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Growing Asia's Markets

ASIA CREDIT REPORT

First Quarter 2017

PREPARED IN PARTNERSHIP WITH

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ASIFMA is an independent, regional trade association with over 100 member firms comprising a diverse range of leading financial institutions from both the buy and sell side including banks, asset managers, law firms and market infrastructure service providers. Together, we harness the shared interests of the financial industry to promote the development of liquid, deep and broad capital markets in Asia. ASIFMA advocates stable, innovative and competitive Asian capital markets that are necessary to support the region's economic growth. We drive consensus, advocate solutions and effect change around key issues through the collective strength and clarity of one industry voice. Our many initiatives include consultations with regulators and exchanges, development of uniform industry standards, advocacy for enhanced markets through policy papers, and lowering the cost of doing business in the region. Through the GFMA alliance with SIFMA in the US and AFME in Europe, ASIFMA also provides insights on global best practices and standards to benefit the region.

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Market Overview and Highlights of Asia (ex-Japan, Australia and New Zealand) debt issuance in First Quarter 2017

Total issuance in 1Q'17 came in at USD 85.0 billion (bn) as of March 31, up 61.2% quarter-over-quarter (qoq) from 4Q'16 (USD 52.7bn) and up 141.9% year-over-year (yoy), inclusive of high grade (HG), high yield (HY), and unrated deals. High yield issuance, at USD 19.7bn, achieved a new record high in the first quarter 2017 from the previous record of USD 12.0bn issued in the first quarter of 2013. Tightening onshore liquidity in China coupled with abundant USD liquidity within the country, the emergence of a strong Chinese domestic investor bid for offshore USD issuance, a hunger for yield at a time of strong spread compression (after the brief late-2016 bond sell-off following the US election and consequent policy uncertainty) and the emergence of a progressively wider range of issuers from across the region, have helped buoy issuance. This overall strength in regional issuance has continued since the end of the quarter and into the Easter break. What is even more impressive is that this strength in the primary markets has been achieved despite considerable headwinds: Leverage and debt ratios continue to worsen in China, the geopolitical backdrop is not particularly constructive – tensions in the Middle East and the Korean peninsula, coupled with uncertainties surrounding the upcoming French election and the turn in the US interest rate cycle are all factors that at other times might have kept markets on the defensive.

Within Asia ex-Japan, Australia and New Zealand, Chinese issuance continues to remains dominant. What is interesting however, is that the mix of Chinese issuance has evolved with the bulk of transactions being completed by banks, who besides raising funds to meet their own capital requirements, have sought to raise financing to on-lend the proceeds to their clients, at a time when onshore corporates need USD to fund overseas acquisitions or additional capex to expand their businesses. The key point worth noting is that as the Chinese authorities seek to contain/limit capital outflows, USD issuance will benefit at the expense of LCY issuance, a trend that has clearly been in evidence this quarter.

Other key highlights of the quarter:

1) HG issuance (of USD 55.6bn) easily outpaced HY issuance of USD 19.7bn. However, HY issuance remains at historical highs, with first quarter 2017 volumes nearly the same or eclipsing annual volumes of prior years and representing a quarter of total debt issuance in the first quarter of 2017. The key driver of heavy HY issuance this quarter has been the move by Chinese property companies to look to the offshore markets for funding (in a reversal of the norm), as the cost of raising funds offshore became relatively cheaper. On another note, in yet another reversal of recent trends, Chinese green bond issuance fell sharply during the quarter, although this could be temporary.

2) On a quarterly total return basis, Asian HY debt outperformed Asian HG paper, with HG paper reporting a total return of 2.13% in 1Q'17, compared to a 3.86% gain in HY paper. In terms of individual sectors and sub-sectors, HY sovereigns were the stand-out gainers, up 4.92% in the quarter. Excluding the small Mongolian sovereign, which is an outlier (+ 12.54% in total return terms as measured by the JACI), other strong gainers included Sri Lanka (+ 4.92%) and Indonesia (the strongest HG sovereign), which was up 5.70%.

Key trends in Asia (ex-Japan, Australia and New Zealand) G3 & LCY bond issuance

For the first quarter 2017, total G3 issuance stood at USD 85.0bn, up 61.2% qoq and up 141.9% yoy. China remained the largest issuing country in the first quarter, accounting for a total of USD 53.5bn, or approximately two thirds (62.9%) of G3 issuance in 1Q'17; USD 31.9bn and USD 15.2bn in HG and HY deals, respectively, were priced from China. South Korea retained its place as second largest issuer in the first quarter, with USD 8.8bn issued in 1Q'17, followed by Hong Kong with USD 6.0bn.

Finance remained the largest sector of G3 issuance in the first quarter (USD 41.3bn), followed by real estate/property (USD 11.9bn) and sovereigns (USD 7.1bn).

In terms of ratings, within the HG space, A- transactions accounted for the largest share of deals priced during the quarter, with USD 12.5bn in total issuance, followed by BBB- rated transactions totaling USD 9.2bn. Within HY issuance, the BB- category dominated with USD 7.6bn of issuance, followed by B rated transactions of USD 3.6bn.

By tenor, Asia ex-Japan, Australia and NZ G3 deals with tenors of 5 years or less continued to account for the bulk of issuance in 1Q'17, with a total of USD 58.8bn in short tenor issues being priced during the quarter. Of these, USD 38.5bn were HG deals, USD 12.7bn were HY deals and the balance unrated.

Overall G3 debt outstanding in the region stood at USD 926.2bn, increasing 5.1% qoq and growing 16.4% yoy. High grade debt accounted for the bulk of total outstanding debt at USD 563.9bn (a 2.5% increase qoq), followed by HY debt at USD 187.5bn (an increase of 3.8% qoq) and unrated debt at USD 174.8bn (a growth of 15.9% qoq). China (with USD 387.9bn), South Korea (with USD 120.5bn) and Hong Kong (with USD 113.1bn) remain the three countries with the largest shares of G3 debt outstanding. In terms of ratings, within the HG space, deals rated A+ (USD 97.5bn) account for the largest share of debt outstanding, while BB+ transactions (USD 78.7bn) continued to remain the dominant rating outstanding in the HY space. By sector, financials with a total of USD 272.8bn accounted for a little less than a third of outstanding G3 paper, followed by sovereigns (USD 243.0bn) and energy (USD 100.5bn). Finally, deals with remaining tenors of 5 years or less (USD 595.9bn) accounted for the bulk of total Asia (ex-Japan, Australia and NZ) debt outstanding.

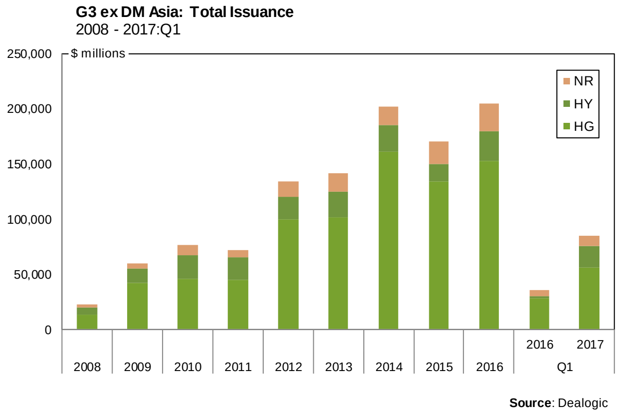
Turning to the LCY debt markets, USD 139.0bn in total LCY-denominated debt was issued in Asia (ex-Japan, Australia & NZ) in 1Q'17, a decline of 33.7% qoq (USD 209.6bn) and a decline of 48.9% yoy (USD 272.0bn).

Total LCY debt outstanding at the end of 1Q'17 in Asia (ex-Japan, Australia and NZ) stood at USD 15.0tn, rising by 1.9% qoq, with HG and HY debt outstanding declining 1.2% and 3.8% qoq, respectively, while unrated debt continued to rise by 2.1%. China remains the bulk of total outstanding LCY debt at USD 9.9tn, followed by India (USD 1.7tn) and South Korea (USD 1.4tn).

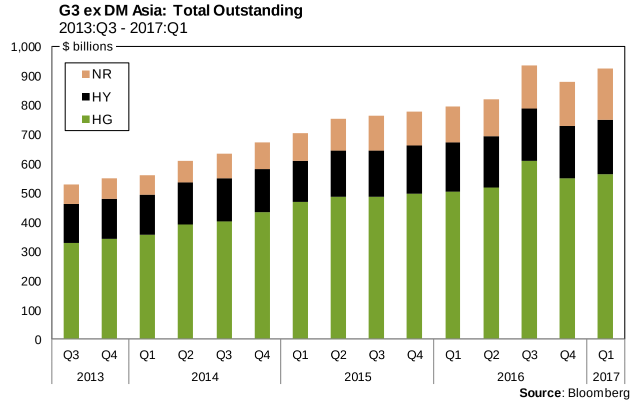
State of the Asian leveraged loan market

Asian leveraged loan debt, excluding developed market Asia, reached USD 34.1bn in 1Q'17, a 35.7% decline qoq (USD 53.0bn) and a 46.8% decline yoy (USD 64.0bn). Leading sectors in 1Q'17 issuance were utility & energy (USD 6.1bn), construction/building (USD 5.0bn), and transportation (USD 4.5bn). Leveraged loan issuance was primarily used for capital expenditures (USD 9.8bn) and project financing (USD 9.3bn). Sponsored loan deals fell, representing 2.2% by dollar amount in the first quarter.

