



**ASIA CREDIT REPORT**  
Fourth Quarter 2016

PREPARED IN PARTNERSHIP WITH



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

### Market Overview and Highlights of Asia (ex-Japan, Australia and New Zealand) debt issuance in Fourth Quarter 2016

Total issuance in 4Q'16 came in at USD 51.5 billion (bn) as of December 31, down 10.2% quarter-over-quarter (qoq) from 3Q'16 (USD 57.4bn) but up 72.2% year-over-year (yoy), inclusive of high grade (HG), high yield (HY), and unrated deals. For the full year 2016, G3 excluding developed markets Asia issuance volume totaled USD 203.4bn, a new high (from 2014's \$201.3bn), and up 20.3% from 2015 full year volumes (USD 169.2bn). EM sovereign issuance continues to dominate G3 bond market headlines - the USD 17.5bn multi-tranche Saudi Arabia debut bond issue in the international markets dethroned the benchmark USD 16.5bn Argentina bond issue, issued in April this year, as the largest EM bond deal ever.

Within Asia ex-Japan, Australia and New Zealand, Chinese issuance remains dominant as usual. In terms of dominant China-focused themes for all of 2016, a mix of green bonds, AT1 and bank capital issuance in general and LGFV (Local Government Financial Vehicle) issuance from a range of less well-known/smaller cities and jurisdictions were all clearly in evidence during the year. Chinese HY issuance centered on the real estate sector was also in evidence during the second half of 2016. On the other hand, Chinese issuance in the EUR currency and jumbo deals from the highly rated quasi-sovereign credits (with the notable exception of Sinopec) were less in evidence in 2016, relative to 2015. Other key highlights of the quarter:

- 1) HG issuance (of USD 37.3bn) easily outpaced HY issuance of USD 9.9bn. Although, HY issuance fell in the fourth quarter in absolute dollar amounts, volumes remains historically elevated, representing a fifth by dollar amount of total debt issuance in the fourth quarter (the same as third quarter). The fast-developing China green bond sector (which dominated global issuance in 2016), is one sector worth watching, as innovations such as "green covered bonds" make their debut in China.
- 2) On a quarterly total return basis, Asian HY debt outperformed Asian HG paper, with HG paper reporting a loss of 3.59% in 4Q'16, compared to a 0.10% gain in HY paper, as a sharp sell-off in US treasuries undermined HG performance. Sovereign and corporate non-investment grade (HY) paper dominated total returns for 2016, returning 11.65% and 11.36% respectively. In terms of individual sectors, the Indonesia sovereign was a standout gainer, with a total return of 12.85%. Among the smaller sovereigns, Pakistan (+ 13.13%) and Sri Lanka (+ 11.40%) contributed to the strong sovereign HY performance. In terms of broader index performance overall, JP Morgan Asian Credit Index (JACI) returned + 5.81% - total returns would have been higher but for the negative impact of US treasuries in the final quarter. Looking ahead, a pause or brief correction in the upward trend in UST yields could underpin Asian credit in 1H'17, with weakness later in the year.
- 3) Issuance in 2017 started off strong, with bonds from a diverse range of countries and sectors (sovereign, quasi-sovereign, covered bond and perpetual issuance, among others) making it very difficult to discern any clear trends over the first three weeks of the year. However, it is safe to say that considerable USD issuance out of China can be expected in 2017, in a continuation of trends evident in 2016. The fall in Chinese FX reserves, refinancing, outbound M&A, green bonds, LGFV paper and bank capital are all likely to be key drivers of China deals.

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

For the fourth quarter 2016, total G3 issuance stood at USD 51.5bn, down 10.2% qoq and up 72.2% yoy. China remained the largest issuing country in the fourth quarter, accounting for a total of USD 31.9bn, or

three-fifths (61.9%) of G3 issuance in 4Q'16; USD 22.7bn and USD 6.3bn in HG and HY deals, respectively, were also priced from China. South Korea regained its place as second largest issuer in the fourth quarter, with USD 6.2bn issued in 4Q'16, followed by Indonesia with USD 4.4bn.

For the full year 2016, issuance totaled USD 203.4bn, comprised of USD 152.5bn of HG issuance, 26.9bn of HY issuance, and USD 24.0bn of unrated issuance, well exceeding 2015 volumes for a new high in G3 volume.

Finance remained the largest sector of G3 issuance in the fourth quarter (USD 21.5bn), followed by real estate/property (USD 7.3bn) and sovereigns (USD 4.5bn).

In terms of ratings, within the HG space, A- transactions accounted for the largest share of deals priced during the quarter, with USD 7.9bn in total issuance, followed by BBB- rated transactions totaling USD 7.4bn. Within HY issuance, the BB- category dominated with USD 2.7bn of issuance, followed by BB rated transactions of USD 2.2bn.

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 4Q'16, with a total of USD 38.8bn in short tenor issues being priced during the quarter. Of these, USD 27.6bn were HG deals, USD 7.0bn were HY deals and the balance unrated.

Overall G3 debt outstanding in the region stood at USD 881.5bn, declining 5.7% qoq and growing 13.0% yoy. High grade debt accounted for the bulk of total outstanding debt at USD 550.0bn (a 10.1% decline qoq), followed by HY debt at USD 180.6bn (an increase of 1.5% qoq) and unrated debt at USD 150.87bn (a growth of 3.6% qoq). China (with USD 355.7bn), South Korea (with USD 119.5bn) and Hong Kong (with USD 112.0bn) remain the three countries with the largest shares of G3 debt outstanding. In terms of ratings, within the HG space, deals rated A+ (USD 94.6bn) account for the largest share of debt outstanding, while BB+ transactions (USD 79.3bn) continued to remain the dominant rating outstanding in the HY space. By sector, financials with a total of USD 250.6bn accounted for a little more than a quarter of outstanding G3 paper, followed by sovereigns (USD 233.1bn) and energy (USD 98.3bn). Finally, deals with remaining tenors of 5 years or less (USD 519.3bn) accounted for the bulk of total Asia (ex-Japan, Australia and NZ) debt outstanding.

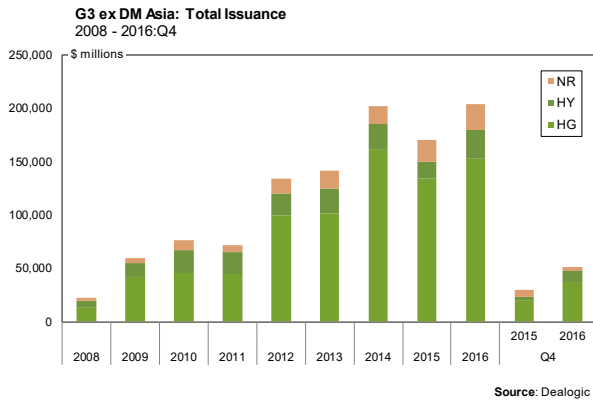
Turning to the LCY debt markets, USD 193.3bn in total LCY-denominated debt was issued in Asia (ex-Japan, Australia & NZ) in 4Q'16, a decline of 23.5% qoq (USD 252.8bn) and a decline of 14.5% yoy (USD 226.2bn). For the full year 2016, issuance was \$933.3bn, well outpacing 2015 issuance.

Total LCY debt outstanding at the end of 4Q'16 in Asia (ex-Japan, Australia and NZ) stood at USD 14.7tn, rising by 3.5% qoq, with HG and HY debt outstanding declining 39.9% and 5.7% qoq, respectively, while unrated debt rose by 9.0%. China also continued to account for the bulk of total outstanding LCY debt at USD 9.62tn, followed by India (USD 1.83tn) and South Korea (USD 1.39tn).

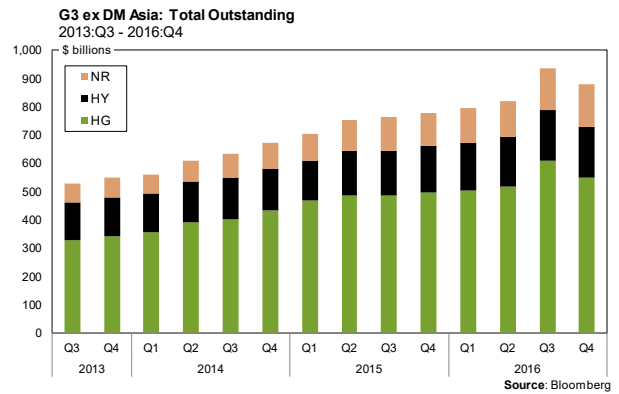
### **State of the Asian leveraged loan market**

Asian leveraged loan debt, excluding developed market Asia, reached USD 53.0bn in 4Q'16, a 29.3% decline qoq (USD 74.9bn) and a 5.4% decline yoy (USD 56.0bn). For the full year 2016, issuance was USD 200.0bn, a decline of 6.1% from 2015 (USD 213.0bn). Leading sectors in 4Q'16 issuance were computers & electronics (USD 10.1bn), construction/building (USD 6.9bn), and transportation (USD 6.4bn). Leveraged loan issuance was primarily used for capital expenditures (USD 19.2bn) and acquisitions (USD 7.8bn). Sponsored loan deals fell slightly, representing 3.9% by dollar amount in the fourth quarter.

