6-2013

Competing Life Insurance Purchasing Strategies: Whole Life Versus Buy Term Invest the Differences

Jordon Hastings
Union College - Schenectady, NY

Competing Life Insurance Purchasing Strategies: Whole Life Versus "Buy Term, Invest the Difference"

By

Jordon Hastings

* * * * * * * * *

Submitted in partial fulfillment
of the requirements for
Honors in the Department of Economics

UNION COLLEGE
June, 2013

ABSTRACT

HASTINGS, JORDON Competing Life Insurance Purchasing Strategies: Whole Life Versus "Buy Term, Invest the Difference". Department of Economics, June 2013

ADVISOR: Professor Tomas Dvorak

Financial experts have been conflicted for decades in regards to the most effective strategy for purchasing life insurance. Specifically, is buying an expensive whole life insurance policy the most appropriate solution, or is purchasing cheap term insurance and investing the rest of the money in a side fund more effective? These strategies were compared side by side across a variety of scenarios with varying account allocations, time horizons and tax treatments. Based on our results, buying term and investing the difference is the most appropriate solution across the majority of the scenarios that were tested. This was due mainly to the higher rates of return that are experienced in the market compared to the modest growth of whole life policies. Ultimately, however, it was still difficult to claim that buying term and investing the difference was the superior solution overall, as some experts claim. The whole life strategy has many advantages, especially when it comes to leaving bequests which, as past research has indicated, are a driving force behind demand for life insurance. Whole life insurance is a safe, tax efficient place to save money that complements many of the side funds utilized in the "buy term, invest the difference" strategy. Many of these accounts have contribution limits, so individuals who max them out would benefit greatly from allocating some additional savings toward a whole life insurance policy.

TABLE OF CONTENTS

List of Tables and Figures iii

Introduction 1

Understanding the Difference Between Term and Whole Life Insurance 4
- Term Life Insurance
- Whole Life Insurance

Previous Works on Life Insurance 12
- Price Elasticity
- Demand Determinants

Buy Term, Invest the Difference Side Fund Options 14
- Saving in a Tax-deferred Account (401K or Traditional IRA)
- Saving in a Taxable Account (Brokerage)
- Saving in a Tax-free Account (Roth 401K, Roth IRA)

Strategy Parameters 21
- Whole Life Strategy
  - Life Insurance Policy
  - Death Benefit
  - Living Benefit
- Buy Term, Invest the Difference Strategy
  - Life Insurance Policy
  - Death Benefit
  - Living Benefit
- Choosing a "Winner"

Results and Analysis of Strategy Testing 27
- Tax-deferred Account vs. Whole Life
- Taxable Account vs. Whole Life
- Tax-free Account vs. Whole Life

Conclusions 40

References 44

LIST OF TABLES AND FIGURES

Figure 1: Cost of Term versus Whole Life Insurance 8

Table 1: Term + Tax-deferred Account versus Whole Life 28

Figure 2: Years 20-40 BTID versus Whole Life Death Benefit 29

Table 2: Term + Taxable Account versus Whole Life 32

Figure 3: Liquidity Comparison of Taxable Account and Whole Life CSV 34

Table 3: Term + Tax-free Account versus Whole Life 36

Figure 4: BTID + Tax-free vs. Whole Life 38

I. Introduction

In trying economic times such as these, the subject of personal finance is placed at the forefront of most people's minds. When putting together a sound financial plan for yourself and your family, it is important to first build a strong foundation based on managing risks. One of the most critical components of this foundation is life insurance, and it is also one of the most confusing and controversial. Dave Ramsey has written a number of books on personal finance, two of which landed on the New York Times bestseller list, and is what some consider a financial guru. Ramsey states that "whole life insurance is one of the worst financial products available" in the article *The Truth About Life Insurance* that he wrote for his personal webpage. He is not alone in this view, as many believe that purchasing a basic term insurance policy and investing the money you would save (due to the much lower premiums compared to a whole life policy of equal value) in mutual funds and the like. "Gurus" like Dave Ramsey, however, are offering advice to the masses, so who is to say that a whole life policy may not be a great investment for someone and their family?

Many people do not like this kind of "one size fits all" approach that is often implemented by these financiers. It is for this reason that people may be drawn to sitting down with representatives of insurance companies to develop a more personalized plan. These representatives may be big proponents of whole life policies and would likely point out that the policy cannot be outlived (whereas term can) and that the cash value returns are guaranteed at a minimum rate based on company performance. Stoughton and Zechner (2011) provide evidence to suggest that utilizing an advisor actually increases total welfare between the advisor and the consumer even in the presence of kickbacks. However, the presence of these

kickbacks is exactly what drives many away from using advisors as pointed out by Cooper and Frank (2005) when they surveyed CLUs and ChFCs. They found that kickbacks provide incentive to push more expensive products, whole life being one of them, so that they will be paid more rather than focusing on their fiduciary duties.

We are left with a dilemma pitting experts like Dave Ramsey against many personal financial advisors on whether or not whole life is an effective strategy. The advisors are faced with the criticism that they may be acting selfishly because they have a lot to gain from consumers purchasing whole life due to its large price tag, but they are also the ones offering the personalized approach and we are supposed to trust that they would not suggest it if it was not the right fit. The "gurus" do not directly benefit from the actual purchases of the consumers, so it is safe to assume that they are offering unbiased advice since they have no incentive to do otherwise. However, they aren't actually sitting down and meeting with individuals to find out what is truly in their best interest. To say that whole life is a terrible investment may be true for some, but the opposite may be true for others. In fact, renowned IRA expert Ed Slott, who also happens to be a practicing CPA, advocates the use of whole life insurance as an essential piece to any retirement plan in his book *"The Retirement Savings Time Bomb…and How to Defuse It"*. The Northwestern Mutual Life Insurance Company recently released (2012) a pamphlet entitled "*Buy Term, Invest the Difference?"* that displayed the after-tax rate of returns required in a side fund to equal the cash value of their own whole life insurance policies over the course of 20 years (1992-2011) and 30 years (1982-2011). The company claimed that a 7.60% and an 8.66% after-tax rate of return was required to equal the whole life policy for the 20-year and 30-year periods respectively. The pamphlet also displayed

how various asset classes (ranging from low risk Treasury Bills to high risk common stocks) were unable to match those after-tax rates of return over those same time periods. This evidence suggests that, at least within the past 30 years, saving money outside of Northwestern Mutual whole life policies yielded less favorable after-tax returns which heavily contests the claims made by whole life opponents.

The life insurance market lacks the transparency of many other consumer markets and this can make purchasing policies a very confusing process. Not to mention the fact that financial experts cannot seem to agree on a particular strategy for purchasing life insurance. In hopes of shedding some light on the matter, this paper will take an unbiased approach to compare the performance of alternative life insurance strategies. One strategy is to purchase a whole life insurance policy and let the cash value accumulate over time, a strategy someone like Ed Slott would recommend as a component of a retirement plan. The other strategy is a favorite of Dave Ramsey, and that is to purchase a term insurance policy and take the difference in premium between the term and a whole life of equal value and invest it in a side fund in the market. This strategy is commonly referred to as "buy term, invest the difference" (BTID). Rather than trying to decipher technical jargon and complicated formulas, this performance comparison highlights the strengths and weaknesses of each strategy and offers a very simple way to determine which strategy may be most appropriate for you, the consumer.

II. Understanding the Differences Between Term and Whole Life Insurance

Term Life Insurance:

Before evaluating the two strategies, it is important to understand the differences between the two life insurance policies. Term life insurance, as the name suggests, provides coverage for a specified term and expires when that term is up. Imagine that a 35 year old married man in good health has determined that he needs $500,000 in life insurance. If he were to choose to fulfill this need through term insurance he would have two options. The first would be to purchase the most basic term policy where the term only lasts for one year. At the end of that year, this man would need to renew the policy in order to continue being insured. This process is not a simple as it may sound. The man must first qualify for life insurance, i.e. be deemed insurable. This is based primarily on his health, both at the present time as well as in the past. If he had a terminal illness such as cancer, for example, he would be deemed uninsurable because he does not meet the health qualifications due to the fact that the chances of him dying during the term are incredibly high and the insurance provider is unwilling to take that risk. By utilizing one year term policies, this man would have to provide proof of insurability each year in order to retain the coverage. This means that if during one year he finds out that he has cancer, but does not pass away prior to the expiration of the insurance at the end of that year, he will not be able to renew the policy and will no longer be able to purchase life insurance. In order to avoid providing proof of insurability each year and making the renewal process much simpler, he could choose to purchase an annually renewable term (ART) policy. This operates nearly the same as a normal one year term policy but instead of

requiring proof of insurability at the end of each year, these policies guarantee insurability based on the information they receive upon the initial purchase. This guarantee can cover periods from 10, 20 or 30 years and in some cases (depending on the company) up to age 80 or even 95. That way, this man would not be at risk of losing his coverage even if he develops an illness that would normally deem him uninsurable.

