



The Opening of China's Bond Markets: Opportunities for Global Investors

Executive Summary

- China has the second largest economy and the third largest bond market in the world. It is therefore not surprising that events in China are among the most important factors affecting global risk assets.
- Recent measures by the People's Bank of China to broaden and facilitate foreign investment in onshore Chinese bond markets should increase foreign participation in these markets, which are substantially larger than offshore (dim sum) Chinese bond markets.
- These measures are part of a wider effort by Chinese regulators to open China's capital accounts and internationalize the renminbi.
- The expansion of access to Chinese onshore bonds brings them a step closer to being included in global bond indices, which would further increase the size of the market.
- Risks associated with investment in Chinese onshore bonds include those related to macro environment and policy direction, as well as growing credit risk and difficulty in comparing credit ratings.
- We believe that expanded access to onshore Chinese bonds currently offers global investors the potential to obtain attractive relative yields, greater diversification, low volatility and deep trading liquidity.

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Introduction

China has the second largest economy and the third largest bond market in the world.¹ The offshore renminbi (RMB) bond market alone has more than quadrupled in size since 2010.² It is therefore not surprising that events in China are among the most important factors affecting global risk assets. Due to various structural restrictions, however, foreign investment in Chinese fixed income markets to date has remained quite limited, even when compared with much smaller emerging market countries. Steps recently announced by the People's Bank of China (PBOC) to broaden and simplify foreign access to the onshore Chinese bond market appear likely to change this. These measures are part of a broad, concerted effort by Chinese regulators and policymakers to open China's capital accounts and encourage internationalization of the RMB.³ Given the significant implications of events in China for the global economy, it is critical for investors, including asset managers, to understand and react to the significant changes underway with respect to Chinese fixed income markets.

1 As of September 30, 2015. Source: Bank for International Settlements (BIS), March 6, 2016.

2 Source: HSBC, as of December 31, 2015.

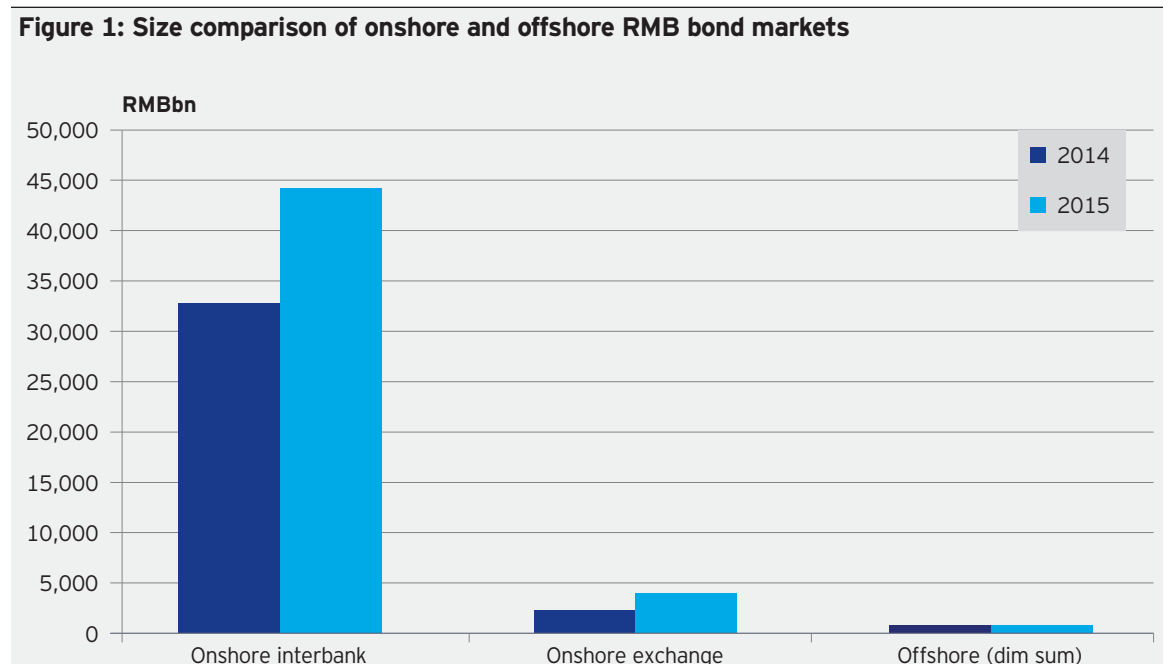
3 Significant efforts by the Chinese government to internationalize the RMB began in 2010 with the creation of the offshore RMB (known as the CNH) and related offshore (or "dim sum") bond markets. Another notable step was taken in April 2014, when the government approved the Shanghai-Hong Kong Stock Connect program to facilitate wider foreign investment in onshore Chinese equities.

We believe that exposure to Chinese bonds, which currently offer relatively attractive yields and historically have shown a very low correlation to other regions' fixed income assets, can add an important diversifying element to global bond portfolios.⁴ We further believe that arbitrage opportunities among the various Chinese onshore and offshore bond markets will become more limited as these markets start to converge. Of course, we are still in the very early stages of the opening of the onshore market and important questions and risks remain to be considered. Nevertheless, we believe that the PBOC's recent announcement positions RMB-denominated bonds well as a potentially attractive investment for international investors, especially when considered in the light of other recent developments such as the recent addition of the RMB to the International Monetary Fund's special drawing rights currency basket and the potential future addition of RMB bonds to global bond indices.

This paper discusses the PBOC's recent changes to rules for foreign investment in the Chinese onshore bond market and then examines various characteristics of that market. We then explore the relative value currently offered by each of the three Chinese bond markets: onshore RMB-denominated, offshore RMB-denominated ("dim sum") and USD-denominated. The appendix contains additional details concerning onshore and offshore market trading mechanisms and the internationalization of the RMB.

Opening of the Onshore Bond Market

China took another step toward the liberalization of its capital accounts and financial markets on February 24, 2016, when the PBOC announced a series of measures intended to facilitate and expand foreign investor access to onshore Chinese bond markets. While observers had been anticipating an expansion of foreign investors' access to Chinese markets for some time, the scope of the PBOC's announcement took many by surprise. Figure 1 below shows the relative sizes of the two onshore RMB-denominated bond markets (the China interbank bond market (CIBM) and the exchange market) as well as the offshore RMB-denominated (dim sum) market.



Source: Wind, Bloomberg L.P., Standard Chartered.

⁴ See Figure 2 for correlation information for the period from 12/31/10 through 12/31/15.

Expansion of access to the China onshore interbank market

Perhaps the most significant of the PBOC's recent measures was the announcement that most types of institutional investors are now eligible to invest in the onshore CIBM market after satisfying certain basic filing requirements. For most non-public sector investors, this new avenue for investment provides an alternative to the previous exclusive methods of access through the qualified foreign institutional investor (QFII) and renminbi qualified foreign institutional investor (RQFII) programs, which include quotas and a more complex approval process. Under the new rules, foreign commercial banks, insurance companies, securities companies, fund management companies, pension funds, charity funds, donation funds and other mid-to-long-term investors are now permitted to invest in the CIBM. Previously, foreign CIBM investment was restricted to foreign central banks, sovereign wealth funds, supranational organizations, RMB clearing banks, RMB settlement banks, select insurance companies and QFII/RQFII investors.

In order to participate in the CIBM, the new categories of eligible investors will need to appoint a settlement agent bank in the onshore market. The settlement agent bank then files the additional required forms, along with the settlement agent agreement, with PBOC Shanghai, which is expected to respond within 20 calendar days. This is significantly more streamlined than the previous requirements applicable to foreign investing in the onshore bond markets, which obligated most private sector investors to undergo an extensive approval process that lacked transparency with respect to the related requirements and timing. The central bank also eliminated quotas for eligible investors under the expanded scheme. Previously, limited quotas were imposed upon non-public-sector foreign investors, which was one of the major barriers to inclusion of Chinese onshore bonds in major global bond indices.

| Comparison of revised CIBM and QFII/RQFII programs | | |
|--|--|---|
| | QFII/RQFII | Revised CIBM |
| Approval Requirements | CSRC (licensing), SAFE (quota), PBOC (interbank bond market access) | Filing with PBOC by settlement agent bank |
| Investment Quotas | On a product (QFII) or entity (RQFII) basis | None |
| Lock-up Period | 3 months for QFII and 1 year for RQFII non open-end funds | None |
| Repatriation Limits | Amount limit for QFII and frequency limit for RQFII | None |
| Investable markets | Exchange market; additional approval required for interbank bond market access | Interbank bond market only ⁵ |

Investors' Perspective: The Case for Chinese Onshore Bonds

In this section, we analyze various characteristics of Chinese onshore bonds that we believe may sometimes be overlooked by investors but that may make them a potentially attractive option for global investors seeking to diversify their portfolios and enhance risk-adjusted returns if managed properly.

Low correlations with other assets

From a portfolio management perspective, we believe that Chinese onshore bonds can potentially offer an attractive means for investors to diversify their assets and help reduce portfolio volatility. As demonstrated in Figure 2, Chinese onshore bonds have historically offered extremely low correlations with other bonds across the globe. The correlation with bonds in the US, Europe and emerging markets ranged between 0-0.2. This reflects the significant potential diversification benefits offered by Chinese onshore bonds in contrast to global assets, which have tended to move in tandem when general risk sentiments change.

⁵ Most primary and secondary bond market activity takes place in the interbank bond market, which accounts for more than 90% of issuance and trading activity (see Figure 1).

Figure 2: Low correlation of RMB bonds with other global bond assets

| | Onshore bonds | Offshore RMB bonds | | 31 December 2010 to 31 December 2015, weekly | | | | | | | | |
|--------------------------------------|--|--|---|---|---|---|---|--|---|---|---|---|
| Asset class | Onshore RMB composite | IG | HY | US Treasury bonds | Developed countries government bonds | US IG corporate bonds | US HY | EM external sovereign bonds | EM local currency government bonds | EM external Corporate Bonds | EUR European IG Corporate Bonds | EUR European HY Corporate Bonds |
| Represented by | ChinaBond Composite Total Return index CTAGTR | HSBC Offshore RMB Bond IG Corporate Bond index HCNHACUM | HSBC Offshore RMB HY & Non-Rated Bond index HCNHYCUM | iBoxx USD Treasuries 10Y+ Total Return index ITRR10Y | JPM GBI Global Unhedged index (USD) JPMGGLBL | Bloomberg USD investment Grade Corporate Bond index BUSC | Bloomberg USD High Yield Corporate Bond index BUHY | JPMorgan EMBI Global Diversified index JPGCCOMP | JPMorgan GBIEM Global index JGENGLOG | JPMorgan Corporate EMBI Diversified index JCMDCOMP | Bloomberg EUR IG Corporate Bond index BERC | Bloomberg EUR HY Corporate Bond index BEUH |
| Onshore RMB | 1.00 | | | | | | | | | | | |
| Offshore RMB IG | -0.09 | 1.00 | | | | | | | | | | |
| Offshore RMB HY | -0.16 | 0.93 | 1.00 | | | | | | | | | |
| US Treasury bonds | 0.13 | -0.04 | -0.07 | 1.00 | | | | | | | | |
| Developed countries government bonds | 0.09 | -0.01 | -0.04 | 0.56 | 1.00 | | | | | | | |
| US IG Corporate bonds | 0.12 | 0.14 | 0.09 | 0.83 | 0.60 | 1.00 | | | | | | |
| US HY | 0.06 | 0.34 | 0.32 | -0.18 | -0.03 | 0.22 | 1.00 | | | | | |
| EM external sovereign bonds | 0.15 | 0.19 | 0.16 | 0.05 | 0.19 | 0.37 | 0.63 | 1.00 | | | | |
| EM local currency government bonds | 0.21 | 0.05 | -0.01 | 0.27 | 0.28 | 0.44 | 0.33 | 0.71 | 1.00 | | | |
| EM external corporate bonds | 0.10 | 0.33 | 0.32 | 0.04 | 0.17 | 0.44 | 0.74 | 0.87 | 0.59 | 1.00 | | |
| EUR European IG corporate bonds | 0.09 | 0.16 | 0.17 | 0.39 | 0.28 | 0.62 | 0.37 | 0.41 | 0.37 | 0.51 | 1.00 | |
| EUR European HY Corporate Bonds | -0.04 | 0.27 | 0.28 | -0.34 | -0.08 | 0.05 | 0.74 | 0.51 | 0.26 | 0.66 | 0.43 | 1.00 |

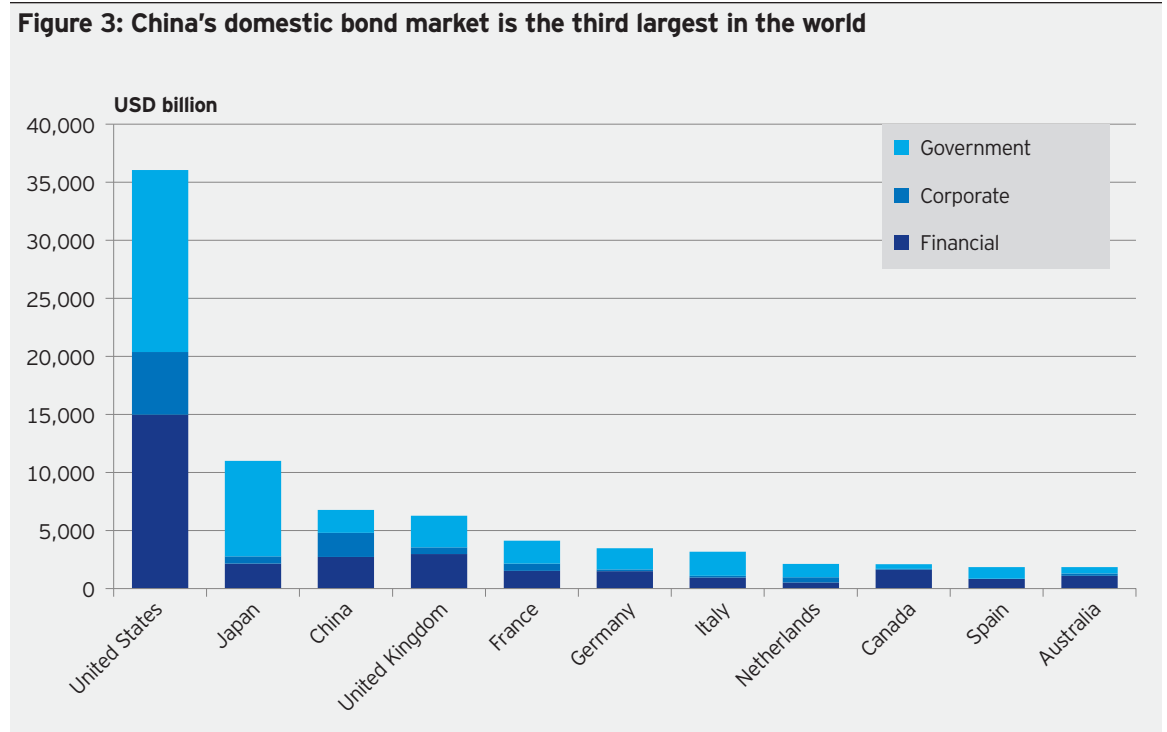
Source: Bloomberg L.P., Invesco.

