

Determining withdrawal rates using historical data

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“Determining Withdrawal Rates Using Historical Data” by William P. Bengen, Journal of Financial Planning, October 1994

The *US Journal of Financial Planning* has named William Bengen a 'rock star' of financial planning. I'd say he's more John Denver than Jon Bon Jovi, but his contribution to lifecycle planning cannot be underestimated.

His seminal 1994 paper "Determining Withdrawal Rates Using Historical Data" was widely lauded and is sourced in a huge number of lifecycle investing related papers. It was one of the first papers written in the area and introduced the concept of the now entrenched 4% rule. We've covered a number of articles on the topic of safe withdrawal rates and lifecycle investing – and it's worthwhile adding this to the list of papers, because it has served as the source material for so many other articles in this area and also marks the beginning of Bengen's pre-eminent position in the industry.

Interestingly, Bengen wrote about the issue of retirement planning around the time of a significant market event 30 years ago – well before the GFC and well before many of us starting thinking or talking about sequencing risk.

Bengen's approach to looking at the issue of portfolio longevity, as he called it, was simple. He looked at how long a simple portfolio would last, using different withdrawal rates, based on real returns and assuming different retirement years (he used retirement years from 1926 to 1966).

Using a 50% equity/50% bond portfolio, he found that an annual withdrawal rate of 4% of the initial portfolio then inflation linked each year led to a portfolio life of at least 50 years in the majority of cases. The worst-case scenario was around 30 years (for a person who retired in 1976). Increasing the withdrawal rate to 5% per annum led to a significant increase in the chance of a portfolio lasting a significantly shorter period, as short as 20 years. A withdrawal rate of 3.5% per annum resulted in the portfolio always lasting at least 50 years.

Bengen also found that a higher exposure to equities was better, with around 75% being the ideal. He showed that even in the case of someone who started retirement in a particularly bad year (like 1929), it was best to stick with a strategy of higher equity exposure. This is particularly interesting in the context of the 100-age rule (still used by many practitioners) that equity exposure in a portfolio should be 100 minus your age, suggesting the ideal equity exposure for a client retiring at age 65 would be 35%. So even while Bengen's findings in this paper around the 4% withdrawal rate became accepted very quickly (at least in the US),

his other significant finding was largely ignored.

Bengen's paper marked the start of research and discussion into retirement income planning – and it was a crucial foundation for the many others who built on his work. It's a very good place to start your thinking on the topic of retirement planning.

[Read “Determining Withdrawal Rates Using Historical Data”](#)
