THE WIDOWHOOD EFFECT AND THE LENGTH OF RETIREMENT

BY DAVID BLANCHETT

The length of retirement is one of the most important assumptions in a financial plan. For married couples, life expectancy calculations typically assume that mortality rates are not related (i.e., independent). This common assumption ignores the well-documented fact that mortality rates typically increase for the surviving spouse after spousal loss, something known as the "widowhood effect." In other words, a surviving spouse's life-expectancy declines after the death of a spouse, all else equal.

In some recently published research in the *Retirement Management Journal*,[1] I explored the existence of the widowhood effect, leveraging data from the Health and Retirement Study (HRS), and the implications of the extend of the observed widowhood effect on retirement projections. In this piece I summarize some of the key findings.

While there is clear evidence of the widowhood effect in the HRS, where mortality rates among surviving spouses increase by approximately 20%, the actual impact of this change on subsequent longevity is actually relatively muted, especially when considering the many uncertainties that exist in any type of financial plan or forecast. Therefore, while I think it's important for financial advisors and retirees to be aware of the widowhood effect more generally, it can likely be ignored when developing longevity forecasts as part of a retirement income plan.

THE LENGTH OF RETIREMENT

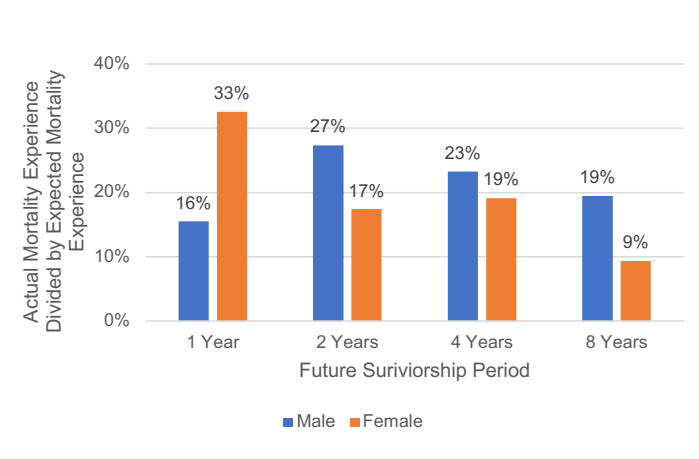
Determining the length of retirement is one of the most important assumptions in a retirement income plan. For married couples, life expectancy assumptions and calculations are typically assumed to be independent, which means there is no implied impact on survival probabilities after the death of a spouse. While this to some extent a simplifying assumption, it is not consistent with research that demonstrates mortality rates tend to increase after spousal loss, something commonly referred to as the "widowhood effect."

I observed evidence of the widowhood effect leveraging data from the 2020 Health and Retirement Study (HRS). The noted changes in future mortality rates versus expected mortality rates for men and women across four future observation periods are included in Exhibit 1. Each value is positive, which means the mortality rates for the surviving spouse is higher than implied by the base mortality table (i.e., subsequent life expectancy is lower).

The average increase in mortality rates across gender and periods in Exhibit 1 is 21 percent. Although the increase in mortality rates was statistically significant (demonstrated via a series of regressions included in the paper), it's not necessarily economically significant. For example, there is a 28.6-percent probability that

1. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5218620

Exhibit 1: Average Actual Change in Mortality Rates versus Mortality Table



Source: Health and Retirement Study, Social Security Administration 2006 Period Life Table, and author's calculations

a 70-year-old woman would die before she turns age 78 (over the next eight years) using the Social Security Administration Period Life Table. A 20-percent increase in mortality rates, which generally is consistent with the findings in Exhibit 1, would imply only a 5.7-percent increase in the probability of dying during the period, which is relatively muted.

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An additional analysis is conducted exploring how incorporating the widowhood effect would impact retirement income forecasts. The analysis leverages mortality rates from the Society of Actuaries (SOA) 2012 Immediate Annuity Mortality table. Mortality rates from the SOA table are used, versus more population-level estimates, such as the Social Security Administration (SSA) Period Life Table, to better reflect the fact that individuals who use a financial advisor tend to be significantly wealthier than the average American and there is notable difference in life expectancies by income/wealth (Chetty et al. 2016)[2]. For some perspective, the life expectancies using the SOA mortality rates are approximately four years, three years, and two years longer than the mortality rates from the SSA table for someone who is age 65, 75, and 85, respectively.

Exhibit 2 provides context about how assumed the length of retirement would change based on three different potential adjustments to surviving spousal mortality rates. The "independent" model assumes mortality rates for the surviving spouse is independent, which effectively ignores the widowhood effect. The other two approaches reflect different adjustments to the surviving spouse's mortality rates: a 25 percent increase and a 100 percent increase. The 25-percent increase is relatively consistent with the aggregate effect noted by Shor et al. (2012)[3], as well as the average values from this research. The 100-percent increase would be significantly larger than the average noted effects, but is included to provide some perspective if the widowhood effect were significantly higher than past estimates.

Panel A of Exhibit 2 includes the probability of either (or both) members of the couple surviving to various ages and Panel B includes the resulting retirement period given various target probabilities.

