

ERM Symposium

Risk Management Through Securitization

Jack Gibson

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**Overview of Life
Insurance
Securitization**

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What is life insurance securitization?

- Securitization is a form of financing and/or capital management available to life insurance companies
- It involves the issuance of bonds whose principal and interest payments are secured against the future profits that emerge from part of the life company's business
- The life insurance securitization market is less developed than the property/casualty market
- Only a limited number of life insurance securitizations have occurred to date

However, we are seeing an increasing level of interest in securitization

Reinsurance has traditionally been preferred for managing reserve and capital strain

- Insurers have historically relied on offshore reinsurance to manage reserve and capital strain on selected insurance products; for example:
 - Term insurance subject to Regulation XXX
 - Universal life insurance subject to Guideline AXXX
- Generally requires LOC or other collateral
- Two main risks exist with regard to reinsurance LOCs:
 - Lack of reinsurance LOC capacity, particularly in future years
 - Uncertainty regarding LOC costs

Securitization is gaining momentum as an alternative to reinsurance

- Insurance companies are no strangers to the capital markets; property/casualty firms have used cat bonds for years to mitigate natural and catastrophic risks
- Securitization provides almost unlimited capacity
 - However, capital markets have a learning curve in order to become familiar with underwriting risk
 - Transactions to date have been private placements with significant life industry participation
- For now, high transaction costs make securitization most viable for large blocks of business
 - Fixed nature of many costs leads to greater economies as deal size increases

When is securitization most viable?

- Securitization is best suited to well-defined blocks of business with a significant level of redundant statutory reserves and/or capital
- Some examples include:
 - Closed blocks formed by recently demutualized companies
 - Term business with XXX reserve strain
 - UL business with AXXX reserve strain

Bonds are issued with principal and interest payments secured against the future profits that emerge from a specific segment of a life insurer's business

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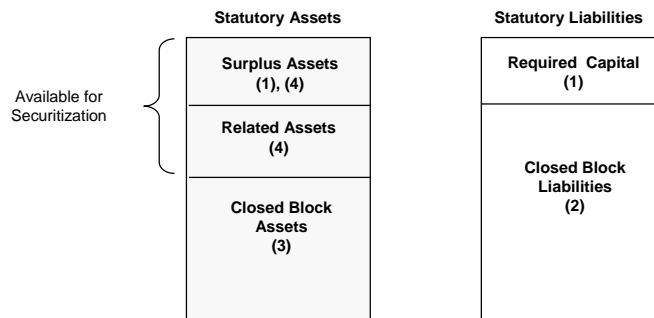
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Two closed block securitizations have occurred to date

- Prudential in 2001, raising \$1.75 billion in capital
- MONY in 2002, raising \$300 million
- Both companies had formed closed blocks to protect dividend interests of participating policyholders as part of the demutualization process
 - Closed blocks were funded with assets equal to 80% to 90% of statutory liabilities
 - Assets supporting remaining liabilities plus target surplus inure to shareholders over time
- Prudential and MONY issued bonds secured by the earnings on and release of the “additional” assets
 - Bonds were actually issued by newly formed intermediate holding companies
 - Bond repayments are limited by the ability of the life company to pay dividends to the holding company

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Two closed block securitizations have occurred to date (*cont.*)



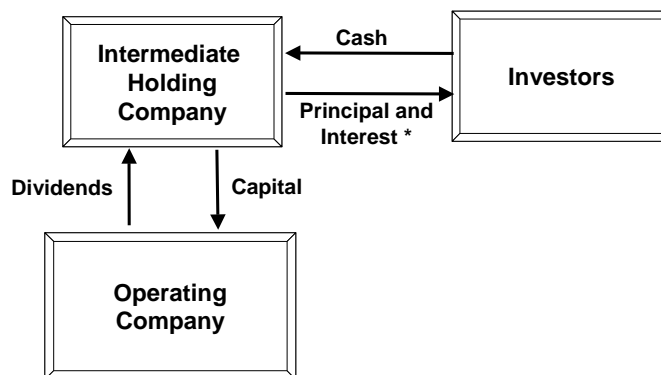
- (1) Surplus assets/required capital are based on RBC calculations and target RBC ratio
- (2) Closed Block Liabilities are based on statutory reserving rules
- (3) Closed Block Assets were calculated at the time of demutualization as the amount needed to mature liabilities and maintain the current dividend scales assuming a continuation of experience underlying the scale
- (4) Surplus and Related Assets provide for adverse deviation over and above that absorbed by policyholder dividends

