

Retirement: A reality or dream? The case of low returns and longevity

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ABSTRACT

Asset allocation is considered by many financial planners as the most important variable in portfolio returns. The mix of assets included in the portfolio is the driving force behind total returns received by the investor. Historically, the appropriate asset allocation for individuals who are nearing or in retirement has been conservative, with fewer equities and more fixed income. In the current economic environment of unprecedentedly low interest rates, a portfolio of mostly fixed income may not provide enough return for an adequate retirement. Additionally, life expectancies are rising. This combination presents a problem for many retirees whereby a conservative portfolio may not outlast a retiree's life. The traditionally conservative fixed income portfolio has now become quite risky.

This case presents the difficulty facing many individuals preparing for or already in retirement. It tells the story of a soon-to-be retiree who becomes very concerned about the low returns he is receiving on his retirement portfolio. With retirement looming in the near future and longevity in his genes, he is extremely concerned that his portfolio will not be large enough to give him an adequate retirement. Even more frightening is the possibility he will outlive his portfolio.

Based on an actual person, the case asks students to address the issues associated with planning for retirement in an environment with historically low interest rates and increased life expectancy. Students must learn and apply the concepts of asset classes, asset allocation, portfolio risk and returns, diversification, and portfolio rebalancing.

Keywords: retirement portfolio, low interest rates, asset allocation, asset class

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INSTRUCTOR'S NOTES

This case explores the economic environment, asset classes, asset allocation and how a retiree can balance risk with the need for security. This case is appropriate for both undergraduate and graduate students studying finance or investments. Additionally, the case would be appropriate for continuing education purposes and for all individuals preparing for or in retirement.

THE CASE

Introduction

John Chase and his wife, Margaret, spent last week at their lake cabin. Their daughter, Jennifer, and her fiancé joined them for the weekend. On Sunday morning John and Jennifer went fishing just after daybreak. It was such a special time for both of them, especially since they caught several bass and a large walleye. While being out on the quiet lake in the early morning hours, John and Jennifer discussed everything from John's golf game to Jennifer's upcoming wedding. One topic that has been gnawing on John since Sunday was the conversation about their retirement accounts. Jennifer ecstatically told her father that her 401(k) had seen very strong growth in the past several years and had a return of over 30% in 2013. John disappointingly told his daughter that his own returns were much lower than hers. Since Sunday, John can't stop thinking about his portfolio. His plan is to retire in three years when he is 63 years old. He has been wondering if this is going to be a reality or just a dream. He wonders what he can do with his portfolio to make it a reality. Yesterday at Rotary John discussed some of his concerns with his good friend, Becky. She suggested he call Blue Sky Financial. John has heeded Becky's advice and has an appointment at Blue Sky next Wednesday.

Appointment at Blue Sky

Amanda Morgan and Jeff Blanton, both Certified Financial Planner Practitioners at Blue Sky, are busy preparing for today's clients. They have several appointments throughout the day. Their first is with a new prospect, John Chase. Just as they are about to wrap up their daily overview, Andy Brooks, Blue Sky's new para-planner, knocks on Jeff's door to let Jeff and Amanda know that Mr. Chase has arrived and is waiting in the conference room. Amanda and Jeff, followed by Andy, quickly head over to the conference room. As Jeff shakes Mr. Chase's hand he says, "Good morning, Mr. Chase, it's nice to meet you". Amanda holds out her hand to Mr. Chase and says "I am delighted to meet you, as well. Thank you for making an appointment." Looking at Andy, Amanda adds, "This is our para-planner, Andy Brooks." Mr. Chase immediately feels comfortable and responds, "Thank you for seeing me, and please call me John".

