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RESEARCH QUARTERLY

First Quarter 2018

RESEARCH REPORT

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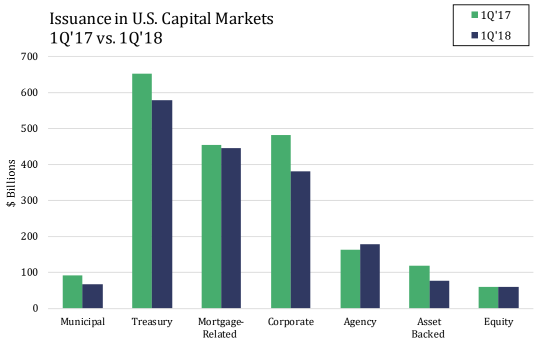
CAPITAL MARKETS OVERVIEW



Note: Includes long-term issuance only
Source: Thomson Reuters, U.S. Treasury, U.S. Federal Agencies

Issuance Highlights - Year-Over-Year(1)

$ Billions	2018:Q1	2017:Q1	% Change
Municipal	67.6	93.1	-27.4%
Treasury	580.0	654.1	-11.3%
Mortgage-Related	444.3	456.1	-2.6%
Corporate	380.7	481.9	-21.0%
Federal Agency	177.7	165.1	7.6%
Asset-Backed	77.8	118.5	-34.4%
Equity	59.5	60.3	-1.3%

Issuance Highlights - Quarter-Over-Quarter(1)

$ Billions	2018:Q1	2017Q4	% Change
Municipal	67.6	146.4	-53.8%
Treasury	580.0	535.5	8.3%
Mortgage-Related	444.3	483.2	-8.1%
Corporate	380.7	319.2	19.3%
Federal Agency	177.7	207.9	-14.5%
Asset-Backed	77.8	154.5	-49.6%
Equity	59.5	55.0	8.2%

(1) Includes long-term issuance only

Total Capital Markets Issuance

Long-term securities issuance totaled $1.80 trillion in 1Q'18, a 4.6 percent decrease from $1.88 trillion in 4Q'17 and an 11.5 percent decrease year-over-year (y-o-y) from $2.03 trillion. Issuance decreased quarter-over-quarter (q-o-q) across all asset classes except Treasury, corporate, and equity while y-o-y, issuance decreased across all asset classes except federal agency.

Long-term public municipal issuance volume including private placements for 1Q'18 was $67.6 billion, down 53.8 percent from $146.4 billion in 4Q'17 and down 27.4 percent from $93.1 billion in 1Q'17.

The U.S. Treasury issued $580.0 billion in coupons, Floating Rate Notes and Treasury Inflation Protected Securities in 1Q'18, up 8.3 percent from $535.5 billion in the prior quarter but 11.3 percent below $654.1 billion issued in 1Q'17.

Issuance of mortgage-related securities, including agency and non-agency passthroughs and collateralized mortgage obligations, totaled $444.3 billion in the first quarter, an 8.1 percent decrease from 4Q'17 ($483.2 billion) and a 2.6 percent decrease y-o-y ($456.1 billion).

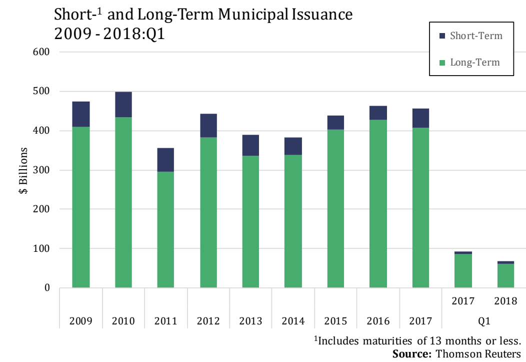
Corporate bond issuance totaled $380.7 billion in 1Q'18, up 19.3 percent from $319.2 billion issued in 4Q'17 but down 21.0 percent from 1Q'17's issuance of $481.9 billion. Of 1Q'18 corporate bond issuance, investment grade issuance was $319.1 billion (83.8 percent of total) while high yield issuance was $61.6 billion (16.2 percent of total).

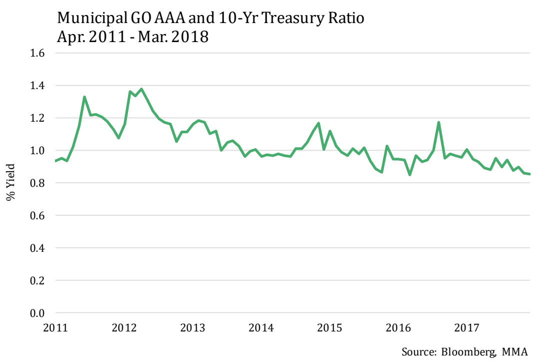
Long-term federal agency debt issuance was $177.7 billion in the first quarter, slightly down from $207.9 billion in 4Q'17 but up 7.6 percent from $165.1 billion issued in 1Q'17.

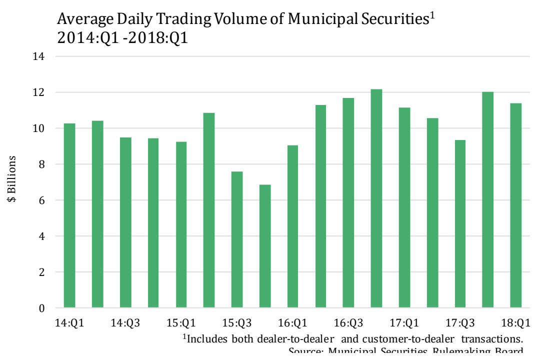
Asset-backed securities issuance totaled $77.8 billion in the first quarter, a decrease of 49.6 percent q-o-q ($154.5 billion) and a 34.4 percent decrease y-o-y ($118.5 billion).

Equity underwriting increased by 8.2 percent to $59.5 billion in the first quarter from $55.0 billion in 4Q'17 but down 1.3 percent from $60.3 billion issued in 1Q'17. Of the total, "true" initial public accounted for $16.1 billion, up 36.6 percent from $11.8 billion in 4Q'17 and up 44.8 percent from $11.1 billion in 1Q'17.

MUNICIPAL BOND MARKET







According to Thomson Reuters, long-term public municipal issuance volume totaled $61.9 billion in the first quarter of 2018, a decline of 54.6 percent from the prior quarter ($136.4 billion) and a decline of 28.5 percent year-over-year (y-o-y) ($86.5 billion). Including private placements[1] ($1.4 billion), long-term municipal issuance for 1Q'18 was $63.3 billion.

Tax-exempt issuance totaled $55.1 billion in 1Q'18, a decline of 53.9 percent q-o-q and 28.0 percent y-o-y. Taxable issuance totaled $5.0 billion in 1Q'18, a decline of 59.9 percent and 36.5 percent, respectively, q-o-q and y-o-y. AMT issuance was $2.2 billion in 1Q'18, a decline of 59.0 percent q-o-q and 19.6 percent y-o-y.

By use of proceeds, general purpose led issuance totals in 1Q'18 ($17.2 billion), followed by primary & secondary education ($14.7 billion), higher education ($4.2 billion), water & sewer facilities ($4.1 billion) and toll roads/highways/streets ($3.3 billion). Refunding volumes plummeted to 19.4 percent of issuance in 1Q'18 from 47 percent in the prior quarter as advance refundings were eliminated beginning in 2018 with the passage of the Tax Cuts and Jobs Act.[2]

Yields, Inflows, and Total Return

Ratios of 10-year tax-exempt AAA GOs and similar-maturity Treasuries remained unchanged in the first quarter on a q-o-q basis, averaging 86.0 percent in both 1Q'18 and 4Q'17.

