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Income Annuities Improve Portfolio Outcomes in Retirement

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EXECUTIVE SUMMARY

Retirees face several critical retirement risks, including market performance, inflation, and longevity risk. Despite these obstacles, financial advisors must help retirees achieve successful outcomes. This study demonstrates how retirees can improve portfolio outcomes in retirement by combining income annuities with mutual funds in an overall asset allocation.

Income Annuities: An Asset Class with Unique Properties. Income annuities, also known as single premium immediate annuities, function as if they are personal “pension plans.” An investor pays a single premium to an insurance company and in return, the insurance company makes periodic payments back to the investor for at least as long as the investor lives. The income stream may be level or may be increased annually to hedge against inflation. Income can be designed to last for a minimum number of years, even if the investor dies before the end of that period. Income can also be paid through the lifespan of one person or through the lifespans of two people.

The study highlights the following features of income annuities that other products currently are not able to offer: High cash flow, uncorrelated to market returns; retirement alpha in the form of mortality credits, which only life insurance companies can manufacture; longevity hedging; and liquidity features that guarantee that the investor, or his heirs, will receive the full amount of the investment back.

Income Annuities in Portfolios. FRC examined a popular strategy—combining an income annuity with a portfolio of mutual funds—to determine how it compares to a traditional retirement portfolio containing only mutual funds. Across a wide variety of metrics, the portfolios containing a partial allocation to income annuities produced significantly better retirement outcomes for investors.

FRC defined success in two ways: is the portfolio likely to deliver the desired income to the investor over the course of his lifetime, and, how much money is likely to be left over at the investor’s death? On both measures, the income annuity-enhanced portfolios significantly outperformed the conventional portfolios. Conventional portfolios are not likely to deliver the desired income to the investor at inflation-adjusted withdrawal rates in excess of 4%. However, income annuity-enhanced portfolios show reasonable success rates through 4.5% inflation-adjusted withdrawal rates, allowing retirees to generate more income with the same amount of assets. Also, the income annuity-enhanced portfolios resulted in significantly greater median net worth at death, creating a better economic outcome not only for consumers, but also for financial advisors.

Our analysis shows that no other investment vehicle can rival the income annuity for retirement security. There is no other vehicle in the marketplace that can convert assets into income as efficiently as the income annuity. The simplicity of the product—combined with the high payout rates, liquidity features, and optional inflation rider—make the income annuity a product that will certainly gain popularity in the near future.

Retirees are facing new challenges that prior generations have not had to face in nearly 70 years. The equity markets have experienced volatility at levels not seen since the 1930s, and the U.S. economy has been the victim of multiple bubbles, which have taken a toll on the wallets of the Baby Boomer generation, in particular. In 1935, Social Security was enacted “to protect ordinary Americans against the loss of jobs and against poverty ridden old-age,” in essence to provide a level of guaranteed income they could never outlive. The events of 2008 have left lasting scars on the psyche of many Boomers, as they have now lived through two bubbles in a ten year period. In the aftermath, investors are seeking new investment strategies that are less risky than ever. With Social Security in jeopardy and increased market volatility, how will Americans generate the guaranteed income they need?

As importantly, the leading edge of the Boomer population is now reaching retirement. Between three to four million Boomers per year are expected to enter retirement over the next 18 years. As these investors shift from accumulating assets to drawing income, a spotlight has been shone on retirement investing practices. **Retirees face significant investing challenges. With less capital to invest, volatile equity markets, and ever longer longevity, something has to give.**

Recently, retirees have increasingly considered a product that addresses all three of these challenges— income annuities. **Income annuities generate more income per dollar of capital invested than any other income-generating asset class, are non-correlated with equity and bond markets, and perfectly hedge longevity risk—a powerful combination of features to address a significant set of challenges.**

FRC believes that it is important to think about income annuities in a portfolio context. As modern portfolio theory has convincingly demonstrated, it’s important to think about whole *portfolios*, not individual assets, as assets interrelate to each other through correlation. Just as adding bonds to a stock portfolio can improve portfolio outcomes in accumulation, we will show that mixing income annuities with mutual funds can improve portfolio outcomes in retirement.

This study begins with a broad overview of retirement investing since it’s important to recognize that investors face a new set of risks in retirement, which requires a new set of investing tools. **We will then review one of these new tools—the income annuity—demonstrating that it offers unique properties that cannot be**

Income annuities generate more income per dollar of capital invested than any other income-generating asset class, are non-correlated with equity and bond markets, and perfectly hedge longevity risk—a powerful combination of features to address a significant set of challenges.

replicated using traditional asset classes nor using other insurance products such as variable annuities with guaranteed minimum withdrawal benefit riders (GMWBs).

We will demonstrate that, when combined with mutual funds in an overall asset allocation, income annuities improve portfolio outcomes in retirement. Finally, we will review the implications of this finding for advisors, distributors, and asset managers and discuss how financial intermediaries can profitably use income annuities to build better retirement portfolios.

I. RETIREMENT INVESTING

Although retirement investing is often thought to be about *income*, it is really more about *outcome*. A retirement portfolio can be said to be successful only when it leads to a successful *outcome* for retirees—meaning retirees are able to maintain the standard of living they desire throughout retirement and leave a legacy for their heirs, should that be a priority.

A. Key Retirement Risks

Retirees have accumulated a certain amount of savings over their working lives, and they must now manage this pool of assets to fund their retirement liabilities. This problem is compounded by the fact that retirees don’t know how long they will live. In financial terms, retirees face an asset-liability matching problem with an uncertain duration. In order to responsibly solve this problem, retirees must build robust financial plans that can withstand the gauntlet of risks that they will face over the remainder of their lives. However, the risk landscape that retirees face differs significantly from

that which accumulators face. In addition to traditional financial risks, retirees face new risks that require new approaches to portfolio construction.

Market Performance. Of course, retirees face market risk, just like accumulators. However, retirees also face a new, related risk—sequence of returns risk. The performance of the market in the early years of retirement plays a huge role in how a portfolio will perform over the life of the investor, far more than market performance in later years. This is because investors are withdrawing money from their portfolio each year to generate income. If they retire into a declining market, retirees will be forced to withdraw money from a smaller pool, adversely impacting the ability of the portfolio to recover when markets rise.

Inflation. A second risk that retirees face is inflation risk, or put more simply, the risk that a cup of coffee costs far more tomorrow than it does today. To be properly prepared for retirement, investors must be prepared to fund liabilities that are increasingly expensive in nominal terms. Also, the traditional risks posed by inflation don't take into account escalating health care costs that are often rising faster than the overall inflation rate.

Longevity. Finally, retirees face longevity risk, which is the risk that they might live for a very long time.

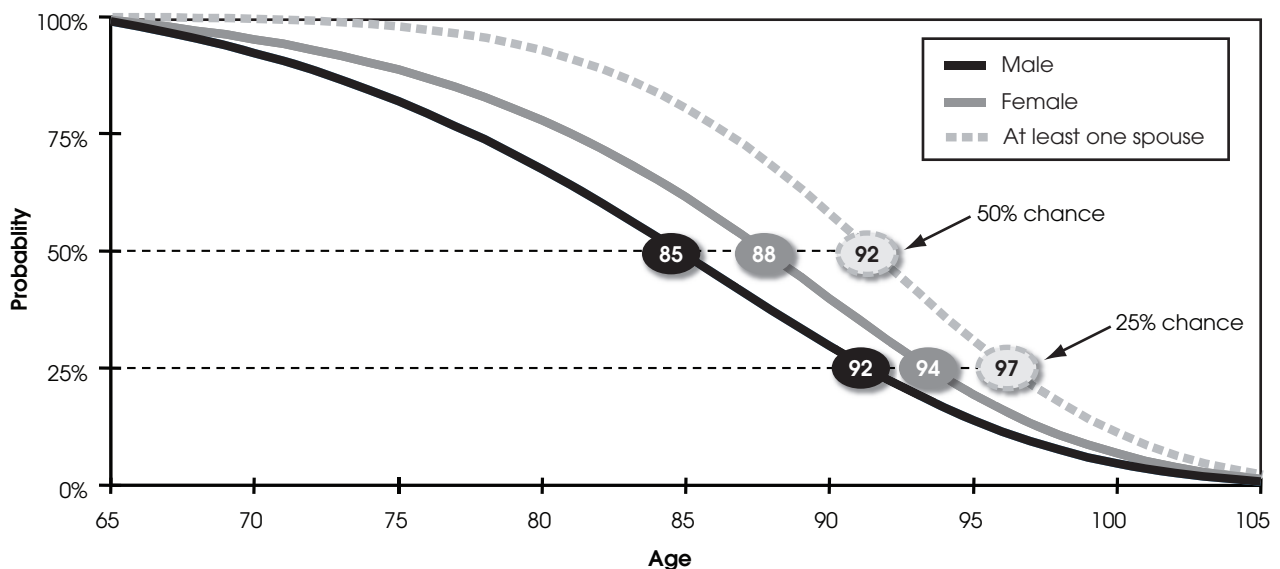
People are living longer today than at any point in recorded history. Although this is a testament to active lifestyles and modern medicine, it is also an issue for investors to contend with during retirement.

Unfortunately, many investors don't treat longevity as a risk; rather, they just build a plan that assumes a fixed planning horizon, often age 90. This practice is no different than building a plan that assumes markets will return 8% every year and inflation will be static at 3%. Although this sure makes planning easy, it doesn't reflect reality.

Planning to 90 feels good because few people believe that they will live to age 90, but as Exhibit 1-1 illustrates, 33% of healthy 65-year-old men and 44% of women will live beyond age 90. Even more importantly, 63% of married couples will have at least one spouse live beyond age 90. Put simply, if you build a financial plan that assumes that a couple needs income to age 90, you're planning to fail 63% of the time.

