



Insurance Linked Securities

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Meeting the Challenges of Change

14th Global Conference of Actuaries

19th – 21st Feb, 2012 | Mumbai, India

Agenda

- Sources of capital for Life Insurers
- What is an Insurance Linked Security?
- Drivers for ILS
- Market overview
- Examples:
 - Extreme mortality bonds
 - Embedded value securitisations
 - Longevity risk transfer
- Conclusion



Equity Issuance to raise capital

Some insurers opt for equity issuance to raise capital

Listing entity	Proceeds	Status	P/E	P/B	P/EV	Listing Date	Country
Tong Yang Life	USD 272m	Listed	14.5x	1.34x	1.02x	Oct 8 th 2009	S. Korea
China Pacific Insurance Co.	USD 3.1bn	Listed	N/A	2.9x	2.00x	Dec 23 rd 2009	Hong Kong
Dai-ichi Life	USD 11bn	Listed	196.4x	1.57x	1.46x	Apr 1 st 2010	Japan
Korea Life	USD 1.6bn	Listed	15.7x	1.14x	0.95x	Mar 17 th 2010	S. Korea
Samsung Life	USD 4.4bn	Listed	27.9x	1.62x	1.04x	May 12 th 2010	S. Korea
AIA	USD 20.5bn	Listed	18.5x	2.17x	1.04x	Oct 29 th 2010	Hong Kong
New China Life	~ USD 1.9bn	Listed	27.3x	N/A	N/A	15th Dec 2011 & 16th Dec 2011	Hong Kong & China

Debt as an alternative?