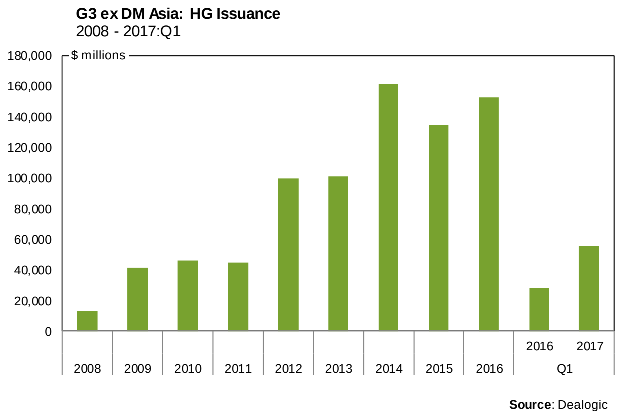
2.1. G3 ex DM Asia: Total Issuance



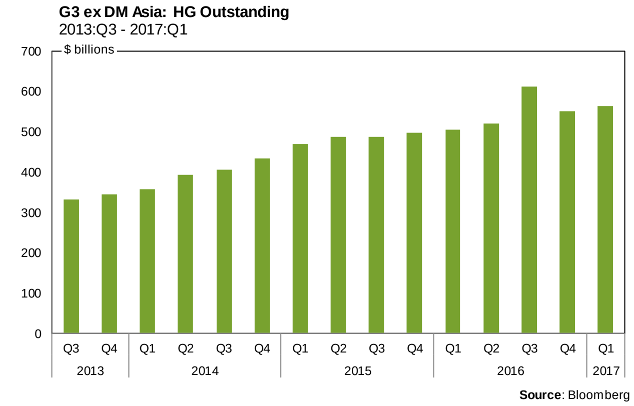
2.2. G3 ex DM Asia: Total Outstanding



2.3. G3 ex DM Asia: HG Issuance



2.4. G3 ex DM Asia: HG Outstanding



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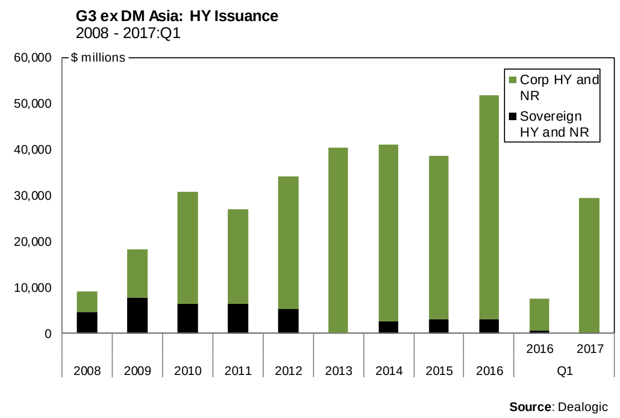
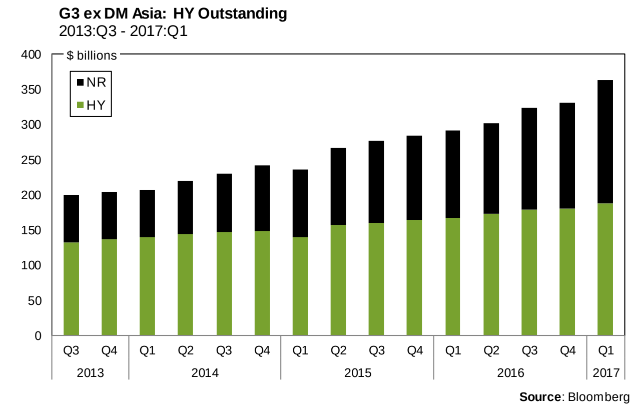
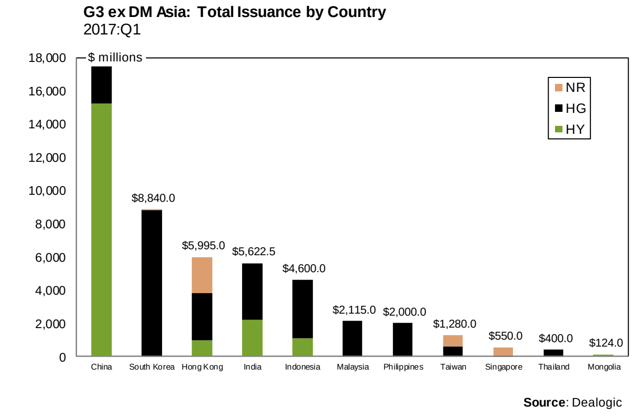


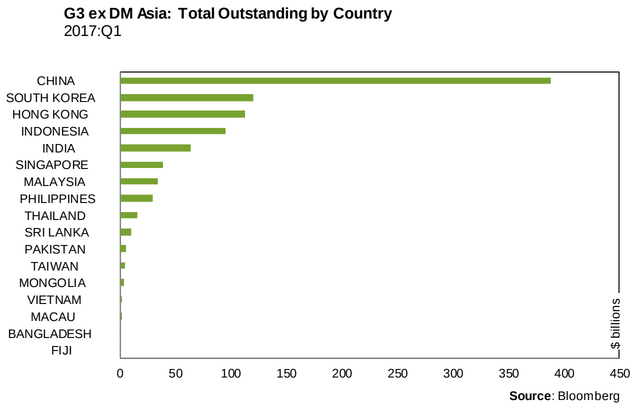
2.6. G3 ex DM Asia: HY Outstanding



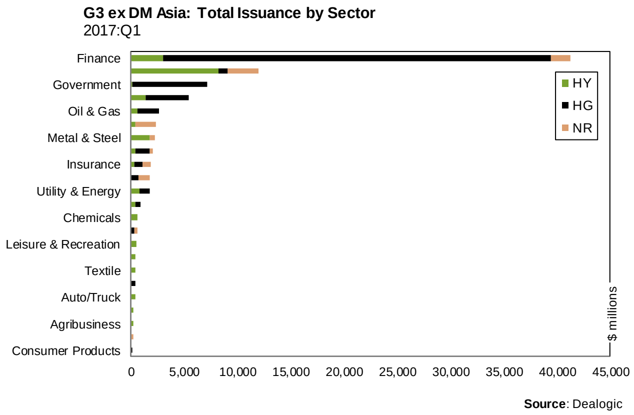
2.7. G3 ex DM Asia: Total Issuance by Country



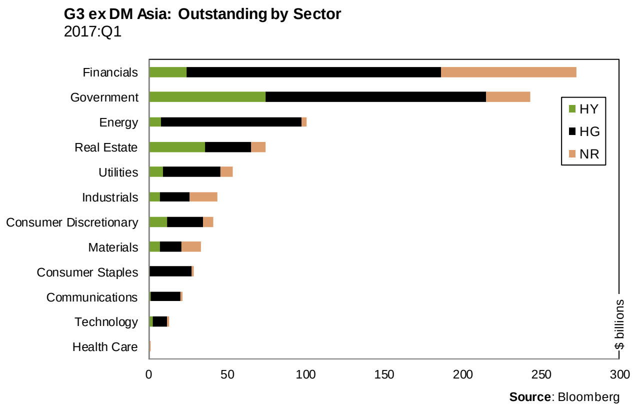
2.8. G3 ex DM Asia: Total Outstanding by Country



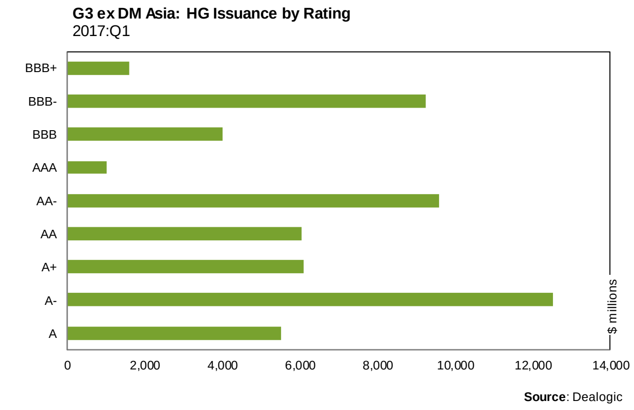
2.9. G3 ex DM Asia: Total Issuance by Sector



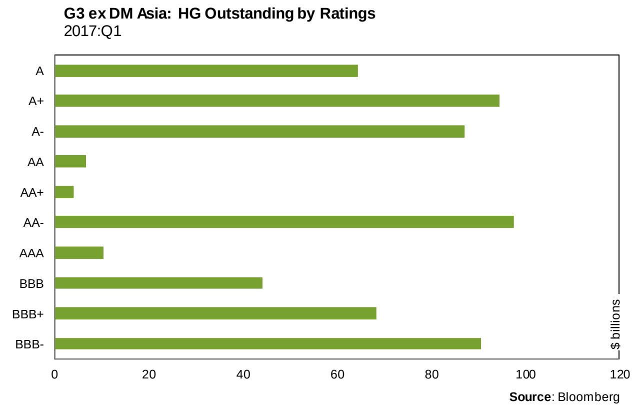
2.10. G3 ex DM Asia: Total Outstanding by Sector



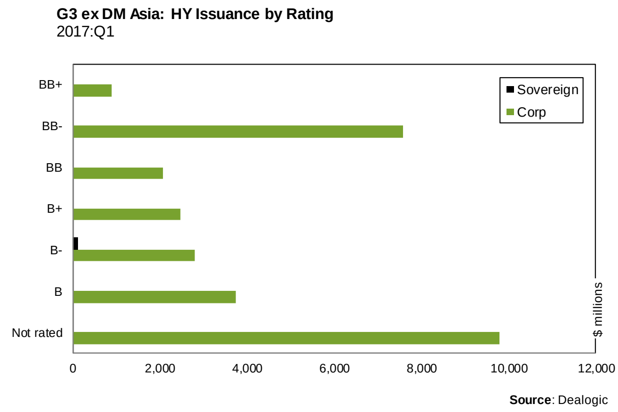
2.11. G3 ex DM Asia: HG Issuance by Rating



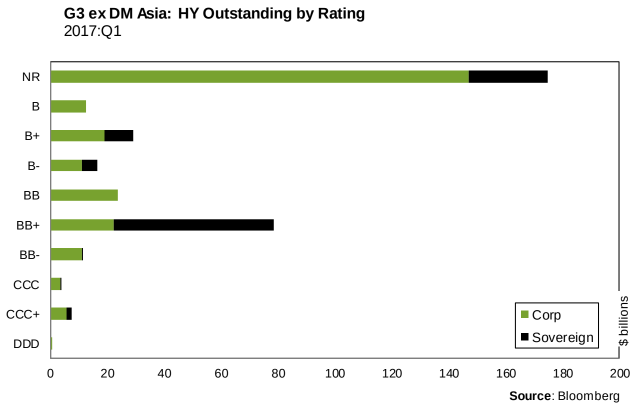
2.12. G3 ex DM Asia: HG Outstanding by Rating