According to the Investment Company Institute (ICI), fourth quarter net flow into long-term tax-exempt funds was positive, with $10.7 billion of net inflow in 1Q'18 compared to $2.2 billion of inflow from 4Q'17 and $7.1 billion of net inflow y-o-y.

According to ICE BofAML indices, municipals lost 1.1 percent in the first quarter of 2018. For the first quarter, pollution control, multifamily, and tobacco bonds outperformed among the individual municipal sectors (a decline of 0.3 percent, 0.4 percent and 0.6 percent respectively) in 1Q'18 while tax, toll/turnpike, and utilities underperformed relative to other municipal sectors (a decline of 1.3 percent in all three sectors). Build America Bonds (BABs) also lost 1.1 percent in 1Q'18, performing similarly to tax-exempt bonds but outperforming similarly-rated corporate bonds (a total return loss of 2.3 percent).

Trading Activity

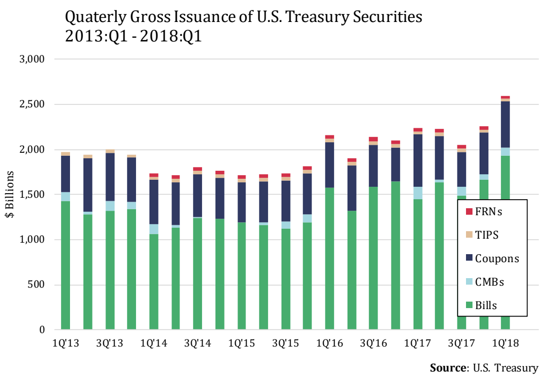
Trading activity fell q-o-q to $11.4 billion daily in 1Q'18, a 5.5 percent decrease from 4Q'17 ($12.0 billion) but a 2.0 percent increase from 1Q'17 ($11.1 billion). By number of trades, trading activity rose 9.4 percent on a q-o-q basis but fell 0.6 percent on a y-o-y basis.

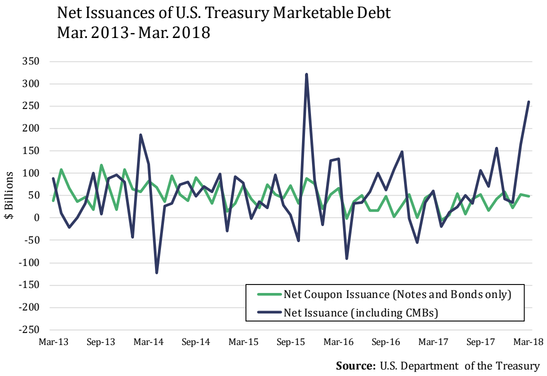
Broker-Dealers and Holdings

Bank holdings of municipal loans rose in 4Q'17 from the prior quarter to $190.6 billion (from $183.4 billion) while holdings of bonds also rose slightly to $385.9 billion (from $383.5 billion).

[1] Private placement figures are excluded in charts and tables.
[2] Percentages represent both full refundings and the half the dollar amount of deals that contain both refundings and new financing.

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 $2.60 trillion in 1Q'18, up 14.8 percent from $2.26 trillion in 4Q'17 and a 15.8 percent increase from $2.42 trillion in 1Q'17. Treasury net issuance, including CMBs, increased to $458.5 billion in the first quarter, up from $270.1 billion in the previous quarter and up from net issuance of $39.7 billion in 1Q'17. First quarter net issuance was slightly less than the U.S. Treasury's net issuance estimates of $441.0 billion.[3].

In 1Q'18, $80.0 billion in CMBs were issued, a 35.6 percent increase from $59.0 billion issued in 4Q'17 but a 42.0 percent decrease from 138.0 billion in 1Q'17 of CMBs issuance.

The U.S. Treasury issued $580.0 billion in coupons, FRNs and TIPS in 1Q'18, up 8.3 percent from $535.5 billion in the prior quarter but down 11.3 percent from $654.1 billion issued in 1Q'17.

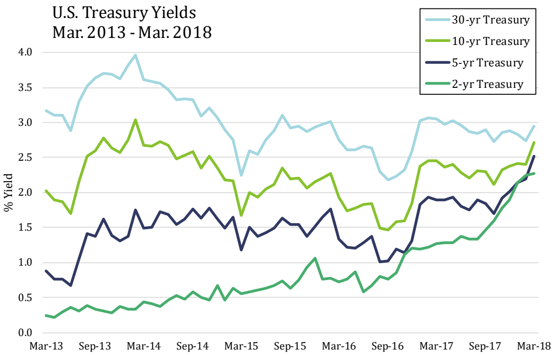
Excluding TIPS and FRNs, total gross issuance of Treasury marketable coupon securities was $513.2 billion, up 10.7 percent from $463.5 billion issued in 4Q'17 but 11.0 percent down from $576.4 billion issued in 1Q'17. Net coupon issuance was $125.5 billion in 1Q'18, an 8.0 percent increase from the $116.2 billion in 4Q'17 and up 24.5 percent y-o-y.

In 1Q'18, $32.2 billion in FRNs were issued, down 22.2 percent from $41.4 billion in 4Q'17 and down 26.0 percent from $43.5 billion in 1Q'17.

Trading Activity

The daily trading volume of Treasury securities by primary dealers averaged $569.6 billion in 1Q'18, a 14.9 percent increase from $495.9 billion in the previous quarter and a 5.5 percent increase from $539.7 billion traded daily in 1Q'17.

[3] Treasury's March borrowing estimates can be found here.



Source: Federal Reserve

Treasury Yield Curve

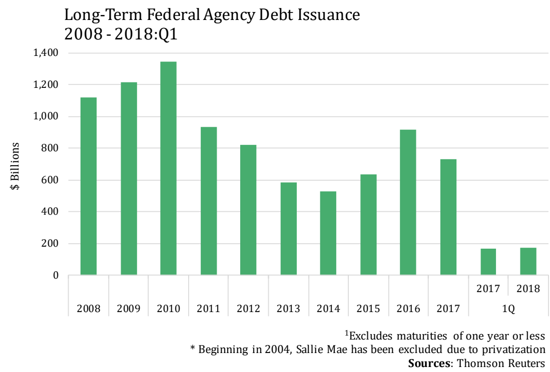
In 1Q'18 U.S. Treasury yields increased for short-, medium-, and long-term securities. Two-year rates increased to 2.27 percent in 1Q'18, up from 1.89 percent end-December and from 1.27 percent end-March 2017. Five-year yields increased to 2.56 percent end-March, up from 2.20 percent in 4Q'17 and from 1.93 percent in 1Q'17. Ten-year yields increased to 2.74 percent end-March, up from 2.40 percent end-December and up from 2.40 percent in 1Q'17. Thirty-year yields ended 1Q'18 at 2.97 percent, up from 2.74 percent end-December but down from 3.02 percent end-March 2017.

