



Life Insurance Securitization

Swiss Re Capital Markets

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Extreme Mortality Protection

Extreme Mortality Exposure

- Extreme mortality risks have been the focus of many life insurance companies due to earnings volatility and potential impact on solvency
- Risks to life insurance companies can be significant. For example:
 - Increase in claims volume
 - Depressed asset values
 - Potential liquidity crisis
 - Ratings downgrade
- Important for a top-tier life insurance company to demonstrate sound mortality risk management

Risk Management Strategies

- While companies recognize the need for sound mortality risk management mitigation strategies remain limited and relatively costly

Self Insurance	Hold capital at levels sufficient to withstand mortality shock. Very costly from a capital point of view.
Holistic Approach	Recognize natural hedge provided by combination of mortality and longevity products. Hedge may be ineffective as insurance and annuity products target different age groups.
Traditional Reinsurance Solutions	Transfer peak mortality exposure to third party reinsurer (“cat cover”). Coverage typically excludes certain risks and is provided for a short period only.
Capital Markets Solutions	Issue ILS tied to a mortality index or company experience. Such solutions address some of the shortfalls in other alternatives and may provide capital benefits.

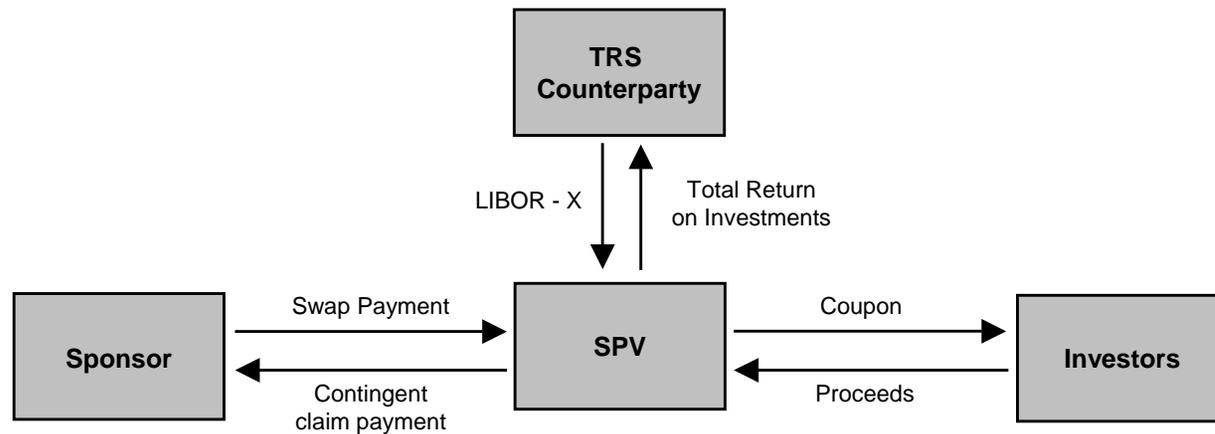
Extreme Mortality Securitization Structure

Structure addresses the pitfalls of traditional insurance

Cover is provided without carve-outs or exclusions

Eliminates counterparty credit risk

Well-defined triggers allow for a clean and timely payout



- Sponsor enters into a financial contract with a newly-formed special purpose vehicle (“SPV”)
 - Risk covered is that a pre-determined mortality index in one or a number of countries exceed a certain threshold on the same index calculated in a reference period
- The SPV issues Insurance-Linked Securities to capital markets investors up to the amount of the mortality cover
- Proceeds of the issuance are placed in a trust account managed by a highly-rated counterparty subject to a total rate of return swap
- If the mortality index reaches or exceeds the trigger level, the collateral is sold and a claim is paid to the Sponsor
- If the mortality index does not reach the trigger level during the risk period, the collateral is liquidated and principal is returned to investors



