



Research Quarterly

Second Quarter 2018

September 2018

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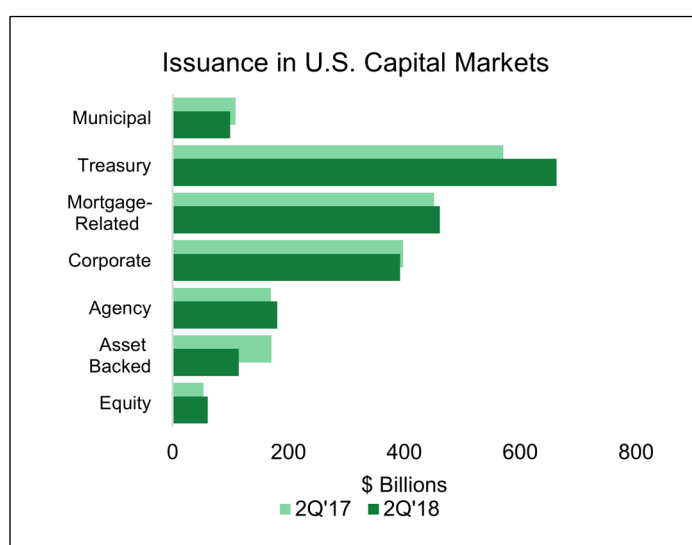
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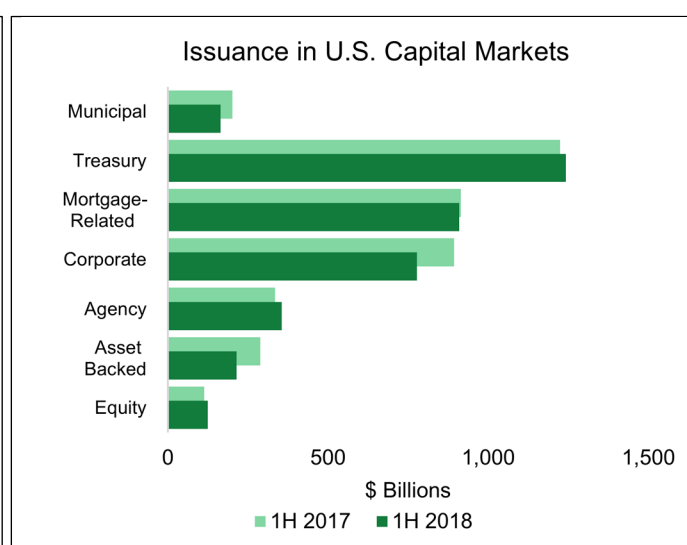
Capital Markets Overview

Total Capital Markets Issuance

Long-term securities issuance totaled \$1.97 trillion in 2Q'18, an 8.4 percent increase quarter-over-quarter (q-o-q) from \$1.82 trillion in 1Q'18 and a 2.5 percent increase year-over-year (y-o-y) from \$1.92 trillion in 2Q'17. Issuance increased q-o-q across all asset classes except equity, while y-o-y issuance increased across all asset classes except municipal, corporate and asset-backed securities.



Note: Includes long-term issuance only
Sources: Bloomberg, Thomson Reuters, US Treasury, US Federal Agencies



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Sources: Bloomberg, Thomson Reuters, US Treasury, US Federal Agencies

Long-term public municipal issuance volume including private placements for 2Q'18 was \$99.3 billion, up 51.9 percent from \$65.4 billion in 1Q'18 and down 8.9 percent from \$109.0 billion in 2Q'17.

The U.S. Treasury issued \$662.5 billion in coupons, Floating Rate Notes and Treasury Inflation Protected Securities in 2Q'18, up 14.2 percent from \$580.0 billion in the prior quarter and 16.1 percent above \$570.8 billion issued in 2Q'17.

Issuance of mortgage-related securities, including agency and non-agency passthroughs and collateralized mortgage obligations, totaled \$461.0 billion in the second quarter, a 2.8 percent increase from 1Q'18 (\$448.6 billion) and a 2.1 percent increase y-o-y (\$451.5 billion).

Corporate bond issuance totaled \$392.5 billion in 2Q'18, up 1.9 percent from \$385.0 billion issued in 1Q'18 but down 1.3 percent from 2Q'17's issuance of \$397.7 billion. Of the 2Q'18 corporate bond issuance total, investment grade (IG) issuance was \$344.2 billion (87.7 percent of total) while high yield (HY) was \$48.3 billion (12.3 percent of total).

Long-term federal agency debt issuance was \$180.6 billion in the second quarter, up 3.1 percent from \$175.2 billion in 1Q'18 and up 6.4 percent from \$169.7 billion issued in 2Q'17.

Asset-backed securities issuance totaled \$114.2 billion in the second quarter, an increase of 14.2 percent q-o-q (\$100.1 billion) but a 33.1 percent decline y-o-y (\$170.6 billion).

Equity underwriting declined by 5.5 percent to \$60.6 billion in the second quarter from \$64.1 billion in 1Q'18 but increased 13.2 percent from \$53.5 billion issued in 2Q'17. Of the total, "true" initial public offerings (IPOs) accounted for \$14.4 billion, down 11.0 percent from \$16.2 billion in 1Q'18 but up 62.1 percent from \$8.9 billion in 2Q'17.

\$ Billions	2018:Q2	2018:Q1	2017:Q2	QoQ Change	YoY Change
Municipal Bonds	99.3	65.4	109.0	51.9%	-40.0%
Treasury Securities	662.5	580.0	570.8	14.2%	1.6%
Mortgage-Related Securities	461.0	448.6	451.5	2.8%	-0.7%
Corporate Bonds	392.5	385.0	397.7	1.9%	-3.2%
Federal Agency Debt	180.6	175.2	169.7	3.1%	3.2%
Asset-Backed Securities	114.2	100.1	170.6	14.2%	-41.4%
Equity	60.6	64.1	53.5	-5.5%	19.8%

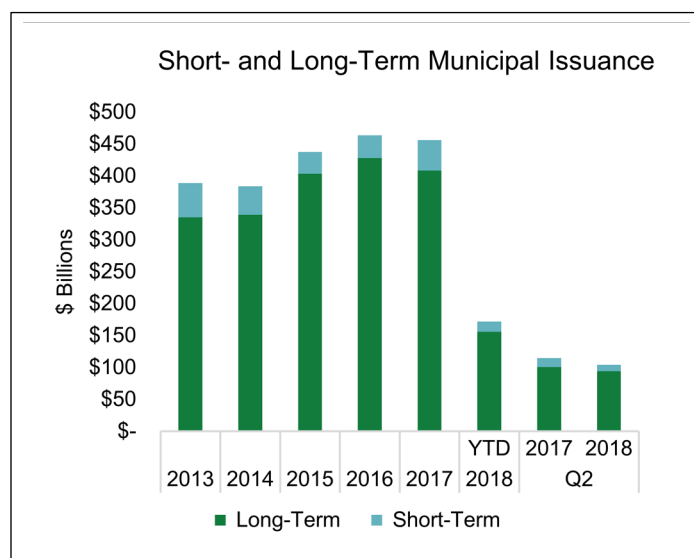
Note: Includes long-term issuance only

Sources: Bloomberg, Thomson Reuters, US Treasury, US Federal Agencies

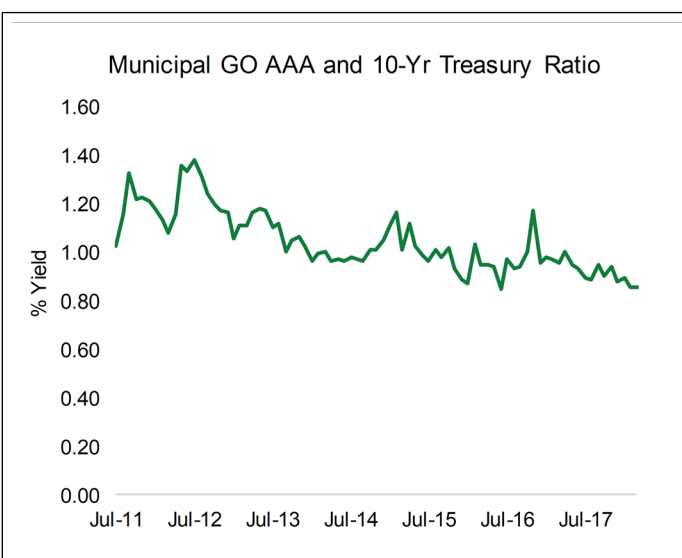
Municipal Bond Market

Long-term public municipal issuance volume totaled \$94.1 billion in the second quarter of 2018, an increase of 52.2 percent from the prior quarter (\$61.8 billion) but a decline of 6.6 percent y-o-y (\$100.7 billion). Including private placements¹ (\$5.2 billion), long-term municipal issuance for 2Q'18 was \$99.3 billion. Year to date, 1H'18 issuance totaled \$201.3 billion, inclusive of private placements.

Tax-exempt municipal issuance totaled \$79.5 billion in 2Q'18, an increase of 44.6 percent q-o-q but a decline of 9.1 percent y-o-y. Year-to-end June, tax-exempt issuance totaled \$134.5 billion, compared with \$134.5 billion in 1H'17. Taxable municipal issuance totaled \$8.1 billion in 2Q'18, an increase of 75.9 percent q-o-q but a decline of 14.9 percent, y-o-y. Year-to-end June, taxable issuance totaled \$12.7 billion, compared with \$12.7 billion in 1H'17. Alternative minimum tax (AMT) issuance was \$6.5 billion in 2Q'18, an increase of 190.6 percent and 72.8 percent, respectively, q-o-q and y-o-y. Year-to-end June, AMT issuance totaled \$8.7 billion, compared with \$8.7 billion in 1H'17.



Source: Thomson Reuters



Source: MMA

By use of proceeds, general purpose led issuance totals in 2Q'18 (\$26.7 billion), followed by education (\$25.2 billion), transportation (\$15.4 billion), utilities (\$10.1 billion) and housing (\$5.7 billion).

¹ Private placement figures are excluded in charts, tables, and texts unless otherwise noted.

Yields, Inflows and Total Return

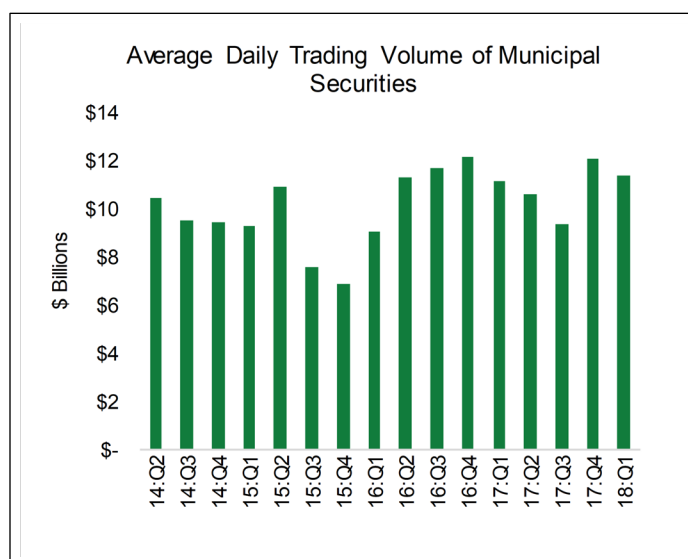
The ratio between 10-year tax-exempt AAA GOs yields and similar-maturity Treasuries declined slightly in the second quarter on a q-o-q basis, averaging 84.8 percent in 2Q'18 from 85.9 percent in 1Q'18.

