Opening

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Ernst & Young Advisory Services Ltd.
IFRS 17 – A technical update

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Partner, Assurance
Ernst & Young Partnership
1. Overview of IFRS 17

IFRS 17 and IFRS 9 - IASB timeline

1 IASB amended IFRS 4 with options to defer the effective date of IFRS 9 for insurers or to apply a temporary 'overlay' method to mitigate the PL impacts of IFRS 9
1. Overview of IFRS 17
Why was this change necessary?

**Current practice**

- Mix of different local Generally Accepted Accounting Principles (GAAPs)
- Limited comparability between insurers and inconsistency with other non-insurance industries
- Limited use for steering the business and understanding sources of profit
- Some key metrics based on IFRS (e.g. RoE and pay-out ratios) but …
- … significant use of secondary metrics (EV, VNB etc.)

**Forthcoming practice (2021)**

- Underwriting revenue and expenses are recognised over time in comparable way to other non insurance business
- Provides separate information about the investment and underwriting performance
- Assumptions used in the valuation of insurance contact liabilities reflect the characteristics of the insurance contract rather than the risk related to asset / investment activity
- Provides up-to-date market consistent information of obligation including value of options and guarantees
- Reflects time value of money

**Key steps in transition**

- Accounting decisions:
  - Implementation choices (accounting policy changes)
  - Financial statements revamp
  - Trade-off between operational simplicity and results optimisation
- Operational implications:
  - Minimal compliance vs. catalyst for change
  - System or process changes
  - Efficient implementation
- Implications for messaging to shareholders (investor story)
2. A snapshot at the standard
IFRS 17 framework comprises of 12 key components

- Define the accounting policy
  - Definition and scope
  - Separation
  - Recognition
  - Level of aggregation

- Measurement and actuarial model and integrated solution
  - Measurement
    - Measurement model
    - Expected cash flows
    - Time value of options and guarantees
    - Attributable expenses
    - Discount rate
    - Risk adjustment for non-financial risk
    - Contractual service margin
  - Initial and subsequent measurement
  - Reinsurance
  - Onerous contract

- Presentation and disclosure
  - Transition
  - Disclosure
  - IFRS 9 and IFRS 17 interactions
  - Presentation

Interaction with other standards:
- IFRS 9 Financial Instruments
- IFRS 13 Fair Value Measurement
- IFRS 15 Revenue from Contracts with Customers
- Relevant Standards and Local Regulations
### 3. Measurement model

#### Three different measurement models

<table>
<thead>
<tr>
<th>Measurement Model</th>
<th>General Model (GM) / Building Blocks Approach (BBA)</th>
<th>Variable Fee Approach (VFA)</th>
<th>Premium Allocation Approach (PAA)</th>
</tr>
</thead>
</table>
| **Default model for all insurance contracts** | **GM should be applied to all insurance contracts, unless they have direct participation features or the contract is eligible for, and the entity elects to apply, the premium allocation approach.** | **VFA should be applied to insurance contracts with direct participation features:**

1. A clearly identified pool of underlying items
2. Payments to policyholders equal to substantial share of Fair Value (FV) of underlying items
3. Amounts paid will substantially change with change in FV of underlying items

This approach cannot be used for reinsurance. | **PPA is an optional simplification for measurement of liability for remaining coverage for insurance contracts with short-term coverage (<1 year).** |

#### EY insights

1. The VFA is introduced for direct participating contracts in order the measurement of such contracts to better reflect the linkage between the fulfilment cash flows and the fair value of the underlying items.
2. Entity shall assess the VFA eligibility at inception and shall not reassess subsequently.
3. “Substantial” will be subject to judgement where IASB has no intention to prescribe a “bright line”. Products with the same economic value may have different accounting results using different measurement models.

#### Implications

The measurement models could change significantly from the current models, in particular for participating and unit-linked products.
4. Level of aggregation
Significant judgement is required for the level of aggregation

Assessment could be top-down for ‘sets’ of contracts based in reasonable and supportable information, otherwise based on individual contracts.

Contracts subject to similar risks and managed together. Contracts in different product lines will be in different portfolios, but a product line could have multiple portfolios.

Onerous contracts at inception to be identified separately. Additional disaggregation based on whether there is a significant possibility of becoming onerous subsequently.

Disaggregation based on contracts written no more than a year apart (‘cohorts’). Basis for subsequent tracking and releasing of CSM.
5. Transition

Transition CSM - key for profitability after transition: finding the right balance

Estimating transition CSM: three approaches

1. Fully retrospective
2. Modified retrospective
3. Fair value
   - Starting point is 1
   - If 1 is impracticable, choose between either 2 or 3

Challenge is to find an optimised approach

Operational transition efforts

Profitability after transition

Examples of transition variations (illustrative)

Prior periods

IFRS 17 effective date

Transition CSM 1

Transition CSM 2

Transition CSM 3
6. Presentation and disclosure
How performance reporting will change: a comparison

<table>
<thead>
<tr>
<th>IFRS 4</th>
<th>IFRS 17</th>
<th>Key Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net earned premiums</td>
<td>Insurance revenue</td>
<td>► Insurance contract revenue excludes investment components</td>
</tr>
<tr>
<td>Interest, dividend and other investment income</td>
<td>Insurance services expense</td>
<td>► Revenue and expense are recognised as earned or incurred</td>
</tr>
<tr>
<td>Incurred claims and expense</td>
<td>Incurred claims and expense</td>
<td>► Insurance finance expense is excluded from insurance service result and is presented (i) fully in P/L or (ii) in P/L and OCI, depending on accounting policy</td>
</tr>
<tr>
<td>Change in provisions</td>
<td>Acquisition costs</td>
<td>► Written premiums disclosed in the notes</td>
</tr>
<tr>
<td>Profit or loss</td>
<td>Gain/loss from reinsurance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insurance service result</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Investment income</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Insurance finance expense</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Net financial result</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Profit or loss</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discount rate changes on insurance liability (optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total comprehensive income</td>
<td></td>
</tr>
</tbody>
</table>
### 6. Presentation and disclosure

