5-2013

Investment in Treasury Bills as a Means of Stock Portfolio Revenue Generation

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An honors thesis presented to the
School of Business,
University at Albany, State University of New York
in partial fulfillment of the requirements
for graduation with Honors in Business Administration
and graduation from the Honors College

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May, 2013

Abstract

In a world with differing opinions regarding capital investments, it is necessary to understand the expected returns for each investment option an investor may exercise. All investors seek maximum returns on their investments, and here the study evaluates the projected incomes of initial investments when exposed to two different strategies. Approximately $36,000 was invested into each, a portfolio of stocks entered into a Dividend Reinvestment Plan, and a portfolio of stocks exposed to a new strategy. This new strategy was a risk averse alternative to the DRIP and its portfolio market value was compared to that of the DRIP portfolio for eleven years. The immediate purposes of this study are 1) to measure the effect that dividend reinvestment has on a high dividend yielding portfolio, and 2) analyze the implications of using these dividend payments as capital for treasury bill investments. The findings of this thesis can be used by investment managers to implement new strategies that go beyond the realm of typical investment approaches.

Acknowledgements

The last year has been extremely hectic, finishing my Bachelors Degree while simultaneously beginning my MBA, and writing my thesis. None of this would have been possible without all of the people in my life. First I would like to thank Professor Haugaard and Professor Shawky for their assistance in forming my research ideas into an organized paper. They were able to answer any questions I had throughout the planning and writing process, and were always around to lend a hand. Also, a special thank you to Professor Haugaard for his nominations and references for various awards, and graduate school applications. I would also like to thank my parents for doing everything in their power to make sure I was raised with a good head on my shoulders. They have instilled in me, a sense of ambition and motivation. It is with this in mind that I have been able to achieve success in all of my endeavors. None of this would be possible without all my parents have done for me. Additionally, I would like to thank my roommates for putting up with me through the relaxing college semesters as well as the very stressful ones. I hope that I have been as good a friend to them as they have been to me. Lastly, I would like to thank my Grandpa Norman for sparking my interest in the financial world. Although we do not see each other as much as we would like, the field of finance has bridged the gap between us and our love for the mental challenges associated with investing will be always be a commonality among us.

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I. Introduction

For decades, individuals, teams, and entire corporations have dedicated their careers to solving the question of how to make an investment most profitable. Hundreds of investment strategies have been designed in efforts to elucidate this problem, and there is not one single "right" answer. Many papers have been published to convey ideas about a newly constructed approach or analyze a pre-existing one. This paper will primarily focus on a new strategy in which investments are comprised of high dividend yielding stocks, in which the dividend payments will be withdrawn on a quarterly basis and invested into 3-month treasury bills.

I.1. Motivation

At the beginning of Summer 2012, I was riding the Long Island Railroad into the city, the same way I had every morning on the way to my internship. I was considering different ways to increase returns on my personal investment portfolio when I began to come up with a strategy involving interest rates. I figured that it would be a good idea to use the bank as a means of compounding my returns on a monthly, quarterly, or yearly basis. As I began to write these ideas down, it became evident that I was going to take my dividend payments and invest them either in short term securities or certificate of deposits (CDs) in order to increase returns on my payments.

After deciding that I would use dividends as a means of increasing returns, I knew that I would have to use a portfolio comprised of high dividend yielding stocks. I thought it would be very interesting to see if I could generate larger returns

between the portfolio's value over time and the compounded dividend payments, than if I had just invested in each company and entered my holdings into a Dividend Reinvestment Plan (DRIP). I was very excited to select the components of my portfolio and assess how the strategy performed compared to the performance of the S&P 500 and the typically chosen DRIP.

Upon completion of this study, we will have a better understanding as to whether it is more profitable to enter securities into DRIPs, or to take the dividends from those same securities and invest them in short term T-bills.

I.2. Portfolio Composition

The portfolio of securities for this observational study was carefully assembled based on a combination of several factors. The first filter was to locate only companies in the S&P 400, S&P 500, and S&P 600. Standard and Poor's (S&P) prides itself as being "the world's largest provider of financial market indices with a longstanding tradition of providing investable and benchmark industries" (1). As such, S&P provides me with a reputable source to choose small-cap, mid-cap, and large-cap stocks from.

The next step was to search for companies with high dividend yields. The nature of the investment strategy focuses on high quarterly dividend payments, and therefore a large dividend yield was necessary. I decided that there should be a minimum annual dividend yield of 4.5% for the majority of the study period. During the eleven-year testing period of 1997 to 2007, a few stocks' dividend yields fell

below the 4.5% minimum, however the company was passed through the filter if the majority of the annual yields were above that percentage.

Finally, the pool of stocks was filtered again on a basis of volume. Although there was no volume minimum, it was necessary to see if the stocks were liquid enough to trade on a consistent basis. This was the case for most of the stocks, as S&P covers predominantly well-known securities. A few stocks were not liquid enough, and faced periods of no trading volume, and were therefore deleted from the portfolio. Lastly, all American Depository Receipts (ADRs) were removed, as they may have an adverse impact on the study results due to their difference in reporting regulations.

After all of the filters were applied, I was left with a diversified portfolio of 36 stocks from the energy, services, utilities, financial, consumer cyclical, consumer noncyclical, and technology sectors. Additionally, the portfolio consists of stocks with large, small and medium sized market capitalizations. There are three energy, one technology, twelve services, thirteen utilities, four financial, one consumer cyclical, and two consumer noncyclical stocks. It is clear that there are far more services and utilities companies that steadily pay out large dividends, than seen in the remaining sectors. These other sectors may also have securities with high dividend yielding stocks, however they were not included in this study due to their lack of coverage by Standard and Poor's.