According to the Investment Company Institute (ICI), second quarter net inflow into long-term tax-exempt funds was positive, but greatly reduced: there was \$1.7 billion of net inflow in 2Q'18 compared to \$11.2 billion of inflow in 1Q'18 and \$9.7 billion of net inflow in 2Q'17.

According to ICE BofAML indices, municipals gained 0.9 percent in total return in the second quarter of 2018, down from the 2.0 percent gain in 2Q'17. On the other hand, Build America Bonds (BABs) lost 0.04 percent in 2Q'18, but outperformed similarly-rated corporate bonds (a total return loss of 0.7 percent).

Trading Activity

Trading activity rose q-o-q to \$12.0 billion daily in 2Q'18, a 5.4 percent increase from 1Q'18 (\$11.4 billion) and was a 13.3 percent increase from 2Q'17 (\$10.6 billion). By number of trades, however, trading activity declined 3.8 percent on a q-o-q basis but rose 1.3 percent on a y-o-y basis.

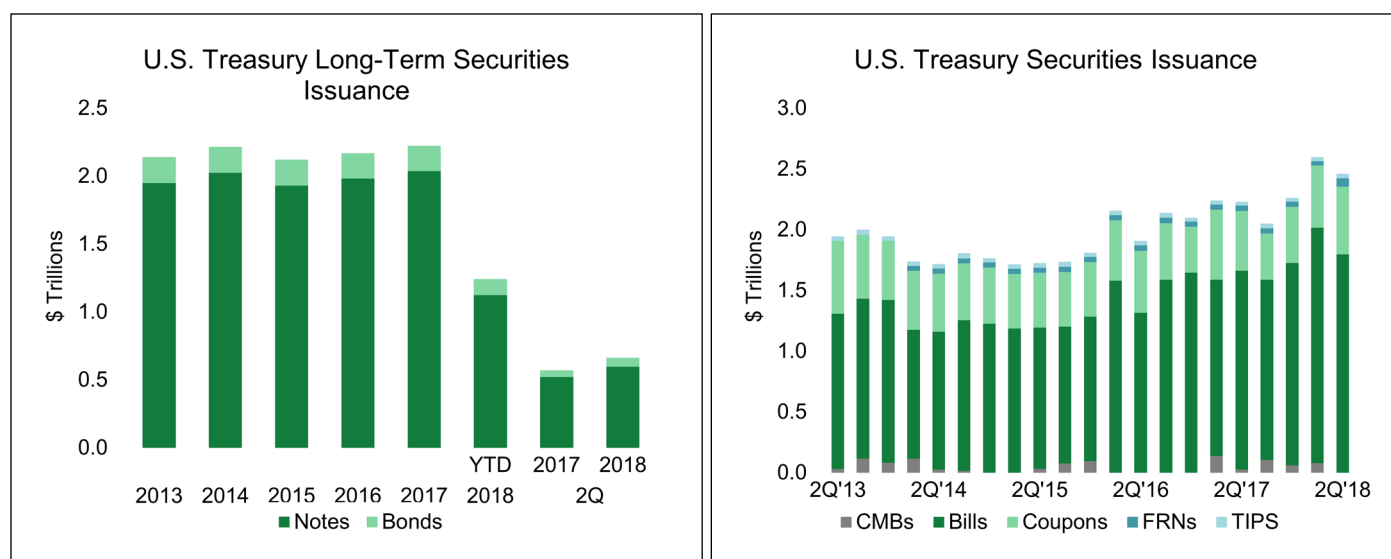


Source: EMMA MSRB

Treasury Market

Gross Issuance of U.S. Treasury Securities

Total gross issuance of U.S. Treasury bills and coupons, including cash management bills (CMBs), Floating Rate Notes (FRNs) and Treasury Inflation-Protected Securities (TIPS), was \$2.46 trillion in 2Q'18, down 5.3 percent from \$2.60 trillion in 1Q'18 but up 10.2 percent increase from \$2.23 trillion in 2Q'17. Treasury net issuance, including CMBs, dropped to \$24.1 billion in the second quarter, down from \$458.5 billion in the previous quarter but up from net issuance of \$17.1 billion in 2Q'17. Second quarter net issuance fell short of the U.S. Treasury's net issuance estimates of \$75.0 billion.²



Note: Gross issuance of marketable U.S. coupon securities
Source: U.S. Department of the Treasury

Source: TreasuryDirect

In 2Q'18, no CMBs were issued, compared to the \$80.0 billion issued in 1Q'18 and \$25.0 billion in 2Q'17.

The U.S. Treasury issued \$662.5 billion in coupons, FRNs and TIPS in 2Q'18, up 14.2 percent from \$580.1 billion in the prior quarter and 16.1 percent from \$570.8 billion issued in 2Q'17.

Excluding TIPS and FRNs, total gross issuance of Treasury marketable coupon securities was \$557.7 billion, up 8.7 percent from \$513.2 billion issued in 1Q'18 and 13.3 percent from \$492.2 billion issued in 2Q'17. Net

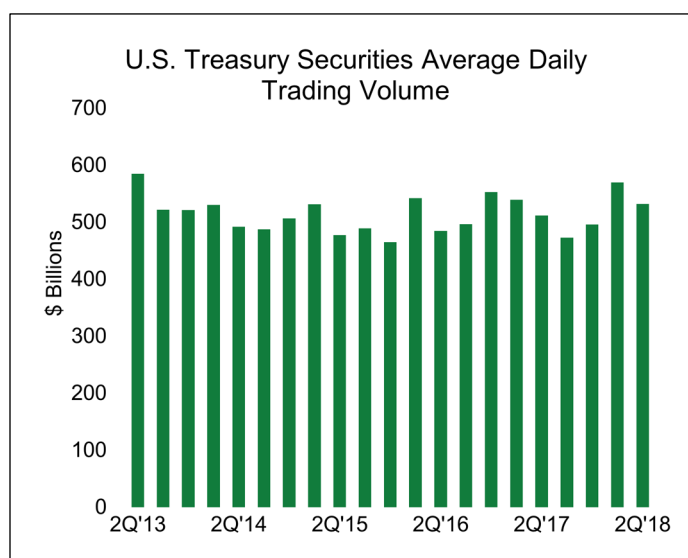
² Treasury's June borrowing estimates can be found [here](#).

coupon issuance was \$155.1 billion in 2Q'18, a 23.6 percent increase from the \$125.5 billion in 1Q'18 and up 176.4 percent y-o-y.

In 2Q'18, \$68.8 billion in FRNs were issued, up 113.7 percent from \$34.6 billion in 1Q'18 and 54.2 percent from \$44.6 billion in 2Q'17.

Trading Activity

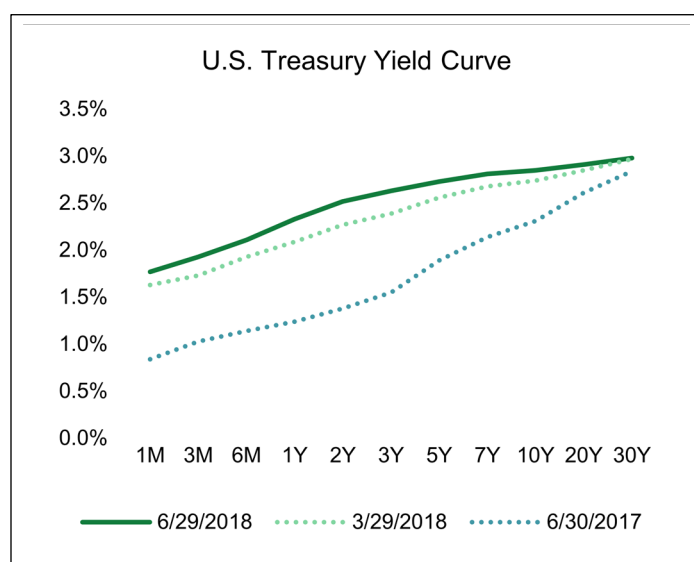
The daily trading volume of Treasury securities by primary dealers averaged \$532.3 billion in 2Q'18, a 6.5 percent decrease from \$569.6 billion in the previous quarter but a 4.0 percent increase from \$511.9 billion traded daily in 2Q'17.



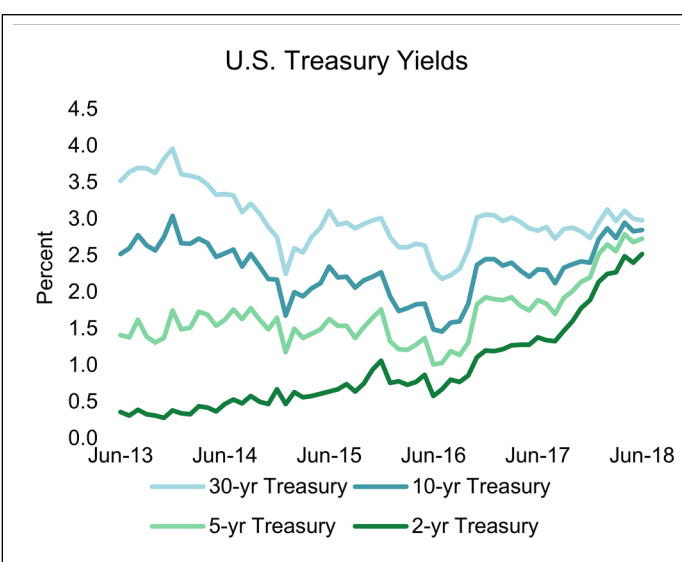
Note: Includes primary dealer activity only
Source: Federal Reserve Bank of New York

Treasury Yield Curve

In 2Q'18 U.S. Treasury yields increased for short-, medium- and long-term securities. Two-year rates increased to 2.52 percent in at end-June, up from 2.27 percent end-March and from 1.38 percent end-June 2017. Five-year yields increased to 2.73 percent end-June, up from 2.56 percent in 1Q'18 and from 1.89 percent in 2Q'17. Ten-year yields increased to 2.85 percent end-June, up from 2.74 percent end-March and up from 2.31 percent in 2Q'17. Thirty-year yields ended 2Q'18 at 2.98 percent, up from 2.97 percent end-March and up from 2.84 percent end-June 2017.



