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 Third Quarter 2017

Total issuance in 3Q’17 came in at USD 67.8 billion (bn) as of September 30, down 14.6% quarter-over-quarter (qoq) from 2Q’17 (USD 79.4bn) but up 18.2% year-over-year (yoy), inclusive of high grade (HG), high yield (HY), and unrated deals. Year to date, total issuance was USD 230.8bn, already exceeding all of 2016 issuance (USD 204.7bn). Overall, Q3’17 has seen strong Asian market activity while Western markets slowed during the traditional summer lull. This is due to several factors contributing to this growth: historically low interest rates and volatility levels, search for yield from investors, abundant investor demand and liquidity.

1) HG issuance (of USD 47.9bn) continues to easily outpace HY issuance of USD 14.3bn. However, HY issuance remains at elevated levels, with third quarter issuance of USD 14.3bn and year to date volumes of $51.5bn, nearly double full year 2016 volumes (USD 26.9bn).

2) USD debt issuance in Asia ex-Japan and Australia has been fueled by robust appetite in China, for bonds, especially those issued by Chinese groups in Hong Kong, as they expand their offshore business and diversify overseas. This has driven issuance up for three of the past four summers, which seems to be a long-term shift, and shows the emerging dominance of Chinese issuers and investors in the market.

3) Chinese issuance continued to dominate the Asia Pacific (ex-Japan) G3 market in the first 9 months of 2017 – the AT1 bank capital sector seems to be particularly favored, as the record pace of Chinese bank Basel-compliant capital transactions continued into September and October. On the part of investors, there is some evidence of a continued diversification out of CNY as weakness in the Chinese currency could be a factor influencing investor preference for USD assets.

4) Asian companies locked in low borrowing costs in Asia’s bond markets, driving record issuance in G3 currencies, in anticipation of a rise in interest rates following the announcement from the US Federal Reserve (the Fed) to start the process of “quantitative tightening”. This reduction in the size of its balance sheet will begin to reverse some of the quantitative easing (QE) that has been so supportive of bond prices in recent years. The Fed also continues to suggest that another rate rise is on the cards for December. Generally, central bankers (including the BOE and the ECB) have continued to indicate that they want to gradually reduce the level of monetary policy stimulus in place. Looking ahead, this may have an impact on Asian bond markets (and indeed bond markets globally), more so given that secondary market credit spreads are at record tight levels.

5) Finally, geopolitical issues (such as the tensions between the US and North Korea) could contribute to some bond market volatility going forward, but on balance, we expect this volatility to be short-lived.

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

For the third quarter 2017, total G3 issuance stood at USD 67.8bn, down 14.6% qoq and up 18.2% yoy; year to date, total G3 issuance was USD 230.8bn, up 51.9% from the three quarters of 2016 (USD 151.9bn). China remained the largest issuing country in the third quarter, albeit taking a smaller share of Asian issuance at USD 36.1bn, or approximately half (53.3%) of G3 issuance; USD 24.2bn and USD 8.8bn in HG and HY deals, respectively, were priced from China. South Korea came in second as the second largest issuer, with USD 8.8bn issued, followed by Indonesia with USD 6.5bn.
Finance remained the largest sector of G3 issuance in the third quarter (USD 20.8bn), followed by real estate/property (USD 9.7bn) and utility & energy (USD 6.9bn).

In terms of ratings, within the HG space, A- transactions accounted for the largest share of deals priced during the quarter, with USD 10.6bn in total issuance, followed by BBB- rated transactions totaling USD 9.8bn. Within HY issuance, the B+ category led with USD 4.9bn of issuance, followed by BB- rated transactions of USD 2.7bn.

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 3Q’17, with a total of USD 39.8bn in short tenor issues being priced during the quarter. Of these, USD 29.0bn were HG deals, USD 7.9bn were HY deals and the balance unrated.

Overall G3 debt outstanding in the region stood at USD 997.6bn, increasing 4.1% qoq and 6.7% yoy. High grade debt accounted for the bulk of total outstanding debt at USD 661.9bn (a 3.1% increase qoq), followed by unrated debt at USD 206.6bn (a growth of 9.7% qoq) and HY debt at USD 129.2bn (an increase of 0.8% qoq).

