

**To: The Green Bond Innovation and Development Seminar Held by the
Securities Association of China**

Green Bond Assets Allocation of Institutional Investors in China



**By Huang Delong
CITIC Securities Asset Management
Sep. 21, 2017**

Agenda

Agenda

Contents

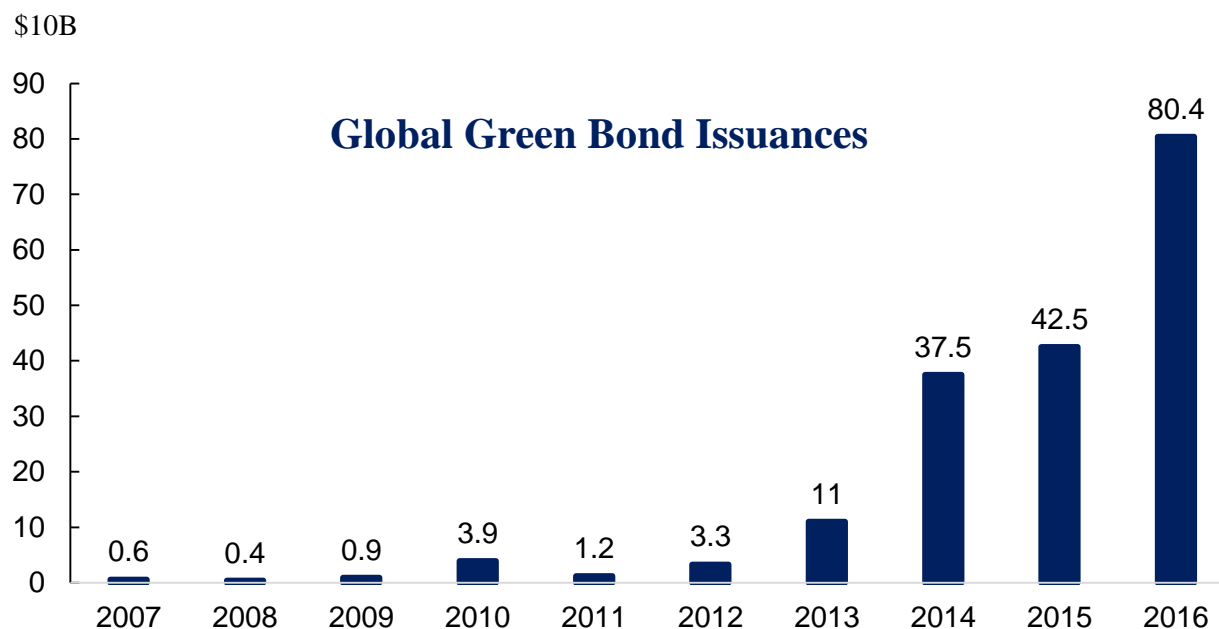
- 1 Green Bonds and Allocation Requirement of Institutional Investors**
- 2 Credit Research on Green Bond**
- 3 Allocation Strategy and Market Prospect of Green Bonds**



1. Green Bond and Allocation Requirements of Institutional Investors

1.1 Brief Introduction of Green Bonds

- **Definition:** Green Bond is a bond financing instrument that specializes in the financing or refinancing of green projects, such as environmental protection, sustainable development, mitigation or adaptation to climate change – defined by the International Capital Markets Association (ICMA), *the Green Bond Principles* (GBP).
- **Global Scale:** Green bonds have been booming in recent years, with a increase from \$ 330 million in 2012 to \$ 80.4 billion in 2016.



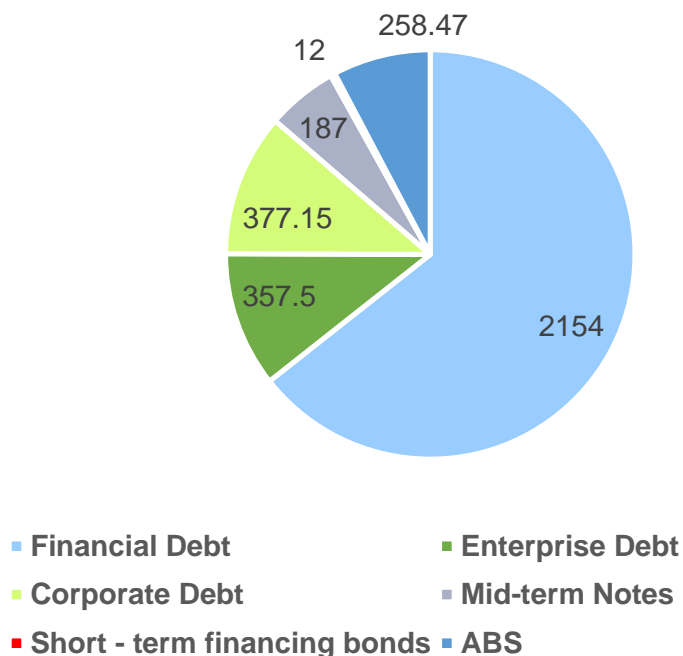
1.2 Policialy Guidelines Play an Important Role in the Development of Green Bonds in China



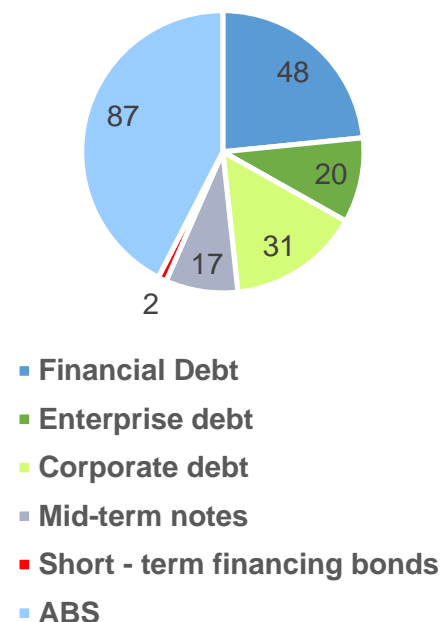
1.3 Overview on Green Bond Market in China

- As of the end of August 2017, China's bond market issued a total of 198 green bonds, with a total proceeds of RMB 331.472 billion, which accounts for 40% of the global green bond market.
- In terms of scale, the total amount of proceeds in green financial bonds is RMB 215.4 billion, accounting for more than 50%, showing that banks are the main issuers in China's green bond market; and in terms of the bonds' numbers, they are mainly asset-backed securities (ABS) and financial bonds;

China Green Bonds 2016 (In RMB 100m)

