Investment Risk Management

Timothy Chan
Group Chief Investment Officer
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1. Key investment challenges and our performance

2. Ping An’s investment and risk management regime

3. Dealing with key risks within insurance assets
Three main questions we ask ourselves:
• Key challenges? How to manage? What to expect?

Key challenges?
• 2013-16, non-standard investments grew by 55% CAGR;
• YTD Jun, 7 corporate bonds in the market defaulted for the first time
• YTD Aug, A-shares fell by 17.28%

How to manage 2.58 trillion insurance assets?
• Mismatch between assets and liabilities – lack of long term assets
• Derivatives market under-developed, lack of hedging tools

What is our expected future return?
• Impact of IFRS9 on insurance assets?
• Future investment strategies for insurance assets?
Our performance – steady growth in NII since 2012, largely reduced fluctuations (1/3)

Significantly lower volatility in return vs. market & own history (2008-2011)

Significantly more predictable investment return

Annual returns in Ping An’s insurance assets

Net investment income (NII)  Total investment income (TII)  Total investment income AFS (TII AFS)

Consider tax exemptions

Annual returns in Ping An’s insurance assets

Significantly more predictable investment return

Net investment income (NII)  Total investment income (TII)  Total investment income AFS (TII AFS)
Our performance – long-term investment return significantly exceeds the actuarial assumption (2/3)

Note: The interest income earned on assets such as Chinese government bonds is tax-exempted. The exempted amount is an indirect investment income for insurance companies. The tax exempted figures above are unaudited estimations.
Our performance – net investment income grows at 21% CAGR, exceeding life claim payments (3/3)

Steady increase in Net Investment Income (NII)

Note: NII - Net Investment Income
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2. Ping An’s investment and risk management regime

3. Dealing with key risks within insurance assets
Investment procedure – insurance asset investment must adhere to core ALM principles (1/5)

 Liability Management | ALM | Asset Management

“Balancing assets and liabilities at the same time achieving sound financial returns”

- Reduce asset-liability mismatch to a reasonable level (duration, cash flow, cost/return)
- Form key decisions on both asset and liability sides (product structure, asset allocation, investment guidelines, etc.)

“To manage liabilities better than expectation”

- To accumulate insurance liabilities at a lower cost
- To achieve or exceed expectation in managing liabilities

“To go beyond benchmarking peers”

- To manage operating costs efficiently
- To generate excess return within confines of a pre-set risk budget

Note: Group Risk Management Executive Committee participates in the regular review of Strategic Asset Allocation.
Under stressed scenario, solvency ratio $\geq 120\%$.

- **Solvency risk constraint**

- **Actuarial pricing consideration: fair-value return constraints**

<table>
<thead>
<tr>
<th>E.g. Life</th>
<th>Minimum return guarantee (%)</th>
<th>Product assumed interest rate (%)</th>
<th>Maximum probability of breaking through min. return guarantee (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>***</td>
<td>***</td>
<td>20</td>
</tr>
<tr>
<td>Participating</td>
<td>***</td>
<td>***</td>
<td>15</td>
</tr>
<tr>
<td>Universal Life</td>
<td>***</td>
<td>***</td>
<td>10</td>
</tr>
</tbody>
</table>

- **Finance cost consideration: financial return constraints**

<table>
<thead>
<tr>
<th>E.g. Life</th>
<th>Average cost of liabilities (%)</th>
<th>Maximum probability of breaking through average cost (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>***</td>
<td>15</td>
</tr>
<tr>
<td>Participating</td>
<td>***</td>
<td>10</td>
</tr>
<tr>
<td>Universal Life</td>
<td>***</td>
<td>10</td>
</tr>
</tbody>
</table>

**Risk appetite framework**

- **Solvency**
- **Profitability based on fair value**
- **Profitability based on financial return**
- **Liquidity**
- **Risk tolerance (Risk margin)**

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**Actuarial pricing constraint**: investment return on fair-value basis uses the [actuarial assumed interest rate] as minimum return requirement, to ensure its portfolio generates sufficient return even under most adverse economic conditions; the investment objective is set via the minimum return requirement.