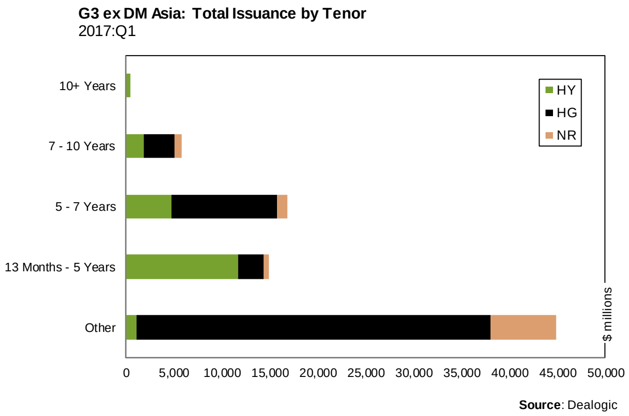
2.13. G3 ex DM Asia: HY Issuance by Rating



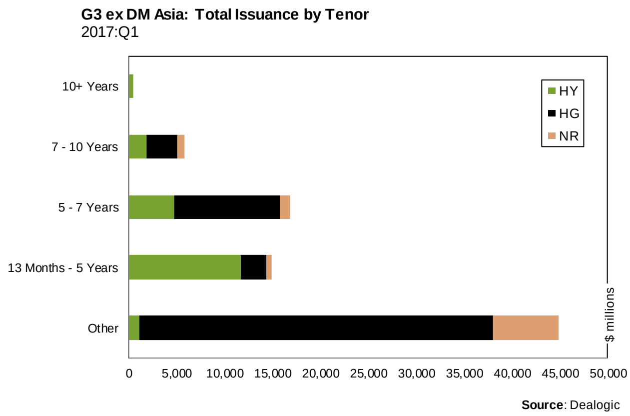
2.14. G3 ex DM Asia: HY Outstanding by Rating



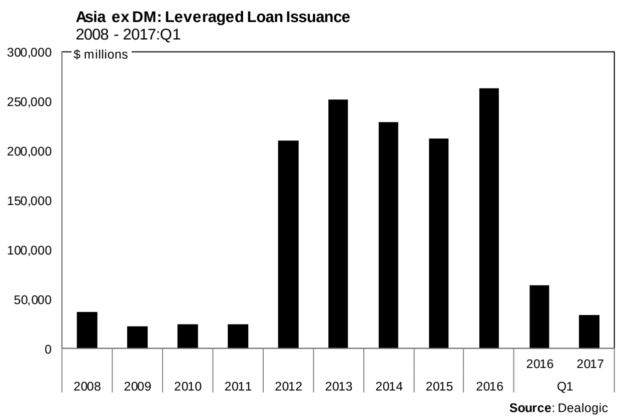
2.15. G3 ex DM Asia: Total Issuance by Tenor



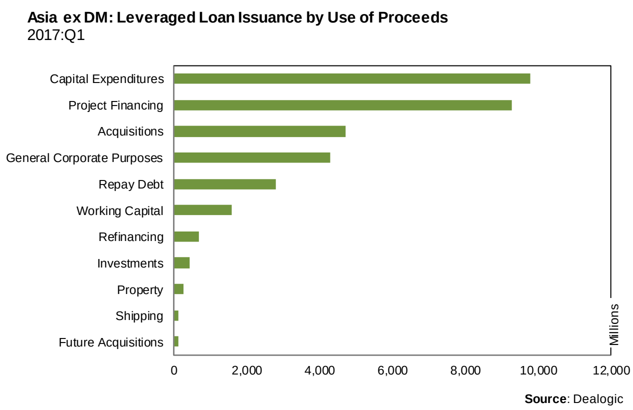
2.16. G3 ex DM Asia: Outstanding by Remaining Tenor



2.17. Asia ex DM: Total Leveraged Loan Issuance

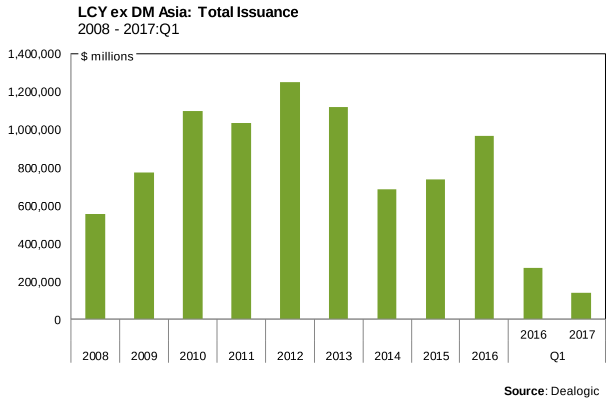


2.18. Asia ex DM: Total Leveraged Loan Issuance by Use of Proceeds

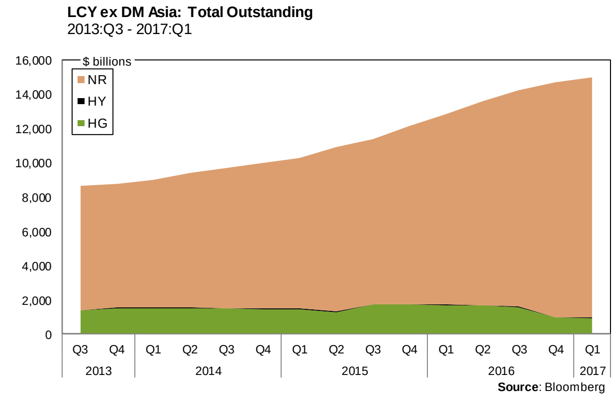


3. LCY Asia ex Developed Market Asia (Japan, Australia and New Zealand)

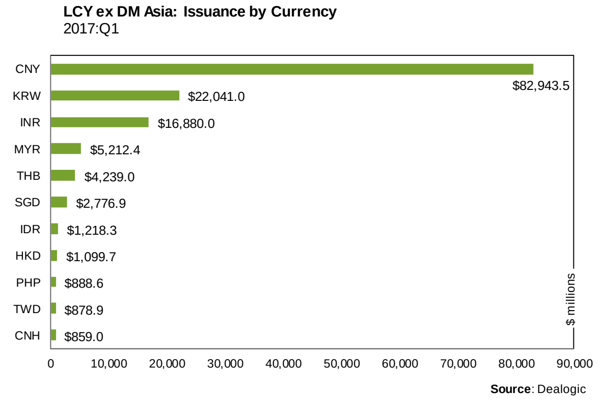
3.1. LCY ex DM Asia: Total Issuance



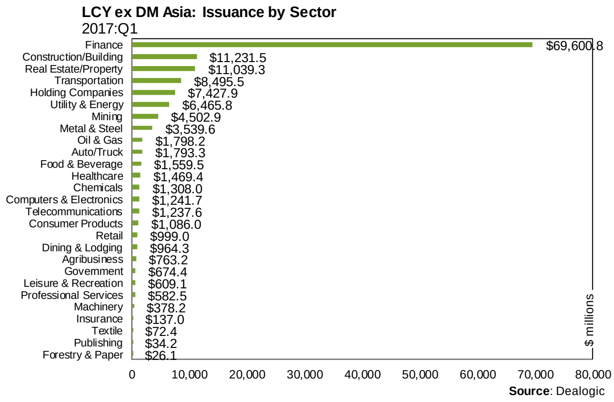
3.2. LCY ex DM Asia: Total Outstanding



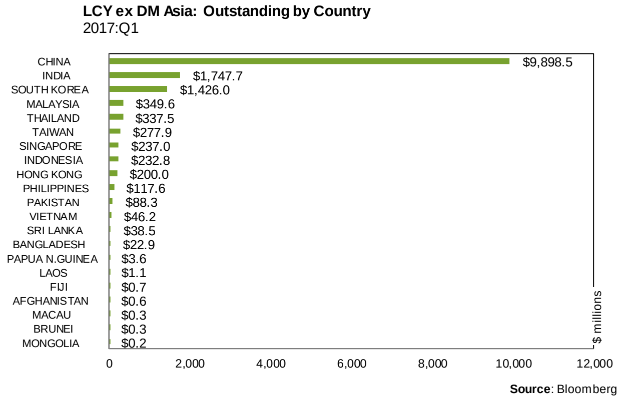
3.3. LCY ex DM Asia: Issuance by Currency



3.4. LCY ex DM Asia: Issuance by Sector



3.5. LCY ex DM Asia: Outstanding by Country



4. All Asia

Total Issuance & Outstanding – G3 and LCY for Asia (including Japan, Australia and New Zealand)

Total G3 issuance in Asia (including Japan, Australia and New Zealand) had a stellar first quarter in 2017, with USD 175.4bn issued, an increase of 40.1% qoq and an increase of 67.6% yoy. In 1Q'17, total HG G3 issuance in Asia was USD 126.0bn, an increase of 39.6% qoq and an increase of 80.2% yoy; HY issuance was USD 24.7bn, an increase of 124.0% qoq but a tenfold increase yoy; and unrated issuance was USD 24.6bn, an increase of 3.5% qoq but a decline of 24.2% yoy. High yield issuance in particular reached a new all-time high in the first quarter of 2017 from the previous record of USD 16.3 billion in the third quarter of 2016.

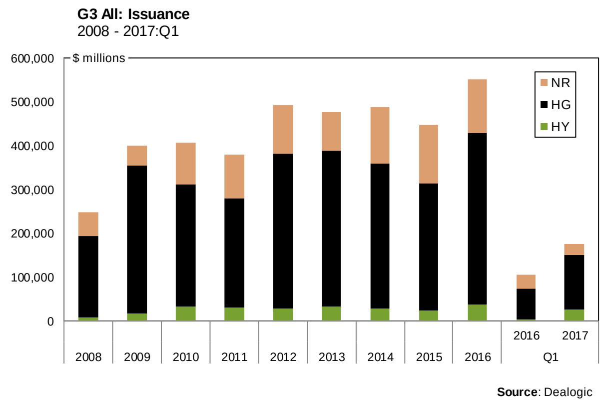
Outstanding G3 debt, including developed market Asia, stood at USD 11.50tn at the end of the first quarter 2017, an increase of 0.1% qoq, with declines in NR debt (USD 7.42tn, a 20.4% decline) but increases in HG debt (USD 3.84bn, an 97.9% increase) and HY debt (USD 226.96bn, a 2.0% increase).

