MOODY'S ANALYTICS

WEEKLY MARKET OUTLOOK

Moody's Analytics Research

Weekly Market Outlook Contributors:

John Lonski
1.212.553.7144
john.lonski@moodys.com

Yukyung Choi
1.212.553.0906
yukyung.choi@moodys.com

Moody's Analytics/Asia-Pacific:

Katrina Ell
+61.2.9270.8144
katrina.ell@moodys.com

Moody's Analytics/Europe:

Barbara Teixeira Araujo
+420.224.106.438
barbara.teixeiraaraujo@moodys.com

Moody's Analytics/U.S.:

Ryan Sweet
1.610.235.5000
ryan.sweet@moodys.com

Greg Cagle
1.610.235.5211
greg.cagle@moodys.com

Steven Shields
1.610.235.5142
steven.shields@moodys.com

Editor
Reid Kanaley
1.610.235.5273
reid.kanaley@moodys.com

High Leverage Offset by Ample Coverage of Net Interest Expense

Credit Markets Review and Outlook *by John Lonski*

High Leverage Offset by Ample Coverage of Net Interest Expense

» FULL STORY PAGE 2

The Week Ahead

We preview economic reports and forecasts from the US, UK/Europe, and Asia/Pacific regions.

» FULL STORY PAGE 6

The Long View

Full updated stories and key credit market metrics: First quarter 2019's bond issuance by U.S. based companies increased by 8.0% yearly for investment-grade and sank by 13.5% yearly for high yield.

Credit Spreads	Investment Grade: We see year-end 2019's average investment grade bond spread above its recent 124 basis points. High Yield: Compared to a recent 410 bp, the high-yield spread may approximate 485 bp by year-end 2019.
Defaults	US HY default rate: Moody's Investors Service forecasts that the U.S.' trailing 12-month high-yield default rate will fall from February 2019's 2.7% to 1.7% by February 2020.
Issuance	For 2018's US$-denominated corporate bonds, IG bond issuance sank by 15.4% to $1.276 trillion, while high-yield bond issuance plummeted by 38.8% to $277 billion for high-yield bond issuance's worst calendar year since 2011's $274 billion. In 2019, US$-denominated corporate bond issuance is expected to rise by 1.7% for IG to $1.298 trillion, while high-yield supply grows by 13.9% to $316 billion. A significant drop by 2019's high-yield bond offerings would suggest the presence of a recession.

» FULL STORY PAGE 10

Ratings Round-Up

Downgrades Galore for U.S. Firms

» FULL STORY PAGE 14

Market Data

Credit spreads, CDS movers, issuance.

» FULL STORY PAGE 17

Moody's Capital Markets Research *recent publications*

Links to commentaries on: Revenues and profits, Fed moves, riskier outlook, high-yield, defaults, confidence vs. skepticism, stabilization, growth and leverage, buybacks, volatility, monetary policy, yields, profits, corporate borrowing, U.S. investors, trade war.

» FULL STORY PAGE 22

Click here for *Moody's Credit Outlook*, our sister publication containing Moody's rating agency analysis of recent news events, summaries of recent rating changes, and summaries of recent research.

Moody's Analytics markets and distributes all Moody's Capital Markets Research, Inc. materials. Moody's Capital Markets Research, Inc. is a subsidiary of Moody's Corporation. Moody's Analytics does not provide investment advisory services or products. **For further detail, please see the last page.**

Credit Markets Review and Outlook

By John Lonski, Chief Economist, Moody's Capital Markets Research, Inc.

High Leverage Offset by Ample Coverage of Net Interest Expense

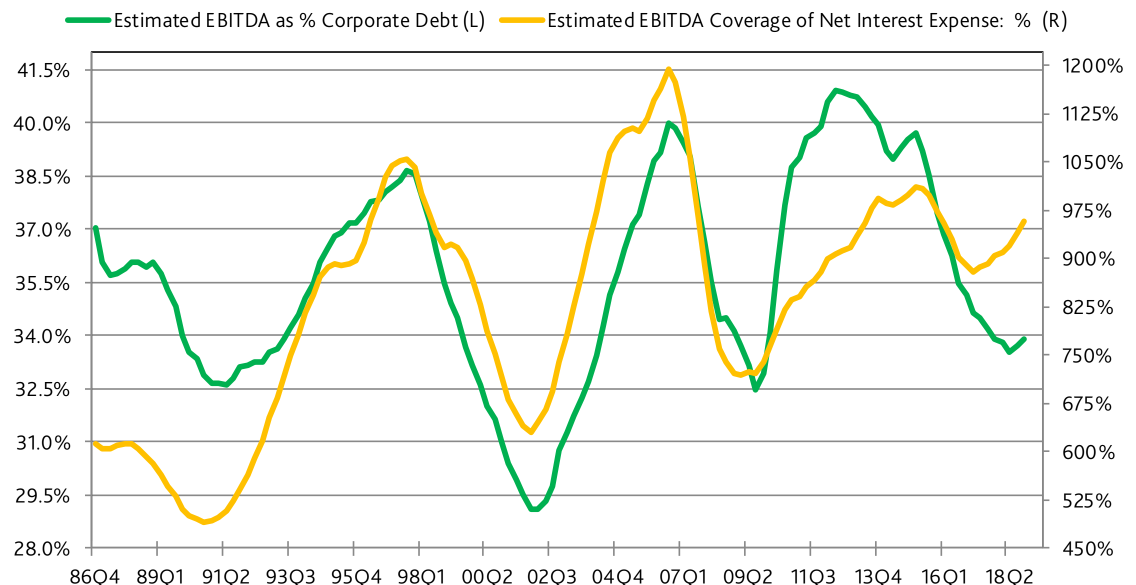
The faster growth of nonfinancial-corporate debt relative to both nominal GDP and the group's core pretax profits has been offset by the comparatively slow growth of net interest expense. To whatever degree possible, policymakers ought to be aware of the dangers that higher benchmark interest rates present to a highly leveraged business sector.

