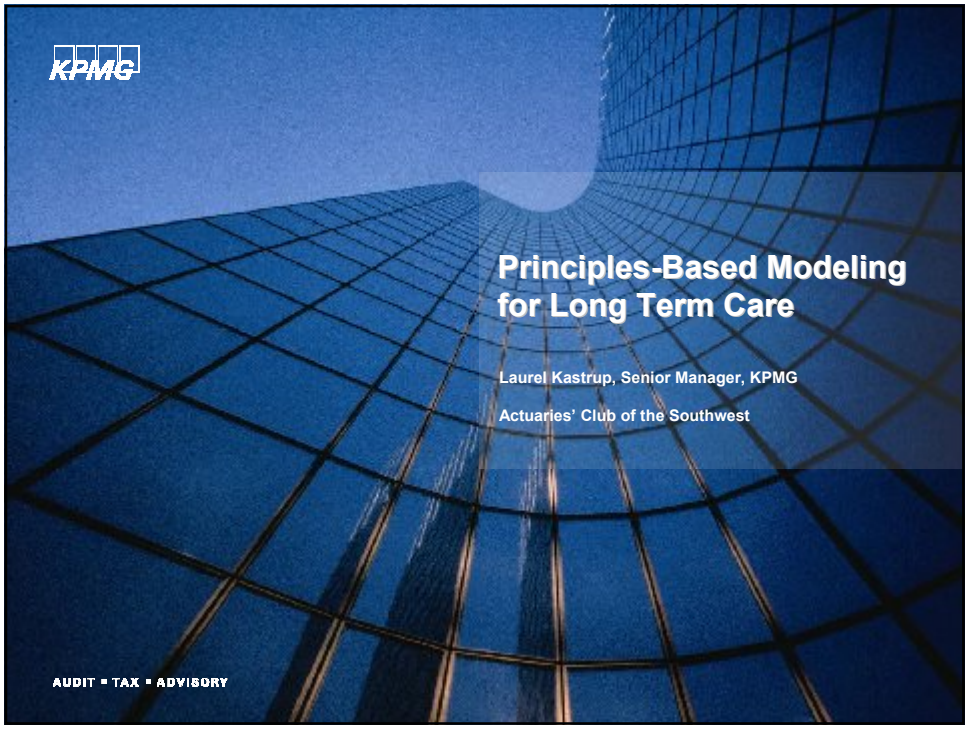

Agenda

- Dates of interest for Principles Based Approach (PBA)
- Why the move to PBA?
- Form and structure of the PBA requirements
- Comparison of Long Term Care (LTC) to Current Life proposals
- Current LTC Valuation
- Core Principles of PBA
- LTC Issues
- LTC Models
- Major Challenges and Implications of PBA
- Comparison to other principles-based approaches
  - Solvency II
  - IFRS

1

Dates of Interest for PBA

Possible Timeframe	PBA will apply to:
2005	Risk-based capital (RBC) for Variable Annuities with supplemental guarantees whenever issued (phased in)
2008-2009	Reserves for Variable Annuities with supplemental guarantees issued after 1980; Standard Valuation Law (SVL) for life and state adoption
2010-2012?	Reserves for life insurance (applies to business written on or after the effective date)
???	Reserves and RBC for long-term care insurance and all annuities not already covered
One More Date:	
2010	New provisions in NAIC Model Audit Regulation (MAR) requirements regarding internal controls over statutory financial reporting (SOX-like requirements take effect)

Note that the above dates are subject to change as the process continues.

2

Why the push to PBA?

- Information
  - More information and resources available to the industry today
    - Experience studies
    - Better models
- Globalization
  - US regulatory system need to allow companies to compete globally and with other financial institutions
- Evolution in Insurance Products
  - New products are being developed which don't fit into current reserving requirements
  - New products have lead to several somewhat uncoordinated laws and guidelines to address the gaps in current regulation
  - Current Statutory standards include "lock-in" which reduces the value of actuarial review

Everybody else is going to principles based.

