

## A Really Big Decision

*Is it better to buy a 'personal pension' in the form of an annuity or to manage your own portfolio and hope for the best?*

### Case Facts

- Clients: Pete and Cindy Miller
- Ages: Pete, 66; Cindy, 62
- Employment: Retiring this year (2009)
- Assets: \$525,000 (combined) in 401(k) accounts  
\$200,000 in regular investment account  
\$50,000 savings account (not used in analysis)
- Income: Social Security: \$37,000 (combined)  
Pensions: \$29,000 (combined)
- Gross income goal: \$84,000 (\$72,000 after tax)
- Longevity: Both in exceptional health; plan for ages 100<sup>1</sup>
- Risk Tolerance: Moderate- Investments have been 61% stocks, 39% fixed

### Commentary

The Millers are a fairly typical upper-middle class couple. They have worked hard and been good savers. Their children are educated and independent. Their house is paid for and they have no other debts. The Millers have accumulated a nice nest egg and have reliable sources of retirement income that meet almost 80% of their income goal.

The problem for the Millers is uncertainty. At first glance, it looks like they are pretty well set. The historical return for their mix of investments (61% stock, 39% bonds and cash) has been 8.85%. With \$725,000 in investments, they should have roughly \$64,000 in yearly investments returns- more than enough to make up the gap between their income goal and their income sources.

There are two problems: (1) pensions that are not adjusted for inflation and (2) the uncertainty of the markets.

### Lack of Inflation Adjustments

Even if the market did return a reliable 8.85% every year from now until age 100, the Miller's retirement security is projected to be a closer call than you would expect, with a 33% probability of things not working out. This stems, in part, from the fact that their pension benefits do not increase each year. Yet the Millers' living expenses do. Over the

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<sup>1</sup> 20% probability that either one will live to age 98, based upon Annuity 2000 Mortality Table

years, the increased demand this places on the portfolio creates genuine risk to their plan should there be a rough market patch.

While one could argue that it wouldn't matter at that point, or that spending could just be reduced along the way. Go find an 80-something and ask her if it would be acceptable if she ran out of money in a few years or if she could find a way to cut her expenses 20%!

### **Market Uncertainty**

Two things that do appear pretty certain about future market returns: (1) In the long run, they probably will produce returns that mirror historical returns but (2) in the short run, year by year, they will never be exactly equal to that average.

One of the "stress tests" that we use to see how a portfolio holds up under varying conditions is called "Bad Timing." In this scenario, the market is assumed to take a 10% dive in the first year of retirement, followed by a 14% drop in the second year (sounds pretty mild from the perspective of 2009). For the remainder of retirement, returns are even. The overall average is the same as in the constant return scenario, 8.85%. However, the sharp initial drop has a lasting impact, causing the portfolio to be exhausted prior to the Millers' time horizon.

This is the reason that financial planners use statistical tools to analyze the probability of a given result, even though it may appear justified by average returns. Using "Monte Carlo" probability testing, the planning software tries literally thousands of different combinations of returns, year in and year out, over the Millers' retirement. It can then give us a probability of success. It can tell us the percentage of those thousands of combinations that were successful in sustaining their portfolio to age 100.

### **Testing Alternatives**

In the case of the Millers, we looked at several strategies to achieve a higher comfort level. These included:

1. Loading up on income producing assets (bonds)
2. Purchasing a commercial annuity
3. Expense management

### **Income-Producing Assets**

The classic retirement portfolio used to consist primarily of bonds, with some allocation to large company stocks that paid regular dividends. The theory was that the bonds offered relative safety of principal with predictable reliable income, enhanced with a sliver of growth potential from the stocks.

In the Millers' case, we tested a shift in their investment mix from 39% bonds to 72%. While it is comforting to know that a bond and its interest will most likely be paid back by the company or government that issued it, the overall return on this portfolio has historically been 7.60% versus 8.85% for the 61% stock mix that the Millers had before.

The result is an actual reduction in the clients' retirement security as the probability of their portfolio lasting to age 100 falls below 40%. In other words, by replacing much of the equity in their accounts with fixed income, they have simply traded short-term market risk for long-term "longevity" risk. The Millers must be willing to accept the increased probability that they may one day run out of money in return for less market risk today.