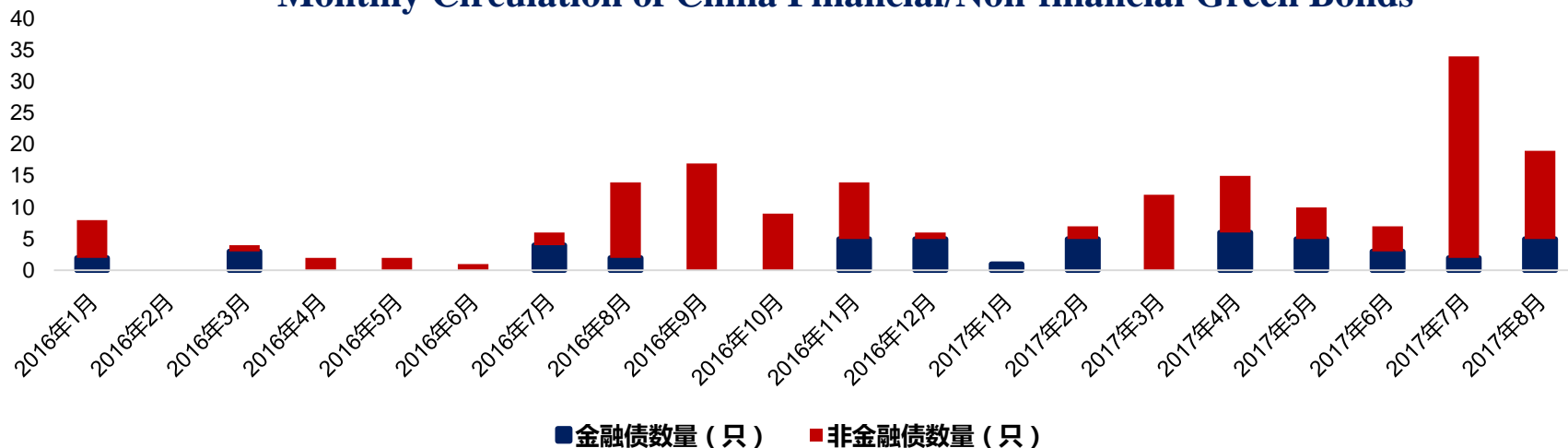


Circulation of China Green Bonds in 2016

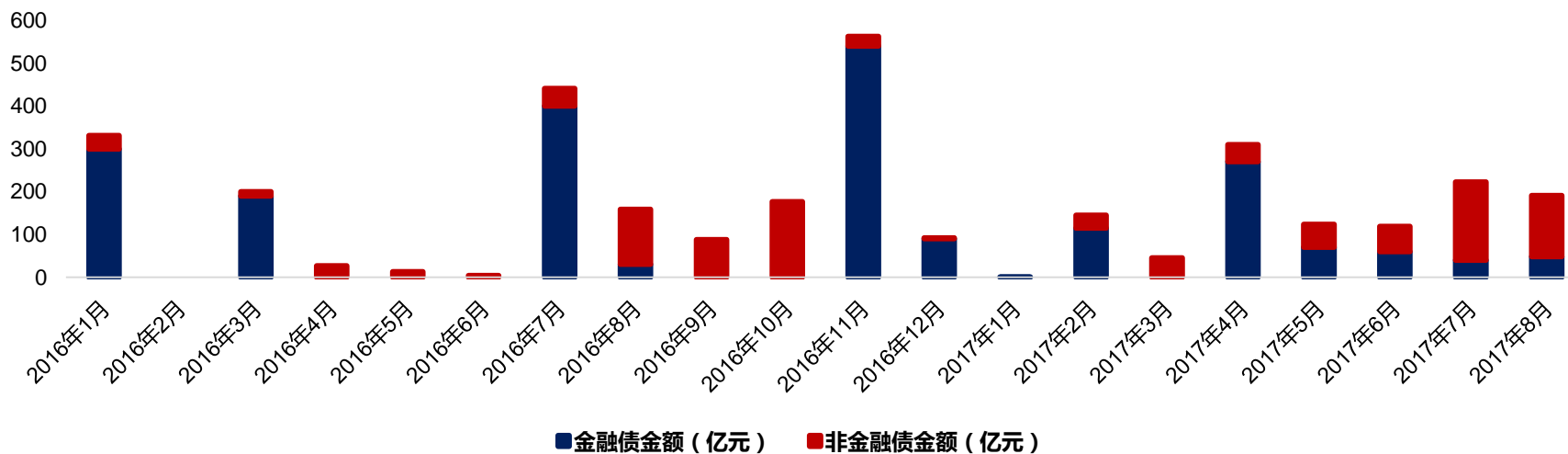


1.4 The Issuance Scale of Non-financial Green Bond Increased Gradually

Monthly Circulation of China Financial/Non-financial Green Bonds

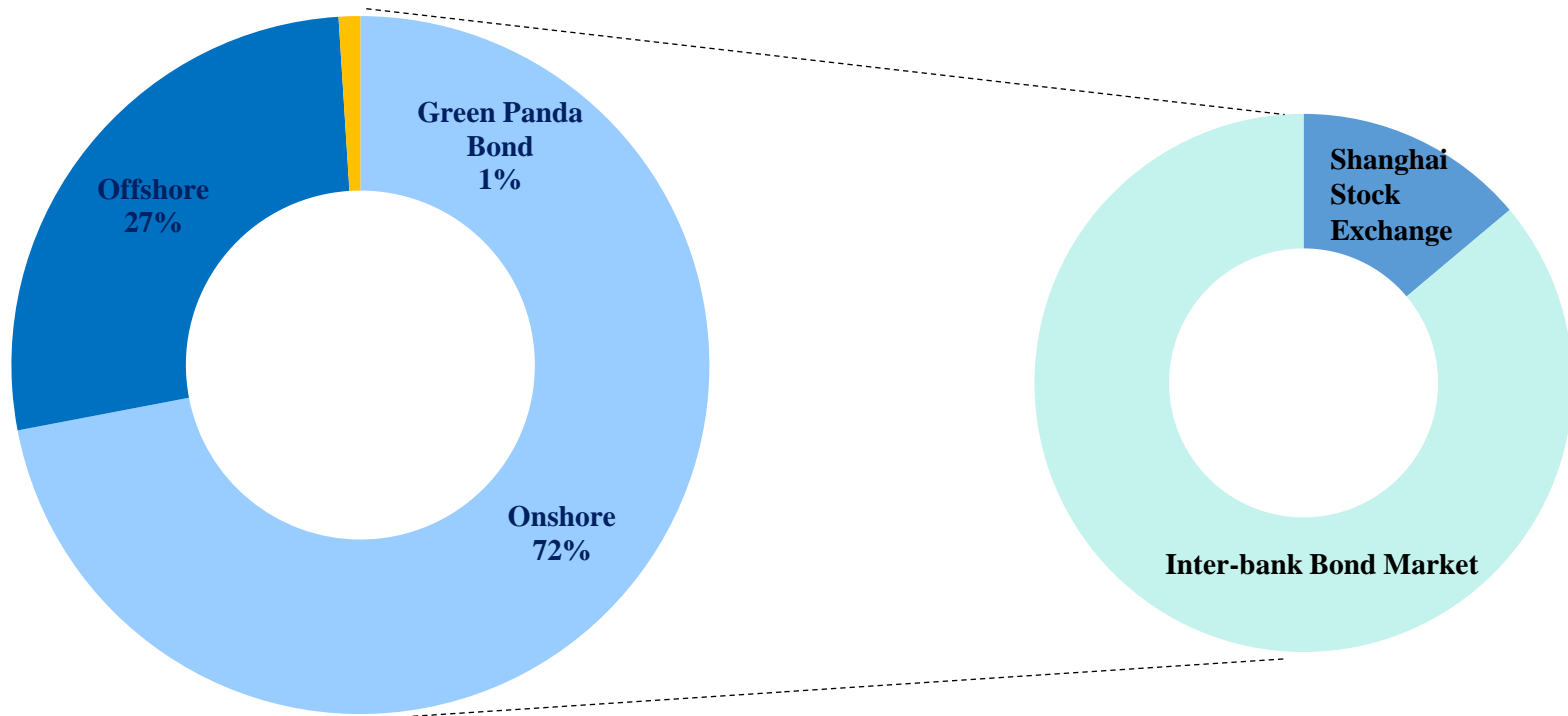


Monthly Issuance Scale of China Financial/Non-financial Green Bonds



1.5 Marketplaces of Green Bond Issuance

- Of the green bonds issued by China, 72% issued are onshore, of which 62% are issued in the inter-bank bond market, and exchange markets are growing rapidly.