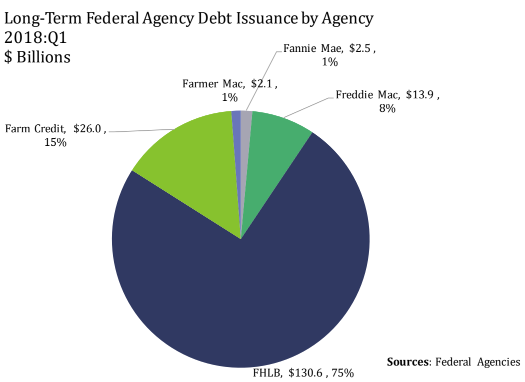
FOMC Meeting Summary

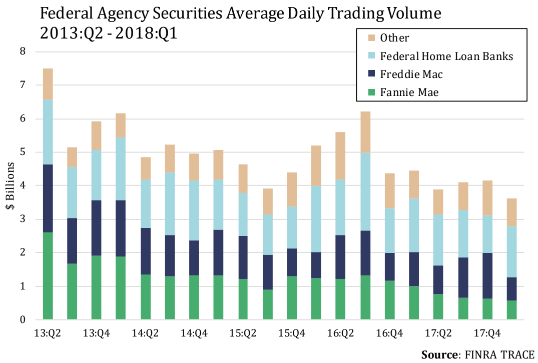
During its March 21, 2018 meeting, the Federal Reserve's Federal Open Market Committee decided to raise the target range for the federal funds rate to 1.50-1.75 percent.[4] In addition, the Board of Governors of the Federal Reserve System voted unanimously to approve a 1.25 percentage point increase in the primary credit rate to 2.25 percent, effective March 22, 2018.

[4] Statement from the FOMC Meeting, March 21st, 2018.

FEDERAL AGENCY DEBT MARKET







Federal agency long-term (LTD) issuance was $177.7 billion in the first quarter, a 14.5 percent decrease from $207.9 billion in 4Q'17 and a 7.6 percent increase from $165.1 billion issued in 1Q'17.

Fannie Mae's 1Q'18 gross debt issuance, both short term debt (STD) and LTD, totaled $222.4 billion, a 1.2 percent decrease from $219.7 billion in 4Q'17 and a 47.9 percent increase from $150.4 billion in 1Q'17. STD issuance increased to $217.3 billion in 1Q'18 compared with $194.1 billion in 4Q'17 and LTD issuance also decreased to $5.1 billion in 1Q'18 from $25.6 billion in 4Q'17. Fannie Mae had $34.6 billion STD outstanding and $231.5 billion LTD outstanding at the end of 1Q'18, up 3.5 percent from the previous quarter's STD outstanding but down 5.2 percent from $244 billion LTD outstanding in 4Q'17.

Freddie Mac's gross debt issuance totaled $88.2 billion in 1Q'18, a decrease of 20.3 percent from $110.6 billion in 4Q'17 and a decrease of 30.2 percent from $126.4 billion in 1Q'17. As of 1Q'18, Freddie Mac had $27.0 billion STD and $244.4 billion LTD outstanding, in comparison with $45.8 billion STD and $261.1 billion LTD in the prior quarter.

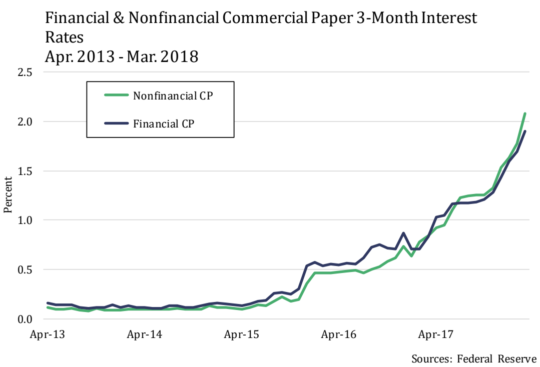
The 12 Federal Home Loan Banks (FHLB) issued $130.6 billion in LTD in the first quarter, a decrease of 0.1 percent from $130.7 billion in 4Q'17 but an increase of 22.1 percent from $107.0 billion in 1Q'17. In 1Q'18, $1,785.4 billion of STD was issued, up 6.5 percent from $1,676.7 billion issued in 4Q'17 and up 32.8 percent from $1,344.4 billion in 1Q'17. Total FHLB LTD outstanding was $629.4 billion at the end of March, down from $642.2 billion outstanding in 4Q'17. Discount notes outstanding decreased to $389.8 billion in 1Q'18 from $392.0 billion in 4Q'17.

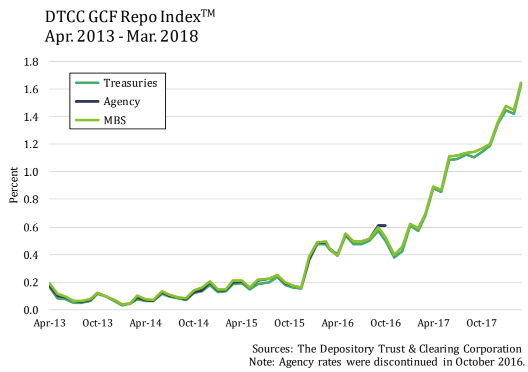
Total Farm Credit System gross debt issuance for 1Q'18 totaled $59.6 billion, down 24.3 percent from the previous quarter's $78.7 billion and down 13.4 percent y-o-y. Total debt outstanding at the end of the first quarter was $269.7 billion, of which $22.6 billion was short-term and $247.1 billion was long-term compared to $25.6 billion short-term and $239.8 billion long-term in the prior quarter.

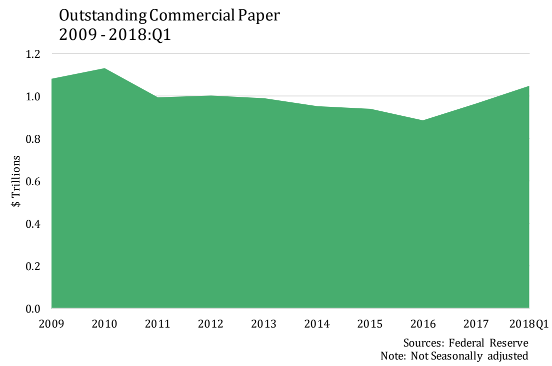
Trading Activity

Average daily trading volume of agency securities in the fourth quarter was $3.6 billion, down 13.2 percent from $4.2 billion traded in 4Q'17 and down 18.9 percent from $4.5 billion traded in 1Q'17. The quarter-over-quarter decline was primarily driven by Freddie Mac trading dollar volume declining 49.7 percent.

FUNDING AND MONEY MARKET INSTRUMENTS







Total Repurchase Activity

The average daily amount of total repurchase (repo) and reverse repo agreement contracts outstanding was $3.94 trillion in 1Q'18, a decrease of 4.7 percent from 4Q'17's $4.13 trillion but a slight increase of 0.3 percent y-o-y.

Average daily outstanding repo transactions totaled $2.21 trillion in 1Q'18, a decrease of 4.2 percent q-o-q but an increase of 1.4 percent y-o-y. Reverse repo transactions in 1Q'18 averaged $1.72 trillion daily outstanding, a decrease of 5.3 q-o-q and a decrease of 1.1 percent y-o-y.

GCF Repo Rates

DTCC general collateral finance (GCF) repo rates increased for Treasuries and MBS in 1Q'18 on a q-o-q basis and y-o-y basis: the average repo rate for Treasuries (30-year and less) rose to 150.1 basis points (bps) from 4Q'17's average rate of 122.4 bps and 1Q'17's average of 62.5 bps. The average MBS repo rate rose to 152.7 bps from 124.3 bps in the previous quarter and 64.0 bps in 1Q'17.