**How will your balance sheet change?**

<table>
<thead>
<tr>
<th>IFRS 4</th>
<th>IFRS 17</th>
<th>Key changes for balance sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td><strong>Assets</strong></td>
<td>► IFRS 17 will require separate presentation of insurance groups which are in a net asset position and those that are in a net liability position.</td>
</tr>
<tr>
<td>Reinsurance contract assets</td>
<td>Reinsurance contract assets</td>
<td></td>
</tr>
<tr>
<td>Deferred acquisition costs</td>
<td>Insurance contract assets</td>
<td>► BBA - Premium receivables from policyholders will no longer be presented within the receivables line. This will instead be netted against the liability for remaining coverage for each group of contract and presented as part of insurance contract liabilities or assets (depending on whether the relevant group of contracts is in a liability or asset position). PAA - Premium receivable is still shown on the balance sheet.</td>
</tr>
<tr>
<td>Premiums receivable</td>
<td></td>
<td>► Deferred acquisition costs will no longer appear as a separate assets line item on the balance sheet. Instead they will be implicitly deferred through inclusion in the insurance contract liabilities (if directly attributable).</td>
</tr>
<tr>
<td>Policy loans</td>
<td></td>
<td>► Reinsurance recoveries on insurance claims will change in line with underlying inwards valuation basis, but will also require a charge for the expected credit risk.</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td><strong>Liabilities</strong></td>
<td>► Premium payable to reinsurers will be netted against the reinsurance contract assets for remaining coverage for each groups of contracts.</td>
</tr>
<tr>
<td>Insurance contracts liabilities</td>
<td>Insurance contracts liabilities</td>
<td>► Insurance liabilities will change to follow the IFRS 17 measurement basis. If the eligibility criteria is met, insurers writing short-term contracts can adopt the premium allocation approach for the premium liability (similar to UPR). Measurement of the outstanding claims liability (estimate for incurred claims) will follow the BBA.</td>
</tr>
<tr>
<td>Unearned premiums</td>
<td>Reinsurance contracts liabilities</td>
<td></td>
</tr>
</tbody>
</table>
## Liabilities for remaining coverage

<table>
<thead>
<tr>
<th></th>
<th>Excluding onerous contracts component</th>
<th>Onerous contracts component</th>
<th>Liabilities for incurred claims</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning of period</strong></td>
<td>7,375</td>
<td>290</td>
<td>2,060</td>
<td>9,725</td>
</tr>
<tr>
<td><strong>Insurance revenue</strong></td>
<td>(1,608)</td>
<td></td>
<td></td>
<td>(1,608)</td>
</tr>
<tr>
<td><strong>Insurance service expenses</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incurred claims and other expenses</td>
<td>15</td>
<td>(41)</td>
<td>1,000</td>
<td>973</td>
</tr>
<tr>
<td>Amortisation of insurance acquisition cash flows</td>
<td>15</td>
<td></td>
<td></td>
<td>989</td>
</tr>
<tr>
<td>Losses on onerous contracts and reversals of those losses</td>
<td>15</td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Changes to liabilities for incurred claims</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td><strong>Investment components</strong></td>
<td>(200)</td>
<td></td>
<td>200</td>
<td>-</td>
</tr>
<tr>
<td><strong>Insurance service result</strong></td>
<td>(1,793)</td>
<td>(41)</td>
<td>1,200</td>
<td>(635)</td>
</tr>
<tr>
<td><strong>Insurance finance expenses</strong></td>
<td>488</td>
<td>17</td>
<td>76</td>
<td>582</td>
</tr>
<tr>
<td><strong>Total changes in the statement of comprehensive income</strong></td>
<td>(1,305)</td>
<td>(24)</td>
<td>1,276</td>
<td>(53)</td>
</tr>
<tr>
<td><strong>Cash flows</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premiums received</td>
<td>1,880</td>
<td></td>
<td></td>
<td>1,880</td>
</tr>
<tr>
<td>Claims and other expenses paid</td>
<td></td>
<td></td>
<td>(1,400)</td>
<td>(1,400)</td>
</tr>
<tr>
<td>Insurance acquisition cash flows</td>
<td>(19)</td>
<td></td>
<td></td>
<td>(19)</td>
</tr>
<tr>
<td><strong>Total cash flows</strong></td>
<td>1,861</td>
<td></td>
<td>(1,400)</td>
<td>461</td>
</tr>
<tr>
<td><strong>End of period</strong></td>
<td>7,932</td>
<td>266</td>
<td>1,936</td>
<td>10,134</td>
</tr>
</tbody>
</table>

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6. Presentation and disclosure
The devil is in the detail… - reconciliations require substantially more granularity
6. Presentation and disclosure
The devil is in the detail… - reconciliations require substantially more granularity

