DISCLAIMER: *I do not provide specific investment advice. Balancing risk vs. rewards in investment decisions is a personal choice based on many variables. However, the process of saving towards retirement cannot start too soon, and delays and interruptions are costly. The lack of understanding, or even fear, about selecting a retirement plan fund need not deter you from your early and ambitious start. My hope is this paper will help you understand the main critical investment concepts and provide you the confidence to make your own decisions.*

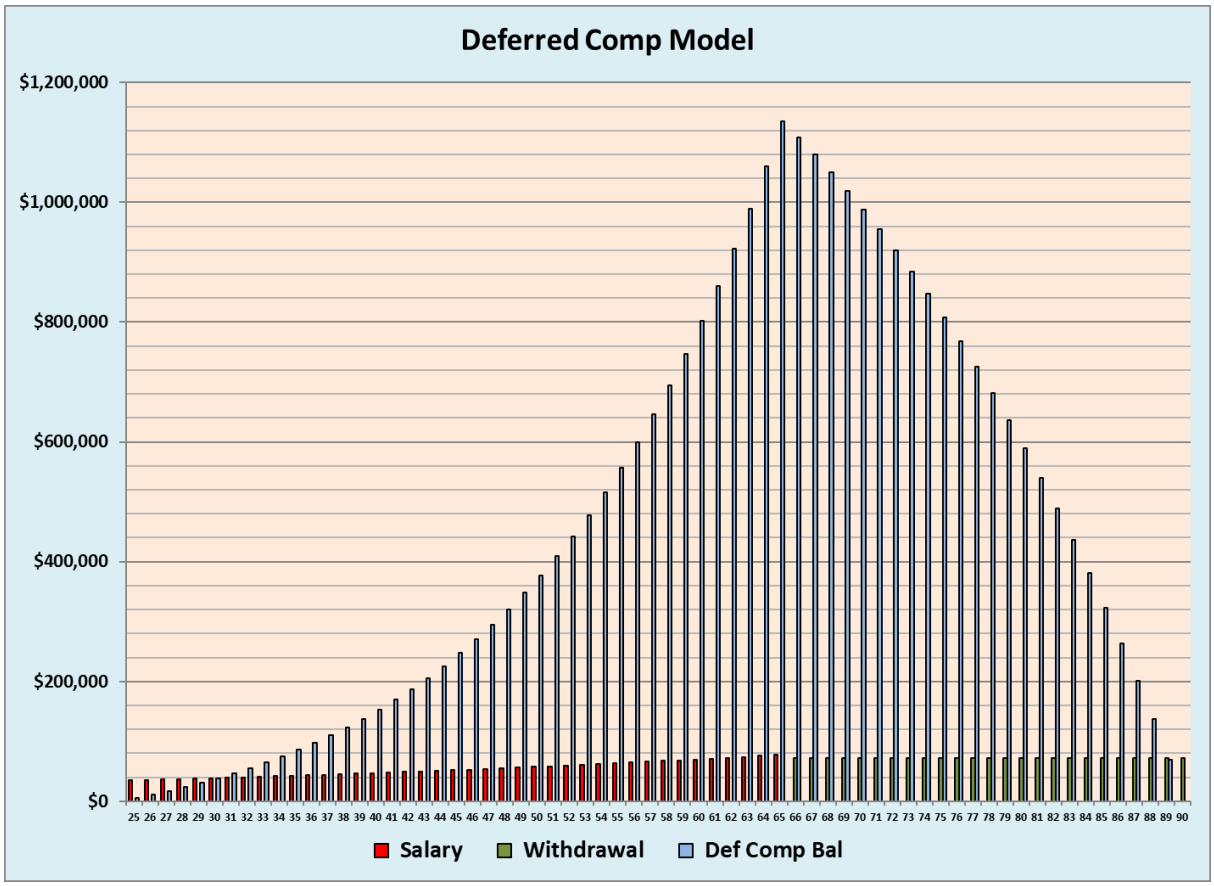
How Does a Deferred Comp Plan Work?

Being an accountant, I always understood the time value of money, and its related principle of compounding interest. I understood that delays, interruptions, and the more horrid "needed" withdrawals from a deferred compensation (DC) plan could negatively impact my retirement goal, but like most young adults, neither retirement nor saving for retirement seemed important when I was young and just starting out in life.

I should say here that while this document focuses on an employer DC Plan, the concepts are still valid if you are investing through an Individual Retirement Account (IRA) or a personal brokerage account. The concepts are transferable.

To pound home this retirement concept for the benefit of my own children, I created an Excel spreadsheet model to produce a graphic representation of the application of these basic "time value of money" principles, and the significantly negative impact delayed or weak participation has on the results. The ***assumptions*** in this "Approach" model are as follows:

- Employee contributions start at age 25.
- Employee retirement is age 65.
- Employee's life expectancy is age 90.
- Employee's annual salary/wage starts at $35,000, and grows annually by 2% on average (includes cost of living increases, job promotions, job changes, etc.)
- The employee contributes 10% of his/her annual salary/wages into a qualified DC Plan (i.e., income tax deferred on contributions, matches, and earnings until money is withdrawn).
- The employer matches 50% of employee contributions, up to a ***max*** of $5,000, annually.
- Employee expects to earn average investment return of 6% while working, and 4% while retired (reflecting a more conservative retirement investment plan).



The busy chart above is crammed into a small space, so for clarity:

- The vertical axis on the left represents ***dollars***.
- The horizontal axis on the bottom represents ***age*** (i.e., 25 years through 90 years).
- The vertical red bars from age 25 through 65 represent the employee's ***annual salary/wage*** (starts at $35,000 and finishes at $77,300 at retirement based on the 2% average growth).
- The vertical blue bar represents the employee's cumulative DC ***Plan balance*** based on the assumptions listed on page 1.
- The vertical green bar represents the taxable annual DC ***Plan withdrawals*** the employee can take throughout retirement (i.e., age 66 years through 90) so that the DC Plan balance is not depleted until the end-of-life expectancy.

The exponential growth curve of the DC Plan balance is the most notable feature of the graph, with the employee's DC Plan balance reaching $1,135,400 at retirement age. Perhaps this next summary table makes the phenomenon even clearer. Given the assumptions listed on page 1, here are the highlights from 65 years of investing in a DC Plan (yes, you need investment earnings from 25 through 90, including your retirement years):

SUMMARY STATISTICS		
Employee Contributions	$ 219,135	12%
Employer Contributions	$ 109,568	6%
Investment Earnings	$ 1,488,276	82%
Total Retirement Withdrawals	$ 1,816,978	
Salary @ Retirement	**$ 77,281**	**100%**
Annual Retire. Withdrawals	**$ 72,679**	**94%**

Because of the "time value of money" principle, an employee under this set of assumptions will be able to withdraw over ***$1,800,000*** over their 25 retirement years (66 through 90) after contributing just a little over $219,000 from their lifetime salary/wages. More importantly, the annual Plan withdrawals (about $72,700) will be 94% of their salary/wage at retirement (about $77,300), and that excludes other retirement income streams like Social Security or a defined benefit pension plan (e.g., a Public Employee Retirement System or a union pension). This is because even with modest investment return expectations (i.e., 6% dropped to 4% in retirement) the lifetime investment earnings will account for 82% of the $1.8 million withdrawals. Of course, the assumed employer match helps, almost $110,000 in this example. ***NOTE THIS: A delay in participation of just 10 years in this example (i.e., wait to start at age 35) will drop the apex retirement balance from $1,135,000 to about $680,00, producing an annual retirement withdrawal of about $43,400.*** The $43,400 is respectable retirement income stream but ***is about 60% of what it could have been***. Do not delay any further!