China (with USD 456.1bn), South Korea (with USD 116.1bn) and Hong Kong (with USD 115.7bn) remain the three countries with the largest shares of G3 debt outstanding. Ratings-wise, among HG issuers, deals rated BBB- (USD 152.8bn) account for the largest share of debt outstanding, while B+ transactions outstanding (USD 27.2bn) dominate in the HY space. By sector, financials with a total of USD 302.1bn accounted for 30% of outstanding G3 paper, followed by sovereigns (USD 228.0bn) and energy (USD 109.6bn). Finally, deals with remaining tenors of 5 years or less (USD 608.9bn) accounted for the bulk of total Asia (ex-Japan, Australia and NZ) debt outstanding.

Turning to the LCY debt markets, USD 235.1bn in total LCY-denominated debt was issued in Asia (ex-Japan, Australia & NZ) in 3Q’17, an increase of 16.6% qoq (USD 201.7bn) but a decline of 11.5% yoy (USD 265.6bn). China remains the largest issuer in the LCY debt markets, with USD 179.7bn, followed by South Korea (USD 23.7bn) and India (USD 8.9bn). Finance also remains the largest category in 3Q’17 with USD 97.8bn issued, followed by construction (USD 32.3bn) and real estate (USD 23.3bn).

Total LCY debt outstanding at the end of 3Q’17 in Asia (ex-Japan, Australia and NZ) stood at USD 16.0tn, rising by 3.4% qoq, with HG and HY debt outstanding declining 2.8% and 4.4% qoq, respectively, while unrated debt rose 3.4%. China remains the bulk of total outstanding LCY debt at USD 10.7tn, followed by India (USD 1.9tn) and South Korea (USD 1.5tn).

State of the Asian leveraged loan market

Asian leveraged loan debt, excluding developed market Asia, reached USD 51.4bn in 3Q’17, a 12.7% decline qoq and a 31.4% decline yoy. Leading sectors in 3Q’17 issuance were transportation (USD 14.5bn), consumer products (USD 11.5bn), and computers & electronics (USD 4.6bn). Leveraged loan issuance was primarily used for capital expenditures (USD 12.5bn) and project financing (USD 12.4bn). Sponsored loan deals as a percentage of issuance rose substantially, representing 20.7% by dollar amount in the third quarter from 2.0% in 2Q’17, with a specific focus in leveraged buyouts: USD 4.5bn coming from standard leveraged buyouts and another USD 2.3bn in secondary buyouts.
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3.3. LCY ex DM Asia: Issuance by Currency

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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) was USD 193.8bn in the third quarter of 2017, an increase of 21.8% qoq and an increase of 10.1% yoy. In 3Q’17, total HG G3 issuance in Asia was USD 141.3bn, an increase of 26.7% qoq and 10.5% yoy; HY issuance was USD 24.9bn, an increase of 22.0% qoq and a 53.2% increase yoy; and unrated issuance was USD 27.6bn, an increase of 1.5% qoq but a decline of 13.7% yoy. High yield issuance in 3Q’17 set a new all time high with USD 24.9bn issued. Year to date ending September, total G3 issuance was USD 528.2bn, composed of USD 379.7bn in HG issuance, USD 69.0bn in HY issuance, and USD 79.4bn in unrated issuance.

Outstanding G3 debt, including developed market Asia, stood at USD 11.6tn at the end of the third quarter 2017, an increase of 0.6% qoq, with declines in unrated debt (USD 5.2tn, a 8.4% decline qoq) but increased in HG debt (USD 6.2tn, a 9.6% increase) and HY debt (USD 176.9bn, a 5.2% increase).

LCY debt issuance, including Japan, Australia, and New Zealand, stood at USD 577.8bn, an increase of 4.3% qoq but a decline of 10.0% yoy, comprised of USD 384.7bn in HG issuance, USD 8.7bn in HY issuance and USD 184.4bn in unrated issuance. Despite the overall increase in dollar volume, the bulk of the qoq increase was from Chinese volumes picking up; outside of Hong Kong and Australia, all other countries reported qoq declines in volume.

The “masala bond” market reopened in India, after it was briefly closed in Q2 2017. While announcing the reopening of the masala bond market, the Reserve Bank of India (RBI) stated that “masala bonds” would henceforth be regulated under the External Commercial Borrowing (ECB) regime and not the Foreign Portfolio Investor (FPI) regime. Under the new regime, the issuance of masala bonds would still be subject to limits on coupons and tenors, which is a feature of regular bond issuance under India’s ECB rules/guidelines.