<table>
<thead>
<tr>
<th></th>
<th>Estimates of the present value of future cash flows</th>
<th>Risk adjustment</th>
<th>Contractual service margin</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beginning of period</strong></td>
<td>163,962</td>
<td>5,998</td>
<td>8,858</td>
<td>178,818</td>
</tr>
<tr>
<td><strong>Changes related to:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Future service yet to be provided</td>
<td>(784)</td>
<td>1,117</td>
<td>(116)</td>
<td>217</td>
</tr>
<tr>
<td>— Current service provided in the period</td>
<td>35</td>
<td>(604)</td>
<td>(923)</td>
<td>(1,492)</td>
</tr>
<tr>
<td>— Past service adjustment to past claims</td>
<td>47</td>
<td>(7)</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td>Insurance service result</td>
<td>(702)</td>
<td>506</td>
<td>(1,039)</td>
<td>(1,235)</td>
</tr>
<tr>
<td>Insurance finance expenses</td>
<td>9,087</td>
<td>-</td>
<td>221</td>
<td>9,308</td>
</tr>
<tr>
<td><strong>Total changes in P&amp;L</strong></td>
<td>8,385</td>
<td>506</td>
<td>(818)</td>
<td>8,073</td>
</tr>
<tr>
<td>Cash flows</td>
<td>18,833</td>
<td>-</td>
<td>-</td>
<td>18,833</td>
</tr>
<tr>
<td><strong>End of period</strong></td>
<td>191,180</td>
<td>6,504</td>
<td>8,040</td>
<td>205,724</td>
</tr>
</tbody>
</table>
7. Summary
What can be done to mitigate potential negative impacts from an accounting perspective?

<table>
<thead>
<tr>
<th>1. Smart first-time adoption</th>
<th>2. Avoid accounting mismatch</th>
<th>3. Close gaps and increase transparency between different frameworks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of aggregation</strong> (e.g. unit of account)</td>
<td>Select the appropriate options (accounting mismatch within IFRS can be minimised)</td>
<td>▪ Different definitions in key public reports (IFRS, EV/VNB and Stat)</td>
</tr>
<tr>
<td><strong>Transition Approach</strong> (Retrospective approach vs. Fair value approach)</td>
<td>▪ Thorough understanding of local accounting practice and difference between IFRS 17 (economic view) and statutory accounting (retrospective view) is needed</td>
<td>▪ IFRS to local statutory and EV reconciliation in investor presentation will be positively received</td>
</tr>
<tr>
<td><strong>Risk Adjustment</strong>: Smart development of your own methodology (calculation, allocation and release pattern)</td>
<td>▪</td>
<td></td>
</tr>
<tr>
<td><strong>Other actuarial assumptions</strong> (that may influence recognition of CSM or initial loss) may have an impact on future KPIs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
IFRS 17 - implementation challenges & opportunities

Martyn van Wensveen
Partner, Financial Services Advisory, Ernst & Young Advisory Services Sdn. Bhd.
Some important lessons learnt so far

1. IFRS 17 is much more than an accounting change, it has a major impact on the entire organisation (front-, middle- and back-office)

2. If you think the IFRS 17 standard is difficult, wait till you try to implement this in real life!

3. Don’t underestimate the amount of time it takes to find the required data to fulfil the extensive IFRS 17 financial and disclosure requirements

4. The biggest amount of work is the end-to-end Data, Systems & Process (DSP) changes – need to make sure IT does not become the project bottleneck!

5. Follow a proven IFRS impact analysis, design and implementation approach/methodology (with structured and centrally prepared input templates)

6. Important to emphasize both the content and process skills needed to get the job done (difficult to find people who master both skills equally well)

7. Need to appoint separate accounting lead (IFRS 17 specialist), actuarial lead (financial models & business impact), systems lead (ERP/EPM) and conversion project lead (finance change specialist) to jointly execute the IFRS 17 conversion project

Scoping & Planning

Language & Culture

Training & Communication
Key insights from a recent global EY survey: cost and complexity of IFRS 17 implementation

The majority of respondents believe IFRS 17 costs will be higher or similar as Solvency II

- 40% believe IFRS 17 costs higher than Solvency II
- 30% believe IFRS 17 costs similar to Solvency II
- 20% believe IFRS 17 costs lower than Solvency II
- 10% are unsure

Most of the cost of implementing IFRS 17 will be spent on technology, systems and data

- 42% on Technology & Data
- 11% on Actuarial Modelling
- 15% on People
- 12% on Accounting
- 20% on Process Changes

Actuarial Modelling and Finance Systems / Data are the areas which will see the highest impact

- Actuarial modelling will be highly impacted (100%)
- Finance & actuarial systems & data will be highly impacted (80%)
- Technical accounting will be highly impacted (60%)

Level of Granularity, CSM Calculation & Transition Adjustment are expected to be the most complex

- Level of granularity is highly complex (80%)
- CSM calculation is highly complex (80%)
- Transition adjustment is highly complex (80%)
- Unit of account is highly complex (70%)
- Investor relations story is highly complex (60%)
All large insurers have started their IFRS 17 projects and estimated their budget needs

100% have initiated their IFRS 17 program
80% have appointed an external advisor
90%+ expect the impact to be significant

$25m-$400m budget range

### Comparative analysis

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Life/Non-Life/Composite</td>
<td>C</td>
<td>Life</td>
<td>C</td>
<td>C</td>
<td>Life</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>Non-Life</td>
<td>Life</td>
</tr>
<tr>
<td>3. Implementation stage (Advanced/Middle/Early)</td>
<td>A</td>
<td>A</td>
<td>E</td>
<td>M</td>
<td>E</td>
<td>M</td>
<td>E</td>
<td>E</td>
<td>E</td>
<td>A</td>
</tr>
<tr>
<td>4. Estimated IFRS 17 budget</td>
<td>$400m</td>
<td>$100m</td>
<td>$200m</td>
<td>$150m</td>
<td>$150m</td>
<td>$125m</td>
<td>$80m</td>
<td>$45m</td>
<td>$25m</td>
<td>$25m</td>
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Operational implications of IFRS 17
the big picture ...