**Finance cost constraint**: in addition, investment return on accounting basis refers to liability cost as the minimum return requirement.
Input
Investment constraints and asset data

Quantitative simulations
Generating the Efficient frontier using Monte Carlo simulations

Evaluation & Selection
Apply stress tests to shortlisted portfolios and form the distribution of returns. Finally select three different portfolios which fulfills all constraints at different risk levels.

- Minimum solvency under stressed scenario
- Max. probability of hitting min. return guarantee
- Expected return and volatility
- Investment strategies

Selection on Efficient Frontier with stress tests

- Minimum return requirement
- Aggressive
- Balanced
- Conservative
- Maximum risk constraint

Risk
Return

Equity falls by 10%

Guaranteed rate of return
Stressed return
Expected return

Probability of achieving guaranteed return greater than 95%
 Investment procedure – Strategic Asset Allocation (SAA) through adequate quantitative assessment (4/5)

**Appetite, strategy, and IFRS9 asset class**

- Profitability based on fair value
- Solvency
- Liquidity
- Profitability based on financial return

Four dimensions of SAA risk appetites

**Six strategies of SAA (based on IFRS9)**

- Excess return
- Asset-liability match

- Non-public market
- Open market
- Duration match
- Interest income
- Real estate
- Cash

**Ping An-Conning System**

- Monte Carlo simulations to fully reflect risk distribution

- SAA simulates investment asset performances based on economic scenarios and allocation portfolios

- 10,000+ allocation portfolios

- Portfolio optimizer produces effective frontiers to optimize the risk-return portfolio

- Highest risk frontier
- Lowest return frontier

**Multi-dimensional evaluation**

- Aggressive portfolio
- Balanced portfolio

- Economic capital
- Asset-liability match
- Return
- Volatility
- Risk-adjusted return

- System implementation

- Multi-dimensional evaluation
Investment procedure – differentiated strategic asset allocation for different insurance accounts (5/5)

Note: Equity investments include preferred stock; Alternative investments include PE and real estate;
◆ Our achievement – a narrowing asset-liability mismatch, net-outflow may only occur in 2029 (1/2)

Asset-liability duration gap continues to reduce since 2013

Cashflow forecast of Ping An Life (Only assume 5 years of new policies in 2018-2022)
Our achievement – highly solvent, even under severe economic conditions (2/2)

C-ROSS Solvency Ratio maintained at above 200%

Under extreme scenario: C-ROSS Solvency Ratio still maintained at above 150%

Ping An’s 2018 Stress Test (extreme scenario)

- HS300 index (CSI 300) -42%
- 1-yr govt bond yield -112bp
- 10-yr govt bond yield -98bp
- Credit default rate 1.91%
- Real estate price -27%
- USD/RMB spot rate -9%

……. ……. …….
Investment risk mgt framework – the only Chinese institution in G-SIIs, aligned with international stds (1/2)

Risk Management “251” System

Ping An Group

Subsidiaries

Firewall

- Dual system of governance at both Group and subsidiaries level
- Group to oversee and manage aggregated risk of subsidiaries

Note: Professional committees at the Group level participate in the review and assessment of major risks. This includes the Group Risk Management Executive Committee and the Group Investment Management Committee.
Investment risk mgt framework – a sound risk mgt system that promotes a balanced risk and return (2/2)

- Standardised internal credit ratings
- Risk capital and stress testing
- Industry concentration exposure
- Counterparty limits
- Strategic asset allocation model

- Internal assessment of investment and risk management capability
- KPI appraisal system
- Tracking of significant counterparties
- Counterparty concentration exposure
- Asset-liability management v2.0

Management Tools

Management processes

Investment risk data

Investment risk models

EVA appraisal
Risk appetites and limits

Risk governance

Investment risk management framework

Systems and platform
**Investment risk mgt process – annual risk budgeting and 4-category limits after adequate stress tests (2/8)**

- Under stressed scenario, the solvency ratio shall not be less than **120%**;
- Under stress scenario, the shortest survival time shall not be less than **30 days**;
- Reduce the probability of reputation risk events to the largest extend, avoid the risk from upgrading to a crisis;
- Fulfill regulatory requirements and Group compliance and operational risk management requirements.