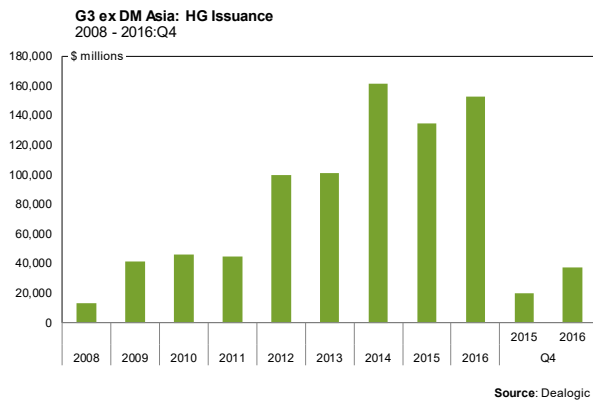
### 2.1. G3 ex DM Asia: Total Issuance



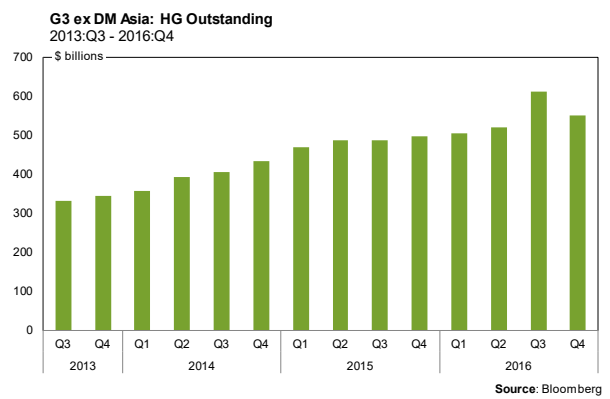
### 2.2. G3 ex DM Asia: Total Outstanding



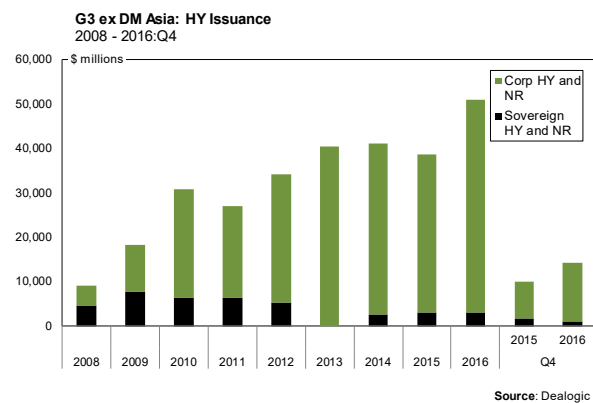
### 2.3. G3 ex DM Asia: HG Issuance



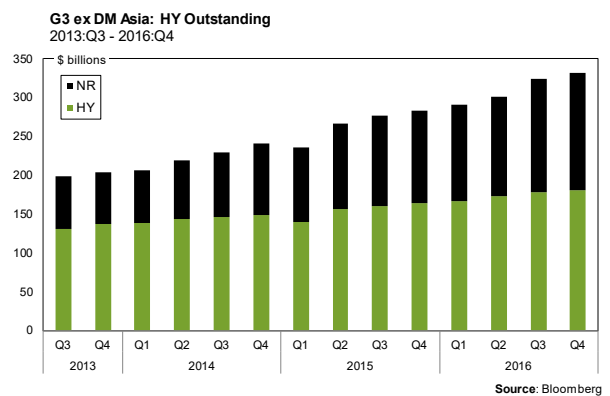
### 2.4. G3 ex DM Asia: HG Outstanding



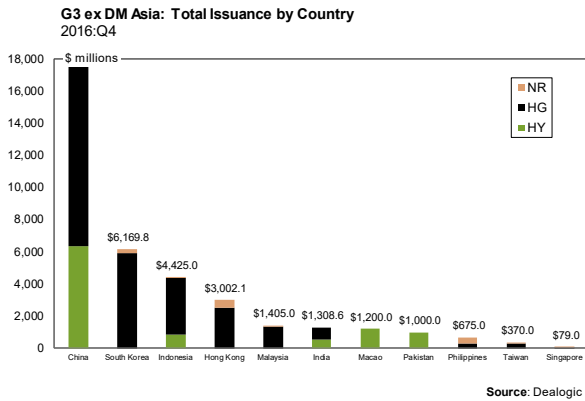
### 2.5. G3 ex DM Asia: HY Issuance



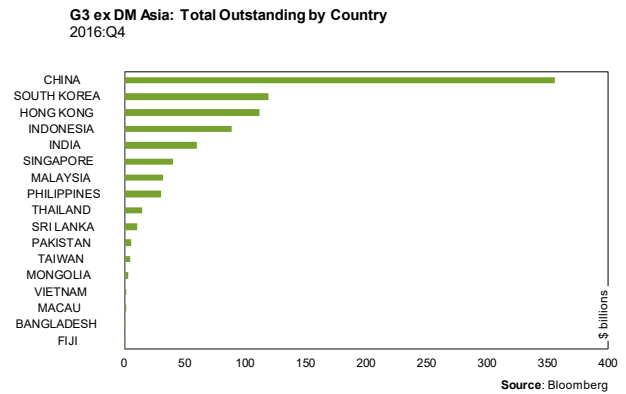
### 2.6. G3 ex DM Asia: HY Outstanding



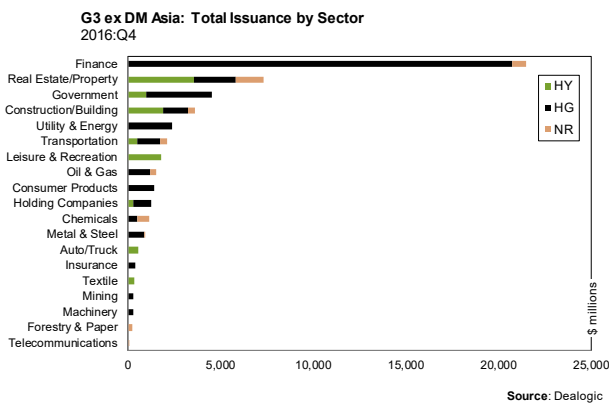
### 2.7. G3 ex DM Asia: Total Issuance by Country



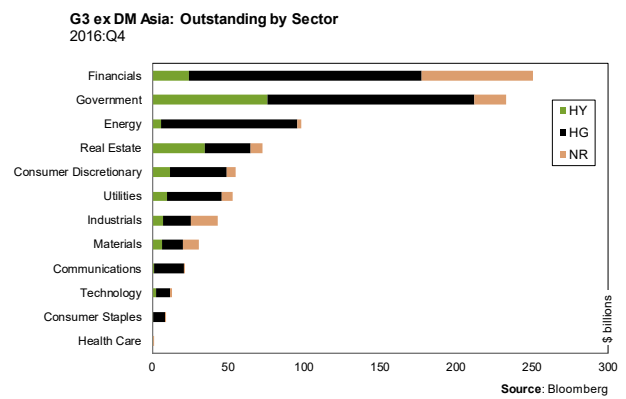
### 2.8. G3 ex DM Asia: Total Outstanding by Country



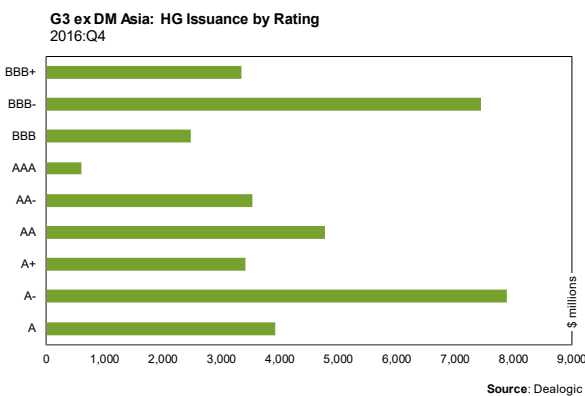
### 2.9. G3 ex DM Asia: Total Issuance by Sector