I.3. Literature Review

Numerous studies have been performed with the motive of demonstrating the effectiveness of dividend reinvestment plans. This investment strategy will expand on these DRIP studies by proving whether or not the dividend reinvestment plan beats the returns of a portfolio even when returns are compounded.

In a study of overall returns of stocks from 1962 to 1989, Joseph P. Ogden of SUNY Buffalo, proves that returns are positively related to stocks' dividend payments. As the dividend payments for a security increase, it can generally be assumed that the overall return of that security will increase as well. This should be expected, as the company is rewarding its shareholders when it has a successful quarter. The study also proves another interesting point by describing the relationship between stock returns and investors' ability to enter dividend reinvestment plans. This is also a positive relationship, illustrating that securities which can have dividends reinvested automatically, will generate higher overall returns. "These findings are consistent with a tendency by stock-holders to reinvest dividend income into the stock of the paying firm, thereby increasing demand for the stock and raising its price" (2).

Other studies of stock returns also prove that investments in dividend yielding stocks produce greater returns for investors than stocks that do not pay out excess earnings. In an article entitled "Dividends with Room to Grow" from Kiplinger's Personal Finance, David Landis states that dividend-paying stocks are the "working-class heroes" of the stock market. He goes on to point out that since 1980, dividend-paying members of Standard and Poor's 500-stock index have on

average gained 15% annualized. That compares with an annualized return of 13% for companies that do not pay dividends. “The difference, says S&P analyst Howard Silverblatt, roughly equals the index’s average dividend yield over the period” (3). A consistently seen higher return is one of the major reasons that investors elect to purchase stock in dividend-paying companies. There are other advantages as well. These include financial stability, and growth as well. According to Indexarb.com, the S&P 500 consists of 410 companies that pay regular dividends, and 90 companies that do not (4). This proves that the larger, and better-respected companies pay dividends to their shareholders. The dividends are indicative of stability in the company, and investors can remain confident that they will be paid on a regular basis as long as the company continues to perform.

There are various other forms of research and investment strategies that deal with investing in high dividend yielding companies over both the short and long term. However, none of the research that I have come across deal with investing dividend payments into short-term t-bills. This strategy will expand further on the ordinary dividend reinvestment plan.

I.4 Statement of Hypothesis

In most studies the returns of stocks in dividend reinvestment plans are compared directly with the capital returns of a portfolio that isn't involved in the DRIP. This study will compare DRIP returns of a specified portfolio with the capital returns of the portfolio, paired with the returns of the portfolio’s dividends after being placed in three-month treasury bills. Each quarter, the portfolio's dividend

payments will be put into a collaborative fund and invested into a three month T-bill. Upon expiration of the T-bill, the subsequent dividend payments from the thirty-six stocks will be added to the fund, and invested into another three month T-bill. This will continue for the specified eleven-year period ranging from Quarter 1 of 1997 to Quarter 4 of 2007. After the eleven years, the collaborative dividend fund will be added to the total value of the T-bill portfolio in efforts to compare that total value with the total value of the portfolio when exposed to a dividend reinvestment plan.

The study will use the same stocks in both the "DRIP Portfolio" and the "T-bill Portfolio" and use the "DRIP Portfolio" as a control group. Additionally, we will be using the SPDR S&P 500 ETF Fund (Symbol: SPY) to track the performance of the portfolio versus the performance of the S&P 500 over the same time period. This well help answer the question of whether the new strategy works, or if the returns simply coincided with gains seen by the market. In essence, we are testing whether or not this new strategy of investing dividend payments into T-bills will be more profitable than entering all of the investments into DRIPs, and if these gains are merely attributed to the gains or losses of the S&P 500.

In my opinion, the strategy that uses T-bills to generate returns on dividend payments (will be referred to as "TB Program" or "TBP" for the remainder of the paper) will overall be more profitable than the DRIP strategy. The reason for this theory is that using the latter strategy is much riskier than the former. Whereas a DRIP exposes the dividend payments to more risk by purchasing more shares of

each stock, the TB Program removes the risk. In the TB program, the dividend returns are placed into different securities to mitigate risk. Additionally, the securities that the dividend payments are being placed into are subject to extremely limited risk. In fact short-term t-bills are the safest financial instruments one can invest in.

While riskier investments generally have a larger return on investment (necessary to entice someone to invest), I believe the overall value of the DRIP Portfolio will suffer due to decreases in share value. The impact of these decreases will also have a greater impact on the portfolio value due to the increasing position in the stock every quarter. Contrastingly, funds in the TBP will be guaranteed to have some form of growth because the dividend payments will be growing at a specific rate determined by the Federal Reserve Bank. There will be less volatility in the portfolio value of the T-bill Portfolio because less funding will be allocated to the volatile stock market. While both portfolios can face large fluctuations in value due to various factors seen in the market, the DRIP Portfolio will face much larger swings because of its increased stake in the stock market.

All things considered, the mitigated risk of the TBP should allow for a much steadier growth of the portfolio's total value, and this is what I will base my hypothesis on. The T-bill Portfolio's value in Q4 of 2007 should be greater than the DRIP Portfolio's value in Q4 of 2007 due to mitigated risks associated with T-bills. I also believe that the returns on my portfolio will beat the returns of the S&P 500

(tracked using the SPDR S&P 500 ETF Fund) due to my portfolio's composition of high-paying dividend securities.