Many use debt but cost can be an issue

Issue date	Issuer	Type	Currency	Amount (million)	Coupon rate (%)	Maturity date	Spread (bp)		Price		Issue Rating S&P/Moody's		
							Issue	Current	Issue	Current	S&P	/	Moody's
18.01.2012	CLOVERIE PLC ZURICH INS	Subordinated	USD	500	8.250	Perpetual	n.a	0	n.a.	102	n.a.	/	A3
17.01.2012	MASS MUTUAL LIFE INS CO	Subordinated	USD	400	5.375	01.12.2041	245	250	100	103	AA-	/	A1
12.01.2012	NEW YORK LIFE GLOBAL FDG	Senior	USD	500	1.300	12.01.2015	98	92	100	100	AA+	/	Aaa
11.01.2012	ALLSTATE CORP	Senior	USD	500	5.200	15.01.2042	225	217	100	104	A-	/	A3
09.01.2012	MET LIFE GLOB FUNDING I	Senior	USD	750	2.000	09.01.2015	167	160	100	100	AA-	/	Aa3
05.01.2012	CNO FINANCIAL GROUP INC	Senior	USD	0	7.000	30.12.2016	n.a	0	100	n.a.	n.a.	/	n.a.
23.12.2011	ING GROEP NV	Senior	EUR	701	4.125	23.03.2015	n.a	370	100	99	n.a.	/	A1e
22.12.2011	SWISS REINSURANCE CO LTD	Senior	CHF	600	2.125	22.09.2017	150	124	101	103	AA-	/	A1
21.12.2011	AMTRUST FINANCIAL SERVIC	Senior	USD	175	5.500	15.12.2021	n.a	0	100	102	n.a.	/	n.a.
19.12.2011	ZURICH FINANCE USA INC	Senior	EUR	300	3.029	19.12.2014	241	124	100	101	n.a.	/	NR
16.12.2011	METLIFE INSTITUTIONAL FD	Subordinated	USD	350	0.955	07.12.2012	n.a	84	100	100	AA-	/	P-1
15.12.2011	INSURANCE AUSTRALIA GRP	Subordinated	NZD	325	7.500	15.12.2036	n.a	187	n.a.	109	A-	/	n.a.
14.12.2011	MET LIFE GLOB FUNDING I	Senior	USD	1'000	0.694	12.06.2012	n.a	0	100	n.a.	AA-	/	Aa3
08.12.2011	IF SKADEFORSKRING AB	Senior	EUR	110	6.000	08.12.2041	373	398	100	90	BBB+	/	n.a.
29.11.2011	COLONIAL FINANCE LTD	Senior	AUD	350	5.598	22.05.2013	n.a	197	100	99	n.a.	/	n.a.
23.11.2011	ZURICH INSURANCE CO	Senior	CHF	525	2.375	23.11.2018	155	149	100	103	A+	/	A1
18.11.2011	MANUFACTURERS LIFE INSUR	Subordinated	CAD	550	4.210	18.11.2021	283	0	100	n.a.	n.a.	/	n.a.
17.11.2011	EL PACIFICO P S SEG REAS	Senior	USD	60	4.200	17.11.2026	n.a	n.a	n.a.	n.a.	n.a.	/	n.a.
16.11.2011	PRUDENTIAL FINANCIAL INC	Senior	USD	400	4.500	16.11.2021	255	235	99	103	A	/	Baa2
16.11.2011	PRUDENTIAL FINANCIAL INC	Senior	USD	325	5.800	16.11.2041	275	289	99	104	A	/	Baa2
15.11.2011	AMERICAN INTL GROUP	Senior	GBP	662	6.765	15.11.2017	n.a	614	n.a.	99	A-	/	Baa1
15.11.2011	AMERICAN INTL GROUP	Senior	EUR	421	6.797	15.11.2017	n.a	547	n.a.	99	A-	/	Baa1
15.11.2011	AMERICAN INTL GROUP	Senior	USD	256	6.820	15.11.2037	n.a	475	n.a.	97	A-	/	Baa1
26.10.2011	CHINA LIFE INSURANCE CO	Subordinated	CNY	30'000	5.500	26.10.2021	n.a	n.a	100	n.a.	n.a.	/	n.a.
18.10.2011	PRUDENTIAL PLC	Senior	GBP	200	1.090	18.04.2012	n.a	n.a	100	n.a.	n.a.	/	n.a.
13.10.2011	UNEDIC	Subordinated	EUR	250	1.370	13.04.2013	37	117	100	100	AA+	/	Aaa
04.10.2011	SWISS LIFE AG	Subordinated	CHF	100	5.250	Perpetual	339	n.a	99	94	n.a.	/	n.a.
03.10.2011	SAMPO OYJ	Senior	EUR	200	3.250	03.10.2014	263	257	100	100	n.a.	/	Baa2
30.09.2011	RELIANCE CAPITAL LTD	Subordinated	INR	1'500	10.750	30.09.2021	n.a	n.a	100	n.a.	n.a.	/	n.a.
30.09.2011	XLIT LTD	Senior	USD	400	5.750	01.10.2021	376	290	100	109	BBB+	/	Baa2
23.09.2011	COLONIAL FINANCE LTD	Senior	AUD	275	6.037	23.09.2013	n.a	325	100	98	A+	/	n.a.
29.09.2011	NEW YORK LIFE GLOBAL FDG	Subordinated	USD	350	0.606	28.09.2012	11	14	100	100	AA+	/	Aaa
23.09.2011	COLONIAL FINANCE LTD	Senior	AUD	275	6.037	23.09.2013	n.a	325	100	98	A+	/	n.a.
16.09.2011	SAMPO OYJ	Senior	SEK	4'000	4.260	16.09.2013	n.a	n.a	100	100	n.a.	/	Baa2
13.09.2011	AMERICAN INTL GROUP	Senior	USD	800	4.875	15.09.2016	425	419	99	100	A-	/	Baa1
23.08.2011	SUN LIFE FINANCIAL INC	Senior	CAD	300	4.570	23.08.2021	215	272	100	100	A/*-	/	n.a.

'...The difficulty in raising capital from the stock market potentially could further hurt the Indian economy, as many companies have had to delay capital investment and expansion plans.

"Some of them have resorted to debt," said Sanjay Sharma, head of equity capital markets for India at Deutsche Bank AG. Lately, however, he said "even debt has been difficult and very expensive."...'