Potential index inclusion

China's bond market has yet to be included in major local currency bond indices, partly due to the lengthy approval process, quota and repatriation constraints previously applicable to foreign investors. The PBOC's recent announcement and follow-up clarification have brought China's onshore bond market closer to being considered for inclusion in these indices. While the certainty, extent and timing of any such move remains unclear, if it does happen, investment portfolios tracking the relevant indices would need to increase their purchases of onshore Chinese bonds accordingly. We estimate that related inflows could ultimately reach USD200-400 billion from fund managers alone based on the potential weight of China onshore bonds in the indices and estimated size of assets tracking these indices.

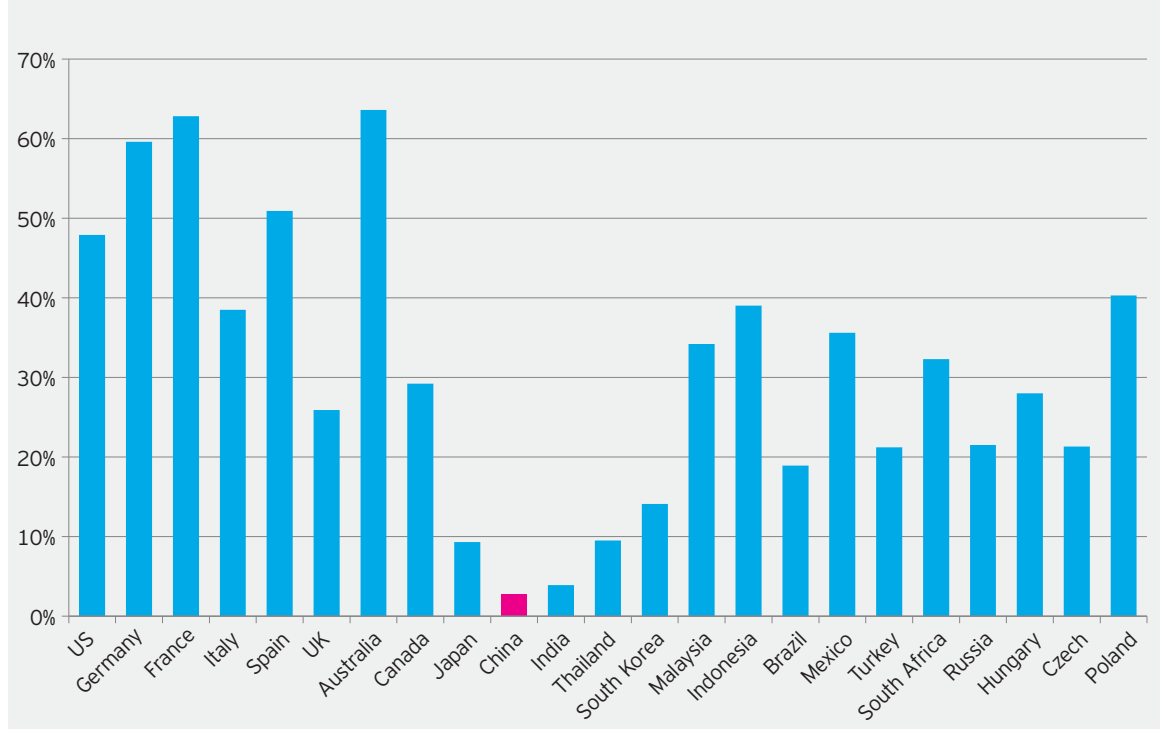
Potential for increased foreign ownership

Figure 3 shows that China's bond market is the third largest in the world, with over USD5 trillion in outstanding issues. However, foreigners currently hold less than 3% of Chinese onshore bonds, a level significantly lower than in most emerging market countries (Figure 4).



As of September 30, 2015. Source: BIS, March 6, 2016; Invesco.

Figure 4: Foreign ownership of local currency government bonds



As of March, 2016. Source: HSBC, Invesco. Information for China represents Chinese onshore bond market.

An increase of foreign ownership of China onshore bonds to 10% would represent an additional USD400 billion in foreign inflows to the onshore bond market.

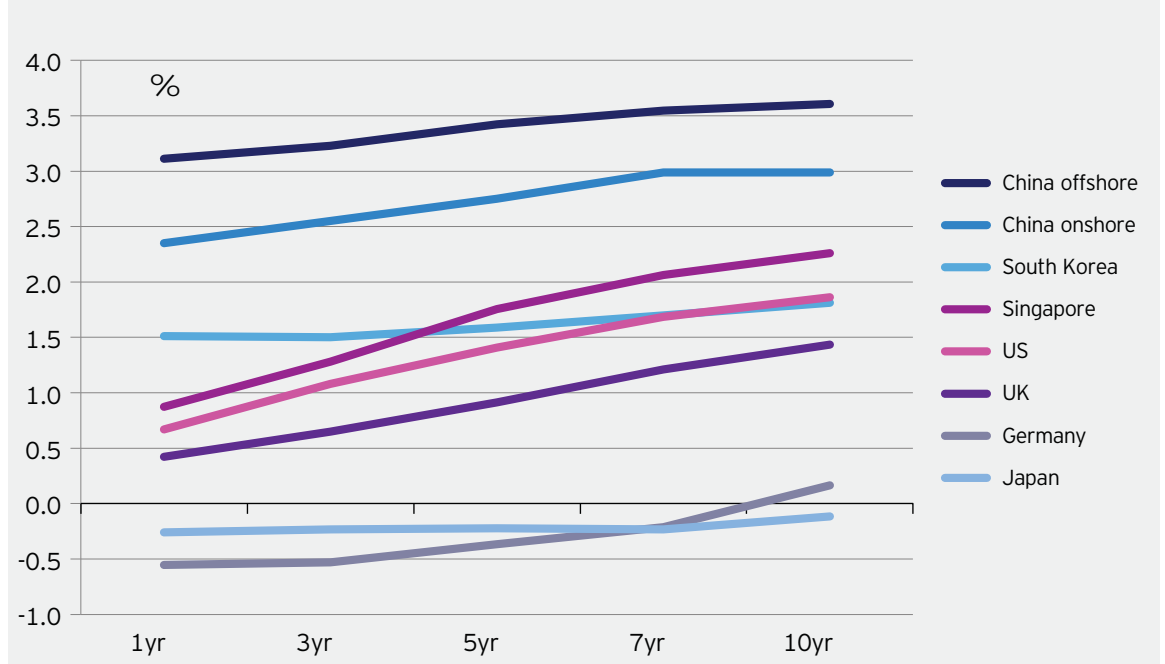
Higher yields than major developed market and many emerging market government bonds

Although Chinese onshore bond yields tightened by 60-80 basis points over the course of 2015, its government bond yield still offered a 100-basis point spread over Asian countries with significantly higher foreign exchange volatility such as South Korea and Singapore as of the end of the year.⁶

Compared to developed market countries, Chinese government bond yields currently appear more attractive in our view. The onshore Chinese government bond yield is trading at a 100-200bps premium over US and UK government bonds and at around 300bps over Japan and Germany's, which are trending deeper towards negative territory (Figure 5). Compared to the onshore market, offshore Chinese government bonds are even higher yielding, trading at a 60-70bps premium over the onshore equivalents. Although Chinese government bonds introduce currency risk when compared with developed market bonds, as discussed below we anticipate that this risk should generally remain relatively limited, given that RMB volatility has been significantly lower than major developed market and emerging market currencies.

⁶ As of December 31, 2015. Source: Bloomberg.

Figure 5: Comparison of various government bond yields to maturity

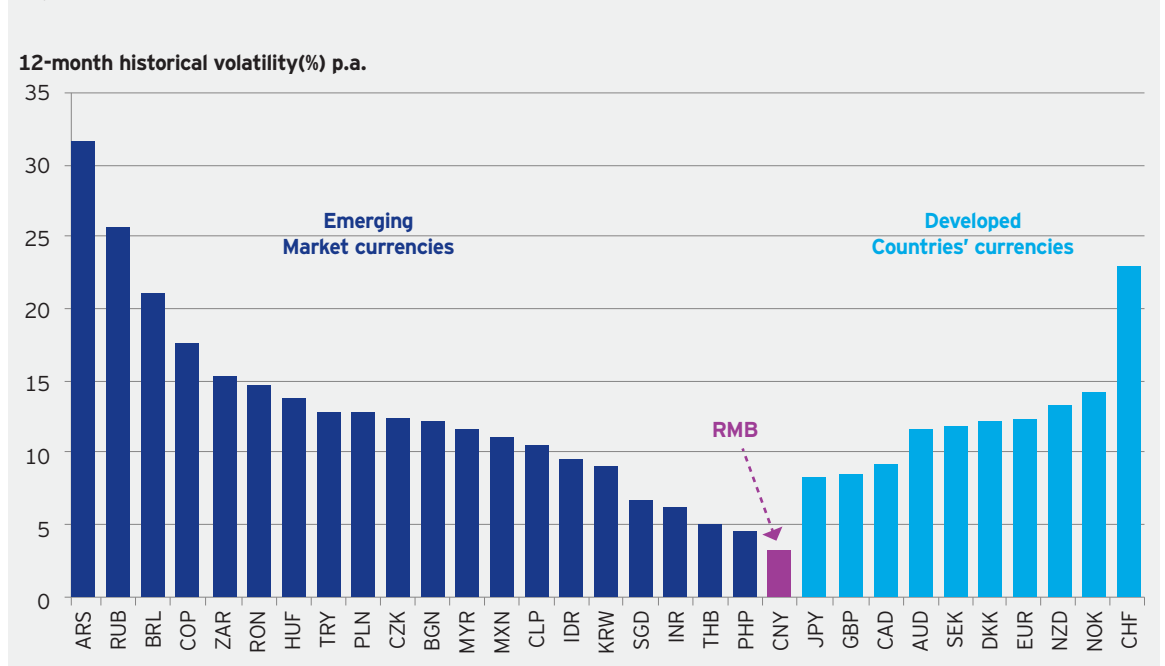


As of May 31, 2016. Source: Bloomberg L.P., Invesco.

Low foreign exchange and bond volatility

Currency outlook and stability are crucial for local currency bond investors. As shown in Figure 6, the RMB has enjoyed the lowest volatility among global currencies, which generally implies lower foreign exchange risk for bond investors.

Figure 6: Low volatility of RMB vs other currencies



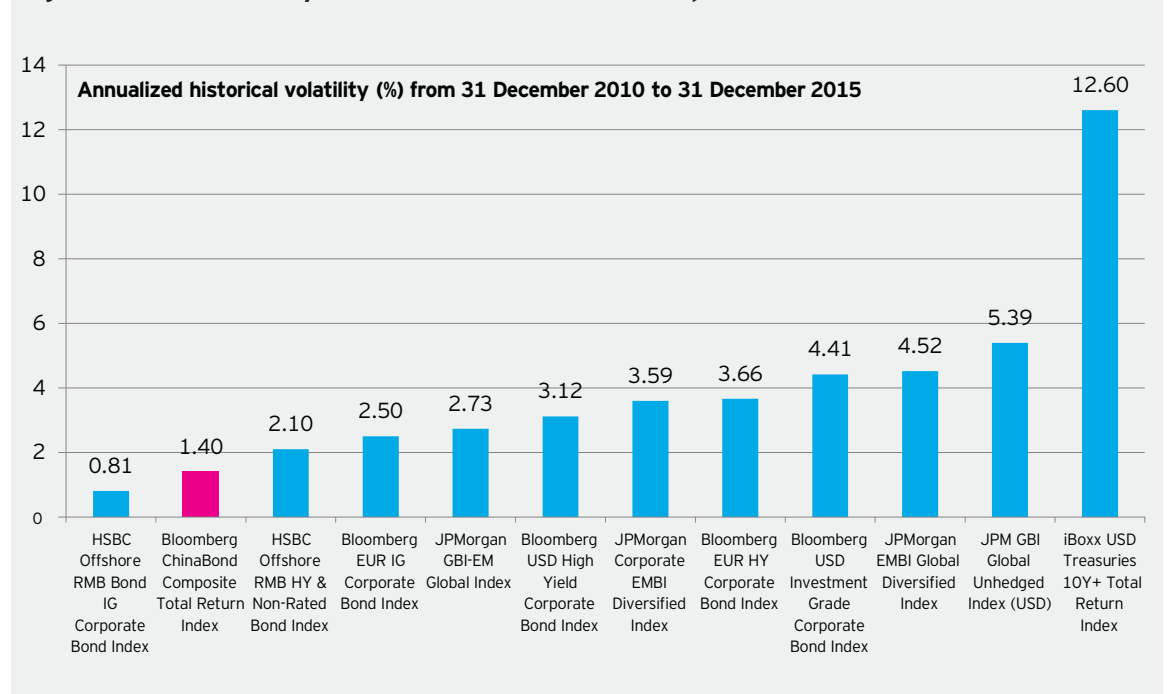
Source: Bloomberg L.P., Invesco, May 31, 2016.