Stellar G3 issuance volumes cut into local currency volumes in the first quarter of 2017; LCY debt issuance including Japan, Australia, and New Zealand, total issuance stood at USD 477.4 billion, a decline of 32.5% qoq and a decline of 19.9% yoy, comprised of USD 361.7bn in HG issuance, USD 5.2 billion in HY issuance and USD 110.5bn in unrated issuance.

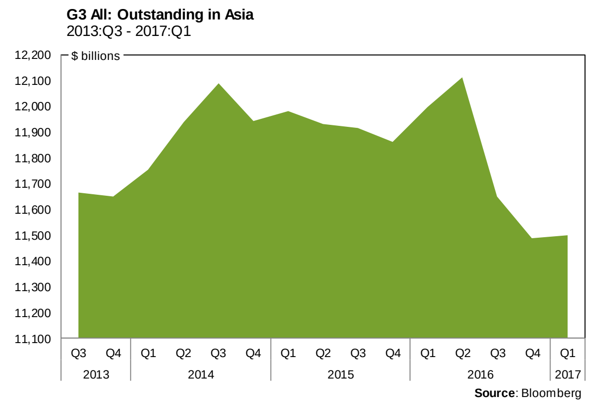
The key factor driving the steep fall in LCY issuance was the decision by the Chinese authorities to encourage local issuers to tap the overseas bond markets for their various financing needs in order to a) replenish Chinese FX reserves, which recorded steady falls in 2015 and 2016 and b) to alleviate pressure on the CNY, which has weakened considerably over the last several months.

Looking ahead though, the prospects for LCY issuance in general are considerably brighter, at least in some regional markets, India in particular. The recent strength of the INR, ample liquidity in the banking system post-demonetization (as the bulk of the higher denomination notes ultimately made their way back into the banks as deposits) and the subsequent trend towards lower rates has provided a boost to total returns for USD-based investors, making India one of the best emerging markets in total return terms. Furthermore, INR interest rates remain high (in the high single digits) relative to other regional markets, so there could be more upside for LCY-denominated bonds. Finally, in recent weeks, there has been clear evidence of investors heightened nervousness around the sharp spread compression seen in the HY space – HY and junk bond funds have seen outflows as investors seek to lock in profits at these tight levels. This does tend to suggest that EM (and Asian) LCY debt could yet be in favor at the expense of USD-denominated debt, going forward.

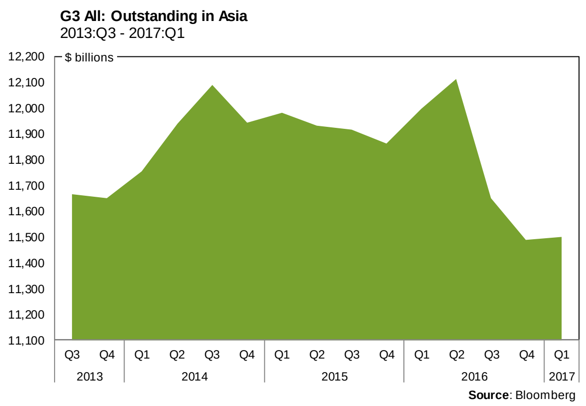
4.1. G3 All: Total Issuance



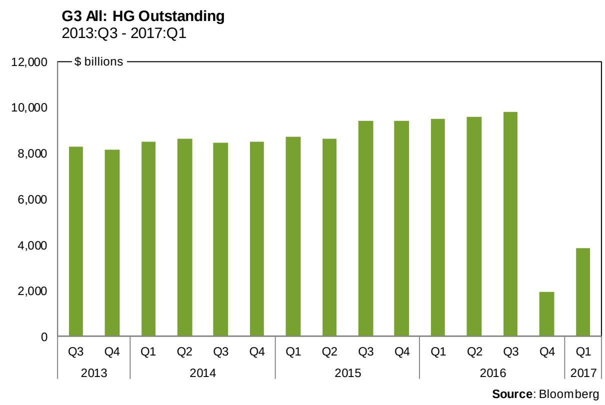
4.2. G3 All: Total Outstanding



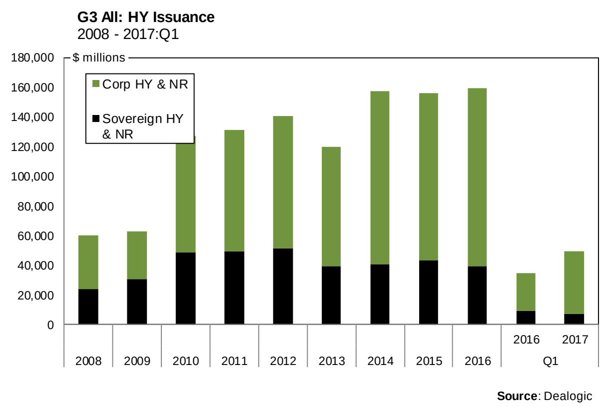
4.3. G3 All: HG Issuance



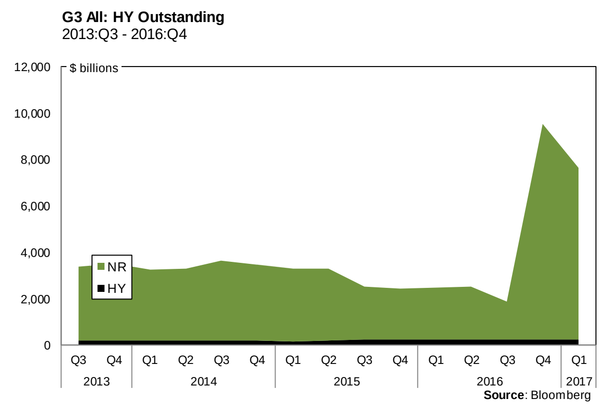
4.4. G3 All: HG Outstanding



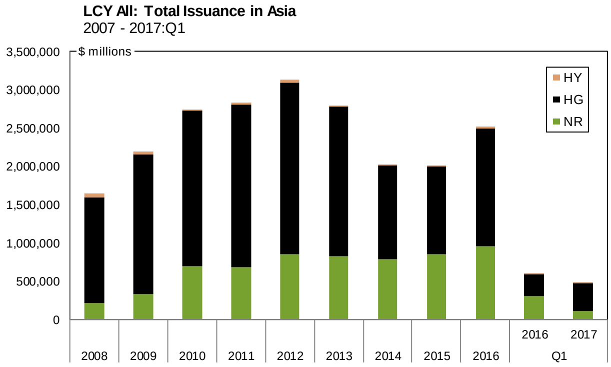
4.5. G3 All: HY Issuance



4.6. G3 All: HY Outstanding



4.7. LCY All: Total Issuance



Source: Dealogic

5. China – Domestic

Total Issuance & Outstanding – Domestic CNY issuance

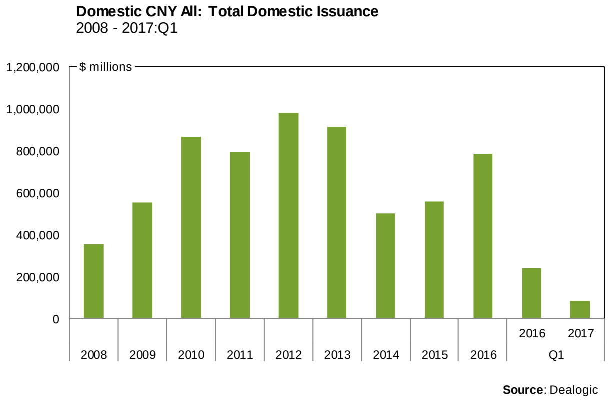
Total domestic CNY issuance stood at USD 83.4bn in the first quarter of 2017, down 49.6% from fourth quarter volume (USD 165.4bn) and a decline of 64.9% yoy (USD 237.6bn). By tenor, 76.8% of first quarter issuance (USD 64.1bn) would mature in five years or less, followed by the 7 – 10 year bucket (USD 10.5bn, or 12.6% of issuance). By sector, finance led issuance totals (USD 35.3bn), followed by construction (USD 10.4bn). Domestic CNY volumes remain well below prior quarter volumes as deleveraging efforts by China, rising bond spreads, and corporate defaults (nine in the first quarter alone) limited issuers from tapping the marketplace.

Outstanding domestic CNY debt stood at USD 9.8tn at the end of first quarter 2017, with sovereigns leading totals (USD 5.3tn), followed by financials (USD 2.5tn) and industrials (USD 787.7bn).

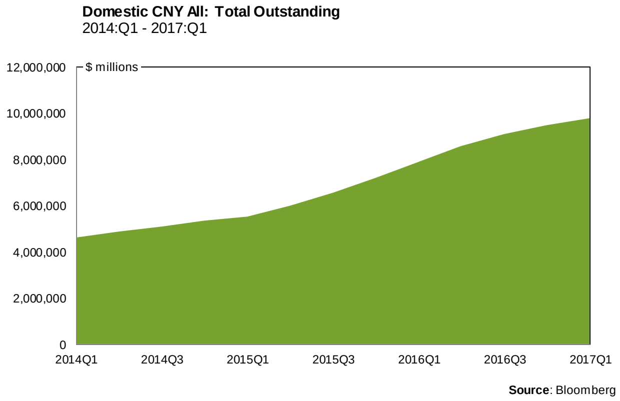
A mix of factors is likely to lead to some pickup in domestic Chinese debt issuance, despite a more hostile domestic rate environment – even as the People's Bank of China (PBOC) has been driving rates higher and tightening domestic liquidity, a combination of corporate refinancing needs and rising bank capital requirements for domestic Chinese financial institutions will help support CNY issuance at the margin, as issuers have no choice but to close their funding/financing gaps through fresh issuance. In addition, with the all-important 19th National Congress of the Communist Party of the PRC scheduled to be held later this year, it is our view that the Chinese authorities will want to ensure a degree of economic stability ahead of this event – thus, certain key sectors (particularly in the state-owned entity (SOE) space) may well continue to receive financial support and be allowed to access the domestic capital markets to meet their funding requirements.