(12 Oct 2011,
The Wall Street Journal Asia)

Reinsurance as an alternative source of capital

	Common Equity	Debt	Reinsurance
Advantages	<ul style="list-style-type: none"> ■ Provides new cash and highest quality of capital ■ Flexible dividends ■ Positive impact on financial leverage 	<ul style="list-style-type: none"> ■ Provides new cash ■ Less expensive than common equity ■ Tax deductible 	<ul style="list-style-type: none"> ■ Immediate release of solvency capital and reserves ■ Speedy execution, can be ramped up when in need ■ Flexibility, confidentiality ■ May improve capital efficiency
Disadvantages	<ul style="list-style-type: none"> ■ Very high cost of capital ■ Dilution of earnings per share and ownership ■ Difficult to reverse 	<ul style="list-style-type: none"> ■ Increases financial leverage ■ Difficult to reverse 	<ul style="list-style-type: none"> ■ Reported net premium is lower due to cession ■ Credit exposure towards reinsurer

"...Implied cost of equity and debt has risen rapidly in 3Q, reducing the sources of capital funding available for primary insurers. **Reinsurance is an attractive alternative as it is cheap, flexible, and inconspicuous...**" (Analyst report published by Morgan Stanley, 27 Sept 2011)

Insurance-linked securities (ILS)...

- ...repackage insurance risk and transfer it to investors via a capital markets instrument
- ...provide capital relief and financing for issuing insurer
- ...can be issued as private placement or in general open to the capital markets
- ...are usually bond-style investments paying a fixed spread over return on collateral assets
- ...require investors to forfeit some or all of their investment if certain insurance events occur
- ... can provide diversification in an investment portfolio (low correlation with other market & credit risks)
- ...can be seen as a hybrid between debt and reinsurance

What are the drivers of Life ILS?

≠ Nat Cat

= Nat Cat

Life insurance

- Long term underlying contracts, often including embedded financial options
- Separate regulatory and reserving requirements from P&C
- Exposure to non-insurance risks, e.g. policyholder behaviour, asset risk

Insurer needs

- Financing
- Liquidity
- Capital and Risk Management

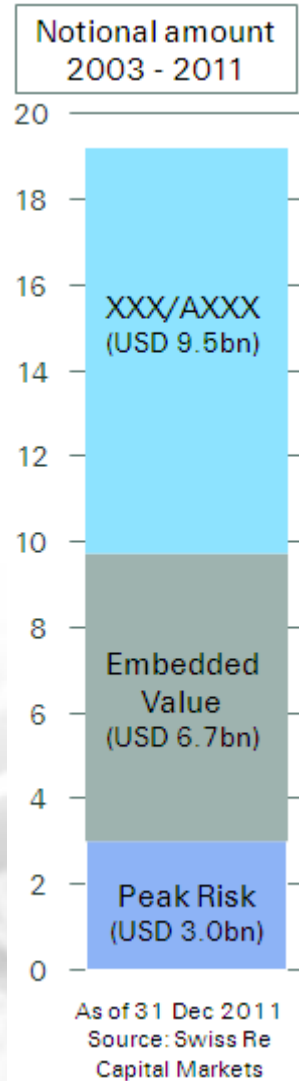
ILS solution

- XXX/AXXX securitisation
- Embedded Value securitisation
(long duration indemnity based)

