

Limited Liability, Risk Transfer, and the Real Economy: The Case of Longevity Risk

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AGGREGATION



CONSEQUENCES

The Puzzle

Risk is systematic

The rationale for hedging is clear

Hedging instruments exist

The hedging market is thin

Why?

LIMITED LIABILITY

changes the incentive to hedge



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Four Literatures — One Mechanism

Cairns–Blake–Dowd

price the risk

Merton–Myers

limited liability
changes incentives

Acharya

common shortfalls
define systemic
exposure

Brunnermeier–
Sannikov

balance sheets
transmit shocks

This paper connects pricing, incentives, common shortfalls, and real effects.

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What Is New?

Existing explanations for thin longevity-risk-transfer markets emphasize

basis risk • transaction costs • incomplete markets • scarce counterparties

A complementary demand-side explanation

**Limited liability distorts the demand to hedge
and changes who bears the consequences of remaining unhedged.**

The consequences extend to investment, employment, and output.


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Economic Structure

Households

consume • work • save •
receive pensions

Production firms

invest • employ • produce •
pay pensions

Financial firms

finance • price • hedge

COMPLETE FINANCIAL MARKETS

$t = 0$: invest • finance • hedge → state s realized → $t = 1$: employ • produce • pay

The distortion does not arise from a missing security.

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Limited Liability — The Firm

SOLVENT

$$X > L + b$$

Equity captures the residual
and values marginal gains.

INSOLVENT

$$X < L + b$$

Equity is zero.
Marginal gains first reduce the shortfall.

Limited liability changes who values an additional dollar across states.

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Result 1 — Under-Investment

Another dollar of investment creates future value across states.



Equity values the marginal return only once the firm is solvent.



The firm invests less than is efficient.

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Result 2 — Under-Hedging

A hedge targeted toward adverse longevity states creates value where exposure is greatest.



Those are precisely the states in which equity is least likely to capture the benefit.



The hedge can create value without creating enough value for equity to buy it.

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From Firm to Economy



Each faces the same incentive mechanism.



At sufficient scale, a firm-level incentive distortion becomes an aggregate economic loss.



Systemic Risk Is Not Required

Economic distortion

Limited liability

Under-hedging

Under-investment

Labor demand ↓

Output ↓

Systemic amplification

Common longevity shock

Liabilities rise across firms

Common shortfalls

Widespread investment response

Large aggregate consequences

Systemic risk magnifies the distortion. It does not create it.

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Conclusion

Complete markets do not guarantee efficient risk transfer when the decision-maker does not bear the full consequences of remaining unhedged.

Longevity risk

provides the exposure.

Limited liability

creates the incentive distortion.

Investment • employment •
output

provide the economic consequences.

“The question is not only whether longevity risk can become systemic, but how much economic activity may already be lost because the incentive to hedge is distorted.”



Thanks

Comments:

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