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End of the Credit Spread Free Lunch?

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Meeting the Challenges of Change

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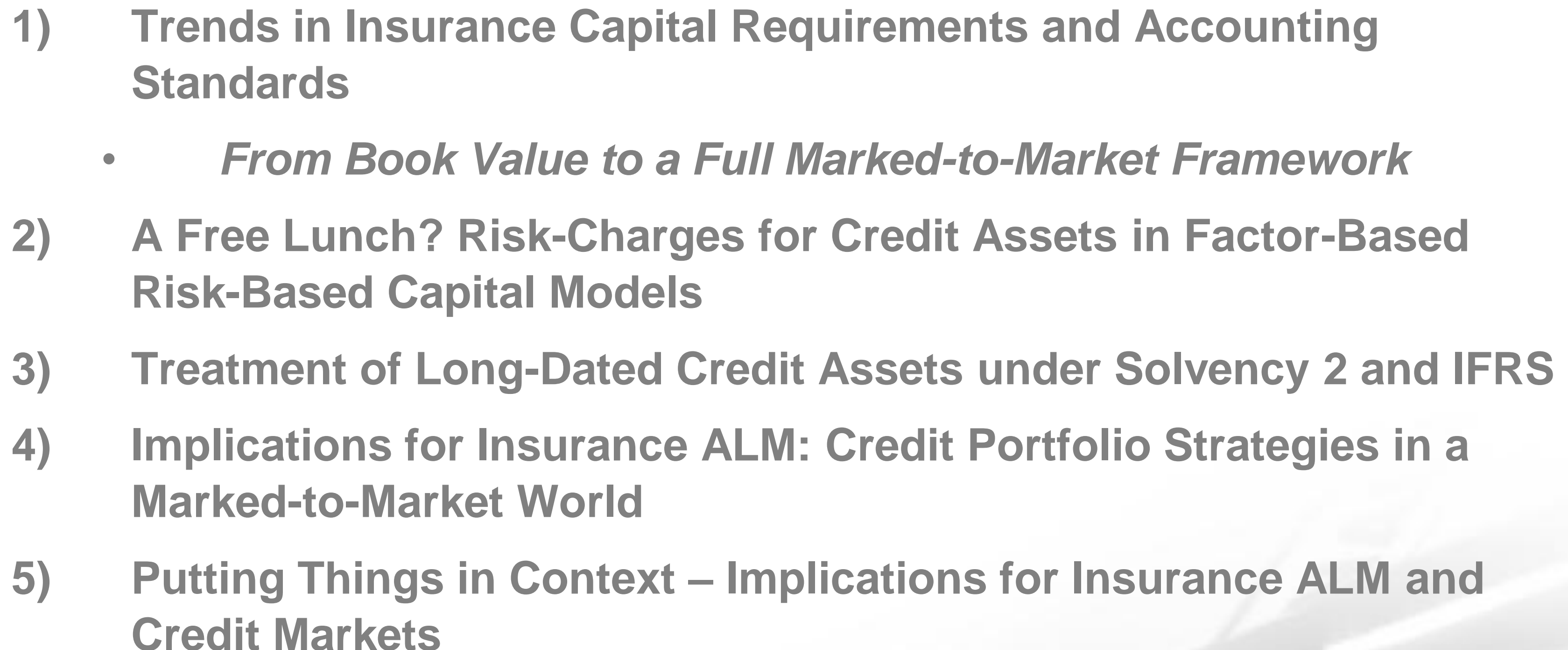
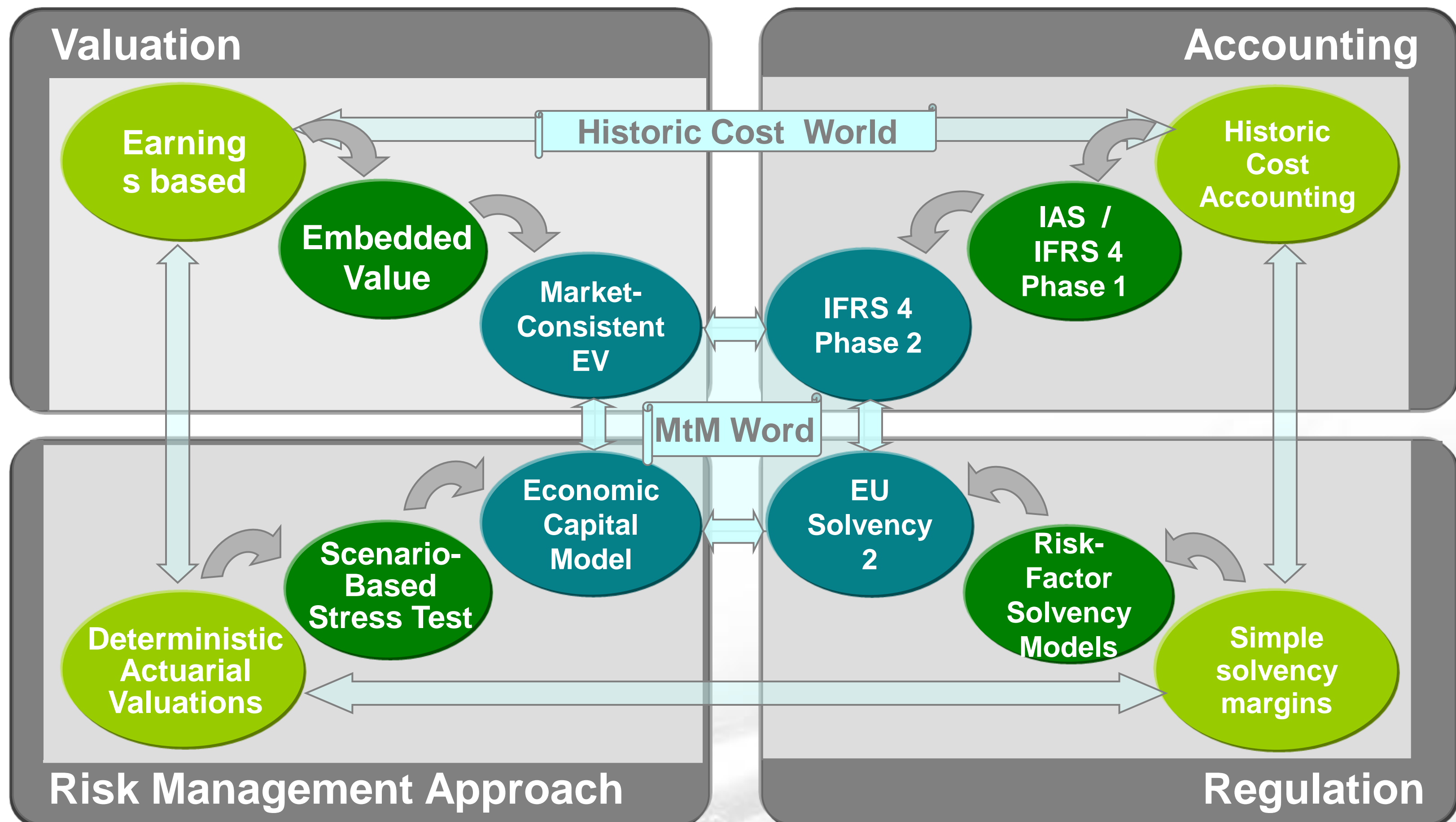
Presentation Overview



