Enlightened Investing

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Abstract

Srila Rupa Gosvami declares that if one rejects this material world as false, not considering the importance of this material world as a means to serve the Supreme Personality of Godhead, such renunciation has very little value. According to my Spiritual Master, Srila Prabhupada, an intelligent person possessing currency notes does not hold the money without using it, even though he knows perfectly well that the currency notes in themselves are nothing but paper. When one has currency notes, he is actually holding only papers, but if he utilizes it for a purpose, then he benefits. Similarly, although this material world may appear false, just like the paper, it has its proper beneficial utilization [Bhaktivedanta purport of the Eighty-seventh Chapter of Krsna, "Prayers by the Personified Vedas."]

Just as currency notes have value, the stock market also has value. Although the stock market may appear to be a collection of false papers, it has its proper, beneficial utilization. An individual may have legitimate reasons for avoiding the stock market, particularly if their cash flow situation is precarious and they are unable to tolerate the inevitable market crashes that create the conditions for powerful advances. ***However, if one were to reject the stock market as an illusion, then this misconception is symptomatic of impersonalism***. The Mayavadi philosopher, mistaking the stock market and currency notes for false paper, gives them up and cannot utilize these resources in the Service of the Lord.

A diversified stock portfolio, in combination with careful cash flow management, is a highly effective tool for building wealth. Without compromising Vaishnava principles, a devotee may take advantage of this powerful engine of long term capital accumulation, fully knowing the value of this material world and how to properly utilize it. While working in Krishna Consciousness outside of ISKCON, a devotee can build the foundations for the next stage of life: financial independence, early retirement, and more intensive preaching activities. The objective of this article is to delineate a non-speculative methodology for achieving financial independence.

Introduction

While working in Krishna Consciousness outside of ISKCON, a devotee can build the foundations for the next stage of life: financial independence, early retirement, and more intensive preaching activities. This issue is important because spiritual and economic degradation of ISKCON forced even longstanding senior devotees to leave their temple communities for employment in mainstream society. ISKCON cannot look after the spiritual and economic needs of its members, has been unable to implement the varṇāśrama system, and cannot be reformed as it increasingly deviates from the true spiritual master, Srila Prabhupada.

Individual devotees can, however, take constructive action—we can associate with the true Guru by reading Srila Prabhupada's books. Srila Prabhupada is not dead. Through His writings, He is continuing to give us everything we need to go back to Godhead. While engaged in occupational duties outside of ISKCON, a devotee maintains his or her practices of reading Srila Prabhupada's books, chanting, and taking food that has been offered to the Supreme Lord Krishna. It is also important for current and aspiring disciples of Srila Prabhupada to communicate with one another, as a prerequisite for future collaboration.

Remaining separate from ISKCON also affords individual devotees the opportunity to build the resource base to support early retirement. Cadres of relatively young devotees that are free from cult interference, as well as the need to work corporate jobs, could employ their time and energy on behalf of spreading Lord Chaitanya's message with greater vigor. The objective of this article is to delineate a non-speculative methodology for achieving financial independence. This study is non-political and does not critique or recommend government policies.

Long Term Capital Accumulation

The key determinants of long term capital accumulation include the seemingly obvious strategy of maintaining a high savings rate, coupled with disciplined investments in a portfolio of broadly diversified stock indexes. There is no substitute for austerity. No amount of financial speculation or machinations will circumvent the need to eliminate credit card debt and save. Stock trading is different from investing. This article focuses on the latter, which entails systematically purchasing and holding diversified funds that hold thousands of stocks. A reasonable savings rate is approximately 50% of after tax income. A reasonable rate of return for the stock market is about 5% in real (inflation-adjusted) terms. Two factors drive long term portfolio growth (1) by saving regularly, an investor consistently adds funds to his or her portfolio (2) the money that was invested generates money on its own, i.e., the investor earns profits on their profits (compounding).

Stocks are often characterized (incorrectly) as illusory paper assets that are inferior to hard assets such as real estate, and precious metals and other commodities. Far from being illusory, stock purchases provide partial ownership of a corporation—you actually own a piece of a business. Although stocks provide us with a share of the profits generated by publicly traded companies in the economy, they also expose an investor to considerable risk and volatility because that is simply the nature of business.

Through diversification, one can avoid unnecessary risks. When individuals invest in a total stock market index, they have achieved a high degree of diversification because they own a piece of every publicly traded company based in the United States. Of course it is not necessary for an individual to make separate purchases of thousands of different stocks—imagine the exorbitant commission costs. Indexed portfolios that contain all of the publicly traded stocks in the U.S. economy can be purchased from reputable mutual fund companies (e.g. Vanguard) for as little as 0.07 percent in annual fees, which is much less than an investor would pay to buy and hold a large list of thousands of stocks.

By buying and holding the entire market through a passively managed or indexed fund, you guarantee that you will own all of the winning companies and thus get all of the market return. One may object to index funds because you will also own all of the losing companies in the economy. This objection is essentially groundless. The worst outcome for any one losing stock is that it would lose 100 percent of its purchase value (in which case it would drop out of the index). In contrast, the winners can easily make 1,000 percent, and exceptionally 10,000 percent, within a decade or two. If an investor misses just one or two of these winning stocks, his entire portfolio will suffer.

The total market index is dynamic. Companies compete intensely with each other. Firms that are stronger and more efficient drive the weaker firms out of business while also driving them out of the total market index. New companies are born, and if they are successful, then they enter the total market index and replace the dying companies. The index does not remain static. The total market index is analogous to a living species in which firms that are stronger replace those that are weaker. The index is self-cleansing.

An investor need not attempt to predict which firms will be winners or losers because that determination will be made by the dynamics of competitive interactions which forces weaker firms out of the total market index. In the long run, the total stock market index is driven higher along a strong upward trend because of survival of the fittest—the maximum loss for the weaker firms is that their stock prices will drop to zero, while in contrast the upside potential of the winners is enormous. A combination of limited downside and almost unlimited upside potential means that on average, the total stock market index trends higher.

The Futility of Picking Individual Stocks

By now it should be clear to the reader that this article defines stock investment as long term ownership of broadly diversified stock indexes that charge minimal fees. This article rejects the all too common, expensive, and inferior, practice of selecting and trading individual stocks. An investor may attempt to achieve a rate of return that exceeds the total stock market index by selecting individual stocks. In this form of "active management", one would devote a great deal of time and resources to evaluating vast numbers of individual companies, with the goal of predicting which firms will "beat the market".