Transactions Comparison

	VITA I	VITA II	Tartan	Osiris	VITA III
Sponsor	Swiss Re	Swiss Re	Scottish Re	AXA	Swiss Re
Year	2003	2005	2006	2006	2006
Mortality Index	70% United States 15% United Kingdom 7.5% France 5% Italy 2.5% Switzerland	62.5% United States 17.5% United Kingdom 7.5% Germany 7.5% Japan 5% Canada	100% United States	60% France 25% Japan 15% United States	62.5% United States 17.5% United Kingdom 7.5% Germany 7.5% Japan 5% Canada
Look Period	4 years	5 years	3 years	4 years	4 and 5 years
Index Calculation	1 year	2-year average	2-year average	2-year average	2-year average
Trigger / Exhaustion Levels (of Base Index)	130% / 150%	A: 125% / 145% B: 120% / 125% C: 115% / 120% D: 110% / 115%	A: 115% / 120% B: 110% / 115%	A: 119% / 124% B: 114% / 119% C: 110% / 114% D: 106% / 110%	A: 125% / 145% B: 120% / 125% C: 115% / 120% D: 110% / 115%

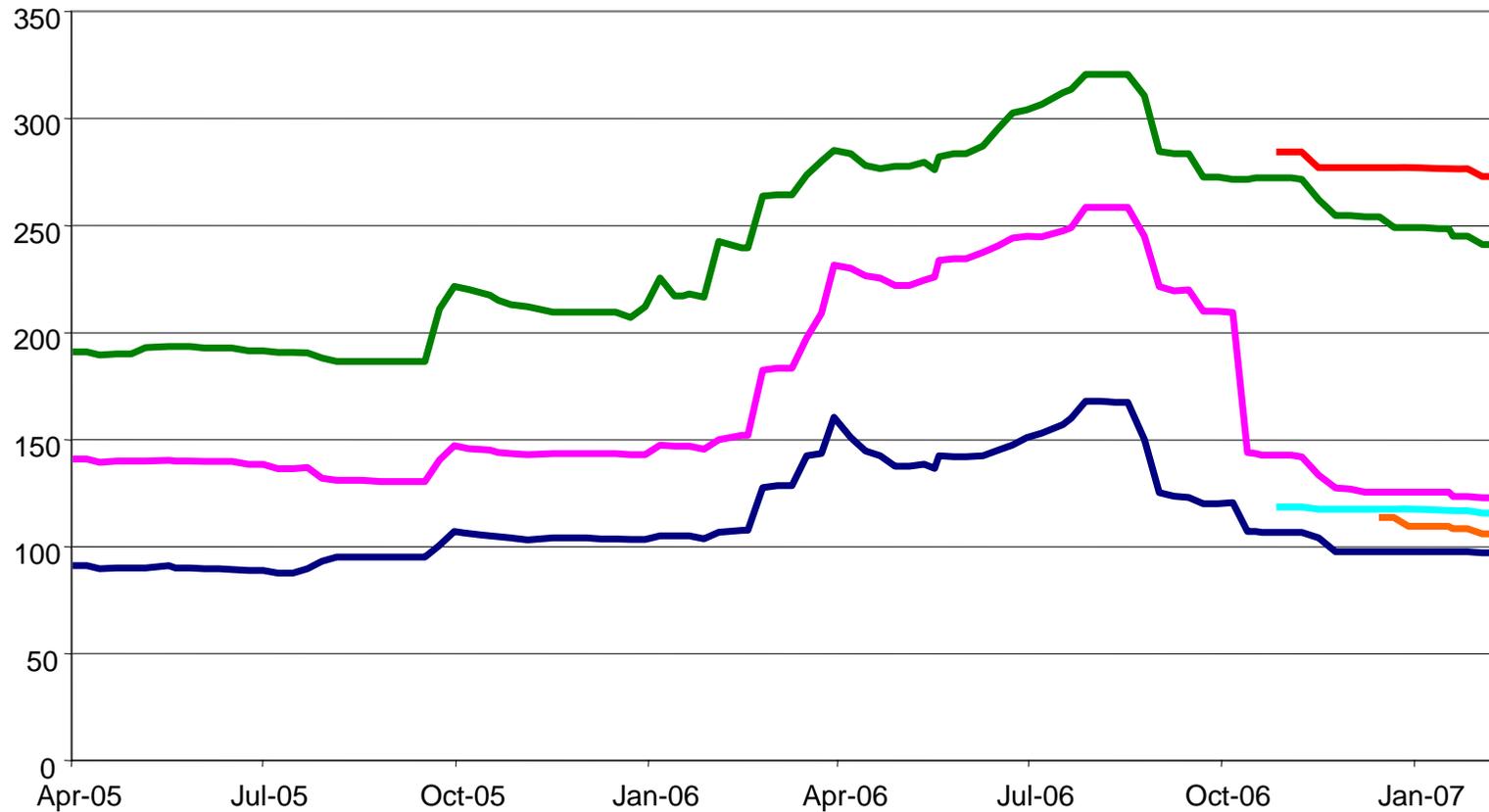


Extreme Mortality Spreads

Spread movements tend to follow perceived risk of an flu epidemic:

Significant media coverage in Q1 and Q2 2006 associated with spread widening

Absence of alarming headlines and success of most recent transactions associated with spread tightening in Q3 and Q4 2006



Vita II B
Initial Pricing: 90bps
Expected Loss: 0.7bps
Rating: A/Aa3

Vita II C
Initial Pricing: 140bps
Expected Loss: 4bps
Rating: A-/A2

Vita II D
Initial Pricing: 190bps
Expected Loss: 14bps
Rating: BBB/Baa2

Vita III B-1
Initial Pricing: 110bps
Expected Loss: 3.9bps
Rating: A/A1

OSIRIS B2
Initial Pricing: 120bps
Expected Loss: 7.3bps

OSIRIS C
Initial Pricing: 285bps
Expected Loss: 17.8bps

Transaction Motivations

- While primarily used as a risk management tool, SRCM believes transaction sponsors should receive capital credit from the rating agencies
 - Fully collateralized source of capital tied to out-of-the-money mortality risk
 - S&P plans to allow credit for CAT reinsurance up to 20% of total base C-2 charges
 - Mortality securitization structure is a stronger form of capital than CAT reinsurance due to absence of counterparty credit risk

- Capital benefit is derived from replacing hard capital and its associated negative carry with soft or contingent capital in the form of a collateralized mortality derivative structure
 - Cost of soft/contingent capital is determined by cost of the securities issued by the structure in excess of the investment earnings on the collateral assets