While volatility may increase if and to the extent that China moves toward a more freely floating currency, either as part of wider economic and financial system reforms or otherwise, we anticipate that policymakers will continue to place a high value on controlling RMB volatility. In this context it is worth noting that China has benefited from significant currency reserves of USD3.2 trillion that could be used to support the RMB if necessary.⁷

⁷ As of April 30, 2016. Source: People's Bank of China.

In addition, RMB bonds have experienced lower volatility over the past five years than bonds in Europe, the US and the emerging markets. Annualized historical volatility for Chinese onshore bonds was 1.4%, compared to 2.5% for European investment grade, 4.4% for US investment grade and 5.4% for global bonds (Figure 7). While volatility levels are likely to increase as China further liberalizes its financial market, the onshore RMB bond market is still expected to exhibit lower volatility as the PBOC is able to exert greater influence over the market and China is less vulnerable to external shocks.

Figure 7: Lower volatility of RMB bonds vs international peers



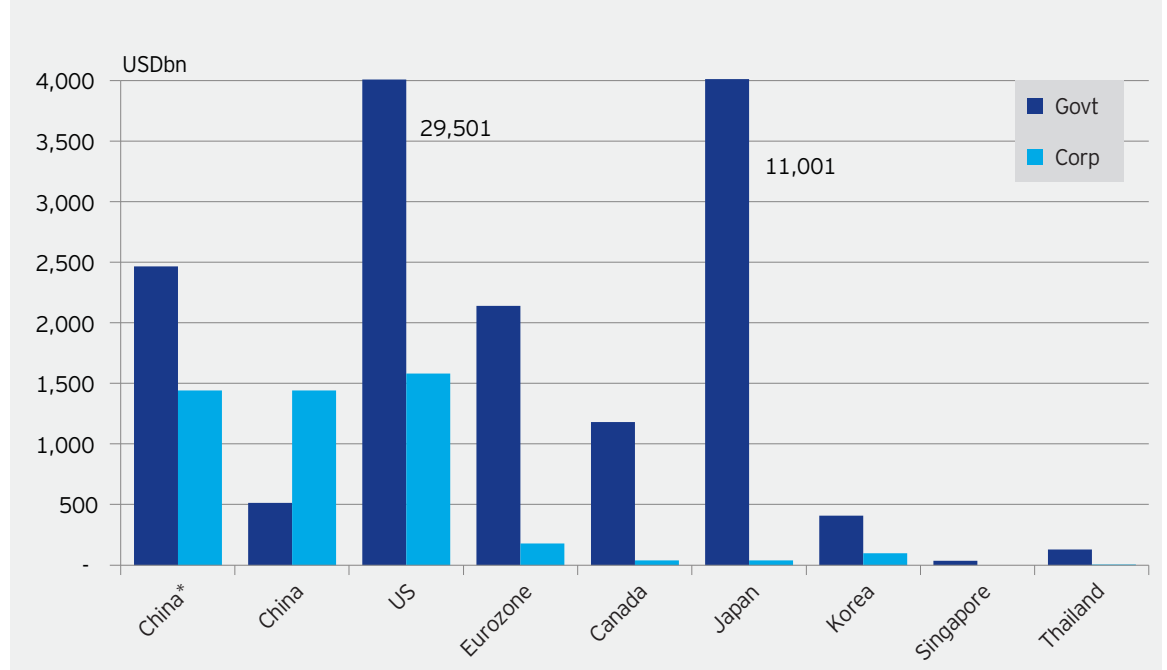
Source: Bloomberg L.P., Invesco, 31 December, 2015. Information in red is for China onshore bond market

Deep liquidity compared to global peers

Contrary to widely held misconceptions concerning the liquidity of China's onshore bond market, turnover ratios for Chinese government and corporate bond trading are actually higher than those of some major developed market and emerging market countries.

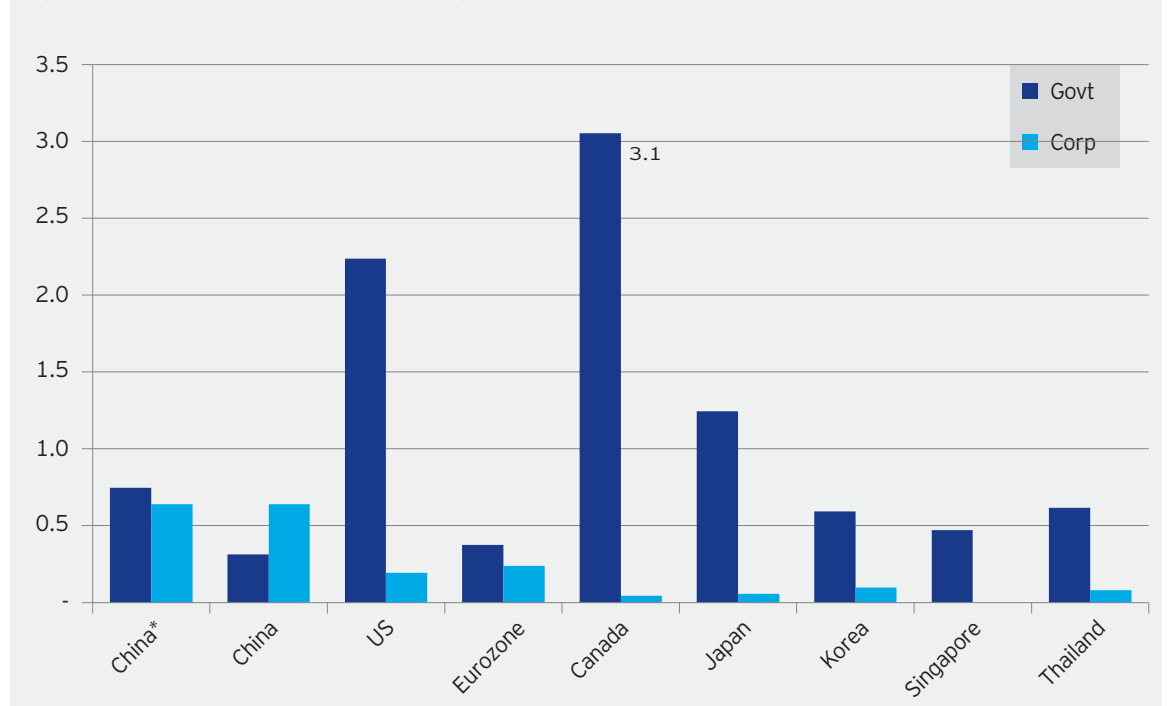
Although the absolute level of the government bond trading volume in China is still lower than that of the US, the eurozone and Japan, the level of corporate bond trading volume is approaching that of the US (Figure 8). If we include policy bank bonds, which are considered sovereign credit risks and traded as rates products onshore, China's trading volume has outpaced the eurozone. The turnover ratio, which in our view provides a better gauge of trading liquidity, shows that Chinese government bond liquidity is greater than that of the eurozone and that Chinese corporate bond liquidity is considerably higher than that of global peers (Figure 9).

Figure 8: Quarterly trading volume of government and corporate bonds



Note: China* includes policy bank bonds, which are considered as central government risk and traded as rates products. Source: Wind, SIFMA, ECB, Trax, IIROC, Statistics Canada, Asian Development Bank, Invesco (as of end December 2015).

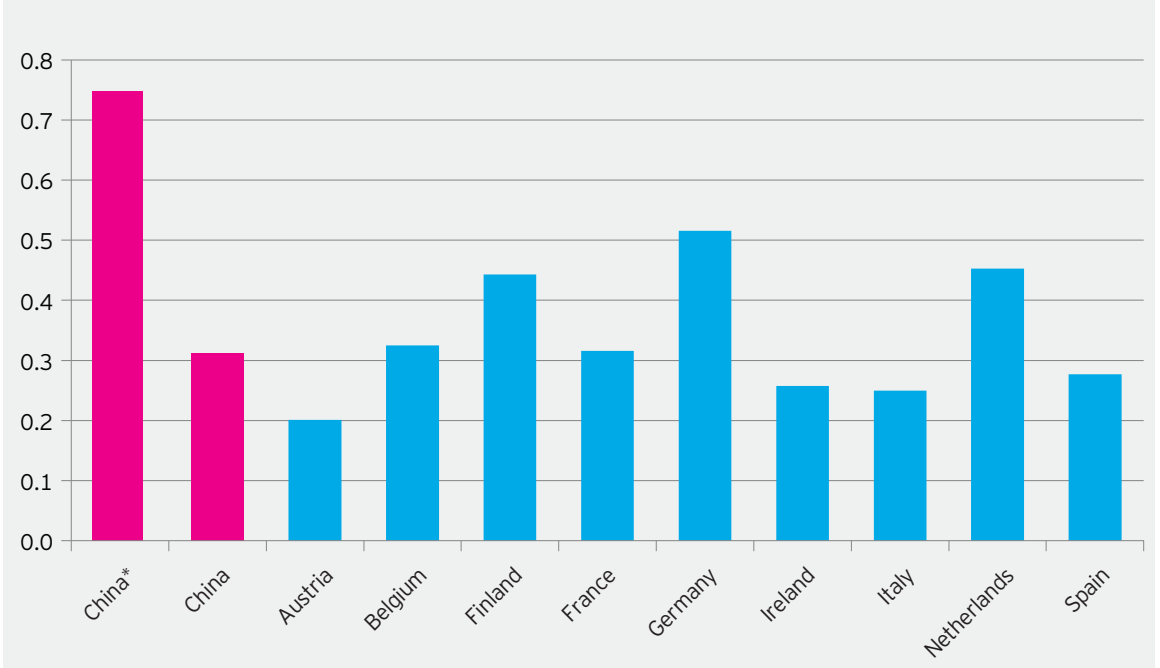
Figure 9: Quarterly turnover ratio of government and corporate bonds



Note: China* includes policy bank bonds, which are considered as central government risk and traded as rates products. Source: Wind, SIFMA, ECB, Trax, IIROC, Statistics Canada, Asian Development Bank, Invesco (as of end December 2015).

Figure 10 compares trading volumes of China's government bond with volumes of major eurozone countries. The turnover ratio in China is higher than those of Austria, Ireland, Italy and Spain, and is on par with those of Belgium and France. The turnover ratio for China rates products (i.e., government bonds plus policy bank paper) is twice the turnover ratio of government bonds alone and is also significantly higher than eurozone peers.

Figure 10: Quarterly turnover ratio of government bonds (China vs major Eurozone countries)



Note: China* includes policy bank bonds, which are considered as central government risk and traded as rates products. Information in red is for the Chinese onshore bond market.
Source: Wind, Bank of America Merrill Lynch estimates, Invesco as of 31 December, 2015.

Remaining Uncertainties

Following the PBOC's initial announcement of expanded foreign access to the Chinese onshore bond market, several areas still require additional clarification. These include tax considerations and whether registration is required at the fund level or the legal entity level.

Interest income is subject to 10% withholding tax for non-government bonds, whereas capital gains tax has not been required of foreign investors to date. Currently there is a lack of clarity regarding tax treatment of foreign investors' onshore investments. Further clarification is expected from the Chinese tax authorities. Foreign investors' current practice is to take a 10% tax provision on gross realized and unrealized capital gains.

Given the large ticket sizes for onshore bond market transactions (usually above RMB 30 million/USD 5 million) and the current complex trade input system, settlement agent banks have advised registering at the legal entity level and allocating bonds internally between different funds. However, given that fund managers' different accounts, especially segregated accounts may have various requirements, doing so may pose difficulties for smaller funds and fund managers.

Investment Risks

We believe that China's onshore bond market presents attractive investment opportunities compared to global peers as discussed above. However, when considering potential investments in Chinese bonds global investors should also bear in mind the investment risks associated with such investments.

Macro environment and policy direction

Since late 2014, China has cut its deposit rate by a total of 150 basis points and the required reserve ratio by 300 basis points. As inflation has increased in early 2016 and the economic growth level has started to show signs of stabilization, some investors have questioned whether China's recent easing cycle has peaked. These concerns have been reflected by the recent steepening of the yield curve. In our view, a less robust monetary easing or stronger than anticipated fiscal stimulus poses downside risks to the performance of onshore Chinese bonds.

The PBOC's foreign exchange policy will also remain a key factor for foreign investors participating in the onshore bond market. Although we view further significant devaluation of the RMB as unlikely, any perceived sustained RMB weakness could deter foreign investment in RMB bonds, especially if foreign exchange hedged yields lose attractiveness due to the hedging costs.

Credit risks and ratings comparison

As China's economic growth moderates and the central government continues to push supply side reforms, corporate bankruptcies and restructurings have increased and, with them, credit risks in the onshore bond market. Unlike the past, when corporate issuer defaults were quite rare, since 2016 the market has started to differentiate among issuers with different credit profiles and pricing, as reflected by widening credit spreads. The number of corporate bond defaults has increased sharply in 2016 compared to the last few years and credit spreads have widened from the historical low level earlier this year. This recent development has raised concerns among investors, especially those outside China.

