New Change, New Promotion

Implications of C-ROSS to Actuarial Professionals

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China Insurance Regulatory Commission
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I  Background and Framework

II  Thinking Model for Solvency System

III  Changes and Promotions
Timeline of C-ROSS: China Risk Oriented Solvency System

**Step 1** Overall Planning
- Where to go
- How to go
- How long

**Step 2** Review and Research
- C-SI self-evaluation
- C-SI vs. RBC vs. SII
- Research of Emerging Market Solvency Regimes

**Step 3** Conceptual Framework

**Step 4** Technical standards
- 9 standards for Pillar I
- 3 standards for Pillar II
- 3 standards for Pillar III
- 1 standard for insurance group
- 1 standard for reporting

**Step 5** Implementation
- Transitional Arrangements

- Mar 2012
- Oct 2012
- May 2013
- Dec 2014
- Feb 2015
Facts and Main Issues of China Solvency I (C-SI)

**Facts**

- Prudent asset and liability valuation
- Volume based fixed ratio capital requirement
  - 16%/18% of non-life insurance net premium
  - 4% of life insurance reserve

**Main Issues**

- Does not comprehensively reflect risks
- Low sensitivity to risks
- Capital requirement rather than risk management
Three Drivers of Developing C-ROSS

More sophisticated regulatory model for more complicated risks

Deepen the market oriented reform: soften the front end and harden the back end

International harmonization of regulation
Risk Stratification Model

Unsupervisable Risks

Supervisable Risks

Inherent Risk

Control Risk

Systemic Risk

Unquantifiable Risk

Quantifiable Risk

Insurance Risk

Credit Risk

Market Risk

Operation Risk

Reputation Risk

Strategy Risk

Liquidity Risk

Pillar I

Pillar II

Pillar III
Risk Stratification Model (cont.)

Reinsurance Risk

Life Reinsurance Risk
- Co-ins. & Modified Co-ins.
  - Long-Term Life
  - Long-Term Health
  - Long-Term Accident
- YRT
  - Long-Term Life
  - Long-Term Health
  - Long-Term Accident

Non-Life Reinsurance Risk
- Quota Share
  - Auto
  - Property
  - Marine Special Risks
- Non Quota Share
  - Property
  - Liability, Accident & Health
  - Special Risks
- Credit Insurance
- Liability
- Short-Term Accident
- Agriculture Insurance
- Short-Term Life
- Short-Term Health
Three-Layer Regulatory Framework: Risk, Capital and Value

- **Layer I**
  - Solvency Ratio
  - Stress Test
  - Regulatory Measure

- **Layer II**
  - IRR
  - SARMRA

- **Layer III**
  - Liquidity risk management
  - Company information disclosure

- **ESM (Enterprise Solvency Management)**

- Quantifiable Risks
- Supervisable Risks
- Overall Risks

- Credit Rating
- Analysis and Examination
- Regulator information disclosure
### Three-Pillar Regulatory Framework

<table>
<thead>
<tr>
<th>Quantifiable Risks</th>
<th>Unquantifiable Risks</th>
<th>Unsupervisable Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Insurance Risk</td>
<td>- Operation Risk</td>
<td>- Company Information Disclosure</td>
</tr>
<tr>
<td>- Credit Risk</td>
<td>- Strategy Risk</td>
<td>- Regulator Information Disclosure</td>
</tr>
<tr>
<td>- Market Risk</td>
<td>- Reputation Risk</td>
<td>- Credit Rating</td>
</tr>
<tr>
<td></td>
<td>- Liquidity Risk</td>
<td></td>
</tr>
</tbody>
</table>

