



## How Do Spending Needs Evolve During Retirement?

By Wade Pfau

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Most people's spending patterns change over the course of retirement – expenses look very different at 90 than they do at 65. Yet most research on retirement withdrawal rates relies on constant inflation-adjusted withdrawals to develop a client's forward-looking budget. Such an unrealistic, one-size-fits-all approach can be disastrous if a client inadvertently retires with insufficient savings. Is there a better way?

It's critical to understand what the empirical data can – and can't yet – teach us about how certain expenses change in retirement. One particular method that has recently drawn attention – age banding – employs knowledge about retirement expenses, giving planners a framework to budget for their clients' retirement in a more realistic manner.

### Reality Retirement Planning

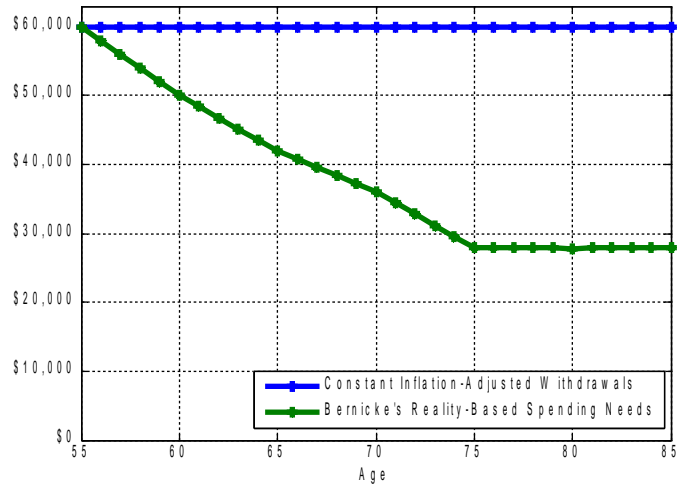
In June 2005, Ty Bernicke, a Wisconsin-based financial planner, published [Reality Retirement Planning: A New Paradigm for an Old Science](#) in the *Journal of Financial Planning*. His article challenged the prevailing assumption that investors need constant inflation-adjusted income in retirement, suggesting that existing studies may drastically overestimate retirement needs.

Bernicke used evidence from the [Consumer Expenditure Survey](#) (CES) to show that those aged 75+ spend less than those aged 65-74, who spend less than those aged 55-64. Bernicke described a tug-of-war for retirees: though they do increase their spending over time with inflation, they also voluntarily spend less as they age. Retirees lose their interest or ability to spend as much on vacations or restaurants, for instance.

(A couple of caveats: Because Bernicke's data are population-wide averages by age group, we don't know how much variation there is within each age group. Also, as planner Michael Kitces [discussed](#) in a recent blog entry, the typical financial planning client probably spends more than these averages imply.)

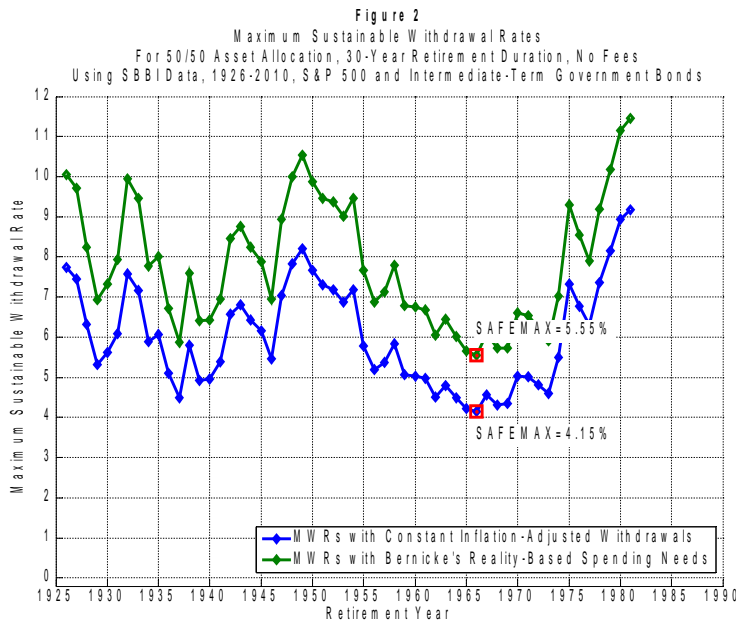
Figure 1 shows the real spending needs by age, based on the CES and developed for an illustrative example in Bernicke's article. Spending needs at age 75 are 33% less than at age 65, and 53% less than at age 55. Checking this with the more recent 2010 Consumer Expenditure Survey, I found that those aged 65-74 spend 20% less than those who are 55-64. Those who are 75+ spend 40% less than those who are 55-64 and 26% less than those who are 65-74.