Of all the retirement risks, FRC believes that longevity risk is the greatest obstacle facing retirees today, for two reasons. First, if you live for a short time in retirement, market returns and inflation don't matter—you'll probably be successful no matter what. On the other hand, if you live for a long time, the other risks come into sharp perspective. In a sense, longevity is a factor

Exhibit 1-1
Probability of a Healthy 65-Year-Old Living to Various Ages



Source: Annuity 2000 Mortality Table

that can expand, or contract, the importance of the other risks in retirement.

The second issue is that longevity risk cannot be hedged by traditional asset classes, and therefore requires fresh approaches to portfolio construction. This issue is discussed in further detail throughout this study.

B. What Financial Advisors Can Do

A central premise of portfolio construction for retirement is that investors must optimize the factors that they *do* control across a range of possibilities for those factors that they *don't* control—market risk, inflation risk, and longevity risk. In other words, financial advisors must help retirees achieve successful outcomes even in the face of market storms, high inflation, and exceptional longevity.

Financial advisors have two primary levers that they can operate to achieve successful outcomes for their clients in retirement: asset allocation and withdrawal rate. By tweaking the mix of assets that their clients hold and helping clients select sustainable withdrawal rates, advisors can help clients achieve successful outcomes regardless of how the market performs or how long they live.

Asset Allocation. Among investment theories, one stands out as having turned the investment community upside down—Modern Portfolio Theory. MPT was initially described in one small paper written by Harry Markowitz in 1952, but it has evolved over the years to become the basis of much of modern investing. Essentially, MPT showed that investing is a tradeoff between risk and return and provided a roadmap for identifying a portfolio that contains the highest amount of return for a given amount of risk. As importantly, MPT provided the theoretical framework behind the principles of asset allocation by demonstrating that risk can be reduced through diversification.

Although assailed over the years, the basic principles of MPT have withstood the test of time. Today, the wealth management industry presumes that investors should hold a diversified portfolio optimized for their risk tolerance. In retirement, the principles of asset allocation still hold true. Investors still make tradeoffs between risk and return, and diversification is still important.

However, since the risks that retirees face are different, the diversified mix of assets that retirees should hold should be different as well. As we will show in Section III, allocating a certain amount to income annuities, in addition to other asset classes, produces more robust portfolios for retirees.

Withdrawal Rate. The amount of income that an investor intends to produce in retirement is central to how likely they are to succeed. Conventional financial planning wisdom holds that recent retirees may safely consume 4% of their initial retirement assets per year, growing with inflation. Four percent is used as a rule of thumb because it has worked for most clients, most of the time.

Lower withdrawal rates—below 4% of initial capital, growing with inflation—tend to lead to successful outcomes, while higher withdrawal rates (above 4%, growing with inflation) tend to increase the risk of failure.

To understand how withdrawal rates affect investor outcomes, it is helpful to look at some historical examples. Exhibit 1-2 shows what would have happened to the account value of an investor who retired with a balanced portfolio containing 50% equities and 50% bonds in a *good* year to retire—1959. As illustrated, a 4% inflation-adjusted withdrawal would have worked out well. The investor would have roughly the same amount of money in their account after 30 years as they did at the beginning. Of course, higher withdrawal rates would have led to failure for many investors, as they would have outlived their assets.

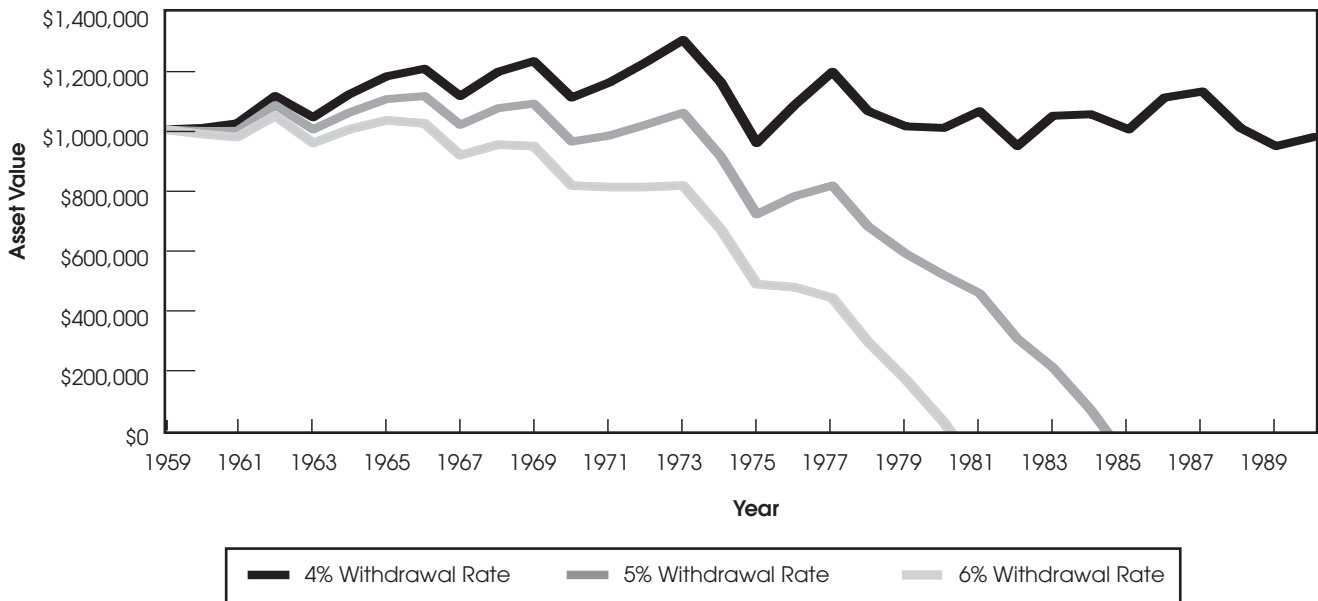
Now, consider what would have happened if the investor retired in a *bad* year, for example, 1966. In this case, as indicated in Exhibit 1-3, even a 4% inflation-adjusted withdrawal rate would have led to failure by the time the investor reached 92.

As previously reviewed, the probability of living into the nineties is very high. More than one-quarter (26%) of men, 35% of women, and 52% of married couples will have one spouse who remains alive beyond age 92. Therefore, it's best to think of the four percent rule of thumb as a reasonable guideline that works most—but not all—of the time.

However, as discussed in Section III, introducing income annuities into retirees' asset allocations can change this picture considerably. The unique properties of income annuities—high payout rates, non-correlation, and longevity hedging—can make 4% withdrawal rates even safer for investors and allow for even higher withdrawal rates as well.

Exhibit 1-2

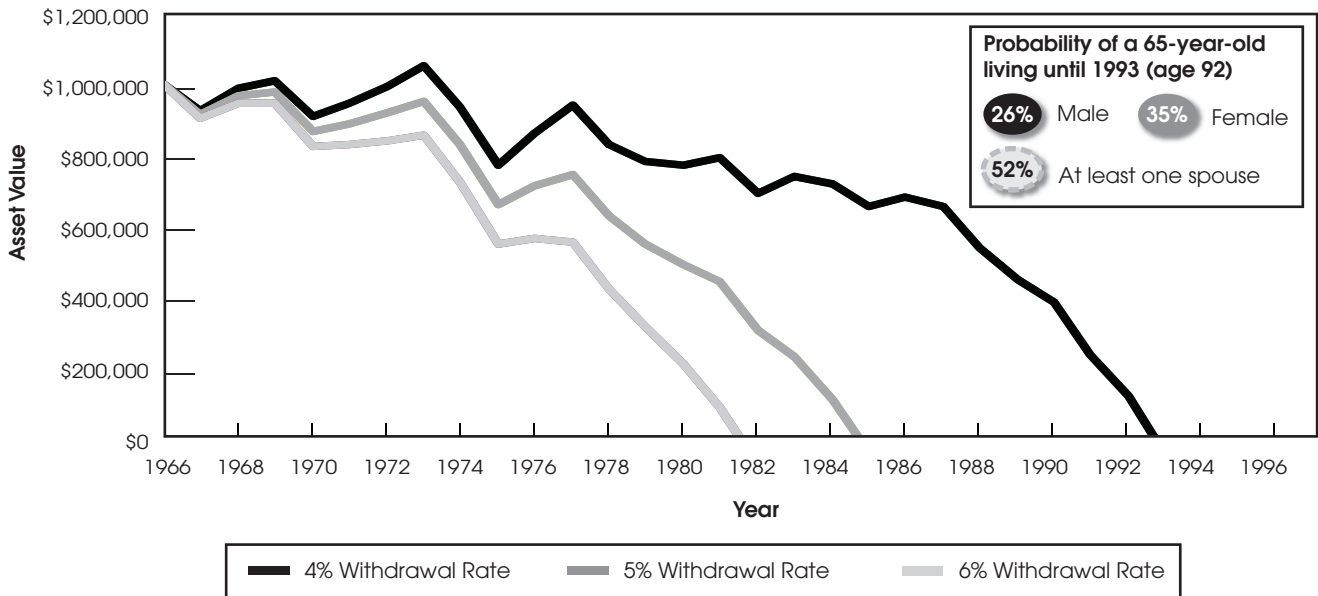
Value of Assets if Customer Had Retired in Average Year—1959: 50% Equity, 50% Bonds