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Two closed block securitizations have occurred to date (*cont.*)

- Transactions allowed Prudential and MONY to monetize the embedded value of the closed block business
 - Proceeds can be used to invest in high ROE businesses
- Principal and interest payments were guaranteed by third-party bond insurers
 - Prudential's issuance included some "unwrapped" debt
- Further transactions of this type may be unlikely given current rating agency viewpoints on treatment of debt (operating versus financial leverage)

Closed block securitizations general structure



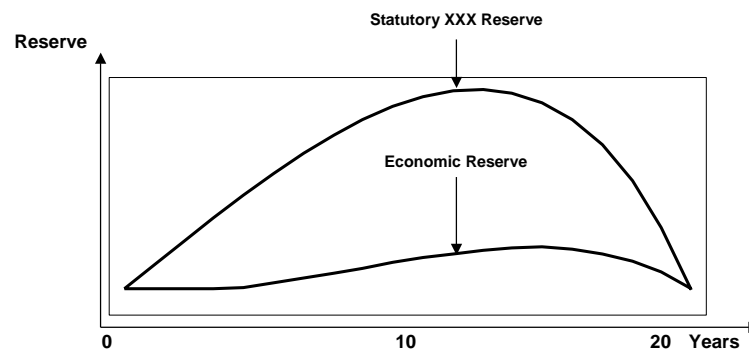
* Principal and Interest payments made on general debt obligation of the intermediate holding company. Third party bond insurer provides a "wrap" to assure payments of principal and interest.

At least one company (American Skandia) has securitized M&E fees and surrender charges on variable annuity business

- Securitized several tranches of variable annuities starting in 1996
- Proceeds used to finance high initial cash strain
- Each bond is secured against an earmarked tranche of variable annuities
- The dollar amount of M&E fees and surrender charges depends on account values, which have high common stock exposure
- Initial over-collateralization has been heavily eroded by equity market downturn

Securitization of term insurance redundant reserves

Regulation XXX Results in Significant Long-term Reserve Strain for Companies in the Term Market

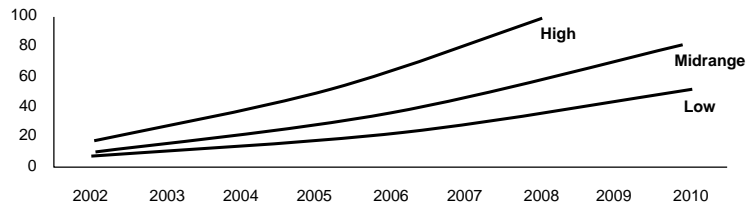


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Securitization of term insurance redundant reserves (*cont.*)

- Moody's estimates that industry LOC demand for XXX reserve credit could increase to roughly \$45 billion by 2007

**Forecasted Reinsurance LOC Market Demand
XXX Reserves Only (\$B)**



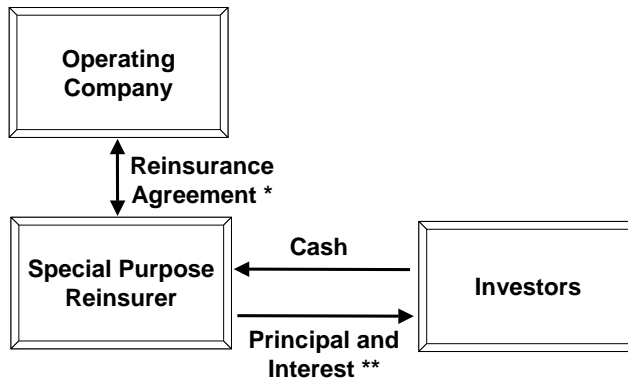
Source: Moody's Investors Service.