The three sit down around the conference table and, as they sip on their coffee, they make small talk about the weather and the upcoming city festival. Feeling the need to get on with business, Amanda smiles warmly and asks, "So John, what brings you here today?" John eagerly responds with "I am so concerned about the returns I am getting on my retirement portfolio. I am wondering if I will ever be able to retire. You see, when the market crashed in 2008 I bolted from stocks just when they hit rock bottom. I was just so scared they would never recover. Now look where I am! My daughter told me just last week she had a return of over

30% in her 401(k) this past year. I want returns like hers, not the measly two percent I got. Gosh, it seems like everyone but me in the universe has seen phenomenal returns over the past couple of years". Amanda and Jeff nod as they are well aware of the dilemma that many individuals are currently facing. John continues, "I not only want to retire in several years but I think it is important to let you know I may live a very long time. Both of my parents are in their mid-nineties, and I currently have perfect health. If I retire in my early 60s, I could be retired for more than 30 years. That's a long time!"

Jeff gives John a brief overview of the market conditions but spends most of the appointment just getting to know John and his current situation. After about an hour, Amanda suggests "John why don't you leave your current portfolio statement with us. We'll study it and pull together some data that will be useful in helping you understand the current economic environment, as well as your portfolio's performance. And John, would you mind taking this risk assessment questionnaire and returning it to our office by next week? Oh, and can you have Mrs. Chase complete a risk assessment as well? This will help us make recommendations that are the most appropriate for your portfolio." Smiling, John stands, now feeling more assured that he has made a smart decision to seek guidance from professionals. "That's just what I am looking for. I appreciate any advice you can give me. Thank you so much for your time."

After John leaves the office, Jeff turns to Amanda and Andy and says. "Since John is coming back in less than two weeks let's get to work on pulling everything together that will help us give him a better understanding of current market conditions and his investment alternatives. Andy, I would like for you to review Mr. Chase's portfolio and to research the economic environment, asset classes, including historical returns and risk. Also see what kind of data you can find on asset allocation. Do you think you could have it for us by Monday?" Amanda chimes in, "That sounds like a plan to me! Andy, I think this will give you a great chance to see the behind the scenes work we do to provide our clients with information that can help in making prudent financial decisions. We might not be able to promise him double-digit returns, but I have a feeling we can improve on his current situation. Now, how about some lunch before the Burkes arrive?" Andy eagerly accepts the lunch invitation, although he currently has a lot of ideas and questions racing through his head and knows his weekend plans with Julie have just been put on hold. Surely she will understand what a great opportunity this is for him to impress both Jeff and Amanda.

DATA PREPARED BY ANDY BROOKS

John Chase's current portfolio and risk assessment

Mr. Chase's current portfolio would be considered extremely conservative. Approximately 85% of his retirement assets are in low yielding securities. In fact, he currently has around 20% in cash and cash equivalent assets, and over 60% in fixed income. It is not surprising that he is dismayed by the returns he has been receiving. Details of his portfolio are presented in Table 1 (Appendix). Also the historical returns and risk (using standard deviation) for the asset classes are presented in Table 2 (Appendix). The average 3-year, 5-year and 10-year returns and risk are shown. Mutual funds, Exchange Traded Funds (ETFs) and Indexes are used as proxies for the asset classes.

A copy of the risk assessment questionnaire taken by Mr. and Mrs. Chase is shown in Table 3 (Appendix). Mr. Chase scored a 20 on the risk assessment. Mrs. Chase scored a 15.

The economy

The economy and the stock market are interrelated. Changes in the economy affect the stock market. The U.S. economy has seen 2 recessions since 2000. The first recession began in March 2001 and lasted around 8 months (Amadeo, n.d.). In the early 2000s, capitalists invested money to launch a large number of dot-coms. The market tended to overvalue internet-based companies as investors believed that any internet related company would be profitable. Many of these companies failed and many of the survivors lost significant share value. The bursting of the dot-com bubble caused the stock market to plunge as evidenced by the S&P 500. (Admin, 2012) The S&P 500 is an index of 500 large cap companies that represent the main industry sectors of the economy. The S&P 500 is used as a benchmark for the stock market as a whole. The S&P 500 dropped to from a high of 1170 to 777 in 2002, a 34 % loss. Portfolio values shrank and investors lost confidence. The situation was further aggravated by the September 11, 2001 terrorist attacks, as investors were traumatized by the worst attack in history in the continental United States (Admin, 2012).