Hypothetical value of assets held in an untaxed account of \$1,000,000 invested in a portfolio of 50% stocks and 50% bonds. The illustration uses historical annual performance from 1959-1989 obtained from Ibbotson Associates. Past performance is no guarantee of future results. Stocks are represented by S&P 500 and bonds by Morningstar U.S. Intermediate Government Bond Index. Each withdrawal rate is adjusted annually for inflation using historical rates. The portfolio is rebalanced annually and assumes an annual deduction of 125 and 75 basis points for management fees for stocks and bonds respectively. This example does not take into account taxes, if any. This example is for illustrative purposes only and does not represent the performance of an actual investment. Note: an investor cannot invest directly in an index. Source: New York Life, 2008

Exhibit 1-3

Value of Assets if Customer Had Retired in Bad Year—1966: 50% Equity, 50% Bonds



Hypothetical value of assets held in an untaxed account of \$1,000,000 invested in a portfolio of 50% stocks and 50% bonds. The illustration uses historical annual performance from 1959-1989 obtained from Ibbotson Associates. Past performance is no guarantee of future results. Stocks are represented by S&P 500 and bonds by Morningstar U.S. Intermediate Government Bond Index. Each withdrawal rate is adjusted annually for inflation using historical rates. The portfolio is rebalanced annually and assumes an annual deduction of 125 and 75 basis points for management fees for stocks and bonds respectively. This example does not take into account taxes, if any. This example is for illustrative purposes only and does not represent the performance of an actual investment. Note: an investor cannot invest directly in an index. Source: New York Life, 2008

II. INCOME ANNUITIES: AN ASSET CLASS WITH UNIQUE PROPERTIES

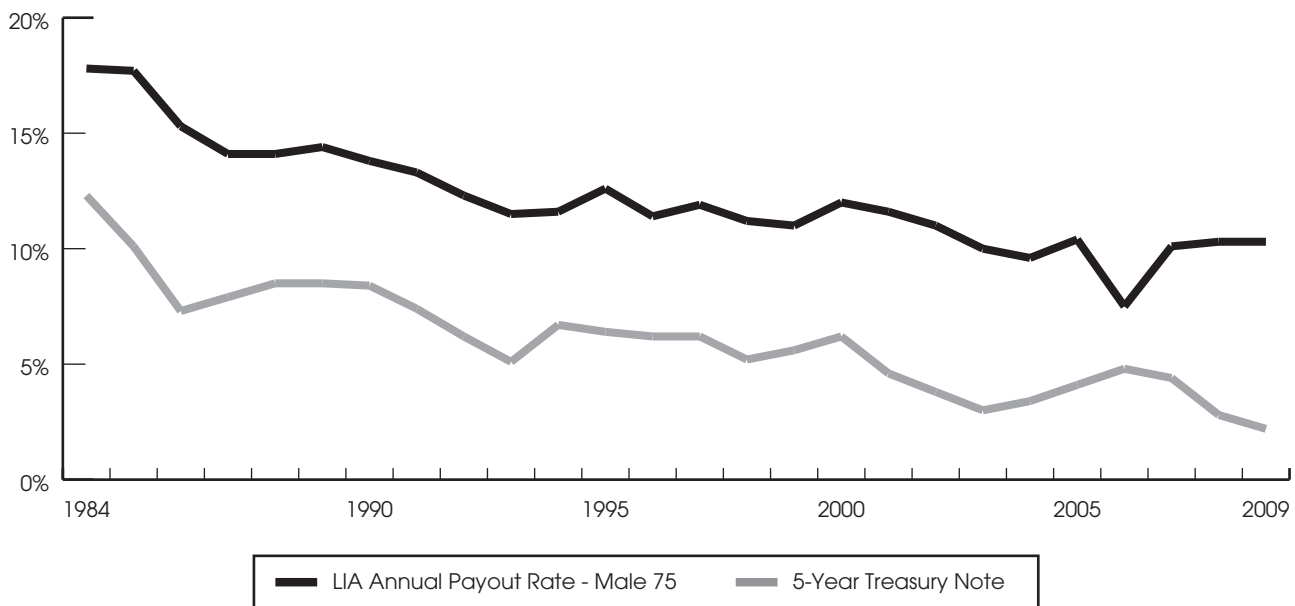
Income annuities, also known as single premium immediate annuities (SPIAs), function as if they are personal “pension plans.” An investor pays a single premium to an insurance company and in return, the insurance company makes periodic payments back to the investor for at least as long as the investor lives. The income stream may be level or may be increased annually to hedge against inflation. Income can be designed to last for a minimum number of years, even if the investor dies before the end of that period. Income can also be paid through the lifespan of one person or through the lifespans of two people.

Income annuities provide income in a tax-efficient manner, especially if the funds are non-qualified, because a part of the payment is considered to be a return of basis. Therefore, that portion of the payment that is return of basis is not taxed. The remainder of the payment is treated as ordinary income. As a reminder, many investors move into a lower tax bracket when they retire, and as a result, retain a greater percentage of their income.

The older the investor, the higher these cash flows will be. For example, income annuities recently paid out 6.8% of the initial premium, for life, for a 65-year-old male investor, compared to an 8.9% payout for a 75-year-old male investor.

More importantly, income annuities generate significantly higher cash flows than traditional income-generating asset classes. The older the investor, the higher these cash flows will be. For example, income annuities recently paid out 6.8% of the initial premium, for life, for a 65-year-old male investor, compared to an 8.9% payout for a 75-year-old male investor.

Exhibit 1-4
Historical 5-Year Treasury Note & Lifetime Income Annuity
Annual Payout Rate: 1984-2009



*Lifetime Income Annuity Payout rates include interest and return of principal. They represent the annualized payouts as a percent of total premium. LIA rates are based on the annual rate using a Life Only payout for a male age 75. Note that LIA payout rates are lower than shown if annuitant is younger.
Source: U.S. Department of Treasury

High Cash Flow, Uncorrelated to Market Returns.

Traditional methods of generating income from a portfolio demonstrate significant correlation to market events. Bond ladders face significant reinvestment risk, particularly given the need to generate laddered income for decades throughout retirement. Dividends on dividend-paying stocks may be increased or decreased as markets change. Systematic withdrawal programs that use bond coupons, dividends, and asset sales to produce targeted retirement income are also vulnerable to market corrections.

On the other hand, fixed-income annuity payouts are not correlated to any investment or dependent upon a stock or bond portfolio rate of return. Portfolio managers have always tried to maximize alpha while minimizing beta. They essentially do this in order to produce high returns regardless of market events. In a sense, the cash flow from an income annuity can be said to accomplish this lofty goal. **Income annuities provide high cash flow that does not change, regardless of market events.**

In addition to providing non-correlated income, income annuity payout rates are far superior to fixed-income yields. For example, the spread between income

Currently, income annuity payout rates from AAA insurers for a 75-year-old male are at 8.9%, while 5-year Treasuries are yielding 1.2%—a 770 bps spread.

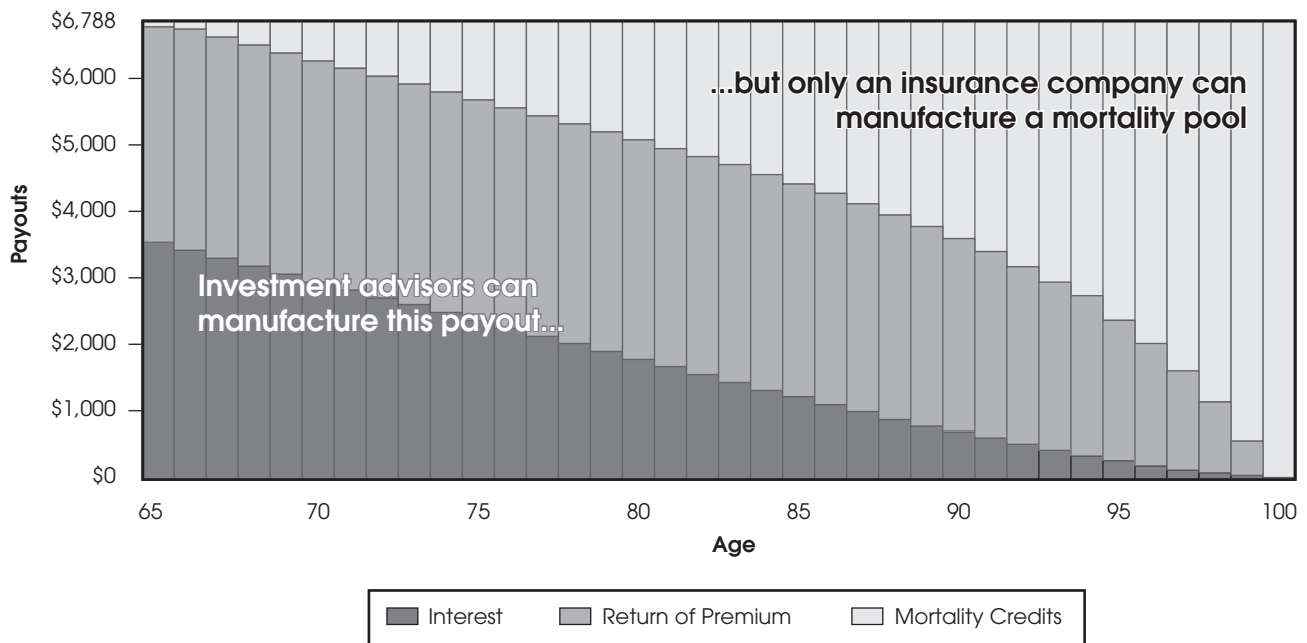
annuity payout rates from AAA insurers for a 75-year-old male and 5-year Treasuries ranged from 277 to 809 bps between 1984 and 2009. Currently, income annuity payout rates from AAA insurers for a 75-year-old male are at 8.9%, while 5-year Treasuries are yielding 1.2%—a 770 bps spread.

It is important to note that the yield on bonds reflects only the payment of interest, not return of principal. The payout on income annuities reflects interest, return of principal, and a form of alpha, called mortality credits, which is discussed in further detail below.