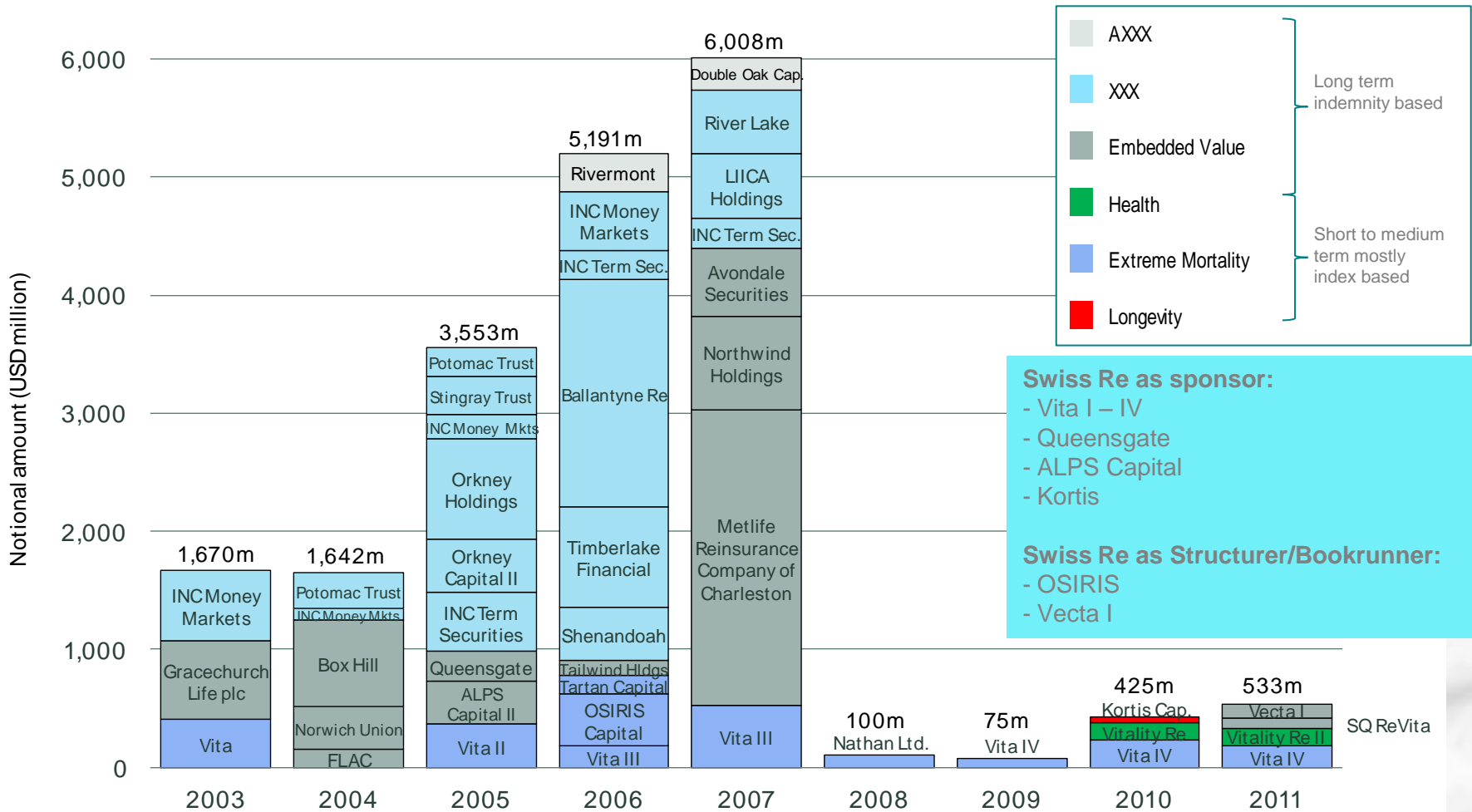
- Exposure to peak risks

- Capital and Risk Management

- Peak risk securitisation
(short duration index based)