The Federal Reserve dropped interest rates incrementally beginning in 2001 to stimulate the economy. The Federal Reserve uses the Fed Fund rate to influence and direct the economy. The Fed Fund rate is the rate that banks are charged to borrow money from the Federal Reserve Bank. The Fed Fund rate has an inverse relationship with the stock market. The Fed Fund rate is reduced when the Federal Reserve wants to stimulate the economy and increased when they are trying to control inflation. A decrease in the Fed Fund rate makes money less expensive to borrow and banks respond by dropping their interest rates. Money becomes less expensive to borrow and spending increases. This tactic is used to stimulate growth in the economy, and the market typically reacts to a decrease in rates by increasing in value (Mueller, n.d.).

Conversely, an increase in the Fed Fund rate makes it more expensive for the banks to borrow money. The banks in turn increase their interest rates. The effect is that it becomes more costly for consumers and businesses to borrow; thus, they have less discretionary income. This leads to less spending and the economy slows. The market typically reacts to an increase in rates by dropping in value (Mueller, n.d.).

The Fed Fund Rate was at 7.03% in July of 2000 and dropped to 1.52% by the end of 2001. Rates were kept low and as the economy recovered housing prices rose. Some banks and investment companies began originating excessive amount of subprime mortgages to consumers who otherwise would not have qualified for traditional mortgages. Subprime mortgages were pooled together and sold as mortgage backed securities. Rates rose slowly in 2005 in an attempt to control spending. The tactic was too little, too late and the housing bubble burst in 2007 (Labonte, 2008). What followed was the worst recession since the Great Depression. It began in December of 2007 and lasted 18 months. Many borrowers went into default and lost their homes. Banks were inundated with large numbers of foreclosed properties. Some banks even became illiquid due to the large drop in the value of their mortgage portfolios. Even large investment banks such as Lehman Brothers and Bear Stearns failed. The stock market crashed. The S&P 500 went from a high of 1565 on October 9, 2007 to a low of 677 on March 9, 2009. This was a 57% loss. The Federal Reserve responded by dropping interest rates to historically low levels (0.08 percent in January 2009) ("The origins of", 2013).

The Great Recession ended in June of 2009. Since then, the economy and the stock market have been slowly recovering. The Federal Reserve tightened their regulations on banks

and, in turn, the banks tightened their credit. Interest rates have remained near zero as the Federal Reserve tries to move the economy in the right direction (Nutting, 2009). The S&P 500 has climbed from its low of 677 in 2009 to 1988 in July of 2014 (an approximate 200% increase). In the current bull market, stock prices are continuing to rise, boosting the value of investor's portfolios.

Asset Classes

An asset class is a group of comparable investments that behave similarly in the market. Asset classes have different risk levels and, accordingly, different risk expectations. There are laws and regulations that apply to each of the asset classes, as well as advantages and disadvantages to owning each class. (Asset class, n.d.)

Equities: Stocks are equity securities that represent ownership in a company. Stocks can be broken down into growth stocks, value stocks, or a blend. Growth stocks are companies that are growing and reinvesting their income into expansion. They tend to be newer and smaller companies that have innovative products (Cussen, n.d.). Growth stocks can offer a higher return than value stocks but they typically don't pay dividends and they can be far riskier than the other stock classes. Growth stocks are prevalent in the areas of technology, alternative energy and biotechnology (Growth vs. Value: Two, n.d.). A growth stock usually does well when the economy is good but suffers during recessions. Value stocks are companies that are more stable and tend to sell consumer goods such as pharmaceuticals, food, health insurance, and utilities. These stocks tend to retain value over differing economic cycles. They typically pay dividends but they appear to be undervalued when looking at their financials. Investors have the sense that they are getting a deal because the company is worth more than market value (Growth vs. Value Investing, n.d.). Generally, equities tend to perform better than other asset classes over the long-term. However, stocks are more volatile in the short-term and there is no guaranteed return on the investment. Investors can lose a lot of money if they fail to diversify their portfolio or if they buy and sell frequently (Risk to Investing, n.d.).

