Joint Region Seminar 2010

Insurance company investment risk management
- updates on development of practices in Asia

August 2010

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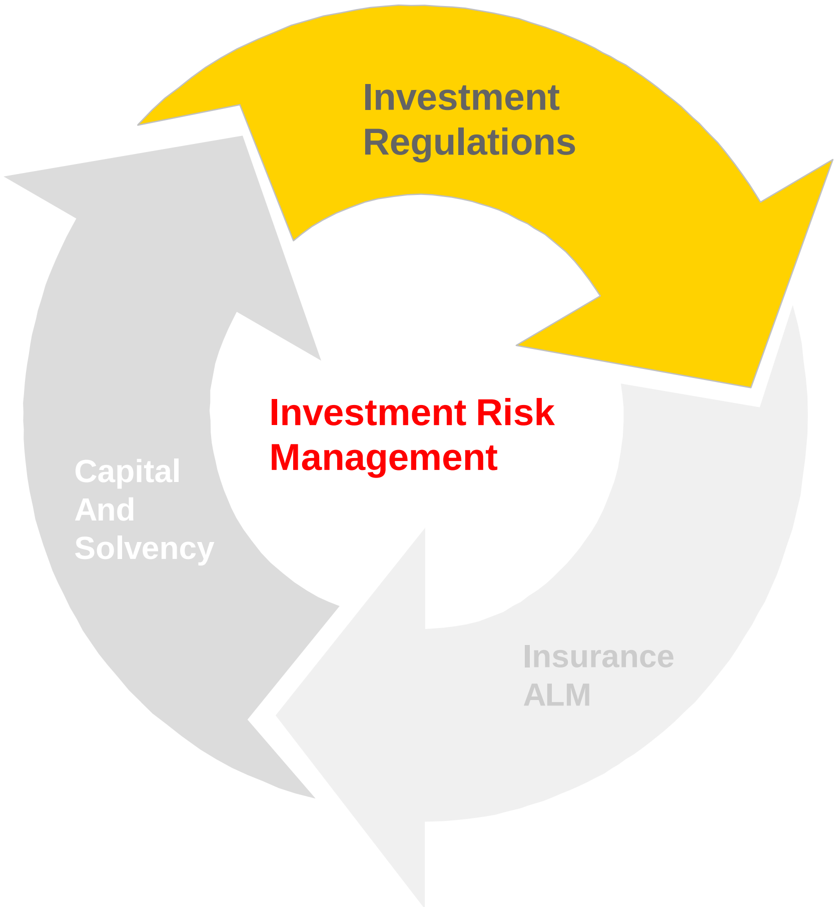
Agenda

- Overview of investment regulations for insurance companies in major locations in Asia
- Recent development and challenges insurers are facing in their asset and liability management and investment risk management
- Recent development on the Solvency II and QIS 5

Overview of Investment Regulatory Landscape



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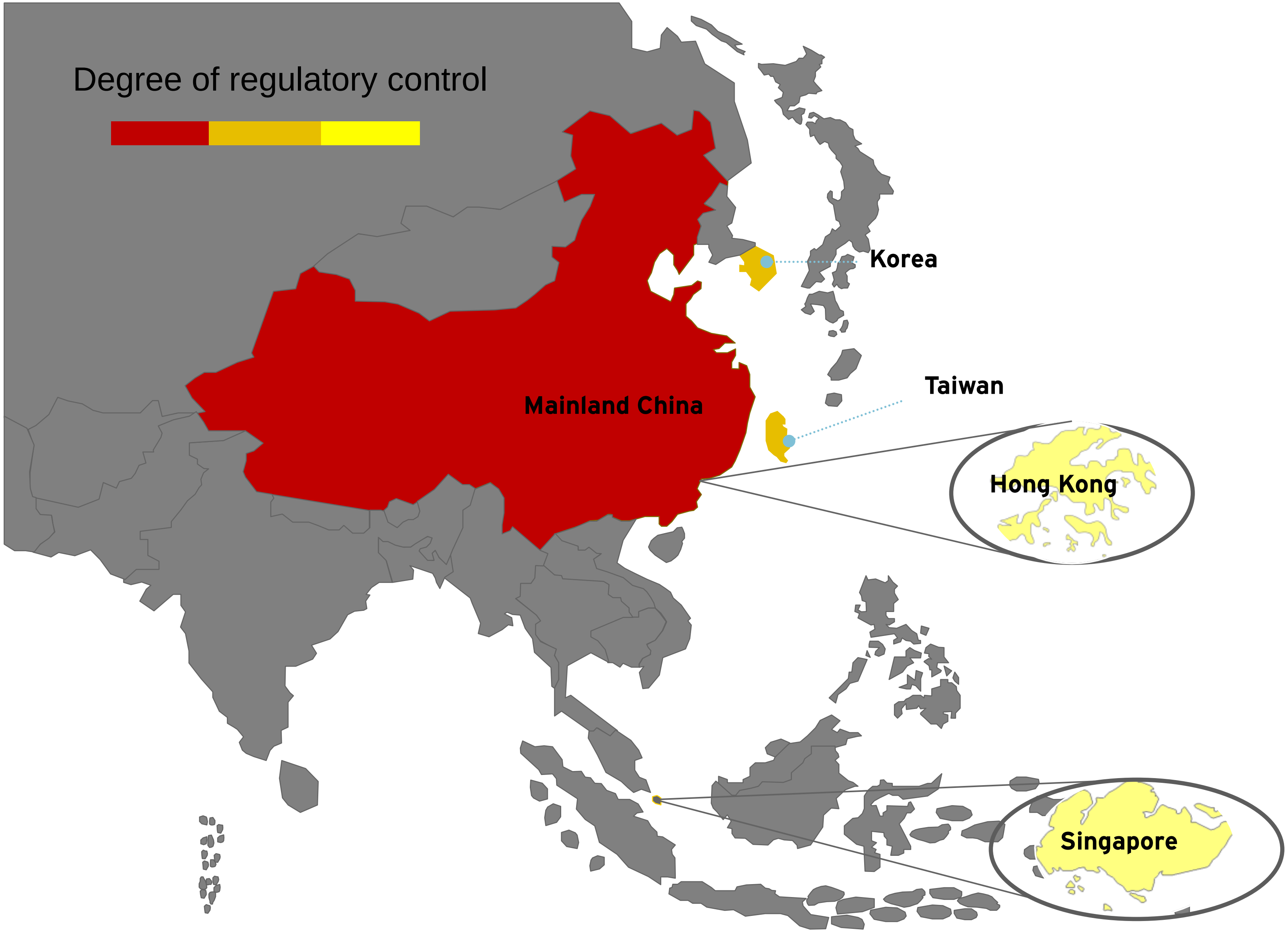
Degree Of Regulatory Control



Investment Regulation In Major Locations

	Hong Kong	Singapore
Insurance Regulator	▪ Office of the Commissioner of Insurance (“OCI”), and Security and Futures Commission (“SFC”)	▪ Monetary Authority of Singapore (“MAS”)
Solvency and Capital Requirements	▪ Solvency I for local statutory basis but European insurers are preparing for Solvency II	▪ Risk Based Capital (“RBC”) for local statutory basis but European insurers are preparing for Solvency II
Investment Regulations and Requirements	▪ No explicit restriction	▪ No restrictions on investment concentration or investment types as long as RBC requirements are met ▪ Prudent management oversight required for derivatives transactions; ▪ Complex derivatives like swaption, options on options are not allowed