It is also important to understand how these one year term insurance and ART policies are paid for. The costs of the policies are paid for through premium payments, which can be periodically paid for monthly, quarterly, semi-annually or annually. In this case, since the term is only one year long, an annual payment would be the entire cost of the policy and this cost gets reevaluated each time a renewal is made. The premiums are calculated based on actuarial mortality tables, basically meaning that the probability of the proposed insured dying during the term is allocated a price. Let's take the same married man from before and compare him to a man who is 10 years older and smokes cigarettes and everything else is held constant. The married man is 35 years old compared to the other man being 45, meaning that the 45 year old man has a higher probability of dying during the one year term simply because he is older. Additionally, the 45 year old man is a smoker and smoking has a negative impact on health, thus, reducing this man's life expectancy and further increasing his probability of death within the one year term. Having taken all of this into account, the 35 year old man would have a much lower premium cost for the same term insurance policy than the 45 year old man. Because of these factors, one year term insurance policies and even the ART policies become more expensive each year because the insured person is one year older than they were previously. If a term policy were renewed for 20 years, that person would have paid increasing

premium costs throughout that time period. As a result of the constantly increasing premiums, it stands to reason that term insurance becomes too expensive past a certain age when the insurance companies begin taking higher risks in issuing the insurance.

The last type of term insurance policies are known as level term life insurance. These policies provide coverage for periods of 10 to 30 years; therefore, there is no need to renew these policies annually. For example, a man purchases a 20 year level term policy at age 35 and when he reaches age 55 the coverage will expire. However, provided he is able to establish proof of insurability at age 55, he can renew that 20 year level term policy and be guaranteed insurance coverage until he reaches age 75, for a higher premium of course. The premiums on these level term policies are, as the name suggests, set to a level amount for the entirety of the term. They are also calculated in the exact same way as the one-year term policies are, the probability of dying during the given term. The reason that they do not increase each year during a 20-year level term policy, for example, is because the premium payment is based on the probability of dying during a 20-year time period rather than a one year time period. This leads to a much higher cost than a one year term policy because the chances of dying in 20 years is much greater than the chances of dying in one year, holding all other things constant. Imagine that, somehow, two people were able to get term insurance at the same exact premium costs. If one person chose to purchase and ART and renewed it for 20 years while the other person chose to buy a 20-year level term policy, they would be covered for the same period of time. The person who chose the 20-year level policy would pay higher premiums that the person with the ART policy for the first few years because the premiums are based on a higher probability of death at that point in time. However, eventually the ART policy will

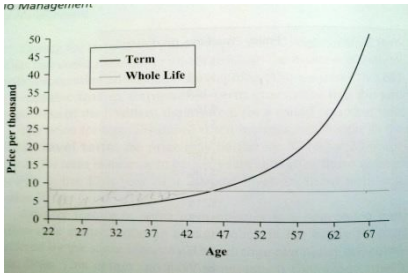
become more expensive when the person ages while the 20-year level premiums remain at the constant level. Basically, the level term policies are more expensive early on, but eventually end up being cheaper toward the end of the term.

Whole Life Insurance:

Whole life insurance, also commonly known as permanent life insurance, is much different from term insurance for a number of reasons. The most obvious reason is that, as the names suggest, these policies remain in force for the entire life of the insured, meaning that the policy is guaranteed to pay out when the insured dies. There is no need for renewal once a whole life policy is purchased and there is also never a need to provide any proof of insurability in the future. If the insured purchased a whole life policy three years ago and suddenly develops a terminal illness that would normally render them uninsurable, the only thing they need to do is continue to pay the premiums and they will not have to worry about losing their insurance. This is a huge advantage over term policies because once you get approved once, you are locked in for life and the insurance company is not allowed to do anything to change that assuming the premiums continue to be paid. The premiums are calculated similarly to the way they are in level term policies. In this case, however, the probability of dying is 100% during a whole life policy since they are designed to provide insurance until that point. Factors such as smoking and other health related things still impact the premium amounts because if there is a high probability of dying in 30 years, the company wants to make sure that it can cover the costs of paying the death benefit when only 30 years-worth of payments are made. Just like the level terms, the premiums are more expensive relative to the coverage in the early stages of the policy, but the fact that they remain level throughout causes that value to actually

be cheaper as the insured gets older. Figure 1 highlights the long-term cost effectiveness of the whole life level premiums compared to the increasing premiums of renewable term insurance policies.

Figure 1: Cost of Term versus Whole Life Insurance



Source: Altfest (2007) "*Personal Financial Planning*" pg. 272.

As expected, though, these premiums are substantially higher than those of term policies and it is this difference in premium that composes the "invest the difference" component of the term insurance strategy.

These high premiums also serve another purpose rather than simply to purchase death benefit of the insurance. Unlike term policies, whole life also has a living benefit known as cash surrender value (CSV) that builds up over time as premiums are paid. Walden (1985) hypothesized that whole life insurance policies behaved as an options package and that the pricing was a reflection of the various options. He found that, from data based on the most popular policies from 59 North Carolina insurers, his hypothesis was accurate and that if cash value and dividends are held constant then prices vary greatly depending on policy provisions and the insurer's characteristics. Therefore, assumptions must be made not only in terms of characteristics of the insured, but also the characteristics of the policy itself. It stands to reason that part of the premium calculation accounts for the expected performance of the company's

general account, which typically consists of bonds, some stocks, real estate, etc. Obviously, the performance in the future can only be estimated so there is no way of knowing what will actually happen. Thus, there will be times during the duration of the policy where the premium represents an overcharge (the company performed better than was expected) or an undercharge (the company did not live up to expectations).

The CSV has two noteworthy aspects, the first being the tax treatment. When the CSV account is left untouched, there are no taxes placed upon it whatsoever, meaning it is allowed to grow tax-free. However, if a lump sum is taken from the CSV account (in cash), the amount exceeding the premiums paid is taxed as ordinary income, which makes sense being that the premiums are after-tax dollars. The second aspect is that the insurance companies actually provide a guaranteed amount of cash value for every whole life policy that they issue. Granted, these values result from a miniscule amount of growth in the neighborhood of around 2% and it will not exceed the amount of money put into the policy until many years down the road. However, should someone choose to terminate their whole life policy, they would at least get a certain some of money back whereas with term they would receive nothing in return. Again, term is much cheaper, so if the whole life is cancelled early on they would have still been better off buying term because even the amount of cash they would receive would not make up the difference in premium costs. This guaranteed amount represents the absolute worst case scenario for the performance of the CSV component of the policy, and much of that performance can be attributed to the company issuing the policy.

There are two types of insurance companies, stock and mutual, and the most notable difference between them is the way they distribute their earnings. These earnings payments are called dividends and are sometimes referred to as refunds because they are partially a result of the company overcharging their policyholders because they ended up exceeding expectations with respect to their general account. It is important to note, however, that in order for a whole life policyholder to receive dividends the policy must be a participating policy. Non-participating policies are not eligible to receive these dividends because these policies state that once the premiums are established, they can never change in any fashion. These dividends or refunds can be used in a few different ways. The policyholders can simply take them in cash each year, have them be used to reduce the premium payment for that year (this is why a non-participating policy does not receive dividends) or they can be used to purchase additional insurance through reinvestment into the policy. Using the dividends to purchase additional insurance not only results in an increase in the death benefit, but it is also a particularly effective way to maximize the CSV account because a portion of the money used to purchase the additional death benefit gets reinvested into the company's general account and allows the CSV to increase by a greater amount. Strategies for utilizing the CSV component of whole life policies will be discussed later on in this paper.

When a stock company begins to distribute their earnings, the first obligation they must fulfill is the need of the stockholders, since they are the "owners" of the company. Whatever amount is leftover from the stockholder compensations can then be distributed amongst the policy holders. Mutual companies do not have stockholders to please, so the "owners" of these companies are actually the policyholders. They are first in line to receive these dividend

payments from the company each year and it is because of this that many people recommend using a mutual insurer when purchasing whole life insurance. This notion is supported by the research of Spiller (1972) when he examined the performance of stock and mutual companies in his paper by comparing 19 stock companies and 27 mutual companies in New York State. Spiller's results indicated that the objectives of stock companies were different than those of mutual companies due to the focus of pleasing stockholders, causing them to perform at different levels. James H. Hunt, a life insurance actuary who has been in the business since 1955, in 2001 explained that whole life policies issued by mutual companies tend to be superior to those issued by other companies, citing his experience reviewing thousands of policies over the decades of his career.

