up-to-date fund databases are a requirement. Worldwide there are in excess of 60,000 different investment fund classes, which is simply ridiculous.

Every year, mutual fund companies introduce hundreds of new mutual funds with high expense ratios to see what will stick, and financial advisors push these funds. Do not expect the incredibly long list of expensive mutual funds to get shorter. Expensive mutual funds are very profitable both to fund companies and to financial advisors.

It is shameful just how few low cost funds are available to investors. In contrast, there is a very large the number of excessively expensive mutual funds available only through financial advisors. Many industry-compensated financial advisors promote only those high cost mutual

funds that have been recent performance “winners,” because naive investors have a penchant for chasing historical performance.

You should understand that most mutual fund companies do not even allow direct investments by individual investors. They sell only through financial advisors, brokers, and other intermediaries. Advisor-only funds will always more expensive for you to buy and to own. Such advisor-only mutual funds are not listed in this book.

The good news is that when the “wheat” of low cost, broadly diversified, passively managed index investment funds has been separated from the 98%+ “chaff” of the financial industry's self-serving mutual fund products, there are still plenty of attractive mutual fund choices for the individual investors.

Section 2.2: The stability of low expenses versus past performance

Low cost mutual fund management expense ratios tend to be relatively stable over the long-term. Low expense ratios are demonstrably a much more reliable and durable investment selection method than historical performance.

On the contrary, mutual funds with much higher expenses live and die on their historical performance record, because that is what their naïve investors are paying attention to. Higher cost funds have more unstable investor populations, particularly as the time horizon increases and their performance record fluctuates.

Following a largely random pattern, lists of highest and lowest fund performance winners and losers are constantly churning. Most of last quarter's top ten funds are not on the next quarter's top ten lists. Widely documented in the investment research literature, this phenomenon is called “reversion to the mean.” Funds tend to revert toward the average over the long-term before costs and taxes. Higher cost funds tend to deliver inferior net returns after costs and taxes are taken into account. Superior performance is transient, but excessive costs are forever.

I have published a wide variety of articles about investment performance. One article to start with is “How to lie with statistics: Investment performance charts” that you can find here:

https://www.theskilledinvestor.com/financial/How-to-lie-with-statistics-investment-performance-charts_Part-1_47.html

Only a minority of the investor population will eventually realize that investment fund performance chasing is just a shell game with much higher costs. As a result, low cost index mutual funds tend to be purchased by more experienced investors. With experience, these investors have figured out that spending more tends to get them less. After wasting money to learn that their advisors have no real insight in fund selection, they eventually opt out of this shell game.

Only a limited number of mutual fund companies offer no load index funds with very low cost investment expense ratios. Fund companies offering these low cost mutual funds know that their clientele has chosen them for their commitment to track a market index cost-effectively, while broadly diversifying within that particular investment asset category.

Lower cost fund companies know that their cost conscious clientele will abandon them, if they raise their fees significantly. This factor leads to the long-term investment cost stability of these funds and obviates the need for cost conscious investors to change investment funds. In fact, as more index funds from more vendors have been introduced over the past four decades, index fund expenses have continued to decline substantially to very low levels.

The research literature clearly demonstrates that investors who ignore the ridiculously high costs of even the average mutual fund and who chase after the latest winning funds, do much worse than passive index fund investors. Simultaneously, they also incur substantially higher investment risks.

Section 2.3: Purchase mutual funds through the lowest cost channels

Whenever possible, low cost no load mutual funds should be purchased directly from mutual fund families that will sell their funds directly to the public. Otherwise, low cost mutual funds should be acquired through a discount brokerage account. It only makes sense to purchase funds through the most inexpensive channel possible. Direct purchase of these mutual funds should entail little or no purchasing fees on your part. Also, there should only be very modest account custody fees that often are waived for balances above certain thresholds.



Do It Yourself

“Full service” brokers and financial advisors do not have reliable methods for choosing mutual funds that will “out-perform” their indexes. Of course, these brokers and other brokers and advisers will claim, suggest, or imply that they can, but the research shows that they have no special insights. Just save you money and buy inexpensive no load mutual funds directly from the mutual fund companies themselves. It is not difficult, and you do not need to let an advisor keep his hand in your wallet for years just so you can buy a mutual fund.

There is also no reason to purchase most low cost mutual funds through any broker, even a discount broker. When you can buy mutual funds directly from a low cost fund company, you can usually avoid all transaction charges. Putting even a discount broker in the middle is unnecessary and adds to your costs.

However, if you chose to use a brokerage account for your investment portfolio, I suggest that you set up an account with one of the major discount brokers. There is no reason to pay the much higher fees of “full-service” brokers. Some of the major discount brokers are E*Trade, Fidelity, Schwab, and TD Ameritrade (now owned by Charles Schwab Corp.).

Understand discount broker services and fees before selecting one of them. Although you are trading through a discount broker, even \$10 trades are very costly from a dollar percentage standpoint (and time standpoint), if you trade frequently and in \$1,000 and smaller trade sizes. If your trade sizes are larger and infrequent, then this trading cost is much less important, since it is amortized over a much longer period.

Section 2.4: Websites of the lowest cost mutual fund companies

You can invest directly in low cost mutual funds that sell directly to the "retail" public:

- * by filling out applications on fund company websites,
- * by downloading forms from the fund company websites, completing them, and mailing them in,
- * by calling the mutual fund company for guidance on how to open and fund an account, or
- * by using a discount broker, although discount brokerage fees will apply.

In alphabetical order, these are the websites of the mutual fund companies with a least one fund listed in this book:

American Century

<https://www.americancentury.com/home/>

Charles Schwab & Company

<https://www.schwab.com/>

Fidelity Investments

<https://www.fidelity.com/>

Northern Funds

<https://www.northerntrust.com/united-states/home>

T Rowe Price

<https://troweprice.com>

Vanguard Group

<https://vanguard.com>

(Then click "Personal Investors")

Section 2.5: Fidelity, Schwab, and Vanguard have more low cost funds

If you inspect the screened lists of low cost mutual funds in this book, you will notice immediately that three vendors, Fidelity, Schwab, and Vanguard, have the greatest variety of very low cost mutual fund options. In many situations, they are the only options available, unless you are willing to pay a much higher management expense ratio, which would be difficult to justify. When you invest in low cost index mutual funds, you will often find yourself maintaining accounts with Fidelity, Schwab, and/or Vanguard.

While Schwab has a shorter list of very low cost mutual funds, Schwab has a virtue of requiring only \$1 as an initial investment across all their lowest cost mutual funds.

Vanguard is the dominant low-cost mutual fund vendor with the largest list of lowest cost mutual funds. Until October of 2010, to get into Vanguard's lowest cost retail mutual funds with the lowest management expense ratios (their "Admiral" share class) required a \$50,000 or \$100,000 minimum initial investment per fund. In October 2010, Vanguard announced that its Admiral investment class minimums for most, but not all, of its Admiral funds would be reduced to \$10,000. Then, in 2018 Vanguard reduced Admiral share minimums to \$3,000 for (most, but not all) Vanguard mutual funds and eliminated the "Investor" share class for those funds.

Regarding required minimum investments, Fidelity has chosen to compete with Vanguard, although Fidelity's timing has lagged. On December 11, 2012 Fidelity announced that for 22 funds, it would reduce its minimums on Advantage shares from \$100,000 to \$10,000 and its minimums on Investor shares from \$10,000 to \$2,500. These minimum investment reductions affected 14 Fidelity index funds and eight other broadly diversified Fidelity mutual funds. At that time, Fidelity also lowered some of its management expense ratios to equal those of Vanguard.

Note that Fidelity has removed the "Spartan" branding name from its low cost index funds. These changes made identifying Fidelity's lowest cost index funds more difficult, since one cannot rely upon the name to determine whether a Fidelity fund is truly the lowest cost fund that Fidelity offers. As with any fund, confirm expenses before purchasing. A Fidelity announcement said "Effective June 14, 2016, Fidelity will remove "Spartan" from the name of each fund and replace it with "Fidelity." For example, the Spartan 500 Index Fund was renamed the Fidelity 500 Index Fund. The ticker symbols and CUSIPs for the funds will not change.

Fidelity has fewer very low cost mutual fund offerings than Vanguard, but Fidelity does offer some of the lowest cost diversified mutual funds. In the early 2000's, Fidelity decided to

compete directly with Vanguard with their own very low cost index funds. At the time, Fidelity's CEO was quoted saying that Fidelity did not expect much profit from such low cost mutual funds. However, in effect, he said that Fidelity saw more profit opportunities in cross-selling their more expensive funds to new customers who had been attracted by their very low cost index funds.

In its continuing efforts to compete, in 2018, Fidelity announced that its minimum initial investment for accounts is \$0. Fidelity also announced the introduction of several "ZERO" investment funds that are listed in this book. These funds carry a 0% portfolio management fee expense ratio, which means that Fidelity is currently absorbing the portfolio investment management costs of these funds, but it may not do so for an extended period of time.

Fidelity is aggressively seeking to capture some of the low cost index mutual fund market that Vanguard dominates. However, once Fidelity acquires new customers, Fidelity will also tries to entice them to invest in the more profitable and higher fee mutual funds that Fidelity has. If you decide to open a Fidelity account, I suggest that you keep your investments in their lowest cost funds and resist Fidelity promotions for their more expensive funds – particularly, if the rationale is the superior, but ephemeral, historical performance of those higher cost funds. You should note that Fidelity's new ZERO mutual funds do not have a direct portfolio management cost recovery mechanism, so they will be a loss leader for Fidelity that presumably will be compensated for by cross-selling other more expensive Fidelity investment products to customers.

Note that Vanguard also offers higher cost, actively managed funds. Vanguard's low cost index funds are preferable, when compared with Vanguard's more expensive, actively managed funds – even though Vanguard's actively managed funds carry expense ratios that are well below industry averages for comparable actively managed mutual funds.

A vast horde of investment fund companies compete in the mid- and high-cost range and none of their names are on these screened fund lists. While I have highlighted Fidelity, Schwab, and Vanguard in this section, because they offer more numerous very low cost funds, there are a handful of other fund companies competing with low costs and operational efficiency. You may wish to consider those other vendors, especially if you already have accounts with them and want to move your assets into their lower cost funds.

A little test of Fidelity's ZERO International Index Fund (FZILX)

Because Fidelity offers several multi-cap international index funds, I decided to run a little personal test beginning in 2021. I had some money in a traditional IRA with Fidelity and decided to split the money evenly across four Fidelity international stock mutual fund configurations. Three of those four equal value international stock mutual fund configurations are from Table 3.1 below in this eBook. These funds are:

Fidelity ZERO International Index Fund -- 0.00% expense ratio -- FZILX

Fidelity Global ex U.S. Index Fund -- 0.055% expense ratio -- FSGGX

Fidelity Total International Index Fund -- 0.06% expense ratio -- FTIHX

After 18 months, I compared the fund balances to see whether a zero percent expense ratio would help FZILX to win the race. It did not. The winner was FSGGX. Compared to FSGGX, Fidelity's ZERO offering (FZILX) fell short by a negative .24%. FTIHX was a bit further back at a negative .89%. Apparently, there is more to this puzzle than just a 0% fee.

None of this really bothered me, because with low cost passive index funds a variety of other factors can affect performance, including differences in index definitions and weightings, as well, as trading efficiency and index tracking error. Furthermore, the 18 months of this test were a particularly volatile period with the rise of inflation globally as the covid-19 pandemic receded. Stock values declined and various central banks took more or less aggressive action that increased interest rates and weighed upon bond values, as well.

All of these Fidelity international stock funds have rock bottom fees. If the test time was many years and not just 18 months, I suspect that performance would oscillate like the leader a close horse race. (We will see with subsequent editions of this eBook.)

Incidentally, I said above that I selected four equal sized international stock positions for this little personal test of mine. The fourth was a combination of a Fidelity large capitalization international stock fund (FSPSX weighted 75%) and a Fidelity emerging markets stock fund (FPADX weighted 25%). From Tables 3.2 and 3.3 below in this eBook, these funds are:

Fidelity Internat Index Fund -- 0.035% expense ratio -- FSPSX (75% weight)

Fidelity Emerging Mkts Idx Fd -- 0.075% expense ratio -- FPADX (25% weight)

This combination of FSPSX and FPADX beat the total international market leader above (FSGGX) by 1.01% over these 18 months. I did not make this combination of FSPSX and FPADX the performance reference point for his little performance deviation demonstration, because combining an international large cap fund with an emerging markets fund is an arbitrary apples and oranges combination. Large capitalization index funds might have done better during this period, and they might have a higher weighting in this two fund combination compared to these three other total international stock market funds.

The lessons one might learn from this test are that even with very low costs other factors can affect performance. Nevertheless, investment costs tend to repeat year after year. High costs will just continually undermine net performance, and the net is what you get to keep. The rest you give away to the financial industry. Low fees are the individual investor's primary lever of control. Saying no to a 1% or higher fee year after year tends to deliver huge long-term benefits.

Once you have committed to a very low cost index strategy, other factors can cause variance, but the individual investor has no predictable control over these other factors. If variance between indexes is bothersome, spread your investments across a variety of low cost index funds, and get on with your real life. Choosing solely between very low fee or zero fee index mutual funds means that you are already on the right road.

Vanguard is the only major mutual funds vendor that is effectively non-profit

You should note that Vanguard is the only major mutual fund company that does not operate for the benefit of the common stock shareholders of the overall fund company. Instead, Vanguard is owned by the Vanguard funds, which are owned by the investors in those funds. Profits from Vanguard funds are returned to these funds and not to any third-party owners or competing common stock shareholders. With this investment fund investor-friendly structure, Vanguard has grown to become one of the world's largest investment management companies and it managed and had custody \$6.2 trillion in investor assets on January 31, 2020 just before the coronavirus market collapse. Near the end of 2022, Vanguard managed \$8.1 trillion in investor asset reflecting both the "post pandemic (it's still here)" market recovery and additional customer deposits.

The lack of a Vanguard company level profit objective for external shareholders eliminates conflicts of interest and allows Vanguard to keep the cost of investing lower than at other

investment fund companies. By aligning the interests of individual Vanguard fund shareholders with the Vanguard Group overall, the focus shifts from profit generation to operational efficiency and expense reduction. If fund expenses produce an excess return to Vanguard overall, then the only logical thing to do is to reduce the expenses charged to fund shareholders.

Over the decades, Vanguard has driven down its fund expense ratios, and this has benefitted its shareholders. Vanguard has also forced competitors to respond with their own lower expense charges, if they wished be viable competitors in the rapidly expanding index fund market. Frankly, without Vanguard's leadership and Vanguard's influence on competitors, you probably would not be able to buy low cost mutual funds.

Section 2.6: Low cost mutual fund companies will help you to invest

In my experience, I have found that the telephone personnel of Fidelity, Schwab, Vanguard, and other mutual fund companies that sell directly to the public have been helpful and competent.

If you need help from a human being, when you call a mutual fund company, there is a trick to get through the automated telephone answering systems. Just say "representative" repeatedly, until the telephone answering software gives up and transfers you to a human. Remember, you are not being impolite to this answering system, and it will not be offended. You are just using the pre-programmed software pathway the answering system has to get phone-frustrated clients to a polite humanoid.

Next, the trick is to be transferred to the right department, so immediately summarize what you need for whomever the human being is that you happen to get on the phone. Then, ask about whom you should be speaking to, in what department, and whether you need to be transferred.

In particular, for tax-advantaged retirement accounts you will want to reach the department that specializes in these accounts. Their personnel deal with the specialized retirement account matters every day. Even their newer personnel know how to handle almost any question that you might have. They can answer your questions, mail the correct forms to you to fill out, and/or direct you to the correct forms online to download, complete, and return.

If you tell the mutual fund personnel of the retirement accounts department that you want to do a tax-free retirement plan transfer or rollover, these personnel should be able to smooth the way for you. All you should have to do is to complete the correct paperwork, and they will handle the funds transfers for you. To avoid current taxes and penalties, you should never take interim possession of any of your tax-advantaged rollover assets. All transfers should be direct custodian-to-custodian transfers whenever possible.

Of course, once you are connected to the correct department, make sure that you take notes about your conversation. If you think you may need to call back again before you complete your transaction, ask whether there is a toll-free direct dial 800, 877, 866, etc. number directly into that department. Also, make sure that you get the name of the person with whom you are speaking, including employee extension or employee number, in case you have to call back and do not want to have to restart a conversation with another person. Note that once you have an account with a mutual fund, their representatives should also be taking summary notes that will be included with your account. Finally, if you approve any kind of telephone transaction, always ask for and record the transaction or confirmation number for possible future reference.

Be aware of the questions that you are asking. If you know what you want to do, and you are calling to get information about “how” to get it done, make sure that you get to someone in a department that understands what you want to do and can answer your questions. Then, focus on questions about “how” to get it done. If you begin to ask questions about “whether” or “why” you should do something, then your questions are moving toward the realm of financial advice. Some “whether” questions can be technical in nature and the mutual fund representative can present your choices and may even refer you some of the firm’s documents for a presentation of the details.

However, if your “whether” or “why” questions indicate that you really do not know what you want, you might be transferred to the advisory department. Even the low cost index mutual fund companies like Vanguard and Fidelity have financial advisory departments. If you find yourself talking to someone in the advisory department, first ask the person how he or she is compensated. “I work on salary, and I have no financial interest in what I tell you,” is the answer you should strongly prefer to hear.

This advisor might be helpful in your decision as to what to do and how to do it. However, if you want to know how to get something specific done; you are relatively self-sufficient; you only have specific questions; and you want to get it done quickly, then you do not need to talk to a mutual fund financial adviser. Instead, you probably need general telephone personnel or a departmental specialist to guide you through the transaction.

One of my clients, a retired college physics professor, really only wanted to understand “how” to get something done through a mutual fund company, but he simply could not stop himself from asking “whether” and “why” questions in the process. Since mutual fund operational personnel could, should, and would not answer such “whether” questions, he was transferred to the advisory department. After a discussion with the advisory department, he was mailed a large package of glossy information that did not answer any of his “how” questions.

I suggested that he contact the appropriate operational department again, but that he should only ask “how” questions. In response, he received a completed investment application that allowed him to make the direct investment that he had originally intended. He signed the paperwork, included his investment check, mailed in the packet, and he was done with the investment. When you know “why” you want to buy only the lowest cost mutual funds, fund companies can more quickly and more efficiently help you with the “how.”

Section 2.7: Financial advisors sell mutual funds that pay them not you

You can easily invest directly with low cost mutual fund firms or even through discount brokers. You simply do not need to pay a third-party broker, financial, or investment advisor to do this for you, when you can do this yourself directly. Your “hourly wage” for taking the personal initiative to invest your money directly in mutual funds is usually very high versus what you pay when you buy funds through a third-party financial advisor.

Purchasing mutual funds through an advisor or through a “full service broker” can be very expensive over your lifetime. Your costs tend to be much higher and your investment risk exposure tends to increase with advisor recommended mutual funds.



First, third-party brokers and financial advisors may not place you in the lowest cost funds, in part, because higher cost funds also provide these advisors and their firms with higher compensation. Second, and all too often, many commissioned and fee-based advisors recommend more expensive, actively-managed funds in an effort to justify their own cost. Why pay an advisor extra, if he is not going to beat the market for you and “earn his keep?”

Unfortunately, such an advisor will take extra and unnecessary investment risk using your money and not his. The historical record for actively managed investment strategies indicates that on average the long-term results are more likely to be worse rather than better.

Almost uniformly, brokers now call themselves “financial advisors.” However, brokers have used loopholes to skirt and largely escape any legal obligation to act in your best fiduciary interests, as would be expected under the Investment Advisers Act of 1940, as amended. In fact, the US brokerage industry, with the long-term complicity of regulators, has muddled the differences between securities brokers and investment advisers and their differing legal obligations regarding the interests of investors. Recent survey research demonstrates that the investing public has little clue that there is supposed to be any legal difference in the standard of professional care between brokers and real financial advisers.

Just as unfortunate, however, is the very wide range of investment product expenses that characterize investment funds selected and promoted by real financial advisers. Financial advisers regulated under the Investors Advisers Act of 1940 are supposed to act in the

"fiduciary" or best interests of their clients. Yet, there has been little restriction on the fees that they assess or the cost of the products that they recommend. Far too many financial advisers place their clients in expensive actively managed investment funds, when the historical record indicates that inferior outcomes are to be expected.

In my opinion, when you consider the results of the study below, both brokers and investment advisers who recommend expensive investment funds seem far more similar than dissimilar. Are the best interests of the client being served by either "suitable investment regulated brokers who call themselves advisors" or "fiduciary investment regulated advisers"? You decide.

Investment research contradicts financial industry claims to help individual investors do better

You might like to read a very enlightening study that covers the problems mentioned above and additional problems for individual investors. After reading this study, you might change your mutual fund buying habits and save yourself substantial sums of money for the rest of your life.

In this Harvard Business School finance working paper, "*Assessing the costs and benefits of brokers in the mutual fund industry*," Professors Bergstresser of Harvard University, Chalmers of the University of Oregon, and Tufano of Oxford University analyze the value-added of the broker sales channel for mutual funds. Note that many brokers call themselves "financial advisors," but they do not have a legal obligation to act in your best fiduciary interests. Under weak securities regulations, brokers are only required to sell you "suitable" investments and disclose the costs, which gives them huge leeway in what they can recommend. Oddly, most investments promoted by brokers that are "suitable" for you also happen to deliver much higher profit for them.

In the conclusion of this research, Professors Bergstresser, Chalmers, and Tufano state that:

"We begin with a positive hypothesis: the prominence of funds sold through brokers implies that brokers provide consumers with valued services. Our study has identified few, if any, of these benefits." *

- * Bergstresser, Daniel B., Chalmers, John M.R. and Tufano, Peter, “*Assessing the Costs and Benefits of Brokers in the Mutual Fund Industry*” (January 16, 2006).
AFA 2006 Boston Meetings

This is a rather stark conclusion, when you consider that the great majority of mutual funds are sold through brokers and other third-party financial advisors.

In buying mutual funds through brokers and advisors rather than purchasing them directly from fund companies, individuals incur very substantial front-end or back-end sales load charges, and they pay substantially higher ongoing fund management and marketing expenses. Individual investors unnecessarily waste tens of billions of dollars every year by purchasing mutual funds through brokers and advisors rather than buying directly.

Higher cost brokers and financial advisors have no special insights about the future

Regarding the future, high cost brokers and financial advisors do not know anything special compared to any other reasonably informed investor. However, they do seem to be quite good at suggesting that they do have superior insights. In addition, they are especially good at taking a larger portion of other people's money on a regular basis.

Professors Bergstresser, Chalmers, and Tufano used a database that allowed them to compare the performance and other characteristics of broker sold mutual funds versus directly purchased mutual funds. Here are some additional quotations from this research study.

"Do brokers offer and sell higher performing funds? ... summing up across broad equity, bond, and foreign equity investment categories leads us to estimate the annual underperformance of the broker-sold funds at \$4.6 billion dollars in 2004. This underperformance is before the payment of \$9.8 billion in 12b-1 fees paid in 2004 and the payment of other distribution fees such as loads." ... (pages 7 - 9).

"Do brokers provide better asset allocation and timing abilities? ... We find no evidence that, in aggregate, brokers provide superior asset allocation advice that helps their investors time the market." ... (pages 10 - 12).

"Putting a brake on behavioral biases? ... Another behavioral bias is the tendency to chase past returns, measured by the flows into and out of mutual funds as a function of prior fund performance. ... While in theory, brokers could reduce the

behavioral bias to chase returns, we find no consistent evidence in practice that return chasing is substantially weaker among broker-sold funds." ... (pages 15 - 16).

"Do brokers merely sell what they are paid to sell? ... Relative to the direct channel, brokers' clients select asset allocations that perform no better, and invest in funds that perform worse even before any distribution fees are considered. For these non-benefits, they pay front-end loads that are as much as 417 basis points (4.17%) higher and annual distribution charges that are up to 40 basis points (.4% per year) larger." ... (page 17).

"An optimistic interpretation would be that brokers are indeed acting in their clients' interests, but, as researchers, we have simply not been able to measure the many substantial intangible benefits that brokered clients receive. ... A less charitable interpretation of our results is that financial intermediaries may not always act in their clients' interest, but rather put clients' interests behind their own interests and the interests of the fund companies that pay them." ... (page 17)

"In summary, we find a reasonably clear pattern of results. We find that the brokered channel sells funds with inferior pre-distribution-fee returns. The channel does not show any evidence of superior aggregate market timing ability, and shows the same return-chasing behavior as observed among direct channel funds. Finally, more sales are directed to funds whose distribution fees are richer. This work leaves us with the puzzle of why investors continue to purchase funds that appear to be no better at substantially higher costs. The answer could be that we, as researchers, failed to measure important intangible benefits, or that consumers of brokers fail to consider the costs and benefits of this relationship." (page 18)

If you purchase mutual funds through brokers and other financial advisors, you might want to reconsider your investment purchasing practices. To understand more about the lack of value provided by brokers and advisors in selecting mutual funds for investors, I suggest that you download and read this important and rather disheartening research paper on broker sold mutual funds versus directly purchased mutual funds.

Reading this study requires your reasonably careful attention, but it is not difficult to read in less than an hour. If you still need convincing that you should purchase mutual funds directly and cut out the middleman, this could be a very profitable hour of reading for you.

You can download and read "*Assessing the Costs and Benefits of Brokers in the Mutual Fund Industry*" by Bergstresser, Chalmers, and Tufano, directly from the Social Science Research Network site. Go to:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=616981

This link will take you to the Social Science Research Network website where you can download a free copy of this study in Adobe Acrobat .pdf format. When you get to the SSRN site, just click on the "One-Click Download" link, save the file to your local disk, open, and read.

Chapter 3: The lowest cost no load mutual funds available for direct purchase

Section 3.1: Global and International Stock Mutual Funds

Section 3.2: US Total Market & Multi-Cap Stock Mutual Funds

Section 3.3: US Domestic Stock Mutual Funds by Market Capitalization

Section 3.4: Global – International Bond Mutual Funds

Section 3.5: US Taxable Bond Mutual Funds

Section 3.6: Municipal Bond Mutual Funds

Section 3.7: Real Estate/REOC/REIT Mutual Funds

Section 3.8: Money Market Mutual Funds

This chapter provides lists of the lowest cost, no load mutual funds in a wide variety of stock, bond, cash, and real estate investment asset categories.

Because this book screens for lower and lowest cost mutual funds by asset category, you can research the various funds listed and make a judgment as to which fund or funds you might choose. If the funds listed in a specific asset category table have a wider expense ratio range than .25%, you will see that the following line has been inserted:

===== Note: This category's lowest expense fund +.25% =====

Obviously, you can do the math, so you might interpret this line to raise the question:

“When you can pay less, what justifies paying more?”

For a sense of comparison with the low cost funds listed in the tables of this chapter, it is useful to look at average management fees across all US domiciled investment mutual funds. These averages will vary by the particular investment asset class or category, but in general, average management fees are unjustifiably, very high. The word unjustifiable is used here, because the overwhelming majority of mutual funds held over time do not justify their fees with above average performance. The more you pay the less you keep.

For example, the average U.S. equities mutual fund portfolio management expense ratio exceeds 1.0%. However, according to Morningstar, the half of U.S. equity mutual funds with expense ratios above 1.0% account for less than 10% of total investor assets held in US equity funds. Thus, "asset-weighted" fee averages are a more accurate way of measuring actual fees paid when compared to "equal-weighted" averages.

In 2017, the asset-weighted average fee for "active" U.S. equity mutual funds was .73% versus only .11% for passive index funds. The financial industry is clearly trying to take more of your money, but most investors have realized that they keep less when they pay more. Particularly in the past twenty years, most investors have favored funds with lower expense ratios and have moved their money accordingly. You can, too.

In March of 2022, Morningstar published updated information in a study titled “Global Investor Experience Study: Fees and Expenses.” For the US, the asset weighted expense ratio for stock or equity mutual funds was .63%, and the asset-weighted expense ratio for bond mutual funds was .43%. Yet, the graphics provided with this study indicated that over 90% of available stock mutual funds had expense ratios above .5% (one-half percent), and about two-thirds of stock mutual funds had management expense ratios exceeding 1%. Regarding bond mutual funds, elsewhere in this book you will find strong evidence that higher bond fund fees are just a deadweight loss to investors. This Morningstar study’s graphics indicated that over half of bond funds charge more than 1% in management fees. The only reason why the asset-weighted averages are lower is that investors are selecting lower cost funds. Clearly, investors are demonstrating a preference for lower fees and voting with their dollars. Most of the mutual fund industry is working against this trend.

Section 3.1: Global and international stock mutual funds with low costs

Table 3.1 -- International Multi-Cap Stock Mutual Funds

Table 3.2 - International & Global Large-Cap Stock Mutual Funds

Table 3.3 - International Mid/Small-Cap & Emerging Markets Stock Mutual Funds

Table 3.1 -- International Multi-Cap Stock Mutual Funds

Fidelity ZERO International Index Fund -- 0.00% expense ratio -- FZILX

Fidelity Global ex U.S. Index Fund -- 0.055% expense ratio -- FSGGX

Fidelity Total International Index Fund -- 0.06% expense ratio -- FTIHX

Schwab International Index -- 0.06% expense ratio -- SWISX

Vanguard Total International Stock Index Admiral -- 0.11% exp. -- VTIAX

Vanguard FTSE All-World except-US Index Admiral -- 0.12% exp. -- VFWAX

===== Note: This category's lowest expense fund +.25% =====

T. Rowe Price International Equity Index -- 0.30% expense ratio -- PIEQX

Vanguard International Value Investor -- 0.38% expense ratio -- VTRIX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.2 - International & Global Large-Cap Stock Mutual Funds

Fidelity International Index Fund -- 0.035% expense ratio -- FSPSX

Schwab International Index Fund -- 0.06% expense ratio -- SWISX

Vanguard Developed Markets Index Admiral -- 0.07% exp. ratio -- VTMGX

Northern International Equity Index Fund -- 0.10% expense ratio -- NOINX

Vanguard Total World Stock Index Fund -- 0.10% expense ratio -- VTWAX

Vanguard International Dividend App. Index Admiral -- 0.16% exp. -- VIAAX

Vanguard International Div. Apprec. Index Admiral -- 0.16% exp. -- VIAAX

Schwab Fundamental Internat. Large Co. Index Fund -- 0.25% exp. -- SFNNX

===== Note: This category's lowest expense fund +.25% =====

Vanguard International Growth Admiral -- 0.34% expense ratio -- VWILX

Schwab Fundamental Emerging Markets Large Co -- 0.39% exp. -- SFENX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.3 - International Mid/Small-Cap & Emerging Markets Stock Mutual Funds

Fidelity Emerging Markets Index Fund -- 0.075% expense ratio -- FPADX

Vanguard Emerging Markets Stock Index Admiral -- 0.14% exp. -- VEMAX

Vanguard Global Minimum Volatility Index Admiral -- 0.14% exp. -- VMNVX

Vanguard Global Minimum Volatility Index Investor -- 0.14% exp. -- VMNVX

Northern Emerging Markets Equity Index -- 0.15% expense ratio -- NOEMX

Vanguard FTSE All-World ex-US Small-Cap Admiral -- 0.16% exp. -- VFSAX

===== Note: This category's lowest expense fund +.25% =====

Schwab Fundamental Internat. Small Co. Index Fund -- 0.39% exp. -- SFILX

Vanguard International Explorer Investor -- 0.41% expense ratio -- VINEX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Section 3.2: US Total Market & Multi-Cap Stock Mutual Funds with Low Costs

Table 3.4 -- US Total Market & Multi-Cap Stock Mutual Funds

Table 3.5 -- US Total Market & Multi-Cap Value & Growth Stock Funds

Table 3.4 -- US Total Market & Multi-Cap Stock Mutual Funds

Fidelity ZERO Total Market Index Fund -- 0.00% expense ratio -- FZROX

Fidelity Total Market Index Fund -- 0.015% expense ratio -- FSKAX

Schwab Total Stock Market Index Fund -- 0.03% expense ratio -- SWTSX

Vanguard Total Stock Market Index Admiral -- 0.04% expense ratio -- VTSAX

Vanguard Tax-Managed Capital App. Admiral -- 0.09% exp. ratio -- VTCLX

T. Rowe Price Total Equity Market Index Fund -- 0.21% exp. ratio -- POMIX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.5 -- US Total Market & Multi-Cap Value & Growth Stock Funds

Vanguard U.S. Growth Admiral -- 0.23% expense ratio -- VWUAX

Vanguard Windsor Admiral -- 0.28% expense ratio -- VWNEX

Vanguard U.S. Growth Investor -- 0.33% expense ratio -- VMUSX

Vanguard Windsor Investor -- 0.38% expense ratio -- VWNDX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Section 3.3: US Domestic Stock Mutual Funds with Low Costs by Market Capitalization

Table 3.6 -- S&P 500 Stock Index Mutual Funds

Table 3.7 -- US Large Capitalization Core/Blend/Dividend Stock Mutual Funds

Table 3.8 -- US Large Capitalization Value Stock Mutual Funds

Table 3.9 -- US Large Capitalization Growth Stock Mutual Funds

Table 3.10 (A) -- US Middle-Capitalization Stock Mutual Funds

Table 3.10 (B) -- US Middle-Capitalization Value and Growth Stock Mutual Funds

Table 3.11 (A) -- US Small-Capitalization Stock Mutual Funds

Table 3.11 (B) -- US Small-Capitalization Value and Growth Stock Mutual Funds

Table 3.6 -- S&P 500 Stock Index Mutual Funds

Fidelity 500 Index Fund -- 0.02% expense ratio -- FXAIX

Schwab S&P 500 Index Fund -- 0.02% expense ratio -- SWPPX

Vanguard 500 Index Fund Admiral -- 0.04% expense ratio -- VFIAX

Northern Stock Index Fund -- 0.05% expense ratio -- NOSIX

T. Rowe Price Equity Index Fund 500 -- 0.20% expense ratio -- PREIX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.7 -- US Large Capitalization Core/Blend/Dividend Stock Mutual Funds

Fidelity ZERO Large Cap Index Fund -- 0.00% expense ratio -- FNILX

Schwab 1000 Index Fund -- 0.05% expense ratio -- SNXFX

Vanguard Large Cap Index Fund Admiral -- 0.05% expense ratio -- VLCAX

Vanguard Dividend Appreciation Admiral -- 0.08% expense ratio -- VDADX

Fidelity U.S. Sustainability Index Fund -- 0.11% expense ratio -- FITLX

Vanguard High Dividend Yield Index Fund Investor -- 0.14% exp. -- VHDYX

Vanguard Equity Income Investor -- 0.19% exp. -- VEIRX

Vanguard Growth & Income Admiral -- 0.22% expense ratio -- VGIAX

===== **Note: This category's lowest expense fund +.25%** =====

Vanguard Dividend Growth Investor -- 0.27% expense ratio -- VDIGX

Vanguard Growth & Income Investor -- 0.32% expense ratio -- VQNPX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.8 -- US Large Capitalization Value Stock Mutual Funds

Fidelity Large Cap Value Index Fund -- 0.035% expense ratio -- FLCOX

Schwab U.S. Large-Cap Value Index Fund -- 0.035% expense ratio -- SWLVX

Vanguard Value Index Fund Admiral -- 0.05% expense ratio -- VVIAX

Vanguard High Dividend Index Fund Admiral -- 0.08% exp. ratio -- VHYAX

Vanguard FTSE Social Index Fund Admiral-- 0.14% expense ratio -- VFTAX

Vanguard Equity Income Admiral -- 0.19% expense ratio -- VEIRX

Schwab Fundamental Large Company Index Fund -- 0.25% exp. -- SFLNX

Vanguard Windsor II Admiral -- 0.26% expense ratio -- VWNAX

Vanguard Equity Income Investor -- 0.28% expense ratio -- VEIPX

===== Note: This category's lowest expense fund +.25% =====

Vanguard Windsor II Investor -- 0.34% expense ratio -- VWNFX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.9 -- US Large Capitalization Growth Stock Mutual Funds

Fidelity Large Cap Growth Index Fund -- 0.035% expense ratio -- FSPGX

Schwab U.S. Large-Cap Growth Index Fund -- 0.035% expense ratio -- SWLGX

Vanguard Growth Index Fund Admiral -- 0.05% expense ratio -- VIGAX

Vanguard US Growth Admiral -- 0.23% expense ratio -- VWUAX

===== Note: This category's lowest expense fund +.25% =====

Fidelity NASDAQ Composite Index Fund -- 0.30% expense ratio -- FNCMX

Vanguard PRIMECAP Admiral -- 0.31% expense ratio -- VPMAX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.10 (A) -- US Middle-Capitalization Stock Mutual Funds

Fidelity ZERO Extended Market Index Fund -- 0.00% expense ratio -- FZIPX

Fidelity Mid Cap Index Fund -- 0.025% expense ratio -- FSMDX

Fidelity Extended Market Index Fund -- 0.035% expense ratio -- FSMAX

Schwab Mid-Cap Index Fund -- 0.04% expense ratio -- SWMCX

Vanguard Mid-Cap Index Fund Admiral -- 0.05% expense ratio -- VIMAX

Vanguard Extended Market Admiral -- 0.06% expense ratio -- VEXAX

Northern Funds Mid Cap Index Fund Portfolio -- 0.15% exp. ratio -- NOMIX

Vanguard Strategic Equity Investor -- 0.17% expense ratio -- VSEQX

T. Rowe Price Extended Equity Fund -- 0.25% expense ratio -- PEXMX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.10 (B) -- US Middle-Capitalization Value and Growth Stock Mutual Funds

Fidelity Mid Cap Growth Index Fund -- 0.05% expense ratio -- FMDGX

Fidelity Mid Cap Value Index Fund -- 0.05% expense ratio -- FIMVX

Vanguard Mid-Cap Growth Index Fund Admiral -- 0.07% exp. -- VMGMX

Vanguard Mid-Cap Value Index Fund Admiral -- 0.07% exp. -- VMVAX

===== **Note: This category's lowest expense fund +.25%** =====

Vanguard Selected Value Fund -- 0.38% expense ratio -- VASVX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.11 (A) -- US Small-Capitalization Stock Mutual Funds

Fidelity Small Cap Index Fund -- 0.025% expense ratio -- FSSNX

Schwab Small Cap Index Fund -- 0.04% expense ratio -- SWSSX

Vanguard Small-Cap Index Fund Admiral -- 0.05% expense ratio -- VSMAX

Vanguard Tax-Managed Small-Cap Admiral -- 0.09% expense ratio -- VTMSX

Northern Small Cap Index Fund -- 0.15% expense ratio -- NSIDX

Schwab Fundamental Small Company -- 0.25% expense ratio -- SFSNX

Vanguard Strategic Small-Cap Equity Fund -- 0.26% expense ratio -- VSTCX

===== Note: This category's lowest expense fund +.25% =====

Vanguard Explorer Fund Admiral -- 0.34% expense ratio -- VEXRX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.11 (B) -- US Small-Capitalization Value and Growth Stock Mutual Funds

Fidelity Small Cap Growth Index Fund -- 0.05% expense ratio -- FECGX

Fidelity Small Cap Value Index Fund -- 0.05% expense ratio -- FISVX

Vanguard Small-Cap Growth Admiral -- 0.07% expense ratio -- VSGAX

Vanguard Small-Cap Value Admiral -- 0.07% expense ratio -- VSIAX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Section 3.4: Global – International Bond Mutual Funds with Low Costs

Table 3.12 -- World and Emerging Markets Bond Mutual Funds

Vanguard Total International Bond Index Admiral -- 0.11% exp. -- VTABX

Vanguard Emerging Markets Gov. Bond Admiral -- 0.20% exp. -- VGAVX

Vanguard Global Credit Bond Fund Admiral-- 0.25% expense ratio -- VGCAX

Vanguard Global Credit Bond Fund Investor -- 0.35% expense ratio -- VGCIX

===== **Note: This category's lowest expense fund +.25% =====**

Vanguard Emerging Markets Bond Fund Admiral -- 0.40% exp. – VEGBX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Section 3.5: US Taxable Bond Mutual Funds with Low Costs

Table 3.13 -- US Taxable Broad Market Corp+Govt Bond Mutual Funds

Table 3.14 -- US Taxable Term-Based Corp+Govt Bond Mutual Funds

Table 3.15 -- US Taxable Term-Based Corporate Bond Mutual Funds

Table 3.16 -- US Taxable High-Yield Corporate Bond Mutual Funds

Table 3.17 -- US Taxable Ultra-Short-Term Corporate Bond Mutual Funds

Table 3.18 -- US Taxable Term-based Govt/Agency/Treasury Bond Mutual Funds

Table 3.19 -- US Taxable Inflation Protected / TIPS Bond Mutual Funds

Table 3.20 -- US Taxable Mortgage Bond Mutual Funds

Table 3.13 -- US Taxable Total/Broad Market Corporate and Government Bond Mutual Funds

Fidelity US Bond Index Fund -- 0.025% expense ratio -- FXNAX

Schwab US Aggregate Bond Index Fund -- 0.04% expense ratio -- SWAGX

Vanguard Total Bond Market Index Fund Admiral -- 0.05% exp. -- VBTIX

Northern Bond Index Fund -- 0.07% expense ratio -- NOBOX

Vanguard Core Bond Admiral -- 0.10% expense ratio -- VCOBX

Vanguard Core Bond Investor -- 0.20% expense ratio -- VCORX

T Rowe Price US Bond Enhanced Index Fund -- 0.25% expense ratio -- PBDIX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.14 -- US Taxable Term-based Corporate and Government Bond Mutual Funds

Short-Term Bonds

Fidelity Short-Term Bond Index Fund -- 0.03% expense ratio -- FNSOX

Schwab Short-Term Bond Index Fund -- 0.06% expense ratio -- SWSBX

Vanguard Short-Term Bond Admiral -- 0.07% expense ratio -- VBIRX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Limited-Term Bond -- 0.30% expense ratio -- FJRLX

Fidelity Short-Term Bond -- 0.30% expense ratio -- FSHBX

Northern Short Bond -- 0.40% expense ratio -- BSBAX

Intermediate-Term

Vanguard Intermediate-Term Bond Admiral -- 0.07% expense ratio -- VBILX

Vanguard Total Bond Market II Index Investors -- 0.09% exp. ratio -- VTBIX

Fidelity Sustainability Bond -- 0.10% expense ratio -- FNDSX

===== Note: This category's lowest expense fund +.25% =====

Northern Core Bond -- 0.42% expense ratio -- NOCBX

Fidelity Intermediate Bond -- 0.45% expense ratio -- FTHRX

Fidelity Investment Grade Bond -- 0.45% expense ratio -- FBNDX

Fidelity Total Bond -- 0.45% expense ratio -- FTBFX

Long-Term Bonds

Vanguard Long-Term Bond Index Admiral -- 0.07% expense ratio -- VBLAX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.15 -- US Taxable Term-based Corporate Bond Mutual Funds

Short-Term Bonds

Vanguard Short-Term Corporate Bond Admiral -- 0.07% exp. ratio -- VSCSX

Vanguard Short-Term Investment Grade Admiral -- 0.10% exp. -- VFSUX

Vanguard Short-Term Bond Index Fund -- 0.15% expense ratio -- VBISX

Vanguard Short-Term Investment Grade Investor -- 0.20% exp. ratio -- VFSTX

===== Note: This category's lowest expense fund +.25% =====

T. Rowe Price Short-Term Bond -- 0.43% expense ratio -- PRWBX

Intermediate-Term

Vanguard Intermediate-Term Corp Bond Admiral -- 0.07% exp. ratio -- VICSX

Vanguard Intermediate-Term Investment-Grade Admiral -- 0.10% exp. -- VFIDX

Vanguard Intermediate-Term Invest.-Grade Investor -- 0.20% exp. -- VFICX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Corporate Bond -- 0.44% expense ratio -- FCBFX

Long-Term Bonds

Vanguard Long-Term Corporate Bond Admiral -- 0.07% exp. ratio -- VLTCX

Vanguard Long-Term Investment Grade Admiral -- 0.12% exp. -- VWETX

Vanguard Long-Term Investment Grade Investor -- 0.22% exp. -- VWESX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.16 -- US Taxable High-Yield Corporate Bond Mutual Funds

Vanguard High-Yield Corporate Admiral -- 0.13% expense ratio -- VWEAX

Vanguard High-Yield Corporate Investor -- 0.23% expense ratio -- VWEHX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.17 -- US Taxable Ultra-Short-Term Corporate Bond Mutual Funds

Vanguard Ultra-Short-Term Bond Fund Admiral -- 0.10% exp. ratio -- VUSFX

Vanguard Ultra-Short-Term Bond Fund Investor -- 0.20% exp. ratio -- VUSTX

Northern Tax-Advantaged Ultra-Short Fixed Income -- 0.25% exp. -- NTAUX

Northern Ultra-Short Fixed Income Fund -- 0.25% expense ratio -- NUSFX

T. Rowe Price Ultra Short-Term Bond Fund -- 0.31% expense ratio -- TRBUX

Fidelity Conservative Income Bond Fund -- 0.35% expense ratio -- FCONX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Note that ultra-short-term bond yields are highly correlated with yields for money market mutual funds, savings accounts, and CDs of very short duration. Therefore, note that this chapter also contains much more extensive lists of money market mutual funds with expense ratios that are lower than expense ratios in the ultra-short-term bond fund category. The ultra-short maturity bond fund category overall has performed poorly and some index vendors have withdrawn their funds from the market.