Financial and Nonfinancial 3-Month Commercial Paper Interest Rates

Interest rates for nonfinancial commercial paper (CP) rose to 208 bps end-March 2018 from 153 bps end-December 2017 and from 84 bps end-March 2017. Financial CP increased to 190 bps end-March 2018 from 143 bps end-December 2017 and also rose from 83 bps end-March 2017.

Total Money Market Instruments Outstanding

Preliminary outstanding volume of commercial paper stood at $1.05 trillion at the end of the first quarter, up 8.5 percent from the prior quarter's $965.9 billion and an increase of 11.9 percent y-o-y.

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 $444.3 billion in the first quarter, a 14.1 percent decline from 4Q'17 ($517.4 billion) and a 3.9 percent decline y-o-y ($462.5 billion). The decline was due to decreases in both non-agency and agency MBS issuance volumes. The agency share of total issuance increased to 89.5 percent from 87.5 percent.

Agency mortgage-related outstandings totaled $8.1 trillion as of the end of the first quarter, a 1.0 percent increase from the prior quarter and a 4.6 percent increase y-o-y.

Agency Issuance and Outstanding

Agency mortgage-related issuance totaled $397.7 billion in 1Q'18, a decrease of 12.2 percent q-o-q ($452.8 billion) and a decline of 5.1 percent from 1Q'17 ($419.2 billion). Agency MBS outstandings totaled $7.0 trillion, a 1.0 percent increase from the prior quarter and a 5.5 percent increase y-o-y, while agency CMO outstanding totaled $1.1 trillion, a 1.3 percent increase from the prior quarter and an 0.8 percent decline y-o-y.

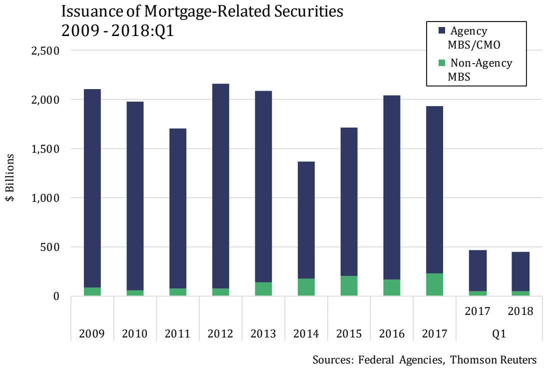
According to Freddie Mac, average conventional 30-year mortgage rates rose in the first quarter to 4.44 percent, up 52 basis points from 3.92 percent in the prior quarter.

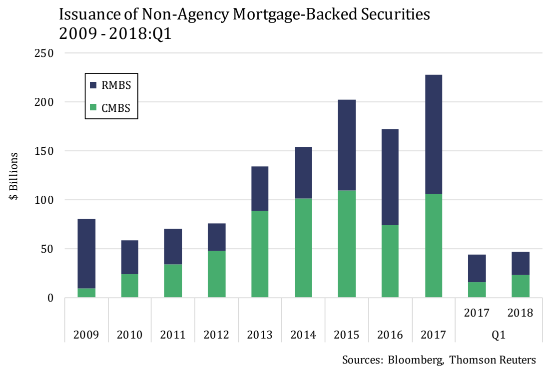
Non-Agency Issuance and Outstanding

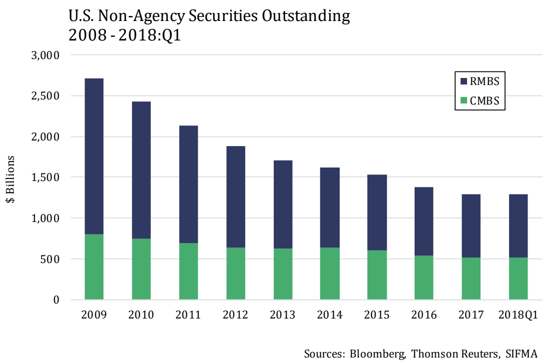
Non-agency issuance totaled $46.7 billion in 1Q'18, a decrease of 27.8 percent from 4Q'17 ($64.7 billion) but an increase of 7.6 percent y-o-y ($43.4 billion). Non-agency residential mortgage-backed securities (RMBS) issuance was $23.5 billion (down 29.2 percent q-o-q and 16.3 percent y-o-y), while commercial mortgage backed securities (CMBS) issuance was $23.2 billion (down 26.3 percent q-o-q but up 51.2 percent y-o-y). Non-agency outstanding was $1.3 trillion as of the end of the first quarter, a 0.5 percent fall from the prior quarter and a 4.4 percent fall y-o-y. CMBS outstanding was $516.5 billion, a 1.6 percent increase from the prior quarter and a 1.0 percent rise y-o-y, while RMBS outstanding was $776.3 billion, a 1.9 percent fall from the prior quarter and 7.7 percent fall y-o-y.

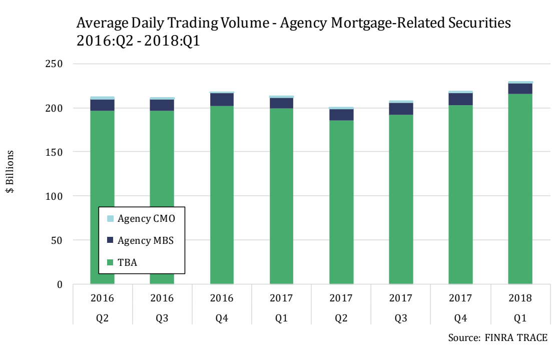
Trading Activity

Daily trading volumes for mortgage-related securities rose in the first quarter, with increases in both agency and non-agency trading volumes. Average daily trading volume of agency mortgage-related securities, including passthroughs, CMOs and TBAs, was $229.9 billion in 1Q'18, an increase of 5.0 percent from 4Q'17 and an increase of 7.8 percent y-o-y. Average daily trading volumes of non-agency securities fell slightly to $2.6 billion daily in 1Q'18, a decline of 2.9 percent q-o-q and 8.1 percent y-o-y.