III. Previous Works on Life Insurance

Price Elasticity:

Risk management is really the foundation of financial planning and one of the most critical components of this facet is life insurance. Therefore, it wasn't surprising that Babbel (2005) found the price elasticity of demand, for all forms of life insurance, to be inelastic. He studied the costs of life insurance policies sold in the U.S. from 1953 and 1979 across all companies. After regressing different company sales prices against the industry, no evidence was found to suggest that consumers "shop around" for the best prices or switch to a company with lower costs. Frees and Sun (2009) took a slightly different approach and looked at the household demand for life insurance, specifically term and permanent (whole life). Their research resulted in a conclusion that term and whole life are substitutes in terms of frequency (owning one or the other), but they are actually complements with regards to severity (amount of insurance coverage purchased). Simply put, if people are only concerned with owning an insurance policy, then they are more likely to own either a whole life policy or a term policy, not both. This information indicates that evaluating strategies based on solely a term insurance policy or a whole life policy would be useful, due to the fact that it is common for households to only hold one or the other, while also alluding to the plausibility that one strategy is not always dominant.

Demand Determinants:

Additionally, the fact that many households only hold either term or whole life indicates that the motives behind the purchase of these policies probably differ. Inkmann and Michaelides (2010) examined the United Kingdom insurance market and found that household

factors of being married, having children and reporting a positive probability of leaving a bequest were all statistically significant in determining the purchase of term life insurance. Grace and Lin (2007) and Fischer (1973) investigated the life cycle demand for life insurance using different methods but ultimately ended up with the same result. The former focused on household income as well as income volatility and how, over time, that impacted the demand for life insurance while Fischer ran multiple simulations accounting not only for income, but also basic wealth and risky assets. Their results indicate that the demand for term life insurance is impacted by income and that it tends to be purchased early on in life when income is more volatile while the demand for whole life remains unchanged. The demand for term decreases with age as income tends to stabilize and people begin living off of their wealth, however, there is evidence that this is when the demand for whole life insurance increases as well. Sauter, Walliser and Winter (2010) studied whole life insurance holdings in Germany before and after the unanticipated tax reform in 2000, which cut the tax exemption statuses in half and, thus, raised taxes on numerous households. Based on the data, a 10% increase in taxes resulted in approximately a 3.3% increase in probability of whole life insurance purchase with a 5.2% increase in households actually affected by the reform. Therefore, tax incentives appear to be a significant driving force behind the demand for whole life insurance.

Thus, evaluating the whole life insurance strategy versus the "buy term, invest the difference" strategy begs the comparison of how a bequest would be fulfilled, what role different taxation methods play and how different types of investment vehicles may impact these characteristics.

IV. Buy Term, Invest The Difference Side Fund Options

The approach for comparing the BTID strategy to the whole life strategy is relatively simple, conceptually. The whole life insurance strategy consists of the death benefit to be paid out to beneficiaries and a CSV account that provides a living benefit to the owner. The BTID strategy consists of term life insurance that will provide a death benefit to the beneficiaries, but also a side fund where the difference in premium between the term and the whole life policy is invested. This account not only represents the living benefit to the owner, but also is the other portion of what the beneficiaries stand to receive upon death of the insured. When the term policies can no longer be purchased, this serves as both the living and death benefit simultaneously and is, therefore, a crucial part of the BTID strategy. The following highlights the features of the different types of investment accounts that will be tested in the BTID strategy and how they differ from one another.

Saving in a Tax-deferred Account (401K or Traditional IRA):

Retirement vehicles are a common method that people utilize when they are looking for ways to save money and accumulate wealth for the future. An employer-sponsored 401k is an example of one of these vehicles that most people are familiar with and serves as a great example of a tax-deferred investment account. Another example is what is known as an individual retirement account, or IRA for short. There are a couple of reasons why these tax-deferred accounts are attractive. First, these accounts allow for pre-tax dollars to be contributed and deducted from that person's taxable income unlike life insurance contributions, which are not tax deductible. This allows for immediate tax relief because that person's taxable income is reduced by the amount of the contribution, which would be

particularly useful for individuals in high tax brackets. Contributing money to a tax-deferred account gives the ability to reduce taxable income by however much is chosen to be contributed, which is very useful if taxes are expected to be higher now compared to later when it is expected that money will be withdrawn. Not only are fewer taxes paid now, but the money that is contributed is also allowed to grow free of tax. This is a huge advantage due to the compounding interest factor. The money that is put into the tax-deferred account gains interest the first year and if it is left in the account for another year, that principal amount will gain interest again but so will the amount gained due to interest from that previous year. Essentially, interest is earned on the previous year's interest, which is where the term "compounding" comes from, causing the money to grow in an exponential fashion.

That is not to say that the tax-deferred account does not have its limitations. The most notable being that it is not a tax-free account; rather, it is what is commonly referred to as a tax-deferred account. This simply means that, although the contributions and growth are all free from tax, any withdrawals that are made from the account in the future are taxed at the ordinary income tax rate at that point in time. Imagine that someone has let their 401k account grow untouched for 10 years causing it to be worth $100,000 and they have decided to purchase a house and need to withdraw that money from the account. The entire $100,000 amount would be taxed as ordinary income, so if he made $85,000 per year (25% tax bracket) he would have to pay taxes on $185,000 per year (33% tax bracket). This can be particularly burdensome if the person has already entered a higher tax bracket since making the contributions. In addition to this, if the person chooses to withdraw funds from the account and they are younger than 59 ½ years old, they also have to pay a 10% excise tax on the entire

amount withdrawn. Thus, if that person was 40 years old and withdrew the $100,000 to purchase a home, he would owe $10,000 in excise tax in addition to the federal income tax. The presence of this penalty dissuades owners from using the 401k as a savings account for use before retirement, which is actually helpful since not withdrawing prior to age 59 ½ avoids the tax but also maximizes the biggest advantage of the account which is the tax-free growth. This basically means that money is illiquid prior to age 59 ½, though borrowing from the plan is commonly an option, but for the purpose of this paper these accounts will be treated as illiquid up to that point.

Saving in a Taxable Account (Brokerage):

An alternative for saving money that may need to be used within a short number of years, contrary to a 401k retirement account, would be a basic taxable account like a brokerage account. These are typically made up of various stocks, bonds, mutual funds and the like that can be custom tailored to the preferences of the owner, whereas something like a 401k is limited to what the employer offers. This means that if someone prefers to take on additional risk in exchange for higher potential returns, the account can be easily allocated with a higher percentage of stocks rather than bonds in hopes of achieving large returns over time. However, if later it is decided that the volatility associated with the potential for high returns is too worrisome, the account can just as easily be reallocated and the percentage of stocks can be reduced while increasing the percentage of safer assets like bonds and Treasury Bills.

The main difference between a taxable account and a tax-deferred is, obviously, based on the tax treatment. The contributions made towards something like a brokerage account do not have any impact on current taxable income as those toward a tax-deferred account do.

Therefore, any contribution made toward a brokerage account is still recognized as part of the taxable income, meaning these contributions can be considered after-tax dollars. Also unlike the tax-deferred account, the growth in a taxable account does not go untaxed and is, therefore, unable to fully appreciate the advantages of compounding interest. The contributions in a brokerage account gain interest based on the allocated asset returns, but these assets also pay dividends and they are taxed as ordinary income (Topic 409, IRS.gov). For example, a 40 year-old male in the 35% tax bracket has been contributing into a brokerage account with a return rate of 10% each year and a 3% dividend rate, resulting in a capital gain of 7%. This account would grow by the capital gain of 7% each year plus 65% (as a result of the 35% tax) of the 3% dividends. Thus, if there were $100,000 in the account, it would grow to $107,000 and he would pay the 35% tax on $3,000 which leaves him with $1950, making the account worth $108,950 at the end of the year. If this were a 401k, it would have been worth $110,000 because none of the capital gains or dividends are taxed.

On the other hand, withdrawing money from a taxable account is quite different from doing so from a tax-deferred account. For one, there is no penalty for withdrawing money based on how old you are; in that sense it is much more liquid than something like a 401k. If someone had to dip into their savings and had to choose between withdrawing from their 401k or brokerage and they were under the age of 59 ½, the brokerage would certainly be the smartest method both because the 10% penalty would be avoided and because the 401k would continue to grow uninterrupted. However, the brokerage account is still taxed when money is withdrawn and it differs depending on the conditions. If $100,000 is withdrawn, that whole amount is not susceptible to tax like it would be in the 401k scenario. The only parts that are

taxable are the capital gains and there are two different types, unrealized and realized. Unrealized capital gains are represented by the amount that the brokerage account grows and are not subject to taxation, but once they become realized, meaning the assets are sold, they can and will be taxed. The reason that the money that was contributed is exempt from taxation upon withdrawal is because it was contributed as an after-tax amount. Assume that $60,000 was contributed into the account and has grown to $100,000; this means that $40,000 is a result of capital gains and it is only taxable (realized) when all of the assets purchased by the $60,000 contribution are sold.

