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**Equity-Based Insurance Guarantees Conference
March 2-3, 2009**

Hong Kong

Overview of the North American Landscape

[James Creedon](#)



Overview of North American Market Landscape for Equity-Based Products

**2-3 March 2009
Hong Kong**

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(With thanks to Hubert Mueller)**

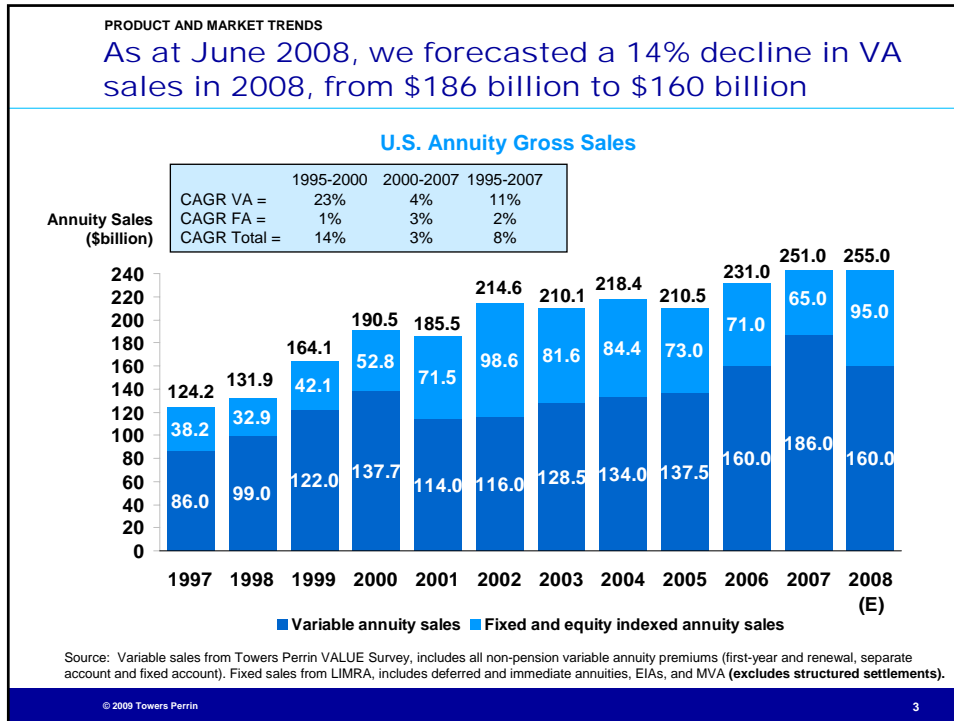
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Agenda

- **Product and Market Trends**
- Rating Agency/Regulatory Developments
- Recent Trends in Risk Management
- Impact of recent financial and economic conditions
- Outlook