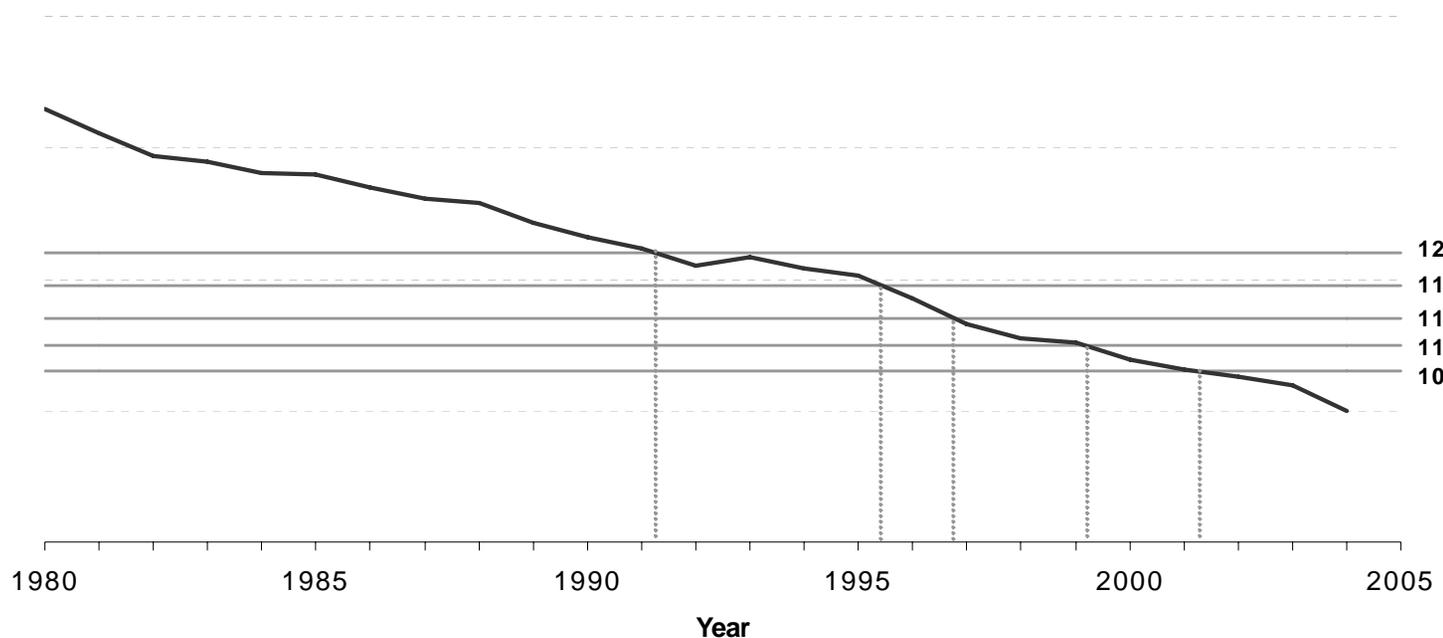
Mortality Index Illustration

mortality levels required to trigger a payout on the plan have been experienced in recent years

mortality has improved 7% on average over last 35 years for the component of the Osiris index

Historical Mortality Data (Osiris US Index)

Death Rate



■ Based on historical data for the Osiris US index, mortality would have to revert to levels in the following years in order to trigger a payout to the sponsor:

	Trigger	Exhaustion
Class A	1995	1991
Class B	1996	1995
Class C	1999	1996
Class D	2001	1999

Trends Impacting Market Growth

- Financial guarantors becoming more comfortable with the sector, reducing “emotional” pricing volatility
- Strong interest in latest transactions indicate increased investor appetite for mortality risk
- Recent upgrades by S&P indicate increased acceptance from the rating agencies
- Rating agencies view on capital credit will be a strong driver on issuer side
- Indemnity and morbidity transactions may be next



Vita II Case Study



Vita Capital II: Summary of Notes

Vita Capital II transaction structure is similar to Vita Capital I

Vita Capital II is a multi-tranche shelf program intended to target different risk appetites across the investor base

Vita Capital II Ltd. Notes

	<u>Class A</u>	<u>Class B</u>	<u>Class C</u>	<u>Class D</u>
Trigger Level: % of 2003 Index Value	125%	120%	115%	110%
Exhaustion Level: % of 2003 Index Value	145%	125%	120%	115%
Overall Annualized Expected Loss^(a)	0.0003%	0.0073%	0.0411%	0.1458%
Overall Annualized Attachment Probability^(a)	0.0015%	0.0165%	0.0755%	0.2344%
Overall Annualized Exhaustion Probability^(a)	<0.0001%	0.0015%	0.0165%	0.0755%
Rating^(b)	A+/Aa2	A-/Aa3	BBB+/A2	BBB-/Baa2

^(a) Equals the 5-year cumulative values as estimated by Milliman divided by 5

^(b) Standard and Poor's, Moody's

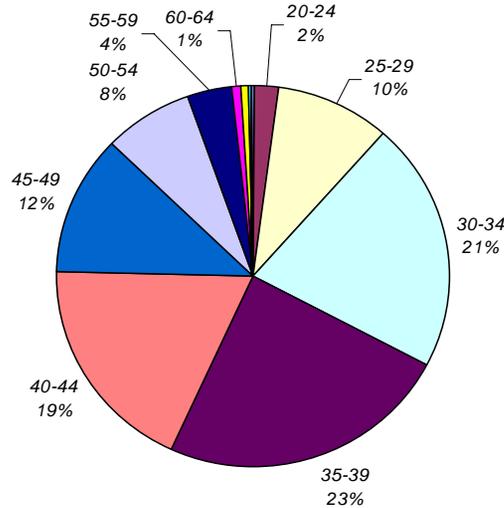


Vita Capital II Index Weights

Vita Capital II's Mortality Index is customized using different weights to match Swiss Re's mortality exposure by:

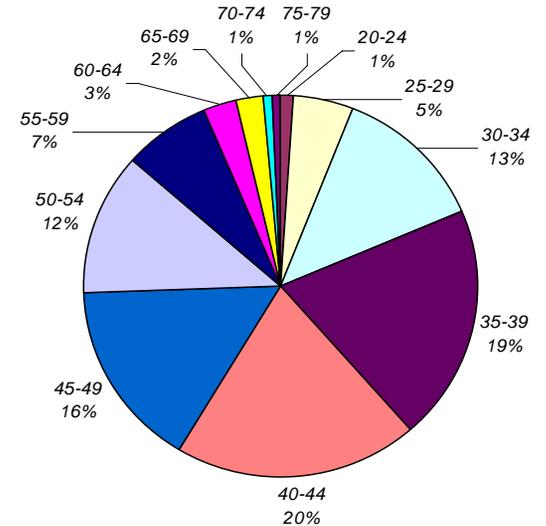
- Geographical weights
- Gender weights
- Age