#### Regulatory Tools

<table>
<thead>
<tr>
<th>Quantitative Capital Requirement</th>
<th>Qualitative Supervisory Requirement</th>
<th>Market Discipline Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Quantitative capital requirement</td>
<td>- Integrated Risk Rating (IRR)</td>
<td>- Company Information Disclosure</td>
</tr>
<tr>
<td>- Actual capital assessment</td>
<td>- Solvency Aligned Risk Management Requirements and Assessment (SARMRA)</td>
<td>- Regulator Information Disclosure</td>
</tr>
<tr>
<td>- Capital stratification</td>
<td>- Liquidity Risk</td>
<td>- Credit Rating</td>
</tr>
<tr>
<td>- Stress test</td>
<td>- Analysis and Examination (A&amp;E)</td>
<td></td>
</tr>
<tr>
<td>- Regulatory measure</td>
<td>- Regulatory Measure</td>
<td></td>
</tr>
</tbody>
</table>

#### Regulatory Discipline

<table>
<thead>
<tr>
<th>Quantitative Capital Requirement</th>
<th>Qualitative Supervisory Requirement</th>
<th>Market Discipline Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Comprehensive Solvency Ratio</td>
<td>- IRR Ratings</td>
<td>- ... ...</td>
</tr>
<tr>
<td>- Core Solvency Ratio</td>
<td>- Control Risk Scores</td>
<td></td>
</tr>
</tbody>
</table>

#### Market Discipline

<table>
<thead>
<tr>
<th>Quantitative Capital Requirement</th>
<th>Qualitative Supervisory Requirement</th>
<th>Market Discipline Mechanism</th>
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<tbody>
<tr>
<td>- ... ...</td>
<td>- ... ...</td>
<td>- ... ...</td>
</tr>
</tbody>
</table>
Pillar I: Total Balance Sheet Approach

**Asset:** admitted value

**Statutory liability:**
1. Net premium based
2. Overly conservative assumptions

**Minimum capital:** fixed ratios of reserve and premium size

**Liability**

**C-SI**

**C-ROSS**

Asset: market and amortised

Policy liability:
1. Gross premium based
2. BEL+Risk Margin (assumptions subject to certain regulatory requirements), should cover the cost of guarantees

Minimum capital: quantify the risk capital more elaborately

**China GAAP**

Asset: market and amortised

Policy liability:
1. Gross premium based
2. BEL+Risk Margin +Residual Margin (assumptions based on best estimates)
Valuation of Insurance Liabilities Under C-ROSS

### Discounting Curve

- Moving Average Risk Free Rate
- Transition Rate
- Ultimate Rate

### Risk Margin Calculation

#### Approach 1: Cost of Capital
- Article 21 of the Regulatory Standards No. 3: Insurance liabilities for life insurance contracts states the cost of capital method should be adopted in calculating risk margin

#### Approach 2: Scenario Based

OR

\[ PV_{\text{scen.}} \]

\[ PV_{\text{base}} \]

\[ \text{risk margin} \]
Pillar I: Capital Definition and Categorization

- **Capital Definition:**
  Available capital shall demonstrate four key characteristics:
  - Permanence
  - Subordination
  - Availability
  - Absence of Encumbrances

- **Capital Categorisation**
  Distinguish available capital resources from high quality to low quality according to their loss absorbing capacity:
  - Tier 1 Core
  - Tier 2 Core
  - Tier 1 Supplemental
  - Tier 2 Supplemental
Pillar I: Capital Requirement

*Net Risk Model*

**Net Risk = Inherent Risk × Control Risk × Systemic Risk**

- **Quantifiable inherent risks**
  - MC (Pillar I)

- **Control risks MC**
  - (Pillar II)

- **Additional MC**
  - (Pro-cyclical Risk, GSII, DSII...)