3

Risks of Not Implementing PBA

- US Insurance industry regulation could be categorized as outdated and burdensome
  - EU has Solvency II which uses principles based approach
- Non-US insurers could gain a competitive advantage
  - More accurate risk reflection in the reserves and capital could allow more efficient pricing
  - US currently under-reserves some products and over-reserves others

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Form and Structure of the Requirements

- Capital PBA can be implemented by the adoption of revised Risk-Based Capital (RBC) instructions
- Reserves PBA adoption is more complex
  - Revised Standard Valuation Law (SVL) is currently being drafted
    - Outlines purposes and general requirements of PBA for life reserves
    - References a Valuation Manual which will specify the detailed PBA
- Valuation Manual
  - Includes requirements for non-PBA reserves (such as LTC)
    - Existing requirements will apply to business that is not currently subject to PBA, but may be in the future
  - Ability to update as PBA evolves without adoption of a revised law or regulation by all of the states

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RBC

- Goal is to have the same PBA model for both capital and reserves
  - For life, that is the case except that reserving approaches apply to new business and capital applies to all in force
- Use the same Prudent Estimate assumptions for capital and reserves
- Company will provide a certification of capital amount determined
  - Supported by a report
  - Unclear if RBC will be subject to the Model Audit Rule (MAR)

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Preliminary Life Reserves Framework

- Based on company-specific modeling
- Reported Reserve = Deterministic Reserve plus the excess, if any of the Stochastic Reserve over the Deterministic Reserve
  - Deterministic Reserve = seriatim calculation of present value of net cash flows with cash surrender value floor (Gross Premium Valuation)
  - Stochastic Reserve = aggregate calculation for each interest rate or equity scenario of the greatest present value of accumulated deficiencies at the end of any Projection Year
    - Special “Recalculated Deterministic Reserve” to provide for exempted policies
- Assumptions—Qualified Actuary must also select a set of Prudent Estimates
  - Prudent Estimates are Anticipated Experience Assumptions to which appropriate margins are applied
    - Updated whenever necessary to reflect changes in anticipated experience

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Life vs LTC Preliminary Model Differences

Life	LTC
Move away from a single prescribed mortality table	Move towards a more common valuation basis
Only investment earnings stochastic	Everything stochastic? (Morbidity, Lapse, Investment Earnings, Mortality, Expenses)
Changes come through non-guaranteed elements	Premium changes

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Current Status of LTC Under PBA

- Covered in Valuation Manual VM-25 (Reserve Requirements for Health Insurance)
  - Stays virtually the same as current Health Model Regulation
  - Would apply to all states
  - Valuation Manual triggered by passing of SVL by % of states

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Current Valuation of LTC

Active Life Reserves (Before Claim)	Claim Reserves (After Claim)
One-Year Preliminary Term Method (Generally)	Present Value of Future Payments
Defined Mortality Tables	Include Incurred But Not Reported Claims
Limitations on Lapses and Interest Rates	Interest Rates by Incurred Year
No Prescribed Morbidity Table	No Prescribed Claim Termination Table

- LTC Statutory Reserves Must Meet:
  - Minimum Statutory Reserve Standards
  - Gross Premium Valuation Testing
  - Asset Adequacy Test

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Six Core Principles of PBA

- Captures all of the benefits and guarantees associated with the contracts and their identifiable, quantifiable and material risks, including the 'tail risk' and the funding of those risks.
- Utilizes risk analysis and risk management techniques to quantify the risks and is guided by the evolving practice and expanding knowledge in the measurement and management of risk. This may include, to the extent required by an appropriate assessment of the underlying risks, stochastic models or other means of analysis that properly reflect the risks of the underlying contracts.
- Incorporates assumptions, risk analysis methods and models and management techniques that are consistent with those utilized within the company's overall risk assessment process. Risk and risk factors explicitly or implicitly included in the company's risk assessment and evaluation processes will be included in the risk analysis and cash flow models used in the PBA. Examples of company risk assessment processes may include economic valuations, internal capital allocation models, experience analysis, asset adequacy testing, GAAP valuation and pricing.