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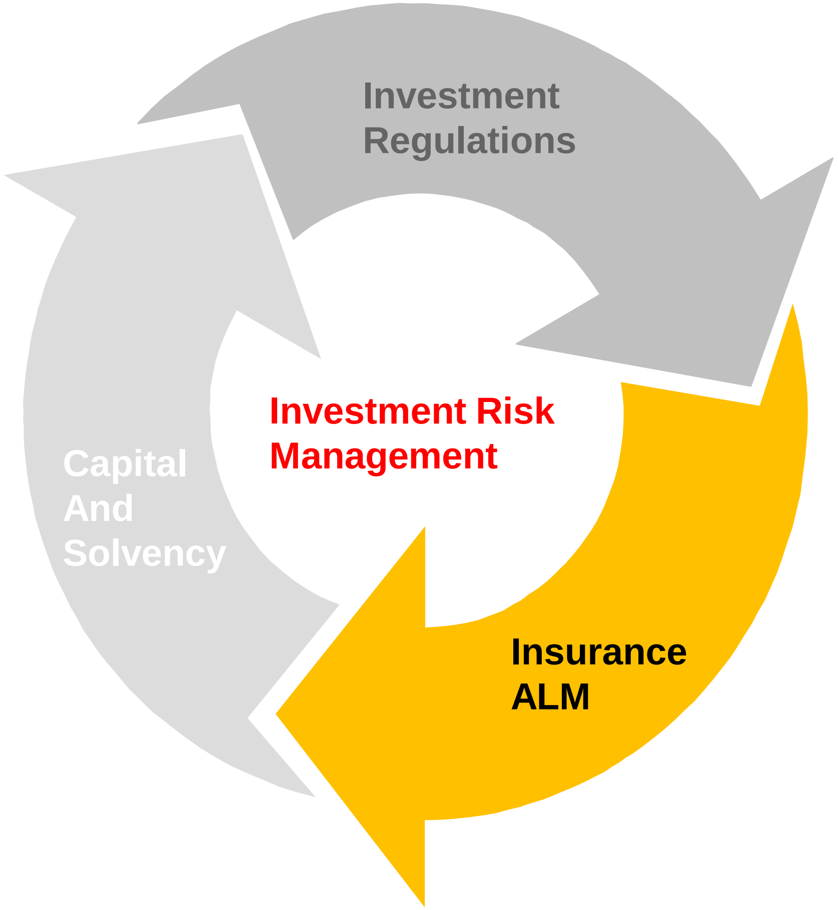
Investment Regulation In Major Locations

	Taiwan	Korea
Insurance Regulator	▪ Financial Supervisory Commission (“FSC”) and Insurance Bureau (“IB”)	▪ Financial Supervisory Service (“FSS”)
Solvency and Capital Requirements	▪ RBC with minimum 200% RBC ratio requirements for all insurers	▪ Solvency I type of capital requirements and now moving to RBC
Investment Regulations and Requirements	▪ Investment limits by asset classes ▪ Maximum 45% foreign investment subject to approval and minimum 250% RBC	▪ Investment limits by asset classes ▪ Maximum 10% on foreign investment

Investment Regulation In Major Locations

	Mainland China
Insurance Regulator	▪ Chinese Insurance Regulatory Commission ("CIRC")
Solvency and Capital Requirements	▪ Solvency I type of capital requirements and Dynamic Solvency Test ▪ Type 1 solvency level (between 100% to 150%) vs. Type 2 solvency level (greater than 150%) ▪ Explore RBC and Solvency II
Investment Regulations and Requirements	▪ Investment limits by asset classes ▪ Investment option was limited, CIRC is now allow insurers to invest in infrastructure and real estate (e.g., new insurance law effective on Oct. 1st, 2009) ▪ Foreign investment through Qualified Domestic Intuitional Investor (QDII), restricted by QDII quotas and regulatory approval process