Figure 1  
Ty Bernicke's Reality Retirement Planning  
Real Spending Needs By Age



Next, I prepared Figure 2, assuming a 30-year retirement beginning at age 65. Subsequent spending is calibrated to the age-65 level, and, following Bernicke, real spending declines gradually to a point that is 33% less in real terms at age 75 than it was at age 65. It then stays at this lower real amount until age 95.

Figure 2 shows the historical maximum sustainable withdrawal rate based on the underlying assumptions (including constant inflation-adjusted spending needs) in William Bengen's classic 1994 article, [Determining Withdrawal Rates Using Historical Data](#), which I recently summarized on my [blog](#). Over time, Bernicke's lower spending needs result in sustainable withdrawal rates that are between 1.3% and 2.4% higher than those required to maintain constant inflation-adjusted spending. For both spending assumptions, the worst-case scenario happened in 1966. Bernicke's spending assumptions would have supported an initial withdrawal rate of 5.55%, compared to 4.15% with constant spending. For someone using Bengen's historical worst-case maximum sustainable withdrawal rate as a spending guide, that implies retirement could have begun with 25% less wealth. This is not a trivial matter!



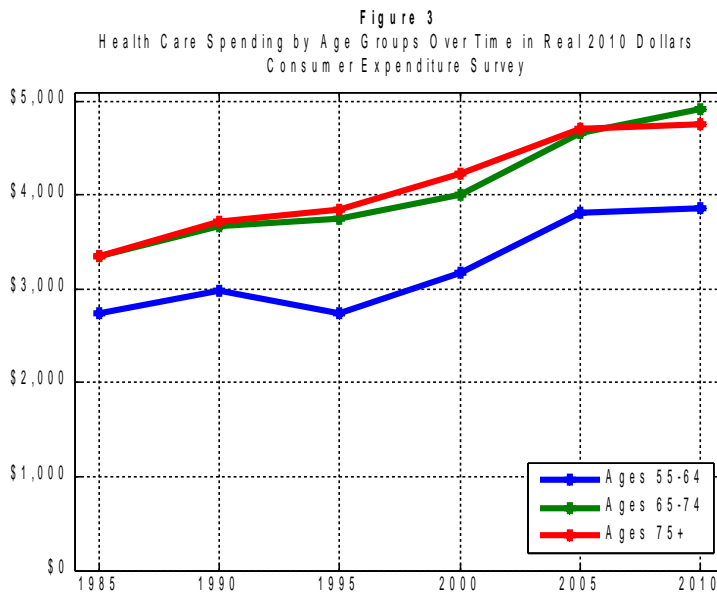
## Is Bernicke correct?

I am not convinced that the spending reductions that arise with age are as large or as voluntary as Bernicke concluded. Bernicke makes the case that the reductions are voluntary by referring to data on median net worth by age and household-income quintiles to show that older people have more wealth than younger people within each quintile. If older people are wealthier but are spending less, he concluded that the spending reductions must be voluntary. Jonathan Clements raised a valid criticism of this, though, in a 2006 *Wall Street Journal* [article](#). Those income quintiles are defined for the whole population, and a much higher percentage (43%) of the 75+ individuals are in the bottom-income quintile. This makes Bernicke's comparisons between wealth and age somewhat less meaningful.

In a 2006 study for the [National Tax Journal](#), I investigated income sources for the 90% of the elderly who receive Social Security benefits. I found that among the elderly, poverty does increase with age, and that those with less income are more likely to be unmarried females (mostly widows) who rely heavily on Social Security. Since Social Security is adjusted for wage growth prior to retirement but for inflation after retirement, older retirees will naturally have smaller benefit amounts than younger retirees, an important explanation for less spending.

Crucially, Bernicke's analysis also obscures the fact that inflation is higher in some spending categories than others, a fact he misses because he considers spending between different age groups in the same year. In Figure 3, I show health care spending by age groups adjusted for inflation to 2010 dollars. In a given year, the total spending for the 65-74 and the 75+ groups is close. But what matters is that real health care spending

increases over time, in part because health care has a higher inflation rate than the CPI. Ten years later, when the 65-74 group joins the ranks of 75+, one should expect higher health care spending, a dynamic Bernicke's analysis does not capture.