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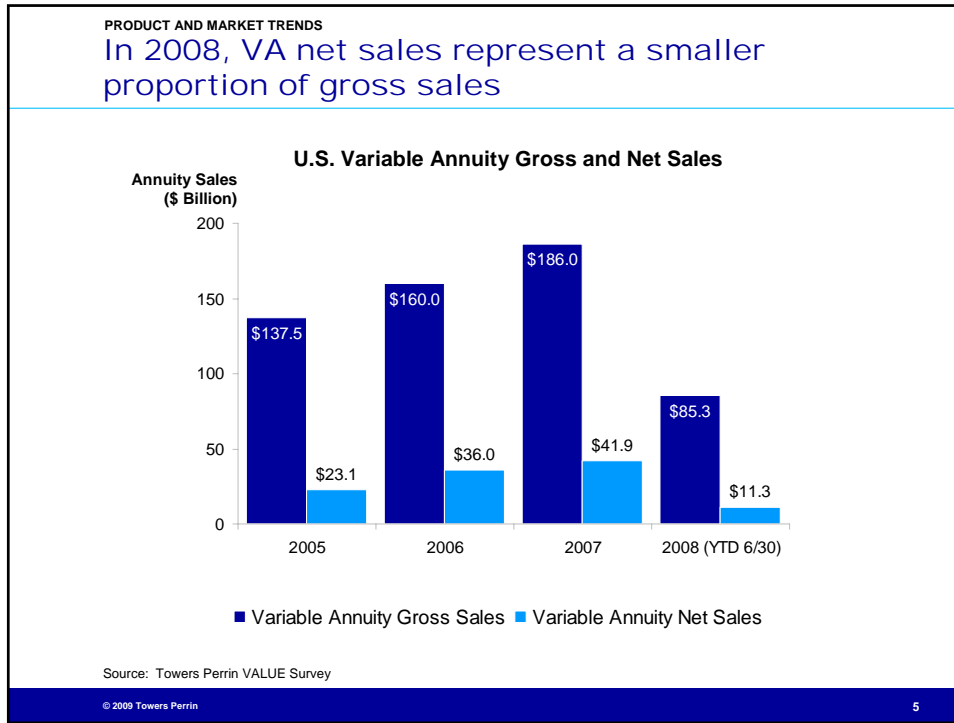


PRODUCT AND MARKET TRENDS
 The Top 15 companies still control 86% of the VA market, but some positions have shifted

YTD Ranking		Company Name	Sales Volume (\$ million)		Market Share %	
YTD 2008	2007		2007	YTD 2008	2007	YTD 2008
1	5	ING	13,095	7,780	7.0	9.1
2	1	AXA Financial/MONY	16,234	7,587	8.7	8.9
3	3	TIAA-CREF	14,116	7,161	7.6	8.4
4	2	MetLife	15,833	6,943	8.5	8.1
5	6	Lincoln National	12,826	6,119	6.9	7.2
6	7	Prudential Financial	11,678	5,563	6.3	6.5
7	8	John Hancock	10,805	4,974	5.8	5.8
8	4	Hartford Life	13,255	4,790	7.1	5.6
9	11	AIG/SunAmerica/American General	9,531	4,689	5.1	5.5
10	10	Pacific Life	10,675	4,280	5.7	5.0
11	9	RiverSource Life	10,762	4,219	5.8	4.9
12	12	Jackson National	9,114	3,549	4.9	4.2
13	13	Nationwide Life	6,051	2,553	3.3	3.0
14	15	AEGON Companies	3,166	1,831	1.7	2.1
15	14	Allianz	3,316	1,464	1.8	1.7
		Total Top 15	160,457	73,502	86.3	86.2
		Market Total	186,000	85,250		

* Source: Towers Perrin's VALUE Survey (YTD 2008 sales through June 30)

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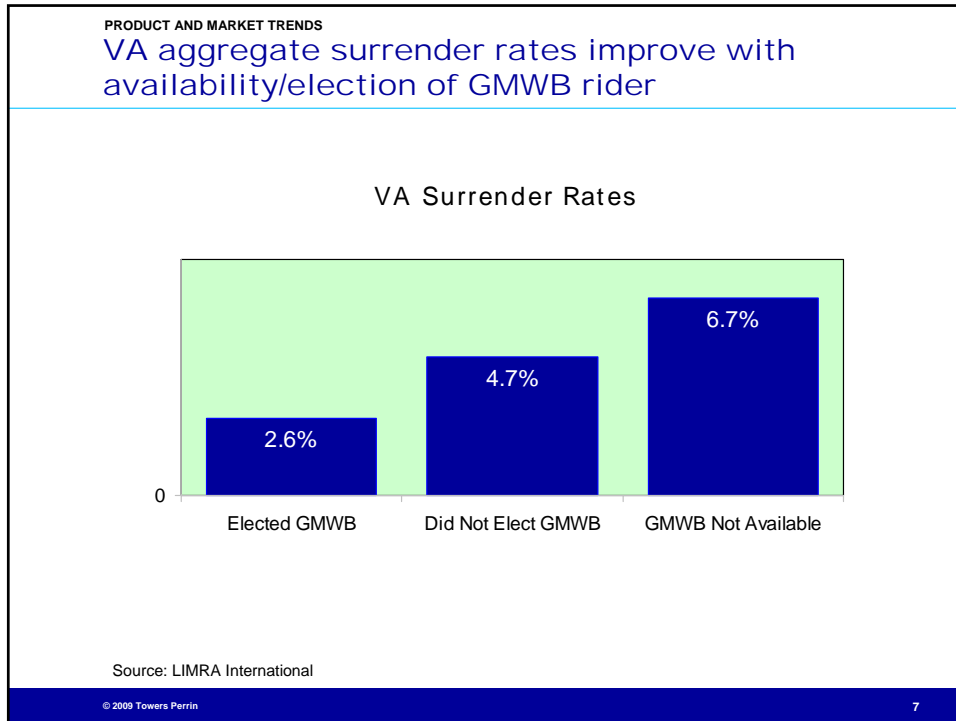