Although a stock index contains both winners and losers, the objective of active management is to create a portfolio that only includes the former. The resulting portfolio is relatively concentrated, with fewer holdings than the index. The active manager sacrifices diversification in the futile hope of outperforming the market. The empirical evidence shows that well-

connected and highly informed financial professionals have little success at predicting winners, despite the fact that they employ the brightest and best analysts. With the benefit of hindsight, it is not difficult to devise stock picking strategies that would have worked well in the past. Unfortunately, strategies that delivered impressive results within a given historical timeframe tend to underperform in the future. Predictions and forecasts are inherently risky—90 percent of investors and fund managers cannot pick stocks.

Moreover, financial firms compete fiercely with each other to identify stocks with the best prospects, and they move quickly to purchase those securities, thereby bidding up their prices. For an individual investor, stock picking is a particularly poor strategy, in part because he is competing against major brokerage houses and institutions that are also attempting to beat the market. Compared to the individual investor, financial firms more rapidly obtain (and process) company-specific and market information, and are capable of moving faster to exploit that information. What competitive edge does an individual investor possess when he goes up against major brokerage houses that are also attempting to pick winners? The individual investor has no answer to this question. Stock picking is a loser's game.

Market Timing Reduces Returns

Stock market participants typically attempt to increase their profits and outperform indexes by anticipating when the market is about to move higher and when it is due for a downturn. In contrast to long term investors that remain steadfastly invested as the market exhibits oftentimes extreme gyrations, market timers hope to hold stocks when they are going up and sell them before they go down (buy low, sell high). The empirical evidence reveals that this hope is an illusion. Specifically, market timing is even worse than stock picking. Rather than following the advice of market-timing newsletters and strategists that seek to divine the market's moves through analyses of economic, political, and investment data, in almost all cases investors would have been better off flipping coins as a means of deciding when to buy and when to sell. It is not difficult to mine historical data in order to uncover market timing strategies that would have generated high returns in the past. Unfortunately, market timing strategies that performed well in the past tend to underperform in the future.

Superiority of Detachment

The stock market is the single best performing investment class over the long run. For example, in 1974 the Dow Jones Industrial Average closed at 616. In 2011 the Dow climbed to 12,217. In 2021, the Dow closed at about 36,338. However, the path from Dow 616 to Dow 36,338 has not been a smooth, straight line. This period from 1974-2021 has been incredibly turbulent, marked by massive geopolitical and economic crises. Just to name a few of these calamities, we had the following:

1. The recession of 1974-75
2. The painful inflationary period of the late 1970s into early 1980, when mortgage rates were in the neighborhood of 20%. 10-year Treasuries were paying in excess of 15%.
3. The Crash of 1987, inflicting the biggest one day drop in the stock market in history, when at least one stock broker committed suicide.
4. The recession of the early 1990s.
5. The East Asian financial crisis of the late 1990s. The collapse of Long Term Capital. A Wall Street stock broker jumped through a window to his death.

6. The massive crash in technology stocks from 2000-2002.
7. The terrorist attacks on September 11th (9/11).
8. The rapid increases in commodity prices, when oil prices climbed to $147 per barrel in the first half of 2008.
9. The financial crisis, large-scale real estate foreclosures, and Great Recession in 2008.
10. The rise and apparent fall of ISIS in the Middle East; tensions with North Korea and Iran; a trade war with China.
11. Coronavirus pandemic

This brief summary list of negative events (given above) grossly understates the true number and severity of crises that have occurred over the past 4+ decades.

The calamities that have occurred over the past 47 years have not prevented the stock market from marching higher and higher. Stock market crashes, being part of the process of creative destruction, are to be expected. Whenever the market collapses, it always recovers and goes on to attain new highs. If an individual had remained invested in the market from 1974-2021, the upward trend from Dow 616 to Dow 36,338 would have generated substantial wealth, despite all of the horrible events that occurred over this period. How could anyone have lost money if they remained rigidly invested in the stock market? The answer is simple. Whenever the market collapses, it induces fear, panic, and irrational behavior, and as a result, people sell at the wrong time i.e. after the downturn.

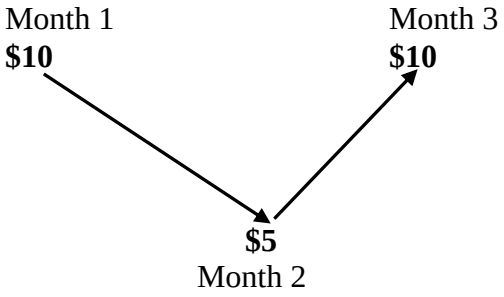
Market collapses have a cleansing effect, setting the stage for powerful advances. Most people experience little or no benefit from the inevitable market recovery and relentless upward trend in stocks because they lack the necessary discipline for remaining rigidly invested in the market. Instead of cultivating detachment, the average "investor" prefers to engage in speculative financial moves, essentially gambling that they can predict market upswings and downturns (market timing). Most people lose money in the stock market because they are gambling, rather than following a disciplined methodology of remaining steadfastly invested, even in the face of economic and geopolitical crises. *The test of a yogi, devotee, or self-realized soul is that he is able to control the senses according to his plan. Most people however, are servants of the senses and are thus directed by the dictation of the senses* [Bg 2.58, purport].

Dollar Cost Averaging

An individual can benefit from stock market volatility, without falling for the fallacy of market timing, through a disciplined investment process known a dollar cost averaging.

After paying off credit card debt and building an emergency reserve fund, the next step is to calculate the dollar amount available to be invested. In this example, we assume that an individual has $2,000 per month available to invest, after paying all living expenses. That fixed dollar amount is invested on a set (monthly) schedule without regard to the share price of the index fund. This approach is referred to as dollar-cost averaging (DCA). These monthly purchases, executed using an on-line brokerage, require only a few moments of the devotee's time, leaving him or her free to focus on other pursuits such as reading, chanting, and acquiring job-related skills.

DCA can actually allow an individual to profit from volatile stock prices. Assume for instance that an index fund fluctuates in value over a 3-month period, and that $2,000 is invested monthly in the fund, allowing shares to be purchased at a price of $10 in month 1, then $5 in month 2, and then $10 again in month 3. Thus, over this volatile 3-month period, the price ends up exactly where it started. A novice may incorrectly believe that no profits were made over this period.