In the past, corporate bond payments were implicitly insured by either underwriters or local governments, which have stakes in the issuers. Moreover, corporate issuers sought to avoid being the first case of a default. However, since late 2015/early 2016, China has strengthened its efforts to address industrial overcapacity. This, together with the impact of slowing economic growth, debt-equity swap plans and some local governments' weakening fiscal revenue, has put pressure on issuers with weak operating performance. It should be noted, however, that defaulted bonds so far only represent 0.14% of total corporate bond outstanding amounts. This is compared to one-year default rate of 1.99% for North America, 0.88% for Europe and 0.57% for Asia Pacific, according to Moody's most recent study.⁸

As credit risk is becoming more appropriately priced by the market, it has become even more crucial for investors to identify risk factors and differentiate issuers with strong credit profiles from those with weak ones. However, credit risk differentiation still relies more on investor research than local credit ratings. Similar to most other local currency bond markets (e.g., Japan and India), China's onshore credit ratings remain significantly biased toward the upside. For example, China's sovereign debt is rated AA by international rating agencies (Moody's and S&P) whereas in the onshore market most central state owned enterprises are rated as AAA by local rating companies. Double-A rated onshore corporate issuers are usually rated low investment grade or high yield in the offshore market. Thus, investors with comprehensive knowledge of China onshore credit analysis and deep understanding of local political and economic factors will likely have a clear advantage over those who only rely heavily on ratings.

Regulatory complexity

China has a more complex regulatory framework for its bond issuers and investors than many other countries. As detailed in the Appendix, there are two trading markets and three regulators for the onshore bond market. However, given that the majority of activity is in the CIBM market, which is regulated only by the PBOC, investors taking advantage of the PBOC's recent expansion of foreign access to the onshore bond market should not have to contend with this regulatory complexity and onshore brokers can act as bridges between the two markets.

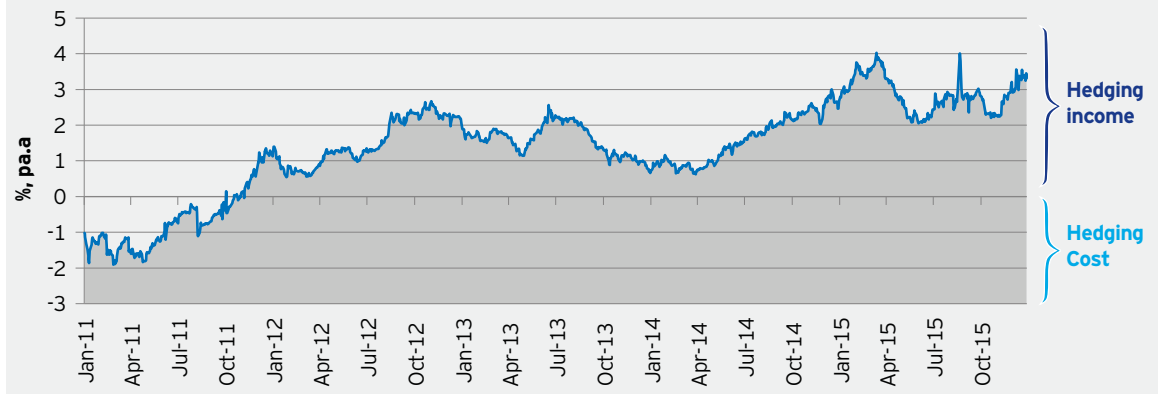
Relative Value Analysis of the Three Chinese Bond Markets

Historically, investors in Chinese fixed income have tended to take a somewhat siloed approach. Mainland Chinese investors focused on the onshore RMB bond market while offshore investors concentrated on the offshore RMB (dim sum) bond markets and USD-denominated Chinese debt. The PBOC's recent announcement enables foreign investors to take fuller advantage of potential arbitrage opportunities across all three markets. As a result, we anticipate that yields across the three markets will begin to converge. It should also be noted that the recent opening of the onshore bond market may provide Chinese bond issuers seeking funding with a broader base of potential buyers.

USD bond investors may also use currency hedging in an effort to improve RMB yields through hedging income generated from offshore RMB (CNH) forwards used to hedge USD exposure into RMB. This income can be quite significant when CNH interest rates are at high levels.

⁸ "The Performance of Moody's Credit Ratings-2016 Q1" April 27, 2016.

Figure 11: Annualized RMB hedging cost/income



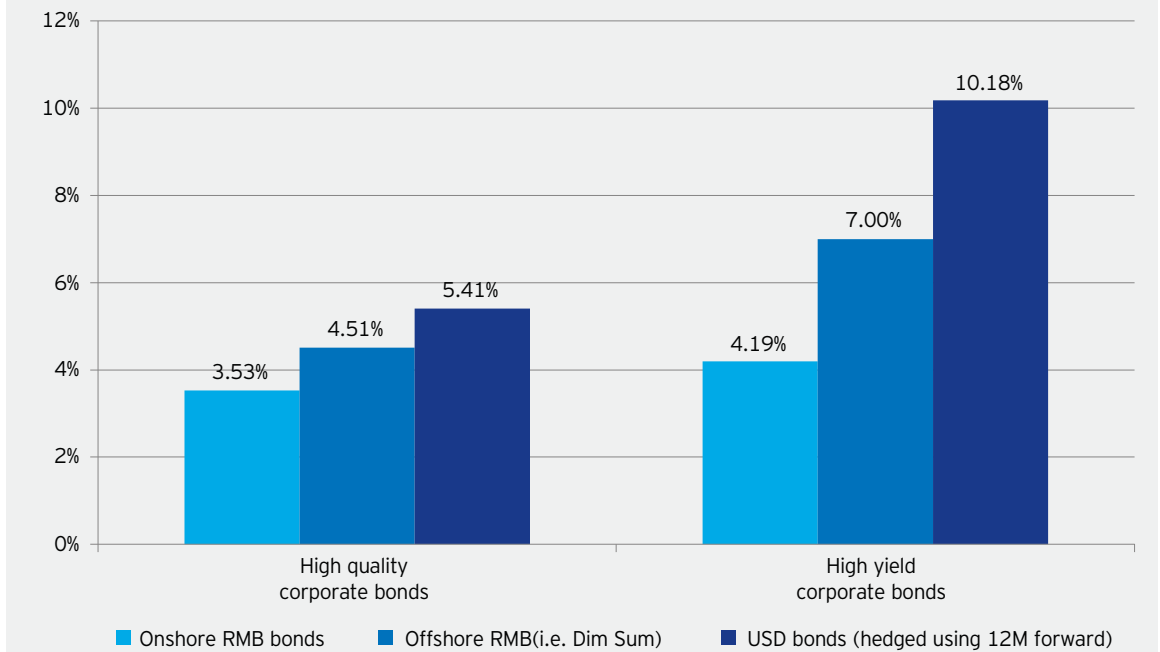
Note: Offshore CNH 12-month forward is used for currency hedging. The calculation formula is: $(\text{CNH 12 month forward outright} / \text{CNH spot} - 1) * 100\%$.

Source: Bloomberg L.P., Invesco. Data as of 31 December, 2015.

Yield comparison among the three markets

Although all three Chinese bond markets provide exposure to the RMB and, to some degree, share a common issuer base, yields offered by the three markets can vary significantly because they are driven by different market trading mechanisms. The onshore market is driven primarily by the PBOC’s monetary policy whereas the offshore market is also impacted by US rates and foreign exchange moves. A “top down” analysis shows that the RMB-hedged USD-denominated bond market has recently offered the highest return among the three Chinese markets (Figure 12).

Figure 12: Yield-to-maturity comparison among the three Chinese bond markets



Source: Bloomberg L.P., Invesco, CFETS, HSBC, Bank of America Merrill Lynch. Data as of end April, 2016.

Notes:

1. The onshore high quality corporate bond yield is represented by the 3-year MTN AAA (locally rated) bond yield.
2. The offshore high quality corporate bond yield is represented by HSBC Offshore RMB Investment Grade Corporate Credit Index whose duration was 2.61 as of 31 December 2015.
3. The onshore high yield corporate bond yield is represented by the 2-year MTN AA (locally rated) bond yield.
4. Offshore high yield corporate bond yield is represented by HSBC Offshore RMB High Yield & Non-rated Corporate Credit Index whose duration was 1.71 as of 31 December 2015.
5. USD high quality corporate bond yield is represented by the BofA Merrill Lynch Asian Dollar Investment Grade Corporate China Issuers Index whose duration was 4.98 as of 31 December 2015. The 12 month CNH forward hedging income was 3.38% on 31 December 2015.
6. USD high yield corporate bond yield is represented by the BofA Merrill Lynch Asian Dollar High Yield Corporate China issuers Index whose duration was 2.59 as of 31 December 2015. The 12-month CNH forward hedging income was 3.38% on 31 December 2015.

A “bottom up” approach, analyzing individual issuers on a case-by-case basis, shows that some issuers’ dim sum bonds currently offer the highest yield among the three markets. However, in most cases the same issuers’ USD bonds, if hedged back into RMB, would have enjoyed the highest yield. The following table shows the relative values for select issuers’ bonds across the three markets.

Figure 13: Dim sum bond and China USD bond yields to maturity exceed onshore RMB bond yields

| Issuer | Onshore RMB bond market | | | Offshore CNH bond market | | | USD bond market (CNH hedged) | | |
|-----------|-------------------------|------------|-------|--------------------------|----------|-------|------------------------------|-----------|-----------|
| | Maturity | Rating (1) | Yield | Maturity | Rating | Yield | Maturity | Rating | Yield (2) |
| Issuer 1 | 11/7/2016 | AAA | 2.8% | 4/25/2016 | NA | 5.4% | NA | NA | NA |
| Issuer 2 | 12/26/2017 | AAA | 4.1% | 12/4/2018 | Baa2/BBB | 5.2% | 43581 | Baa2/BBB | 6.6% |
| Issuer 3 | 5/27/2020 | AA+ | 4.2% | 2/17/2019 | BB3 / BB | 7.0% | 12/02/19 | NA | 9.3% |
| Issuer 4 | 4/28/2018 | AAA | 3.2% | 3/21/2018 | Ba3 / B+ | 7.1% | 3/4/2017 | Ba3 / B+ | NA |
| Issuer 5 | 8/3/2018 | AAA | 4.1% | NA | NA | NA | 3/9/2020 | BB+ / Ba1 | 9.1% |
| Issuer 6 | 4/25/2017 | AAA | 4.2% | 3/13/2017 | NA | 5.6% | NA | NA | NA |
| Issuer 7 | 7/7/2020 | AAA | 3.8% | 5/28/2018 | Ba2 / BB | 6.6% | 10/18/2019 | Ba2 / BB | 8.6% |
| Issuer 8 | 9/10/2017 | AA+ | 4.3% | 1/15/2017 | NA | 7.0% | NA | NA | NA |
| Issuer 9 | 7/13/2020 | AA+ | 4.2% | NA | NA | NA | 4/29/2016 | BB | 6.3% |
| Issuer 10 | 6/19/2020 | AAA | 4.2% | NA | NA | NA | 2/17/2020 | B / B2 | 13.0% |

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Note 1: China onshore local ratings.

Note 2: Including RMB hedging income of 3.38% p.a.

Source: Bloomberg L.P., Wind, Invesco. Data as of 31 December, 2015.

Impact on the dim sum market

In the long term, we expect the offshore CNH market to become an RMB version of the eurodollar market as China gradually opens up its capital account and liberalizes its financial markets. We believe that the recent addition of RMB into the IMF’s special drawing rights basket should further accelerate this process and that this evolution should, in turn, lead to greater demand for both offshore and onshore RMB-denominated bonds.

The opening of the onshore bond market has broadened investment opportunities for foreign investors, many of whom were effectively limited to the offshore CNH market in the past when seeking Chinese issuer and RMB exposure. In addition, bond market performance in the onshore market is more closely linked to the PBOC’s monetary operations, whereas the offshore market is more affected by investors’ foreign exchange expectations.

The opening of the onshore bond market may also increase global investors’ awareness of investment opportunities in the offshore CNH bond market. We anticipate that the potential future inclusion of RMB bonds in global bond indices should also increase the attractiveness of CNH government bonds, which traded at higher yields than their onshore equivalents during early 2016.⁹ However, for investors who wish to place large trades and need deep trading liquidity, we believe that the onshore market currently provides a better platform since the offshore CNH bond market liquidity is thinner and supply has been declining. We have listed below some of the key differences between the onshore and offshore RMB bond markets. The Appendix provides a more comprehensive overview of these markets.

⁹ Source: Bloomberg data

Significant differences between the onshore and offshore Chinese bond markets

Investment restrictions and settlement

Onshore (RMB) - Investors must appoint a settlement agent bank, which then files with PBOC Shanghai. Based on the existing CIBM program, there are no lock-up period or repatriation limits. For bonds traded in the CIBM, settlement is conducted onshore via the settlement agent banks, which in turn settle through the China Central Depository and Clearing Co. Ltd or the Shanghai Clearing House.

Offshore (CNH) - Investors have no constraints on market access, no controls on capital flows and no lock-up period. CNH bonds can be settled offshore through the Central Moneymarkets Unit, Clearstream or Euroclear. We anticipate that offshore RMB (CNH) will follow the path of the eurodollar as the RMB internationalization process continues to evolve. Instead of being replaced by the RMB market, the CNH market could continue to develop, as more RMB is being accumulated, managed, traded, borrowed and loaned into the offshore market. This will be especially significant once the RMB's addition to the SDR basket as a reserve currency is complete.

Interest rates/funding costs

Onshore (RMB) - PBOC policy rates and monetary operations (including reserve ratio requirements, open market operations and other liquidity tools) are used to manage liquidity conditions and thus funding costs in the interbank market.

Offshore (CNH) - CNH rates are impacted by both US and Chinese funding costs. Expectations regarding USD-CNH movement influence liquidity conditions as well. Thus, bond yields in the CNH market are affected not only by the PBOC's monetary policies but are also subject to global market volatility, in particular US rate moves and changes in RMB exchange rate expectations.

Trading liquidity

Onshore (RMB) - As commercial banks are currently the major bond holders and tend to hold to maturity, trading liquidity has been relatively thin as reflected by the wider bid-offer spread than the USD bond market. However, mutual funds and securities firms are active liquidity providers in the secondary market. This is evidenced by the higher liquidity of policy bank papers than government bonds, as the former are more actively traded by asset managers and securities firms.