Source: U.S. Department of the Treasury



Source: U.S. Department of the Treasury

FOMC Meeting Summary

During its June 12-13, 2018 meeting, the Federal Reserve's Federal Open Market Committee (FOMC) raised the target range for the federal funds rate from 1.50 – 1.75 percent to 1.75 – 2.00 percent.³ At the most recent meeting on July 31 – August 1, 2018, there were no further changes to the target range for the federal funds rate.⁴ The FOMC went on to say that they expect a further gradual increase in the target range for the federal

³ [Statement from the FOMC Meeting](#), June 13th, 2018.

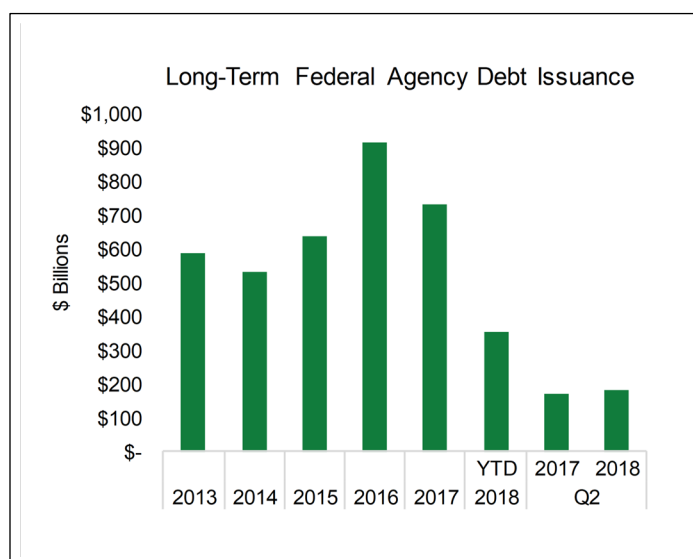
⁴ [Statement from the FOMC Meeting](#), August 1st, 2018.

funds rate, consistent with sustained economic growth. The GDP growth is forecasted by SIFMA's Mid-Year 2018 Economic Outlook to increase to 2.9% in 2018.⁵

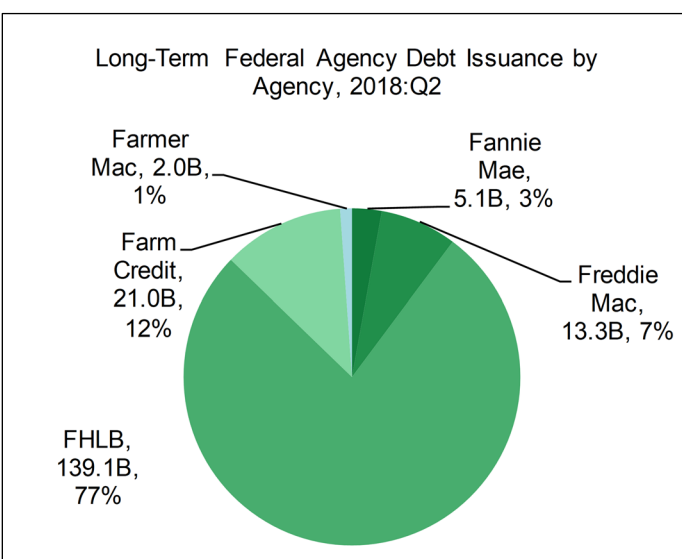
⁵ [SIFMA Mid-Year 2018 Economic Outlook](#), June 11, 2018.

Federal Agency Debt Market

Federal agency long-term debt (LTD) issuance was \$180.6 billion in the second quarter, a 3.1 percent increase from \$175.2 billion in 1Q'18 and a 6.4 percent increase from \$169.7 billion issued in 2Q'17.



Source: Federal Agencies



Source: Federal Agencies

Fannie Mae's 2Q'18 gross debt issuance, both short term debt (STD) and LTD, totaled \$125.9 billion, a 42.7 percent decrease from \$219.9 billion in 1Q'18 and a 42.7 percent decrease from \$152.3 billion in 2Q'17. STD issuance decreased to \$120.8 billion in 2Q'18 compared with \$217.3 billion in 1Q'18 but LTD issuance increased to \$5.1 billion in 2Q'18 from \$2.6 billion in 1Q'18. Fannie Mae had \$25.8 billion STD and \$225.4 billion LTD outstanding at the end of 2Q'18, down 25.5 percent and 2.6 percent, respectively, from the previous quarter.

Freddie Mac's gross debt issuance totaled \$109.6 billion in 2Q'18, an increase of 24.3 percent from \$88.2 billion in 1Q'18 but a decrease of 17.2 percent from \$132.4 billion in 2Q'17. As of 2Q'18, Freddie Mac had \$34.8 billion STD and \$231.8 billion LTD outstanding, up 28.9 percent and down 5.2 percent, respectively, from the prior quarter.

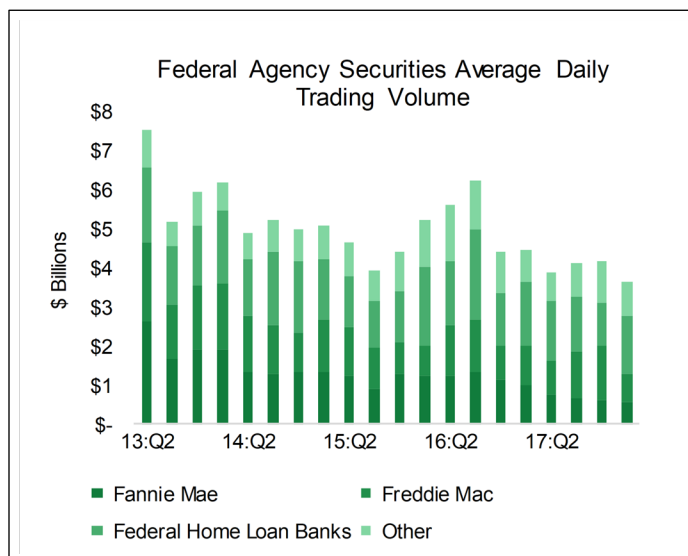
The 12 Federal Home Loan Banks (FHLB) issued \$139.0 billion in LTD in the second quarter, an increase of 6.5 percent from \$130.6 billion in 1Q'18 and 17.7 percent from \$113.9 billion in 2Q'17. In 2Q'18, the FHLBs issued \$2,035.5 billion of STD, up 14.0 percent from \$1,785.4 billion in 1Q'18 and 17.7 percent from \$1,729.6 billion in 2Q'17. Total FHLB LTD outstanding was \$646.1 billion at the end of June, up X percent from \$629.4

billion outstanding in 1Q'18. Discount notes outstanding increased as well to \$413.7 billion in 2Q'18 from \$389.8 billion in 1Q'18.

The 12 Federal Home Loan Banks (FHLB) issued \$139.0 billion in LTD in the second quarter, an increase of 6.5 percent from \$130.6 billion in 1Q'18 and 17.7 percent from \$113.9 billion in 2Q'17. In 2Q'18, the FHLBs issued \$2,035.5 billion of STD, up 14.0 percent from \$1,785.4 billion in 1Q'18 and 17.7 percent from \$1,729.6 billion in 2Q'17. Total FHLB LTD outstanding was \$646.1 billion at the end of June, up 2.7 percent from \$629.4 billion outstanding in 1Q'18. Discount notes outstanding increased as well to \$413.7 billion in 2Q'18 from \$389.8 billion in 1Q'18.

Trading Activity

In aggregate, average daily trading volume of agency securities was \$3.1 billion in the second quarter, down 14.2 percent from \$3.6 billion in 1Q'18 and 20.4 percent from \$4.2 billion in 2Q'17. Individually, Freddie Mac's trading volume declined the most (21.4 percent) quarter-over-quarter, followed by Fannie Mae (17.3 percent) and FHLB (14.4 percent).

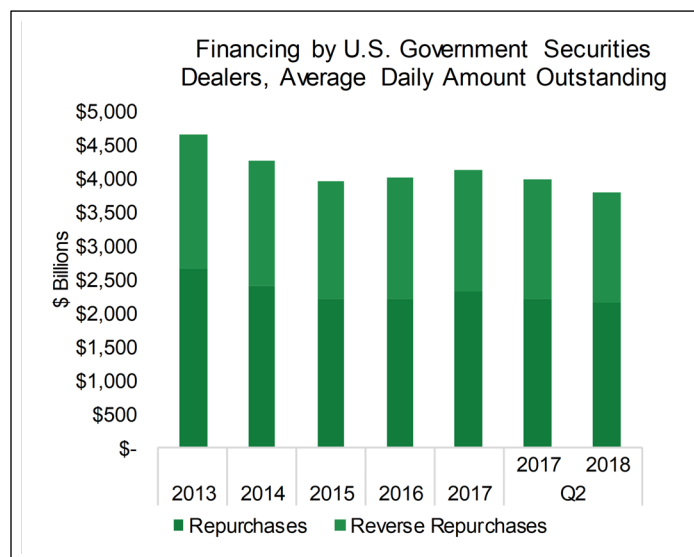


Source: Thomson Reuters

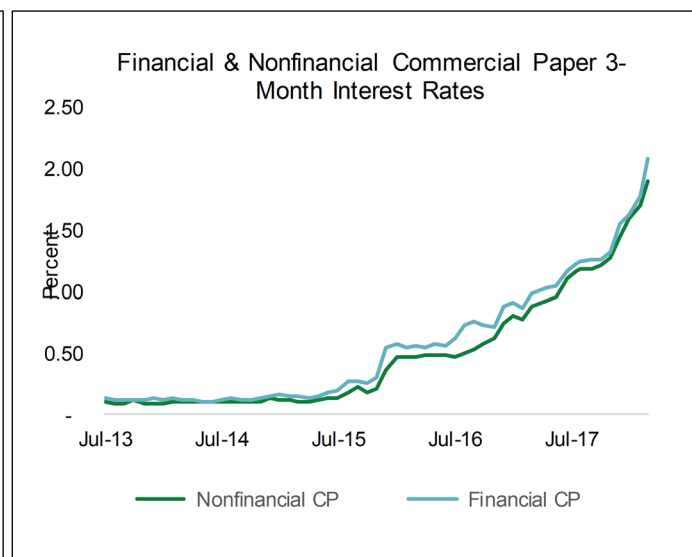
Funding and Money Market Instruments

Repurchase Activity

The average daily amount of total repurchase (repo) and reverse repo agreement contracts outstanding was \$3.78 trillion in 2Q'18, a decrease of 3.9 percent from 1Q'18's \$3.93 trillion and a decline of 5.2 percent y-o-y.



