2014 EAAC IN TAIPEI TAIWAN

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The C-ROSS solvency system and actuarial valuation in China

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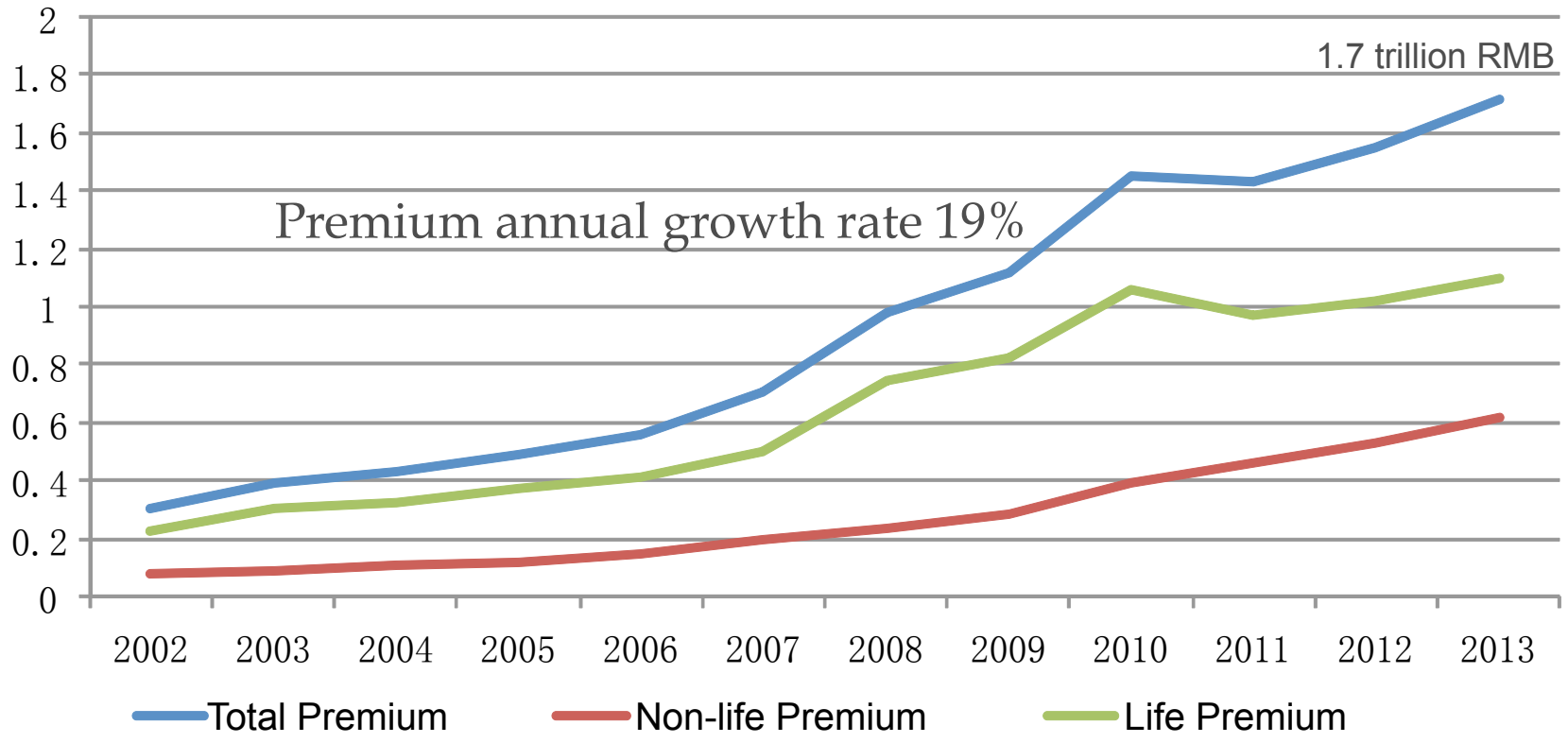
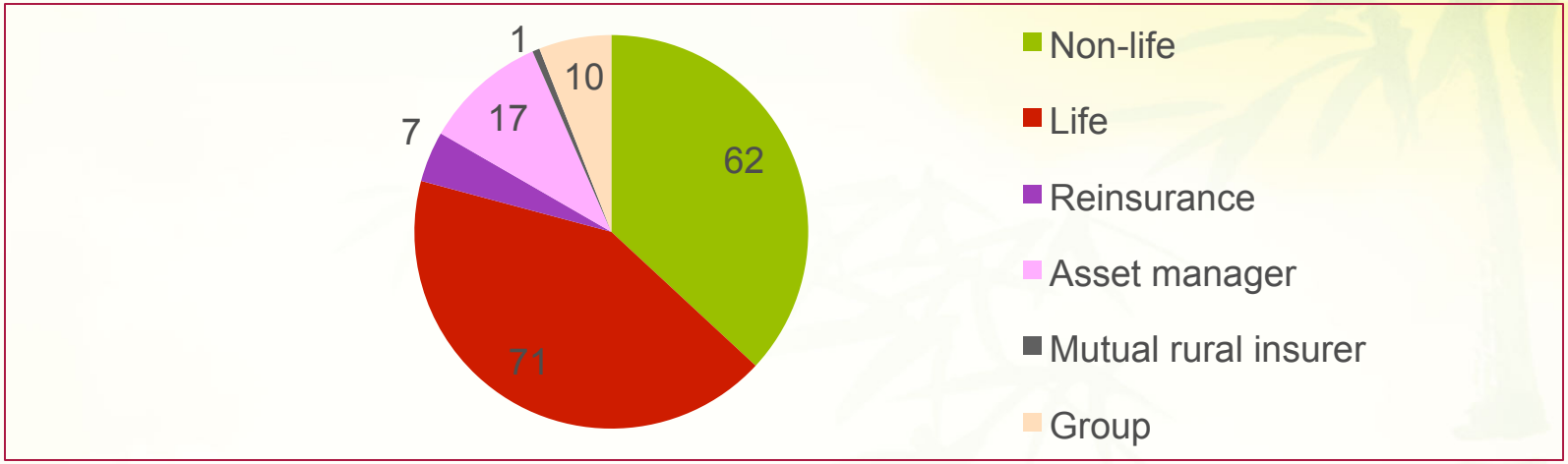
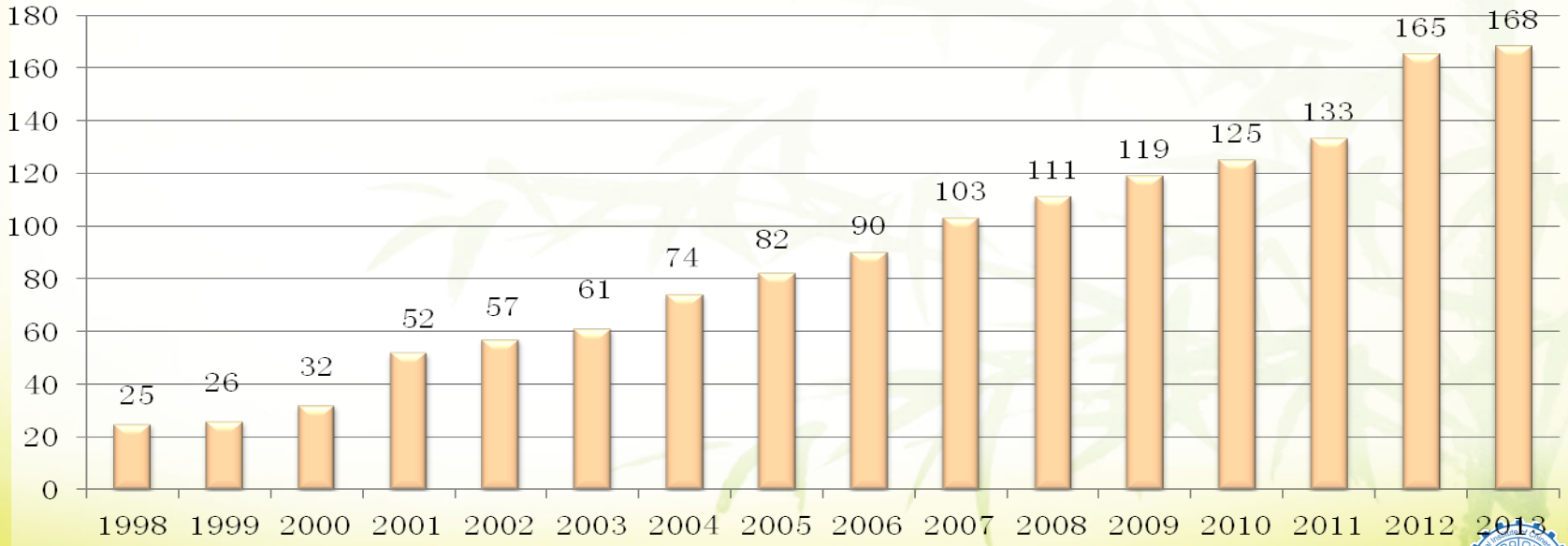
EAAC