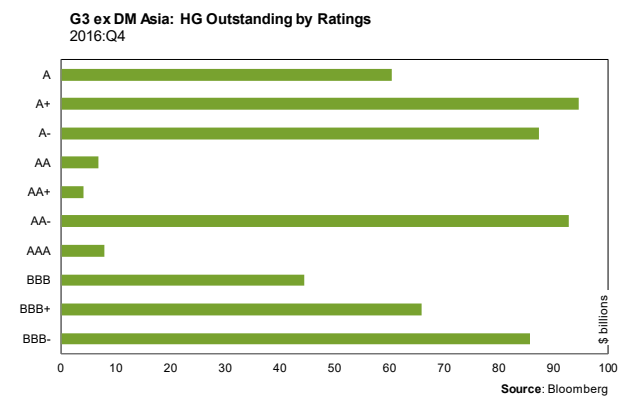
### 2.10. G3 ex DM Asia: Total Outstanding by Sector



### 2.11. G3 ex DM Asia: HG Issuance by Rating

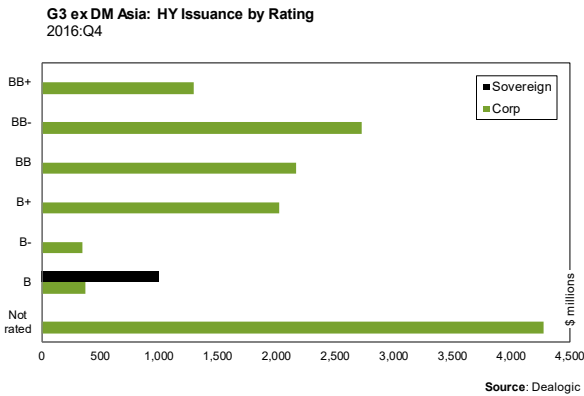


### 2.12. G3 ex DM Asia: HG Outstanding by Rating

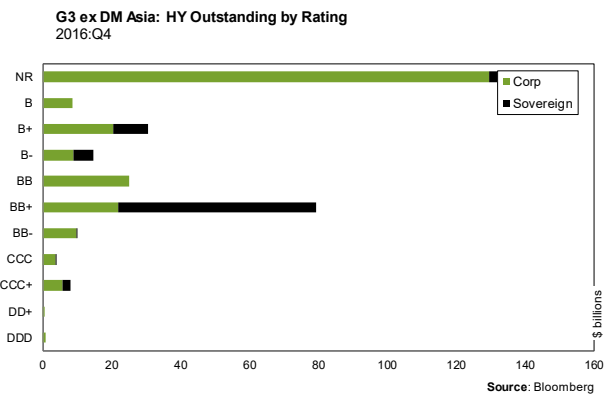




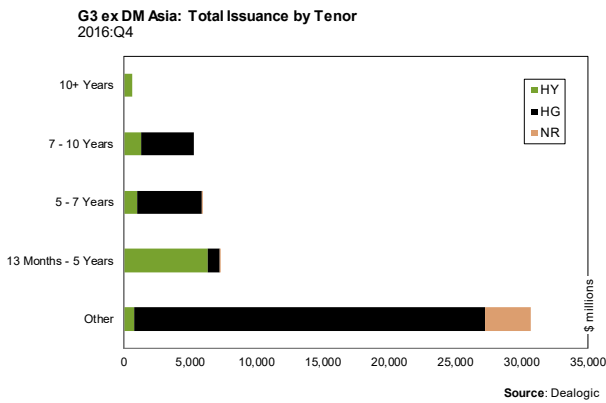
### 2.13. G3 ex DM Asia: HY Issuance by Rating



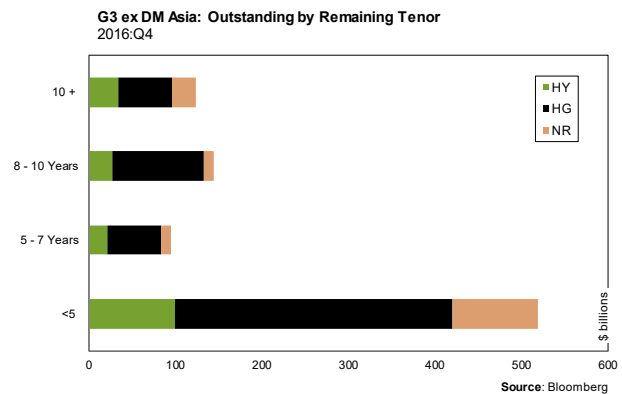
### 2.14. G3 ex DM Asia: HY Outstanding by Rating



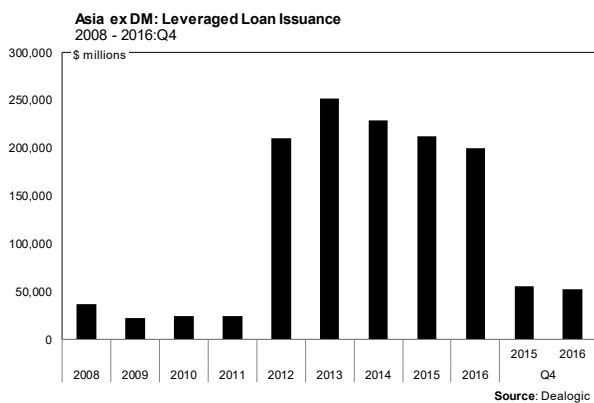
### 2.15. G3 ex DM Asia: Total Issuance by Tenor



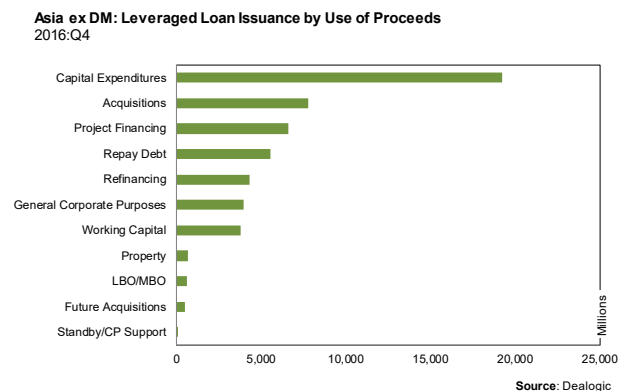
### 2.16. G3 ex DM Asia: Outstanding by Remaining Tenor



### 2.17. Asia ex DM: Total Leveraged Loan Issuance

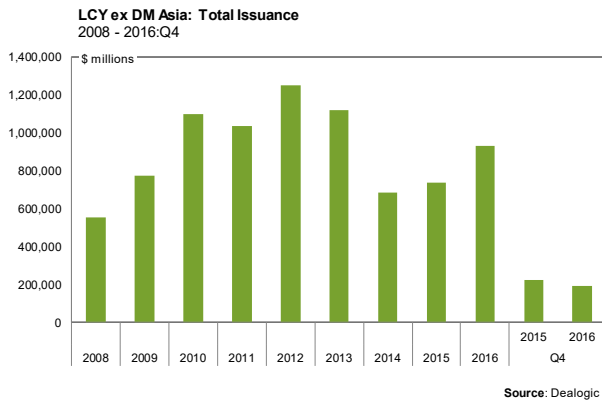


### 2.18. Asia ex DM: Total Leveraged Loan Issuance by Use of Proceeds

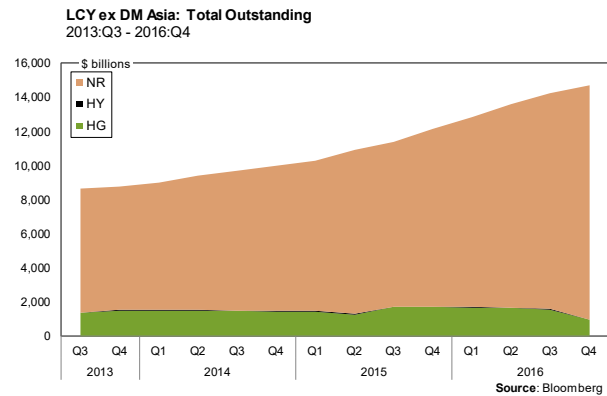


## 3. LCY Asia ex Developed Market Asia (Japan, Australia and New Zealand)

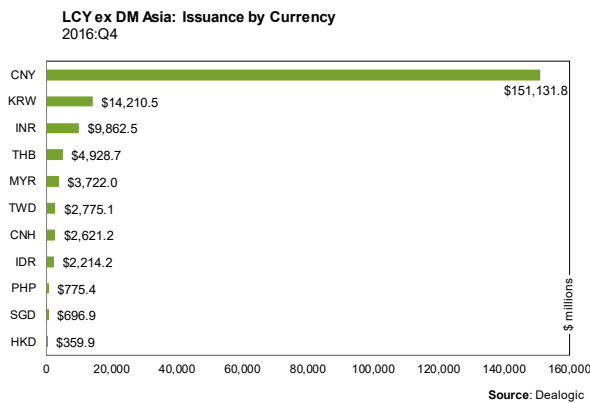
### 3.1. LCY ex DM Asia: Total Issuance



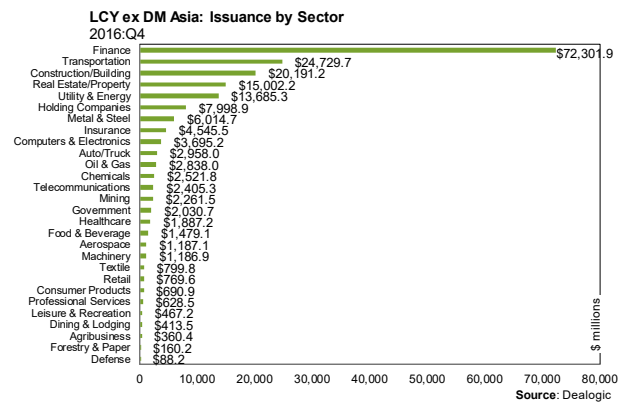
### 3.2. LCY ex DM Asia: Total Outstanding