- **Overall Minimum Capital Requirement (MC)**
Pillar I: MC Components

Quantifiable risks

- Market risk
  - Interest rate risk
  - Equity risk
  - Property risk
  - Overseas assets risk
  - Currency risk

- Credit risk
  - Credit spread risk
  - Default risk

- Insurance risk
  - Non-life insurance risk
    - Premium risk
    - Reserve risk
    - Catastrophe risk
  - Life insurance risk
    - Mortality risk
    - Longevity risk
    - Morbidity risk
    - Expense risk
    - Surrender risk

- Reinsurance risk
  - Life reinsurance
  - Non-Life reinsurance
Pillar I : MC Calculation Methods

- **Composite factor based method:**
  
  $MC = EX \times RF$

  where: $EX$ is the risk exposure;

  $RF$ is the risk factor; $RF = RF_0 \times (1+K)$

  $RF_0$ is the base risk factor, $K$ is the characteristic factor

  $K = \sum_{i=1}^{n} k_i = k_1 + k_2 + k_3 + \cdots + k_n$

  $K_i$ is the characteristic factor based on specific risk or entity, $n$ is the number of characteristic factors

- **Scenario based method:**

  Used to calculate one year VaR;

  Applied on catastrophe risk for non-life, interest rate risk and insurance risk for life insurers
K-Factor Approach to Address Sophisticated Business Nature

K factor is introduced to reflect the characteristic of the business nature and risk

\[ K = \sum_{i=1}^{n} k_i = k_1 + k_2 + k_3 + \cdots + k_n \]

### Entity-Specific K-Factor

- When calculating the counterparty default risk of reinsurers, the characteristic factor \( k_1 \) depend on whether the domestic reinsurer counterparty is legal entity or not, \( k_1 \) value is set and assigned as follows:

\[
K_1 = \begin{cases} 
0 & \text{legal entity} \\
0.05 & \text{non legal entity}
\end{cases}
\]

### Risk-Specific K-Factor

- When calculating the counterparty default risk of the reinsurers' risk exposure, the characteristic factor \( k_1 \) depend on whether the counterparty provides asset – backing securities, \( k_1 \) value is set and assigned as follows:

\[
K_1 = \begin{cases} 
-0.25 & \text{The part with asset backing securities} \\
0.25 & \text{The part without asset backing securities}
\end{cases}
\]
Pillar I: Minimum Capital Aggregation

- Considering risk diversification effects, minimum capital requirements for particular risks are calculated using correlation matrix to aggregate, using life policy as example:

\[ MC_{\text{Market}} = \sqrt{MC_{\text{Vector}} \times M_{\text{Correlation coefficient}} \times MC^{T}_{\text{Vector}}} \]

\[ MC_{\text{Vector}} = (MC_{\text{Interest rate}}, MC_{\text{Equity price}}, MC_{\text{Real estate}}, MC_{\text{Overseas fixed-income}}, MC_{\text{Overseas equity}} \text{ and } MC_{\text{Exchange rate}}) \]

\[ MC_{\text{Credit}} = \sqrt{MC_{\text{Spread}}^2 + 2\rho \times MC_{\text{Spread}} \times MC_{\text{Counterparty default}} + MC_{\text{Counterparty default}}^2} \]

\[ MC_{\text{Non-life insurance}} = \sqrt{MC_{\text{Premium and reserve}}^2 + 2\rho \times MC_{\text{Premium and reserve}} \times MC_{\text{Catastrophe}} + MC_{\text{Catastrophe}}^2} \]

\[ MC_{\text{Life insurance}} = \sqrt{MC_{\text{Vector}} \times M_{\text{Correlation coefficient}} \times MC^{T}_{\text{Vector}}} \]

\[ MC_{\text{Vector}} = (MC_{\text{Loss rate}}, MC_{\text{Surrender}} \text{ and } MC_{\text{Cost}}) \]
Pillar I: Counter-Cyclical Regulation

Entity Level

- K factor for counter-cyclicality for trading equity and real estate assets

Industry Level

- Life policy valuation curve consists of base curve and comprehensive premiums
- Comprehensive premiums take into consideration of counter-cyclical capital adjustment