Longer term, the development of EM Asia bond markets should continue at a steady pace, particularly as market infrastructure and legal frameworks grow to support the region’s capital markets, especially in the areas of fixed income and credit. Project bonds are a significant high yield opportunity in Asia, given the region’s massive infrastructure funding needs in the next decade, especially with China’s Belt & Road initiative attracting a great deal of investor interest. This should lead to further market deepening and contribute to continued momentum in the Asian high yield market.
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

LCY All: Total Issuance in Asia
2009 - 2017Q3

Source: Dealogic
5. China – Domestic

**Total Issuance & Outstanding – Domestic CNY issuance**

Total domestic CNY issuance stood at USD 179.8bn in the third quarter of 2017, up 36.5% from the second quarter (USD 131.8bn) but a decline of 15.8% yoy (USD 213.4bn). By tenor, 64.6% of third quarter issuance (USD 116.1bn) would mature in five years or less, followed by the “other” bucket (USD 19.2bn, or 10.7% of issuance). By sector, finance led issuance totals (USD 61.6bn), followed by construction (USD 30.2bn). Despite the slight uptick in third quarter volume, domestic CNY volumes in 2017 in the first three quarters combined were half that of 2016 volumes, with USD 412.0bn issued year to date in 2017 compared to USD 808.1bn issued in 2016.

Outstanding domestic CNY debt stood at USD 10.6tn at the end of third quarter 2017, with sovereigns leading totals (USD 6.0tn), followed by financials (USD 2.7tn) and industrials (USD 812.7bn).

We did indicate in our previous quarterly credit report (Asia Credit Report, Second Quarter 2017) that the Chinese authorities’ determination to curb leverage across the board in order to ensure a more sustainable growth path for the Chinese economy, especially in the run-up to the all-important party Congress (which has just concluded) would result in some reduction in the pace of debt issuance – and that has certainly come to pass. Moreover, in recent days, concern over excessive leverage in the Chinese banking system has led to a sell-off in the country’s domestic bond markets. However, we feel that longer term, the CNY market is on a firmer footing, given the recent opening of the China Interbank Bond Market (CIBM) to foreign investors, coupled with the recent inauguration of the “Bond Connect” program between Hong Kong and China. Finally, the fact that a “sudden stop” in lending could contribute to a “hard landing” of the Chinese economy, should ensure that leverage is not curtailed too aggressively.
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 picked up slightly in the third quarter; an equivalent of USD 8.4bn in CNH bonds were issued, an increase of 25.1% qoq and an increase of 55.5% yoy. In terms of tenor, 82.5% all of third quarter issuance was accounted for by transactions with tenors of 5-years or less, with slightly less than a fifth of overall volume from short-term paper (USD 1.5bn). HG deals rated AA- totaling USD 6.8bn had the highest share among rated deals (80.0%). In terms of sector, only finance (USD 8.4bn) and computers & electronics (USD 28.2mn) deals were issued in the third quarter.

The total of dim sum bonds outstanding stood at USD 58.2bn at the end of the third quarter, a decline of 8.1% qoq. This is in line with recent trends — the relative importance of CNH in relation to the much bigger CNY market continues to decline, as the CNY domestic market becomes accessible to a wider range of investors.

One silver lining is that despite the decline in outstanding dim sum bonds, most deposit centers have reported a pickup in offshore CNH deposits, with South Korea as the only country reporting a decline in deposits in the most recent data reported. Overall deposit volumes remain well below the highs, however.
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)

HG bond spreads traded tighter in 3Q’17 from the second quarter: Asian HG bonds on a composite basis were quoted at an average spread of 127 basis points (bps) in September from 134 bps in June while US and European HG bond issues were quoted at average spreads of 112 bps (from 120 bps) and 98 bps (from 111 bps), respectively. On the other hand, Asian HY corporates traded wider in the third quarter of 2017, averaging 427 bps in September (from 398 bps in June 2017), while US and European bonds tightened at 375 bps (from 380 bps) and 273 bps (from 315 bps), respectively.

In terms of total return, emerging market equities were the outperformers in the third quarter, while global HG credit generally underperformed. Asian HG gained 1.29% in the third quarter, while Asian HY indices gained 2.77%.