However, there are two different types of realized capital gains, short-term and long-term, and this is what determines the tax method. A short-term realized capital gain results from an asset being held for less than a year before being sold and these gains are taxed at an ordinary income rate. A long-term realized capital gain results from assets that have been held for more than a year before being sold and these are taxed at 15%, meaning that it is in the best interest of the owner to hold assets for at least a year, especially if the owner is in a high income tax bracket (Topic 409, IRS.gov). Thus, continuing the previous scenario where $40,000 of the $100,000 are realized capital gains, we will assume that they are long-term so withdrawing $100,000 would ultimately yield $94,000 after taxes ($60,000 + $40,000*(1-0.15)). In order for this same person to withdraw $94,000 after taxes from a 401k, assuming a 35% income tax bracket, they would have to withdraw $144,615 from the account as opposed to $100,000 from the brokerage.

Saving in a Tax-free Account (Roth 401k, Roth IRA):

The third alternative that was tested for investing the difference in the BTID strategy was a tax-free account, examples of which are Roth 401Ks and Roth IRAs. These accounts differ from their traditional counterparts in that their contributions are not tax deductible and the withdrawals are made tax-free. However, these accounts do suffer from the 10% excise tax if withdrawals are made prior to age 59 ½, so they are also considered illiquid up to that point. However, just like the tax-deferred accounts, the Roth contributions also grow tax-free and fully experience the compounding interest over time. A practical example of the proper way to utilize a tax-free account would be a young professional choosing to invest their savings in a Roth 401k (tax-free) early in their career and pay taxes up front because they expect to be in a higher tax bracket by the time they plan on receiving distributions from that account. On the contrary, if a man is saving for his retirement and feels that his tax bracket will be lower than it currently is, he would save in a tax-deferred account and pay taxes on the distributions at the lower rates.

The only difference between the tax-free accounts and the tax-deferred account is when the taxation occurs. The government basically understands how advantageous these vehicles are in terms of tax efficiency that they had to create ways to limit their use to prevent them from being abused. In 2013, if you are 49 years of age or younger the maximum amount of money that you can contribute to Roth and Traditional IRAs is limited to $5,500 and it increases to $6,500 if you are 50 years of age or older. For both types of 401Ks, the contribution limit is $17,500 during 2013. Additionally, there is also a maximum income limit for qualification to contribute to an IRA, traditional or Roth. In regard to both types of IRAs, if

the person is single they can qualify for maximum contribution as long as they earn less than $110,000 per year (28% tax bracket) and can qualify for partial contribution if they earn less than $125,000 per year. If it is a married couple, they must earn less than a combined $173,000 per year (28% tax bracket) to qualify for full contributions and for partial contributions they must earn less than $183,000 per year. There are no income limitations placed on either type of 401k plan.

V. Strategy Parameters

Whole Life Strategy:

Life Insurance Policy

An illustration of a $500,000 participating 65 life whole life policy issued by Northwestern Mutual Life (NML) in November of 2012 was used in every scenario that was tested. The term 65 life indicates that the policy will be fully paid for when the insured reaches age 65, meaning that premium payments will no longer be required after that year. Attached to this policy was a paid up additions (PUA) rider, which results in any dividends paid by NML to be used to purchase additional insurance. The premium payment is valued at $8,870 per year and it is assumed that it is paid annually. This was calculated based upon the insured being assumed to be a 35 year-old non-smoking male in perfect health and based on the fact that it is designed to be fully funded when he is 65 years old, meaning 30 annual premium payments are required.

It must be noted that life insurance illustrations are in no way a guarantee of actual performance; however, the predictions are based on current economic conditions as well as past company performance. Pritchett (1998) points out that the high interest rate 1980's highlights the flaw of basing predictions on current conditions because the life insurance companies had a hard time living up to their predictions when the interest rates fell. It is because of this uncertainty that NML was chosen to provide the illustration. NML is one of the most respected, ranked #1 most admired company in the life insurance industry by Fortune Magazine in 2011, insurance companies in the industry and they have paid dividends every year without fail since 1872. The company also boasts A++ and Aaa ratings from A.M. Best Company

and Moody's Investor service respectively, both highest possible ratings. Therefore, although the predictions are not guaranteed, NML's reputation leads us to believe that they are done in good faith and are accurate. Mass Mutual, another highly rated similar to NML, recently released (in 2012) a historical dividend study that showed their own illustrated policies issued in 1980 side by side with how those policies actually performed for 32 years and the actual performance wound up exceeding expectations.

Death Benefit

There are a number of factors that were analyzed to evaluate the performance of the whole life strategy, the first being the amount the beneficiaries stand to receive at certain points during the life of the policy. The PUA rider causes the death benefit on the policy to increase each year that a dividend is paid. The death benefit can never go below the original $500,000 that it is worth in the first year and once it increases it can never go below that new level if premiums continue to be paid in full and the policy is left alone. Therefore, the amount that the beneficiaries on the policy stand to receive upon death of the insured is projected to increase each year that a dividend is paid. This death benefit is funded with after-tax dollars and the dividends represent refunds of those dollars, allowing it to grow tax-free for the duration of the policy. The beneficiaries also get to receive that death benefit upon death of the insured tax-free as well, meaning that whatever the death benefit is worth, that is exactly the amount that will be paid to the beneficiaries (Code Sec. 101(a)).

Living Benefit

The living benefit is the amount that the owner is able to withdraw while the insured is still alive. The living benefit of this policy (the CSV account) also grows each year as premiums

and dividends are paid and, just like the death benefit, can never decrease at any point if it is left untouched and premiums continue to be paid. The reason this is referred to as a living benefit is because the beneficiaries have no stake in the CSV, only the owner of the policy has access to that money while the insured is alive. If the insured dies, NML would take the CSV and pay the beneficiaries whatever amount the death benefit is worth, regardless of the amount of CSV had grown to. There are a couple of options to consider when withdrawing funds from the CSV. The first option, and the option that was used in all of our testing, allows the owner to make a cash withdrawal up to the total amount of premiums paid in to the policy tax-free, while any amount exceeding the total premiums paid gets taxed as ordinary income (tax-deferred growth). This is what would happen if someone decided to terminate their policy, but withdrawing from the CSV will not impact the insurance coverage so long as the premiums keep getting paid, which we assume they do during our testing. The other option allows the owner to get tax-free cash up to the amount of CSV by taking it out in the form of a policy loan at an interest rate that may be higher or lower than the market rate. This is, essentially, borrowing your own money, which is why taxes need not be paid, and the other advantage is that you do not actually have to pay the loan back. The dividends can be used to pay back the interest and a portion of the death benefit can be used to do this as well. However, this can be dangerous if the policy does not pay back the loan quick enough by itself. This can lead to changes in coverage and can require the owner to pay higher premiums to pay back the loan. Due to the uncertainty associated with this option, it would require professional consultation to determine if it would be a useful strategy; therefore, it was not considered in the testing.

Buy Term, Invest the Difference Strategy:

Life Insurance Policy

The policies used for the BTID strategy were $500,000 20-year level terms issued by Northwestern Mutual Life and the premiums were calculated based on the same 35 year old non-smoking male in perfect health. The premium came out to $487 per year, making the difference between that and the whole life premium $8,383 and that is what gets invested into the various side funds. Since the term policy expires after 20 years, it must be renewed and to do this the same person needs to be used. The only thing that changed was his age, which is 55 for the second 20-year term policy; because we assume that he is still in perfect health and has not taken up smoking. This causes the premium to increase to $1,757 per year for the next 20 years, dropping the difference down to $7,113. Now, being that the whole life policy is paid up at age 65 of the insured, the difference in premiums need only be invested until that point in the term strategy as well since the whole life strategy no longer requires payments. Again, we are assuming that all premiums and the differences are paid each year in full. Once that 20-year term expires, however, the insured man that the premiums have been based upon will be 75 years old. No matter what his health status, he is deemed uninsurable purely due to his age and no longer has the ability to purchase any life insurance.

Death Benefit:

Evaluating the performance of BTID is a bit more complicated than it is for whole life. First, the amount the beneficiaries receive depends not only on the $500,000 of insurance during the first two 20-year term policies, but also on the value of the side fund that the premium differences were invested in. Per the discussion of the side fund options, the tax

implications associated with paying out the side fund varies depending on the type of side fund it is and in some cases the 40% estate tax needed to be taken into account as well. Therefore, during the period when the term policies were in force, the $500,000 death benefit is added tax-free to the value of the side fund at that point in time with the appropriate taxes and penalties accounted for. When the insured reaches age 75 and no longer has the insurance, then the amount paid at death to the beneficiaries is equal to the value of the side fund with the appropriate taxes accounted for. It is assumed that these accounts will be cashed out upon the death of the insured because the whole life strategy yields a cash payment to the beneficiaries, so it stands to reason that the same be done in the BTID strategy.