As an aside, you likely know that the contributions taken from your salary/wages are tax deferred, i.e., they reduce your tax bill until they are withdrawn, presumably when you are in a lower tax bracket. Similarly, taxes on the investment income and your employer's contributions are also tax deferred until withdrawn. If you save and invest well, you may not be in a lower tax bracket in retirement, but by avoiding taxes on your contributions, employer matches, and investment returns during your employment years you significantly accelerate the compounding impact on your retirement assets.

So, other than lacking discipline to routinely make meaningful DC Plan contributions, what other obstacles deter employees from using the DC Plan as their main retirement vehicle? Although not a complete list, here are some thoughts about why these retirement vehicles are underutilized:

- Most employees have never seen a graph like on page 2 that illustrates the power of these DC Plans to create retirement wealth. If they see them, they think they are sales gimmicks and unrealistic, which is false. Simple discipline does achieve these results.
- Youth, and the difficulties that come with starting marriages and families as you begin your working career can be deterrents; when money is tight DC Plans are delayed and/or under-contributed.
- Over the years, situations can arise that require the expenditure of large sums of money (e.g., medical, home, funeral expenses). It can be hard to establish cash reserves for these needs, so DC Plan hardship withdrawals or loans become tempting or necessary solutions (see IRS and your DC Plan for those rules).

- Employers hire recordkeepers to manage the bookkeeping for the DC Plan (i.e., managing the contributions, withdrawals, accounting for investment income, etc.). The employer and the recordkeeper work together to decide which ***mutual funds*** to offer to employees. While these recordkeepers may also offer their own mutual funds for investment purposes, this is not always the case. One mistake that employers and recordkeepers sometimes make is they offer ***too many*** mutual funds, which can paralyze employees into indecision, or even wrong decisions. Offering too many mutual fund choices makes it seem too complicated. Another mistake is they do not offer at *least one* good fund for *each* asset class (see Asset Class discussion below).
- Once convinced of the need and benefits of contributing into a DC Plan, employees are stymied by the plethora of financial information on the individual mutual funds. They are easily overwhelmed with reviewing each fund's prospectus (i.e., a document outlining the mutual fund's investment objectives, risks, fees, expenses) and investment return history vs. benchmark (more on that below). The employee may come to believe investment decisions are beyond them, resulting in deference to someone else to make decisions for them, or they select funds based on other emotional criteria. Even worse, they simply don't participate.

It is the investment choice process, the selection of which mutual funds to put your and your employer contributions into, that I wish to focus the rest of this investment approach on.

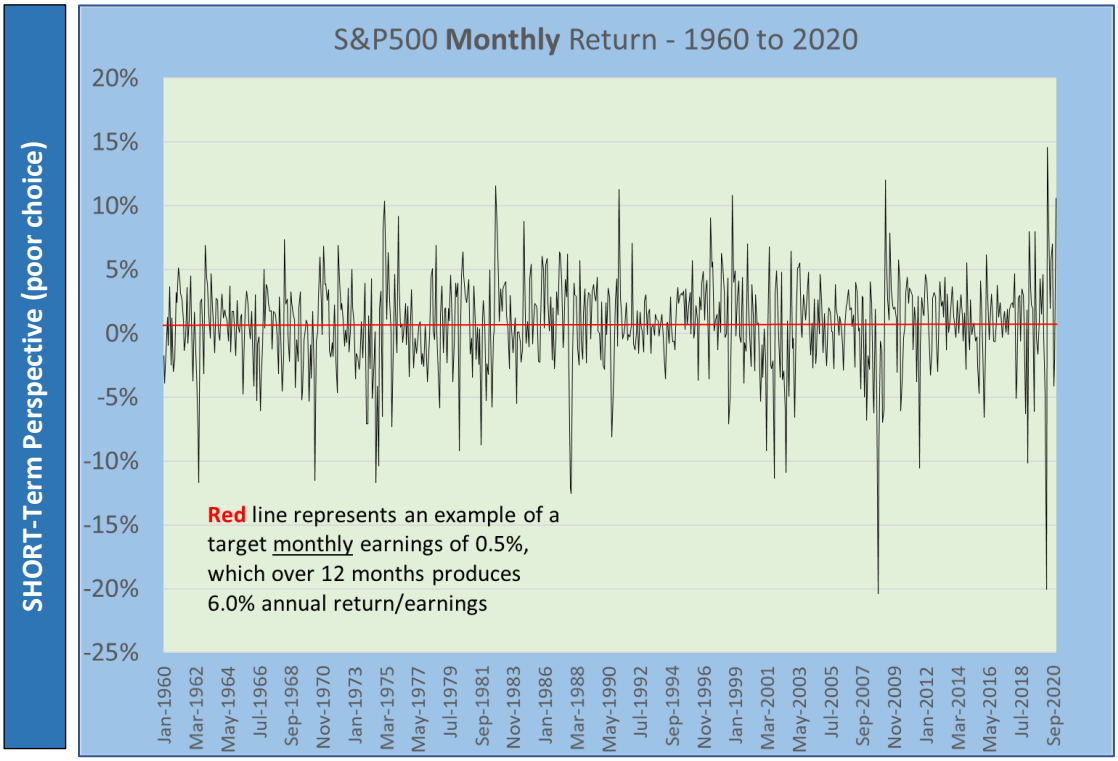
How Should You Invest Within Your DC Plan?