Fixed Income: Bonds are a type of fixed income security. A bond is a debt instrument that is issued by a company or government entity. In essence, an investor is lending money in return for interest. Bonds are classified by their length and credit quality. Bonds are less risky than stocks but they also have smaller returns (Pros and Cons, n.d.). Bonds with longer maturities and that have a higher credit risk offer higher interest rates. A bond's value fluctuates with interest rates and in the current market low interest rates are making bonds less valuable. The price of long-term bonds tends to fluctuate more with changes in interest rates. Bonds are often safer than stocks but the interest payments are taxed at a higher rate than dividends and capital gains. If a company goes bankrupt, the bond holders are in line to be paid before the stockholders. Thus, the bondholders usually get back some of their money, while stockholders may lose their entire investment. Bonds are advantageous for retirees because they have predictable returns and offer a steady income stream. Bonds can be used in a portfolio to help smooth out the volatility from stocks. (Bond Investing, n.d.)

Cash Equivalents: Of the three major asset classes cash equivalents have the least risk but also provide the lowest return. This class includes US government Treasury bills, certificates of deposits (CDs), banker acceptance, corporate commercial paper and money market instruments (Cash Equivalent, n.d.). In the current low interest rate environment these assets are yielding extremely low returns.

Real Estate: This asset class represents commercial and residential land and buildings. Real estate is a tangible asset that will always have some value. The real estate market is considered to be largely inefficient because property values don't fluctuate immediately with changes in the market. Therefore, investors may be able to acquire real estate for less than it is actually worth. There are, however, downside risks to investing in real estate. Real estate is not liquid, which could cause problems if an investor is in need of quick cash. It is very important to understand all aspects of real estate purchases and sales because it is possible to lose a lot of money. (Real Estate Investing, 2008). Unlike bonds and equities, real estate investments will require paying property taxes and possibly insurance. Instead of actively owning real estate, an investor can invest in real estate through a real estate investment trust (REIT). REITs trade on the stock exchange and can be bought and sold just like shares of stock (What is a REIT, n.d.).

Commodities: A commodity is a raw material that is interchangeable with other raw materials of the same type. It is used in commerce and frequently used as inputs to generate goods and services. Although commodities can differ slightly with regards to quality, they are essentially uniform. Some examples of commodities include gold, grains, beef, oil and natural gas. (Commodity, n.d.) Because commodities are negatively correlated with the returns of equities and long-term fixed income they can add diversification to a portfolio (Commodities vs. stocks, 2005). Downsides to investing in commodities are that commodities must be stored and insured (thus a cost) and the investor is foregoing interest or dividends that fixed income and equities pay (Weil, n.d.).

Asset allocation

Asset allocation is how your investment portfolio is divided among different assets such as equities, fixed income, real estate, commodities and cash. The allocation for an individual investor will depend on his or her unique situation. The most important factors are the investor's goals, time horizon and tolerance for risk (Mayo, 2014). The goals and time horizon are interrelated. The time horizon is the amount of time before the investor needs to achieve a particular financial goal (the reason for the investment). If the goal is far out in the future, the investor will have the ability to wait out slow or negative economic cycles. However, if the goal is within a few years, the investor has a shorter time horizon and would not have the ability to wait for the economy to improve. With a high tolerance for risk, the investor is willing to invest more aggressively for a greater potential return. On the other hand, with a low tolerance for risk, the investor will invest conservatively and should expect lower returns.

The benefit of asset allocation is that all investments do not go up and down at the same time or at the same speed. Economic conditions may cause one asset class to increase in value and another to decrease in value. By diversifying among different asset classes, an investor can protect against significant losses and smooth investment returns. In addition to the diversification benefit, asset allocation drives the investor's return and ability to reach specific financial goals. Without taking enough risk, an investor may not be able to reach some goals. On the other hand, if the investor takes too much risk the money might not even be there when needed (Riddix, 2011).