2. The Idea for Credit Research on Green Bond

2.1 Credit rating is the basis for better allocation to green bonds

Pre-issuance

Strictly screening: manage bond pool on the basis of internal rating

Develop internal rating models;

Bond pool classification-based management system: core pool, basic pool, high-yield pool, and no-investment pool;

In-process

Tracking: multi-dimensional position scanning

Track position notice and negative information every day

Monthly, the investment committee provides opinions on the less-qualified varieties of bonds every month

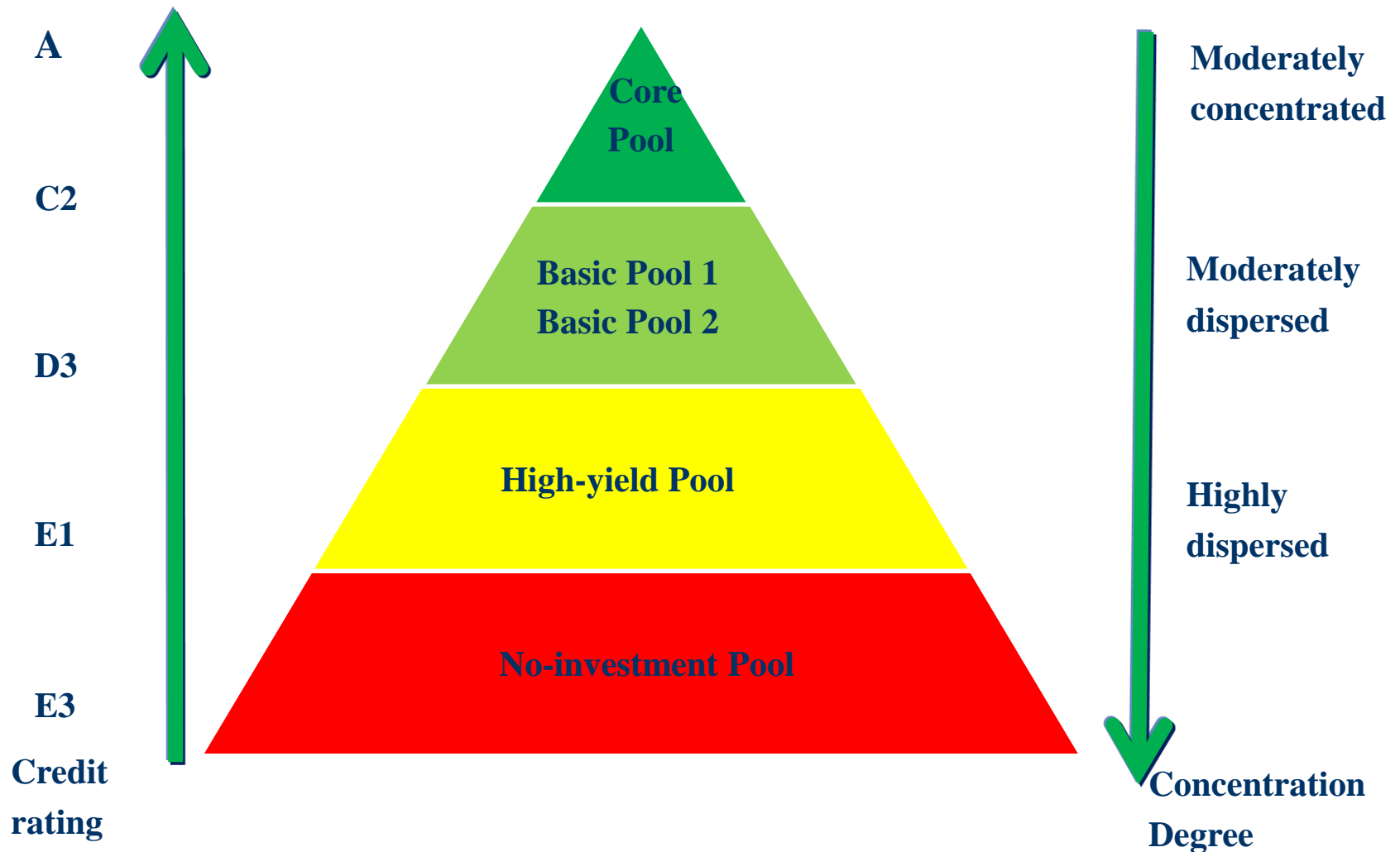
Quarterly, track position status, financial statement changes and liquidity warnings

Post-issuance

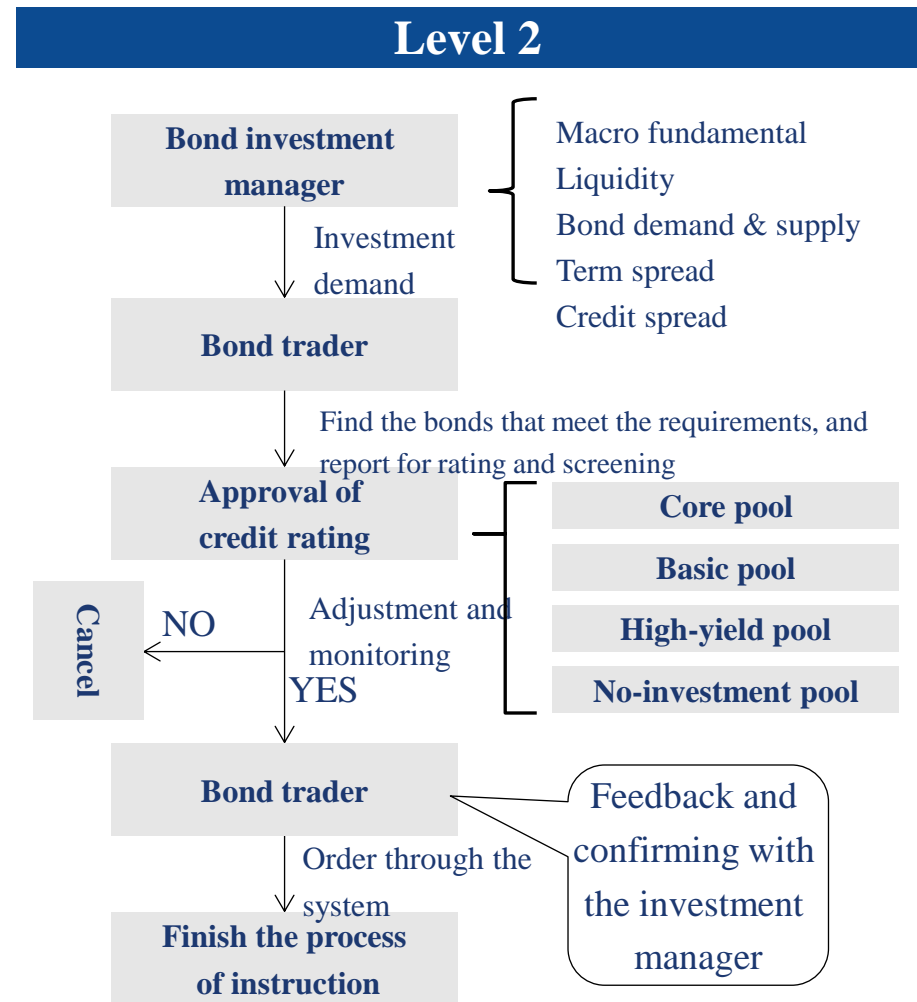
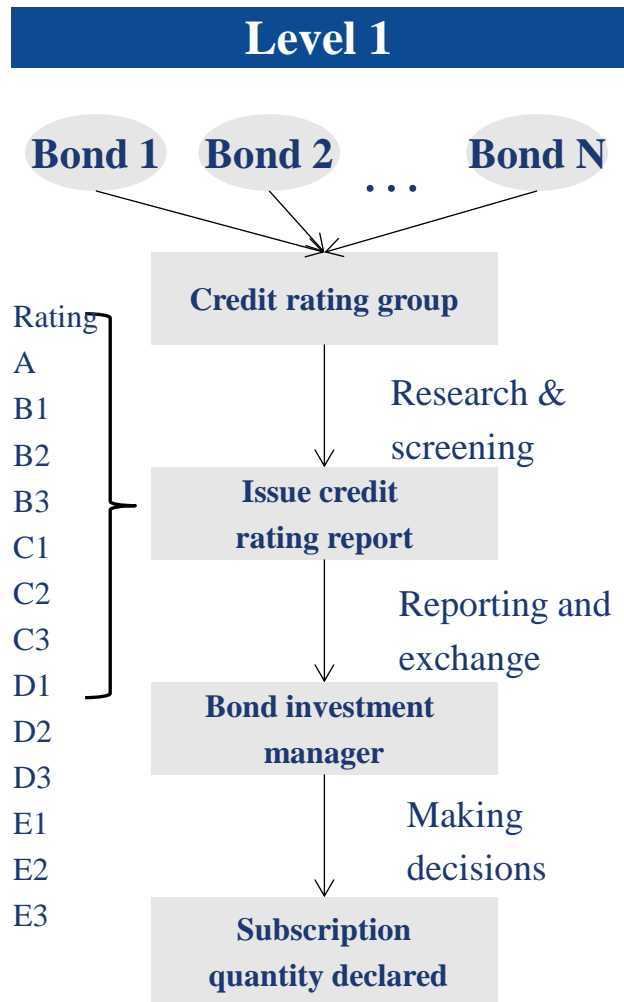
Risk disposal: active disposal participation, and resolute implementation of the disposal system