Offshore (CNH) - Market liquidity is dependent on CNH market funding costs, onshore liquidity, exchange rate expectations, and the pool of CNH deposits. Lower funding costs and a positive RMB outlook lead to narrower bid-offer spreads, and vice versa.

Ratings, governing laws and taxation

Onshore (RMB) - Onshore bonds are rated by local rating companies, with 59% of rated bonds rated as AAA and approximately 0.1% of bonds rated BBB or below as of the end of May, 2016. Onshore bonds are governed by the laws of the People's Republic of China. Interest income is subject to 10% withholding tax.

Offshore (CNH) - Ratings are provided by internationally recognized entities (e.g., Standard & Poors and Moody's) standards, with only 3% of bonds rated at AAA, 22% and 13% rated AA and A, respectively, and 18% rated BBB or below as of end March 2016.¹⁰ Governing laws for offshore bonds include Hong Kong, United Kingdom, US and various European jurisdictions, depending on the issuer. No withholding tax is applied.

10 Source: HSBC

Conclusion

Fifteen years ago, investors seeking Chinese fixed income exposure had relatively limited options. Since that time, however, the continuing internationalization of the RMB coupled with the rapid growth of offshore Chinese bond markets have resulted in a substantially expanded investment universe for Chinese bonds. We expect that the PBOC's recent move to expand and facilitate foreign investor access to the onshore Chinese bond market will spur further investment and move Chinese bonds closer to being included in global indices, which we anticipate would lead to additional inflows.

China's continued integration into international financial markets has led the Chinese USD-denominated bond market to dominate the Asian USD dollar bond market. As China continues to liberalize its capital accounts and financial markets, we expect the offshore RMB bond market to evolve into the RMB's version of the eurodollar market and the onshore Chinese bond market to develop further into a major investment platform given its large size and liquidity advantages. The compelling arbitrage opportunities offered by the three Chinese markets for investors may not last indefinitely as RMB internationalization progresses.

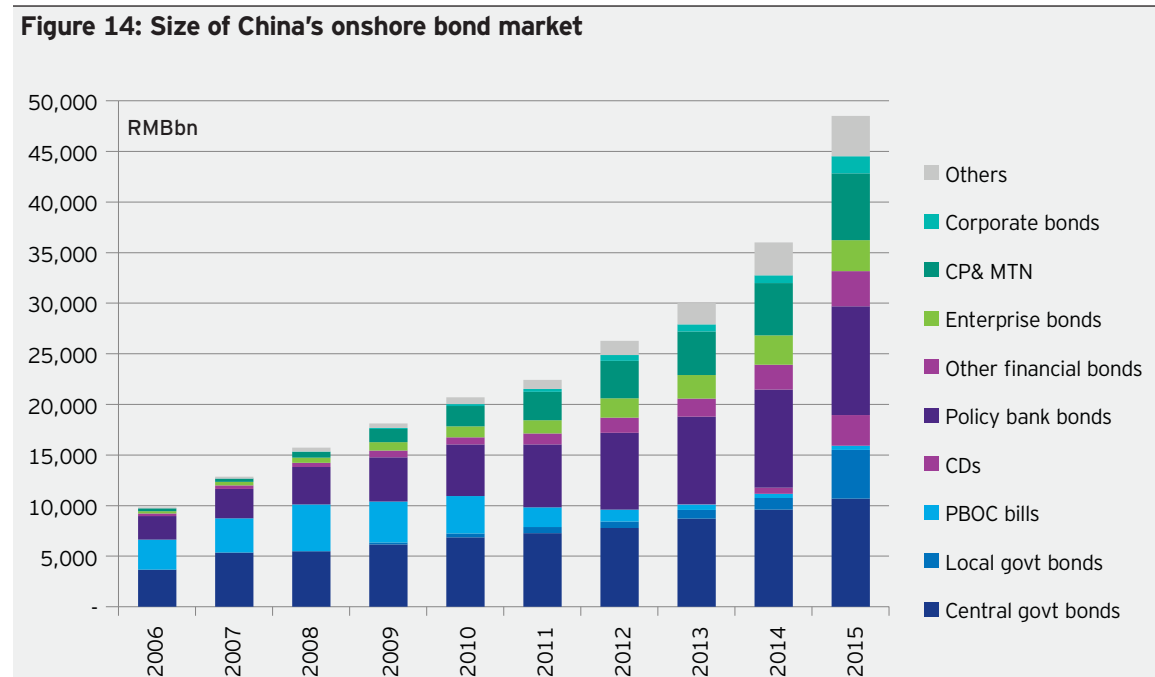
In sum, we believe that Chinese onshore bonds currently offer investors the potential to obtain attractive relative yields, greater diversification, low volatility and deep trading liquidity. And while uncertainties and risks certainly remain, the importance of the Chinese fixed income market—the third largest in the world—makes it crucial for global investors to understand and evaluate fully their options for gaining exposure to it.

Appendix

Overview of Onshore and Offshore RMB-Denominated Bond Markets

Size and Growth of Onshore Market

The Chinese onshore bond market registered an average of 20% growth over each of the past 10 years, with outstanding bonds amounting to RMB49 trillion (USD7.5 trillion) at the end 2015 (Figure 14). Policy bank bonds, central government bonds and commercial paper/medium-term notes were the largest three components, accounting for 22%, 22% and 14%, respectively.



As of December 31, 2015. Source: Wind, Invesco. Others include, among other securities, private placements, government sponsored entity bonds, asset-backed securities, convertible bonds and RMB-denominated bonds issued by non-Chinese issuers and sold in mainland China ("panda bonds").

Types of Markets, Bonds and Regulators in Onshore Market

There are two bond trading markets in China—interbank (CIBM) and exchanges—with different regulators for different types of bonds. As shown in Figure 15, most bonds are traded in the interbank market. The PBOC and the National Association of Financial Market Institutional Investors (NAFMII) are the major regulators for the interbank market. The National Development and Reform Commission (NDRC) approves enterprise bond and SME collective bond issuances. The China Securities Regulatory Commission (CSRC) regulates the exchange market where corporate bonds and convertible bonds are traded.

Figure 15: Regulators and trading markets for various types of bonds

| Regulators | Inter-bank Bond Market | Exchange Market | | | | |
|-------------------------------|---|---|-------------------------|-------------------------------|----------------------|--------------|
| CSRC | | <table border="1"> <tr> <td>Convertible Bond</td> <td>Exch. Corp Bond</td> </tr> <tr> <td>Preferred Share</td> <td>Exchange ABS</td> </tr> </table> | Convertible Bond | Exch. Corp Bond | Preferred Share | Exchange ABS |
| Convertible Bond | Exch. Corp Bond | | | | | |
| Preferred Share | Exchange ABS | | | | | |
| NAFMII | <table border="1"> <tr> <td>Medium Term Note</td> <td>Commercial Paper</td> </tr> </table> | Medium Term Note | Commercial Paper | | | |
| Medium Term Note | Commercial Paper | | | | | |
| NDRC | | <table border="1"> <tr> <td>Enterprise Bond</td> </tr> <tr> <td>SME Collective Bond</td> </tr> </table> | Enterprise Bond | SME Collective Bond | | |
| Enterprise Bond | | | | | | |
| SME Collective Bond | | | | | | |
| PBOC/CBRC | <table border="1"> <tr> <td>Financial Bond</td> <td>Interbank ABS/CLO</td> </tr> <tr> <td>Hybrid Capital Bond</td> <td>Tier II Capital Bond</td> </tr> </table> | Financial Bond | Interbank ABS/CLO | Hybrid Capital Bond | Tier II Capital Bond | |
| Financial Bond | Interbank ABS/CLO | | | | | |
| Hybrid Capital Bond | Tier II Capital Bond | | | | | |
| MOF | | <table border="1"> <tr> <td>Central Government Bond</td> </tr> <tr> <td>Local Government Bond (Pilot)</td> </tr> </table> | Central Government Bond | Local Government Bond (Pilot) | | |
| Central Government Bond | | | | | | |
| Local Government Bond (Pilot) | | | | | | |
| PBOC | <table border="1"> <tr> <td>Policy Bank Bond</td> <td>PBOC Bill/Notes</td> </tr> </table> | Policy Bank Bond | PBOC Bill/Notes | | | |
| Policy Bank Bond | PBOC Bill/Notes | | | | | |

Source: CICC, For Illustrative Purposes Only.

Central and local government bonds, enterprise bonds and SME collective bonds¹¹ can be traded in both the interbank and exchange markets; exchange corporate bonds regulated by the CSRC can only be traded on the exchange market. However, onshore brokers can serve as a bridge between the two markets. As brokers have accounts in both interbank and exchange market, they can transfer bonds between the two markets and thus help investors who have access to only one of the markets to get bonds in the other market. Compared to the exchange market, the interbank market provides much better liquidity and more variety. (Figure 16).

¹¹ Enterprise bonds are bonds issued by companies regulated by the NDRC, which are mainly central and local government owned enterprises. SME collective bonds are bonds issued by a group of small and medium-sized enterprises.

Figure 16: Issuance tenor and trading liquidity of various types of bonds

| Regulators | Exchange Market | | | | Interbank Market | | | |
|------------------------|------------------------|------------------------------------|-----------|-----------|--------------------------------------|--|-----------|-----------|
| Products | Bond Type | Issuer | Tenor | Liquidity | Bond Type | Issuer | Tenor | Liquidity |
| Sovereign Bonds | Government bond | MOF | 3m ~ 50yr | | Government bond | Ministry of Finance | 3m ~ 50yr | |
| | Local government bond | MOF on behalf of local governments | 3m ~ 5yr | | Local government bond | Ministry of Finance on behalf of local governments | 3m ~ 5yr | |
| | | | | | PBoC Bills | PBoC | <1yr, 3yr | |
| Corporate Bonds | | | | | Policy bank financial bond | ADB, EXIM, CDB | 6m ~ 30yr | |
| | Corporate bond | non-FI companies | 3m ~ 30yr | | Commercial paper | Non-FI companies | <1yr | |
| | Cross-market NDRC Bond | non-FI companies | 3m ~ 30yr | | Commercial bank notes | Commercial banks | 2yr-15yr | |
| | | | | | Non-bank FI bonds | Security companies | 3yr-30yr | |
| | | | | | NDRC bonds | Non-FI companies | 3yr-10yr | |
| | | | | | Medium-term notes (MTN) | Non-FI companies | 3yr-10yr | |
| | | | | | Asset-backed securities | Trust companies | 9m-5yr | |
| | | | | | Small and mid-sized collection notes | Small and mid-size companies | 1yr-3yr | |

→ Liquidity from excellent to poor

As of January, 2016. Source: CICC. For Illustrative Purposes Only.

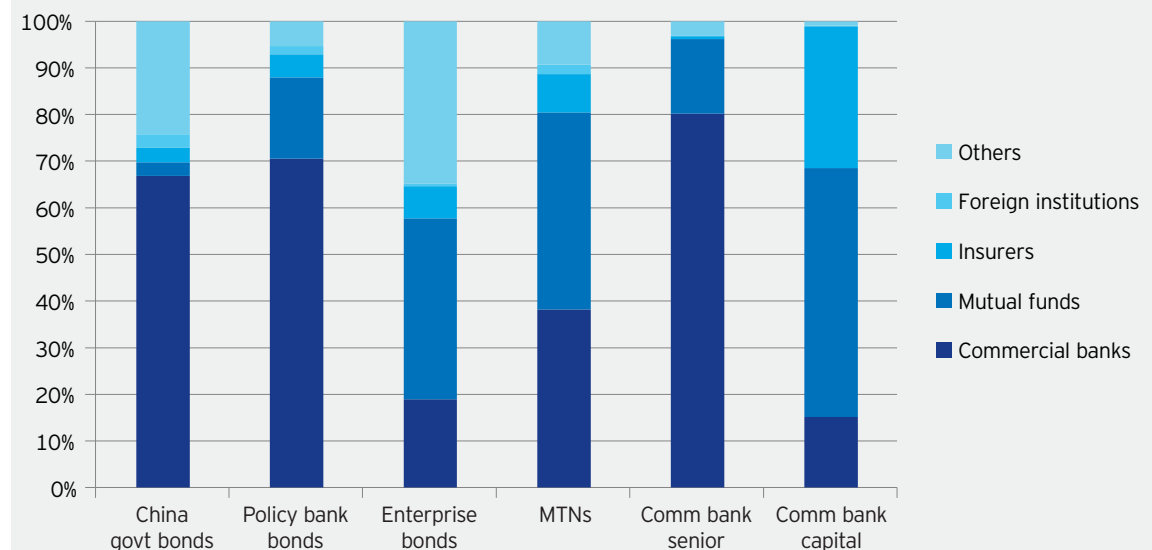
Onshore Market Investor Base

Prior to the recent opening of the onshore market to additional investor types, major bond investors in the onshore market included Chinese commercial banks, mutual funds and insurance companies (Figure 17). Investors have shown different appetites for different types of bonds. Commercial banks hold the majority of government bonds, policy bank bonds and commercial bank senior paper, which is hardly surprising since the risk weighting of central government bonds and policy bank bonds is 0% and the risk weighting of commercial bank senior bonds is 25%. This indicates minimal capital consumption and much higher risk weighted-adjusted return.

Local mutual funds were the major investors in enterprise bonds and medium term notes, as these bonds typically offer higher yields and can be pledged for leverage. Mutual funds and insurance companies held 53% and 30%, respectively, of bank capital securities such as bank subordinated bonds.

Foreign investors mainly held central government bonds (53% of their holdings) and policy bank bonds (38% of their holdings), but their market share was less than 3% for the respective rates products.

Figure 17: Major investor types in the onshore interbank market



As of April, 2016.

Source: China Bond, Invesco. Others includes, among other entities, special members, credit cooperatives, non-bank financial institutions, securities firms, non-financial institutions, retail investors and exchange markets.