Table 3.18 -- US Taxable Term-based Government/Agency/Treasury Bond Mutual Funds

Short-Term Bonds

Fidelity Short-Term Treasury Bond Index Fund -- 0.03% exp. ratio -- FUMBX

Vanguard Short-Term Treasury Index Admiral -- 0.07% exp. ratio -- VSBSX

Vanguard Short-Term Federal Admiral -- 0.10% expense ratio -- VSGDX

Vanguard Short-Term Treasury Admiral -- 0.10% expense ratio -- VFIRX

Vanguard Short-Term Federal Admiral -- 0.20% expense ratio -- VSGBX

Vanguard Short-Term Treasury Investor -- 0.20% expense ratio -- VFISX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Limited Term Government Fund -- 0.30% expense ratio -- FFXSX

Intermediate-Term

Fidelity Intermediate Treasury Bond Index Fund -- 0.03% exp. ratio -- FUAMX

Vanguard Intermediate-Term Bond Admiral -- 0.07% expense ratio -- VBILX

Vanguard Intermediate-Term Treasury Index Admiral -- 0.07% exp. -- VSIGX

Vanguard Intermediate-Term Treasury Admiral -- 0.10% exp. ratio -- VFIUX

Northern US Treasury Index Fund -- 0.16% expense ratio -- BTIAX

Vanguard Intermediate-Term Treasury Investor -- 0.20% exp. ratio -- VFITX

T. Rowe Price US Treasury Intermediate Term -- 0.27% exp. ratio -- PRTIX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Government Income Fund -- 0.45% expense ratio -- FGOVX

Fidelity Intermediate-Term Government Income -- 0.45% exp. ratio -- FSTGX

Long-Term Bonds

Fidelity Long-Term Treasury Bond Index Fund -- 0.03% exp. ratio -- FNBGX

Vanguard Long-Term Treasury Index Admiral -- 0.07% exp. ratio -- VLGSX

Vanguard Long-Term Treasury Admiral -- 0.10% expense ratio -- VUSUX

Vanguard Long-Term Treasury Investor -- 0.20% expense ratio -- VUSTX

===== Note: This category's lowest expense fund +.25% =====

T. Rowe Price US Treasury Long Term Fund -- 0.29% expense ratio -- PRULX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.19 -- US Taxable Inflation Protected / TIPS Bond Mutual Funds

Schwab Treasury Inflation Protected -- 0.05% expense ratio -- SWRSX

Fidelity Inflation-Protected Bond Index Fund -- 0.05% expense ratio -- FIPDX

Vanguard Short-Term Inflation-Protected Sec. Admiral -- 0.06% exp. -- VTAPX

Vanguard Inflation-Protected Securities Fund Admiral -- 0.10% exp. -- VAIPX

Vanguard Inflation-Protected Securities Fund Investor -- 0.20% exp. -- VIPSX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Note that inflation protected bond yields tend to be lower than comparable risk and duration bonds that do not supply inflation protection. Inflation protection is not free. Thus with lower yields, expenses will take a higher portion of total returns.

Table 3.20 -- US Taxable Mortgage Bond Mutual Funds

Vanguard Mortgage-Backed Sec. Admiral -- 0.07% expense ratio -- VMBSX

Vanguard GNMA Fund Admiral -- 0.11% expense ratio -- VFIJX

Vanguard GNMA Fund Investor -- 0.21% expense ratio -- VFIIX

===== **Note: This category's lowest expense fund +.25%** =====

Fidelity GNMA -- 0.45% expense ratio -- FGMNX

Fidelity Mortgage Securities -- 0.45% expense ratio -- FMSFX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Section 3.6: Municipal Bond Mutual Funds with Low Costs

Table 3.21 -- US/National Short-Term Municipal Bond Mutual Funds

Table 3.22 -- US/National Intermediate-Term Municipal Bond Mutual Funds

Table 3.23 -- US/National Long-Term Municipal Bond Mutual Funds

Table 3.24 -- US/National High Yield Municipal Bond Funds

Table 3.25 -- US Individual State Municipal Bond Funds

Regarding the differing taxability characteristics of investment accounts, please note that national and state bond funds are appropriate for taxable accounts only. Furthermore, municipal bond investments tend to provide more tax sheltering benefits for those people who are in higher combined federal, state, and local income tax brackets.

Muni bonds usually have lower yields than taxable bonds – although this was not always been the case during the financial crisis. Because tax-advantaged retirement plans already provide a tax shelter, this means that the tax savings advantages of muni bonds cannot be captured inside of retirement plans. When muni bond yields are lower than taxable bonds, which they normally are, then you lose the yield difference, if you hold muni-bonds within tax-advantaged retirement accounts.

Table 3.21 -- US/National Short-Term Municipal Bond Mutual Funds

Vanguard Ltd-Term Tax-Exempt Admiral -- 0.09% expense ratio -- VMLUX

Vanguard Short-Term Tax-Exempt Admiral -- 0.09% expense ratio -- VWSUX

Vanguard Ltd-Term Tax-Exempt Investor -- 0.17% expense ratio -- VMLTX

Vanguard Short-Term Tax-Exempt Investor -- 0.17% expense ratio -- VWSTX

Fidelity Limited Term Municipal Income -- 0.29% expense ratio -- FSTFX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Conservative Income Muni Bond -- 0.35% expense ratio -- FCRDX

Northern Funds Short-Intermediate Tax-Exempt -- 0.46% exp. ratio -- NSITX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.22 -- US/National Intermediate-Term Municipal Bond Mutual Funds

Vanguard Intermediate-Term Tax-Exempt Admiral -- 0.09% exp. -- VWIUX

Vanguard Tax-Exempt Bond Index Fund Admiral -- 0.09% exp. -- VTEAX

Vanguard Intermediate-Term Tax-Exempt Investor -- 0.17% exp. -- VWITX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Intermediate Municipal Income -- 0.35% expense ratio -- FLTMX

Schwab Tax-Free Bond -- 0.38% expense ratio -- SWNTX

Northern Funds Intermediate Tax-Exempt -- 0.46% expense ratio -- NOITX

American Century Intermediate-Term Tax-Free -- 0.46% exp. ratio -- TWTIX

T. Rowe Price Summit Municipal -- 0.50% expense ratio -- PRSMX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.23 -- US/National Long-Term Municipal Bond Mutual Funds

Vanguard Long-Term Tax-Exempt Admiral -- 0.09% expense ratio -- VWLUX

Vanguard Long-Term Tax-Exempt Investor -- 0.17% expense ratio -- VWLTX

Fidelity Tax-Free Bond -- 0.25% expense ratio -- FTABX

===== Note: This category's lowest expense fund +.25% =====

Northern Funds Tax Exempt -- 0.45% expense ratio -- NOTEX

Fidelity Municipal Income -- 0.46% expense ratio -- FHIGX

T. Rowe Price Summit Municipal -- 0.50% expense ratio -- PRINX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.24 – US/National High Yield Municipal Bond Funds

Vanguard High-Yield Tax-Exempt Admiral -- 0.09% expense ratio -- VWALX

Vanguard High-Yield Tax-Exempt Investor -- 0.17% expense ratio -- VWAHX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.25 -- US Individual State Municipal Bond Funds

Arizona

Northern Funds Arizona Tax-Exempt -- 0.47% expense ratio -- NOAZX

Fidelity Arizona Municipal Income Fund -- 0.55% expense ratio -- FSAZX

California

Vanguard CA Intermed.-Term Tax-Exempt Admiral -- 0.09% exp. -- VCADX

Vanguard California Long-Term Tax-Exempt Adm. -- 0.09% exp. -- VCLAX

Vanguard CA Inter.-Term Tax-Exempt Fund Investor -- 0.17% exp. -- VCAIX

Vanguard CA Long-Term Tax-Exempt Investor -- 0.17% exp. ratio -- VCITX

Fidelity California Limited Term Tax-Free Bond -- 0.29% exp. ratio -- FCSTX

===== **Note: This category's lowest expense fund +.25%** =====

Schwab California Tax-Free Bond Fund -- 0.38% expense ratio -- SWCAX

Northern Funds California Intermediate Tax-Exempt -- 0.45% exp. -- NCITX

Fidelity California Municipal Income Fund -- 0.46% expense ratio -- FCTFX

Am. Century California Intermediate Tax-Free -- 0.46% exp. ratio -- BCITX

Northern Funds California Tax-Exempt -- 0.47% expense ratio -- NCATX

American Century California High-Yield Muni -- 0.49% exp. ratio -- BCHYX

Connecticut

Fidelity Connecticut Municipal Income Fund -- 0.49% expense ratio -- FICNX

Georgia

T. Rowe Price Georgia Tax-Free Muni Bond Fund -- 0.56% exp. -- GTFBX

Maryland

T. Rowe Price Maryland Tax-Free Fund -- 0.49% expense ratio -- MDXBX

T. Rowe Price Maryland Short-Term Tax-Free -- 0.53% exp. -- PRMDX

Fidelity Maryland Municipal I -- 0.55% expense ratio -- SMDMX

Massachusetts

Vanguard Massachusetts Tax-Exempt Investor -- 0.13% exp. ratio -- VMATX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Massachusetts Municipal Income Fund -- 0.46% exp. ratio -- FDMMX

Michigan

Fidelity Michigan Municipal Income Fund -- 0.49% expense ratio -- FMHTX

Minnesota

Fidelity Minnesota Municipal Income Fund -- 0.51% expense ratio -- FIMIX

New Jersey

Vanguard New Jersey Long-Term Tax-Exempt Adm. -- 0.09% exp. -- VNJUX

Vanguard New Jersey Long-Term Tax-Exempt Inv. -- 0.17% exp. -- VNJTX

===== Note: This category's lowest expense fund +.25% =====

Fidelity New Jersey Municipal Income Fund -- 0.48% expense ratio -- FNJHX

T. Rowe Price New Jersey Tax-Free Bond -- 0.56% expense ratio -- NJTFX

New York

Vanguard New York Long-Term Tax-Exempt Adm. -- 0.09% exp. -- VNYUX

Vanguard New York Long-Term Tax-Exempt Inv. -- 0.17% exp. -- VNYTX

===== Note: This category's lowest expense fund +.25% =====

Fidelity New York Municipal Income Fund -- 0.47% expense ratio -- FTFMX

T. Rowe Price NY Tax-Free Bond Fund -- 0.53% expense ratio -- PRNYX

Ohio

Vanguard Ohio Long-Term Tax-Exempt Investor -- 0.13% exp. -- VOHIX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Ohio Municipal Income Fund -- 0.49% expense ratio -- FOHFX

Pennsylvania

Vanguard Pennsylvania Long-Term Tax-Exempt Adm. -- 0.09% exp. -- VPALX

Vanguard Pennsylvania Long-Term Tax-Exempt Inv. -- 0.17% exp. -- VPAIX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Pennsylvania Municipal Income Fund -- 0.49% expense ratio -- FPXTX

Virginia

T. Rowe Price Virginia Tax-Free Municipal Bond Fund-- 0.51% exp. -- PRVAX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Section 3.7: Real Estate/REOC/REIT Mutual Funds with Low Costs

Table 3.26 -- Real Estate/REOC/REIT Mutual Funds

International

Vanguard Global ex-US Real Estate Index Fund Admiral -- 0.12% exp. -- VGRLX

===== Note: This category's lowest expense fund +.25% =====

Schwab Fundamental Global Real Estate Index Fund -- 0.39% exp. -- SFREX

Northern Funds Global Real Estate Index Fund -- 0.47% expense ratio -- NGREX

United States

Fidelity Real Estate Index Fund -- 0.07% expense ratio -- FSRNX

Vanguard REIT Index Fund Admiral -- 0.12% expense ratio -- VGSIX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Note that real estate is the only market sector fund group that is listed in this book. This information is here simply because certain investors not owning real estate directly might want to increase overall diversification by adding low cost passively-managed real estate fund positions in their portfolios. Note that broader equity indexes also provide exposure to certain kinds of real estate, but these real estate mutual funds can increase diversification for those who do not already own sufficient real estate assets. Through ownership of rental properties and personal residences, many investors are already over-exposed to real estate in their aggregate personal portfolios. In contrast, renters might need diversified real estate exposure, which they can obtain very cost-effectively through these low cost funds.

Mutual funds in dozens of other market sectors are available, and many investors implement active “strategic asset allocation” or “sector rotation” strategies using these sector funds. However, these non-real estate sectors tend already to be well-represented within broader capitalization-weighted equity indexes. Therefore, an investor can easily obtain diversified exposure to market sectors without needing to assemble a portfolio using sector funds, which tend to carry much higher management expense ratios.

The investment research literature indicates that a healthy skepticism of sector strategies is in order. Averaged across investors, neither individuals nor professionals have demonstrated success with active sector strategies. Sector rotation, sector strategic asset allocation, and sector market timing strategies have generally yielded inferior risk-adjusted results compared to low cost and fully passive index mutual fund strategies. Furthermore, more broadly diversified buy-and-hold-and-hold strategies tend to be more tax efficient, while demanding far less time to

implement that than active sector strategies. This is why no other sector funds – beyond real estate funds – are included in this book.

About private REITs that are promoted by and available only through financial industry middlemen

Because the alternative of purchasing much lower cost, publicly traded REIT investments like those in the table above always exists, these low cost publicly traded REITs are preferable to private REITs promoted exclusively by financial advisors. Privately sold REITs are hard to value and have substantial additional fees that can drag down net investment performance.

Furthermore, these private REITs lack active after markets for reselling shares, and investors are often faced with selling their shares at dramatic discounts, if they want to get out.

In 2012, Vault Partners together with the real estate studies center at the University of Texas Austin's McCombs School of Business announced a study of private REIT performance. Entitled the "Non-traded REIT Industry Full-Cycle Performance Study," this research was a systematic evaluation of the net returns to investors over the full lifecycle of 17 large non-traded REITs.

Performing such a study requires a full lifecycle analysis of the internal rate of return on the capital investment of each REIT from the beginning through final liquidation. Returns include payments during the active life of the REIT and funds received in the final liquidation event, which could include an IPO, a merger, or a sale of all assets.

In summary, of these 17 large private REITs, 12 REITs (or 71% of the total) underperformed passive benchmarks across their full lifecycle. This study's researchers concluded that the primary cause of underperformance was excessive sales charges and fees.

Furthermore, you should also understand that weak regulations have allowed private REITs to maintain their original sales price as the current "market value" of shares for up to 18 months after the sales period ends. In addition, an investor may have purchased their shares through an advisor much earlier in the sales period. Therefore, it could be several years before a private REIT is required to declare a "market value" for its shares. Instead, they continue to state the current "market value" as original offering price per share, which is typically \$10 per share.

In recent years, many large non-traded REITs have belatedly slashed the \$10 per share valuations that they had carried for long periods, and numerous articles have been published

about this private placement valuation problem. Many investors have been very surprised about the fall in the "per share value" of the private REITs that their advisors sold to them.

In reality, all along these investors had been looking at the original sales price per share, which was not tied necessarily to the ongoing market value per share of the underlying assets. At least with a public REIT, an investor has a much better understanding of the current fair market value of their shares. Furthermore, when they want to sell, public REIT investors have a place to sell their shares, which compares favorably to investors in private REITs who are often very surprised by how little their shares might be worth without an active market.

Section 3.8: Money Market Mutual Funds with Low Costs

Table 3.27 -- US Taxable Government Money Market Mutual Funds

Table 3.28 -- US Taxable Corporate Money Market Mutual Funds

Table 3.29 -- US/National Tax-Exempt Money Market Mutual Funds

Table 3.30 -- Individual State Tax-Exempt Money Market Mutual Funds

Money market fund fee waivers during and after the financial crisis

During periods of economic stress, in particular, the industry average of management expense ratios for retail money market funds is not necessarily a reliable indicator of the true expenses. Due to the collapse of money market yields with the onset of the financial crisis in 2008, almost all higher expense retail MMFs then waived most of their expense charges to avoid offering a negative yield. (Note that for many years subsequent to the 2008 financial crisis, yields for all money market funds were actually negative, after inflation has been taken into account.)

According to an iMoneyNet report, by the middle of 2009 in the depths of the financial crisis over 93% of MMFs had waived or lowered some of their fees. When interest rates recovered, most of these previously high cost MMFs raised their fees again by eliminating some or all of their waivers. If you want to understand this situation for a particular money market mutual fund, read the prospectus to understand fees and fee waivers. Many money market funds were quick to increase (restore) their higher fees following the crisis.

Table 3.27 -- US Taxable Government Money Market Mutual Funds

Vanguard Treasury Money Market Fund -- 0.09% expense ratio -- VUSXX

Vanguard Federal Money Market Fund -- 0.11% expense ratio -- VMFXX

Fidelity Government Money Market Fund Premium -- 0.32% exp. ratio -- FZCXX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Treasury Money Market Fund -- 0.42% expense ratio -- FZFXX

Fidelity Treasury Only Money Market Fund -- 0.42% expense ratio -- FDLXX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.28 -- US Taxable Corporate Money Market Mutual Funds

Vanguard Cash Reserves Federal MM Fund -- 0.10% expense ratio -- VMRXX

Fidelity Government Cash Reserves -- 0.34% expense ratio -- FDRXX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.29 -- US/National Tax-Exempt Money Market Mutual Funds

Vanguard Municipal Money Market Fund -- 0.15% expense ratio -- VMSXX

===== Note: This category's lowest expense fund +.25% =====

Fidelity Treasury Money Market Fund -- 0.42% expense ratio -- FZFXX

Fidelity Tax-Exempt Money Market Fund -- 0.42% expense ratio -- FMOXX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Table 3.30 -- Individual State Tax-Exempt Money Market Mutual Funds

California

Vanguard CA Tax-Exempt Money Market Fund Inv. -- 0.16% exp. – VCTXX

===== Note: This category's lowest expense fund +.25% =====

Fidelity California Municipal Money Market Fund -- 0.42% exp. -- FABXX

Massachusetts

Fidelity Mass. Municipal Money Market Fund -- 0.42% exp. ratio -- FAUXX

New Jersey

Fidelity New Jersey Municipal Money Market Fund -- 0.42% exp. -- FAYXX

New York

Vanguard NY Tax-Exempt Money Market Fund Inv. -- 0.16% exp. – VYFXX

===== Note: This category's lowest expense fund +.25% =====

Fidelity New York Municipal Money Market Fund -- 0.42% exp. -- FAWXX

Pennsylvania

Vanguard PA Tax-Exempt Money Market Fund -- 0.16% exp. ratio -- VPTXX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

Chapter 4: Seven rational investment fund selection criteria

Section 4.1: Introduction to seven scientific criteria for screening mutual funds

Section 4.2: Never pay adviser sales loads or 12b-1 fees

Section 4.3: Choose funds with the lowest management fees

Section 4.4: Select funds with the lowest portfolio turnover

Section 4.5: Avoid large actively managed funds

Section 4.6: Choose mature investment funds

Section 4.7: Avoid very small investment funds

Section 4.8: Screen to eliminate significantly inferior fund performance

When viewed through the lens of the best interests of an individual investor, over 95% of available investment mutual funds are just chaff – not wheat. After the vast investment fund “chaff” created by a profit seeking financial industry has been removed, only low cost, low turnover and passively managed index funds remain. Assemble your investment portfolio from these low cost index mutual funds wheat and ignore the rest.

Section 4.1: Introduction to seven scientific criteria for screening mutual funds

People simply want to invest in what they hope will be better investment funds. They want selection criteria that can lead to a higher probability of doing better in the future on both a sustained and risk-adjusted performance basis.



With real lives to lead, people who are not professional investors just need an efficient, but effective fund identification process. They want to pick the best mutual funds that will make their investment assets work for them. They do not want to have to "work for" their assets by spending large amounts of time monitoring and repeatedly changing from one mutual fund to another.

Millions of individual investors run futile hamster wheel races pursuing the illusion that the superior past performance of some funds and individual securities will lead to the same superior performance in the future. I have written this book for those of you who want to stop "chasing your personal finance tail" and get on with your real life.

Of course, it is difficult to stop running in a personal hamster wheel, unless you are convinced that there is better approach that you can implement yourself with relative ease. The good news for you is that this book provides a superior, research-validated way for you to choose mutual funds.

Low cost no load index funds simply are better

Taken as a whole, the vast body of investment research studies show that there really are better approaches to buying and owning mutual funds. You do not need to frantically chase fund performance. Performance chasing simply does not work.

The vast majority of individuals who chase fund performance get results that are far worse than a passive approach. Better performance tends to come to those individual investors who calm down and try to understand what actually has been demonstrated to work in the investment research literature.

Below I introduce seven sections on selection criteria that can lead you to the best no load mutual funds to hold for the very long term. In particular, note that you should use the first six selection criteria first. Only then should you look more closely at a fund's past performance — and then only for the purpose of eliminating the worst historical performers. Read these seven articles for all the details.

The best mutual fund selection problem solved for individual investors

The seven scientifically based, rational fund screening rules are discussed in more detail below in this chapter. Furthermore, I have already used these seven screening rules to winnow down the tens of thousands of available investment funds to a much shorter list of 250 low cost no load mutual funds. I have done all the pre-screening grunt work for you, and these low cost funds are listed in various asset class categories in the following chapter.

Therefore, your mutual fund selection problem has been focused on a much more manageable number of funds for you to evaluate in more detail. With this book, you do not have to pay high fees to expensive financial advisors who most often will suggest that you pick high cost funds that had superior historical performance, but will most often will turn out to be mediocre or worse performers in the future.

Summaries of these seven scientific mutual fund screening criteria

The section immediately below provides an “intermediate level” description of the seven investment fund selection criteria. If these summaries provide enough information then you will not need to read the more detailed sections later this chapter. When you are satisfied with your understanding, you can go directly to the screened and categorized low cost, no load mutual fund lists in the previous chapter. If you want to understand more background about these seven selection criteria, read the more detailed sections in this chapter.

1) The best mutual funds have no sales loads and no 12b-1 fees

The majority of investors buy more expensive mutual funds through advisors. They pay a very, very high price over their lives for doing so. You simply do not need to pay hefty sales commissions (loads and higher annual expense ratios) to financial advisers who will only offer to you those funds that will pay them these hefty sales commissions. Alternately, you do not have to pay percent-of-assets advisory fees to have a fee-based advisor choose mutual funds for you – you can do it yourself.

When you pay someone's sales commission or percent of assets fee, who in turn only tells you about expensive mutual funds, you shoot yourself in both feet. First, you pay for inferior advice. Second, you end up living with fund expenses that kill a substantial portion of the growth of your personal investment portfolio. All mutual fund sales commissions, marketing fees, and asset fees can be avoided entirely by buying from the many mutual fund families that will sell fund shares directly to the public without such fees.

This investment fund selection criterion is very simple. Zero is the maximum amount of front-end load and back-end load fees that you should pay. Zero is the maximum marketing or 12b-1 fee you should pay. 12b-1 sales fees are just extra annual percentage charges that get added to the management expense ratio of some mutual funds. Financial advisors will make more money with mutual funds that charge 12b-1 fees, but you will make less.

You never need to pay percent of assets fees. Just say no. However, because you are not going to pay these fees, you will also have to find the funds yourself. The good news is that very low cost, broadly diversified passive index mutual funds are very easy to find with this book.

2) The best no load mutual funds have very low management expenses

Lower investment management fees are better. Lowest is best, and the lowest means passively managed index mutual funds. Since there are numerous funds with annual expense ratios below .25%, always look there first.

The higher the annual fund expense ratio the more you should question why you should pay such higher expenses. Paying more tends to lead to inferior rather than superior performance net of you overall investment costs and capital gains taxes.

3) The best no load mutual funds have very low portfolio turnover

Lower portfolio turnover is better. Higher turnover increases hidden fund transactions costs, which tend not to be recouped through better performance. Look for single-digit and very low double-digit annual portfolio turnover rates in the no load index funds that you purchase.

4) Avoid large actively managed mutual funds

When they trade their overly large portfolio positions, large actively managed funds tend to affect securities market prices negatively. This can only drag down their net fund performance. The more these excessively large mutual funds trade, the worse it gets.

High trading costs suck value out of the mutual fund portfolio, and these costs are on top of the management fees that you pay directly. However, these trading costs are hidden, because they lower gross returns, which are not separately reported to fund shareholders.

High turnover by large funds should be a big red flag to you. If you avoid actively managed funds altogether, then your concerns about excessive fund size can be greatly reduced. Very large index funds need to manage their trading impact, but their turnover is far lower than actively managed funds. Therefore, total index fund trading costs are much lower. Not trading is a virtue.

5) Choose mature mutual funds

The mutual fund industry throws a whole lot of new fund spaghetti on the wall to see what will stick. If a new mutual fund has a lucky streak, individual investor assets and "advised" assets come running their way. This new fund becomes an accidental success — at least a success for the fund company.

However, when you invest in a very new fund, and it fails to grow, the fund is very likely to die or to be absorbed into another fund. Rarely do lousy young mutual funds fold up with the investment fund company refunding your money. Why confess to incompetence and give back assets that could still yield fees?

When new funds do not attract enough assets, these "failed" funds (along with your invested and diminished assets) most often will get merged into other funds controlled by the fund family. Unfortunately, new failed funds tend to get merged into larger funds with noticeably inferior historical performance.

Mutual funds are like dogs in some respects. They must grow up in just a few years. If they do not get big fast, usually a bigger dog eats them. Investment fund companies do not want to take any of the luster off their currently hot funds, by blending in assets from these inferior funds that they intend to euthanize. Therefore, more likely than not your money will get tossed into one of their bigger funds with “doggy” performance or into one of their average funds.

To avoid participating in this frenetic new fund infanticide process, prefer funds that have been in business for at least a few years. Three years is usually enough. You can pick younger funds, but you should only younger funds from low cost mutual fund families that have a reliable record of accomplishment in launching and growing low cost funds.

6) Avoid very small mutual funds

Small funds cannot operate efficiently. They need a minimum critical mass of assets to fund required management expenses. Simply avoid very small funds. One or two hundred million dollars is probably the minimum. A higher minimum would also be fine, since there are still many larger funds to choose from that would meet these other criteria.

7) Screen to eliminate significantly inferior mutual fund performance

Evaluate the historical investment performance of mutual funds, but only AFTER using the other screening criteria first. Superior or average past fund performance tells you ABSOLUTELY NOTHING about how a fund will perform in the future. Pay attention to the fine print in the prospectus that says that past performance does not indicate future performance, because that is the truth that stands up in court.

Ignore all the fund industry’s selective marketing of only their past winners. Individuals need to move beyond their naive and flawed notions about projecting superior historical investment performance into the future.

Modern, highly competitive, and real-time securities markets are auction price setting mechanisms that force the mass of smart and not-so-smart professional and amateur investors to accept average returns over time. Only very poor past performance tends to indicate potentially sub-par performance in the future, and that is probably itself due to higher costs. Therefore, eliminate only the very worst of historical performance during fund screening and choose from

the remainder — despite whether a fund has had superior, average, or even somewhat below average performance in the past.

Net of costs, four and five star funds are no better than three star funds and probably no better than even two star funds. Eliminate the bottom one-tenth to one-third of funds on a historical performance basis and then choose from all the remaining funds without stressing their past performance.

Instead, choose no load index funds with no sales charges, very low costs, and very low turnover. You should note that after applying the first six of the seven investment fund screening criteria, it is very rare that any funds with substantially inferior performance remain on the screened lists. As you cut investment costs of all kinds to a minimum, you automatically knock out the dogs, without having to do so directly.

If you evaluate the investment research literature, you will find that portfolios that hold passive, low cost, no load index mutual funds are far more likely to lead to higher risk adjusted net investment performance over the long run. Nevertheless, financial sales people will keep selling you more expensive financial products, because their bonuses and their employers' profits come out of your investment returns.

Very few individual investors take a close look at their risk-adjusted results and compare them to the net results they would have gotten from the passive, low cost investment strategy that was also available to them. Had their financial advisor been willing to overcome these inherent conflicts of interest and suggest a low cost, passive strategy, the investor would more likely have done much better.

Incentivized financial advisors are just salespeople, and they are trained to disparage low cost investing. Just ask about buying low cost investment funds, and you will find that the most common tactic is for the advisor to laugh at the idea. This client humiliation tactic deftly avoids a rational discussion. Since the logic and evidence is consistently on the side of low cost strategies, why even engage in a rational discussion with a client?

Most clients are uncertain about the complexity of investing and many unjustifiably view financial advisors as masters of the investment universe. Too many clients will just shut up, go along with these advisors, and end up poorer as a result.

These seven selection criteria offer you a straight-forward way to pick better load mutual funds by yourself. Become an extremely cost-conscious consumer of financial and investment products today, and you will start to control the only lever you really have available to improve your future net investment performance. Do not assume your advisor will do it for you, because most financial advisors are paid to pull in the opposite direction.

Section 4.2: Never pay adviser sales loads or 12b-1 fees

Sales loads and 12b-1 fees pay financial advisors to recommend excessively expensive mutual funds



Our friendly donkey asks: “Do you think this load makes me faster?”

Why do you think they call it a load anyway?”

Front-end sales loads, back end sales load, and 12b-1 charges just pay advisers. These payments are not used to improve mutual fund investment performance. There is no connection between mutual fund portfolio management and these extra sales charges. There is absolutely no reason to believe that a fund will perform any better to compensate for these charges. In fact, there is every reason to believe that these sales charges will just reduce your wealth.

Because securities markets are generally efficient, superior performance is largely due to luck rather than skill and superior performance tends not to persist. On average across funds, front end and back end sales loads are a dead weight loss to you due to market efficiency.

Front-end and back-end loads, 12b-1 fees, and other sales compensation charges and percent-of-assets fees only ensure that an advisor and his/her advisory firm will be compensated for guiding you to choose the funds that will pay these fees.

Front-end sales loads reduce the amount that will be invested in the fund on your behalf. You will have less money invested and fewer assets upon which to earn a return. Back end sales loads allow funds to take away a share of your future returns. Funds with front-end and back-end loads also tend to charge higher annual fees. Marketing fees sometimes known as 12b-1 fees are just additional recurring annual sales charges that further reduce your ongoing returns. Assessed over time, 12b-1 fees pay a sales agent for periodic "servicing."

All a front-end sales load or back-end sales load will guarantee is that there will be a paid sales person to tell you that the fund that they are trying to get you to purchase is a "better" fund. While advisors will most often be careful to avoid making specific promises about future performance, they will not hesitate to provide materials that suggest that the fund they are pushing had superior past performance and perhaps a 4-star or 5-star Morningstar Rating. Net of costs, four and five star funds are no better than three star funds and probably no better than even two star funds. See:

[Do Morningstar Ratings predict risk-adjusted equity mutual fund performance?](https://www.theskilledinvestor.com/financial/Do-Morningstar-Ratings-predict-risk-adjusted-equity-mutual-fund-performance_63.html)

https://www.theskilledinvestor.com/financial/Do-Morningstar-Ratings-predict-risk-adjusted-equity-mutual-fund-performance_63.html

This game is easy to play. Only mutual funds with "superior" past performance are pushed promoted by commissioned financial advisors. Less expensive, no load mutual funds will be ignored. When superior performance inevitably stops in the future, new "better" funds will be promoted instead. Past "better" funds that turn out not to be better are just shelved. The securities industry has been playing this superior investment performance shell game for decades. Unfortunately, you get stuck with mediocre future performance and higher investment costs, unless you stop playing the game.

Ignore the sales pressure of any financial counselor or investment advisor who pushes stock and bond mutual funds with loads, marketing charges, and higher expenses. Just buy the lowest cost no-load mutual funds listed in this book directly.

Section 4.3: Choose funds with the lowest management fees

A high mutual fund management expense ratio can only be justified, if an investment fund earns an even higher net return that compensates for these higher expenses

Sadly, this is most often NOT the case with costly actively managed equity and bond mutual funds. In addition, you have no reliable way to tell beforehand which actively managed fund will return more than its added costs. With a passively managed index fund, you are highly likely to get an investment return that is close to the securities market return less your costs.

A higher management expense ratio will tend to cause an actively managed fund to trail the return of index funds. Therefore, your chances of picking a supposedly superior actively managed fund are greatly reduced. Even in the short run, only a minority of actively managed mutual funds perform well enough to compensate for their higher investment management expenses.

In the longer term as the comparison period lengthens, fewer and fewer actively managed stock and bond funds will beat the market, because "superior" short-term performance is mostly due to luck rather than to skill. Investment luck does not last. When the performance evaluation period increases, fewer actively managed mutual funds deliver net performance that is better than a passively managed index fund targeting the market's return. Actively managed mutual funds are unreliable vehicles to use for your family's long-term financial needs!

The average actively managed mutual fund manager demonstrates some skill, but the added costs swamp this additional investment return

Certain scientific studies have demonstrated that some professionally managed equity mutual funds seem to exhibit a modest level of apparent skill in their ability either to choose stocks and bonds and/or to manage their stock and bond portfolios. These mutual fund managers may be slightly better stock pickers, and/or they may have better portfolio management practices.

In managing their portfolios, these mutual fund managers may not make the behavioral mistakes that many individual investors do. Examples of behavioral investment mistakes are holding on to losers too long and selling winners too quickly.

Scientific finance studies have demonstrated a slight persistence in stock price trends for some, but not all equities. This persistence could benefit portfolio managers who hold their winners longer and sell their losers more quickly. Evidence of superior skill for bond fund manager seems entirely lacking, so buying no load bond funds is clearly a better strategy.

Most professional investment fund managers have expertise, but efficient market competition tends to make them all mediocre in the long term. Just because scientific finance studies do not support buying actively managed stock and bond funds on a net returns basis, this does not mean that professional money managers are not somewhat skillful. To the contrary, the level of professional expertise in portfolio management at most fund companies is very high.

However, unlike too many American schools and colleges, the real-time securities markets have built-in grade and achievement deflators. On average, the markets deliver “C” grade level returns before costs. If your costs are lower, you are more likely to get a B or even an A. But, when your costs are higher, you are much more likely to get a D or an F on a net returns basis.

Accidental, chance based variability in portfolio returns across mutual funds is the major factor that obscures the truth about the inferior net performance of more costly funds. Market participants must put a discounted, risk-adjusted value on the future economic prospects of their potential investment holdings and guess which will perform better. These highly uncertain predictions make securities market prices volatile and highly unpredictable. After the fact, market participants will eventually be graded on the valuation impacts of currently unknowable positive and negative future events. Playing with your money, some investment fund managers will be lucky in the short run, while others will not be. However, over longer periods fund manager performance averages out. You have paid much higher fees for a bumpier ride, and you end up poorer as a result.

Minor, short-term skill demonstrated by some active professional investment fund managers, perpetuates the completely spurious active management versus passive management "debate"



From the perspective of the individual investor, this tired active management versus passive management "debate" or argument is completely irrelevant. Scientific finance studies have the advantage of being done after the fact, and they use large sets of historical investment fund performance data to see what actually did happen. Some studies provide continuing fuel for self-interested industry promoters to keep saying that actively managed mutual funds provide value.

However, without a crystal ball, individual investors instead face the daunting task of trying to pick some of the few future winners out of a very large crowd of investment fund managers who will not provide a positive net return. The active management debate implies that after all the additional management expense ratio costs, mutual fund trading costs, higher capital gains taxes, and extra time are taken into account, investors are supposed to have some crystal ball to sort future winners from losers.

Nobody has such a crystal ball. The closest approximation to a crystal ball that is available is the simple rule of buying only very low cost mutual funds. All very low cost mutual funds must be cost efficient and broadly diversified, passive investment funds. Low cost funds do not charge enough to support anything but a market index tracking strategy.

The investment fund management industry keeps pointing to past performance and Morningstar ratings as predictors, when superior past performance and 4-star and 5-star ratings are useless predictors. Instead, lower costs and lower turnover are far superior predictors of future mutual fund performance.

Even the scientific studies that demonstrate some professional skill, do not show that this incremental skill justifies paying the much higher fees of active funds. On average, actively managed funds simply do not have sufficiently higher returns to cover even their higher direct management expense ratios.

The research shows that added management expense ratio costs typically outweigh added performance by about 2 to 1 or 3 to 1. And, this does not even count the higher trading costs and the deadweight loss that individual investors are subjected to when they pay investment sales loads and 12b-1 fees!

Spend 2 or 3 or 4 or more dollars in a slightly skilled but largely random investment fund game to get a dollar back! Waste your valuable time trying to figure out which funds will demonstrate better performance. Take the risk that you could pay far more and still end up picking one of the worst rather than one of the "best" actively managed funds, after the results are in. Do this over and over across your lifetime. Sounds fun, huh?

Did you know that one investment research study on growth mutual funds demonstrated that there was a 12 to 1 ratio between the cumulative returns of the best performing growth mutual fund to the worst performing growth mutual fund over the 19 year period from 1976 to 1994?*

* Edward S. O'Neal, "How Many Mutual Funds Constitute a Diversified Mutual Fund Portfolio?" *Financial Analysts Journal*, March/April 1997: 37-46

Sound ridiculous to you? For the slimmer chance of winning the investment manager selection lottery, do you want to roll the dice and end up with a terrible fund or maybe a series of terrible funds? Perhaps this is not the best way to plan your family's financial future.

Why bother listening to this completely self-serving securities industry "debate," when you can simply buy very low cost, broad market index mutual funds, and then get on with your life? Do you really want the pleasure of spending a lot of time in your life listening to one financial advisor after another tell you that a succession of expensive investment funds are "better"? Then, do you want the excitement of watching these "better" funds perform over time, when they are far more likely not to be better as time passes and as your portfolio is harmed?

Furthermore, higher active transactions costs are most often hidden and left out of the comparison, even though higher active fund trading costs can will drag down net returns for

higher turnover funds. Also, these studies usually do not account for increased taxes paid by individual investors caused by active trading. Finally, they do not measure the opportunity cost related to an individual investor's extra time spent on futile, ongoing efforts to pick "superior" funds that most often will not be.

An individual investor is better served by choosing from among the numerous passive, no load mutual funds that have decided to compete on low costs.

Obviously, a decision rule that focuses on lower fees will strongly favor passively managed index funds over actively managed funds. You will have more choices than you need, if you restrict your investment fund choices to those passively managed mutual funds that are trying to attract individual investors' money by charging very low fees.

When screening mutual funds, you should first set a relatively stringent upper limit on the annual expense ratio that you are willing to pay. With passively managed domestic index funds, .5% annually is an overly generous upper limit. Many domestic index funds are available with management fees well under .25%. Because of their variety, it is not as easy to generalize about screening international and global index funds. However, much lower management expense ratios should still be the key screening rule for these non-US funds.

With actively managed mutual funds, you first really should ask yourself whether you have a valid reason for still preferring them over passively managed index funds. If you still have a good reason to select an actively managed fund, which most individual investors do not have, then you should still seek lower management expense ratios among active funds. You might start screening with an upper expense ratio limit of .75% and then move lower. Obviously, you should also amortize any sales loads that you cannot avoid. Again, however, there is never a good reason to pay a front-end sales load or back end sales load. There are many better no load mutual funds available for you to buy directly from no load mutual fund companies.

In addition, if you still insist upon traveling down the active investment management road, then try to get some genuine enjoyment out of the thrill of doing so. Why? Because you are likely to pay more, get less, and spend a lot more time, when you take the active investment path. Therefore, you need some other compensation to make up for the expected loss. The active path is like going to Las Vegas. If you have any perspective on the odds, you know that you are more likely to lose than win with a higher cost active versus a lower cost passive strategy.

Active investing is such a fun hobby, isn't it? When you do your investment research and trading, I suggest you laugh out loud and have a really good time just like all the people you see on the gaming floors of casinos. Oh, what's that you say? The vast majority of people you have seen on the gaming floors are rather serious and dour? Relatively few gamblers seem to be enjoying themselves much, and the ones laughing are most often late night drunks who are just tossing their money away? Certainly, your path will be different with active investing. You expect to yuck it up, of course, sitting in front of your computer screen for endless hours trying to pick winners and avoid losers. Big smile, right? Just keep in mind that you should have some compensation for consciously choosing a path that investment research consistently has shown leads to lower expected net risk-adjusted performance.

Section 4.4: Select funds with the lowest portfolio turnover

Higher mutual fund turnover means higher securities trading costs, which reduce investment fund performance.



Short-term mutual fund trading is a zero sum game played against other very well informed mutual fund traders and other securities market traders. On average, higher mutual fund turnover is far more likely to result in lower investment fund performance — instead of superior risk-adjusted performance.

Higher stock and bond mutual fund turnover indicates a short-term strategy to pursue supposedly superior returns though very active in buying and selling. The investment fund manager hopes that his or her short-term speculative insights will allow the fund to beat others in the highly competitive securities markets.

Most often, however, the very active investment fund manager will be wrong about the supposed virtues of more frequent trading. When securities trading volume is greater, then even higher investment fund performance is required just to break-even on the associated incremental securities trading costs.

The primary impact of excess turnover is to drive up trading costs, which tend not to be visible to individual investors. Such trading costs include brokerage commissions, the bid/ask spread, and the market impact, if mutual fund trading causes the bid-ask spread to move temporarily to absorb higher trading volume.

The mutual fund turnover ratio serves as a visible proxy to measure the more hidden securities trading costs of actively managed mutual funds

Such securities trading costs are not detailed in the information that is easily available to mutual fund investors. Trading costs are not paid out of the management expense ratio of the mutual fund, but instead securities trading costs directly reduce the reported investment fund performance and net asset value of the fund's securities portfolio.

When compared to funds of a similar style, a fund's turnover ratio gives a good indication of fund activity. Investment research studies have demonstrated that lower turnover is better.

Certain fund management styles will be characterized by low turnover, such as no load mutual funds that track passive indexes. Certain fund management styles, such as aggressive growth equity or stock mutual funds, will have far higher mutual fund turnover. Unfortunately, the investment research literature does not demonstrate that higher turnover leads to better performance.

In fact, the opposite is true. The great majority of actively managed funds with high turnover do not demonstrate better investment fund performance results, after the additional trading costs are taken into consideration. Furthermore, no reliable way has been shown to identify beforehand the minority of higher turnover funds that will eventually do better. You are far more likely to pick from the majority of higher turnover funds that will do worse — sometimes much worse — because of their added costs.

When you select no load mutual funds, look for funds with the lowest turnover. Very low turnover funds are more likely to provide superior investment fund performance. The reason is

simple. Low turnover no load mutual funds avoid the additional drag of higher securities trading costs.

Any database application you use to screen mutual funds should allow you to screen for portfolio turnover. Turnover is calculated as a percentage of the fund's average portfolio value on an annual basis. Annual percentage turnover can range from a few percent per year to many times 100% per year.

For points of reference, Morningstar provides mutual fund turnover statistics for major types of funds. Morningstar data indicates that actively managed domestic stock mutual funds have average turnover of about 100%. Average turnover percentages are similar for international stock funds.

Taxable bond funds had average turnover around 150%. Of course, bond mutual fund turnover can vary significantly due to the average duration of the bonds within the fund. Municipal bond funds typically have much lower turnover of around 25% per year. Over time, these mutual fund turnover averages for actively managed funds may shift.

In contrast, passively managed, stock index no load mutual funds have far lower turnover and therefore far lower trading costs. The best no load stock index funds will have single digit annual percentage turnover ratios or at least very low double digit percentages.

Concerning bond market index funds, these usually are passively managed no load mutual funds holding fixed income securities. No load bond funds will have turnover that also varies, because of the average duration of the bonds in the fund. Nevertheless, no load bond index funds should almost always have lower turnover, when compared to more actively managed bond mutual funds.