1. Policy
   ► New accounting policies/procedures and control documentation
   ► IFRS 17 methodology guidance and reporting instructions
   ► GL Chart of Accounts changes and account mappings
   ► Assumptions setting (for modelling)
   ► Investment policy changes (IFRS 9)

2. Performance Management
   ► Changes in MI reports and KPI’s
   ► Planning, budgeting and forecasting processes need to be adjusted
   ► VBM, scorecards and incentive schemes

3. People
   ► Training
   ► Cross functional collaboration (especially for Finance & Risk)
   ► Project resourcing & budget
   ► Managing change fatigue

4. Organization
   ► Roles and responsibilities between Actuarial and Finance departments
   ► Technical Provisions Assumptions/Expert Judgement Committee
   ► Impact on outsourcing contracts

5. Data
   ► Refinement, upgrading, conversion and migration of actuarial valuation models
   ► New financial reporting data requirements (input/output)
   ► Data reconciliations at different levels
   ► Data gathering, storage and archiving
   ► Data quality, security and controls
   ► Data governance and master data management

6. Processes
   ► Materiality concepts/guidelines
   ► Updating closing and reporting processes, planning processes, actuarial processes, risk management etc.
   ► Internal and external reporting templates including group reporting packages
   ► Internal controls and audit trail

7. Technology
   ► Core systems, investment system, actuarial systems, pricing systems, etc.
   ► Posting logic/engines
   ► General Ledger, consolidation and reporting systems
   ► System interfaces
   ► Current system capacities & capabilities (agile technology)
   ► New functionalities/features
Careful consideration of the impact of IFRS 17 across the entire systems architecture is needed

High to medium complexity across data, systems and processes

High severity and complexity of change, significant additional investment

Medium severity and complexity of change, limited additional investment

Low severity and complexity of change, leverage current change/ transformation initiatives

Source systems (Policies, claims, reinsurance, investments)

- IFRS17 calculation engine (CSM)
- Accounting rules posting engine
- Cost Allocations
- Ledgers
- Consolidation

Actuarial and risk models

- Reporting, analytics and visualisation, disclosure
- Planning, budgeting & forecasting and MI
- Operational data store
- Master data management (MDM)
- Governance risk compliance (GRC)
There are basically 3 solution options to consider

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>“Leverage existing data, processes and systems for IFRS 17 and build on MCEV/Solvency/RBC tools and models wherever sensible”</td>
<td>“Build IFRS 17 capabilities through the introduction of a separate sub-ledger system managed by Finance”</td>
<td>“Central Finance system to provide integrated IFRS 17 Platform capable of multi-GAAP valuations for both Group &amp; local reporting”</td>
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**How to do it**

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<tbody>
<tr>
<td>► Enhance current actuarial system (e.g. Prophet) to produce CSM calculations and related data</td>
<td>► Build IFRS 17 capabilities through the introduction of integrated sub-ledger solution</td>
<td>► Central Finance system with enhanced multi-dimensional IT capabilities to provide a new Multi-Ledger, Multi-Client, Multi-Product, Multi-Currency, Multi-Time IFRS 17 Platform</td>
</tr>
<tr>
<td>► Build on existing MCEV/Solvency II tools and leverage existing data, processes and systems wherever possible (minimal change)</td>
<td>► Include an integrated, pre-configured insurance data model for source data and results data onto one platform that eliminates redundancy</td>
<td>► Use of in-memory calculation features with integrated database to support historic data storage and cohort granularity with enhanced actuarial and risk modelling for cohort views</td>
</tr>
<tr>
<td>► Enhance existing Finance systems and IT solutions to cover IFRS 17 specific accounting and reporting requirements (e.g. unit of accounts, movement tables, disclosures)</td>
<td>► A powerful enterprise data warehouse can be built to provide flexible reporting and analysis tools (managed by Finance)</td>
<td></td>
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**Pros**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>► Easiest and fastest solution to implement</td>
<td>► Opportunity to implement a new, more efficient system setup while leaving old systems intact</td>
<td>► Higher flexibility of the implemented solution</td>
</tr>
<tr>
<td>► Built primarily on existing reserving, MCEV and Solvency/RBC tools and processes</td>
<td>► Shorter time to benefits realization</td>
<td>► Enables addition of other requirements (e.g. IFRS 9 and Solvency/RBC)</td>
</tr>
<tr>
<td>► Lower investment required</td>
<td>► Ancillary benefits in areas outside IFRS</td>
<td>► Lower critical path risk</td>
</tr>
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**Cons**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>► Less efficient system setup (add-ons)</td>
<td>► Multiple data sources and complexity of the process means higher implementation risks</td>
<td>► Takes longer to realize benefits from migration</td>
</tr>
<tr>
<td>► May not fit the future IFRS 17 reporting timelines and new requirements (e.g. controls)</td>
<td>► Significant upfront investment required for new solution with potentially limited lifespan</td>
<td>► Likely to have some manual steps and solutions resulting in higher operational cost</td>
</tr>
<tr>
<td>► Considerable manual steps = higher operating costs</td>
<td>► Critical path risk (need a “Plan B”)</td>
<td>► Could be expensive to implement and technology still unproven</td>
</tr>
</tbody>
</table>
Our preliminary assessment also shows that several key finance processes will be impacted