Retirement Alpha (a.k.a. Mortality Credit). Many investors do not understand how income annuities produce such high cash flows. Essentially, income

Exhibit 1-5

Components of Guaranteed Lifetime Income Payout: Male Age 65, \$100,000 Investment



Note: Graphical representation based on an example provided by Dr. David Blake.
Source: New York Life actuarial data and methodology. LIA payments based on rates as of 4/1/10, and are subject to change.

annuities provide investors with a form of alpha that traditional investments cannot mimic. This alpha comes in the form of mortality credits, which is what separates income annuities from other investment options within the fixed-income market.

Income annuity cash flows derive from three sources: interest, a return of principal, and mortality credits. Exhibit 1-5 shows the components of cash flow generated for a 65-year-old male who purchases an income annuity. The darkest shading represents interest, the medium shading represents return of principal, and the light shading represents the special sauce—mortality credits.

Clearly, investment advisors can manufacture the dark and medium shading cash flows themselves by buying a portfolio of bonds and paying out both interest and principal over time. However, only mortality credits can manufacture the light shading cash flows.

These mortality credits are derived from the mortality pool built into income annuities. Essentially, the insurance company sells annuities to thousands of investors, some of whom will die early, and some of whom will die late. By applying principal from those who die early to those who die late, the insurance company is able to guarantee a higher, lifelong payout to everyone.

It is important to note that the payout provided by the insurance company is guaranteed, regardless of the performance of the mortality pool. Insurance companies can guarantee the payout without assuming significant risk because of the law of large numbers—with thousands of investors in the pool, it is fairly easy to predict how many investors will die each year.

Mortality credits increase significantly with age because as people grow older, their future lifespan decreases. Older investors are more likely to return their capital to the mortality pool quickly, generating more cash flow for the remaining investors. That is why income annuity payout rates increase with age.

Only life insurance companies can manufacture mortality credits. There is no such thing as a “synthetic” mortality credit. As importantly, the life insurance industry has a finite capacity. Therefore, there is a limit to how many income annuities the entire industry can produce.

Longevity Hedging. One of the most important aspects of income annuities is that they provide a perfect hedge to longevity risk. Just as Treasury-Inflation Protected Securities (TIPS) are often introduced into a portfolio as an inflation hedge, income annuities can play a role as a longevity hedge.

Mortality credits increase significantly with age because as people grow older, their future lifespan decreases. Older investors are more likely to return their capital to the mortality pool quickly, generating more cash flow for the remaining investors. That is why income annuity payout rates increase with age.

Longevity risk is one of the least understood components of retirement investing; yet, FRC believes that it is the most important risk that retirees face. As previously noted, there is a 63% chance that one member of a married couple will live past 90. Despite this, many investment advisors build a financial plan to age 90. Effectively, advisors are planning for nearly two-thirds of their clients to fail.

Investors face an asset-liability matching problem with an uncertain duration. By assuming that investors will die at 90, many financial advisors may be embedding significant longevity risk in retirees’ portfolios. A better approach is to find an asset class with a duration that explicitly matches the duration of the retirement liability. Income annuities can help solve this problem. Therefore, FRC expects that income annuities will play an increasing role in portfolio construction for retirees.

Liquidity Features. Historically, a lack of liquidity has been the biggest hurdle for many investors to overcome when considering income annuities. Investors have feared that they would want some of their principal back while they are alive, or similarly, that they would “lose” to the insurance company by dying shortly after purchasing the income annuity.

This is not the case any longer, as the market has been maturing and innovation has taken hold. There are several liquidity features standard to most income annuities that address many of these concerns. Not only do these products provide lifetime income, but investors can access money from these contracts if necessary through built in options and riders, some of which may come at an added cost.

A feature called “cash refund” guarantees that the investor, or his heirs, will receive the full amount of the investment back, one way or another. If the investor dies prior to receiving his full investment back via income payments, the beneficiary will be paid the difference between purchase price and income received. This feature guarantees that an investor will not lose any of the investment due to premature death.

However, it is important to note that most investors, according to FRC’s 2009 *VA Manufacturer Opportunity* study, are not seeking death benefit options but are more concerned about having a lifetime income guarantee. This is not surprising considering the extreme volatility older investors have lived through over the past decade. Most investors are now concerned that they may not have saved enough for retirement. From FRC’s point of view, the lifetime income guarantee will trump the need for any type of death benefit option for many of these retirees. In fact, advisors are seeing investors more interested in lifetime income guarantees than ever before. In a 2009 FRC *Advisor Insight* survey, 94% of advisors said that at least a portion of their clients were coming to them with questions about guarantees.

If the investor finds that he needs more money than what is available through the income payments, income annuities typically offer a feature called “commutation,” which provides an avenue for the investor to access capital if necessary. However, the amount available under commutation will be less than the principal invested, and withdrawing capital will impact the amount of future income payments and can have tax implications. While commutation does not provide full liquidity, it is a viable option for emergency cash needs that can alleviate some of the historical liquidity concerns.

Most importantly, the strategy that FRC will describe—combining income annuities with a portfolio of mutual funds—provides liquidity to investors through the mutual fund sleeve, while providing a stable, lifelong base of income through the income annuity sleeve. Working collectively, income annuities and mutual funds provide the best of both worlds.

Credit Risk. Ratings matter for income annuities just like they matter for bonds, but even more so. The lower the insurer rating, the more the investor needs to be compensated for bearing credit risk. Conversely, the higher the ratings, the less risk the investor is assuming. Just as an investor would expect to receive a lower yield for an AAA bond than for an A bond, an investor should

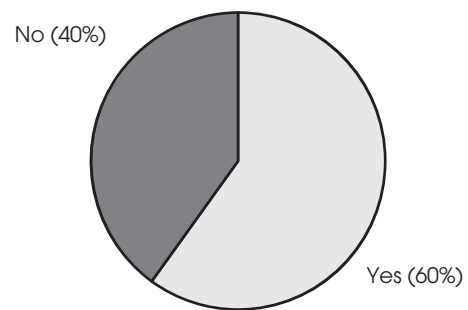
expect to receive a lower payout from an income annuity issued by an AAA insurer than from an income annuity issued by an A insurer.

FRC believes that ratings are of particular importance in the income annuity market due to the product’s long duration. Just as credit risk is of paramount importance in long bonds, it is similarly important in income annuities. Since investors are exposed to the credit risk of the product for the duration of their life, perhaps 25 or even 30 years, credit risk should be a top priority. It would be a mistake to reach down the credit spectrum for a slightly higher payout at the expense of greater risk. For this reason, FRC recommends investing in highly rated income annuities and spreading credit risk among a handful of insurers.

Comparing Income Annuities to VAs with GMWB Riders. While a variable annuity (VA) with a GMWB rider might seem like an alternative to an income annuity, it is not. There are several major differences between the products, starting with the structure of the contracts. A VA is fundamentally built to accumulate assets using equity investments, and the GMWB rider is an add-on meant to distribute the income stream. On the other hand, income annuities are built from the ground up to distribute income efficiently without exposure to market volatility.

A variable annuity with a GMWB rider does offer some unique advantages for investors in the accumulation phase, such as the step-up provisions, which may lead to higher base benefit values given positive market

Exhibit 1-6
Are VA Manufacturers Excluding Investment Options in Order to Mitigate Risk?



Source: FRC *Vision, Smoothing Out the Ride: Changes in Asset Allocation Theory*, March 2010

performance. However, even with these benefits, there are further constraints on the product. For example, the fee structure is typically based on the amount of the base benefit guarantee, which could be substantially higher than the cash value of the contract. Moreover, the all-in fees may prove prohibitive, as they often amount to close to 3%, thus eroding capital. These fees may lead to substantially lower rates of equity returns for investors, rendering the annual, quarterly, monthly, or daily step-ups in living benefit base value unbeneficial.

There are also mandatory asset allocation constraints that must be adhered to in order to maintain the guarantees in the contract. In fact, according to a survey from FRC's *Smoothing Out the Ride*, many asset managers and third-party asset allocation model providers believe that VA firms are keeping their portfolios more conservative in order to reduce the potential risk to the insurance company, as noted in Exhibit 1-6. If this is indeed true, it is likely that the asset allocation portfolios within a VA will underperform market indices. Given the high fee structure of VAs, conservatively-tilted portfolios are likely to cause further erosion of results.

For investors in the retirement phase, it is possible to compare the robustness of the lifetime income that both products produce. Both products will provide income for as long as the owner lives. But the GMWB rider will typically generate 5% of the benefit base, based on the performance of the underlying investment portfolio, which may have uncertain returns.

On the other hand, income annuities are currently generating approximately 7.7% annually for a 70-year-old investor, with no market risk. The primary reason for this 270 basis point spread is that income annuities are able to leverage mortality credits, while GMWB riders rely on the performance of the underlying portfolio, which may be inconsistent. From the perspective of the insurer guaranteeing the payout, it is far riskier to guarantee the performance of the equity markets than it is to guarantee the performance of a mortality pool.

This raises a related point—the market risks embedded on the balance sheet of insurers offering GMWB riders is likely higher than the mortality risks embedded on the balance sheets of insurers offering income annuities. Many GMWB riders were written when the markets were higher, leaving open the possibility of insurers having to pay the income stream out of their general fund. It is true that some of these benefits were hedged and reinsured; however, it has come to light

that insurers may have underestimated the costs of hedging (Milevsky 2006), and it is unknown if the hedging strategies actually worked. It is possible that some insurers, especially the more popular insurers that issued tens of billions of dollars in premiums, have risk on their balance sheet that has not yet come due. On the other hand, insurers that have focused primarily on income annuities do not face the same level of risk.