Section 4.5: Avoid large actively managed funds

Big mutual fund portfolio positions and higher percentage ownership of any company's stocks and bonds are not good for actively managed mutual fund performance

These big positions and high percentages are not good for your personal investment portfolio either. Large size constrains how a fund can trade and how efficiently it can do so. When an actively managed mutual fund becomes very large, it must manage its trading

exceptionally well, or it will suffer significantly higher transactions costs, which tend to cause lower net mutual fund performance. The need to balance short term securities market trading supply and demand will drive up trading costs for actively managed mutual funds.

There are some extremely large mutual funds. For example, at the end of April 2020 after the initial impact of the coronavirus pandemic selloff, Morningstar, Inc. data indicated that the total net assets of the largest U.S. domestic stock mutual funds ranged from:

- a) \$819 billion for the largest US stock mutual fund (Vanguard Total Stock Market Index Fund – all share classes combined) to
- b) \$90 billion for the number 10 US stock mutual fund (American Funds Investment Company of America – all share classes combined) to
- c) \$48 billion for the #20 US stock mutual fund (Vanguard Dividend Appreciation Fund – all share classes combined).

Only a minority of these top 20 very large stock and bond mutual funds were passively managed no load index funds

Eight of the top twenty funds ranked by total invested assets in all share classes were index mutual funds (seven from Vanguard and one from Fidelity). The other 12 were giant actively managed mutual funds. All share classes for each fund, including share classes with front-end loads and back end loads, were grouped together for these total asset numbers.

Keep in mind that the large investment portfolio size issues and the market impact issues discussed in this section are far more significant concerns for actively managed mutual funds. They are not as important for no load mutual funds and that track passively managed market indexes. This is simply because very large index mutual funds do far less trading.

With no load index funds, the target composition of their portfolios can be known through the benchmark index

The composition of a particular no load index fund may vary from the index, but usually only by a small amount. The target portfolio composition changes only when the publisher of the underlying bond or stock market index changes the composition of the index. When the index changes, then index mutual funds must make changes, and this can have a market trading impact. Adverse market impact raises transaction costs and lowers net mutual fund performance.

Is there a maximum stock and bond mutual fund size of actively managed mutual funds that might affect investors' welfare negatively? A larger fund can afford more analysts and can increase the number of different company securities that it holds. However, there are practical limits. The size of the positions held will also tend to increase. Very large size can push some funds into investing only in companies with very large market capitalizations.

Many of these very large funds become de facto index funds, because their holdings tend to replicate a large portion of the benchmark securities index, while they charge higher fees and more often deliver inferior net performance after their added investment expenses and costs.

With so much money to invest, it is not practical for these fund giants to track companies with smaller equity market capitalizations or debt issues. Many giant mutual funds have enough assets to buy smaller companies in their entirety.

However, all diversified investment funds are constrained from doing so by laws and regulations — even if they wanted to so. For example, funds must avoid certain concentrated positions (e.g. not holding more than 5% of a company's securities) that would jeopardize their legal standing as diversified management companies and their corporate tax exemptions at the fund management company level.

Even if they stay within these legal ownership limits, very large actively managed fund size inevitably increases the fund's percentage ownership of the securities that it holds. A notable issue faced by very large actively managed mutual funds is the "market impact" of the fund's trading activities.

If the fund tries to buy or sell large positions in individual firms over short periods, the fund can adversely affect the market price of that security temporarily. When large funds buy or sell, there must be sufficient trading volume on the other side. A sufficient volume of trades by others with contrary opinions of a company's prospects must be available. If not, the market bid/ask price range must adjust temporarily to encourage others to enter the securities markets to trade.

Trading induced changes in securities prices can significantly drag down the net investment performance of very large actively managed mutual funds

In addition, mid-sized mutual funds can also suffer adverse market impact. If the positions traded by mid-sized funds are substantial relative to the total available short-term trading

volume, they will also suffer negative market impact. Nevertheless, this market impact problem tends to be the more acute with larger funds.

Given these considerations about the size of very large actively managed mutual funds, you might wish to limit the maximum size of the actively managed mutual fund, in which you would be willing to invest. You might decide that you are not willing to put your money into funds that exceed perhaps \$10 billion or \$5 billion in assets or even less. There is no magic excess size threshold. Nevertheless, you should be aware that you can still choose from numerous funds with assets under \$10 billion or \$5 billion that still meet the other screening criteria.

Many monster-sized actively managed mutual funds receive heavy publicity

Familiarity or lack of familiarity with a mutual fund brand name should not be considered when you screen funds initially. Brand awareness often is simply an indicator of a fund family's higher marketing and advertising costs that fund shareholders tend to pay one way or another. If other screening criteria indicate that a fund could be attractive, the fact that it is an unfamiliar fund should have no bearing on whether you decide to do more investigation.

You should keep in mind that your familiarity with the brand name of a mutual fund or with the names of mutual fund companies does not mean a larger fund is "better" than a smaller one whose name you may not recognize. In fact, because of the problem that investment portfolio performance could be worse for large and very large actively managed mutual funds, well-known brand names often deliver worse performance over the long term.

If well recognized actively managed mutual fund brand names attract excessive asset inflows, this will cause higher trading costs and greater negative "market impact." In addition, the portion of their portfolios held in cash can increase, and you will get charged the same high management expense ratio for the cash, as well as, the stock and bond holdings.

Understand that large mutual fund portfolio size is a far, far greater concern for actively managed funds than for passively managed index mutual funds that track bond and stock market indexes

Very large passively managed index funds do far less trading, because they trade only to invest net inflows or to redeem net outflows. In contrast, large actively managed funds incur

much higher trading costs in pursuit of better returns, which raises the hurdle than they must get over just to break even on these attempts.

With an actively managed mutual fund, for example, the mutual fund manager or managers can simply decide to change the composition of the investment portfolio and incur the trading cost and market impact. Every mutual fund manager hopes to gain more than the trading costs, when they do this.

Of course, when all these collective buy and sell decisions are made, fund managers are more likely to be wrong than right. They have no crystal balls about what will happen to securities market values in the future. For every securities buyer there must be a seller and for every securities seller there must be a buyer. Actively managed mutual fund portfolios get rearranged, trading costs go up, and total net performance must come down.

If you are considering investing in a very large actively managed mutual fund, you should think about the alternative of investing in a no load mutual fund that targets the same index benchmark

No load index funds do significantly less trading through their buy-and-hold strategies. They have a lower likelihood of a performance shortfall due to their market trading impact. Of course, index fund expenses should be substantially lower, which is also much more likely to improve net investment performance.

When an actively managed mutual fund's size grows very large, its portfolio holdings may also move closer to the composition of the market index. There is strong evidence that the portfolios of most very large, large, and even medium sized actively managed mutual funds closely resemble the composition of the passive indexes against which their performance is benchmarked.

However, the annual percentage expense ratios of these actively managed funds are far higher than the annual percentage fees of passively managed index funds. Active mutual fund shareholders are charged much higher management expense ratios across both the active and passive portions of their portfolios. In effect, you pay an extremely high asset management fee for just a little active management. This is because you pay a higher management expense ratio

across all fund assets, but only a much smaller portion of the investment portfolio is really being managed actively.

Of course, portfolio managers might disagree. Nevertheless, how do they explain the most likely outcome, which is to relatively closely track, but usually underperform the benchmark? Whatever the reasons or excuses, you can decide if you want to keep paying high fees for inferior closet indexers.

More often than not individual investors lose, when they hold actively managed mutual funds. The longer the time period is that investors hold actively managed mutual funds, then the smaller and smaller the chance is that they will actually "beat the market." Sadly, this transfer of assets from individual investors to mutual fund companies has continued and has grown for decades. It is well past time for individual investors to wise up!

Section 4.6: Choose mature investment funds

Investing in more mature stock and bond mutual funds allows you to evaluate the historical consistency of a fund's record

On average, the future portfolio returns of more mature funds are probably no more predictable than for very young funds with a similar style or strategy. However, the record of accomplishment of a more mature fund can provide more confidence in its commitment to its strategy and in its ability to remain in business. While there is no guarantee that an older fund will not fail, you have a better chance of avoiding involuntary participation in the frenetic birth and death process of many infant stock and bond mutual funds. Very young mutual funds simply lack records of accomplishment. Therefore, very young stock and bond mutual funds are more likely to make you be an experimental guinea pig of mutual fund companies.

Concerning screening criteria, simply set a minimum age for mutual funds that you are willing to have in your investment portfolio. Prefer low cost no load mutual funds that have been around for at least three years. Three years should be adequate, and there is probably no reason to have a longer minimum. The point is simply to avoid allowing mutual fund companies to experiment with your money.

The financial securities industry is clever and tries very hard to attract your investment mutual fund dollars. For example, a research study from 2004 using data from Lipper, Inc. indicated that 1,460 new mutual funds were started in 2003, 2,309 in 2002, and 2,392 in 2001.* The actual number of truly new and distinct funds is smaller, because Lipper counts different share classes as separate funds.

* Hayashi, Yuka. "More Mutual Funds are Disappearing Despite Market Recovery."
Dow Jones Newswires. February 26, 2004

Differences between share classes have nothing to do with the management of a fund's portfolio. Instead, these share class differences are due to the structure of the sales compensation paid to the investment counselor or financial advisor who convinces you to invest in stock and bond mutual funds. Different share classes simply assess higher or lower front-end and back-end sales load charges and higher or lower annual expense ratios.

Mutual fund companies argue that they are trying to offer innovative new stock and bond mutual funds to meet evolving investor demands. This answer is rubbish. Mutual fund companies are trying to get your assets into their funds. A true innovation motive is quite unlikely, because tens of thousands of funds of all types already exist worldwide. For example, there are almost as many different US domestic stock mutual funds, as there were U.S. publicly traded companies. (This counts only U.S. firms that are traded on public exchanges and excludes over the counter (OTC) penny stocks.)

The founder of the Vanguard Group, John Bogle, has a similar opinion of innovation in the financial services industry. He said, "One thing you can easily say is that we're over-innovated in the financial markets. We innovate because we find a "product" – a word I detest using in this business – that we can sell and make a lot of money on. That's the system. That's the way capitalism works. But with these brilliant quantitative croupiers taking those unusual derivative risks that they may not even understand, the more they take, the less the investor earns. An asset delivers a certain return over time, and trading back and forth with one another doesn't increase that return. Since trading is costly, it actually reduced the return. We've complicated the system. Innovation makes it worse." (Journal of Indexes, September/October 2013, Volume 16, No. 5, p. 40)

A more cynical view of this frenetic investment fund birthing process is that mutual fund companies recognize that fund performance is much more a matter of luck than skill. If fund families keep forming new funds, then some of these new funds will perform better by chance than the average fund within the particular investment style category.

The large number of new funds launched annually indicates that barriers to entry are very low. Fund families can launch a new fund and use their existing operations to support the new fund. If early fund returns happen to exceed its benchmark, then the fund family has a new fund to sell with a short but apparently superior performance record.

Small new mutual funds with stellar investment fund performance records attract investor assets

Sometimes, new fund managers will get lucky by taking positions in smaller firms with more volatile stock prices, or they may pick some larger capitalization firms whose stocks might appreciate dramatically in the short run. The very short, but apparently stellar, record of accomplishment of some new funds makes it much easier to attract investors. These funds can live to see other days, if new assets flow in fast enough.

You should pay close attention the expense ratios of a very young fund and the expense-related footnotes in its prospectus. It is common for fund families to subsidize the management expenses of new funds for a time. By keeping the management expense ratio down, the funds can temporarily inflate performance.

If the fund's securities selection is lucky, then more investors may come running. If the asset base grows quickly enough then could enable the new fund to grow its management expenses without increasing its annual management expense ratio.

However, if a mutual fund is not so lucky, its standalone management expenses will not disappear. Fund families do not want to subsidize costs of their small, languishing funds for an extended period, and the pressure will be on for the fund to "stand on its own." Therefore, you need to watch for upward creep in the management expense ratio of a very young fund over time. Note also that the higher a fund's expenses, the more likely it is that the fund's net returns will fall short, when compared to a passive market index benchmark.

The new mutual fund grindhouse: Toss 'em out — Chew 'em up

In the Warner Brothers movie *300*, the Spartans tossed to their deaths those babies whom they deemed to be inferior. Mutual fund companies also are quite Spartan in this respect. Unfortunately, most mutual fund companies do not extend this Spartan mentality to the management expense ratios that they charge investors across all their funds.

A new mutual fund that does poorly will often be put out of its misery, although this mortality process will do nothing for the misery of the mutual fund's investors. Most of these under performing fund dogs (or puppies) either will be shut down or will be merged into larger funds. For example, "according to data from Lipper Inc. 870 U.S. mutual funds were merged into other funds (in 2003), while 464 were liquidated. The pace is similar to 839 mergers and 555 liquidations in 2002, and 956 mergers and 433 liquidations in 2001."*

* Hayashi, Yuka. "More Mutual Funds are Disappearing Despite Market Recovery."
Dow Jones Newswires. February 26, 2004

As noted previously, 1430 mutual funds were created in 2003, for example. When 2003's 870 mergers and 464 liquidations are combined with these new funds, then the net number of new mutual funds was just 96! Fund financial innovation certainly seems like an awfully harsh process, through which many investors find themselves being dragged. The cynic would say that the mutual fund industry's rapid birth and infanticide cycle simply allows some of the fund industry's inferior performance history to be swept under the carpet and obscured or erased.



Mutual fund companies tend to merge new, under performing mutual funds into their inferior mature mutual funds

Furthermore, to the chagrin of participating investors, when unsuccessful young mutual funds are merged, there also is evidence that the older mutual funds — into which these young,

failed funds tend to be merged — will usually have inferior characteristics from the investor's perspective. The larger and older existing funds into which new and unsuccessful funds are merged have a higher tendency to be both more risky and poorer performing than the average mutual fund. *

* Edwin J. Elton, Martin J. Gruber, and Christopher R. Blake. "Survivorship Bias and Mutual Fund Performance." *Review of Financial Studies*, Winter 1996, Vol. 9, No. 4: pp. 1097-1120

Apparently, many mutual fund companies do not want to lose the assets that they already have captured in their inferior new funds by liquidating them and issuing refunds. However, at the same time, they also appear not to want to merge these failed young funds with their more successful older funds and thereby drag down the performance history of these more successful older funds. Instead, they usually merge their sick puppies with their older dogs, which are large enough to stay alive within the cost structure of the mutual fund companies.

Section 4.7: Avoid very small investment funds

If you are going to invest in actively managed mutual funds, then these funds need to have a sufficiently large asset base to fund the necessary securities research and analysis.

If an active fund is too small, then fund securities research, analysis, and management quality can suffer or fees could grow. Passively managed index funds do not have the significant overhead that actively managed mutual funds have associated with personnel to evaluate investment alternatives.

Because of their much lower analytical costs, the minimum size of passively managed index funds can be far less of an issue, when compared with an actively managed mutual fund. Nevertheless, both actively managed mutual funds and passively managed mutual funds have to cover their marketing, sales, legal, customer service, and other costs — many of which will benefit from the financial economies of scale related to the amount of assets under management.

A minimum total asset base is required to amortize the management expense ratio that is necessary to manage properly a mutual fund

To illustrate, an actively managed \$100M stock mutual fund with a 1% management expense ratio yields \$1 million annually for securities research, analytic expenses, and other fund management costs. In the grand scheme of what it takes to run actively managed mutual funds each year, \$1M is just not a lot of money. Therefore, it would be reasonable for you to set your minimum asset selection criteria at several hundred million dollars or even higher for any diversified investment fund — particularly those that are actively managed mutual funds.

If the maximum management expense ratio you are willing to pay each year is lower than 1%, then the required asset base would need to be proportionately higher. If the expenses of a particular "style" of active fund, such as emerging markets stocks, tend to be significantly higher, then you would want an even larger asset base over which to spread securities research and other portfolio management costs.

While the investment research literature indicates that passive index mutual fund strategies lead to better net performance on average, I do not expect that actively managed mutual funds will disappear. Therefore, if you still are going to invest in any investment fund and particularly actively managed funds, then you should want them to have a sufficiently large asset base to fund the necessary research and pay all other administrative costs. If a fund is too small, then fund management quality could suffer and/or fees will increase.

There are significant differences in costs between actively managed mutual funds and passively managed index funds. By not attempting to beat the market, which most often will meet with failure, no load index funds can dramatically reduce costs and taxes and improve the odds of better net returns. While there are some areas of specialized expertise in index fund management, properly managing an index mutual fund depends largely on having a very efficient trading operation to track the index and an efficient customer service operation.

Regarding securities research expenses, no load mutual funds can avoid the significant overhead that actively-managed mutual funds must incur. Expensive securities research analysts are not needed, since the funds track an index with a known list of securities. Because of their much lower costs, the minimum size of a passively managed index fund is less of an issue than it is with actively managed mutual funds. Nevertheless, individual investors still need to be concerned about index funds that are too small.

Section 4.8: Screen to eliminate significantly inferior fund performance

Screen out inferior mutual fund performance — but only after using the other mutual fund selection criteria above

Superior or even average mutual fund performance in the past simply DOES NOT predict similar fund performance in the future. Repeat this to yourself. Repeat it again. And again.

However, the investment research literature does provide some modest evidence that substantially inferior past mutual fund performance is more likely to lead to somewhat inferior mutual fund returns in the future. Excessive costs and high management expense ratios are the likely culprits, when explaining very sub-par diversified investment fund returns.

Choosing solely from among mutual funds that have performed very well in the past will lead to significant screening errors

As a first step in their mutual fund screening process, far too many individual investors and their financial advisors instinctively start by sorting funds on the basis their superior historical performance. They want to choose only from among those mutual funds that have performed the best in the past. They hope that superior past performance will continue into the future.

Both this instinct and this mutual fund screening approach are fatally flawed. Choosing only from among past higher performing diversified investment funds can lead to major mutual fund selection mistakes. These mistakes arrive in many forms, including inferior gross mutual performance, higher management expense ratios, costly sales loads and marketing fees, and/or higher trading costs due to higher fund turnover.

For example, if you choose a high cost and high turnover five-star fund with a superior, but largely lucky, past mutual fund performance record, then you can set yourself up for some real future investment performance troubles. If this mutual fund performance record does not continue into the future, then you will still end up paying a high management expense ratio and high, hidden fund turnover trading costs.

You will just to get mediocre future performance on a "gross" returns basis. When higher annual management expense ratio costs, higher hidden trading or turnover costs, and higher short-term capital gains taxes are taken into consideration, then the result will be inferior

performance on a "net" returns basis. What appeared to be a big winner, when it was owned by someone else, becomes a big loser, when you own this fund.

An additional reason why you might have decided to buy this high cost mutual fund could have been, because you were only sold "superior" mutual funds. Perhaps a financial advisor selectively offered to you only those mutual funds with higher past performance and 4-star and 5-star mutual fund ratings. Because you were naively inclined to buy on the basis of past performance, it was much easier for the investment counselor or financial adviser to make the sale to you by suggesting only four star and five star funds.

In the process of purchasing this fund, you may also have paid a substantial front-end sales load or back end sales load. If you paid a sales load, then an annual 12b-1 marketing fee probably was also tacked on to the annual management expense ratio to pay your financial advisor to "serve" you.

Now, your investment picture gets even worse. Instead of putting 100% of your dollar to work in the investment fund, perhaps only 95 cents will actually make it into the fund to work for you. In addition, the 12b-1 fee drives up your annual costs even higher.

Investment research studies indicate that superior past mutual fund performance simply does not indicate that there will be superior future performance — particularly after higher costs and taxes are considered. When historical mutual fund performance is evaluated carefully in well-designed statistical studies, there is very little evidence that managers of funds with superior past performance will sustain this performance into the future. Past fund success is simply not an indicator of future success.*

* Mark M. Carhart "On Persistence in Mutual Fund Performance." *The Journal of Finance*, 1997, Vol. LII, No. 1: pp. 57-82

Before evaluating past mutual fund performance, use the first 6 of these 7 objective mutual fund screening criteria

These 7 screening criteria can help you to screen the tens of thousands of available diversified investment funds to get down to a more manageable list of diversified investment funds to evaluate. The first 6 mutual fund screening criteria below will yield a much shorter diversified investment fund list.

Only then, should an investor use historical performance measures to evaluate the screened list and only then with the sole objective of eliminating those funds that have had a history of sustained and significant under performance. The investor can then use the web and other sources to research in greater depth the remaining funds on the screened list – whether or not their prior performance has been average or superior. Just eliminate any funds with substantially inferior past performance from this smaller diversified investment fund list.

Note that in reality however, after you have knocked out funds with

- 1) sales loads and 12b-1 fees,
- 2) high management expense ratios,
- 3) high turnover and trading costs,
- 4) large actively managed funds,
- 5) immature funds, and
- 6) small inefficient funds,

you are very unlikely to have any funds remaining that have substantially inferior past performance. Since these other six mutual fund screening criteria are inversely correlated with lousy mutual fund performance, you are very likely to have already eliminated all of the past performance dogs, as well.

Chapter 5: Other stock, bond and cash investment fund considerations

Section 5.1: Do your research – and do it BEFORE you buy

Section 5.2: Buy funds only to implement a very long-term buy-and-hold strategy

Section 5.3: How many investment funds should I own?

Section 5.4: Should I invest in dividend stock funds?

Section 5.5: Target date mutual funds may not be your best choice

Section 5.6: Invest in fixed income securities through low cost bond index funds

Section 5.7: Bond mutual fund fees

Section 5.8: Scarce low-cost international bond index mutual funds

Section 5.9: Screening cash investment funds

Section 5.10: Determining if a mutual fund does business directly with the public

Section 5.11: Asset tax location strategies can significantly reduce your taxes

Section 5.12: Portfolio optimization with an asset tax location example

Section 5.13: The financial services industry and the cost of financial advisors

Section 5.1: Do your research – and do it BEFORE you buy

The lists in this book can be very helpful to an investor who wishes to focus on low cost mutual funds. However, this is just the beginning of the investment process and not the end. Always understand any security that you are going to buy – before you buy it. Visit the mutual fund company website. Do some research. Get the prospectus. Read the prospectus.

Yes, actually do read the prospectus, so you that really know what you are buying. Many individual investors skimp on doing their research and the majority of people do not even open the prospectus. To some degree, this is understandable, because most investment fund lawyers slather on copious quantities of cover-your-ass risk exposure disclosure language and other boilerplate language into these prospectuses. Nevertheless, a lot of useful information can be

found in the investment fund prospectus along with all of this CYA verbiage. With some practice, you will learn where to focus your attention, when reading a prospectus.

Think of the situation this way. When you finally figure out that low cost mutual funds are the better way to invest, you will also understand that these are funds that you can hold for many years without having to revisit your decision. So take some time to read the prospectus so that you know what a particular fund is committed to do for you. If you do not like something, do not buy that fund and move on to investigate another fund, until you find the set of mutual funds that will meet your needs.

When you buy a house, you (should) get a termite inspection report before your money is committed and locked in. Would you buy a house without a termite report? Are you willing to take the risk that you later might find that half the wood in the walls is already sawdust? Think of a prospectus as the termite report for your mutual fund. If more investors were to investigate seriously the mutual funds that they buy and were to read the prospectuses, they might wake up to just how termite infested the mutual fund industry is with excessive costs and other self-serving and risky behaviors.

Yes, in my research informed opinion, a wide variety excessive mutual fund costs are the termites that continually eat away at your net long-term investment returns. When you begin to view these excessive costs as termites, rather than as justifiable costs that will reliably enable you to beat the other guy, then maybe you will behave differently. Investment fund termites come dressed in all kinds of appealing garb, including historical performance charts and lots of stars with smiling and confident advisor promotion, but ultimately excessive investment fees and costs will rot your portfolio from the inside.

Section 5.2: Buy funds only to implement a very long-term buy-and-hold strategy

You should purchase passive, broad index funds with the intent to hold and hold and hold them for a long time. You should expect a return that is close to the broad market return and should not have to concern yourself with market over-performance or under-performance. When you buy index funds, they should track their market index benchmarks relatively closely.

The mutual fund screening criteria and process I have employed eliminates the industry's increasing proliferation of very narrow sector mutual funds from consideration. Because I suggest a very passive, low cost, broad market tracking investment strategy, there is no reason to choose sector funds, since low cost funds are available that track the much broader markets at lower costs. (The only exception is that this book supplies lists of low cost real estate sector mutual funds for those who rent and lack any real estate exposure in their overall asset portfolio.)

Section 5.3: How many investment funds should I own?

There is no precise answer to the question of how many different investment funds a person might hold. I suggest that you avoid a proliferation of accounts and investment funds. Perhaps you could set a maximum limit of two or three different mutual fund companies and discount brokers combined where you would have accounts.

Of course, you could have multiple accounts with each vendor. Multiple accounts with a vendor are prompted usually by the need to segregate taxable assets, traditional tax-advantaged retirement accounts, and Roth accounts. Furthermore, sometimes there are reasons to maintain multiple tax-advantaged accounts of the same type to maintain a separation between different sources of tax-advantaged assets.

For example, if you did a series of traditional to Roth asset conversions over the years there could be reasons to keep each conversion in a separate Roth account for tracking purposes. In another example, if you rolled over a 401k into a rollover IRA, you may wish to avoid commingling new IRA contributions within that same account, so that you could later roll those IRA(401k) assets into a subsequent 401k, if you want to execute a back door Roth IRA conversion.

Overall, I suggest that you might hold ten or fewer different mutual funds across all these accounts, but the total number could be higher or lower, depending upon your assets and whether you have a proliferation of tax-advantaged retirement accounts. You could hold shares of a particular mutual fund in different accounts, which again probably would be dictated by the need to keep certain tax-advantaged assets segregated.

Each vendor would provide a consolidated report on your family accounts either monthly or quarterly. Frequency may depend upon account activity. To save money, these vendors will try

to get you to accept email delivery of electronic reports in lieu of hard copy statements. Personally, I prefer to receive the printed reports despite the additional physical filing. For me, printed reports are just more “accessible.” However, you would need to keep your printed financial records in a safe place and dispose of them properly, given the increasing and cumulative menace of identity theft. See:

See this extensive article: “Identity theft protection and prevention” at:

<https://www.theskilledinvestor.com/wp/identity-theft-protection-638.htm>

Section 5.4: Should I invest in dividend stock funds?

In this book, you will find listings of low cost international and US dividend stock mutual funds. These low cost dividend stock fund lists are provided because some investors have chosen to emphasize dividend-paying stocks in the equities portion of their investment portfolios.

Dividend-oriented mutual funds have been in existence for many years and normally are categorized, as core/blend funds rather than either value or growth funds. Therefore, this book will include dividend-oriented mutual funds in its core/blend mutual fund lists.

The purpose of this section is to question whether an investment strategy emphasizing dividends is necessarily a preferred investment strategy. The alternative is to invest in the broadest possible diversified stock portfolio or the entire universe of stocks whether or not they pay a dividend.

While there may be no “right answer” to this question, to invest in low cost mutual funds that skew toward companies that pay dividends, you will necessarily have to pay a modestly higher expense ratio. Doing this will also skew the stock exposure in your portfolio toward larger, more mature, and perhaps slower growing companies. Furthermore, a dividend strategy may tend to skew a stock portfolio with respect to industry type, perhaps increasing exposure, for example, toward consumer products, industrial, and financial services firms.

Investor preferences for stock dividends and many dividend investment funds serving these investors have been around for many years. However, the low return environment in the wake of the financial crisis and Great Recession has greatly amplified investor demand for dividend paying stock funds. In more normal markets, the price earnings ratios of dividend paying stocks

have been significantly lower than those of firms that pay no dividends or that pay relatively small dividends.

As the Federal Reserve has restrained interest rates and the number of low return years has ground onward, investors have reached for higher returns. They have sought higher returns in riskier bonds, in supposed "alternative" assets, and in dividend paying equities. By 2012, as measured by the price earnings ratio, dividend paying stocks had been bid up in price to the point that the P/E ratio of dividend stocks was on parity with that of non-dividend paying stocks.

If and when the business environment continues to normalize, there is a question whether relative these P/E ratios will revert back toward their historical relationships. Time will tell, but if this were to happen, dividend stocks would have to experience relatively lower price appreciation than would non-dividend paying stocks.

Personally, a focus on dividend paying firms has always seemed a bit odd to me. Over the long-term markets price the relative value of companies and their common stocks in relation to the expected growth of future earnings. Whether and how those earnings are disbursed is a matter of far less concern in the valuation of equity securities.

Obviously, firms may need to use some cash from earnings to fund operations, but they have alternatives regarding what to do with any excess earnings. The primary alternatives for excess earnings are:

- A) to increase assets by retaining cash thereby supporting growth in per share stock price through increased assets,
- B) to buy back shares with cash, which supports a higher per share stock price by reducing the number of shares outstanding, and/or
- C) to issue cash dividends that remove the excess cash from the corporation.

By issuing dividends, the distributed cash does not enhance the share price, but it does enhance the pre-tax total yield to shareholders.

If two firms are exactly the same in all respects and are exactly the same in their expected future earnings, then how they deal with excess cash earnings should not make a substantial difference in their valuation. For example, if one firm pays no dividends and retains all earnings, the market will set its stock price based on the combined value of its expected future earnings

and the value of its retained assets. For example, the net result might be that the markets value the firm's asset growth component at 3% and its future earnings growth component at 4% for a total stock price appreciation of 7% per year.

The second firm distributes all excess cash earnings as dividends, so the market would value future company growth at 4%. However, from the investor's point-of-view, he has also received a pre-tax distribution of 3% for a total pre-tax return of 7%. If the investor is a non-taxable institution, their net return is also 7%. If they are an individual investor subject to taxation, their return is 7% less any personal investment tax obligations.

Alternatively, the second firm could use the excess cash earnings to buy back shares. Therefore, similar to a dividend distribution the markets give no credit for asset growth because the cash was disbursed to buy back the shares. However, since there are fewer shares outstanding, earnings per share is expected to be 7% because the same expected earnings are divided by a smaller number of shares.

Yes, of course, there are a myriad of additional factors that might elaborate the model, but they do not materially affect the fundamental idea that assets and expected earnings drive stock valuations. Dividend policy tends to be irrelevant.

The problem, however, is that dividend policy is not irrelevant to many individual investors. Many investors who favor dividends have also decided that they are willing to spend the dividends to support their living expenses, but they are not willing to "touch the principal." Therefore, they skew their investment portfolio to enhance the dividend payout.

While they may never have to touch the principal, when they skew their investment portfolio toward dividend paying stocks, the principal of their portfolio must necessarily grow at a lower rate. If these investors took a more holistic view, they would recognize that dividends were largely irrelevant. If they need to live on some of their assets, and the company stock they own does not pay dividends, then they need to sell some shares, but the effect would be the same as spending the dividends, while they leave the principal alone.

However there is a key question in the choice of a dividend oriented stock investment portfolio. Is it worth higher investment fees, higher investment taxes, and a less diversified and

skewed investment portfolio relative to owning the whole market, just so that they can maintain the illusion of not having touched the principal?

Section 5.5: Target date mutual funds may not be your best choice

Most commonly, target date mutual funds are pre-fabricated retirement investment funds that are primarily designed to deliver a declining stock and increasing bond asset allocation over the years. This section provides useful information for those considering investing in target date funds.

Target date funds imply that equity allocation proportions should decline with age for everyone. Age declining equity allocations are not necessarily a given and are not appropriate to many people. As discussed in earlier chapters, the point of asset allocation is to align one's relative risk tolerance with the expected risk and return of your portfolio. While it is natural to assume that people will become increasingly risk averse with age, this is not necessarily the case. A wide variety of factors, such as stable income sources, wealth, investing knowledge, emotional control, etc. will affect whether one's risk aversion does or does not change with age.

For the rest of this section, however, let us assume that you would become more risk averse with age, and thus your investment portfolio should shift over time toward the greater stability of bonds and cash and away from the higher volatility of stocks. This is a significant presumption, because investors need to ensure that the investment funds they choose will actually implement the asset allocation strategy that they want. You should note that making this presumption implies that you have done some financial planning, and you understand the asset allocation that is appropriate in your current portfolio. It also implies that you understand your risk profile, which underlies your asset allocation strategy, and you believe that you will become more risk averse in the future.



Understand the structure of target date funds before investing

The financial crisis revealed that many investors naively had selected target date retirement funds based on the year in the fund name without understanding the concepts of "to retirement" versus "through retirement." Many investors who were close to retirement were shocked by what happened to the value of their target date funds as the stock market crashed. Despite carrying the same year in their names, some target date funds were designed with a glide path (the annually changing bond to stock ratio) that reached the most conservative level upon entering retirement, while others contained a glide path that continued throughout retirement. The equity allocation within different target date funds that had the same year in their fund names could differ by as much as 40 percentage points in their allocation to stocks. You need to do your homework when you select any investment fund, and target date funds are no exception.

Target date funds theoretically target an average investor who has an average risk tolerance. However, investors vary in their tolerance for risk and thus their optimal asset allocation would differ. This means that you should choose a target date fund based upon its expected investment risk and return profile rather than the year of retirement in the fund's name. Assuming that you

were to choose a target date fund with the most personally appropriate investment risk exposure, the correct choice of a target date fund would not necessarily be the fund with your projected retirement year in its name.

Any person believing that retirement planning requires simply choosing an investment fund with a year in its name that is close to the year that they intend to retire is not putting sufficient effort into their financial planning. While target date funds have their virtues, for many they are perhaps a bit too convenient. They should not be a license not to think clearly about your lifetime and retirement financial planning.

Choosing a target date fund vendor

Numerous mutual fund companies offer families of target date funds. Many of these target date fund families are offered only through employer retirement plans and/or are sold only via advisers. Target date funds are just combinations of assets classes and collections of investment funds with allocation percentages that change over the years, Nothing about them affects that other investment fund selection principles that are discussed in this book. The most desirable individual funds are the lowest cost, most broadly diversified, passively managed index investment funds. Therefore, the most desirable target date funds are the lowest cost, most broadly diversified, collections of passively managed index investment funds.

So how does one go about choosing a target date fund family, given that you know the risk profile of the particular fund within a target date fund family that would be most appropriate for you? Again, low cost is the dominant selection variable, which leads you to the most diversified index investment funds.

Instead of providing long lists of target date fund families that may or may not be available to you in an employer sponsored investment or IRA, this section suggests a different approach. We will look only at those low cost target date mutual fund families that you can invest in directly. If you are fortunate, you will find that your employer offers these same target date fund families in your retirement plan. If they do not, you can still evaluate whether the target date funds available to you in your employer's retirement plan are worth the extra price. The higher the cost of the target date funds available to you, the more you should complain about being denied access to lower cost target date funds.

In terms of direct investments into target date funds, until recently Vanguard was the lowest cost leader. Vanguard offers a low cost target date mutual fund family for direct purchase by investors with uniform expense ratios of .08% in 2023.

Now, let us look at the target date mutual fund families of Fidelity and Schwab, which have been the main low price competitors to Vanguard in the index fund arena. Until recent years, Fidelity and Schwab offered target date fund families with noticeably higher costs than Vanguard, and they still do offer those significantly higher cost target date fund families. However, the good news with both Fidelity and Schwab is that they both now offer index fund based target date fund families with very competitive low expenses.

Schwab now has an index fund target date family named: “Schwab Target 20XX **Index** Fund” – all with a .08% annual expense ratio in 2023. This is more of Schwab’s aggressive push to lower index funds costs and to lead in this market from a lowest management fee standpoint.

(Note that Schwab still maintains its more expensive target date fund family with expense ratios as high as .59%. It is not clear the justification for these higher expense ratios. So pay close attention to the fund family names, because the addition of the word “Index” is the only difference in their names.)

You also need to pay close attention to Fidelity’s target date fund names. The Fidelity various target date fund families have net expense ratios ranging up to 1.75% for its various future year funds. Fidelity target date funds are a particularly confusing word salad of “Freedom,” “Advisor,” “Blend,” “Flex,” combined with purchase restriction classifications like A, C, I, K6, Z, Z6, M, etc. When you look at the composition of the underlying funds, Fidelity’s more expensive target date funds can be composed of a jumble of up to a couple dozen different active and/or index funds. If you were to do some more research, you would find that some of these expensive target date funds are only available through retirement plans and some are available only through advisors with much higher fees that compensate advisors. The good news is that you can entirely avoid Fidelity’s high cost target date word salad naming complexity.

In contrast, the “Fidelity Freedom **Index** 20XX Fund” target date fund family in 2023 had a net expense ratio ranging from .06% to .12% for all future year funds depending upon the purchase class. Notice how much difference inserting the word “Index” into the fund family name makes in terms of reduced costs – up to 1.60% annually! In contrast to the mess

summarized in the previous paragraph, the much less expensive Fidelity “Index” target date fund family is composed of relatively few different underlying passively-managed index funds!

You could make your own low cost target date fund

Even if:

- A) you wanted to implement an asset allocation that declines with age,
- B) you understand the correct asset allocation model for yourself, and
- C) you found a target date fund family to implement your model,

you should realize that the allocations in target date funds are revised only once per year. While some thought does go into the construction of a target date fund family, there is relatively little "rocket science" involved in managing these funds from year to year. As the years pass you gradually adjust the proportions among the underlying funds.

In contrast, if you have an overall asset allocation plan across all your investments, you will re-balancing at least once a year anyway. It is a relatively trivial matter to shift your overall bond and stock proportions as you age. Compared to target date funds, you should be able to implement age related adjustment much more cost effectively using separate, low cost stock and bond mutual funds. Therefore, target date funds provide relatively little value-added to a knowledgeable person.

While target date mutual funds provide some diversification across asset classes for those who lack any financial or investment plan whatsoever, they are usually not the right tool for those who do have a financial plan. When you read and understand the "asset tax location" concepts discussed elsewhere in this book, it will become clear that you should take into account the taxability of your account holdings when deciding where to hold stocks and bonds within your various investment accounts. Depending upon your taxable and tax-advantaged asset holdings, target date funds might never be an appropriate choice within any of your accounts. This is simply because you instead would split your stock and bond funds and hold them in different account types to reduce investment taxes.

Finally, concerning costs, target date funds are "fund of fund" arrangements that tend to be more expensive than choosing individual funds. Target date funds add additional fees to manage the long-term asset allocation model, while each target date fund year just varies the underlying

stock, bond, and cash ratios of the underlying mutual funds. Even with the lowest cost investment fund vendors, like Vanguard and Fidelity, target date funds can still be somewhat more expensive than the underlying funds. Self-assembly is almost as easy and can be cheaper than these target date funds.

With a self-assembly method, a "do-it-yourself" Vanguard target date fund could cost less than .05% per year compared to the average pre-fabricated Vanguard target date retirement fund, which charges .08%. While this .03% or greater expense difference may not sound much, with a \$100,000 investment position the difference equals \$300 over a decade without compounding. That could buy a mid-sized TV that would probably last a decade. The point is that even very small percentage savings on large amounts are worth paying attention to - even if you are using the lowest cost, most efficient investment funds.

However, if self-assembling target date funds seems like it is not worth the bother, think about the comparison with the industry average target date expense ratio of about .5%. At the end of 2021, Vanguard stated that "industry average expense ratio for comparable target-date funds (was) 0.49%. (All averages are asset-weighted. Industry averages exclude Vanguard. Sources: Vanguard and Morningstar, Inc., as of December 31, 2021.)"

The savings compared to this industry average would be worth well over ten times as much, without taking into account the long-term compounded value of the money you save. Instead of giving your money away to the financial industry, you could have a mid-sized TV for a decade and take a nice vacation for a week.

Section 5.6: Invest in fixed income securities through low cost bond index funds

Bond trading is a very complex process that individual investors should leave to professional fund managers. The pricing and trading of bonds and fixed income securities is far more convoluted than for common stocks or equities. Furthermore, bond pricing is much less transparent and has wide spreads. In reality, you effectively buy at retail prices and sell at wholesale prices. However, the bond trading process is highly opaque to the individual investor, and many people do not understand that the securities industry holds a greater advantage in bond trading than in stock trading.

Securities pricing in the bond market is much different from the stock market. While a firm usually has only one kind of common stock, it could have dozens or even hundreds of different outstanding fixed income securities. Few individual investors have the required skill, knowledge, information, and experience to assess bond market prices.

Fixed income securities or bonds have different valuation characteristics than do common stock securities, and bonds require different valuation methods. Common stock investments give the investor a claim to part of the market value of the firm and to its dividends, if the Board of Directors declares any such dividend payments.

Compared to common stock held by shareholders, corporate bonds give their holders a more senior claim to the firm's cash flow to pay bond interest and principal payments. If bondholders' claims cannot be met, then default and bankruptcy may occur. The firm could be forced to sell or liquidate, and equity ownership could even pass to its creditors and bondholders. Such events usually are difficult, very lengthy, and distasteful processes.

Figuring out whether bond obligations are likely to be fulfilled by issuers during the term of the bond is best left to professional bond investment specialists. This is called the default risk. Expectations about the varying potential for default can cause substantial price differences for bonds that otherwise have similar terms.

Investors can achieve higher returns by choosing the lowest cost bond market index funds

No load bond mutual funds also can provide a very high degree of fixed income securities investment diversification, and no load bond mutual funds can do this very economically. For individual investors it simply is much more straightforward to hold bonds through a bond investment fund.

Once a bond fund establishes its "style" for the type, maturity, and quality of bonds it will hold, it purchases and holds bonds with an eye toward maintaining that style. Maintaining targeted maturity is relatively straightforward. Determining investment quality is less straightforward, but bond mutual funds have analysts on staff and have access to the analytic data and services of bond ratings houses like Moody's, Standard and Poor's, and Fitch Ratings.

Bond market index funds offer a far higher degree of investment portfolio diversification

No load bond funds provide the investment risk reduction associated with market diversification. Investors can achieve fixed income securities diversification far more economically than they could through the direct purchase of individual bonds.

Fixed income mutual funds offer additional trading efficiency advantages to individual investors. The professional traders of bond mutual funds can conduct fixed income securities trading much more efficiently. Furthermore, fixed income funds trade substantial volume, which gives them leverage in negotiations and the ability to trade with different parties. Individual investors have no such leverage, and they must take or leave the price they are given. Therefore, individuals buy at retail prices and sell at wholesale prices — often paying substantially higher spreads than professional fixed income securities traders do.

Without knowing it, bond market trading of individual fixed income securities can be very expensive for individual investors. Individual investors simply cannot tell whether they are getting a fair market price. Sometimes, individual investors pay very high spreads and transaction expenses, when they buy or sell individual bond securities. This is not an issue of bond market inefficiency. Rather, it is a problem of grossly unfair treatment aided to the obscurity of the bond market pricing process and the willingness of certain traders to take full advantage of individual investors.

Section 5.7: Bond mutual fund fees

Is it worth paying higher bond mutual fund management fees?

Simply put, if you pay higher bond mutual fund fees, then these bond management expenses tend just to be a "deadweight" loss to you. The best bond fund buying strategy is to pick only very low-cost no load bond funds.

In pursuit of higher risk-adjusted bond mutual fund returns, many investors wonder whether it is worth paying higher expenses and fees. If they do pay more, will they get better mutual fund performance? Will higher performance outweigh the added expenses? Investment science provides a strong "no" as the answer. When you pay more in bond mutual fund fees, you are just wasting your money.

When selecting among bond funds, always choose rock bottom fund costs, after you have decided on the type of bonds to hold and the average duration of the bonds that are held in the portfolio. If you choose investment funds from reputable vendors and these funds have substantial assets and broadly diversified holdings, then the fund investment costs should be the primary differentiator.

The financial industry perpetuates self-serving and false "debates" about active versus passive investing, and the vast majority of these supposed debates center on equity or stock investment funds. Nevertheless, the proponents of higher cost, actively-managed bond investment funds also promote their own active versus passive debate. However, the evidence clearly is not at all in their favor.

Higher bond mutual fund fees hurt the performance of all types of fixed income funds

In "*Bond Fund Returns and Expenses: A Study of Bond Market Efficiency*," Professor William Reichenstein of Baylor University studied the relationship between bond mutual fund returns and expenses.* Professor Reichenstein analyzed bond mutual fund expenses and returns for the years 1994 to 1998.