As derived from the National Income Product Accounts, or GDP accounts, the annual increase of the net interest expense of U.S. nonfinancial corporate sank from 2016's 9.0% to the 0.8% of 2017 and the 0.7% of 2018. In turn, a rough approximation of the estimated EBITDA (corporate earnings before interest, taxes depreciation and amortization) of nonfinancial corporations has climbed from 2016's 889% to 2018's 958%, where the latter exceeds the 888% of yearlong 2007.

However, the good news of solid interest coverage is countered by the risks implicit to a relatively low level of EBITDA vis-a-vis outstanding corporate debt. For example, the ratio of the EBITDA proxy to outstanding nonfinancial-corporate debt has declined from 2016's 35.1% to 2018's 33.9%, where the latter is less than 2007's 36.6%.

Though ratios of corporate debt to the EBITDA proxy and GDP compare unfavorable to what held prior to the Great Recession, the estimated interest coverage ratio is much improved. All else the same, lower benchmark interest rates will improve the outlooks for both corporate credit quality and the near record-long business cycle upturn.

Figure 1: Relatively Low Ratio of EBITDA Proxy to Corporate Debt Is Offset by Relatively High Ratio of EBITDA Proxy to Net Interest Expense
sources: Moody's Analytics, BEA, Federal Reserve



Refinancing Surge of 2016-2017 Helped to Rein In 2018's Net Interest Expense

As derived from the National Income Product Accounts, the net interest expense of U.S. nonfinancial corporations rose by merely 0.7% annually in 2018. Net interest expense's annual rise was surprisingly meager given the climb by 3-month LIBOR's yearlong average from 2017's 1.26% to 2018's 2.31%, as well as the comparably measured increases from 4.50% to 4.93% for Moody's long-term Baa industrial

company bond yield and from 5.78% to 6.49% for a composite speculative-grade bond yield, to say nothing of yearlong 2018's 6.8% annual advance by the outstandings of nonfinancial corporate debt. Whether the sample begins in 1978 or 1983, the correlation between the annual percent changes of net interest expense and nonfinancial-corporate debt outstanding equals a significant 0.68.

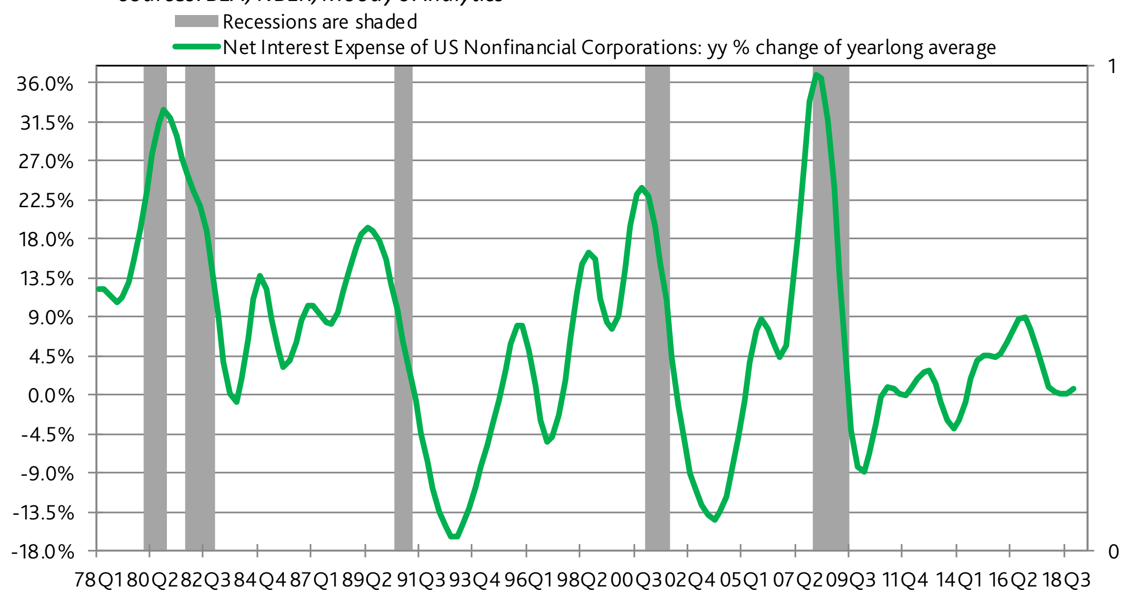
Yearlong 2018's meager rise by net interest expense was all the more surprising given 2018's broadly distributed decline by the frequency with which refinancings were cited among the stated uses of funds that were secured through corporate borrowing. From 2017 to 2018, refinancings were mentioned 28% fewer times for both new high-yield bond offerings and new loans from high-yield companies, as well as 30% fewer times for new investment-grade bond issues.