II. Data Description and Analysis of Study

The findings of this study could not be attained without the use of years of quarterly data, as well as a way to make sense of this data. This section will be attributed with explaining the way in which the data was obtained, and what can be assumed from the data trends. The intricacies of the research should provide concrete evidence as to whether or not the TBP was successful in beating both the DRIP and the S&P 500 over the same years.

II.1. Obtaining the Necessary Data

To perform a study reliant on data, it is imperative to draw figures from a reliable source. In this case, the data was queried using Compustat, a leading provider of financial market intelligence (5). This query provided me with details of all thirty-six stocks in the portfolio, including share price at the end of every quarter from 1997 to 2007, as well as the corresponding dividend payment for each quarter. I was also able to obtain the price and dividend payments of the SPDR S&P 500 ETF Fund for the same period with the help of Compustat.

The specified date range for this study was selected in order to have a sufficient time period to notice trends, while simultaneously avoiding any major financial crises. Although the "dot-com bubble" occurred during the time we focus on for the study, the portfolio value should not have been greatly affected, due to the

lack of technology stocks in the portfolio. This eleven-year period provides a suitable length of time, coupled with rather normal market volatility.

Even with access to Compustat's database, not all of the necessary figures were supplied with the Compustat query. To solve this issue, the remaining data values were obtained using Google Finance's recorded historical stock prices and dividend payments. This was not a common practice throughout the acquiring of data for the study, however it was used as an alternative for finding accurate information.

II.2. Data Manipulation

After attaining all of the data values, they were input into a Microsoft Excel file for manipulation. Each company and its financial information had to be kept organized and separate from the other companies. The price data of each stock was transposed in a horizontal fashion with its corresponding dividend listed directly below. For purposes of the study, it was decided that the portfolio should not be weighted in terms of market capitalization, but instead to initially invest approximately $1,000 into each stock. The next steps varied, as the techniques needed to be altered between the DRIP Portfolio and the T-bill Portfolio.

II.2.i. DRIP Portfolio Data Manipulation

First I needed to see how many shares could be purchased in Q1 of 1997 for each security. The amount of shares I was able to purchase varied, depending on the price of the stock at Q1 '97. To calculate the shares available for purchase, I simply

divided $1,000 by the price of the stock. All decimals were rounded down, as it is not practical to buy fractions of a share.

To explain the next step, it is essential to understand how a dividend reinvestment plan works. Companies allow their shareholders the option to enter into a DRIP, which is explained by Investopedia as "a plan offered by a corporation that allows investors to reinvest their cash dividends by purchasing additional shares or fractional shares on the dividend payment date" (6). To clarify further, the dividends that each company in the portfolio paid out, were reinvested into the company at the time of payment, allowing the portfolio to accumulate more shares. See Figure 1 as an example. In Q1 '97, 19 shares of AT&T Incorporated were purchased at a price of $52.50. The total value of this holding was $997.50, which was calculated by multiplying the stock price by the number of shares purchased. Additionally, AT&T paid out a dividend of 87.75 cents for Q1 '97. Looking at Q2 '97, the amount of shares currently in the portfolio is larger, because the Q1 dividends were used to purchase more shares. We can see that the total value of the AT&T holdings has increased, not only because the share price increased, but also because the portfolio has a greater amount of AT&T shares. As previously stated, not all companies in the study paid a dividend every quarter, which is exemplified in Figure 1 as well. For Q2 of 97, AT&T did not pay out a dividend so no additional shares were purchased. The number of shares did not change between Q2 and Q3, and the total value only changed relative to the change in stock price.

Figure 1

Symbol	Company		Q1 97	Q2 97	Q3 97	Q4 97
T	AT&T Inc.					
		Price	52.5	61.875	61.437	73.25
		Dividend	0.8775	0	0.4475	0.4475
		Shares	19	19.3175714	19.3175714	19.4582784
		Total Value	997.5	1195.27473	1186.81364	1425.31889

Using the DRIP method, as long as dividends are paid to investors, the number of shares invested in each company will continue to rise. This will, in most cases, lead to higher returns than just receiving cash dividends every quarter.

II.2.ii. T-bill Portfolio Data Manipulation

Similar to the DRIP Portfolio, it was necessary to calculate the initial number of shares the portfolio would possess of each stock. This portfolio, following the TBP, would not acquire more shares as the company paid dividends. Instead these dividend payments would be separated into a new fund, called "T-bill investment". Without reinvesting dividend payments into the company, the number of shares held by the portfolio would remain static. This can be seen in Figure 2, which illustrates the holdings of AT&T from Quarter 1 of 1997 to Quarter 4 of 1997 in the T-bill portfolio. Using this strategy, each company's quarterly dividend is multiplied by the number of that company's shares held in the portfolio. This number, calculated each quarter, is denoted as "New T-bill Investment". This method also differs from the DRIP in that the rate of 3-month treasury bills are used to increase the value of the dividend payments. Looking at Q3 '97, there is an additional $8.5025 to invest in a 3-month T-bill. The $8.5025 is added to the previous quarter's Total T-bill Investment, which has appreciated at a rate of the previous quarter's treasury rate. This is calculated and displayed in the subsequent quarter's Total T-

bill Investment. To further clarify, the Total T-bill Investment of $25.43 seen in Q3 '97 is comprised of the newly acquired $8.5025 (from that quarter's dividend payment), plus the previous quarter's Total T-bill Investment, which has grown by .8%.