Source: Thomson Reuters

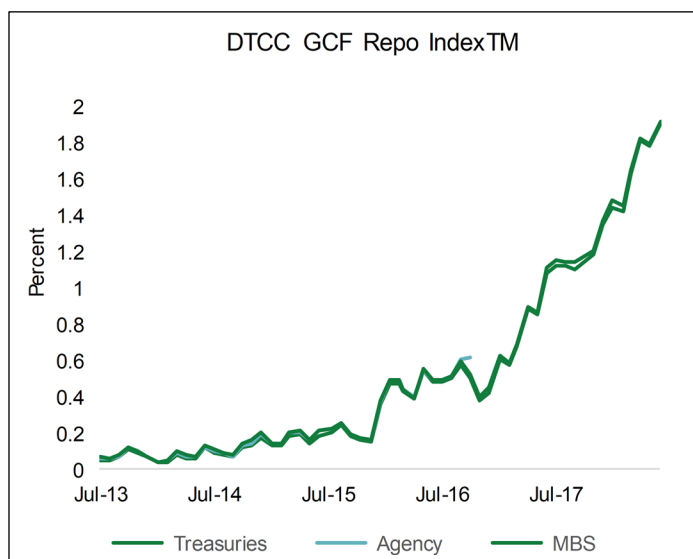


Source: Thomson Reuters

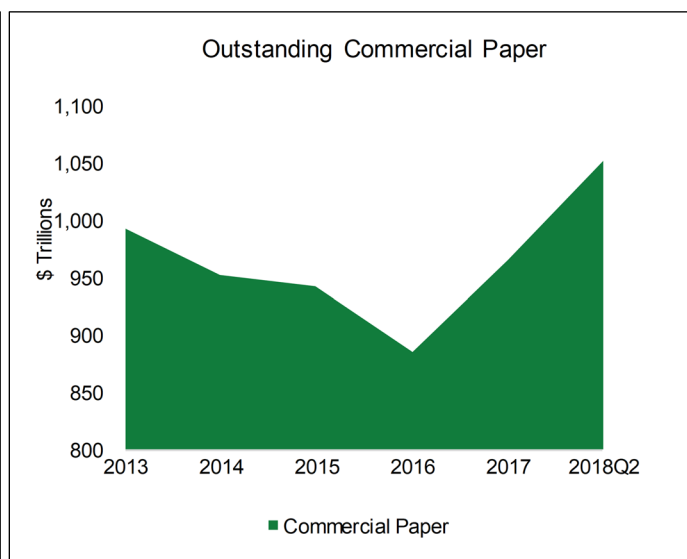
Average daily outstanding repo transactions totaled \$2.14 trillion in 2Q'18, a decline of 3.2 percent q-o-q and a decline of 3.5 percent y-o-y. Reverse repo transactions in 2Q'18 averaged \$1.64 trillion daily outstanding, a decrease of 5.3 q-o-q and 7.2 percent y-o-y.

GCF Repo Rates

General collateral finance (GCF) repo rates increased for Treasuries and MBS in 2Q'18 q-o-q and y-o-y: the average repo rate for Treasuries (30-year and less) rose to 183.2 basis points (bps) from 150.1 bps in 1Q'18 and 94.2 bps in 2Q'17. The average MBS repo rate rose to 184.4 bps from 152.7 bps in the previous quarter and 96.2 bps in 2Q'17.



Source: Thomson Reuters



Source: Thomson Reuters

Total Commercial Paper Outstanding

Preliminary outstanding volume of commercial paper stood at \$1.05 trillion at the end of the second quarter, up 0.3 percent from the prior quarter's \$1.04 trillion and an increase of 13.6 percent y-o-y.

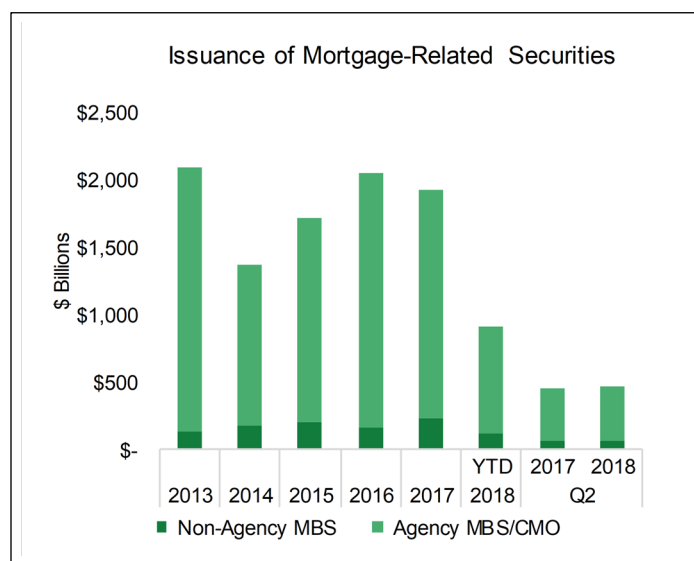
Financial and Nonfinancial 3-Month Commercial Paper Interest Rates

Interest rates for nonfinancial commercial paper (CP) rose to 208 bps at end-June 2018 from 200 bps end-March 2018 and 110 bps end-June 2017. Financial CP increased to 219 bps end-June 2018 from 208 bps end-March 2018 and from 116 bps end-June 2017.

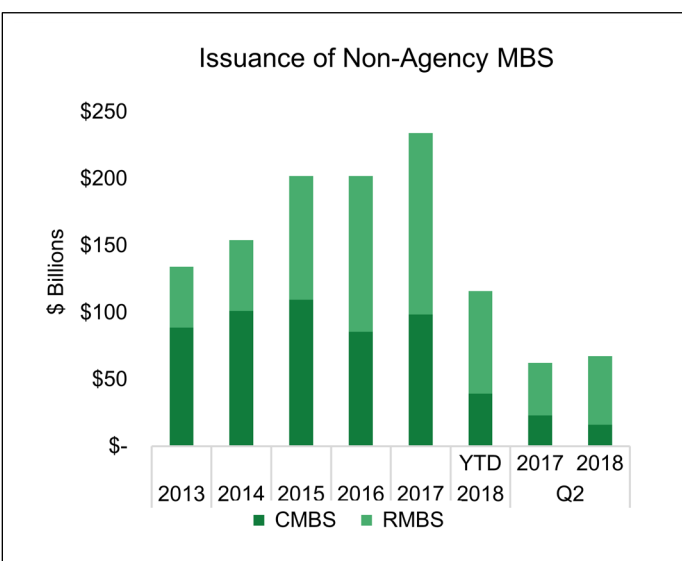
Mortgage-Related Securities

Mortgage-Related Issuance and Outstanding

Issuance of mortgage-related securities, including agency and non-agency passthroughs and collateralized mortgage obligations (CMOs), totaled \$461.0 billion in the second quarter, a 2.8 percent increase q-o-q (\$448.6 billion) and a 2.1 percent increase y-o-y (\$451.5 billion). The rise was primarily due to increases in non-agency MBS issuance volumes. The agency share of total issuance decreased to 85.4 percent in 2Q'18 from 89.2 percent in the previous quarter.



Source: Federal Agencies, Bloomberg, Thomson Reuters



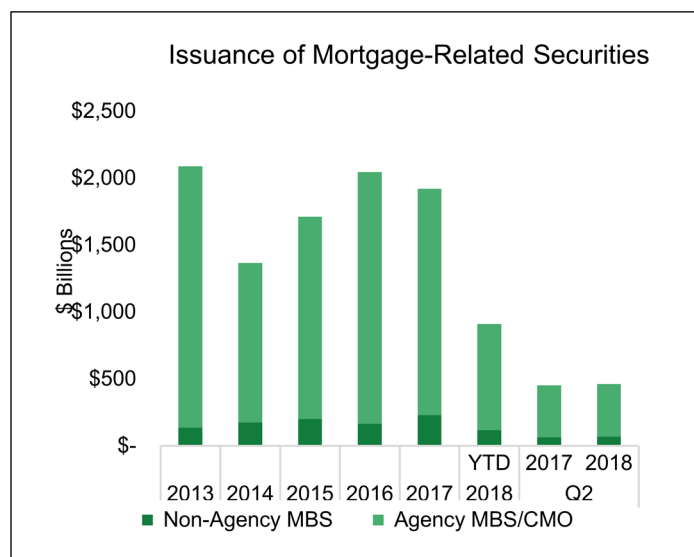
Source: Bloomberg, Thomson Reuters

Agency mortgage-related outstanding totaled \$8.2 trillion as of the end of the second quarter, a 1.1 percent increase from the prior quarter and a 5.0 percent increase y-o-y.

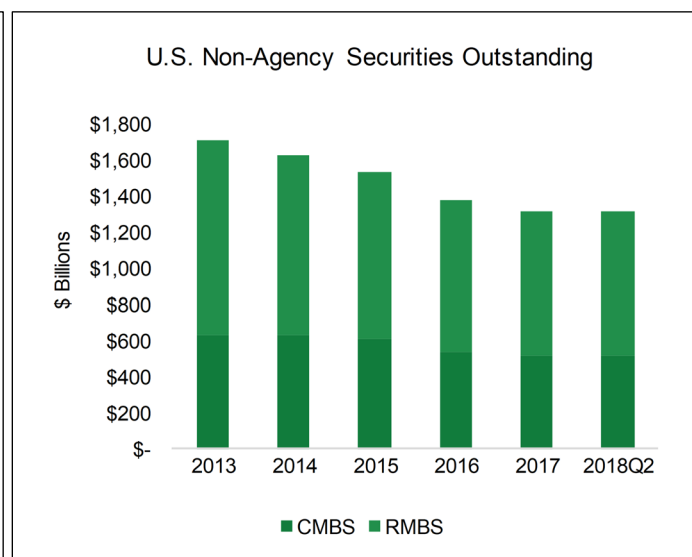
Agency Issuance and Outstanding

Agency mortgage-related issuance totaled \$393.7 billion in 2Q'18, a decrease of 1.6 percent q-o-q (\$400.1 billion) but an increase of 1.2 percent y-o-y (\$389.1 billion). Agency MBS outstanding totaled \$7.1 trillion, a 1.1 percent increase from the prior quarter and a 5.4 percent increase y-o-y, while agency CMO outstanding totaled \$1.1 trillion, a 1.0 percent decrease from the prior quarter but up 0.5 percent increase y-o-y.

According to Freddie Mac, average conventional 30-year mortgage rates rose in the second quarter to 4.56 percent, up 12 basis points from 4.44 percent in the prior quarter.



Source: FINRA TRACE



Source: Bloomberg, Thomson Reuters, SIFMA

Non-Agency Issuance and Outstanding

Non-agency issuance totaled \$67.4 billion in 2Q'18, an increase of 39.0 percent from 1Q'18 (\$48.5 billion) and 8.0 percent y-o-y (\$67.4 billion). Non-agency residential MBS (RMBS) issuance was \$51.3 billion (up 103.3 percent q-o-q and 30.4 percent y-o-y), while commercial MBS (CMBS) issuance was \$16.0 billion (down 30.9 percent q-o-q and 30.4 percent y-o-y). Non-agency outstanding was \$1.3 trillion as of the end of the second quarter, a 1.2 percent rise from the prior quarter and a 0.6 percent decline y-o-y. RMBS outstanding was \$790.8 billion, a 1.6 percent increase q-o-q and a 4.0 percent decline y-o-y, while CMBS outstanding was \$519.8 billion, a 0.6 percent increase q-o-q and a 5.0 percent increase y-o-y.