1) Trends in Insurance Capital Requirements and Accounting Standards
   - *From Book Value to a Full Marked-to-Market Framework*
2) A Free Lunch? Risk-Charges for Credit Assets in Factor-Based Risk-Based Capital Models
3) Treatment of Long-Dated Credit Assets under Solvency 2 and IFRS
4) Implications for Insurance ALM: Credit Portfolio Strategies in a Marked-to-Market World
5) Putting Things in Context – Implications for Insurance ALM and Credit Markets

Some Historical Context …

Historic Evolution of Insurance Accounting, Regulation, Risk Management and Valuation



Solvency: US vs EU

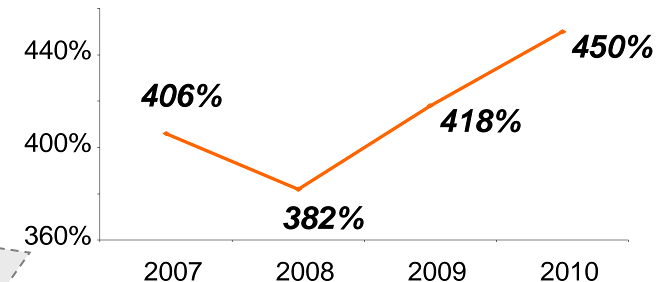
	US NAIC	EU Solvency 2
(Fixed Income) Assets	*Amortised Cost*	*Generally MtM*
Liabilities	*Rules Based, Implicit Risk Margin*	*Explicit risk margin / or replication portfolio approach*
Liability Discount Rate	*Fixed / Deterministic*	*Marked to Market (Swap Curve)*
Asset Risk Charges	*Simple Risk Factors*	*Stress-Test Based; Use of Internal Model*

US Life Sector Balance Sheet

US Life Sector: Statutory General Account B/S

USD bn	2007	2008	2009	2010
Investment Assets				
Government Securities	247	280	293	366
Credit Assets	**2384**	**2408**	**2395**	**2455**
Other	411	419	477	476
Total Investments	3042	3108	3164	3297
Liabilities				
Insurance Reserves	2625	2733	2770	2880
Non-Reserve Liabilities	276	276	256	263
Capital & Surplus	**279**	**261**	**298**	**315**
Capital & Surplus & AVR/IMR[1]	***340***	***292***	***329***	***362***
Total Liabilities	3180	3270	3324	3458

Source: American Council of Life Insurers;
1) AVR = Asset Valuation Reserve; IMR = Interest Maintenance Reserve



"In our opinion, it is clear that life insurers have proven to be lower risk financial companies. […] The government supported the financial system with hundreds of billions of dollars given to financial services companies through TARP and the life insurance industry only took $4.4 billion of this amount"

BAML Research, US Life Insurance Primer 2012

General Account Assets

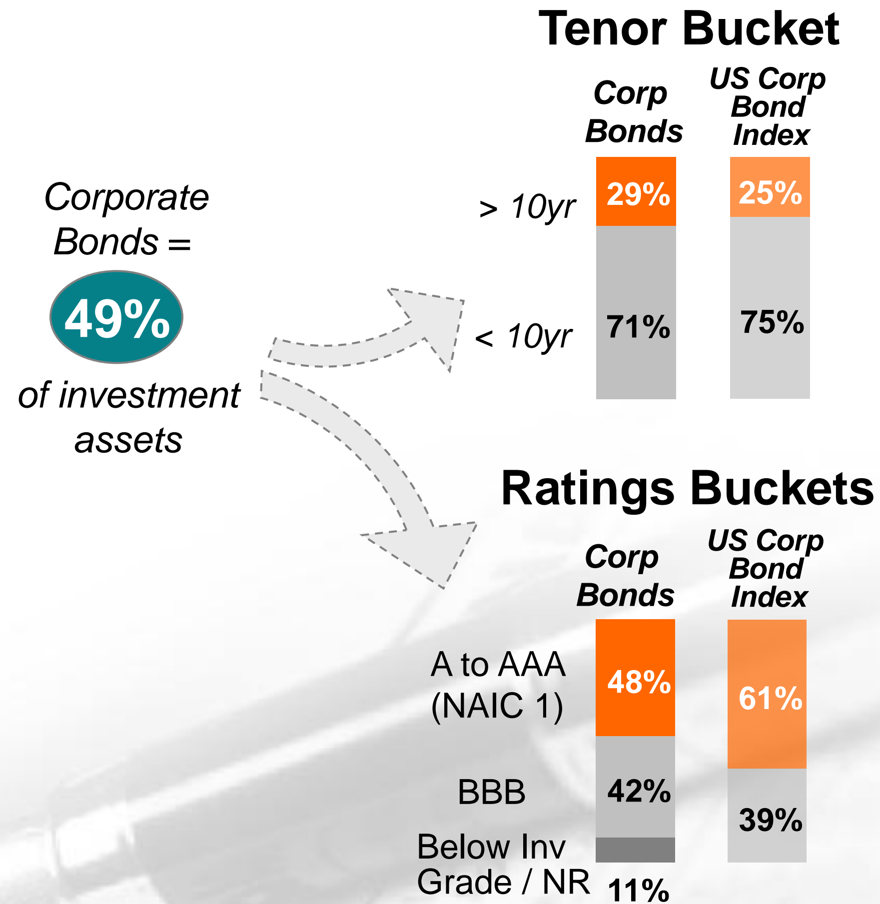
US Life Sector: Statutory General Account B/S