<table>
<thead>
<tr>
<th>Redesign your closing process</th>
<th>Major change to reporting processes</th>
<th>Planning and performance management</th>
<th>Control and audit processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deadlines to publish results remain unchanged or shorten</td>
<td>New format of P&amp;L and Balance Sheet</td>
<td>Planning and forecasting processes need to be adjusted to the new IFRS regime</td>
<td>Adoption of new processes will require the design of specific controls to ensure quality and robustness and integration into existing control frameworks</td>
</tr>
<tr>
<td>More complex calculations needed</td>
<td>New Chart of Account &amp; Accounting Logic</td>
<td>Provision of management information and KPIs that make performance transparent have to be consistent with financial results</td>
<td>Auditability of reported figures across the entire value chain</td>
</tr>
<tr>
<td>Potentially greater demand for manual activities on an interim basis</td>
<td>Additional disclosure requirements (e.g., methods, estimation approaches, risk information, etc.) will require process changes</td>
<td>Content and structure of data captured from reporting systems will change significantly</td>
<td>Historization of reported figures and input data</td>
</tr>
<tr>
<td>Additional time required for analysis</td>
<td>Content and structure of data captured from reporting systems will change significantly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Try to gain synergies from Solvency / RBC / EV reporting processes and systems where possible
We recommend a phased approach to manage the timely implementation of IFRS 17

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>Perform impact assessment</td>
</tr>
<tr>
<td></td>
<td>Mobilize team</td>
</tr>
<tr>
<td></td>
<td>Do detailed gap analysis</td>
</tr>
<tr>
<td></td>
<td>Perform financial and operational impact assessments</td>
</tr>
<tr>
<td></td>
<td>Start with resource planning</td>
</tr>
<tr>
<td></td>
<td>Educate key stakeholders</td>
</tr>
<tr>
<td>2018</td>
<td>Design desired state and develop new solution architecture</td>
</tr>
<tr>
<td></td>
<td>Make new accounting policies and proforma financial statements</td>
</tr>
<tr>
<td></td>
<td>Design desired system landscape</td>
</tr>
<tr>
<td></td>
<td>Tackle issues identified during the operational impact assessment</td>
</tr>
<tr>
<td></td>
<td>Design actuarial and finance target operating model</td>
</tr>
<tr>
<td></td>
<td>Allocate people</td>
</tr>
<tr>
<td>2019 - 2020</td>
<td>Implement new processes and systems</td>
</tr>
<tr>
<td></td>
<td>Execute planned implementation</td>
</tr>
<tr>
<td></td>
<td>Go live with new systems architecture</td>
</tr>
<tr>
<td></td>
<td>Perform parallel runs</td>
</tr>
<tr>
<td></td>
<td>Ensure wider business impact is managed appropriately</td>
</tr>
<tr>
<td></td>
<td>Discuss issues with auditors/regulators</td>
</tr>
<tr>
<td></td>
<td>Workshops and trainings</td>
</tr>
</tbody>
</table>
Recommended next steps (to be done in 2017)

- Start your local IFRS 17 & 9 impact assessment project(s)
- Mobilize project resources & key stakeholders
- Conduct core team training (covering both content & process)
- Perform detailed gap analysis (using pre-populated structured templates)
- Conduct impact assessments (financials, products, ops, systems & processes, people)
- Determine realistic implementation roadmap & budget (including IT cost!)
- Report findings to internal stakeholders (MT, Board, Group etc.)
- Discuss findings with external auditor and regulator(s)
- Seek approval for next phase (Design)
IFRS 17 Panel Discussion

Panelists:

Peter Duran
Group Senior Actuary
AIA Group Ltd.

Jeremy Porter
Group Chief Actuary
HSBC Insurance Hong Kong

Doru Pantea
Partner, Assurance
Ernst & Young Partnership

Moderator:
Tze Ping Chng
Partner, Actuarial & Insurance Advisory Services
Ernst & Young Advisory Services Ltd.
Coffee Break
Hong Kong Risk Based Capital – Quantitative Impact Study 1 and beyond

Florence Ng
Director, Actuarial & Insurance Advisory Services
Ernst & Young Advisory Services Ltd.
Agenda

1. Overview of HK RBC
2. Quantitative Impact Study (QIS)
3. Preliminary findings
4. Potential impact on selected products
5. Future considerations

This pack was prepared by EY Finance, Risk, and Actuarial Change teams/professionals.

The information in this pack should not be regarded as comprehensive or sufficient for making decisions, nor should it be used in place of professional advice.

Accordingly, EY Asia-Pacific accepts no responsibility for loss arising from any action taken or not taken by anyone using this pack.

If you require any further information or explanations, or specific advice, please contact us and we will be happy to discuss matters further. Please contact your usual EY contact, or alternatively one of the contacts listed below.
1. Overview
Regulatory developments in Asia-Pacific

**China**
- **C-ROSS**: fully launched in January 2016
- **DSII**: Expected in 2017
- **ALM**: New C-ROSS ALM regulations expected in 2017

**Malaysia**
- **RBC**: Framework established in 2009 for life/Gi insurers, 2014 for Takaful insurers
- **Stress Test**: Updated guideline on stress testing (June 2016) on multi-year scenarios
- **LIFE Framework**: Consultation in Q4 2016; initiative to enhance efficiency of distribution channels and develop cost-effective products

**South Korea**
- **RBC**: Enhanced RBC regime based on Solvency II regime, with a targeted implementation of 2020
- **Field test**: Field test on the impact on the required capital is expected to be released in 2017
- **IFRS**: Korean insurers are preparing ahead of the upcoming accounting regime change to IFRS 17 and IFRS 9

**Hong Kong SAR**
- **IA**: Establishment to replace OCI launched
- **RBC**: IA has begun work on Phase 2 of its four phase plan for the development. Completion of QIS 1 by HK participants is in progress
- **ERM GN**: expected to accelerate the implementation of Pillar 2
- **CIRC Equivalence**: Mutual equivalence arrangement between the OCI and the CIRC

**Australia**
- **LAGIC**: Introduced in January 2013 – three pillar RBC framework analogous to Solvency II
- **New regulations**: Expected soon on commission payable and claims handling
- **Stress tests**: First comprehensive stress test results disclosed in Aug 2016, with next planned for 2018