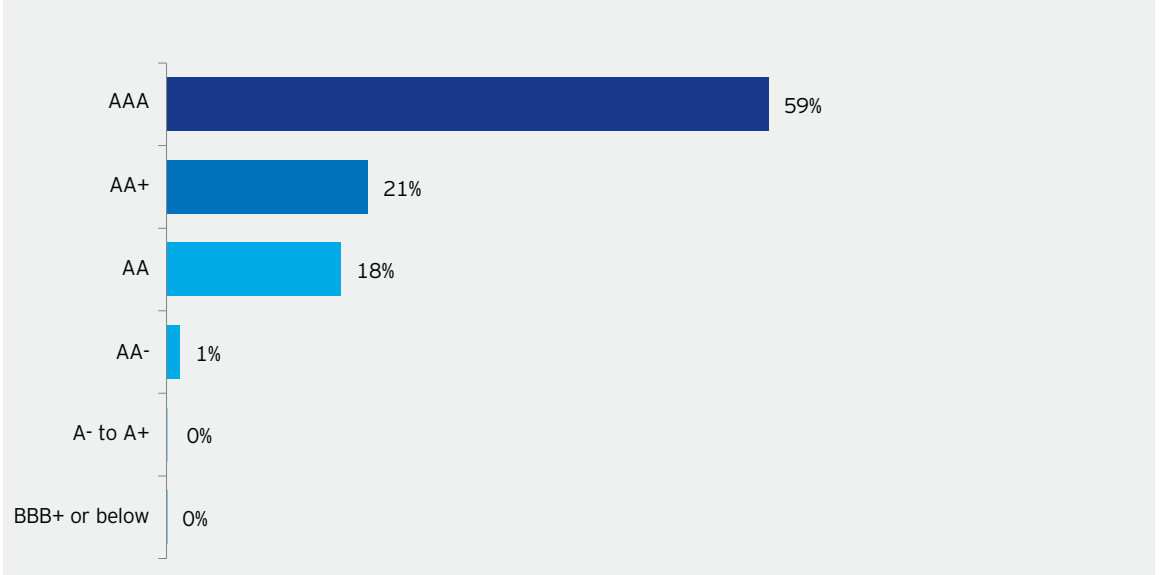
Credit Rating Distribution in the Onshore Market

Unlike international bond markets, Chinese onshore credit bond ratings are significantly biased towards the upside. 59% of rated credit bonds are at AAA and 40% are rated in the AA category (Figure 18). This is also partly driven by the fact that higher-rated issuers (mostly state-owned enterprises (SOEs)) tend to issue larger amounts compared to lower rated companies. From the number of issuers, Figure 19 shows that 34% of rated issues are at the AAA level, with AA+ and AA issuers accounting for 29% and 33%, respectively.

The discrepancy between local and international ratings is hardly surprising and, in fact, has been the norm for many local currency bond markets. For example, in Japan and India, local rating firms have assigned AAA ratings to issuers whose international ratings are A and BBB.

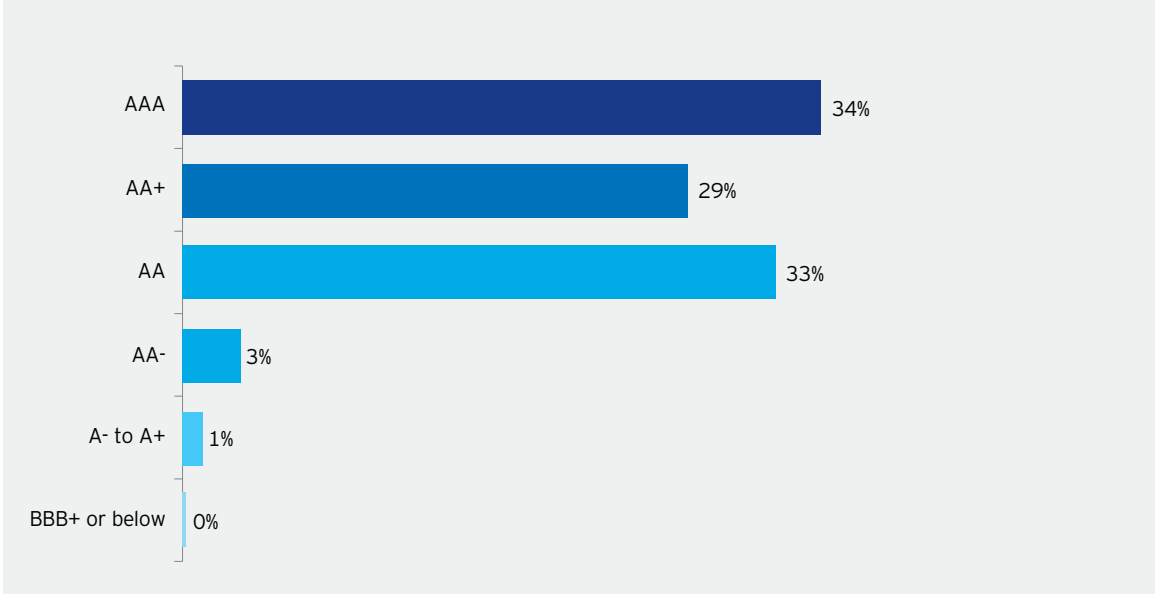
In China's case, given that the sovereign ratings by Moody's and S&P are at Aa3 and AA-, respectively, all mainland Chinese issuers' ratings are capped at these levels. However, in the onshore market, local rating agencies view many central SOEs to have minimal credit risks and have assigned them AAA ratings. This rating bias has created difficulties for international investors seeking to differentiate credit profiles of issuers and properly price credit risk. Therefore, overseas investors lacking strong credit research capabilities for the onshore market have generally limited their investments to central SOE bonds and rates products.

Figure 18: Major investor types in the onshore interbank market



As of May, 2016. Source: Wind, Invesco (Note: above percentages are of rated bonds)

Figure 19: Credit rating distribution by number of issuers

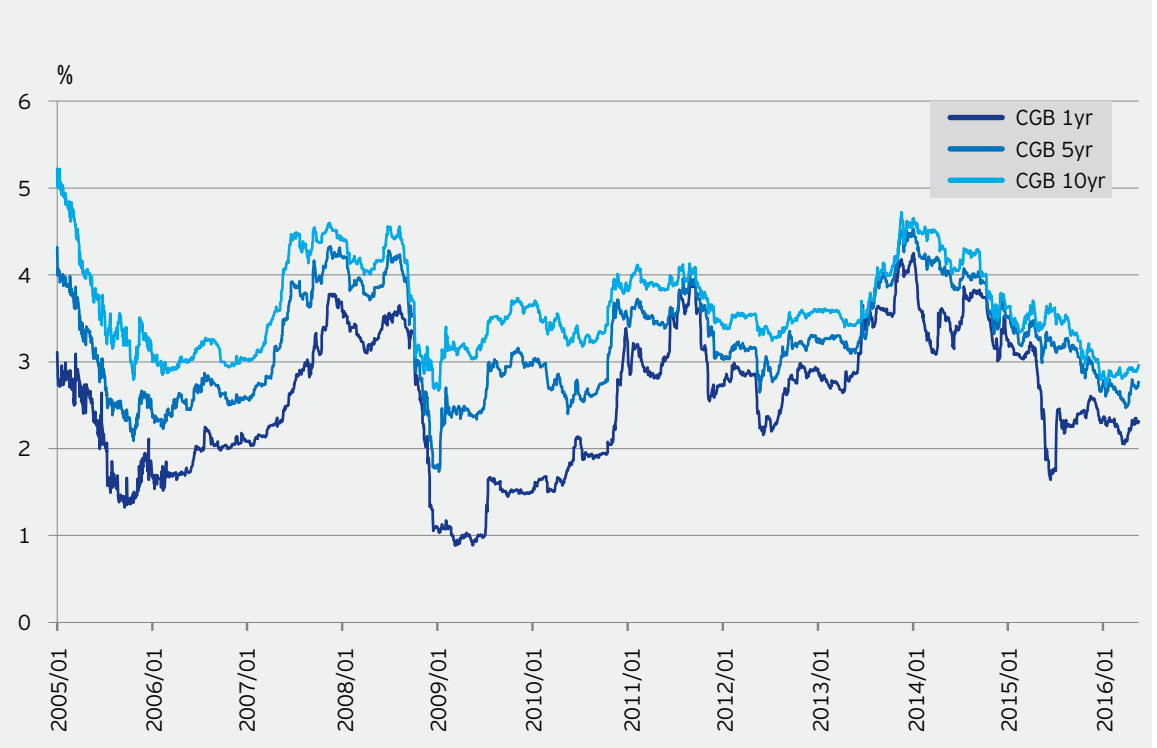


As of May, 2016. Source: Wind, Invesco (Note: above percentages are of rated bonds)

Investment Performance and Term Structure of the Onshore Bond Market

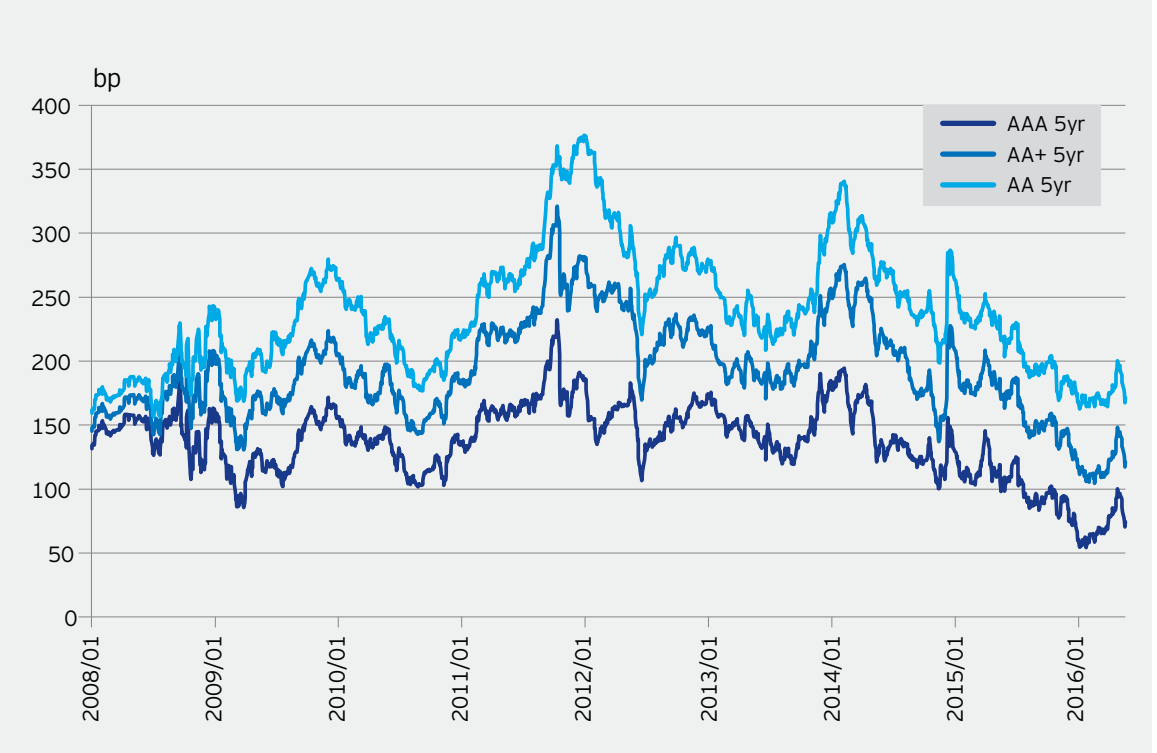
The onshore bond market recorded a sharp rally in 2015, with both government bond yields and credit spreads declining significantly. More notably, the 10-year China government bond yield and credit spreads have reached a historical low level (Figure 20 and Figure 21). Term structure of Chinese onshore bonds (Figure 22) shows that the policy bank bond and the credit bond yield curves are steep compared with Chinese government bonds.

Figure 20: China government bond historical performance



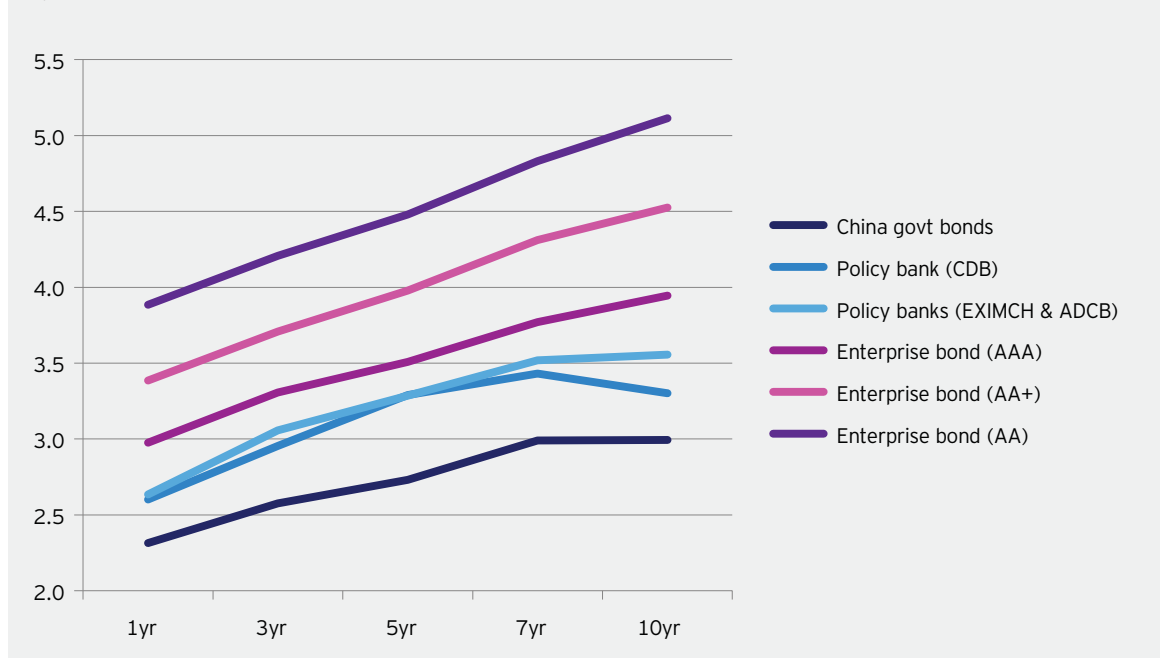
As of 30 May, 2016. Source: Wind, Invesco.