In reality, the investor profited handsomely. Since a fixed dollar amount was invested each month, more shares were purchased when the price was lower, and fewer shares when the price was high. In month 1, the $2,000 that was invested purchased 200 shares at a price of $10, then 400 shares at a price of $5 (month 2), and finally 200 shares again at a price of $10 (month 3). The total number of shares purchased was therefore 800 (200+400+200), and the value of these shares at the end of month 3 is $8,000 (800 shares multiplied by $10 per share in month 3). The individual is holding $8,000 in share value, after investing only $6,000 ($2000+$2000+$2000). The profit is $2000, computed as $8,000 in share value minus the cost of $6,000. DCA generated a substantial profit over a period when the price of the index fund oscillated sharply, ultimately ending up exactly where it started. In contrast, it can be shown that if the price had been perfectly flat, remaining at $10 over the entire 3 month period, profits would be zero due to the complete absence of volatility. The takeaway is that for a young individual who has just embarked on his regimen of disciplined, regular, consistent investments, volatility is a boon. However, for a retiree who is withdrawing from his portfolio to pay living expenses, stock market volatility is detrimental to the survival of the portfolio, as discussed later in this article.

Size of Portfolio Required for Financial Independence

Materialistic consumers who save only a small fraction of their salary will have to work several decades in order to build up enough assets to maintain high levels of sense gratification during retirement. An austere devotee can minimize his working years by carefully tracking and controlling costs, while relentlessly following a disciplined investment program of dollar cost averaging. The level of assets needed to sustain financial independence can be estimated from a useful guideline known as the 4% rule. Following the 4% rule, an individual withdraws 4% of his portfolio to cover living expenses in the first year of retirement, and then increases the size of the withdrawals to keep up with inflation. Therefore, when an individual has accumulated a portfolio that is 25 times higher than his or her annual living expenses, they are financially independent and able to retire at any time. For instance, if a devotee can live on $20,000 per year, this figure is multiplied by 25. Thus, he will require a portfolio of $500,000 (computed as 25 x $20,000) to achieve financial independence. In contrast, a karmi that is addicted to high

levels of sense gratification with expenses of $50,000 per year will require a portfolio of $1.25 million.

Risk Management

Stocks are highly volatile (Table 1), which poses a threat during the retirement stage. Risks must be managed through limiting the size of withdrawals from the portfolio based on the 4% rule, broad diversification, rebalancing the portfolio, and taking a long-term perspective.

Table 1 Historical Returns for Various Asset Classes

Year	US Large	US Large Value	US Small value	US Micro	REITS	Emerging	10-year treasury	Inflation
1972	18.95%	15.32%	11.15%	1.01%	not available	not available	2.35%	3.41%
1973	-16.18%	-9.79%	-24.12%	-39.86%	not available	not available	3.29%	8.71%
1974	-26.93%	-21.13%	-21.09%	-24.56%	not available	not available	4.05%	12.34%
1975	36.95%	40.67%	53.94%	67.55%	not available	not available	5.52%	6.94%
1976	24.18%	33.32%	54.78%	49.27%	not available	not available	15.29%	4.86%
1977	-7.84%	-3.31%	15.88%	29.31%	not available	not available	0.53%	6.70%
1978	5.87%	6.37%	19.25%	28.81%	not available	not available	-0.74%	9.02%
1979	18.05%	23.22%	37.80%	46.92%	not available	not available	1.83%	13.29%
1980	31.92%	31.75%	25.77%	41.43%	not available	not available	-1.29%	12.52%
1981	-5.21%	-1.48%	15.69%	-3.30%	not available	not available	5.28%	8.92%
1982	20.97%	25.08%	36.87%	27.91%	not available	not available	39.57%	3.83%
1983	21.29%	25.44%	42.61%	39.70%	not available	not available	2.30%	3.79%
1984	6.21%	11.43%	5.69%	-6.51%	not available	not available	14.87%	3.95%
1985	31.23%	32.93%	37.46%	24.40%	not available	not available	29.85%	3.80%
1986	18.06%	19.70%	13.99%	6.90%	not available	not available	21.35%	1.10%
1987	4.71%	2.11%	-3.51%	-9.36%	not available	not available	-2.64%	4.43%
1988	16.22%	20.16%	29.00%	22.84%	not available	not available	6.90%	4.42%
1989	31.36%	26.89%	19.21%	10.16%	not available	not available	17.84%	4.65%
1990	-3.32%	-7.02%	-19.05%	-21.56%	not available	not available	7.70%	6.11%
1991	30.22%	23.78%	42.96%	44.26%	not available	not available	18.91%	3.06%
1992	7.42%	15.48%	28.23%	23.48%	not available	not available	7.23%	2.90%
1993	9.89%	18.26%	21.10%	20.97%	not available	not available	12.97%	2.75%
1994	1.18%	-0.63%	-0.07%	3.09%	-8.40%	not available	-7.19%	2.67%
1995	37.45%	37.04%	30.32%	34.48%	12.13%	0.56%	25.55%	2.54%
1996	22.88%	21.80%	21.41%	17.65%	33.84%	15.83%	0.00%	3.32%
1997	33.19%	29.78%	35.44%	22.78%	18.77%	-16.82%	11.97%	1.70%
1998	28.62%	14.63%	-2.68%	-1.81%	-16.32%	-18.12%	14.64%	1.61%
1999	21.07%	12.58%	3.35%	31.49%	-4.04%	61.57%	-7.83%	2.68%
2000	-9.06%	6.09%	21.88%	0.67%	26.35%	-27.56%	17.28%	3.39%
2001	-12.02%	-11.86%	13.70%	23.98%	12.35%	-2.88%	5.40%	1.55%
2002	-22.15%	-20.88%	-14.20%	4.90%	3.75%	-7.43%	15.45%	2.38%
2003	28.50%	32.25%	37.19%	80.98%	35.66%	57.65%	0.15%	1.88%
2004	10.74%	15.26%	23.55%	19.09%	30.76%	26.12%	4.50%	3.26%
2005	4.77%	7.10%	6.07%	4.08%	11.89%	32.05%	3.01%	3.42%
2006	15.64%	22.13%	19.24%	11.48%	35.07%	29.39%	2.19%	2.54%
2007	5.39%	0.08%	-7.07%	-5.40%	-16.46%	38.90%	10.42%	4.08%
2008	-37.02%	-35.97%	-32.05%	-39.49%	-37.05%	-52.81%	20.53%	0.09%
2009	26.49%	19.58%	30.34%	25.96%	29.58%	75.98%	-10.17%	2.72%
2010	14.91%	14.27%	24.82%	24.86%	28.30%	18.86%	7.92%	1.50%
2011	1.97%	1.00%	-4.16%	-7.86%	8.47%	-18.78%	16.24%	2.96%
2012	15.82%	15.00%	18.56%	19.83%	17.53%	18.64%	2.73%	1.74%
2013	32.18%	32.87%	36.41%	50.91%	2.31%	-5.19%	-8.57%	1.50%
2014	13.51%	13.07%	10.39%	4.61%	30.13%	0.42%	10.63%	0.76%
2015	1.25%	-1.04%	-4.77%	-8.28%	2.22%	-15.47%	1.12%	0.73%
2016	11.82%	16.75%	24.65%	21.47%	8.34%	11.55%	1.00%	2.07%
2017	21.67%	16.99%	11.67%	12.47%	4.83%	31.11%	2.39%	2.11%
2018	-4.53%	-5.55%	-12.34%	-17.12%	-6.11%	-14.71%	0.99%	1.91%
2019	31.33%	25.67%	22.61%	15.34%	28.78%	20.13%	8.03%	2.29%
2020	18.25%	2.18%	5.72%	25.53%	-4.78%	15.05%	10.01%	1.36%
2021	28.57%	26.31%	27.96%	22.31%	40.19%	0.73%	-3.33%	7.04%