Figure 2

				Q1 97	Q2 97	Q3 97	Q4 97
			Treasury Rate	0.008	0.008	0.008	0.008
T	AT&T Inc.						
			Price	52.5	61.875	61.437	73.25
			Dividend	0.8775	0	0.4475	0.4475
			Shares	19	19	19	19
			New Tbill Investment	16.6725	0	8.5025	8.5025
			Total Tbill Investment	16.6725	16.7975438	25.4317778	34.1258708
			Total Value	1014.1725	1192.42254	1192.73478	1425.87587

After determining the Total T-bill investment of each stock for every quarter, the Total Value of each holding is calculated by adding the Total T-bill Investment to the product of the share price and number of each company's shares in the portfolio. Both the DRIP portfolio and T-bill portfolio use their respective methods to calculate the overall values of each stock over time, illustrating the growth of each investment when different strategies are applied. The values of all stocks in the portfolios are then summed to yield the Overall Portfolio Total Value for both portfolios, which we will see in the following section.

II.3. Data Analysis

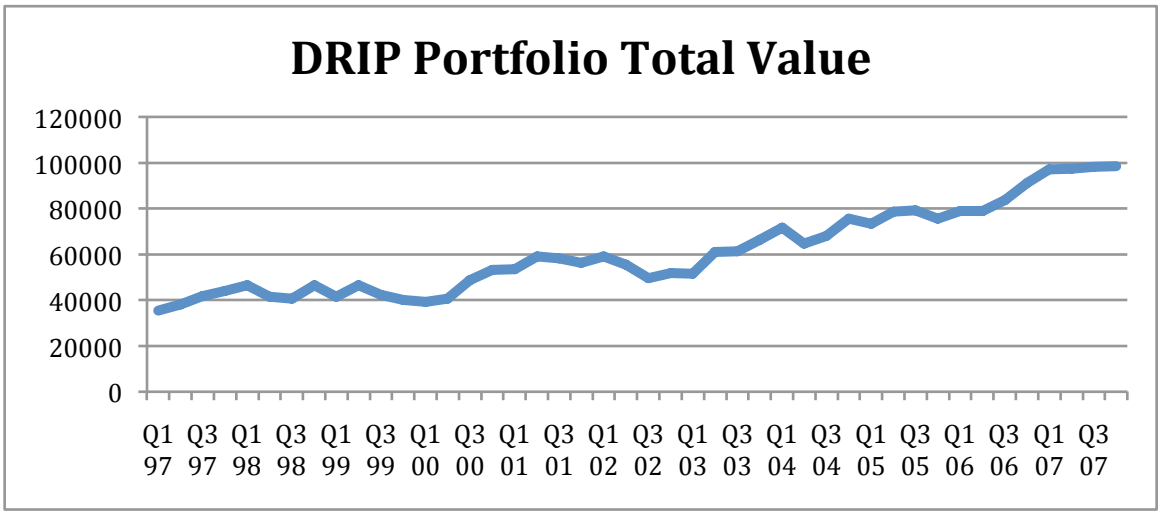
After entering the data in an organized fashion, it was time to examine the trends, and evaluate my findings. This was done separately on the DRIP portfolio and T-bill portfolio to prove or disprove my original hypothesis that the T-bill

portfolio returns would be greater. Both portfolios were also compared with the performance of the S&P 500 when exposed to their respective strategies.

II.3.i. DRIP Portfolio Analysis

As stated earlier, all thirty-six stocks were weighted evenly and approximately $1,000 was invested into each one. This gave the portfolio a starting value of $35,458.52. As expected, the total portfolio value began to increase, however the value did not grow each and every quarter. Market conditions had an apparent impact on the stock prices, which consequently altered the value of the portfolio. When the study was half over, in Q2 of 2001, the portfolio value had risen over 67% to $59,244.42. This was a demonstration of massive gains that came as a surprise to me. By the end of the study in Q4 of 2007, the total portfolio value was $98,599.02. This illustrated a 178% return in just eleven years. This rapid overall growth can be seen in Figure 3 below.