Recently, in response to this issue, some insurers have started to develop VA wrap products that use mortality credits to hedge the longevity risks. This reduces the market risks to their balance sheets and consequently, to their customers.

III. INCOME ANNUITIES IN PORTFOLIOS

FRC examined a popular strategy—combining an income annuity with a portfolio of mutual funds—to determine how it compares to a traditional retirement portfolio containing only mutual funds. We found that, across a wide variety of metrics, the portfolios containing a partial allocation to income annuities produced significantly better retirement outcomes for investors.

The portfolios that FRC examined were based on the following assumptions:

- Investor is a 65-year-old male, who is expected to live until age 92 with \$500,000 in traditional equity and fixed income assets. While a life expectancy of 92 represents the 25th percentile for a 65-year-old male, the portfolios were also tested to a life expectancy of 96 or the 10th percentile longevity. The extended life expectancy was evaluated to truly test the asset allocation decision.
- Withdrawal rates of 4%, 4.5%, and 5% were assumed in the analysis. However, based on the withdrawal rates most commonly recommended by financial advisors to retirees in past FRC research, the analysis focused primarily on the 4% and 4.5% withdrawal rates.
- FRC primarily relied on examples from the Ibbotson ETF asset allocation series for its model portfolios, including both a conservative and moderate portfolio. An aggressive portfolio was not considered, given the logical conservative profile of an average retiree.
- Aggregate index returns and standard deviations were used rather than direct portfolio data in order to remain unbiased. In addition, index returns and subsequent simulations were calculated after fees

and expenses, assuming expenses of 25 basis points and a wrap advisory fee of 100 basis points.

- In order to reduce the impact of the last 10 years of fat tail events, FRC used 20-year historical standard deviations for each asset class along with subsequent correlations over that 20-year period. While the standard deviations and correlations over longer historical periods were considered, the most recent 20-year returns and standard deviations represented a more appropriate conservative approach given the heightened volatility in the markets over the last decade.
- The models accounted for inflation, using 2.5% as an acceptable normalized annual measure. Withdrawal amounts were inflated annually by 2.5%.
- RMDs, required minimum distributions, were taken into account and assumed to begin at age 70. For any amounts withdrawn over and above the assumed cash needs, the excess cash flow was reinvested into a non-qualified account using the same asset allocation.
- Federal income tax rates were assumed to be relatively low given the low dollar withdrawals assumed in the analysis. The marginal tax rate or the tax rate applied to investment income and the rate applied to any additional dollars of income was 15%. The calculated average tax rate or the rate applied to regular income was 13.8%. The average tax rate is slightly lower than the marginal tax rate since the model assumed a certain level of standard deductions.
- The assumed income annuity payout rate, assuming a 3% inflation rider, was 5.1%, which is largely reflective of current payout rates and the current low interest rate environment. Had FRC employed normalized rates across market cycles, the payout would have been closer to 6% with a 3% inflation rider, which would have led to even better outcomes for the income annuity-enhanced portfolios.

FRC ran its analysis under both a static “perfect world” model, assuming steady year-over-year returns, and a dynamic Monte Carlo model which imposed 1,000 market scenarios on the portfolios. Although our conclusions about the outperformance of the income annuity-enhanced portfolios were similar across both models, we consider the “perfect world” scenarios unrealistic given the year-to-year volatility in the markets. As such, our presentation and conclusions below are based almost entirely on the Monte Carlo simulations to more

accurately reflect the variability in market returns over the past two decades. These results better equip advisors to plan for portfolios that are robust across market, longevity, and inflation outcomes.

A. Defining Success

One of the more difficult decisions in this analysis was determining what constitutes a successful outcome. Some advisors and clients might define success as generating a certain level of income through an average expected lifetime, based on average annual returns. However, most financial advisors and sophisticated investors would view that description as much too simplistic, particularly given the price volatility over the past several years. Since investors don’t know how long they’ll live, they need to plan to live longer than average, and they need a way of hedging against the possibility that they live an exceptionally long time. Just as importantly, investors can’t model outcomes using average annual returns, as the sequence of returns risk inherent to retirement investing dictates that a range of return sequences must be analyzed.

Consequently, for purposes of this study, a key metric is the percentage of successful trials achieved in the Monte Carlo simulations for a life expectancy of 92 years of age (or the 25th percentile for a 65-year-old retiree), and for a life expectancy of 96 years (or the 10th percentile). Each of the Monte Carlo simulations was based on 1,000 trials. Quite obviously, the optimal objective is a 100% success rate, where success is defined as not running out of money during the investor’s lifetime. Of course, Monte Carlo simulations cannot predict what will happen to an individual investor, but they are helpful in understanding the likelihood of success that a given investment strategy will face. With that in mind, FRC believes that investors would view portfolios with a less than 75% chance of success to be a poor option, and portfolios with a greater than 75% chance of success to be an adequate option.

A secondary metric is the level of terminal net worth in the median Monte Carlo scenario. In other words, on average, how much money is left in the investor’s account when they die? We also looked at the tenth percentile terminal net worth to understand the downside case. Positive terminal net worth implies a legacy for the investor’s heirs; negative terminal net worth implies that the investor ran out of money before they died.

B. Conventional Portfolios Based on Traditional Mutual Funds

In order to objectively construct these portfolios, FRC took a sampling of two Ibbotson Associates portfolios, including a conservative and moderate model. By using 20-year standard deviations, returns and correlations for the different asset classes, FRC examined the likelihood of success of traditional portfolios being able to provide income under certain withdrawal conditions. However, this did not take into account specific sequence of return events, such as negative returns in the first few years followed by positive returns or the opposite scenario. Rather, random samplings were performed through a Monte Carlo simulator, which incorporated year-to-year variability of returns and the possibility of positive and negative tail events in a normal returns distribution. Appendix A, located at the end of this study, presents a complete outline of the allocations, returns, standard deviations, and correlations for each of the portfolios.

Conservative Conventional Portfolio. The conservative portfolio allocations were loosely based on Ibbotson’s conservative ETF asset allocation. However, to generate 20-year historical returns and risk characteristics, the ETFs were replaced with index returns, standard deviations, and correlations. As such, bond allocations were represented by the BarCap Short Treasury Index and the BarCap U.S. Aggregate Bond Index. For equity portfolio allocations, FRC utilized the S&P 500 Index, and the Russell 2000 Index as a proxy for small cap stocks. FRC also chose to eliminate international equity assets from the portfolio, given the poor risk/return characteristics of the MSCI EAFE Index over the last 20 years, and a lack of a suitable replacement for international equity. The subsequent asset composition and weights are presented as follows:

- BarCap Short-Term Treasury TR31.27%
- BarCap US AGG Bond TR.....41.73%
- S&P 500 TR20.25%
- Russell 2000 TR2.75%
- DJ US Real Estate TR.....4.00%

The results of this portfolio were somewhat disappointing for any withdrawal rate above 4%. As shown in Exhibit 3-1 and detailed more fully against other portfolios in Appendix B, the success rate of the conservative portfolio was 94%, at a 4% withdrawal rate. That is, about 942 of the 1,000 simulation trials resulted in enough income over the individual’s lifetime to meet the 4% withdrawal rate. Moreover, median net worth at 92 years of age was approximately \$290,000. Overall, these results were generally acceptable by the prior definition of success.

The results, however, deteriorate significantly as withdrawal rates increased. For example, at a 4.5% rate of withdrawal with a terminal date of 92 years of age, the portfolio failed to deliver enough cash flow for 36% of the trials. Terminal net assets for the 64% of trials that did provide enough income through age 92 had a minimal average net worth of just \$59,000 at the 50th percentile. If life expectancy is increased to 96 years of age (or the 10th percentile) the success rate declines from 64% to just under 25%. Finally, at a 5% withdrawal rate, the success rate up to age 92 was negligible at slightly less than 25% of the trials, and a mere 6% through a life expectancy of 96. In both cases, there were no terminal net assets (or a deficit to be precise) at the 50th percentile. Consequently, we conclude that at 4.5% and 5% withdrawal rates, the conservative portfolio was essentially a failure for our retiree, regardless of his life expectancy.

Exhibit 3-1
Conservative Portfolio–Monte Carlo Simulation

Withdrawal Rate	Success Rate	Terminal Net Assets		
		10th Percentile	50th Percentile	90th Percentile
4.0%	94.2%	\$33,747	\$289,783	\$582,712
4.5%	63.6%	(\$152,020)	\$59,087	\$376,797
5.0%	24.9%	(\$304,698)	(\$143,732)	\$111,665

Note: 65 year old male, lifespan of 92 years
Source: NaviPlan, Morningstar Direct

Exhibit 3-2
Moderate Portfolio–Monte Carlo Simulation

Withdrawal Rate	Success Rate	Terminal Net Assets		
		10th Percentile	50th Percentile	90th Percentile
4.0%	97.1%	\$105,111	\$422,536	\$789,060
4.5%	74.9%	(\$120,587)	\$165,048	\$577,219
5.0%	38.1%	(\$287,361)	(\$74,699)	\$298,454

Note: 65 year old male, lifespan of 92 years
 Source: NaviPlan, Morningstar Direct

Moderate Conventional Portfolio. To address the funding shortfalls with the conservative portfolio, a more balanced moderate portfolio was tested under the same set of assumptions. Again, Ibbotson provided the proxy as the indices used in the assets allocations were generally based on their balanced ETF asset allocation portfolio. The specific assets and composition are presented below:

- BarCap Short-Term Treasury TR24.25%
- BarCap US AGG Bond TR.....33.50%
- S&P 500 TR29.55%
- Russell 2000 TR5.60%
- DJ US Real Estate TR.....7.10%

Not surprisingly, the Monte Carlo results were better under the moderate portfolio, but they were hardly encouraging. For example, based on an assumed life expectancy of 92 years, the success rate improved slightly to 97% at a 4% rate of withdrawal, versus 94% under the conservative asset allocation. For the 4.5% rate of withdrawal, the success rate was notably better at just under 75%, with an average net worth at age 92 of \$165,000 for the 50th percentile. However, simulations run under a 5% withdrawal resulted in an inadequate 38% rate of success, with no terminal worth at death. When the life expectancy was extended to the 10th percentile or 96 years of age, simulation performance deteriorated significantly. For instance, the success rate fell to 85% at a 4% rate of withdrawal, while the 4.5% payout declined sharply to 51% and well below FRC’s 75% success hurdle. Equally important, net worth at age 96 for the 50th percentile was zero. Generally speaking, the simulations under the moderate portfolio were largely disappointing.