**Singapore**
- **RBC2**: MAS is getting closer to finalizing the enhanced RBC framework, although release of final regulations may be delayed
- **QIS2**: 3rd public consultation and full scope QIS2 conducted in late 2016
- **QIS3?**: Recent discussion on a potential 3rd QIS before RBC2 is finalized
HK RBC framework
Proposed framework comprises a three-pillar framework

Pillar 1
- Fair Value of Assets (FVA)
- Technical Provisions – Current Estimates (CE) and Margin Over Current Estimates (MOCE)
- Prescribed Capital Requirements (PCR)
- Own Fund

Pillar 2
- Own Risk and Solvency Assessment (ORSA)
- Holistic internal assessment of risks including those not included in Pillar 1
- Stress and scenario testing
- Links to capital management

Pillar 3
- Market disclosure and supervisory reporting to facilitate market discipline and transparency

Legend
No quantitative specification provided on the following items for QIS1:
- Life: Calculation of MOCE
- PCR diversification benefits
- Operational risk PCR
- Quality of capital resources

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Key changes from HK ICO balance sheet to HK RBC balance sheet

<table>
<thead>
<tr>
<th>Key changes</th>
<th>HK ICO balance sheet (rule-based capital)</th>
<th>HK RBC economic balance sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td>Market Value of Assets / Amortised Cost</td>
<td>Own Fund</td>
</tr>
<tr>
<td>1</td>
<td>Fair valuation</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Asset hypothecation (Life)</td>
<td></td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td>Surplus</td>
<td>Surplus</td>
</tr>
<tr>
<td></td>
<td>Required Capital</td>
<td>PCR</td>
</tr>
<tr>
<td></td>
<td>Other Liab</td>
<td>Other Liab</td>
</tr>
<tr>
<td></td>
<td>Mathematical Reserves</td>
<td>MOCE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical Provisions</td>
</tr>
</tbody>
</table>

**Legend**
- No quantitative specification provided on the following items for QIS 1:
  - Life: Calculation of MOCE
  - PCR diversification benefits
  - Operational risk PCR
  - Quality of capital resources

**Key changes from HK ICO balance sheet to HK RBC balance sheet**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair valuation</td>
<td>Asset hypothecation (Life)</td>
<td>Gross premium valuation (Life)</td>
<td>Contract boundary</td>
<td>MOCE</td>
<td>Discount curve</td>
<td>Time value of options &amp; guarantees (TVOG) (Life)</td>
<td>Risk-based PCR</td>
</tr>
</tbody>
</table>

**HK RBC economic balance sheet**

- PCR for Life:
  - Long term business underwriting risks
  - Operational risk
  - Diversification

- PCR for GI:
  - Insurance risks
  - Market risks
  - Operational risk
  - Diversification
The Insurance Authority (IA) conducted its first HK RBC consultation from 16 September to 15 December 2014. The consultation focused on objectives, overarching principles and proposed framework.

The consultation outcome (with 51 submissions) was published on 30 September 2015 concluding a general support for the move towards a risk-based capital framework. There is a general agreement on the high level principles of the conceptual framework, though there are mixed views on certain technical aspects.

The first Quantitative Impact Study (QIS 1) was released on 28 July 2017. The IA strongly encourages HK insurers and reinsurers to complete QIS 1.

The HKFI circulated a letter on the voluntary testing of a top-down yield curve based on own assets with guardrails (OAG) on 31 August 2017.

QIS 1 results and the voluntary OAG testing results are due on 1 December 2017.

Data analysis and follow-up with individual participants will take place from December 2017 to mid-2018.

From our experience in other markets, further consultations and QISs can be expected between 2018 and 2022 before the expected implementation date of 1 January 2022. The IA has confirmed QIS 2 development will begin in mid-2018.

The IA has indicated to issue Pillar 2 draft guidelines for consultation by the end of 2017, aiming to finalise in 2018.
2. Quantitative Impact Study (QIS)
Implementation Overview
Over 50 model runs are expected to complete QIS comprehensively

Life: 33  GI: 23  OAG: Varies

Quantitative Templates

Life: 10  GI: 9
Asset templates

Life: 7  GI: 2
OAG: varies
Liability templates

Life: 16  GI: 7
OAG: 1
PCR templates

GI: 5
Data templates

Key expected activities:

- **Life:**
  - Asset hypothecation
  - Reserving basis from NPV to GPV
  - Modelling of TVOG

- **GI:**
  - Reinsurance arrangement
  - Business mix and diversification
  - Capital management
  - M&A

- Collating results for different shocks
- Populating qualitative templates
### Liability change from HK ICO basis to HK RBC basis

**Example - par whole life product**

<table>
<thead>
<tr>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
<th>Step 6</th>
<th>HK RBC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HKICO / Cap 41 reserve</strong></td>
<td><strong>From NPV to GPV basis</strong></td>
<td><strong>Apply best estimate assumptions</strong></td>
<td><strong>Apply IFRS 17 contract boundary</strong></td>
<td><strong>Update discount rate</strong></td>
<td><strong>Include TVOG</strong></td>
</tr>
<tr>
<td>• Gross of reinsurance</td>
<td>• Include all future discretionary benefits</td>
<td>• Remove PADs</td>
<td></td>
<td>• From VIR to risk-free +volatility adjustment</td>
<td>• Consider BAU management actions</td>
</tr>
<tr>
<td></td>
<td>• Remove CSV floor</td>
<td></td>
<td></td>
<td>• Discretionary benefits should be recalculated</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Remove zeroisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Illustrative**
PCR modules for Life business

Factor based Stress test Qualitative Only

Prescribed Capital Requirement (PCR)