Life ILS issuance



As of December 31, 2011; Source: Swiss Re Capital Markets

Index market back at pre-crisis level, indemnity market on recovery path

Indemnity vs Index

Indemnity based

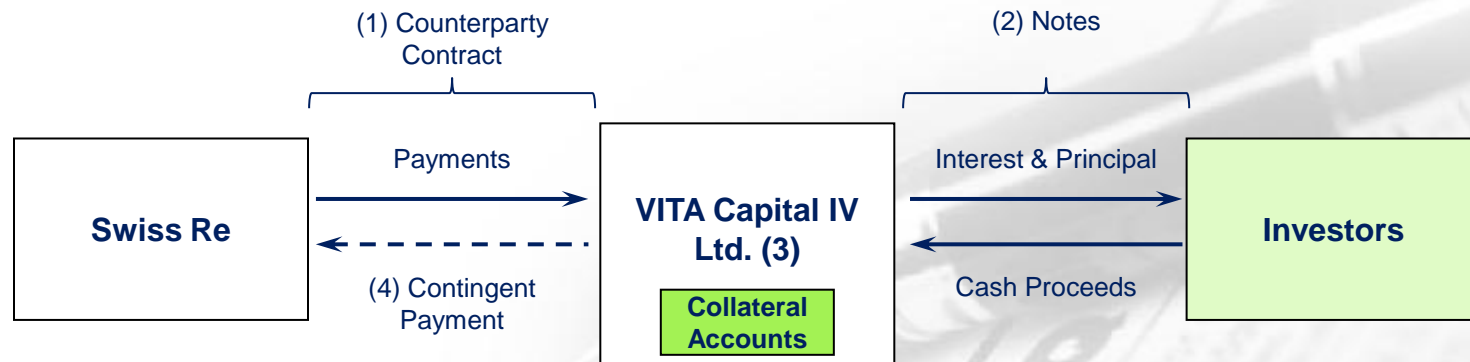
- Defined portfolio of policies/named lives – matches exposure of risk holder
- Extensive due diligence and disclosure requirements
- Bespoke, limited scope for liquid, secondary trading market
- Appeal to narrow range of investors, e.g. specialised Insurance Linked Securities funds

Index based

- Linked to publicised index, e.g. general population mortality index
- Risk holder retains basis risk between own portfolio and index
- Standardised, scaleable, more suited for secondary trading
- Likely to appeal to wider investor base, e.g. money managers and multi-strategy hedge funds

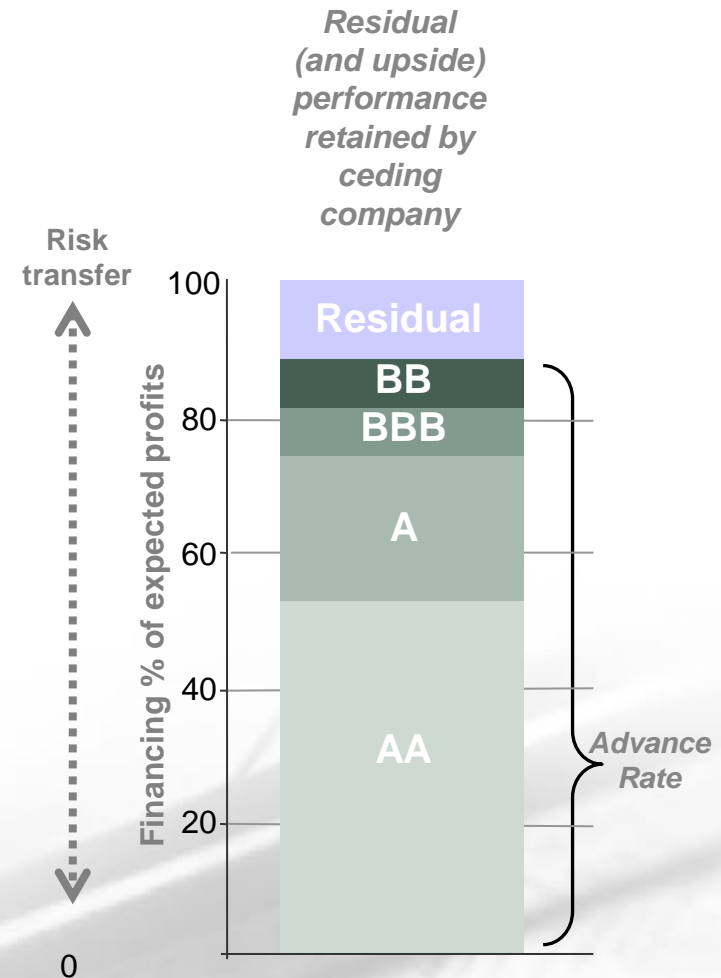
Extreme mortality bonds

- .. provide protection against extreme mortality events, e.g. pandemics
- ...have trigger points for payout linked to published mortality indices
- ...pay out if mortality based on index (e.g. two year rolling average) exceeds trigger point during of bond
- ...are typically issued in several risk layers
- ...are tailored to approximate issuer's risk exposure (weighting of index by age-group , gender, country)