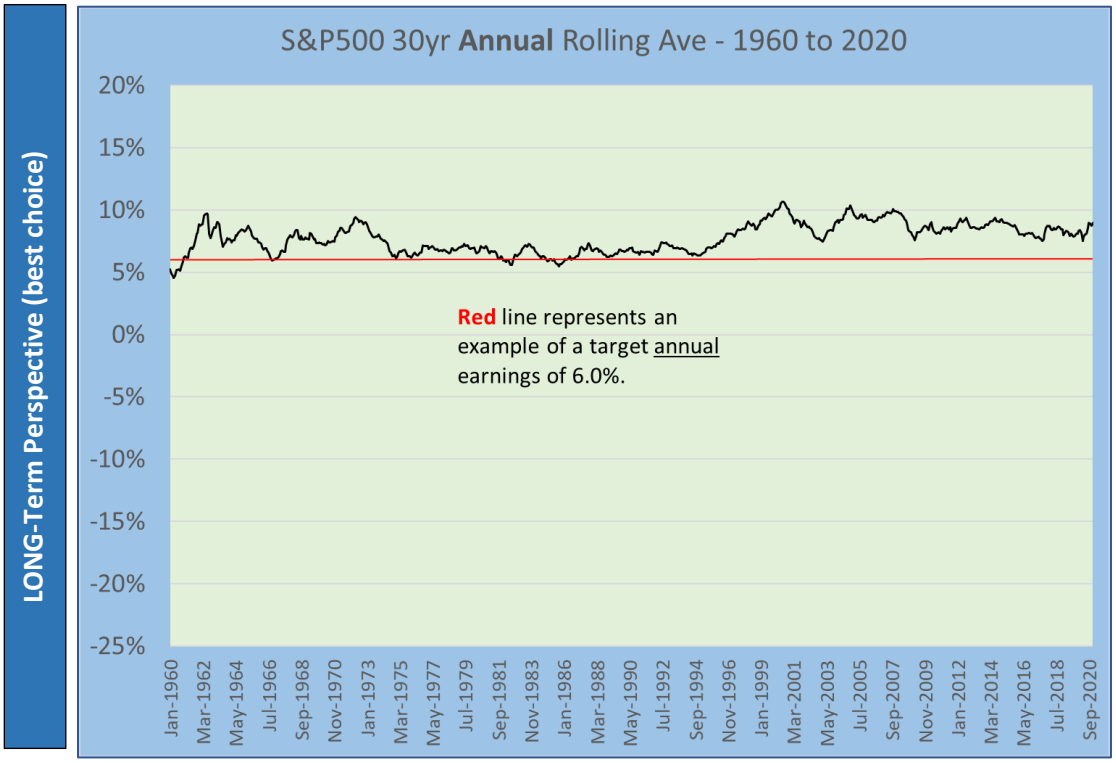
There are two primary ways to make investment income/earnings: (1) purchase ***ownership*** in something that produces income, appreciates in value, or does both, and (2) ***loan*** money on which you get repaid the loan amount plus interest. In its simplest form, it comes down to buying stock (equities) or bonds (a corporate or government loan/bond/debt).

The amount of investment earnings that will compound and grow within your DC Plan is managed with a "risk vs reward" concept. Risk is the probability you could lose money, and the reward is the degree to which you receive investment income. It is obvious but worth stating here, every investment has short term risk; on any given day, month, year, or even several years your expected fund earnings could be negative, severely negative. But since you are a long-term investor in your DC Plan (i.e., investing over that 50 to 65-year horizon) you will see that patience and fortitude to stick with your investment plan will smooth out those bumps so that over the long-term your earnings should meet your expectation. I will attempt to illustrate this concept with two charts of the S&P 500 Index.

Generally speaking, high risk, large cap stock ownership (e.g., an S&P500 Index fund) will offer higher returns in the long-term, but ***there will also be*** higher opportunity for ***significant*** losses in the short-term. Conversely, lower risk bonds (e.g., a Bloomberg Barclays Aggregate Bond Index fund) will offer lower returns in the long term, and while there ***will be*** short-term losses, they generally will be ***less extreme*** than large cap stock funds. If you are young and/or risk tolerant, you might invest 100% of your assets in an S&P500 Index fund. However, if you are older and/or risk intolerant you might invest 100% of your assets in an Aggregate Bond Index fund. But for those in-between the two extremes, there are a variety of combinations to balance your personal risk tolerance for any given period of your life.

So, other than a savings or money market account, you must accept investment risk to earn enough money to retire comfortably. The charts on this page use historical S&P 500 data (i.e., large cap U.S. stock valuations) to contrast short-term vs. long-term risk.





The S&P 500 Index is a market index that measures the performance of the 500 largest companies trading stock on the New York Stock Exchange (NYSE). Those 500 largest US companies listed in the

NYSE reflect a diversified group representing all sectors of the economy. It is one of the most followed equity indices.

The two graphs on the previous page 5 use the same S&P 500 Index closing value at the end of each month from January 1930 through December 2020 (1,080 months). Earnings is simply the % of change from one month to the next. The data from 1930 through 1960 is needed to compute the "rolling average" annual S&P 500 returns starting in January 1960 for comparison to that month's return. This rolling average is simply looking back the prior 30 years from the current month, finding the average monthly change for that 360-month period, and multiplying it by 12 to annualize the monthly earnings. Simply stated, if you invested $100 in the S&P 500 Index 30 years ago and never touched it, your ***average annual earnings***, compounded, over that 30-year period is represented by the "rolling average" as of the current month.

The black line on the chart represents the percent change in the actual historic S&P 500 Index for the month vs the annualized 30-year rolling average for that month. The red line on each chart represents a targeted or expected annual return of 6% (the same 6% assumed in the DC Plan model).

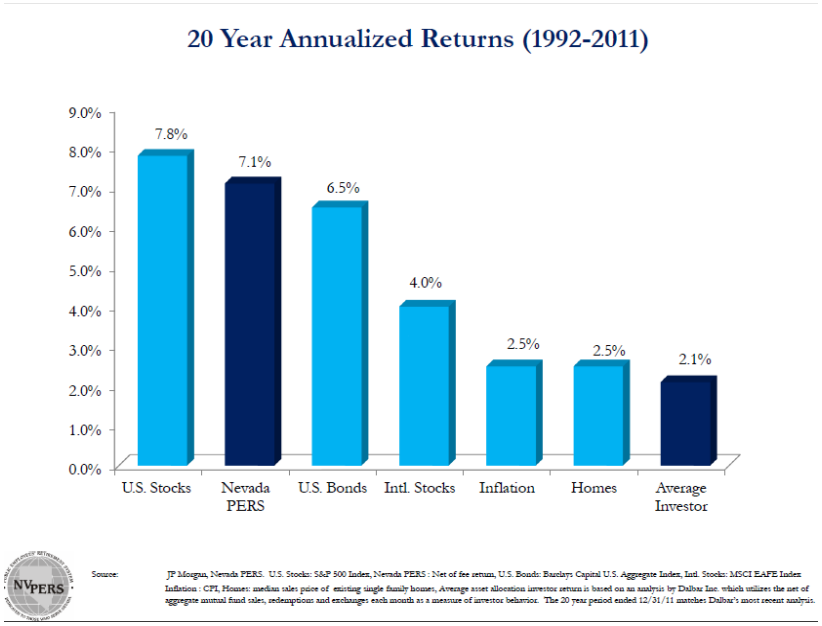
Note how the *first graph* of monthly earnings looks like an EKG of a *heart attack.* There are wild fluctuations from month to month, with the lowest point being October 2008 when the Index ***decreased -20.4%*** in one month, and the high being May 2020 when the Index ***increased +14.6%*** in one month. You can see why someone uninformed about how markets fluctuate would never want to invest in the S&P 500 Index. But, over the long-term that would be a big mistake.

Note how the *second graph* is much smoother. That is because rather than focusing on short-term results (i.e., one month), the 30-year rolling average looks at a 30-year performance period (one month vs the previous 360 months). On this graph, the lowest was April 1960 which annualized to a ***+4.6%***, and the highest was July 2000 which annualized at ***+10.7%***, for their respective prior 30-years. The 30-year rolling annualized return never dropped lower than 4.6% in the last 60 years, contrasted against the 285 months that the S&P 500 Index had *negative* monthly growth over the same period (i.e., 40% of the 720 months were negative). Most significant, there are just a handful of times the 30-year rolling average did not achieve a 6% return, and in fact ***the average 30-year rolling return on the graph is 7.7%***. Makes the targeted 6% seem conservative (there is that accountant again).