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Securitization of term insurance redundant reserves (*cont.*)

- A securitization solution is an alternative that avoids the need for LOCs
 - Four companies have completed term XXX securitizations and others are actively seeking a securitization solution
- Debt can be issued in tranches corresponding to required funding for XXX reserves
- Costs to insurer include
 - difference between interest rate on assets purchased with debt proceeds and debt interest rate
 - fee paid to credit wrapper
 - transaction costs
- This structure has advantages when compared to a LOC structure:
 - Future capacity of capital markets is less of an issue
 - Net impact of future changes in market credit spreads is small because both sides of the balance sheet are affected
- However, there are also issues to consider
 - Minimum threshold on deal size
 - Effective cost of transaction is greater than current LOC costs (but not necessarily those charged by reinsurers)

Sample structure for securitization of redundant reserves



* Reinsurance reserve credits are partially supported by assets placed in trust from the cash that is raised from the investors.

** Principal and interest payments made on securities issued by the special purpose reinsurer. Securities could be "wrapped" by a financial guarantor.

Securitization of term insurance redundant reserves (cont.)

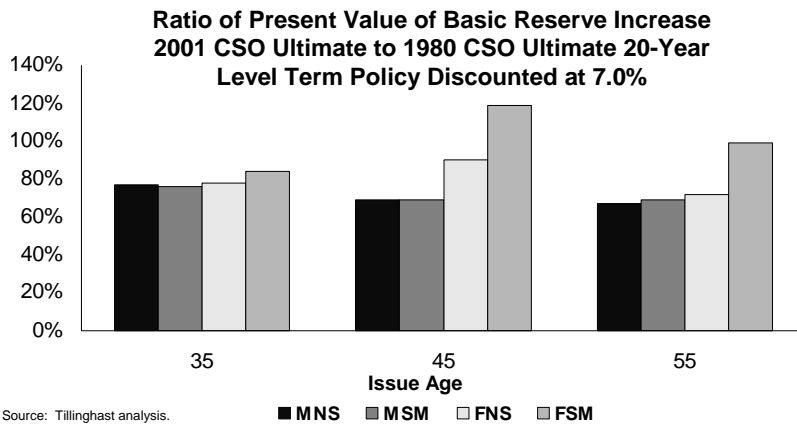
- Key risk to investors is that assets held in trust are needed to pay benefits
 - Primary risk factor is mortality
- Modeling requirements:
 - Accurate model of securitized term business
 - Ability to stress test mortality assumption in various ways
 - Varying mortality slope
 - One-time catastrophic events
 - Stochastic mortality?
- Goal is to demonstrate that securitization structure can withstand substantial adverse deviations in mortality experience
- Reinsurance arrangements are an important consideration
 - For many large term writers, retained business may not have scale for securitization
 - Can existing reinsurance be recaptured on economical terms?
 - Restructuring as YRT reinsurance is another option
 - Reduces investor exposure to mortality risk, but may introduce credit risk

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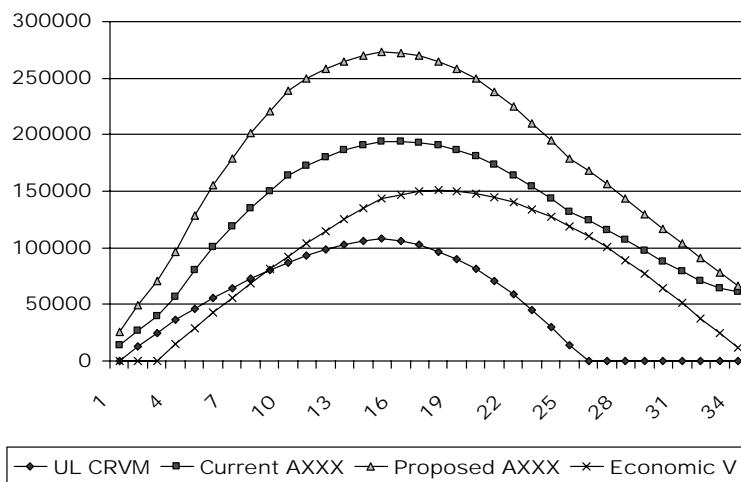
Securitization of term insurance redundant reserves (*cont.*)

- Impact of 2001 CSO on basic reserves for term insurance may help alleviate term reserve redundancy to some extent

ILLUSTRATIVE



A similar structure could be employed for UL business subject to AXXX reserving requirements



There are unique considerations regarding developing a securitization structure for AXXX reserves