The improved but inadequate performance under the moderate portfolio were hardly surprising, despite

average annual returns that exceeded the conservative portfolio. The increased equity allocation also raised the overall standard deviation of the portfolio. Given the relatively high correlation among assets classes over the past 20 years, the simulations at higher withdrawal rates were clearly stressed under heightened price volatility. Over 1,000 trials, the Monte Carlo simulation clearly reflected that risk and resulted in relatively high failure rates.

A clear conclusion of this study is that only the 4% withdrawal rate is sustainable using traditional portfolios, whether conservative or moderate.

C. Success Rates Using Income Annuity-Enhanced Portfolios

In order to improve portfolio outcomes, FRC examined a portfolio containing both income annuities and traditional assets. As mentioned before, income annuities are a unique asset class with three key benefits: they generate more income per dollar of capital invested than any other income-producing asset class; they’re not correlated with equity or bond markets; and they offer a perfect longevity hedge.

Given these unique benefits, FRC expected to find that the income annuity-enhanced portfolios would have a higher success rate than traditional portfolios. This expectation proved to be correct. Far fewer investors holding these portfolios run out of money before they die, particularly at higher withdrawal rates. Just as importantly, when investors holding the income annuity-enhanced portfolios run out of assets, they don’t run out of income, as the income annuity keeps paying through the investor’s life time, thereby providing a longevity hedge.



Interestingly, FRC also found that the income annuity-enhanced portfolios, on average, have far more assets remaining at the time of the investor’s death, creating larger legacies for heirs—and leading to more robust economic opportunities for advisors, distributors, and asset managers. The implications of this last finding are huge, as they create a business model for financial intermediaries, in addition to a value proposition for investors.

Sample income annuity-enhanced portfolios were tested by allocating 30% (\$150,000) and 40% (\$200,000) of the \$500,000 in assets to an income annuity, and the balance to a conventional portfolio. The average annual returns, standard deviations, and correlations employed in the prior section were assumed, but the weighting compositions were changed to reflect the reduced risk and fixed-income features of the income annuity. Since the income annuity is protected subject to the claims paying ability of the issuing insurer, and has no volatility, it acts as the fixed-income component, allowing the investor to take more risk with other investments.

Income Annuity-Enhanced Portfolio—\$200,000 Income Annuity. The first of the two simulations was run with a 40% allocation to the income annuity, and the remainder to a portfolio containing nearly 72% equities. Although this might appear to be overly aggressive, FRC regards the income annuity allocation to be essentially a fixed income allocation. Therefore, the combined fixed income/income annuity allocation was approximately 57%—equivalent to the moderate conventional portfolio. The \$300,000 conventional portion of the portfolio was allocated as follows:

- BarCap Short-Term Treasury TR12.10%
- BarCap US AGG Bond TR.....16.55%
- S&P 500 TR57.45%

- Russell 2000 TR.....7.65%
- DJ US Real Estate TR.....6.25%

Under this income annuity structure, the odds of an investor achieving his goals increased considerably. Just as important, when the income annuity-enhanced portfolio reaches “zero,” the income annuity continued to pay out a stream of income for the life of the investor. In addition, with a 3% inflation rider, the annual payments increase every year to keep pace with the rate of inflation on a historical basis. For example, if the assets in the conventional portfolio were exhausted by age 92, the investor would continue to receive almost \$22,000 in inflation adjusted income from the income annuity.

At a 4% withdrawal rate, the portfolio success rate was 100%—marginally better than the conventional portfolios on an income basis, and with a terminal portfolio that is, astoundingly, almost equal to the initial size of the portfolio at \$490,000 at the 50th percentile. At a 4.5% rate of withdrawal the income annuity portfolio outcome was far superior with almost 94% of the trials succeeding, as compared to 64% and 75% for the conservative and moderate conventional portfolios, respectively. Equally important, the median terminal net worth was \$319,000, as opposed to \$59,000 for the conservative portfolio and \$165,000 for the moderate portfolio.

Finally, at the 5% payout the success rate was 61% - below FRC’s objective of 75% but well above the dismal levels achieved by the conventional portfolios. Nevertheless, even when the simulation failed, the lifetime inflation-adjusted income annuity income continued well beyond the elimination of the conventional portion of the portfolio. So payouts even under the 5% withdrawal scenario effectively never ended.

The \$200,000 income annuity-enhanced portfolio was

Exhibit 3-3
\$200,000 Income Annuity Portfolio—Monte Carlo Simulation

Withdrawal Rate	Success Rate	Terminal Net Assets		
		10th Percentile	50th Percentile	90th Percentile
4.0%	100.0%	\$276,710	\$490,715	\$775,581
4.5%	94.2%	\$36,371	\$319,236	\$600,159
5.0%	60.8%	(\$147,875)	\$47,538	\$412,072

Note: 65 year old male, lifespan of 92 years
Source: NaviPlan, Morningstar Direct

also evaluated at a life expectancy of 96 years of age. While the Monte Carlo results were logically less successful than the shorter life expectancy at the 25th percentile, they were dramatically better than the results achieved under both conventional portfolios. For example, at a 4.5% rate of withdrawal with a terminal date of 96 years of age, the success rate and median terminal net worth for the portfolio with an income annuity was nearly 87% and \$267,000, respectively. The success rate for the comparable moderate conventional portfolio was only 51% with no median net worth. This comparison alone clearly demonstrates an income annuity's ability to address longevity risk and enhance portfolio performance.

Income Annuity-Enhanced Portfolio—\$150,000 Income Annuity. The second of the two simulations was run with \$150,000, or 30% of the assets, allocated to the income annuity, and the balance to an aggressive portfolio. The BarCap Short-Term Treasury and U.S. Aggregate Bond allocations were increased to adjust for the reduced income annuity, while the overall fixed income / income annuity allocation was consistent with the previous model at roughly 57%.

- BarCap Short-Term Treasury TR17.10%
- BarCap US AGG Bond TR.....22.55%
- S&P 500 TR48.55%
- Russell 2000 TR6.55%
- DJ US Real Estate TR.....5.25%

Overall, the results were slightly below the previous portfolio that allocated \$200,000 to the income annuity, but far better than the traditional mutual fund portfolios. It appears that to some extent, higher allocations to income annuities lead to better outcomes for investors. As for failure rates for this portfolio, a 100% success rate was maintained under a 4% rate of withdrawal and a

91% success was achieved for the 4.5% rate of withdrawal, for a life expectancy assumption of 92 years of age. However, a scenario based on the 5% withdrawal rate declined to 53%. These results are clearly not as impressive as the other income annuity-enhanced portfolio, but nonetheless largely successful for 4% and 4.5% withdrawal rates. Lastly, much of same relative results were found with those Monte Carlo simulations which included a terminal date assumption of 96 years of age or the 10th percentile for a 65 year old male. Exhibit 3 summarizes the success rates and other related information for this portfolio with a terminal date of 92 years, while Appendix B outlines the full simulation data.

D. Income Annuity Performance Observations

For this analysis, we defined success in two ways: is the portfolio likely to deliver the desired income to the investor over the course of their lifetime, and, how much money is likely to be left over at the investors' death?

On both measures, the income annuity-enhanced portfolios significantly outperformed the conventional portfolios. Conventional portfolios are not likely to deliver the desired income to the investor at inflation-adjusted withdrawal rates in excess of 4%. On the other hand, income annuity-enhanced portfolios show reasonable success rates through 4.5% inflation-adjusted withdrawal rates, allowing retirees to generate more income with the same amount of assets. As an aside, it's important to differentiate the withdrawal rates we are discussing from the 5% withdrawals typically offered by GMWBs, which are not inflation-adjusted.

Just as importantly, the income annuity-enhanced portfolios provide a longevity hedge that the conventional portfolios do not. If the investor outlives their assets, they can't outlive their income.

Exhibit 3-4
\$150,000 Income Annuity Portfolio—Monte Carlo Simulation

Withdrawal Rate	Success Rate	Terminal Net Assets		
		10th Percentile	50th Percentile	90th Percentile
4.0%	99.9%	\$236,872	\$467,419	\$770,091
4.5%	90.5%	(\$6,345)	\$250,224	\$603,452
5.0%	53.0%	(\$181,137)	\$2,263	\$390,149

Note: 65 year old male, lifespan of 92 years
Source: NaviPlan, Morningstar Direct

Finally, the income annuity-enhanced portfolios resulted in significantly greater median net worth at death. By including an income annuity, the investor was able to take some pressure off of the mutual fund portfolio, allowing it to shrink more slowly than if no income annuity option was offered. The significance of this finding cannot be understated. Not only does this offer a significant investor benefit, it also creates a business case for financial intermediaries looking for an economic model for supporting investors in retirement.