PRODUCT AND MARKET TRENDS
Typical current forms of VA death benefit and living benefit guarantees* (GLBs) sold in the US

Type	Nature of Guarantee	Typical Waiting Period	Typical Guarantee	Enhanced Feature	Typical Annual Charge
GMDB	Lump sum on death	None	Annual ratchet or 5% roll-up, to age 80	Combination, or 7% roll-up	15 – 35 bps
GMWB	Guaranteed amounts via partial withdrawals	None	Return of premium via 5% withdrawals for life	Bonus and resets until withdrawal; higher % for older ages	60 – 85 bps
GMIB	Guaranteed income at annuitization	10 years	5% roll-up	Greater of 5% roll-up and annual reset	50 – 75 bps
GMAB	Guaranteed lump sum	10 years	Return of premium at year 10	Resets/combo products	25 – 50 bps

*Many features require diversification of assets.

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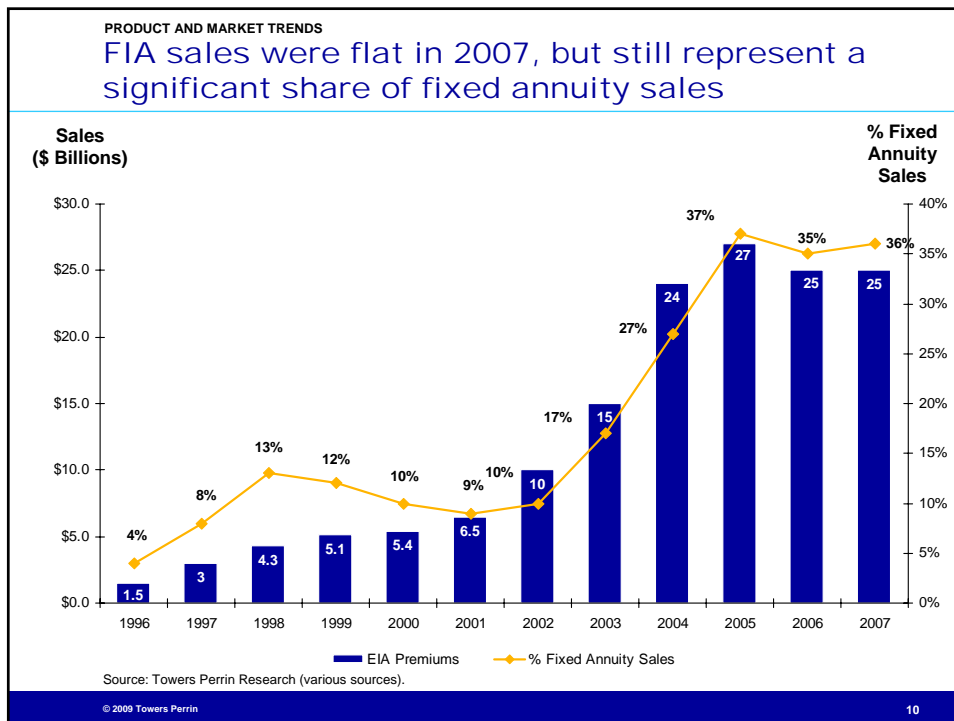