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**Subsidiary risk appetite and limits**

- **Risk appetites**
  - Core limits at the company level
  - Core limits at the business level
  - Monitored limits
  - Limits at the Group level

- **Risk tolerance and limits**
  - Risk limits targeted at the whole subsidiary level, including capital adequacy ratio and non-performing loan ratios
  - Risk limits targeted at specific business lines of the subsidiary
  - Limits not affecting the KPI, examples include rating mix of credit assets
  - Group-wide industry limits and counterparty limits
### Core risk limits at company level

<table>
<thead>
<tr>
<th>Subsidiary</th>
<th>C-ROSS Solvency Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA Life</td>
<td>≥150% under stressed environment (&quot;stressed&quot;)</td>
</tr>
<tr>
<td>PA P&amp;C</td>
<td>≥150%, stressed</td>
</tr>
<tr>
<td>PA Pension</td>
<td>Insurance side: ≥150%, stressed</td>
</tr>
<tr>
<td>PA Health</td>
<td>Third party side: Credit risk capital ≤58m; Market risk capital ≤29m</td>
</tr>
</tbody>
</table>

### Core risk limits at business lines

<table>
<thead>
<tr>
<th>Subsidiary</th>
<th>Account</th>
<th>Equity %</th>
<th>Corporate bond %</th>
<th>Alternative %</th>
<th>Real Estate %</th>
<th>Private Equity %</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA Life</td>
<td>Traditional</td>
<td>18.5%</td>
<td>9.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Participating</td>
<td>22.3%</td>
<td>6.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Universal</td>
<td>21.3%</td>
<td>6.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA P&amp;C</td>
<td>Traditional</td>
<td>15.0%</td>
<td>30%</td>
<td>45%</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Traditional</td>
<td>23%</td>
<td>30.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA Pension</td>
<td>Participating</td>
<td>20.6%</td>
<td>30.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Universal</td>
<td>20.4%</td>
<td>30.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA Health</td>
<td>Traditional</td>
<td>15.0%</td>
<td>30%</td>
<td>20.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Note: The regulatory solvency requirement is ≥100% under normal condition.
Investment risk mgt process- Industry concentration exposure management covering 39 industries (4/8)

Industry risk evaluation

Industry research (qualitative)

External data (quantitative)

Scorecard → Industry risk ranking → Industry concentration exposure → control mechanism

High-risk industry limits (strict control)

Other industry exposure limits (soft control)

Qualitative: ... due to latest environment policies, over-capacity and cyclical factors, the score is relatively LOW ...

Quantitative: ... The total liabilities of industry in 2017 is around 4 trillion, asset-liability ratio is as high as 67.8%, profitability is poor, high default rates....

E.g. Coal industry

Ranked bottom 10%

Limit set at certain bn RMB

Defined as a high-risk industry, apply strict control, with a limit of certain bn RMB -> Exposure reduced by 22.6% after control
**Investment risk mgt process – Counterparty limits to suppress high risk counterparty exposures (5/8)**

‘Counterparty’ = a group of related corporate clients

- Equity control enterprise
- Senior management control enterprise
- Related-party guarantee enterprise

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1. Identify counterparty and related parties

2. Establish counterparty limit

- Counterparty’s risk condition
- Ping An’s risk tolerance

Four factors
- Solvency
- Rating
- Industry
- 4 X% of Ping An’s net assets

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Example

- Zhejiang X Group
- Zhejiang Y holding company
- Jiangsu W Co. Ltd
- Zhejiang Z Co. Ltd
- Zhejiang M real estate group
- Jiangsu V real estate company