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Six Core Principles of PBA--continued

- Permits the use of company experience, based on the availability of relevant company data and its degree of credibility, to establish assumptions for risk over which the company has some degree of control or influence.
- Provides for the use of assumptions, set on a prudent estimate basis, that contain an appropriate level of conservatism when viewed in the aggregate and that, together with the methods utilized, recognize the solvency objective of statutory reporting.
- Reflects risks and risk factors in the calculation of the reserves and capital that may be different from one another and may change over time as products and risk measurement techniques evolve, both in a general sense and within the company's risk management process.

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How the Principles Impact LTC

- Reserves reflect all material risks—already the basis for the gross premium valuation test
- Coordinates the valuation model using prudent estimate approach with other management models
- Anticipates the use of company experience and recent industry experience for key assumptions
- Valuation manual has consistent basis for margins
- Hopefully will lead to coordinated reserve and capital calculations

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LTC Assumptions

Assumption	Traditional Model	Principles Based Approach
Morbidity Incidence/severity Claim variability	Own experience Outside sources	Industry data—NEED TABLE Adjusted to own experience Modeled stochastically
Lapse	Own experience with limits	Industry data Adjusted to own experience Modeled stochastically
Mortality	Published mortality table	Industry data Adjusted to own experience Modeled stochastically
Investment Income	Long term rate	Stochastic interest rate scenarios
Expenses	Own experience	Own experience
Rate Increases	Approved increases Future increases (depends	Future increases

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LTC and Experience

- PBA anticipates the use of company experience and industry experience for key assumptions
  - In LTC the top 10 companies have 62% market share; 88 of the top 100 companies have a market share of 2% or less
  - Not many LTC companies have credible company-specific data
- Currently there is not an industry valuation morbidity table
  - SOA committee working on creating a table
  - Goal is to create a baseline for morbidity (claim frequency & claim severity)
  - Companies could adopt the baseline or support adjustments
    - Claim frequency and length of claim
    - Differences in underwriting
    - Differences in claim adjudication
    - Difference in product structure—triggers and benefits
    - Differences in geographic mix of sales—significant utilization difference by benefit type
    - Differences in distribution
    - Adjustments by policy form within a Company?

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LTC Morbidity Valuation Table

- Data source for table is SOA's Intercompany Study
  - Covers 1984 through 2004
  - 6.5 million policies
  - 25 million years of exposure
  - Limitations in data:
    - Only 2 companies have contributed to all five reports
    - 63% of exposure is in policy durations one to five
    - Average attained age is 64; need credible data for over age 80
  - Compared to prior report:
    - Claim incidence decreased
    - Claim severity increased
    - Voluntary lapses fell

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Modeling Differences--Incurred Claims

- Traditional Model
  - Many variations
    - Incidence rates/ termination rates
    - Incurred claims/runoff factors
- Principles Based Reserves Projections Models
  - Incidence rates
  - Termination rates
  - Recovery rates
  - Death rates

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Modeling Differences—Lives/Exposures

- Traditional Model
  - Many variations
    - All lives with many adjustments
    - Active/disabled lives
    - Benefit exhaustion
- Principles Based Reserves Projections Models
  - Active lives
  - Disabled lives

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Other Modeling Issues for LTC –Rate Increases

- Reflection of rate increases in future cash flows under stochastic scenarios
  - Focus on unscheduled premium rate changes
  - Policyholder behavior at time of rate increase notification
    - Anti-selective lapses
    - Policyholder optional benefit reduction offers
    - Non-forfeiture offers at time of premium rate increase
  - Timing of changes at discretion of writing company
    - Trigger point for premium rate action defined in model
    - Reaction time
    - Effectiveness of filed premium rate increases
    - Premium rate actions may vary depending on management oversight and amount of reinsurance
    - May depend on whether or not company is writing new business