Source: Portfolio Visualizer

As shown in Table 1, large capitalization stocks (e.g., the S&P 500) experienced sharp losses from 2000-2002 and particularly in 2008 when they fell 37%. Interestingly, the various asset classes in Table 1 are not completely synchronized. For example, while large cap stocks fell 12.02% in 2001, the small cap value index gained 13.7% while real estate investment trusts (REIT) rose 12.35%.

Since the various asset classes within the equity sphere do not move in lockstep with each other, it is beneficial for investors to spread out their money across different groups to achieve diversification. In this scenario, an individual retires with $500,000 that is divided equally among 6 different categories of stocks (large cap, large cap value, small cap value, micro cap, REITS, and emerging markets). Hence, $83,333 is invested in each of the 6 asset classes, for a total of $500,000. Since the various stock groupings do not all move together, the portfolio is rebalanced at the end of each year. Over time an individual's asset allocation will change from its original position as a result of differences in returns from the various asset classes. Rebalancing entails selling some of the best performers and using those proceeds to purchase the laggards, so that money is once again divided equally across the 6 asset classes at the start of the new year.

Implementation

This section demonstrates the 4% rule by using actual stock market returns for the years 2000-2021. In order to avoid conveying a false sense of optimism, we deliberately select a particularly challenging period (2000-2021) in which 2 massive meltdowns occurred within a relatively short space of time.

Scenario I: Benchmark

In Scenario I, the devotee retires at the very beginning of year 2000 with a Starting Balance of $500,000, spread out equally across the 6 equity categories. A Withdrawal of $20,000 is used to pay for living expenses. At the end of 2000, s/he has a portfolio that is slightly lower, with an Ending Balance of $495,308, after subtracting off the Withdrawal (Table 2). The investment profits in this year were not sufficient to cover expenses and the retiree depleted some of the principal.

In the following year (2001), the retiree increases the size of his Withdrawal to $20,310 in response to rising costs of living due to inflation. Again, the portfolio experiences a drawdown, leading to and Ending Balance of $494,208. Drawdowns continue in the following year, leading to an Ending balance of $427,208 at the end of 2002. All throughout this 3 year period of principal depletion, the devotee maintains his commitment to the stock market, rebalancing his portfolio at the end of each year.

Table 2 Results for Scenario I

Year	Start Balance	Withdrawal	Appreciation	End Balance	Portfolio return
2000	500,000	20,000	15,308	495,308	3.06%
2001	495,308	20,310	19,210	494,208	3.88%
2002	494,208	20,793	-46,134	427,280	-9.34%
2003	427,280	21,184	193,864	599,960	45.37%
2004	599,960	21,875	125,512	703,597	20.92%
2005	703,597	22,623	77,349	758,323	10.99%
2006	758,323	23,198	168,032	903,157	22.16%
2007	903,157	24,144	23,241	902,254	2.57%
2008	902,254	24,166	-352,466	525,623	-39.07%
2009	525,623	24,823	182,155	682,954	34.66%
2010	682,954	25,195	143,443	801,202	21.00%
2011	801,202	25,941	-25,852	749,408	-3.23%
2012	749,408	26,393	131,621	854,637	17.56%
2013	854,637	26,789	212,933	1,040,781	24.92%
2014	1,040,781	26,992	125,119	1,138,908	12.02%
2015	1,138,908	27,189	-49,524	1,062,195	-4.35%
2016	1,062,195	27,752	167,437	1,201,880	15.76%
2017	1,201,880	28,338	197,789	1,371,332	16.46%
2018	1,371,332	28,879	-137,956	1,204,497	-10.06%
2019	1,204,497	29,540	288,798	1,463,756	23.98%
2020	1,463,756	29,942	151,133	1,584,946	10.33%
2021	1,584,946	32,050	385,855	1,938,752	24.35%

After experiencing 3 consecutive years of losses, the vast majority of people would abandon the stock market. However, although stocks can fall substantially for extended periods of time, these unfavorable periods set the stage for sharp recoveries and continued appreciation. In 2003, all of the equity indexes moved higher. Despite withdrawing $21,184 for living expenses, the portfolio grew to $599,960, which is higher than the starting value of $500,000 in 2000. It is extremely difficult to predict when the market will collapse and when it will bounce back. Market timing is largely impossible. Recoveries entail sharp, sudden, unpredictable moves to the upside—if an individual is to benefit, s/he must consistently allocate a significant share of their wealth to the stock market, rather than jumping in and out. At the end of 2007, the portfolio rose to $902,254.

In 2008 another bear market occurred. The portfolio collapsed to $525,623. This severe downturn laid the groundwork for a powerful recovery, beginning in 2009. In 2017, the portfolio grew to $1.37 million, despite continuously rising withdrawals for living expenses; 2021 was a surprisingly good year for financial markets—the portfolio ended at $1.9 million.

Scenario II: Risks of Not Diversifying

Large cap stocks were the top performer in the 1990s (Table 3): $10,000 invested in this asset class in 1990 would have grown to $52,674 by the end of 1999[1], which is an annualized return of

[1] Clearly, this figure does not include withdrawals for living expenses.