Finally, additional developments such as the progressive opening of the "China Interbank Bond Market" (CIBM) to international investors, coupled with the launch of the recently announced "Bond Connect" program, will help drive international interest in the domestic bond market. Furthermore, the selective inclusion of Chinese bonds in a couple of broad global bond indices, together with the possibility that Chinese domestic bonds could be included in even more widely-followed bond benchmarks in the near future, should also lead to a pickup in CNY issuance in the second and subsequent quarters of 2017, relative to the first quarter, in our view.

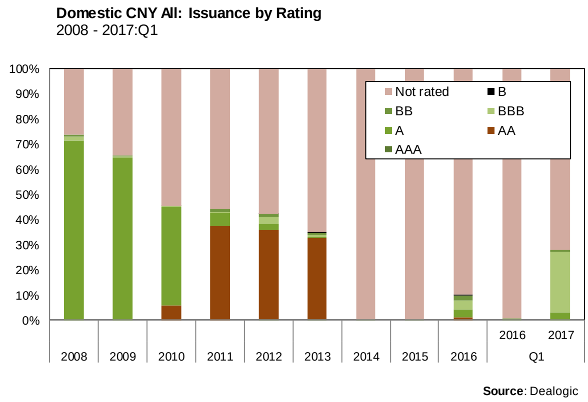
5.1. Domestic CNY All: Total Issuance



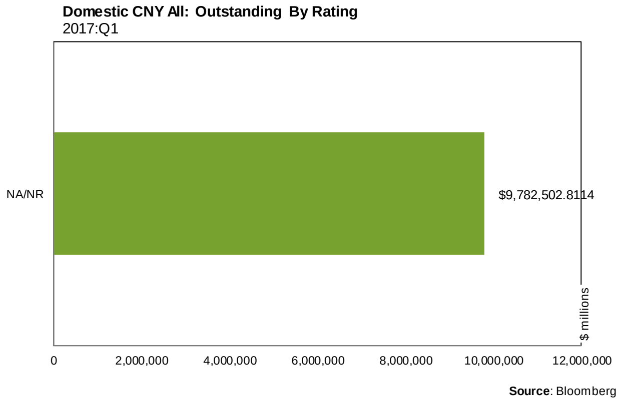
5.2. Domestic CNY All: Total Outstanding



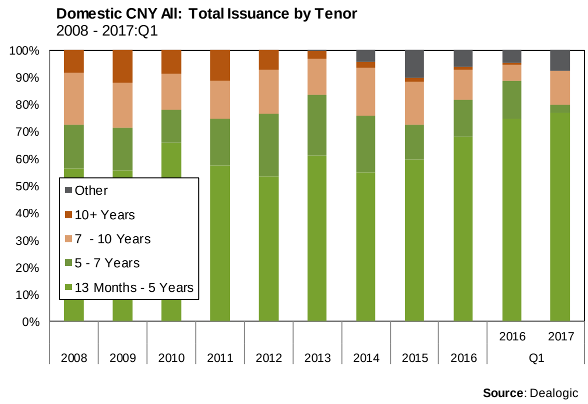
5.3. Domestic CNY All: Issuance by Rating



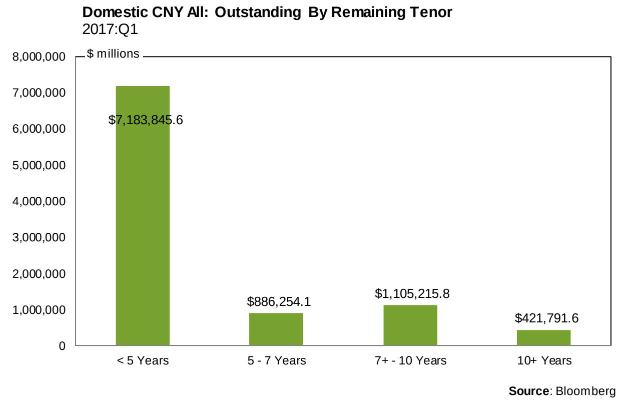
5.4. Domestic CNY All: Outstanding by Rating



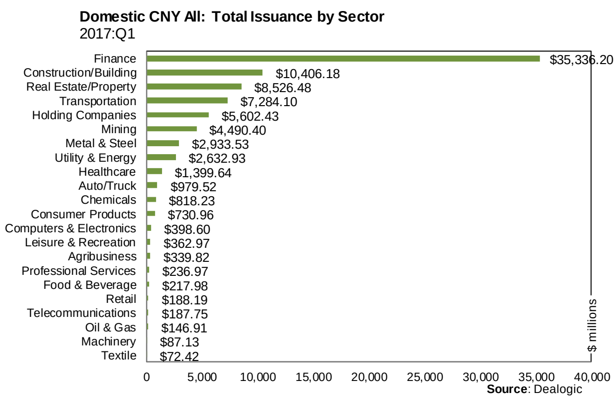
5.5. Domestic CNY All: Issuance by Tenor



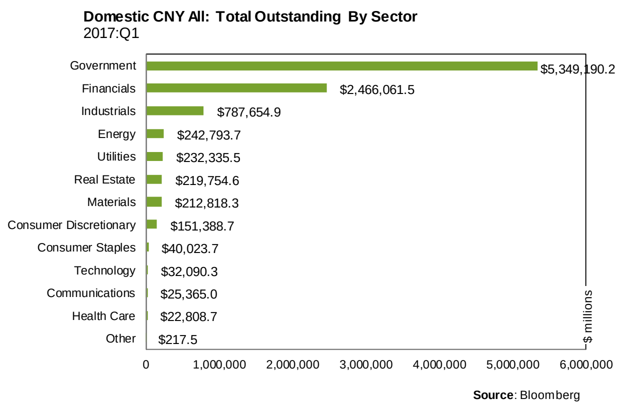
5.6. Domestic CNY All: Outstanding by Remaining Tenor



5.7. Domestic CNY All: Issuance by Sector



5.8. Domestic CNY All: Outstanding by Sector



6. China – CNH

Key trends in offshore renminbi (CNH) and the dim sum bond markets

The pace of offshore issuance slowed down substantially in the first quarter; an equivalent of USD 1.9bn in CNH bonds were issued, a decline of 73.9% qoq but an increase of 6.5% yoy. In terms of tenor, all of first quarter issuance was accounted for by transactions with tenors of 5-years or less, with nearly half from short-term paper (USD 895.5mn). HG deals rated A totaling USD 434.5mn had the highest share among rated deals (22.7%). In terms of sector, only finance transactions (totaling USD 1.5bn) and auto (USD 434.5mn) were issued in the first quarter.

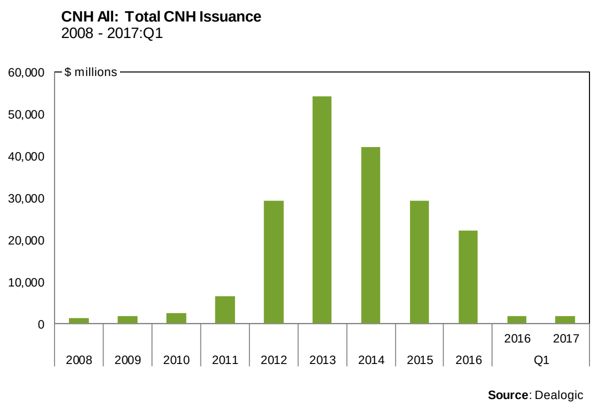
The total of dim sum bonds outstanding stood at USD 72.8bn at the end of the first quarter, a decline of 7.2% qoq. As international investors receive progressively easier access to the onshore markets, it does appear that the relentless decline of the offshore dim sum bond market will continue. To some extent, refinancing requirements may help slow (but not reverse) the overall decline in the dim sum bond markets (as issuers may find it difficult to raise CNY financing onshore and remit the funds offshore to repay maturing CNH debt). Furthermore, offshore CNH liquidity continues to decline.

CNH Deposit Base by Location	Amt (USD bn)	As of
Hong Kong	90.4	Feb-17
Singapore	17.3	Dec-16
Taiwan	45.0	Feb-17
Korea, Republic of	1.4	Mar-17
Luxembourg	9.8	Aug-15
United Kingdom	8.5	Dec-16
France	3.0	Dec-15

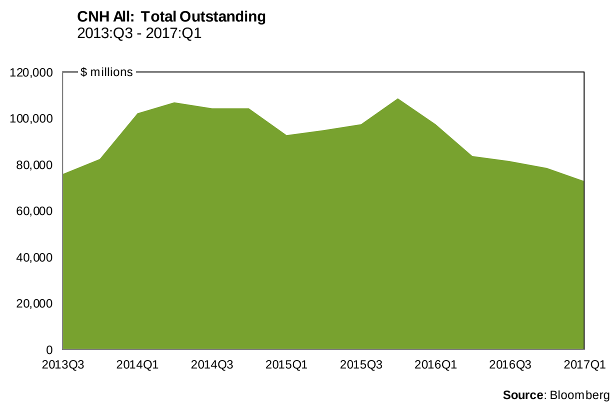
Sources: HKMA (Hong Kong), MAS (Singpore), Central Bank of Republic of China (Taiwan), Bank of Korea (Korea), Luxembourg for Finance (Luxembourg), Bank of England (UK), PWC (France); Exchange Rate: CNH 6.8872 = USD 1.0, GBP 1.26 = USD 1.0

About the only positive on the subject of offshore CNH liquidity is that most deposit centers have reported a slowdown in declines in recent data with the exception of Hong Kong, which remains in freefall (Hong Kong CNH deposits are 51.0% of peak volumes from December 2014; Singapore CNH deposits are 54.0% of peak volumes in June 2015, Taiwan CNH deposits are 92.1% of peak in June 2015, and South Korea are 6.1% from peak volumes in December 2014). Absent a sudden strengthening in the renminbi, this trend should continue for the foreseeable future.