IV. CONSIDERATIONS FOR ASSET MANAGERS AND DISTRIBUTORS

FRC believes that a number of demographic, economic, and legislative trends are conspiring to drive growth of the income annuity market. Perhaps counter-intuitively, asset managers and distributors should be happy about the growth of this category. Demographics favor the growth of the income annuity category, as Baby Boomers are preparing to retire in record numbers in the near future. Unfortunately, many Boomers have suffered from the dot-com implosion and the credit crisis over the past 10 years, which have impaired their portfolios. This means that many investors are seeking less risk and more guarantees, especially guaranteed income products.

A. Safety Nets Disappear

Recent market data shows that investors are favoring income-focused investment products versus equity-based products. This is an overall secular shift, as investors have been underweight bonds for some time now. But it is also a sign of lower risk tolerance. While reducing risk may be acceptable in the short-term for investors, it will not help them reach their long-term retirement goals.

In fact, as FRC has proven, even a well-constructed moderate portfolio is likely to fail over the long-term if investors get aggressive with withdrawal rates, as many will. This is an alarming issue: as many retirees are dealing with reduced balance sheets, they may require high withdrawal rates to sustain their lifestyles.

Combine these developments with the fiscal issues that the Federal government is dealing with regarding Social Security obligations, and many retirees may be in far more financial trouble than they believe. In just seven years, by 2018, benefits paid out will exceed revenues into the Social Security fund, and the fund is

expected to be exhausted in 2040 (www.ssa.gov/OACT/TRSUM/index.html). It is important to note that the Trustees reports continually reduce the life expectancy of Social Security, so even though the current projections show solvency until 2040, that may change by the next report, especially if interest rates remain low.

It is safe to assume that some form of Social Security will remain into the foreseeable future, since no politician is likely to vote to eliminate the popular program, which citizens have paid into for their entire working lives. However, what is in question is the amount Social Security will provide U.S. citizens moving forward, since it is possible to cut benefits or extend the retirement age. There is also Medicare, which is in far worse shape than Social Security and is slated for insolvency by 2029. The impact of Medicare insolvency on retirees is not fully known at this time, but it has the makings of a financial disaster. If the social safety nets are removed and investors no longer have private pensions to depend on, how will they fund their retirements? The income annuity makes more sense now than at any other point in history, as investors want certainty in their lives.

FRC's analysis shows that no other investment vehicle can rival the income annuity for retirement security. Quite simply, there is no other vehicle in the marketplace that can convert assets into income as efficiently as the income annuity. The simplicity of the product, combined with the high payout rates, liquidity features, and optional inflation rider make the income annuity a product that will certainly gain popularity in the near future.

B. The Fiduciary Obligation

Since the Dodd-Frank Financial Reform Bill will put more fiduciary responsibilities on the shoulders of advisors and plan sponsors, FRC believes that it has become not only a moral obligation, but potentially a legal imperative, for financial intermediaries to construct responsible retirement portfolios. In this context, it is impossible to ignore the alpha that the income annuity generates, which can be attributed to the mortality credits that only life insurance companies have access to.

The data confirms that income annuity enhanced portfolios outperform conventional portfolios; by offering the income annuity option, fiduciaries can fulfill their responsibilities by providing the best possible investment options.

It is also critical to remember that mortality credits are a finite resource—insurance companies do not have unlimited capacity. Asset managers, plan sponsors, and the advisor community must look for insurance partners now in order to secure access to capacity.

C. Economics for Advisors and Distributors

Advisors and distributors face an economic problem in managing retirees' money—they face a potentially shrinking pool of assets, and therefore lower income, while managing a retired client with more complex needs, and more free time to ask questions.

A key question that advisors and distributors must ask themselves is “does a portfolio containing income annuities increase advisor economics, or decrease advisor economics?” In other words, are income annuities just good for consumers or do they also make good business sense?

The first reaction for many advisors would be that income annuities decrease advisor economics because the advisor is “giving up” a portion of the assets that they might otherwise earn fees from managing. However, FRC believes that this view is wrong, for three reasons.

First, the results that were depicted earlier in this study demonstrated a very interesting outcome—the income annuity-enhanced portfolios, on average, contained significantly more assets at the end of the investors' life than the traditional portfolios. This result occurs because the income annuity's high cash flow reduces the withdrawal strain on the mutual fund portfolio, giving the portfolio the freedom to grow, rather than shrink. Just as importantly, the mutual fund portfolio may be invested more aggressively given the income floor established by the income annuity. Clearly, more assets will result in more fees to the advisor and will also be good for the client.

Second, advisors now have more freedom to decide how to earn economics from income annuities. In addition to traditional, commission-paying income annuities, there are now institutionally-priced, “fiduciary-friendly” income annuities on the market, which are designed to be included in a wrap program. Fee-based advisors, who expect to manage the allocation between traditional asset classes and income annuities over time, can now receive an ongoing fee from their clients to manage both mutual funds and income annuities.

Finally, FRC believes that the retirement income challenge is a tremendous platform for advisors to drive account consolidation. As consumers shift from the one-

dimensional world of accumulation to the complex, multi-dimensional problem of providing income for the remainder of their lives, they will crave professional advice. Advisors will not be able to provide this advice without understanding the full household balance sheet—both assets and liabilities. Income needs are holistic, not compartmentalized, and retirement advisors have a reason to gain a holistic understanding of their clients' assets, leading to a unique consolidation opportunity. Advisors that build objectively better retirement portfolios—using both conventional assets and income annuities—are more likely to be able to seize this opportunity.

D. Economics for Asset Managers

At first glance, asset managers may view income annuities as competitive, rather than complementary, to their business model. Since a portion of clients' portfolios may be invested in an income annuity, asset managers may feel that there are fewer assets to manage. As in the distributor case, FRC believes that income annuities are good for many asset managers' economics. However, we think the economics differ for equity managers and for fixed-income managers.

Equity asset managers should benefit from income annuities. As most advisors are likely to view income annuities as a fixed-income replacement rather than an equity replacement, FRC does not believe that equity managers will lose assets to income annuities. In fact, FRC believes that equity managers are likely to gather, and hold, more assets in the presence of an income annuity than they would in the absence of an income annuity, for two reasons.

First, income annuities significantly reduce downside risk for consumers, allowing the remainder of the portfolio to be more aggressively invested in equities. Just as importantly, the steadiness of the income generated by an income annuity may give investors courage, enabling them to remain invested in equities even in the face of market downturns. Second, retirees that own income annuities are likely to take lower withdrawals from their equity portfolios than retirees that instead own fixed income mutual funds, because income annuities produce higher cash flow than fixed income.

However, the economics are more negative for bond managers. Income annuities function as a bond replacement in a portfolio, likely leading to lower allocations for bond managers in the presence of an income annuity. FRC believes that this is likely to lead to some bond managers aggressively seeking to partner with insurance

companies to develop a new breed of product that combines features of both bond funds and income annuities.

At the end of the day, our analysis demonstrates that portfolios that contain income annuities lead to better outcomes for consumers. Regardless of the economics, there is a clear argument for asset managers to be “on the side of angels”, and do the right thing for America’s retiring population.

V. PARTNERING WITH INSURERS

FRC believes that distributors, asset managers, and insurers will increasingly collaborate to deliver comprehensive retirement solutions to the retiring public. As we’ve shown throughout this study, income annuities are an essential component of retirement portfolios, and we believe that the financial services industry will ultimately coalesce around the mortality credit—the essential differentiator of the income annuity—as a key driver of retirement security.

Many opportunities for collaboration exist. Distributors may partner with asset managers and insurers to deliver advice programs that package mutual funds and income annuities into comprehensive retirement portfolios. Asset managers may partner with insurers to manufacture a new generation of products combining income annuity features into commingled fund structures. Whatever the structure, FRC presumes that opportunities abound.

Now is the time for asset managers and distributors to seek out and solidify partnerships with insurance carriers. There are only a few highly rated insurance carriers with deep capacity to back the longevity risk essential to income annuities, and this capacity is finite. Just as asset managers do not have unlimited capacity to offer small cap strategies, insurers do not have unlimited capacity to offer income annuities. For this reason, financial intermediaries must find quality partners before capacity constraints are reached.

Capacity limits exist for two primary reasons. First, income annuities generally offer lower, but more stable, returns on capital to insurers than other product lines, like variable annuities. For this reason, many public carriers are likely to resist expanding their income annuity businesses beyond a certain point to avoid reducing their returns to investors. However, mutual insurers, which are owned by policyowners rather than investors, may be more likely to be offer income annuity capacity as they are attracted to the stability of the product line, and do not

need to reach for return like public carriers.

Second, insurers offering income annuities face a limit to the amount of business that they may be willing to write without exposing themselves to naked longevity risk. Insurers must make an assumption about the average longevity of their income annuity investors. To the extent that the pool of investors lives longer than expected, insurers could have a material exposure when they deliver on the lifetime payment guarantees that they have made.

However, insurers can hedge this risk by offering life insurance products. If, on average, investors live longer than expected, insurers’ income annuity businesses underperform, but their life insurance businesses outperform. This natural hedge increases the stability of insurers’ balance sheets, but the hedge is limited by the size of insurers’ life businesses. It is also limited by the fact that only certain types of life insurance—namely permanent life—are proper hedges. Term life, which is generally offered to younger investors, does not effectively hedge income annuities, which are generally offered to older investors. As the income annuity market grows, insurers are likely to be reluctant to continue to write income annuities without an offsetting hedge.

Because of these capacity limits, asset managers and distributors must act now to secure partnerships, or higher-quality partners may become unavailable. Just as importantly, many intermediaries may want to secure multiple partnerships to offer their clients multiple credits backing lifetime income.

In selecting a partner, FRC cannot stress reputational risk enough. Not all life insurers are created equal, which makes choosing the right carrier critically important. Financial intermediaries must recognize that any partnership that entangles their brand with an insurance carrier’s is a long-term partnership—a partnership that extends over their clients’ entire lives. Because income annuities are irrevocable products, financial intermediaries can’t trade their clients out of a product backed by a carrier that stumbles, or even worse, fails to deliver.