One limit for each counterparty

- Change Counterparty limit for Zhejiang X Group = RMB 8.0 billions

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Equity control relationship
Senior management control (manual confirmation)
**Investment risk mgt process – internal credit rating developed since 2003 (6/8)**

- **Full coverage**
  - 13 industries
  - circa 30,000 assets
  - 100+ credit specialists

- **Unified standard**
  - Unified ratings
  - Unified models
  - Unified procedures

**Standardised ratings across 10 subsidiaries**

- **Pre-investment**
  - Credit screen and selection

- **Investment stage**
  - Decision making

- **Post-investment**
  - Monitoring
  - Capital mgt

**Internal VS. International standards**

<table>
<thead>
<tr>
<th>Ping An</th>
<th>S&amp;P</th>
<th>Moody’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>AAA</td>
<td>Aaa</td>
</tr>
<tr>
<td>AA</td>
<td>AA+~A</td>
<td>Aa1~A2</td>
</tr>
<tr>
<td>A</td>
<td>A~~BBB</td>
<td>A3~ Baa2</td>
</tr>
<tr>
<td>BBB</td>
<td>BBB~BB</td>
<td>Baa3~ Ba2</td>
</tr>
<tr>
<td>......</td>
<td>......</td>
<td>......</td>
</tr>
</tbody>
</table>

- **Wide usage**
- **Regular review**
  - Transition matrix
  - Internal differences
  - Rating assumptions

- **Example**

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**Note:**
- **Wide usage**
- **Regular review**
## Investment risk mgt process – a 2-hour quick response through ‘grey-list’ & big-data early warning system (7/8)

<table>
<thead>
<tr>
<th>Involved unit/line/monitoring system</th>
<th>Emergency contact/system owner</th>
<th>CRO/CIO of subsidiary</th>
<th>Group senior mgt and subsidiary CEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big-data public info monitoring system</td>
<td>Monitor negative public events</td>
<td>Screen out market incidents report to Group</td>
<td></td>
</tr>
<tr>
<td>Ping An Group Asset Management Center</td>
<td>Identify important events or negative news</td>
<td>Give warnings and inquire mitigation actions</td>
<td>Consolidate information and review mitigation plans</td>
</tr>
<tr>
<td>Subsidiaries</td>
<td>Identify important events or negative news</td>
<td>Report exposure and mitigation plan, feed into risk systems</td>
<td>Trigger disaster reaction plan for major events</td>
</tr>
</tbody>
</table>

- **Daily feeds**
- **Valid feed?**
- **Feedback**
- **15 minutes**
- **45 minutes**
- **1 hour**
- **Weekly tracking**
- **Acknowledge and give out instructions**

### Key Points
- **Identify important events or negative news**
- **Give warnings and inquire mitigation actions**
- **Identify important events or negative news**
- **Report exposure and mitigation plan, feed into risk systems**
- **Consolidate information and review mitigation plans**
- **Trigger disaster reaction plan for major events**

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**Notes:**
- Investment risk mgt process – a 2-hour quick response through ‘grey-list’ & big-data early warning system (7/8)
Investment risk management process – 16,000 warning signals in two months via big-data, traced 206 counterparties (8/8)

- Exposure
- Litigation amount
- Warning strength
- Financial ratios
- Negative news
- White list

15,930 Warning signals (2 months)

206 Counterparties (2 months)
Our achievement – 0 default in non-standard assets, 0 default in corporate bonds in H1 2018

0 default in non-std assets

The RMB 360 billion non-standard assets invested by the insurance funds account for 14.1% of the entire portfolio, so far there is no default.