<table>
<thead>
<tr>
<th>Category</th>
<th>Comprehensive Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk / Liquidity</td>
<td>70BP</td>
</tr>
<tr>
<td>Medium Risk / Liquidity</td>
<td>45BP</td>
</tr>
<tr>
<td>Low Risk / Liquidity</td>
<td>30BP</td>
</tr>
</tbody>
</table>

Macro Level

- Article 19 of the Regulatory Standards No. 2: insurers shall measure counter-cyclical supplementary capital according to CIRC requirements
Pillar I: Regulatory Intervention

Different levels of regulatory intervention:

- **Ordinary regulatory intervention**
  Applicable: when Comprehensive Solvency Ratio falls below 100%

- **Extraordinary regulatory intervention**
  - **Suspending new sales**: Core Solvency Ratio is constantly below specific standard “A1” or available capital drops below certain absolute amount “A2”
  - **Take-over & restructuring**: Core Solvency Ratio is constantly below specific standard “B1” or available capital drops below certain absolute amount “B2”
  - **Bankruptcy & Liquidation**: Core Solvency Ratio is constantly below specific standard “C1” or available capital drops below certain absolute amount “C2”
Pillar II: Integrated Risk Rating (IRR)

Pillar I Quantitative Risks
- Insurance Risk
- Market Risk
- Credit Risk
- Pro-Cyclical Risk
- Systemically Important Risk

Pillar II Qualitative Risks
- Operation Risk
- Strategy Risk
- Reputation Risk
- Liquidity Risk

Integrated Risk Rating (IRR)
A B C D

Regulator assesses the overall risk of the insurance company quarterly
# Pillar II: Integrated Risk Rating (IRR) (cont.)

<table>
<thead>
<tr>
<th>Rating</th>
<th>Quantitative risk</th>
<th>Qualitative risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Solvency ratio <em>meet</em> regulatory requirements</td>
<td>Small operational risk, strategic risk, reputational risk and liquidity risk</td>
</tr>
<tr>
<td>B</td>
<td>Solvency ratio <em>meet</em> regulatory requirements</td>
<td>Relatively small operational risk, strategic risk, reputational risk and liquidity risk</td>
</tr>
<tr>
<td>C</td>
<td>Solvency ratio <em>meet or not meet</em> regulatory requirements</td>
<td>Relatively big risks such as operational risk, strategic risk, reputational risk or liquidity risk</td>
</tr>
<tr>
<td>D</td>
<td>Solvency ratio <em>meet or not meet</em> regulatory requirements</td>
<td>Severe risks such as operational risk, strategic risk, reputational risk or liquidity risk</td>
</tr>
</tbody>
</table>
Pillar II: Integrated Risk Rating (IRR) (cont.)

Weighted average method

IRR

- quantitative risks × 50%
- qualitative risks × 50%

Depending on the absolute level and variance of the solvency ratio

Core solvency ratio
Comprehensive solvency ratio

Operational risk × 50%
Strategic risk × 15%
Reputation risk × 10%
Liquidity risk × 25%

Influenced by risk factors such as external environment, the distribution characteristic, expected loss and historical data, etc.
Non-quantifiable risks are assessed according to a set of standards. The following demonstrate the assessment model for operational risk under C-ROSS:
Pillar II: Solvency Aligned Risk Management Requirement and Assessment (SARMRA)

Risk Management Requirement and Regulatory Assessment

Risk Management Requirement
Regulator publishes requirements on risk management

Risk Management Evaluation
Regulator evaluates the risk management abilities of the insurers
Pillar II: Control Risk Scored by SARMRA

Scoring S

- **completely compliance**  - get 100% of standard score.
- **Mostly compliance**  - get 80% of standard score.
- **Partially compliance**  - get 50% of standard score.
- **Not compliance**  - get zero

\[ MC_{control} = Q \times MC_{quan} \]

\[ Q = -0.005 \times S + 0.4 \]

- **S >= 80,**  \( MC_{control} \leq 0 \)
- **S < 80,**  \( MC_{control} > 0 \)

- A robust and effective risk management system is critical for insurers in order to decrease the capital requirement.
- The assessment results of SARMRA will directly affect the capital requirement of control risk.
- The robustness and effectiveness of risk management will directly affect the capital requirement.