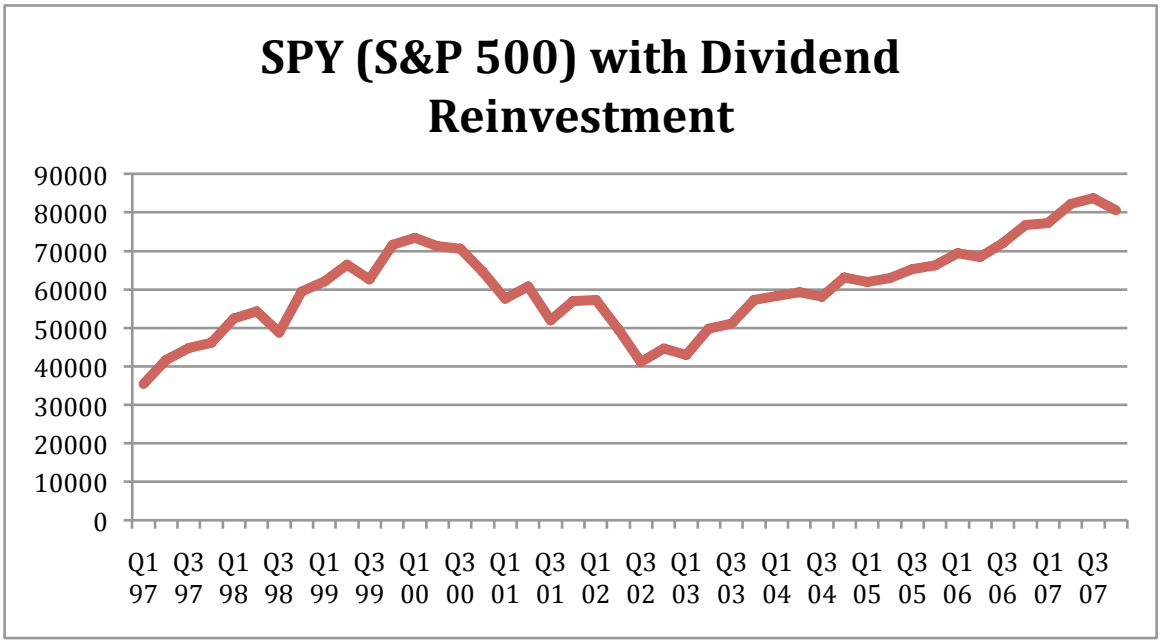
Figure 3



As seen in the graphic, the initial years did not have steady growth, and instead had varying gains and losses. After Q2 of 2000 however, there was a large jump in portfolio value and this initiated a series of profitable quarters. It is important to remember that each quarter, the number of total shares increased, but the value did not always increase from quarter to quarter. However, over the long-term, the total DRIP portfolio value grew substantially.

It was also necessary to see how each portfolio performed when compared to the S&P 500. As explained earlier we used the SPDR S&P 500 ETF Fund (SPY) to track the S&P 500's progress over time. This was a good measure of performance, and also paid out dividends relative to the dividends that the companies it tracked paid out. The same initial value of $35,458.52 was invested into SPY and its progress was tracked while being exposed to the same DRIP strategy.

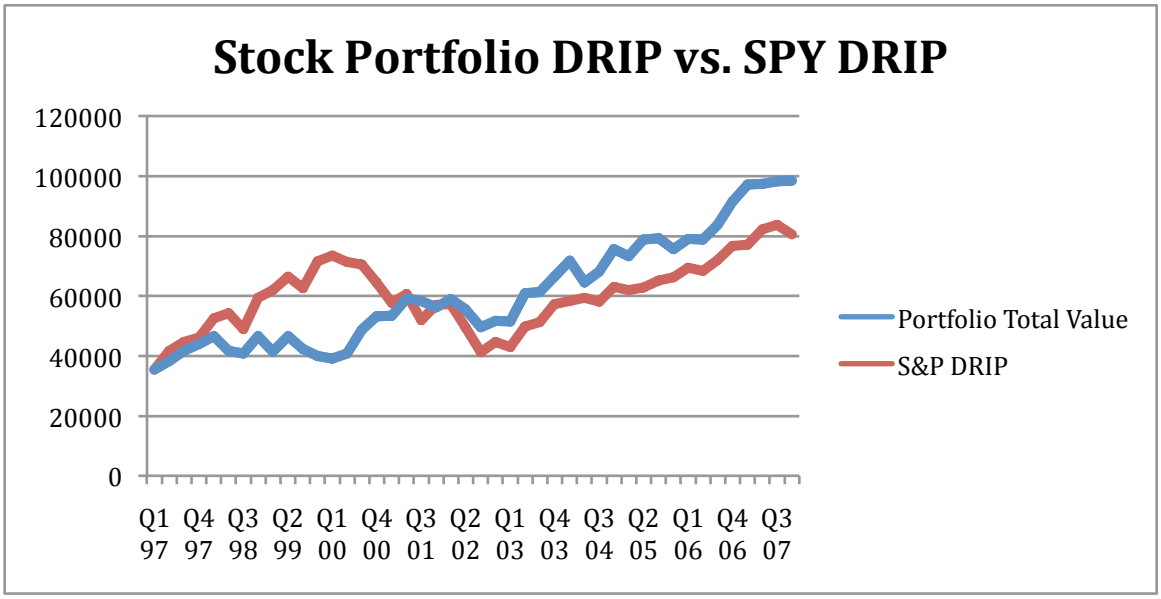
Figure 4



As seen in Figure 4, at the start of the study, there was very steady growth, which came to a halt in 2000. After a large plummet in stock value, things turned around in 2002, and the value began steadily increasing once again.

A comparison can be made between the DRIP portfolio and SPY performance over the eleven-year study period by overlaying the two graphs (See Figure 5 below).

Figure 5



The graphed lines start out together, as the same dollar amount was invested into each the stock DRIP portfolio and SPY DRIP. Just as hypothesized, the stock DRIP had a much less fruitful start. The risks associated with dividend reinvestment in a small portfolio kept the overall value from growing very much in the short-term. The SPY however is made up of various companies and therefore as the overall market performed well, the SPY grew rapidly. As previously addressed, in 2000 the SPY declined which ironically showed a negative relationship to the

