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# Natural Hedging of Life and Annuity Mortality Risks

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## Abstract

The values of life insurance and annuity liabilities move in opposite directions in response to a change in the underlying mortality. Natural hedging utilizes this to stabilize aggregate liability cash flows. We find empirical evidence that suggests that annuity writing insurers who have more balanced business in life and annuity risks also tend to charge lower premiums than otherwise similar insurers. This indicates that insurers who have a natural hedge have a competitive advantage. In addition, we show how a mortality swap might be used to provide the benefits of natural hedging.

## Securitization of Mortality Risks in Life Annuities

Source: Journal of Risk & Insurance

## Risk Overhang and Market Behavior

Source: The Journal of Business

## Reinsurance and the liability insurance crisis

Source: Journal of Risk and Uncertainty

## Approaches and Experiences in Projecting Mortality Patterns for the Oldest-Old

Source: North American Actuarial Journal

## Historical and Projected Mortality for Mexico, Canada, and the United States

Source: North American Actuarial Journal

## Theory of Rational Option Pricing

Source: The Bell Journal of Economics and Management Science

## Corporate mergers, stockholder diversification, and changes in systematic risk

Source: Strategic Management Journal

## On The Pricing of Intermediated Risks: Theory and Application to Catastrophe

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