Premium Growth - China

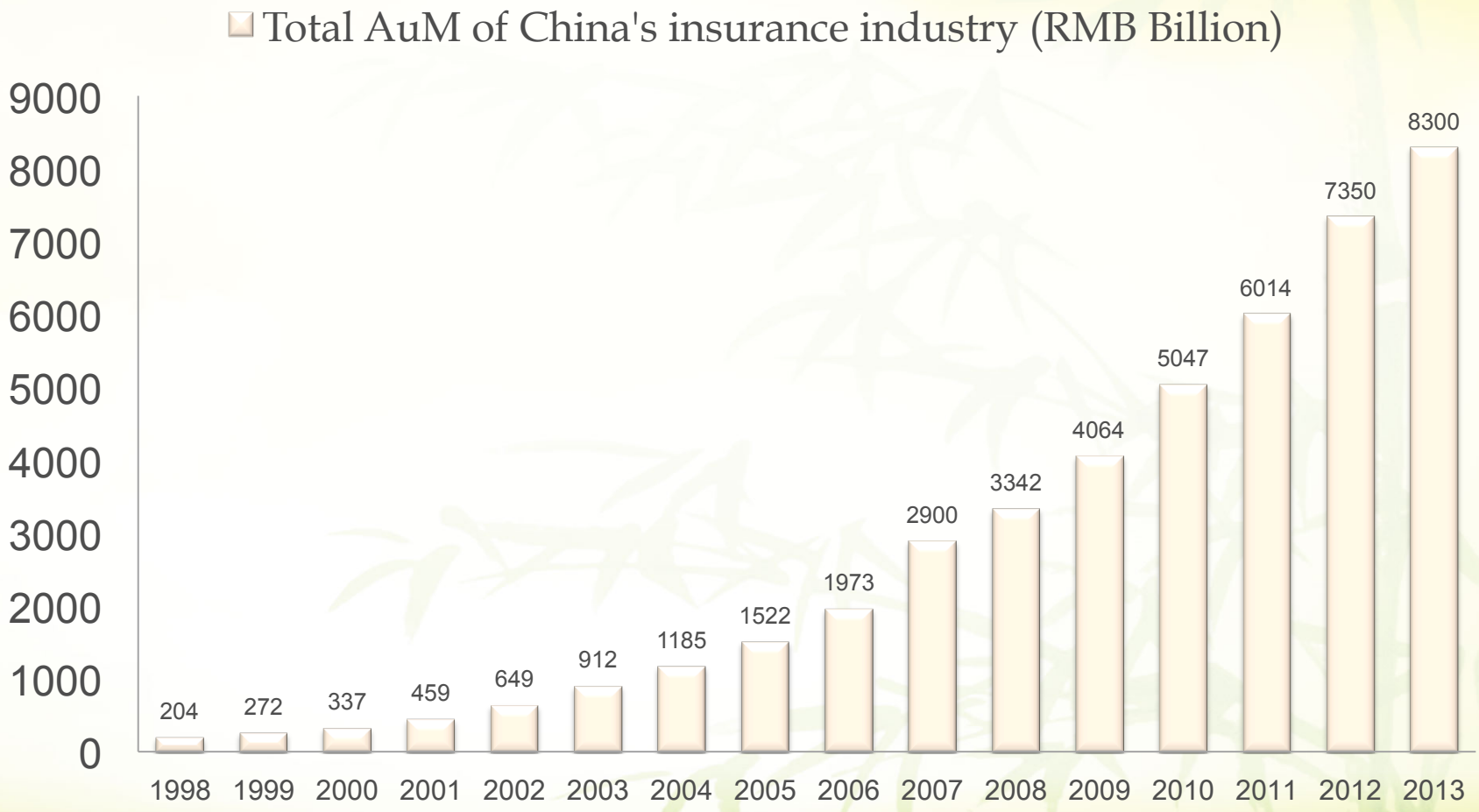


Number of Insurance Companies





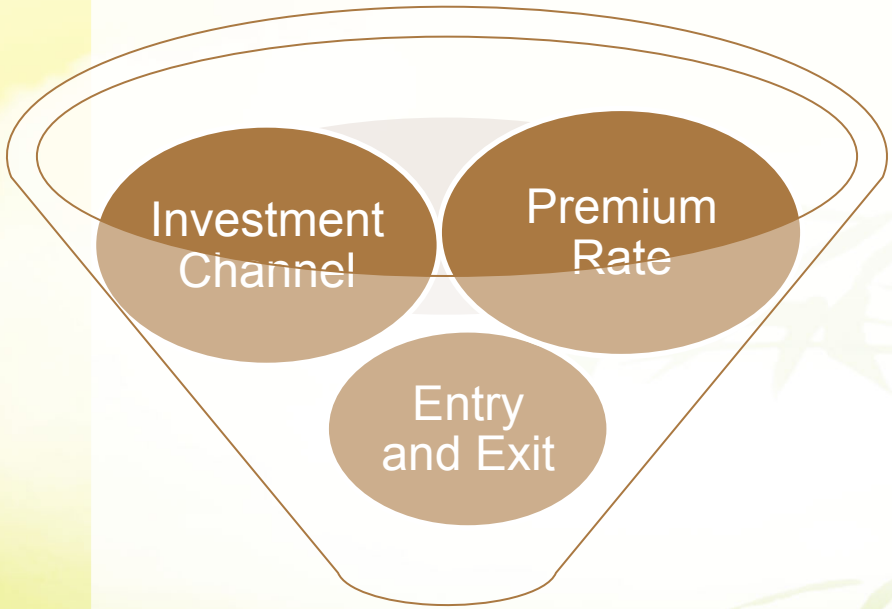
Asset Volume Under Management

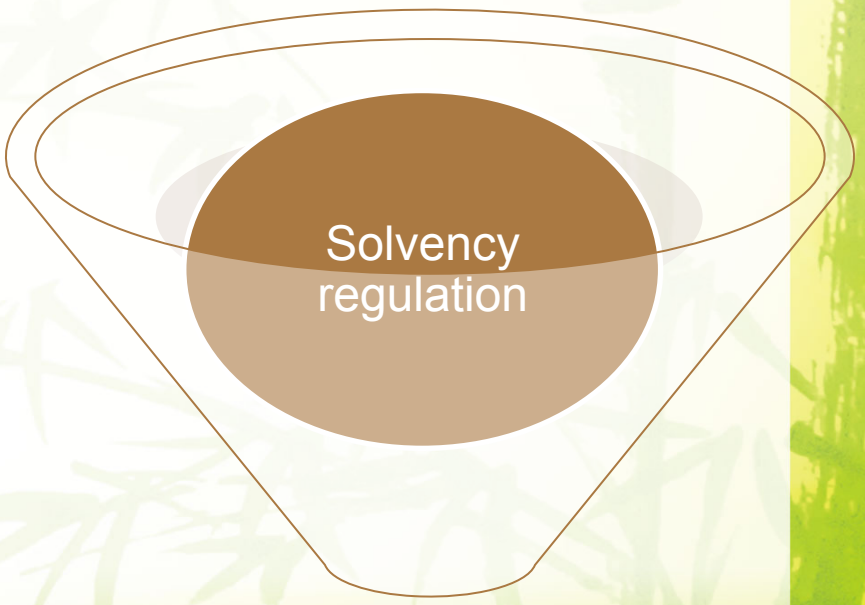


Market-Oriented Reformation

Liberalize the front end

Control the back end





Agenda

- **Background & History**
- **Conceptual Framework of C-ross**
  - **Pillar I Quantitative Capital Requirements**
  - **Pillar II Qualitative Supervisory Requirements**
- **Liability valuation in C-ross: updated**

Background & History-Time Line

- From 2003 to 2007, CIRC(China Insurance Regulation Committee) build up the first generation of Chinese solvency supervision system——the current one：**Solvency I**
- In 2012, CIRC started the reform of the solvency supervision system to construct the second generation system ——the new one：**C-ROSS**
- The new system will be implemented in 2015.