	2007	2008	2009	2010
Investment Assets				
Government Securities	247	280	293	366
Corporate Bonds	**1514**	**1540**	**1508**	**1611**
ABS / MBS	545	530	561	527
Mortgage Loans	325	338	326	317
Equities	148	118	78	83
Other	263	302	399	394
Total Investments	3042	3108	3164	3297

Source: American Council of Life Insurers

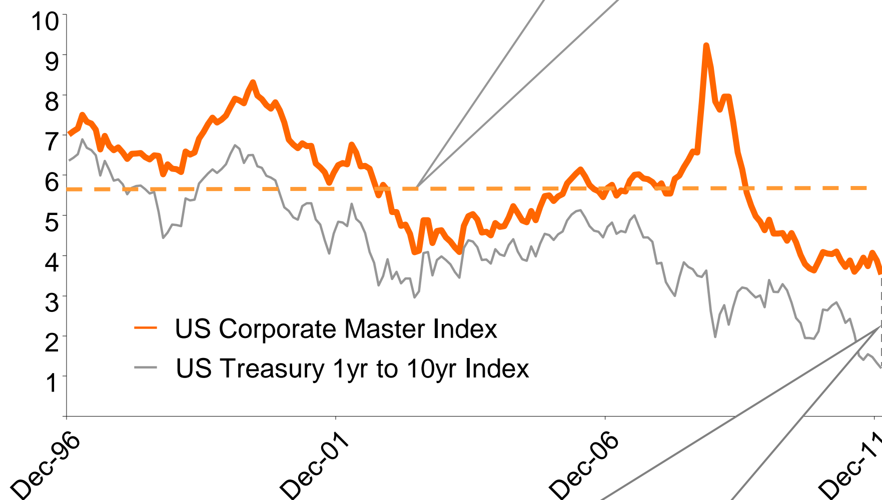
US Corporate Bond Index:

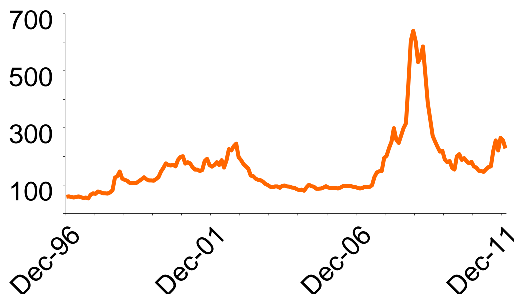
- BAML US Corporate Master Index
- US Investment Grade Bonds
- Comprising 4,935 issues with total market value of USD 3.04trn
- Avg Duration of 6.4yrs



Why All This Credit Exposure?

❶ Nice Yield …





❷ Better Return on Solvency Capital

- Risk-Based Capital Requirement for bonds does not depend on tenor, only on rating
  - A 30yr bond has the same capital requirement as a 3yr bond with the same rating, but a higher return
  - A free lunch?

Rating	Tenor[1]	*Avg Annual Return*[2]	*Required RBC Capital*	*Return on RBC Capital*
NAIC Class 1 (A to AAA)	3 to 5yr	6.2%	0.4	1546%
	5 to 10yr	6.9%	0.4	1727%
	> 15yr	7.8%	0.4	1953%
NAIC Class 2 (BBB)	3 to 5yr	6.7%	1.3	518%
	5 to 10yr	7.5%	1.3	578%
	> 15yr	8.4%	1.3	645%
Equities[3]		8.5%	29.3	29.2%

