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Estimating Retirement Savings: Are *Ballpark Estimate* Type Planning Worksheets Accurate Enough to Help Consumers?

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Abstract

Calculating the savings required to maintain one's lifestyle in retirement will increasingly become a topic of interest to aging baby boomers. Fortunately, there are many tools (e.g., worksheets, and computer software) to assist consumers and family economists who teach or advise them. Three key variables in retirement savings estimates are amount of annual income needed in retirement (i.e., percentage of income replacement), growth rate on savings, and an individual's longevity. Each of these variables is discussed in this paper, along with characteristics and limitations of various planning tools. To keep calculations simple, some retirement estimates, such as the American Savings Education Council's Ballpark Estimate, make assumptions about one or more key variables. They also use conservative growth rates and average life expectancies. Other planning tools allow users to make their own assumptions about key variables. Despite their limitations, the use of retirement planning calculations is encouraged. More than half of American workers have yet to calculate what they need to save. Users are cautioned to understand the assumptions that underlie analyses.

With 77 million baby boomers (currently age 35 to 53) facing retirement, at perhaps no other time in American history has retirement planning been of such great concern to so many people. Suddenly, there comes a realization that there are fewer years of work remaining than time previously spent in the labor force. Also, longevity has increased and many boomers can expect to live 30 or more years beyond retirement age (Wasik 1998).

Increasingly, middle-aged and older Americans are asking questions such as "How much do I need to save?' and "If I haven't been saving enough, are there ways that I can make up for lost time?" As a result, family economists will find themselves frequently assisting clients with retirement saving/investing needs analyses and catch-up financial planning strategies (e.g., investing more aggressively, trading down to a smaller home).

Tools such as worksheets and computer software programs that provide estimates of the savings required to fund a specific amount of income over an individual's assumed life expectancy have traditionally been used for planning purposes. Many of these tools make assumptions regarding users' desired retirement lifestyle (usually stated as a percentage of pre-retirement income), the future inflation rate users will experience, users' retirement age and longevity, and the growth rate on retirement savings (Tacchino & Saltzman 1999). Also included in these models are calculations of the future value of current retirement savings (e.g., IRA and 401(k) account balances) and anticipated benefits from outside sources (e.g., Social Security, pension).

Examples of retirement planning tools include the Ballpark Estimate, developed by the American Savings Education Council (ASEC) (http://www.asec.org), interactive calculators on Web sites, such as Financenter (http://www.financenter.com), and dozens of retirement savings worksheets and software programs developed by state Cooperative Extension units and financial services firms. Several new planning tools, such as Financial Engines (http://www.financialengines.com) can even tell users their probability of achieving a specific retirement goal. If the odds are poor, they can try different scenarios that provide better results (Quinn 1999).

Recently, questions have been raised about the accuracy and usefulness of some retirement savings planning estimates. Quinn (1998), for example, reported that a Newsweek staffer, posing as a consumer seeking financial advice, received a wide range of retirement savings projections from advisors who used different tools and made different planning assumptions. Waddell (1999, 1997) has questioned whether ASEC's Ballpark Estimate worksheet and other tools developed by the financial services industry overstate the savings needed by overestimating the amount of income required in retirement and assuming only a 3% real rate of return after inflation.

Tacchino and Saltzman (1999) and Stein (1998) note that expenses vary throughout retirement years, and that adjustments should be made in planning tools to avoid overstating the amount of savings required. Citing data from the 1995 Consumer Expenditure Survey (CES), Tacchino and Saltzman (1999) note that expenditures decrease as retirees get older, falling by 26.5 % for persons over 75, compared to the 65-74 age group.

Often, spending decreases are voluntary (e.g., less travel due to declining health or the death of a spouse) and should be reflected in retirement savings calculations. They propose a blended replacement ratio (percentage of pre-retirement income) that incorporates a reduction of approximately 20% of initial retirement spending levels after age 75. Thus, if a person retires at age 60 and plans for a life expectancy of 30 years, with an original replacement ratio set at 75% of pre-retirement earnings, their age 75 ratio would be 60% (75% - [75% x .20] = 60%) and the blended ratio, covering all of their retirement years, would be 65.2% (.652).