Background & History - Role

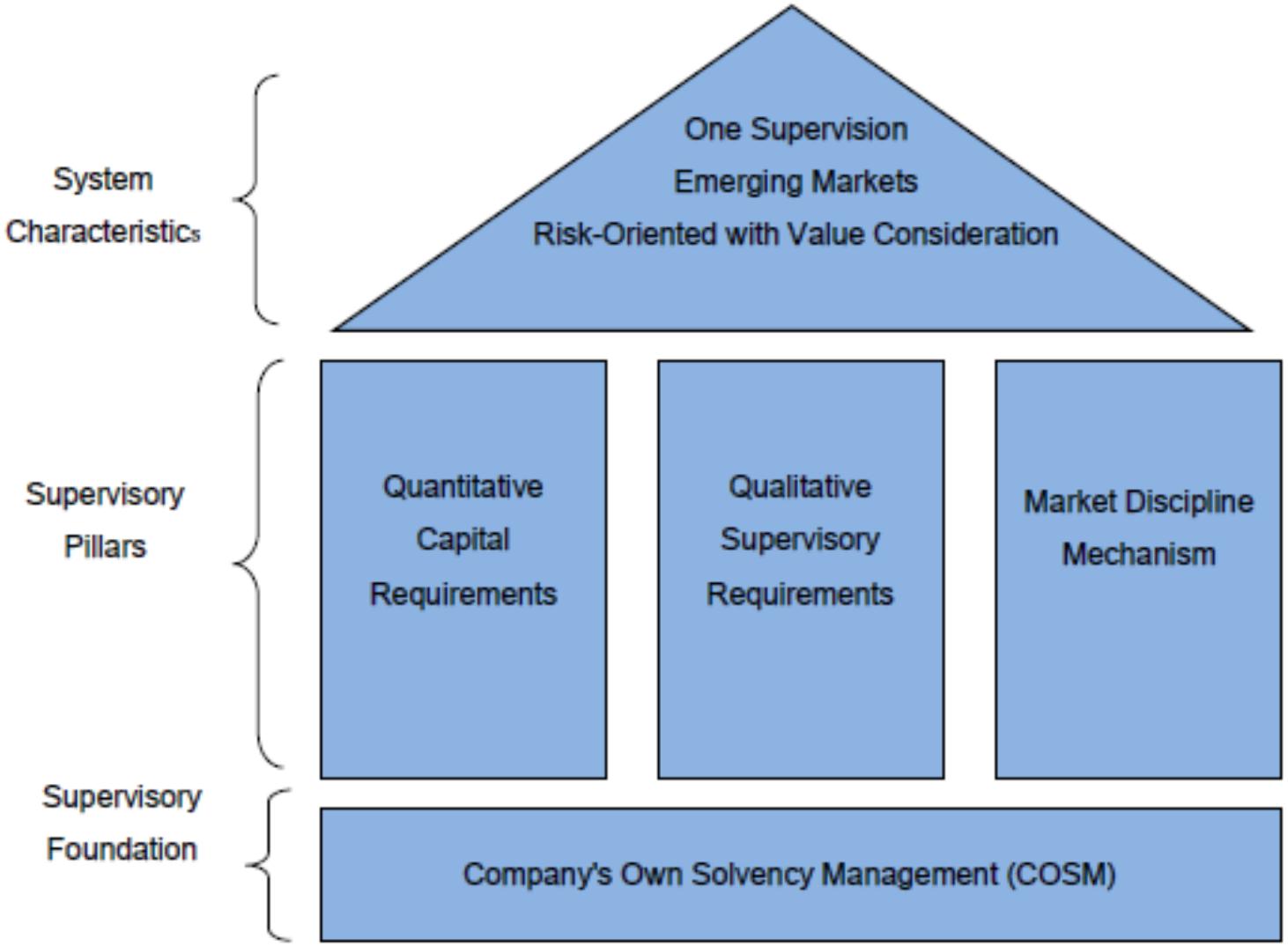
- In a certain level，reflects the risks of insurance company.
- Based on the conservative assumptions , the capital requirement with real capital together to cover the both expected and unexpected losses in general .
- On the ground of the rapid development of China insurance market over the past ten years, the system was capacity for and played a very important role in：
  - to unify the concepts of capital management in the industrial,
  - the risk prevention,
  - promote the strength of the insurance industry
  - improve the management level

Background & History -adaption of Solvency I

- Do not identify the risk profile: operational risk, reputational risk, strategic risk, liquidity risk and asset liability matching risk .
- Failure to properly recognize the expected and unexpected losses.
- Capital requirements and reserve are linked and adequate duplicate.
- Do not reflect the effects of internal control, risk management, business structure and asset portfolio.
- Failed to promote sustainable operation in different of period and scale companies.

Conceptual Framework of C-ROSS

- **2013.05.03 issued <China Risk Oriented Solvency System Conceptual Framework>**
  - To measure the risks scientifically and comprehensively, to calculate a capital requirement that aligns with the specific risks.
  - To mitigate undesirable or unintended risk exposures and determine appropriate capital requirements; to establish an effective incentive mechanism to encourage undertakings to improve the management and control of risks and to promote the robust development.
  - To actively explore an appropriate model for solvency supervision in emerging markets and to contribute to the development of international solvency supervision.


System Characteristics
One Supervision
Emerging Markets
Risk-Oriented with Value Consideration
Supervisory Pillars
Quantitative Capital Requirements
Qualitative Supervisory Requirements
Market Discipline Mechanism
Supervisory Foundation
Company's Own Solvency Management (COSM)

Pillar I
—Quantitative Capital Requirements

1. Capital requirement
2. Valuation and admissibility standards of assets and liabilities
3. Available Capital tier
4. Dynamic solvency testing
5. Supervisory intervention

Capital requirement

- insurance risk capital requirements;
- market risk capital requirements;
- credit risk capital requirements;
- macro-prudential capital requirements, i.e. capital requirements for pro-cyclical risk and systemic risk in systematically important institutions;
- supervisory capital requirement adjustments,

Solvency adequacy ratio

- Three indicators to evaluate the solvency position of insurance undertakings:
  - core solvency adequacy ratio,
  - aggregated solvency adequacy ratio
  - integrated risk rating.

Valuation Principles of Assets and Liabilities in Pillar I

- non-life insurance undertakings and life insurance undertakings should be as consistent as possible.
- The same insurance business should adopt the same valuation principles for assets and liabilities, regardless of whether it is carried out by life or non-life insurance undertakings, direct insurers or reinsurers.
- The valuation principles of assets and liabilities should be as consistent as possible, in order to minimize the mismatch between assets and liabilities caused by the inconsistencies in the valuation principles.

Valuation Principles of Assets and Liabilities in Pillar I

- should reflect the actual risk profiles of the assets and liabilities of insurance undertakings in the market environment and their changes timely and appropriately.
- should fully utilize the existing insurance undertakings' financial accounting system. In order to effectively reduce the implementation costs of solvency assessment and management, underlying data, measurement principles and methods and reporting systems should be shared to the extent practical.
- used to calculate the minimum capital requirements under Pillar 1 should be consistent with those used for the calculation of available capital.
- should objectively reflect the actual situation in China and fully consider the impact on the entire insurance industry. The standards should be appropriate and practical.

Pillar II
——Qualitative Supervisory Requirements

1. **Integrated risk rating,** i.e. the supervisor conducts a comprehensive evaluation of the overall solvency of insurance undertakings by integrating the quantitative evaluation of the risks that can be quantified under Pillar 1, and the qualitative evaluation of the risks that are difficult to quantify (including operational risk, strategic risk, reputational risk and liquidity risk) .
2. **Risk management requirements and assessment framework**, sets out specific supervisory requirements for the risk management practice of insurance undertakings including risk governance structure, internal control, the management structure, risk assessment processes, etc., and assesses insurance undertakings' risk management capabilities and risk profiles.
3. **Supervisory inspection and analysis,** i.e. conducting on-site inspections and off-site analysis of the solvency of insurance undertakings.
4. **Supervisory intervention actions.**

Risk Management Requirement and Evaluation

Risk Management Requirement

Regulator publishes the requirement on risk management

Risk Management Evaluation

Regulator evaluates the risk management level of the insurance companies

The result of evaluation will feedback in the MC control risk:

$MC_{control} = Q \times MC_{quantifiable\ inherent\ risks}$

$Q = -a*S+b;$

S is the scores achieved by the insurance company under SARMRA

Liability valuation in C-ROSS

- life insurance liability：
  - Best Estimation Reserve（BER） + Risk Margin（RM）
  - RM = BE(design) - BE(base)

BER- Output cash flows

- Insurance Coverage :
  - Guarantee
    - Death benefit
    - Disability
    - Mobility
    - Survive
    - Surrender
    - Maturity
  - Non guarantee
    - Dividends
    - Payment on credit rate

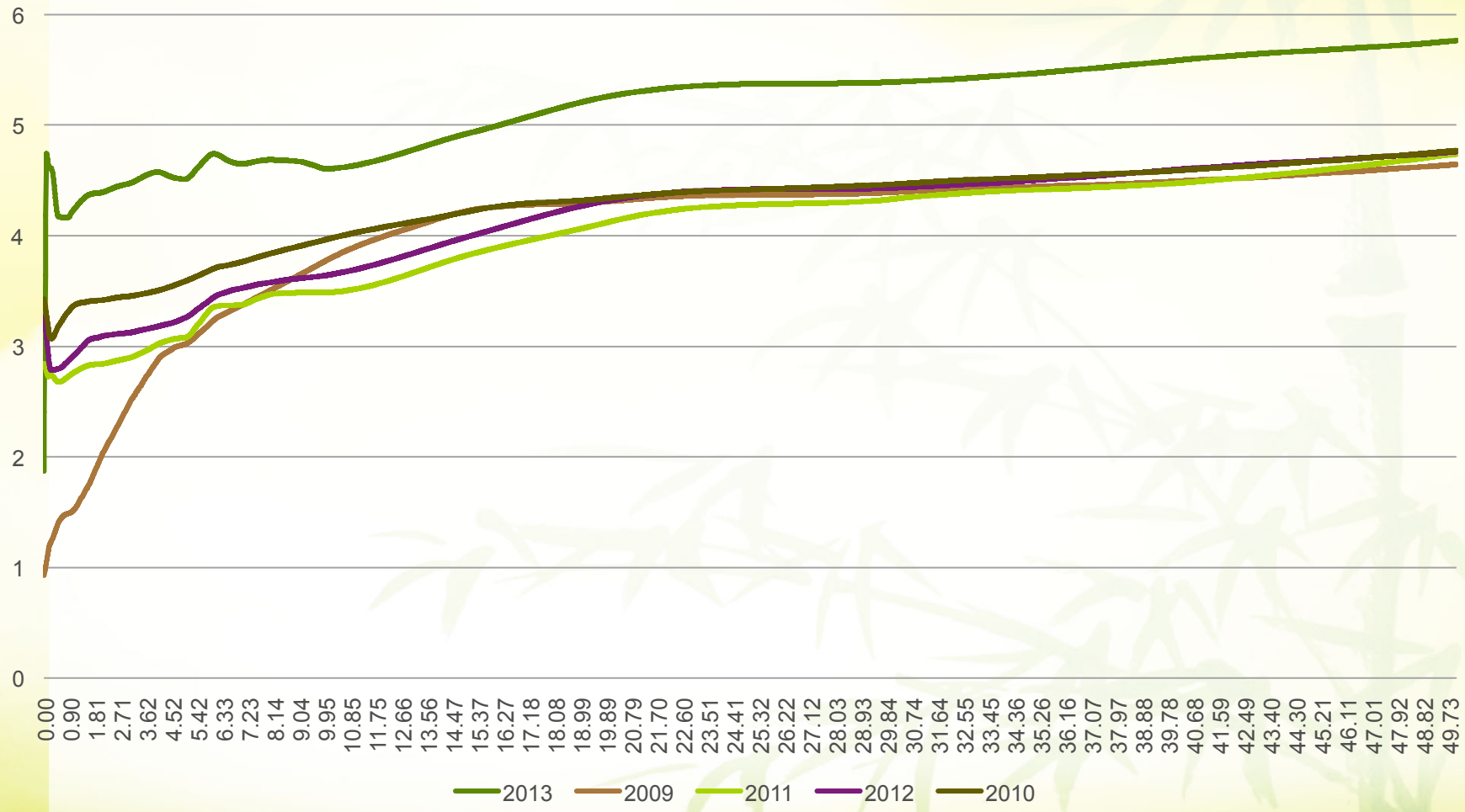
BER- Output cash flows

- Expense
  - Maintain
  - Commission
  - Claim
  - Regulation related
- Tax-pay

BER-Discount rate

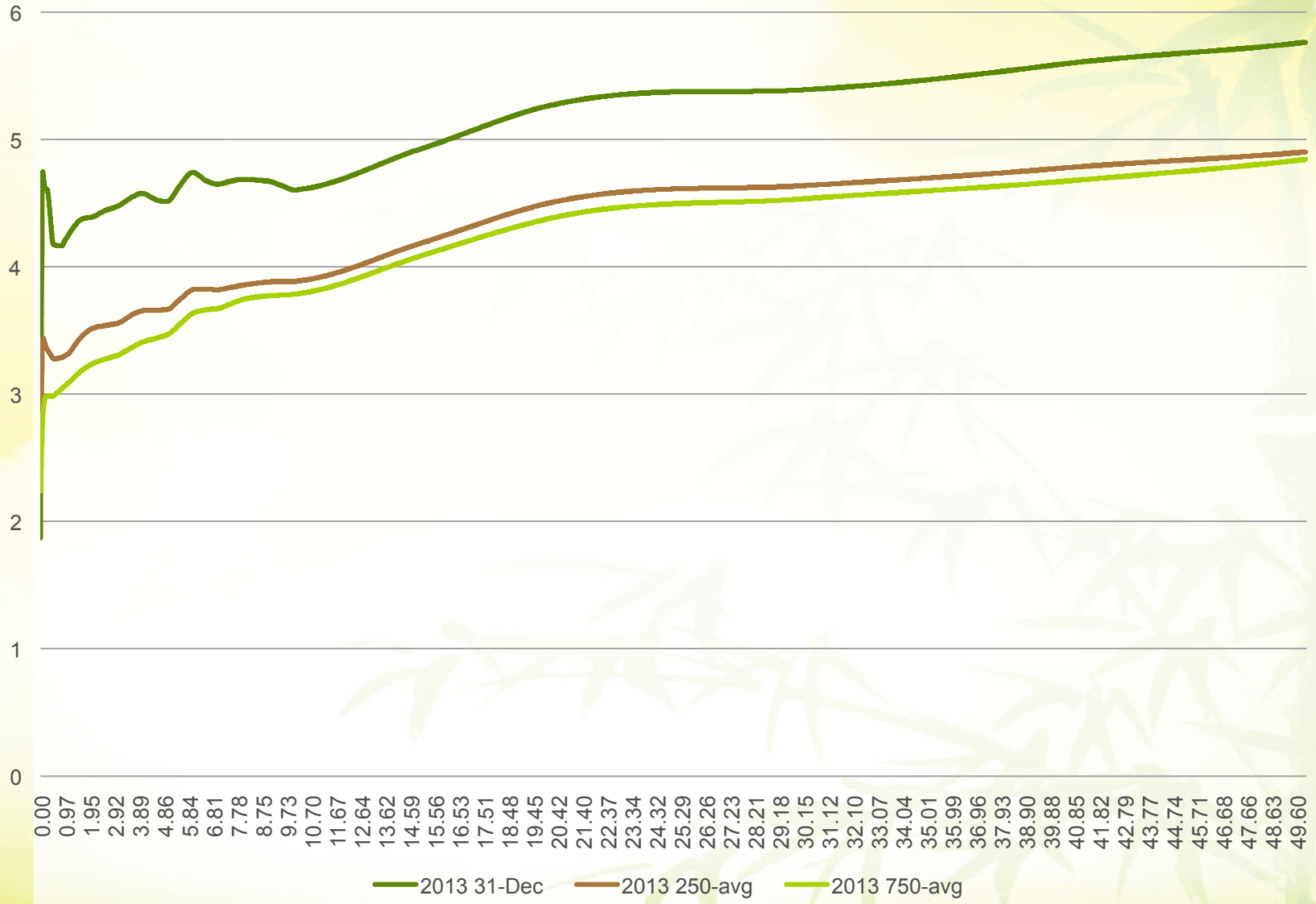
- Two methodology
  - Base rate + comprehensive premium
  - Cash flow matching
- Current interest rates scenario: 2013/12/31
- Assumed low interest rates scenario: 2009/12/31

Yield curve(http://www.chinabond.com.cn/d2s/index.html)



Base rate