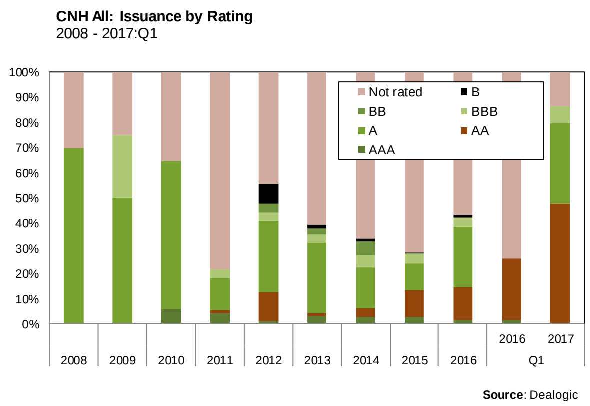
6.1. CNH All: Total CNH Issuance



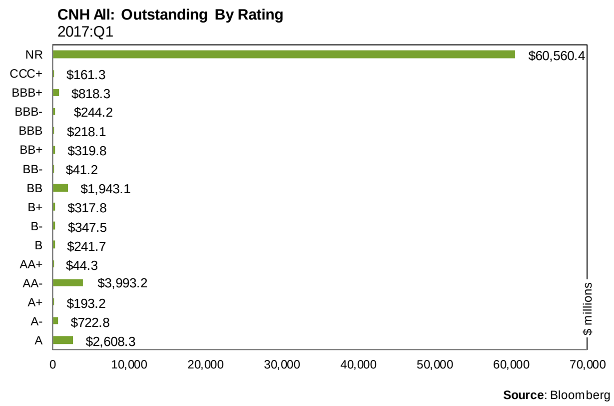
6.2. CNH All: Total Outstanding



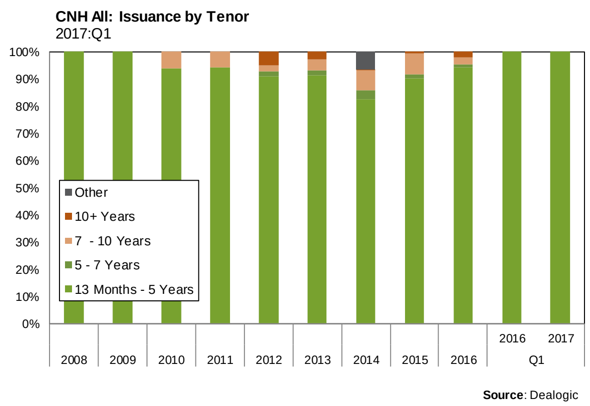
6.3. CNH All: Issuance by Rating



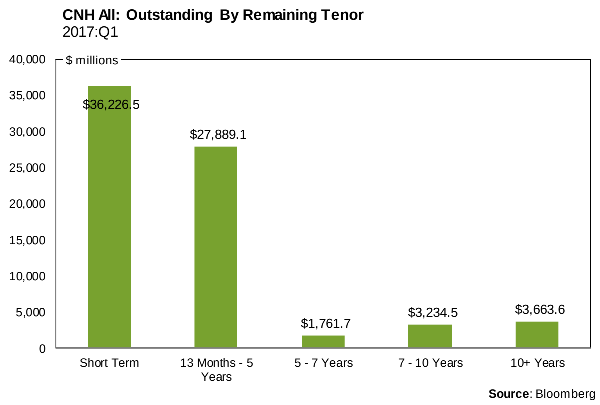
6.4. CNH All: Outstanding by Rating



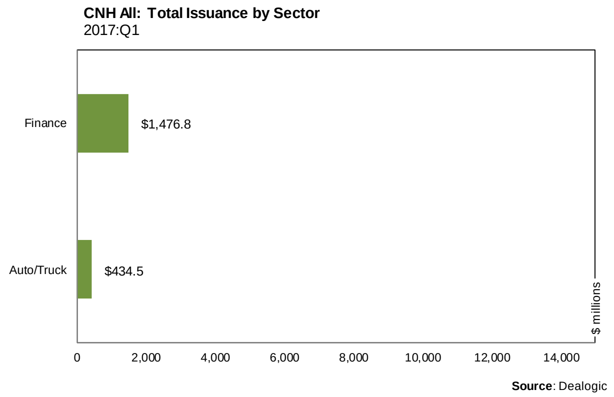
6.5. CNH All: Issuance by Tenor



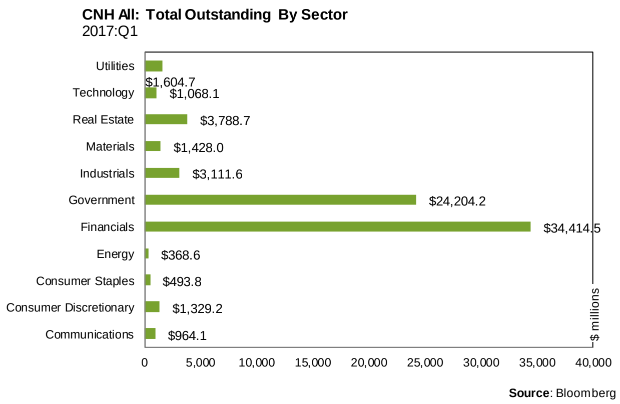
6.6. CNH All: Outstanding by Remaining Tenor



6.7. CNH All: Issuance by Sector



6.8. CNH All: Outstanding by Sector



7. Spreads, Credit & Total Return

Relative Value and returns (Asia ex-Japan, Australia & New Zealand G3)

Asian HG bond spreads tightened in the first quarter, trading several basis points tighter than in the fourth quarter. At the end of 1Q'17, Asian HG bonds on a composite basis were quoted at an average spread of 131 basis points (bps) in March from 146 bps in December while US and European HG bond issues were quoted at average spreads of 121 bps (from 131 bps) and 121 bps (from 124 bps), respectively. Asian HY corporates tightened in the first quarter of 2017, averaging 384 bps in March (from 463 bps in December 2016), while US and European bonds were much tighter at 390 bps (from 428 bps) and 350 bps (from 388 bps), respectively.

In terms of total return, emerging market equities were the outperformers in the first quarter, followed by developed market equities, while Japanese equities and global corporate IG underperformed. Asian HG gained 2.13% in the first quarter, while HY indices gained 3.86%.

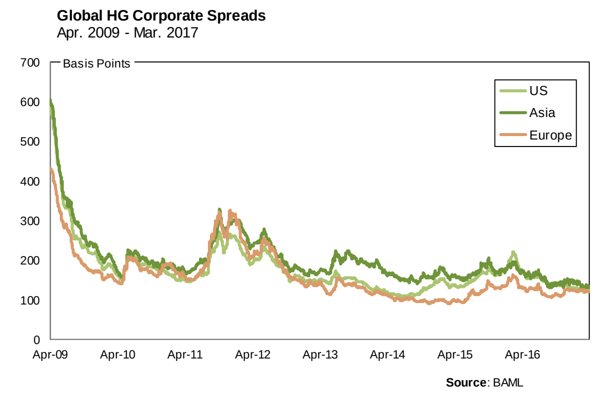
Looking back at some of the themes we highlighted at the beginning of the year, a number of those ideas continue to remain relevant and have actually played out as the first quarter drew to a close:

a) EM fixed income ETFs drew the strongest share of inflows among the different classes of fixed income funds, at 8.2 % (according to DTCC and the ETF research center). With EM equity funds also drawing strong inflows, this has reversed the earlier trend of EM outflows seen in 2016 (a reversal which we predicted would occur in our last quarterly credit report published in February 2017).

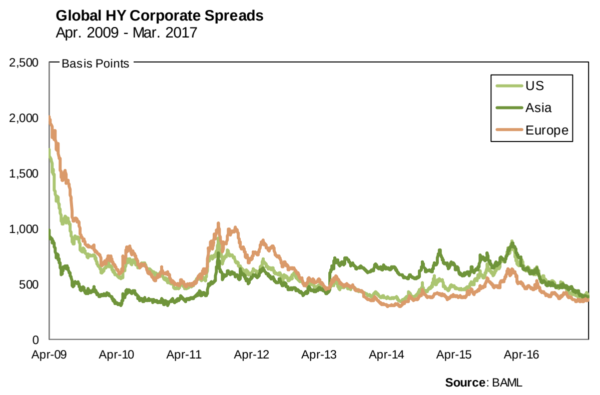
b) Also, as predicted, the US dollar's uptrend has paused and although it hasn't quite reversed, a number of EM currencies have outperformed (the Indian rupee – INR – in particular). Again this was in line with our thoughts at the beginning of 2017 that the higher interest rate local currencies such as India and Indonesia would do well (As pointed out above, Indonesian fixed income was also a relatively strong performer during the quarter).

c) We are of the view that the trends that have been in evidence during the first quarter will continue through mid-year. Within Asia ex-Japan EM, we do look for HY paper to continue to outperform, as there is little evidence that the "yield hunger" that has driven much of the pricing in primary markets continues. In terms of countries, there is still more upside for countries such as India and Indonesia, while China we believe will underperform – there are a number of uncertainties in China's economic outlook going forward that are likely to keep investors on the defensive – moreover, the pickup in Chinese debt issuance which we expect ahead of the 19th Chinese party congress later this year, would translate into investors being able to pick and choose from a wide range of issuers and sectors. This in turn would translate into strong performance for only the best/strongest issuers and significant underperformance elsewhere.