Stein (1998) classifies retirement into three phases: a high-cost active phase that generally lasts through a person's mid-70s, a slower-paced (less expensive) passive phase that lasts about 10 years, and a final retirement phase marked by failing health and, perhaps, nursing home care. Managing the risks (e.g., the cost of long-term care) and uncertainty of the final phase of retirement is a major challenge facing retirees and their financial advisors. It is widely acknowledged that medical costs tend to increase as people get older. Retirement savings needs analyses should be periodically reviewed and adjusted to take into account changing household expenses and price increases.

Key Planning Assumptions

Estimating retirement savings has been described as "something less than an exact science" (Tacchino & Saltzman 1999). Like other areas of financial planning (e.g., selecting the "best" investment for college savings for a nine-year-old), there are no absolute answers. Still, the figures derived from a retirement savings need analysis should be accurate enough so that users neither save thousands of dollars more than needed (Kristof 1998), perhaps at the expense of maintaining good health and social relationships (Warner, 1996), nor find themselves having to drastically lower their standard of living in retirement. In addition, the planning tool (e.g., worksheet) used should be "user friendly" and easy to understand and complete without high-level math skills. Otherwise, a retirement savings estimate may never even be attempted.

As it is, less than half of working Americans have ever attempted to determine what they need to save for retirement. The 1998 Retirement Confidence Survey (Yakoboski & Ostuw 1998) found that only 45% of workers have completed a retirement savings analysis, up from 32% in 1996. Three key assumptions in retirement planning estimates follow: (1) the amount of annual income needed in retirement (i.e. a percentage of income replacement ratio), (2) the growth rate on savings (typically stated as a rate of return after inflation), and (3) an individual's longevity. All three factors will be discussed in this paper. Like all computations that require assumptions, the more realistic the figures used (e.g., the growth rate on savings) in a retirement savings need analysis, the more accurate the estimate. Otherwise, it's simply "garbage in, garbage out" (Clements 1995).

Amount of annual income needed in retirement

Opinions abound on the issue of what percentage of pre-retirement income should be used as a savings target. The ASEC Ballpark Estimate worksheet, for example, suggests a retirement lifestyle based on replacing 70% of annual gross income. In the first step of this six-step calculation, users are told to multiply their current gross income by .70 (although, in reality, any other percentage (e.g., 80%) could also be placed in this section). Waddell (1997) argues that 70% to 80% of pre-retirement income is too high a replacement percentage figure, thus causing

users to over-save. He notes that many retirees no longer have mortgages and children's' expenses, nor do they require a percentage of income anymore to save for retirement.

Waddell also cites reductions in expenses for clothing and entertainment and taxes and states that household expenses could drop by as much as 45%. Stein (1998, p. 6), on the other hand, notes that "it is not uncommon to see retirees spending more money in the first few years of retirement than they had been used to spending before they retired." He writes in The Prosperous Retirement (1998) that expenses for the active phase of retirement can be similar to those during the years before. During the passive phase, a slow-down in lifestyle and reduced expenses will help offset the impact of inflation. The cost of the final phase is highly unpredictable, due to the unknown impact of medical and long-term care expenses, but can be made more certain through the purchase of insurance (e.g., Medigap and long-term care policies).

There is no absolute answer for estimating retirement savings and it is dangerous to generalize for everyone on either the high side (e.g., 90% replacement ratio) or low side (e.g., 50% replacement ratio). Some people can live happily on half of their pre-retirement income and others will require 100% (or more) to maintain, or even enhance, their lifestyle. There are also a lot of people in between, for whom 60% or 70% or 80% of current income will be a realistic replacement percentage.

A lot depends on a retiree's financial goals (e.g. travel, new car purchases) and lifestyle choices (e.g., trading down to a smaller home or moving to a less costly area). Also, the generosity (or lack thereof) of former employers. Some retirees have generous pensions and free or low-cost employer-paid health coverage. Others have no employer retirement benefits and must pay $5000 or more annually out-of-pocket for supplemental Medigap health coverage. Retirement lifestyle decisions can also play an important role in determining the amount of savings required. This adjustment process occurs both before and during retirement.