Recent development and challenges in investment risk management

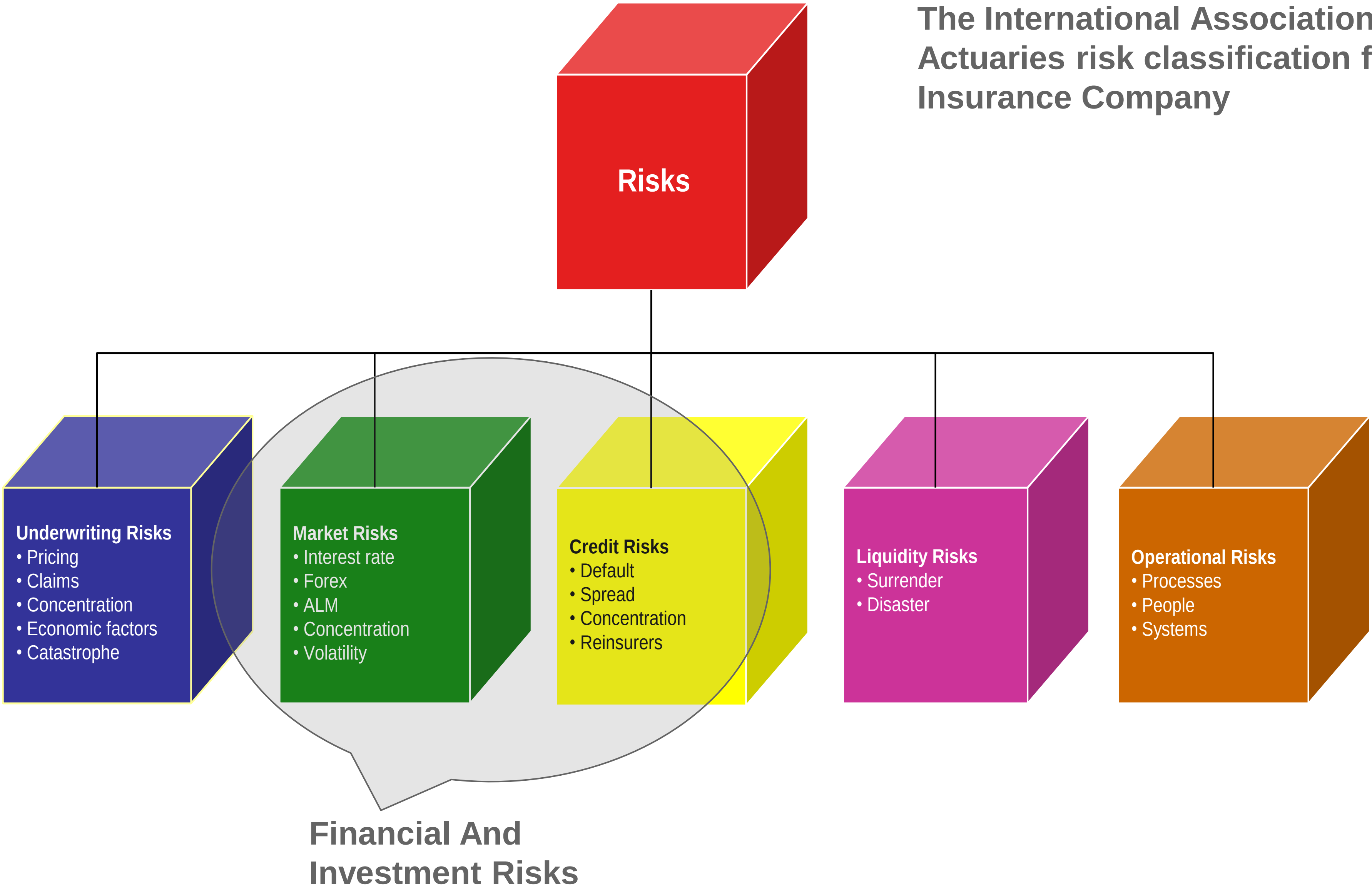


ALM and Investment Challenges Facing by Insurers

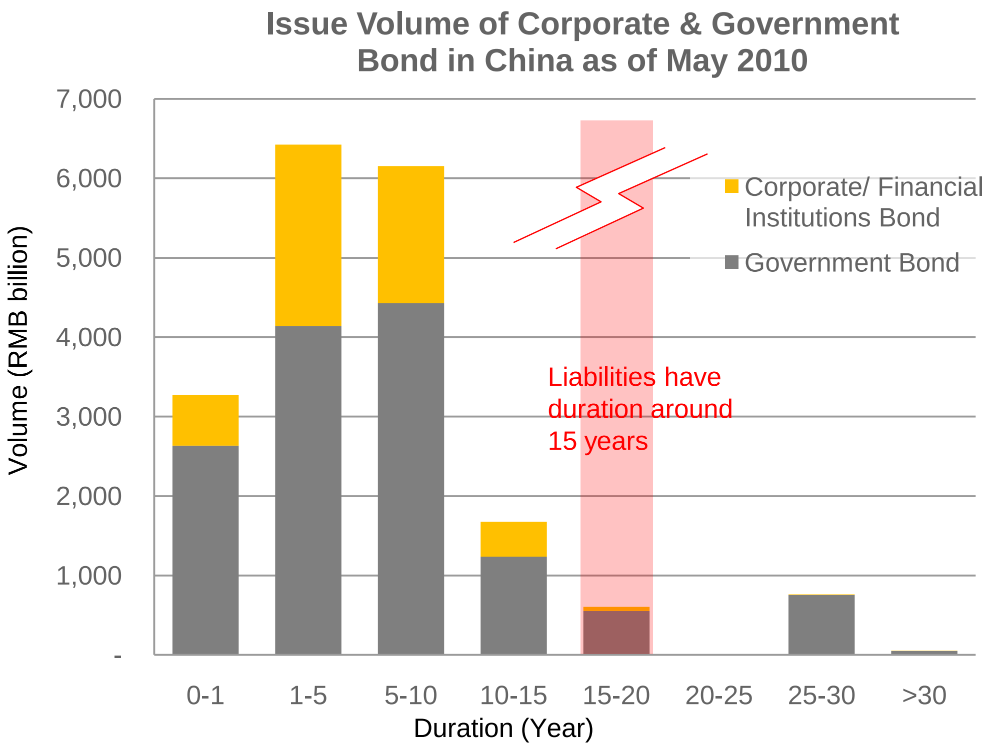
- Duration mismatch between asset and liability and need for a robust ALM solution
- Low government bond yields and overall investment return results in the continuation of the “negative spread” issue
- New accounting standards impact on asset and liability valuation
- Increasing solvency and capital pressure impact on product pricing, design, and investment allocation
- Lack of available instruments to allow proper hedging of guarantee risks

The Need for Managing Insurance Risks

The International Association of Actuaries risk classification for Insurance Company



China: Where to source longer duration?



Insurer	Infrastructural Project	Rate of Return	Investment Size (RMB)
CPIC Group & 5 other insurers	Expo 2010 Shanghai China (Phase 2)	5.4%~ 5.8%	4 billion
PICC Group	Tianjin Binhai New Area Transportation	4.75% for 5-year bond; 5.25% for 10-year bond	6 billion
Various insurers	Beijing-Shanghai high-speed railway	around 4%	10billion
Various insurers	PICC & Huaneng Group Energy Project	5.02% for 2-year bond; 5.93% for 10-year bond	2 billion

- Interest rate (duration) risk is a key risk for insurers. Typical liability duration for life insurance products is around 15 -20 years or even longer. However, typical bond duration in most countries in Asia s far less than 15 years
- In China, the recent CIRC regulation which allows insurers to invest in Infrastructure and real estate, created some opportunities for insurers. Insurers started to invest in Infrastructural projects, with relatively longer durations, which offer better ALM alternatives
- Comparing with the 10 year China government bond yield of 3%, infrastructure projects provide more attractive return
- Infrastructural projects also have relatively lower correlations with other investments
- Announced in July, 2010, CIRC allows insurer to get into interest rate swap

Korea: ALM of Variable products

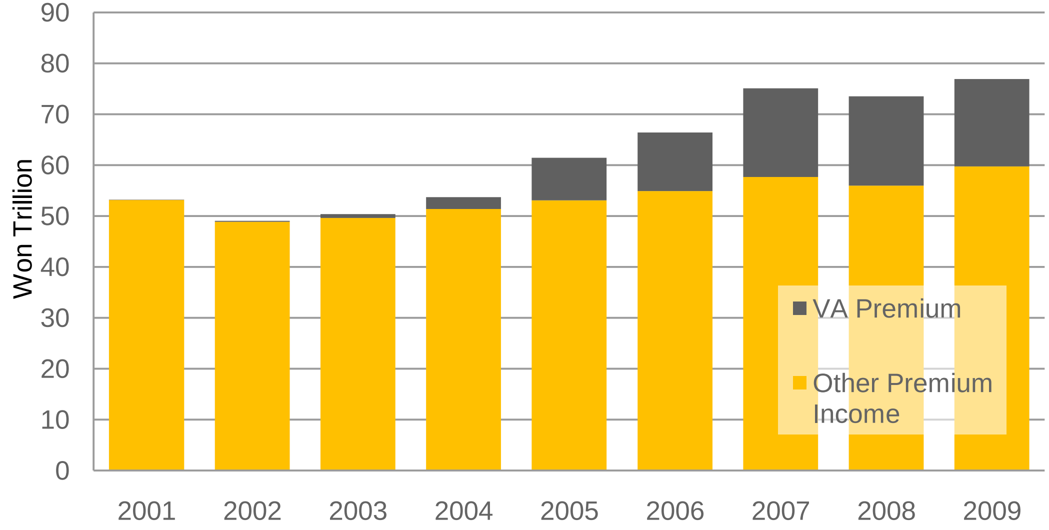
- Korea has the 2nd largest variable product market in Asia
- As oppose to economic valuation, Korean reserving requirement for variable products are based on accumulation of fees
- No hedging becomes the "best" ALM strategy for variable products if the ALM target is Korean GAAP (KGAAP) P&L
- However, on the economic front, we know that no hedging is not optimal

Can we hedge both economic and accounting P&L at the same time?