- PRODUCT AND MARKET TRENDS
- Recent GMWB innovations have intensified focus on this feature
- Lifetime GMWB withdrawals were introduced in 2003
 - Many products have asset allocation restrictions to keep charges down
 - Most carriers have introduced a version for married couples
 - Several carriers offering higher maximum withdrawals for older ages
 - Sun Life introduced "Income Storage Benefit" (March 2007)
 - Unused GMWBs are stored for later withdrawal
 - Prudential added lifetime GMWBs to its 401(k) product (July 2007)
 - Bonus features were added by most companies (since 2007)
 - Use of rollups and ratchets (or both) to increase guarantee base
 - Hybrid products were introduced in 2008
 - Only one product approved to date
 - We saw a flurry of re-pricing and enhancements this year
 - Higher charges/more restrictive features to make up higher option costs
 - Lately, companies have introduced new features and raised charges
 - Combinations GMWB with GMAB (85 to 170 bps)
 - Optional nursing home rider doubles annual income (20 bps)
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PRODUCT AND MARKET TRENDS
Fixed indexed annuities (FIAs) have been a growth engine within the fixed annuity segment

- FIAs provide participation in the equity market with a “safety net”
 - Single premium design
 - The policyholder participates in the stock market via an index (typically S&P 500), with a cap
 - Policyholder value increases on a monthly or annual basis
 - Guaranteed surrender value (e.g. 90% of initial premium accumulated at 3% p.a.)
- Recent developments in FIA product design include
 - International indices or multi-index strategies
 - Wider range of benefits
 - Withdrawal for life
 - Frequency of step ups
 - Bonuses

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PRODUCT AND MARKET TRENDS

The Top 5 players in the Fixed Indexed Annuity (FIA) market have a market share of 61%

Top 5 Players

Company	2007 Sales (\$ Billions)	Market Share (%)
Allianz Life	\$5.2	21%
AVIVA USA	\$4.3	17%
American Equity	\$2.1	8%
Old Mutual	\$2.0	8%
Midland National	\$1.7	7%
Top 5	\$15.3	61%
Market Total	\$25.2	100.0%

- In 1Q08, Aviva's FIA sales exceeded Allianz Life's sales for the first time

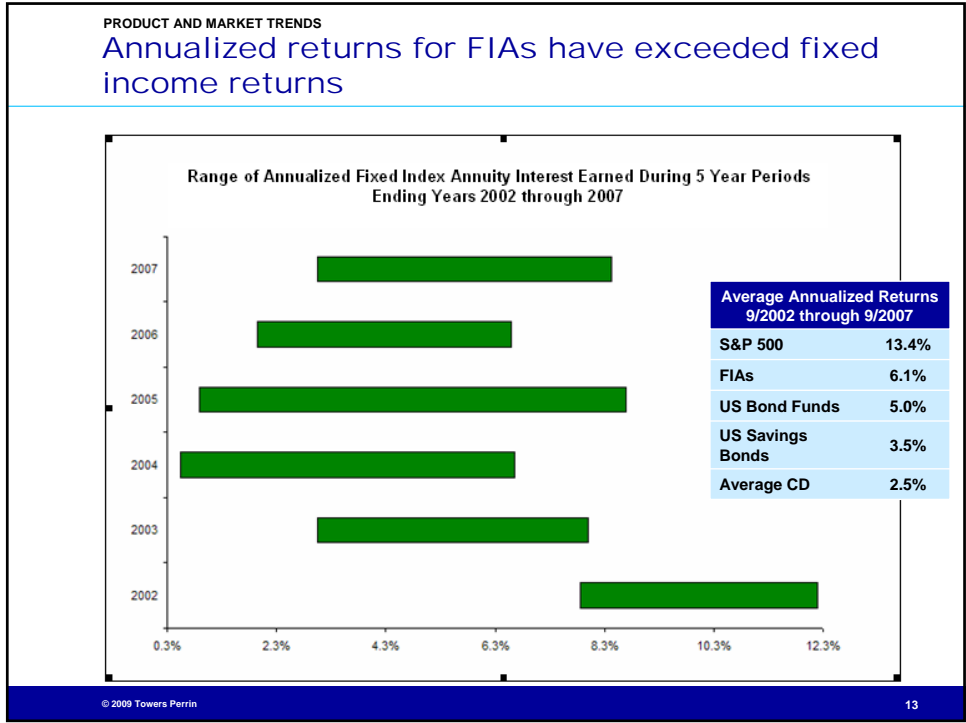
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PRODUCT AND MARKET TRENDS