Burns (1998, p. 62) notes that "changes in geography and shelter are great surrogates for a lifetime of investing." In other words, lifestyle decisions, such as the choice of retirement housing, can greatly reduce the amount needed to save. Burns (1998) notes that someone might be able to "save" $500,000 -- without picking a single investment -- just by using "geographic arbitrage;" (i.e., moving from a high-cost area, say Upper Saddle River, New Jersey, to a lower-cost locale like Lubbock, Texas). Not only would a homeowner have access to freed-up equity (e.g., replacing a 2500 square foot home worth $400,000 with another costing $150,000, leaving $250,000, less sales expenses, to invest), but the cost of maintenance, utilities, and property taxes in the less expensive locale is also likely to be lower, resulting in a dramatic reduction in living costs. Just two basic lifestyle choices -- what kind of house you live in and where it is located -- can have as much, if not more, impact on your well-being in retirement than the amount of money you are able to invest.

Before doing a retirement savings calculation and making a replacement ratio assumption, a thorough analysis of current and projected living costs should be undertaken, incorporating anticipated changes, if any, in retirement housing. Also consider expenses that will be added (e.g., cost of Medigap and/or long-term care insurance) and those that will terminate (e.g., commuting and 401(k) plan contributions) upon retirement. Again, such an analysis must be personalized and not be based on broad generalizations, or even government statistics, about senior spending patterns.

For example, Waddell (1997) describes a potential 10% to 20% reduction in post-retirement spending due to termination of retirement savings plan (e.g., 401(k)) contributions. Many households do not save anywhere near this percentage, however, so they would experience little or no expense reduction. Substantial spending changes may also not be possible if mortgages and other debts still need to be repaid or other expenses, such as income taxes and entertainment, remain at or near pre-retirement levels. Inflation, too, will take its toll. Thus, a projection of retirement spending, including tax liability, is a much better indicator of future income needs than an arbitrary percentage of income.

Another factor that can affect required retirement savings is an inheritance. While there is a popular misconception that many working persons today will inherit significant sums of money, inheritances have not been an important element in wealth accumulation in the past, nor are they expected to be so in the future. Only 7% of families reported that most of their wealth came from inheritances, according to results from the 1986 Survey of Consumer Finances (Levy & Michel, 1991). Nevertheless, while potential inheritances should never be used as an excuse not to save, they can be a source of income. If received, this money should be invested prudently (e.g., diversified portfolio).

Unfortunately, inheritances are difficult to count on due to uncertainties about benefactors' health and longevity. Thus, it could make sense for adult children to "hedge their bets" by paying premiums for long-term care insurance for their parents. This lessens the possibility that long-term care expenses, such as nursing home bills, will dissipate their legacy. The result can be increased retirement assets.

Another consideration in retirement planning is the use of post-retirement employment income and Social Security benefits in a savings need calculation. Some certified financial planners routinely eliminate or discount Social Security benefits when calculating what their clients need to save for retirement (Most 1999). Some planners expect that future benefits will be severely reduced or they are concerned that more affluent clients will find them "means-tested" away. Social Security is viewed as "cream on the side" that can provide additional funds for travel, but clients are told not to depend on it (Most 1999). Obviously, when Social Security and other income sources are eliminated from consideration as a source in a retirement savings need

analysis, individuals need to save more on their own and/or scale down lifestyle expectations (e.g., lower replacement ratio).

Growth rate on retirement assets

Another source of controversy in discussions of retirement savings tools is the assumed rate of return on retirement savings. While U.S. large company stocks have averaged an 11.2% annual return between 1925 and 1998 ("Stocks, Bonds, Bills, and Inflation" 1999), it would be a mistake to assume this high a return for individual investors because few people invest 100% in stocks (Clements 1998). More typically, investors place their money in several asset classes; for example, 50% stocks, 30% bonds, and 20% cash. Such a diversified portfolio reduces investment risk resulting from stock and bond market volatility.

Diversification also lowers the average annual return of a portfolio, relative to the best-performing asset class (often stock) at a given point in time. Typically, the less stock in an asset allocation mix, the lower the average annual return. For example, between 1950 and 1997, a portfolio comprised of 80% stock, 10% bonds, and 10% cash earned a 12.2% before-tax annual return. With a 40% stock, 50% bond, and 10% cash allocation, the annual return decreased to 9.2%, according to Ibbotson Associates ("Stocks, Bonds, Bills, and Inflation" 1998), along with corresponding reductions in portfolio volatility (i.e., the "spread" between the largest 12-month gains and losses).