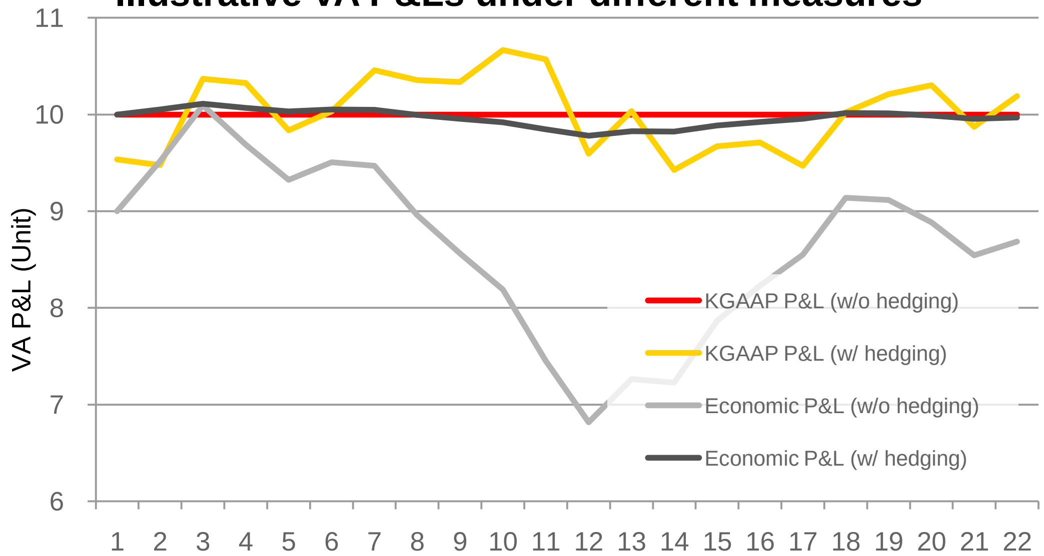
- Portfolio insurance investment strategies like Constant Proportion Portfolio Insurance (CPPI) might offer solutions
- CPPI provides economic hedging to the guarantees embedded in variable products without using derivatives that add additional volatility to the insurers KGAAP P&L

- New reserving requirement for VA Guarantee (CTE approach) is expected to be effective March 31, 2011.

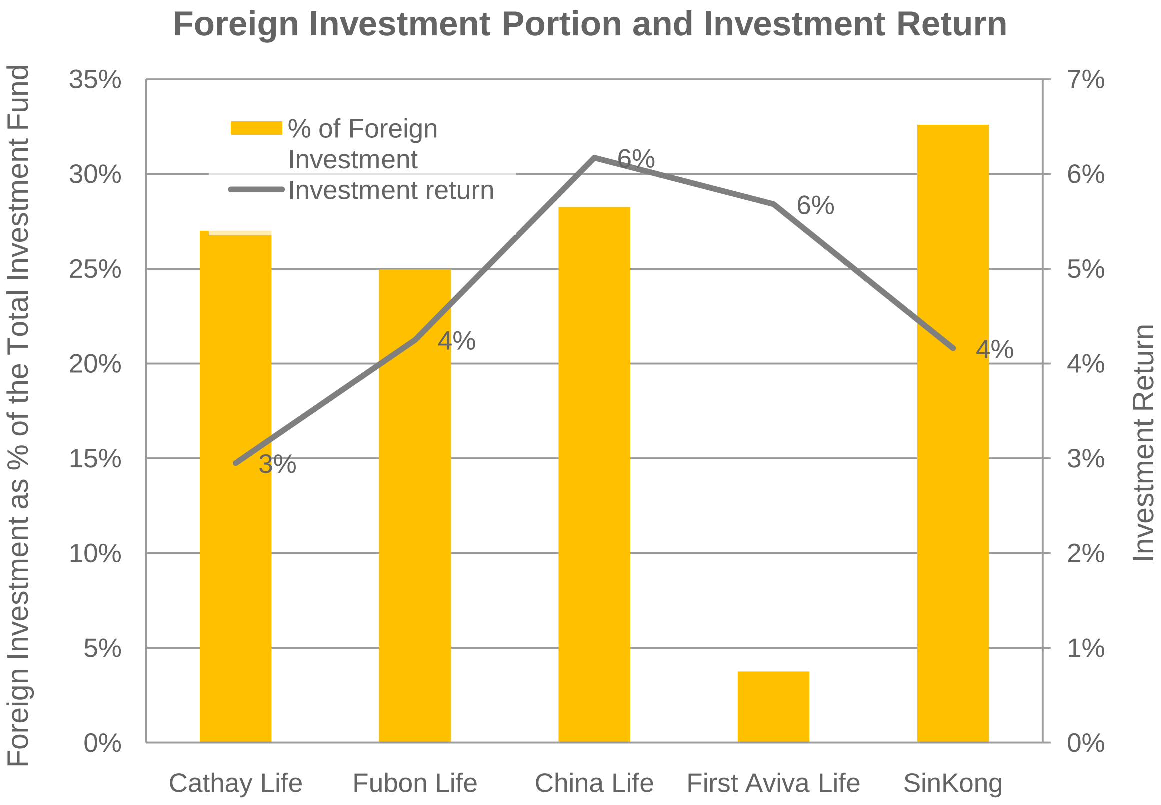
Life Insurance Premium income



Illustrative VA P&Ls under different measures



Taiwan: Is foreign investment or real estate the "cure" for the negative spread issue?



- Foreign Investment
  - Foreign investments are mostly US government bonds
  - Relatively small exposure to foreign equity markets
  - Comparing with the 45% cap on foreign investment, are there more rooms for foreign investments?
  - FX futures/Forwards are used to manage FX exposure
  - However, FX hedging can be costly
  - With higher solvency requirements (i.e, 250% RBC)
- Real Estate
  - Insurers have to be aware of concentration of risk