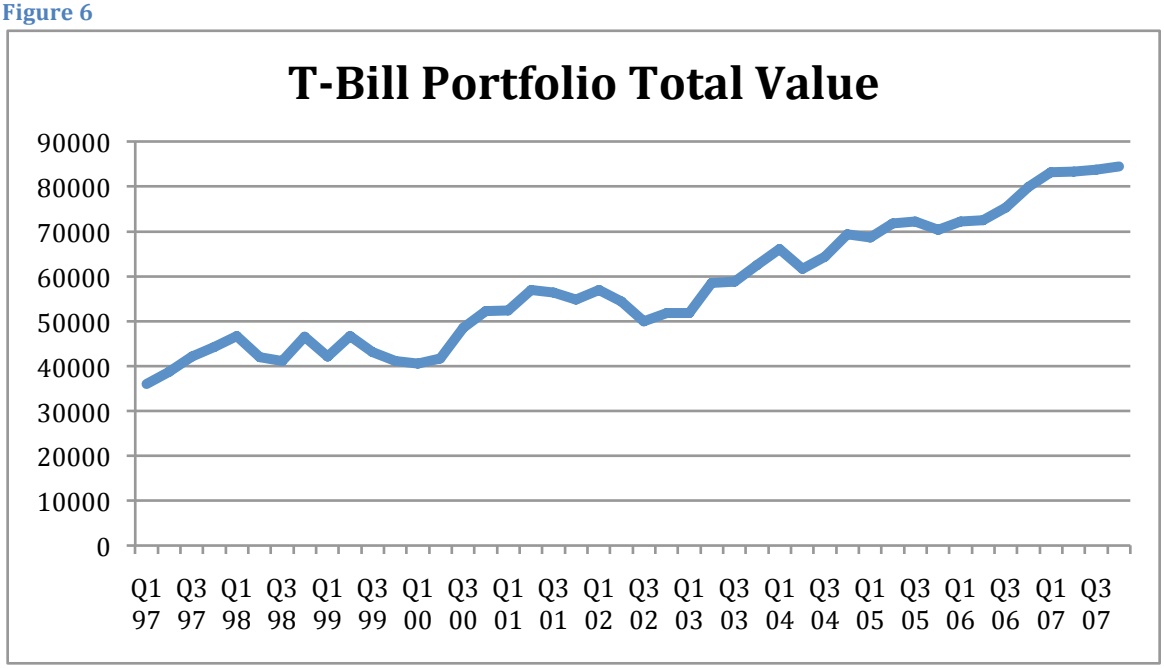
growth of the stock DRIP portfolio. As the SPY value began its descent to approximately $40,000, the stock DRIP portfolio began its ascent. Beginning in 2003, the SPY and the stock DRIP portfolio demonstrated a positive relationship trending towards positive returns.

At the conclusion of the study (Q4 2007) the total value of the money invested in SPY grew to $80,598.74. This represents a 127% growth over 11 years. Over the same period of time, a 178% increase was seen from the initial investment made in the stock DRIP portfolio. After analyzing these figures, it is evident that the overall performance of the stock DRIP portfolio would have been of greater benefit to an investor than if he put the same capital investment into the overall market while still using the DRIP strategy. In this instance, it can be asserted that the riskier investment paid off over the long-term.

II.3.ii. T-bill Portfolio Analysis

The T-bill portfolio started out with the same initial investment as the DRIP portfolio, and was subjected to a different investment strategy for the next eleven years. Similar to the DRIP portfolio, the T-bill portfolio immediately demonstrated growth, however it was not sustained, and began to see a decline in value. By Q1 of 1998, the value of the portfolio reached $46,740.66, and within two years time, that value had decreased to just over $40,000. This frequent volatility was again, due to the movements in the overall markets and could not be avoided. However, as will be explained later, depositing the dividend payments into treasury bills rather than investing the payments back into the companies mitigated some of the risk.

Figure 6

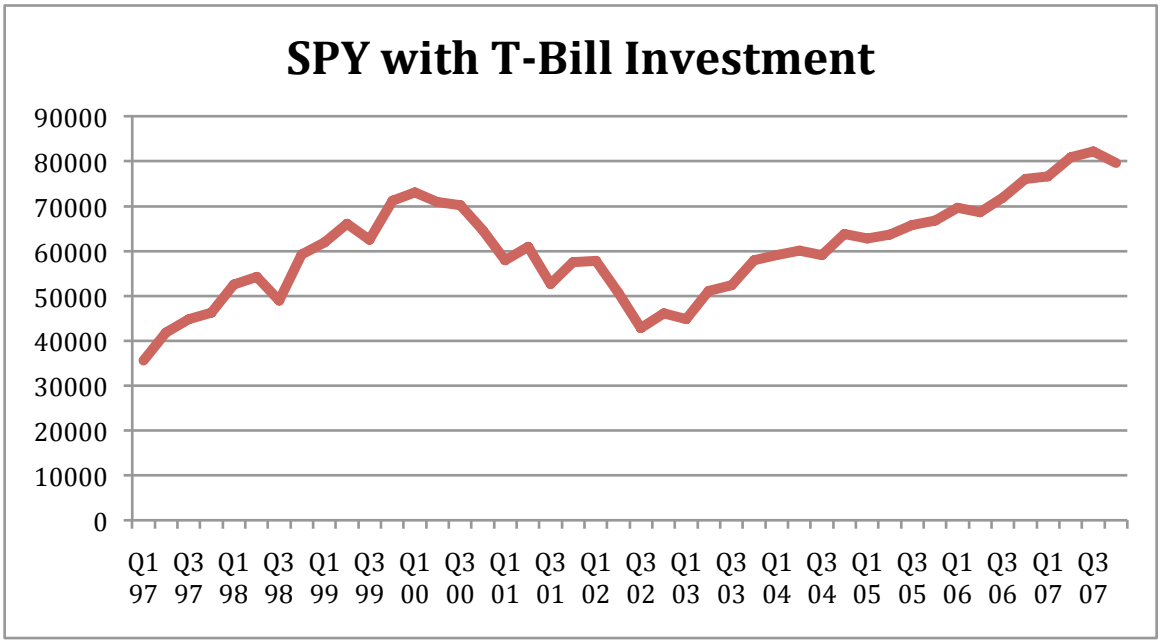


As is seen in Figure 6, the first three to four years of observation did not result in massive gains. It was not until 2000 that the market began to exhibit steadier patterns of growth, influencing the portfolio in a positive manner. With the dividends being invested elsewhere, there was reduced risk and therefore somewhat steadier growth. This was due to a static number of shares of each company in the portfolio. At the end of the observation period, the initial investment grew from approximately $36,000 to $84,451.27, demonstrating a gain of 135%. This is a very large increase in value over such a period.