Urgent position closeout, opportunistic position closeout, prioritized underweight, and downgrade tips

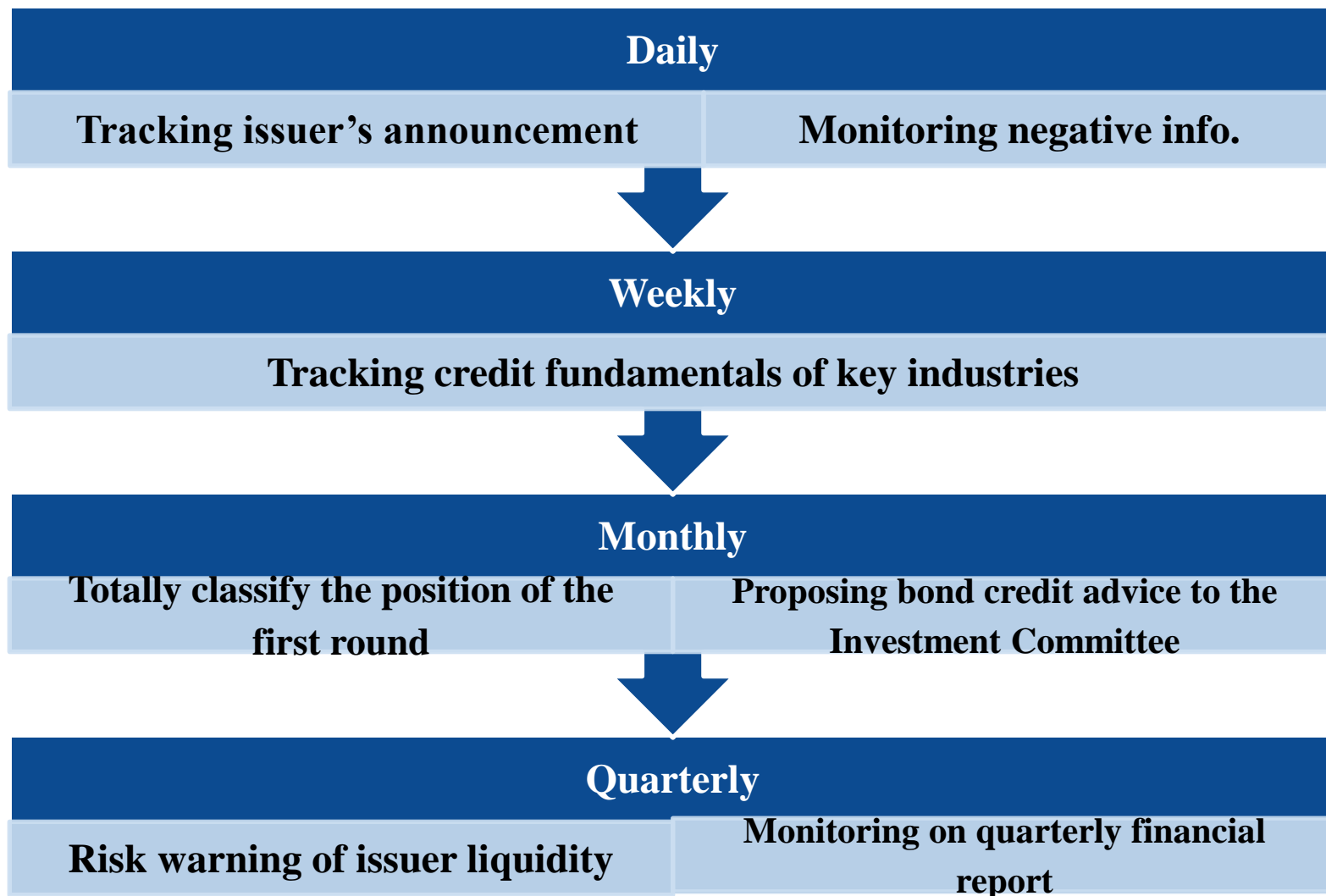
2.2 Establishment of the Bond Hierarchical Management Mechanism on the Basis of the Internal Rating



2.3 Pooling and Transaction Process of Green Bond



2.4 Tracking during the bond duration and timely monitoring the issuer status



2.5 Strengthen liquidity risk Pre-warning, timely find out liquidity risk

- Prospectively from the points of corporate short-term debt service pressure and operating capital gap and other indicators, the issuer's liquidity risk is divided into 9 classes, with the best Lv.1, and the worst Lv.9, and such investigation will be conducted quarterly.

Enterprise with good liquidity

| | |
|--------------------------------|---|
| Monetary funds | Short-term loans |
| | Transactional financial liabilities |
| | Note payable |
| Transactional financial assets | Current liabilities due within one year |
| | Operational current liabilities |
| Note receivables | Non-current liabilities |
| Operational current assets | Owner's equity |