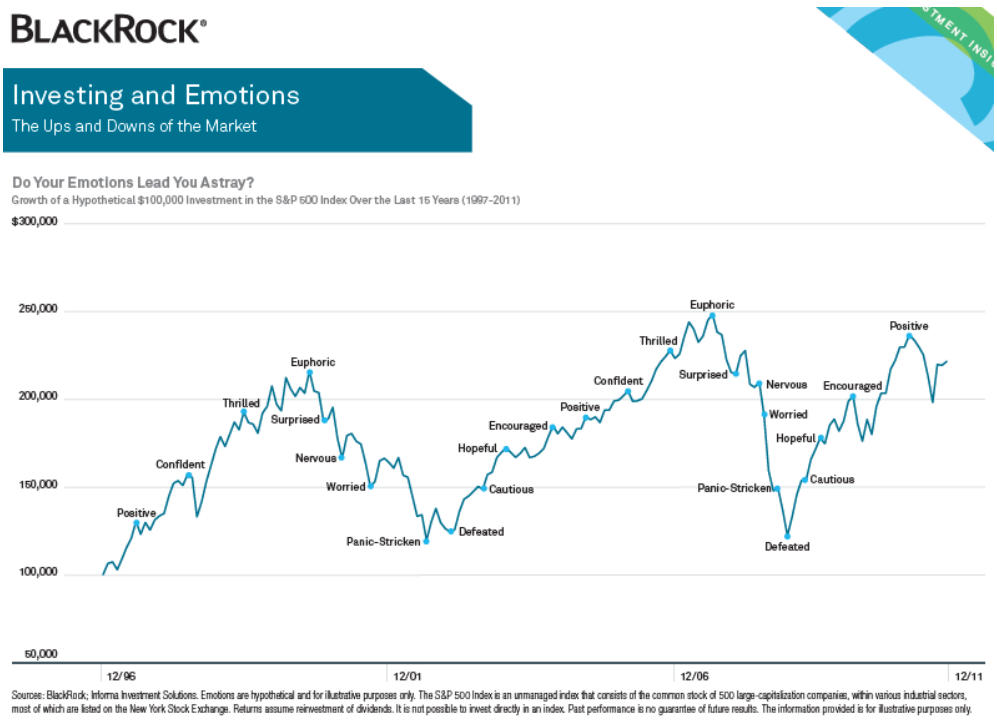
The key to investing is to have a plan or strategy that you stick with for a long term, adjusting the plan only gradually as you age and have less time to recover from bad market cycles. One problem with mutual fund investors (e.g., DC Plan employees) is that they get itchy ears when they hear of "hot" funds, and they often transfer money from their lower performing fund into the hot performing fund. This is an example of selling low, buying high; exactly opposite of common sense which is to buy something at a low cost and sell it at a higher value. Often these hot funds are actively managed and have their periods of high growth, but eventually that manager's strategy no longer works in a changing market cycle and it soon drops in value. This chasing of hot funds is also an example of market timing, both on the part of the active manager and the mutual fund investor. Even professional investors have great difficulty with market timing, so mutual fund investors need to avoid this temptation.

This next graph is somewhat dated, but it speaks truth about the average mutual fund investor falling prey to market timing and chasing those hot funds, as well as a risk aversion that causes them to invest too heavily in low yield bonds and money market funds which barely keep pace with inflation. The graph was prepared by BlackRock but was used by the Nevada Public Employee Retirement System

(PERS) Chief Investment Officer in a Trustee education session. The point of the graph is that during the 20-years from 1992 through 2011, the average annualized earnings for DC Plan investors was a ***meager 2.1%***, which was 0.4% *less* than inflation and home appreciation, 4.4% *less* than Barclays US Bonds Aggregate Index (an anomaly from the 1990s), and ***a whopping 5.7% less than the S&P 500 Index***. That's right, the average mutual fund investor did not even beat inflation!



Part of this poor mutual fund performance is driven by a lack of understanding, but it is also a condition of "emotional investing" (PERS Trustee required reading was *The Little Book of Behavioral Investing* by James Montier… I suggest you read that book). Here is another chart that depicts the cycles of emotional investing, not as tongue-in-cheek as you might think.



Typically, but not always, stocks produce higher investment income because the risk of loss is higher (profits and dividends *are not* guaranteed). Investment grade bonds come with ratings (BBB or higher) and sometimes with bond insurance, and their payment schedules of principal and interest are defined by the bond contracts so that missed payments result in defaults that will negatively affect their ability to get future loans. Except for cyclical fluctuations in interest rates that effect yields, bond investment returns are not as high as stocks because their risk is considered lower. There are exceptions to these concepts, like "high-yield" bond funds that are not rated (i.e., they are considered "junk" bonds). Such bonds pay high interest rates because their risk of default is much higher, and so while they are categorized as "bonds" they perform more like "stocks."

This discussion of stocks vs. bonds brings us to the concept of "Asset Class." Asset Class is a term-of-art that starts simply but can get parsed into confusing segments. As a place to start, let us just say we have Equities (stock), Fixed Income (bond/debt), Real Estate & Commodities (property and natural resources), and of course Cash (and cash equivalents like bank accounts and money markets).

Except for Cash (i.e., the proverbial "stuffing cash in your mattress" approach... for fun read Jesus' parable of the talents in Matthew 25:14-30), each of these asset classes can be broken into sub-classes which usually revolve around the risk/reward scales of "growth" vs. "value" and "domestic" vs "foreign." For example, Nevada PERS target investment classes are 42% in US Stocks (value domestic equity), 28% in US Bonds (value domestic debt), 18% in Non-US Stocks (value foreign equity), 6% in Real Estate (value domestic property), and 6% in Private Equity (growth domestic equity). In that portfolio, everything is managed to ***mirror the benchmark index*** except for Real Estate and Private Equity. In the big picture, ***88%*** of the PERS $45 billion in assets is invested in *passively managed* virtual indexes, ***82%*** is invested in US governments and companies, and ***66%*** is invested in equity investments. Essentially, PERS is investing big in the US economy for the long-term.

So why so many Asset Classes? I suppose partly to create a diversity of investments to spread risk. That can be overdone; I argue that investing in an S&P500 Index fund or Agg Bond Index fund is the best diversification because the holdings mirror the natural diversity of the index (see the S&P 500 description on the bottom of page 5).

Another benefit of Asset Classes is assessing their correlation to each other (i.e., does one class tend to rise when another falls?). That brings me to the correlation coefficient between the Asset Classes. The correlation coefficient is a statistical measure of the strength of the relationship between the relative movements of two variables, like Asset Classes. The values range between -1.0 and 1.0. A correlation of -1.0 shows a perfect negative correlation, while a correlation of 1.0 shows a perfect positive correlation. A correlation of 0.0 shows no linear relationship between the movement of the two variables. Having Asset Classes producing income to offset Asset Classes producing losses can be beneficial, which is indicative of negative correlation.