18.1%. Small cap value was the worst performing stock index: a $10,000 investment in 1990 would have grown to "only" $38,707 by the end of 1999, for a return of 14.5% per year.

Table 3 Growth of $10,000 for Various Asset Classes and Time Periods

Year	US Large	US Large Value	US Small value	US Micro	REITS	Emerging	10-year treasury
	10,000	10,000	10,000	10,000	----	----	10,000
1990	9,668	9,298	8,095	7,844	----	----	10,770
1991	12,590	11,509	11,573	11,316	----	----	12,807
1992	13,524	13,291	14,840	13,973	----	----	13,733
1993	14,861	15,718	17,971	16,903	----	----	15,514
1994	15,037	15,619	17,958	17,425	----	----	14,398
1995	20,668	21,404	23,403	23,433	----	----	18,077
1996	25,397	26,070	28,414	27,569	----	----	18,077
1997	33,826	33,833	38,483	33,849	----	----	20,241
1998	43,507	38,783	37,452	33,237	----	----	23,204
1999	52,674	43,662	38,707	43,703	----	----	21,387
annual growth	**18.1%**	**15.9%**	**14.5%**	**15.9%**	**----**	**----**	**7.9%**
	10,000	10,000	10,000	10,000	10,000	10,000	10,000
2000	9,094	10,609	12,188	10,067	12,635	7,244	11,728
2001	8,001	9,351	13,858	12,481	14,195	7,035	12,361
2002	6,229	7,398	11,890	13,093	14,728	6,513	14,271
2003	8,004	9,784	16,312	23,695	19,980	10,267	14,293
2004	8,863	11,277	20,153	28,218	26,125	12,949	14,936
2005	9,286	12,078	21,377	29,370	29,232	17,099	15,385
2006	10,739	14,751	25,489	32,741	39,483	22,125	15,722
2007	11,317	14,763	23,687	30,973	32,984	30,731	17,360
2008	7,128	9,453	16,096	18,742	20,764	14,502	20,925
2009	9,016	11,303	20,979	23,607	26,906	25,521	18,797
2010	10,360	12,916	26,186	29,476	34,520	30,334	20,285
annual growth	**0.3%**	**2.4%**	**9.1%**	**10.3%**	**11.9%**	**10.6%**	**6.6%**
	10,000	10,000	10,000	10,000	10,000	10,000	10,000
2011	10,197	10,100	9,584	9,214	10,847	8,122	11,624
2012	11,810	11,615	11,363	11,041	12,748	9,636	11,941
2013	15,611	15,433	15,500	16,662	13,043	9,136	10,918
2014	17,720	17,450	17,110	17,430	16,973	9,174	12,079
2015	17,941	17,268	16,294	15,987	17,350	7,755	12,214
2016	20,062	20,161	20,311	19,420	18,797	8,651	12,336
2017	24,409	23,586	22,681	21,841	19,704	11,342	12,631
2018	23,303	22,277	19,882	18,102	18,501	9,673	12,756
2019	30,604	27,996	24,378	20,879	23,825	11,621	13,780
2020	36,190	28,606	25,772	26,209	22,686	13,370	15,160
2021	46,529	36,132	32,978	32,056	31,804	13,467	14,655
annual growth	**15.0%**	**12.4%**	**11.5%**	**11.2%**	**11.1%**	**2.7%**	**3.5%**

Academic studies of investors' behavior reveal a strong tendency to extrapolate recent events—investors believe that past performance will continue into the future. After experiencing superior results from large cap stocks in the 1990s, many investors heavily concentrated their capital into this asset class, in effect speculating that large caps would continue to surpass the other equity categories in the future years. Moreover, individuals tended to exclude or grossly underweight

small cap value, since it was the worst performer in the 1990s. This would have been a major mistake. Table 3 shows a sharp reversal in the first decade of the 21st century, in which large caps generated the lowest returns: a $10,000 investment in 2000 would have grown to a mere $10,360 in 2010. Unfortunately, investors tend to "fight the last battle", shifting their asset allocation away from lagging asset classes. Influenced by their poor performance in the first decade of the 2000s, stock market participants who reacted by excluding or underweighting large caps would have failed to benefit from their ensuing outperformance. From 2011-2021, large caps once again outstripped the other equity categories. Rather than speculating as to which asset class will outperform in future years, the superior approach is maintain a stable asset allocation that is diversified across all of the major asset classes.

In Scenario II, we examine the results of failing to properly diversify. An individual retires at the very beginning of year 2000 with a Starting Balance of $500,000, just as in Scenario I. An initial Withdrawal of $20,000 is used to pay for living expenses. Withdrawals increase in response to rising costs of living due to inflation. That is where the similarities to Scenario I end. A key difference is that in Scenario II, the retiree allocates 100% of the portfolio to large cap stocks, whereas Scenario I was based on a diversified approach.

In Scenario II, at the end of 2000, the retiree has a portfolio that is significantly lower, with an Ending Balance of $434,700, after subtracting off the Withdrawal (Table 4). With this overly concentrated asset allocation, the portfolio never rises above the starting level of $500,000. In the early years of retirement, the retiree depletes his portfolio to the point where he simply does not have enough remaining capital to benefit from the subsequent outperformance of large cap stocks from 2011-21. Consequently, by the end of 2021 only $301,506 remains. The retiree faces the real risk of completely exhausting his capital. Large caps alone are not likely to be sufficient to sustain retirement. Indeed, the period from 2000-10 is referred to as the lost decade for stocks, although this characterization is only accurate for large caps.