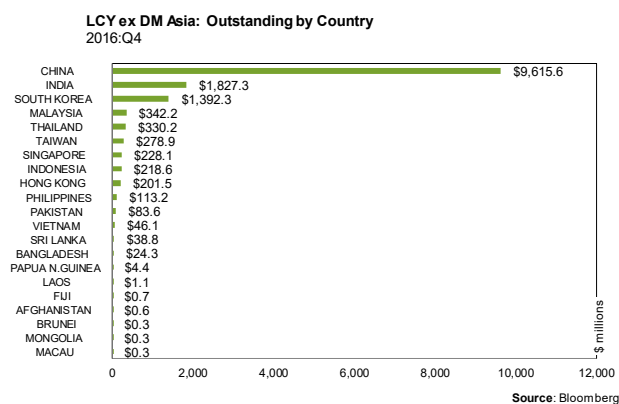
### 3.3. LCY ex DM Asia: Issuance by Currency



### 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) stood at USD 123.8bn in the fourth quarter of 2016, a decline of 29.6% qoq but an increase of 30.9% yoy. In 4Q'16, total HG G3 issuance in Asia was USD 89.7bn, a decline of 29.8% qoq but a growth of 54.1% yoy; HY issuance was USD 11.0bn, a decline of 32.0% qoq but triple the volume yoy; and unrated issuance was USD 23.1bn, a decline of 27.7% qoq and 29.2% yoy. For the full year 2016, G3 issuance totaled USD 549.1bn, exceeding 2015 volumes by 24.5% and set a new high in G3 issuance volume.

Outstanding G3 debt, including developed market Asia, stood at USD 11.50tn at the end of the fourth quarter 2016, a decline of 1.4% qoq, with growth in NR debt (USD 9.3tn, 473.9% growth) but declines in HG debt (USD 1.9bn, an 80.2% decline) and HY debt (USD 222.5bn, a 0.1% decline).<sup>1</sup>

Finally, turning to LCY debt issuance including Japan, Australia, and New Zealand, total issuance stood at USD 691.1 billion, an increase of 9.8% qoq and an increase of 24.8% yoy, comprised of USD 526.4bn in HG issuance, USD 4.7 billion in HY issuance and USD 160.0bn in unrated issuance. For the full year 2016, LCY debt issuance totaled \$2.48tn, an increase of 25.8% from the prior year, comprised of USD 1.53tn HG issuance, USD 22.1bn of HY issuance, and USD 920.3bn of unrated issuance.

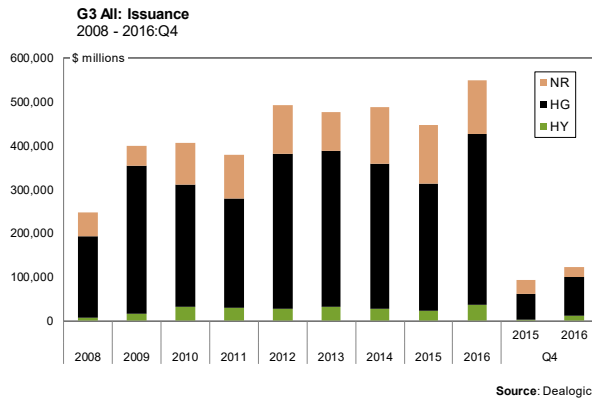
Sustained USD strength has taken its toll on EM LCY markets in general and Asia in particular. According to EPFR Global, while EM funds recorded total outflows of just USD 2.6bn for all of 2016, the figures for Asia ex-Japan were much worse, as a total of USD 24.2bn left the region (although, there were exceptions – Indonesian sovereign debt saw in excess of USD 7.5bn of inflows in 2016, for instance). This does show that there has been a fair amount of rebalancing away from Asia and into other regions including EMEA and Latam. Several factors have combined to undermine sentiment towards Asia. In no particular order of importance, these include:

- Political uncertainty in South Korea;
- the demonetization of high value notes in India (with the RBI's subsequent "surprise" focus on inflation contributing to further weakness in Indian fixed income assets);
- continuing weakness of EM currencies against the USD in general, with CNY weakness being especially pronounced over 2H'16; and
- a general perception overall that increased protectionism on the part of the Trump administration will have a disproportionately larger negative impact on the more "trade-intensive" Asian region.

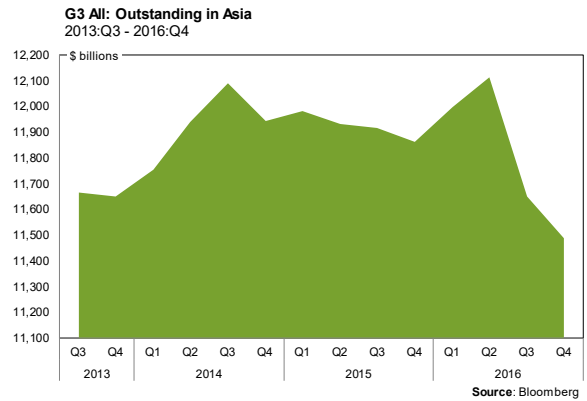
Even accounting for all these negatives though, we do think that sentiment towards certain parts of Asia could reverse in the short to medium term – specifically, countries such as India and Indonesia which enjoy high "real" interest rates domestically and moreover, are more domestically driven – with substantial potential for economic reform to deliver upside surprises. In addition, there has been a noticeable pause in the USD's uptrend in recent weeks, which could also serve to underpin domestic Asian fixed income assets in 1H'17.

<sup>1</sup> Due to the calculation methodology behind Bloomberg's composite rating and the change in Q4 to Fitch's Japanese sovereign rating from A to Au, almost all Japanese securities have moved from the A rated to NR rated category. This affects outstanding by rating in every chart that includes Japan.