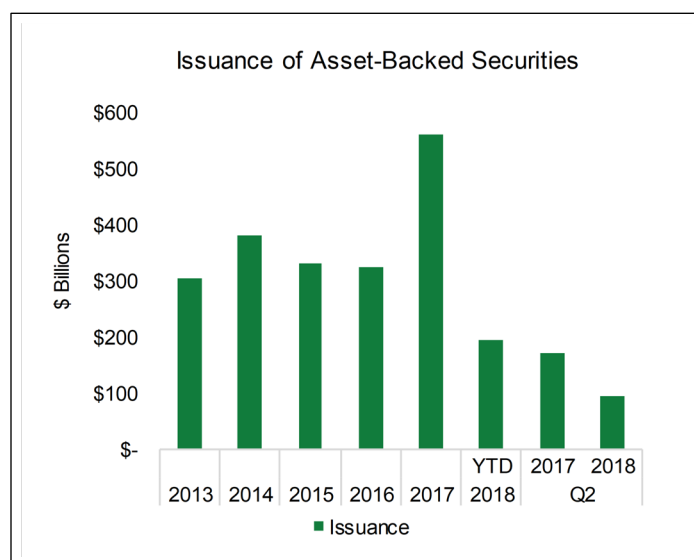
Trading Activity

Increased non-agency mortgage related daily trading volumes outweighed decreased agency trading volumes for an increase in aggregate. Average daily trading volume of agency mortgage-related securities, including passthroughs, CMOs and TBAs, was \$223.4 billion in 2Q'18, down 2.8 percent from 1Q'18 but up of 11.4 percent y-o-y. Average daily trading volumes of non-agency securities increased to \$3 billion daily in 2Q'18, up 13.9 percent q-o-q and 42.0 percent y-o-y.

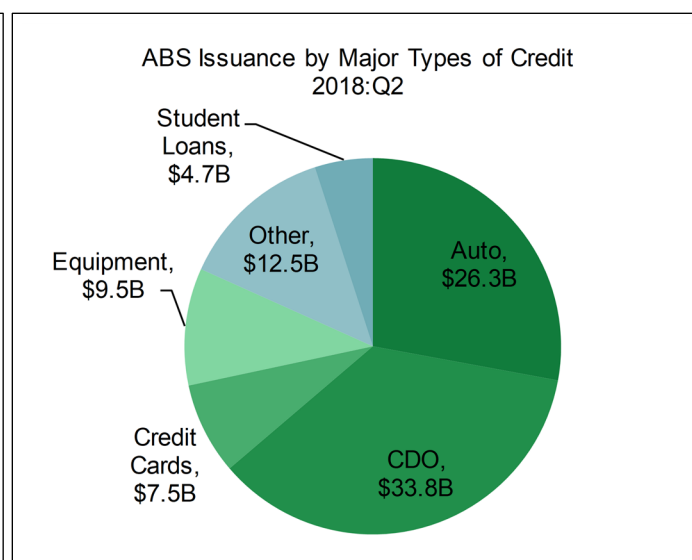
Asset-Backed Securities

Asset-Backed Securities Issuance

Asset-backed securities (ABS) issuance totaled \$94.3 billion in the second quarter, a decline of 5.7 percent q-o-q and 45 percent y-o-y. The CDO and auto sectors led issuance totals for the second quarter with \$33.8 billion (35.8 percent of total issuance) and \$26.3 billion (27.9 percent of total issuance), respectively.



Source: Bloomberg, Thomson Reuters



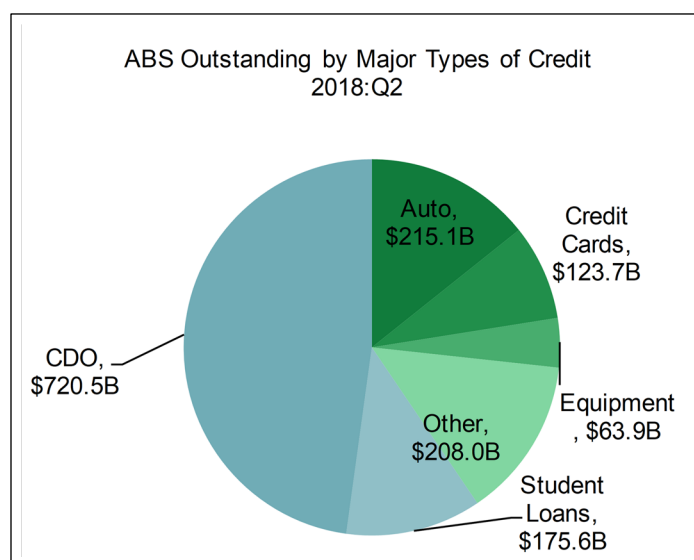
Source: Bloomberg, Thomson Reuters, SIFMA

On a q-o-q basis, most major types of credit experienced a decline in issuance volumes in the second quarter, with the largest percentage decline in the student loan sector, which was down 23.3 percent (a decline of \$1.4 billion). Credit cards, auto, and “other” asset categories experienced q-o-q decreases of 19.8 percent, 14.6 percent and 13.9 percent, respectively. The only q-o-q increases were in the equipment and CDO sectors, with issuance volume rising 29.7 percent and 5.9 percent, respectively.

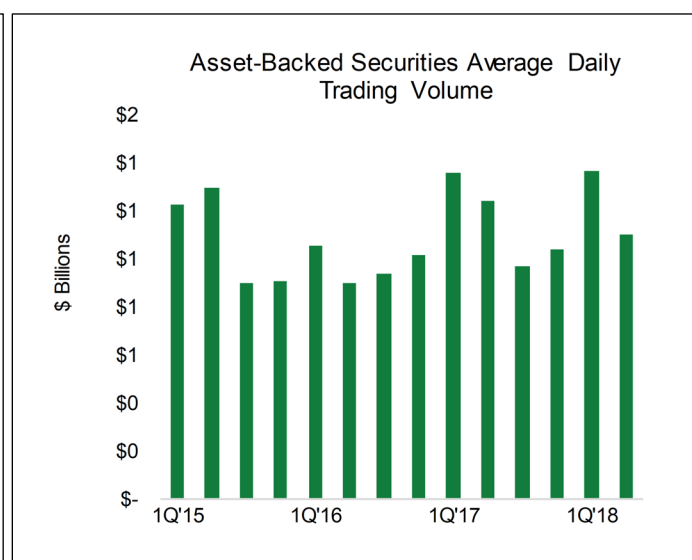
Among ‘esoteric’, or other, ABS, marketplace lending (MPL) securitizations remained robust, with several new lenders debuting securitization deals in 2Q’18: Freedom Financial (May, consumer loans), LendingPoint (June, consumer loans) and LoanMe (June, consumer loans). Franchise, or whole business, securitizations also remained robust in the second quarter, with deals from Coinstar, Hardee’s, Driven Brands, and Dominos Pizza.

Outstanding volumes ended the second quarter at \$1.51 trillion, up 1.9 percent q-o-q and up 5.5 percent y-o-y. USD-denominated CDOs, auto, equipment and esoteric ABS outstandings increased y-o-y by 5.7 percent, 7.3

percent, 19.7 percent, and 17.5 percent, respectively. Student loans and credit cards outstanding declined y-o-y by 3.4 percent and 7.9 percent, respectively. Notable subcategories experiencing y-o-y growth were: private student loans (15.3 percent), rental cars (16.6 percent), solar (144.1 percent), consumer/personal loans (32.7 percent), Property Assessed Clean Energy (PACE) (26.0 percent) and large ticket transportation (25.1 percent).



Source: Bloomberg, Thomson Reuters



Source: FINRA TRACE

Trading Activity

Daily average trading activity in ABS and CDOs decreased to \$1.4 billion in 2Q'18, down 19.7 percent from \$1.7 billion in 1Q'18 and 13.2 percent from \$1.56 billion 2Q'17. Trading activity decreased in both ABS and CDO markets, down 19.8 percent and 19.6 percent q-o-q, respectively.

U.S. Collateralized Loan Obligations⁶

The second quarter was noteworthy for several reasons: the emergence and subsequent proliferation of CLO refinancings, resets and reissues and the introduction of volatility, with CLO spreads edging wider for the first time in months. In comparison to the start of the year, double A spreads moved the most in both the U.S. and Europe. U.S. double A spreads widened by 13.0 percent (from 144 bps to 162.7 bps) while their European counterparts jumped out by 26.6 percent (from 106.8 bps to 135.3 bps).

150bp is tightest double A print

For new issue U.S. deals with a reinvestment period of longer than four years, HPS Investment Partners' HPS Loan Management 12-2018 (priced in May) and PGIM's Dryden 58 (priced in June) achieved the tightest double A prints in 2Q'18, with both hitting 150 bps. In Europe, GSO Capital Partners' Milltown Park CLO achieved the tightest double A print of 130 bps.

The most stable part of the CLO capital stack was the junior debt section. U.S. single B-rated notes moved only marginally from 806.5 bps in Q1 to 822 bps in Q2. European double B notes underwent a more dramatic move wider as average spreads increased from 481.5 bps to 535.7 bps — an increase of 54.2 bps.

Despite recent spread widening, several managers debut CLOs to market in the second quarter. Fifty-five managers were active in the US new issue CLO space in Q2, with 21 coming back for more after issuing in Q1. Of the remaining 30 managers (excluding the debutants), 28 managers returned to the market for the first time since 2017. Year-to-date, 85 managers have priced new US broadly syndicated CLOs.

In Europe, issuance has rocketed in the past year and this growth is expected to continue. Colin Atkins, a managing director at Carlyle Group, says that despite recent spread widening, the overall market is in good shape. He notes that there are three key components of issuance at the moment — new issues, resets of post-reinvestment deals (primarily 2014 vintage) and reset/repricing of post non-call deals (primarily 2016 vintage).

What to do with 2016 deals

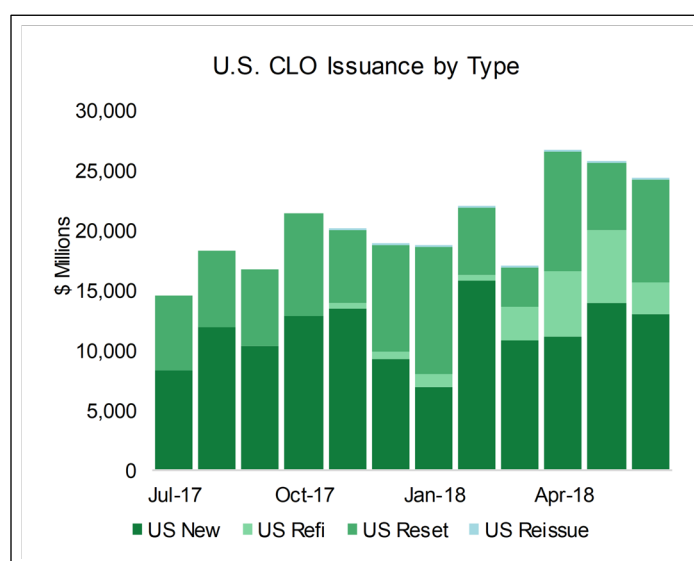
2016 CLOs were put together with high financing costs and so most observers believed that these deals would be refinanced or reset at the first available opportunity. This opportunity opened in 2018, with the two-year non-call periods on 2016 deals expiring. Forecasts have largely proved accurate with a raft of 2016-vintage deals being reworked. However, roughly 34 percent of such deals in the US and 29 percent in Europe have not been

⁶ The author of the CLO section is Tanvi Gupta, Creditflux. For any questions, please contact Tanvi Gupta at tanvi.gupta@acuris.com.

altered. If CLO spreads persist wider, these deals may have missed the window of opportunity to refinance their debt.