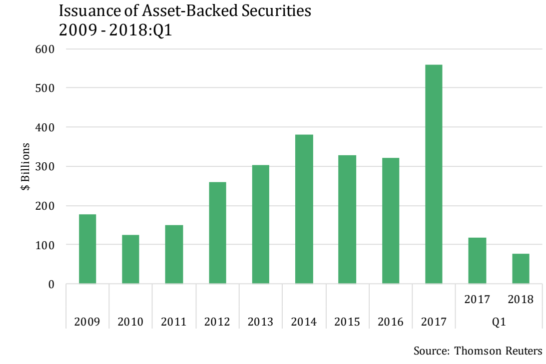


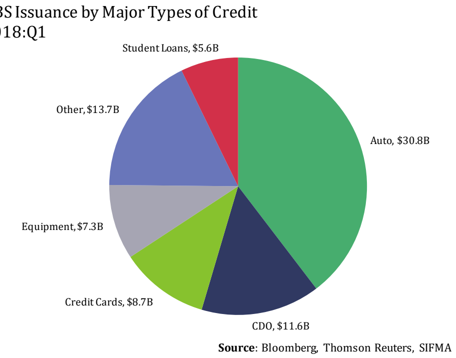


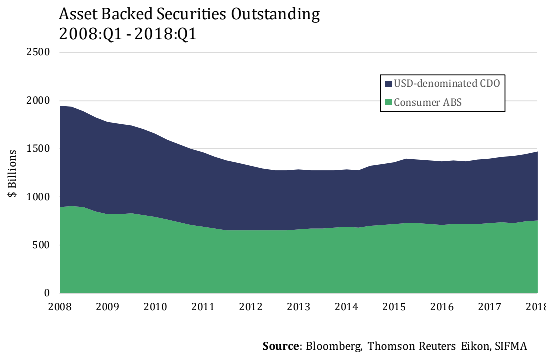


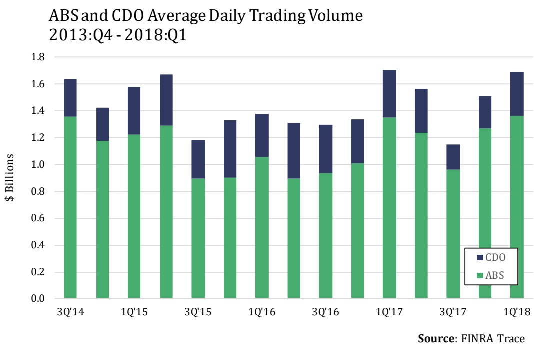


ASSET-BACKED SECURITIES









Asset-Backed Securities Issuance

Asset-backed securities (ABS) issuance totaled $77.8 billion in the first quarter, a decline of 49.6 percent q-o-q and 34.4 percent y-o-y. The auto and CDO sectors led issuance totals for the first quarter with $30.8 billion (39.6 percent of total issuance) and $11.6 billion (14.9 percent of total issuance), respectively.

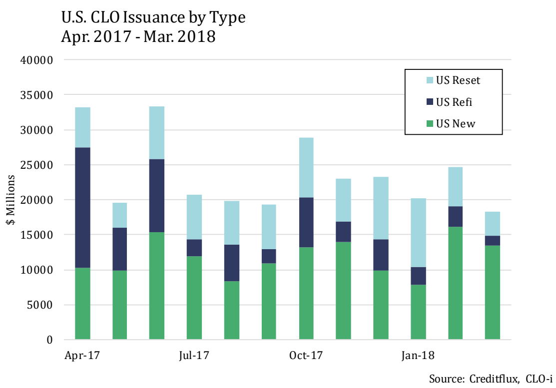
On a q-o-q basis, most major types of credit experienced a decline in issuance volumes in the first quarter, with the largest decline of 86.4 percent in the CDO sector. Credit cards, equipment, and "other" asset categories experienced q-o-q decreases of 4.0 percent, 7.1 percent, 36.3 percent respectively. Whereas auto, and student loans experienced increases in issuance with 18.9 percent, and 18.3 percent, respectively.

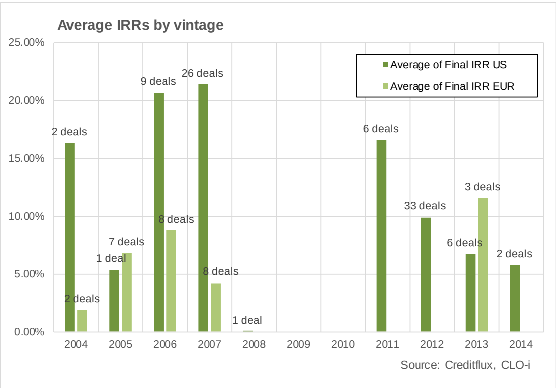
Outstanding volumes ended the first quarter at $1.47 trillion, up 1.6 percent q-o-q and up 5.5 percent y-o-y. USD-denominated CDOs, auto, equipment, and esoteric ABS experienced increases in outstanding volume by 0.2 percent, 1.4 percent, 1.4 percent, and 3.9 percent respectively. Student loans, and credit cards experienced decreases in volume by 0.8 percent, and 8.5 percent respectively. Notable subcategories to see y-o-y growth were: equipment leases (21.7 percent), large ticket transportation (47.7 percent), consumer/personal loans (43.4 percent), franchise/whole business (43.4 percent), insurance (25.6 percent), PACE (31.1 percent), and USD-denominated CLOs (15.4 percent).

Trading Activity

Daily average trading activity in ABS and CDOs increased in 1Q'18 to $1.7 billion, an increase of 12.0 percent from $1.51 billion in 4Q'17 but a decrease of 0.9 percent from 1Q'17. Trading activity increased in both ABS and CDO markets, 7.3 percent and 37.8 percent q-o-q, respectively.

U.S. COLLATERALIZED LOAN OBLIGATIONS[5]





Issuers excited by busy first quarter

After 13 months of compulsory risk retention for US CLOs, it seems that the simplified regulatory regime is already encouraging a host of CLOs from returnees and new entrants to the market

The first quarter of 2018 has got the market feeling bullish about the coming year. In comparison to Q1 2017, US new issue volumes grew 102.7 percent (rising from $14.8 billion to $29.9 billion) and mid-market CLO issuance increased by 68.7 percent (from $2.0 billion to $3.4 billion). European CLO new issues saw the largest rise of all, improving by 118 percent (from €2.9 billion to €6.2 billion).

Risk retention: we barely knew thee

In 2017, the US and European CLO markets tackled risk retention side-by-side – but Europe will soon be going it alone. The biggest CLO news of the year so far came when the LSTA prevailed in its lawsuit against the SEC and the Federal Reserve, with an appeals court ruling that US CLO managers are not subject to credit risk retention laws under the Dodd-Frank Act.

The ruling certainly lowers the barriers to entry for wannabe CLO managers, but – as one arranger points out – it may not have an enormous effect on future volumes because loan supply will act as a constraint.

John Popp, global head and chief investment officer of the credit investments group at Credit Suisse Asset Management, says that, even without risk retention, new managers face hurdles in attempting to break into the CLO market. "For established institutions wanting to enter the credit market as managers, CLOs are the easiest point of entry for them after the risk retention decision. Standalone players, on the other hand, will have a harder time entering the market as I expect the capital markets to impose some discipline," he says.

Voya Alternative Asset Management branched out to price its debut European CLO in the first quarter. The Scottsdale-based firm has an established US CLO business and the head of its senior loan group in Europe, Olivier Struben, says that Voya took a disciplined approach to putting together its inaugural European CLO. "Our business is focusing on fundamental risk. Most important for us was to ramp a quality portfolio from the start," he says.

2018 offered an opportune time for Voya to make its entrance due to favourable secondary loan prices. According to Struben: "From a liability spread point of view, late December and early January would have been the perfect time to price. However, due to softening of secondary loan prices post-pricing ramp conditions were not that bad at the end of March and in early April."

Voya received a warm welcome from the market as Voya Euro CLO I was priced with a tight triple A spread of 75 basis points – in line with the market average.

Permira returns after 10 years

Europe also opened its arms to Permira Debt Managers, which returned to the market after 10 years to price its first ever 2.0 deal. Arranged by BAML, Providus CLO I was a €362.5 million deal with a triple A print of 74 bps.

In the US, Greywolf Capital Management and Pretium returned to the new issue market after a break of three years, while Hayfin priced its first new deal, Hayfin Kingsland VIII, since acquiring Kingsland late last year.

In April there have been further indications that new and returning CLO managers could thrive in

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

the post-risk retention environment in the US. Post Advisory Group priced its first US CLO in April, while CarVal Investors began marketing its debut.

2018 so far has been completely dominated by new issuance, with new deals accounting for 48.7 percent of the US CLO market, 93.3 percent of the mid-market CLO space and 60 percent of the European CLO market.