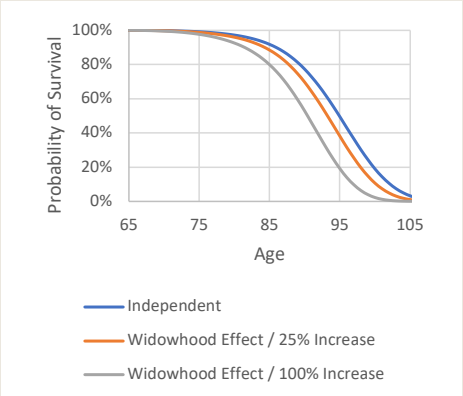
Increasing the mortality rate for the surviving spouse decreases the estimated retirement period, as expected, but the effect is relatively muted for reasonable mortality rate increases (25 percent) and reasonable retirement periods, e.g., targeting a 25-percent probability of outliving the retirement period. For example, if mortality rates for surviving spouses are assumed to

2. Chetty, Raj, Michael Stepner, Sarah Abraham, Shelby Lin, Benjamin Scuderi, Nicholas Turner, Augustin Bergeron, and David Cutler. 2016. "The Association Between Income and Life Expectancy in the United States, 2001-2014." *Jama*, vol. 315, no. 16: 1750-1766.

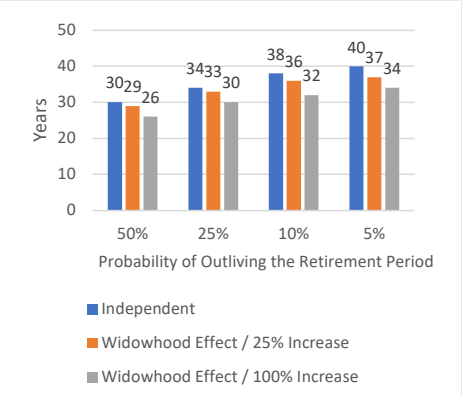
3. Shor, Eran, David J. Roelfs, Misty Curreli, Lynn Clemow, Matthew M. Burg, and Joseph E. Schwartz. 2012. "Widowhood and mortality: a meta-analysis and meta-regression." Demography, vol. 49, no. 2: 575-606.

Exhibit 2: Retirement Periods Incorporating Different Potential Widowhood Effects

PANEL A: PROBABILITY OF SURVIVAL



PANEL B: RETIREMENT PERIOD BY TARGET PROBABILITY



Source: Author's calculations

be independent, i.e., there is no widowhood effect, if the target probability of outliving was 25 percent, the retirement period would be assumed to last 34 years. Increasing mortality rates by 25 percent, consistent with the past noted effect, only decreases the assumed retirement period by one year (to 33 years).

Although these changes may seem material, depending on one's perspective, the impact on required savings would be minor. For example, using a simple time-value-of-money calculation, if we assume a retiree wants $50,000 worth of income for 34 years, assuming a 5-percent discount rate and beginning-of-year payments, this would require $957,382 in savings. Assuming one less retirement period year (33 years) only decreases the required savings by 1.4 percent, to $943,678.

A final analysis was conducted exploring the impact of the widowhood effect on the potential benefits of delayed claiming of Social Security retirement benefits. When it comes to Social Security retirement benefits, the surviving spouse effectively receives the greater of the two benefits when the first member passes away; therefore, to the extent surviving spousal survivor rates are decline (which they do) it could negatively impact the benefits of delayed claiming.

I estimated that delayed claiming from age 65 to age 70 results in a positive expected value of approximately 7 percent, consistent with expectations and past research on the topic, if we assume spousal survivor rates are independent (i.e., there is no widowhood effect). If mortality rates for the surviving spouse increase by 25 percent, which is roughly consistent with the observed widowhood effect, the benefit of delayed claiming falls to a positive 6 percent value. This demonstrates, as expected, the benefits of delayed claiming are lower given the widowhood effect, but they are generally positive.

Overall, the analysis suggests including the widowhood effect in mortality models at levels consistent with observed levels is unlikely to materially affect a retirement-income plan, especially when considering the underlying uncertainty around all the errors inherent in the forecast, especially when considering the additional computational complexity that is introduced as part of the modeling process.

CONCLUSIONS

The retirement period assumption in a financial plan is incredibly important and should be calibrated to the particular circumstances of the client. This piece explored the widowhood effect, which is well documented in longevity literature and demonstrates that life expectancies decline for surviving spouses, on average.

Overall, though, even if the widowhood effect were to continue at levels noted in this analysis and in past research, which is a roughly 25 percent increase in spousal mortality rates, the impact on a financial plan

is likely to be muted, especially given the other sources of estimation error inherent in any type of financial plan or forecast, e.g., future market returns or mortality more generally. Therefore, while financial advisors need to be aware of the mortality implications of the widowhood effect for surviving spouses, assuming mortality rates for spouses are independent is likely a reasonable simplifying assumption in a retirement income plan.

AUTHOR

David Blanchett, PhD, CFA, CFP®, is Managing Director, Portfolio Manager and Head of Retirement Research for PGIM DC Solutions. He is also a Research Fellow with the Alliance's Retirement Income Institute and an Adjunct Professor of Wealth Management at The American College of Financial Services.