Age Weights: UK



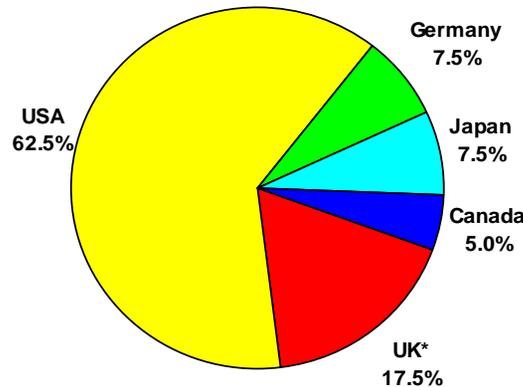
Note: Age groups 65-79 make up for under 1% of total

Age Weights: US, Canada, Germany & Japan

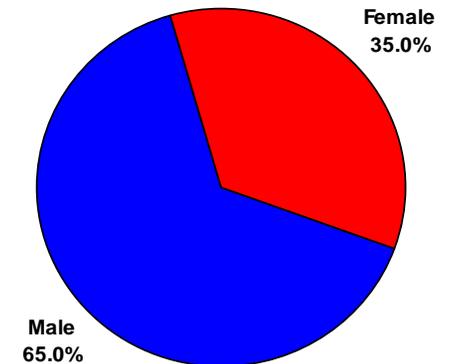


Note: Age groups 80-84 make up for under 1% of total

Geographical Weights



Gender Weights



Vita Capital II Trigger Definition

Vita Capital I captures mortality risk over 1-year measurement periods

Vita Capital II captures mortality risk over 2-year measurement periods

- The **Combined Mortality Index Value** for a given 2-year period is defined as the average of consecutive annual index values over the corresponding period:
 - Index value is computed using age and gender weighted death rates for five countries and obtained from publicly available sources
 - Weights are set at inception to mirror Swiss Re’s mortality exposure
- Both the **Trigger Level** and **Exhaustion Level** for observed mortality in the risk period are measured against 2002/2003 Index Value.
- For any Class, a **Trigger Event** is deemed to have occurred when the Combined Mortality Index Value exceeds the respective Trigger Level.
- If a Trigger Event has occurred, the percentage of principal lost increases linearly between the Trigger Level and Exhaustion Level, calculated as:

$$100\% \times \frac{\text{Combined Mortality Index Value} - \text{Trigger Level}}{\text{Exhaustion Level} - \text{Trigger Level}} \quad \text{subject to a maximum of 100\%}$$



Vita Capital II: Impact of Historical Events on the Index

Estimated magnitudes of historical events required to reach the respective Trigger Levels for each Class, assuming that the Index is based on a reference year immediately prior to each event. Magnitudes of less than 1.0x indicate that the event would have caused a loss of principal on the relevant class of notes.

Historical Occurrence	Est. Magnitude ¹ to reach Trigger Level			
	Class D	Class C	Class B	Class A
Influenza Epidemic ² (1918)	0.67x	1.01x	1.35x	1.69x
World War II ³ (1939-45)	0.56x	0.84x	1.13x	1.41x
Korean War ⁴ (1950-53)	22x	33x	45x	56x
Vietnam War ⁵ (1967-74)	17x	25x	33x	41x
AIDS (1995)	5.0x	7.5x	10.0x	12.4x
September 11 (2001)	103x	155x	206x	258x
European Heatwave (2002)	29x	43x	57x	71x

- (1) Assumes geographic & demographic distribution of deaths is proportionate to underlying populations. Actual magnitude vary depending on actual concentrations by age groupings.
- (2) Based on Index standardized mortality of US population applied proportionately to all five countries under Covered Area.
- (3) Includes military and civilian deaths based on assumed worst years of 1944 and 1945. Japanese impact also includes deaths attributable to Atomic Bombs dropped on Hiroshima and Nagasaki.
- (4) Includes US military deaths only, averaged over 4 years.
- (5) Includes US military deaths only, based on worst years of 1968 and 1969