A year ago, refinancings were flavour of the month (or quarter). In Q1 2018, CLO equity investors instead favoured resets or refis: $6.7 billion of broadly syndicated loan CLO refis were seen in Q1 compared to $18.8 billion of resets – a mammoth 348 percent increase from Q1 2017's reset volumes.

US sees increase in re-issues

Along with a reset wave, re-issues have gained in popularity. In Q1, six US managers re-issued their old deals to produce volumes of $4.2 billion. Citi arranged three of these deals, while JPM and Goldman Sachs each did two and BAML executed one.

Although both reset and re-issue offer an extension on a CLO's reinvestment period, a possible reason for the growing popularity of re-issues could lie with the relative ease with which they van be processed.

"In recent years, the 'Crescent letter' condition generally has restricted a reset of a CLO that has been previously refinanced," says Brad Larson, global head of CLO origination at Credit Suisse. He further adds: "A legacy transaction reset may require a 100 percent equity vote, whereas a re-issue can be done via a simple majority, which makes achieving consent more likely."

In Europe, €727.3 million of refis were executed in Q1, versus €3.0 billion of resets.

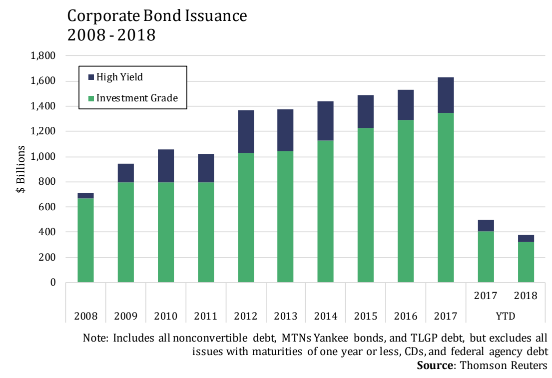
Spreads shift in and out

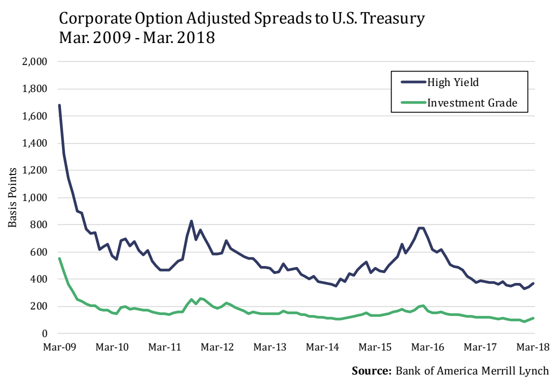
Spread widening affected the global credit markets after a bout volatility in the equities markets in February. The CLO market weathered this storm pretty well with spreads shifting tighter through February. But March and April has seen spreads shift wider once more. There have been rumours that the cause may be Japanese banks temporarily stepping away from senior CLO tranches – these institutions are heading into the end of their financial year and are less likely to be in risk-on mode in March.

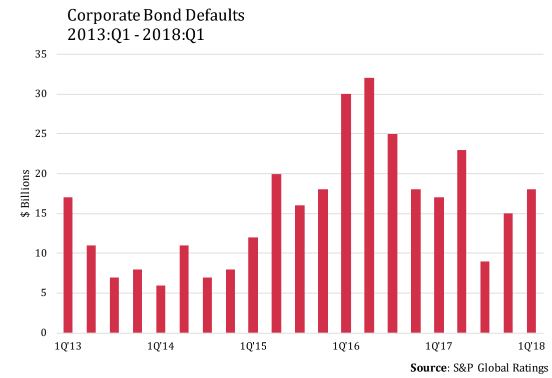
According to CSAM's Popp: "Liabilites drifting wider has affected CLO equity returns somewhat, but the benefit of locking in these liabilities is that you can refinance if things really contract. In three to five years there is scope for spread tightening, which could dramatically improve CLO returns."

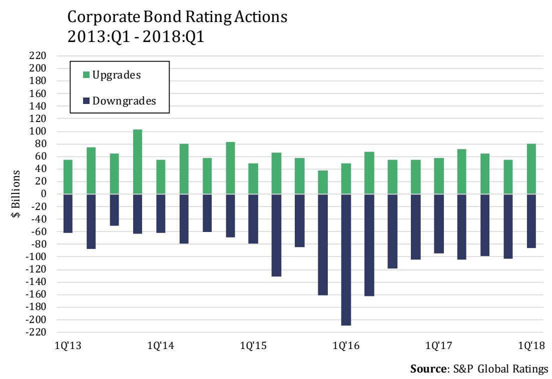
In Europe, market participants believe it's a short term technical imbalance that has created the move wider. London-based Struben says: "We have seen widening of liability spreads, resulting in higher average costs, while the collateral side remained roughly stable, reducing the arbitrage somewhat. At the same time, we believe that structural demand for European CLOs is increasing and will lead to tighter liability spreads in the longer run."

CORPORATE BOND MARKET









Corporate Bond Issuance

Corporate bond issuance totaled $380.7 billion in 1Q'18, up 19.3 percent from $319.2 billion issued in 4Q'17 but down 23.4 percent from 1Q'17's issuance of $496.7 billion. More than a third of the bonds issued in the first quarter were for indebtedness reduction (37.4 percent of total issuance), followed by general corporate purposes (34.8 percent), and future acquisitions (8.9 percent).

Investment grade (IG) bond issuance increased to $319.1 billion in 1Q'18, up 27.4 percent from $250.4 billion in the previous quarter but down 21.4 percent from $405.9 billion in 1Q'17. The top three industries accounted for over half of 1Q'18 IG issuance: financial companies remained the leading IG debt issuance sector, accounting for almost half ($149.5 billion) of all IG issuance, followed by the retail sector with 13.6 percent ($43.5 billion) and energy and power with 13.5 percent ($43.0 billion).

Issuance of high yield (HY) bonds decreased to $61.6 billion in 1Q'18, 10.4 percent below the 4Q'17's total of $68.8 billion and down 32.1 percent from $90.8 billion issued in 1Q'17. The following three sectors made up over half of total HY issuance in the first quarter: energy and power (26.0 percent, $16.0 billion), financials (22.9 percent, $14.1 billion), and materials (13.0 percent, $8.0 billion).

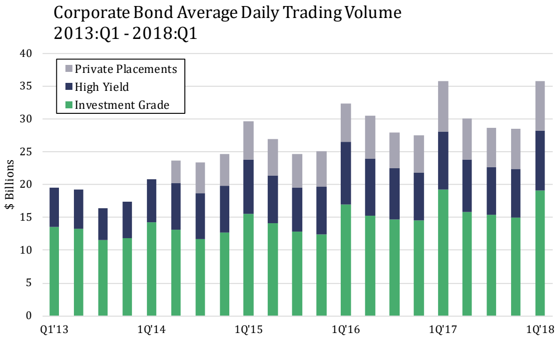
Bond Spreads and U.S. Default Rate

According to Bank of America-Merrill Lynch, option adjusted spreads for IG bonds as well as HY bonds widened in the first quarter of 2018. Spreads of IG bond stood at 117 bps at the end of 1Q'18, up 18 bps from 99 bps at end-December 2017 but down 7 bps from 124 bps at the end of March 2017. HY bond spreads widened q-o-q, ending 1Q'18 at 372 bps, 9 bps above 363 bps in 4Q'17 but down 20 bps from 392 bps at the end of March 2017.