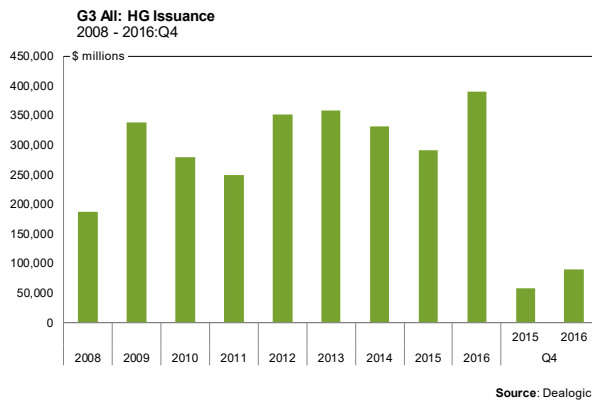
#### 4.1. G3 All: Total Issuance



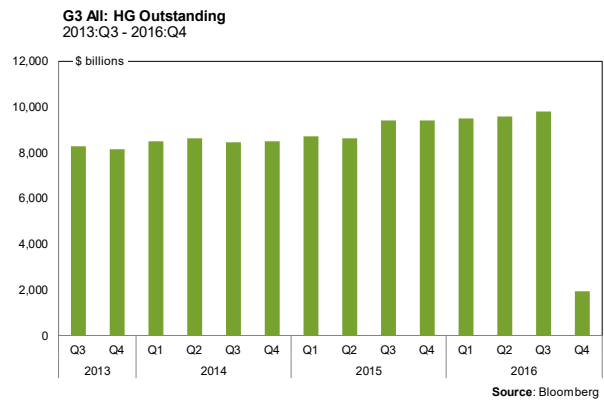
#### 4.2. G3 All: Total Outstanding



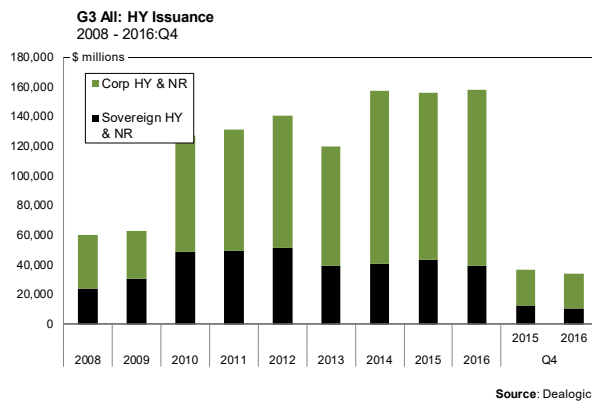
#### 4.3. G3 All: HG Issuance



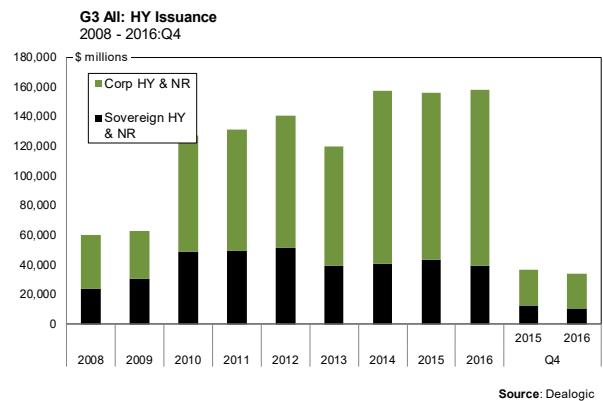
#### 4.4. G3 All: HG Outstanding



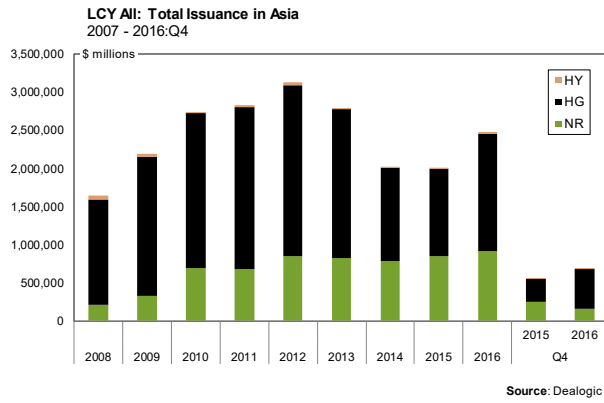
#### 4.5. G3 All: HY Issuance



#### 4.6. G3 All: HY Outstanding



#### 4.7. LCY All: Total Issuance



## 5. China – Domestic

### Total Issuance & Outstanding – Domestic CNY issuance

Total domestic CNY issuance stood at USD 151.3bn in the fourth quarter of 2016, down 25.3% from second quarter volume (USD 202.6bn) and a decline of 19.4% yoy (USD 187.6bn). By tenor, 54% of fourth quarter issuance (USD 81.4bn) would mature in five years or less, followed by the 7 – 10 year bucket (USD 23.8bn, or 24% of issuance). By sector, finance led issuance totals (USD 49.8bn), followed by transportation (USD 21.6bn).

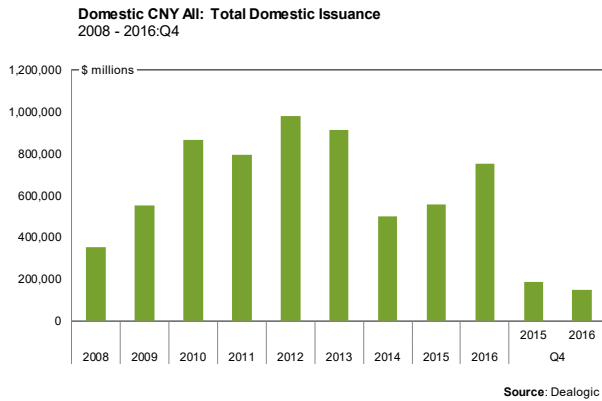
For the full year 2016, domestic issuance outpaced 2015 volumes with USD 753.3bn issued compared to USD 558.4bn in 2015. Although a 34.9% increase from 2015 volumes, 2016 volumes remain well below the domestic CNY issuance high of USD 979.7bn in 2012 as Chinese companies turned increasingly toward the equity market for funding in the fourth quarter and beginning of 2017.

Outstanding domestic CNY debt stood at USD 9.5tn at the end of fourth quarter 2016, with sovereigns leading totals (USD 5.26tn), followed by financials (USD 2.25tn) and industrials (USD 786.2bn).

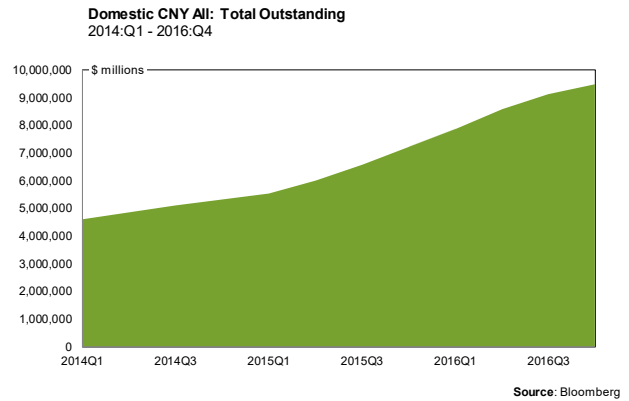
Looking ahead, a combination of factors is likely to keep Chinese domestic debt issuance muted. As Chinese authorities tighten liquidity in an effort to limit CNY weakness and at the same time seek to restructure the heavily indebted corporate and SOE sectors – which in turn are plagued by heavy overcapacity and high leverage ratios across the board - there could be limits on debt-fueled growth. On the other hand, the likelihood on strong pressure on China from the US on the trade front, would likely mean that the Chinese authorities may have no alternative but to allow some room for economic growth, funded at least to a limited extent by leverage. How these conflicting pressures resolve themselves remains to be seen.

Another factor that will limit growth in CNY debt issuance is the explicit directive on the part of Chinese authorities to local enterprises to raise funding offshore, to replenish FX reserves which have fallen to USD 3.0tn. In addition, maturing USD debt in 2017 which need to be refinanced, coupled with the fact that Chinese banks have to raise additional capital to meet capital adequacy ratios, suggests that USD-denominated Chinese issuance is likely to be more dominant at the margin, relative to CNY domestic issuance, compared to past years.

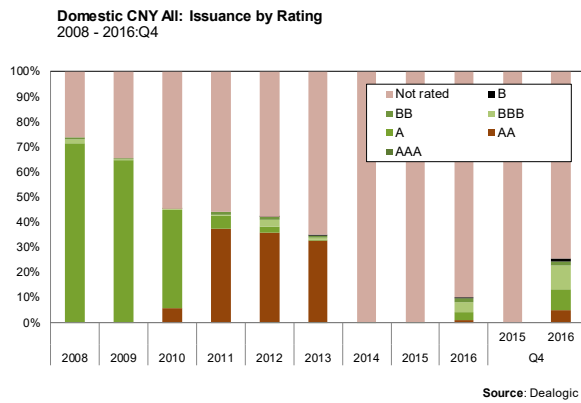
### 5.1. Domestic CNY All: Total Issuance



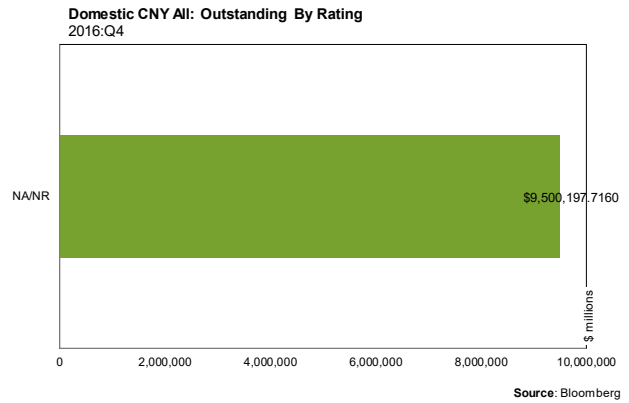
### 5.2. Domestic CNY All: Total Outstanding



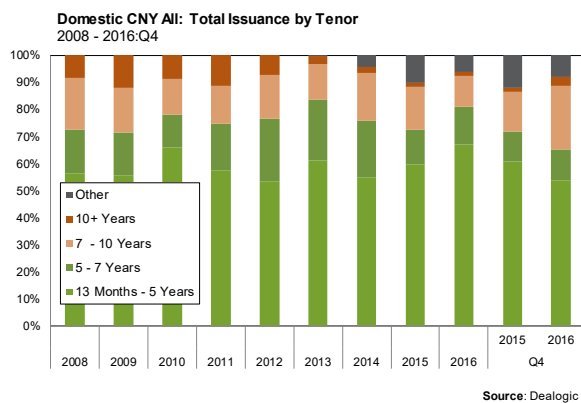
### 5.3. Domestic CNY All: Issuance by Rating