1) Based on US Corporate Master Sub-Indexes

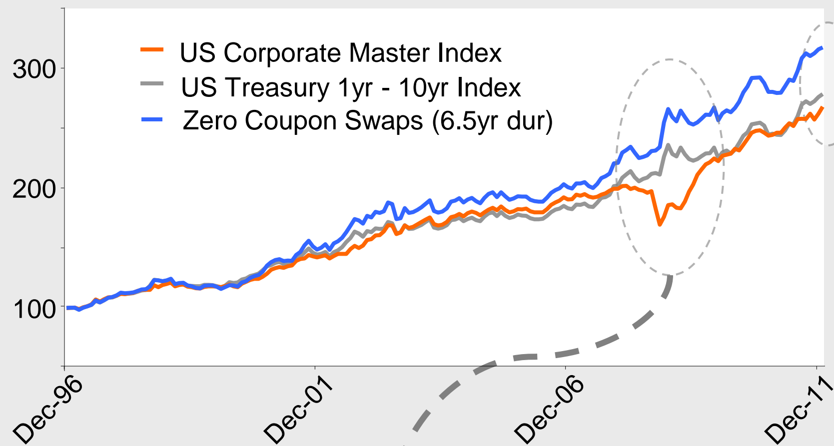
2) Annualised Rolling Total Returns 1996 to current

3) S&P 500 Total Return (Source: Bloomberg)

Source (all other): BAML Global Index System

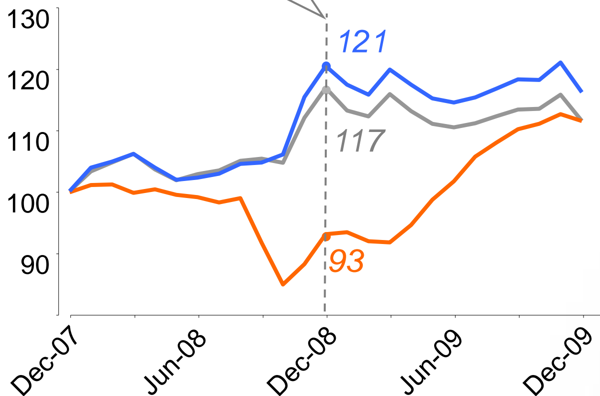
But …

- Swap Index (duration matched) represents MTM Liabilities
- The 2008 'gap' in asset values alone was 7%
- The Asset and MTM liability gap would have been **28%** !



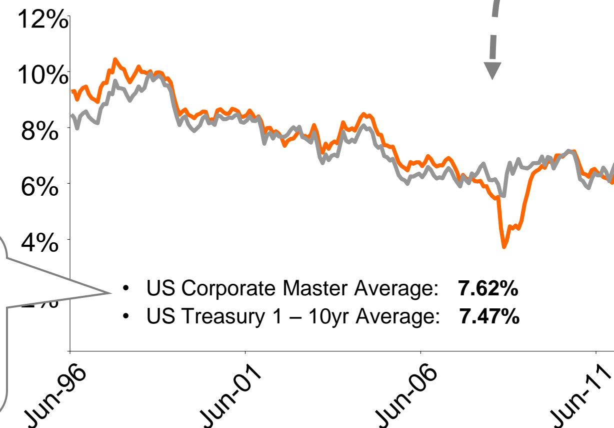
Do Treasuries outperform Corporate Bonds?

What happened in the Financial Crisis?



Total Return 2007 to 2009

Corporate Bonds do outperform in the long-term average, but not by much ….



10yr Rolling Total Returns

Key Aspects of Solvency 2

- Liability Discount Rates
  - Discount Liabilities using the Swap curve plus an Illiquidity Premium
  - Broadly similar to the expected liability treatment expected under IFRS 4 (Insurance Contracts) Phase 2

- Market Risk Charges
  - For equity, interest rate and credit spread risk (and others)
  - Market risk charges determined a result of a stress test

Solvency 2: Credit Risk

- Under Solvency 2 there is a strengthened credit risk capital requirement, based on a spread movement applied to the duration of the bond
  - This entails substantial capital requirements, especially for long-dated bonds

EU Solvency 2 – QIS5 Credit Spread Risk Module

Credit Spread Risk on Bonds

⇨ Applies to IG Corporate Bonds, HY Corporate Bonds, Subordinated debt, Hybrid Debt

⇨ Capital Requirement:

MV x duration x Spread Risk Factor

⇨ Spread Risk Factors:
AAA 0.9; AA 1.1%; A 1.4%;
BBB 2.5%; BB 4.5%; B 7.5%, Unrated 3.0%