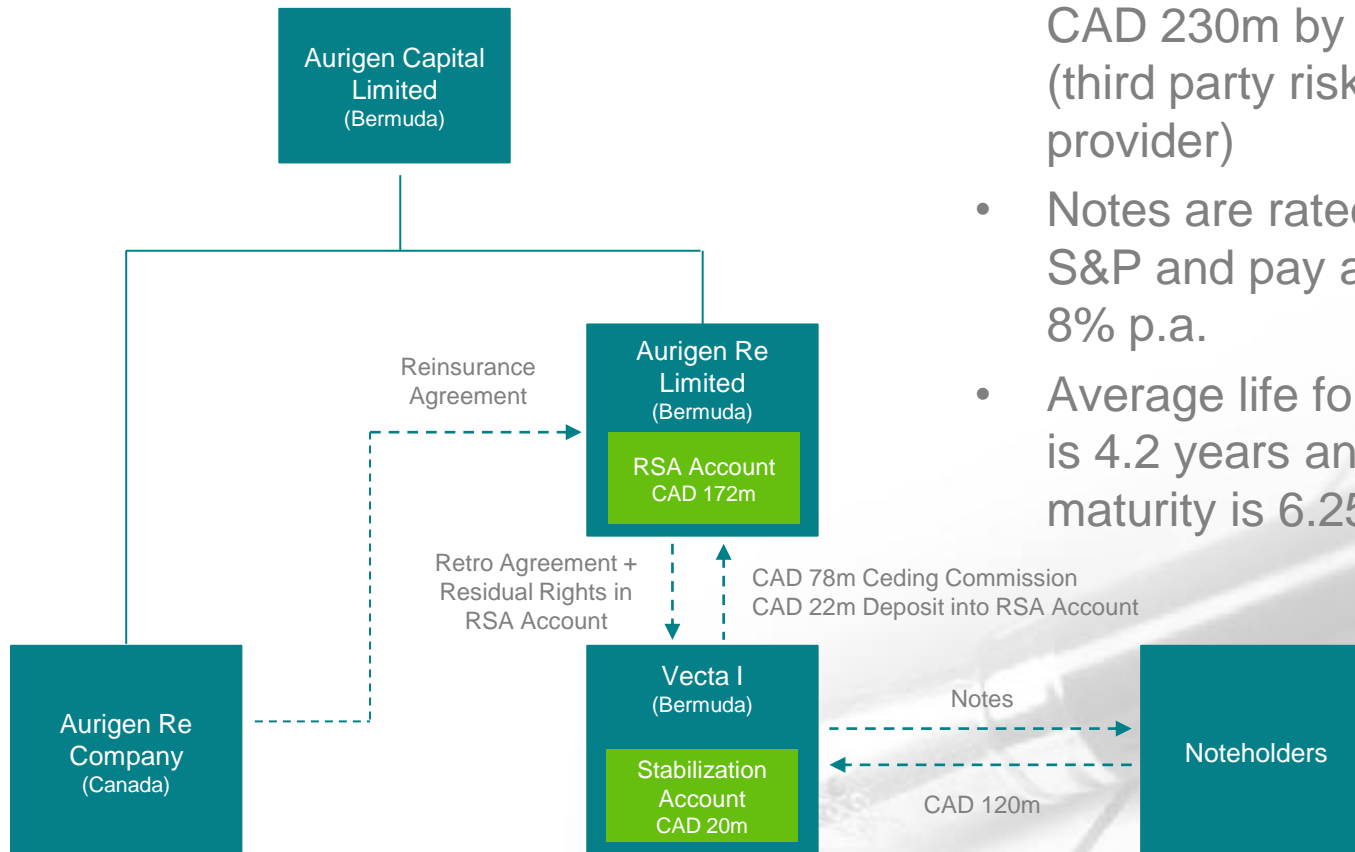


Embedded Value (EV) Securitisation

- ...turns an illiquid, often inadmissible, asset (EV) into cash
- ...attaches to future cash flows from defined portfolio
- ...can provide advance of 40-80% of EV depending on stability of future cash flows and investor risk appetite
- ...transfers majority of risks in underlying portfolio (mortality, lapse, asset risk)
- ...may be sold in separate tranches, targeting investors with differing risk appetites