- 750-day moving average + ultimate rate adjusted
- Term structure：
  - ✓≤ 15 Year: do not adjust
  - ✓(15, 30): extrapolate
  - ✓≥ 30 year: 5%
- The convergence rate of yield up 30


6
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36.96
37.93
38.90
39.88
40.85
41.82
42.79
43.77
44.74
45.71
46.68
47.66
48.63
49.60
2013 31-Dec
2013 250-avg
2013 750-avg

RM = BE(design) - BE(base)

- BE(design):
  - Insurance loss rate: ±5%
  - Lapse rate: ±10%
  - Maintain fee: +10%
- no discount rate effect

Timeline of C-ROSS

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Taipei Int

2012

- Launch of the C-ROSS Project
- Launch the first batch projects

2013

- Publish conceptual framework
- Launch the second batch projects

2014

- Publish and refine the consultation paper
- Run IQAs
- Finalize technical standards

2015

- Begin with transitional arrangements

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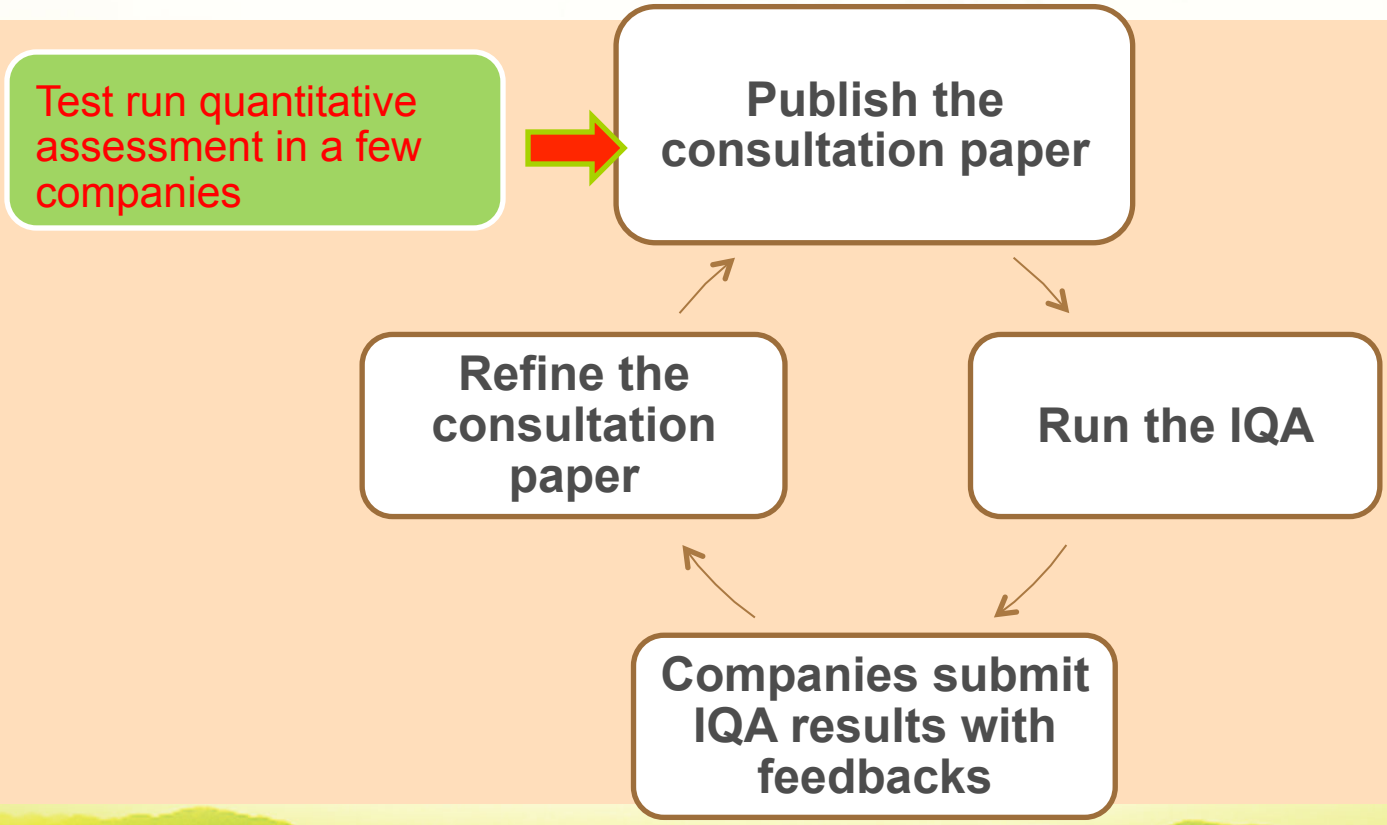
Industry Quantitative Assessment (IQA)