Why is NV PERS so heavy with indexed investments, besides the lower management fee costs? Specialized fund managers have strategies to *beat* their benchmark index. They believe their strategy will earn more than the benchmark, so they charge higher fees for their strategy/effort. Like chasing hot funds, when taken as a whole actively managed funds might outperform the benchmark index in different market cycles, but the problem is *which fund* will and for *how long*? I do not like using sports analogies, but one that made sense to me was NFL first-round draft picks. Historically speaking, we know on average how many first-round draft picks actually won the Super Bowl, became the league

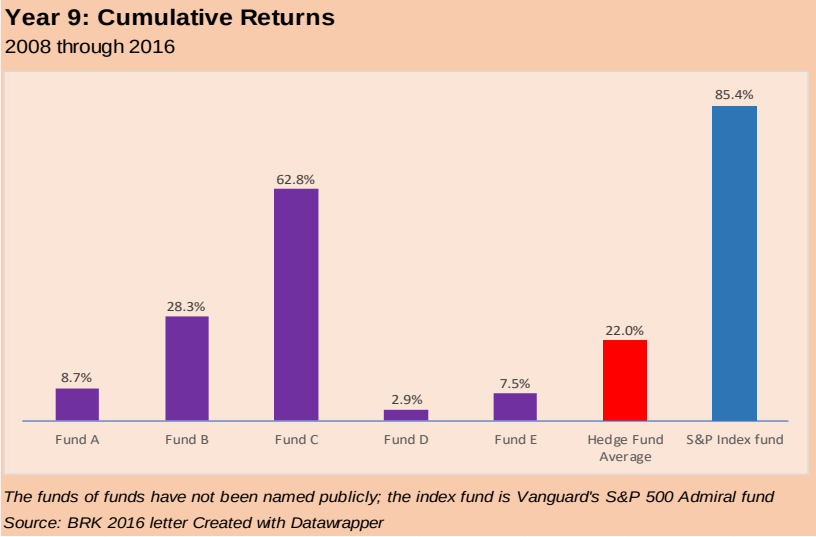
MVP, or were selected into the Pro Bowl. Good luck if you try to pick which one of the first-round college draftees will achieve such high status… even the NFL team managers cannot get it right, and they are professionals.

The experience at NV PERS was that no matter who we hired to actively manage a fund class, they cost millions of dollars in fees but the analysis of how often they beat the benchmark proved they were not worth the cost. Before PERS dropped its active managers, every month the PERS Board was either firing an active manager or hiring a replacement active manager, chasing those extra earnings over the benchmark. Why pay a fee premium on an actively managed mutual fund hoping it will beat its benchmark index by enough to pay for the extra fee? There is much less anxiety and effort if you just invest in the benchmark index through a low-cost, passively managed mutual fund.

Even with my accounting/finance background, personal investments always stymied me. I was never motivated enough to learn to manage my own portfolio of investments, and I was distrustful of brokers and managers pretending they knew how to get wealthy quick. As I stated in the opening paragraph, I understood well the time value of money, but I was unwilling or unable to devote the time needed to educate myself on investment choices.

Fortunately, I did not make any awful investment choices in the early years, nor did I chase the hot funds, but I did succumb to low contribution rates and even hardship withdrawals. Later, during my nine years with PERS, the Chief Investment Officer (CIO) spent half of each monthly board meeting educating the Trustees on their investment plan (The Nevada Plan). It was a simple plan that achieved a high investment return with the least amount of risk (i.e., the NV PERS Sharpe Ratio consistently placed it in the top quartile of large pension fund risk-adjusted performance). The Nevada Plan had its roots in simplicity and common sense, much like Warren Buffet's investment philosophy (founder of Berkshire Hathaway).

Like Warren Buffet, founder of Berkshire Hathaway, the PERS CIO believed that investing in the world's greatest economy should be simplified into fewer moving parts, and that the use of "indexed" mutual funds produce the best earnings with the lowest cost in the *long-term*. Hedge Funds bloomed in the 1990s catching the eyes of many short-thinking investors. In 2008 Buffet publicly bet that actively managed Hedge Funds would not beat the S&P 500 Index over the 9 years from 2008 through 2016. He won that bet by a sizable margin:



At this point you might appreciate the DC Plan's ability to create retirement wealth and understand the importance of disciplined and meaningful contributions as well as the avoidance of hardship withdrawals or Plan loans. But you might still be overwhelmed by the fund selection process.

If you have 30+/- years before retirement it might seem safe to invest a ***large*** percentage of your assets in an S&P 500 Index Fund (perhaps 100% if you are risk tolerant). Sometimes these funds show up with different names like Vanguard 500 Index Fund, Fidelity 500 Index Fund, State Street S&P 500 Index Fund, and Schwab S&P 500 Index Fund. This excerpt from Investopedia explains the significance of the S&P 500 Index:

> The Standard & Poor's 500 Index, or simply S&P 500, is a market-capitalization-weighted index of 500 large-cap U.S. companies that make up 80% of U.S. equity by market cap. It is widely regarded as the best gauge of large-cap U.S. equities and often referred to as "the market" because it is comprised of stocks that span all market sectors. Some of the S&P 500's largest components include Microsoft Corp. (MSFT), Apple Inc. (AAPL), Amazon.com Inc. (AMZN), Alphabet Inc. (GOOGL), and Facebook Inc. (FB).

The problem is that each DC Plan (the sponsoring employer and their contracted recordkeeper) creates its own fund lineup. (There are about 8,000 mutual funds available for selection, all vying for your fee payments which are netted out of your earnings so that you never really see or understand them.) Their fund lineup may not carry any of the passive index funds mentioned above. You may not find the words "S&P" or "500" in the fund lineup. When that happens, you need to settle for the next best. Look for the words "Large Cap Stock Blend" or "Large Cap Value." Your recordkeeper should provide a vehicle to learn about the fund, like a Morningstar Snapshot. If not just use the Fund's call letters to search for its Morningstar report. For example, searching for "Morningstar Snapshot FXAIX" will get you to the snapshot of the Fidelity 500 Index fund. You will see data like "Expense Ratio" or "Fee Level" which you want to be low. You will see a "Category" like "Large Cap Blend" which tells you it focuses on the large US corporate stocks. You will see a growth chart compared to the fund's benchmark index which indicates how closely it tracks the actual S&P 500 Index. (See **Appendix A** for an example of what to look for.) So, if no S&P 500 fund is offered, look up the Morningstar Snapshot for the "Large Cap" funds it does offer, finding the one that best tracks to the S&P500 index while costing low fees.

As you get closer to retirement, maybe somewhere in your 50s (or if you get a sick anxiety about placing 100% of your retirement in an S&P 500 Index Fund at any age), you simply balance the S&P 500 risk by adding an Aggregate Bond Index or a Stable Value fund. For example, the Vanguard Total Bond Market or iShares US Aggregate Bond Index Fund carry less risk (and of course less investment return) with a low Expense Ratio (fee) that tracks the Barclays Capital U.S. Aggregate Bond Index (an index that measures the performance of the US investment grade bond market, including a wide spectrum of public, investment-grade, taxable, fixed income securities in the United States – including government, corporate, and international dollar-denominated bonds, as well as mortgage-backed and asset-backed securities).

For even less risk, a Stable Value fund will invest in high-quality government and corporate bonds, short-term, and intermediate-term. They are no different from any bond fund, except they are ***insured***, sometimes called "wrapped" bonds. An insurance company or bank is contractually obligated to protect the fund's investors from any loss of capital or interest. This peace of mind means the investment returns are even lower, maybe 1% or so over inflation.