Living Benefit

The living benefit of the BTID scenario can be defined as the value of the side fund in each of the scenarios after accounting for taxes that would be required upon withdrawal from the specific fund. However, there are a number of assumptions that must be made throughout this process. First, the income tax rate is assumed to remain constant at 35% throughout the entire duration of the testing (60 years total). Assuming high tax brackets makes sense because the strategies require a large sum of money be contributed, due to the fact that the policies are for $500,000, which would most likely be paid by someone in one of the top brackets. We are also assuming that the contributions are made at the beginning of the year and that any withdrawals are made at the end of the year, which keeps the timing consistent and makes the values comparable to each other. Additionally, there are some scenario-specific assumptions that will be discussed upon their evaluation.

Choosing a Winner:

Both the death and living benefits of each strategy will be taken into account when determining which strategy is superior given a certain scenario. On the death benefit side, the amount that the beneficiaries stand to inherit, in cash after taxes, determines which strategy "wins". Basically, if BTID provides $3 million after taxes to the beneficiaries and whole life only pays out $2 million, then BTID "wins" that category. The same goes for the living benefit category. The CSV after-tax (paid on the excess of the total premium contributions) withdrawal value and the after-tax withdrawal value on each of the three types of side funds will be compared. Whichever fund provides more money to the owner of the account at a given period in time would "win" that particular scenario. However, in the event that the values are relatively close liquidity serves as the tiebreaker of sorts. It was established that whole life is illiquid in the early stages of testing (first 20 years) and then relatively liquid thereafter (income tax paid on growth only). The tax-deferred account has similar liquidity to the whole life strategy, while the taxable account is more liquid, meaning that in the event of a tie a taxable account would take the advantage. Obviously, there are multiple aspects being tested and this makes it difficult to declare one a "winner", rather, one strategy may prove to have an overall advantage in a certain scenario, but it may not "win" each aspect.

VI. Results and Analysis of Strategy Testing

The three side funds (tax-deferred, taxable and tax-free) were allocated in three different ways; aggressive, conservative and safe by using historical market data gathered by Ibbotson Associates for the *Stocks, Bonds, Bills and Inflation Yearbook*. The aggressively allocated accounts have a rate of return of 9.78% as that has been the mean return of large company stocks from 1926 – 2011. The conservative allocations have a rate of return of 6.05%, which represents the mean return for long-term government bonds from 1926 – 2011. Finally, the safely allocated accounts were assigned a rate of return of 3.58%, the mean return of U.S. Treasury bills from 1926 – 2011. This gives us nine scenarios spread evenly over three investment vehicles and each of them is tested over a 60-year period that is broken up into three 20-year periods. This enabled the evaluation of the short, medium and long-term effectiveness of each strategy over the nine scenarios, providing a thorough analysis of the performance of each scenario. Due to the complexity of the analysis of each scenario, it is likely that both strategies will come out on top at various points. This helps illustrate the strengths and weaknesses of each strategy.

Tax-deferred Account vs. Whole Life:

Table 1 summarizes the results of the comparison of whole life to the BTID strategy that utilizes a tax-deferred account, such as a 401k, as a side fund. The contributions were made with pre-tax dollars, so investing the difference was a bit more complex than it may seem. During the first 20-year period, the level term annual policy premiums were $487 while the whole life's annual premium was $8,870, leaving a difference of $8,383 to be invested for the first 20 years. However, $8,383 represents a post-tax difference, since whole life insurance

premiums are paid with after-tax dollars, whereas contributions toward a 401k are tax deductible, resulting in an equivalent investment that is actually larger. A 35% income tax bracket is assumed, meaning that in order for the $8,383 to be represented in pre-tax dollars it must be divided by (1-0.35) = 0.65, resulting in $12,896. This value represents what should be contributed to the account for the first 20 years because it has the same impact on income as an $8,383 after-tax contribution. The same method must be done for the second 20-year period when the policy is renewed. The new term premium is $7,113 and when that is divided by 0.65, because of the 35% tax bracket, we are left with $10,943. This amount is contributed toward the account for only 10 years, instead of the full 20 years, because at that point the whole life policy has been paid up premiums are no longer being paid. From this point on, and beyond the expiration of the term policy, the amount in the account is left to grow as-is, tax-deferred of course.

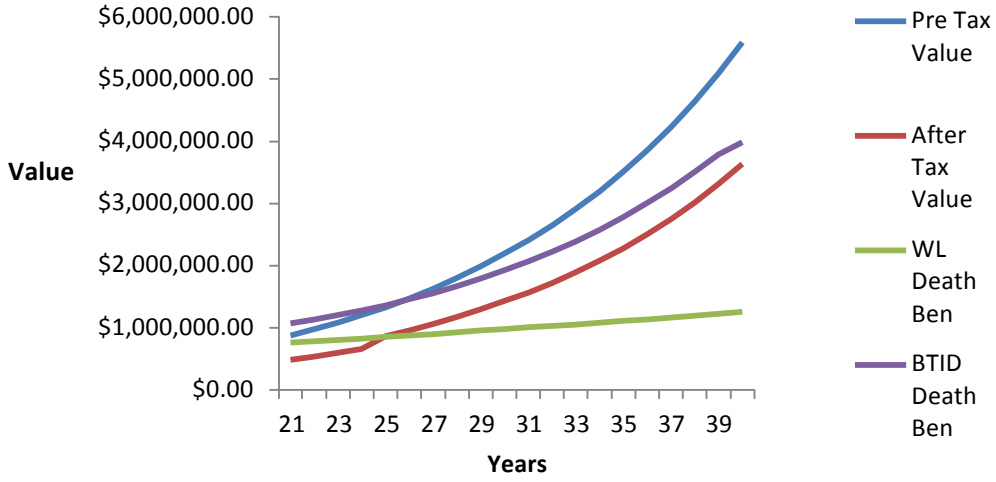
Table 1: Term + Tax-deferred Account versus Whole Life

Buy Term, Invest Difference					**Whole Life**			**Advantage**
Return	*Year*	*Side Fund: 401k*	*Withdraw Value*	*Pay at Death*	*CSV*	*Withdraw Value*	*Pay at Death*	
Stocks 9.78%	20	$790,929	$435,011	$1,014,103	$248,583	$223,668	$744,096	BTID
	40	$5,593,785	$3,635,960	$3,981,974	$863,820	$657,722	$1,260,850	
	60	$36,155,165	$23,500,857	$15,400,514	$1,960,048	$1,370,270	$2,178,049	
Bonds 6.05%	20	$505,836	$278,209	$828,793	$248,583	$223,668	$744,096	BTID
	40	$1,913,536	$1,243,799	$1,743,799	$863,820	$657,722	$1,260,850	
	60	$6,195,128	$4,026,833	$3,716,100	$1,960,048	$1,370,270	$2,178,049	
Bills 3.58%	20	$380,898	$209,494	$747,584	$248,583	$223,668	$744,096	Whole Life
	40	$959,438	$623,634	$1,123,634	$863,820	$657,722	$1,260,850	
	60	$1,938,809	$1,260,266	$1,260,266	$1,960,048	$1,370,270	$2,178,049	

In the aggressively allocated account, BTID came out as a clear winner at all points during the 60-year period, accumulating millions of dollars in both the taxed withdrawal amounts (living benefit) as well as the payments to the beneficiaries at death (death benefit).

The value of the account itself was worth more than the entire death benefit that whole life provided at the end of the first 20 years, but the account took a huge hit with respect to the 35% income tax and the 10% excise tax (due to being only 55 years old) when calculating the withdrawal value. This indicates that the account is relatively illiquid during this time period, though whole life is equally illiquid due to the fact that the CSV takes so long to exceed the total contributions. However, the term insurance death benefit allowed for BTID to make up the difference lost due to taxation and exceed that of the whole life. I would actually argue that, in this particular scenario, the performance of the tax-deferred account actually eliminated the need for the renewal of the 20-year term policy as the value of the account more than covered the value of the death benefit in comparison to what whole life had to offer, as Figure 2 displays.

Figure 2: Years 20-40 BTID vs. Whole Life Death Benefit



The withdrawal value of BTID in the 40th year (insured's age 75) was more than what the whole life death benefit was projected to be, rendering the term death benefit essentially unnecessary. Although that value is nearly $4 million and the pay at death in the 60th year

(insured's age 95) is more than $15 million, it is worth noting that these values were a result of the 40% estate tax in addition to the 35% income tax (assuming the beneficiaries are also in that tax bracket) because the overall value of the account exceeded the $5 million exemption in both cases (the estate tax only applies to the amount that exceeds $5 million, not the value of the total account). If nothing else, it is unnerving to see the value of the account cut by more than half when it is passed on to the beneficiaries.