Until now:

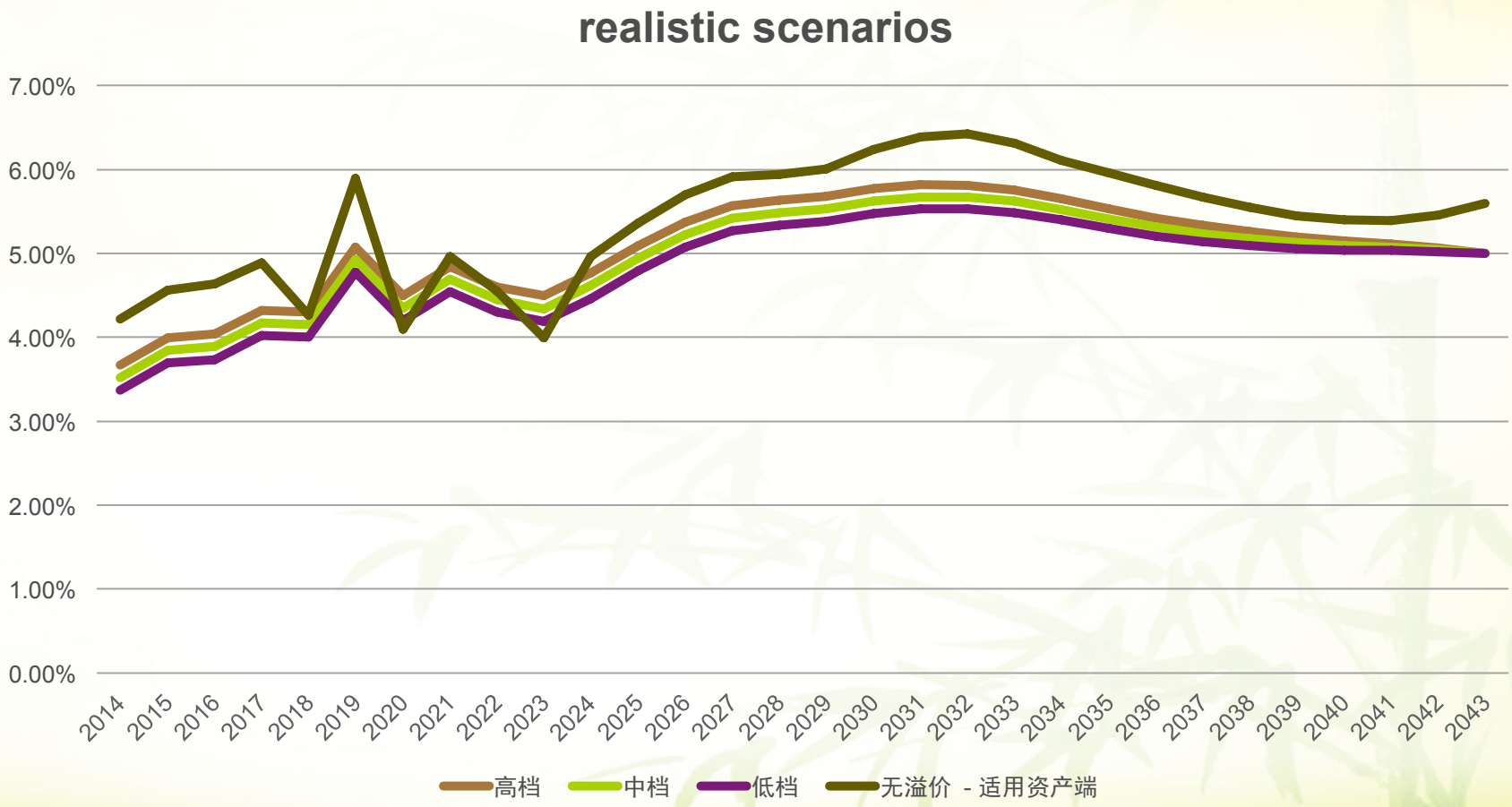
Non-Life insurers: Three IQAs

Life insurers: Two IQAs

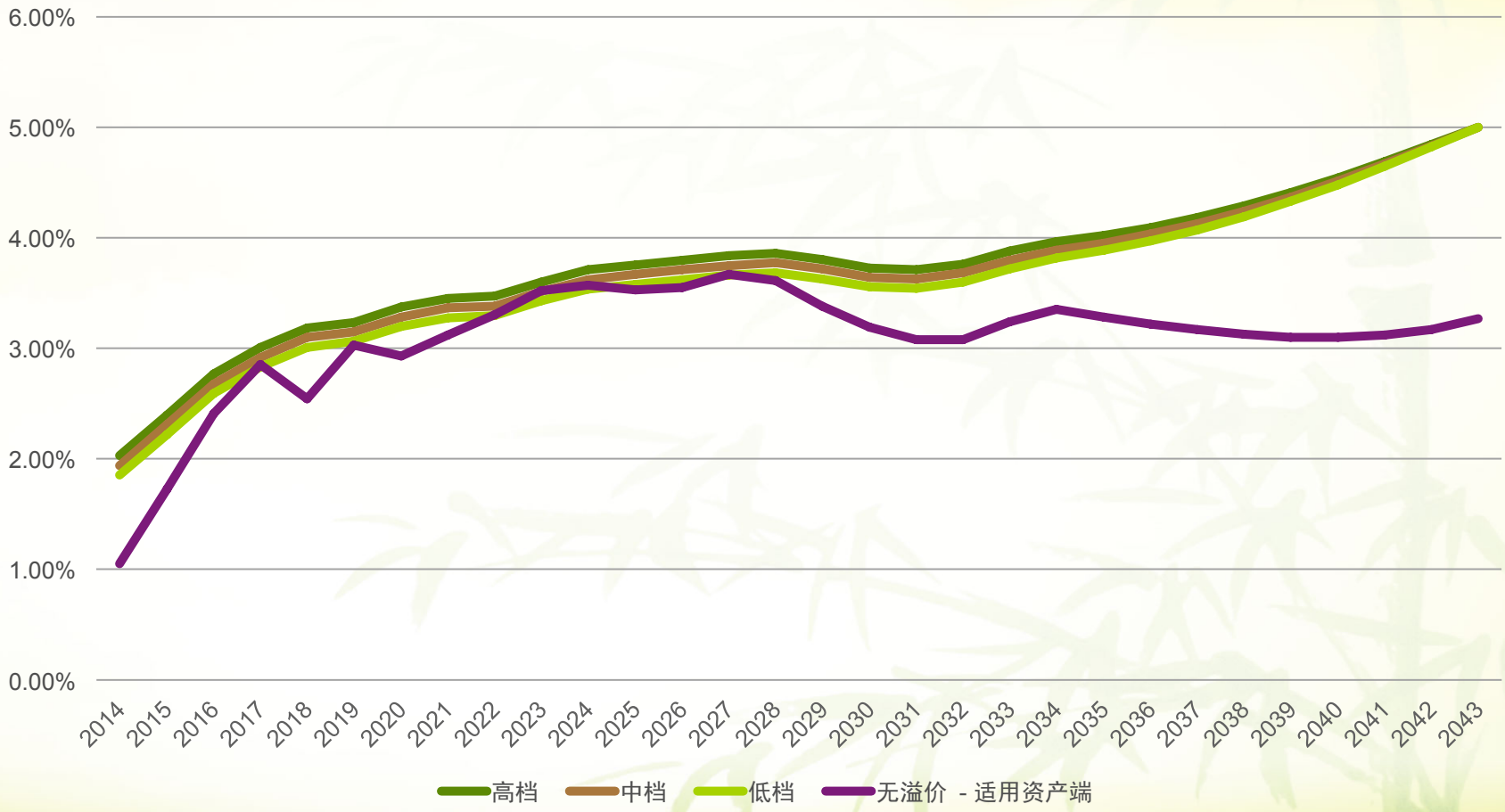
Reinsurers: One IQA