Figure 21: Credit spread of China 5-year enterprise bonds



As of 30 May, 2016. Source: Wind, Invesco.

Figure 22: Term structure of Chinese onshore bonds



As of 30 May, 2016. Source: Wind, Invesco.

Offshore (“Dim Sum”) Market

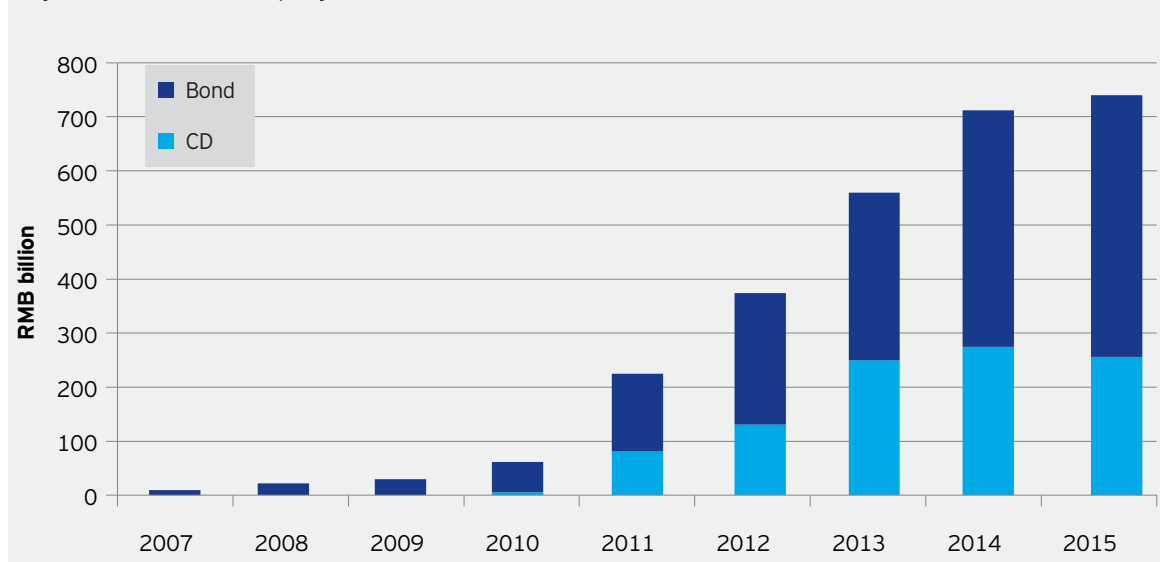
History of the Dim Sum Bond Market

Hong Kong was the only offshore RMB clearing center when RMB internationalization began. Cities such as Singapore, Taipei, London have since joined the league as RMB internationalization has continued to evolve. Likewise, the issuance of offshore RMB bonds started to expand from the Hong Kong market. HSBC issued a RMB 2 billion bond in London in April 2014. The first offshore RMB bond in the Taiwan market was issued by CTBC Bank. HSBC and Standard Chartered Bank have also issued offshore RMB bonds in Singapore. Although some offshore RMB bonds are issued outside Hong Kong, people still generally refer to all offshore RMB bonds as “dim sum” bonds or CNH bonds.

Growth of Dim Sum Bond Market

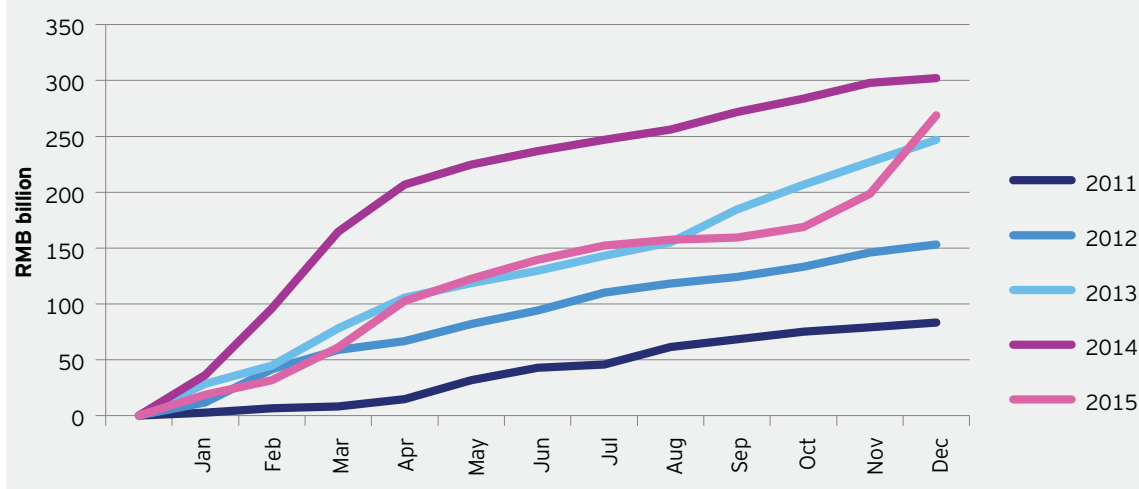
With support from the Chinese government, the dim sum bond market has grown quickly to reach RMB 739 billion (USD114 billion) as of the end of 2015, more than tripling since 2011.

Figure 23: Fast developing dim sum market



As of 31 December, 2015. Source: HSBC, Invesco.

Figure 24: Dim sum bond issuance (YTD)



Note: Excluding CDs.

Source: Bloomberg L.P., HSBC, Invesco. Data as of December, 2015.

Dim sum bond issuance peaked in 2014, aided by three primary factors. The principal reason was the promotion of RMB internationalization and the growth of the dim sum market. Chinese government policy favors issuance of RMB bonds in the offshore market to facilitate the political goal of RMB internationalization. Moreover, a large portion of the existing dim sum bonds matured in 2014. The refinancing demand naturally increased new bond issuance in the market. Administrative and regulatory burdens associated with approvals required for issuing in the onshore RMB bond market also pushed more issuers to turn to the dim sum market, which had less burdensome requirements.

Issuance in 2015 was slightly lower than 2014. This was partly caused by a decreasing demand of RMB investments in the offshore market linked to the depreciation of the currency, as well as low borrowing costs in the onshore market. As the PBOC's monetary policies still point to the dovish side, the dim sum market is expected to face its first major challenge in 2016 as an increasing number of issuers turn to the onshore RMB bond market for their financing needs.

Figure 25: Primary market new dim sum bond issuance in 2014 and 2015

| | Amount issued (RMB billion) | Number of new issues |
|---------------|-----------------------------|----------------------|
| 2014 | 542 | 929 |
| 1H2015 | 206 | 609 |
| 2H2015 | 187 | 394 |
| 2015 | 393 | 1003 |

Note: More than 60% of the new issues are from Chinese issuers.

Source: Bloomberg L.P., HSBC, Invesco. Data as of December, 2015.

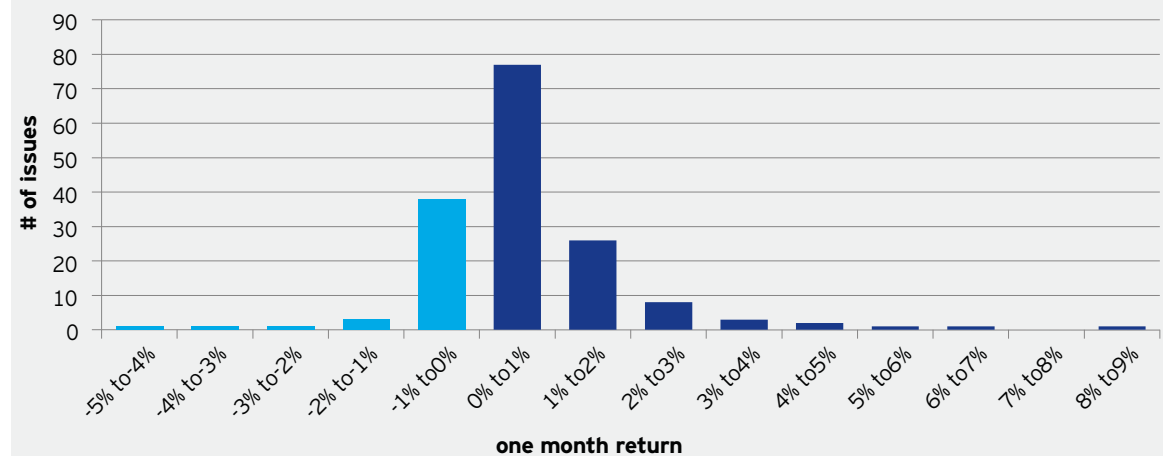
New Issue Premium

When bond issuers come to the primary market to borrow, they normally offer a yield higher than the secondary market yield in order to attract investor interests. This is because when corporate financing needs are not met by bank loans, companies turn to the bond market instead and any failed attempt to issue a bond in the primary market damages the issuer's reputation. As a result, often issuers do not want to take any chances and offer an attractive "new issue premium" to investors. Investors who are active in the primary market are likely to enjoy additional capital gains in addition to interest payments.

The incentive for providing such a new issue premium has grown recently. As regulations in the Asian and Chinese banking systems tighten, banks have become more reluctant to provide loans. The economic slowdown in China and other Asian countries has also hampered lending in the region.

The new issue premium exists in the dim sum market as well. Some dim sum bonds are CDs or not publicly listed and thus lack reliable pricing data. Among the 163 new dim sum issues in 2015 with reliable pricing data, 119 delivered positive returns within one month after issuance.

Figure 26: Dim sum bond 2015 new issue performance distribution within 1 month



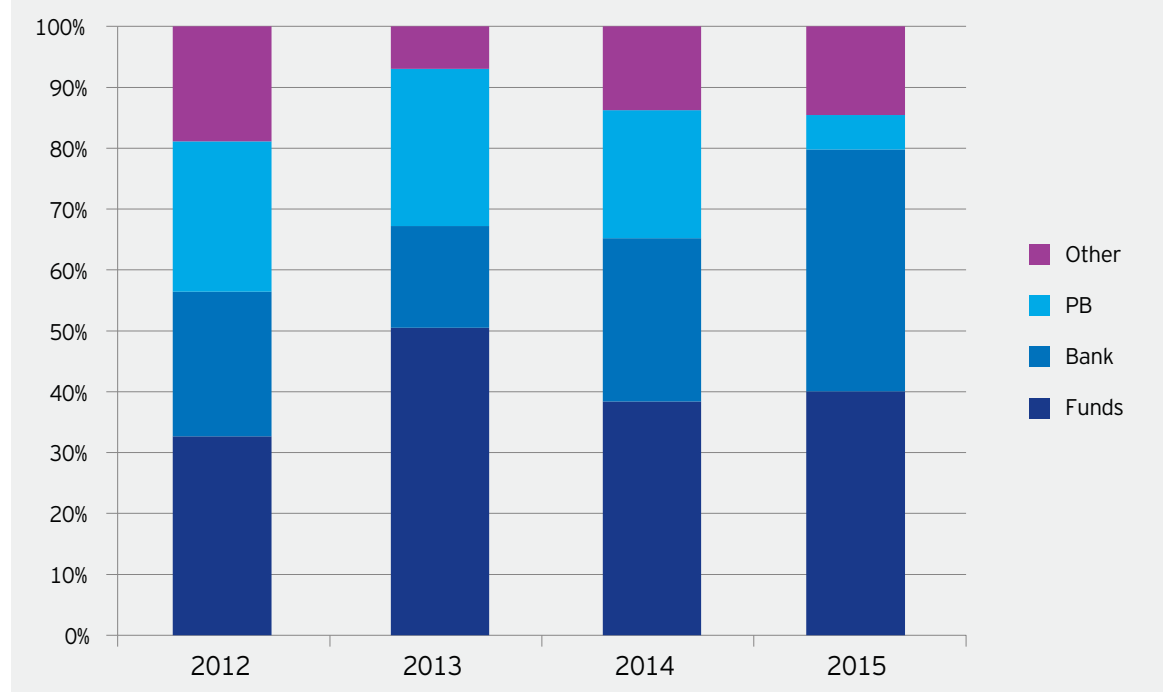
Note: 1 month return is calculated by comparing the highest bond price within 1 month after issuance against the bond's new issue price. Bonds without reasonable pricing data are not included.

Source: Bloomberg L.P., HSBC, Invesco. Data as of December, 2015.

Investor Base of the Offshore Market

Historically, the dim sum market has offered international investors an opportunity to obtain exposure to RMB-denominated bonds without the burdens associated with QFII/RQFII applications or onshore withholding taxes. The largest groups of investors in the dim sum bond market are mutual funds and commercial banks followed by private banks.