* Reichenstein, William. "Bond Fund Returns and Expenses: A Study of Bond Market Efficiency." *Journal of Investing*, Winter 1999: 1-9

To ensure that he was comparing bond funds of similar characteristics, Professor Reichenstein grouped bond mutual funds by their investment styles. Fund groups were differentiated by maturity (short-, medium-, long-term maturities) and investment grade quality (low, medium, high quality). Within each of the nine combinations of these maturity and quality style groups, he assigned each individual fixed income fund to one of three equal sized groups according to the fund's expense ratio (low, medium, high expenses).

Professor Reichenstein tested several theories about investment returns and expenses over 1-year, 3-year, and 5-year time horizons by comparing average investment returns between these nine maturity and quality groupings. For example, he compared the average net return of the low cost group to the medium cost and the high cost groups of the same style to see whether higher fees produced greater returns, and so on. Without failure, Professor Reichenstein found that higher expenses predicted lower returns in 42 out of the 42 group comparisons.

Superior performance of specific bond mutual funds could have been obscured by comparing only the averages between groups. Therefore, Professor Reichenstein tested whether individual funds within his maturity and quality groupings delivered returns that compensated for their higher expenses. Again, his conclusion was no.

More evidence that higher bond fund expenses lead to lower bond fund performance

In 1991, Jonathan Clements used Morningstar data that grouped bonds into five categories: government backed mortgage bonds, corporate bonds, U.S. Treasury bonds, general municipal bonds, and high-yield bonds.* Clements found that in 28 out of 30 comparisons higher expenses meant lower returns to the investor. In 1999, Clements updated his 1991 study and found that higher expenses still meant lower returns to the investor, this time in 15 out of 15 cases.**

* Clements, Jonathan. "In Picking Bond Fund, Expense Factor Remains the Key." *Wall Street Journal*, April 4, 1991, p. C1.

** Clements, Jonathan. "If Your Manager is So Smart, Why are his Expenses So High?" *Wall Street Journal*, July 6, 1999, p. R1.

In addition, in 1999 John Bogle analyzed bond maturity and quality groupings for government, corporate, and municipal funds.* He found that in 24 out of 24 comparisons higher expenses meant lower returns. Combined, 109 of these 111 comparisons in these four studies indicated that higher bond expenses meant lower returns to investors.

* Bogle, John, C. "Bogle on Mutual Funds: New Perspectives for the Intelligent Investor". Burr Ridge, IL: Irwin, 1994

Professor Reichenstein's analysis also concluded that the performance of similar bond funds with and without front-end loads was not statistically distinguishable. Additional expenses and adviser sales loads just tended to result in a dollar-for-dollar reduction in investor's assets. This means that advisers have no skill in identifying superior performing bond funds. When you pay an adviser, they will usually put you into a more expensive fund, and you lose on both the wasted sales load and the higher fees.

In fact, his analysis indicated that higher bond mutual fund expenses were a dollar for dollar "deadweight loss." The higher the expenses, the lower the net return was for the individual investor. Professor Reichenstein's analysis also concluded that the performance of similar bond

funds with and without front-end loads was not statistically distinguishable. Additional expenses and investment broker sales loads just tended to result in a dollar-for-dollar reduction in investor's assets.



This deadweight loss on high bond fund fees comes out of your wallet

Pay more to get less. Hmmmmm... Since when is that a good idea? Save your money. Ignore what commissioned bond mutual fund brokers and investment counselors tell you. Higher costs and sales loads do not deliver better bond mutual funds. Seek out and buy low cost, no load bond funds. Buy them directly from the mutual fund company to save money. It is your money. Hold on to it!

Section 5.8: Few low-cost international bond index mutual funds

Few low cost international bond index mutual funds

Given the complexities of investing in bonds across many countries and currencies, somewhat higher costs should be expected. However, when one considers all the available low-cost, US bond investment funds, there are currently few low-cost international bond mutual funds. This creates an investment implementation dilemma. While global bond fund diversification would be desirable, is it worth owning them? Unless you can pay rock bottom fees, your expected net returns are not anywhere near as high as international equities, when you

use the long-term return history as a guide. Furthermore, your international bond portfolio would be subject to positive and negative exchange rate volatility, as foreign currency returns are converted to dollars for performance reporting.

Cost efficient international bond investing – an index mutual fund dilemma

At this point, there are relatively few truly low cost funds international bond mutual funds, except two that were first opened to the public by Vanguard in 2013. Prior to 2013, only two retail international bond mutual funds were found with annual management expense ratios under 1%, and these expense ratios for those two funds were above .8% per year. In addition, those funds had relatively high turnover, which can indicate additional hidden costs related to trading and to short-term returns taxed at ordinary income tax rates.

Most other bond mutual funds in the world bond category with have other shortcomings, including: a) unabashed active management with excessively high turnover inappropriate to the duration of the underlying bonds, b) inadequate diversification, c) insufficient total net assets, d) very high investment minimums, and/or e) strategies that involve debt leverage, which amplifies risk. When the emerging markets bond mutual fund sub-category is considered, expense ratios are even higher, while these other shortcomings persist.

The long-term historical risk premium paid to bondholders of US dollar denominated intermediate-term bonds has been roughly 2.75% in real dollar terms – after inflation has been removed from the analysis. Thus, before 2013 the least expensive fund could consume almost a third of the total historical US bond market real dollar returns – without even considering turnover-trading costs and taxes.

Of course, one might hope that international bond funds would have higher returns than US dollar denominated bond funds, but we always need to keep in mind that risk adjusted returns are what one needs to pay attention – not just relative rates of return. International bond funds would add exposure to exchange rate fluctuations and other additional investment risks. Thus, one would need to evaluate whether there could be a reasonable expectation of significantly higher bond yields to compensate for these substantial costs, the exchange rate risk, and any other risk factors.

Low cost international bond mutual funds

Near the end of 2011, the Vanguard Group filed investment fund registration statements with the Securities and Exchange Commission and announced that it would enter the international bond mutual fund market. Vanguard stated its intent to introduce two broadly diversified international bond funds, each with Admiral and Investor share classes:

* Vanguard Total International Bond Index Fund

and

* Vanguard Emerging Markets Government Bond Index Fund.

In early 2012, however, Vanguard announced that these funds would be delayed. Vanguard's new international bond funds were finally introduced in May of 2013 and their expense ratios have significantly undercut the competition in the international bond mutual funds market. Then, world bond fund expense ratios average over 1.1% per year, and emerging markets bond fund expense ratios average over 1.3% per year.

These are the fund names, expense ratios and ticker symbols of Vanguard's line of world, international, and emerging markets bond funds. No other fund company has yet chosen to compete with Vanguard in the low cost end of the international bond fund market.

(Note that Table 5.1 below is the same as Table 3.12 above.)

Table 5.1 -- World and Emerging Markets Bond Mutual Funds

Vanguard Total International Bond Index Admiral -- 0.11% exp. -- VTABX

Vanguard Emerging Markets Gov. Bond Admiral -- 0.20% exp. -- VGAVX

Vanguard Global Credit Bond Fund Admiral-- 0.25% expense ratio -- VGCAX

Vanguard Global Credit Bond Fund Investor -- 0.35% expense ratio -- VGCIX

===== Note: This category's lowest expense fund +.25% =====

Vanguard Emerging Markets Bond Fund Admiral -- 0.40% exp. -- VEGBX

* Always read the prospectus to understand restrictions and fees, including any purchase, redemption, and brokerage fees that may apply. Investment funds sometimes are closed to new investors.

What to do about international bonds, when using only bond index mutual funds

Using only mutual funds, you might need to get a bit more creative with your investment portfolio. First, once you understand the chapter below entitled: “Asset tax location strategies can significantly reduce your taxes” you will realize that there are tax optimization reasons to hold your allocation to bonds within your retirement accounts. You might get lucky when you look at the international bond mutual fund choices available within your employer sponsored 401k, 403b, 457, or other retirement plan. You might find that a not-as-expensive international bond institutional share class fund has been made available to you and that could do the trick.

If you intend to hold your international bond allocation in taxable accounts, of course, you can purchase Vanguard's low cost international bond funds.

Section 5.9: Screening cash investment funds

Anyone can invest in money market savings accounts offered by fund companies that deal directly with the public. The primary objective of that article was to identify money market accounts with low investment management fees. Fidelity and Vanguard have the most low cost money market funds.

When you screen investment funds in almost any investment asset category and rank them from lower to greater investment management ratios, the resulting lower cost investment fund lists tend to be populated by funds from only a handful of investment management companies. A mutual fund company sets its business strategy, and some of them have decided to compete on the basis of low costs and high efficiency. It is my opinion that low cost investment fund companies tend to do a better job of serving the interests of individual investors.

The sad fact is that there simply are too few of these firms that are trying to save you money on your investments. Most investment fund companies seem to have a business strategy that is quite the opposite. You are their cow to milk. Generally, their marketing materials selectively focus on the past performance of their successful funds, while sweeping their dogs under the carpet. They charge you high costs, which doom most of these expensive funds to be inferior performers in the future. See: [*Pay Less to Get More.*](#)

What is important, when you buy money market saving funds?

Investment research overwhelmingly shows that lower cost mutual funds tend to yield higher returns. In general, the higher the mutual fund company expenses, the lower the net returns to individual investors. In the highly competitive money securities market place, more expensive cash equivalent mutual fund money managers do not achieve high enough returns to cover their higher fees. As a result, these higher costs cause you to get inferior net returns. You pay more. You get less.

Regarding choosing money market mutual funds, the process of picking them can be even more straightforward than choosing bond or stock funds. Stocks and bonds have a great deal more pricing complexity than money funds do. However, as with almost everything else in finance and investing, things seem to become more complex very rapidly once you take off the lid and look inside.

High cost and high yield money market mutual funds tend to be higher risk money funds

First, normally there are no government guarantees or otherwise that protect your assets in money market mutual funds. With money market savings accounts, you could lose your money. If for some reason, the market value of the securities in the fund portfolio fall significantly, then the net asset value (NAV) could fall below \$1.00. This is known as "breaking the buck," and while infrequent, it happens more often than most individual investors realize. (For more on this, see the next section.)

If you want Federal Deposit Insurance Corporation (FDIC) insurance on your cash holdings, then find a bank that offers FDIC insurance coverage on you money. The National Credit Union Administration (NCUA) runs the FDIC equivalent for credit union savings associations. The National Credit Union Administration is a US government agency that regulates and supervises credit unions. They also operate and manage the National Credit Union Share Insurance Fund (NCUSIF), which provides share insurance coverage for credit union members against losses should the credit union fail. When in doubt look it up on the FDIC or NCUA website, and ask specific questions of the financial institution where you intend to place your cash.

Individual investors are always looking for the highest returns, but often they do not ask about the risks associated with seeking higher returns. Since money market funds compete for the same customers, they want to offer the highest money market account rates. How can high cost funds offer the best money market fund rates?

Well, if you assume for a moment that all money market funds have that same management expense ratios, then obviously some funds could only offer higher interest rates, if they invested in investment instruments with higher yields. Of course, no investment with a higher yield comes without taking on higher risk, as well. High return and low risk investments are just a fantasy for naive investors. Therefore, if money funds offer higher yields, they can only achieve these higher yields by investing in more risky assets.

Now, let us assume that we are back in the real world and that some funds (many funds) charge higher management expense ratios than others — sometimes dramatically higher expense ratios. If these more expensive money market funds still want to compete for customers on interest rate yields, then they have to invest in even more risky securities to achieve much higher returns. Then, these higher gross returns from more risky securities are reduced by their higher management expenses.

For an extended period, high cost and high yield money market mutual funds might do just fine. Nevertheless, the higher risk is still there, because the underlying risk of the money market investment securities is still there. The risks are just not obvious to most investors. The question is when and how will this higher risk manifest itself?

Therefore, one of the major reasons that you should first screen money market mutual funds to pick only those with the lowest expenses is that lower cost funds do not have to take on so much risk to deliver higher returns. Professionally managed funds with lower costs should have a better risk and return profile over the long term.

Breaking the buck - money market account risk and mutual fund company reputation.

Do not be confused about FDIC coverage and money market mutual funds. Normally, money market funds are NOT covered by FDIC insurance. During the 2008-2009 credit crunch and financial crisis, the Federal Reserve Bank used the “systemic risk exception” to extend FDIC insurance to money market mutual funds. The purpose was to prevent an industry wide panic and "run-on-the-bank," following the failure of the largest independent money market fund family, Reserve Primary Fund. Temporary FDIC insurance coverage for money market funds subsequently ended, as panic subsided and the financial crisis passed. Requirements were later tightened from money market funds, focusing on the type and risk of underlying securities that

must be held, if a mutual fund family wanted to say their money market fund would maintain a \$1.00 net asset value (NAV).

Note that the Fed also used the “systemic risk exception” in 2023 to extend FDIC protection to bank deposits greater than \$250,000 when Silicon Valley Bank and Signature Bank failed. The Fed had increased interest rates to cool inflation and some banks with inadequate risk protections in place, such as Signature and SVB, rising rates and falling bond values meant that these banks had inadequate capital to survive.

You might wonder how often a money fund has broken the buck. Prior to the financial crisis, the only instance of actually breaking the buck was from 1994, when the U.S. Government Money Market Fund of Denver, Colorado, an institutional and not retail money market fund, invested in derivative securities and broke the buck. The fund was liquidated and institutional investors were “lucky” and got back about \$.96 on the dollar.

Nevertheless, there have been dozens of times when money funds broke the buck, but were bailed out by their parent mutual fund company. Within the year after the onset of the credit crunch in mid-2007, as the US housing bubble began to collapse, there were at least a dozen of these money fund “break the buck” rescues by their parent companies.

Why does the parent of the mutual fund company, step in? Generally, it is because they want to prevent a run on the bank — their money market mutual fund “bank.” They know that investors perceive that the net asset value is supposed to be stable and always equal to one dollar. Despite all their disclosures and small print, mutual fund companies realize that their money market savings fund investors expect money market account rates to be higher than a savings account, while they still believe that a dollar is a dollar and that the NAV will always be a buck. Many money fund investors probably assume that regular depository bank savings account interest rates are just lower due to higher fees and higher bank costs and not due to higher investment risk.

If the buck were broken and the money market account NAV fell below a buck, investors would panic and liquidate en masse. As investors fled the money market fund, many would also begin to question the fund company’s overall investment management capabilities. Many would also liquidate their other bond and stock mutual fund investments with that firm. If the mutual fund company did not support the NAV at \$1.00, then their entire business could fall.

That brings us to the 2008/2009 credit crisis and the second instance of breaking the \$1.00 NAV buck. This time, however, the money market fund to break the buck was not a small fund, as in 1964. Lehman Brothers collapsed into bankruptcy on September 15, 2008. The Reserve Primary fund, the oldest money market fund in the industry, held about \$65 Billion (yes, billion with a "B") in assets of both retail and institutional investors. Unfortunately, Reserve Primary held almost \$800 million in short-term commercial securities issued by Lehman Brothers.

Not only was the Reserve Primary fund huge and \$800 million a lot to lose, Reserve had no parent corporation with really deep pockets or any pockets at all to make up the difference. At best, Reserve executives were slow in clarifying the details of the situation, but the NAV was calculated at \$.97, not \$1.00. A rapid run on the remaining assets of Reserve began. Much worse, a widespread run on many other money market mutual funds began. The US Treasury Department stepped in on September 19, 2008 to offer "FDIC-like" insurance to money market mutual funds and support a \$1.00 NAV, and the industry-wide money market fund run abated quickly.

Reserve had a total of 27 different money market mutual funds. By the end of 2009, 24 of these funds had been liquidated, and the three remaining funds were in the process of liquidation. In short, the original money market fund family went down in its entirety, because it could not back up the implied promise of a \$1.00 NAV.

This is what you get, when you combine a global credit crisis, rapidly diminished value of securities in the portfolio, prevailing short-term interest rates hovering near zero, and no deep pocket parent to provide a bailout. In normal times, such a massive bankruptcy would be less likely and prevailing interest rates would be sufficiently positive to avoid dropping the NAV below \$1.00. In that circumstance, the yield might be cut significantly, but the earnings on the underlying cash equivalent securities would provide a buffer.

Incidentally, breaking the buck at a mutual fund has nothing to do with the auction rate securities scandal that unfolded early in the 2008/2009 financial crisis. In this not so delightful affair, major brokerage firms encouraged their clients to seek higher returns on their cash deposits with the implication that higher risk did not accompany these higher yields. Invented by the major investment banks in the 1980s, auction rate securities actually were high-risk investments -- not cash equivalent securities.

This higher risk manifested itself in early 2008, when the auction rate securities markets froze, the investment banks stopped supporting the auctions, and about two hundred billion dollars (yes, again, Billion with a "B") of assets were frozen. These securities were hardly cash equivalents for those left holding the bag. To learn more about this sordid, irresponsible, and continuing affair, search for "auction rate securities settlement" with your favorite search engine.

All this information provided above has probably scared the hell out of you. Now, what do you do with it? Do you run away from money market funds and put all your cash into FDIC insured bank deposits? While that is one alternative that you might consider, I have not supplied this information about money market funds and the credit crisis to have you swear off investing in money market funds. I simply wanted to make the point that you need to pay attention to both risk and return, even when you are investing in money market funds. Furthermore, you need to pay attention to the costs of money market funds and any other investment for that matter.

If you are investing your cash in low cost money market funds, you are giving yourself an advantage. If you are not reaching for the highest yield that you can find, then it is more likely that you are staying away from funds that invest in more risky assets. If you are doing both, then you are more likely in better shape.

Therefore, a good way to select the best money market funds with a reasonable risk and return profile is to choose from the lowest cost vendors. Then, you hope that they will be competent and not take unwarranted risks in pursuit of higher returns.

(As mentioned above, in the wake of the financial crisis tighter regulatory restrictions on allowable investment securities for money market fund portfolios have been imposed and the average duration of those underlying securities has been shortened.)

Next, you hope is that if the fund's money managers do made some securities investments that turn sour, then the parent company would have enough capital and would step in to bail out the fund, not break the buck, and prevent a customer run on their entire financial product portfolio.

Finally, after you pay attention to costs and avoid reaching for the very highest return, even with lower cost money market mutual funds, make sure that you are doing an apples to apples

comparison. In particular, pay attention to the "duration" of your supposed cash equivalent investments. For example, if a money market mutual fund is investing in securities with an average duration of 30 days, and you think that the yields on FDIC insured bank products are better, then make sure that you are doing a fair comparison.

Make sure that you compare yields on a comparable, interest bearing bank product. If you can withdraw your funds at any time from your money market mutual fund which has underlying securities with an average duration of 30 days, do not make a false comparison with a one-year or two-year CD that locks up your money for a much longer period of time and carries penalties for earlier withdrawals. That is simply not a fair comparison.

If a low cost money market fund has a higher yield than the current yield on a savings account, then you are making a more fair comparison. If there is a difference in yields, then you can judge whether FDIC insurance protection is worth the yield difference. However, if you are locking your cash in to a one-year or two-year CD, then a yield comparison with a short-term money market fund is an unfair apples-to-oranges comparison. A more appropriate yield comparison would be between that one-year or two-year CD and a low-cost, short-term diversified bond index fund of comparable duration regarding the underlying securities. Again, if there is a difference in yields, then you can judge whether FDIC insurance protection on a longer term CD is worth the yield difference versus a low cost bond index fund that does not carry similar insurance.

How to screen low cost money market funds

To develop lists of low cost money market funds, I used the screening methods described below. I have found that lists of low cost investment mutual funds, including money market mutual funds, that are developed using these screening methods tend to be quite stable over time.

The reasons are quite simple why a low cost money market fund lists tend to be relatively stable. If a mutual fund company competes on price, it keeps competing on price. If it offers low turnover, low fee, passively managed index mutual funds, it tends to keep offering the same.

As a starting point the universe of potential money market funds was obtained using data from Lipper and/or Morningstar. This universe of mutual funds was then automatically screened according to these fund selection rules:

- 1) No charges for 12b-1 fees and mutual fund sales loads. (Eliminate financial advisor sales load charges and any 12b-1 fees. It is ludicrous to pay such fees, and thankfully, they are infrequent, but not nonexistent.)
- 2) Lower investment management expenses (All should have very low asset management fees),
- 3) Lower portfolio turnover (Because money market funds tend to invest in securities of very short duration, their rates of portfolio turnover are very high compared to most stock and bond mutual funds. Therefore, portfolio turnover is not a useful differentiator between money funds.),
- 4) Avoid very large actively managed mutual funds (None of these funds should have unnecessarily active management strategy, which would not make very much sense anyway given the very short duration of the underlying securities. If the fund is willing to buy the security, it should hold it to maturity.),
- 5) Avoid very new mutual funds (All money market funds should be least three years old.),
- 6) Eliminate very small mutual funds (Choose money market funds with least \$500 million or even a billion in portfolio assets. Since the margins are usually thin, there should be more assets over which to spread necessary operating costs.), and
- 7) Screen out inferior performance (If you are using Morningstar data, check that none have inferior 1-year, 3-year, and 5-year performance within their peer groups. Generally, low cost fund perform quite well and will rank higher within their asset category in performance comparisons. Thus, it is unlikely that this screen would be necessary.)

Efficient cash investments are US dollar denominated

Regarding cash and short-term cash equivalent investments, to hold any of your cash allocation in non-US dollar denominated securities would simply expose you to shorter-term currency exchange rate risk. This contradicts some of the normal objective related to the cash portion of your investment portfolio, which is to reduce risk and value fluctuations.

Usually an investor holds some portion of their overall investment portfolio in cash designed to cover expenses for some months to some years going forward. Should the investor need this

cash, it would be more prudent to have those cash holding be denominated in US dollars, since they would need to pay their expenses in US dollars. Certainly, prices of imported goods could change, but most goods and services that are consumed are domestically produced and dollar denominated.

In addition, despite the securities industry's completely irresponsible promotion of currency trading to retail investors, the currency markets are no place whatsoever for an individual investor. Currency trading is a zero sum game that places a premium on up-to-the-second real-time information about worldwide developments affecting the currency markets, about flows of funds, and about shifting governmental policies and practices.

Furthermore, knowledgeable and efficient foreign exchange trading occurs at dollar volumes that are far out of reach of the average retail investor. When individual investors engage in foreign exchange trading, it is like a puny human trying to get close to a casino craps table run by elephants. In short, the odds do not favor the human having any reasonable chance even to get up to an efficient trading table – let alone trade profitably against professional traders. If individual investors carefully consider the situation, they will stay far away from foreign exchange trading.

Section 5.10: Determining if a mutual fund does business directly with the public

If you wonder whether any mutual fund can be purchased directly or via a discount broker, there are relatively straightforward and free ways to determine this. Go directly to the mutual fund company and see if you can buy it directly. If you are using a discount broker, see if the broker will sell it to you, and what the associated transactions costs might be.

Another method is to go to the Morningstar.com website. Purchase restrictions used to be listed on the Quote tab for any security for free without a subscription, but not anymore. As of 2023, you need to have a premium account subscription which was priced at \$35/month or \$250/year. That is a lot to pay to this information, but perhaps one of your financial custodians offers a free subscription bundled with other services.

If you have a Morningstar subscription, then click on the Launch Investor button. Then, enter the ticker symbol and you will have a consolidated view of all information on that security.

Scroll down about 90% of the way toward the bottom and look for the small section titled “Review Other Classes”. (This is not a great section title, since the asset class represented by the ticker you used should be listed. When “other” does apply, there should be multiple lines listed with different ticker symbols.) If there is only one class represented by the ticker symbol that you entered, it should indicate if there are purchase restrictions, such as institutional funds, retirement funds, or A for “qualified access”, etc. If no restrictions are listed you should be able to purchase the security directly or through a discount broker without paying an advisor, being in a retirement plan, etc. If multiple share class lines are listed, look for the one without restrictions and also note the expense ratio and minimum purchase amounts for the share class you can purchase.

By the way, when you find that the Review Other Classes table has multiple listings for a mutual fund and one of these lines indicates that an investor can buy these funds directly, this is an opportunity for you to become better educated about just how much you waste when you buy mutual funds via middlemen. As you evaluate the lines in this table, understand that every line describes a share class within that same mutual fund. These share class lines simply describe how much it costs to put your money into that same fund, how much you get charged while you own this mutual fund, and how much it costs to get your money out of that same fund – depending upon the channel you use to invest.

The first column of this Review Other Classes table is the "Front Load", which is the number of cents on the dollar that are taken out to pay the middleman and his firm. If the front-end load is 4.00 then only 96 cents of every dollar of yours will actually be used to buy shares. The four cents is taken away by the financial industry for advice, when the financial industry does not have a clue about how funds will perform in the future.

The "Deferred Load" column tells you how much will be taken out at the back end, when you sell your shares. If the deferred load is 3.00, and your original investment of 100 cents on the dollar increased over the years to 500 cents, then when you sell, the middleman will take 15 cents and you will net 485 cents.

In the "Expense Ratio" column, notice that the expense ratio is almost always substantially higher than the expense ratio for the shares that you can buy directly. This is because a higher expense ratio is charged, and the difference is given to the middleman. This higher expense ratio

has nothing to do with improving the management of the investment portfolio of the mutual fund. Instead it goes to the middleman to keep giving you advice.

The "12b-1 Actual" column is the part of the added expense ratio charge that falls under the 12b-1 regulation. 12b-1 fees were first allowed in 1980 and were supposed to be temporary marketing fees effective for less than one year to help mutual fund startups. However, ever since then mutual fund boards of trustees for the vast majority of higher cost actively managed mutual funds have been kept renewing these fees.

The connection to the original rationale for 12b-1 fees of getting new funds started has long been lost, if that was ever a valid justification for these fees. Now, the primary reason why these higher cost funds succeed in the marketplace is that they are pushed by financial advisors who selectively market historical performance to naive investors. These financial advisors pocket these 12b-1 fees, which pay them to tell you that these more expensive funds are better funds, when this is not likely to be the case. The really perverse aspect of all this is that you end up paying your advisor's marketing expenses out of your investment assets to have him or her tell you to buy something that is not likely to be in your best interests.

The letters and other information in the "Purchase Constraints" and "Shareclass Attributes" columns of this "Review Other Classes" table also can indicate useful information about this share class type. You can read the footnotes under the table to get more information, but for simplicity whenever there is something written (and not just a dash) under one of these columns, then they are not available directly to the public without some intermediary that will charge you extra.

However, there is one exception to this simple rule. If you find that a mutual fund that has a share class with dashes in these two columns, you may also find an additional share class line with an even lower expense ratio and a higher minimum required initial investment. That additional lower cost share class might have an "A" in the Purchase Constraints column for "Qualified Access." Qualified Access does not necessarily mean that it cannot be purchased directly, but instead it means that a greater investment is required to obtain the lower expense ratio.

Vanguard is an example of this. You will find that Vanguard's "Investor" share class will have only dashes in the last two columns of the Review Other Classes table. In addition, you

usually will find an even lower priced share class with an "A" indicating qualified access. In the case of Vanguard, they call their lowest priced direct purchase shares, Admiral shares.

Section 5.11: Asset tax location strategies can significantly reduce your taxes

This section discusses personal investment portfolio asset allocation and some considerations about where to hold different classes of financial assets from the standpoint of more optimal taxation.

The type of account where you hold different classes of assets affects your tax bill

As you move your cash, bond, and stock financial assets into lower cost, more broadly diversified investment mutual funds, you should also consider how to "locate" your investment asset allocation with respect to more optimal taxation. This section will also discuss some ideas about where and how to hold your cash assets and how to make emergency cash available.

First, we presume that you have already properly assessed your investment risk tolerance. Using knowledge of your investment risk tolerance, we also presume that you have decided upon an appropriate asset allocation across the primary cash, bond, and stock asset classes. Then, the next question is how you will split your cash assets, fixed income assets, and equity assets between your taxable retirement investment accounts and your tax-advantaged retirement investment accounts, including traditional IRAs, Roth IRAs, traditional 401ks, Roth 401ks, and other such tax-advantaged retirement accounts.

You and your family's particular tolerance of or aversion to investment risk drives your long-term asset allocation strategy and your exposure to asset classes with different expected risk and return characteristics. In addition, the differential tax characteristics of various asset classes and the different treatment of taxable investment accounts versus tax-advantaged retirement investment accounts creates valuable opportunities to optimize your overall investment portfolio returns from an after-tax point-of-view.

As long as short-term capital gains tax rates and long-term capital gains tax rates differ and as long as the taxation of returns on certain types of investment securities differs, e.g. taxable bonds versus municipal bonds, then there will be opportunities to pay lower taxes overall related to your total investment portfolio. Merely by holding certain types of assets in certain types of

accounts, you can reduce your overall tax payments and thus increase the value of your retained investment portfolio over time. The financial crisis has not affected the logic of this section. However, changes in tax law and in the differential tax treatment of capital assets and account taxability over time can change the long-term value of your effort to optimize your personal asset allocation from a "tax location" perspective.

Deciding where to hold different assets in taxable investment accounts versus tax-advantaged retirement accounts is known as the "asset tax location" decision

There can be substantial confusion on the part of individual investors and many investment advisors as to the best location for assets from the standpoint of taxation over the long-term. Simply put, in deciding on your investment asset location, the question is whether you should hold your stocks, bonds, and/or cash in taxable and/or tax-advantaged retirement accounts. To summarize the investment research literature, the academic consensus is that you should prefer to hold your stock or equity assets in your taxable accounts and you should prefer to hold your cash and fixed income assets in your tax-advantaged accounts.

The primary reason for this is that long-term federal capital gains tax rates historically have been substantially lower than short-term capital gains tax rates and ordinary income tax rates. Even though stocks tend to appreciate more quickly than bonds, taxation on equities can often be deferred for a very long time. In addition, when capital gains taxes must be recognized on equity asset transactions, very often these gains will be subject to lower federal long-term capital gains tax rates.

Fixed income / bond assets and cash money assets usually yield income that must be recognized regularly and must be paid at generally higher ordinary income tax rates

Including inflation which has averaged 3% annually, stocks have returned about 10% per year over the past 80 years. Alternatively, expressed in real dollars or constant purchasing power dollars without inflation included, this means that stocks have yielded about 7% annually over the long-term. For these many decades, high grade longer duration corporate bonds have yielded about 5.5% to 6% including inflation and about 2.5% to 3% without inflation. Cash has yielded somewhat short of 4% with inflation and somewhat less than 1% in real terms without inflation. See these Market Risk Premiums articles.

For bonds, only a small part, if any, of longer duration fixed income yields are in the form of capital gains, which could be subject to more favorable long-term capital gains tax rates. Cash does not generate favorable long-term capital gains at all. Despite the lower yields of bonds and cash, their income is usually continuous and taxable in the short-term. Particularly if you have a relatively high combined state and federal marginal income tax rate, you can lose a substantial part of your bond and cash income to taxation without the tax shelter provided by tax-advantaged retirement plans.

In contrast, even though equities have substantially higher yields, a substantial proportion of these returns can be deferred, which avoids near term taxation. Furthermore, if properly managed, most often these taxable equity returns can be taxed at lower federal long-term capital gains tax rates, when needed.

Combined, these factors mean you can net more after taxes by holding your equities investment assets in taxable accounts and by holding your bond and cash assets in tax deferred retirement accounts

In the research studies that were mentioned above, investigators analyzed a wide range of portfolios with different asset allocations and different asset tax locations. The objective of these studies was to determine what is optimal from a tax location standpoint, and uniformly they reached the general conclusion to put equity assets subject to long-term capital gains into taxable accounts and bond or fixed income assets into tax-advantaged accounts.

Cash and cash equivalents, which tend to earn less than bonds are "located" in the middle from a tax location or tax optimization standpoint. If your particular asset allocation would mean that any cash or bond assets would be held in your taxable accounts, the assets should be cash assets, because their taxable yields are usually lower than bonds. (See the related section below about cash holding entitled "Emergency cash management and your allocation of cash assets to tax-advantaged retirement accounts.")

Your asset allocation and the total amount of assets you have in taxable versus tax-advantaged accounts combined with your asset allocation will determine whether some of your cash, bond, and/or equity assets end up being held "less optimally" from a taxation standpoint in taxable or tax-advantaged accounts.

To be clear, however, the research demonstrates that the asset allocation decision dominates the tax location decision. This means that you do not change your asset allocation decision, because of tax considerations. Instead, you hold to your asset allocation despite tax considerations. (Note, however, there may be alternative investment vehicles that address particular needs. For example, persons with very high federal, state, and local marginal income tax rates and a relatively high allocation toward bonds may find that their bonds would fill their tax-advantaged accounts and overflow into their taxable accounts. When this happens, they might benefit from holding municipal bonds rather than taxable bonds.)

Obviously, over time your assets in taxable versus tax-advantaged accounts may grow at differential rates. In addition, over time you might decide to change your asset allocation between asset classes. However, asset allocations tend to be relatively stable because they are tied to your relative investment risk tolerance, which tends to be more stable. Therefore, your preferred asset allocation percentages do not have to change over time, although they may.

As time goes on, you may need to make rebalancing adjustments to maintain your asset allocation within the percentages and tolerances that you wish to maintain. This might cause some shifts in which asset classes are held in accounts with different taxability. Nevertheless, your asset allocation decision still would drive everything.

Emergency cash management considerations and the allocation of cash assets to tax-advantaged retirement accounts

Some people become concerned, if their combined asset allocation decision and asset location decision means that all their cash would be held more optimally from a tax standpoint in their tax-advantaged retirement accounts versus in their taxable accounts. Furthermore, some people also may be concerned about how much cash to hold in a taxable account for "emergency" purposes, despite whether such taxable cash holdings are less optimal from a tax location standpoint.

Often these emergency cash and tax issues are of lesser importance than they would seem at first. A decision can be made simply to keep "X" expense months of cash in a taxable account and to pay the taxes, even though this allocation might be less than optimal from a tax savings standpoint. In addition, real estate lines of credit or other unused and available debt lines can be

taken into consideration, which perhaps might reduce the amount of emergency cash that one desires to hold in taxable accounts.

By way of example, if your monthly expenses were \$6,000, you might want to hold 6 months cash or \$36,000 in a taxable savings account. Assuming that you could earn the average historical pre-tax return of 4% annual interest rate on these \$36,000 dollars, your taxable savings account would yield \$1,440 in additional taxable income. If your total marginal federal income tax rate and state income tax rate was 26%, then you would pay about \$375 more in federal and state income taxes annually to hold this cash in a taxable account versus in a tax-deferred retirement account.

To optimize your asset tax location, you could invest your cash in a tax deferred retirement accounts and use off-setting transactions to raise cash money for emergencies

If you did happen to have a major financial emergency, you could make some offsetting transactions to free up the needed emergency cash from your retirement accounts. In effect, cash can be "moved" out of your tax-deferred accounts when needed by selling taxable equity assets for the cash that was required and then "replacing" those assets in your retirement accounts. You would replace the assets that you sold in your taxable accounts by buying similar assets in tax-advantaged retirement accounts using the cash that you held in your tax-advantaged accounts.

Of course, these offsetting transactions could trigger capital gains tax recognition related to your equity asset sales from your taxable account sales. Over the long-term, the affects usually are quite small particularly since true emergencies consuming significant amounts of cash are relatively rare. Of course, you also might need to make overall adjustments to your asset allocation, given the emergency use of the cash. Furthermore, be aware of IRS wash sale tax rules that might apply, if you buy substantially identical investments in tax-advantaged retirement accounts, when you also sell them in taxable accounts.

Finally, concerning a smaller cash emergency fund, you still might chose to hold some amount of cash in a taxable account for ready access — perhaps a few thousand dollars or more. There could be other benefits to doing this. You may find a bank that will arrange for your savings account cash (earning reasonable interest we hope) to act as over-draft protection to your linked checking account. With such an arrangement the higher taxes associated with holding a

small amount of emergency cash in taxable accounts might be offset sometimes by preventing those nasty overdraft events, when you make a mistake and bank charges mount rapidly.

Section 5.12: Portfolio optimization with an asset tax location example

An example of how the personal asset allocation and asset location decisions are combined

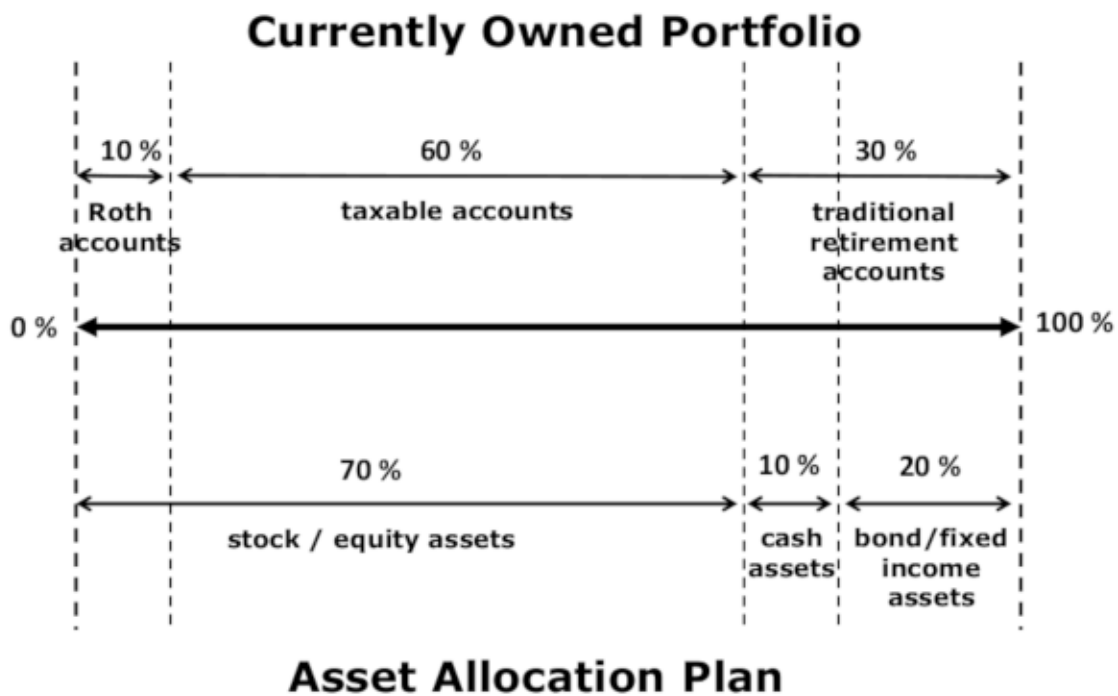
Your asset allocation decisions and your asset location decisions can be mapped onto a line that goes from 0% to 100%. First, total the cash, bond, and stock financial assets that you hold in your taxable and tax advantaged accounts, and then determine the proportions that are in taxable accounts or tax-advantaged retirement accounts.

In this example, assume that you presently hold 60% of your total cash, bond, and stock financial assets in taxable accounts. In addition, assume that 30% of your total assets are held in traditional tax-advantaged accounts, and that 10% of your total assets are held in Roth tax-advantaged accounts.

Using the 0% to 100% currently owned portfolio line illustrated in the graphic below, mark 0% to 10% as your Roth tax-advantaged retirement assets. Mark the range from 10% to 70% as your taxable account assets. Finally, mark 70% to 100% as your traditional tax-deferred retirement assets. (Below, we will discuss why we have chosen to place your Roth retirement assets before both your taxable assets and your traditional tax-deferred retirement assets, as you move up this line.)

Next, below this same line we will overlay your asset allocation. Let us assume that you have chosen an overall asset allocation of 70% to stocks and equity assets, 20% to bonds and fixed income assets, and 10% to cash and cash equivalents. Along this 0% to 100% line, your individual stocks and equity mutual fund assets would be assigned to the left hand side of this line or from 0% to up 70%.

Asset Tax Location Example



Because bonds tend to be higher yielding than your cash, you would always assign your fixed income assets to the right hand side of this line. Since you have decided that you want to have a 20% bond asset allocation, then your bonds would fill in the range from 80% to 100%. If you have Roth account assets, which in this case are 10% of the total, you would fill these Roth accounts with stock assets, which have a higher expected risk and return profile. Roth assets would not be taxes subsequently, so you would prefer that your Roth accounts have the highest appreciation potential. You would also prefer to hold your other stock assets in taxable accounts then you can, because when stocks are held as long term assets in taxable accounts, their qualified dividends and capital gains are taxed a significantly lower long-term capital gains tax rates at the federal level. Finally, your cash would fill in the space in the middle that remains between equities and bonds. In this case, you cash would be "located" from 70% to 80% along this line.

Why would equities be allocated into Roth retirement accounts versus into traditional tax-advantaged retirement accounts?

If your equity asset allocation is sufficiently high that some of your equity assets would be held in tax-advantaged accounts, then they would be invested in Roth accounts, if you have Roth account assets. Because equity assets historically have appreciated more quickly than bonds or cash, it is preferable for your stock assets to be in Roth accounts, which would not be subject to future taxation. Since traditional tax-advantaged accounts eventually would be taxed at ordinary income tax rates, you would prefer that these accounts would grow more slowly, while you would prefer that your Roth accounts would grow more quickly in relative terms.

There are other estate planning reasons that could favor placing higher growth assets into Roth retirement accounts. Roth retirement accounts have some very significant advantages over traditional tax-advantaged accounts for estate planning purposes. If a family's financial model indicates that there is a good possibility that they will still have some tax-advantaged account assets at death, then those should be Roth tax-advantaged account assets, whenever possible.

Given the SECURE Act "2.0" of 2022, US tax laws and IRS regulations require mandatory withdrawals from traditional retirement accounts (not Roth accounts) starting at age 73 or age 75, depending upon your current age. These mandatory traditional account withdrawals might be adequate to meet your expense needs in retirement without you having to touch your Roth retirement account assets. During your retirement, your Roth accounts would not have mandatory withdrawal requirements. (Obviously, in retirement you would still have the option to withdraw either traditional retirement account assets and/or Roth retirement assets.)

Furthermore, your Roth accounts could be inherited by your adult children, and these inherited Roth assets could also grow tax free within the inherited Roth account for 10 years when they are specified as beneficiaries. After ten years they would need to be withdrawn from the inherited Roth account. This means, for example, that an adult child inheriting a Roth account at age 40 could perhaps enjoy another 10 years of tax-free investment growth before taking a tax free distribution and reinvesting those assets in a taxable account.

Section 5.13: The financial services industry and the cost of financial advisors



If you need financial advice, pay for it directly. “Free financial advice” often turns out to be the most expensive advice you can get.

Most proactive and knowledge seeking individuals can manage their own personal finances. They simply do not need a continuous relationship with a financial advisor charging high fees. For occasional assistance, pick an advisor who can deliver competent, objective advice, but who does not sell financial products. If you agree with the advice, buy recommended financial products directly via the most inexpensive channel possible. When financial advice and financial product sales activities are combined, it is highly dubious that you will get the best advice in your best interest. It is much more likely that the advisor will feed his or her family first with your money.

The only reliable way to ensure financial advisor objectivity is to pay directly for their services

Pick financial advisers and investment advisers solely to obtain objective and high quality financial advice. Specific financial counsel and investment counsel is potentially of high quality, only if it is carefully customized to your particular needs and only if it is given by an adviser who is absolutely independent, knowledgeable, and competent. The only reliable way to ensure the potential objectivity of any financial planning advisor or investment counselor is to pay directly for the adviser’s services, after investigating the adviser’s background, competence, and work ethic.

There are no shortcuts. "Free" advice is never free. In fact, free advice is usually far more expensive than the advice that you receive from an advisor whom you pay directly. When you choose to obtain "free" advice, in lieu of paying fixed hourly services or a fixed fee for a planning project, the long term costs to you can be horrendously high. However, these huge costs are largely hidden and that is why this industry game of "free" financial advice keeps going on.

Free “advice” from industry-paid advisors leads to inferior investments

Advice that is contingent on any expectation that you will purchase products through your financial counselor is subject to major conflicts of interest. Financial advisers, who are not paid directly by you, must instead derive their compensation from commissions and other fees paid by the financial services industry. "Free" recommendations lead you to buy financial products that were not the best for your needs and that are not the best products available.

Many people pay investment front end sales loads for advice that seems free. Industry representatives willingly tell you that their advice is both free and good. You just end up paying a financial sales rep to sell to you and in the process perhaps to confuse or mislead you about the facts. The industry argument is that the advice is free and that you only have to pay, if you do follow the good advice that is given so freely.

Industry-paid financial advisors do not get paid to push better investment index mutual funds with the lowest costs and the best future prospects. For example, when you pay a front-end sales load, your initial invested assets are lower by the amount of the front end sales charge. In addition, only actively managed mutual funds will be recommended and actively managed funds tend to carry more expensive management expense ratios and higher hidden investment portfolio trading costs. Furthermore, an additional 12b-1 sales fee will get tacked on every year. With a 12b-1 fee, the same investment counselor who gave you the initial "free" advice will get paid over time to stick around and sell you more of the same.