The story is similar with respect to the conservatively allocated account, though to a smaller degree of magnitude due to the lower rate of return. Just like with the aggressive account, the BTID exceeded whole life in both living and death benefits at each time period and even accumulated enough cash to fall victim to the estate tax in the 60th year before paying out to the beneficiaries (though it still more than doubled the whole life death benefit). The first 20-year period is evenly matched, though BTID proves superior in the withdrawal value by more than $50,000. The death benefit of the term policy combined with this withdrawal value allows BTID to narrowly exceed the payment the death benefit of the whole life strategy. During the next 20-year period, with the renewed term policy, the withdrawal value in BTID nearly doubles the withdrawal value of the whole life CSV account. However, unlike with the aggressive account, the withdrawal value does not exceed the death benefit of the whole life, meaning the death benefit of the term policy was needed to make up the difference. With that being said, BTID ends up paying out more than $480,000 more to the beneficiaries than whole life does. By the time the 60th year is reached, the withdrawal value for BTID is more than $4 million compared to whole life's $1.37 million. However, if the insured were to pass away the beneficiaries would only get $3.7 million due to the combination of the 35% income tax and the

estate tax on the value of the actual account, which was upward of $6 million. However, the whole life strategy only provides $2.17 million to the beneficiaries at that point so BTID still has an advantage, even after the taxes on the account are considered.

When the tax-deferred account is allocated conservatively, with a return rate of 3.58%, the whole life strategy is found to be superior over each of the criteria. The withdrawal value of the whole life strategy after 20 years is slightly larger than that of the BTID strategy and, being that each are equally illiquid, the advantage leans toward whole life. Since beneficiaries do not need to pay the 10% early withdrawal penalty, the term death benefit plus the value of the account taxed at 35% does pay slightly more than whole life at this time period though not by as much as the whole life exceeds BTID in the living benefit. For the first 20-year period, whole life has a slight advantage, though it would be just as fair to call it a tie. The results are not that close for the remainder of the periods where we see whole life actually become more advantageous due to the margin between the living and death benefits widening over time. This scenario also highlights the difference between withdrawing funds from a tax-deferred account like a 401k and the whole life CSV. Although whole life comes out ahead in terms of after-tax consideration each time, the pre-tax value of the BTID account is greater than the CSV of whole life at every time period (excluding the 60th year). The fact that whole life CSV is only taxed on the amount that exceeds the contributions, compared to the tax-deferred account being taxed at face value including contributions (since they were not taxed up front), provides the leverage needed to shift the advantage toward the whole life strategy.

Taxable Account vs. Whole Life:

Table 2 summarizes the results of the comparison between BTID strategy when investing in a taxable account and the whole life strategy. Again, the same 20-year level term policies and the same whole life policy are present in these scenarios as well. The difference in premiums between the whole life and level term for the first 20 years remains $8,383, just like the previous scenario, and the difference following the level term renewal during the second 20 years is still $7,113 (where it is invested for 10 years, when the insured reaches age 65). Just like whole life premiums, contributions to brokerage and other taxable accounts are made with after-tax dollars. This means that the investing the difference is as simple as it sounds, in that the two differences in premiums are equivalent to what will be contributed in the BTID strategy.

Table 2: Term + Taxable Account vs. Whole Life

Buy Term, Invest Difference					**Whole Life**			**Advantage**
Return	*Year*	*Account: Brokerage*	*Withdraw Value*	*Pay at Death*	*CSV*	*Withdraw Value*	*Pay at Death*	
Stocks 9.78%	20	$472,038	$466,988	$966,988	$248,583	$223,668	$744,096	BTID
	40	$2,966,796	$2,935,055	$3,435,055	$863,820	$657,722	$1,260,850	
	60	$16,872,921	$16,692,405	$11,943,236	$1,960,048	$1,370,270	$2,178,049	
Bonds 6.05%	20	$268,619	$268,213	$768,213	$248,583	$223,668	$744,096	BTID
	40	$761,085	$759,936	$1,259,936	$863,820	$657,722	$1,260,850	
	60	$1,766,524	$1,763,856	$1,763,856	$1,960,048	$1,370,270	$2,178,049	
Bills 3.58%	20	$247,584	$219,610	$719,610	$248,583	$223,668	$744,096	Whole Life
	40	$623,634	$488,939	$988,939	$863,820	$657,722	$1,260,850	
	60	$1,260,226	$902,723	$902,723	$1,960,048	$1,370,270	$2,178,049	

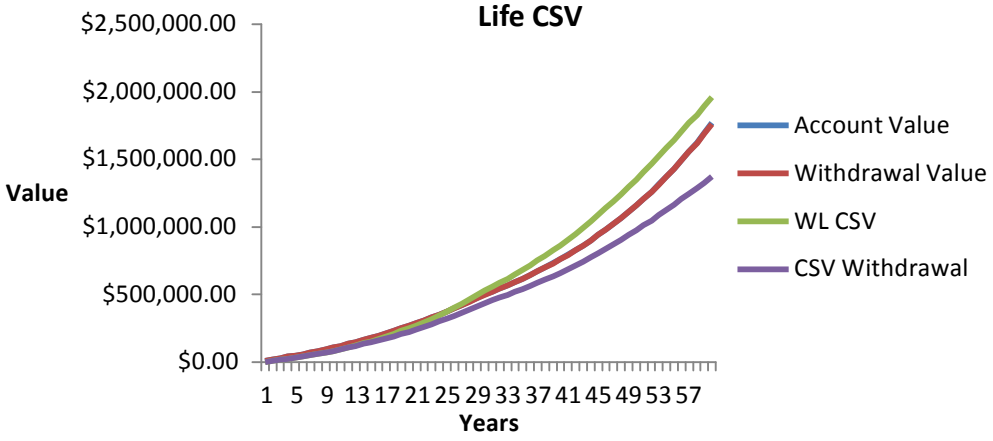
In the aggressively allocated account, where the rate of return is 9.78%, BTID had a clear advantage. At the end of the first 20-year period, the living benefit (withdrawal value) in the BTID strategy was nearly double that of the whole life strategy. On top of that, it is clearly more liquid (as we have established that whole life is illiquid in the first 20 years and mildly liquid

after that) than whole life, as indicated by the rather small difference between the full value of the account and its withdrawal value. This is due to the fact that the money is taxed up front and the growth is taxed each year in the form of dividends being treated as ordinary income (dividends in this case were assumed to be 2% each year, resulting in a capital gain of 7.78% annually). Unlike the previous scenario, there is also no excise tax for withdrawal made prior to age 59 ½. The only thing taxed at withdrawal is the realized capital gain (resulting from stocks being sold), which is done so at 15% as we assume all stocks to be held for more than a year prior to being sold. BTID also paid nearly $225,000 more to the beneficiaries than whole life was able to provide. The values at the end of the 40th year indicate that the renewal of the level term policy was unnecessary, as we saw with the tax-deferred account. The withdrawal value of the BTID strategy was worth nearly $3 million compared to the whole life CSV withdrawal value of $657,722. The death benefit of whole life was just over $1.26 million compared to BTID's nearly $3.5 million payout, which is well over the $500,000 difference the term policy is designed to account for. BTID widens the margin in each category by the end of the 60th year, even with the presence of the 40% estate tax.

With a conservatively allocated taxable account, where returns closer to bond rates are expected (which is where the 6.05% rate was calculated), the two strategies are evenly matched. BTID does get the advantage for the first 20-year period, as indicated by the greater living and death benefit. The term policy was an essential component to the BTID strategy in providing the extra funds needed to exceed the death benefit of the whole life policy during this period. At the end of the 40th year, whole life edges out BTID in the death benefit category by less than $1,000. However, the withdrawal value of the taxable account exceeded that of

the whole life strategy by more than $10,000 and combined with the superior liquidity, BTID has an advantage during this period as well. By the end of the 60th year the living benefit of the BTID strategy is worth nearly $400,000 more than that of the whole life strategy, while the whole life provides nearly the same amount more in death benefit than BTID. Being that bequests are a driving force behind demand for life insurance, it would seem that that would be the more important category in this particular case, especially considering that the insured is 95 years old at that point. This gives whole life the edge during that time period, though BTID appears to have the overall advantage when using a conservatively allocated taxable account, due mainly to the liquidity and performance of the living benefit, which is illustrated nicely by Figure 3.

Figure 3: Liquidity Comparison of Taxable Account and Whole Life CSV



If the owner was particularly concerned with leaving a bequest, which is not an unreasonable assumption given past research; it would not necessarily be unfair to shift the verdict toward a tie. Additionally, it is important to note that the growth in the conservatively allocated account is much less than that of the aggressively allocated account, even more so than the difference in return rates would indicate. This is due to the fact that a 5% coupon rate was assumed (this

is taxed as ordinary income, as the dividends were) which leaves only a 1.05% annual capital gain compared to the 7.78% in the aggressive account. The rest of the taxation is handled equivalently, but the lack of growth is a result of the difference in capital gains rather than the assumed rates of return.

