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Age banding - a model for planning retirement income needs

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"Age Banding: A Model for Planning Retirement Needs" by Somnal Basu, Association for Financial Counseling and Planning Education, Volume 16 (1), 2005

A number of different approaches to managing retirement income streams have been developed and discussed in various journals over the past 30 years or so. Over recent months, we've highlighted one school of research on funding retirement income, being the sustainable withdrawal rate approach.

This paper, written by Basu in 2005, takes a very different approach to determining retirement income needs. It establishes what Basu calls a time segmented approach. Effectively, it's an approach that can be used to finesse income need forecasts in retirement through its different stages. Each stage can then be funded separately, allowing for more growth assets to be used in funding the more distant stages.

In his paper, Basu points to what he believes are some of the common weaknesses in many approaches to retirement planning.

For example, in many of the previous retirement income papers we've reviewed, only one inflation rate is used for forecasting retirement incomes. Many of the papers that consider, say, the 4% safe withdrawal rate rule generally then inflate the income stream by CPI each year. However, Basu argues that CPI may not be right figure to use. He dissects retirement spending into broad categories (in this paper, he has used taxes, basic living, leisure and health but you could use anything you like) and then considers inflation rates for each category. Leisure and health often have much higher inflation rates than CPI, so the overall rate will be higher. Expenditure in each area will also change - basic costs will fall on retirement and will likely continue falling, leisure will be high in the early years, healthcare will rise throughout retirement. This means the overall inflation rate faced by retirees will change during the course of retirement as well.

Basu also argues that "replacement ratios" often used to estimate initial income needs in retirement are too simplified. Obviously, there is a significant bias to current income levels, as well as the practitioner's own position. Further, small initial errors can compound significantly over the course of a 30-year retirement.

In order to address these issues, amongst others, Basu uses what he calls an Age-Banded Model. He assumes retirement is 30 years long (ages 65 to 95) and that three different 10-year periods can be identified. He then proposes a methodology that takes into account

actual expenses in the last year of retirement and adjusts from there for the first year of retirement. Different categories of expenses are inflated at different rates and then, each 10 years or so, the amounts to be spent on each category are re-estimated, based on current expenditure and what is known about life changes. From this, income needs for the three periods are estimated and the lump sum needed to fund each is calculated.

Basu then argues that at retirement, age 65, the lump sum needed to fund, say, the last period in retirement can be invested aggressively – it won't be needed for 20 years.

There are some faults with this paper. The most obvious one in my view is the projected rates of return used for different portfolios seem very high. For example, Basu assumes a long-term return of up to 15% per annum for high risk portfolios (I am assuming no gearing but then so is Basu). These figures obviously distort results. Nonetheless, because these inflated return projections are applied consistently, the general order of findings is unaffected, although the lump sums needed are underestimated.

Nonetheless, Basu offers another approach to funding retirement income needs, incorporating some clever thinking particularly on the categorisation of different types of expenses through retirement, with more thought going into the replacement ratio estimation than is often seen.

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