FIA's were a key growth engine within fixed annuity segment, but last few years sales are flat

- Option budget determines the cap, which is reset each year
 - Newer designs use monthly accumulation of index performance, where each month is capped
 - Companies typically buy static put options on a weekly or monthly basis to match obligations
 - Hedging is still mainly static, not dynamic
- FIA's have received increased scrutiny lately
 - The SEC has proposed that certain FIA's be considered a security
 - Broker licensing issues
 - Increased market conduct risk
- Given equity market turbulence, YTD sales are up
 - 20% increase as of mid-year

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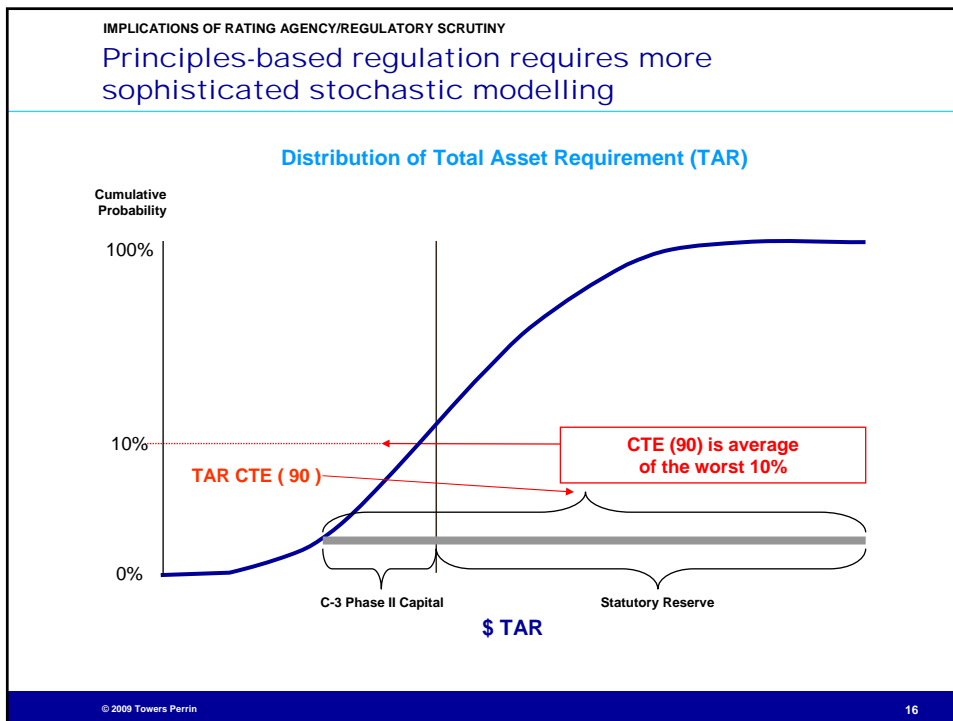
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RATING AGENCY/REGULATORY DEVELOPMENTS