Return on Solvency Capital under the SII Credit Spread Module

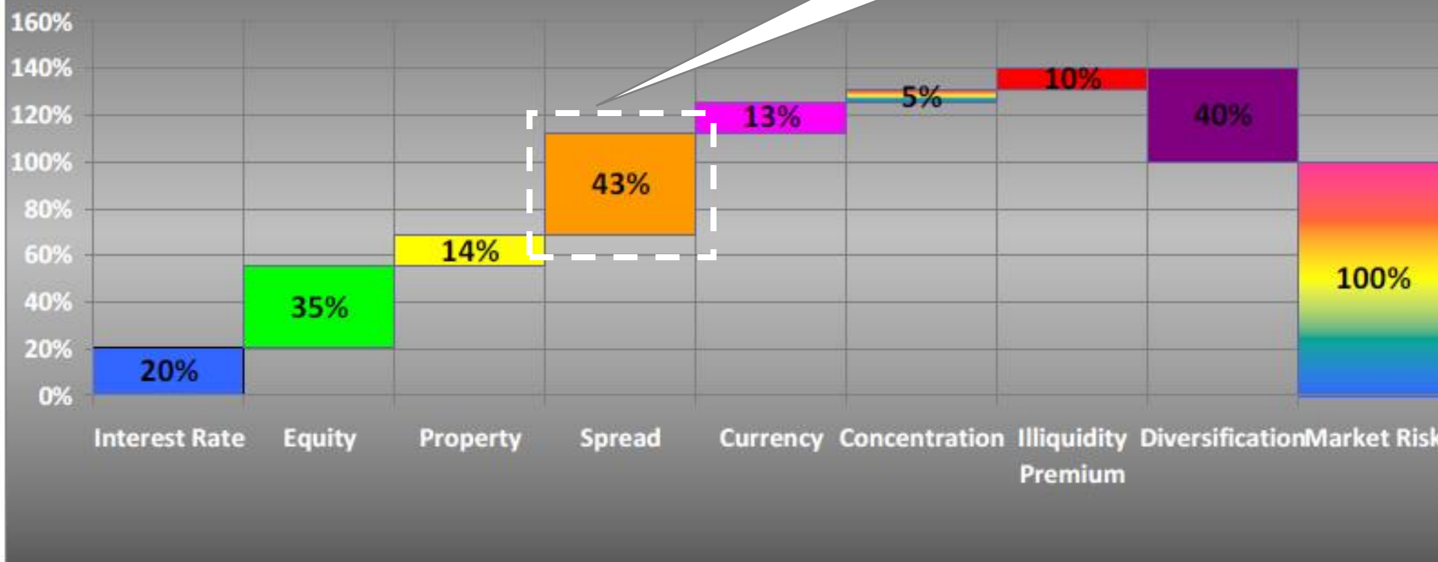
Rating	**Tenor[1]**	***Avg Annual Return[2]***	***Required RBC Capital***	***Return on RBC Capital***
AAA	3 to 5yr	6.4%	3.4	190%
	5 to 10yr	6.8%	5.8	118%
	> 15yr	6.9%	14.4	48%
BBB	3 to 5yr	6.7%	8.9	76%
	5 to 10yr	7.5%	15.2	49%
	> 15yr	8.4%	32.1	26%
Equities[3]		8.5%	39.0	22%

1) Based on US Corporate Master Sub-Indexes
2) Annualised Rolling Total Returns 1996 to current
3) S&P 500 Total Return (Source: Bloomberg)
Source (all other): BAML Global Index System

Solvency 2 Market Risk

- The aggregate result from the QIS5 Solvency 2 impact study shows that credit risk under the credit spread module is by the largest market risk charge item
- This is before allowing for diversification benefits