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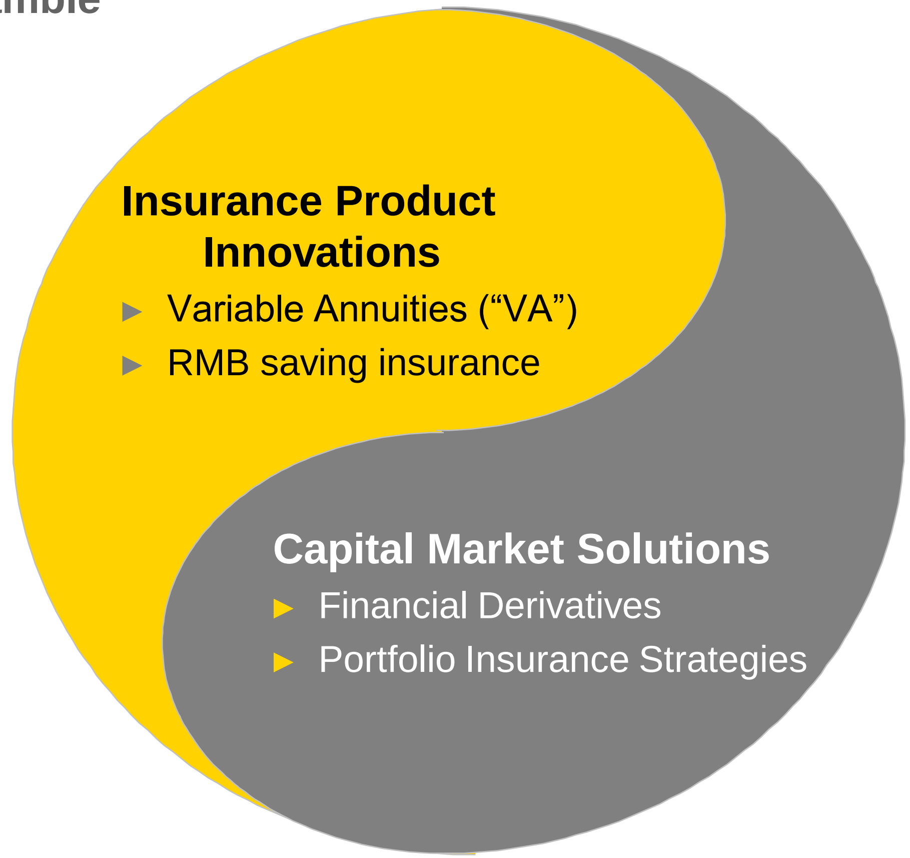
Hong Kong: Capital market and insurance product

- **HK life insurers scramble for RMB insurance market**
  - Citibank
  - BOCG Life
  - HSBC
  - Fubon Bank

  Anymore to come?

- **Variable Annuities enjoyed market attention before the financial crisis**
  - Manulife
  - HSBC
  - AXA

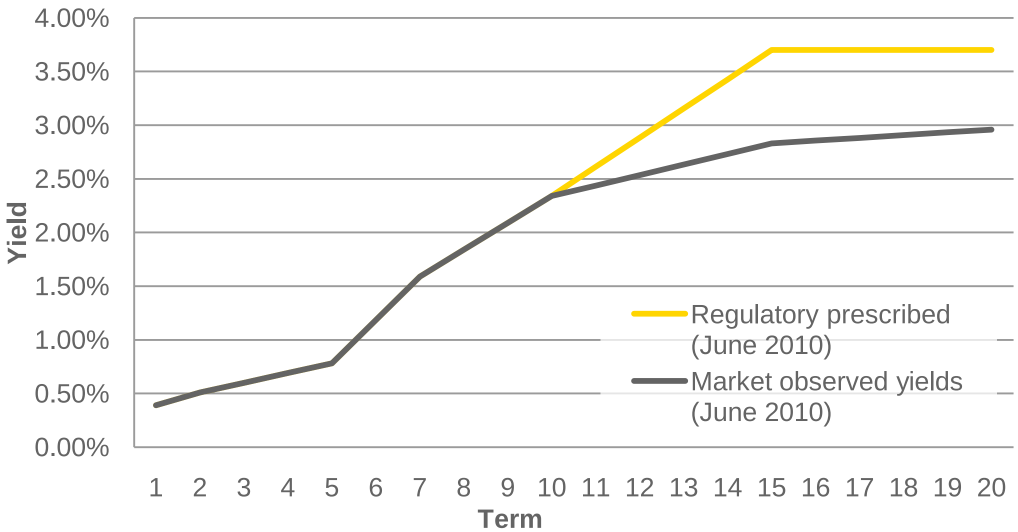
  Revitalization of VAs?

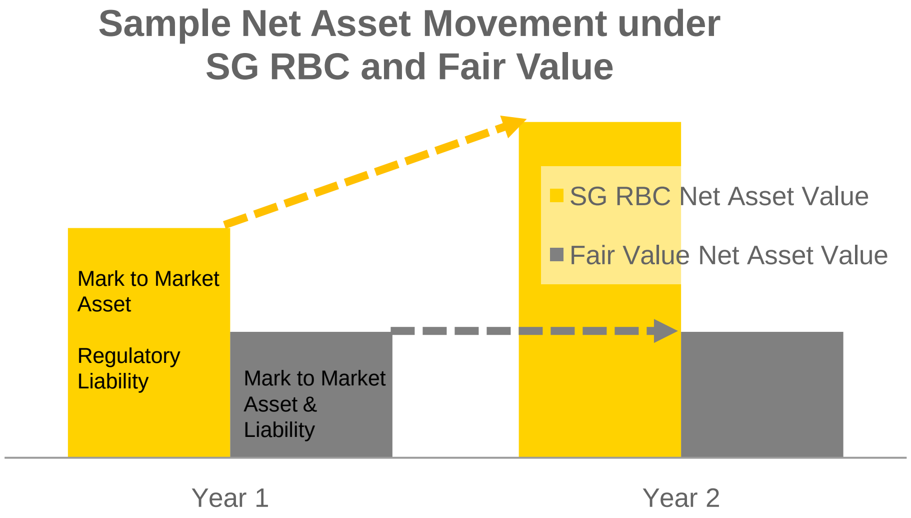


- **Financial Derivatives**
  - RMB non-deliverable futures is used to manage RMB FX risks; however, it is expensive
  - It is hard to source financial derivatives for emerging market index; exposing insurers to basis risk

- **Portfolio Insurance Strategies**
  - like CPPI or synthetic hedging provide a good alternative to financial derivatives
  - Active portfolio allocation is used to manage the financial guarantees provided