An example of balancing just two contrasting funds might look like this (one a higher risk/return fund like an S&P 500 Index expected to earn 6% annually in the long-term and one a lower risk/return fund like an Aggregate Bond Index fund expected to earn 3.5% annually in the long-term):

Fund (i.e Asset) Allocation						
Fund's Expected L-T Return		**100% Bond**	**75% 25%**	**50% 50%**	**25% 75%**	**100% S&P**
S&P 500 Fund	**6.5%**	**0.0%**	**1.6%**	**3.3%**	**4.9%**	**6.5%**
Aggregate Bond Fund	**3.5%**	**3.5%**	**2.6%**	**1.8%**	**0.9%**	**0**
Expected L-T Blended Return		**3.5%**	**4.3%**	**5.0%**	**5.8%**	**6.5%**

NOTE: these are made-up returns that may be lower or higher than recent history suggests, but the table's purpose is to illustrate how to buffer the equity risk with a lower-risk bond by spreading (allocating) your investment between these two funds, which also impacts your expected returns. In this example, if you were risk-averse and put 100% in the Aggregate Bond Fund you might expect to earn 3.5% annually, while if you were young and aggressive you might earn 6.5% annually with 100% in the S&P Fund. A "middle-ground" 50/50 split between the two funds will produce a blended 5.0% return.

This asset allocation process leads us into the concept of "rebalancing." Assume you split a $100,000 investment 50/50 between the Aggregate Bond Fund and the S&P 500 Fund and they performed exactly as expected above. Without rebalancing, this is what your results will look like after 10 years:

	Agg Bond		S&P 500		Total
	Dollars	Total	Dollars	Total	
Start	$ 50,000	50.0%	$ 50,000	50.0%	$ 100,000
Year 1	$ 51,750	49.3%	$ 53,250	50.7%	$ 105,000
Year 2	$ 53,561	48.6%	$ 56,711	51.4%	$ 110,273
Year 3	$ 55,436	47.9%	$ 60,397	52.1%	$ 115,833
Year 4	$ 57,376	47.1%	$ 64,323	52.9%	$ 121,699
Year 5	$ 59,384	46.4%	$ 68,504	53.6%	$ 127,889
Year 6	$ 61,463	45.7%	$ 72,957	54.3%	$ 134,420
Year 7	$ 63,614	45.0%	$ 77,699	55.0%	$ 141,313
Year 8	$ 65,840	44.3%	$ 82,750	55.7%	$ 148,590
Year 9	$ 68,145	43.6%	$ 88,129	56.4%	$ 156,273
Year 10	$ 70,530	42.9%	$ 93,857	57.1%	$ 164,387

While over the 10 years you performed better than the targeted 50/50 return of 5.0% (it was 5.1% on average for the 10 years), the real problem is that your risk tolerance has significantly shifted from 50/50 to 43/57 (a 14% spread), meaning you are taking on more risk than your plan assumed. The remedy for this is to "rebalance" to your target 50/50 blend periodically by moving money from the overweighted fund(s) to the underweighted fund(s). For the above example, you would halve the difference between the two funds ([$93,857 - $70,530] / 2 = $11,663.50) and transfer it from the overweighted S&P Fund to the underweighted Agg Bond Fund to restore your 50/50 target allocation. Most all recordkeepers offer automatic rebalancing on a quarterly or annual basis, or you can manually rebalance whenever you want (there are restrictions against rebalancing too often… usually a limit of so many per quarter or per year).

But there is even a better reason to rebalance. Markets fluctuate widely over time, especially the equity markets. In a strong Bull Market you might see an annual growth of 20% and then a in a Bear Market a loss of 30% (thank goodness Bull Markets average about 9 years while Bear Markets average about 1.4 years). Recall the concept of "buy low, sell high?" With mutual funds you are not actively buying and selling individual stocks or bonds, but you do make large aggregate "buy/sell" transactions when you transfer money from one fund to the other. Funds become overweighted when they grow faster than the others, and become underweighted when they grow less or even decline. When you transfer money from the overweighted fund to the underweighted fund you are essentially selling part of the overweighted fund at a high point to purchase more of the underweighted fund at its low point; you are locking in your recent gains in the overweighted fund to prepare for the market cycle where the underweighted fund starts gaining more than the overweighted fund. You are not timing market but rather selling off the recent gains to protect them in the less risky fund.

So, lets end this with two final charts. The first is a 90-year history of Bull/Bear Markets from 1927 through 2017 (although we technically entered a COVID19 Bear Market in March/April of 2020, the S&P 500 recovered very nicely finishing 2020 with a 19% gain). The main point here is that equity markets rise and fall, but ***mostly they rise***. The summary box on the upper left of the chart on page 13 says it all:

- The average **Bull Market** period lasted 9.0 years with an average cumulative total return of 472%.
- The average **Bear Market** period lasted 1.4 years with an average cumulative loss of -41%.

Do you think the 41% loss on the short-term *Bear* is worth the 472% gain in the longer-term *Bull*? It may depend upon variables like your age, retirement status, and other sources of retirement income. I think most will say "yes" until they get too close retirement to fully recover from a Bear Market, and even then most will stay in the stock market but buffer that risk by allocating more of their assets to the less risky bond funds.

The final chart on page 14 is a more detailed explanation about the need to rebalance using a simple and fun example. Do you invest in a ***suntan lotion*** company or an ***umbrella company***, and if you invest in both, how do you ensure you maximize your combined earnings through the bright sunny days and the dark clouds of the rainy days? If you do not rebalance, you will not achieve your targeted investment earnings. And remember, rebalancing is effectively how you "*buy low, sell high*" between your mutual funds. ***Make a plan, and then stick to the plan***.

That's it. That is as simple as I can make it. Simple works because it's easy to understand, but still somewhat difficult to implement because of the "emotions" surrounding the future. But a simple, long-term plan beats any plan that changes frequently to time the markets, forever chasing the hot stock, bond, or fund that tickles your ears.

All the best on your journey into retirement!