QIS 5 Aggregate Results



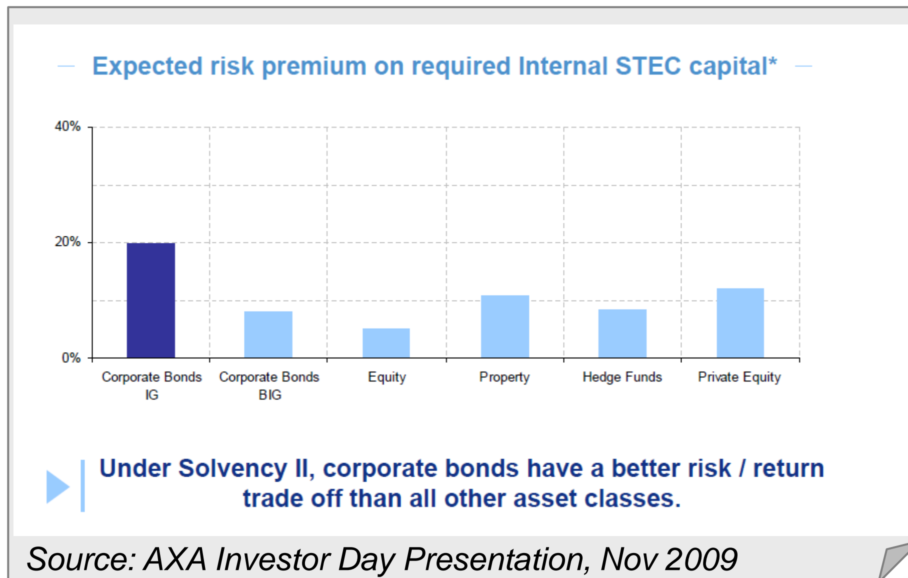
Spread Risk is the most substantial component of the Market Risk charge

Source: EIOPA Report on the 5th Quantitative Impact Study for Solvency II, March 2011

Strategy 1: AXA

- The Solvency 2 credit spread module charges disincentivise insurers from holding long-dated credit assets
- However shorter-dated exposures can still offer an attractive return on solvency capital

Example: AXA (Extract from Investor Presentation)



Source: AXA Investor Day Presentation, Nov 2009

However

"Corporate bond portfolio duration limited to 4/5 years"

?

How to manage asset duration without using long-dated corporate bonds?

Strategy 1: AXA (cont'd)

AXA (Extract from Investor Presentation): General Account Asset Allocation

	FY 2011
Total General Account Assets (EURbn)[1]	467
Asset Allocation of General Account Assets	
Fixed income	82%
of which:	
Govies and related	*44%*
Corporate bonds	*32%*
ABS	*2%*
Mortgage loans & other	*5%*
Cash	6%
Other	12%

Interest Rates Derivative Notionals > 5yr (FY 2010) (EUR bn)

IR Receiver Swaps	31.6
Swaptions Bought	8.8
Floors Bought	2.2

1) General Account Assets include Life Insurance (83%); P&C & International Insurance (15%) and Banking Assets (1%). The number excludes Unit-Linked assets

Source: AXA FY 2011 2010 Results Presentation; 2009 Document de Reference, Note 19

- Strategy:
  - Buy mainly shorter-dated to medium Corporate Bonds
  - Increase portfolio durations by holding 1) long-dated Government bonds
  - Overlay interest rates receiver swaps or swaptions to attain additional duration

Strategy 2: Manulife

- Strategy:
  - Buy long-dated Government bonds to get duration (say 30yr bonds)
  - Sell CDS Protection to get additional credit spread (e.g. receive a premium for insure another market counterpart against default of a certain credit)
    - CDS protection is typically sold for a 5yr tenor

- Example: Manulife Financial

⇨ *"We actually hold a large amount of Treasuries on our balance sheet, backing our liabilities, a number of which were put on to reduce interest rate risk over the last several years, and we are not earning credit spread on those. So the average quality of the portfolio has been going up"*