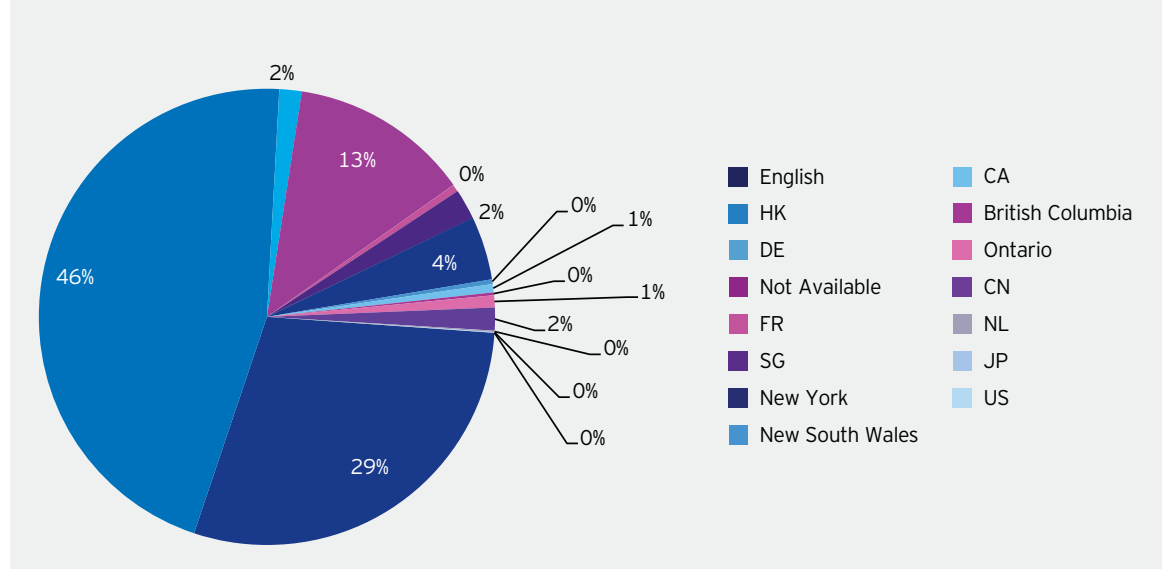
Figure 27: Dim sum bond new issue investor distribution



Note: Excluding CDs. Other includes, among other entities, insurance companies, corporates and sovereign wealth funds. As of December 31, 2015. Source: Bank of America Merrill Lynch, Invesco

Dim sum bonds are generally governed by the laws of Western jurisdictions familiar to international bond investors (primarily English or Hong Kong law).

Figure 28: Dim sum market breakdown by governing law

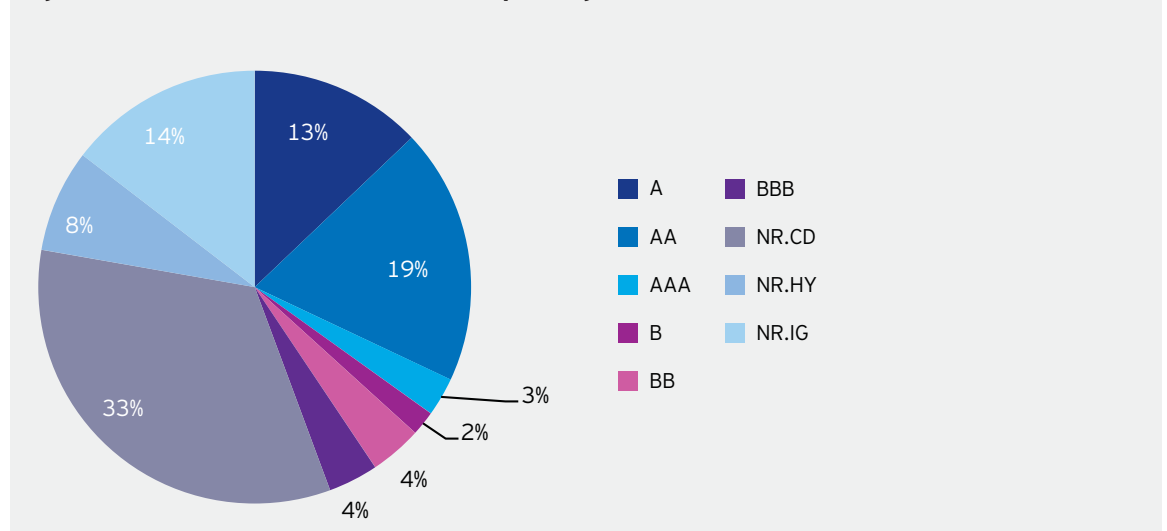


Note: Country, state, province or other (English, EEA, etc) under which the security agreement is regulated.
 Source: Bloomberg L.P., HSBC, Invesco. Data as of 31 December, 2015.

Credit Ratings in the Offshore Market

Many issuers in the dim sum bond market are from mainland China and have relatively healthy credit conditions. Some of the issuers have implicit or even explicit guarantees or support from central and local governments. Bonds issued by these issuers, even without a credit rating, have generally been well subscribed during the bond IPO period. Thus, the dim sum market has more investment grade bonds than high yield bonds similar to most other bond markets. We can see the credit rating breakdown of the dim sum market in Figure 29 below. Nevertheless, the onshore and offshore credit rating discrepancy applies in the dim sum market as well. A large portion of high yield issuers in the dim sum market enjoy some of the highest investment grade ratings in the onshore RMB bond.

Figure 29: Dim sum market breakdown by ratings



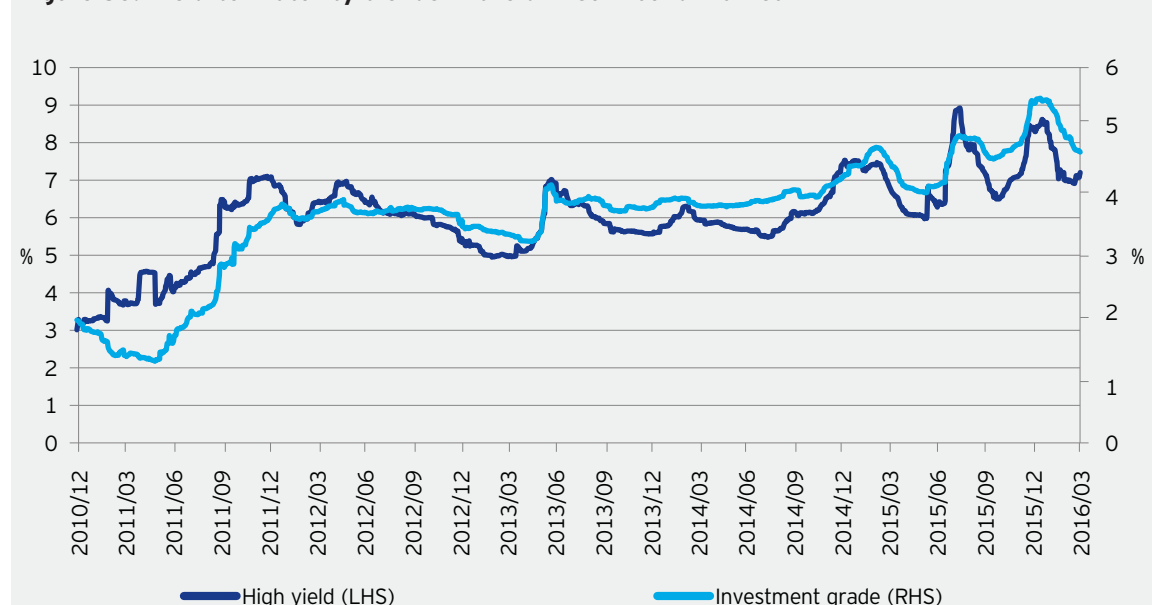
Source: HSBC, Invesco. Data as of 31 December, 2015

However, the differences between the rating systems in the offshore and onshore Chinese bond markets are notable. A majority of the issuers that are rated as non-investment grade in the offshore market are given AAA, AA+ and AA local ratings in the onshore market.

Investment Performance and Term Structure (Offshore Market)

Current yields in the dim sum market have recently been significantly higher than their onshore counterparts. RMB reforms in August 2015 and the subsequent market volatility in the offshore CNH currency led international investors to engage in panic sales of their dim sum bonds. The CNH interest rates and dim sum bond yields increased significantly. On the other hand, onshore rates and yields have been declining due to loose monetary policies adopted by the PBOC. As a result, bonds with similar maturities and credit ratings offer very different yields in these two markets.

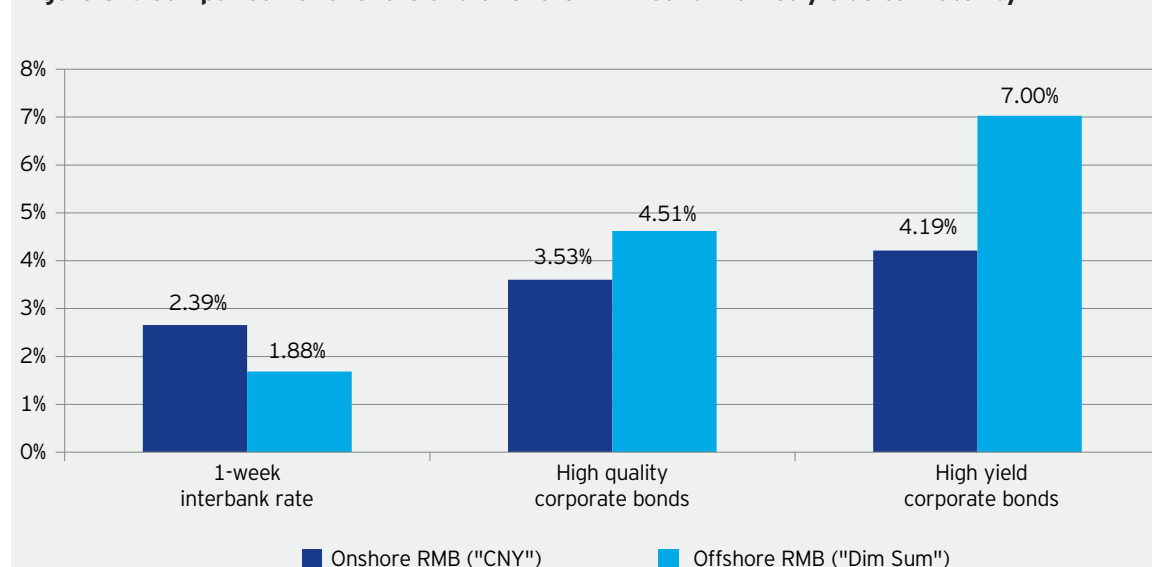
Figure 30: Yield-to-maturity trends in the dim sum bond market



Note 1: The high yield dim sum bond yield is represented by the HSBC CNH High Yield & Non-Rated Bond Index average yield.
 Note 2: The investment grade dim sum bond yield is represented by the HSBC CNH Investment Grade Bond (ex Govt) Index average yield.

Source: Bloomberg L.P., HSBC, Invesco. Data as of 29 April, 2016.

Figure 31: Comparison of onshore and offshore RMB bond market yields to maturity



Note 1: The onshore high quality corporate bond yield is represented by the 3-year MTN AAA (locally rated) bond yield.
 Note 2: The offshore high quality corporate bond yield is represented by the HSBC Offshore RMB Investment Grade Corporate Credit Index whose duration was 2.6 as of 31 December 2015.
 Note 3: The onshore high yield corporate bond yield is represented by the 2-year MTN AA (locally rated) bond yield.
 Note 4: Offshore high yield corporate bond yield is represented by the HSBC Offshore RMB High Yield & Non-rated Corporate Credit Index whose duration was 1.7 as of 29 April 2016.

Source: Bloomberg L.P., Invesco, CFETS, HSBC. Data as of 29 April, 2016.

About the contributors



Ken Hu joined Invesco in April 2014 as Chief Investment Officer, Fixed Income, Asia Pacific. He acts as fixed income senior investment professional and our primary liaison in Asia Pacific, and leads overall fixed income efforts in the region including growing our fixed income presence in Asia Pacific and overseeing fixed income investment products and processes.

Ken has over 18 years of experience as an investment management professional, with much of his career dedicated to fixed income leadership positions. He joins Invesco from Bank of China Hong Kong (BOCHK) Asset Management, where he has served as chief investment officer for fixed income since January 2011 and won the Best Offshore RMB Manager award from Asia Asset Management in 2012 and 2013. Prior to that Ken was chief investment officer for Bank of China Group Life Assurance, where he started investing in onshore RMB bond markets, and director of fixed income for HSBC Private Bank. He also led the investment management activities for First State Investments and Income Partners Asset Management.

Ken holds a Bachelor's Degree in Business Administration from the University of Wisconsin-Madison, USA and a Master's Degree in Finance from the Hong Kong University of Science and Technology. In 2005, he was invited by the Hong Kong University of Science and Technology as a Visiting Scholar to teach investment courses for its Bachelor's Degree programme. Ken is both a Chartered Financial Analyst and Certified Public Accountant.



Chris Lau joined the Invesco Fixed Income as Senior Portfolio Manager in November 2013. He has been the lead manager of Invesco's Hong Kong liquidity portfolios since 2013. Chris also has regional responsibilities for the oversight of Invesco money market funds and help to grow liquidity products in the Asia Pacific region. Since July 2015, Chris became the co-manager for Asian fixed income portfolios covering both USD & local currency portfolios. Before joining Invesco, Chris worked as the portfolio manager at Boseru Asset Management International, managing onshore and offshore RMB and Asian HY bond funds from April 2011. Prior to that, Chris was the Head of fixed income at BOCI-Prudential Asset Management in HK, where he was managing global and Asian fixed income portfolios as well as money market funds. Chris earned a bachelor of Commerce degree from Monash University, Melbourne.



Yi Hu joined Invesco in November 2014 as senior credit analyst. Prior to joining Invesco, she worked in HSBC for 7 years. Yi started with HSBC in London before moving to Hong Kong and working in the Asia credit team in 2009. Since then, she has been covering Asian banks with a special focus on the Chinese banking sector. Yi holds a MSc in Philosophy and Public Policy from the London School of Economics and Political Science and a BA in Economics from University of International Business and Economics in Beijing. Yi is also a CFA charter holder.



Yifei Ding joined Invesco as Fixed Income Analyst in July 2015. He is responsible for macro and quantitative research in respect of Asian countries and assisting in the portfolio management of Invesco's Asian fixed income portfolios. Prior to joining Invesco, Yifei was Fixed Income Portfolio Manager/Analyst at Bank of China Hong Kong (BOCHK) Asset Management for three years whilst, before that, he worked at PricewaterhouseCoopers. Yifei obtained his PhD in Economics from the University of Oklahoma in the United States and a Bachelor of Science degree in Computational Mathematics from the Southeast University in China.

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