Increases in the mid-market

The middle market CLO space produced \$6.4 billion worth of issuance in the second quarter, \$3.6 billion of that coming from new issue deals.



Source: Creditflux, CLO-i

	Spreads for US CLOs		
	Q1	Q2	% Change
AAA/Aaa	102.9	106.3	3.3%
AA/Aa2	144.0	162.7	13.0%
A/A2	178.8	192.1	7.5%
BBB/Baa2	268.9	291.5	8.4%
BB/Ba2	544.6	572.9	5.2%
B/B2	806.5	822.0	1.9%

Source: Creditflux, CLO-i

Source: Thomson Reuters

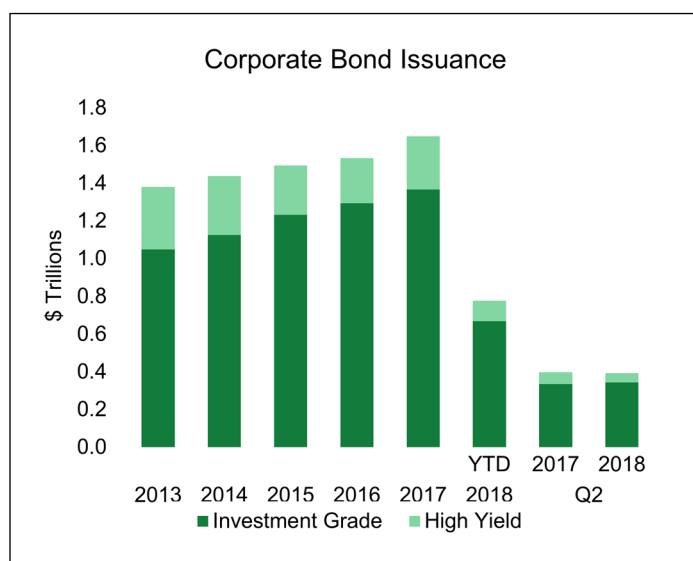
Corporate Bond Market

Corporate Bond Issuance

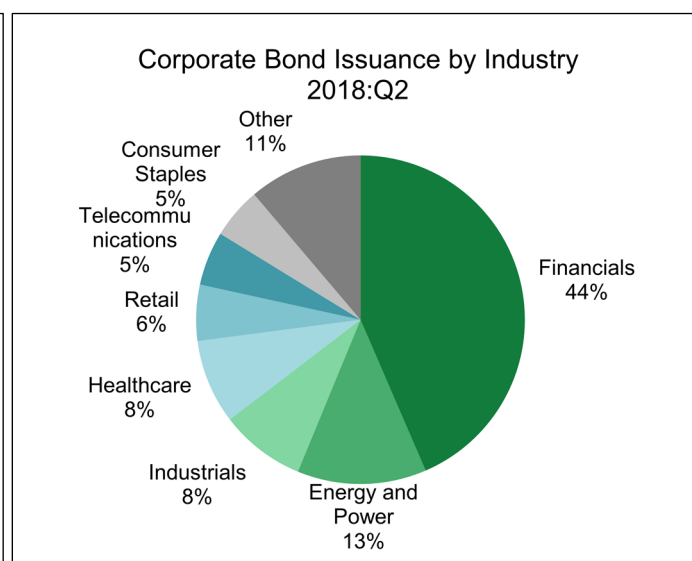
Corporate bond issuance totaled \$392.5 billion in 2Q'18, up 1.9 percent from \$385.0 billion issued in 1Q'18 but down 1.0 percent from \$396.5 billion in 2Q'17. More than a third of the bonds issued in the second quarter were for general corporate purposes (35.5 percent of total issuance), followed by indebtedness reduction (28.7 percent) and future acquisitions (16.3 percent).

Investment grade (IG) bond issuance increased to \$344.2 billion, up 6.3 percent from \$323.8 billion in the previous quarter and 3.0 percent from \$334.0 billion in 2Q'17. The top three industries accounted for almost two thirds of 2Q'18 IG issuance: financial companies remained the leading IG issuance sector, accounting for 44.6 percent (\$153.6 billion) of the total, followed by the energy and power sector with 11.7 percent (\$40.1 billion) and industrials with 8.8 percent (\$30.4 billion).

Issuance of high yield (HY) bonds decreased to \$48.3 billion in 2Q'18, 21.1 percent below the 1Q'18's \$61.2 billion and down 24.2 percent from \$63.7 billion in 2Q'17. The top three sectors made up over two thirds of total HY issuance in the second quarter: financials (35.6 percent, \$17.2 billion), energy and power (20.2 percent, \$9.7 billion), and materials (11.1 percent, \$5.3 billion).



Note: Excludes short-term debt, convertibles, and CDs
Source: Thomson Reuters



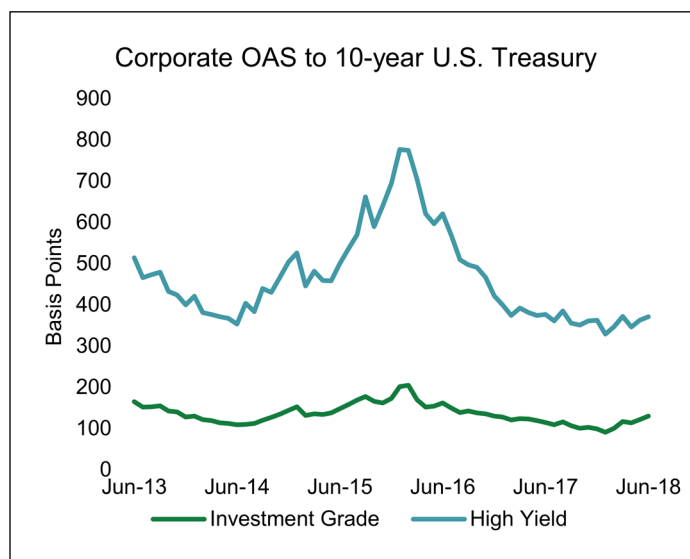
Note: Excludes short-term debt, convertibles, and CDs
Source: Thomson Reuters

Bond Spreads and U.S. Default Rate

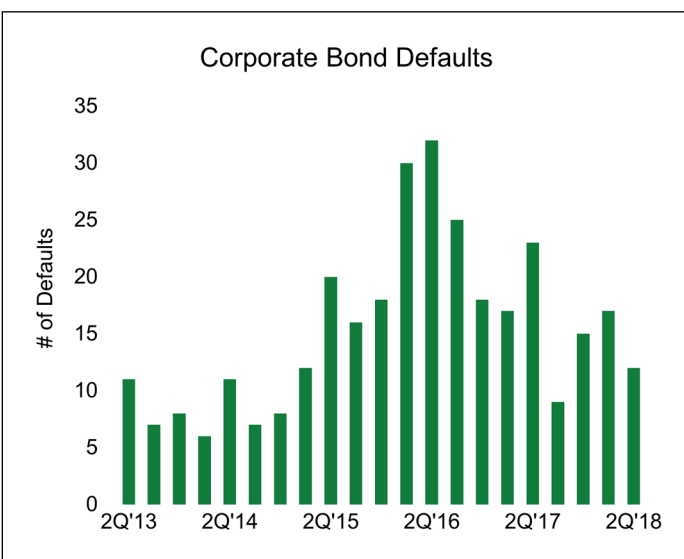
The option adjusted spread for IG bonds widened in 2Q'18 while the spread for HY bonds tightened. The option adjusted spread for IG bond stood at 130 bps at the end of 2Q'18, up 13 bps from 117 bps at end-March 2018 and up 15 bps from 115 bps at the end-June 2017. HY bond option adjusted spread tightened q-o-q, ending 2Q'18 at 371 bps, 1 bp below 372 bps in 1Q'18 and down 6 bps from 377 bps at the end-June 2017.

S&P's Global Fixed Income Research reported the number of U.S. defaulted issuers decreased to 12 in 2Q'18 from 17 in 1Q'18 and from 23 in 2Q'17. The U.S. trailing 12-month speculative-grade corporate default rate decreased to 3.0 percent in 2Q'18, down from 3.3 percent in 1Q'18 and 3.8 percent in 2Q'17. The default rate is expected to fall further to 2.6 percent by 4Q'18.⁷

In 2Q'18, S&P Ratings Services downgraded 121 and upgraded 87 U.S. issuers, a ratio of downgrades to upgrades of 1.4. This was an increase from the previous quarter when there were 86 downgrades versus 80 upgrades (downgrade/upgrade ratio of 1.1).



Source: ICE Data Indices

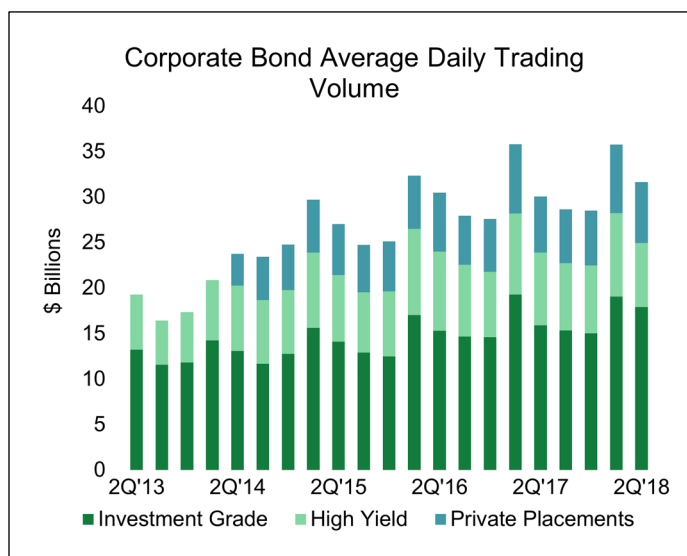


Source: S&P Global Ratings

⁷ Standard & Poor's Rating Services, [Fleetcorp Becomes the First Turkish Company To Default in 2018](#), August 16, 2018.

Trading Activity

According to the FINRA TRACE data, average daily trading volume of non-convertible corporate bonds was \$31.6 billion in 2Q'18, down 11.5 percent from \$35.8 billion in 1Q'18 but up 5.4 percent y-o-y. Public IG corporate bonds average daily trading volume decreased to \$17.9 billion in 2Q'18, down 5.9 percent from \$19.1 billion in the previous quarter but up 12.7 percent from \$15.9 in 2Q'17. Public HY corporate bonds average daily trading volume was \$7.0 billion in 2Q'18, down 23.4 percent from \$9.2 billion in the previous quarter and down 12.2 percent from \$8.0 billion in 2Q'17. Private placements' average daily trading volume decreased to \$6.7 billion in 2Q'18, down 11.2 percent from \$7.6 billion in 1Q'18 but up 9.2 percent y-o-y.