Singapore: Basis mismatch



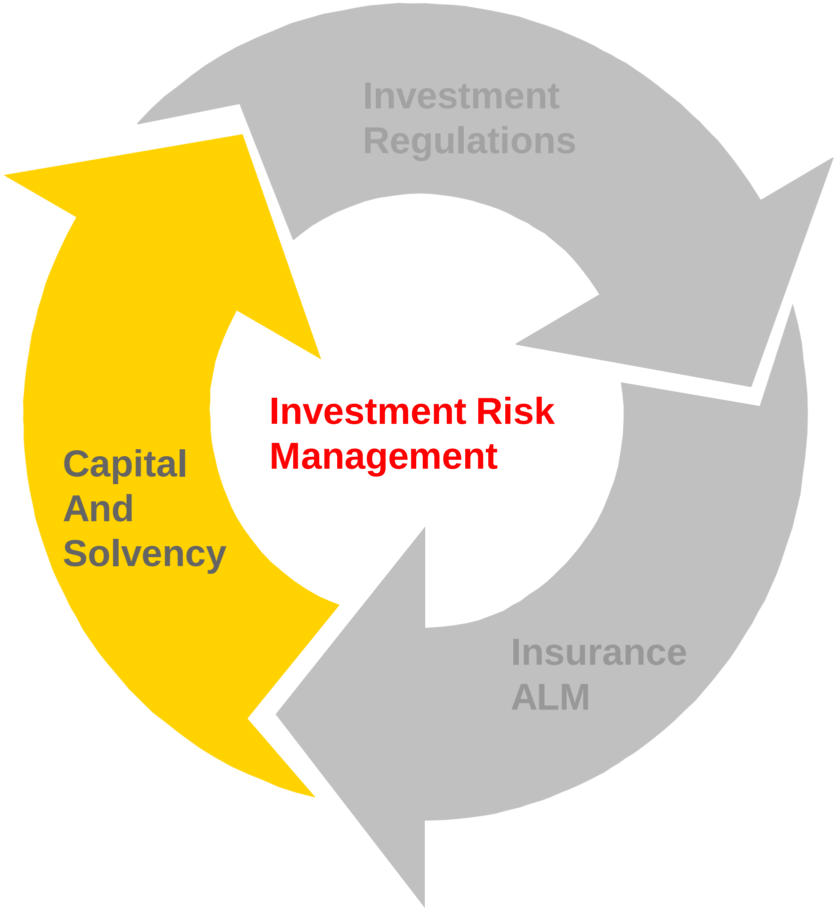


- ▶ Under the Singapore regulations, liability values are based on an average historically smoothed discount rate and assets are mark to market;
- ▶ Long term regulatory discount rates have smaller fluctuation than the long term market observed rates;
- ▶ Insurers are therefore subject to basis risk;
- ▶ Interest rate swap and structure solutions, albeit expensive, are used by insurance companies to manage the basis risk;

A Holistic Strategy Asset Allocation and ALM Approach

- Effective investment risk management should be part of insurer's overall Enterprise Risk Management Framework, and requires a robust and holistic ALM and Strategy Asset Allocation ("SAA") practice
- Strategic Asset Allocation focus on insurer's:
  - Risk appetite and risk tolerance
  - Long term allocation target
  - Expected return to meet the liability obligation
- Best practice ALM and SAA begin as a top-down process
  - Optimization using economic risk and return measures combined with capital measures
  - Capital measures (e.g. Solvency II, RBC) are usually incorporated as constraints
  - Utilize a holistic SAA and ALM approach that enable optimal diversification across all market risks (interest rate risk, credit risk, equity risk, and other financial as well as non-market risks) by consider the entire asset portfolio rather than only the asset backing the liabilities

Recent development in Solvency II and QIS 5



Introduction to Solvency II
Background

- Solvency II is the proposed new Europe-wide framework for prudential supervision of insurance

- Aims to address problems with Solvency I
  - Outdated system
  - Insufficiently risk-sensitive
  - Does not reflect best practice
  - Difficulties in supervising multinational, diversified groups

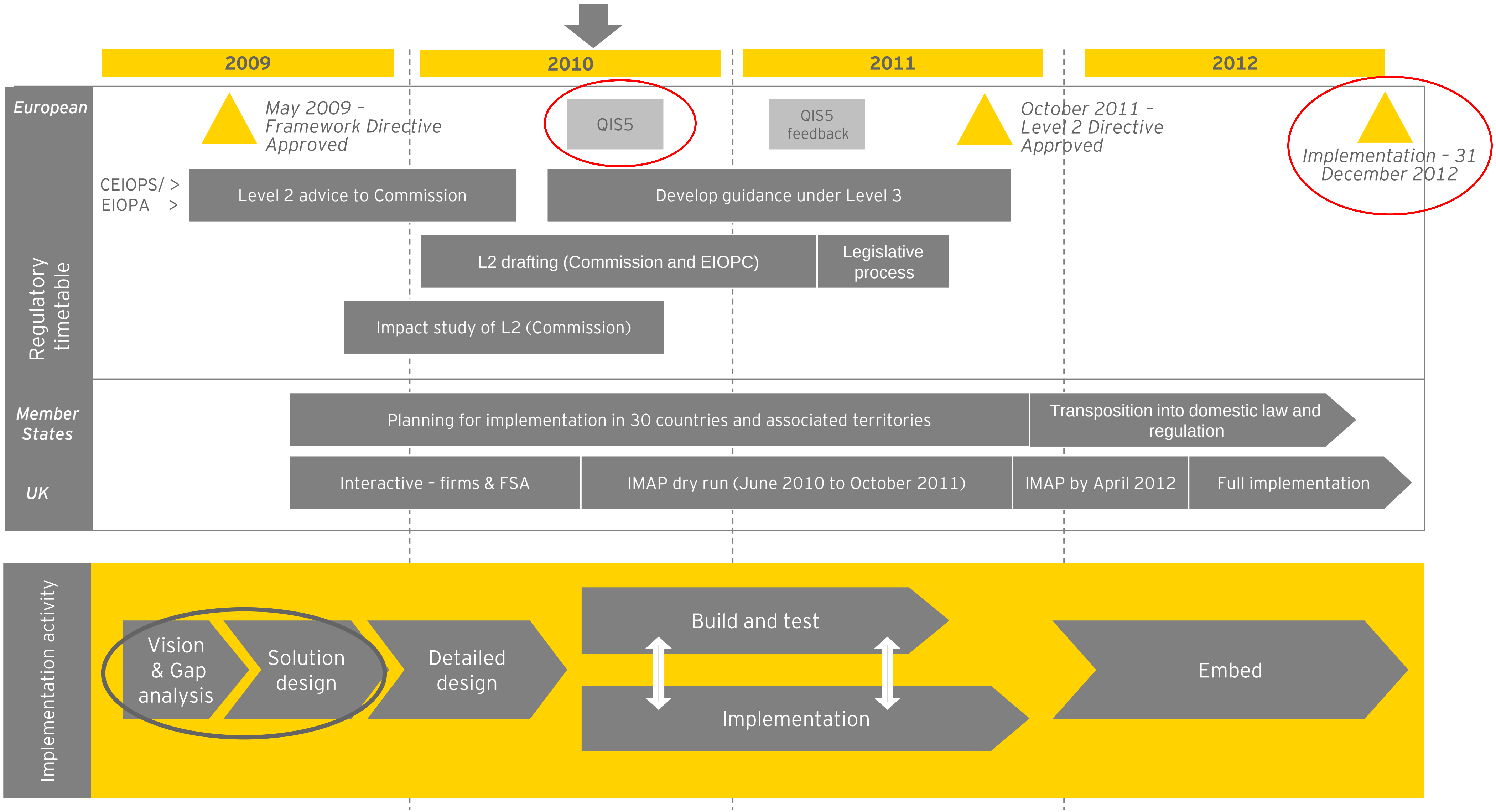
- A fundamental change to Solvency requirements:
  - Principles based approach to supervision
  - Market consistent approach for valuing liabilities
  - Capital requirements linked to risk profile
  - Convergence of economic capital and regulatory capital
  - Lead supervisor for groups
  - Major focus on risk management
  - Significant disclosure requirements
  - Capital add-ons for deficiencies
  - Links to other reporting measures

Introduction to Solvency II
A 3-pillar structure

Risk Quantifications	Risk Management	Risk Transparency
Pillar 1	**Pillar 2**	**Pillar 3**
Quantitative Capital Requirements	Supervisory activities	Supervisory reporting & public disclosure
Solvency **C**apital **R**equirements **M**inimum **C**apital **R**equirements	Risk Governance	Transparency & Disclosure

A risk oriented framework

The timetable for Solvency II and implementation activities



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Events since late 2009:

- Change at the top – Charles McCreevy, who piloted through the Framework Directive, has been replaced as responsible Commissioner by Michel Barnier
- CEIOPS to be replaced by a new European Insurance and Occupational Pensions Authority in 2011
- Commencement date of Solvency II proposed to be pushed back from October 2012 to December 2012 to align with most company year-ends
- CEIOPS Level 2 Advice to the Commission finalized on Consultation Papers up to 78 (final advice published in April 2010)
- CEIOPS Level 3 Guidance issued relating to internal model approval
- Technical work on specific matters including catastrophes
- Equivalence – identification and assessment of “first wave” countries
- Fifth Quantitative Impact Study (QIS 5).