With a safely allocated taxable account, the whole life comes out with a clear advantage. The end of the 20th year shows the living and death benefits of whole life to be slightly greater. The fact that the taxable account is more liquid during this period can make up for the small (roughly $4,000) difference in living benefit and be called a tie, but the whole life strategy provides nearly $25,000 more death benefit than BTID, which gives it the slight advantage over this time period. From this point on, however, whole life is clearly a more appropriate strategy. The value of the death benefit of BTID never exceeds $1 million, something that whole life does comfortably by the end of the 40th year. The living benefit of
BTID is also still worth less than $500,000 at the end of the 40th year, while whole life's CSV withdrawal value is upwards of $650,000, and still is not worth $1 million by the end of the 60th year when whole life's is worth nearly $2 million. Regardless of the fact that the taxable account is considerably more liquid than the whole live CSV account, the margins are simply too wide for that to make up the difference for BTID. Additionally, the total value of the taxable account, before taxes are taken at withdrawal, never exceeds the value of the whole life CSV account at any point in time following the 20th year.

Tax-free Account vs. Whole Life:

Table 3 summarizes the scenario in which BTID involves the 20-year level term policies with the difference invested in a tax-free account, such as a Roth 401k, competes with the

whole life strategy. Again, all of the life insurance policies are the same as in the previous scenarios tested, meaning that the difference to be invested in the first 20 years is $8,383 and the difference invested for the first 10 years of the next 20 years is $7,113. Both whole life premiums and contributions made towards tax-free accounts are paid for with after-tax dollars, just like the previous scenario involving the taxable account, meaning that the difference in premium represents the equivalent amount invested in the BTID strategy. Unlike the previous scenario with the taxable account, the after-tax contributions toward the tax-free account grow free from taxation and no taxes are taken out upon withdrawals after age 59 ½ . It is worth noting that due to the assumption that income tax is constant at 35%, the performance of the tax-free account is very similar to that of the tax-deferred account, which is to be expected, though the slight differences make investigating both scenarios worthwhile and will be highlighted.

Table 3: Term + Tax-free Account vs. Whole Life

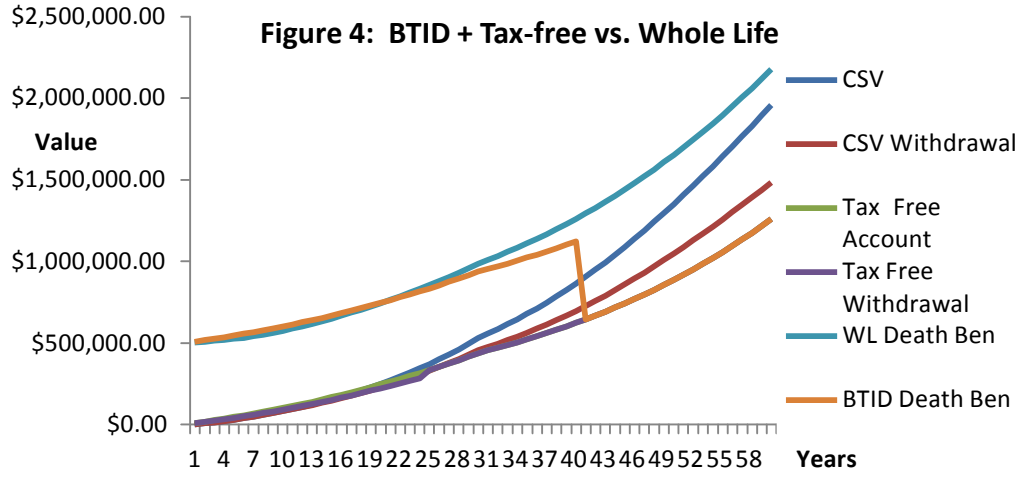
Buy Term, Invest Difference					**Whole Life**			**Advantage**
Return	*Year*	*Account: Roth 401k*	*Withdraw Value*	*Pay at Death*	*CSV*	*Withdraw Value*	*Pay at Death*	
Stocks 9.78%	20	$514,103	$462,693	$1,014,103	$248,583	$228,651	$744,096	BTID
	40	$3,635,960	$3,635,960	$4,135,960	$863,820	$696,458	$1,260,850	
	60	$23,500,857	$23,500,857	$16,100,514	$1,960,048	$1,485,742	$2,178,049	
Bonds 6.05%	20	$328,793	$295,914	$828,793	$248,583	$228,651	$744,096	BTID
	40	$1,243,799	$1,243,799	$1,743,799	$863,820	$696,458	$1,260,850	
	60	$4,026,833	$4,026,833	$4,026,833	$1,960,048	$1,485,742	$2,178,049	
Bills 3.58%	20	$247,584	$222,825	$747,584	$248,583	$228,651	$744,096	Whole Life
	40	$623,634	$623,634	$1,123,634	$863,820	$696,458	$1,260,850	
	60	$1,260,266	$1,260,266	$1,260,266	$1,960,048	$1,485,742	$2,178,049	

The outcome with an aggressively allocated tax-free account in the BTID strategy is largely the same as what was experience with the aggressively allocated tax-deferred account. BTID has the clear advantage across all criterions throughout the time periods. The 10% excise

tax placed on early withdrawals prior to age 59 ½ creates illiquidity for the tax-free account during the first 20-year period and for a part of the second 20-year period, but this is the only tax taken out upon withdrawal. However, the withdrawal value in the BTID strategy was more than double that of the whole life CSV withdrawal value while the pay at death exceeded $1 million compared to whole life's $744,096. The withdrawal value of the tax-free account is actually slightly larger than what was experienced in the tax-deferred account. This is due to the fact that the tax-deferred account pays an income tax on the entire amount withdrawn (which results in a value equal to the value of the total tax-free account at that time) but also has to pay the 10% penalty on the total value of the account. This 10% penalty is larger in the tax-deferred scenario due to the fact that the larger contributions (because they were pre-tax) caused the total value of the account to be higher. This outcome holds true for the next two allocations of the tax-free account as well, and once the 10% penalty no longer applies the withdrawal values of the tax-free and tax-deferred accounts are identical, as expected. The margin of victory for BTID continues to widen over the next two 20-year periods and, just like with the aggressive tax-deferred and taxable accounts, the performance of the tax-free account during the second 20-year period rendered the renewal of the term policy irrelevant. By the time the 60th year arrives, BTID has turned out far superior to the whole life strategy even when taking into account the estate tax of 40% on the amount greater than $5 million in the tax-free account. It is also worth noting that this version of BTID pays out more at death than the tax-deferred version because the beneficiaries need not pay income tax in addition to the estate tax. The pay at death is only greater when the estate tax comes into play and this holds true for the next two scenarios as well.

As for the conservatively allocated tax-free account, we have largely the same story but to a lesser degree. At the end of the first 20 years, the withdrawal value of the tax-free account is worth nearly $70,000 more than the CSV withdrawal value. However, being that it is worth less than $300,000, the presence of the term policy allows for the BTID strategy to take the advantage in amount payable to the beneficiaries as well by edging out the whole life death benefit by just over $84,000. By the end of the 40th year the tax-free account falls only about $7,000 short of the entire whole life death benefit at that time. This represents a landslide victory in terms of living benefit but also indicates that the combination of that and the term policy death benefit also means that BTID easily overcomes whole life in terms of what the beneficiaries stand to receive. By the end of the 60th year, BTID has nearly three times the living benefit of the whole life strategy and close to twice the death benefit.

The safely allocated, tax-free account in the BTID strategy does not perform well enough to keep pace with the whole life strategy, as Figure 4 illustrates.



At the end of the first 20 years, the tax-free account gets hit with the 10% early withdrawal penalty causing it to fall short of the whole life CSV withdrawal value by about $6,000. Both

accounts are considered illiquid at this point in time, meaning the advantage in living benefit goes to the whole life strategy. The death benefit of the term policy is able to make up the difference between the withdrawal value of the tax-free account and the death benefit of the whole life policy with about $3,000 to spare. Therefore, BTID gets the advantage in terms of the death benefit which leaves the strategies split for the first 20-year time period; though it would be fair to give BTID a slight advantage given that bequests have a large influence on the demand for life insurance. The whole life strategy begins to take the full advantage beyond this point, however. The CSV withdrawal value is worth approximately $73,000 more than the withdrawal value of the tax-free account at the end of the 40th year and is more than $225,000 greater at the end of the 60th year. Even with the greater liquidity of the tax-free account (distributions after age 59 ½ are completely tax-free) the advantage still lies with whole life due to the sheer magnitude of the differences. The term policy at the end of the 40th year falls short in making up the difference between the value of the tax-free account and the whole life death benefit by about $137,000 (notice the sharp decrease in Figure 4 representing the toll BTID death benefit takes upon expiration of the term policy) and at the end of the 60th year, the whole life death benefit is worth almost $1 million more than that of the BTID strategy.