0 default in corporate bonds

The proportion of corporate bond invested by the insurance funds is 6.7%, with the amount of over RMB 170 billion. No default during the first half of 2018.
• 30+ asset models
• 100+ financial parameters
• 3000+ financial assets data
• 10000+ economic scenarios
• 60000+ simulation nodes
• 200000+ statistical data
• 1000000+ results
• 60min to finish all calculations above
• 313 data fields; 277 products

Economic Scenario Generator (ESG)
- 10,000+ Monte Carlo simulations of the economy, each generating a different set of asset returns and cashflow

Asset-liability simulator (Simulation)
- Full path simulation, work out the investment return, duration mismatch and cashflow at each time step under each economic scenario.

Investment risk database (Database)
- Collecting all internal investment and risk management related data, files and market data to support real-time monitoring and warnings

Database and Query Tool
- Storing all computations and results
- Large amount of statistics for each variable

Optimisation Tool
- Generating the efficient frontier
- Optimising according to multi-dimensional requirements

remote iPad application (Investment Analysis)
- Verifying group exposure in 10 minutes
- Asset allocation analysis, investment risk scenario tests and stress tests

◆ Investment management system – the world leading Ping An-Conning asset allocation system (1/2)
Ping An’s investment management platform

- **Users**
  - Group
  - Subsidiaries
  - Asset provider
  - Capital provider
  - Supervisor

- **Analysis and management platform**
  - Standardised reports
  - Customised reports
  - AI search engine
  - Investment project assessment
  - Post-investment management
  - Big-data market monitor
  - Early-warning system

- **Full process governance**
  - Pre-investment – Standardised applications
    - Recording of project files
    - Authority control
    - Governance levels
  - Investment stage – M-shape decision procedure
    - Pre-committee communication
    - Decision tools
    - Group/Subsidiary specific tools
  - After-investment AI risk warnings
    - 24/7 media screening
    - Limits/labels warning
    - Daily mgt monitoring

- **Base**
  - Internal project data
  - External market data
  - AI technology support

Covering **23** subsidiaries

**4.23 million** pieces of data updated every month

**12,000** data labels

**36,535** data fields
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2. Ping An’s investment and risk management regime

3. Dealing with key risks within insurance assets
   1. Investment management strategies
   2. Non-standard assets investment risk management
   3. Corporate bond investment risk management
   4. Real estate investment risk management
   5. Equity investment risk management
   6. Embracing the challenges posed by IFRS9 standard
   7. Embracing the Asset-Liability Mismatch
“NII+” Strategy —— Create a cushion for insurance investments
Over the past decade, the compounded growth rate of NII reached 20.56%, hundreds of billions of cashflow provided solid support to Ping An’s growth. The coverage ratio of NII to life compensations has also increased over the past five years.

Fixed Income investment strategy —— Extend asset durations + seek tax exemptions
Actively purchase long duration assets. We hold over RMB 575bn 20yrs+ bonds, average duration 14.75 years. Over the past five years, asset-liability mismatch has reduced by 2 years. Over the past ten years, tax-exempted assets contributed an extra by 50 bps of investment returns per annum.

Real estate investment strategy —— “Cornerstone” of long-term return
Allocation to real estate investments to increase from 2% to 10%, exploring new types of real estate investments.

Equity investment strategy —— Focus on key holdings, making use of good external managers
Concentrate on in key holdings. Based on our cost of buying, we predict the dividend ratio by HSBC for 2018 is up to 5.9%, ICBC is 5.2%, and Country Garden as much as 22.7%; we plan to increase the mandate size to external managers.

Overseas investment strategy —— Adequate diversification, with managed FX risks
Non-capital market investment will be mainly through entrusted investment.