Equivalence – latest developments

- Relate mostly to the group solvency assessment of an insurer
- Equivalence may be achieved through the regulations of the third country or through specific supervisory agreements with the third country
- In June 2010 the European Commission asked CEIOPS to advise:
  - by the end of August 2010 which countries should be included in the "first wave" of equivalence assessment
  - by the end of July 2011, whether the first wave countries meet the general criteria for equivalence
- The Association of British Insurers has estimated the following as being the most important countries for obtaining equivalence: *Switzerland, US, Bermuda, Canada, Australia, Hong Kong, India, China, Japan*

Overview of QIS5
Headlines

Overview

- The Final QIS5 Technical Specification was issued on 6 July 2010. The final specification to is now available on: http://ec.europa.eu/internal_market/insurance/solvency/index_en.htm#qis5
- The Commission has emphasized the importance of dealing with all areas of the exercise comprehensively, and is expecting high quality submissions from firms on which to base its decisions. This echoes calls from local regulators around the robustness required in the production of QIS 5
- A number of key changes from the draft technical spec:
  - Changes in calibrations – generally less favourable compared to QIS4, but more favourable compared to CEIOPS Consultation Papers / Final Advice
  - Changes in methodology – additional sub-modules proposed and refinements in methodology for existing (sub)modules compared to QIS4
- The technical specifications should not be seen as the final outcome as the intention is to publish the Level 2 implementing measures once the results of QIS5 are known

QIS5 objectives

- To provide detailed information on the quantitative impact of future Level 2 implementing measures
- To encourage industry preparation and to:
  - Identify areas where internal processes, procedures and infrastructure may need to be enhanced and encourage improvements to data collection processes
- To provide a starting point for an ongoing dialogue in preparation for the new supervisory system

QIS5 provides an ideal checkpoint for Solvency II programmes to:

- Educate stakeholders with quantitative evidence of the potential impacts, informing lobbying activity
- Review and realign Solvency II plans based on your experience of performing QIS5

Overview of QIS5
Submission and timelines

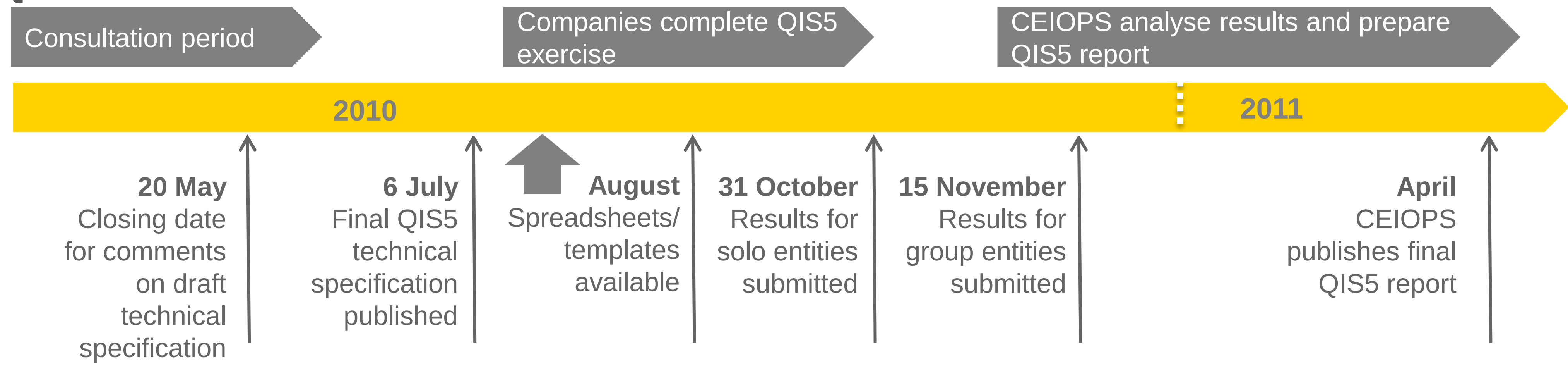
Submission

- The results will be completed based on a reporting date of end December 2009
- QIS5 results are to be submitted to the CEIOPS centralised database as well as to national supervisors to enable results aggregation
- The exercise runs between August and November 2010:
  - Solo entities to submit to national supervisors by 31 October 2010
  - Group submissions should be sent by 15 November 2010
- [Spreadsheets and templates expected early August 2010]

Participation

- Participation is strongly encouraged. The Commission is expecting at least 60% of the total number of European undertakings to participate. All insurance groups are encouraged to participate, with at least 75% expected

QIS5 Timeline



Brief summary of final technical specifications

- Base risk-free reference rates derived from swap rates less as adjustment for credit risk of 10bps
- Adjustment for illiquidity premium is now included, depending upon type of business

Business	Illiquidity premium
Contracts where: ▸ the only underwriting risks connected to the contract are longevity risk and expense risk ▸ no surrender risk is borne by the undertaking ▸ premiums have already been paid and no incoming cash-flows are allowed for in the technical provisions	100%
Life contracts with profit participation other than those included in 100% bucket	75%
All other liabilities	50%

- Cost of capital factor remains at 6%
- Changes proposed to correlation factors (which have been widely debated since final advice)
- Reduction in operational risk charge and equity shocks since final advice.
- Widening of Tier 1 own funds (recognizes intangible assets, expected profits in future premiums)
- QIS5 requires insurers to consider future management action when calculating the best estimate liabilities