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Other Modeling Issues for LTC –Interest Rates

- Allow for Interest Rate Scenarios
  - Include traditional impacts on asset earned rates and insurance liabilities
  - May include impact on policyholder behavior
    - New market entrants and competition re-prices to lower premium rates
    - Anti-selective shock lapses for existing business
    - Reduced need for premium rate increases on existing business
    - Mandatory decrease in premium rates for existing policyholders
    - Over-insurance and induced utilization of covered benefits
    - Impact of interest rate variability on existing business limited by financial hedging strategies

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Other Modeling Issues for LTC –Morbidity Changes

- Allow for scenarios that include unanticipated changes in morbidity or benefit utilization patterns
  - Account for possibility of shift in claim cost curve
  - Examples of factors that could result in changes in morbidity
    - Greater utilization of lower intensity services
    - Services become more attractive to compete for business of seniors in need of assistance
    - State or federal action resulting in increased availability of long-term care facilities or services

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Other Modeling Issues for LTC –Regulatory Changes

- May consider regulatory intervention
  - Upon reasonable expectation of new regulation, impact of regulation could be modeled in future results
  - Examples:
    - Mandated coverage for new services
    - Changing interpretation of law or regulations
    - Federal or state action to increase/decrease government's share of LTC coverage
  - Consider precedent of retroactive application of new regulations
    - Rate stability requires disclosure of past increases
    - Florida HB 947

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Other Modeling Issues for LTC –Improvements

- May consider morbidity and/or mortality improvements
  - Measurable "population" impact not directly applicable to insured data
    - Varies by underwriting style
    - Socioeconomic selection
  - Impact of treatment "breakthroughs" or cures for important senior health conditions
  - Is it possible that morbidity or mortality improvement can exist in isolation?
  - Lower level of claim incidence may be accompanied by longer length of claim

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Challenges for LTC Model

- Build a stochastic model incorporating the significant risks of a complex product
- Life/annuity CTE work limited to investment issues
- Lack of historical standard morbidity table

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LTC Technical Work Group

- Design, Develop and Test Model
  - Analyze results
- Considerations
  - Consider potential management action
  - Ease of ability to program the multi-stochastic-variable LTC product lines
  - How much variance is acceptable?
  - Number of trials to run to establish the proper reserve and capital levels
- Current Stage
  - Non-Excel models not viable
    - Confidentiality issues
    - Portability
  - Starting point: Excel-based Cash Flow projection model developed by Jim Robinson
  - Must consider business segmentation

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LTC Technical Work Group—Modeling Method 1

- Random Walk by Policy
  - Process a single policy through every time interval
  - A random number at the beginning of each time interval tests the policy's probability of a change in status within the time interval
  - Move to the next policy
- Pros
  - Easy to understand
  - Easy to program
- Cons
  - Difficult to implement management action
  - Potentially long execution time

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LTC Technical Work Group—Modeling Method 2

- Random Walk by Duration
  - Process a single time interval through every policy
  - A random number at the beginning of each time interval tests the policy's probability of a change in status within the time interval
  - Move to the beginning of the next time interval
- Pros
  - Similar to Method 1
  - Easy to understand
  - Easy to program
  - Easier to implement management action
- Cons
  - Still has long execution time

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LTC Technical Work Group—Modeling Method 3

- Stochastic Simulation Using Database Lookup
  - Pre-process all possible result paths and store in a database
  - Generate one random number for each policy and use it to select the result path from the database
- Pros
  - Similar to Method 1
  - Reduces run time for the simulation
- Cons
  - Pre-processing will likely increase overall run time, but it is only done once
  - Database will be quite large
  - Management action would be difficult to implement
  - Paths do not have equal probability

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LTC Technical Work Group—Modeling Method 4