Using a strategic approach to asset allocation, the investor selects a base target allocation from a selection of asset classes. The three major classes of assets are equities, fixed income,

and cash and cash equivalents. The allocation is periodically rebalanced to maintain the target allocation. For example, when equities have increased more than fixed income the portfolio will be rebalanced by selling some equities and buying more fixed income. While there is consensus among financial professionals that the asset allocation is one of the most important decisions made by the investor, there is no exact formula to determine the asset allocation for individual investors. Equity portfolios do provide more return for the investor over long periods of time. But when the time horizon is shortened, an all equity portfolio becomes volatile and risky. To reduce the risk, other asset classes, such as cash, fixed income and alternative investments, can be added to the portfolio. A balanced portfolio can help reduce the volatility and down-side risk (Asset Allocation, n.d.).

One rule of thumb for asset allocation is to subtract the investor's age from 100 and invest that difference, as a percent, in equities and the remainder in fixed income. As the investor gets older they will be investing a lesser percent in equities and more in fixed income. Because individuals are living longer and will need more money to last through retirement some financial planners are suggesting that this rule be revised by using 110 or even 120, rather than 100. This would push the percent invested in equities higher (What is the best, n.d.).

MONDAY MORNING'S FOLLOW-UP MEETING

After presenting his research to Jeff and Amanda, Andy breathes a sigh of relief that this project is finished, and he can make up with Julie by taking her to dinner tonight. But, before Andy can complete his thoughts, Amanda says "Andy what an outstanding job you have done pulling together this information; however, it's quite a bit of data. I am wondering if you could take this information you have complied, along with any additional research necessary, to answer some specific questions. I believe these questions can be used in our discussion with Mr. Chase to help him understand his investment situation. If you are willing to tackle them, here is the list:"

1. Why have we asked Mr. Chase to take a risk assessment before we make any recommendations about his portfolio? Why did we also ask Mrs. Chase to take the risk assessment questionnaire? Using the scores on the risk assessment questionnaire, what tolerance for risk do the Chases have combined?
2. Mr. Chase said he sold out of the stock market in 2008. What lesson can be learned from this decision?
3. Why don't we have a one-size-fits-all asset allocation model for individuals?
4. How can we compare the returns of asset classes when they all have different amounts of risk?
5. Mr. Chase has approximately 7.5% invested in real estate and commodities? Is this appropriate?
6. Compare the mix of fixed income and equities for Mr. Chase (60 years old) using an asset allocation rule of thumb of 100, 110 and 120.
7. Mr. Chase has almost 20% of his portfolio in cash. What are the pros and cons to holding cash and would you suggest he adjust his cash holdings?
8. High-quality dividend paying stocks can be good investments for a retiree's portfolio. Why is this so and are there risks associated with seeking income from high dividend paying stocks?
9. Propose an asset allocation for Mr. Chase.

10. One scenario that Mr. Chase can consider is to postpone retirement a few years.
What are the advantages to delaying retirement?

Andy is delighted with the positive feedback from both Amanda and Jeff and confident that he can continue to impress them with answers to these questions. But, Andy also knows things with Julie aren't going to fly so well when he cancels tonight's dinner plans.



POSSIBLE ANSWERS TO STUDENT QUESTIONS

1. Why have we asked Mr. Chase to take a risk assessment before we make any recommendations about his portfolio? Why did we also ask Mrs. Chase to take the risk assessment questionnaire? Using the scores on the risk assessment questionnaire, what tolerance for risk do the Chases have combined:

Probably one of the most important steps in helping clients reach their financial goals is assessing their tolerance for risk (accurately assessing a client's propensity for risk). Risk assessment is critical in the financial planning process and should be addressed before any recommendations are made concerning a client's portfolio. In fact, in the Rules of Conduct for CFP® Professionals, it states "make and/or implement only recommendations that are suitable for the client" (CFP Board, 2008). Since Mrs. Chase will also be affected by the investments in the portfolio, the asset allocation should reflect her tolerance for risk as well. With two individuals an average of the two risk assessment scores is appropriate. Using an average of their scores gives them a score of 17.5. This would be considered low moderate tolerance for risk.