◆ Investment outlook: Global financial asset return in 5-10yrs could be lower than the average of past 10-20yrs
Non-standard debt credit risk mgt – multi-stage assessments, credit enhancement, govt credit (1/3)

- Quota management
- Concentration limits
- Business team’s project management
- Subsidiary’s investment decision committee
- Internal/external credit rating
- Secretariat assessment
- Investment Committee review
- Strict firewall between product side and funding side

Investments
RMB2.58 trillion

71% with credit enhancement

Remaining 50% endorsed by government

Cashflow coverage rate 88.5%

Strict Group & Compliance requirements

Clear Responsibilities & Entry requirements

0 default
% of non-standard debt assets 14.1%

85.9%
## Non-standard debt credit risk mgt – infrastructures and non-banking financials have lower risks (2/3)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Investment proportion (%)</th>
<th>Nominal investment income (%)</th>
<th>Remaining maturity (Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>35.8</td>
<td>5.82</td>
<td>4.82</td>
</tr>
<tr>
<td>Highways</td>
<td>17.7</td>
<td>5.93</td>
<td>5.85</td>
</tr>
<tr>
<td>Utilities</td>
<td>6.1</td>
<td>5.53</td>
<td>2.90</td>
</tr>
<tr>
<td>Infrastructure and industrial parks</td>
<td>5.5</td>
<td>5.77</td>
<td>4.58</td>
</tr>
<tr>
<td>Other (Water, Environmental, railways)</td>
<td>6.5</td>
<td>5.84</td>
<td>4.01</td>
</tr>
<tr>
<td>Non-banking financials</td>
<td>29.9</td>
<td>5.70</td>
<td>4.25</td>
</tr>
<tr>
<td>Real estate</td>
<td>19.8</td>
<td>6.12</td>
<td>2.62</td>
</tr>
<tr>
<td>Coal mining</td>
<td>3.0</td>
<td>6.16</td>
<td>2.41</td>
</tr>
<tr>
<td>Other</td>
<td>11.5</td>
<td>5.78</td>
<td>5.26</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100.0</td>
<td>5.85</td>
<td>4.22</td>
</tr>
</tbody>
</table>

Note: (1) Non-standard debt assets: refer to debt assets other than standardised ones;
(2) The data includes the asset-backed plans, amounting to RMB35bn compared with the total amount of debt plans and trust plans.
Non-standard debt credit risk mgt – strict regulations strengthens product security (3/3)

- Targeting the risk in debt plans, the CBIRC has formulated very strict regulations on initiating and issuing debt plans, which greatly reduced the credit risk of debt plans. Typical requirements are listed as follows:

  - **Issuer**: Generally should be “insurance assessment management companies”.
  - **Paying party**: 0 bad records (e.g. no defaults)
  - **Fund provider**: Insurance funds are NOT allowed to invest in product issued by institutions punished by the regulator over the **past 3 years** (including debt pans and trust plans)
  - **Credit enhancement**: the transaction structure should have effective credit enhancement, such as:
    - Type A: jointed-liability guarantee provided by state-owned commercial banks or publically-listed banks;
    - Type B: the guarantor must fulfill multiple conditions such as net assets no less than RMB 15bn, guaranteed amount cannot exceed 50% of its net assets etc. if the guarantee is provided by the parent company or the effective controller of the paying party, the guarantor’s net assets should not be less than 1.5 times that of the paying party If the guarantor;
    - Type C: guarantee provided by pledge or collateral of no less than 2x the fair value of the debt;
Corporate bond credit risk mgt – low allocation, high ratings, strict controls (1/2)

Approximately 93% of corporate bonds are rated AA or above (external), and approximately 80% are rated AAA (external). There were 0 defaults in the first half of 2018.

Note: Financial bonds refer to securities issued by banks and non-bank financial institutions in accordance with legal procedures and agreed to repay principal and interest within a certain period of time.