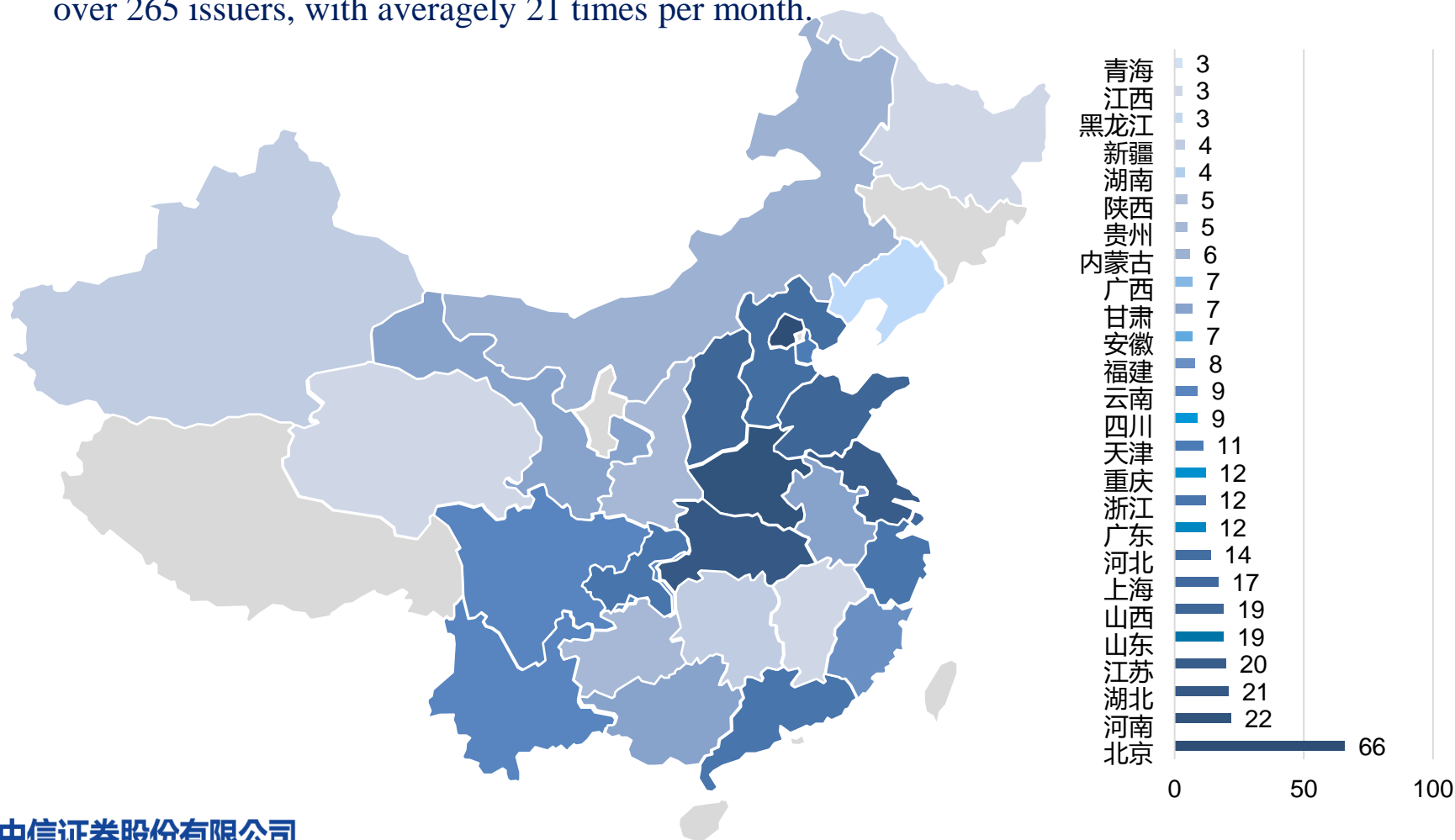
Enterprise with bad liquidity

| | |
|--------------------------------|---|
| Monetary funds | Short-term loans |
| | Transactional financial liabilities |
| Transactional financial assets | Note payable |
| Note receivable | Current liabilities due within one year |
| Operational current assets | Operational current liabilities |
| | Non-current liabilities |
| Non-current assets | Owner's equity |



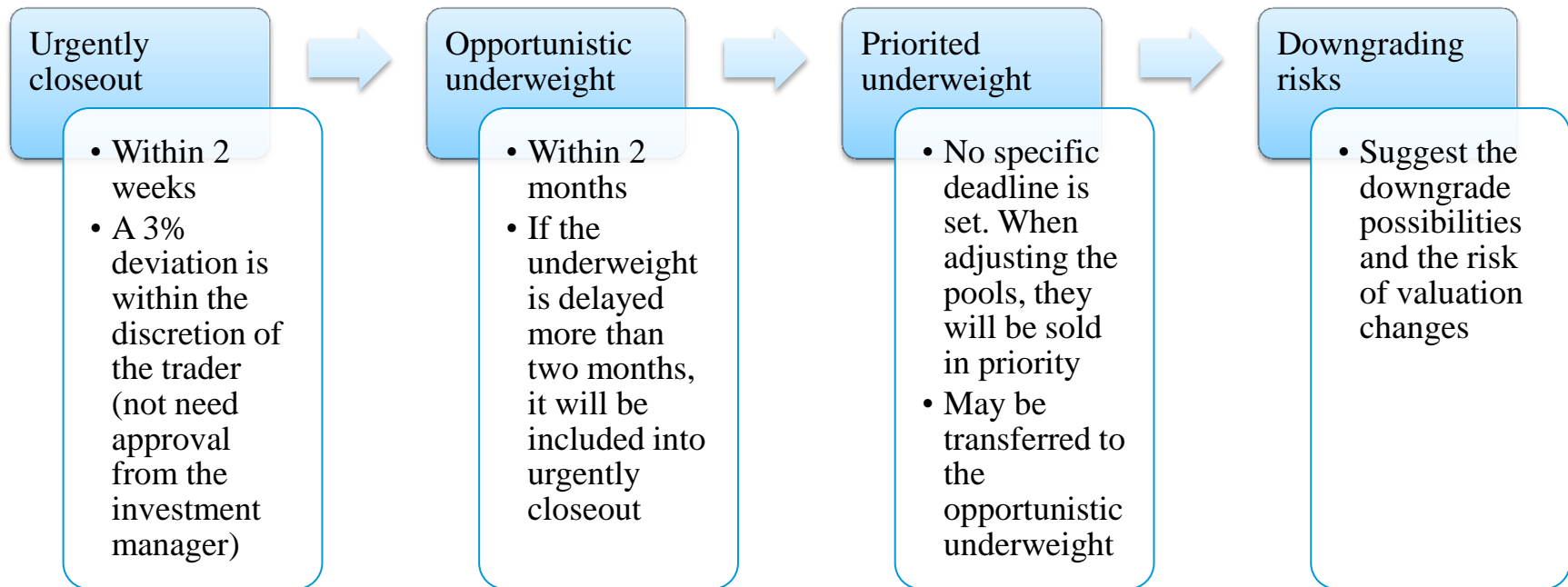
2.6 On-site Investigation during the duration

- For the on-site investigation of bonds with high-position and low-credit, the investigation will be carried out not less than once a year; in case of major events, communication or onsite research will be carried out in a timely manner. In 2016, CITIC AM has totally made research over 265 issuers, with averagely 21 times per month.



2.7 The Closeout System is the Ultimate Protection for Avoiding Risk

The level of urgency is arrayed from emergency to not



2.8 Some Differences in Risk Features Between Green Bonds and Regular Bonds

| Aspects of Inspection | Items to be inspected for non-green bonds | Added or focused Items to be inspected for green bonds |
|--|--|---|
| Company Background | Strength of shareholder / actual controller: investment strength, social resources | Professional background for engaging in green industry , and experience in construction and operation of green project |
| Policy Environment | Industrial policy attitude bias: encouraging; general; restrictions; requiring to eliminate | For policy preferences and enforcement efforts, it should particularly pay attention to the local government level, in addition to the national government |
| Corporate Governance and Management | Governance structure and operational norms, independence and competition, management system design and implementation effectiveness, quality of personnel, corporate strategy | Standardization of the investment project screening criteria, environmental risk management strategies and capabilities, and the effectiveness of environmental impact benefits tracing mechanism |
| Operational Competitiveness | Diversification (business, products, regions, customers, suppliers, etc.); competitive status (market share, production processing level, marketing control ability, R & D strength, industrial chain, etc.) | Operation: rationality of regional layout; competitive status: R & D strength (technical reserves), the level of production technology, and advantages of industrial chain |
| Industry Peculiarity | Industry life cycle, industry competition, industry status, industry development status and prospects | Environmental sensitivity of the industry: whether the business has a positive or negative impact on the environment |

2.8 Some Differences in Risk Features Between Green Bonds and Ordinary Bonds

| Aspects of Inspection | Items to be inspected for non-green bonds | Added or focused Items to be inspected for green bonds |
|---------------------------------------|---|---|
| External Supports | Shareholder support: capital input, business expansion | Government support: fiscal subsidies, financing facilities, tax preference |
| Financial Risks | Company scale, operational capacity, profitability, solvency, growth capacity | Environmental benefits / Internalized cash flow nature (inflow / outflow), amount, sustainability |
| Measures of Credit Enhancement | Traditional way of Credit Enhancement: third-party corporate guarantee, guarantee by sureties, pledge guarantee, guarantee by related parties, and natural person guarantee | Innovative Credit Enhancement: financial support by Green Industry Development Fund, pledge of special green assets such as carbon emission rights, and green insurance, etc. |
| Information Disclosure | Prospectus, audited financial reports, rating reports, legal submissions, elaboration of significant notes, etc. | Third-party green assessment opinion / certification report, and report of use of raised proceeds |