2. Mr. Chase said he sold out of the stock market in 2008. What lesson should he learn from this decision?

The stock market is a leading indicator of the economy as it expands and contracts. When the economy is contracting the stock market tends to fall. In 2008 the economy had one of the biggest contractions in history and, accordingly, the stock market had one of the largest declines in history. An investor needs to have faith that the economy will come back and so will the stock market. Following the age old principle "buy low, sell high" it would have been better to buy in 2008 than sell.

3. Why don't we have a one-shoe-fits-all asset allocation model for individuals?

Because, asset allocation determines the risk of a portfolio and risk tolerance is unique to an individual. Some individuals are risk takers and others are risk adverse. Individuals need to find an asset mix that meets their risk tolerance for losing money yet allows them to reach their financial goals. You certainly don't want an investor to lose sleep because their portfolio is too aggressive for their risk profile. Asset allocation also is dependent on the investor's financial goals, time horizon, and the investor's age.

4. How can we compare the returns of asset classes when they all have different amounts of risk?

The Sharpe Ratio allows us to compare returns on a risk-adjusted basis. The return less the risk-free rate is divided by the standard deviation. Although an asset may have a higher return, it may not be superior. If the higher return has a lot more risk, the additional return may not be worth the extra risk. Comparing the Sharpe Ratios we get a more accurate measure of performance. The Sharpe Ratio for each asset class is reported in Table 2 (Appendix). Large Cap stocks and Domestic Fixed Income have very good risk-adjusted performance compared to the other asset classes.

5. Why do you think Mr. Chase has approximately 7.5% invested in real estate and commodities?

Real estate and commodities are considered alternative investments. They tend to fluctuate differently than equities and fixed income. Therefore, they have a place in a well-diversified portfolio. Held alone, they would be considered risky. Real Estate has an acceptable Sharpe Ratio as seen in Table 2 (Appendix). However, commodities have a very poor risk-adjusted return which reflects the high risk for such low return. Mr. Chase may want to reconsider holding commodities in his portfolio.

6. Compare the mix of fixed income and equities for Mr. Chase (60 years old) using an asset allocation rule of thumb of 100, 110 and 120.

100 – age = amount in equities; 100 – amount in equities = fixed income

100: 100 – 60 = 40% in equities; 60% in fixed income

110 – age = amount in equities; 100 – amount in equities = fixed income

110: 110 – 60 = 50% in equities; 50% in fixed income

120 – age = amount in equities; 100 – amount in equities = fixed income

120: 120 – 60 = 60% in equities; 40% in fixed income

7. Mr. Chase has almost 20% of his portfolio in cash. What are the pros and cons to holding cash and would you suggest he adjust his cash holdings?

This amount is considered extremely conservative. The two major advantages to holding cash are that you have funds to invest when an opportunity arises such as the stock market dropping. For example, when the stock market hit bottom in 2008, those with cash had an excellent opportunity to purchase at the very bottom (buy low). The major disadvantage of holding cash is the extremely low returns. Factoring in inflation, cash will currently have a negative return. Mr. Chase would be prudent to have approximately 2 years of living expenses in cash. Many experts believe that 5% of a portfolio in cash is a good rule of thumb.

8. High quality dividend paying stocks are good investments for a retiree's portfolio. What are the advantage and risks associated with this investment?

The advantage of investing in high dividend paying stocks is the income stream that you will receive. A high dividend paying stock may pay a dividend of 3 – 5%. This income is in addition to the growth of the stock (capital gains). If the stock increases in value by 8% for the year and has a dividend yield of 4% the total return for the investment is 12%. When invested in fixed income, there is also an income stream but the investor will not get to enjoy any growth in the firm like an equity holder. Dividend stocks do come with risk. Because the firm could either reduce or cut the dividend it is important to invest in high quality companies to reduce the likelihood of a dividend reduction or cut. There is also the risk associated with all equities – the price of the stock can decrease generating a capital loss for the investor.