The final score of SARMRA is the weighed average of the 9 parts scores.
Pillar II: Liquidity Risk Regulation

- Liquidity Requirement
- Regulatory Indicators of Liquidity Risk
- Regulatory Intervention
- Cash Flow Stress Test
- Regulatory Reports

Liquidity Risk Regulation System
Pillar II: Analysis & Examination (A&E)

Three categories of Analysis & Examination:

- **Supporting A&E**
  - Data accuracy and behavior compliance
  - Analysis of quantifiable regulatory indicators
  - Unquantifiable risk analysis & examination

- **Calibration A&E**
  - Model mis-specification risk (both quantitative and qualitative models)
  - Omitted risks

- **Extended A&E**
  - New types of risks
  - Macro prudential
  - Other
Pillar III – Market Discipline

- Insurance company information disclosure
- Regulator information Disclosure
- Insurance company credit rating
- Insurance company information disclosure
Approach to Group/Financial conglomerates

Scope of Applications

- Insurance holding group
  - Insurance group(holding) company/Insurance company
    - Insurance company
    - Insurance company
    - Non-insurance institutions
  - Non-insurance holding group
    - Non-insurance institution
    - Insurance company
    - Insurance company
    - Non-insurance institutions
  - Mixed insurance group
    - The same de facto controller, without apparent parent company
    - Insurance company
    - Insurance company
    - Non-insurance institutions
Contents

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III  Changes and Promotions
Overview Global of Solvency Regulations

United States
- NAIC solvency modernization
- Federal Insurance Office (FIO)
- Systemic risk regulation (FSOC)
- Rating agencies regulation…

Europe
- Solvency II implementing measures
- New supervisory architecture (ESAs, ESRB)
- Pension reforms
- Rating agencies regulation…

Latin America
- Mexico solvency reform
- Brazil reinsurance

International
- IAIS ComFrame and capital standards
- G-SII policy measures
- IASB & FASB project…

Asia Pacific
- Solvency reforms
  - China
  - Japan
  - Singapore
  - Thailand
  - HK SAR
- Market access
  - India
  - Indonesia
  - China
Asia Regulatory Reform

- C-ROSS was set up in 2015 and is in transitional period.
- Continuous work towards economic-based solvency regime.
- Continuous refinement of RBC framework.
- Consultation of RBC under way, implementation expected in 2017+.
- Consultation on financial reinsurance and guarantees.
- Enhanced RBC calculation in 2013.
- LAGIC in 2013, Natural Perils Horizontal Requirements started 2014.
- Devising the roadmap towards Risk Based Solvency approach.
- RBC framework for Takaful operators implemented in 2014.

Source: Swiss Re Analysis
Considerations of a Regulation Reform

We see regulation reform are based on the following factors:
- Product mix
- Investments
- Valuation Models
- Risk Management Actions
- Supervisory Intervention

What is underneath?
A Thinking Model To Develop a Prudential Regulatory System

*Formation – Behavior-Operation (FBO) Model*

But this is where we are used to focusing on

- **Syntactics Layer**
  - Business Operation
- **Semantics Layer**
  - Market Behavior
- **Pragmatics Layer**
  - Market Formation
Regulatory Problem-Solving Process under FBO Model

**Pragmatics**

1. How Insurance market being formed?
   - Social governance system
   - Business models
   - Unified or fragmented regulatory organizations
   - ...

2. How Insurance Market Behaves?
   - Market structure
   - Consumer behaviour
   - Database / IT system
   - ...

**Syntactics**

3. How Insurance Business Being operated?
   - Product mix
   - Asset portfolios
   - Value measurement
   - Technical specification
   - ...