### **Immediate Annuity**

An immediate annuity functions like a pension. The retirees give up a portion of their assets in return for a guaranteed stream of payments. In its purest form, an annuity pays benefits for the life of the owner, no matter how long that person lives. If death occurs way beyond normal life expectancy, the insurance company must keep paying. On the other hand, if the owner dies two months after the annuity was purchased, no further payments will be made. The funds used to buy the policy are lost to the clients' heirs.

Annuities can be set up so that the payments continue after the death of the owner for the remainder of the surviving spouse's life. They can also be structured to provide a certain minimum number of payments, or even for a refund of a portion of the original premium. However, all of these bells and whistles 'cost' the owner in the form of a reduced monthly benefit.

In the Millers' case, we assumed that they carved out \$200,000 from Pete's 401(k) and purchased a no-load immediate annuity, with 100% survivor benefit for Cindy. The monthly benefit was \$1,032. This annuity benefit, in combination with their Social Security and pension benefits, would make their total combined "safe" retirement income \$79,000, or about 94% of their \$84,000 goal.

Interestingly, the projections show that adding this extra measure of guaranteed income actually reduces the probability of overall retirement "success" (defined here as sustaining their income and portfolio at the target level to age 100) from 67% to 54%. The removal of \$200,000 from investments to purchase the annuity increased the strain on the Millers' resources through the retirement years, especially in the later years when the annuity and pension benefits lost more ground to inflation.

One should not conclude that this makes the annuity the wrong or a bad choice. The insurance company's guarantee of continuation of that income will be worth more to a risk-averse client than the higher projected value of their portfolio without the guarantee. In short, the "insurance" against outliving their money may be well worth the cost to the Millers.

### **Cutting Spending**

Always a good place to start, this is a healthy but somewhat unpopular strategy for clients.

To check this strategy for the Millers, a 5% “pay cut” was entered into the financial planning software. While this approach would mean that their after-tax income would be \$68,000 per year, or \$4,000 less than desired, limiting spending this way results in their portfolio not only lasting, but growing to over \$3.4 million by age 100, with an 81% probability of this result.

This result was achieved with no change in the basic investment mix of 61% stocks/39% fixed income.

### ***Conclusion***

It all comes down to risk aversion and the concept that there is truly no free lunch.

The Millers can guarantee a certain level of income that comes close to the total they think they need. However, the cost of the guarantee – giving up \$200,000 and the probability of a reduced legacy for their children – may or may not be acceptable to them.

A sound approach to making this decision may be to identify that portion of their living expenses which is made up of absolutely essential needs. If the Millers’ guaranteed income sources are sufficient to cover the basics, plus inflation, they would probably be better off remaining in control of their investment assets as resources to fund the things they want but do not absolutely need. If not, they should seriously consider ‘annuitizing’ enough of the portfolio to clear that basic needs hurdle.

What’s left would be the ultimate legacy for their children and grandchildren.

## Financial Goal Plan

### Pete and Cindy Miller



**Prepared by :**

William Keffer, CFP®, ChFC  
Principal  
Keffer Financial Planning

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**What If Worksheet - Scenarios**

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# What If Worksheet - Scenarios

This Worksheet allows you to analyze and compare the results of one or more scenarios that you created by varying the Plan assumptions.

Goals	Estimated % of Goal Funded											
	Current Scenario			More Bonds			Income Annuity			Trim Expenses		
	Average Return	Bad Timing	Back Test	Average Return	Bad Timing	Back Test	Average Return	Bad Timing	Back Test	Average Return	Bad Timing	Back Test
<b>Needs</b>												
<b>10 Retirement - Living Expense</b>	100%	94%	100%	98%	92%	90%	100%	93%	93%	100%	100%	100%
<b>Safety Margin (Value at End of Plan)</b>												
Current dollars (in thousands) :	\$374	\$0	\$42	\$0	\$0	\$0	\$180	\$0	\$0	\$592	\$269	\$477
Future dollars (in thousands) :	\$2,175	\$0	\$247	\$0	\$0	\$0	\$1,049	\$0	\$0	\$3,446	\$1,568	\$2,783

Monte Carlo Results	Likelihood of Funding All Goals			
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Your Confidence Zone: 75% - 90%



