

Life 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

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<p>To date, approximately 80% of life securitizations have been for capital-raising purposes</p>	<table border="1"> <thead> <tr> <th><u>Type</u></th> <th><u>Examples</u></th> </tr> </thead> <tbody> <tr> <td>Capital Raising</td> <td> <ul style="list-style-type: none"> ▪ American Skandia (Variable Annuities) ▪ Prudential Holding (Closed Block) ▪ MONY (Closed Block) ▪ Barclay's (Unit-Linked) </td> </tr> <tr> <td>Reserve Funding</td> <td> <ul style="list-style-type: none"> ▪ First Colony (Guideline XXX) </td> </tr> <tr> <td>Risk Transfer</td> <td> <ul style="list-style-type: none"> ▪ Swiss Re (Extreme Mortality) </td> </tr> </tbody> </table>	<u>Type</u>	<u>Examples</u>	Capital Raising	<ul style="list-style-type: none"> ▪ American Skandia (Variable Annuities) ▪ Prudential Holding (Closed Block) ▪ MONY (Closed Block) ▪ Barclay's (Unit-Linked) 	Reserve Funding	<ul style="list-style-type: none"> ▪ First Colony (Guideline XXX) 	Risk Transfer	<ul style="list-style-type: none"> ▪ Swiss Re (Extreme Mortality)
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Page 3									

Trends in Life Securitization	
	<ul style="list-style-type: none"> ■ 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.
Page 4	

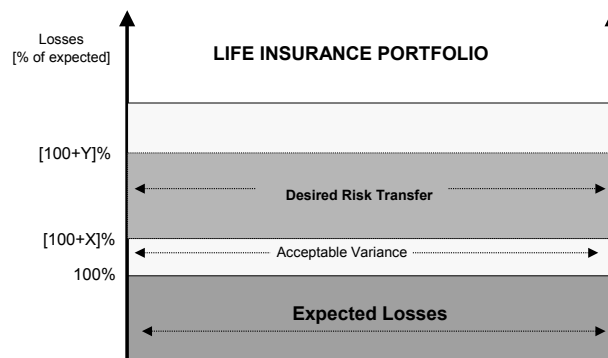
Case Study - Mortality Risk Transfer

- 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

Page 5

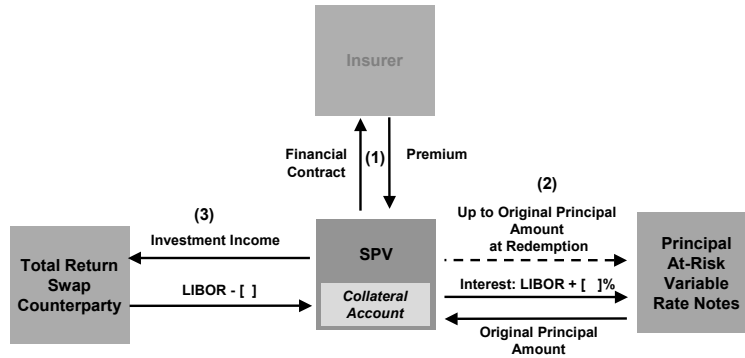
Mortality Risk Transfer - Issuer's Risk Position

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



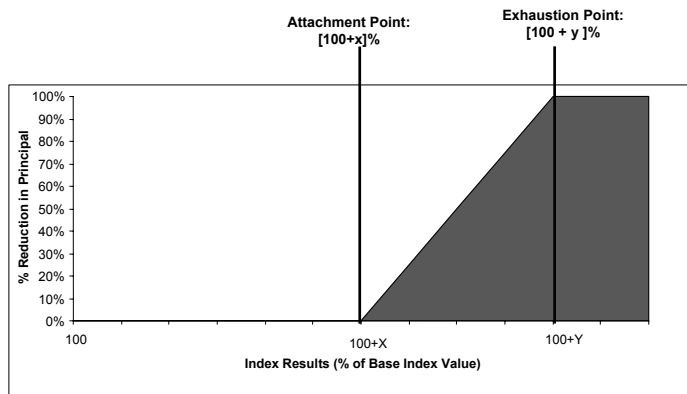
Page 6

Mortality Risk Transfer - Structure



Page 7

Mortality Risk Transfer - Payout



Page 8

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,

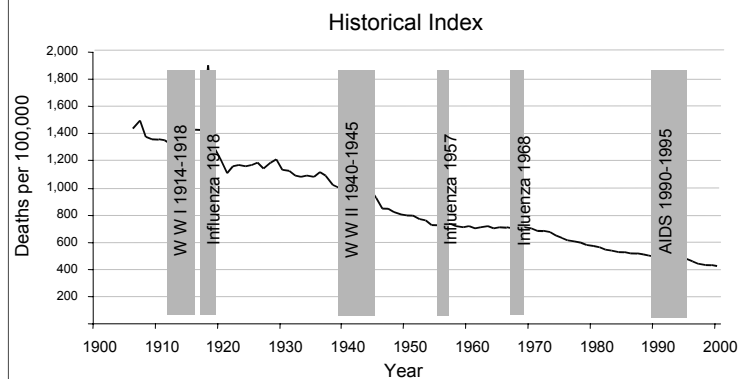
a_i is the weight for age band i , and

$q_{i,j}$ 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 = $100 \times (\text{Index Value} - \text{Attachment Point}) / (\text{Exhaust Point} - \text{Attachment Point})$

Page 9

Historical Analysis



Page 10