

Swiss Re



Life Insurance Securitization

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Purposes of Securitization

While the business purpose varies, completed deals to date have typically resulted from an imbalance within the industry

- Capital raising / financing
- Reserve funding
- Risk transfer

Purposes of Securitization

To date, approximately 80% of life securitizations have been for capital-raising purposes

Type

Examples

Capital Raising

- American Skandia (Variable Annuities)
- Prudential Holding (Closed Block)
- MONY (Closed Block)
- Barclay's (Unit-Linked)

Reserve Funding

- First Colony (Guideline XXX)

Risk Transfer

- Swiss Re (Extreme Mortality)

Trends in Life Securitization

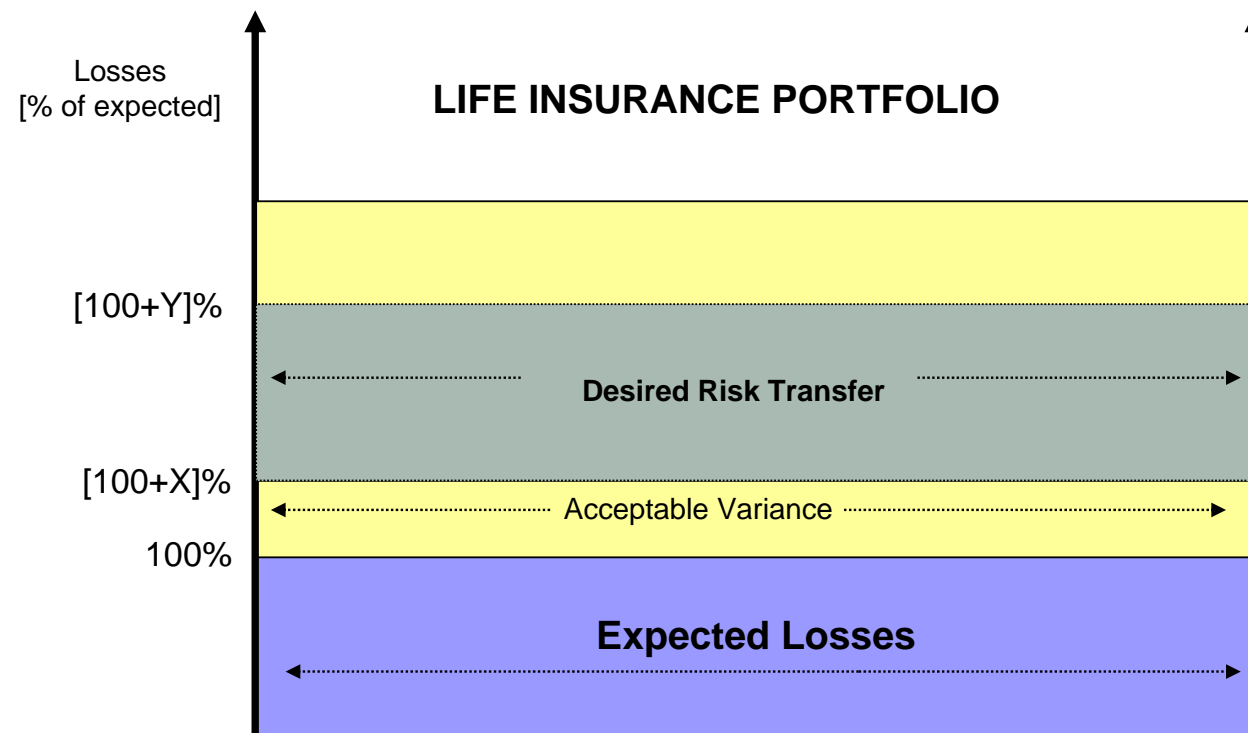
- **Wrap** - Due to the complexity of the underlying business, bond surety providers (monolines) have typically provided credit protection on the issuance.
- **Ratings** - Virtually all of the life securitizations to date have been investment grade.
- **Duration** - The tenor of the notes issued has varied widely - from 3 to 30 years.
- **Size** - Issuance expenses have led to a fairly high “critical mass” requirement, typically resulting in deal sizes larger than \$250 million.
- **Return** - A “novelty premium” is demanded by investors, although the effect is somewhat mitigated if a wrap is employed.