In terms of YTD trends and expectations for the rest of the year:

a) The Asian credit markets (and indeed credit markets across the globe) look quite stretched and fully valued at current levels. For instance, in the HG space, the China sovereign (rated two notches below South Korea, following the recent downgrade of China’s credit rating) recently priced a two-tranche 5y and 10y bond issue, more than 25 bps tighter than comparable spreads on its South Korean (and other similarly rated) counterparts.

b) Continued questions relating to Chinese leverage, the growth in Indian bank NPLs (the government’s recent USD 32bn recapitalization of Indian banks notwithstanding) and the general frothiness in credit spreads (one pointer in this direction is the fact that frontier markets in Asia – Sri Lanka and Mongolia – have tended to outperform the more established markets), should keep investors cautious. A sudden reversal in sentiment could lead to a steep sell-off – particularly in the HY and the bank capital (AT1) sectors.

c) That said, continued overall growth in the Asian investor base (particularly out of China) and the development and maturing of the mutual fund, insurance and pension industries in the region, should contribute to longer-term stability in the Asian fixed income markets, despite any short-term stresses that could contribute to underperformance in the near term, over the next 3-6 months.
7.1. Global HG Corporate Spreads

![Global HG Corporate Spreads](Image)

7.2. Global HY Corporate Spreads

![Global HY Corporate Spreads](Image)

7.3. China Interbank AAA - BBB Corps Fixed Rate Curve

![China Interbank AAA - BBB Corps Fixed Rate Curve](Image)

7.4. CNH HG Yield Curve

![CNH HG Yield Curve](Image)

7.5. CNH HY Yield Curve

![CNH HY Yield Curve](Image)

7.6. CNH NR Yield Curve

![CNH NR Yield Curve](Image)
7.7. Global Returns, Quarter-End

Total Return (Global)
2017:Q3

Source: S&P, BAML, MSCI

7.8. Global Returns, 2017

Total Return (Global)
2017

Source: S&P, BAML, MSCI

7.9. Asia Upgrades / Downgrades ex DM Asia

Standard & Poor’s Asia Upgrades/Downgrades ex DM Asia
2012 - 2017:Q2

Source: Standard & Poor’s

7.10. Asia Upgrades / Downgrades, DM Asia Only

Standard & Poor’s Asia Upgrades/Downgrades, DM Asia Only
2012 - 2017:Q2

Source: Standard & Poor’s

7.11. Asian Upgrades & Downgrades, Standard & Poor’s, Second Quarter 2017

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<td>BBB</td>
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<td>BB-</td>
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<td>CLP Holdings Ltd.</td>
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<td>5/26/2017</td>
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<td>MagnaChip Semiconductor Corp</td>
<td>Korea, Republic of</td>
<td>6/23/2017</td>
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<td>Goodman Group</td>
<td>Australia</td>
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<td>DBNGP Trust</td>
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<td>5/17/2017</td>
<td>BBB+</td>
</tr>
<tr>
<td>Alaminas Ltd.</td>
<td>Australia</td>
<td>4/7/2017</td>
<td>BB+</td>
</tr>
<tr>
<td>Elutec Power Development Co. Ltd.</td>
<td>Japan</td>
<td>4/25/2017</td>
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Source: Standard & Poor’s
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<tr>
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<th>Date</th>
<th>Rating</th>
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<tr>
<td>Quintis Ltd.</td>
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<td>5/11/2017</td>
<td>B</td>
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<td>5/17/2017</td>
<td>BB+</td>
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<td>Auswide Bank Ltd.</td>
<td>Australia</td>
<td>5/21/2017</td>
<td>BBB-</td>
</tr>
<tr>
<td>Bendigo and Adelaide Bank Ltd.</td>
<td>Australia</td>
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<td>BBB+</td>
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<td>Boart Longyear Ltd.</td>
<td>Australia</td>
<td>4/5/2017</td>
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<td>Jiangsu New Headline Development Group Co. Ltd.</td>
<td>China</td>
<td>4/5/2017</td>
<td>BB</td>
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<td>MyState Bank Ltd. (MyState Limited)</td>
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<td>IMB Ltd.</td>
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7.12. Asian Defaults, Standard & Poor’s, Second Quarter 2017

<table>
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<td>N/A</td>
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</table>
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.
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.

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)

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

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. 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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Kyle Brandon, Managing Director, Director of Research

Sharon Sung, Assistant Vice President, Research