Probability of Success: 67%  
Below Confidence Zone



Probability of Success: < 40%  
Below Confidence Zone



Probability of Success: 54%  
Below Confidence Zone



Probability of Success: 81%  
In Confidence Zone

Key Assumptions	Current Scenario	More Bonds	Income Annuity	Trim Expenses
<b>Stress Tests</b>				
Method(s) :	Bad Timing Program Estimate Years of bad returns : 2009: -10.28% 2010: -14.18%	Bad Timing Program Estimate Years of bad returns : 2009: -2.72% 2010: -4.21%	Bad Timing Program Estimate Years of bad returns : 2009: -10.28% 2010: -14.18%	Bad Timing Program Estimate Years of bad returns : 2009: -10.28% 2010: -14.18%
	Back Test 1970	Back Test 1970	Back Test 1970	Back Test 1970

● Indicates different data between the Scenario in the first column and the Scenario in any other column.

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# What If Worksheet - Scenarios

Key Assumptions	Current Scenario	More Bonds	Income Annuity	Trim Expenses
<b>Funding Order</b>				
Select Order for Assets assigned to Funding All Goals :	Time Order	Time Order	Time Order	Time Order
Assets - Ignore Earmarks (except for College Savings Plans) :		No	No	No
Retirement Income - Ignore Earmarks :		No	No	No
<b>Hypothetical Average Rate of Return</b>				
During Retirement :	Current	● Capital Pres I	● Total Return I	● Total Return I
Total Return :	8.85%	● 7.60%	● 8.85%	● 8.85%
Real Return :	4.23%	● 2.98%	● 4.23%	● 4.23%
Base inflation rate :	4.62%	4.62%	4.62%	4.62%
<b>Goals</b>				
Retirement - Living Expense				
Planning Age				
Pete :	100	100	100	100
Cindy :	100	100	100	100
Both Retired				
Pete and Cindy retired :	\$72,000	\$72,000	\$72,000	● \$68,000
One Alone - Retired				
Cindy alone :	\$64,000	\$64,000	\$64,000	\$64,000
Pete alone :	\$64,000	\$64,000	\$64,000	\$64,000
<b>Retirement Income</b>				
ABC Corp Pension				
Annual Income :	\$17,000	\$17,000	\$17,000	\$17,000
Start Year :	Pete's Retirement	Pete's Retirement	Pete's Retirement	Pete's Retirement
Select when income will end :	End of Cindy's Plan			
Benefit After Death	100	100	100	100
XYZ Schools Pension				
Annual Income :	\$12,000	\$12,000	\$12,000	\$12,000
Start Year :	Cindy's Retirement	Cindy's Retirement	Cindy's Retirement	Cindy's Retirement
Select when income will end :	End of Cindy's Plan			
Benefit After Death	100	100	100	100

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Key Assumptions	Current Scenario	More Bonds	Income Annuity	Trim Expenses
<b>Social Security</b>				
Pete				
Select when benefits will begin :	At age of full eligibility			
Annual benefit - Enter your own - Evaluate annually :	\$21,000	\$21,000	\$21,000	\$21,000
Widow(er) benefit :	\$0	\$0	\$0	\$0
Percentage of benefit to use :	100%	100%	100%	100%
Cindy				
Select when benefits will begin :	At age of full eligibility			
Annual benefit - Enter your own - Evaluate annually :	\$16,000	\$16,000	\$16,000	\$16,000
Widow(er) benefit :	\$0	\$0	\$0	\$0
Percentage of benefit to use :	100%	100%	100%	100%
<b>Goal Strategies</b>				
Immediate Annuity				
Single Premium Immediate Annuity				
Pete-Qualified		No	Yes	No
Joint-100% Survivor-Lifetime Only				
Purchase Amount \$200,000				
Annual Income \$12,384				
Value of Portfolio :	\$725,000	\$725,000	\$525,000	\$725,000
Stock in Portfolio :	\$442,250	\$442,250	\$320,250	\$442,250
Percentage of Stock in Portfolio :	61%	61%	61%	61%
<b>Tax Options</b>				
Include Tax Penalties :	Yes	Yes	Yes	Yes
Change Tax Rate?	No	No	No	No

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