**Prudential Regulatory System Formation**
“Pragmatics Layer” - How Insurance Market Being Formed?

The Way Insurance Regulators Being Organized

- Nationaly unified regulatory organization or fragmented regulatory organization?
  - China is “one regulator” vs US has 50 regulators vs. EU has 27 regulators

Demand Side

- Social governance system
- Social security system
- Disaster protection system
- Need of long-term financing
- Social axiology and social goal
- ...

Supply Side

- Business models to fulfill insurance and long-term finance needs
- No. of insurance participants or alternative institutions and level of competition
- Threshold of licensing
- ...

The Maturity Level of Associated Markets

- The level of maturity of associated markets (financial market is a typical associated market insurance market underlying)
- Development stage of alternative markets
Formation and Maturity Level of Insurance Market —— its impact on regulatory model

Primary Market
- Sized Based Regulation
  - Low GDP
  - Low disposable income
  - Low insurance awareness

Emerging Market
- Risk Based Regulation
  - Rapid growth
  - Relatively low insurance density and penetration
  - Versatile risk nature

Mature Market
- Risk/Economic Based Regulation
  - Stable growth
  - Complete and efficient market
  - Aging population
  - Low interest rate

Post Mature Market
- ?
  - Low growth
  - ??

Neomature Market
- Community Based Regulation?
  - Mobile internet
  - Big data
  - Could computing
  - Social media network
  - New business model
### Demand Side

—— Social Security System (C-ROSS Case)

Social security provisions could decide the level of commercial insurance demands.

Using Pension system as an example:

<table>
<thead>
<tr>
<th>China Features</th>
<th>C-ROSS Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td></td>
</tr>
<tr>
<td>Zero</td>
<td>Minimum guarantee (Di Bao)</td>
</tr>
<tr>
<td>IA</td>
<td>Mandatory social pool old age pension</td>
</tr>
<tr>
<td>IB</td>
<td>Mandatory Individual Account (IA) pension (urban only)</td>
</tr>
<tr>
<td>II</td>
<td>Voluntary enterprise annuity (set up by eligible employers)</td>
</tr>
<tr>
<td>III</td>
<td>Voluntary individual pensions e.g. insured group pension plans, individual pension</td>
</tr>
<tr>
<td>IV</td>
<td>Family support, subsidised healthcare and housing</td>
</tr>
</tbody>
</table>

Pension companies who only offer type II business are not subject to C-ROSS capital requirements.

Pension companies and other life insurance companies who offer type III and IV business are subject to C-ROSS regulation.
Supply Side
—— Business Model (C-ROSS Case)

<table>
<thead>
<tr>
<th>Business Models</th>
<th>C-ROSS Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liability driven</td>
<td>Flexible, compatible, inclusive regulatory regime</td>
</tr>
<tr>
<td>Asset driven</td>
<td></td>
</tr>
<tr>
<td>Innovative</td>
<td></td>
</tr>
</tbody>
</table>
# Maturity Level of Associated Market

## Underlying Financial Market (C-ROSS Case)

<table>
<thead>
<tr>
<th>China Financial Market</th>
<th>C-ROSS Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete</td>
<td>MC Valuation</td>
</tr>
<tr>
<td>Less Perfect</td>
<td>+ Amortised Cost</td>
</tr>
<tr>
<td>Weak Efficient</td>
<td>Discount yield curve (0 – 20 years):</td>
</tr>
<tr>
<td>Irrational Investors</td>
<td>750 days moving average of government bond yield curve</td>
</tr>
<tr>
<td>Cyclical Impact</td>
<td>Pro and counter cyclical capital adjustment at both balance sheet and macro-economic perspectives</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
Regulatory Organisation Structure
—— One Regulator System (C-ROSS Case)

<table>
<thead>
<tr>
<th>China Market</th>
<th>C-ROSS Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Regulator</td>
<td>Supervisory based risk assessments</td>
</tr>
<tr>
<td>One System</td>
<td>Standardised risk factors</td>
</tr>
<tr>
<td></td>
<td>Easier to promote supervisory guidelines</td>
</tr>
<tr>
<td></td>
<td>Immediate and effective supervisory intervention</td>
</tr>
<tr>
<td></td>
<td>authority</td>
</tr>
</tbody>
</table>
“Semantics Layer” - How Insurance Market Behaves?