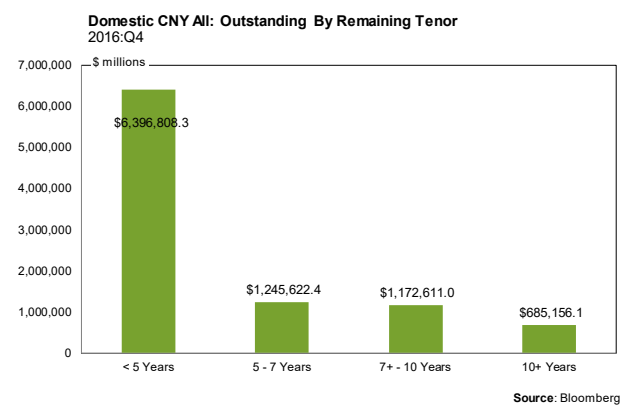
### 5.4. Domestic CNY All: Outstanding by Rating



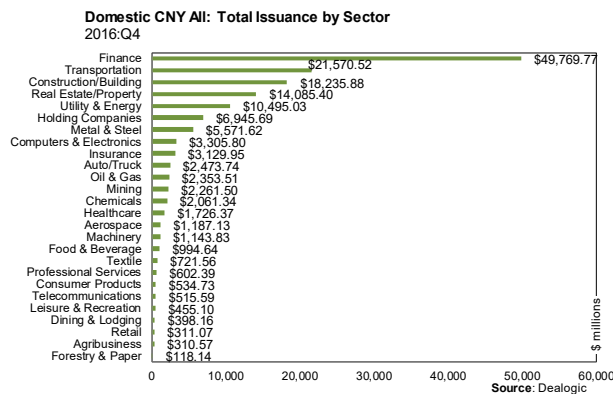
### 5.5. Domestic CNY All: Issuance by Tenor



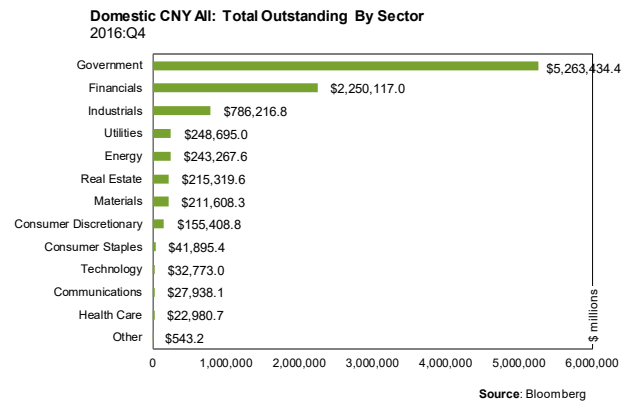
### 5.6. Domestic CNY All: Outstanding by Remaining Tenor



### 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 issuance picked up on a qoq basis in the fourth quarter, reflecting largely seasonal variation. For the fourth quarter of 2016, an equivalent of USD 6.4bn in CNH bonds were issued, an increase of 18.8% qoq but a decline of 24.9% yoy. In terms of tenor, nearly all of fourth quarter issuance was accounted for by transactions with tenors of 5-years or less, with nearly half from short-term paper (USD 2.9bn). HG deals rated A+ totaling USD 1.4bn had the highest share among rated deals (21.1%). In terms of sector, finance transactions totaling USD 3.0bn accounted for the largest volume of deals by sector (46.5%), followed by sovereigns, totaling USD 2.0bn (representing 31.5% of issuance). For the full year 2015, offshore CNH reached USD 21.2bn, down significantly from full year 2015 volumes of USD 29.4bn of volume as onshore issuance took precedence.

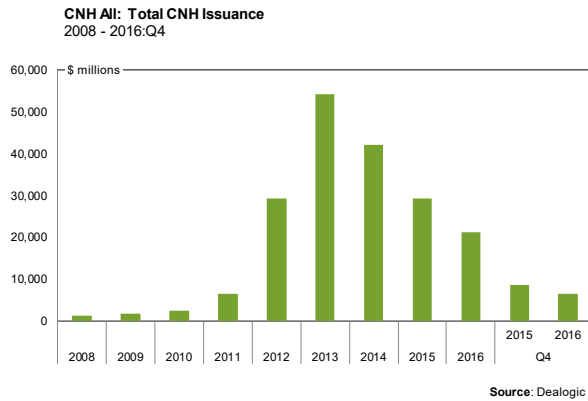
CNH Deposit Base by Location	Amt (USD bn)	As of
Hong Kong	78.7	Dec-16
Singapore	17.3	Sep-16
Taiwan	44.5	Nov-16
Korea, Republic of	1.2	Nov-16
Luxembourg	9.8	Aug-15
United Kingdom	10.6	Sep-16
France	3.0	Dec-15

Sources: HKMA (Hong Kong), MAS (Singapore), Central Bank of Republic of China (Taiwan), Yonhap News (Korea), Luxembourg for Finance (Luxembourg), Bank of England (UK), PWC (France); Exchange Rate: CNH 6.945 = USD 1.0, USD 1.23 = GBP 1.0

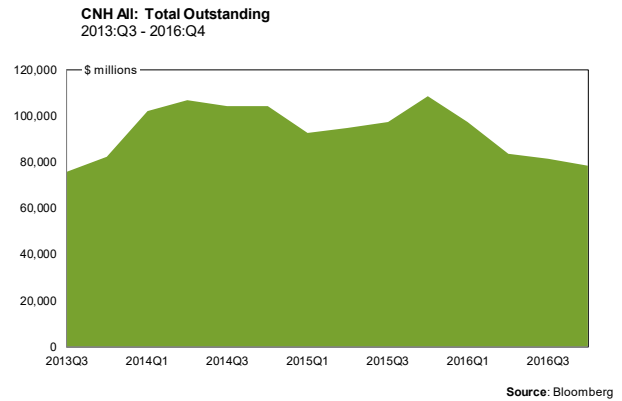
The total of dim sum bonds outstanding stands at USD 78.4bn, a decline of 3.8% qoq. With Chinese authorities moving to curb capital outflows, exceptional volatility in offshore CNH interest rates in an environment of continuously declining liquidity and continuing renminbi weakness, effectively means that the offshore CNH market is unlikely to find favor with investors any time soon. Offshore CNH deposits continue to fall sharply across all offshore centers – specifically, December 2016 data for Hong Kong revealed that offshore CNH deposits are barely 55% of their peak levels seen in December 2014 – as investors accelerated their pace of withdrawals in late 2016. Moreover, with the Chinese authorities providing wider access to the domestic CNY bond market to international investors, the offshore dim sum bond market is likely to be further negatively impacted in 2017.