9. Propose an asset allocation for Mr. Chase.

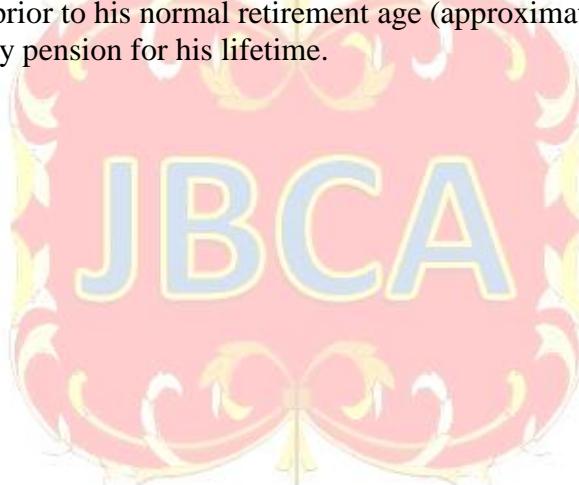
The major change in Mr. Chase's portfolio is to decrease his cash holdings and his allocation to fixed income. Using a 110 asset allocation model and his age of 60, Mr. Chase's portfolio is split evenly between fixed income and equity. Decreasing his cash

holdings to approximately 5% of his portfolio and keeping his current investments in real estate and commodities, a possible portfolio alternative is shown in Table 4 (Appendix).

Although it is highly unlikely that returns in 2014 and beyond will equal or exceed 2013, if Mr. Chase had been invested in the new proposed asset allocation for 2013 he would have had a return of approximately 14% compared to the less than 3% return he actually received. The real driver of the higher returns in this new proposed portfolio is the decrease in cash and the increase in the equity weight to 44%. It is likely that equity returns will be much lower and they could even be negative going forward. But, by having a higher percentage in equity he has an increased chance of boosting his portfolio returns.

10. One alternative that Mr. Chase can consider to assure an adequate retirement is to postpone retirement a few years. What are the advantages to delaying retirement?

Mr. Chase stated he wanted to retire by age 63. This is considered an early retirement and poses three problems for a retirement portfolio. Firstly, he will be reducing the number of years he works and thus reduces the number of years he saves for retirement. Once he retires, he will no longer contribute to his portfolio. Secondly, he will start depleting his portfolio sooner. This is a double edged sword - less in and more out. Thirdly, if he draws from Social Security prior to his normal retirement age (approximately 66), he will receive a smaller Social Security pension for his lifetime.



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APPENDIX

Table 1: Mr. Chase's Portfolio (Total Return)

	2011		2012		2013	
Asset Classes	Percent of Portfolio	Period Return	Percent of Portfolio	Period Return	Percent of Portfolio	Period Return
Equities, Domestic	6.07%	0.53%	6.09%	16.52%	6.15%	36.85%
Equities, International	3.93%	-11.58%	3.42%	18.57%	3.12%	22.72%
Real Estate	4.89%	9.80%	5.27%	17.72%	4.23%	5.63%
Commodities/ Natural Resources	4.52%	-12.49%	4.03%	-2.11%	3.11%	-9.69%
Fixed Income, Domestic	68.86%	-1.25%	67.23%	3.44%	60.12%	-0.25%
Fixed Income, International	4.52%	1.76%	4.30%	10.22%	3.78%	-1.05%
Cash and Equivalents	7.22%	0.10%	9.66%	0.07%	19.49%	0.04%
Total Return		-1.28%		5.25%		2.73%