Rating agencies' views of capital adequacy are increasingly based on Economic Capital (EC)

- Multinationals and large domestic companies have adopted EC in advance of European solvency regulations
 - Expected adoption of Solvency II in 2012 is having a global impact, particularly for the subsidiaries of multinationals in North America
 - A suggested approach for minimum regulatory capital in Solvency II model is to use the 99.5 percentile, with a one-year observation period
- EC has proven to be effective in quantifying risk in an ERM framework and measuring appropriate capital needs
 - S&P has focused on ERM/EC since 2005
- Because it has proven effective, more insurance companies globally are implementing and considering implementing EC:
 - Rating agencies agree and are starting to incorporate EC models into their view of insurance companies' capital adequacy
 - Regulatory developments in Europe (Solvency II) and North America (Principles-based Regulation) further encourage companies to develop EC
 - EC is the common approach for defining required capital in a market-consistent embedded value ("MCEV") framework
 - Peer pressure from competitors is prompting companies to act now

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RATING AGENCY/REGULATORY DEVELOPMENTS

Principles-based regulation (PBR) – recent trends

- Implementation effort is at full steam
 - No changes to VA RBC (C-3 Phase II) – expecting large increases in required capital for year-end 2008
 - VA CARVM will be adopted for year-end 2009
 - Life and Fixed Annuity Capital Model (C-3 Phase III) expected to be effective for year-end 2009
 - Life and Fixed Annuity Reserve Model and Valuation Manual expected to be adopted during 2009 or 2010, with full implementation expected to begin 2010 or 2011
- Current discussions continue between NAIC, ACLI, actuaries and tax authorities
 - More focus on Solvency II – NAIC is considering using a more streamlined approach to adoption
- Companies need to prepare for PBR now

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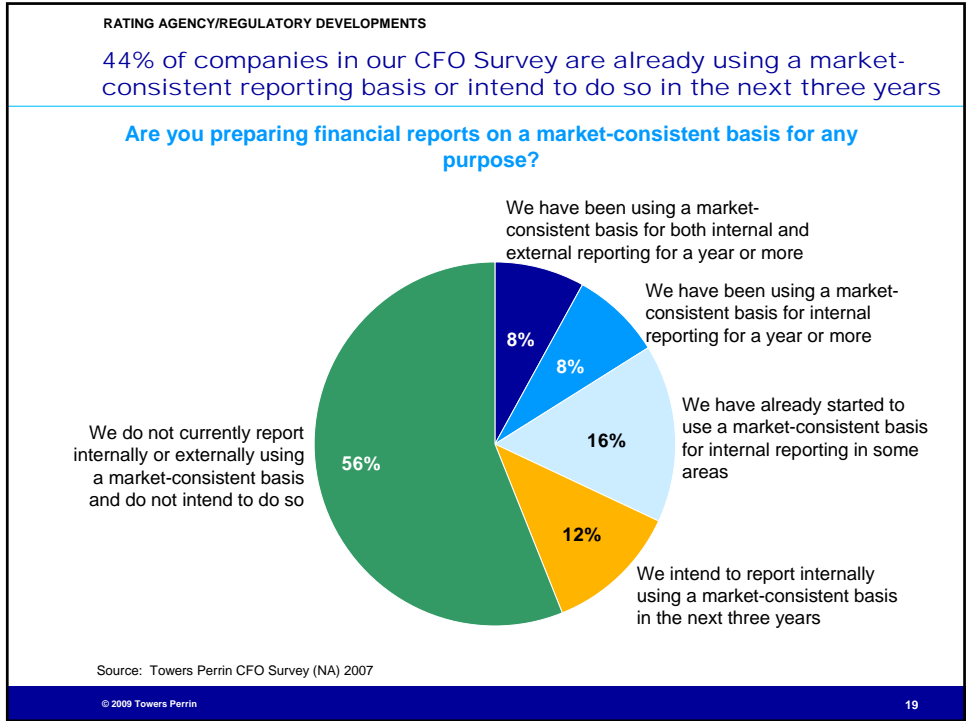
RATING AGENCY/REGULATORY DEVELOPMENTS