The T-bill portfolio's performance was also compared with the performance of the S&P 500, which was represented by SPDR S&P 500 ETF Fund (SPY). The capital investment and dividend payments were subject to the same rules and strategy as the T-bill portfolio, and the results were analyzed as well. The SPY value

increased from $35,458.52 to $79,648.05 representing a 124% growth over the eleven-year period. This can be seen in Figure 7 below.

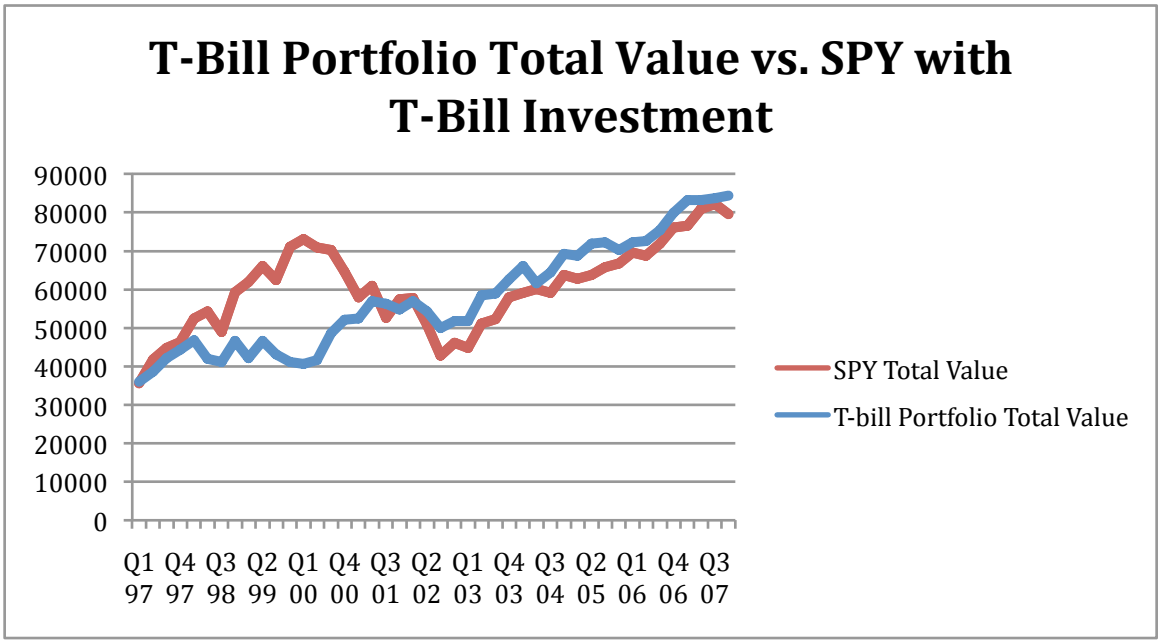
Figure 7



A comparison of the T-bill portfolio and the SPY investment under the T-bill strategy can be seen in Figure 8, wherein many trends have been noticed. There is a large initial growth of SPY from 1997 to 2000. It then has a large decrease in value to around $42,000 in 2002. This volatility was unexpected, as it is only subject to market risk, and a much safer investment strategy. This is expressed as the red line in Figure 8. The blue line, which represents the total value of the T-bill portfolio, has a much less volatile beginning, and then shows a rapid increase in value around the year 2000. The intersection of the two lines may be a direct result of the "dot-com bubble" bursting. This assumption can be made because the overall market

experienced great losses, however the T-bill portfolio would not be as affected by those losses due to its composition of very few technology companies.