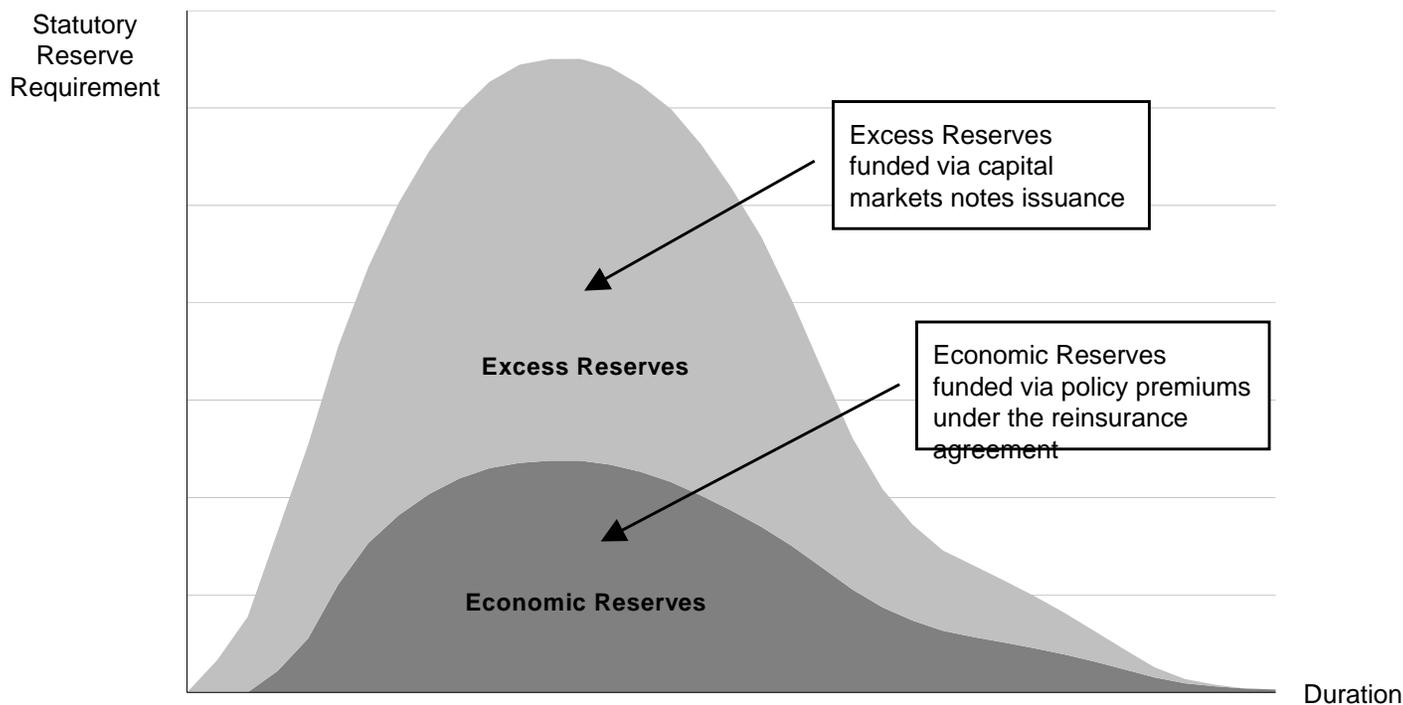
Excess Reserves Securitization

US Statutory Reserves Funding

- Regulation XXX/AXXX requires term writers to hold reserves well in excess of reasonable best estimate of policy liabilities
- Since the introduction of Regulation XXX/AXXX companies have developed a combination of financing alternatives to fund their peak reserve requirements
 - Internal funding
 - Coinsurance
 - Offshore reinsurance with letter of credit
 - Securitization
- Securitization provides the largest economic benefits
 - Preservation of tax reserve deductions
 - Favorable rating agency treatment
 - Term funding at locked-in cost