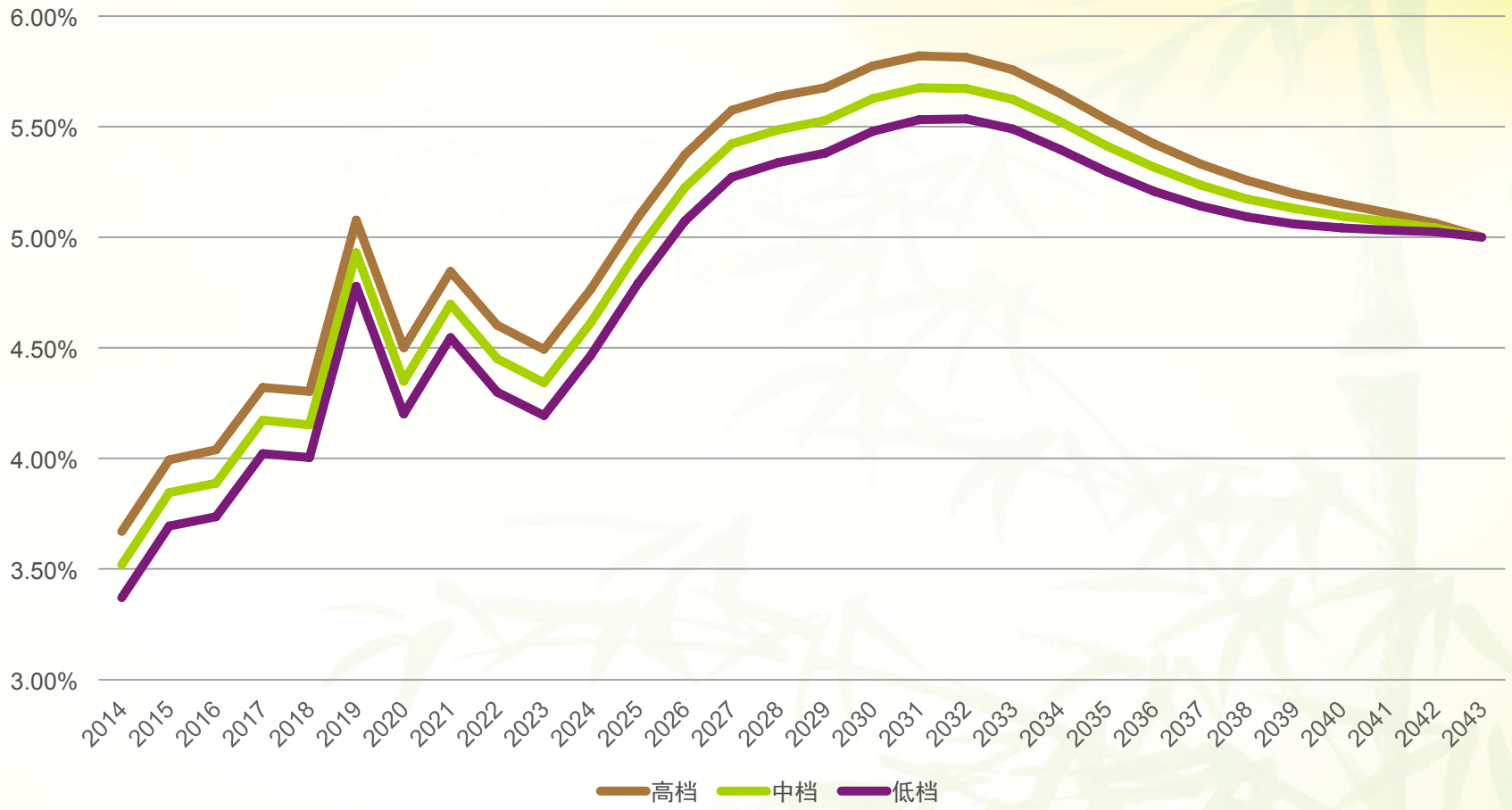
Realistic yield curve- IQA



Low rates-assumption



Liability only- Real



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Q&A