Table 4 Results for Scenario II

Year	Start Balance	Withdrawal	Appreciation	End Balance	Portfolio return
2000	500,000	20,000	-45,300	434,700	-9.06%
2001	434,700	20,310	-52,251	362,139	-12.02%
2002	362,139	20,793	-80,214	261,132	-22.15%
2003	261,132	21,184	74,423	314,370	28.50%
2004	314,370	21,875	33,763	326,259	10.74%
2005	326,259	22,623	15,563	319,198	4.77%
2006	319,198	23,198	49,923	345,923	15.64%
2007	345,923	24,144	18,645	340,424	5.39%
2008	340,424	24,166	-126,025	190,233	-37.02%
2009	190,233	24,823	50,393	215,803	26.49%
2010	215,803	25,195	32,176	222,784	14.91%
2011	222,784	25,941	4,389	201,231	1.97%
2012	201,231	26,393	31,835	206,673	15.82%
2013	206,673	26,789	66,507	246,392	32.18%
2014	246,392	26,992	33,288	252,688	13.51%
2015	252,688	27,189	3,159	228,657	1.25%
2016	228,657	27,752	27,027	227,932	11.82%
2017	227,932	28,338	49,393	248,988	21.67%
2018	248,988	28,879	-11,279	208,830	-4.53%
2019	208,830	29,540	65,426	244,716	31.33%
2020	244,716	29,942	44,661	259,435	18.25%
2021	259,435	32,050	74,121	301,506	28.57%

Scenario III: Balanced Portfolio

Thus far, this study has focused exclusively on equities. In Scenario III we consider the diversification benefits of adding a completely different asset class to the portfolio—treasury bonds. Adding a small amount of bonds to a diversified stock portfolio significantly reduces risk with little adverse impact on returns. Treasury bonds are backed by the U.S. government and therefore offer near absolute protection from default on principal, unlike corporate bonds. Indeed, short of national destruction, there is no possibility of default for treasury bonds, although corporations can in fact default on the bonds they issue. However, corporate and treasury bonds are both subject to risks stemming from rising interest rates. A 10-year treasury bond yielding a fixed coupon will decline in market value when interest rates rise.

Nevertheless, even with interest rates being a risk factor, bonds are far less volatile than stocks. As shown in Table 1, over the period from 1972-2021, the worst year for 10-year treasuries was -10.17% in 2009. The worst year for large caps was -37.02% in 2008. An investor can dampen the volatility of the portfolio by including bonds. Although bonds are less volatile than stocks, the price of this safety is that they *typically*, but not always, provide lower returns. From 2000-21, small cap value, micro caps, and REITS, produced returns of 10.3%, 10.8%, and 11.5% per year, respectively. Annual returns for large caps (7.4%) and large cap value (7.3%) were inferior. An investment in the 10-year treasury only gained 5.1% per year over the same period. The annual returns for emerging markets (6.6%) were not much higher than treasuries, although the latter is far less volatile.

In addition to their relative safety, treasuries are negatively correlated with stocks, i.e., treasuries can partially offset losses that occur when stocks fall. While large cap stocks were experiencing a meltdown from 2000-2002 and again in 2008, the 10-year treasury provided positive returns. For example, in 2008 treasuries were up 20.53% while large caps were down (-37.02%) (Table 1). Individuals that hold both bonds and equities experience smaller drawdowns when the latter collapses.

In Scenario III, the devotee retires at the very beginning of year 2000 with a Starting Balance of $500,000, spread out equally across 7 categories: the 10-year Treasury bond, and stock indexes for large caps, large cap value, small cap value, micro caps, REITS, and emerging markets. Hence, $71,428.6 is invested in each of the 7 asset classes, for a total of $500,000. Since the various stock and bond groupings do not all move together, the portfolio is rebalanced at the end of each year. A Withdrawal of $20,000 is used to pay for living expenses. At the end of 2000, s/he has a portfolio that is slightly higher, with an Ending Balance of $505,464, after subtracting off the Withdrawal (Table 5). That is to say, the investment profits in this year were more than sufficient to cover expenses and the retiree's principal actually grew. This outcome compares favorably to Scenario I when the portfolio decreased at the end of 2000.

The bond allocation did not completely protect the portfolio in 2002, as the Scenario III balance did in fact fall to $455,753. However, when bonds were excluded from the portfolio in Scenario I, the balance fell even further to $427,280. The inclusion of bonds in Scenario III mitigated the losses in 2002.

Table 5 Results for Scenario III

Year	Start Balance	Withdrawal	Appreciation	End Balance	Portfolio return
2000	500,000	20,000	25,464	505,464	5.09%
2001	505,464	20,310	20,702	505,857	4.10%
2002	505,857	20,793	-29,311	455,753	-5.79%
2003	455,753	21,184	177,340	611,908	38.91%
2004	611,908	21,875	113,658	703,691	18.57%
2005	703,691	22,623	69,334	750,401	9.85%
2006	750,401	23,198	144,870	872,074	19.31%
2007	872,074	24,144	32,217	880,147	3.69%
2008	880,147	24,166	-268,897	587,083	-30.55%
2009	587,083	24,823	165,859	728,120	28.25%
2010	728,120	25,195	139,321	842,245	19.13%
2011	842,245	25,941	-3,754	812,550	-0.45%
2012	812,550	26,393	125,492	911,649	15.44%
2013	911,649	26,789	183,528	1,068,389	20.13%
2014	1,068,389	26,992	126,314	1,167,711	11.82%
2015	1,167,711	27,189	-41,654	1,098,868	-3.57%
2016	1,098,868	27,752	150,043	1,221,158	13.65%
2017	1,221,158	28,338	176,422	1,369,243	14.45%
2018	1,369,243	28,879	-116,131	1,224,233	-8.48%
2019	1,224,233	29,540	265,641	1,460,334	21.70%
2020	1,460,334	29,942	150,122	1,580,514	10.28%
2021	1,580,514	32,050	322,289	1,870,754	20.39%

The financial crisis in 2008 led to a major meltdown in all 6 of the equity categories considered in this study. Again the bond allocation in Scenario III partially offset the losses in equities. The balance in 2008 fell to $587,083. This outcome compares favorably to Scenario I when, without the protection of treasuries, the portfolio decreased even further to $525,623.

In Scenario III, by the end of 2021, the balance is $1,870,754, which is somewhat lower than in Scenario I ($1,938,752). Typically, there is a tradeoff between risk and return. The price of safety is reduced profits. However, empirical studies over **multiple** time periods demonstrate that the tradeoff is favorable. Adding a small amount of treasuries to a diversified stock portfolio significantly reduces risk with little adverse impact on returns, as demonstrated by Scenario III.

Monte Carlo Simulations

Retirement planning would be straightforward if you could depend on earning the same amount year after year from your portfolio. You would know exactly how much you could afford to withdraw and would never have to deal with market uncertainties. However, the actual year to year returns in Table 1 are highly volatile, implying substantial market uncertainties. In order to avoid conveying a false sense of optimism, this study deliberately selected a particularly challenging period (2000-2021) in which 2 massive meltdowns occurred within a relatively short space of time. This study did not cherry pick a favorable period of time in order to mislead or understate the difficulties faced during retirement.