The challenge for developers of retirement savings tools, like the Ballpark Estimate, is to incorporate a realistic rate of return based on the asset allocation decisions of typical users. The simpler a worksheet or software program, the more variables, like longevity and investment return, must be assumed. Otherwise, a user would need pages of time value factor tables in order to complete an analysis. Waddell (1999) argues that the 3% real rate of return (defined as the return adjusted for inflation) assumed in the Ballpark Estimate is too low and results in an overestimate of required savings. Instead, he calculates a return of 6.32%, after inflation, on a 60%/40% mix of stocks and bonds. No allowance is made for income taxes in Waddell's calculation, however. Of course, taxes must immediately "come off the top" of a taxable investment and are payable upon withdrawal for tax-deferred accounts (e.g., IRAs) at marginal tax brackets ranging from 15% to 39.6%.

One also has to wonder how many Americans have a 60/40 stock/bond asset allocation as Waddell (1999) suggests. In February 1999, it was reported that Americans are losing tens of billions of dollars of interest each year by placing their money -- about $1.5 trillion dollars total -- in bank savings accounts that pay less than 2% annually ("Americans Losing Billions" 1999). The number of workers who choose guaranteed investment contracts or GICs (a.k.a., stable value funds), which typically pay about 1.5% to 2% more than a money market fund (Schultz 1998),

for retirement plan contributions is another indication that a conservative rate of return figure may be in order.

Bogle (1994) estimates that, after taxes and inflation, stocks earned 6.1% between 1926 and 1992. Long-term bonds earned only .5% and cash assets actually lost purchasing power (-.3%). Thus, if investors hold much of their retirement savings in cash or fixed-income assets, a 3% real rate of return in retirement worksheets may not lead to savings over-estimates at all, as Waddell contends. Instead, savings calculations may be right on the mark, or even on the low side, due to lack of equities in many portfolios. As of 1995, only 40.3% of U.S. households owned any stock, including individual company shares and stocks purchased indirectly through mutual funds and employer retirement plans (Wessel 1999).

Stated another way, more than half of all Americans have yet to experience the higher returns that stocks have historically provided over time, despite one of the longest-running bull markets ever. Since this is "reality," a relatively low growth rate on savings should be used for planning tools developed for the masses. Although 6% returns after inflation are certainly possible for some, they will result in faulty analyses if most people earn much less.

Some retirement savings tools factor in the impact of taxes, as well as inflation, on the growth of retirement savings, and some do not. Thus, it is important for users to carefully study the assumptions that underlie their calculations. For example, the Ballpark Estimate assumes a constant 3% real rate of return after inflation. To keep things simple, taxes are not considered in this analysis, although users will most certainly need to forfeit part of their investment earnings to Uncle Sam at some point in time. Similarly, some references define "real rate of return" as "the return on investments after adjusting for inflation" (Bogle 1994; Garner, Coplan, Raasch, & Ratner 1996; Goodman 1997; Keown 1998; Morris 1998; Sharpe & Alexander 1990).

There are also retirement planning tools that assume a certain growth rate on savings after both taxes and inflation (Hogarth 1987; O'Neill 1995; Tengel 1996), typically a 2% after-tax, after-inflation rate. Likewise, there are references ("Financial Terms Made Simple" 1995; Garman & Forgue 1997; Morris & Morris 1997) that state that "return on investments after adjusting for inflation and income taxes" is the definition of "real rate of return." It is important for users to understand the assumptions that underlie a retirement savings need analysis. The best planning tools allow users to change the underlying assumptions (e.g., rate of return on investments, longevity), thus providing a more personalized analysis.

Longevity

A third factor that impacts retirement planning decisions is longevity, or life expectancy. Obviously, the longer people live in retirement (e.g., age 92 versus age 77), the more money they

need to save. Unfortunately, no one has a crystal ball to know how many years he or she will spend in retirement. Therefore, the next best alternative is actuarial tables that define life expectancy as the average number of years of life remaining for a group of people who have attained a given age.