Vectra I – 2011 EV Securitisation

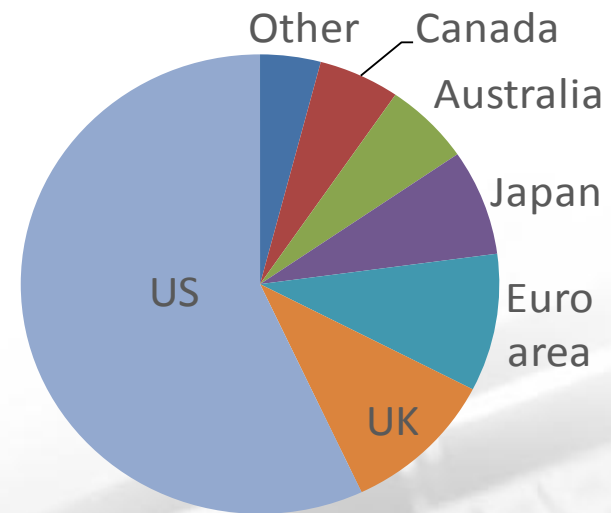


- CAD 120m EV securitisation sponsored by Aurigen Re
- EV for the block is estimated at CAD 230m by Oliver Wyman (third party risk analysis provider)
- Notes are rated BBB+ (sf) by S&P and pay a fixed coupon of 8% p.a.
- Average life for the transaction is 4.2 years and expected maturity is 6.25 years

The global longevity risk issue is huge

- Global longevity exposure estimated as approx USD 20 trillion of pension assets
- 90% of exposure related to pension funds; 10% pension insurance contracts
- Insurers' exposure dominated by markets with compulsory annuitisation
- Corporate sponsors exposed to defined benefit pension schemes
- Governments committed to fund old-age pension/health benefits

**OECD Pension Assets
(USD 18.6 Trillion)**



Source: OECD Global Pension Statistics

Finite capacity, disproportionate demand

UK corporate pension liabilities	Transferred to insurers	UK Life Companies Annuity reserves
Over GBP 1 trillion	Under 1%pa	GBP 150bn

Over the last 5 years GBP 30 billion of pension liabilities has been transferred through bulk annuities and longevity hedging

Insufficient capacity in insurance market to absorb the future demand for longevity risk transfer from UK pension plans

Develop capital market investor base

- Swiss Re has entered into a transaction with Kortis Capital Ltd. ("Kortis") to receive up to \$50m of payments in the event of a large increase in the differential in mortality improvements between male lives aged 75-85 in England & Wales and male lives aged 55-65 in the US
- First tradable rated security providing protection against longevity trend risk

Management Highlights

"Swiss Re's longevity strategy focuses on providing our clients with indemnity protection, while supporting the development of efficient capital market solutions on an indexed basis as a source of future long-term capacity"

– *Brian Gray, Chief Underwriting Officer, Swiss Re*

"The Kortis programme is of particular note as it provides protection against adverse deviation in mortality improvements for both Swiss Re's mortality and longevity portfolios, whilst taking into account the complementary nature of the two risks"

– *Christian Mumenthaler, Head Life & Health, Swiss Re*

Insurance linked securities

- ...are a hybrid between debt and reinsurance
- ...provide capital relief and risk transfer
- ...are coming back after set-back in early part of financial crisis
- ...can be standardised or bespoke
- ...can provide additional capacity for peak risks (pandemics)
- ...can monetise Embedded Value
- ...are most useful as part of long term capital and risk management strategy
- ...will be key to managing longevity risk

Question time?



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