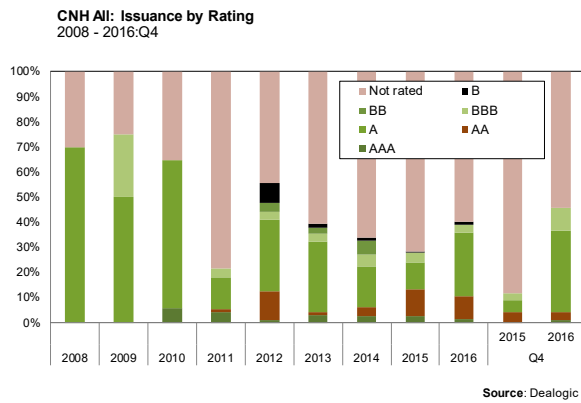
### 6.1. CNH All: Total CNH Issuance



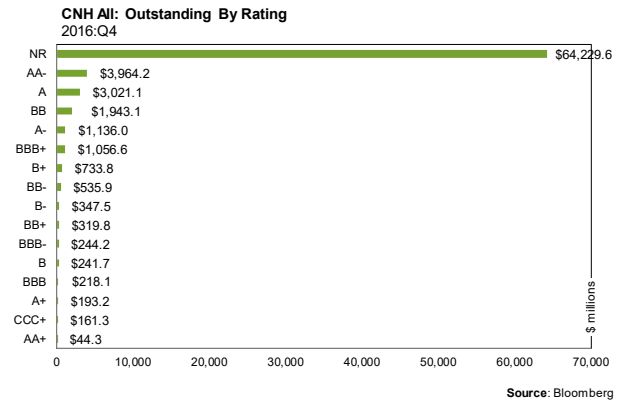
### 6.2. CNH All: Total Outstanding



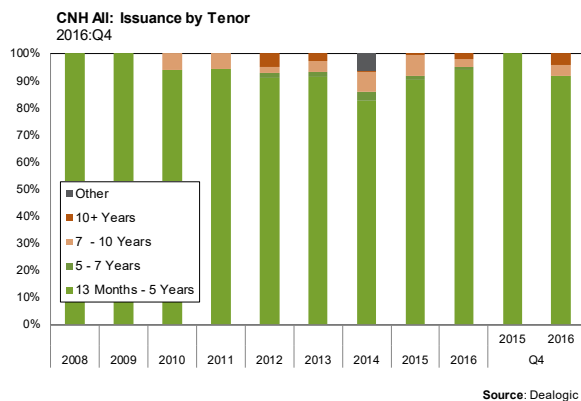
### 6.3. CNH All: Issuance by Rating



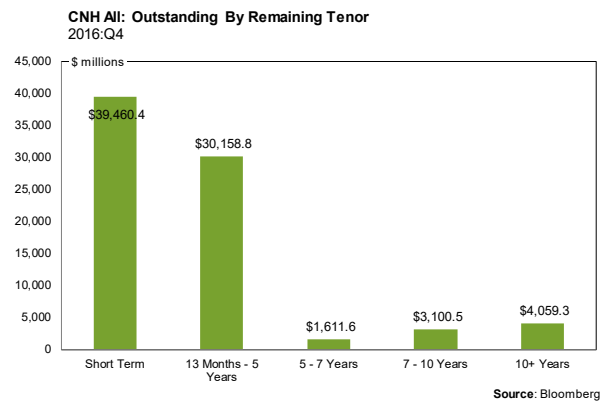
### 6.4. CNH All: Outstanding by Rating



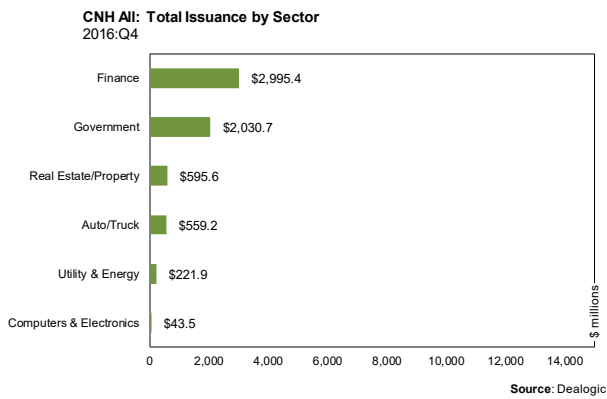
### 6.5. CNH All: Issuance by Tenor



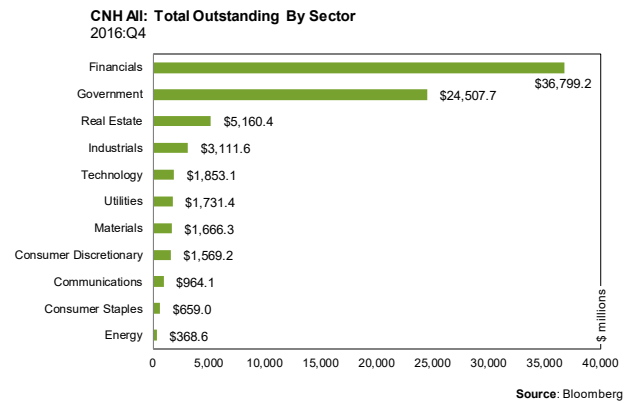
### 6.6. CNH All: Outstanding by Remaining Tenor



### 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)

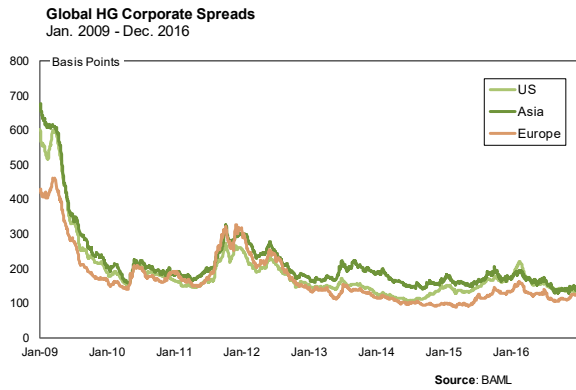
Asian HG bond spreads widened in the fourth quarter, trading several basis points wider than in the third quarter. At the end of 4Q'16, Asian HG bonds on a composite basis were quoted at an average spread of 150 basis points (bps) from 138 bps end-September while US and European HG bond issues were quoted at average spreads of 130 bps (from 143 bps) and 124 bps (from 115 bps), respectively. Asian HY corporates tightened slightly, however, ending 4Q'16 at 474 bps (from 487 bps), while US and European bonds were much tighter at 422 bps (from 497 bps) and 378 bps (from 416 bps), respectively.

In terms of total return in the fourth quarter, developed market equities and emerging market Europe were the outperformers in the fourth quarter, followed by global HY credit, while emerging market Asian equities and Asian IG underperformed. Asian HG lost 3.59% in the fourth quarter, while HY indices gained 0.10%.

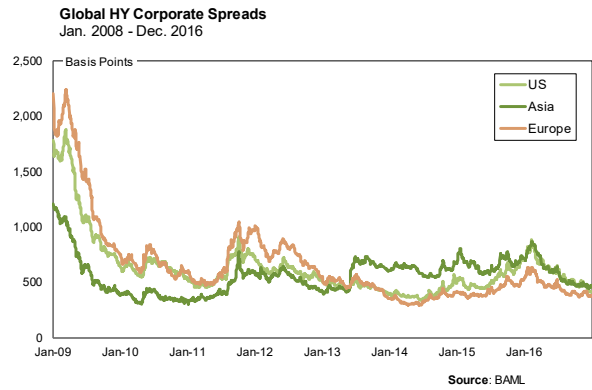
Some of the themes we highlighted at the end of the third quarter, continue to be in vogue in early 2017:

- a) The USD's uptrend seems to have come to a halt, at least in the short to intermediate term. Simultaneously, US Treasury market weakness in anticipation of further rate hikes (as President Trump's stimulus plans take effect) seems to signal a period of weakness in USD-denominated fixed income assets (even more so for those investors whose home currency is not the USD).
- b) Under the circumstances, Asian LCY assets will tend to outperform, in our view, at least in 1Q'16 and possibly for a bit longer. As alluded to earlier, select economies with high real interest rates and a positive "domestic consumer-driven growth" story (countries such as India and Indonesia) will tend to do a bit better than those economies that are much more open and facing macro rebalancing issues (such as China).
- c) Other factors that are likely to underpin EM assets (and Asia ex-Japan in particular) is that the regional outlook is much improved relative to 2H'16 and as a result, the strong outflows from Asia of the past year will most likely reverse in 2017. When the pendulum swings too far in one direction, there is a natural tendency for the trend to change, more so when the fundamentals are supportive of the trend change; as a consequence, Asian assets and domestic Asian fixed income in particular, will likely benefit.
- d) Finally, on a Relative Value basis, Asian HY paper looks attractive vis-à-vis the rest of the fixed income universe, particularly in the HY corporate space. The overall recent trend of HY outperformance vis-à-vis HG is set to continue and select Asian HY assets continue to offer value.

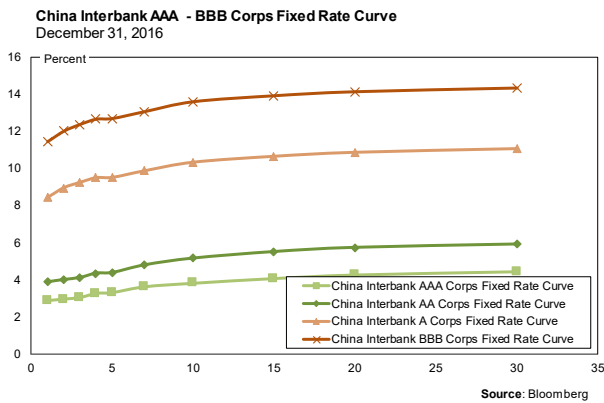
### 7.1. Global HG Corporate Spreads



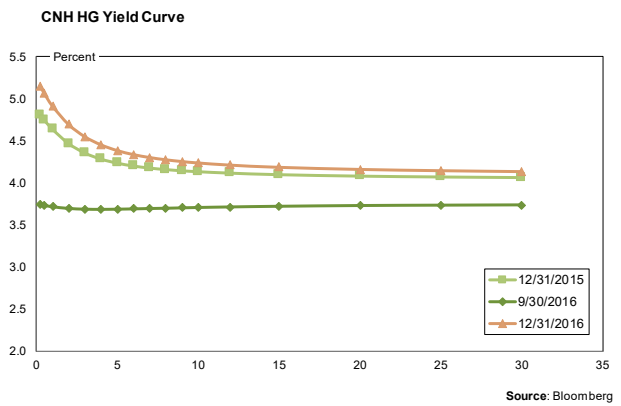
### 7.2. Global HY Corporate Spreads



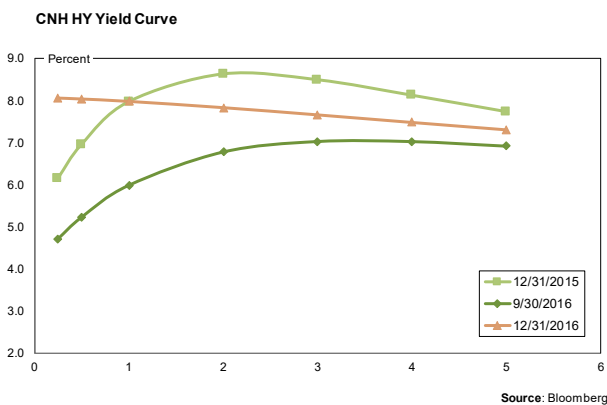
### 7.3. China Interbank AAA - BBB Corps Fixed Rate Curve