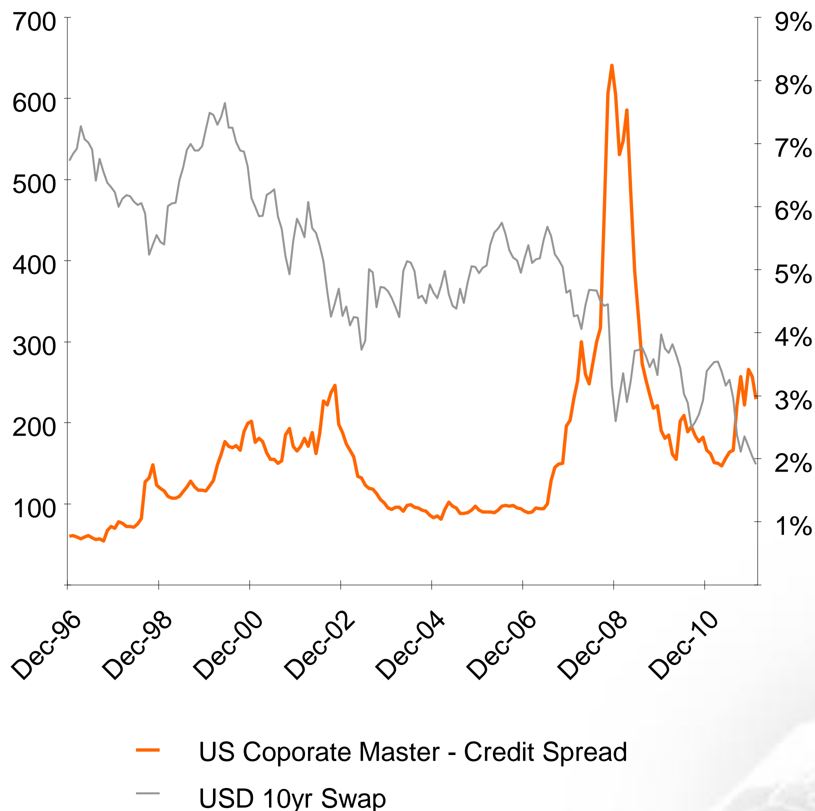
⇨ *"We would like to earn some credit spread. Here we would be buying 5 year CDS […]. The plan is to start with a CAD 500m programme"*

⇨ *"We think this is a less risky way of adding credit spread than to redeploy these Treasuries into long corporate bonds"*

Steve Hartz, EV General Account Investments, Manulife Financial Q3 2011 Earnings Call, Nov 2011

Key Takeaways

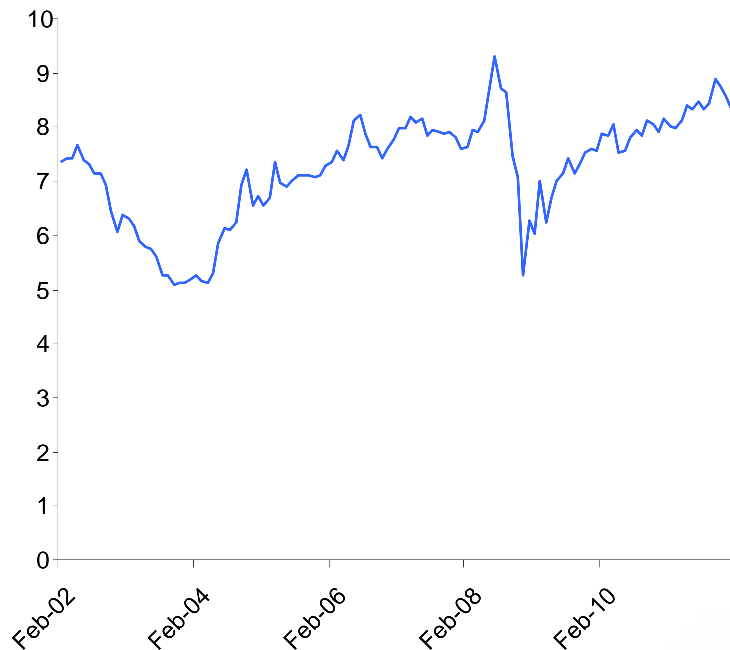
US Corporate Master Credit Spread



- At least in Europe, insurance accounting and regulation are moving towards a full MtM balance sheet
  - Adoption of IFRS accounting (IFRS 4 phase 2) along the way
- The MtM balance sheet will be harder to manage, earnings and capital will become more volatile
- Potential impact credit spread volatility may not been fully appreciated yet
  - Moving from default risk view to a spread volatility view
  - Question 1: How exceptional was the 2008 widening of credit spreads?
  - Question 2: What is the correlation of interest rates and credit spreads?

Implications for India?

INR 10yr Government Bond Yield



- Solvency 2 was written for a market close to run-off, which is a very different setting from the India market
  - Growth ‘
  - Can the market avoid ALM problems caused by purely designed products / guarantees?

- INR interest rates are high compared to the rest of the region and indeed the world
  - Historically interest rates have been quite volatile
  - Opportunity now to benefit from rising bond as rates do gob

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