Financial sales loads, excessive asset fees, high cost active investment strategies, and a myriad of other suboptimal financial industry strategies and products typically bleed 1/4 to 1/3 of the typical individual investor's annual portfolio returns before taxes. This waste compounds year after year after year, until individuals and their families get smart and realize that "free" is not really free and that "just of percent or two" will have a huge cumulative negative impact on their financial welfare.

Financial advisor conflicts-of-interest are very dangerous to your personal finances

Many industry-paid advisers are ethical and helpful. However, the reputations of ethical advisers are tainted by others who are just salespeople who masquerade as advisers.

Furthermore, even industry paid advisers face a career-long struggle to be independent of financial industry influences. They must spend their careers balancing the best interests of their clients against the interests of the financial companies that employ them. They must weight continuously the best interests of their clients against their own personal financial interests, paychecks, and bonuses.

When they are paid by the financial services industry and not by their clients, think about the continuing dilemma that even an ethical person faces. Training programs for industry compensated financial advisors and investment advisors focus on selling, selling, and more selling. These people are classified as "producers" by the industry, because that is what they do. They produce revenue and profits for their companies. These revenues and profits come from you.

When an advisor is not independent, you never know whether you are getting good advice or the latest sales pitch

When a financial advisor is not independent of the financial services industry, you can never be certain whether you are getting the best advice or just falling for the latest financial sales pitch. Once an ethical and newly minted financial counselor emerges from a financial industry training program and starts a financial sales career, the pressure to produce is constant. His compensation program will provide incentives to take more and more from his clients and will pressure him to pull in more and more assets to manage. His company will constantly pressure him to perform and produce more revenue.

Now, think about the not-so-ethical financial advisor who is paid by the industry and thinks first about his or her paycheck and bonus, before taking care of your personal financial interests. You do not stand a chance.

US financial services industry regulation is minimal at best. When a loose regulatory environment is combined with not-so-ethical financial advisors and investment counselors, almost anything goes. Most financial consumers are confused and outgunned. If industry sales

reps can push expensive, high compensation products into the "retail" financial consumer channel, they will. There is little to stop them from emptying the wallets of naive retail financial consumers and individual investors.

You have to seek out and find proactively financial advisors who are truly independent. If you become more knowledgeable about how the personal finance advisory industry works, you can better assess the quality of the financial and investment advice that you receive. Eventually, you will realize that the only financial advisor you want to work with is an advisor whom you pay directly. Furthermore, that advisor must refuse to accept any form of compensation from the financial services industry.

<https://www.theskilledinvestor.com/financial/financial-advisors-investment-counselors.html>

Appendix: Personalized lifetime financial planning software

Section 1.1 A tool to improve your lifetime financial planning

Section 1.2: Executive Summary of VeriPlan

Section 1.3: VeriPlan's lifetime financial planning decision tools

Section 1.4: VeriPlan's Comparison Tool highlights differences between projection models

Section 1.5: VeriPlan's graphics and data outputs

To enhance the lifetime financial planning process for my clients, I have designed and developed VeriPlan during the past decade. VeriPlan is a sophisticated and automated personal lifetime financial planning application for individuals and families.

This Appendix explains VeriPlan's features, capabilities, and applications toward personal lifetime financial planning and investing. I use VeriPlan with clients who want to develop a comprehensive picture of their financial affairs projected across their lifetimes.

Individuals can buy a copy of VeriPlan and do their own lifetime personal financial planning. For do-it-yourselfers, I make VeriPlan available for a very modest licensing fee through one of my websites:

<https://www.theskilledinvestor.com/VeriPlan/>

If you go to the link above, look in the left hand sidebar for the blue link titled; "Download the free VeriPlan User Guide in PDF format." When you click that link, you will get an instant download of the latest VeriPlan User Guide, which is extensive and detailed.

Section 1.1 A tool to improve your lifetime financial planning

VeriPlan projects fully integrated scenarios about your income, expense budget, debts, investment portfolio assets, investment returns, and investment costs within the context of the U.S. federal, state, and local income taxes that apply to you. VeriPlan presents all your personal lifetime financial modeling information in clear graphics and data tables.

VeriPlan is a self-learning lifetime financial planning and investment projection application. VeriPlan gives you significant personal insight into your most important personal finance and

investment portfolio decisions. Through comprehensive and customized lifetime projections, VeriPlan's fully integrated financial and investment calculators model your particular financial situation across your adult lifetime.



You can easily customize any of your personal data and settings in VeriPlan. After you make any modification, VeriPlan automatically and instantaneously revises your complete lifetime projection. When you use VeriPlan's rich set of fully integrated “what if” financial modeling tools, you can take control of your own financial, investment, and retirement planning.

VeriPlan helps you analyze important personal finance questions.

Here are some examples of the kinds of questions VeriPlan can help you to answer:

A) Career planning:

- * What are the long-term economic benefits of changing positions or employers?
- * Would it make economic sense to return to school and improve my skills?

B) Debt management:

- * What tradeoffs are associated with accelerating mortgage loan payments or other debt repayments?

C) Education expenses:

- * Will I be have enough college savings to pay for my children’s education while saving for retirement?

D) Estate planning:

- * How could my savings rate and investment strategy affect the size of my estate?
- * After my expenses, how much could I give or bequeath to family and charities?

E) Insurance budgeting:

- * How large might my exposures to insurable financial risks be over time?

- * How might different budgets for insurance premiums affect my financial plan?

F) Investment cost reduction:

- * What investment returns might I earn net of investment costs?
- * How much could I waste on unproductive investment costs?
- * How might I improve my investment returns by keeping costs to a minimum?

G) Investment returns:

- * How does my current investment strategy compare to a passive strategy focused on long-term, risk-adjusted returns net of investment costs and taxes?

H) Investment risk management:

- * What returns might I expect from the balance of expected asset class investment returns and risks that I have chosen?
- * Am I saving enough to stay within my investment risk and return comfort zone and still reach my financial planning goals?
- * If I were to lose income in the future, how long would my liquid investment portfolio assets cover my projected expense budget?

I) New business ventures:

- * What are the likely long-term benefits and risks, if I forego current income to start a business?
- * Could I self-fund my business venture or would I need external capital?

J) Real estate planning:

- * When will I have sufficient capital to buy real estate?
- * How does mortgage debt affect my investment portfolio and financial goals?

K) Retirement planning:

- * Would I have sufficient investment assets to retire early?
- * Would my investment assets cover my expenses, if I live a very long time?
- * What is a relatively safe asset portfolio withdrawal plan?

L) Saving goals:

- * Am I saving at a sufficient rate to fund all my future financial planning goals?
- * How much benefit might I expect from increasing my income and/or reducing my expense budget?
- * What is the long-term value of saving some or all of my bonuses?

M) Tax reduction:

- * Am I managing my investments from an income tax efficiency standpoint?
- * How much should I put into either taxable, traditional retirement accounts, or Roth retirement accounts?
- * Would my retirement portfolio assets be adequate after income taxes and other taxes are paid in retirement?

Section 1.2: Executive Summary of VeriPlan**Organization, Graphics, and Data**

VeriPlan provides 34 user worksheets organized into groups. VeriPlan is a lifetime projection model for 1 or 2 earners from 18 to 100 years old. Projections can begin at any age from 18 to 99 and continue through age 100. VeriPlan automatically provides 18 graphics and a consolidated worksheet with the data for these graphics. All VeriPlan projections extract inflation and use real or non-inflationary dollars with constant purchasing power over your life.

Earned and Other Income

Regular employment and/or self-employment income can be projected for either earner. You can also enter separate information about other income sources that you expect to have.

Pensions, Annuities, Deferred Compensation, and Social Security Income

VeriPlan projects up to 10 separate pension, deferred compensation, and annuity payouts. For each pension or annuity, VeriPlan automatically projects: a) the dollar amount of the monthly payment, b) separate real dollar growth rates before and after the first payment, c) whether payments begin at a specific age or at either user's retirement, d) duration of payments, and e) taxability of payments. Concerning your Social Security retirement payments, you can set current dollar levels for your entitlements, adjust the age to begin to receiving payments, and scale back the amount of your projected payments, if you wish.

Debts

VeriPlan automatically projects the pay-off of up to 25 current debts. You can plan for the accelerated repayment of any or all debts. Interest on selected debts can be tax-deductible. Also,

VeriPlan automatically manages mortgage repayments on your planned future purchases of up to three homes.

Financial Assets, Real Estate, and Property

VeriPlan projects your asset holdings in five asset classes. Individually and automatically, VeriPlan will manage separately up to 24 cash assets, 24 bond and fixed income assets, 99 stock and equity assets, and 20 property, real estate, and other assets. For each of your asset holdings, VeriPlan collects information about share ownership, values per share, investment costs, and account taxability.

VeriPlan's integrated, automated, and high performance asset projection facilities enable the rapid evaluation of a wide range of customized financial plans. Growth of your projected "centerline" investment asset values are based on 85-year historical risk-adjusted and inflation-adjusted asset class growth rates. Asset class growth rates are fully user-adjustable using either VeriPlan's systematic and/or judgmental growth rate adjustment tools.

For each of your financial asset holdings, VeriPlan separately and automatically projects annual returns, return variability, taxes, and investment costs. VeriPlan automatically projects your net annual holdings by asset class, including new investments from future positive annual net earnings, reallocations, and withdrawals due to projected negative net earnings. VeriPlan automatically assesses your overall annual net portfolio returns, tax-efficiency, and investment cost-efficiency.

VeriPlan can project these asset class aggregates, even though the net valuation of your individual financial asset holdings may change at different rates due to return adjustments you make, varying investment costs, uneven taxable distributions, and legal differences in account taxability. VeriPlan can provide significantly more personalized insight, because its projections focus on your particular projected financial life situation, instead of relying upon arbitrary averages across a general population.

Taxes

VeriPlan automatically projects your lifetime tax obligations in eight separate tax categories. It automatically projects your particular federal, state, and local income tax rates and limitations; your tax exemptions, adjustments, and deductions; and your property and other taxes. VeriPlan

supports the 'Single' and 'Married, Filing Jointly' federal income filing statuses and automatically applies the tax rates and limits associated with these filing statuses. To prevent obsolescence, you can change VeriPlan's tax rates and limits, if laws change.

VeriPlan applies current variable U.S. federal ordinary income tax rates and limits. It contains tax rate information for the 50 United States and Washington, D.C. and automatically applies either variable, flat, or no income tax for any state that you choose. VeriPlan can automatically apply any local ordinary income taxes. Furthermore, it can develop projections using different levels of federal, state, and local taxable income.

VeriPlan automatically projects annual tax exemptions and their phase-outs for up to 10 dependents and up to 6 different adjustments to your taxable income. VeriPlan automatically projects your federal income tax deductions and applies the more favorable of either the standard deduction or your itemized deductions. VeriPlan automatically applies Social Security (FICA) and Medicare taxes, and projects either employee or self-employment tax rates, as appropriate.

Concerning your assets, VeriPlan automatically applies long-term capital gains tax rates on capital appreciation and qualified dividend distributions including asset withdrawals net of your accumulated asset tax basis. Over your lifetime projections, VeriPlan will automatically track your cumulative cash, bond, and stock asset class tax basis. VeriPlan also automatically projects your property, real estate, and other assessment taxes.

Traditional and Roth Tax-advantaged Retirement Plans

VeriPlan has automated your lifetime projections regarding employer retirement plans and personal IRA accounts that allow you to defer taxation or to avoid future taxation altogether. VeriPlan automatically projects separate values for your taxable accounts, traditional retirement accounts, and Roth retirement accounts. For traditional and Roth IRA and employer-sponsored retirement accounts, VeriPlan automates the projection of your lifetime contributions, deductions, asset growth, withdrawals, and taxation. It automatically assesses federal and state early withdrawal penalties, as required.

Updates and enhancements

VeriPlan has been updated and enhanced at least once each year for almost twenty years. However, since VeriPlan is designed to be user updatable, there is no requirement that you

purchase an enhanced version of VeriPlan and there is no requirement that you purchase a support contract. Your initial, very modest license fee is the only charge for VeriPlan.

VeriPlan has been fully functional and robust since 2006. Each year since then some additional functionality has been added, but VeriPlan's core functionality has been very complete for many years.

The primary reason for annual updates to VeriPlan are to update:

- * US Federal and 50 state + DC tax rates, limits, phase-outs, and other tax parameters, including retirement plan rule changes, and
- * historical asset class returns, inflation, and volatility data for 1928 through the most recent year

Because facilities are provided within VeriPlan for current licensees to update these parameters in their own copy with more recent information, it is not necessary to upgrade.

If you would like to understand the updates and enhancements that have been made to VeriPlan in the past several years, go to this web page:

[VeriPlan Lifetime Financial Planner - Annual Version Enhancements](#)

or

<https://www.theskilledinvestor.com/VeriPlan/1915/veriplan-lifetime-financial-planner/>

Documentation

VeriPlan's worksheets provide extensive, integrated documentation. VeriPlan is designed to be self-training, and you do not need a user manual. Just read and follow the instructions on the spreadsheets.

Nevertheless, a separate and free *VeriPlan User Guide* with additional information is also available. The *VeriPlan User Guide* is free to anyone – whether or not you have a license to the VeriPlan software. You can find where to download this user guide in PDF format by going to this web page. (Look for the green book cover and click it to download the free PDF.)

<https://www.theskilledinvestor.com/VeriPlan/financial-planning/>

To download this VeriPlan User Guide in PDF, MOBI, EPUB, and other formats go to this web page:

<https://www.smashwords.com/books/view/372828>

Systems Platforms

VeriPlan is a fully self-contained Microsoft Excel spreadsheet application that runs in a standalone configuration with local data storage. To operate, VeriPlan requires a Microsoft Windows PC or Apple Macintosh with ANY Microsoft Excel version from 2002 up to the most recent version release. VeriPlan will run on your Windows PC or Mac with Excel, even if you have a relatively "ancient" system.

License and Purchase Information

VeriPlan is licensed and is for personal, non-commercial use by one (1) household. Buyers receive an unconditional thirty-day (30 day) satisfaction guarantee.

The price for VeriPlan is lower than all other full featured cash flow projection modeling tools. You can learn all the details about it and order it from this web page:

<https://www.theskilledinvestor.com/VeriPlan/>

Section 1.3: VeriPlan's lifetime financial planning decision tool sets



Asset Allocation Tools

Your asset allocation strategy allows you to align the risk of your investment portfolio with your risk tolerance. VeriPlan provides five user selectable and adjustable asset allocation

methods for your lifetime projections. Fixed, variable, and age-based allocation mechanisms are provided. Reallocations are performed automatically at the beginning of all subsequent projection years.

Cost-Effectiveness Tools

Excessive investment costs are a huge problem for the average investor. VeriPlan's projections automatically analyze the impact of five types of investment expenses across your lifetime: 1) purchase fees and loads, 2) management fees, 3) marketing fees, 4) transactions costs, and 5) account custody fees. VeriPlan fully automates the comparison of lifetime investment costs between the investment costs of your current financial asset portfolio and the costs that you believe are reasonable to pay.

Expense and Savings Tools

VeriPlan allows you to set your annual expenses, and change your future expense levels and expense growth rates. VeriPlan also allows you to enter major planned expenses year by year and change growth rates relative to average inflation. You can enter positive and negative expense adjustments and growth rates in any projection year.

VeriPlan's expense planning tools can be used as a "Children's Education Expenditure Planning Tool", and as a "Mid-Career Education Planning Tool" to model tradeoffs associated with returning to school for career advancement.

VeriPlan also provides a 24-month household expense tracking, budget planning, and expense versus budget variance analysis tool. This optional use budget tool includes both standard expense categories and user defined expense categories. If you already use another budgeting tool, you are not required to use VeriPlan's budgeting tools. Instead, you can use the budgeting system that you already have to derive the expense numbers that you would enter into VeriPlan.

Current and Future Debt Tools

Regarding any current debts that you have, VeriPlan automatically repays interest and principal as you specify. You can use VeriPlan's debt management facilities to analyze and plan for the accelerated repayment of any or all of your current debts.

In addition, excess consumption and the cost of associated debt can be very destructive, when you do not live within your means. This tool allows you to set a debt interest rate for future unfunded consumption. When your projected expenses exceed your projected income, VeriPlan automatically accumulates excess consumption debt and unpaid interest, after your cash, bond-fixed income, and stock-equity financial assets would be depleted. If subsequent positive net income becomes available, VeriPlan will automatically retire some or all of this unfunded consumption debt.

Historical Asset Class Returns

VeriPlan's automated "centerline" projections are based on the very long-term, historical securities market rates of return that have been achieved in the cash, bond-fixed income, and stock-equity asset classes over the past 95+ years. You can adjust these projected rates of return, using VeriPlan's various portfolio risk tools.

VeriPlan's projections automatically deduct your taxes and investment costs from your financial asset class returns. Furthermore, across your lifetime, VeriPlan will automatically project the value of your real estate, property, and other assets, which are not priced currently on real-time securities markets. VeriPlan uses the current fair market value and future growth rate assumptions that you set for these real estate, property, and other assets.

Home Purchase Tool

VeriPlan provides this tool for users who plan to purchase from 1 to 5 homes at various years in the future, as well as up to 10 rental real estate properties.. For such future home purchases, this tool automatically takes into account: a) the planned purchase price, b) closing costs, c) settlement cash required, d) mortgage debt to be assumed, and e) expected interim and subsequent price changes.

Portfolio Asset Class Rebalancing Tools

VeriPlan aids in reallocating currently held financial assets, according to both the asset allocation and the asset tax location models chosen. Thus, it simultaneously takes into account the distribution of cash, bond, and stock assets across taxable accounts, traditional tax-advantaged retirement accounts, and Roth tax-advantaged retirement accounts.

Portfolio Risk Tools

VeriPlan provides several combinable methods to develop projections automatically using asset class return assumptions that differ positively and/or negatively from VeriPlan's "centerline" historical assumptions:

- 1) The Projection Variance Tool allows you to vary asset class returns upward or downward automatically in proportion to their historical volatility or risk.
- 2) The Asset Class Return Adjuster allows you to vary financial asset growth rates automatically on a one-by-one judgmental basis.
- 3) The Current Portfolio Revaluation Tool to help users understand the potential effects of substantial changes in near-term portfolio asset values.

Portfolio Safety Tools

Individual investors face a dilemma. Both less risky and more risky investment strategies may not achieve desired results for different reasons. When assessing investment strategies with different risk levels, it can be helpful to understand how the "safer" portion of your portfolio assets might evolve across your lifecycle. VeriPlan's Portfolio Safety Tools automatically project how long your cash and shorter-term fixed income assets would cover your projected expenses, if all your expected income sources ceased at any point. It automatically measures your projected financial capacity to weather future financial risks.

Retirement Planning Tools

With this tool, you can set individual retirement ages for either earner. You can select whether or not to retire simultaneously. You can also adjust your expected ordinary living expenses in retirement and the growth rate of those expenses. Concerning Social Security retirement payments, you can set the levels of your entitlements and adjust the age at which you would first begin to receive Social Security payments. Furthermore, you can scale back the amount of your projected Social Security payments, if you wish. Finally, because much older workers can face significant erosion of real dollar wage rates, you can adjust VeriPlan's assumptions about real dollar wage erosion for earnings at ages over 65.

Tax-Advantaged Plan Tool

VeriPlan has automated your lifetime projections regarding employer retirement plans and personal IRA accounts that allow you to defer taxation or to avoid future taxation altogether.

VeriPlan automatically projects separate values for your taxable accounts, traditional retirement accounts, and Roth retirement accounts. For traditional and Roth IRA and employer-sponsored retirement accounts, VeriPlan automates the projection of your lifetime contributions, deductions, asset growth, withdrawals, and taxation. It automatically assesses federal and state early withdrawal penalties, as required.

Your settings on this tool control your projected tax-advantaged plan contributions funded from your future positive net income and/or from your future taxable financial assets, up to current legal annual contribution limits. This tool allows you to determine the portion of your projected annual contributions that would be deposited automatically into either traditional tax-deferred accounts or Roth accounts.

- 1) The Total Contribution Limitation Tool allows you to set your personal limitation on overall tax-advantaged account deposits, as a percent of your future annual positive net cash flows.
- 2) The Roth Contribution Limitation Tool allows you to set the percentage that Roth contributions would be of your total annual contributions into both traditional and Roth accounts.
- 3) The Roth year-by-year Conversion Planning Tool helps you to understand which years in the future might be better to do Roth conversions, and it helps you to judge the federal tax rates on the amount of Roth conversions you plan to make in each year. Depending upon the year-by-year Roth conversions amounts that you manually enter into the table to the right, VeriPlan will automatically assess federal, state, and or local income taxes in you projections. Any state or local income taxes would be in addition to the federal tax information provided below. VeriPlan's Roth conversion tool also allows you to understand the current and future impact of annual conversions on Social Security retirement income subject to taxation and on any IRMAA Medicare insurance premium subsidy reductions related to relatively high income in retirement.

Section 1.4: VeriPlan's Comparison Tool highlights differences between projection models

Once you have loaded relatively complete financial data and set your assumptions, you can begin to evaluate alternative financial decisions. By comparing one VeriPlan projection scenario to another, which uses somewhat different data and/or assumptions, you can evaluate the relative desirability of these alternatives. Through an iterative process of evaluating alternatives, you can refine the lifetime financial plan that you intend to implement. In general, to determine whether personal financial "Strategy A" or "Strategy B" is likely to be preferable to you, compare two VeriPlan projection scenarios to see which yields a better long-term financial result.

VeriPlan is built on the Microsoft Excel spreadsheet engine, and runs on any Windows PC or Mac with any version of Excel. In spreadsheets, normally any change that you make to one cell will change the results of all other spreadsheet cells that are connected by the underlying logic. Therefore, spreadsheets do not automatically "save the state" of the model that existed just before the most recent change. Nevertheless, model comparisons are possible, if you first lock or "save the state" of a projection model, before making further revisions.

The VeriPlan Comparison Tool allows you to lock the state of any of your projection models. This is achieved by following some simple procedures to copy all of VeriPlan's output data and paste them into another spreadsheet as values only. Doing this will lock the "state" of the data values from your prior baseline model. Then, you continue to revise one or more assumptions and/or data inputs within VeriPlan to reflect any alternative personal financial strategy. VeriPlan's Plans Compared worksheet will then automatically subtract the "live" data being output from the revised model from the "locked" data values of the prior baseline model. This allows you easily to evaluate the differences between two lifetime projection models.

There is also another use for VeriPlan's Comparison Tool features. Some spreadsheet users might wish to develop external spreadsheets for specialized purposes and link those spreadsheets to VeriPlan's projection data output. VeriPlan Comparison Tool allows external copying and live linking of all VeriPlan output data.

Section 1.5: VeriPlan's graphics and data outputs

Overview of VeriPlan's graphics and data outputs

VeriPlan's graphics and data tables allow easy comparison of projection scenarios. VeriPlan presents your projections in 25 graphics, which are described below. Whenever you make any

change, VeriPlan will automatically and instantly revise these graphics. In addition, the data worksheet will be updated automatically, as well.

You can find all the data for all the projection series that VeriPlan uses to draw these graphics on the "GRAPHICS DATA" worksheet which is the right most spreadsheet tab within VeriPlan. The Graphics Data worksheet lists the data for all graphics in the order that the graphics tabs appear within VeriPlan.

VeriPlan projects your individual or family financial affairs over a lifetime, as if you were a business using cash flow planning methods. VeriPlan puts you in the position of general manager, and it provides graphics and data worksheets that a general manager might need to understand long-range financial projections regarding your personal financial planning.

The unit of time on the horizontal axis of every graphic is one year, and all graphics cover ages 18 to 100. Your particular projections will begin with the initial age of Earner #1. All graphics lines begin with the initial age of Earner #1.

VeriPlan's automated financial projection graphics

This numbered list of VeriPlan's graphics is current as of 2023. Following this numbered listing are sections that correspond to each of these graphics and that provide a description of each graphic with an example.

The sample graphics below with a gray background are from an earlier version of VeriPlan. They have been retained here, because each of these graphics presents a particular projection scenario that is described in the text along with the graphic. These prior graphics are the same in the latest version of VeriPlan, except that the background are white rather than gray. If you see a graphic with a white background, these graphics were more recently added to VeriPlan.

- 1) INCOME: Non-Asset Income -- Earned, Pension, Annuity, Social Security & Other
- 2) EXPENSES: Ordinary Living Expenses with Other Planned & Adjusted Expenses
- 3) DEBT PAYMENTS: Debt Payments
- 4) PERSONAL TAXES: Tax Payments
- 5) RENTALS+PROPERTY: Income, expenses, debt payments, taxes, and cash flow from for rentals and other properties

- 6) CASH FLOW: Non-Asset Cash Flow
- 7) SAVINGS RATES: Pre-Retirement Savings Rates with Investment Debt Repayments
- 8) HUMAN CAPITAL: Expected Income and Savings Before Retirement
- 9) ALLOCATION: Financial Asset Allocation
- 10) TOTAL ASSETS: Financial Assets, Property, and Debts with Assets Lost to Excessive Investment Costs
- 11) ASSET FLOWS: Non-Asset Cash Flow with Cash, Bond, and Stock Financial Asset Returns
- 12) DEBT OWED: Personal, real estate, and business debt principal owed
- 13) ASSET TAXABILITY: Taxable, Traditional & Roth Tax-Advantaged Financial Assets
- 14) TRANSACTIONS: Taxable & Tax-Advantaged Deposit & Withdrawal Transactions
- 15) RETIREMENT INCOME: Retirement income sources and pre-tax Required Minimum Distributions (RMDs) after Earner #1 retires
- 16) WITHDRAWALS: Withdrawal Rates from Cash, Bond & Stock Assets
- 17) RETIREMENT SHORTFALLS: Cash flow shortfalls after Earner #1 retires including RMDs
- 18) SAFETY MARGIN: Emergency asset coverage of expenses without other income
- 19) VALUE OF TIME: Hourly wage equivalent value of income, expenses, and financial assets
- 20) COST-EFFICIENCY %: Net Cash, Bond & Stock Financial Asset Returns with Returns Lost on Excessive Investment Costs
- 21) COST-EFFICIENCY \$: Net Cash, Bond & Stock Financial Asset Returns with Returns Lost on Excessive Investment Costs
- 22) SALES LOADS: Lost Returns on Past and Future Financial Asset Sales Load Purchase Fees
- 23) LIFE EXPECTANCY: Average U.S. male and female total life expectancy and remaining life expectancy by current age

24) HISTORICAL RETURNS: U.S. Financial Asset Class Returns from 1928 to the present

25) ROLLING RETURNS: Annualized U.S. Financial Asset Class rolling 5-year real dollar asset class returns and CPI inflation from 1928 to the most recent year

VeriPlan's graphics provide an integrated projection of your lifetime finances. Summaries of each are provided below

VeriPlan uses real, constant purchasing power dollars with inflation removed. All dollar based numbers in VeriPlan are "real" in the sense that they assume constant purchasing power for currency over time. To understand more about the 90+ year history of US inflation and major financial asset class returns and variability, inspect the Historical Returns graphic and read the Risk & Returns worksheet.



Inflation (and sometimes deflation) are facts of financial life, but they are not systematically predictable. Making dollar projections that include an inflationary component adds little value to projection modeling. To the contrary, nominal dollar projections that include inflation assumptions tend more often to confuse decision-making. Projections with inflation may create an illusion of growth, when the opposite might be true. Your nominal assets could increase by five times, but the price of a loaf of bread could increase by ten times. Projection modeling using real, constant purchasing dollars solves this problem.

The impact of inflation on various investments needs to be considered when making investment choices. Inflation's unpredictability limits your strategic investing options. Generally, a fully diversified asset strategy will reduce the variability associated with inflationary differences between sectors, while leaving an exposure to the general rate of inflation. Your asset allocation can be used to adjust investment exposure to asset classes that historically have exceeded inflation by a lesser or greater amount.

1) INCOME Graphic

Non-Asset Income -- Earned, Pension, Annuity, Social Security & Other

(Real \$/year by age; Excludes reinvested asset returns and asset withdrawals)

This INCOME graphic projects the income associated directly or indirectly with earned income sources (excluding income from your asset portfolio), including:

- * Earned employment and actively-managed business income with your real dollar growth rates for Earners #1 and #2 that you entered on the income worksheet.
(Note that earned income for Earners #1 and #2 will also reflect any year-by-year income adjustments that you have made on the income worksheet.)
- * Pension, annuity, and Social Security income from the retirement worksheet
- * Other income with adjustments from the income worksheet

No income from assets nor any capital appreciation is represented on this graphic, because this information is provided on other asset related graphics. Asset income is assumed to be taxed and reinvested. Assets would be withdrawn only in years when you are projected to have a cash expense-to-earned income shortfall.

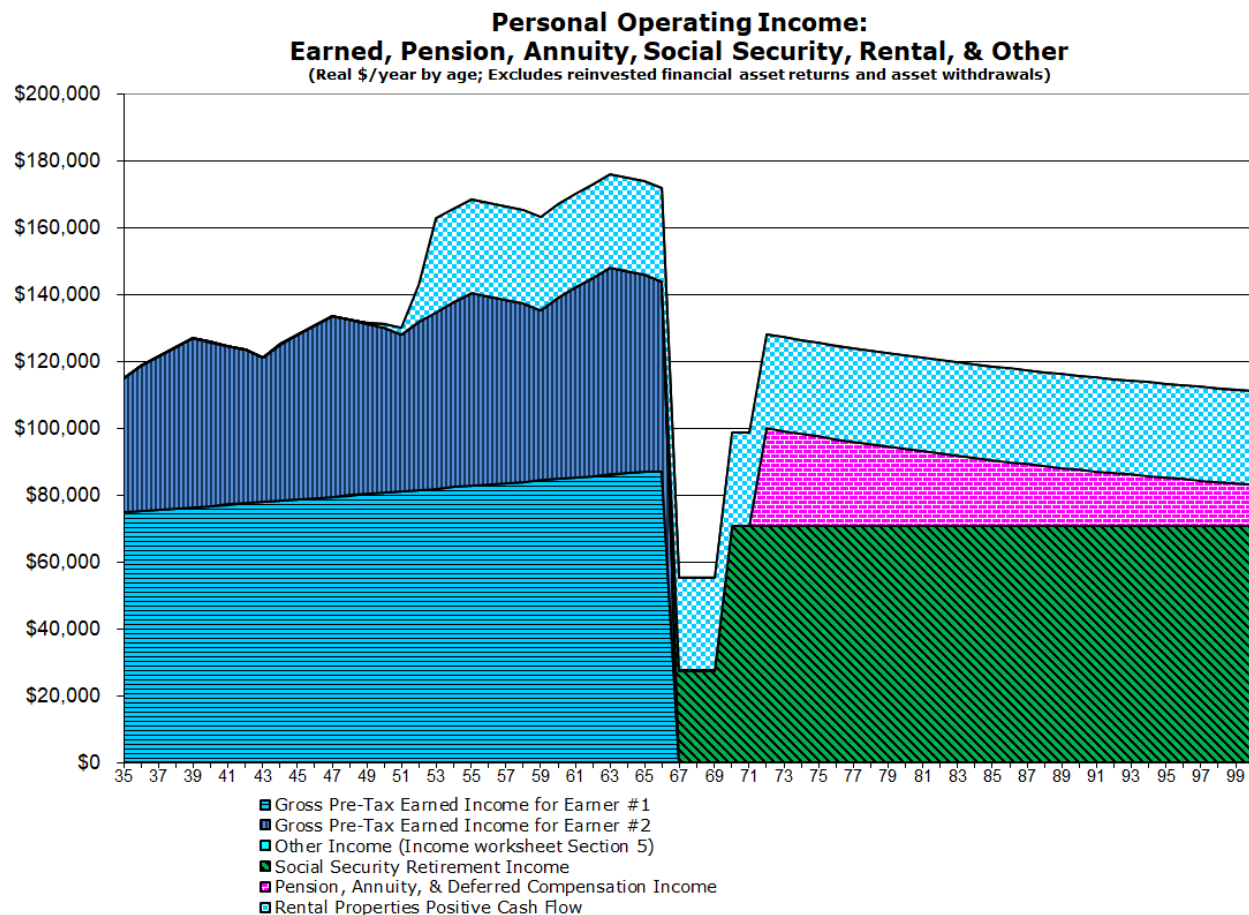
INCOME graphic example

In this sample income graphic below, Earner #1 is projected to have moderately increasing real dollar wage and salary income reflecting a .5% annual income increase relative to consumer price inflation. Earner #2 is self-employed and earns less, but projects a slightly steeper increase in annual income at 1% above inflation. In addition, Earner #2 has used VeriPlan's year-by-year positive and negative income adjustments facility to model that the vicissitudes of four primary business cycles in the future. Because both of these earners are relatively young, motivated, and

intent upon career advancement, they have developed income projections that exceed inflation, which is atypical of most workers.

This graphic also demonstrates VeriPlan's ability to project other sources of income. First, they own a small rental property that they expect will produce modest but steady income, and this is reflected in the cross-hatched and light-blue colored bar that extends across their projections. While they currently own this rental property, the debt is being paid down and is not yet cash flow positive. At about age fifty, this rental property is expected to begin to be cash flow positive and the taxable net income will flow into the family's overall income picture.

Second, in retirement, they both expect to have Social Security retirement income, that one person will first accept at age 67, while the other will wait until age of 70 to maximize these Social Security cost of living adjusted retirement income sources.. These Social Security retirement income payments are projected to maintain their purchasing power due to cost of living increases in retirement.



Finally, Earner #1 is among the lucky and relatively few young workers with a funded, albeit modest, traditional retirement pension. This pension is projected using VeriPlan's pensions, deferred compensation, and annuities features. This particular pension projection assumes that the retirement pension will keep pace with inflation up until retirement, but once pension payments begin at age 70, they will not be subject to cost of living increases and will decline annually by close to 3% due to expected inflation. This accounts for the declining slope of the solid pink bar from age 70 to 100.

2) EXPENSES Graphic

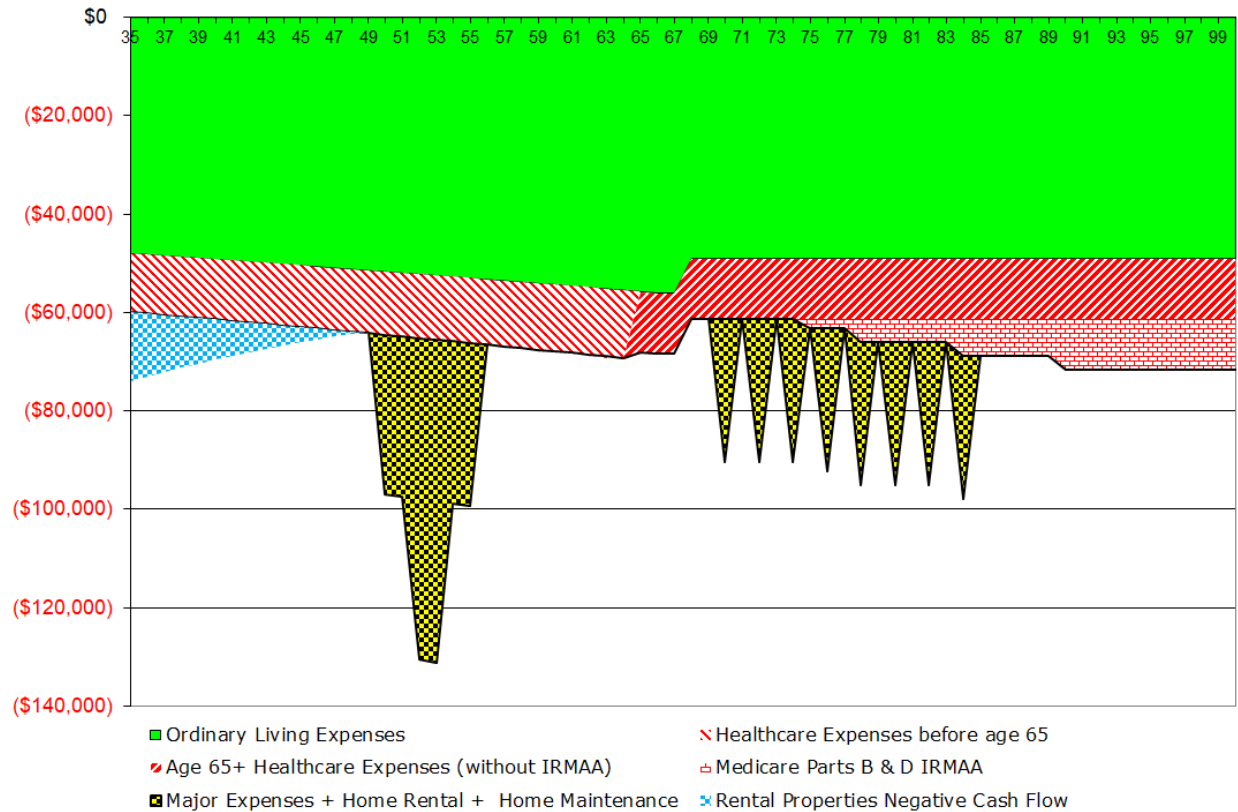
Ordinary Living Expenses with Other Planned & Adjusted Expenses

(Real \$/year by age; Excludes tax payments, debt payments, and asset fees & expenses)

This EXPENSES graphic projects your expenses related to living, but not the cash outflows related your debts or taxes or any current additions to savings or investments. This graphic includes your ordinary living expenses and major planned expenses with year-by-year adjustments and any real dollar growth rate adjustments relative to general CPI inflation that you might set on the Expenses worksheet.

EXPENSES graphic example

Personal Living Expenses with Other Major Planned Expenses (Real \$/year by age; Excludes tax payments, debt payments, and asset fees & expenses)



Similar to their assumptions about real dollar earnings growth, this couple has assumed that their ordinary living expenses, will increase by .5% above the prevailing rate of consumer price inflation. Then, VeriPlan allows them to adjust their ordinary living downward somewhat when Earner #1 retires at age 67. After that, their ordinary expenses are expected to track the average level of CPI inflation.

In retirement, they expect that their ordinary expenses will be 90% of their expenses immediately prior to retirement and then will remain constant with respect to inflation. However, just after retirement and every three years thereafter through age 85, they have also used VeriPlan's year-by-year expense adjustments features to add \$25,000 in expenses to fund a cruise or similarly expensive vacation. These expenses are represented by the expense spikes with the yellow and black cross hatched area during retirement.

They also have two young children, separated in age by two years. The yellow and black cross hatched area from ages 50 to 56 projects the expected net cash cost (after scholarships) of

sending both children to four-year colleges in consecutive years with two years of overlap, when both are in college. They have used VeriPlan's year-by-year expense adjustments features to model annual college costs of \$30,000.

This graphic also shows a light blue wedge that declines from age 36 to 48. This represents the negative cash flow related to the rental property that they own and that must be funded. As the rental real estate debt is paid down, they begin to breakeven and thereafter have positive cash flow.

Finally, this couple has used VeriPlan's Medicare cost features to project their healthcare costs in retirement, as well as their out of pocket healthcare costs prior to retirement. The various red layers below the green ordinary expense amounts represent these healthcare cost projections.

VeriPlan explains the Medicare retirement healthcare system and provides Medicare expense defaults that users can change to project their retirement healthcare costs. In addition, VeriPlan will automatically track your total retirement income and calculate when you might have high enough retirement income that would make you subject to IRMAA Medicare insurance premium subsidy reductions. Knowing in advance that you could be subject to IRMAA reductions allows you to use other VeriPlan features, such as VeriPlan's Roth year by year conversion analysis features that could reduce your IRMAA liabilities later on.

3) DEBT PAYMENTS Graphic

Debt Payments

(Real \$/year by age; Nominal dollar debt payments are converted to real dollars with a 3% inflation adjustment.)

This DEBT PAYMENTS graphic projects your annual debt repayment obligations according to your settings on the debts worksheet. On the debts worksheet, you can classify your debts as consumption-oriented or investment-oriented. Consumption-oriented debts represent past consumption that you have financed. Investment-oriented debts are those you take on with a rational expectation that they will increase the value of your human capital and/or portfolio assets.

Because VeriPlan uses real or constant purchasing power dollars with inflation extracted throughout your projections, your future debt payments related to your current debts will be discounted. If at any point in the future, your expenses would exceed your net income and would fully deplete your accumulated cash, bond, and equity financial assets, then VeriPlan automatically would begin to accumulate an "unfunded consumption debt" loan for you. On the debts worksheet, you can set a projected loan interest rate for any such unfunded consumption debt. Were this undesirable situation to occur in the future, then the required interest-only annual payment on this accumulated unfunded debt would display automatically on this DEBTS PAYMENTS graphic.

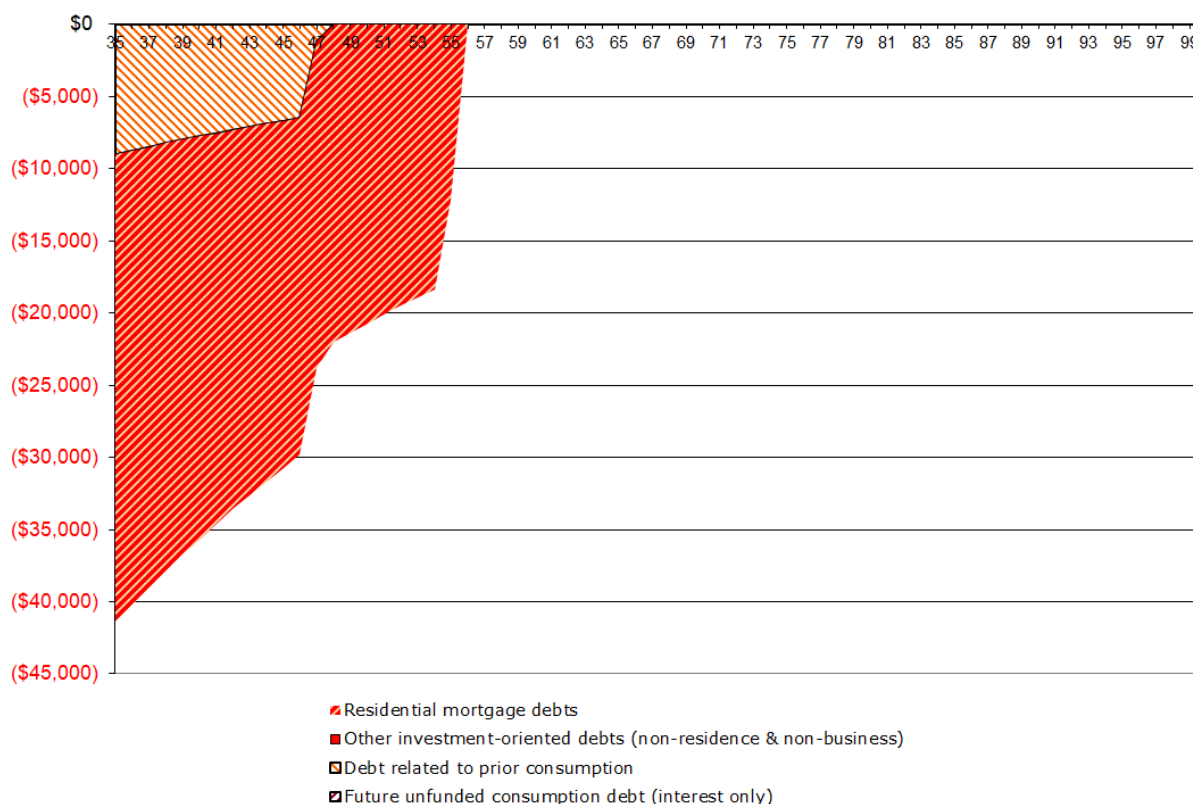
DEBTS graphic example

The sample Debts graphic below reflects two different. The first thing to note is that debt payments decline significantly over time. This decline in annual real dollar payments is due the fact that VeriPlan's projections are presented in real, constant purchasing power dollars. In life, when you pay off debts, debts that require a fixed nominal dollar amount to be paid per period are actually paid with cheaper and cheaper dollars as time goes on. General inflation undercuts the value of the dollar over time, and thus your future debt payment cost less in real dollar terms. are repaid in nominal dollars that inflate with time.

The lighter red cross-hatched area represents higher interest rate credit card debt that they intend to pay off over ten years. The bulk of the debt represented in this graphic with red diagonal lines is due to a 30 year fixed rate mortgage on a home that this couple owns, which is expected to be paid off by age 58.