- **Stage 1**: Asset allocation
- **Stage 2**: Credit control
- **Stage 3**: Post-investment management

Investments: RMB2.58 trillion

- Corporate debt: 6.7%
- Government debt: 21.5%
- Financial debt: 16.0%
- Investments: 55.7%
**Corporate bond credit risk mgt – Rating, monitoring, early warning and quarterly full reviews (2/2)**

### Pre-investment
- External rating $\geq$ AA+
- Ranking in industry
- Credit enhancement and guarantees
- Rating agency reports/credit reports
- Financial report for the last three years and the most recent issue

### Post-investment

#### Portfolio management
- Probability of Default (PD)
- Loss Given Default (LGD)
- Concentration

#### Project daily monitoring
- Entity warning
- Industry warning
- Region warning
- Early warning information collection
- KPI analysis
- Business and market analytics
- Investment & finance status
- Judgment based on key indicators
- Classify judgment
- Issue reminders
- Classify reminders

#### Project quarterly monitoring
- Classification
- Risk model update
- Industry ranking
- Business advantage
- Financials
- Credit ratings
- Classify assessment
- Classify judgment
- Classify reminders
**New real estate Reference area Investment horizon Expected IRR**

<table>
<thead>
<tr>
<th>New real estate</th>
<th>Reference area</th>
<th>Investment horizon</th>
<th>Expected IRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retirement real estate</td>
<td>Around cities</td>
<td>&gt;20 years</td>
<td>10~15%</td>
</tr>
<tr>
<td>Industrial park</td>
<td>Non-core areas in tier-1 and tier-2 cities</td>
<td>10 years</td>
<td>7%~9%</td>
</tr>
<tr>
<td>Long-term rental apartment</td>
<td>Most of them are within one hour of distance from core business districts in tier-1 cities and core tier-2 cities</td>
<td>5-10 years</td>
<td>7%~8%</td>
</tr>
<tr>
<td>City renovation</td>
<td>Urban central area, shanty town, old commercial area, industrial area, etc.</td>
<td>5-15 years</td>
<td>10~20%</td>
</tr>
<tr>
<td>High-speed railway new city</td>
<td>Along railways</td>
<td>5-15 years</td>
<td>IRR 12-15% for parts of the sales, and some parts may see IRR&gt;20% due to the high turnover rate</td>
</tr>
</tbody>
</table>

**% of real estate assets 1.8%**

- Office building RMB 38.3bn, **92% located at tier 1-2 cities**
- Shopping malls RMB 5.1bn
- Logistics RMB 5.3bn

**Investments RMB 2.58 trillion**

98.2%
Stable cash yield to enhance the NII strategy

Natural hedge against inflation in the long run

Partnership with experienced developers to preserve property values

**Capital**
- Land reserves, direct purchase
- Infrastructure and utilities investment
- Equity investment

**Resource**
- Integrate government and industry resources with Group resource: capital, brand, management, healthcare and pension etc.

**Development**
- Infrastructure development
- Utilities development
- Office building development

**Management**
- Industrial park operation, industry support
- Business innovations: leasing, securitisation, REITS, PE funds

◆ Real estate concentration risk mgt – multiple strategies to produce stable returns (2/3)
Real estate concentration risk mgt – initial selection, mitigation and post-investment warnings (3/3)

Pre-investment selection
Credit rating: basic criteria
Region, industry and financial ratios

Risk mitigation techniques
Differentiated: pledge rate, financial period, credit enhancement facilities...

Real-time post-investment warnings
Quantitative: net debt ratio, cash multiples, pledge rates...
Qualitative: policy changes, etc.

* Based on external ratings
Equity risk management – focus on high-dividend stocks and long-term holdings (1/2)

- Our value-investment philosophy created a balanced mix of Equity holdings
  - Among our Equity holdings (23%), after deducting PE and joint venture holdings, the remaining part accounts for 16.5%, of which long-term holdings of common stock accounts for 7.1%, preferred stocks accounts for 3.0%, **short-mid term stock holdings only accounts for 5.8%**;
  - H1 2018, we received 6.0bn dividend income, circa 10.3% of the NII (58.4bn), higher than 2017;
  - Dividend ratios of banking preference shares at 4.85%, dividend ratio from HSBC at 5.93%;