Sequence of Returns Risk

In all 3 scenarios, the first bear market occurred immediately after retirement, which poses serious challenges for any retiree. If the stock market experiences large losses in the early years of retirement and the individual continues to make withdrawals to cover living expenses, he or she will deplete their portfolio to the point where they simply do not have enough money left to benefit when the stock market turns around and recovers. [2] Or more prosaically, you have to have something to come back with when good times are back again.

The sequence of returns has profound consequences for a retiree. That is, when a severe early decline occurs, a retiree who continues to withdraw to pay for living expenses will not have enough of a portfolio left over to take advantage of the stock market recovery that follows. A retiree will then quickly deplete his portfolio. This is known as sequence of return risk. Scenarios I and III demonstrate that broad diversification is a powerful method of mitigating / managing this risk. In contrast, Scenario II shows the severe consequences of failing to manage sequence of return risk.

Incorporating a Broader Range of Market Uncertainties

It is useful to examine a wide variety of potential market scenarios that take fluctuating market returns into account. Instead of basing calculations on just one average rate of return, Monte Carlo simulations generate 100,000 simulations of hypothetical market scenarios, and calculate the impact on the individual's asset levels during his retirement. Each simulation includes up and down markets of various lengths, intensities, and combinations. For each year of each simulation, the Monte Carlo technique randomly selects one year of stock, bond, and cash returns from a database that goes back to 1871. Using those values, the algorithm calculates the impacts on the retiree's portfolio - subtracting his spending, adjusting for inflation, and adding the investment return. The algorithm repeats this process, one year at a time, until the end of his retirement (usually 30 years) or until his portfolio is exhausted. The next simulation starts the whole process from the beginning. This process is repeated until 100,000 independent simulations have been completed.

After 100,000 independent simulations, a broad range of possible scenarios have been tested, and clear patterns begin to emerge. By keeping track of the number of simulations in which your savings last for the duration of your retirement, we're able to estimate the probability that your plan will be successful. For example, if your savings survive in 80,000 of 100,000 simulations, we can estimate that the probability of success is 80%. (80,000 / 100,000 = 80%). Of course, it's important to remember that Monte Carlo simulation assumes the future will be at least somewhat like the past - after all, we're using historical data in each simulation. It could be argued that the future may contain scenarios that are better or worse than anything considered by this tool. This perspective is not to be lightly dismissed. However, FIRECALC, which is arguably the best Monte Carlo simulation tool for retirement purposes, uses data that goes back to 1871, a long historical period that encompasses all manner of economic and financial crises. The perspective articulated by FIRECALC is compelling, and deserves to be quoted in full:

[2] This problem is obviously more serious when an individual is withdrawing large amounts from the portfolio. The 4% rule is a method of managing risks through relatively modest withdrawals.

"*FIRECalc makes a single fundamental assumption:*
If your retirement strategy would have withstood the worst ravages of inflation, the Great Depression, and every other financial calamity the US has seen since 1871, then it is likely to withstand whatever might happen between now and the day you no longer have any need for your retirement funds.
If you accept that assumption, then just tell FIRECalc how much you have and how much you'll be spending, and FIRECalc will tell you how often your strategy would have worked throughout history. Or what you need to change to make it all work."

Two-Asset Portfolio

When using FIRECalc, the first steps are to enter the size of the portfolio (e.g. $500,000) and the level of expenses in the initial year of retirement (e.g. $20,000, as per the 4% rule). The user also decides the share (%) of the portfolio that is invested in a total stock market index, as well as the percentage held in the 5-year Treasury bond. It is possible to experiment with various percentages, ranging from a complete (100%) bond allocation to fully investing in the total stock market index. For the purposes of this example, we divide the portfolio equally among these 2 asset classes: 50% in 5-year bonds, 50% in stocks. The individual's retirement horizon is 30 years, i.e. the portfolio must support a 30-year retirement. Using stock and bond returns since 1871, FIRECalc calculates the success and failure rate, where failure means the portfolio was depleted before the end of the 30 years. Relying on a 50%-50% stock-bond allocation as well as the 4% rule for expenses, the portfolio has a success rate of 95.8%—with this strategy, it is highly unlikely that a retiree would run out of money in less than 30 years. In fact it is far more likely that he would have money left over when he dies after his 30 year retirement. This may be a desirable outcome, if the goal is to provide an inheritance for family members or to create a religious foundation. Bear in mind that the results presented above assume that the retiree will receive nothing in social security and/or pension payments.

Diversified Portfolio

FIRECalc can also gauge the impacts of a more diversified portfolio, based on performance data since 1927. Although this experiment relies on less data, it is a stringent test of the 4% rule since the post-1927 period includes the Great Depression. As in the previous example given above, the size of the portfolio is $500,000 and the level of expenses in the initial year of retirement is $20,000, as per the 4% rule. However, unlike the previous example, the $500,000 is now allocated to a broader range of asset classes: 10% held in U.S. micro caps, 10% in U.S. small caps, 10% U.S. small cap value, 20% large caps (S&P 500), 20% U.S. large value, 10% held in long term treasury bonds, 15% in long term corporate bonds, and 5% held in 1-month treasury bills. Again, failure means the portfolio was depleted before the end of the 30 years. FIRECalc found that 0 cycles failed, for a success rate of 100.0%. The retiree (successfully) relies solely on his portfolio to finance his retirement—he receives nothing in social security or pension payments.

Balancing Competing Objectives: Time versus Money

The 4% withdrawal rule was created to survive worst case market scenarios encompassing 1929, 1937, and 1966. Results from Monte Carlo Simulations reveal that most of the time, the 4% rule leaves behind a large amount of unspent principal: (**a**) Over two-thirds of the time the retiree finishes the 30-year time period with more-than-double the starting portfolio (**b**) more than 90% of the time, the retiree finishes with more than their starting principal. The implications are threefold: (**1**) The portfolio could support spending levels in excess of the 4% rule (**2**) An individual could retire sooner with a smaller portfolio (**3**) Insisting on a 100% success rate from Monte Carlo simulations is costly. An individual can improve the success rate by working longer in order to accumulate a larger portfolio. However, if an individual delays retirement until the simulated failure rate falls to 0%, then he or she has sacrificed time in exchange for leaving behind a great deal of unutilized money. Time also has value. Is it preferable to retire early, if it means dying with less money left over? The value of additional money / safety must be weighed against the value of additional time available for retirement. It is the author's personal view that a success rate of 90% or greater provides a sufficient margin of safety in which there is also a strong likelihood of leaving behind unspent principal. However, it is important to note that the relative valuation of time versus money is an individual decision.