XXX/AXXX Reserve Securitization

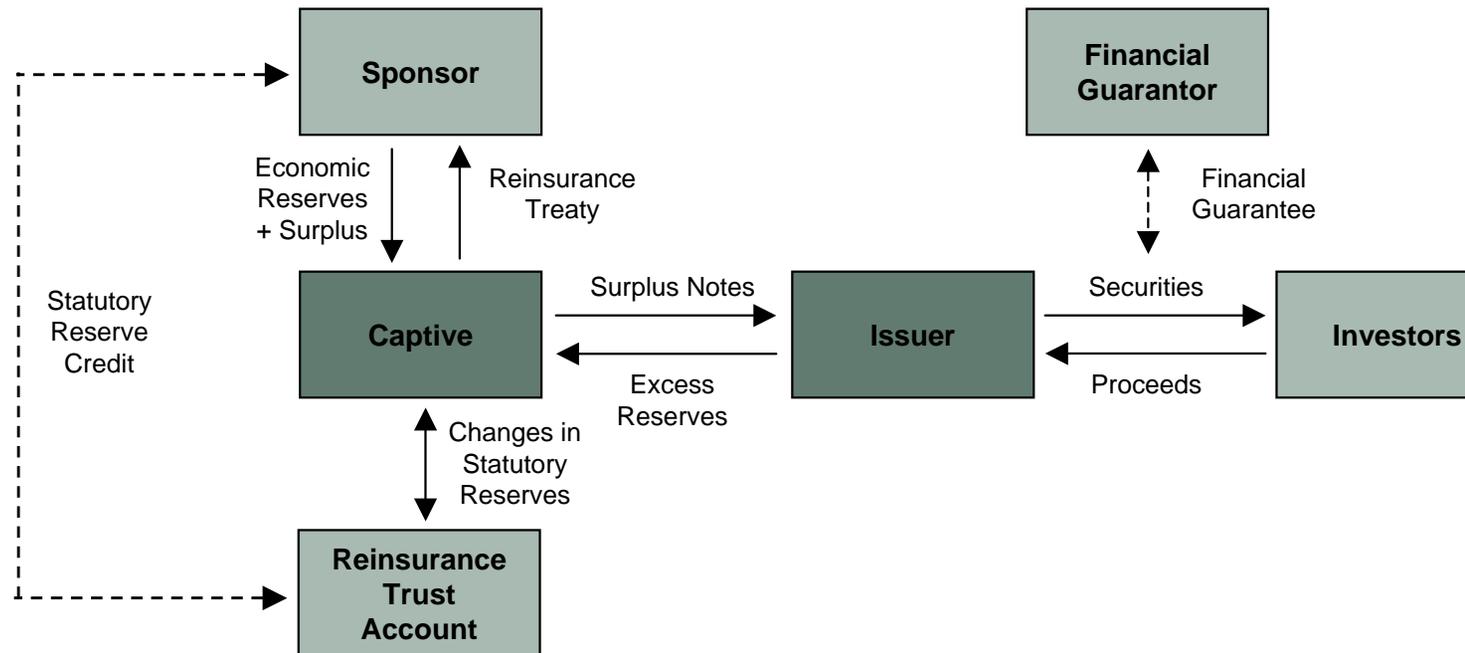
- US statutory reserve requirement results in significant redundancy over best estimate liabilities (economic reserves)
- Idea is to fund economic reserves portion via a coinsurance treaty and fund excess reserves with securitization proceeds
- Rate of return demanded by investors for assuming underlying risk is significantly lower than company's cost of capital, therefore resulting in more efficient use of capital



Sample XXX Transaction Structure



- Subject business is ceded to a newly-formed captive reinsurance company
- Investors purchase capital markets securities from Issuer
- Issuer uses the proceeds to purchase surplus notes from Captive
- Captive funds Reinsurance Trust Account with initial premium transfer from sponsor and proceeds from surplus note issuance
- Principal is paid on the surplus and capital markets notes with funds released from the Reinsurance Trust Account as statutory reserve requirement goes down



Financial Guarantors

- Have played a critical role in the development of life insurance securitizations
- Premiums have gone down significantly since the early life insurance transactions
- All XXX/AXXX transactions to date have included a financial guarantee
 - Monolines have essentially taken the complexity and regulatory risk that investors have sought to avoid
 - Results in significant price arbitrage at current premium levels
- Guarantors impose triggers and remedies to limit their exposure from adverse events
- Although their participation may lengthen the process, arbitrage role of the wrap is significant at today's spread levels