- Market behavior largely shapes the direction and ultimate structure of regulatory system and any reform must carefully consider the following elements:

<table>
<thead>
<tr>
<th>Key Elements of Market Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Structure</td>
</tr>
<tr>
<td>Degree of Regulatory Authority</td>
</tr>
<tr>
<td>Expertise / Level of Sophistication</td>
</tr>
<tr>
<td>Database and IT System</td>
</tr>
<tr>
<td>Capital Resources</td>
</tr>
<tr>
<td>Culture / Consumer Behavior</td>
</tr>
<tr>
<td>Market Constancy</td>
</tr>
<tr>
<td>Demographics</td>
</tr>
</tbody>
</table>
## C-ROSS Case: Insurance Market Behaviour

<table>
<thead>
<tr>
<th>China Market Behaviour</th>
<th>C-ROSS Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing and rapid growth</td>
<td>• Emphasis on qualitative assessment to capture the risk nature</td>
</tr>
<tr>
<td></td>
<td>• Areas in guidelines for future changes and improvements</td>
</tr>
<tr>
<td>Big variance in company sizes</td>
<td>• Introducing K factors to capture different features of different companies</td>
</tr>
<tr>
<td></td>
<td>• Regressive tiered capital charge for Auto insurance</td>
</tr>
<tr>
<td>Lack of financial resource insufficient expertise</td>
<td>• Composite factor method, not scenario based method</td>
</tr>
<tr>
<td></td>
<td>• Industry standard model, no internal model</td>
</tr>
</tbody>
</table>
Current discussions of regulatory formation are focused on business operation and technical aspect levels.
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III  Changes and Promotions
Three Changes Happened

- **C-SI**
  - From volume-orientation to risk-orientation
    - Increase the risk-sensitivity and risk-coverage of regulatory approaches
    - Create incentives of more sophisticated risk-taking and risk management
    - Change the industry focus from scale to risk & value

- **C-ROSS**
  - From single approach to integrated approach
    - Utilize uniform framework of financial reporting valuation, value measurement and capital management, to minimize the inconsistency of decision-making indicators
    - Balance sheet, capital allocation, risk management and performance measurement within one “basket”
  - From country focus to market focus
    - China is the largest emerging insurance market
    - Emerging markets shared many common key features
    - As compatible system, C-ROSS could provide helpful experiences to other emerging markets
Actuaries are best positioned to play bigger roles

- Powerful tool-kit that is helpful across all levels of the system construction
- From technique oriented to business oriented
- From analytical to strategic
How to Adopt and Lead the Changes From C-ROSS?

**Technique Layer**
- Pricing
- Accounting
- ALM
- Product innovation
- Valuation
- Strategic Investment
- Risk Model

**Management Layer**
- Strategic Management
- Product Management
- Investment Management
- Risk Management
- Corporate Governance

**Market Layer**
- Market Development
- Consumer Behavior
- Capital Market
- Supervisory Intervention
- Public Relationship

Communication and Public Relation
In 1999, CIRC issued actuarial technical specification
In 2004, non-life reserving standards established
Actuaries and products engaged in actuarial departments

In 2009, China’s accounting standard reform and accounting purpose reserving standard being issued
Actuaries being significantly involved in departments such as Financial Reporting and financial planning

In 2015, C-ROSS entered transition period
Actuaries are expected to create impact in more business functions including risk management, investment and strategic planning
New Change, New Promotion

GO!

Thanks