- Waiting Time Model
  - Suggested by Eric Stallard, Research Professor, Duke University
  - Generate two random number for each policy
    - The first determines the time of the next change in status
    - The second determines what the status change is
  - Relies on the hazard rate function:
    - ${}_kHx + t = -\log_k p^r_{x+t}$
    - Assuming independent probabilities:
      - » Total Hazard Rate = Σ Individual Hazard Rates
- Pros
  - Similar to Method 1
  - Reduces the number of trials for every policy
  - Reduces run time for the simulation
  - Allows for management actions
- Cons
  - Less intuitive
  - May require software other than Excel

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LTC Technical Work Group—All Methods

- Most assumptions are based on the policy year while some are based on calendar year
- The policy year survival function is normalized to a calendar year valuation date
- Interpolation methods used for normalization can also be used to choose the exact event timing within the calendar year interval
- Secondary and tertiary events
- Should assumptions change for policies that have been on claim?
- The stochastic liability cash flow is not the end product

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Next Steps for LTC Technical Work Group

- Closely monitoring life insurance PBA recommendations as they will influence LTC
  - CTE variation by product line
  - Margins around valuation assumptions
  - Aggregating liabilities and offsetting risks
  - Federal income tax treatment and circular calculations
  - Minimum number of scenarios
  - Discount rate and security risk profiles
- Adding variables to projection model
  - Morbidity has been focus to date
  - Need to begin evaluating potential changes to reserve levels

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Major Challenges of PBA

- Availability of resources—staff and tools
- Striking a balance between the desire for simplicity with the need to properly address the underlying risks
- Auditability of reserve—including regulator review
- Determining appropriate margins
- Impact on taxes still to be determined

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Expected and Unexpected Implications of PBA

While the PBA approach continues to evolve, some effects can be anticipated and should be under consideration now:

- Financial Results
- Financial Volatility
- Financial Operations
- Capital Implications
- Tax
- Pricing
- Product Development
- Model Risk and Controls
- Rating Agency Reaction
- Reinsurance

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Financial Results

- Ultimate effect cannot be fully anticipated until reserve model is determined; however, it should be given careful thought.
  - For example, initial modeling on the life product (performed by the Life Reserves Working Group) indicated a decline in reserves, especially for term products where the reserve "hump" could be cut significantly under the principles–based approach. However, proposed changes to the deterministic requirements could result in a higher reserve than PBA stochastically produced reserves.
- Primary determinant of company solvency is statutory capital and the statutory RBC ratio

Availability of capital for strategic purposes will be effected by statutory financial results.

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Financial Volatility

- All assumptions (including discount rates) are reviewed at least annually and revised as needed to reflect experience, with the resulting change expected to flow through the income statement.
- Since reserves are not "locked-in", this may lead to volatile results and statutory financial surprises

This will necessitate greater involvement of management in the assumption-setting process than is currently the case.

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Financial Operations

- Calculating statutory reserves and capital with stochastic scenarios and multiple runs will most likely require significantly increased work and time.
  - When the PBA was applied to capital requirements for variable annuities, computer time was extensive (e.g., as high as 240 hours).
  - Could affect the ability of the company to meet deadlines for financial close
  - Significant effort not only to run models, but also to perform necessary controls
- Current proposals no longer require an independent PBA reviewer
  - Management will need to consider the appropriate level of review (internal or external) to confirm accuracy and reliability
  - Does not alleviate the need for proper controls

Financial reporting processes will change dramatically, with added pressure to produce quality estimates on a timely basis.

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Capital and Strategic Implications

- The PBA proposal to use modeling (versus the current factor-based RBC approach) would likely result in a capital requirement that is more reflective of the actual company.
- PBA tools may improve the ability of the company to strategically manage its risk profile.
- PBA should facilitate the calculation of economic capital
  - Includes the analysis of the benefits of risk diversification if model uses stochastic modeling for many risk factors
- If PBA is a uniform system based on realistic assumptions, it may provide a better yardstick than either current statutory or GAAP financials

Will new key metrics emerge? Will planning and budgeting be affected?

