

Research Brief #3

How precise can policy valuations be?

Here's something scary.

Suppose you own a life insurance policy, and you want to know how much it's worth. Let's say that you're 83 years old, and you have a universal life policy with an \$800,000 level death benefit. You obtained a life expectancy appraisal of 65 months.

Here's the value of the policy using four discount rates from 8% to 14%:

Gross purchase price assuming life expectancy equals 65.0 months

(before deducting broker's commission and income tax)

Buyer's rate of return			
8%	10%	12%	14%
\$288,000	\$262,000	\$239,000	\$219,000

But what if the life expectancy appraisal is 65.5 months rather than 65.0 months?

Gross purchase price assuming life expectancy equals 65.5 months

(before deducting broker's commission and income tax)

Buyer's rate of return			
8%	10%	12%	14%
\$284,000	\$258,000	\$235,000	\$216,000

So in this example, a difference in life expectancy of one-half month can change the purchase price of the policy by several thousand dollars.

How precise are life expectancy estimates? Life expectancy appraisal firms typically use whole months, not tenths of a month. And if you get several appraisals, there can easily be a spread of several months among them. In this example, one firm might estimate 60 months while another firm estimates 70. Even bigger differences are possible.

Here are some other factors that can affect a policy valuation:

- Buyers have various ways to construct a mortality curve that has a specified life expectancy. Curves with different shapes will produce different prices.
- After purchase, buyers can choose the death benefit option, the amount to withdraw from the policy and the premium mode. These anticipated choices affect the purchase price.
- Buyers can assume that the policy's cost-of-insurance rates will increase or decrease in the future. This will affect the projected premiums that are needed to keep the policy in force, and that affects the purchase price.
- Buyers have various ways to discount the projected cash flows. Different discounting methods will produce different prices.

Buyers deal with the uncertainties of pricing by diversifying. They buy hundreds of policies, and they hope that their pricing mistakes will cancel out.

Policyowners are in a more difficult position, because they rarely have hundreds of policies to sell. One possible strategy is to diversify across time by doing a partial sale: instead of selling the entire policy, you can sell a portion of it and retain the rest.

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