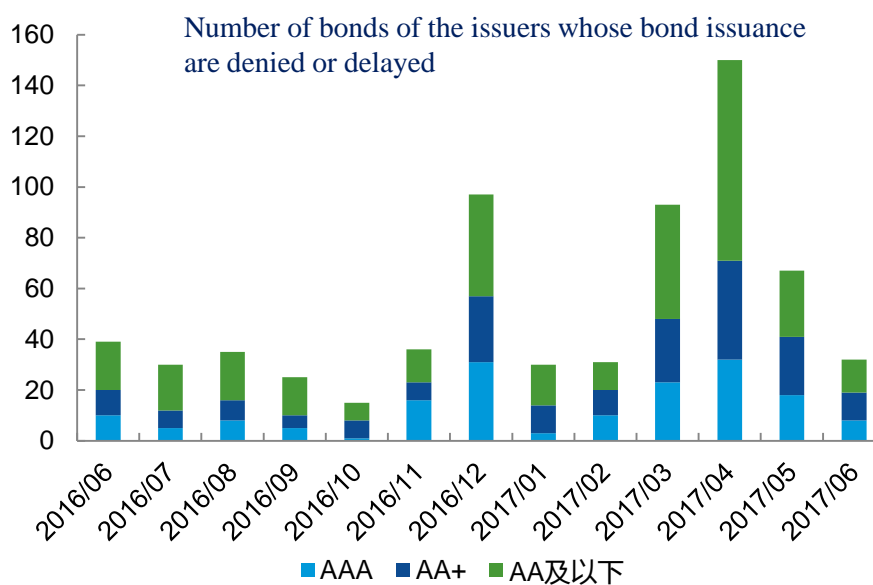
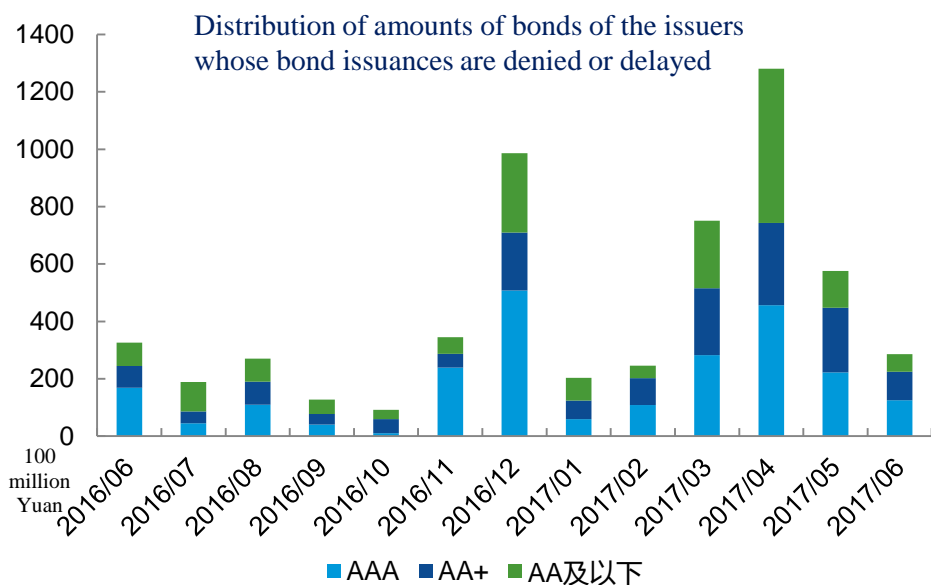
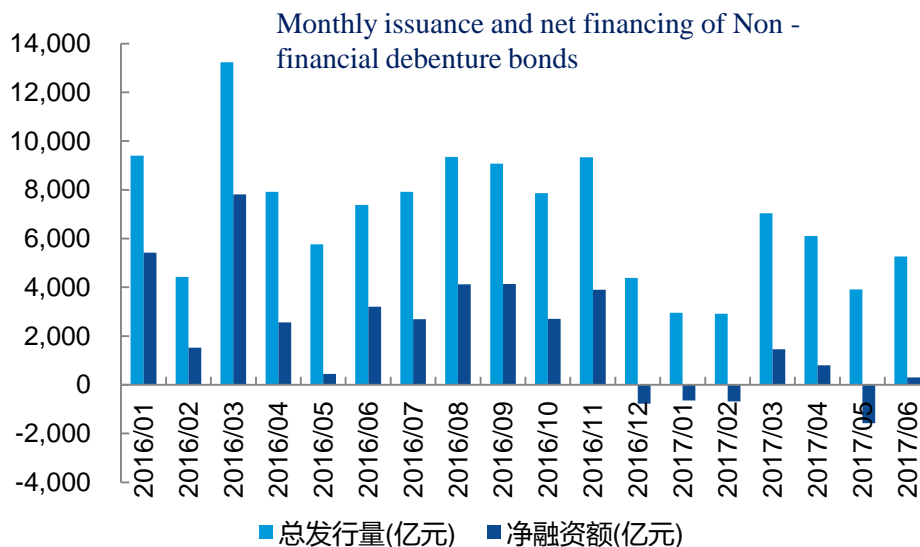
Source: PengYuan Rating, CITIC AM



3. Allocation Strategy and Market Prospect of Green Bond

3.1 Debenture bond issuance is depressed; low-rating enterprises face refinancing pressure

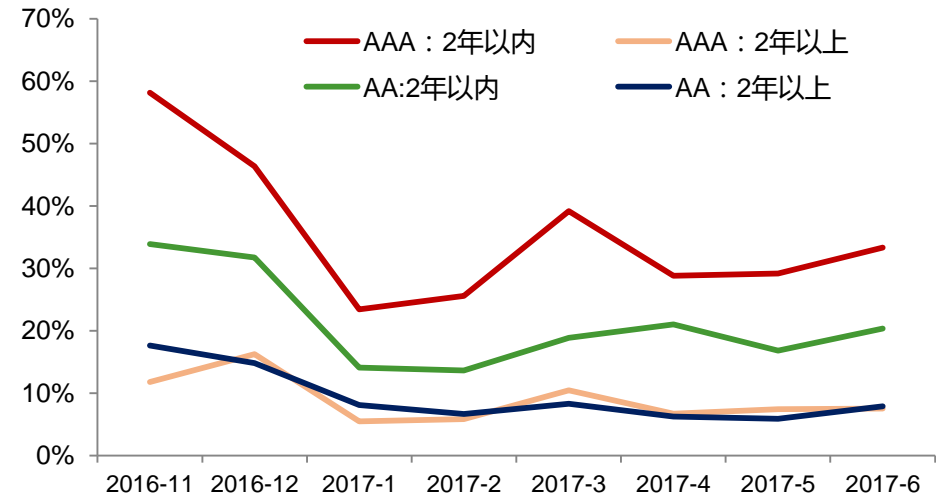
- In the first half of this year, non-financial debenture bonds continued the slump pattern, with semi-annual net financing of RMB -36.067 billion, of which, the net financing in May RMB -158.251 billion, with a record low.
- Judging from the issuers whose bond issuances are denied or delayed, it seems although the amount of money raised by the high-rating bonds is relatively a lot, the number of low-rating bonds is much more, low-rating issuers are still facing certain financing pressure.