Note: Includes nonconvertible corporate bonds only; private placements trading volume only available from 2Q'14.
Source: FINRA TRACE

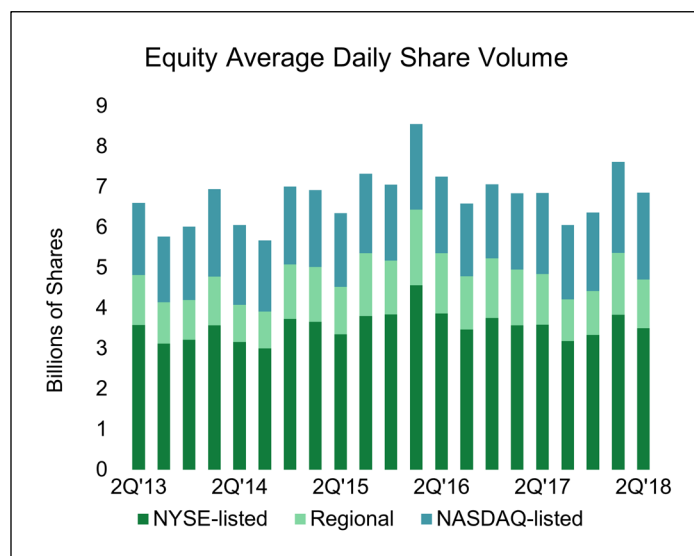
Equity and Other Markets

The U.S. stock market posted gains in the second quarter of 2018. The S&P 500 closed 2Q'18 at 2,718.37, up 2.9 percent the prior quarter and 12.2 percent y-o-y. The NASDAQ Composite Index closed 2Q'18 at 7510.30, up 6.3 percent q-o-q and 22.3 percent y-o-y. The Dow Jones Industrial Average (DJIA) ended 2Q'18 at 24,271.41, up 0.7 percent q-o-q and 13.7 percent y-o-y.

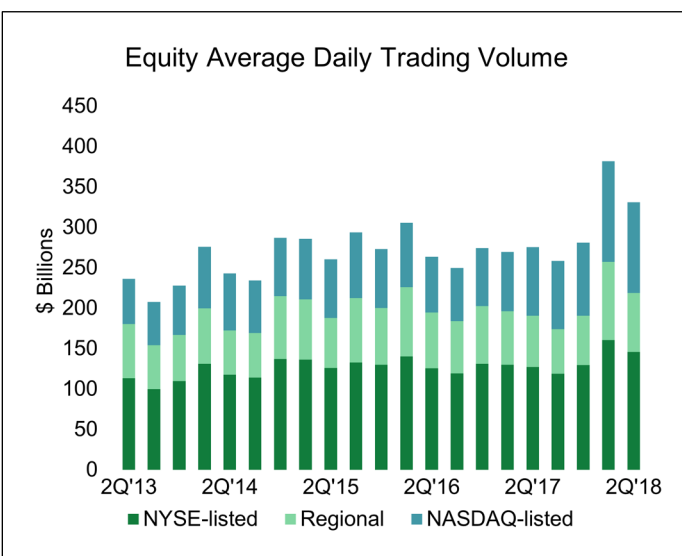
Average Daily Share and Dollar Volume

Equity market average daily share volume was 6.9 billion shares in 2Q'18, a decrease of 10.0 percent from 7.6 billion shares in 1Q'18 but a 0.1 percent increase from 6.85 billion shares in 2Q'17. The largest quarterly percentage decline was observed in stock trading on regional exchanges, where average daily share volume decreased by 21.1 percent in 2Q'18 q-o-q (1.2 billion shares in 2Q'18). Average daily share volume of NYSE-listed and NASDAQ-listed stocks also decreased by 8.7 percent (2.1 billion shares) and 4.7 percent (3.5 billion shares) q-o-q, respectively.

Equity market average daily dollar volume decreased by 13.4 percent to \$330.8 billion in 2Q'18 from \$381.8 billion in 1Q'18 but was up 20.0 percent from \$275.6 billion in 2Q'17. The largest quarterly percentage decline in dollar volume was observed in regional-listed stocks (down 24.8 percent, or \$72.8 billion), followed by NASDAQ-listed (down 10.0 percent, \$112.1 billion) and NYSE-listed (down 9.0 percent, \$145.9 billion).



Source: Cboe Exchange, Inc.



Source: Cboe Exchange, Inc.

NYSE Short Interest

The number of shares sold short on the NYSE averaged 16.3 billion in 2Q'18, up 0.8 percent from 16.1 billion in the previous quarter but down 0.4 percent from 16.4 billion in 2Q'17. NYSE short interest was 2.7 percent above the five-year average of 15.9 billion. Out of approximately 6,100 stocks listed on NYSE, a short position was shown in 4,884 issues at the end of 2Q'18 and 3,922 issues showed a short position of 5,000 shares or more.⁸

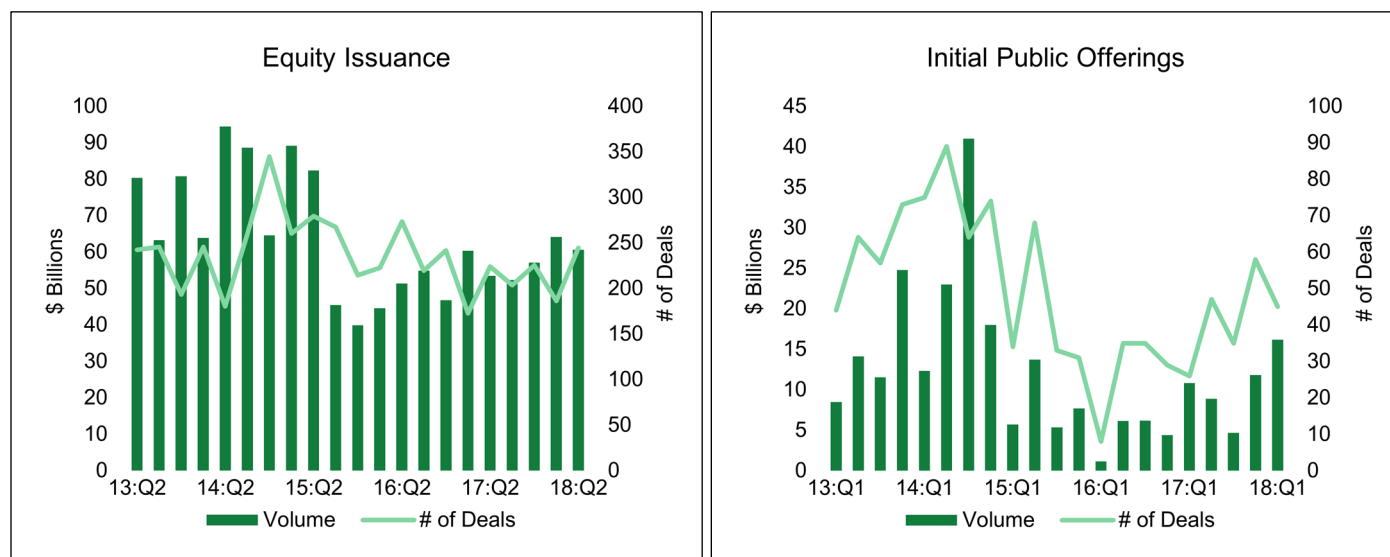
Equity Issuance

Equity underwriting decreased by 5.5 percent to \$60.6 billion in the second quarter from \$64.1 billion in 1Q'18 but was up 13.2 percent from \$53.5 billion in 2Q'17. Equity underwriting volume in 2Q'18 was 4.9 percent below the five-year average of \$63.7 billion.

IPO Volume

"True" initial public offerings (IPOs), which exclude closed-end mutual funds, decreased to \$14.4 billion on 61 deals in 2Q'18, an 11.0 percent decrease from \$16.2 billion on 45 deals in 1Q'18 but up 62.1 percent from \$8.9 billion on 47 deals in 2Q'17. The top three 2Q'18 IPO issuance sectors by dollar volume were: high technology (\$4.3 billion on 16 deals), financials (\$4.1 billion on 7 deals) and healthcare (\$1.8 billion on 18 deals), which together accounted for over two thirds of the quarter's total volume.

⁸ [NYSE Group Consolidated Short Interest Reports](#), July 11, 2018.



Source: Thomson Reuters

Note: Excludes closed-end funds
Source: Thomson Reuters

Secondary Offerings Volume

Secondary market issuance stood at \$41.9 billion on 194 deals in 2Q'18, unchanged from \$41.9 billion on 199 deals in 1Q'18 but an increase of 9.7 percent from \$38.2 billion on 194 deals in 2Q'17.

M&A Volume

Announced U.S. mergers and acquisitions (M&A) volume increased to \$635.1 billion in 2Q'18, an 8.2 percent increase from the previous quarter's \$587.2 billion and a 74.1 percent increase from \$364.7 billion in 2Q'17. M&A volume was 27.5 percent above the five-year quarterly average of \$497.9 billion.

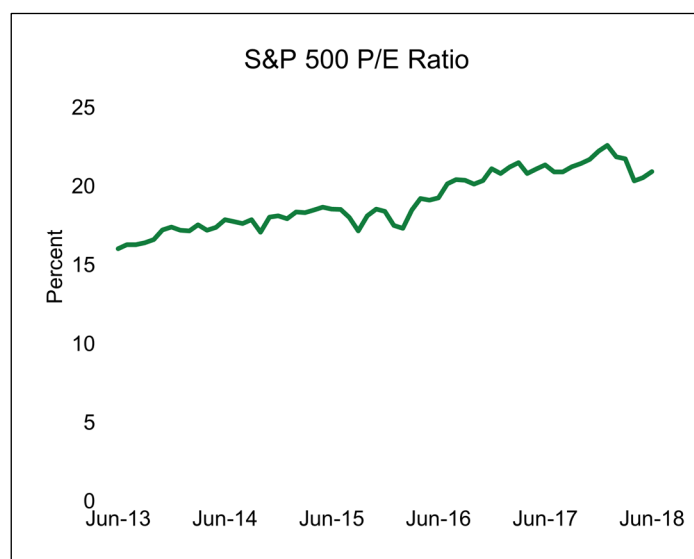
According to data from Dealogic, the amount of "U.S. Inbound" M&A (money invested in U.S. companies by those outside the U.S. through M&A) fell to \$54.8 billion in 2Q'18, down 30.1 percent from \$78.4 billion in the previous quarter and down 6.6 percent from \$58.7 billion in 2Q'17. The dollar amount U.S. companies invested in other countries through M&A ("U.S. Outbound") rose to \$95.6 billion in 2Q'18, up 9.4 percent from \$87.4 billion in 1Q'18 and up 3.5 times from \$27.2 billion invested in 2Q'17.