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Tax

- Desirable for PBA to fit within the current tax structure so that new tax legislation is not required
- In January of 2008, the IRS issued Notice 2008-18, which identified several potential issues and possible solutions with the current PBA proposals.
- Continued dialogue and consultation amongst interested industry parties and Treasury and the IRS has resulted in some degree of optimism that workable solutions can be found for the issues discussed in the Notice.

Management may need a greater understanding of the choice of Prudent Estimates—especially the initial estimates used in pricing—and the level and trend of experience on which they are based.

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Pricing

- Decisions made in the pricing process can impact reserves and financial reporting, not only at issue, but also in later years
- Pricing assumptions are based on the same experience studies as valuation assumptions and any differences must be understood
- The pricing actuary and Qualified Actuary must work closely to confirm the smooth functioning of the PBA.
  - For example, a decision to decrease gross premiums for competitive reasons will result in higher reserves throughout the lifetime of the product.
- For products with tail risk, may need to use “stochastic on stochastic “ projections in pricing

Management may find it useful to participate in the pricing process in order to understand the choices and potential implications for financial reporting.

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Product Development

- The final model for PBA could lead to development of products to take advantage of the model
- Certain existing products may be less attractive under PBA
- If PBA leads to lower reserves and potentially lower premiums, this could in turn lead to a wave of replacement activity, with GAAP as well as statutory implications.
- New product designs may emerge.

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Model Risk and Controls

- A large set of sophisticated models, some untested or used in a new way, will produce key statutory numbers.
- The company will need to confirm that controls over the processes meet the requirements of the Model Audit Rule effective 2010.
- Additionally, current PBA proposals require the company's chief financial officer to "participate" in an evaluation of internal controls over the PBA process carried out by the Qualified Actuary.

The lack of bright-line rules and mandated factors for PBA makes effective controls essential.

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Rating Agency Reaction

- Statutory reserves directly impact a company's available capital, an effect the rating agencies will certainly react to.
- However, it is not yet clear what impact these changes will have on the rating agencies' conclusions.

How will consistency of approach among insurers be gauged?

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Other Uses of Principles-Based

- Basel II
  - Change to solvency supervision for banks; especially in Europe
  - Emphasizes internal risk management processes of banks
  - Depends on company-specific modeling rather than formulas
  - International
- Solvency II
  - New solvency system for insurance undertakings in the Economic Union
  - Currently under development
- International Financial Reporting Standards (IFRS)
  - Already in use in the EU
  - Coming to the rest of the world
  - Still working on insurance standard (Phase II)

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Similarities between Solvency II and US PBA

- Capture and report true risk
- Uses a blend of company and market experience
- Auditable and verifiable
- Uniformity
- Establishes control levels
- Objective to disclose margins in assumptions
- Reserves are the sum of a central estimate and a margin
- Capital is for extreme events
- Capital is meant to reflect actual risk position and management of a company

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Differences between Solvency II and US PBA

- Scope
  - US framework is more product and risk specific
  - US Life will only cover new business for reserves
  - US framework does not currently cover all products
- Measurement
  - Solvency II uses a one-year horizon and a market-consistent approach
  - US PBA uses conditional tail expectation (CTE) and Greatest Present Value of Accumulated Deficiency over the life of the business

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International Financial Reporting Standards (IFRS)

- International Accounting Standards Board (IASB) still working on Phase II Insurance project
- Timetable
  - Discussion Paper – May 3, 2007
  - Closing date for comments – November 16, 2007
  - Exposure Draft – Not before 2009
  - Final Standard – Not before 2011
  - Implementation – Not before 2012

IASB has not committed itself to a timetable, so dates for Exposure Draft, Final Standard and Implementation are tentative.

There may be further delays if Phase II becomes a joint project with the FASB.