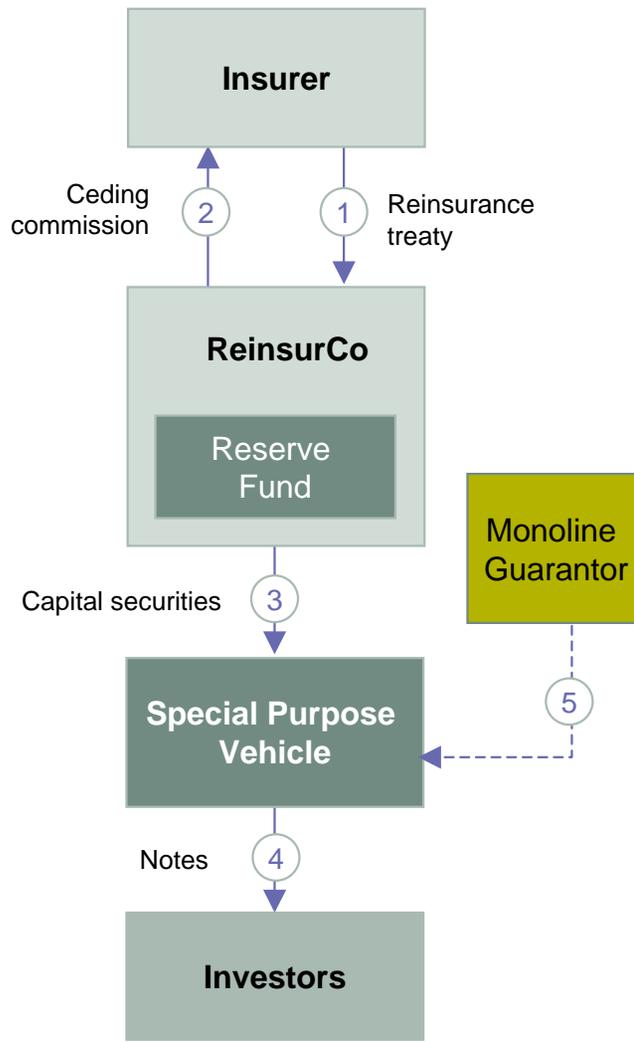
Embedded Value Monetization

Embedded Value Monetization

- Allows life insurance companies to monetize future profits embedded in a block of business
- Generates cash from an otherwise intangible asset, improving capital efficiency, transferring risk and potentially improving return on equity
- Has been used in the US and Europe to unlock value in acquired blocks of business (e.g. ALPS Capital) and closed blocks created in demutualizations (e.g. Prudential, MONY)
- Transactions to date have received favorable tax, accounting and rating agencies treatment in the sponsors' jurisdictions
- Proceeds can be used for other corporate purposes
 - Funding acquisitions
 - Funding new business growth
 - Special dividends or share buyback

Embedded Value Structure

EMBEDDED VALUE SECURITIZATION



- 1 An insurance carrier (insurer) establishes a wholly owned subsidiary (ReinsurCo) and enters into a reinsurance treaty.
- 2 At closing the insurer receives a ceding commission from ReinsurCo in connection with the reinsurance of the block of business.
- 3 ReinsurCo issues capital securities to a third-party special purpose vehicle (SPV) to fund the ceding commission payment, transaction costs and a reserve fund. The reserve fund may be available to cover losses under the reinsurance treaty.
- 4 The SPV funds the purchase of the capital securities by issuing notes to investors. These notes usually have multiple tranches and are secured by the ReinsurCo's securities and cash releases from the reserve fund. Features of the notes generally mirror those of the capital securities.
- 5 Monoline guarantor may be included for credit enhancement under a wrapped structure (not included in Queensgate transaction)

Subject Business

- A transaction should not include risks investors cannot quantify
- Product type
 - A mix of insurance products including traditional and interest sensitive life is well received by investors
- Regional and demographic diversification
 - A certain degree of regional diversification is important to investors
 - Age diversification tends to increase stability. Gender is not a primary concern.
- Persistency is a material risk investors take when buying embedded value securities
 - Unless business is lapse-supported high lapses will hurt investors
 - Seasoned books with no active sales force managing clients tend to have lower lapse rates and actuaries can draw on historical experience
 - New business is benefited by contractual protection (surrender charge, agent claw back) and mitigates some of the lapse risks