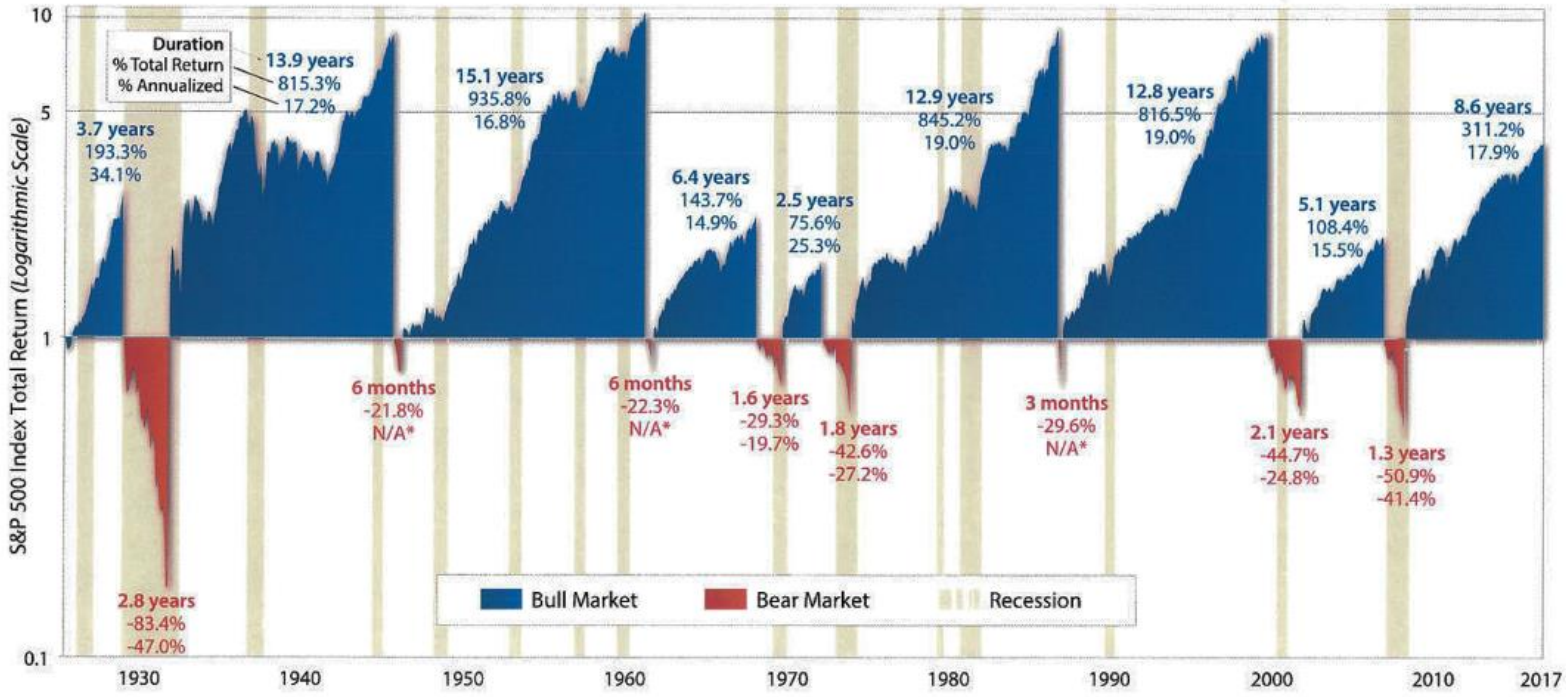
History of U.S. Bear & Bull Markets Since 1926

This chart shows historical performance of the S&P 500 Index throughout the U.S. Bull and Bear Markets from 1926 through September 2017. Although past performance is no guarantee of future results, we believe looking at the history of the market's expansions and recessions helps to gain a fresh perspective on the benefits of investing for the long-term.

- The average **Bull Market** period lasted 9.0 years with an average cumulative total return of 472%.
- The average **Bear Market** period lasted 1.4 years with an average cumulative loss of -41%.

Bull
From the lowest close reached after the market has fallen 20% or more, to the next market high.

Bear
From when the index closes at least 20% down from its previous high close, through the lowest close reached after it has fallen 20% or more.



Source: First Trust Advisors L.P., Morningstar. Returns from 1926 - 9/30/17.

The S&P 500 Index is an unmanaged index of 500 stocks used to measure large-cap U.S. stock market performance. Investors cannot invest directly in an index. Index returns do not reflect any fees, expenses, or sales charges. This chart is for illustrative purposes only and not indicative of any actual investment. These returns were the result of certain market factors and events which may not be repeated in the future. Past performance is no guarantee of future results.

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First Trust

The Need to Rebalance Asset Portfolios

	Expected Returns		
	Sunny	Rainy	Total
Suntan Lotion Inc.	20.00%	-10.00%	10.00%
Umbrella Inc.	-5.00%	10.00%	5.00%
Combined (50/50)	7.50%	0.00%	**7.50%**

Based on expected returns from different asset classes (US equities, Foreign equities, US bonds, Foreign bonds, etc.), ***rebalancing*** helps your portfolio lock in cyclical gains in preparation for the next market cycle.

In fact, without rebalancing your assets will underperform to your expectations over time.

Expected Total Return WITHOUT Rebalancing

	Begin	Sun	Mid-Point	No Rebalance	Rain	Final Total	Total Return
Suntan Lotion Inc.	$100.00	20.00%	$120.00	$120.00	-10.00%	$108.00	
Umbrella Inc.	$100.00	-5.00%	$95.00	$95.00	10.00%	$104.50	
Combined (50/50)	$200.00		$215.00	$215.00		$212.50	**6.25%**

Expected Total Return WITH Rebalancing

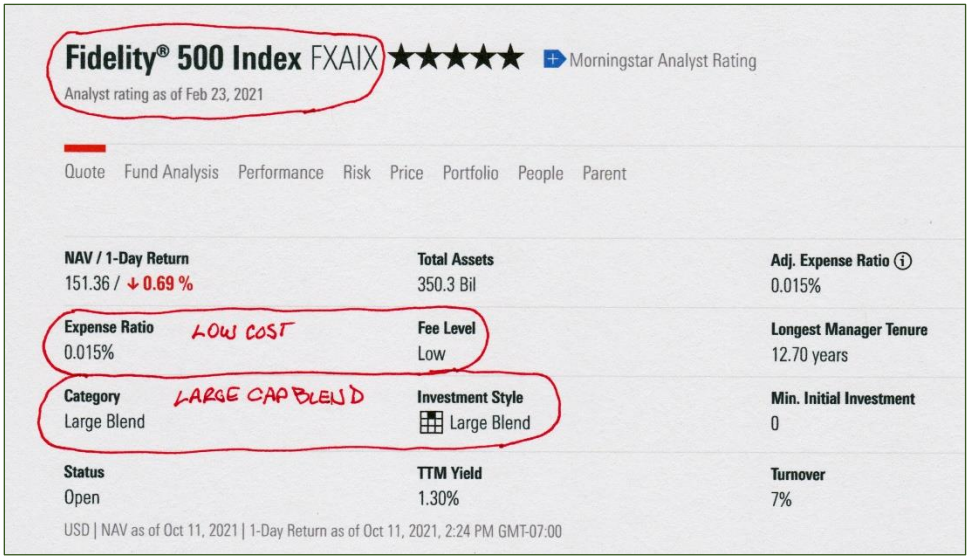
	Begin	Sun	Mid-Point	Rebalance	Rain	Final Total	Total Return
Suntan Lotion Inc.	$100.00	20.00%	$120.00	$107.50	-10.00%	$96.75	
Umbrella Inc.	$100.00	-5.00%	$95.00	$107.50	10.00%	$118.25	
Combined (50/50)	$200.00		$215.00	$215.00		$215.00	**7.50%**

Note that Suntan returns 10% by itself, while Umbrella returns 5% by itself. For this purpose assume Suntan is equivalent to a volatile S&P500 Index and Umbrella is equivalent to a less volatile Agg Bond Index, and that sunny is a Bull Market and rainy is a Bear Market. Although holding Suntan alone would return an annual 10%, the investor wants to buffer the expected 10% loss when it rains (the Bear) by holding Umbrella because it's correlation coefficient to Suntan is closer to -1. That will make the investor's 50/50 blend return an expected annual 7.50%... if it is rebalanced.