Market Risk
- Interest Rate Risk
- Credit Spread Risk
- Equity Risk
- Property Risk
- Currency Risk

Credit Default Risk

Long Term Business Underwriting Risk†
- Mortality/Longevity Risk
- Morbidity Risk
- Expense Risk
- Lapse Risk
- Mass Lapse Risk
- Catastrophic Risk

Operational Risk

† Only liabilities are tested in this module
PCR modules for GI business

Prescribed Capital Requirement (PCR)

- Market Risk
  - Interest Rate Risk
  - Credit Spread Risk
  - Equity Risk
  - Property Risk
  - Currency Risk

- Credit Default Risk

- Insurance Risk
  - Premium
  - Reserve
  - Catastrophe

- Operational Risk

Factor based Stress test Qualitative Only
Work plan for QIS 1 activities

QIS 1 Project Timeline

<table>
<thead>
<tr>
<th>Week ending</th>
<th>Project Management</th>
<th>Data, Assumption, &amp; Methodology</th>
<th>Modeling</th>
<th>Results &amp; Reconciliation</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 4</td>
<td>Detailed project plan</td>
<td>Data prepared</td>
<td>Asset model built</td>
<td>Asset templates</td>
<td>We are here</td>
</tr>
<tr>
<td>Aug 11</td>
<td></td>
<td>Assumptions and ESG set</td>
<td>Liability model built</td>
<td>Base liabilities results</td>
<td></td>
</tr>
<tr>
<td>Aug 18</td>
<td></td>
<td>Methodologies set</td>
<td></td>
<td>PCR results</td>
<td></td>
</tr>
<tr>
<td>Aug 25</td>
<td></td>
<td></td>
<td></td>
<td>OAG results</td>
<td></td>
</tr>
<tr>
<td>Sep 1</td>
<td></td>
<td></td>
<td></td>
<td>Stepwise reconciliation</td>
<td></td>
</tr>
<tr>
<td>Sep 8</td>
<td></td>
<td></td>
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<tr>
<td>Sep 15</td>
<td></td>
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<tr>
<td>Sep 22</td>
<td></td>
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<tr>
<td>Sep 29</td>
<td></td>
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<tr>
<td>Oct 6</td>
<td></td>
<td>Documentation</td>
<td>Model enhancement completed</td>
<td></td>
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<tr>
<td>Oct 13</td>
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<tr>
<td>Oct 20</td>
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<tr>
<td>Oct 27</td>
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<tr>
<td>Nov 3</td>
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<tr>
<td>Nov 10</td>
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<tr>
<td>Nov 17</td>
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<td>Nov 24</td>
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<tr>
<td>Dec 1</td>
<td></td>
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</tr>
</tbody>
</table>

Key milestone: 🔺
Key deliverable: 🔥
Current challenges in completing QIS 1 (Life)

Data Collection
- Asset hypothecation
- Collection of more granular asset data

Modelling
- Significant number of runs
- Enhanced modelling / calculations
- Balance existing resources

Review and Governance
- Training and regulatory updates
- Review and key stakeholder approval

Current Challenges

Compare QIS results with other bases
Reconciliation of figures

Analysis of Results
1010110
1001001
1101010
Current challenges in completing QIS 1 (GI)

- Valuing insurance liabilities under fair value with risk margin and discounting
- Contingent liabilities

- Valuing assets under fair value
- Collection of more granular asset data

- Accident year basis for direct insurance, underwriting year basis for reinsurance
- Ultimate loss triangles required in data collection

- HK RBC requires more granular LOB classification

- Current Challenges

- Assets
- Liabilities
- Loss Triangle
- LOB Classification
3. Preliminary findings
## Preliminary findings
### Selected areas of concern insurers currently discussed in QIS 1

### Contract boundary

<table>
<thead>
<tr>
<th>Basis</th>
<th>Contract boundary definition</th>
</tr>
</thead>
</table>
| IFRS 17 para. 34 | Cashflows from substantive rights and obligations during the reporting period in which the entity:  
(1) can compel the policyholder to pay the premiums or  
(2) has a substantive obligation to provide the policyholder with services.  
A substantive obligation to provide services ends:  
(a) when the entity has the *practical ability to reassess* the risks of the *particular policyholder* and, as a result, can set a price or benefit level that *fully* reflects those risks; or  
(b) when:  
(i) the entity has the *practical ability to reassess* the risks of the *portfolio* that contains the contract and, as a result, can set a price or benefit level that *fully* reflects the risk of that portfolio; and  
(ii) the pricing … *does not take into account the risks that relate to periods after the reassessment date.* |
| BMA para. 122 | Cashflows … to continue up to the point at which:  
(a) the insurer is no longer required to provide coverage;  
(b) the insurer has the right or the *practical ability to reassess* the risk of the *particular policyholder* and, as a result, can set a price that *fully* reflects that risk;  
(c) the insurer has the right or the *practical ability to reassess* the risk of the *portfolio* that contains the contract and, as a result, can set a price that *fully* reflects the risk of that portfolio. |
| ICS para. 70 | Cashflows beyond the following dates should not be considered, unless the Volunteer Group can demonstrate that they are able and willing to compel the policyholder to pay the premiums:  
(a) The future date where the Volunteer Group has a *unilateral right to terminate* the contract or *reject the premiums payable*; OR,  
(b) The future date where the Volunteer Group has a *unilateral right to amend* the premiums or the benefits payable in such a way that the premiums *fully* reflect the risks. |
## Preliminary findings