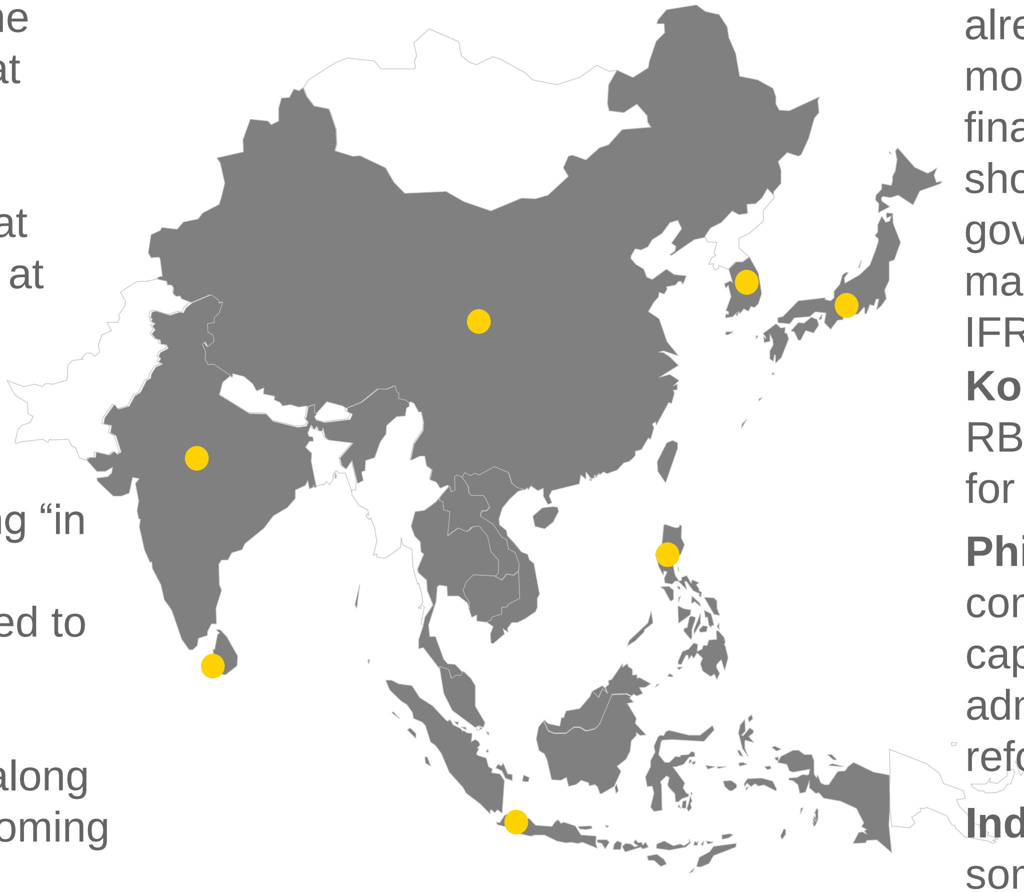
What it means for Asia

- Solvency II has set a benchmark that is being largely followed by the International Association of Insurance Supervisors in its capital adequacy project. We may expect to see wider adoption of Solvency II-type models in other jurisdictions
- Already, movements towards risk-based capital approaches are seeing incentives for better risk management, better capitalisation, more appropriate valuation methods and more intelligent supervision
- The IASB's Phase 2 project provides a parallel impetus to improvement
- Solvency II represents a challenge to many jurisdictions because of shortage of skilled resources and experience, in both the regulators and insurance companies, and the limited development of some markets
- Particular challenges include:
  - determination of market-consistent values
  - calibration of risk factors in local environment
  - a sufficiently sophisticated approach to supervision
  - treatment of *takaful*

Regulatory developments

China – currently uses a traditional solvency regime but known to be looking at Solvency II with interest. China is one of the few countries in the region that could impose Solvency II at short notice and with a reasonable prospect of success

India – on record as being "in no hurry" to converge to Solvency II, but has moved to require more robust and consistent reserving and expects to move further along the path to RBC in forthcoming years. IFRS adoption is scheduled for 2011



Sri Lanka – currently developing an RBC model with World Bank assistance

Japan – capital requirements already follow a risk-based model and recent revisions to financial services regulation show a greater emphasis on governance and risk management   Moving to IFRS

Korea – recent adoption of RBC, and IFRS scheduled for 2011

Philippines – still many small companies with relatively low capital. Recent change in administration may provide reform opportunities

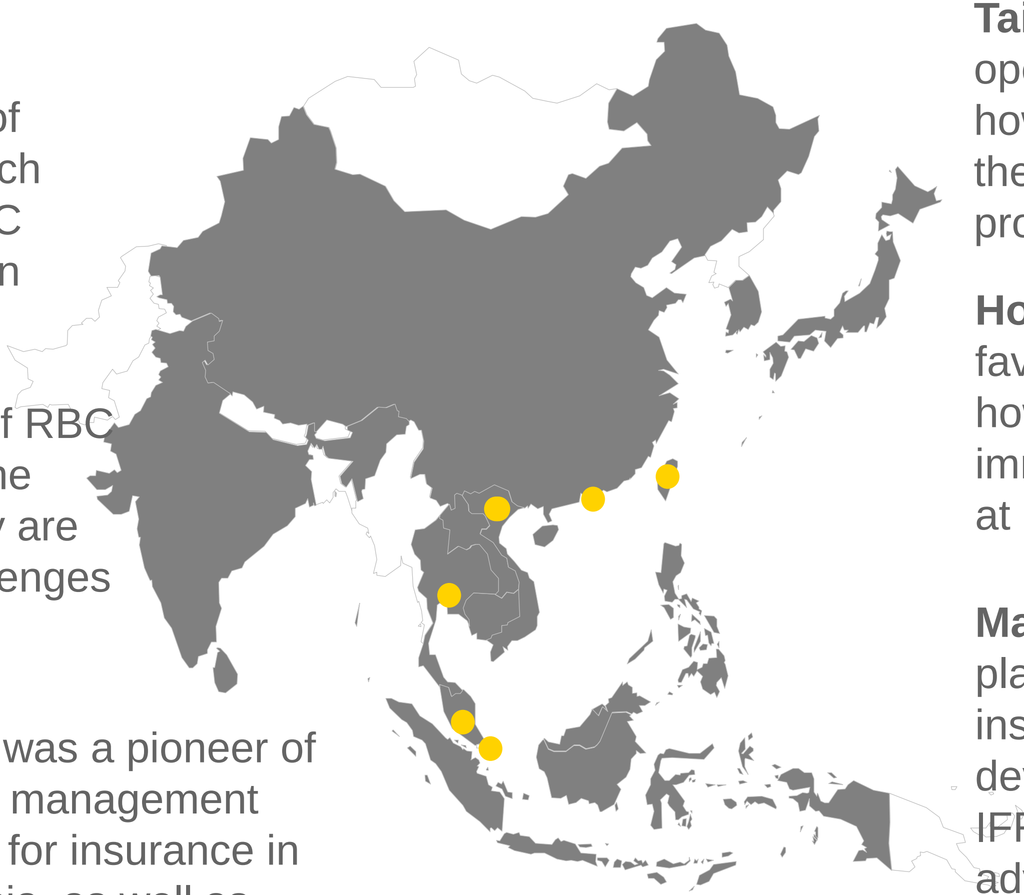
Indonesia – RBC in place for some years, but capital adequacy remains an issue for a number of companies and the process of increasing the requirements is slow

Regulatory developments

Vietnam – currently contemplating comprehensive revision of insurance regulation, which would likely be on an RBC basis. IFRS adoption is in the pipeline

Thailand – introduction of RBC is scheduled for 2011. The regulator and the industry are now coping with the challenges posed by this change

Singapore – was a pioneer of RBC and risk management requirements for insurance in south-east Asia, as well as IFRS convergence



Taiwan – has for some time operated an RBC model however the capitalisation of the industry remains problematic

Hong Kong – in principle in favour of move to RBC, however there is no immediate prospect of this at present

Malaysia – RBC is now in place for conventional insurance and under development for Takaful. IFRS implementation is advanced

Thank you

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