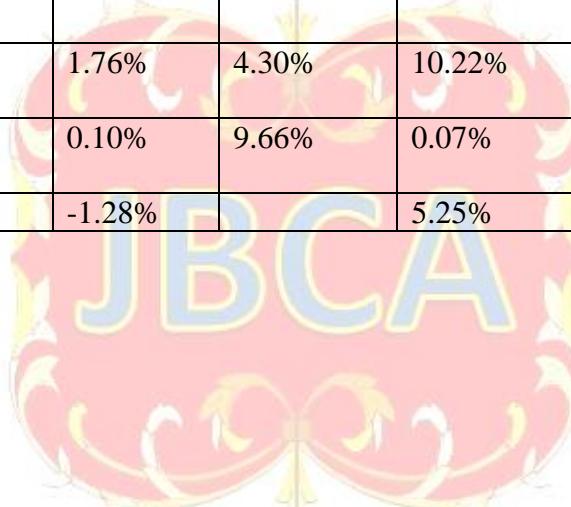


Table 2: Historical Average Returns, Standard Deviation and Sharpe Ratio for Asset Classes									
	3 Year			5 Year			10 Year		
	Return	Std. dev.	Sharpe Ratio	Return	Std. dev.	Sharpe Ratio	Return	Std. dev.	Sharpe Ratio
Large Cap Stocks (IWF)	16.36%	12.85%	1.25	16.87%	13.7%	1.21	8.28%	15.20%	0.50
Small Cap Stocks (IWM)	13.63%	17.23%	0.82	16.54%	18.16%	0.93	8.77%	19.67%	0.45
International Stocks (EFA)	7.84%	16.32%	0.54	9.25%	16.60%	0.61	6.95%	18.14%	0.38
Commodities (MSDILTR)	-3.20%	15.09%	-0.14	5.21%	15.53%	0.40	4.80%	18.70%	0.26
Real Estate (MSCI)	11.89%	13.74%	0.88	12.77%	14.40%	0.90	7.43%	16.04%	0.43
Fixed Income Domestic (AGG)	2.94%	2.71%	1.06	4.31%	2.83%	1.48	4.62%	3.31%	0.89
Fixed Income International ((RPIBX))	0.36%	6.38%	0.08	3.36%	7.77%	0.45	4.64%	8.42%	0.39
Cash and Equivalent (VMMXX)	0.02%	0.01%	-3.65	0.05%	0.01%	-2.48	1.70%	0.57%	0.70

Source: Morningstar.com. Proxy definitions: IWF: iShares Russell 3000; IWM: iShares Russell 2000; EFA: iShares MSCI EAFE; MSDILTR: Morningstar Long-Only Commodity Index; MSCI: MSCI World NR USD; AGG: iShares Core US Aggregate Bond; RPIBX: T. Rowe Price International Bond; VMMXX: Vanguard Prime Money Market Inv

Table 3: Risk Tolerance Assessment						
		Global Portfolio Allocation Scoring System (PASS) for Individual Investors				
Questions		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Earning a high long-term return that will allow my capital to grow faster than the inflation rate is one of my most important investment objectives.	5	4	3	2	1
2	I would like an investment that provides me with an opportunity to defer taxation of capital gains to the future.	5	4	3	2	1
3	I do not require a high level of current income from my investments.	5	4	3	2	1
4	I am willing to tolerate some sharp down swings in the return on my investments in order to seek a potentially higher return than would normally be expected from more stable investments.	5	4	3	2	1
5	I am willing to risk a short-term loss in return for a potentially higher long-run rate of return.	5	4	3	2	1
6	I am financially able to accept a low level of liquidity in my investments portfolio.	5	4	3	2	1

Source: (Droms, William G., and Steven N. Strauss, 2003)

A high score would indicate that a client was a risk taker and could have a more aggressive portfolio. A low score would indicate that a client is risk adverse and a more conservative portfolio is appropriate.

Score	Risk Tolerance
6 – 12	Low
13 – 18	Low moderate
19 – 24	High moderate
25 - 30	High

Table 4: Possible Portfolio Alternative			
	Asset Weight	2013 Returns	Hypothetical 2013 Return
Equity Domestic	30%	36.85	11.05%
Equity International	14%	22.72	3.18%
Real Estate	4.23%	5.63	0.24%
Commodities	3.11%	-9.69	-.30%
Fixed Income Domestic	35%	-0.25	-.09%
Fixed Income International	9%	-1.05	-.09%
Cash	4.66%	0.04	0.002
Total	100%	2.73%	13.99%