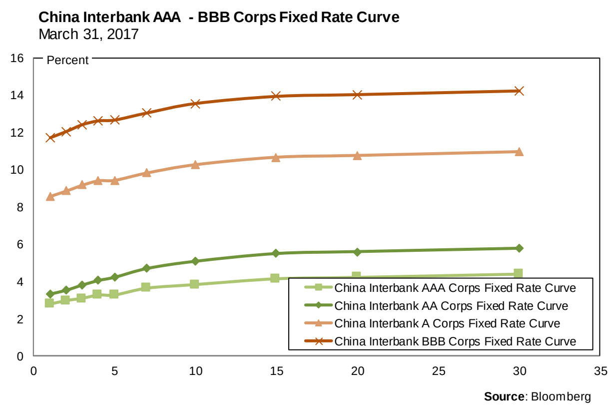
7.1. Global HG Corporate Spreads



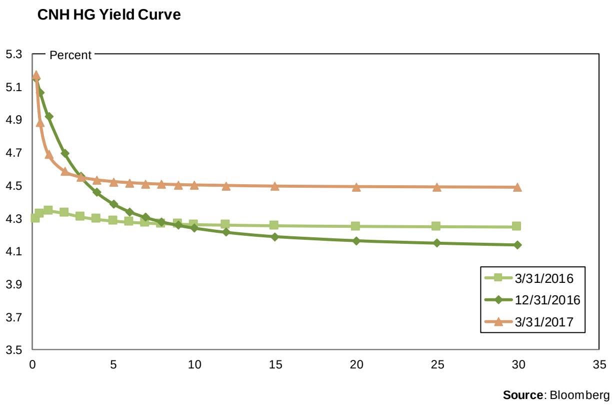
7.2. Global HY Corporate Spreads



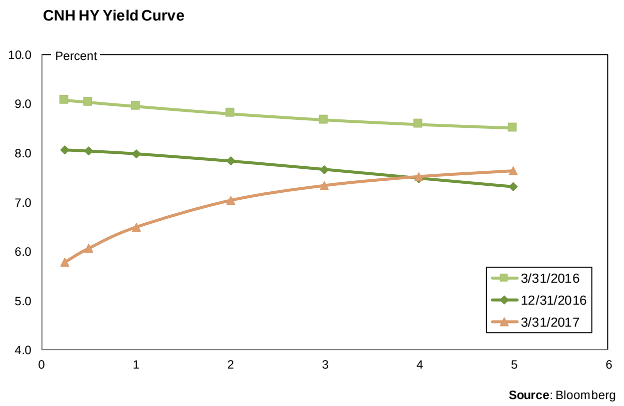
7.3. China Interbank AAA - BBB Corps Fixed Rate Curve



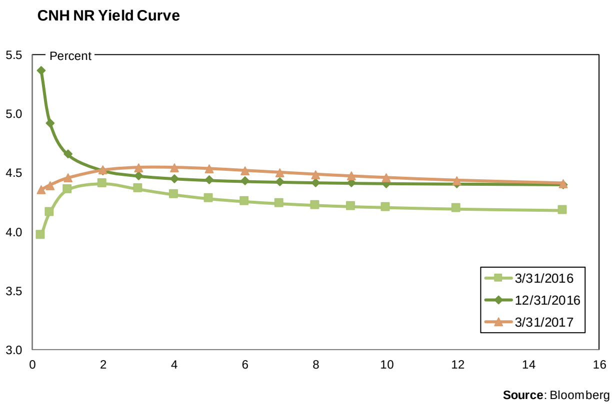
7.4. CNH HG Yield Curve



7.5. CNH HY Yield Curve

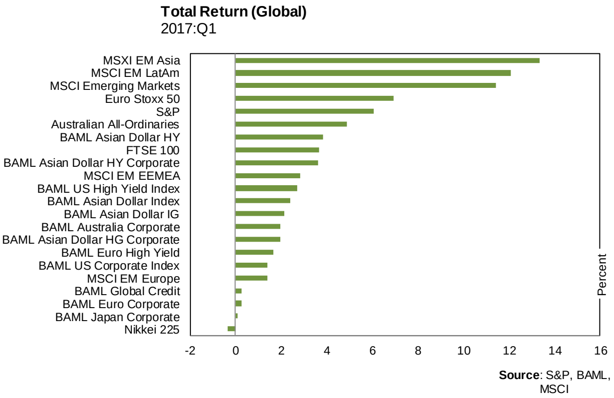


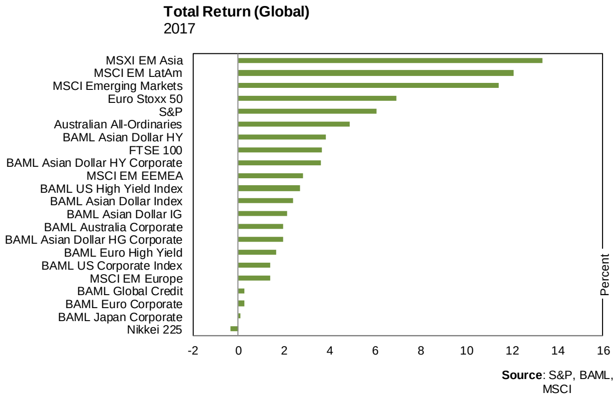
7.6. CNH NR Yield Curve



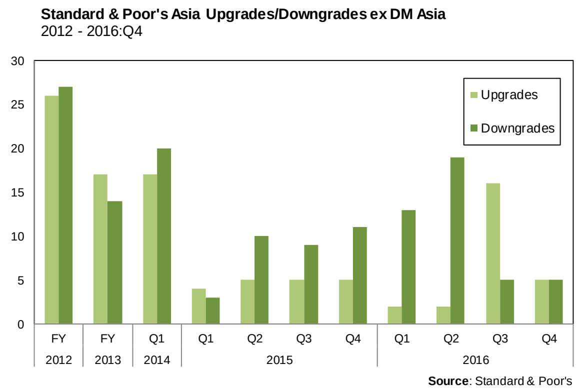
7.7. Global Returns, Quarter-End

7.8. Global Returns, 2016

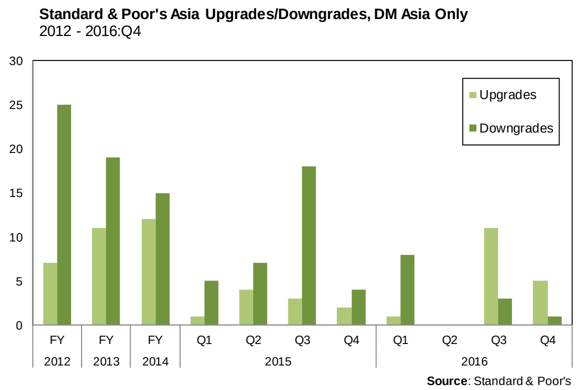




7.9. Asia Upgrades / Downgrades ex DM Asia



7.10. Asia Upgrades / Downgrades, DM Asia



7.11. Asian Upgrades & Downgrades, Standard & Poor's, Fourth Quarter 2016

Upgrades	Country	Date	Rating
Nomura Holdings Inc.	Japan	11/17/2016	A-
China Travel Service (Holdings) Hong Kong Limited (China National Travel Service (HK) Group Corporation)	Hong Kong	10/13/2016	BBB+
BlueScope Steel Limited	Australia	11/10/2016	BB+
PT Japfa Comfeed Indonesia Tbk	Indonesia	11/10/2016	B+
MyState Bank Ltd. (MyState Limited)	Australia	12/6/2016	BBB+
Fortescue Metals Group Ltd.	Australia	12/19/2016	BB+
Liberty Financial Pty Ltd.	Australia	10/30/2016	BBB
Suhyup Bank	Korea, Republic of	12/1/2016	A
Broadcom Ltd. (Avago Technologies Holdings Pte. Ltd.)	Singapore	12/22/2016	BBB-
KEB Hana Bank	Korea, Republic of	11/8/2016	A+

Downgrades	Country	Date	Rating
Singapore Post Ltd.	Singapore	12/21/2016	BBB+
Toshiba Corp.	Japan	12/28/2016	B-
PT Gajah Tunggal Tbk.	Indonesia	12/7/2016	CCC+
Dalian Wanda Commercial Properties Co. Ltd.	China	12/12/2016	BBB-
Yuexiu Real Estate Investment Trust (Guangzhou Yuexiu Holdings LImited)	Hong Kong	11/8/2016	BBB-
China Oilfield Servies Limited (China National Offshore Oil Corp.)	China	11/4/2016	BBB

7.12. Asian Defaults, Standard & Poor's, First Quarter 2017

Defaults	Country	Type
N/A	N/A	N/A

8. Summary of the Methodologies Adopted for this Report

2. G3 Asia ex Developed Market Asia (Japan, Australia, and New Zealand)

Issuance

Bond transactions are sourced primarily from Dealogic, with supplemental information sourced from Bloomberg. Unless otherwise noted, all issuance are long-term debt. High grade transactions are defined as transactions with a Dealogic "effective" rating of equal or greater than BBB-, and may include unrated transactions based on issuer and desk notes. High yield transactions are defined as transactions with a Dealogic "effective" rating of equal or less than BB+, and may also include unrated transactions based on issuer and desk notes. Unrated deals are those deals with no effective rating from Dealogic.

"All Asia" issuance are defined as being a corporate bond issue having a Dealogic "deal nationality" as within Asia, regardless of market, including domestic. Sovereign, sub-sovereign, medium-term notes, and agencies are also included from issuance, while supranational and ABS/MBS issuers are excluded from issuance. Loans are excluded from issuance as well.

"DM", or Developed Market Asia, include those deals with a Dealogic deal nationality from Australia, Japan, and New Zealand. "Ex DM Asia" will refer to all deals excluding those deals with a Dealogic deal nationality from Australia, Japan, and New Zealand.

G3 deals are defined a subset of deals in "All Asia" that are rank eligible, according to Dealogic's rank eligibility guidelines, with a tranche currency in US dollar (USD), European euro (EUR), or Japanese yen (JPY). There may exist deals within "All Asia" issuance that are denominated in a G3 currency but are not rank eligible and therefore not included in G3 tables but may be included in all other non-G3 exclusive tables.

"LCY", or local currency, are defined as a subset of deals in "All Asia" flagged by Dealogic local currency flag. G3 and LCY deals are not mutually exclusive and may overlap (e.g., in the case of Japanese JPY deals).

All issuance are denoted in USD equivalents based on exchange rates as of the issue date of the bond.

Outstanding

Outstanding figures are sourced from Bloomberg and contain all bonds from its corporate securities database, including private placements. Structured notes and debt secured by assets are excluded. All other criteria hew closely to the criteria for issuance.

All outstandings are denoted in USD equivalent based on exchange rates as of quarter-end.

Outstanding G3 deals are defined a subset of deals in "All Asia" that are rated with at least one rating by one of the four rating agencies: Fitch Ratings, Moody's, Standard & Poor's, or DBRS; and denominated in US dollar (USD), European euro (EUR), or Japanese yen (JPY). Deals that are not rated by one of the four rating agencies (those deals with a Bloomberg composite rating of "NA") are excluded. The "NA" exclusion is due to overlap between rank ineligible deals and those deals with no rating; a close analysis of the data reveals that the figures for data excluding "rank ineligible" deals and the figures for data excluding data rated N.A. in Bloomberg are similar.