Case Study - Mortality Risk Transfer

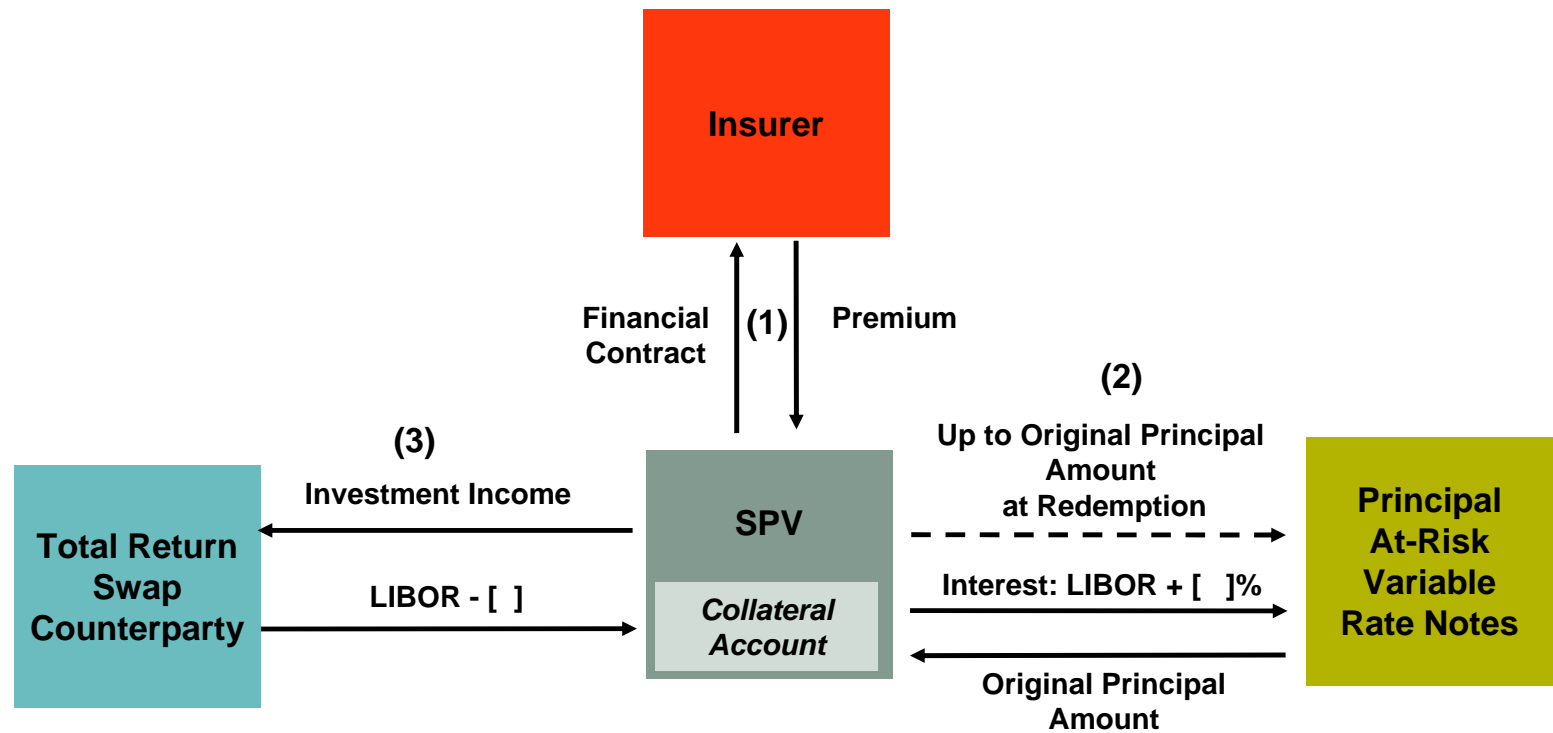
- In December 2003, Swiss Re sponsored a \$400 million securitization of mortality risk
- The purpose was to get protection against extreme mortality events, without relying upon the credit-worthiness of a retrocessionaire
- A catastrophe bond structure was used, with loss measurement based on a parametric index
- No credit enhancement was provided on the security