S&P's Global Fixed Income Research reported the number of U.S. defaulted issuers increased to 18 issuers in the first quarter of 2018 from 15 in 4Q'17 and from 17 in 1Q'17. The U.S. trailing 12-month speculative-grade corporate default rate increased to 3.30 percent end-March 2018, up from 3.0 percent end-December 2017 but down from 4.10 percent end-March 2017. The U.S. speculative-grade corporate default rate is expected to fall further to 2.60 percent by December 2018.[6]

In 1Q'18, S&P Ratings Services downgraded 86 and upgraded 80 U.S. issuers, a ratio of downgrades to upgrades of 1.1. This was a decrease from the previous quarter when there were 103 downgrades versus 55 upgrades (downgrade/upgrade ratio of 1.9).

[6] Standard & Poor's Rating Services, NCSG And FirstEnergy Solutions Boost The 2018 Global Corporate Default Tally To 27, April 5, 2018.

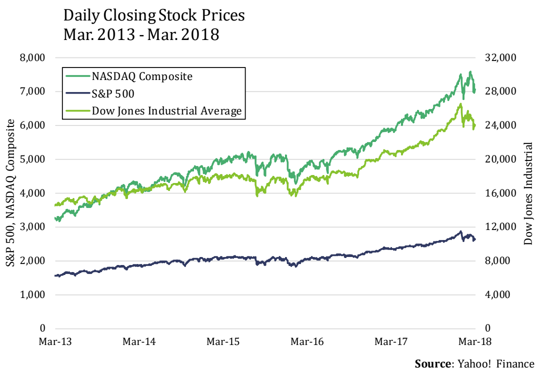


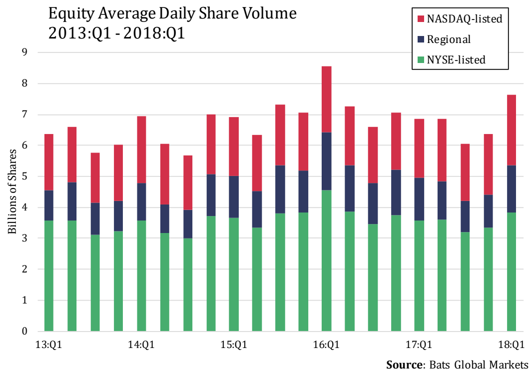
Note: Includes nonconvertible corporate bonds only; private placements trading volume only available from 2Q'14 on.
Source: FINRA TRACE

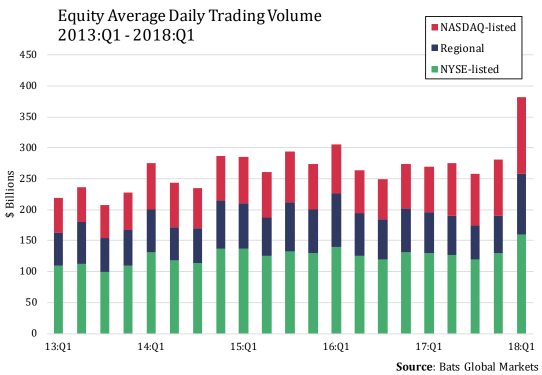
Trading Activity

According to the FINRA TRACE data, average daily trading volume of non-convertible corporate bonds was $35.9 billion in 1Q'18, up 25.8 percent from $28.5 billion in 4Q'17 and up 0.2 percent y-o-y. Investment grade corporate bonds average daily trading volume increased to $19.1 billion in 1Q'18, up 27.2 percent from $15.0 billion in the previous quarter but down 0.9 percent from $19.3 in 1Q'17. High yield corporate bonds average daily trading volume was $9.2 billion in 1Q'18, up 23.7 percent from $7.4 billion in the previous quarter and up 3.3 percent from $8.9 billion in 1Q'17. Private placements' average daily trading volume increased to $7.6 billion in 1Q'18, up by 25.1 percent from $6.0 billion in 4Q'17 but down 0.9 percent from $7.6 billion in 1Q'17.

EQUITY AND OTHER MARKETS







The U.S. stock market posted a strong first quarter for 2018 with two major stock indices reaching their record highs in March and one in January. The S&P 500 closed 1Q'18 at 2,640.87, a 1.2 percent decrease from the prior quarter but an 11.8 percent increase y-o-y and recorded an all-time high 2,786.57 on March 9, 2018. The NASDAQ Composite Index closed 1Q'18 at 7,063.45, a 2.3 percent increase q-o-q and a 19.5 percent increase y-o-y, also reaching its record high of 7,588.33 on March 12. 2018. The Dow Jones Industrial Average (DJIA) ended 1Q'18 at 24,103.11, a 2.5 percent decrease q-o-q but a 16.6 percent gain y-o-y and recorded its all-time high of 26,616.71 on January 26, 2018.

Equity Average Daily Share and Dollar Volume

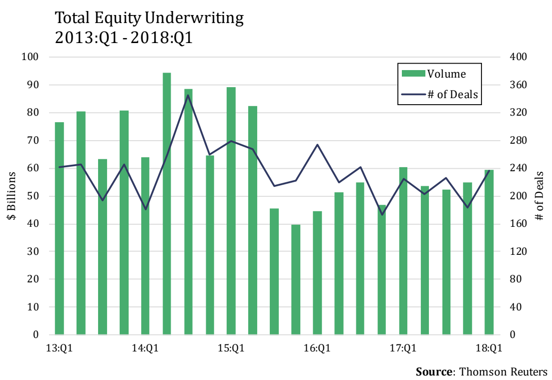
Equity average daily share volume was 7.6 billion shares in 1Q'18, an increase of 18.8 percent from 6.4 billion shares in 4Q'17 and an 11.4 percent increase from 6.8 billion shares in 1Q'17. The largest quarterly increase was observed in stocks on regional exchanges, where average daily share volume increased by 41.0 percent in 1Q'18. Average daily share volume of NASDAQ-listed and NYSE-listed stocks also increased by 16.0 percent and 15.1 percent q-o-q, respectively.

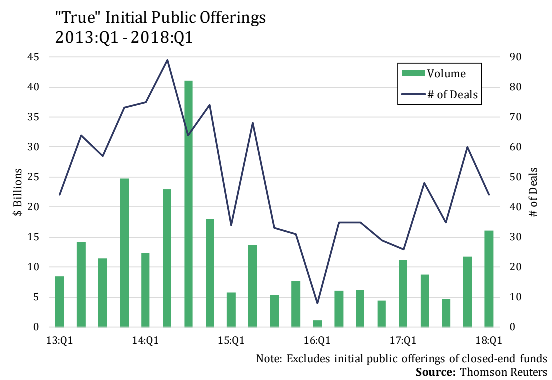
Equity average daily dollar volume increased by 35.9 percent to $381.8 billion in 1Q'18 from $281.0 billion in 4Q'17 and was up 41.6 percent from $269.7 billion in 1Q'17. The largest quarterly increase in dollar volume was observed in regional-listed stocks (up 59.0 percent), followed by NASDAQ-listed (up 37.6 percent) and NYSE-listed (up 23.8 percent).