Figure 8

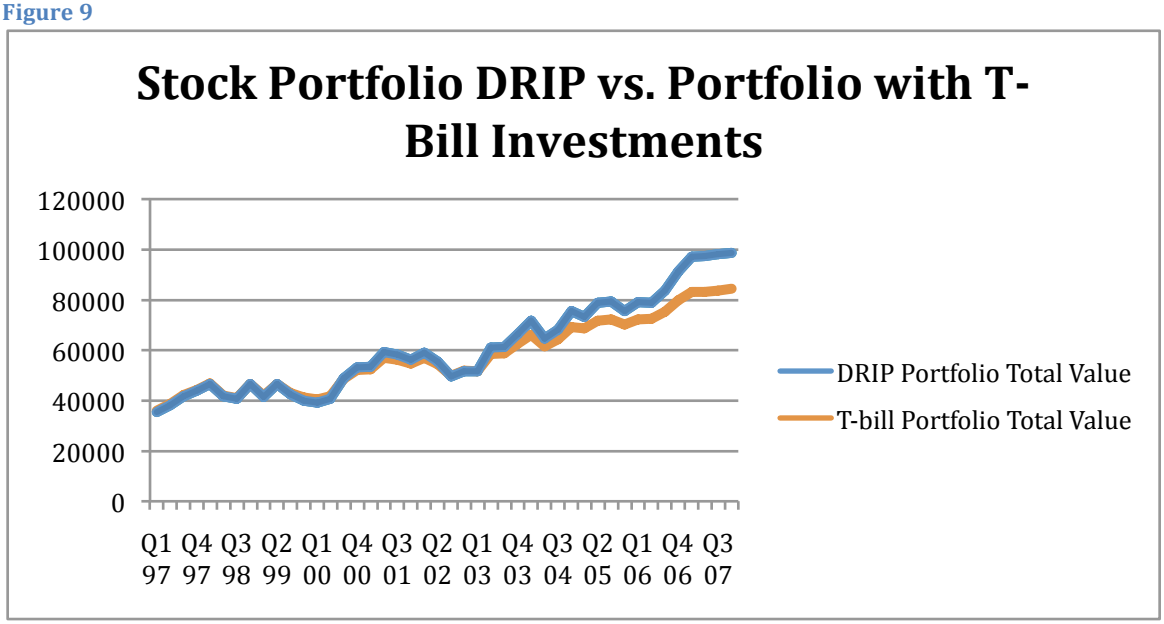


After 2003, when the market began to proliferate, the values of both the T-bill portfolio and SPY under the T-bill strategy began to grow. Until the end of the observation period in 2007, the values increased with a noticeably large correlation. Again, as the T-bill portfolio was riskier, it exhibited larger returns than the S&P 500, which was only subject to market risk.

II.3.iii. Comparison of Portfolio Results

The DRIP portfolio, for purposes of this study, was used as a control group. In order to accurately analyze the results, a comparison of the T-bill portfolio value to the DRIP portfolio value was imperative. Figure 9, establishes a base for making these comparisons.

Figure 9



This graph, comparing performance of the two investing strategies, illustrates that their respective values were very much correlated. When one portfolio value increased, the other did as well, and the same could be said about decreases in market value. There were frequent intersections of market values due to the portfolio's close proximities, but generally maintained their positive relationship with one another. It was not until more than half of the observation period was over that the DRIP portfolio begun to noticeably outperform the T-bill portfolio.

The portfolios were comprised of the same stocks to act as a control, with the efforts of seeing total portfolio values affected solely by investment strategy. The DRIP portfolio was exposed to greater risk by reinvestment, whereas the T-bill portfolio's risk was mitigated from diversification in other securities. In the beginning of the study, the T-bill portfolio was more valuable because the market

sectors that the portfolios were involved in demonstrated instability, so when stock values went down, the T-bill portfolio had less stake in the declining market. Overall the market experienced larger growth towards the end of the observation period, therefore adding large growth potential to the portfolio with more capital invested in the market. As repeatedly stated, this was the DRIP portfolio, and over the long-term, the DRIP portfolio outperformed the T-bill portfolio by 43% in the observation period.

III. Conclusion

As with all research, the underlying goal is to prove an idea or learn about an otherwise unaddressed situation or question. This thesis in particular dealt with the question as to whether it was more or less profitable to invest dividend payments from securities into treasury bills. With databases full of information, it was more than possible to put this question to the test and reject/fail to reject my hypothesis. Overall this was a great experience to learn about the profitability of various securities when exposed to different investing strategies.

III.1. Hypothesis Realizations

My hypothesis, as stated in section I.4. explains that the T-bill portfolio would experience larger gains in market value over the eleven year period because it was more inclined to have a steady growth trend. After completing the study, it became evident that due to the success of the market, the riskier strategy was more profitable. This would not have been the case if the market had performed poorly over the same time-span. With more stake in the growing markets, the DRIP

portfolio was able to increase its value at a much more rapid rate than the T-bill portfolio, which had a portion of its funds invested in risk-free, low yielding treasury bills. In a stock market situation, people are more tolerant of risky securities if there is a longer holding period. My research supports this trend, which is evidenced by having larger returns in the DRIP portfolio. The DRIP portfolio did not have large gains at first, but over the long-term, the market performed well, and would have rewarded its DRIP portfolio investors. This is lucid evidence as to why it is necessary to reject the hypothesis that the TBP would boast larger returns than the DRIP portfolio. If the strategies were applied to the same portfolios but in a shorter observation period, it is very likely that the TBP would outperform the DRIP portfolio.

III.2. Limitations of this Study

The previous section addresses time concerns, which undeniably impacted the findings of this study. This could be viewed as a fault in the research. The hypothesis and stated findings are not suitable for all situations, and the time frame selected has a major impact on the results. The time for this study was selected in efforts to avoid periods of market turmoil or mass instability. This was done with the purpose of having a large enough data sample on which to draw conclusions, without having to attribute portfolio values to irregular events. The period chosen was more stable than other years, and the researcher had to consider this when drawing conclusions.

This observational study incorporates copious amounts of data to represent values over sizeable amounts of time. With such work, comes the possibility of data entry error, or contradicting values. There were very few instances of differing data values between the Compustat database and Google Finance, however it was noticed. There may be minute skews in the data due to these differing values, but the trends in values were not affected, nor would the conclusions change as a result of the inconsistencies.

Another fault of the study was its negligence of taxes. In a real-life scenario, taxes would be taken from returns of both portfolios. Additionally, the rate of taxation would vary depend on whether it was associated with a capital gain or a dividend payment. The returns, net of taxes, would be smaller than illustrated in this study, however the same conclusions could be made.

III.3. Closing Remarks

All things considered, this study was a great way to learn about the relationships between market conditions and varying stock values, as well as the ways that investment strategies result in substantially varying returns. Although it was concluded that the TBP did not surpass the returns of the DRIP portfolio, it demonstrated that such a strategy could be used to generate large returns in a much more secure manner. As said by Thomas Jefferson, “with great risk comes great reward”, and the payoff for this risk is evidently larger in this instance.

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