- AXXX reserves are not as well defined as XXX reserves
 - Could depend on product features and fund performance
- May be difficult to define the “Economic Reserve” for the UL secondary guarantee, and the amount of reserve redundancy to be securitized
- While the main risk (to investors) in a XXX securitization is adverse mortality experience, an AXXX securitization would be subject to additional risks
 - investment
 - persistency
 - premium patterns
 - crediting strategy
- AXXX reserves for a block of business could run off more slowly than XXX reserves, and remain on the books for a very long time

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There are unique considerations regarding developing a securitization structure or AXXX reserves (*cont.*)

- There are additional modeling challenges for AXXX deals compared to XXX deals:
 - Asset modeling is more important
 - Premium payment assumptions can be critical
 - Stochastic analysis may be needed (e.g., interest rate risk)
- The deal structure may also play a role in reducing volatility from the investors' perspective (e.g., specific covenant relating to crediting rate strategy)
- Investor exposure to changes in non-guaranteed aspects is an important consideration
 - COI rate changes
 - Changes in YRT reinsurance arrangements
 - How can investors be protected from adverse changes?

Recently new securities have emerged focused on the mortality risk of a small number of lives

- Life insurance life annuity combinations (“LILAC”) have been developed to take advantage of mortality arbitrage opportunities
 - A charity sets up a trust and sells fixed income securities in that trust to institutional investors
 - Monies raised are used to purchase immediate annuities on the lives of the charity’s donors
 - Income from the annuities is then used to purchase life insurance on the same donors
- UBS has successfully put together several plans
- Key risks include:
 - Timing of deaths
 - Especially given the limited number of lives in the pools
 - Stochastic mortality analysis is key to understanding timing risk
 - Deaths within the incontestability period
 - Premium guarantees
- State insurable interest laws result in limiting the donors to certain states
 - Texas and Virginia were the initial states used in the program

There are other securities focused exclusively on mortality risk

- Earlier this year Merrill Lynch sold \$70 million in bonds backed by life settlements sold by Legacy Benefits
- Legacy Benefits purchased life insurance policies from people with impaired life expectancies
 - Transaction is referred to as a life settlement
 - Typically involves insureds over age 65 with high face amount policies
- As with LILACs, the key risk with this offering is the timing of deaths
- Swiss Re issued a mortality catastrophe in December 2003
 - Principal payment was linked to adverse mortality risk scenarios

The actuary's role involves designing a sound financial model of the securitized business

- Primary modeling requirement is a good model of the securitized business, capable of projecting cash flows over a period at least equal to the term of the debt
- Securitization is non-recourse debt
 - Debt payments are contingent on sufficient cash flows emerging from the securitized business
 - Over-collateralization provides a “buffer” against adverse developments in experience
- The debt issuer uses the model to demonstrate the amount of collateral available to service the debt
 - Typically run under a baseline assumption set and a wide range of “stress” tests; can the debt be serviced even under adverse scenarios?

The financial model and its underlying assumptions must satisfy stakeholders

- The model and assumptions will undergo significant third-party scrutiny
 - Rating agencies
 - Bond insurers
 - Potential investors
- Models and baseline assumptions must be well-documented and supportable
 - Critical assumptions supported by credible experience study data
 - Sufficient “granularity” in model
 - Good model validations (static and dynamic)
 - Third-party signoff

When stress testing the model, it is critically important to cover a wide range of scenarios

- What is the basis for the stress tests selected?
- Do they represent sufficiently adverse scenarios in light of historical experience and future expectations?
- Stochastic vs. deterministic stress tests?
- Are there other plausible scenarios that should be tested?

Life insurers should carefully consider the pros and cons of securitizing

- Currently, high upfront costs, so need a large transaction to be cost effective (\$300 million and higher)
- Creates leverage
 - Financial versus operating?
 - Closed block structures seen as financial leverage by some rating agencies
 - XXX securitization structures may be viewed as operating leverage if monies raised by securitization are used to support XXX, or other redundant reserves
- Key factors to be considered:
 - Rating agency viewpoint
 - Wrapped or unwrapped debt?
 - Capital markets learning curve

We expect lower-cost transactions, more groundbreaking deals and new product lines

- The first XXX securitization in 2003 was viewed as groundbreaking
- Other deals in process will break additional new ground if successful (e.g., relating to AXXX)
- Long-term care products may be a good candidate
 - Long tail of liabilities
 - Significant intermediate build-up of policy reserves and associated capital requirements
 - Similar LOC issues to term/XXX
- “Hybrid” deals may involve multiple product lines

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