A primary consideration is the financial strength of the carrier partner. There are few carriers with long histories of credit rating strength and stability, and these firms are the most desirable partners, given the long duration of the obligation that they must underwrite. It is clearly important that the firm be around to honor the guarantees extended. This is one area where risk should not be taken.

However, in any carrier partnership, a financial intermediary's own reputation is on the line even if the carrier ultimately delivers on its promises. Any significant degradation in credit quality over clients' lifetime will create angst for clients, and will affect the financial intermediary's brand. Similarly, if the carrier's service does not live up to the financial intermediary's standard of quality, the financial intermediary's brand is at risk.

Another key issue for financial intermediaries is income annuity pricing. Carriers that aggressively price income annuities are, by definition, exposing clients to more credit risk, as aggressive pricing translates into a carrier balance sheet with fewer dollars to back consumer liabilities. Just as importantly, carriers can buy business through aggressive pricing for only so long before they must pull back, and it can be difficult to partner with a firm that cycles in and out of the market. While it is important for financial intermediaries to work with carriers that offer clients good pricing, it is equally important, over the long term, for financial intermediaries to work with carriers that act rationally.

Distributors and asset managers work for decades to build their reputation for quality, integrity, and service. It is not worth risking that hard-earned reputation by working with an insurer that doesn't deliver at the same level.

VI. CONCLUSION

Asset managers have done a spectacular job at building accumulation products, but there is a point when that money must be returned to the investor in the form of income. Unfortunately, only insurance companies have access to mortality credits, a form of alpha that allows income annuities to offer a unique combination of benefits—high cash flow, non-correlation to markets, and a perfect longevity hedge.

FRC's analysis demonstrates that a combination of products—both income annuities and mutual funds—offers the best outcomes to investors. The data definitively shows that income annuity-enhanced portfolios outperform conventional portfolios. While the data supports the strategy, FRC fears that asset managers will not embrace this method of retirement income distribution since it diverts assets away from their offerings into insurance carrier's offerings. While this fear is understandable, it is also unwarranted as our results also suggest that advisors, distributors, and equity asset managers may be better off if consumers own

income annuities, because income annuities take the pressure off of portfolio withdrawals, leading to higher mutual fund account balances over time.

Just as importantly, given that the Financial Reform Bill may make advisors fiduciaries in the near future, it is going to be critical that such strategies are examined and implemented. Not only does the evidence point to the strategy's success, but also the Treasury Department has begun to advocate for annuities in retirement plans. By embracing the strategy now, asset managers will be able to present investors with a strategy that works and will be ahead of legislation that is set to further alter financial services.

Furthermore, this strategy is easy for investors to understand since income annuities are easy to understand. Unlike other insurance products, such as a variable annuity, there are no asset allocation models to adhere to or withdrawal limitations to stay within. The income annuity simply offers a paycheck for life. The simplicity of the product—mixed with a liquid mutual fund portfolio—will attract investors.

In FRC's view, financial intermediaries should be considering partnerships now. Insurer capacity is not unlimited, and there is a small number of high-quality insurers that financial intermediaries would want to partner with.

The media already has embraced income annuities. Financial intermediaries can benefit from income annuities. And most importantly, investors are more likely to enjoy successful retirements using income annuities. FRC believes that this is a product whose time has come.



Editorial: Lisa Campbell, Jim Graves, & Julie Young

Sales: For information on any FRC product, please call 866-532-8009 or e-mail FRCinfo@frcnet.com.

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APPENDIX A

Portfolio Analysis Data

	BarCap Short Treasury TR USD	BarCap US Agg Bond TR USD	S&P 500 TR	Russell 2000 TR USD	DJ US Real Estate TR USD
20-Year Geometric Returns - as of December 2009	4.370%	7.011%	8.207%	8.344%	8.140%
20-Year Geometric Returns - net of fees ¹	3.120%	5.761%	6.957%	7.094%	6.890%
20-Year Std. Deviation	2.195	5.060	19.731	20.941	21.752
Allocation					
Conventional Conservative Portfolio	31.27%	41.73%	20.25%	2.75%	4.00%
Moderate Conservative Portfolio	24.25%	33.50%	29.55%	5.60%	7.10%
Income Annuity-Enhanced - \$200,000 Annuity	12.10%	16.55%	57.45%	7.65%	6.25%
Income Annuity-Enhanced - \$150,000 Annuity	17.10%	22.55%	48.55%	6.55%	5.25%
Correlations					
BarCap Short Treasury TR USD	1.000				
BarCap US Agg Bond TR USD	0.268	1.000			
S&P 500 TR	0.006	-0.193	1.000		
Russell 2000 TR USD	-0.018	-0.193	0.873	1.000	
DJ US Real Estate TR USD	0.060	-0.120	0.658	0.724	1.000

Source: Morningstar, NaviPlan

Notes:

1 Assumed fees: 1.25%

2 Conventional allocation only

3 Conventional allocation only

APPENDIX B

Monte Carlo Simulations - Life Expectancy of 92 Years

Withdrawal Rate	Success Rate	Terminal Net Assets		
		10th Percentile	50th Percentile	90th Percentile
Conservative Conventional Portfolio				
4.0%	94.2%	\$33,747	\$289,783	\$582,712
4.5%	63.6%	(\$152,020)	\$59,087	\$376,797
5.0%	24.9%	(\$304,698)	(\$143,732)	\$111,665
Moderate Conventional Portfolio				
4.0%	97.1%	\$105,111	\$422,536	\$789,060
4.5%	74.9%	(\$120,587)	\$165,048	\$577,219
5.0%	38.1%	(\$287,361)	(\$74,699)	\$298,454
Income Annuity-Enhanced Portfolio - \$200,000 Annuity				
4.0%	100.0%	\$276,710	\$490,715	\$775,581
4.5%	94.2%	\$36,371	\$319,236	\$600,159
5.0%	60.8%	(\$147,875)	\$47,538	\$412,072
Income Annuity-Enhanced Portfolio - \$150,000 Annuity				
4.0%	99.9%	\$236,872	\$467,419	\$770,091
4.5%	90.5%	(\$6,345)	\$250,224	\$603,452
5.0%	53.0%	(\$181,137)	\$2,263	\$390,149

Monte Carlo Simulations - Life Expectancy of 96 Years

Withdrawal Rate	Success Rate	Terminal Net Assets		
		10th Percentile	50th Percentile	90th Percentile
Conservative Conventional Portfolio				
4.0%	74.0%	(\$304,698)	(\$143,732)	\$111,665
4.5%	28.0%	(\$363,737)	(\$124,582)	\$97,344
5.0%	5.5%	(\$525,290)	(\$368,671)	(\$93,820)
Moderate Conventional Portfolio				
4.0%	85.4%	(\$79,650)	\$325,323	\$690,033
4.5%	50.9%	(\$309,289)	(\$6,032)	\$494,040
5.0%	17.1%	(\$502,009)	(\$273,206)	\$133,284
Income Annuity-Enhanced Portfolio - \$200,000 Annuity				
4.0%	99.7%	\$228,828	\$478,468	\$800,734
4.5%	86.6%	(\$50,274)	\$267,333	\$592,535
5.0%	39.0%	(\$262,119)	(\$73,214)	\$305,269
Income Annuity-Enhanced Portfolio - \$150,000 Annuity				
4.0%	98.7%	\$170,243	\$422,090	\$768,198
4.5%	71.2%	(\$138,478)	\$165,173	\$537,905
5.0%	31.3%	(\$316,058)	(\$136,263)	\$315,238

Source: NaviPlan, Morningstar

Study Authors

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As Director of Guaranteed Income Products and Insurance Research, Scott DeMonte is responsible for leading FRC's research and consulting in the variable annuity marketplace. His role includes the development of primary research, identifying and tracking industry best practices, and analyzing and evaluating market developments. Most recently, Scott has written *Guaranteed Income Solutions: Retirement Income Products, Post Credit-Crisis* and *Smoothing Out the Ride: Changes in Asset Allocation Theory*. Prior to joining FRC, Scott founded AnnuityIQ.com where he developed the first rating system for variable annuities and their living benefits. With 14 years of industry experience covering all aspects of the distribution of annuity products, he previously was employed as a regional vice president for Jackson National Life and as a regional marketing director for The Hartford. Scott studied business at SUNY Canton in Upstate New York and holds FINRA Series 7 and 63 licenses, as well as life and health licenses.

Lawrence Petrone, CFA

Lawrence Petrone has more than 16 years experience at several firms in the investment management industry. He has served as director of investment research, senior research analyst, and portfolio manager. Most recently, he was Director of Research at FRC, with responsibility for all research production. He is the author of the FRC study, *Retirement Money in Motion: Capitalizing on IRA, Rollover, & Taxable Money Movement* and recently co-authored *FRC's Mid-Year 2010 ETF Review: Evaluation of ETFs*. Lawrence holds a Masters of Education degree from Boston College and a Bachelor of Arts degree from Gordon College. He is a Chartered Financial Analyst.

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New York Life Insurance Company, a *Fortune* 100 company founded in 1845, is the largest mutual life insurance company in the United States and one of the largest life insurers in the world. Headquartered in New York City, New York Life's family of companies offers life insurance, retirement income, investments and long-term care insurance. New York Life Investments provides institutional asset management and retirement plan services. Other New York Life affiliates provide an array of securities products and services, as well as institutional and retail mutual funds. Visit New York Life's Web site at www.newyorklife.com for more information. FRC and New York Life are independent, unaffiliated entities. New York Life participated in the funding of this research.

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- **Direct Access**—SMEs and analysts working directly with you to get your questions answered and to develop customized proprietary solutions.