VII. Conclusions

In general the BTID strategy had the advantage over a vast majority of the scenarios tested and was only at a disadvantage when the account was allocated safely, returning 3.58% on the invested difference. Of the three account types chosen for the BTID strategy, utilizing a tax-free account like a Roth 401k had a slight advantage over a tax-deferred account (traditional 401k) due to the living benefit being greater when the insured was less than 59 ½ years old. However, this only applies based on the assumptions we made considering taxes, specifically, income tax. When the income tax bracket remains the same, a tax-free and tax-deferred account, assuming growth still remains untaxed and estate taxes are a non-factor, will perform at the same level. Table 1 and Table 3 from the previous section illustrate this perfectly by displaying the same withdrawal values at years 40 and 60 (insured is older than 59 ½ so there is no excise tax) of the tax-deferred and tax-free account, respectively, across all three allocations. If the tax bracket in the beginning of the period, when the contributions are being made, is lower than when withdrawals are being made a tax-free account will have the advantage because taxes were paid up front at a lower rate. On the other hand, if taxes are greater up front and are lower at the time of withdrawal the tax-deferred account would have the advantage because taxes would be taken out at the lower rate.

The main reason that the taxable account was unable to keep pace with the tax-deferred and tax-free account was due to the fact that the time horizon tested was so large. This large time horizon gives the tax-deferred and tax-free accounts a huge advantage over a taxable account because the growth is not taxed at all and compounding interest takes full effect. Taxing the growth each year in the taxable account causes it to fall behind over the run

because it does not benefit from compounding interest like the other accounts do. However, at the end of the 20th year in the testing, the taxable account was much more comparable with regard to withdrawal value (actually performed the best in the aggressively allocated account) due to the fact that it is only subject to capital gains taxes and does not experience the 10% early withdrawal penalty (it is more liquid). This indicates that a taxable account is a more appropriate solution for saving a portion of money that would be used in the short-term where tax-deferred and tax-free accounts provide a long-term solution.

Although BTID was generally the most appropriate strategy given the scenarios that were tested, it wasn't outright superior to the whole life strategy. This indicates that the whole life strategy would be appropriate for certain people and ought to be considered when evaluating savings plans and fulfilling life insurance goals. Based on the results from the tests, whole life appears to perform in between the conservative and safe allocation of potential investment accounts. This is not surprising as the whole life CSV account earns about 4.52% when you take the average returns of the 60-year period, excluding the first 7 years as that is the period where a bulk of the expenses are being paid on the policy. If the BTID side fund were to achieve a 4.52% rate of return each year, just like the whole life policy, two things would happen. First, if the side fund were tax-deferred or tax-free, BTID would have an overall advantage in living benefit especially after age 59 ½ due to the whole life premiums being taxed up front and then the CSV gains being taxed as income. Whole life gets hit with two types of taxes which decrease liquidity relative to the other accounts. In terms of death benefit, however, whole life comes out on top after the insured reaches age 75 and is no longer insurable. The other accounts will only be accumulating toward the CSV of whole life, which is

much lower than the death benefit. Without the term policy there to make up the difference for BTID, the beneficiaries are only able to receive the side fund, which is equal to the whole life CSV and not the death benefit.

Another noteworthy point about whole life CSV is that it is guaranteed to only increase and will never decrease if it is left alone and premiums continue to be paid. In 2008 when the market experienced huge losses, the value of accounts such as the ones tested in the BTID strategy dropped significantly, whereas the value of whole life insurance CSV accounts did not lose any money. The safety net that the whole life strategy provides in that sense would serve as a nice compliment to the BTID strategy to mitigate some of the risk associated with having funds tied to the market. For an individual who has maxed out contributions toward their 401k or Roth IRA and is looking to save more, utilizing a whole life policy as a vehicle for those savings would contribute to the portfolio nicely. The liquidity of whole life is similar to the other tax-free or tax-deferred accounts so it would certainly still be a place for long-term savings. Assuming it is treated as such, placing savings in a whole life policy would be far more efficient than just letting it sit in a savings account. Obviously, it provides a tax-free monetary bequest at a significant discount to be passed on to one's children or even their favorite charity. The sheltered growth and untaxed payout is very attractive to wealthy families in high tax brackets who easily exhaust the other tax efficient savings vehicles. It also provides a nice option for a young professional in a low tax bracket who will get cheaper premiums due to their age and will also pay the taxes now before entering higher brackets.

Testing these two strategies using actual results would provide more concrete evidence to support or refute the conclusions drawn in this study. The best way to evaluate the whole life strategy is through the analysis of an existing policy rather than simply an illustration. The same can be said for BTID in that using real time market returns is far more accurate than assuming constant, compounded growth. Practicality becomes an issue with this due to the fact that a thorough comparison of the two strategies requires at least a few decades worth of data. This study also did not account for human behavior in that commitment to the strategies was fully assumed. Whole life CSV typically takes a number of years before it begins to exceed the amount of premiums that have been paid, due mainly to the premiums paying the up-costs of the company as well as the insurance. This makes whole life somewhat of a forced commitment vehicle due to the fact that getting rid of the policy would cost the owner a considerable amount of money if done within the first few years of owning it. BTID does not reinforce the need to save as well as the whole life strategy because there are no immediate consequences to not contributing to one of the various side funds, so consumer discipline becomes an issue. According to the Bureau of Economic Analysis (March 1, 2013), the 2012 personal saving rate in the U.S. was 3.9% and was only 2.4% in January, 2013 which indicates that most consumers are not saving much on their own accord. A true case study of these two strategies, putting actual consumer and market behavior to the test would complement the results of this analysis nicely.

VIII. References:

ALTFEST, L.J. (2007). Personal Financial Planning. McGraw-Hill/Irwin, 1221 Avenue of the Americas, New York, NY, 10020.

BABBEL, D, F. (1985). The Price Elasticity of Demand for Whole Life Insurance. The Journal of Finance. Vol. XL., NO. 1 March 1985

COOPER, R. W. and FRANK, G. L. (2005). The Highly Troubled Ethical Environment of the Life Insurance Industry: Has it Changed Significantly from Last Decade and If so, Why? Journal of Business Ethics, Vol. 58, No. 1/3, Promoting Business Ethics (Apr. – May, 2005), pp. 149-157.

FISCHER, S. (1973), Life Cycle Model of Life Insurance Purchases. International Economic Review. Vol. 14 No. 1 February, 1973.

FREES, E. and SUN, Y. (2009). Household Life Insurance Demand: A Multivariate Two-Part Model. North American Actuarial Journal, 14(3), 338-354.

GRACE, M.F. and LIN, Y. (2007). Household Life Cycle Protection: Life Insurance Holdings, Financial Vulnerability, and Portfolio Implications. The Journal of Risk and Insurance, 2007, Vol. 74. No. 1, 141-173.

HUNT, J. H. (2001). Evaluating Cash Value Life Insurance Policies. Consumer Federation of America. 1424 16th St, NW, Ste. 604 Washington, D.C. 20036.

IBBOTSON ASSOCIATES. (2012). 2012 Ibbotson Stocks, Bonds, Bills, and Inflation (SBBI) Classic Yearbook. Morningstar, Inc. 22 W. Washington Street Chicago, Illinois 60602.

INKMANN, J. and MICHAELIDES, A. (2010), Can the Life Insurance Market Provide Evidence for a Bequest Motive? Netspar Discussion Papers. July, 2010.

MASS MUTUAL FINANCIAL GROUP. (2012). Historical Dividend Studies From Massachusetts Life Insurance Company: A Technical Guide for Individuals. Massachusetts Life Insurance Company, Springfield, MA. 2012.

NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY. (2012). Buy Term, Invest the Difference? Northwestern Mutual Life Insurance Company, Milwaukee, WI. 2012

PRITCHETT, S.T. (1998). Incorporating Historical Investment Performance in Projecting Life Insurance Cash Values. Financial Services Review, 6(3): 155-167.

SAUTER, N., WALLISER, J., and WINTER, J. (2010). Tax Incentives,Bequest Motives, and the Demand for Life Insurance: Evidence from Two Natural Experiments in Germany, CESifo working paper Public Finance, No. 304.

SLOTT, E. (2012). The Retirement Time Bomb…and How to Defuse It: A Five Step Plan for Protecting Your IRAs, 401K(s), and Other Retirement Plans from Near Annihilation by the Taxman. Penguin Books Ltd. 80 Strand, London. WC2R ORL, England. 2012.

SPILLER, R. (1972). Ownership and Performance: Stock and Mutual Life Insurance Companies. The Journal of Risk and Insurance, Vol. 39, No. 1 (mar., 1972), pp. 17-25.

STOUGHTON, N. M., WU, Y. and ZECHNER, J. (2011), Intermediated Investment Management. The Journal of Finance, 66: 947–980

U.S. DEPARTMENT OF COMMERCE: BUREAU OF ECONOMIC ANALYSIS. Personal Income and Outlays, January 2013. For release: March 1, 2013.

WALDEN, M. L. (1985). The Whole Life Insurance Policy as an Options Package: An Empirical Investigation. The Journal of Risk and Insurance. Vol. 52. No. 1. March, 1985.