Selected areas of concern insurers currently discussed in QIS 1

### Credit spread PCR

<table>
<thead>
<tr>
<th>Case</th>
<th>Rated by any 4 major rating agencies?</th>
<th>Rated by any other rating agencies?</th>
<th>Rating band allocation</th>
<th>Shock level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes – rated by 1 agency</td>
<td>Yes or No</td>
<td>Definitive rating band</td>
<td>Corresponding rating band</td>
</tr>
<tr>
<td>2</td>
<td>Yes - rated by 2 or more agencies</td>
<td>Yes or No</td>
<td>Definitive rating band based on internal rating or lowest rating?</td>
<td>Corresponding rating band or lowest rating?</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>Yes</td>
<td>Non-definitive rating band based on internal rating or unrated?</td>
<td>Corresponding rating band or unrated?</td>
</tr>
<tr>
<td>4</td>
<td>No</td>
<td>No</td>
<td>Unrated</td>
<td>Unrated</td>
</tr>
</tbody>
</table>
Preliminary findings
Selected areas of concern insurers currently discussed in QIS 1

► OAG testing

► Differences between OAG technical specifications under HKRBC and ICS
  ► Risk correction
  ► Guardrail for equities and ALDA
  ► Credit rating

<table>
<thead>
<tr>
<th>Basis</th>
<th>Recognised rating agencies</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKRBC</td>
<td>S&amp;P, Moody’s, Fitch, A.M. Best</td>
<td>See previous discussion</td>
</tr>
<tr>
<td>ICS</td>
<td>S&amp;P, Moody’s, Fitch, JCR, R&amp;I, DBRS</td>
<td>A.M. Best for RI exposures</td>
</tr>
</tbody>
</table>

► Understanding the OAG impact
  ► Specification vs spreadsheet for equities and ALDA guardrail: Min(200 bps, min(1, X/Y) * rating 4 spread - RC)
  ► Does OAG over penalize investment in equities and ALDA?
  ► Regenerate ESG based on OAG yield curve
Preliminary findings
Selected areas of concern insurers currently discussed in QIS 1

- Operational risk – 2015 current estimate

  - 2015 ICO reserve * (2016 CE / 2016 ICO reserve)

  - 2015 BEL under LAT * (2016 CE / 2016 BEL under LAT)

  - 2015 BEL under LAT * (2016 GPV / 2016 BEL under LAT) + 
    2015 TVOG under internal EC * (2016 TVOG / 2016 TVOG under internal EC)
4. Potential impact on products
Par products
Expected impacts under QIS

Key Impacts
• Overall, we expect the capital requirement to increase due to risk-based approach
• Key driver of capital requirement is market risk
• Mortality and expense risk are the most significant life risk impacts in this illustration.

Upward Driving Forces
• Overall, we expect the reserves to increase for participating products due to the following:
  • Allowing for future discretionary benefits
  • Including TVOG
  • Including benefit outgo such as expenses
  • Reduction in valuation interest rates

Capital Requirement

Reserve

HK ICO HK RBC

Mathematical Reserve

Illustrative PCR composition

*Credit default risk is not captured in this illustration as no deposits, reinsurance or loans is assumed.

Market Risk Composition

Life Risk Composition

Key Impacts

Market Risk

- Interest rate
- Spread
- Equity

Life Risk

- Mortality
- Lapse
- Expense
- Catastrophe
Non-par critical illness products
Expected impacts under QIS

Mathematical Reserve

Downward Driving Forces
• Overall, we expect the reserves to decrease for non-participating products due to the following:
  • Removing PADs
  • Discount rate changed from VIR to the prescribed "Risk-Free + 50 bps Adjustment"
  • Removing cash surrender value flooring

Capital Requirement

Key Impacts
• Overall, we expect the capital requirement to increase due to risk-based approach
• Market risk is the most significant risk in terms of capital requirement.
• For Life risk, lapse down risk is most material in this illustration.

*Credit default risk is not captured in this illustration as no deposits, reinsurance or loans is assumed.
Universal life products
Expected impacts under QIS

Mathematical Reserve

Upward Driving Forces
• Overall, we expect the reserves to increase for universal life products due to the following:
  • Including benefit outgo such as expenses

Capital Requirement

Key Impacts
• Overall, we expect the capital requirement will be mainly influenced by the following:
  • Interest rate and credit spread risk
  • Lapse down risk

Illustrative PCR composition

<table>
<thead>
<tr>
<th></th>
<th>HK ICO</th>
<th>HK RBC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserve</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Illustrative PCR composition</th>
<th>Interest rate</th>
<th>Spread</th>
<th>Mortality</th>
<th>Expense</th>
<th>Lapse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Red</td>
<td>Purple</td>
<td>Blue</td>
<td>Yellow</td>
<td>Pink</td>
</tr>
</tbody>
</table>

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Investment linked products with actuarial funding
Expected impacts under QIS

Mathematical Reserve

Downward Driving Forces
- Overall, we expect the reserves to decrease for investment linked products due to the following:
  - Significant benefit from allowance of negative non-unit reserve
  - Removing surrender value floor
  - Change in reserving methodology to GPV

Key Impacts
- Overall, we expect the capital requirement will be mainly influenced by the following:
  - Life risk is expected to dominate given the market risk can be passed on the policyholders for the unit reserve portion
  - Lapse up and mass lapse risks are expected to be significant
  - Expense risk
  - The net impact on surplus (change in reserves + change in capital requirement) is expected to be positive due to the negative non-unit reserves

Illustrative PCR composition

Lapse
Expense
Mortality

Reserve
HK ICO  HK RBC

Capital Requirement
5. Future considerations
Future HK RBC considerations

- Risk & capital management
- Pillar 2 ERM
- Pillar 3 Disclosure
- Product development
- ALM/SAA implications
- Reinsurance
- Group supervision
- Recovery & Resolution Planning
- C-ROSS equivalence
Thank you
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