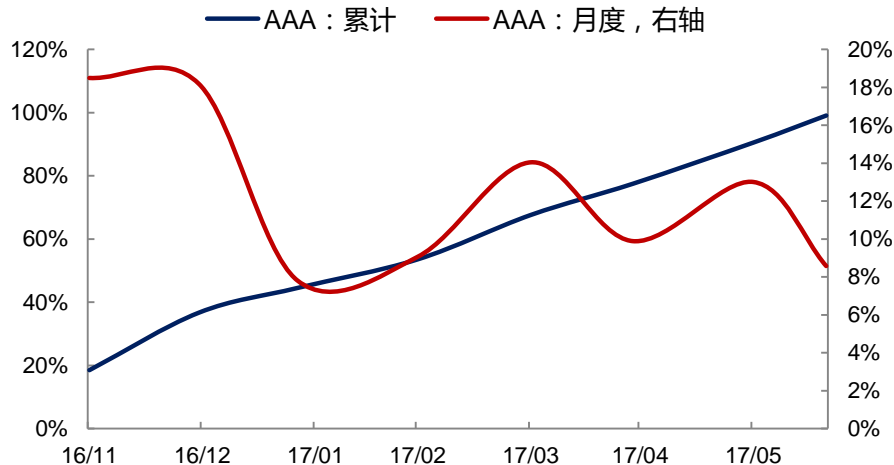
3.2 The turnover rate of high-rating bonds is relatively high, while the turnover rates of middle-rating and low-rating bond are ordinary

- Judging from the debenture bonds transaction data since November 2016, the turnover rate of high-rating bonds is relatively high, while the turnover rates of middle-rating and low-rating bond are ordinary, selloff pressure and valuation risk are not fully released.
- The turnover rate of the varieties within 2 years is higher, the turnover rate for those with more than 2 years is lower, which shows the active transactions of the short-duration varieties.

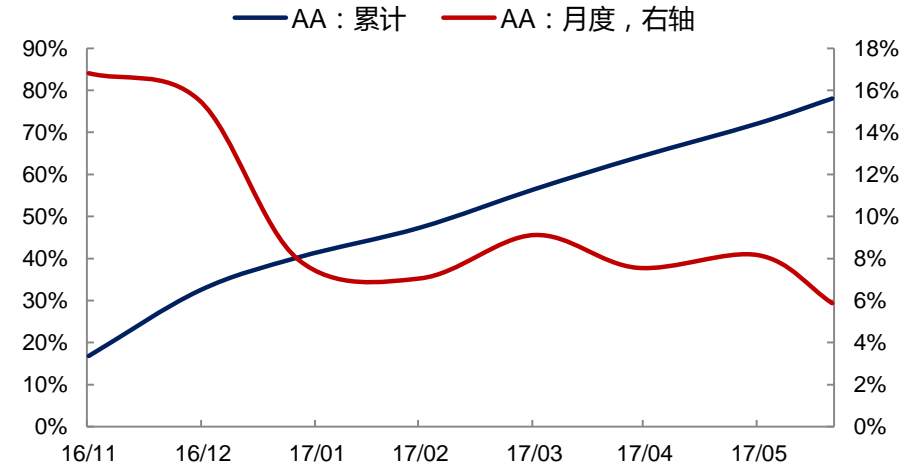
The turnover rate of the varieties within 2 years is higher



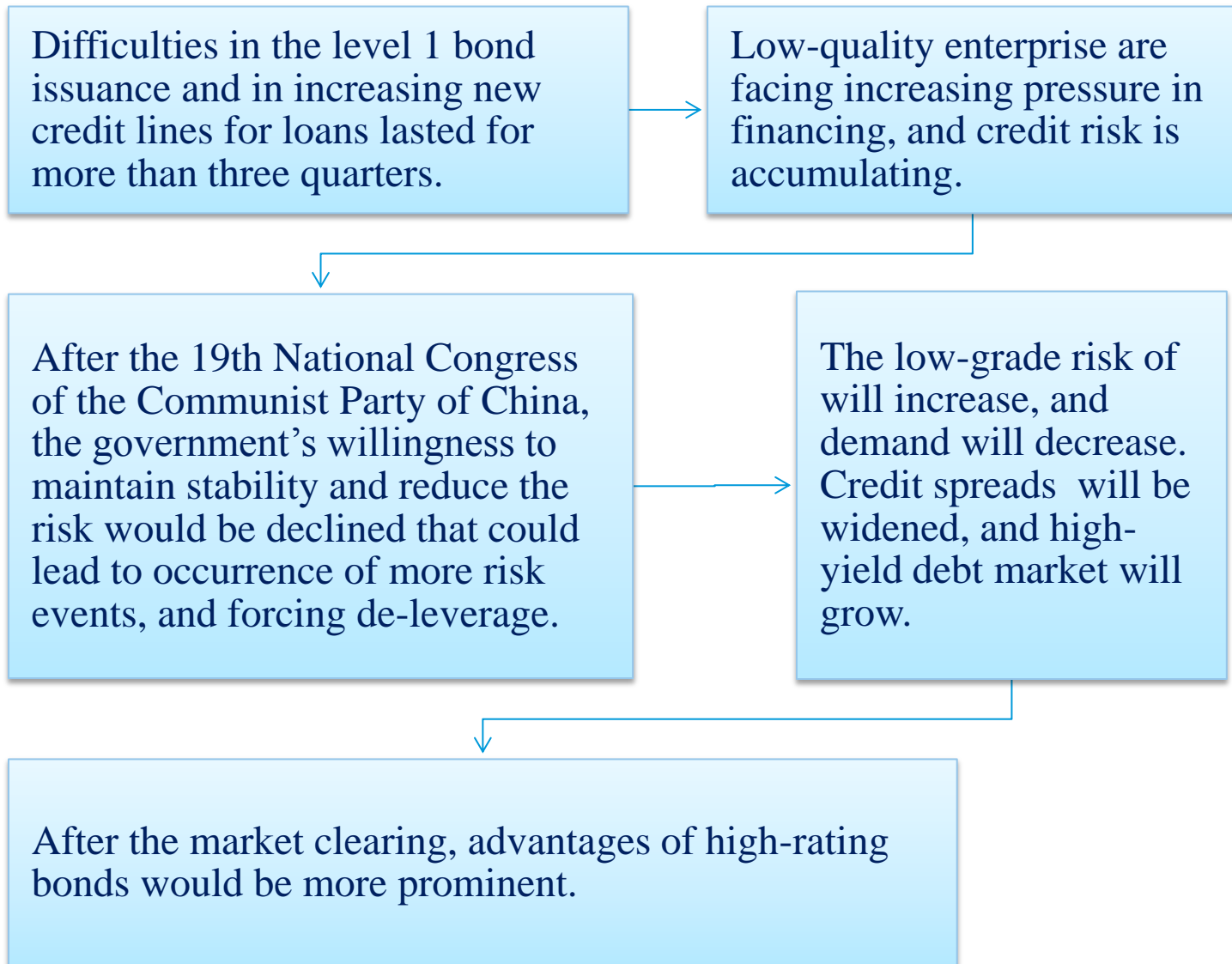
Since November, the turnover rate of high rating bonds is relatively high



Since November, the turnover rates of middle rating and low-rating bonds are ordinary