2.1., 2.3, 2.5., 2.7., 2.9., 2.11., 2.13., 2.15., 2.17., 2.18.

Data are sourced from Dealogic.

Issuance by country is determined by Dealogic's deal nationality.

Issuance by tenor is determined by years of maturity at issuance.

Issuance by sector is defined by Dealogic's General Industry Group ("GIG") groupings and are not analogous to Bloomberg's Sector grouping.

2.2., 2.4., 2.6., 2.8., 2.10., 2.12.

Data are sourced from Bloomberg.

Outstanding by rating are by current composite rating assigned by Bloomberg. Composite ratings by Bloomberg are the average of ratings assigned by Moody's, Standard & Poor's, Fitch Ratings, and DBRS; a minimum of two ratings must be given to a bond before a composite rating is generated. "NR" denotes a bond with a single rating assigned by the four rating agencies, whereas "NA" denotes a bond with no rating from any of the four.

Outstanding by tenor are based on current tenor as quarter-end. "Other" includes those bonds with no listed maturity date and perpetuals.

3. LCY Asia ex Developed Market Asia (Japan, Australia and New Zealand)

3.1. - 3.4.

Issuance data are sourced from Dealogic according to the criteria outlined in Section 1. Outstanding data are sourced from Bloomberg according to the criteria outlined in Section 1.

4. All Asia

4.1. – 4.9.

Issuance data are sourced from Dealogic according to the criteria outlined in Section 1. Outstanding data are sourced from Bloomberg according to the criteria outlined in Section 1.

5. Domestic CNY

Issuance

Bond transactions for CNY are sourced from Dealogic and are defined as all issued debt denominated in renminbi (CNY) and in the domestic debt markets. CNY-denominated deals issued in the euro, foreign, or international markets are excluded. There are no restrictions on deal type and will include supranationals, medium-term notes, money market notes, securitisations, and commercial paper debt. Due to the lower restrictions in CNY issuance, CNY-denominated deals outside of Section 5 and 6 are a subset of the deals contained in Section 5 and 6.

Outstanding

Bond transactions for CNY are sourced from Bloomberg and are defined as debt denominated in CNY and issued in the domestic or domestic MTN markets. CNY-denominated deals issued in the euro, foreign, or international debt markets are excluded. Deals include corporate high grade bonds, high yield bonds, medium-term notes, money market and commercial paper debt. The combination of CNH and CNY debt exclude a small minority of dual-currency deals that are non-domestic, non-dim sum debt.

All outstandings are denoted in USD equivalent based on exchange rates as of quarter-end.

5.1. – 5.8.

Issuance data are sourced from Dealogic in accordance to the criteria specified in Section 5. Outstanding data are sourced from Bloomberg in accordance to the criteria specified in Section 5.

6. CNH

Issuance

Bond transactions for CNH are sourced from Dealogic and are defined as all debt denominated in renminbi (CNY) issued and in the euro, foreign, or international debt markets. CNY-denominated deals issued in the domestic market are excluded. There are no restrictions on deal type and will include supranationals, medium-term notes, money market notes, securitisations, and commercial paper debt. Due to the lower restrictions in CNH issuance, CNH-denominated deals outside of Section 5 and 6 are a subset of the deals contained in Section 5 and 6.

All issuance are denoted in USD equivalents based on exchange rates as of the issue date of the bond.

Outstanding

Bond transactions for CNH are sourced from Bloomberg and are defined as debt denominated in CNY and issued in the euro, foreign, or international debt markets. CNY-denominated deals issued in the domestic market are excluded. Deals include corporate high grade bonds, high yield bonds, medium-term notes, money market, securitisations, and commercial paper debt. The combination of CNH and CNY debt exclude a small minority of dual-currency deals that are non-domestic, non-dim sum debt.

All outstandings are denoted in USD equivalent based on exchange rates as of quarter-end.

6.1. – 6.8.

Issuance data are sourced from Dealogic in accordance to the criteria specified in Section 4. Outstanding data are sourced from Bloomberg in accordance to the criteria specified in Section 6.

7. Spreads, Credit Quality & Total Return

7.1. – 7.2. Global Corporate Spreads

High grade and high yield US and European corporate spreads are sourced from Bank of America-Merrill Lynch (BAML) indices. Spreads are over government debt.

US high grade spreads are sourced from BAML's US Corporate Index (C0A0) and tracks the performance of US dollar denominated investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at last 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of USD 250 million. Original issue zero coupon bonds, 144a securities (with and without registration rights), and pay-in-kind securities (including toggle notes) are included in the index. Fixed-to-floating rate securities are included provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Contingent capital securities, including those with automatic principal write-down provisions, are included in the index provided they do not have an automatic common equity conversion, unless the conversion is activated by a regulatory authority in which case they are included. Other hybrid capital securities, such as those that potentially convert into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms, are also included in the index. Securities issued or marketed primarily to retail investors, equity-linked securities, securities in legal default, hybrid securitized corporates, Eurodollar bonds (USD securities not issued in the US domestic market), taxable and tax-exempt US municipal securities and DRD eligible securities are excluded from the index.

European high grade spreads are sourced from BAML's Euro Corporate Index (ER00) and tracks the performance of EUR denominated investment grade corporate debt publicly issued in the Eurobond or Euro member domestic markets. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at last 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of EUR 250 million. Original issue zero coupon bonds and pay-in-kind securities, including toggle notes, are included in the index. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Contingent capital securities are included in the index provided they do not have an automatic common equity conversion feature; these securities with triggers activated by a regulatory authority, including conversions into equity, qualify for inclusion. Also qualifying for inclusion are contingent capital securities with principal write-down triggers. Hybrid capital securities qualify for the index, including those potentially converting into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms. Euro legacy currency, equity-linked and securities in legal default are excluded from the Index. Securities issued or marketed primarily to retail investments do not qualify for inclusion in the index.

US high yield spreads are sourced from BAML's US High Yield Index (H0A0) and tracks the performance of US dollar denominated below investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch), at last 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of $100 million. In addition, qualifying securities must have risk exposure to countries that are members of the FX-G10, Western Europe or territories of the US and Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden. Original issue zero coupon bonds, 144a securities (with and without registration rights), and pay-in-kind securities (including toggle notes) are included in the index. Callable perpetual securities are included provided they are at least one year from the first call date. Fixed-to-floating rate securities are included provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Contingent capital securities, including those with automatic principal write-down provisions, are included in the index provided they do not have an automatic common equity conversion, unless the conversion is activated by a regulatory authority in which case they are included. Other hybrid capital securities, such as those that potentially convert into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms, are also included in the index. Securities issued or marketed primarily to retail investors, equity-linked securities, securities in legal default, hybrid securitized corporates, Eurodollar bonds (USD securities not issued in the US domestic market), taxable and tax-exempt US municipal securities and DRD eligible securities are excluded from the index.

European high yield spreads are sourced from BAML's Euro High Yield Index (HE00) and tracks the performance of EUR denominated below investment grade corporate debt publicly issued in the euro domestic or eurobond markets. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance. In addition, qualifying securities must have at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of EUR 100 million. Original issue zero coupon bonds, "Global" securities (debt issued simultaneously in the Eurobond and euro domestic markets), 144a securities and pay-in-kind securities, including toggle notes, qualify for inclusion in the index. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Contingent capital securities are included in the index provided they do not have an automatic common equity conversion feature; these securities with triggers activated by a regulatory authority, including conversions into equity, qualify for inclusion. Also qualifying for inclusion are contingent capital securities with principal write-down triggers. Hybrid capital securities qualify for the index, including those potentially converting into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms. Euro legacy currency, equity-linked and securities in legal default are excluded from the Index. Securities issued or marketed primarily to retail investments do not qualify for inclusion in the index.

Asian high grade and investment grade spreads are sourced from J.P. Morgan's Asia Credit Index (JACI) and tracks the performance of USD-denominated Asian debt in the Asian ex-Japan region. Qualifying countries are those Asian region excluding Japan, including: China, Hong Kong, Indonesia, India, South Korea, Sri Lanka, Mongolia, Macao, Malaysia, the Philippines, Pakistan, Singapore, Thailand, Taiwan and Vietnam. Minimum deal sizes are $150 million and at least 12 months to final maturity at time of issuance. Fixed and floating rate instruments, and debt issued by sovereign, quasi-sovereign and corporate entities qualify for inclusion. Convertible bonds do not qualify for inclusion in the index.

7.3. China Interbank AAA Yield Curve

The curve is comprised of yuan-denominated fixed-rate corporate bonds that are traded on the China Interbank exchange. The bonds are rated AAA by local rating agencies. The values for the points on the curve are contributed by China Government Securities Depository Trust & Clearing Co Ltd (CDC).

7.4. – 7.6. China CNH Yield Curves

The securities underlying this curve are a subset of CNH data and sourced from Bloomberg; please see section 6 for more details regarding criteria. Ratings are determined by Bloomberg composite rating. Curves are fitted using Nelson-Siegel regression on mid-yield to maturity of underlying bonds.

7.7. – 7.8. Total Return (Quarter-End and YTD)

Total return data are sourced from various global bond and equity, including, but not limited to: the Bank of America-Merrill Lynch, Standard & Poor's, J.P. Morgan, and MSCI,

7.9. – 7.11. Asian Issuer Rating Actions

European issuer upgrades and downgrades are sourced from S&P. and are a combination of both emerging market, Japan, Australia, and New Zealand rating actions. Multiple upgrades or downgrades of a single issuer are counted separately. Rating actions are inclusive of both corporate (both credit, policy, or merger-related) as well as sovereign ratings.

Due to publication timing, these data set may run on a quarter lag.

7.12. Asian Issuer Defaults

European issuer upgrades and downgrades are sourced from S&P and are a combination of both emerging market, Japan, Australia, and New Zealand defaults reported. Defaults are inclusive of both corporate (both credit, policy, or merger-related) as well as sovereign defaults.

9. Disclaimer

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