### Somnath Basu's age banding

That leads us to California Lutheran University professor Somnath Basu's [Age Banding: A Model for Planning Retirement Needs](#), which he published in the first 2005 issue of *Financial Counseling and Planning*. Though the article provided a comprehensive retirement planning framework, here I will focus specifically on the findings that covered post-retirement spending patterns. Basu's framework is the most promising generalized approach I've seen for how to incorporate changing spending needs into retirement planning.

As an easy-to-digest example of his framework, Basu considered a 30-year retirement divided into three 10-year intervals. Rather than assuming a constant rate of inflation for expenses during retirement, he divided spending into four general categories: taxes, basic needs, health care, and leisure. Within these categories, he investigated the spending patterns by age and made allowances for differential inflation rates between these categories. For instance, he noted that retirees spend more on leisure in the early part of retirement and more on health in the later part of retirement.

<b>Table 1 An Age Banding Illustration</b>				
	Inflation Rate	Lifestyle Adjustment Factor at Age 65	Lifestyle Adjustment Factor at Age 75	Lifestyle Adjustment Factor at Age 85
Taxes	3%	0.5	1	1
Basic Living	3%	0.7	0.8	0.9
Health Care	7%	1.15	1.2	1.25
Leisure	7%	1.5	0.5	0.25
<i>Source: Adapted from the stylized example in Somnath Basu's "Age Banding: A Model for Planning Retirement Needs"</i>				

Table 1 details how the approach works with these four spending categories and three time segments (65-74, 75-84, 85-94). These numbers are not calibrated closely to data; they are meant to be illustrative for a typical client. The inflation rate for taxes is 3%. At age 65, the lifestyle adjustment factor for taxes is an assumed drop to 50% of their pre-retirement level, as payroll taxes are no longer paid. Those lifestyle adjustment factors are progressive; a value of 1 at age 75 means that tax amounts will not change relative to their real values at age 65, they may only grow with inflation. The same is the case for taxes at 85. Overall, taxes drop by 50% at retirement but then stay at this same inflation-adjusted level.

Next, though always adjusted for 3% annual inflation, basic living expenses are assumed to fall by 30% at retirement, and then by another 20% at age 75, and then by another 10% at age 85. Thus, by age 85, real spending on basic expenses has fallen to about 50.4% of its pre-retirement level. ( $0.7 \times 0.8 \times 0.9 = 0.504$ .)

As for health care and leisure, both have an inflation rate of 7% instead of 3%. And health care expenses also increase with age, adjusting upward by 15% at 65, by 20% at 75, and by another 25% at 85. By 85, real health expenses are assumed to be 3.7 times larger than their pre-retirement value, assuming a somewhat simplified overall inflation rate of 3%. Leisure increases by 50% at retirement as clients set out to enjoy life, then drops by 50% at 75 and another 75% at age 85. By 85, even with the higher inflation rate, leisure spending is only 40% of its pre-retirement level in terms of the overall price index.

By capturing both the differential inflation rates and the changing dynamics by age, age banding provides a useful tool for planning long-term client budgets. With this approach, however, it is not obvious that retirement spending will decline with age. It may, and the



data suggest that spending does decline, but rapid growth in health care expenses could potentially lead to an overall increase in spending needs at the highest ages.

### **What does this all mean for retirement planning?**

So which is the better baseline assumption to use: constant inflation-adjusted spending or decreased spending as one ages? This is a big question that is still not fully resolved. We need to track individual households over time in order to better see the variety of spending patterns and how they relate to personal characteristics of the household. What percent of households voluntarily reduce their spending? What percent are forced to increase spending because one or more family member enters a nursing home or experiences large medical bills? Are personal characteristics linked to different spending patterns in such a way as could help advisors make better assumptions for their clients? For instance, higher net worth retirees may have much larger discretionary expenses when they enter retirement, while a more typical retiree may find that most of their spending is for essential needs, which will not decline and must adjust with inflation.

Spending may decline and I would not fault anyone for using assumptions of gradual real spending declines along of the lines of 10% or even 20% over the retirement period. But pending further research developments, I would avoid moving too far in the reduced spending direction as a baseline assumption. Though the standard assumption of constant inflation-adjusted withdrawals could be improved, it builds in reasonable conservatism and may not be too far off as a baseline. Applying differential inflation rates and age-based lifestyle adjustment factors, as in Basu's age-banding approach, may be the best approach for working with individual clients.

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