IFRS (Fair Value) is expected to replace US GAAP in the medium term but may be changes in valuation requirements

- The SEC has published a proposed roadmap that would lead to the mandatory use of IFRS reporting by US insurers beginning in 2014
 - A final decision would be made in 2011, based on some trial reporting by 100 large companies by 2011
- Some resistance to full mark-to-market reporting
- Implications of adopting IFRS
 - US GAAP, in its current form, will give way to IFRS
 - Market-consistent reporting will become the norm
 - Full alignment between hedging economic risk and the accounting treatment
 - Should lead to hedging of life-contingent GLBs over time (GMDB, GMIB)

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RECENT TRENDS IN RISK MANAGEMENT

GLB risk management strategies

- Product Design
 - Asset allocation restrictions
 - Can reduce tail risks significantly, leading to lower capital requirements and more competitive charges
 - Age restrictions
 - Higher withdrawals at older attained ages
 - Fee assessment
 - Based on guarantee base, account value or greater of the two
 - Limiting maximum annual growth on resets / bonus features
- Reinsurance
 - Quota-share alternatives available during 2007, but have dried up recently
 - General lack of re-pricing of guarantees despite higher market volatility has made reinsurance too expensive
- Hedging
 - Multi-Greek dynamic hedging becoming standard practice
 - Companies generally assume market volatility will return to historic levels over time (5 – 10 years)
 - Recent market volatility has led to some breakage in relationship between assets and liabilities

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RECENT TRENDS IN RISK MANAGEMENT

Among the 20 largest US VA players, all companies have some form of hedging program in place

Hedging Strategy	Number of Companies	Percentage
Dynamic hedging — beyond Delta	9	45%
Dynamic hedging — Delta only	10	50%
Static hedging only	1	5%

Source: Towers Perrin Research

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IMPACT OF RECENT FINANCIAL AND ECONOMIC CONDITIONS

Recent economic conditions are a perfect storm for VA writers

- Fall in equity markets
 - Reduced fund management fee income
- Increased market volatility
 - More regular hedging
 - Higher cost of hedging instruments
- Fall in interest rates
 - Testing hedging strategy on in-force business
 - Increased charges on new business
- Basis risk

IMPACT OF RECENT FINANCIAL AND ECONOMIC CONDITIONS

There has been a number of announced capital injections/losses on VA books

Old Mutual “Our pricing team had modelled the markets and the correlations relating to these products and believed we could institute hedge programmes to cover the guarantees.

...but following the global market turmoil it now transpires that these hedge programmes have only provided on average about 60% protection against market falls.”

Source: Old Mutual – Aug 2008 – Investor Q&A

“The company [Manulife] said it would have to increase reserves for its variable annuities by C\$2.7bn”

Source: SCMP, Dec 2008

“AXA Group announced a US\$3bn capital injection into its US subsidiary AXA Financial to bolster its solvency. One factor in this decision was variable annuity hedging losses projected at between EUR350 and EUR450 million for the fourth quarter of 2008,...”

“In its report for the quarter ending September 30 2008, Dutch insurer AEGON announced a EUR48 million loss on US VA earnings.”