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IASB Interaction with FASB

- The FASB and the IASB agreed to approach the IASB's insurance contracts project using a modified joint approach
- FASB will consider the IASB's Discussion Paper
- FASB has obtained input on the IASB's preliminary views by issuing an Invitation to Comment
- Feedback on the Invitation to Comment will be used by the Board in deciding whether to add to its agenda a joint project with the IASB to develop a comprehensive Standard
- FASB Decision expected Q4 2008

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IFRS Interaction with SEC

- SEC eliminated US GAAP reconciliation for foreign private issuers using IFRS for years ending after November 15, 2007
- August 27, 2008: SEC announces proposed roadmap for potential adoption of IFRS by all U.S. public companies
  - Milestones identified that will be monitored by SEC before it requires mandatory adoption of IFRS
  - Phased-in schedule for mandatory IFRS adoptions, beginning in 2014 with large accelerated filers
  - Optional adoption of IFRS by a limited number of companies as early as 2009

IFRS will eventually replace the current US GAAP.

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Proposed IFRS Phase II

- Uses current exit value
  - The amount the insurer would expect to pay another entity if it transferred all its remaining contractual rights and obligations immediately
- In practice current exit value is not typically observable so it must be estimated using the three building blocks:
  - Explicit, unbiased market-consistent, probability weighted current contractual estimates of future cash flows (i.e.. a current expected value approach)
  - Current market discount rates that adjust the future cash flows for the time value of money
  - An explicit unbiased estimate of the margin that market participants require for:
    - Bearing risk (a risk margin); and
    - Providing other services (a service margin)

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IASB Interaction with Solvency II

- Solvency II rules for the valuation of assets and liabilities should be compatible with Phase II
- The Solvency II rules may have to be developed without there being an adopted Phase II Standard in place. The likely outcome of the IASB work is, however, being taken into account
- Solvency II may propose additions and adjustments to the Phase II requirements provided specific reasons are given
- The Solvency II rules may need to be adjusted once the IASB has finalized Phase II of its Insurance Contracts standard

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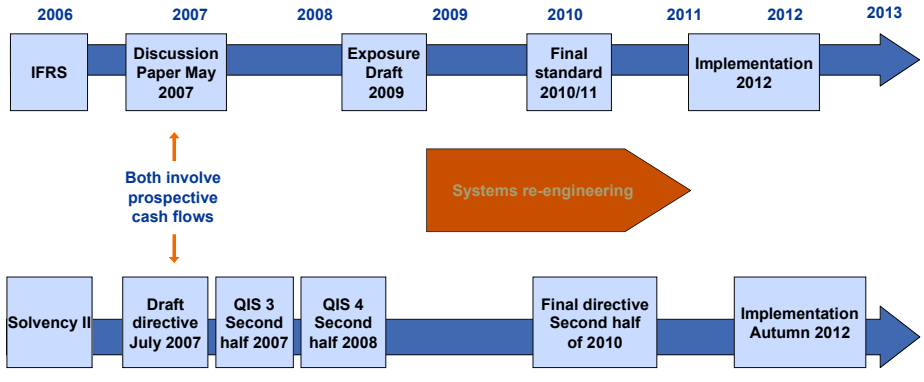
Timetable and interaction between IFRS and Solvency II



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IFRS vs Solvency II

- European insurers would like the IASB to adopt an approach that is consistent with Solvency II
  - Don't want to deal with two very different complicated models
- Insurers based outside Europe are concerned that the Phase II measurement model might be unduly influenced by Solvency II

Since IFRS may eventually replace US GAAP, should the US be concerned about two very different complicated models with IFRS and PBA?

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Role of the actuary with the changes to GAAP & Stat

- Explicit recognition margins likely expands the role of the actuary
- Use of risk analysis techniques such as modeling and simulation would lead to more complex actuarial models
- Actuarial processes would need to be more transparent, incorporating differing views within the Company
- Documentation of process and a need to be transparent
- Use of credible company experience would likely lead to more time spent on experience analysis

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