Impersonalists Reject the Stock Market

Financial independence is not necessarily the same as being independently wealthy, although a key requirement for accomplishing either of these objectives is the intelligent management of financial resources. A devotee's austere life may result in an accumulation of material assets. Yet, he lives very simply, as his assets are designated or reserved for distributing religious principles throughout the world. The consciousness, motivation, and goals of devotees are completely different from the ordinary man grasping for sense enjoyment.

"*To accumulate material possessions, one must labor very hard, and when he gets them he creates many enemies because this material world is always full of rivalry. If one becomes rich, his friends or relatives are envious. For ekanta-bhaktas, unalloyed devotees, Krishna therefore never provides material possessions. A devotee sometimes needs some material possessions for preaching, but the possessions of a preacher are not like those of a karmi. A karmi's possessions are achieved as a result of karma, but those of a devotee are arranged by the Supreme Personality of Godhead just to facilitate his devotional activities. Because a devotee never uses material possessions for any purpose other than the service of the Lord, the possessions of a devotee are not to be compared to those of a karmi*." [Srimad Bhagavatam Canto 6, chapter 11, text 22]

Srila Rupa Gosvami declares that if one rejects this material world as false, not considering the importance of this material world as a means to serve the Supreme Personality of Godhead, such renunciation has very little value. A person who knows the intrinsic value of this material world for the service of the Lord, who is not attached to the material world, and who renounces the material world by not accepting it for sense gratification, is situated in real renunciation. This material world is an expansion of the material energy of the Lord. Therefore it is real. It is temporary and flickering, but not false [Bhaktivedanta purport of the Eighty-seventh Chapter of Krsna, "Prayers by the Personified Vedas."]

An intelligent person possessing millions of dollars in currency notes does not hold the money without using it, even though he knows perfectly well that the currency notes in themselves are nothing but paper. When one has one million dollars in currency notes, he is actually holding only a huge bunch of papers, but if he utilizes it for a purpose, then he benefits. Similarly, although this material world may appear false, just like the paper, it has its proper beneficial utilization [Bhaktivedanta purport of the Eighty-seventh Chapter of Krsna, "Prayers by the Personified Vedas."]

Because the currency notes, although paper, are issued by the government, they therefore have full value. Similarly, this material world may be false or temporary, but because it is an emanation from the Supreme Lord, it has its full value. The Vaisnava philosopher acknowledges the full value of this material world and knows how to properly utilize it, whereas the Mayavadi philosopher, mistaking the currency note for false paper, gives it up and cannot utilize the money [Bhaktivedanta purport of the Eighty-seventh Chapter of Krsna, "Prayers by the Personified Vedas."]

Just as currency notes have value, the stock market also has value. Although the stock market may appear to be a collection of false papers, it has its proper, beneficial utilization. An individual may have legitimate reasons for avoiding the stock market, particularly if their cash flow situation is precarious. ***However, if one were to reject the stock market as an illusion, then this misconception is symptomatic of impersonalism***. The Mayavadi philosopher, mistaking the stock market and currency notes for false paper, gives them up and cannot utilize the money in the Service of the Lord. A diversified stock portfolio, in combination with careful cash flow management, is a highly effective tool for building wealth. Without sacrificing Vaishnava principles, devotees may take advantage of this powerful engine of capital accumulation, fully knowing the value of this material world and how to properly utilize it on behalf of Lord Chaitanya’s Mission.

Appendix
On-Line Brokers and Exchange Traded Funds

Commission costs for buying and selling securities have fallen sharply over the years due to the adoption of more efficient computerized technologies in financial industries combined with vigorous competition among brokerage firms. Fidelity, Charles Schwab, and TD Ameritrade recently eliminated commission fees altogether—they charge nothing per on-line trade. With zero commission costs, an individual can also of course reinvest dividends at no charge.

		Commission Cost		
Symbol	**Description**	**TD Ameritrade**	**Fidelity**	**Charles Schwab**
VTV	large value stocks	0	0	0
FVD	large value stocks	0	0	0
DTN	large value stocks	0	0	0
DTD	large value stocks	0	0	0
PRF	large value stocks	0	0	0
SLYV	small value stocks	0	0	0
VBR	small value stocks	0	0	0
EES	small blend stocks	0	0	0
IWC	micro cap stocks	0	0	0
FDM	micro cap stocks	0	0	0
IVV	large cap stocks (S&P 500)	0	0	0
SPY	large cap stocks (S&P 500)	0	0	0
VNQ	Real estate investment trusts	0	0	0
USRT	Real estate investment trusts	0	0	0
RWR	Real estate investment trusts	0	0	0
VWO	emerging market stocks	0	0	0
DGS	emerging market (small value)	0	0	0
GMF	emerging mkt Pacific/Asia ex-Japan	0	0	0
VEU	International All-World ex-US	0	0	0
DLS	International SmallCap Dividend	0	0	0
ITE	treasury 4 year bond	0	0	0
GOVT	treasury 5-6 year bond	0	0	0
IEI	treasury 3-7 year bond	0	0	0
IEF	treasury 7-10 year bond	0	0	0
VGIT	treasury 5-6 year bond	0	0	0
VGLT	treasury 14-15 year bond	0	0	0
TLT	treasury 15-18 year bond	0	0	0
TLH	treasury 10-20 year bond	0	0	0

This article is not an advertisement for any broker. In fact the author draws no remuneration in any form from this website. Readers are encouraged to carry out their own research, exercise due diligence, and form their own conclusions.

During the accumulation phase when an investor is dollar cost averaging, he or she is making frequent, relatively small purchases of index funds while re-investing dividends to enhance wealth-building compounding effects. The elimination of commission fees by major brokerage firms has removed a key cost barrier to capital accumulation based on dollar cost averaging and dividend reinvestment, strategies that often entail frequent purchases.

Past performance is not a guarantee of future results. Mutual fund performance and exchange traded fund performance shown in this article includes reinvestment of dividends and other earnings but does not reflect the deduction of investment advisory fees, taxes, or other expenses. This content is provided for informational purposes and is not to be interpreted as investment advice or recommendations to buy or sell any financial product. Moreover, this article is not to be construed as an offer, solicitation, recommendation or endorsement of any particular security, products, or services. I wrote this article myself, and it expresses my own views on finance. I am not receiving compensation for this article. I have no business relationship with any brokerage firm, index fund, exchange traded fund, or company stock that is mentioned in this article.