Personal Residence, Investment, and Consumption Debt Payments

(Real \$/year by age; Converted to real dollars with historical inflation or user's assumption.
Excludes rental and other property debts.)



4) PERSONAL TAX PAYMENTS Graphic

Personal Tax Payments

(Real \$/year by age; Includes all federal, state, and local earned income taxes, employment taxes, property taxes, and realized asset-related federal, state, and local short-term & long-term capital gains taxes and penalties.)

This PERSONAL TAXES graphic lists all projected tax payments across your lifecycle, and reflects your settings on the tax worksheet and your tax-related entries on the tax-advantaged plans and financial assets worksheets.

This PERSONAL TAXES graphic includes your projected taxes related to:

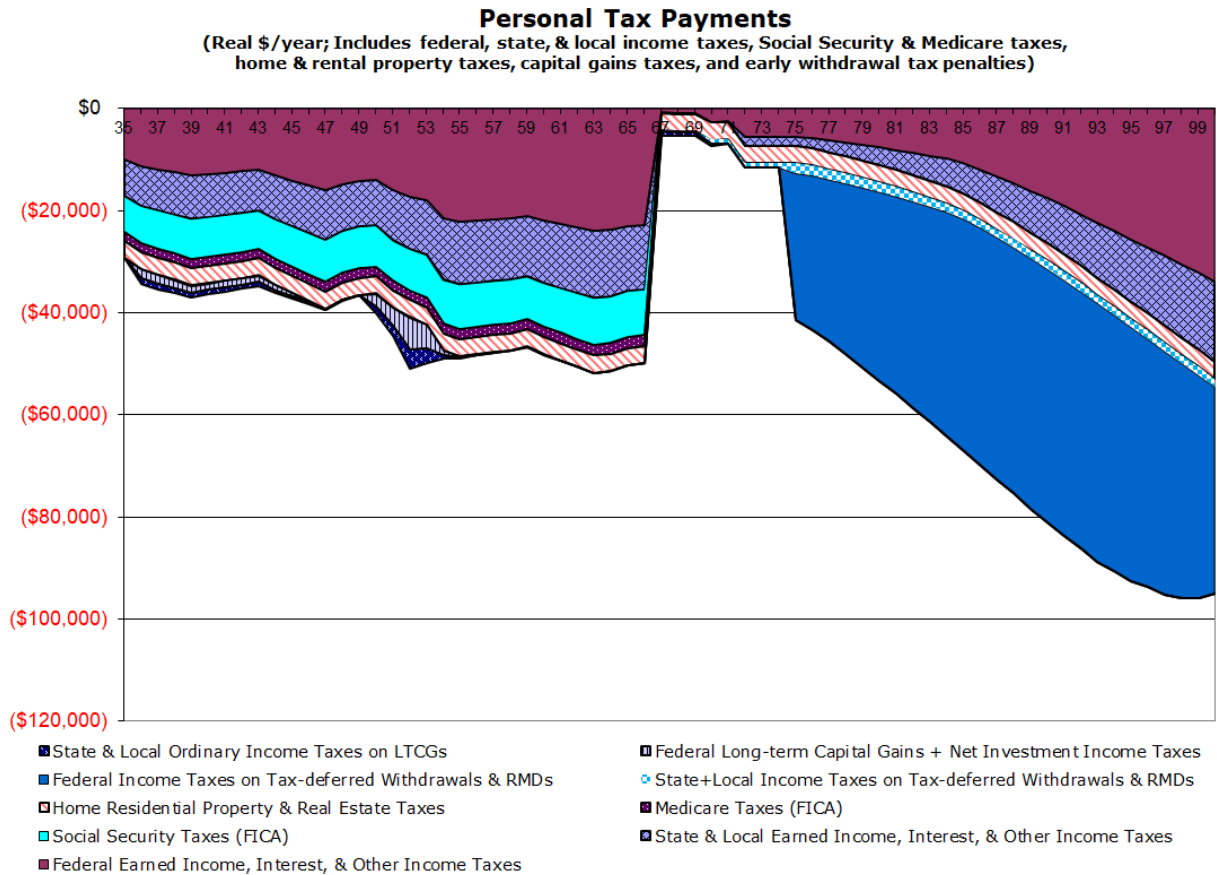
- * Federal, State and Local ordinary income taxes on earned, interest, retirement and other income calculated with the marginal or flat rate taxes that apply to single or married taxpayers filing jointly

- * FICA/Social Security and Medicare taxes for both salaried and self-employed workers
- * Property and real estate taxes
- * Ordinary Federal, State, & Local taxes on mandatory and needed tax-deferred account withdrawals
- * Federal long-term capital gains taxes
- * State and Local ordinary income taxes on long-term capital gains

Note that this taxes graphic also reports "realized" asset taxes related to asset withdrawals, ordinary income, and capital gains distributions, including early withdrawal penalties. Long-term capital gains are calculated at the federal tax level and assessed at ordinary rates at the state and local income tax levels. Federal, state, and local ordinary income taxes on reinvested interest are also assessed automatically.

The information that you enter on the financial assets worksheet related to taxation, including that tax basis in your various accounts, will affect your tax projections. Ordinary earned income and ordinary short-term capital gains asset income tax treatments are similar, and therefore VeriPlan combines both earned income and asset income sources here for taxation purposes. Generally, most asset income taxes will be from current interest and dividend payments on cash and bond/fixed income assets.

PERSONAL TAXES graphic example



For the sample graphic above, note several things about this couple's projected taxes. This projection assumes that this couple lives in Connecticut and works in New York City, subjecting them to New York City local income taxes, which are also supplied by VeriPlan. Additionally, this couple pays substantial Social Security payroll taxes throughout their working years. They pay more than two wage and salary employees would, because Earner #2 is self-employed and pays both the employer and employee portions of these Social Security payroll taxes, which VeriPlan assesses automatically.

In the middle of their working years you will notice spikes related to the withdrawal of assets from traditional retirement accounts to fund some of their children's educational expenses. When this couple gets closer to paying their children's education there are steps that they could take to lower taxes related to education funding.. VeriPlan acts as an early warning system, so that they can understand the short-term risk of depleting assets in taxable accounts that would not be subject to early withdrawal penalties.

Finally, note that in retirement, this couple would pay increasing taxes on withdrawals from tax-advantaged retirement plans to cover retirement living expenses and to satisfy requirements for Required Minimum distributions which also are automatically projected by VeriPlan. They can use VeriPlan's automated Roth contribution limitation tool to test whether lower or higher Roth contribution percentages could be more optimal while they work. Furthermore, they can use VeriPlan's Roth conversion tools to see whether a series of annual conversions following retirement might be a more tax cost effective way to acquire Roth retirement investment account assets.

5) RENTALS+PROPERTY: Income, expenses, debt payments, taxes, and cash flow from for rentals and other properties

Net Cash Flow from Rental Real Estate and Other Investment Properties (Excludes residential real estate; Real \$/year by age)

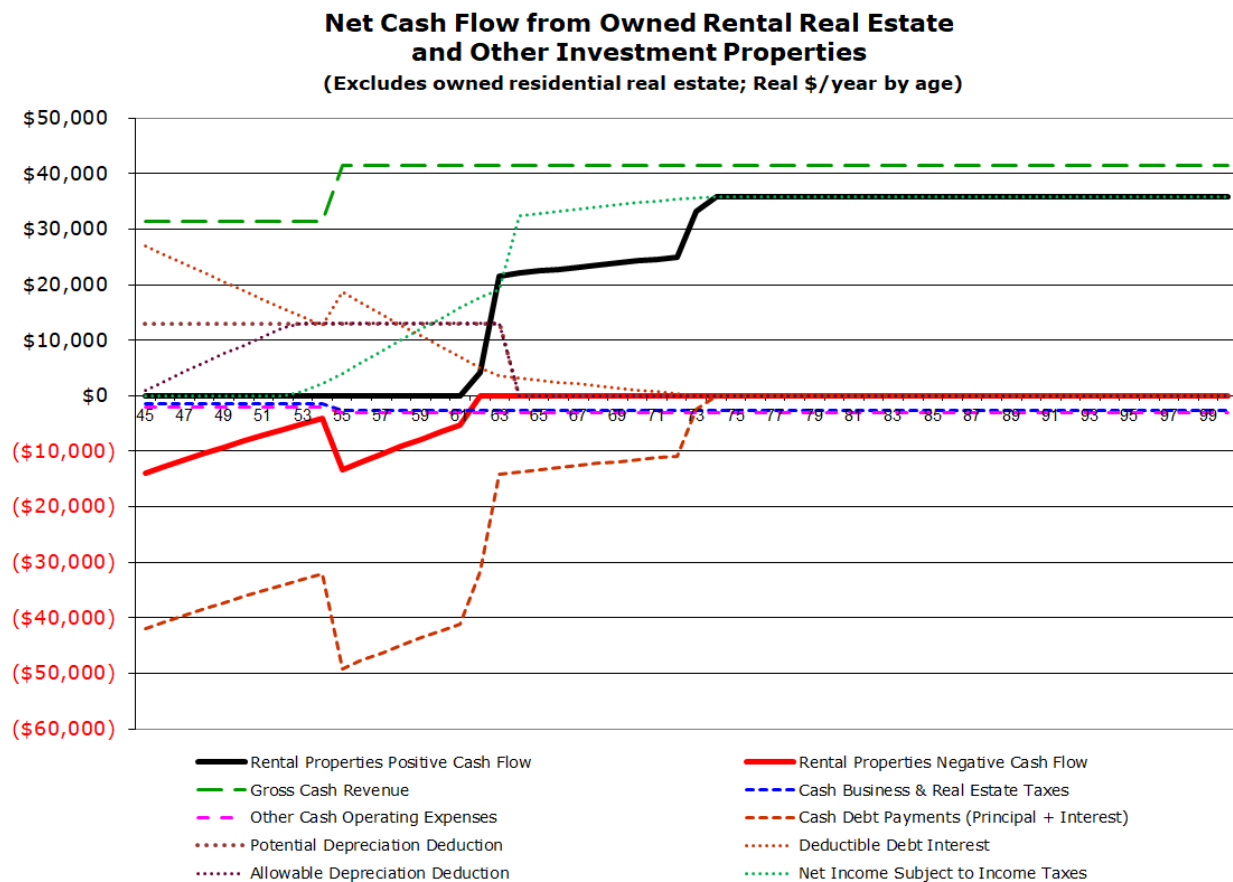
VeriPlan's yellow-tabbed Property+Debts worksheet allows you to enter information concerning up to 10 rental properties and up to 10 other investment properties, including information about asset values, income, operating expenses, taxes, depreciation, and debt payments. In addition, it allows you to plan the future purchase and sale of rental real estate and other property assets. This graphic shows aggregate cash flows across all these assets including gross income, operating expenses, real estate taxes, and debt payments. The solid black and red lines show the annual positive and negative cash flows respectively for all of these property assets.

In addition to cash flow information, this graphic also presents some additional information used to project net positive or negative cash flow from rentals and other properties. Positive net cash flow less depreciation would also flow onto the personal tax return. This additional information is the interest only portion of debt payments which would be deductible and the depreciation allowance for rental real estate properties. For depreciation, two columns are provided: A) total potential depreciation and B) the amount of depreciation projected to be deductible in a particular year. Then, total taxable rental and other property income is projected for each year, as well. This taxable total income equals A) gross revenue minus the combination of B) business and real estate taxes + other expenses + the interest only portion of debt payments + deductible depreciation.

RENTALS+PROPERTY graphic example

This graphic combines all projection factors for a rental real estate property that is owned currently and has a debt that is being paid down. Income, operating expenses, real estate taxes, and depreciation are all taken into account automatically. The net cash flow, when positive, would flow onto the personal tax return and be subject to automatic projection income taxation by VeriPlan taxation processes.

In the tenth year, a non-real estate property with accompanying debt, income, expenses, and associated property taxes is planned for purchase. VeriPlan will handles everything automatically, including the purchase economics. This purchase accounts for the cash flow trend reversing and turning more negative in the tenth year. As the debts on both of these investments are paid down, net combined cash flow turns positive at about age 62. Cash flow becomes increasingly positive after that, until it levels off at about age 76, when all debts would be retired.



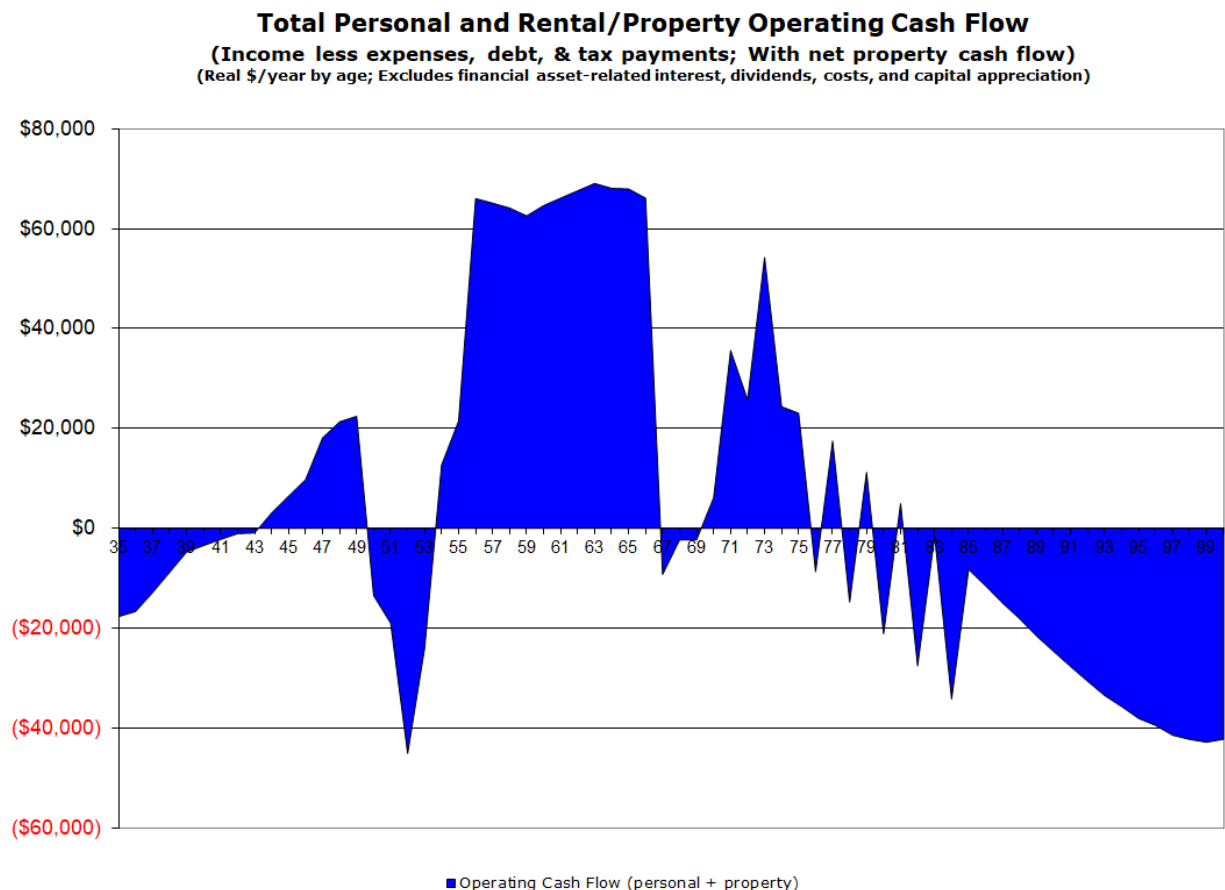
6) CASH FLOW Graphic

Non-Asset Cash Flow – Income less Expenses, Debt, & Tax Payments

(Real \$/year by age; Excludes asset-related interest, dividends, costs, and capital appreciation)

This CASH FLOW graphic projects your net earned and other non-asset income -- reduced by all expenses, taxes, and debt payments. The graphic is a summary of all projected financial activity, but without any asset-related returns or appreciation net of investment costs. However, it does include the projected impact of required taxes related to assets.

CASH FLOW graphic example



For this couple, they are projected to be net savers during the earlier and later working years. For part of the period when their two children are in college, they are projected to have negative cash flow. In retirement, their projection shows an increasing cash flow gap between retirement expenses and retirement income sources, such as Social Security and pensions as they age.. Therefore, they will need to draw upon investment assets to make up the difference.

This gap is primarily driven by increasing taxes related RMDs as they get older. This Operating Cash flow graphic does not include the financial asset side of overall cash flow and assets would be required to make up any negative cash flow in retirement. Note that VeriPlan adds investment asset projection information to this Cash Flow information in the “Asset Flows” graphic. (For more information, see the Asset Flows graphic section below.)

7) SAVINGS RATES Graphic

Pre-Retirement Savings Rates with Investment-Oriented Debt Repayments

(%/year by age; % of non-asset income in years when non-asset cash flow is positive.)

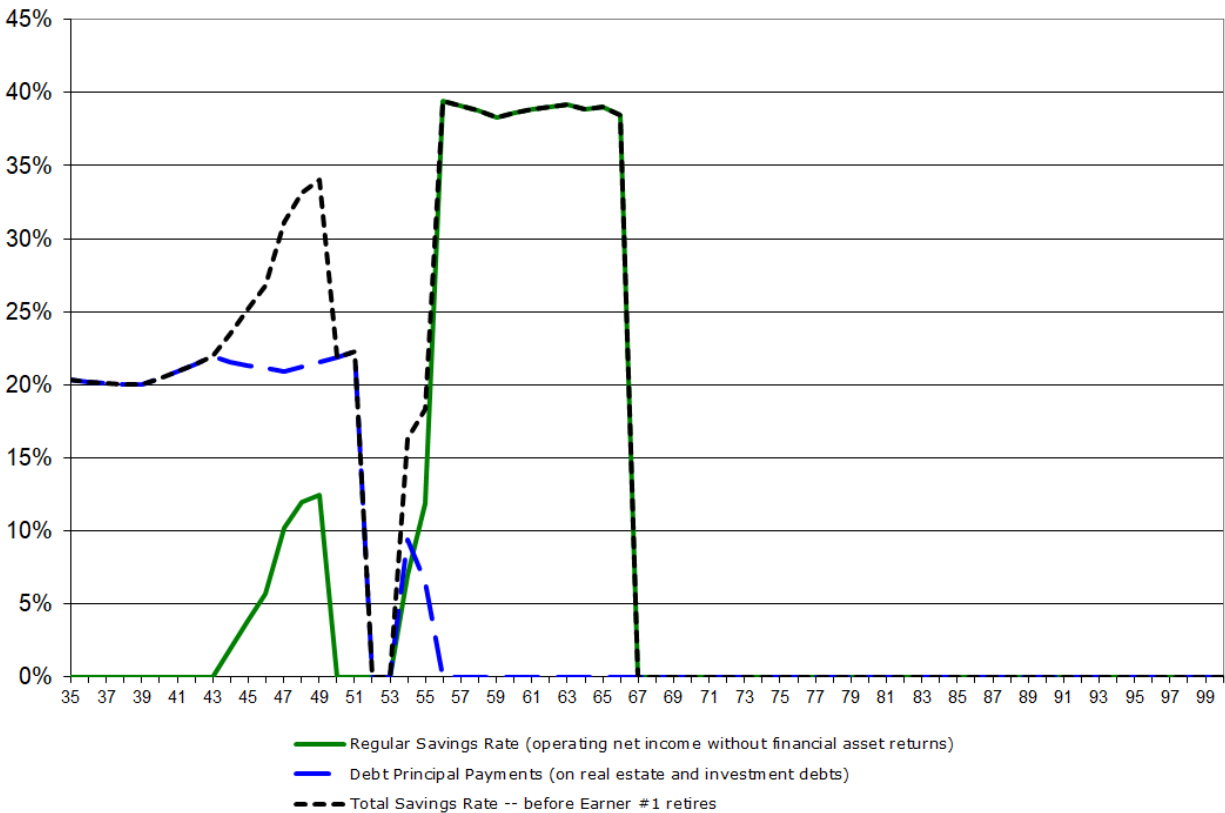
This SAVINGS graphic projects your annual savings rates up to the planned retirement age of Earner #1. Up until retirement, saving rates will be zero for any projection year when expenses, taxes, and debt payments exceed non-asset income.

The graphic does not show savings rates in retirement, even if non-asset income is projected to exceed expenses, taxes, and debt payments in some retirement years. Because non-asset income in retirement is usually much less than pre-retirement income, this would distort pre-retirement versus post-retirement savings rates. Therefore, to understand potential savings situations during retirement, instead, you should refer to the asset flows graphic.

This graphic projects your savings rates with and without your investment-oriented debt payments. Particularly early in many people's lifetimes, it can seem difficult to save. Savings is always important, and it is useful to recognize that investment-oriented debt payments are a form of savings. When such debt has been retired, then your "normal" savings rates usually need to increase substantially to ensure that adequate assets will be accumulated prior to retirement.

SAVINGS RATES graphic example

**Pre-Retirement Cash Flow Savings Rates, including
Principal Repayments on Real Estate and Investment Debts**
(% of non-asset income in years when operating cash flow is positive; limited to 100%)



For this couple in the sample graphic above, they are projected to have very high personal savings rates. In addition, to living within their means, and saving normally from their earned income, VeriPlan also includes the payoff of the principal on their mortgage as additional “investment oriented debt savings.”

8) HUMAN CAPITAL Graphic

Expected Income and Savings before Retirement

(Real \$ beginning balances by age; Depletion of expected future gross and net pre-retirement earned & other non-asset income)

This HUMAN CAPITAL graphic projects the cumulative remaining gross and net human capital for Earners #1 and #2 up until the retirement age of Earner #1.

Human capital is a depletable personal asset. Without substantial inherited assets, gifts, or lottery winnings, human capital is the only asset one has. It must be converted into earned income to

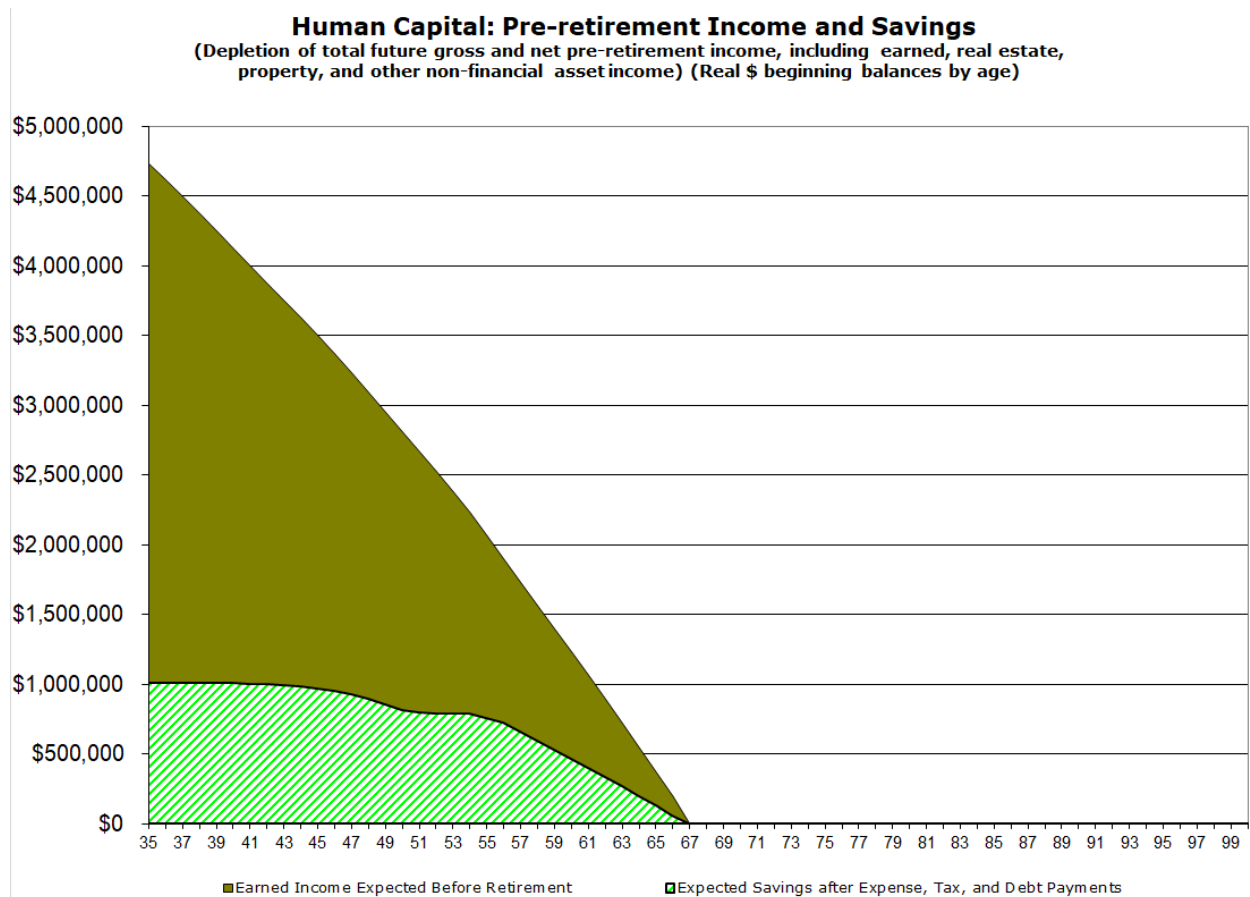
pay ongoing expenses. Some of it must also be saved and converted into valuable assets, if one is to have assets to live on after human capital is gone.

VeriPlan measures your gross human capital as your cumulative yet-to-be-earned real dollar income prior to retirement. Your gross human capital depends upon your entries and growth rates on the income worksheet. These entries are related to your: A) wage and salary income, B) actively-managed business income, and C) other income sources, which may or may not be associated with active income generating efforts on your part.

You can spend and/or save your gross human capital. To the extent that you save it rather than spend it, you will have projected net human capital. Your projected net human capital is your cumulative yet-to-be-saved real dollar net earned income or savings after expenses prior to retirement. Your net human capital can be converted into other assets, which can increase in value and be withdrawn in the future to fund expense shortfalls.

On other asset related graphics, VeriPlan will display your net human capital to illustrate the projected depletion of your human resources. As you move toward retirement and as you convert net income into other assets via savings and new investment deposits, net human capital must fall. The current balance of your net human capital is not a bankable or spendable asset, but you can increase or shrink it through your projected savings rate. Both your gross and net human capital illustrate the aggregate future value of your labor related earned income stream. Human capital is another way to measure future income that could also be at risk due to other factors such as unemployment, underemployment, early disability, and/or premature death.

HUMAN CAPITAL graphic example



This couple's lifetime cumulative gross earnings are expected to exceed \$4,500,000 and they are projected to spend about \$3,500,000 of that for ongoing expenses, debt payments, and taxes during their working years. The good news is that this couple is projected cumulatively to save about \$1,000,000 of their gross projected income, which they will put toward their investment program.

On the Human Capital graphic their cumulative expected net savings are represented by the area with the diagonal green lines. On all of VeriPlan's other area graphs that project this couple's lifetime investment assets, you will notice that his Net Human Capital will also be included. This is done to illustrate the conversion over time of their valuable labor into valuable investment assets.

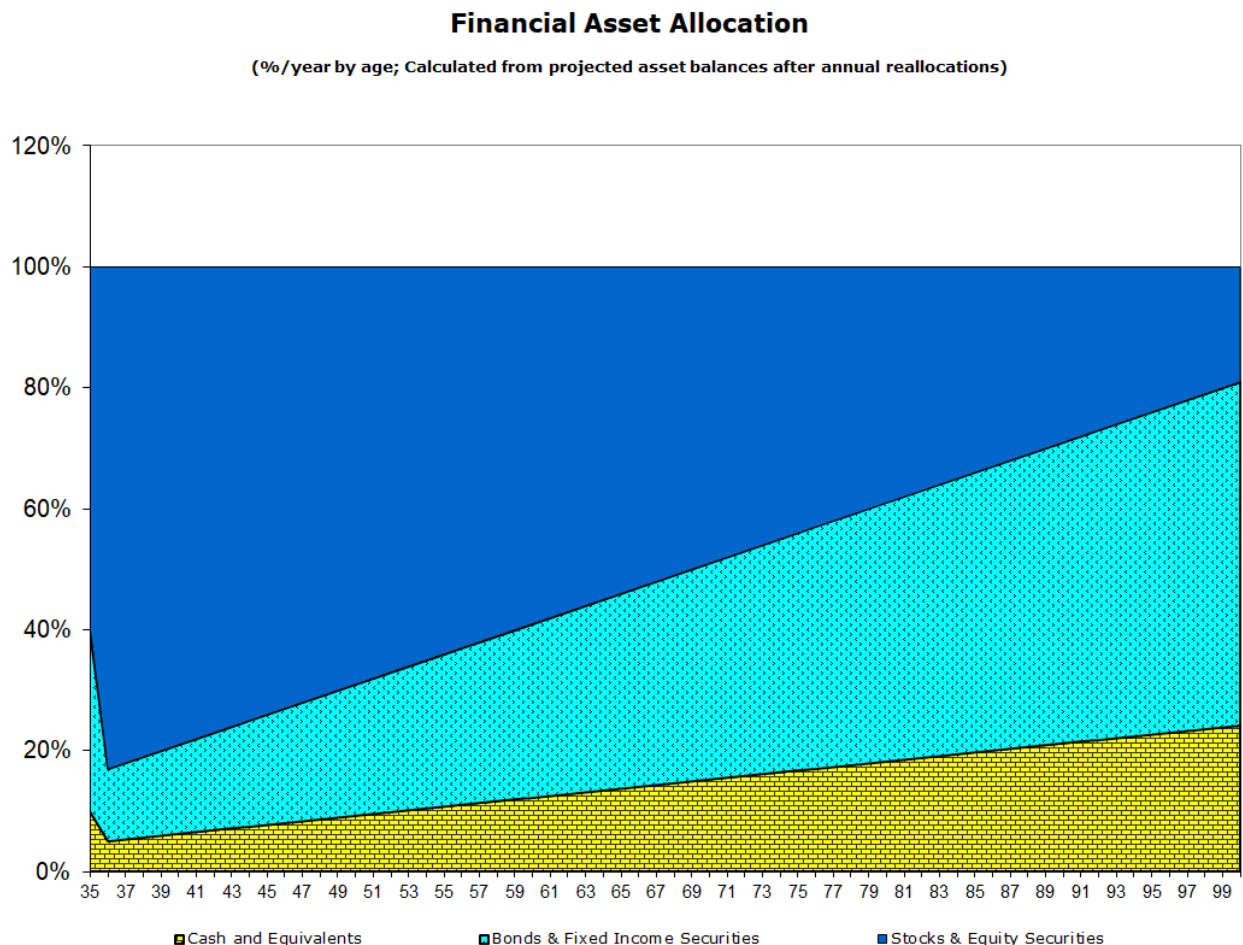
9) ALLOCATION Graphic

Financial Asset Allocation

(%/year by age; Calculated from projected asset balances after annual reallocations)

This Asset Allocation graphic shows your projected annual financial asset allocation across your lifetime. This graphic depends upon your settings on the allocation worksheet. VeriPlan provides five asset allocation methods with flexible user adjustments.

ALLOCATION graphic example



In this sample graphic, this couple has chosen to adopt an asset allocation strategy more weighted toward equities while they are younger. Over time, they will steadily increase their allocation to bonds and cash and decrease their allocation to equities. In this particular projection, this couple has chosen the VeriPlan asset allocation method that set a fixed ratio between bond and cash.

10) TOTAL ASSETS Graphic

Financial Assets, Property, and Debts with Cumulative Assets Lost to Excessive Investment Costs

(Real \$/year by age; Beginning balances with reallocations; Debt causes assets to display below 0)

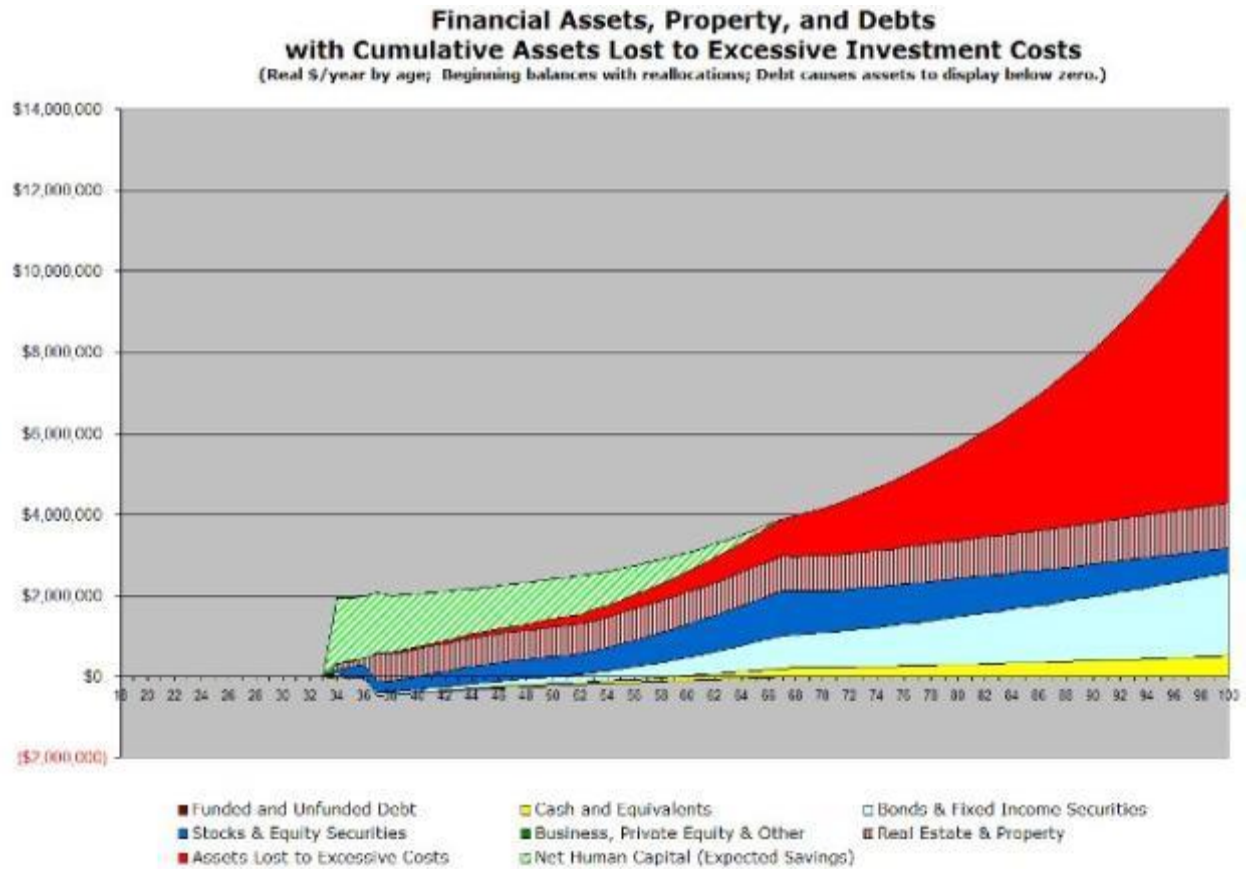
This TOTAL ASSETS graphic shows your projected cash, bond/fixed income, and stock/equity financial assets and property. Your net human capital is also shown to illustrate the conversion of your net earned income into financial assets through your savings. Cash, bond/fixed income, and stock/equity financial assets and property assets are graphed in layers. On top of your financial assets, this graphic also displays the projected values of your property and other assets that you entered on the property worksheet.

Debts display differently. This graphic includes the value of your current debts, as they are paid down, plus any future debts that you accrue. Because of how the graphics drawing facilities of the underlying spreadsheet engine work, your debts will not display directly when you have other positively valued assets. However, your current and future debts will affect how your positively valued assets are displayed.

The presence of your current or future debts can be detected easily on these graphics. Whenever the lower edge of any positively valued asset falls below zero, your outstanding debts are the cause. How much your positively valued assets will be pulled downward depends upon the total principal amount of your debts with any accrued interest.

TOTAL ASSETS graphic example

(This is the older style of this VeriPlan graphic. Because it represents the projection scenario with investment costs that is described in the accompanying text below, this older graphic has been retained.)



Graphing investment cost inefficiencies in the Total Assets graphic

In this sample total assets graphic, this couple's lifetime asset projection indicates that they would have increasing amounts of cash, bond, and stock financial assets and real estate property over their lives. However, due to the various costs of their investment portfolio, they would spend their lives paying unnecessarily high investment expenses. In effect, they would throw away almost as much in total assets by age 100 than they would have retained.

VeriPlan provides easy to use investment cost analysis facilities that help users understand the lifetime impact of the investment fees they pay. The sad thing is that this couple's lifetime projection graphic reflects the average investment costs paid by the average investor. Like other average investors, if they do not slash their investment costs, they will significantly stunt the growth of their retirement portfolio by paying excessive fees to the financial services industry.

In addition to projecting your cumulative cash, bond, and stock financial assets and property assets, this TOTAL ASSETS graphic also projects your cumulative assets lost to excessive

investment costs associated with your financial assets and your settings on the investment costs worksheet.

Your property and other assets are graphed with your financial assets and cost-inefficiencies and have been arranged on these charts to demonstrate how long your total assets are projected to last. If you are projected to have expense shortfalls that will reduce your assets in the future, then your more liquid financial cash, bond/fixed income, and stock/equity assets will be depleted first. After they are exhausted, VeriPlan assumes you will deplete your other assets (business interests, private equity, etc.) followed thereafter by your real estate property assets.

11) ASSET FLOWS Graphic

Non-Asset Cash Flow with Cash, Bond, and Stock Financial Asset Returns

(Includes Required Minimum Distributions, & Unfunded Consumption) (Real \$/year by age)

The graphic provides several summary financial projections. First, it graphs both annual financial asset returns net of current year investment expenses. Second it graphs your total annual cash flow from non-asset related activities, including all earned and other income, living expenses, debt payments and taxes -- including investment taxes. (This line is equivalent to the CASH FLOW graphic.) Then, it graphs the combination of your projected non-asset cash flow and current year net asset appreciation.

This ASSET FLOWS graphic also indicates total projections annual Required Minimum Distributions (RMDs) from traditional tax-advantaged retirement accounts. Finally, it graphs unfunded consumption expenses, if and when projected cash, bond, and stock financial assets are exhausted. These unfunded consumptions expenses would need to be paid through borrowing or the sale of property and other assets or they would be entirely unfunded.

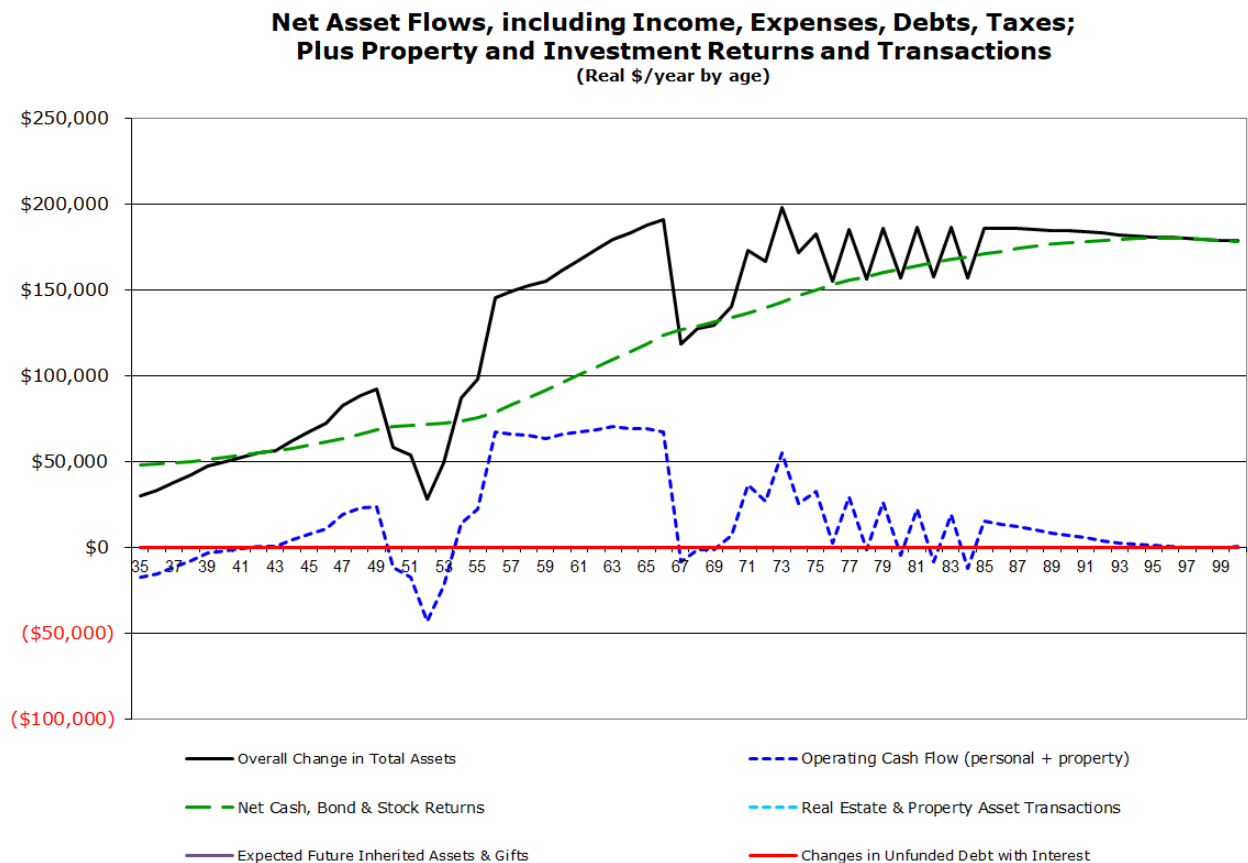
ASSET FLOWS graphic example

Some VeriPlan users find the Asset Flows graphic to be very useful, because it combines the effects of lifetime cash flow from earnings, expenses, debts, and taxes with the effects of lifetime appreciation of their cash, bond, and stock financial asset portfolio. In this sample graphic, this couple's projection data from their Cash Flow graphic is drawn as the blue line. The projected annual return on their investment portfolio is graphed as the green line, which steadily increases during their working years. During their retirement years, the projected annual return on their

investment portfolio levels off but still grows moderately, as they utilize some of their investment returns to fund their negative cash flow in retirement.

The black line on the Asset Flows graphic combines this couple's cash flow from earnings, expenses, debts, and taxes with the appreciation of their cash, bond, and stock financial asset portfolio. Whenever that black line is above zero, then their total family assets are projected to increase by that annual amount. Correspondingly, when the black line falls below zero, this would mean that their cash flow gap exceeds the projected investment return of their financial asset portfolio.

(This is the older style of this VeriPlan graphic. Because it represents the projection described in the accompanying text, it has been retained.)



Required Minimum Distributions from tax-advantaged retirement accounts

After age 73, tax laws specify that a portion of the assets held in traditional tax-advantaged IRAs and employer sponsored retirement plans must be withdrawn as Required Minimum Distributions (RMDs). The initial age for RMDs used to be 70.5. This was increased to 72 by the

SECURE Act of 2019. Then, the SECURE Act (“2.0”) of 2022 increased the initial age for RMDs to 73 and to 75 starting in 2033. Thus, currently the initial age for RMDs depends upon your age now.

Calculated according to actuarial tables, RMDs force assets out of traditional tax-advantaged accounts and into taxable accounts solely to assess income taxes on the taxable proceeds (above any tax basis that these retirement account assets might have, which is usually quite small or zero). For user convenience, this graphic also lists this couple’s projected Required Minimum Distributions from traditional tax-advantaged retirement accounts. However, users should understand that RMDs are not retirement “income,” but are simply legally mandated withdrawals from tax-advantaged accounts to create “income taxable” events and corresponding income tax payments. RMDs occur whether or not the retiree(s) need the after-tax funds to live on in retirement. If they do, then RMDs can fund negative cash flow. If they do not, then the after-tax funds are simply reinvested in taxable accounts. The Withdrawals graphic, immediately following, discusses RMDs in greater detail.

