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LONGEVITY DERIVATIVES: CONCEPT AND PRINCIPLES

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Abstract

This article provides a practical analysis of longevity derivatives and the definition, advantages of them. They are available as survivor bonds, forward contracts, options, and swaps.

Keywords

longevity derivatives, survivor bonds, forward contracts, options, and swaps business, investment.

Longevity derivatives are specialized instruments that hedge longevity risk for pension plans and insurers when a population lives longer than expected. They include survivor bonds, forwards, options, and swaps, with payouts that rise as actual longevity exceeds projections, and the risk tends to be weakly correlated with many other asset types. Derivatives are securities that derive their value from price fluctuations in an underlying asset or group of assets. Aside from speculating on future movements, they are commonly used to hedge, which is a form of insurance that basically involves taking an opposite position in a related security to offset losses.

One of the biggest risks facing pension funds and insurers is that their customers will live longer than anticipated.

Longevity derivatives are designed to offer some protection against these risks by enabling investors to make money on the side from people living longer. In theory, this means entities that lose money when their customers don't die also have an opportunity to profit from longer life expectancies, thereby reducing and maybe even potentially nullifying the impact of one of their greatest threats. The first and most prevalent form of longevity derivatives is the longevity or survivor bond.

These fixed-income instruments pay a coupon based on the "survivorship" of a stated population group, which is usually determined by a nominated index responsible for measuring a certain demographic's lifespan. As the mortality rate of the stated population group rises, coupon payments drop until they eventually reach zero. The longevity derivatives market has expanded to include forward contracts, options, and swaps. Aside from giving pension funds and certain insurance companies an option to protect themselves against longevity risk, annuity payers being an obvious example, these derivatives also may appeal to other parties.

Speculators choose to acquire longevity derivatives from companies for several reasons. One is that longevity risk has shown low correlations with other types of investment risk, such as market risk or currency risk.

Because longevity derivatives don't tend to move in lockstep with equity or debt market returns, they are potentially attractive investments and an ideal way to diversify portfolios. Longevity derivatives help pension funds and insurers hedge longevity risk through instruments such as survivor bonds, forwards options, and swaps, with payouts that rise when a population outlives expectations. They can diversify risk because longevity risk tends to be

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weakly correlated with other asset classes, although the market is still developing, with liquidity limits, pricing challenges, and potentially high costs.

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