<table>
<thead>
<tr>
<th>Major strategic holdings</th>
<th>Dividend per share (18E)</th>
<th>Dividend ratio (18E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSBC</td>
<td>3.98</td>
<td>5.90%</td>
</tr>
<tr>
<td>ICBC</td>
<td>0.29</td>
<td>5.40%</td>
</tr>
<tr>
<td>Country Garden</td>
<td>0.64</td>
<td>17.02%</td>
</tr>
<tr>
<td>China Yangze Power</td>
<td>0.67</td>
<td>5.55%</td>
</tr>
</tbody>
</table>
Equity risk management – make full use of FOF/MOM strategies to boost return (2/2)

- **Determination of total mandate size**
  1. Determine total mandate size
  2. Submit investment proposal (e.g. underlying FM)
  3. Assess internal/external managers and proposals

- **Selection of external managers and % alloc.**
  4. Provide unbiased opinions on selections and allocation
  5. Make selection and allocate funds
  6. Investment upon agreement and investment guideline

- **Monitoring, redemption and injection**
  7. Regular performance report
  8. Provide opinions based on managers’ performance and risk indicators
  9. Redemption or injection

**Clients:**
- Ping An Life
- Ping An P&C

**Investment managers:**
- Internal managers
- External managers

**Supervisor:**
- Ping An Group
IASC9 – will lead to an increased volatility in accounting P&L (1/2)

- Assume a sample portfolio is switched through the following rules, the expected volatility in P&L will largely increase.

<table>
<thead>
<tr>
<th>Classification</th>
<th>IAS39</th>
<th>IFRS9</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTM</td>
<td>70%</td>
<td>AC</td>
</tr>
<tr>
<td>AFS</td>
<td>30%</td>
<td>FVOCI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FVPL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
<th>P&amp;L Volatility – IAS39</th>
<th>P&amp;L Volatility – IFRS9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dummy account</td>
<td>0.20%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

* Based on one-year Monte Carlo simulations

- Using historic back-testing approach, IFRS9 would have resulted a much higher volatility in the accounting P&L.

* Dummy account consists of 60% bonds, 20% stocks and 20% non-standard assets. Non-standard assets and 80% of bonds are booked under HTM or LR, stocks and 20% of bonds are booked under AFS.
Adjust accounting classification for certain Equity holdings
• Allocate high-dividend stocks under FVOCI, and adopt the Equity Method for long-term equity holdings, to reduce P&L volatilities

Restrict lower-grade corporate bond investment
• Reduce investment in low-rated corporate bonds to avoid a significant increase in impairment provision for such assets to cover credit risks

Optimise terms of non-standard assets
• Ensure non-standard assets can pass the SPPI test to the greatest extent, to avoid the classification of FVTPL which may increase the fluctuation of our P&L

Early control of FVPL% at the Strategic Asset Allocation stage
• Consider P&L volatility as part of the investment risk appetite, which is embedded in the Strategic Asset Allocation as an essential objective.
**Summary —— Ping An’s 6 key strengths in investment and investment risk management**

**Aligned with international standards – “251” framework, internal rating**
Group & subsidiary dual control system to ensure risks are transparent and manageable at consolidated level;
Collaboration with global firms to promote international standards.

**Professional tools – supporting SAA and risk control**
Localised the world leading Conning system; first to introduce Risk Frontier & Risk Manager, to create a modern risk management system.

**Quantitative investment decisions – investment budgeting, risk management**
Developed a localised Strategic Asset Allocation model based on the liability features;
Comprehensive limits system covering 23 subsidiaries.

**Advanced systems – system-based process management**
Started in 2012, the investment and risk management system and investment database have evolved and transformed into a smart one.

**Local data – an in-depth analysis of the Chinese market**
10,000 economic scenarios based on China data; Economic capital models, and stress test scenarios based on domestic market.

**Process management – highly valued post-investment management**
Utilisation of big data to support full investment process and promote realisation of investment objectives.
Thank you !