12) DEBT OWED Graphic: Personal, real estate, and business debt principal owed

DEBT OWED graphic example

This Debt Owed provides projected annual beginning principal balances for all personal and business debts. Debts are categorized as:

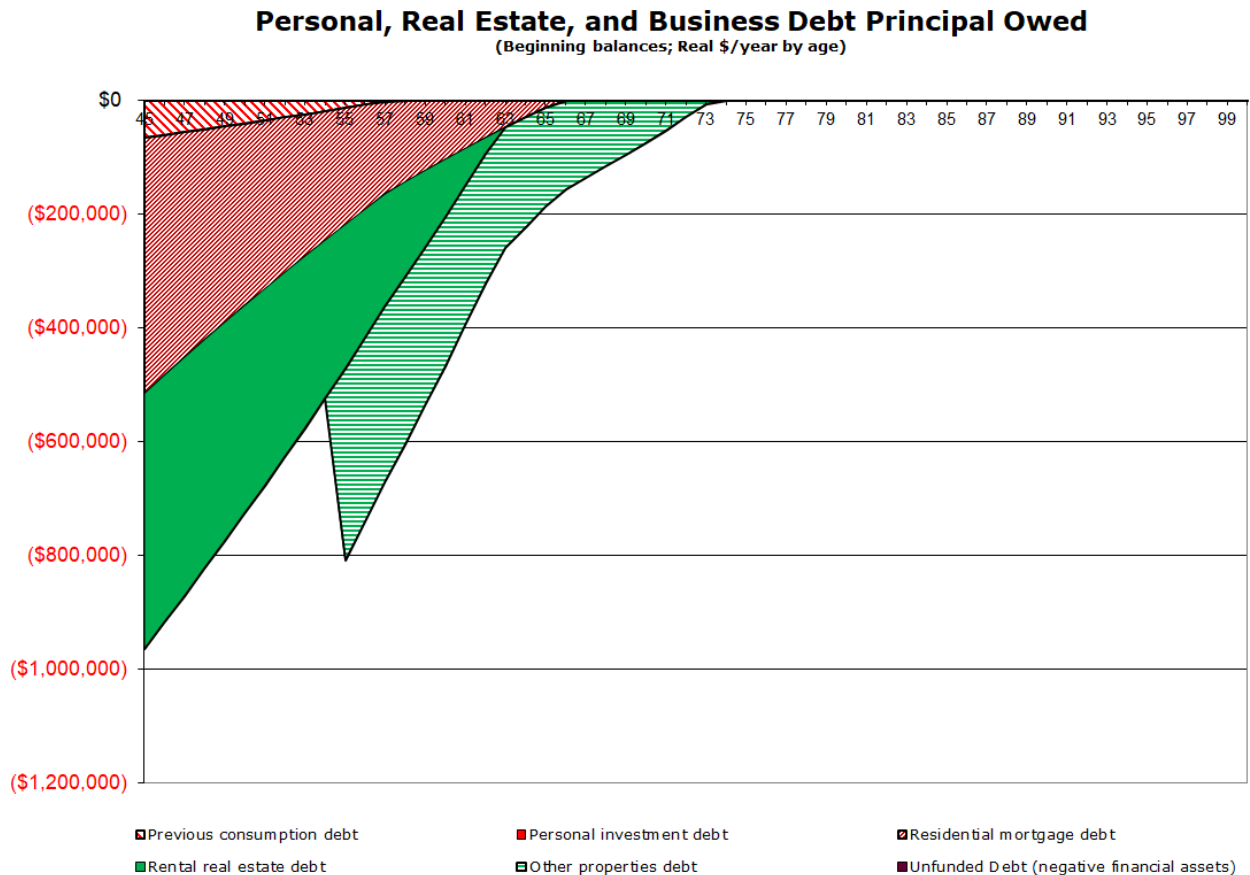
- a) previous consumption debt,
- b) personal investment debt,
- c) residential mortgage debt,
- d) rental real estate debt,
- e) other properties debt, and
- f) unfunded debt.

Unfunded debt is equal to cumulative negative financial assets, if financial assets are projected to be depleted.

In the graphic example below, there are three current debts that are all projected to be paid off by age 66.. The smaller wedge at the top is credit card debt related to prior consumption, The

light red area is the mortgage on the personal residence. The dark green wedge is the mortgage debt on the rental real estate property that is currently held.

The fourth debt represented by the lighter green area with horizontal lines has not yet been incurred. In ten years, they plan to purchase a small business property, which will involve taking on more debt. VeriPlan handles all the financial parameters of future purchase and/or sale of any business property, as well, as for residential real estate and rental real estate.



13) ASSET TAXABILITY Graphic

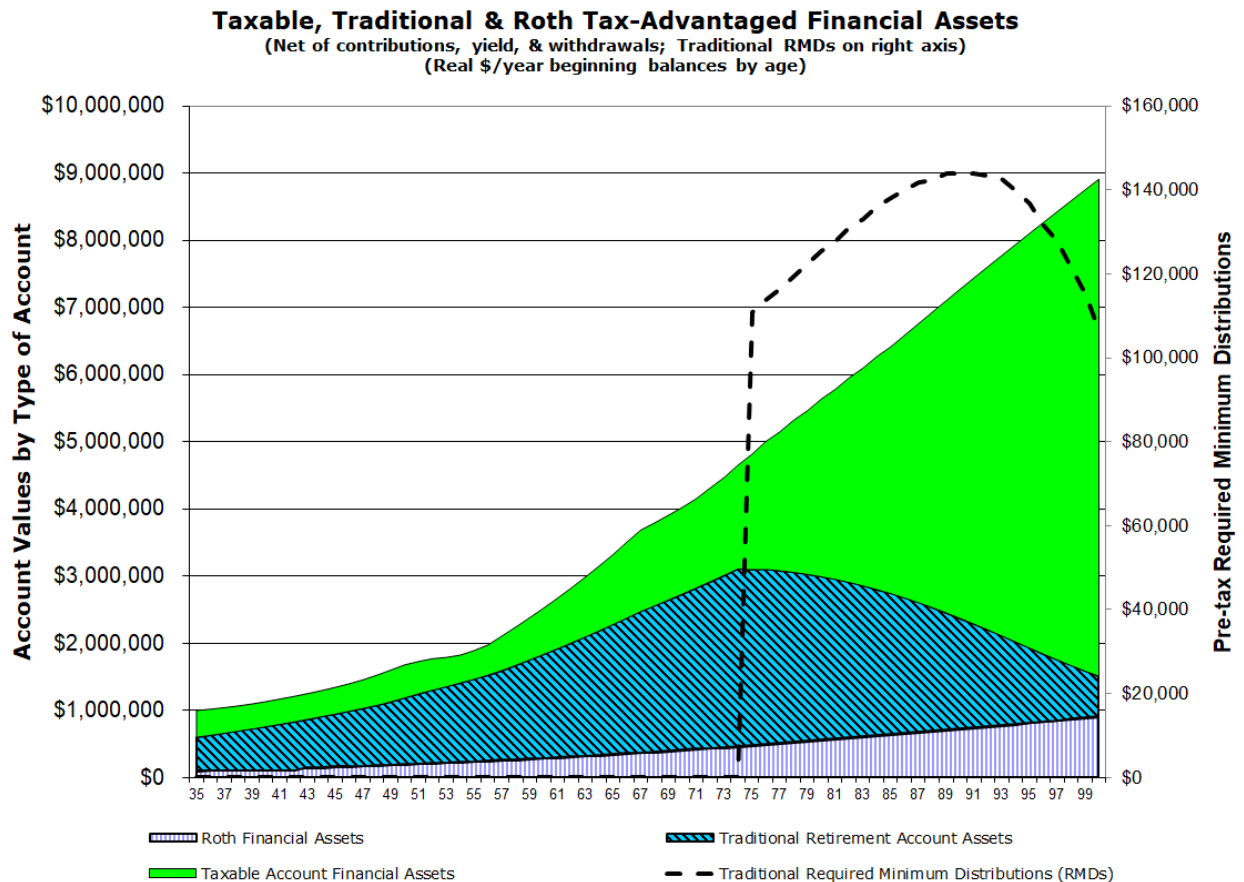
Taxable, Traditional & Roth Tax-Advantaged Financial Assets

(Real \$/year beginning balances by age; Net of new investments, yields, transfers, and withdrawals)

This ASSET TAXABILITY graphic projects your holdings of financial assets between your taxable and tax-deferred accounts. These assets depend upon the tax characteristics your current holdings, which you entered on the financial assets worksheet. This graphic also depends upon

your settings on the tax-advantaged plans worksheet regarding your future contributions into tax-advantaged retirement plans.

ASSET TAXABILITY graphic example



The Asset Taxability graphic for this couple indicates that their modest contributions to Roth retirement accounts would grow steadily. Concerning their traditional tax-advantaged accounts those assets would grow and then decline in retirement with RMDs. Throughout their working years this couple plans to take maximum advantage of tax-advantaged retirement investing. This means that they need to keep an eye on their ongoing contributions to deal with years where assets in taxable accounts would not fund near term expense needs.

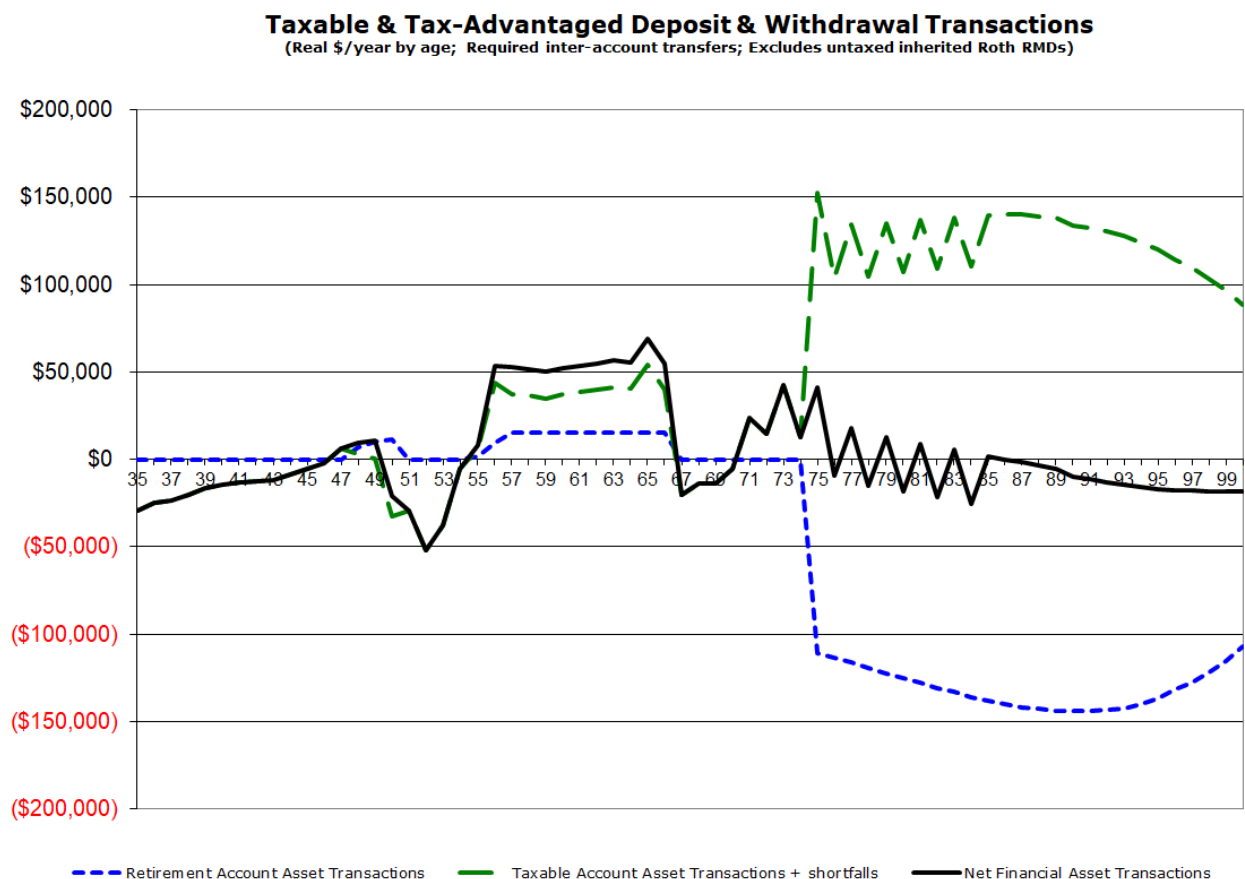
14) ASSET TRANSACTIONS Graphic

Taxable & Tax-Advantaged Deposit & Withdrawal Transactions

(Real \$/year by age; Required inter-account transfers)

This TRANSACTIONS graphic shows your projected annual net financial asset cash flows into and out of both your taxable and tax-advantaged accounts. It also shows your net overall financial asset transactions, which is a combination of your taxable and tax-advantaged accounts transactions. This combined annual transaction line indicates whether you are adding to or withdrawing from your financial asset accounts to meet your expense, debt, and tax obligations. Annual costs without interest that cannot be funded with financial assets are also included in the taxable and net asset categories.

TRANSACTIONS graphic example

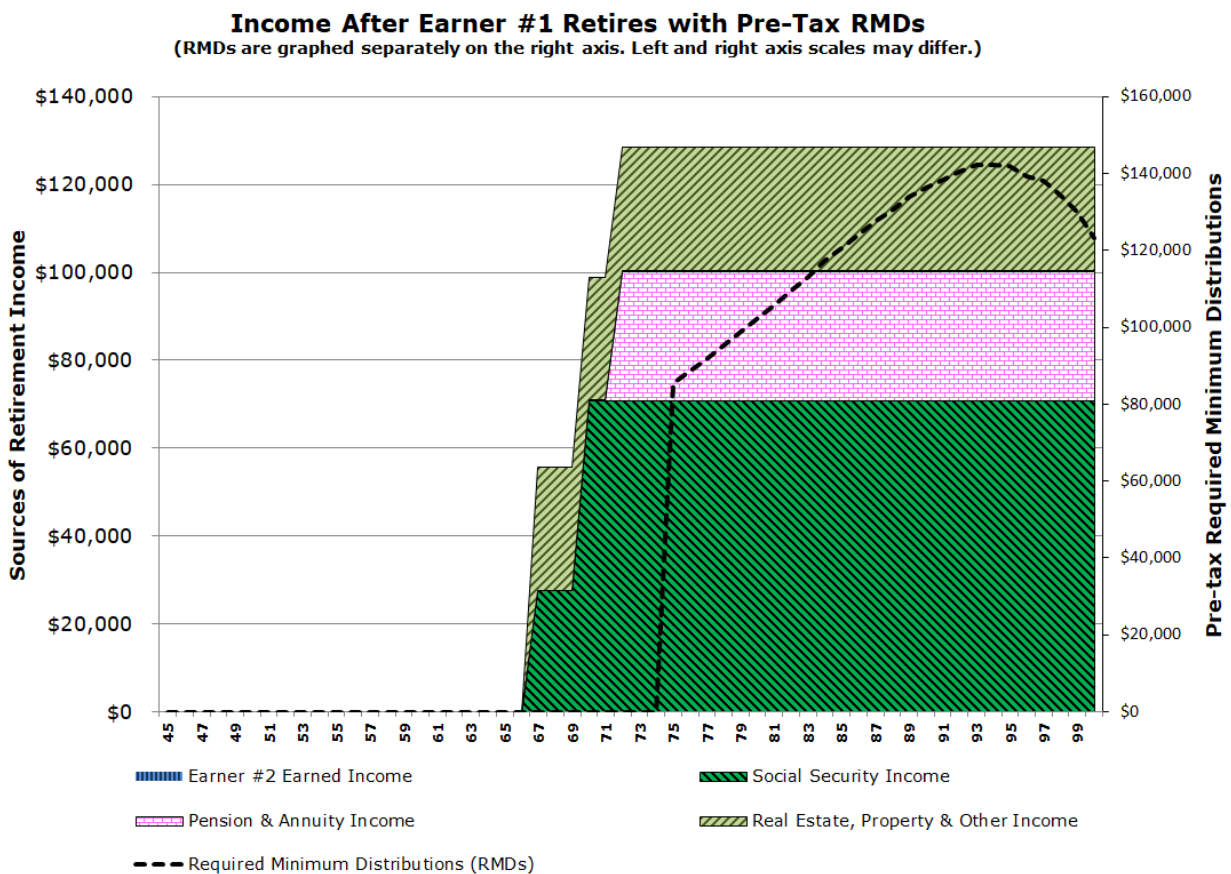


This graphic is helpful when you wish to assess whether withdrawals from tax-advantaged accounts are being made to cover necessary expenses and/or to meet mandatory tax recognition and taxation requirements for RMDs. If tax-advantaged account withdrawals are indicated simultaneously with deposits into taxable accounts, then some or all of your tax-advantaged account withdrawals are being made to satisfy mandatory withdrawal rules. This graphic focuses on transactional cash flows only. It does not show your overall projected net financial asset

yields. All your financial asset deposits, distributions, and other withdrawals are included. However, capital appreciation that is not recognized for tax purposes is not. Instead, capital appreciation that does not involve taxation is simply reinvested and is reflected in your financial asset balances on VeriPlan's various financial assets graphics.

15) RETIREMENT INCOME Graphic: Retirement income sources and pre-tax Required Minimum Distributions (RMDs) after Earner #1 retires

RETIREMENT INCOME graphic example



This graphic projects various income sources in retirement after Earner #1 plans to retire. Retirement income sources may include continuing earned income from Earner #1, Social Security retirement income, and pension, deferred compensation, and/or annuity income.

This graphic also includes Pre-Tax Required Minimum Distributions (RMDs). RMDs are not strictly an income source. Instead, they are required distributions of invested assets from retirement accounts that force taxation in the process. If you would need some or all of the after-

tax RMD proceeds to pay your bills, then you can think of them as income. Whatever might be left of these RMDs after taxes and after expenses would then be deposited into taxable asset accounts.

Pre-tax RMDs from traditional retirement accounts are projected as a dashed overlay line measured by the right vertical axis. Note the retirement income sources on the left vertical axis and RMDs on the right vertical axes are usually not the same numerical scale. Also, note that if any RMDs are indicated before age 73, these could be associated with inherited traditional retirement accounts. Alternatively, if the Earner #2 spouse is older than Earner #1, they could represent RMDs associated with the spouse's traditional retirement accounts.

RMDs are not strictly an income source. Instead, they are required distributions of invested asset from retirement accounts that force taxation in the process. If you would need some or all of the after-tax RMD proceeds to pay your bills, then you can think of them as income. Whatever might be left of these RMDs after taxes and after expenses would then be deposited into taxable asset accounts.

16) ASSET WITHDRAWALS Graphic

Withdrawal Rates from Cash, Bond & Stock Financial Assets

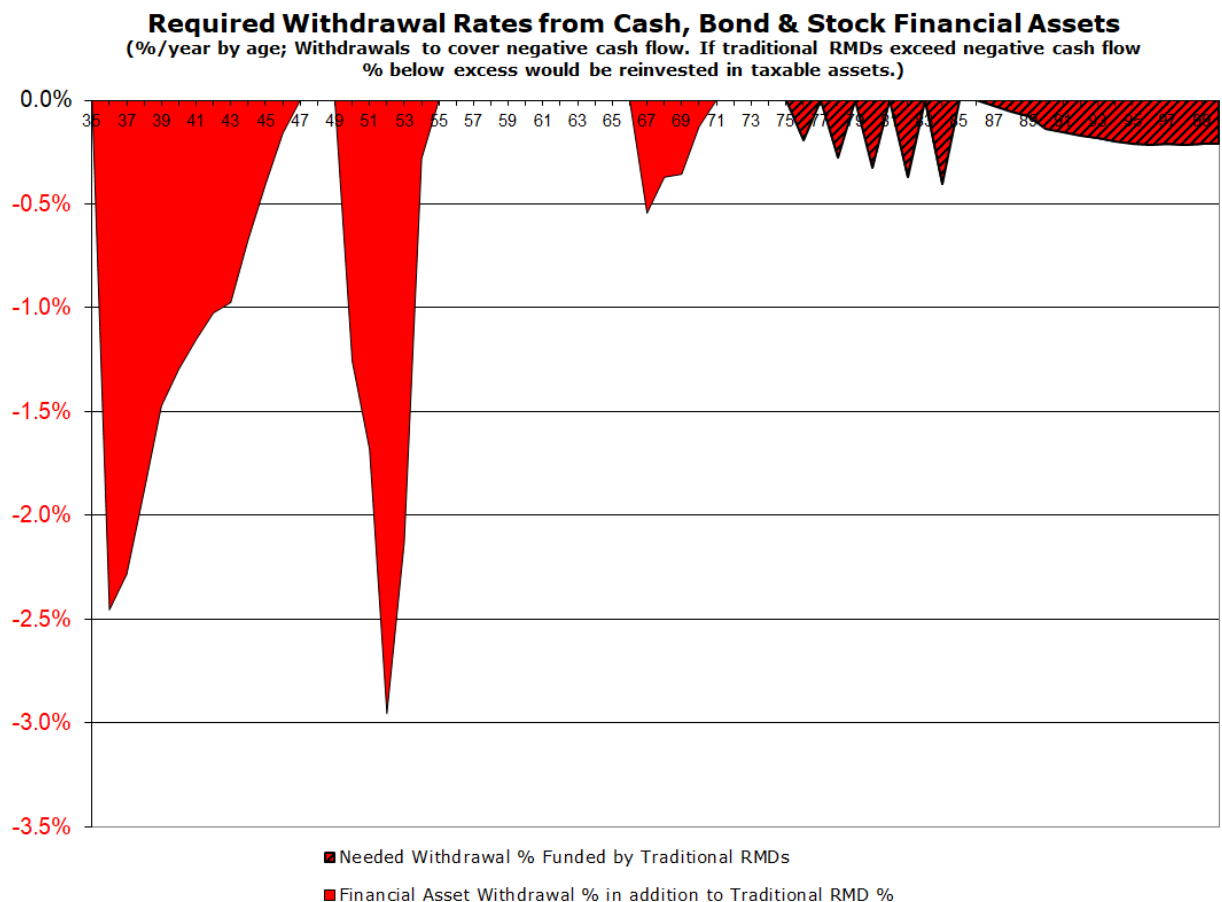
(%/year by age; Withdrawals for net cash flow shortfalls, RMDs, & associated taxes)

This WITHDRAWALS graphic presents your net overall annual financial asset withdrawal rates as a percentage of the beginning balances of your then current financial asset holdings. An asset withdrawal rate can only be shown, when your total cash, fixed income, and equity financial assets are positive.

This graphic also indicates how much of withdrawals are attributable to annual Required Minimum Distributions (RMDs) from traditional tax-advantaged retirement accounts. In any projection year when negative cash flow requirements exceed RMDs, additional withdrawals will be indicated. In years when RMDs exceed cash flow requirements, then any excess RMD withdrawal beyond cash flow requirements will not be shown here. Instead, that RMD excess will be deposited automatically in taxable financial asset accounts.

WITHDRAWALS graphic example

While those planning retirement seek rules of thumb about asset withdrawal rates, the future unfolds unpredictably and withdrawals over a lifetime will depend upon the net effects of a myriad of financial factors. Retirement withdrawal studies that discuss methods of gauging and planning safe withdrawals of 3%, 4%, or even higher percentages from retirement portfolios have utility and are very important to consider.



For this couple, their withdrawals graphic provides information about a variety of projected events over their lives that would involve withdrawals of assets from their cash, bond, and stock financial asset portfolio – exceeding the projected yield of their financial portfolio at that point in time. The first percentage drawdown occurs early in their projection, when their portfolio is the most modest and when they need to cover negative cash flow from financial assets that they were fortunate enough to have inherited.. The second drawdown occurs during some of the consecutive years when their two children are in college. The third drawdown occurs in their early retirement years when that have a larger cash flow gap, because they have chosen to

increase their Social Security retirement payments by delaying acceptance of their first payment until they are age 70.

Finally, the fourth and longest drawdown event begins around age 75 for Earner #1, which illustrates the projected amount they need to withdraw to fund negative cash flow once they have begun to receive Social Security retirement payments and are also subject to Required Minimum Distributions. The good news for them is that VeriPlan projects their withdrawal rates would be less than half of one percent in late retirement. This is fortunate, because their shift to a bond and cash heavy investment portfolio as they age would mean both lower expected risk but also lower expected rates of return.

17) RETIREMENT SHORTFALLS Graphic: Cash flow shortfalls after Earner #1 retires including RMDs

RETIREMENT SHORTFALLS graphic example

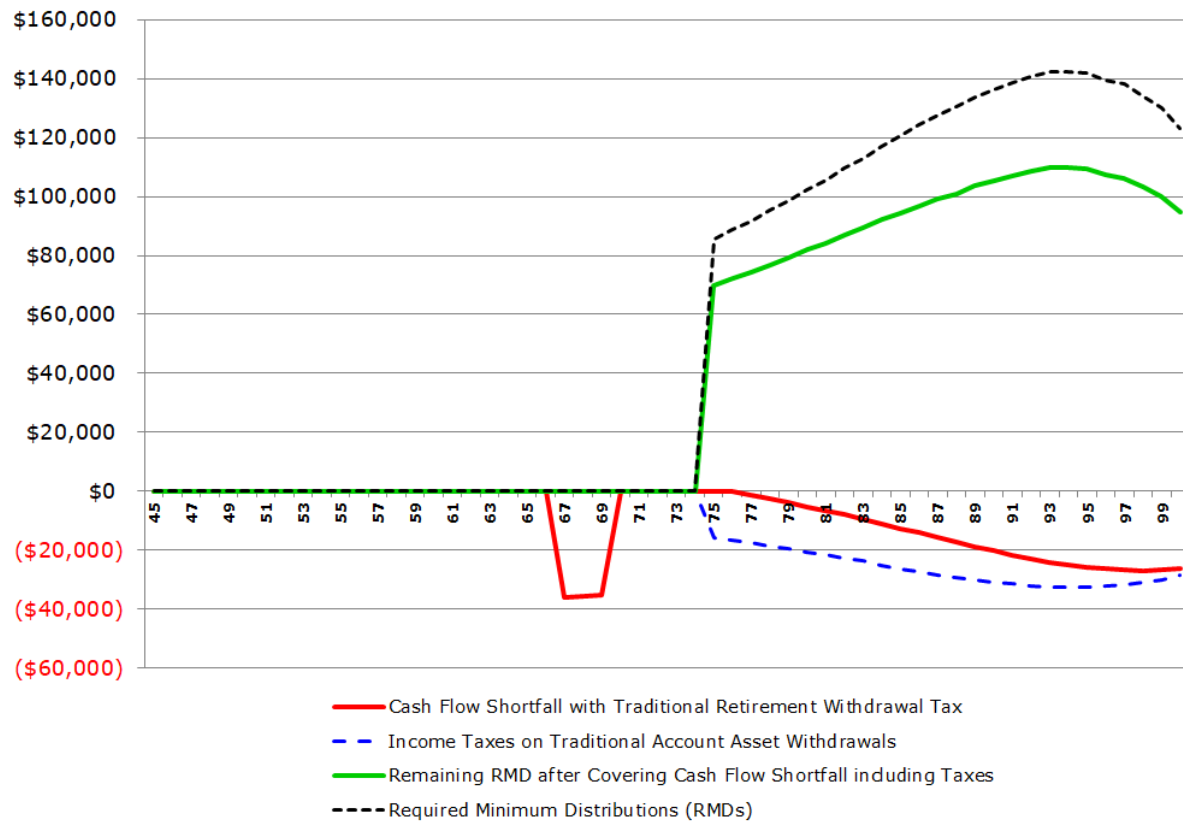
This graphic projects any yearly cash flow shortfalls after Earner #1 retires. These cash flow shortfalls have already taken into account the retirement income sources projected on the previous RETIREMENT INCOME graphic. However, the cash flow shortfall line does not include the impact of your projected RMDs from traditional retirement accounts.

RETIREMENT SHORTFALLS demonstrates whether your RMDs are projected to be sufficient to make up for any cash flow shortfall that you might experience during various retirement years. If the cash flow shortfall in any projection year, which includes income taxes on traditional account asset withdrawals, were to exceed your projected RMDs, then other assets would be needed to cover the remaining shortfall.

To provide a better understanding of traditional retirement account RMDs and taxes, this graphic also includes a dashed line indicating total federal, state, and local ordinary income taxes on withdrawals from traditional retirement accounts to cover RMDs and for income taxes on any additional withdrawals needed in excess of RMDs.

This graphic displays a continuous green line that indicates any net RMD remaining after RMD income taxes and cash flow shortfalls have been covered. When this line is positive, this means that these excess RMD assets would be automatically reinvested in your taxable accounts as financial assets.

Cash Flow Shortfalls with Traditional RMDs, after Earner #1 Retires (If cash flow shortfall exceeds RMDs, additional assets would need to cover the remainder)



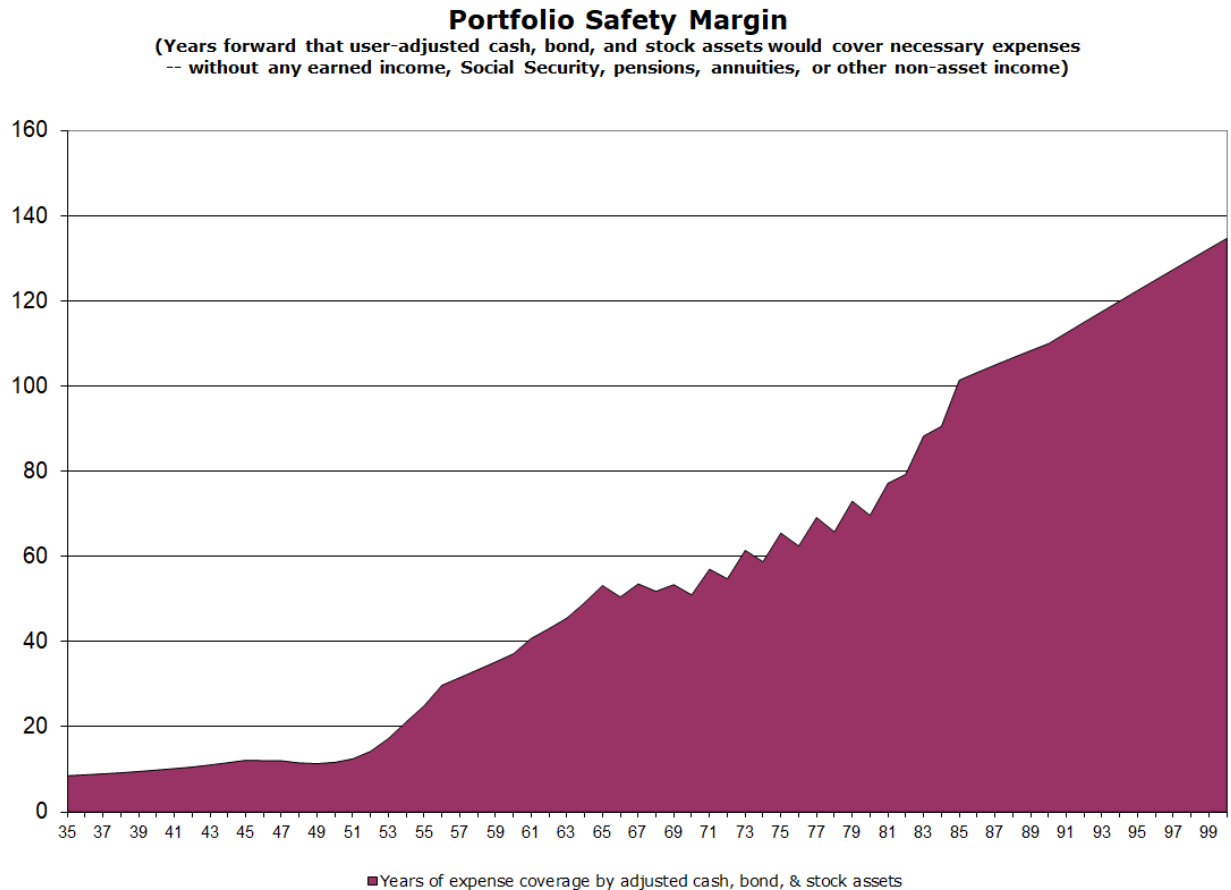
18) ASSET SAFETY MARGIN Graphic

Emergency asset coverage of expenses without other income

(Number of years forward from any projection year that financial assets would cover necessary expenses -- without the receipt of other expected earned income, Social Security, pensions, annuities, or other non-asset income)

This SAFETY MARGIN graphic provides a measure of how long, measured in years going forward, that your projected financial assets would cover your projected necessary expenses, if you lost all your expected sources of income. In effect, this is a stress test of the unusual situation where all personal income sources ceased, and you needed to fund needed living expenses solely from your financial investment assets.

SAFETY MARGIN graphic example



Particularly after this couple puts their two children through college (by the time that Earner #1 is in his or her early 50's), their portfolio safety margin keeps increasing. Some of this is due to aggregate long-term portfolio appreciation, and some of this is due to the fact that they have chosen an asset allocation strategy that increasingly shifts toward bonds and cash over time.

19) VALUE OF TIME Graphic: Hourly wage equivalent value of income, expenses, and financial assets

VALUE OF TIME: Hourly Value of Income, Expenses, and Financial Assets (Number of years forward that cash, bond, and stock portfolio financial assets would cover necessary expenses -- without any expected earned income, Social Security, pensions, annuities, or other non-asset income)

Given all the uncertainties in personal financial planning, it can be very difficult to make major life decisions, such as the choice of when to retire. Viewing finances on an hourly basis can be helpful, and this is another way to think about how one must or would like to spend one's

time. Regarding the retirement decision, the trade-offs between working longer versus retiring can be aided by understanding income, expenses, and financial assets on a standard hourly basis.

When they are sufficient in retirement, your financial assets act as a replacement worker for yourself. Financial assets can replace earned income and close the gap between Social Security, pension, and annuity income and expenses in retirement.

While other VeriPlan graphics project financial resources assuming that the primary Earner/User(s) will live to age 100, that very conservative planning assumption clearly exceeds the average life expectancies that you can see on VeriPlan's Life Expectancy graphic. To help you think about the differential impact of an earlier demise, this graphic provides three lines measuring financial assets on an hourly basis, if death were to occur at 80, 90, or 100 years of age.

All the lines on this graphic present information on an hourly basis assuming a 2,000 full-time work year, since 8 hours per day times 5 days per week times 50 weeks per year equals 2,000 hours per year.

Because the earned income, retirement income, and expenses lines measure a single year, this is how they are calculated:

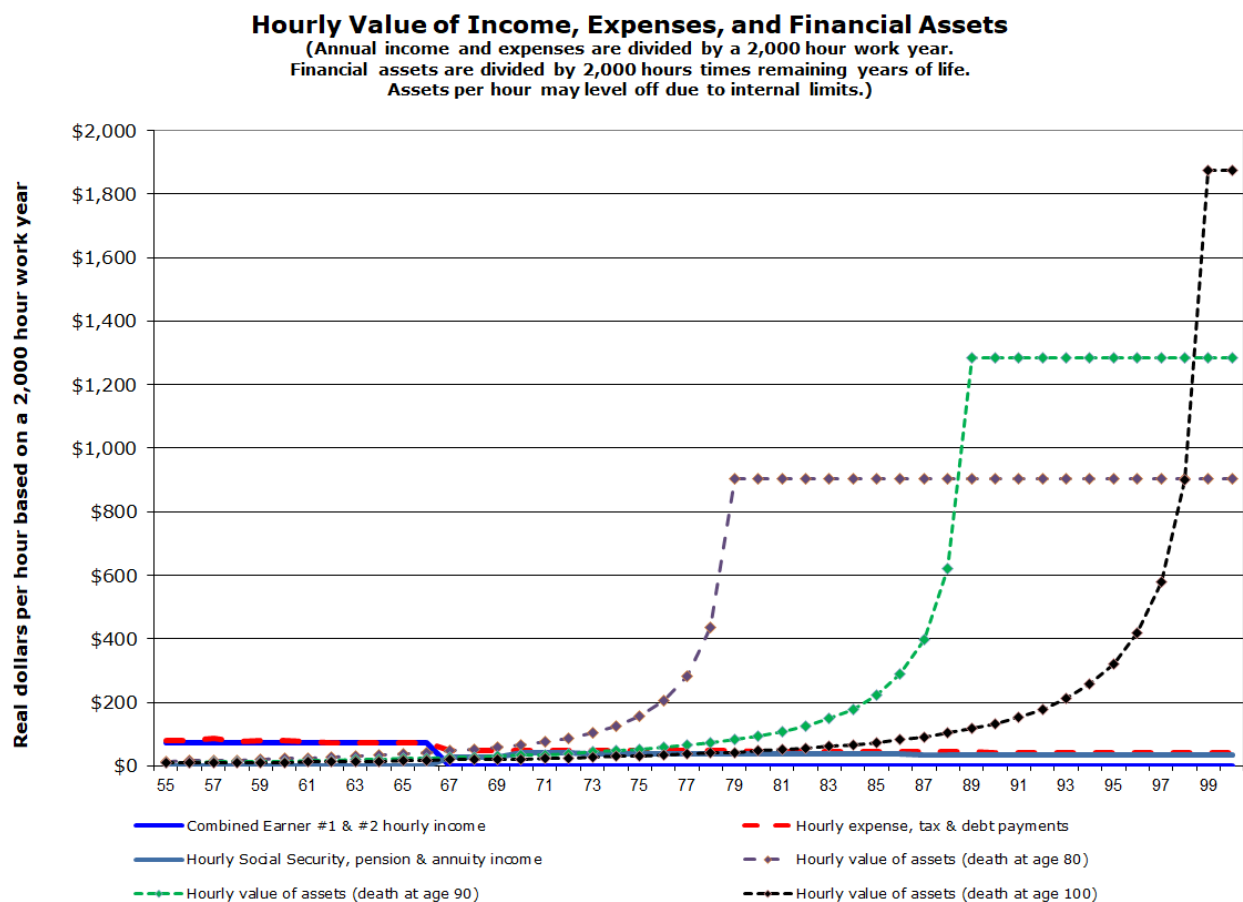
- Combined Earner #1 & #2 full-time equivalent income: Combined earned income is calculated as if that income was obtained by a single worker working 2,000 hours per year. If your total household earnings are obtained with more or less than 2,000 hours of work, make a mental adjustment, but keep in mind that it is necessary to standardize the hours per year for comparisons across the various lines.
- Social Security, pension, and annuity income: All retirement income sources are combined and then divided by 2,000 hours.
- Total expense, tax, & debt payments: All cash outflows are combined and then divided by 2,000 hours.

The three "Hourly value of assets" lines with projected death at age 80, 90, or 100 measure the hourly remaining lifetime value of total financial assets through those three ages. The hourly

amounts are calculated by dividing the total financial assets at the beginning of each projection year by 2,000 hours per year times the number of years of life remaining.

Note that each of these age 80, 90 and 100 asset lines may level off due to internal limits for some projections, if total projected total assets are very large. Without such a limitation in some projections, remaining asset values can be very high with only a few years remaining. In these situations, the hourly financial asset value could become very large and would far exceed hourly living costs.

Sample VALUE OF TIME graphic



20) COST-EFFICIENCY % Graphic

Net Cash, Bond & Stock Financial Asset Returns with Returns Lost on Excessive Investment Costs

(Real \$/year by age)

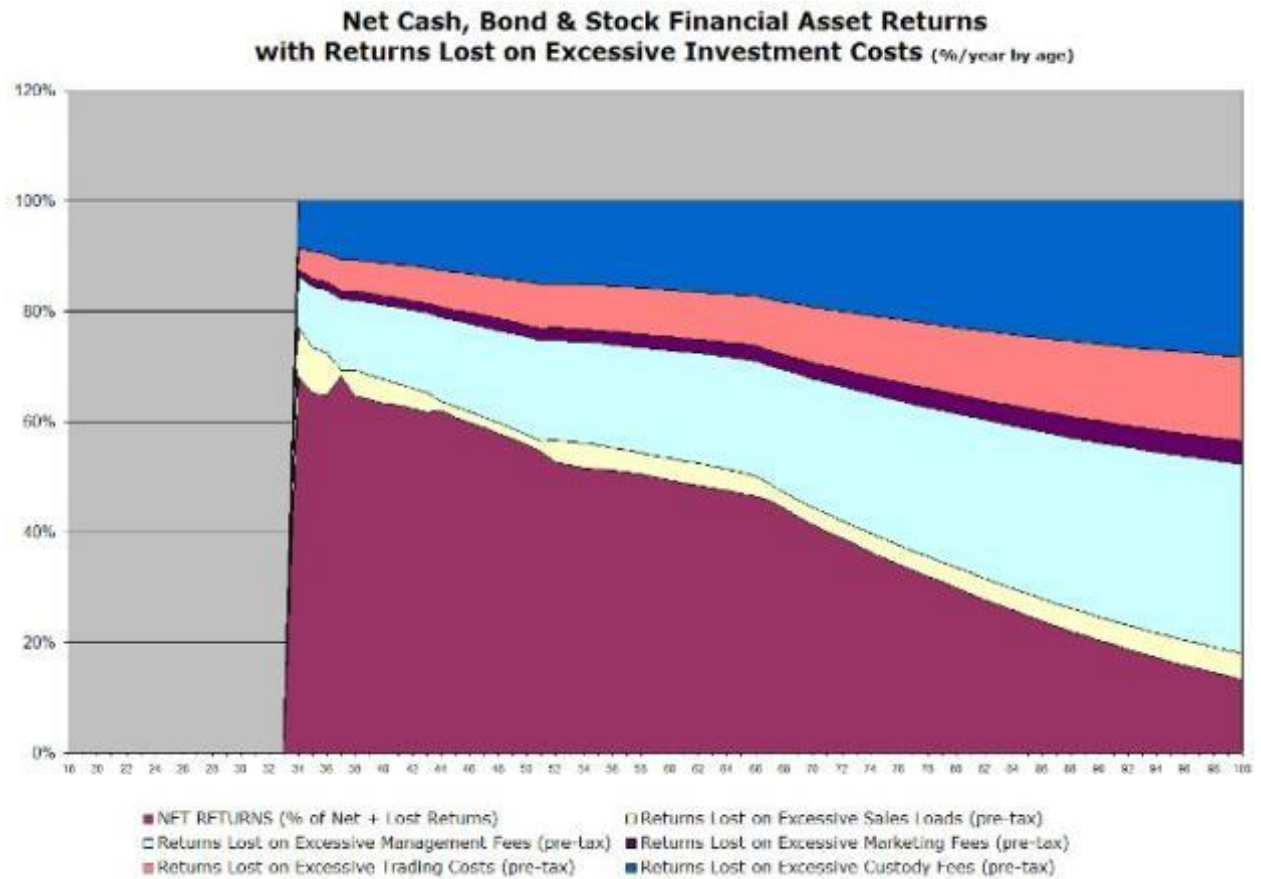
By comparing your current portfolio's investment costs to the investment costs that you believe are reasonable to pay, this and the next graphics illustrate your potential returns with a more cost-efficient strategy versus your projected asset returns and portfolio values with your current costs.

The COST-EFFICIENCY % graphic presents the same information as the following COST-EFFICIENCY \$ graphic, but in percentage terms. For people who must draw down their financial assets at various points in their lives to make up for expense shortfalls, the percentage of returns lost to cost-inefficiencies will increase. Of course, almost everyone will have to draw down their assets at various points, because their earned income will not exceed their expenses during all years of their lives.

Because investors only can pay expenses from their tangible retained assets, expense shortfalls will only eat into these assets. In contrast, because the assets that they gave away to cost-inefficiencies are phantom assets or opportunity costs that cannot be used, then those lost assets will grow increasingly faster than your tangible and depletable retained assets.

COST-EFFICIENCY % graphic example

(This is the older style of this VeriPlan graphic. Because it represents the projection scenario described in the accompanying text, this older graphic has been retained.)



The couple depicted in these sample VeriPlan graphics pay investment costs that are typical of the average investor. While surprising to most investors, the lifetime costs of excessive investment costs for the average investor are simply huge. Most investors think that the investment costs that they pay are small, but the compounded and accumulated lifetime value of assets lost to the financial services industry are anything but small.

For this couple, they are losing to fees and taxes about one third of their potential investment returns on their retained assets each year. However, the situation deteriorates thereafter. Keep in mind that all VeriPlan graphics are based upon “real or constant purchasing power” dollars and all these graphics have removed inflation. Investment costs are assessed on nominal or inflationary dollars, but the investor has to live with what remains.