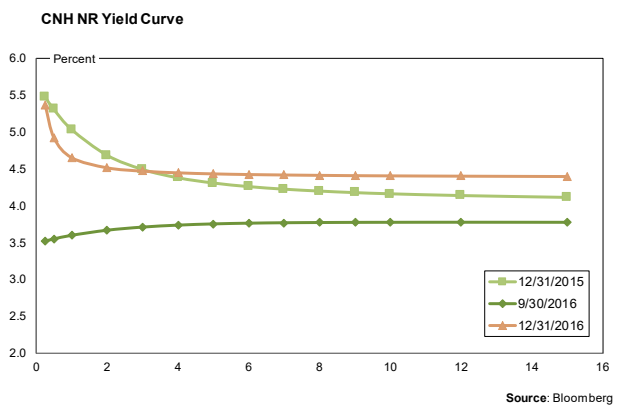
### 7.4. CNH HG Yield Curve



### 7.5. CNH HY Yield Curve



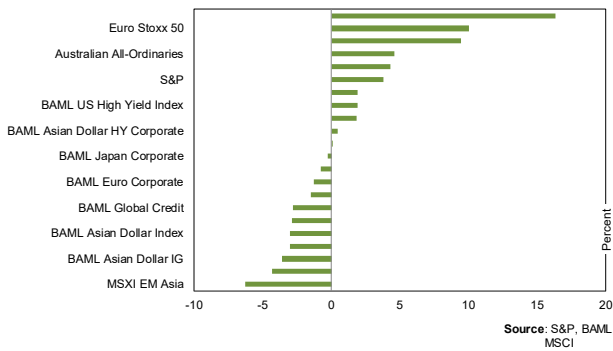
### 7.6. CNH NR Yield Curve



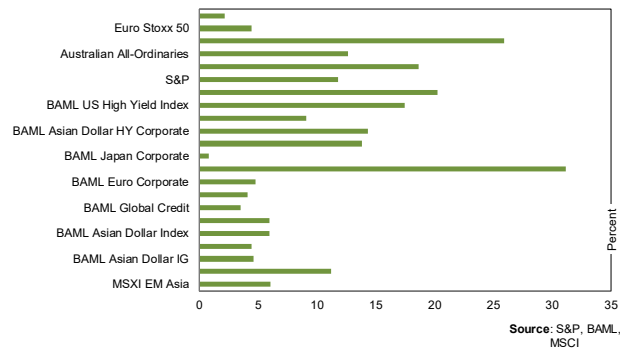
### 7.7. Global Returns, Quarter-End

### 7.8. Global Returns, 2016

**Total Return (Global)**  
2016:Q4

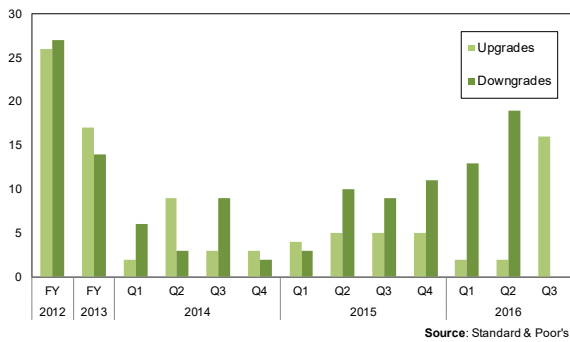


**Total Return (Global)**  
2016



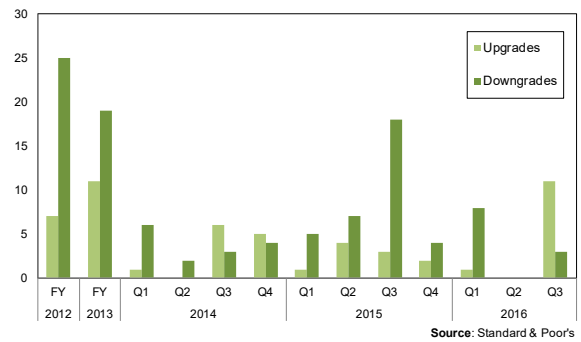
### 7.9. Asia Upgrades / Downgrades ex DM Asia

**Standard & Poor's Asia Upgrades/Downgrades ex DM Asia**  
2012 - 2016:Q3



### 7.10. Asia Upgrades / Downgrades, DM Asia

**Standard & Poor's Asia Upgrades/Downgrades, DM Asia Only**  
2012 - 2016:Q3



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

Upgrades	Country	Date	Rating
PT Cikarang Litrindo Tbk.	Indonesia	8/18/2016	BB
Broadspectrum Limited	Australia	7/28/2016	BB+
Woori Bank (Woori Finance Holdings Co. Ltd.)	Korea, Republic of	8/8/2016	A
EnergyAustralia Holdings Ltd. (CLP Holdings Ltd.)	Australia	7/25/2016	BBB
Tata Motors Ltd. (Tata Sons Ltd.)	India	8/16/2016	BB+
Industrial Bank of Korea	Korea, Republic of	8/8/2016	AA-
Alinta Energy Finance Pty. Ltd.	Australia	9/5/2016	BB
Korea Electric Power Corp. (Republic of Korea)	Korea, Republic of	8/8/2016	AA
Kookmin Bank	Korea, Republic of	8/8/2016	A+
Korea Expressway Corporation (Republic of Korea)	Korea, Republic of	8/8/2016	AA
ORIX JREIT Inc.	Japan	7/11/2016	A
Korea Gas Corp. (Republic of Korea)	Korea, Republic of	8/8/2016	AA-
Korea Development Bank (Republic of Korea)	Korea, Republic of	8/8/2016	AA
Korea Land and Housing Corp. (Republic of Korea)	Korea, Republic of	8/8/2016	AA
China Metallurgical Group Corp.	China	7/14/2016	BBB
Korea National oil Corp. (Republic of Korea)	Korea, Republic of	8/8/2016	AA
Daiwa Securities Group Inc.	Japan	7/6/2016	A-
MISC Berhad (Malaysia)	Malaysia	8/11/2016	BBB+
Daegu Bank	Korea, Republic of	8/8/2016	A-
Mitsui Fudosan Co. Ltd	Japan	7/4/2016	A
Reynolds Group Holdings Ltd.	New Zealand	9/27/2016	B+
Republic of Korea	Korea, Republic of	8/7/2016	AA
TFS Corporation Limited	Australia	7/14/2016	B+
Sharp Corp.	Japan	8/18/2016	B-
Goodman Australia Industrial Partnership	Australia	8/9/2016	BBB+
Shinhan Bank (Shinhan Financial Group Co., Ltd)	Korea, Republic of	8/8/2016	A+
SGSP (Australia) Assets Pty Ltd.	Australia	9/19/2016	A-

Downgrades	Country	Date	Rating
PT Gajah Tunggal Tbk.	Indonesia	8/1/2016	B-
Alumina Ltd.	Australia	9/21/2016	BB
Colonial Holding Co. Ltd. (Commonwealth Bank of Australia)	Australia	9/19/2016	A
PT MNC Investama Tbk.	Indonesia	8/2/2016	B-
EMECO Holdings Ltd.	Australia	9/26/2016	CC
Union Bank of India	India	8/12/2016	BB+
Zoomlion Heavy Industry Science and Technology Co. Ltd	China	9/9/2016	B
Mongolia	Mongolia	8/19/2016	B-

### 7.12. Asian Defaults, Standard & Poor's, Third Quarter 2016

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 (COA0) 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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## 10. Credit

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