Today, retirees can expect to live longer than ever before. A couple, both 65, can expect that at least one partner will live another 25 years (age 90), and a couple with spouses age 70 and 75 can expect the survivor to live 17 years, possibly into their early 90s (Carlson 1997). Other clues to longevity are family history and personal health habits (e.g., diet, exercise, smoking). Persons who come from a family with a tradition of long-lived ancestors, and those who have taken good care of themselves (e.g., diet, exercise, no smoking), may want to plan on saving more money, or investing more aggressively, to make sure their money lasts as long as they do.

Retirement planning tools factor in longevity in two ways. Some prompt users to make an assumption about how long they expect to be retired (Goetting, Atwood, & Tengel 1989; Hogarth 1987; O'Neill 1995; T. Rowe Price 1991; Tengel 1991; Turner 1991). Actuarial tables, for individuals of each gender and/or for couples, are often provided as a frame of reference. Other tools, such as the Ballpark Estimate, assume that users will live to a specified age. The Ballpark Estimate uses age 87 which is the life expectancy (27 years) for a 60-year old ("How Long Will I Live?" 1996). It also cautions users that "planning for retirement is not a one-size-fits-all exercise," nor is it a one-time exercise, noting that "you will need to recalculate your retirement needs annually and as your salary and circumstances change." Calculations are only meant to provide a rough idea of savings, and more detailed analyses are available through computer software programs or financial advisors.

Financial planners typically develop savings estimates so that retirement assets provide income beyond a client's life expectancy. Widely quoted certified financial planner, Harold Evensky, for example, notes that half of all 65-year olds will die before they turn 85 and half will die later. He advises planning as though you'll live longer than 70% of all 65-year olds, which means age 89 for men and 93 for women (Clements 1995). In other words, err on the side of caution.

The problem with using such high life expectancies in retirement tools for the masses, however, is that they produce high required savings figures. This can lead to self-efficacy problems (Karpel 1995). If planning tools produce savings figures that are out-of-reach, users might very well say "I'll never have enough, so why bother saving at all?" Thus, using age 87 appears to be a reasonable compromise. Also, if Ballpark Estimate users can live on less than 70% of their pre-retirement income or earn more than a 3% real rate of return, as Waddell (1999) suggests, this will counterbalalance the age 87 life expectancy figure, which should be fine for what is clearly billed as a rough estimate.

Summary

Saving for retirement will increasingly become an issue of great importance to aging baby boomers in the years ahead. The first step on the path to financial security in retirement is calculating the amount of savings required to maintain one's desired lifestyle (Quinn 1998a) and then taking appropriate action (e.g., contributing to an IRA). This article has discussed three key retirement planning variables: income replacement percentage, rate of return on retirement savings, and longevity.

Another key factor is the effect of inflation. Characteristics of various planning tools were also discussed. To keep calculations simple, some retirement planning tools, including the widely used Ballpark Estimate, developed by the American Savings Education Council (ASEC), necessarily make assumptions about one or more key variables. They also appear to use lower growth rates on savings than what may be possible with portfolios tilted toward stocks. This undoubtedly reflects the lack of equity investments in over half of U.S. households. Longevity estimates use average figures, perhaps not to discourage users from attempting to save.

The bottom line is that, if not Ballpark Estimate type retirement planning worksheets, then what? How do family economists motivate clients to save? As it is, more than half of American workers don't know what they need to maintain their lifestyle in retirement (Yakoboski & Ostuw 1998). Ballpark Estimate type worksheets are worthwhile because they provide useful feedback and motivation for adjusting behavior (e.g., amount of retirement savings). Thus, their use should be encouraged as the basis for an annual review and adjustment (if needed) of retirement finances.

Caution should be exercised with any retirement planning tool. Users, and educators who advise them, need to understand the assumptions that underlie an analysis in order to interpret the output correctly. The best retirement tools provide choices, rather than assumptions, about critical planning factors (e.g., longevity, rate of return on portfolio) for maximum flexibility of use. On the other hand, tools that make certain assumptions, like the Ballpark Estimate, are generally shorter and less intimidating. The most important thing is that users know what they are getting. In addition, the retirement planning process should be viewed as dynamic and plans adjusted as warranted.

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