Source: Life & Pensions

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IMPACT OF RECENT FINANCIAL AND ECONOMIC CONDITIONS

Possibly significant impact on USGAAP earnings and regulatory capital requirements

- Reduced future fee income stream, but fixed expenses
 - Testing DAC recoverability
 - Many have already written down DAC on VA business
- Increased C-3 Phase II capital requirements
 - Now a significant proportion of guarantees are in-the-money
 - Standard scenario floor on capital requirements reduces hedging credits
- American Council of Life Insurers proposed relief from capital requirements including removal of Standard Scenario Floor for 2008 and 2009
 - Rejected by National Association of Insurance Commissioners (NAIC)

Reduced profitability of existing and new VA products

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IMPACT OF RECENT FINANCIAL AND ECONOMIC CONDITIONS

Increased focus on hedge effectiveness

- Basis risk due to difference in performance of hedging instruments and underlying investment funds
 - Basis risk was relatively low in bull markets
 - Significant increase in tracking error of funds against benchmarks for some companies
- More active hedging
 - Intra-day trading
- Hedging of higher order greeks
 - Hedging of second order greeks (e.g. gamma) required to hedge to large market movements
 - Vega hedging to hedge equity volatility
- Testing assumptions around policyholder behaviour
 - Guarantees are in-the-money
 - Expectation of higher utilisation rates particularly on GMWB for life

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IMPACT OF RECENT FINANCIAL AND ECONOMIC CONDITIONS

Companies are re-visiting product designs, pricing and hedging programs

- Higher hedging costs on current products
 - Higher cost of guarantees and capital requirements
 - Pass on cost to existing customers?
 - Higher charges for new customers?
 - Simple guarantee riders on new products
- Increased focus on fund selection and mapping
 - Stricter fund selection and replace some existing funds
 - Lower volatility funds
 - Asset allocation restrictions
- Improved hedging programs
 - Increase number of greeks considered for hedging
 - Monitor closely basis risk and policyholder behaviour
 - More active hedging

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OUTLOOK

Lessons learned to date in the US

- Proliferation of GLBs should help the life insurance sector gain a larger share of global retirement assets
- Hedging of VA guarantees has only been in use for a few years, mainly in a bull market
 - Many companies still only hedge Delta risk
 - Basis risk has been larger than expected
 - Ability to assess/improve hedge effectiveness will become a key differentiator for success
- Recent conditions have highlighted need for robust risk management in product design, fund selection, hedging programs and experience monitoring
- Regulators and rating agencies are only allowing partial credit for hedging when defining capital requirements
 - Typically, only 50% credit is allowed initially
- Use of hedging may enable a reduction in risk-based capital (20%–30%), but may increase reserves
 - Need to take into account in pricing and valuation
 - Implementing “smart modeling” techniques will expedite processing of large stochastic models

OUTLOOK

The outlook for VA sales in the US is good in the long-term

- Growing number of individuals reaching retirement
- Growing pool of retirement assets and rollover assets in the US
 - Approximately \$15 trillion by end of 2007, plus \$300 billion in annual rollovers to individual retirement accounts
- Shift of retirement savings responsibility from employer to employees
- US life insurers can leverage their expertise internationally
 - Example: Hartford Life
- GLBs provide a huge growth opportunity for life insurers
 - Larger asset size could help improve economics with investment advisory fees and revenue sharing
- Forces companies to continue refining their pricing and risk management strategies
- Unique position of insurers to offer products protecting against longevity risk, vs. banks/mutual funds
- But, sales and profits are negatively affected by increased market volatility

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OUTLOOK

Where will the US annuity market go?



- VA product design will remain a key differentiator for sales success
 - GLBs a must for growth
- Annuity sales growth in 2009 and beyond will continue at a slower pace (2-3% overall)
- Proliferation of VAGLBs will continue, leading to further market segmentation, lower ROE and ongoing market consolidation
 - Improving hedge effectiveness will become a key market differentiator
- Payout annuities with longevity features will increase their market share
- We see a trend emerging towards simpler, low cost products and features
- Market downturn will lead to significantly increased capital and reserve requirements
 - Smaller companies are being hit harder
 - Need to offer living benefits to achieve scale
 - Expecting further market consolidation
- Introduction of VA CARVM in 2009 will increase reserves

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Questions and Comments



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