A failure to rebalance after the sun/rain cycles will actually produce a 6.25% return, lower than the expected 7.50%. In order to achieve the expected 7.50% return, the investor must rebalance after each sun/rain cycle.

It would be great if we rebalanced at the beginning of each Bull or Bear cycle, but because we can't time markets we have to watch our asset allocation so when they get off their target allocation, say by 5% (note that a 55/45 imbalance produces a 10% spread in this case, as 55% - 45% = 10%), we correct that by selling the overweighted asset to buy the underweighted asset during the market cycles (yes, it is counter-intuitive).

Excerpts From Sample Morningstar Report on **Fidelity® 500 Index Fund FXAIX**



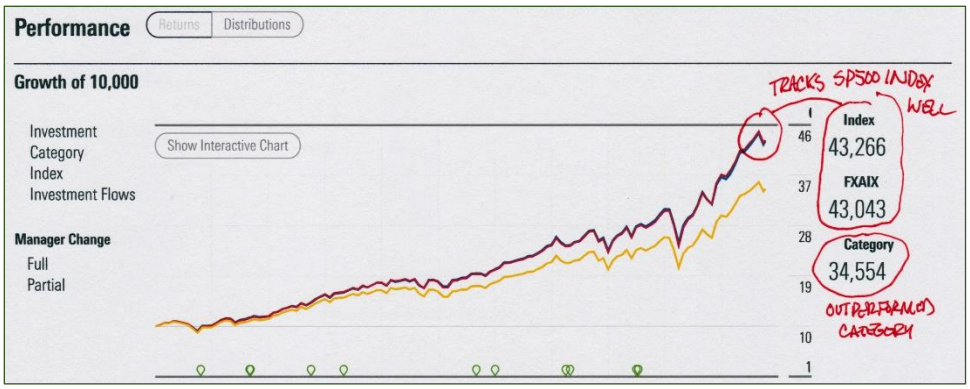
Fidelity® 500 Index FXAIX ★★★★★ Morningstar Analyst Rating

Analyst rating as of Feb 23, 2021

Quote | Fund Analysis | Performance | Risk | Price | Portfolio | People | Parent

NAV / 1-Day Return 151.36 / ↓0.69 %	**Total Assets** 350.3 Bil	**Adj. Expense Ratio** 0.015%
Expense Ratio 0.015%	**Fee Level** Low	**Longest Manager Tenure** 12.70 years
Category Large Blend	**Investment Style** Large Blend	**Min. Initial Investment** 0
Status Open	**TTM Yield** 1.30%	**Turnover** 7%

USD | NAV as of Oct 11, 2021 | 1-Day Return as of Oct 11, 2021, 2:24 PM GMT-07:00



Performance Returns | Distributions

Growth of 10,000

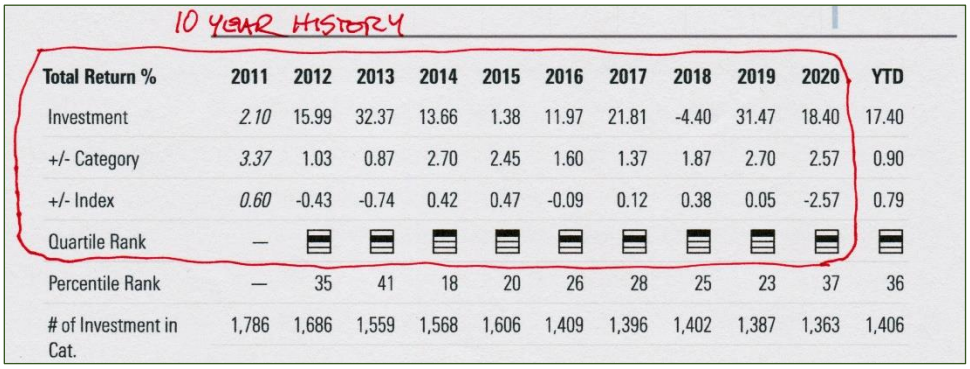
Investment
Category
Index
Investment Flows

Manager Change
Full
Partial

Show Interactive Chart

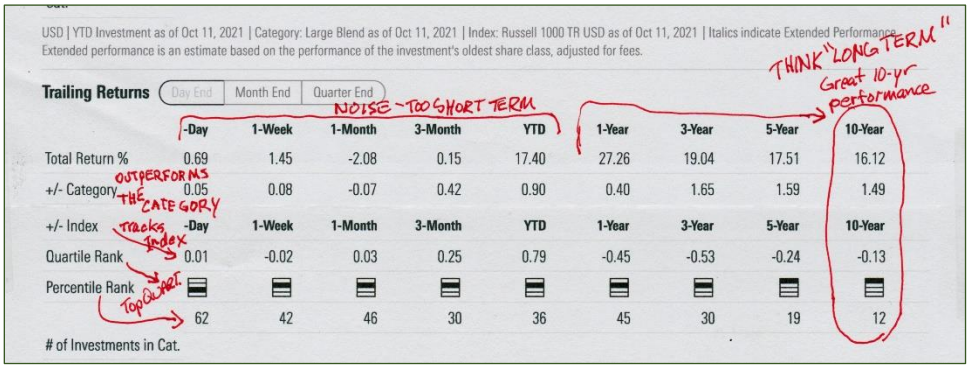
Index 43,266
FXAIX 43,043
Category 34,554

46 37 28 19 10 1



10 YEAR HISTORY

Total Return %	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD
Investment	*2.10*	15.99	32.37	13.66	1.38	11.97	21.81	-4.40	31.47	18.40	17.40
+/- Category	*3.37*	1.03	0.87	2.70	2.45	1.60	1.37	1.87	2.70	2.57	0.90
+/- Index	*0.60*	-0.43	-0.74	0.42	0.47	-0.09	0.12	0.38	0.05	-2.57	0.79
Quartile Rank	—										
Percentile Rank	—	35	41	18	20	26	28	25	23	37	36
# of Investment in Cat.	1,786	1,686	1,559	1,568	1,606	1,409	1,396	1,402	1,387	1,363	1,406



USD | YTD Investment as of Oct 11, 2021 | Category: Large Blend as of Oct 11, 2021 | Index: Russell 1000 TR USD as of Oct 11, 2021 | Italics indicate Extended Performance.
Extended performance is an estimate based on the performance of the investment's oldest share class, adjusted for fees.

Trailing Returns Day End | Month End | Quarter End

	Day	1-Week	1-Month	3-Month	YTD	1-Year	3-Year	5-Year	10-Year
Total Return %	0.69	1.45	-2.08	0.15	17.40	27.26	19.04	17.51	16.12
+/- Category	0.05	0.08	-0.07	0.42	0.90	0.40	1.65	1.59	1.49
+/- Index	-Day	1-Week	1-Month	3-Month	YTD	1-Year	3-Year	5-Year	10-Year
Quartile Rank	0.01	-0.02	0.03	0.25	0.79	-0.45	-0.53	-0.24	-0.13
Percentile Rank									
# of Investments in Cat.	62	42	46	30	36	45	30	19	12

Appendix A