3.3 It is expected that after the policy preservation period, low-grade risk will increase

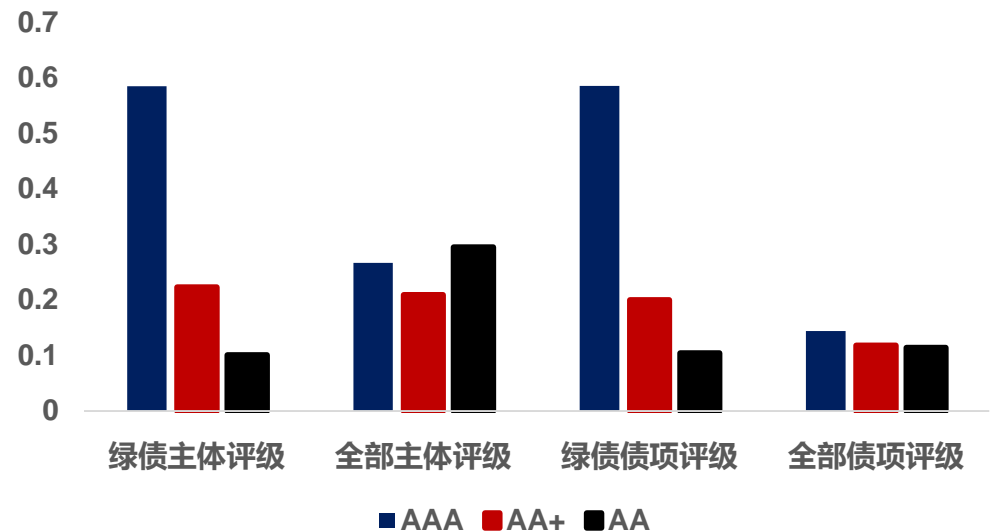


3.4 Credit rating of green bond is higher than the overall market, suggesting investment value

- The ratings of China's green bonds issuer and bond are higher than the overall level of the bond market. Among the green bonds issued in 2016, the issuer rating with AAA accounted for 57.1%. In the environment with intensified market credit risk, the green bonds with overall high grade will promote investors' allocation demand.
- In the long run, with the addition of various types of entities, the rating level of green bonds will gradually return to the market average, but would be still slightly better than other types of bonds.

Rating Distribution of China's Green Bond in 2016

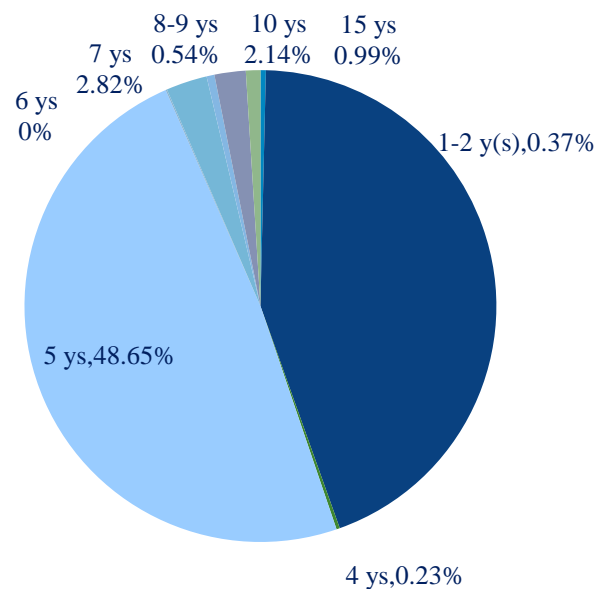
| (Number of bonds) | Issuer Rating | Bond Rating |
|-------------------|---------------|-------------|
| AAA | 28 | 28 |
| AA+ | 11 | 10 |
| AA | 6 | 7 |
| AA- | 1 | 0 |
| No rating | 2 | 4 |



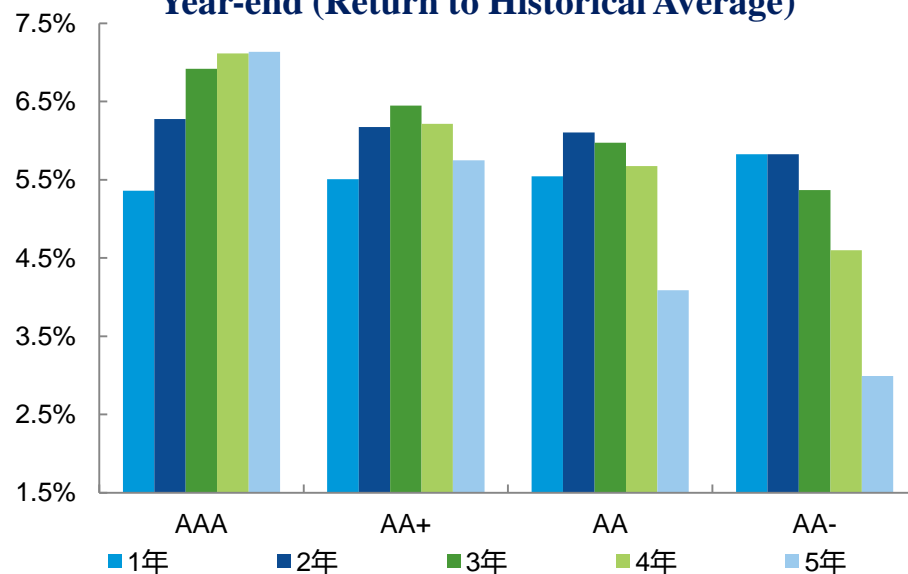
3.5 Three-year green bond investment is cost-effective, and more allocation is recommended.

- Overall, the term of China's green bonds is mainly between 3 years and 5-year, accounting for more than 90% of the total. On the other hand, the green bond coupon rate is absolutely low, and slightly lower than the non-green bonds in same type with same rating. On the whole, the 3-year bonds show better defensive nature and the investment for it is the most cost-effective one. However, some organizations which seek higher returns can choose to increase duration of their portfolios to increase their profits when they are in the selection of green bonds.

Distribution of Duration of China's Green Bond in 2016



Yield Calculation of Debenture Bonds Held to the Year-end (Return to Historical Average)



3.6 Institutional Investor Green Bond Allocation Case

| Issuer | Bond | Year to Maturity | Issuer Rating | Bond Rating | China Bond Valuation |
|--|--------------|------------------|---------------|-------------|----------------------|
| Bank of Qingdao | 16青岛银行绿色金融01 | 1.4959 | AA+ | AA+ | 4.9851 |
| Yunnan Provincial Energy Investment Group Co., Ltd. | 16云能投GN001 | 4.1288 | AAA | - | 5.9574 |
| Beijing Enterprises Water Group Limited | G16北控1 | 6.8849 | AAA | AAA | 4.9116 |
| China Energy Conservation and Environment Protection Group Company | G16节能1 | 3.9260 | AAA | AAA | 4.7188 |
| Jiangsu Guoxin Asset Management Group Limited | 16苏国信GN003 | 4.2329 | AAA | AAA | 4.7775 |
| Guiyang Public Traffic Company | G贵公交5 | 4.5370 | - | AAA | 5.8459 |
| China Huadian Corporation | G17华电2 | 4.8466 | AAA | AAA | 4.7457 |
| China Huarong Financial Leasing Co., Ltd. | 17华融租赁绿色金融02 | 4.4219 | AAA | AAA | 4.9779 |
| Jingjiang Provincial Binjiang New Town Investment and Development Co., Ltd. | 17靖江绿色债 | 6.8603 | AA | AAA | 5.4222 |
| Wuhan Metro Group Co. Ltd. | 17武汉地铁GN001 | 14.8603 | AAA | AAA | 5.1243 |
| Leshan City Commercial Bank Co., Ltd. | 17乐山商行绿色金融05 | 2.9918 | AA | AA | 5.1094 |
| Chongqing Longhu Enterprise Development Co., Ltd. | G17龙湖1 | 4.4274 | AAA | AAA | 5.0782 |
| Xuzhou Economic and Technological Development Zone State - owned Assets Management Co., Ltd. | 17徐州经开GN001 | 4.9781 | AA | AA | 5.7679 |



**Tranquil, Upright,
Maintain Sustainable
Development!**

**Beijing, China, 100026
No. 48, Liangmaqiao Road, Chaoyang
District, Beijing
CITIC Securities Company Limited**

致
謝