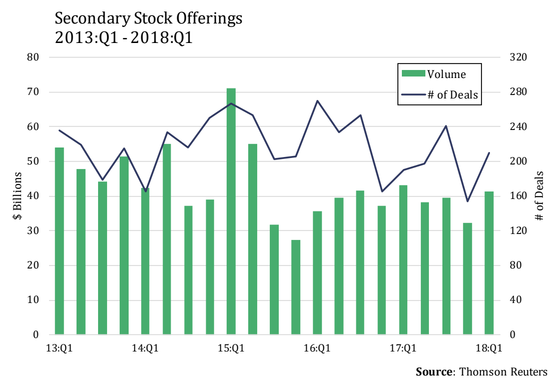
NYSE Short Interest

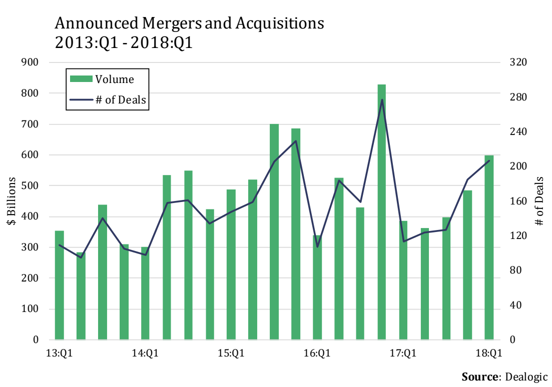
The number of shares sold short on the NYSE averaged 16.1 billion in 1Q'18, down 0.6 percent from 16.2 billion during the previous quarter but up 4.3 percent from 15.5 billion in 1Q'17. NYSE short interest was 2.5 percent above the five-year average of 15.8 billion. Out of approximately 6,100 issues, a short position was shown in 4,936 issues at the end of 1Q'18 and 3,904 issues showed a short position of 5,000 shares or more.[7]

[7] NYSE, NYSE Arca and NYSE MKT Short Interest Reports, April 11, 2018.









Equity Underwriting Volume

Equity underwriting increased by 8.2 percent to $59.5 billion in the first quarter from $55.0 billion in 4Q'17 but was down 1.3 percent from $60.3 billion issued in 1Q'17. Equity underwriting volume in 1Q'18 was 7.2 percent below the five-year average of $64.2 billion.

IPO Volume

"True" initial public offerings (IPOs), which exclude closed-end mutual funds, increased to $16.1 billion on 44 deals in 1Q'18. IPO dollar volumes increased by 36.6 percent from $11.8 billion on 60 deals in 4Q'17 and was up 44.8 percent from $11.1 billion on 26 deals in 1Q'17. The top three sectors in IPO issuance in 1Q'18 by dollar volume were: high technology ($6.1 billion on 7 deals), industrials ($2.4 billion on 4 deals) and consumer products and services ($1.9 billion on 5 deals), which together accounted for almost two thirds of the quarter's total volume.

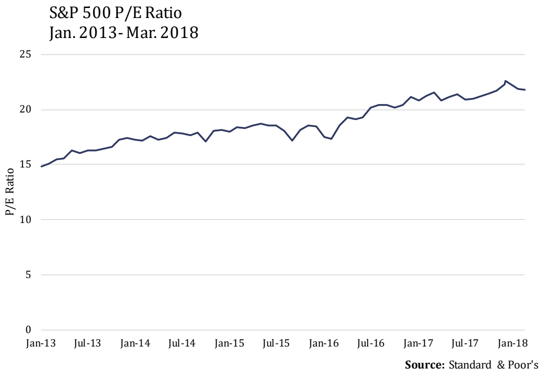
Secondary Offerings

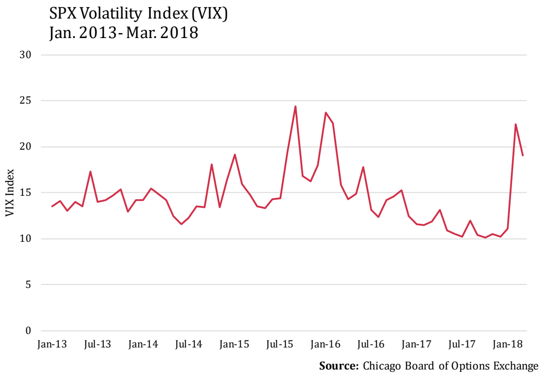
Secondary market issuance increased to $41.3 billion on 197 deals in 1Q'18, an increase of 27.6 percent from $32.4 billion on 211 deals in 4Q'17 but a decrease of 4.1 percent from $43.1 billion on 226 deals in 1Q'17.

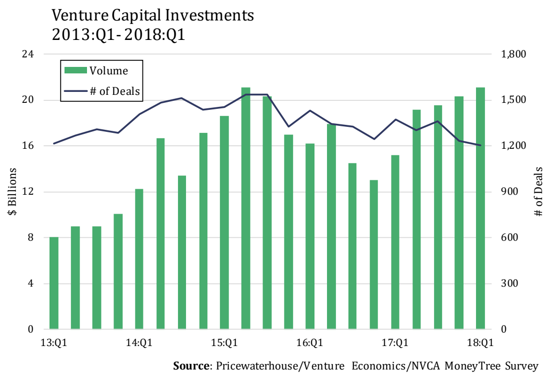
Announced M&A Volume

Announced U.S. mergers and acquisitions (M&A) volume stood at $598.9 billion in 1Q'18, a 23.1 percent increase from the previous quarter's $486.4 billion and a 55.6 percent increase from $384.9 billion in 1Q'17. M&A volume was 24.8 percent above the five-year quarterly average of $479.8 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 $80.8 billion in 1Q'18, down 5.1 percent from $85.1 billion in the previous quarter and down 2.0 percent from $82.4 billion in 1Q'17. The dollar amount U.S. companies invested in other countries through M&A ("US Outbound") rose in 1Q'18 to $107.3 billion, up 288.5 percent from $27.6 billion in 4Q'17 and up 49.9 percent from $71.6 billion invested in 1Q'17.







S&P P/E Ratio

The S&P 500's P/E ratio averaged 22.1 in 1Q'18, up 1.2 percent from the previous quarter's 21.8 and up 7.2 percent from 21.2 in 1Q'17. The S&P P/E ratio stood 17.8 percent above the 5-year average of 18.7 but 22.2 percent below the high of 28.4 in 1Q'00.[8]

CBOE VIX Index

The Chicago Board Options Exchange Volatility Index (VIX) increased to an average of 17.4 in the first quarter, up 68.4 percent from an average of 10.3 in 4Q'17 and up 48.4 percent from 11.7 in 1Q'17. The quarter started with the index declining to a low of 9.15 in early January before spiking to 37.32 in early February; the VIX ended 1Q'18 at 19.02. The spread between high and low values for the VIX was 28.17 in 1Q'18, much wider than 4.0 in 4Q'17 and a 2.5 spread in 1Q'17.

Venture Capital Volume

Venture capitalists invested $21.1 billion in 1,206 deals in the first 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 3.9 percent in dollar terms but decreased by 2.2 percent in the number of deals compared to 4Q'17 when $20.3 billion was invested in 1,233 deals. The internet sector continued to receive the highest level of funding of all industries with $7.3 billion in 1Q'18, up 11.0 percent from $6.5 billion in 4Q'17 and up 32.1 percent y-o-y. The healthcare sector received second largest amount of funding with $5.3 billion (up 20.9 percent q-o-q) followed by the mobile & telecommunications sector with $3.5 billion (down 9.2 percent in 4Q'17).[9]

[8] SIFMA records start in January 2000.
[9] US MoneyTree Report, 1Q 2018.

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