Investors absorb 100% of the negative impacts of inflation. Therefore, when percentages are calculated with real dollars, investment costs take a larger piece of the pie. Net returns after expenses and taxes are what count to the individual investor. As a visual analogy, think of each individual investor who pays unnecessarily high fees as an unfortunate fisherman. Moreover,

think of the average investor as Santiago, the fisherman in Ernest Hemingway's "*The Old Man and the Sea*."

Santiago takes the risks of going to sea and finally hooks a big marlin (his gross return). However at age 85, he does not have the strength to pull the marlin into his boat. By the time Santiago returns to shore, the sharks have reduced his marlin to only the skeleton, which equals his net return. The sharks of the financial world are nicer in the sense that they usually take less than half of the flesh through excessive fees and unnecessary taxes, before you make it to shore. Unfortunately, these financial sharks circle every investor's boat year in and year out feeding off your catch.

In the short-term, what remains for the couple in this graphic are significantly diminished net percentage returns after excessive investment fees and after unnecessary investment taxes. Then, these investors need to live on those assets through years of negative cash flow related to their income after expenses, taxes, and debt payments. However, phantom investment assets lost or given away through excessive fees and taxes are not similarly drawn down to cover negative cash flow. Thus, these "phantom" assets compound in the future much more rapidly than the assets that this couple would retain and draw upon, as needed. Thus the proportion of lost assets grows across their lives and comes to dominate their financial projection – particularly as the time horizon increases into multiple decades.

21) COST-EFFICIENCY \$ Graphic

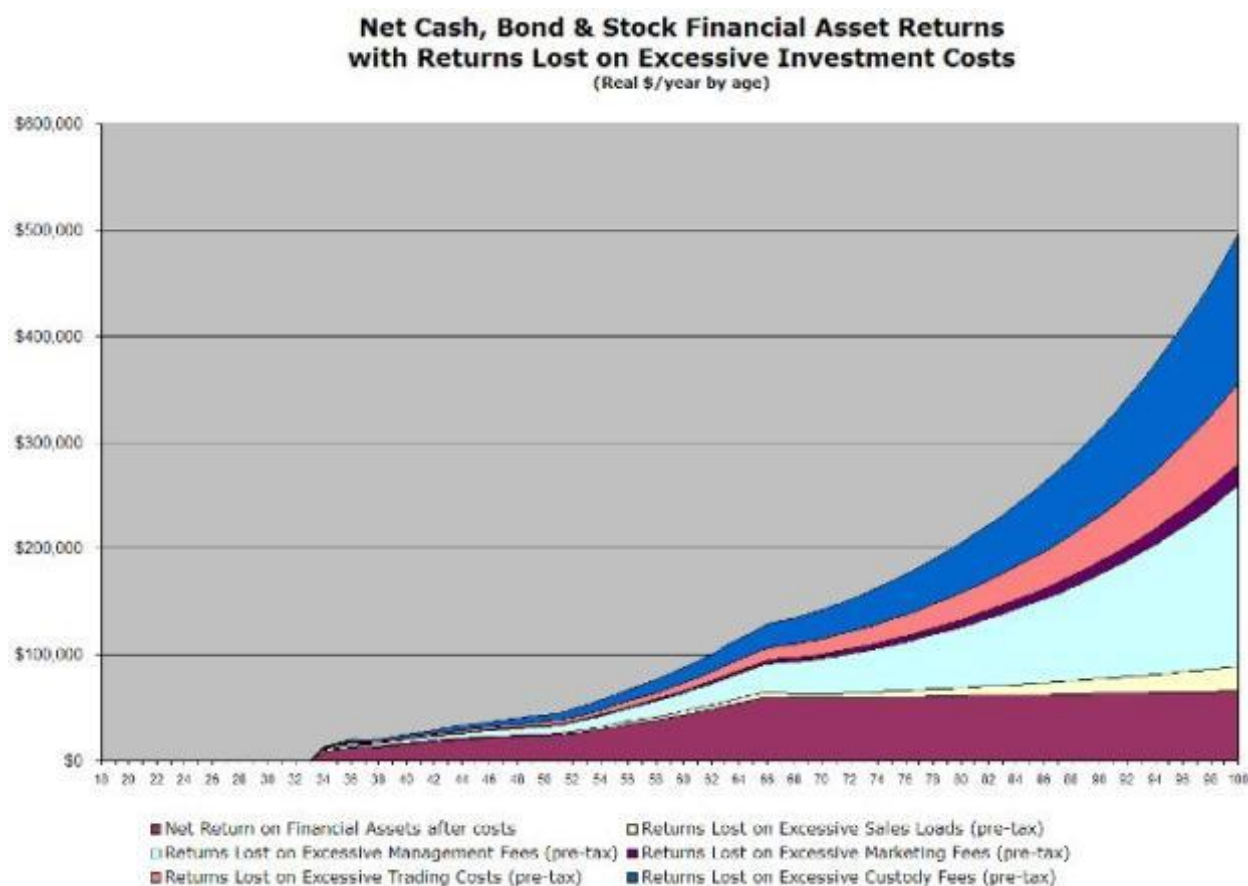
Net Cash, Bond & Stock Financial Asset Returns with Returns Lost on Excessive Investment Costs

(Real \$/year by age)

Rather than being presented in percentage terms, the graphic below is a projection of annual real dollar net returns and of returns lost to various types of investment cost inefficiencies.

COST-EFFICIENCY \$ graphic example

(This is the older style of this VeriPlan graphic. Because it represents the projection scenario described in the accompanying text, this older graphic has been retained.)



The COST-EFFICIENCY \$ graphic projects the net real dollar returns your portfolio will earn each year. In addition, it projects each of the five investment cost-efficiencies that your portfolio may have. If your current investment portfolio is as efficient as the maximum reasonable costs that you have set above on this worksheet, then your portfolio projections will show no cost-inefficiencies. If this graphic projects inefficiencies, then you may have opportunities to make improvements by reducing your investment costs.

If you have cost-inefficiencies, you should also note that they will continue to grow, even if all your retained financial assets have all been depleted to cover expense shortfalls. The foregone value of these annual costs will continue to increase even after your actual owned assets are gone. These assets still exist and still grow, but they do not in your accounts, since in effect you gave them away.

VeriPlan projects the rate of increase of these lost assets to be equal to the long-term historical weighted average gross (pre-tax) real returns using your chosen asset allocation model, less your reasonable maximum costs assumptions. These lost assets may compound rapidly

compared to your retained assets. You retained assets may be depleted by your negative cash flow for living expenses, debts, and taxes, while these lost assets are not subject to these burdens.

22) SALES LOADS Graphic

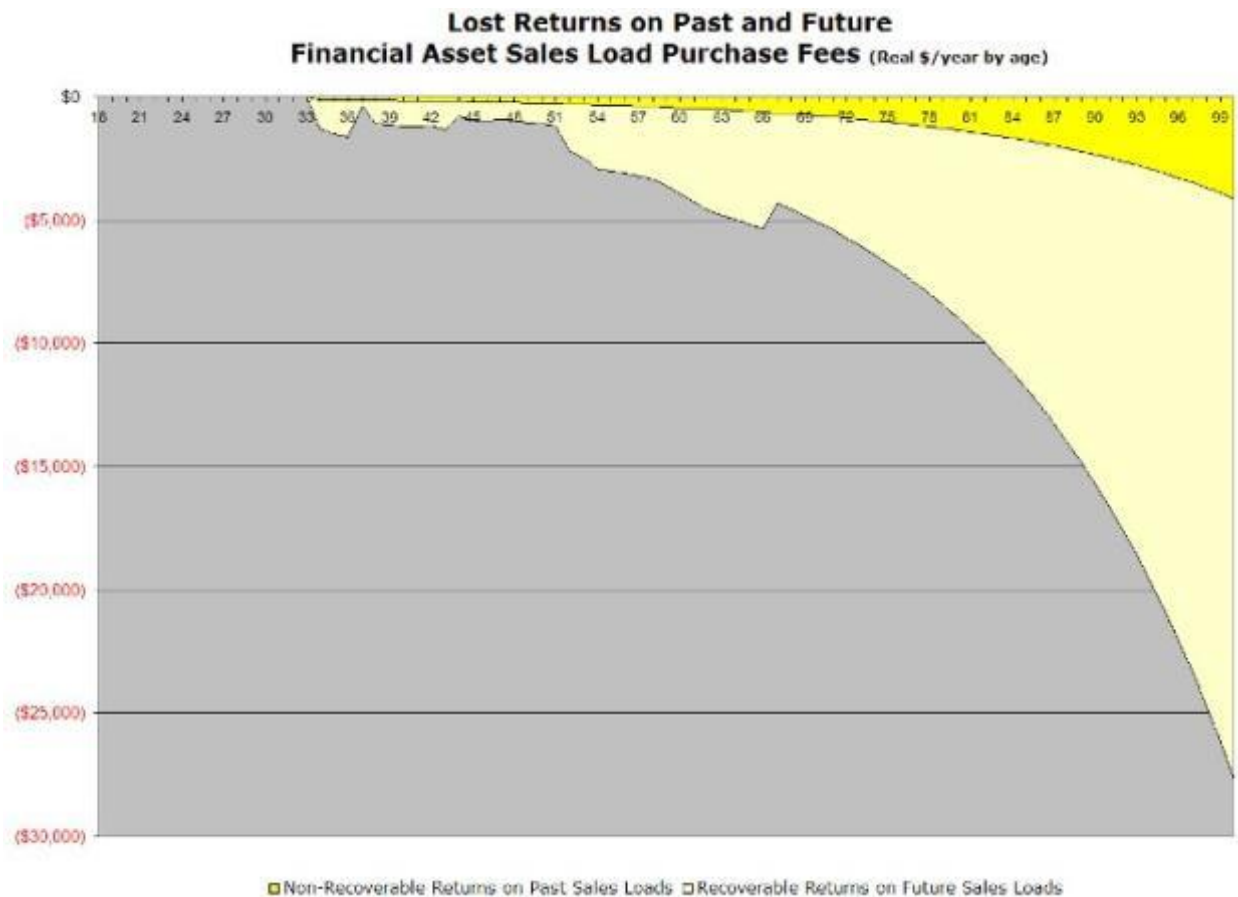
Lost Returns on Past and Future Financial Asset Sales Load Purchase Fees

(Real \$/year by age)

VeriPlan presents information about annual returns lost to both your past and future sales load payments on this SALES LOADS graphic. To quantify the financial impact of loads that you have paid in the past to acquire your current portfolio, VeriPlan uses both the tax basis that you report for each of your assets and the sales load percentages that you report that you paid on the financial assets worksheet. Then, it projects future lost returns related to these past load payments.

SALES LOADS graphic example

(This is the older style of this VeriPlan graphic. Because it represents the projection scenario described in the accompanying text, this older graphic has been retained.)



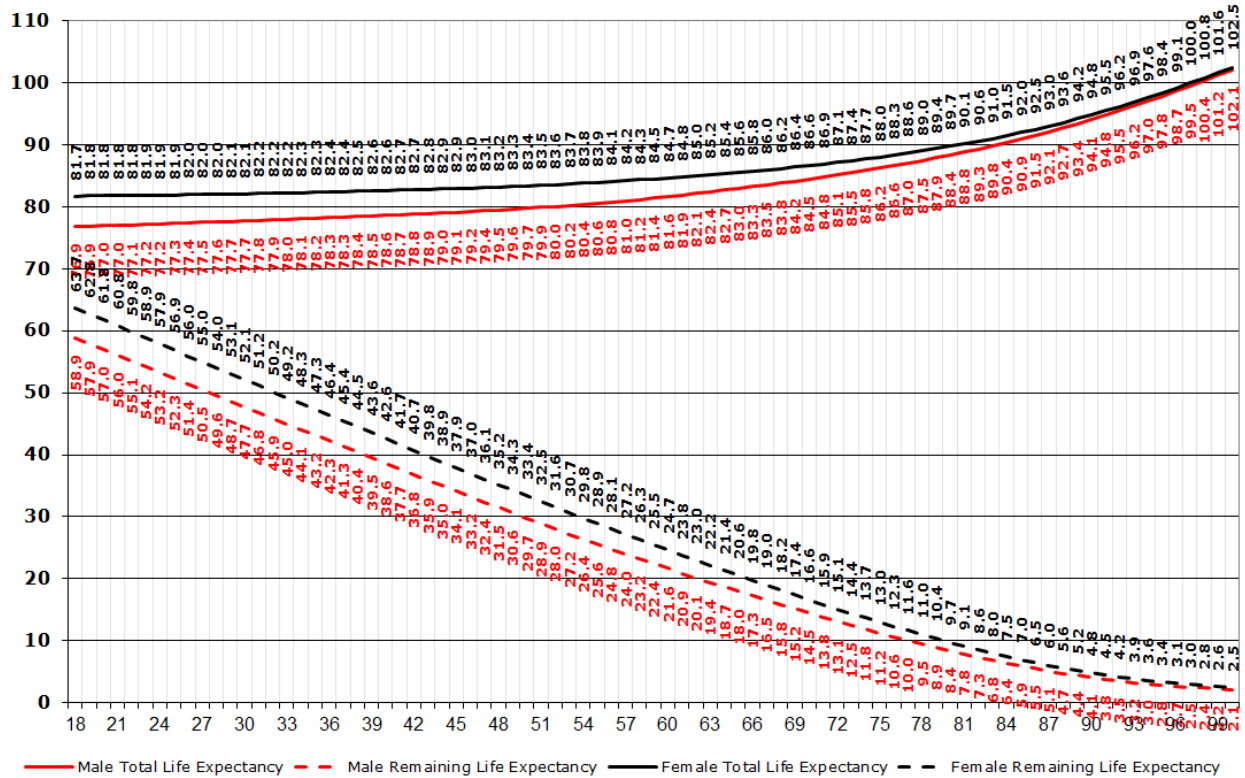
While you cannot recover sales loads that you have paid in the past, VeriPlan can help you to understand their potentially very substantial impact on your lifetime projections. In the sample graphic above, this couple cannot avoid the lost returns on investment sales purchase loads that they have paid in the past. However, they can stop paying sales loads in the future and eliminate the much larger beige area of the graph below. If you seek out diversified, low cost investments proactively, you will find vendors willing to supply them without middleman charges.

23) LIFE EXPECTANCY: Average U.S. male and female total life expectancy and remaining life expectancy by current age

LIFE EXPECTANCY graphic example: (Bold lines are total expected male and female lifespans given current age. Dashed lines are expected average remaining lifespan for those who have attained an x-axis age. Source: Social Security Administration, Period Life Table)

U.S. Male and Female Average Life Expectancy

(Total and remaining life expectancy given lifespan thusfar;
Source: Social Security Administration, Period Life Table)



VeriPlan makes no assumptions about the mortality of Earner/User #1 or #2. This mortality chart is just here for your information. As a lifetime cash flow model, VeriPlan projects total cash flows through age 100 without making any assumption about death prior to age 100. For example, if your projection model with whatever assumptions you have chosen projects that your assets would last through age 100 as it automatically covers all of your costs, then your demise in any year prior to age 100 would simply represent the projected gross value of the estate at death.

Four life expectancy lines are graphed on this chart:

- Total life expectancy of a female given one's current age on the X-axis
- Total life expectancy of a male given one's current age on the X-axis
- Remaining life expectancy of a female given one's current age on the X-axis
- Remaining life expectancy of a male given one's current age on the X-axis

It is helpful to understand this U.S. life expectancy data for men and women at birth and for those who live to be 65. Particularly, in the context of political discussions about the viability of

the Social Security retirement system given the stresses caused by the baby-boom generation cohorts moving through the system, people can be careless or selective in their interpretation of life expectancy statistics.

Sometimes you hear that when the Social Security system was founded, life expectancy beyond traditional retirement ages was only a few years, and now retirees are living a couple of decades beyond retirement. Therefore, the system must be fundamentally flawed. Unintentionally or otherwise, this is a misinterpretation of life expectancy data.

Life expectancies have certainly increased, a proper comparison should be across age cohorts for those who have reached retirement age. At birth life expectancies have risen dramatically, but much of that is due to a significant reduction in child mortality. Those who died before working age neither contributed to the Social Security system nor made retirement demands upon it. When trying to understand the Social Security system, changes in mortality and many other factors are in motion, so it is very helpful to read the annual Social Security Administration Trustee's Report.

24) HISTORICAL RETURNS Graphic

U.S. Financial Asset Class Returns and Inflation for 1928 to the most recent calendar year

(Real dollar return percentages -- Annual asset class rates of return have been adjusted for the CPI inflation/deflation rate.)

These historical US asset class total investment returns are provided for reference. These total returns are calendar year returns, including both interest or dividends and capital appreciation. These data sources have been transformed for their use within VeriPlan. In particular, the US 3-Month Treasury Bill, US 10-Year Treasury Bond, and S&P 500 Stock Indexes have been transformed from "nominal dollar" percentage returns to "real dollar" percentage returns. This means that the percentage Annual Inflation Rate (CPI) figures on the chart have already been subtracted from the investment asset class returns that are graphed.

These historical asset class returns series are used to calculate

- A) the historical real dollar "compounded or geometric average" asset class returns measures
- and

B) the historical statistical standard deviation asset class volatility measures, which are used in VeriPlan's default projections.

These compounded asset class returns parameters can be changed downward or upward by the user in the risk and returns worksheet, either arbitrarily or systematically with respect to asset class volatility.

When interpreting these historical asset class returns, note the asymmetric nature of percentage change data relative to absolute dollar returns data. For example, when an asset begins at a particular dollar value and then increases in value by 100%, it only needs to fall by 50% from that increased dollar value to return to the original dollar value. Conversely, when an asset begins at a particular dollar value and then falls in value by 50%, it must increase in value by 100% from that decreased dollar value to return to the original dollar value.

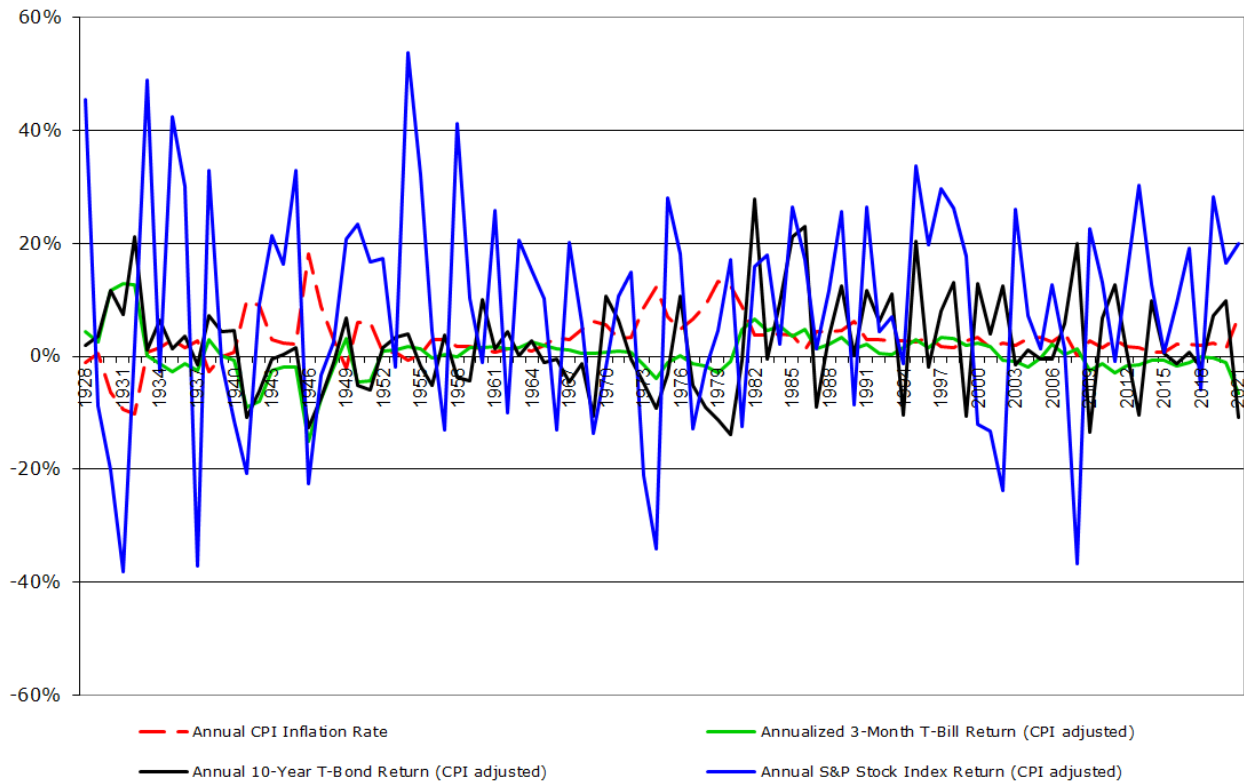
The HISTORICAL RETURNS graphic

This graphic provides a visual history of the annual asset class percentage changes that underlie the compound annualized baseline asset class growth assumptions of VeriPlan's asset projection logic. Two versions of this graphic are provided:

- A) annual real dollar returns by asset class from 1928 to the most recent year, and
- B) the same data presented as a series of overlapping five year rolling returns.

With the risk and returns worksheet, a VeriPlan user has several mechanisms to change these asset class growth rate assumptions going forward -- either systematically with respect to volatility or judgmentally/arbitrarily. However, of course, those user adjustment would not affect this graphic, since it is historical in nature.

U.S. Financial Asset Class Returns for 1928 to 2021
 (Real dollar return percentages -- Annual asset class rates of return have been adjusted
 for the CPI inflation/deflation rate to reflect purchasing power.)



These historical US asset class total investment returns are provided for reference. Note that they are calendar year returns, including both interest or dividends and capital appreciation.

25) ROLLING RETURNS Graphic: Annualized rolling 5-year real dollar asset class returns and CPI inflation from 1928 to the most recent year

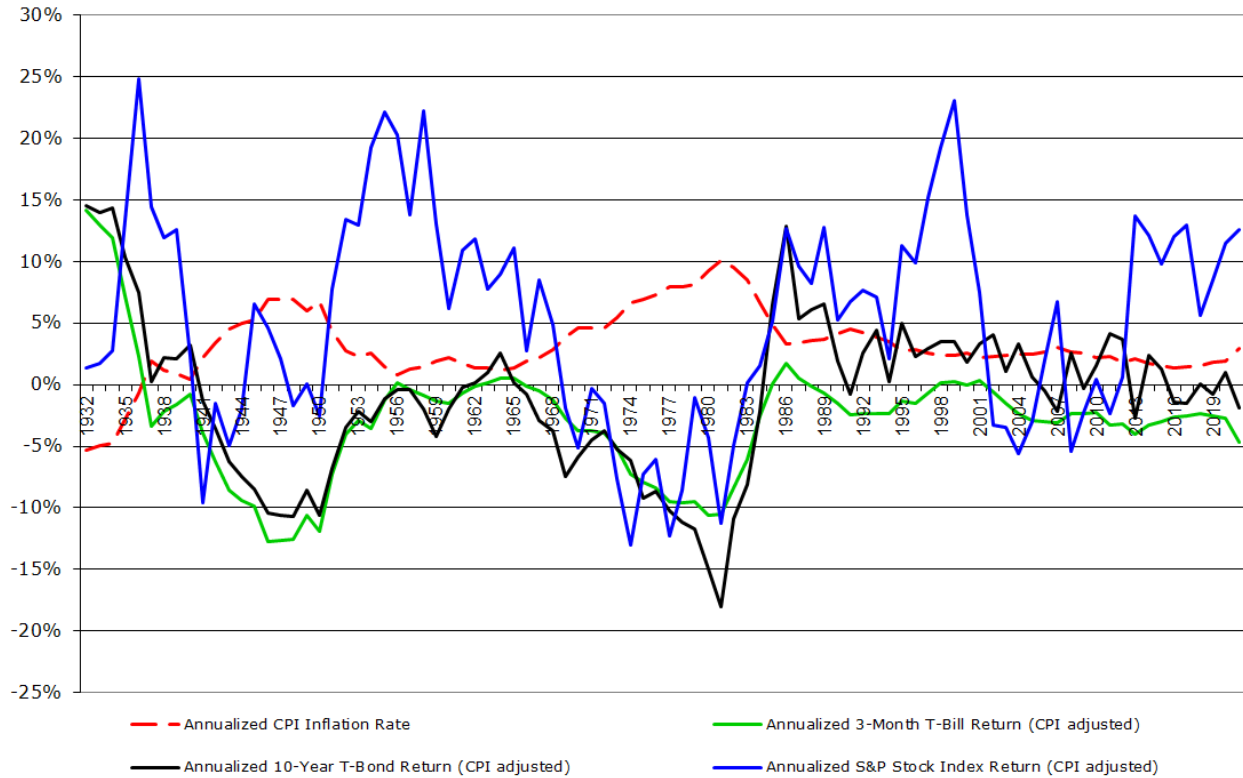
The ROLLING RETURNS graphic

This chart uses the annual data from the HISTORICAL RETURNS chart above to develop the annualized real dollar returns for rolling five-year periods that end on the year indicated on the X-axis.

Annualized rolling averages, such as these five-year rolling averages can be easier to interpret visually. Just keep in mind that any rolling average will provide an understanding of cumulative returns for the period of the rolling average, but also may smooth out the variability of returns when both negative and positive returns have occurred for a particular asset class over that same period. Therefore, it is useful to inspect both annual returns and rolling period returns.

Annualized Real Dollar Rolling 5-Year U.S. Asset Class Returns 1928 to 2021

(5-year annualized returns ending the year on the X-axis.
Asset returns have been adjusted for the CPI to reflect purchasing power.)



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<https://www.theskilledinvestor.com/VeriPlan/>

Appendix: Author's background

Lawrence (Larry) Russell is the author of this book. Since 2001, I have been President and Managing Director of Lawrence Russell and Company, a personal financial planning services provider and registered investment adviser in Pasadena, California. I am also a former technology industry business executive with a background in corporate business management, technology start-ups, financial modeling, investment management, economics, statistics, taxation, and accounting.



For my resume, see my LinkedIn profile page:

<https://www.linkedin.com/in/larryrussell>

To find my books and publications see:

<https://www.theskilledinvestor.com/VeriPlan/financial-planning/>

Overview of my financial planning and investment management background

My knowledge of financial planning and investments has been developed through:

* education at M.I.T. (BS-1975), Brandeis University (MA-1979), and Stanford University (MBA-1982) [That's right. I'm getting older every day.]

- * twenty-five years of corporate and start-up management experience in the business development, financial planning, corporate development, and investment functions
- * studying the scientific finance research literature in depth to find evidence about which investment and financial planning strategies do and do not work
- * design and development of VeriPlan, a lifetime financial planning software product

After graduating from MIT in 1975, I conducted statistical research on employee benefit programs at the National Manpower Institute in Washington, D.C. In 1978, I moved to beautiful California and joined the Institute for the Future, a think tank in Menlo Park, California.

Using sophisticated computer projection methods for Fortune 100 clients, we developed long-range planning scenarios incorporating demographic, econometric, financial, and technological factors. My experience at the Institute for the Future was helpful later in the design of VeriPlan, since VeriPlan functions as a fully integrated and automated lifetime scenario projection engine and financial planning decision support tool.

Completing his MBA at Stanford in 1982, I joined Hewlett-Packard's computer systems division and led business development and marketing initiatives. At Sun Microsystems from 1991, I acquired product lines from technology companies via negotiated licensing arrangements. As Director of Corporate Development, during my last four years at Sun Microsystems, I directed mergers and acquisitions projects, evaluated investment proposals made to Sun's senior executives, including external investments in private firms.

In 1999, I co-founded Codexa Corporation in Altadena, California with my friend and MIT undergraduate roommate, Dr. David J. Leinweber, an expert on computationally driven institutional investing. As Codexa's EVP and CFO, I directly managed the finance, accounting, business development, human resources, and legal functions. I developed Codexa's information service provider business plan, hired the executive team, and helped to raise an \$8M Series A venture round.

Codexa developed an advanced and automated systems service that provided Internet information filtering services to Wall Street securities industry professionals. Our service architecture is described in detail Chapter 6 of "*J2EE Technology in Practice: Building Business Applications with the Java 2 Platform, Enterprise Edition*" by Rick Catell and Jim Inscore.

Our company's early stage clients included numerous major Wall Street firms. Despite having developed working technology, Codexa was still a development stage company with an unsustainable negative cash burn rate. In 2001 the securities, technology, and telecommunications industries fell off the cliff and needed Series B financing was not available, as the dot bomb bubble imploded.

With the technology and securities industries on their backs in 2001 with all four legs in the air, there were few long-term career opportunities for a person with my background. I decided I was not going to hunt for nonexistent tech industry positions along with the haystack of other unemployed professionals in the wake of the dot com crash. Given the economy in 2001, I soon reached the conclusion that, however unwillingly, I must be retired – at least from the high tech industry – at the ripe old age of 50. In 2001, I established Lawrence Russell and Company, initially as a management consulting firm, and it later evolved into a financial planning services firm.

As a self-directed investor during my corporate career, I saved my pennies and invested them according to the principles that I had learned at the Stanford Business School. Thus, retiring at 50 was feasible, while not desirable to me. Since I was too old for basketball and did not care for golf, I began to catch up on the investment and personal finance research literature to see what was new, since I had been at Stanford in the early 1980s.

As I searched the web, university libraries, and on-line scholarly paper repositories, I was impressed by how much useful personal financial planning information was scattered around the academic world. It seemed to me that many individuals and families were starved for just this kind of objective financial and investment information. At the same time, people were drowning in a sea of self-interested securities and financial services industry sales pitches that pushed overly expensive and unnecessarily risky investment products.

After a year of full-time reading, clarity began to emerge. Then, and in the decade following, I have read thousands of research papers in their excruciating economic and statistical details. These scientific finance papers hold information that is directly useful to individuals for financial planning and investing. Yet, academic papers are written for an audience of other academics and highly trained industry research professionals and not for individuals.

Through this research, I reached these primary conclusions:

- 1) The financial research literature clearly demonstrates that the optimal investment strategy for individual investor is a completely passive and most broadly diversified strategy that cuts all investment fees, costs, taxes, and time commitments to the very bone.
- 2) Lifetime family financial planning should never be one-size fits all or even several sizes fit all. While there are commonalities, every family's current and intended future financial situation is unique and must be modeled to develop a customized and implementable long-term financial plan.

To make some of this academic finance information more accessible to the general public, in 2002, I began to write summary articles and publish them on the web. In the past decade+, I have published well over a thousand financial and investment articles on the web. The easiest way to find them is to go to my *The Skilled Investor* website: <http://www.theskilledinvestor.com/> On the front page of *The Skilled Investor* you will find a hierarchical listing of many of these articles. In addition, the red colored links in the left-hand sidebar of *The Skilled Investor* website will take you to my other personal finance, financial planning, and investing websites.

I also became convinced that I understood more efficient and scientifically verifiable pathways for individuals to optimize their financial planning and investment strategies. Furthermore, I realized that the computational details and complexity of the subjects involved prevented individuals from focusing on financial decision-making. Simple spreadsheets, free online financial tools, and back-of-the-envelope calculations were generally useless when hundreds of personal income, expense, debt, tax, investment, and other factors unique to each family were in play.

In 2002, I had begun to design and develop a financial and investment planning spreadsheet for my own family. I got a bit carried away with this project. In 2003, designed the architecture for a fully automated, completely integrated, and highly customizable lifetime planning software tool build upon the Microsoft Excel spreadsheet engine. This software eventually became VeriPlan.

I designed VeriPlan to be a decision support tool set for a financial planning advisory business that I intended to set up. I also designed VeriPlan to be self-learning and self-updatable, so that do-it-yourself users could purchase personal use copies and licenses through the Internet.

I realized that the mass of Americans would never have access to a personalized lifecycle planning application, unless an inexpensive software product was developed. Furthermore, I decided that VeriPlan must be priced very low, so that everyone could afford it.

I estimate that I put between 3,000 and 4,000 personal hours into the development of VeriPlan between 2003 and 2006. When you are "retired" and self-employed you do not have to keep a time card. By 2006, the functionality of VeriPlan was complete and robust. Since 2007, I estimate that I have spent between 300 and 500 more hours annually working on VeriPlan. Over these twenty years of software development and enhancement, total cumulative hours are roughly 10,000. These hours of effort are an indication of how complex it is to develop a fully integrated, automated, and robust lifetime financial and investment planning application.

Before starting my development of VeriPlan in 2003, I had searched for a sophisticated and customizable lifetime financial planning tool to use myself. I was unimpressed with what I found. Instead of providing an interactive and personalized modeling environment that a client could use interactively with an advisor, many professional financial modeling tools had significant functional and analytic limitations. They also required extensive training to be used properly. Worse, all of these professional tools just cost too darn much.

Furthermore, and perhaps most dismayingly, many of these computerized professional planning tools are largely designed to channel clients toward the selection of more costly financial, securities, and insurance products. Through my research, certain scientifically verifiable selection criteria for financial and investment products had become very clear to me. The cost of any financial or investment product is at the top of this list of selection criteria.

With the scientific planning and investing knowledge that I gained from my reading and publication of financial articles on the web and from the development of VeriPlan, I also decided to become a financial and investment planning adviser. In 2004, I passed the Series 65 "Uniform Investment Adviser Law Examination" administered for the North American Securities Administrators Association (NASAA) by the Financial Industry Regulatory Authority (FINRA). In 2005, my firm, Lawrence Russell and Company, became a Registered Investment Adviser in the state of California (Certificate #133101).

Using VeriPlan as an integral part of my financial services offering, I began to deliver comprehensive financial planning services to clients residing primarily in the Pasadena,

California area. To avoid all conflicts-of-interest, I set up a purely fee-only advisory practice. I charge hourly or fixed fees for customized planning services. To avoid conflicts-of-interest, I do not sell any investment or insurance product of any kind. I do not charge any percent of asset fees. I do not accept or pay third party fees of any kind.

I refused to adopt the percent of assets advisory compensation model that is standard in the industry. I did not set out to “gather assets” to increase my fee revenue and live off of other people's hard-earned investment assets. Instead, I chose only to bill clients directly for services on a fixed fee for project and hourly basis.

Direct compensation paid by my clients is less lucrative than the commission or asset fee models that absolutely dominate the financial services industry. Direct income from clients paying reasonable fees combined with additional income from writing personal finance software, ebooks, and websites has been enough for me.

Furthermore, this is a far superior approach to compensation, because all these activities allow me to develop and implement the best financial practices for my clients and readers. In contrast, the commission or asset fee models dominating the financial services industry force almost every professional to spend an inordinate amount of their time hustling to attract very well-off clientele who already have substantial investment assets. All this hustling for new, wealthy clients leaves these advisors with much less time either to understand or to deliver high quality financial services in their client's best interests. In fact, this leads to a never-ending cycle, wherein most advisors charge their current clients far too much, while they spend much of their time chasing new clients who will in turn be charged too much.

Direct compensation from my clients and income from my financial planning books and software has been very liberating. I can tell my clients and the readers of my books exactly what the financial research shows. I can say and write what I think has been proven by sound academic research to be in the best interests of real people without giving any thought to my own interests. This is the very definition of the fiduciary care standard that financial advisors are supposed to use with respect to the primacy of the interests of their clients.

This approach also allows me to help my clients and my readers get the myriad of financial industry hands out of their family wallets. Some people feel that they pay too much for financial services, but they keep paying anyway, because they do not understand that they have

do-it-yourself alternatives. Most others have no idea of just how ghastly costly their relationship with the financial services industry will be over their lifetimes. This book can help you to understand the huge costs that the financial industry imposes upon their “retail” clientele to the significant lifelong detriment of these retail clients.

When some of these retail clients finally get fed up with the self-interested greed of the financial industry, they must have an alternative way to do-it-themselves or they just become more frustrated. Just pointing out the problem is not enough. In place of the frustration, people need practical solutions that enable them to self-manage their own financial affairs. In reality, financial self-management is not very difficult, but it takes a commitment on your part both to understand what is better to do and then the sustained will to do it.

Over the past several years, I have developed financial planning and investment management materials and processes for my clients and to allow them to cut out unnecessary and vastly overpriced financial industry “services.” My focus with my direct clients is to work cooperatively with them:

- a) to develop a durable lifetime plan that they can implement themselves,
- b) to increase their knowledge and competence in self-management, and
- c) to supply them with sophisticated, yet easy-to-use software planning tools.

My clients can use this knowledge and these materials to implement their own plans without having to repeatedly pay more and more advisory fees and many other excessive financial costs year after year. In addition, to helping directly some of the do-it-yourselfers out there, I have spend thousands of hours over the past decade plus, making these materials available to the general public in the form of web articles, ebooks, and lifetime financial planning decision support software.

I have researched and written various objective books that can help you cut your investment expenses and increase your wealth. To learn more, click the book covers or go to this web page:

<https://www.theskilledinvestor.com/VeriPlan/financial-planning/>

Notice: This financial information is for educational purposes.

This book provides financial information, and all information in this book is solely for informational and educational purposes. This book does not provide financial advice or investment advice of any kind. Under law, specific investment advice can only be dispensed to you by someone who is authorized to do so and who has an understanding of your particular financial situation.

This book attempts to provide information that focuses on the best interests of individuals and families. Fiduciary care of people's financial interests requires knowledge, experience, and the absence of financial conflicts of interest that distort the quality of information and advice given to people.

Global securities markets have a dog-eat-dog ethos with winners and losers. Highly competitive and ruthless securities markets are necessary for efficient price setting and capital allocation. I applaud when full-time financial professionals engage in competition among themselves with knowledge, resources, and skill.

However, when similar strategies are applied to individuals who lack knowledge, education, and resources, then this is just an unfair fight. When the inadequacies, ignorance, biases, and misperceptions of individuals are exploited systematically, this is deplorable. Unfortunately, this approach is standard operating procedure for many parts of the financial services industry.

When financial industry marketing and promotions imply that there is a partnership or advisory role, but actions taken indicate that this is not the case, then this is moral bankruptcy. When the financial industry is so strong that it distorts fairness in governmental regulation, then many deplorable behaviors are not criminal, largely because laws, regulations, and enforcement are too weak.

I believe that enlightened individuals should never naively expect fairness, when they deal with much of the financial services industry. Despite the financial industry's recent self-induced credit crisis, self-immolation, and taxpayer bailout, there is no reason to believe that this industry will ever change voluntarily. The game is just too profitable for the financial services industry and its excessively compensated employees to expect things ever to change fundamentally.

The mass of American financial consumers are trusting, docile sheep regarding their personal financial affairs. The amount they are willing to waste on overpriced financial services is astonishing. Far too many US consumers pay far too much and get woefully little value in return from the financial services industry. The industry repeatedly scrapes the consumer excess off the table and stuffs it into its salaries, bonuses, and corporate earnings reports. The only salvation for most individuals is that eventually some of them will wake up and decide to stop paying tribute to this beast.

Do not be naive about financial advisors. Figuratively, (and literally) they come in all shapes and sizes. In general, financial "advice" laws, regulations, and enforcement related to financial "advisors / advisers / planners" are weak and are riddled with loop holes. Survey's have clearly demonstrated very widespread consumer confusion about different types advisors and their responsibilities related to their clients. Caveat emptor or "let the buyer beware" is the reality related to all financial advisors, but far too many people are naive and trusting in the face of the complexity of finance.

It is a very bad idea to go into any advisory relationship assuming that the advisor will automatically have your best interests in mind and act solely for your benefit. If this were the reality, then the financial services industry would not be so very large and so very profitable. If the global financial services industry were to put the interests of their customer ahead of their shareholders, then the financial industry simply would not be one of the largest industries on earth.

Anyone with a bit more than a vague interest in the financial world around them grows up to understand that the capitalist business model and its associated self-interested profit motive predominates. Shareholders demand maximum returns on their invested capital. Capitalist enterprise executives, who are the agents of these shareholders, are tasked with maximizing shareholder returns. Incentive systems attempt to align manager and shareholder interests. When these self-interests conflict, sometimes the manager agent tail can wag the shareholder dog. Nevertheless, such agent and shareholder conflicts almost always are focused on how the maximum profit pie gets split and not on the "best interests" of customers.

Regarding the profit motive and the financial services industry, see this five-part article series that I published in 2007 prior to the financial crisis. It is entitled:

[The Biggest Personal Finance Story of the Past 30 Years](https://www.theskilledinvestor.com/ss.item.270/the-biggest-personal-finance-story-of-the-past-30-years.html)

<https://www.theskilledinvestor.com/ss.item.270/the-biggest-personal-finance-story-of-the-past-30-years.html>

I urge you to read this five-part article series -- before you hire any financial advisor and their firm.

Here are some highlights from what I wrote in this series of articles:

"The biggest personal finance story of the past 30 years has been the dramatic growth of the market capitalization of financial services firms within the U.S. equity markets. ... The reason that this is so important to your personal finances is pretty straightforward. Simply put, most individuals pay far too much for financial products and services. Their continuing overpayments show up in the increasing value of financial services company stocks. People have paid far too much for years, and the industry's excessive charges have been increasing for years."

"In return, individuals receive far too little. Exorbitant and increasing investment costs, high banking fees, predatory credit card charges, excessive insurance costs, etc. simply represent a massive wealth transfer from the personal pocket books of average individuals into the coffers of the financial services industry and into the high paychecks of its employees."

"There is no reason to believe that industry self-regulation or governmental regulation will ever fix these conflict-of-interest problems. Only those individuals who become wise enough to be proactive and seek out lower cost financial products will stop getting fleeced. The vast majority of individuals will just keep on paying excessive costs to the financial industry, while they receive inadequate value in return. ... The choice is yours as to whether you want to keep pouring in your money or whether you want to adopt a lower cost personal finance strategy."

So, if you really do need financial or investment advice, you should hire a financial advisor, but you should do so with your eyes wide open to avoid getting fleeced. Understand and remember that advisors are expensive, yet some of them could be worth paying for. If you do not

feel you can manage your finances entirely by yourself or you have particular needs that require professional expertise and advice, I suggest that you interview several advisors carefully.

Be proactive in looking for the right advisor and do not simply follow the lead of a friend who happens to recommend an advisor that they trust. While that recommended advisor might be fine, "trust referrals" are potentially problematic. Problems can arise, because along that chain of trusted recommendations, it is possible/probable that nobody really did any actual due diligence that might have unveiled potential advisory problems. Some of the most pernicious advisor frauds and scams have been perpetrated against religious and other affiliated groups that have been infiltrated by fraudsters who gained the trust of few members and then widely expanded their network of fraud through trusting referrals.

When a family member, friend, or co-worker makes a recommendation of a financial adviser, that could be a good start. However, that recommendation does not absolve you of your personal responsibility to do your own due diligence. Before you start to trust that this advisor and commit your hard-earned money, check out the advisor and decide for yourself whether he really will take care of you and your family and will always put your interests ahead of his and his firm's interests.

I have published a set of almost 40 articles about financial advisor selection, regulation, payment, frauds, and scams. These articles might be helpful in your search, and you can find here:

<https://www.theskilledinvestor.com/financial/financial-advisors-investment-counselors.html>

Read and understand these web articles and this book. An advisor acting in your best interests would tend to follow the investment principles that I discussed in my books and my web articles. I never change my fundamental financial planning and investment principles. That is the whole point about developing lifetime financial principles. Financial principals should valid, research based, and durable to navigate an uncertain and unpredictable future.

I strongly suggest that you choose an advisor whom you pay directly. Furthermore, choose an advisor who does not accept compensation from the industry in any form. Seemingly free financial advice can cost you very dearly over your lifetime. Never lose sight of the stark fact that throughout your life you are a walking, breathing financial industry profit center.

So to summarize: This book DOES NOT constitute or provide personalized financial planning advice, personalized investment advice, or any other kind of personalized financial advice under the laws and regulations of the United States of America and its various States or of any other country in the world. In no way does this book constitute a solicitation or offer to sell investment securities, investment advisory services, financial planning services, or any other kind of financial service as defined under any financial or securities law anywhere in the world.

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Chapter 2

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Chapter 4

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Chapter 5

- * Arrows and target; image from FreeDigitalPhotos.net
- * Empty wallet; image from FreeDigitalPhotos.net

Appendix: VeriPlan - Personalized lifetime financial planning software

- * All projection graphics were automatically developed by VeriPlan
- * Path to success; image from FreeDigitalPhotos.net
- * VeriPlan CD graphic by Lawrence Russell and Company
- * Tools; image from FreeDigitalPhotos.net
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- * "Buyers Guide to the Lowest Cost No Load Mutual Funds"; by Lawrence Russell
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