S&P P/E Ratio

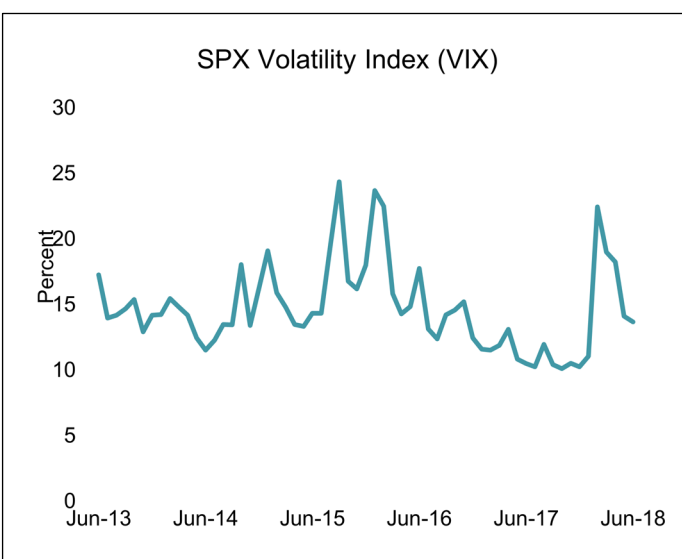
The S&P 500's P/E ratio averaged 20.6 in 2Q'18, down 6.7 percent from the previous quarter's 22.1 and down 2.3 percent from 21.1 in 2Q'17. The S&P P/E ratio stood 8.6 percent above the 5-year average of 19.0 but 29.9 percent below the all-time high of 29.5 in 2Q'99.

CBOE VIX Index

The Chicago Board Options Exchange Volatility Index (VIX) decreased to an average of 15.3 in the second quarter, down 11.6 percent from 17.4 in 1Q'18 but up 34.2 percent from 11.4 in 2Q'17. The quarter started with the index declining from a high of 23.62 in early April to a low of 11.64 in early June and bounced back up slightly to end 2Q'18 at 16.09. The spread between high and low values for the VIX was 11.98 in 2Q'18, much tighter than 28.17 in 1Q'18 but wider than 6.21 spread in 2Q'17.



Source: Standard & Poor's

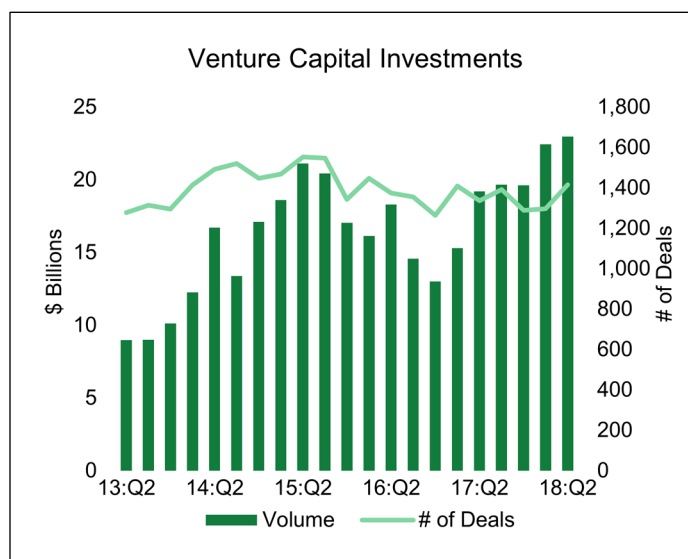


Source: Chicago Board of Options Exchange

Venture Capital Volume

Venture capitalists invested \$23.0 billion in 1,416 deals in the second quarter of 2018, according to the MoneyTree™ Report from PricewaterhouseCoopers LLP (PwC) and the National Venture Capital Association (NVCA), based on data provided by Thomson Reuters. Quarterly venture capital (VC) investment activity increased by 2.3 percent in dollar terms and by 9.2 percent in the number of deals compared to 1Q'18 when \$22.4 billion was invested in 1,297 deals. The internet sector continued to receive the highest level of funding of all industries with \$8.9 billion in 2Q'18, up 19.2 percent from \$7.5 billion in 1Q'18 but down 4.2 percent y-o-y.

The healthcare sector received second largest amount of funding with \$5.3 billion (down 0.9 percent q-o-q) followed by the mobile & telecommunications sector with \$3.4 billion (down 3.8 percent q-o-q).⁹



Source: Pricewaterhouse/Venture Economics/NVCA
MoneyTree Survey

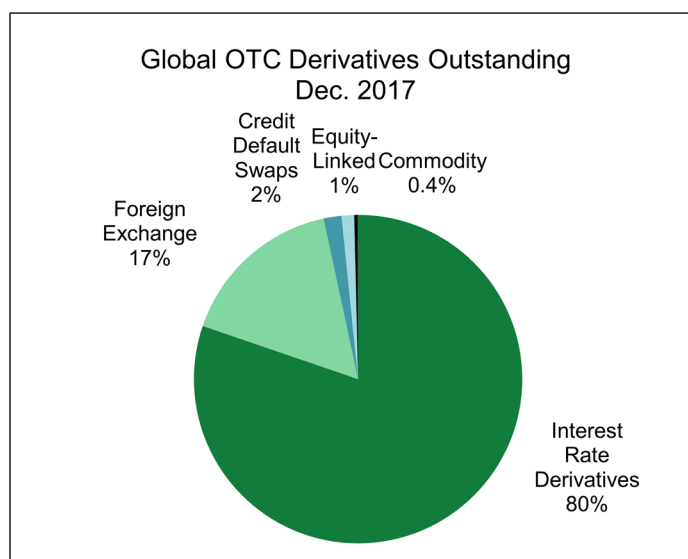
⁹ [U.S. MoneyTree Report](#), 2Q 2018.

Over the Counter Derivatives

Global OTC Derivatives Market

According to the most recent Bank of International Settlements (BIS) Semiannual Over-the-Counter (OTC) Derivatives Markets Statistics Report (“BIS Report”), the gross notional amount outstanding of OTC derivatives totaled \$531.9 trillion as of end-December 2017 (down 19.4 percent from end-June 2017). Most product classes saw slight decreases from end-June 2017, including equity-linked contracts (down 5.7 percent to 6.6 trillion), credit default swaps (CDS) (down 3.8 percent to \$9.5 trillion), interest rate derivatives (“IRD”) (down 1.8 percent to \$426.6 trillion) and foreign exchange (down 1.2 percent to \$87.1 trillion). “Other” derivatives contracts experienced the largest increase from the end-June 2017 (up 22.3 percent to \$137 billion), followed by commodity derivatives (up 5.7 percent to \$1.7 trillion).

The gross market value of OTC derivatives decreased to \$11.0 trillion as of end-December 2017, down 13.6 percent – its lowest level since 2007 according to BIS data. Gross credit exposure of outstanding OTC derivatives decreased 3.1 percent to \$2.7 trillion during the same period.



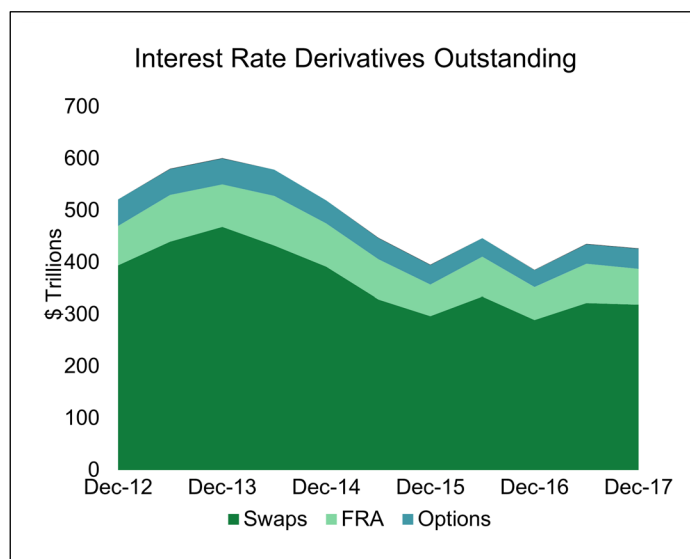
Note: Gross notional amounts outstanding
Source: Bank for International Settlements

Interest Rate Derivatives

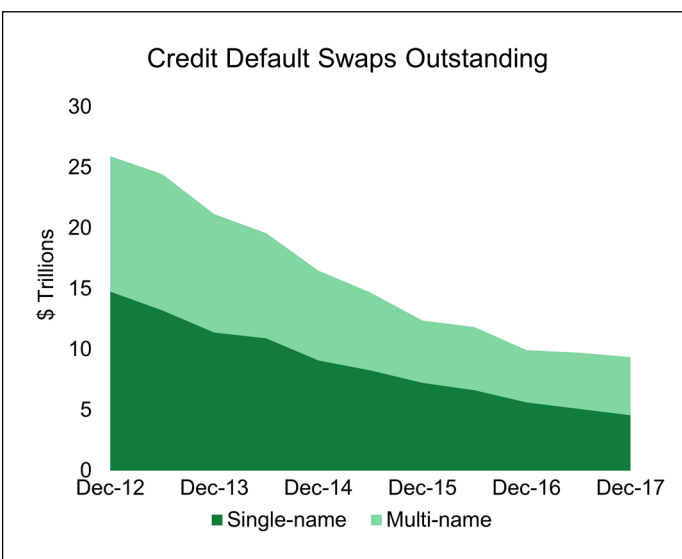
According to the BIS Report, IRD accounted for the majority of the gross notional amount outstanding for the OTC derivatives market, at \$426.6 trillion as of end-December 2017, representing 80.2 percent of the global market. Interest rate swaps (IRS) (accounting for 74.7 percent of the total IRD market) totaled \$318.9 trillion, largely unchanged from end-June 2017, but down 10.3 percent y-o-y. Options increased 3.9 percent from end-June 2017 and 19.2 percent y-o-y, while Forward Rate Agreements (FRAs) declined 9.4 percent from end-June 2017, but rose 8.2 percent y-o-y.

Credit Default Swaps

According to the BIS Report, CDS accounted for 1.8 percent of the gross notional amount outstanding of the global OTC derivatives market, at \$9.4 trillion as of end-December 2017 (down 3.8 percent from \$9.7 trillion or end-June 2017). This decline was largely due to continued drop in single-name CDS, which totaled \$4.6 trillion as of end-December 2017 (down 10.4 percent from end-June 2017 and 19.0 percent y-o-y). Multi-name CDS totaled \$4.9 trillion as of end-December 2017, up 3.4 percent from end-December 2017 (and up 11.4 percent y-o-y). Index CDS totaled \$4.4 trillion as of end-December 2017 (up 5.0 percent from end-June 2017 and 15.7 percent y-o-y).



Note: Gross notional amounts outstanding
Source: Bank for International Settlements



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Source: Bank for International Settlements

Credits

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