Mortality Risk Transfer - Issuer's Risk Position

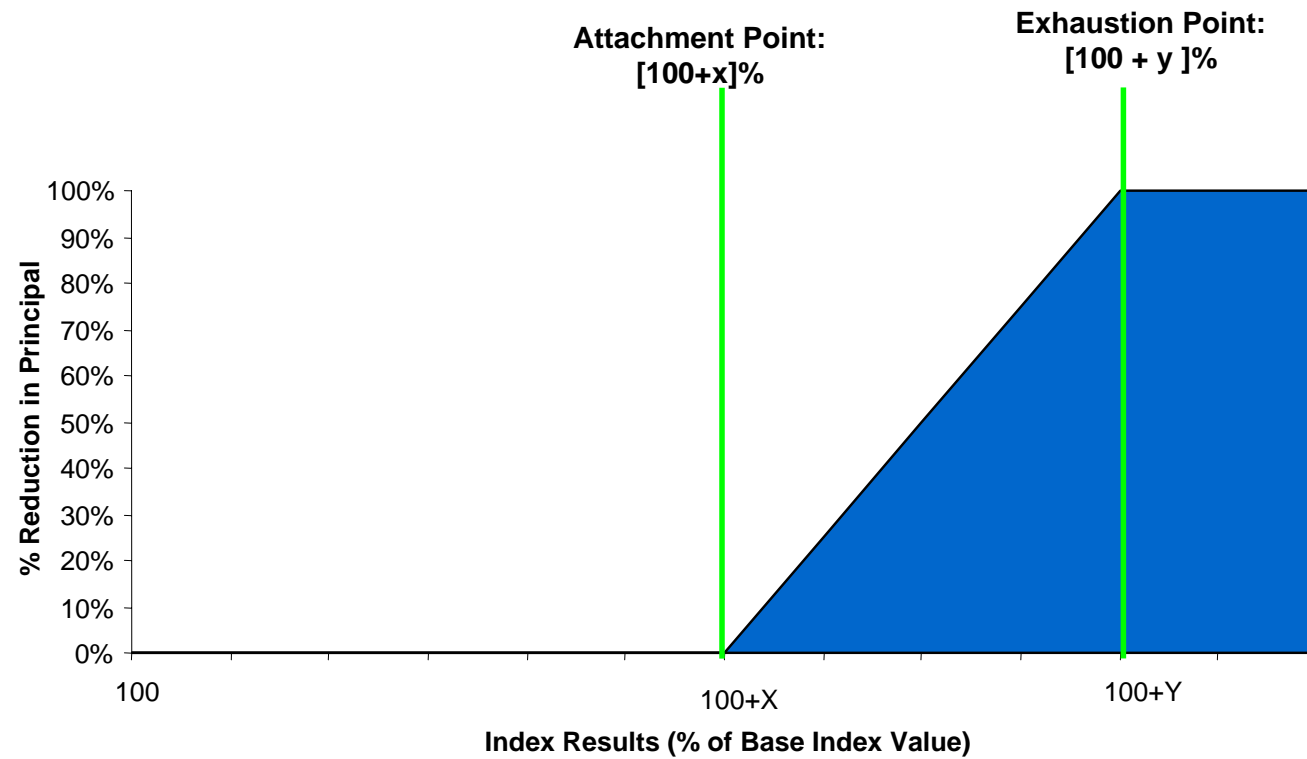
The Issuer's internal risk assessment is based on its aggregate portfolio



Mortality Risk Transfer - Structure



Mortality Risk Transfer - Payout



Mortality Risk Transfer - Trigger Definition

- The index value for a given year is defined to be the average death rate per 100,000 for pre-defined coverage area
- The average death rate is calculated using a parametric index formula, which applies pre-determined weights to gender, age, and country, and draws on publicly-available mortality data as the inputs:

$$Index = \sum_{j=1} c_j \sum_{i=1} (g^m a_i q_{i,j}^m + g^f a_i q_{i,j}^f)$$

Where

c_j is the weight for country j ,

$g^{m,f}$ is the gender weighting,

a_i is the weight for age band i , and

$q_{i,j}$ is the observed death per 100,000 for males and females, respectively, from country j and age band i

- Attachment Point = x% of Index Value in baseline year
- Exhaustion Point = y% of Index Value in baseline year
- % Loss = 100 x (Index Value - Attachment Point) / (Exhaust Point - Attachment Point)

Historical Analysis