However, 2018's small rise by net interest expense may be a lagged response to the surge in refinancings during the two-years-ended 2017, or when the frequency of refinancings among uses of proceeds advanced at average annualized rates of 45% for high-yield bonds, 51% for loans from high-yield issuers, and 24% for investment-grade bonds.

By itself, 2018's very modest rise by net interest expense is a favorable portent for the ongoing business cycle upturn largely because the five recessions since 1979 were preceded by a 24% average annual advance for nonfinancial-corporate net interest expense. Yearlong 2018's reportedly slight rise by net interest expense helped to limit the deterioration of corporate credit quality stemming from corporate debt's faster climb. Nevertheless, the scope for refinancings has been reduced by enough to warn of faster growth by 2019's net interest expense even if benchmark interest rates subside.

However, there has been an important exception to the recent drop in refinancing activity. In contrast to January-February 2019's 28% year-over-year drop by refinancings among new high-yield bond issues, the frequency with which refinancings were cited soared higher by 47% for newly offered investment-grade bonds. Regarding the newly rated bank loan programs of 2019's first quarter, the incidence of refinancings plummeted by 61% year-over-year.

Figure 2: Nonfinancial-Corporate Net Interest Expense Surges by 24% Annually, on Average, During the Year Prior to the Start of a Recession
sources: BEA, NBER, Moody's Analytics



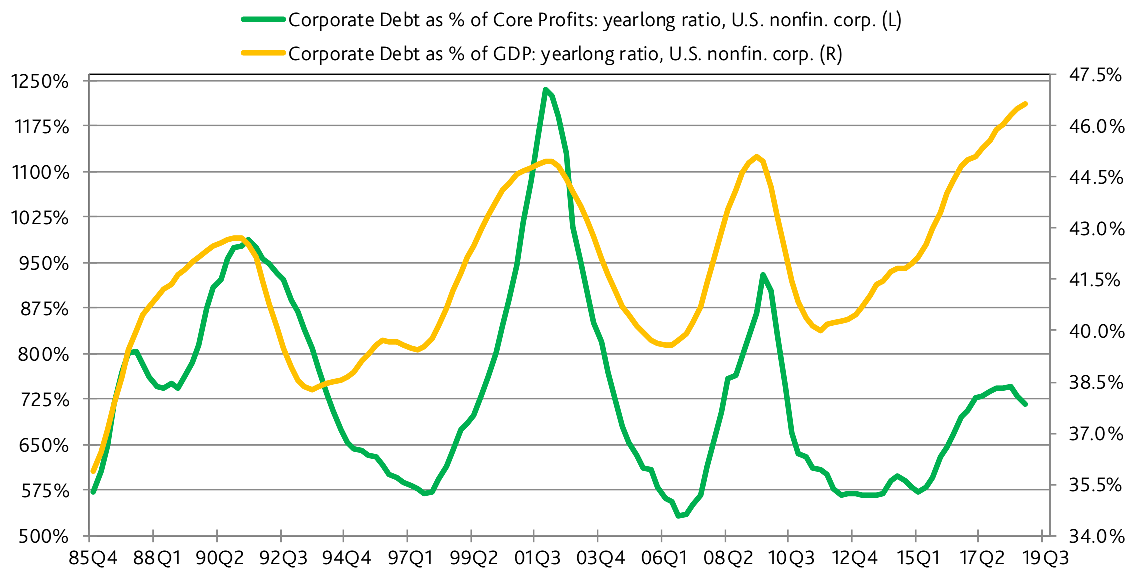
Profits Growth Offsets the Drag of a Record High Ratio of Corporate Debt to GDP

In 2018, nonfinancial-corporate debt rose to a record high 46.6% of U.S. nominal GDP. The three previous record high ratio of corporate debt to GDP were joined by cycle-high corporate debt to core profits ratios of 8.7:1 in 2009, 12.4:1 in 2001, and 9.7:1 in 1990. By contrast, 2018's ratio of corporate debt to core profits was a much lower 7.2:1, which was less than its recent high of 7.5:1 for the 12-months-ended June 2018.

The ongoing expansion of core profits distinguishes the latest record high ratio of corporate debt to GDP from its three previous record highs. This measure of corporate leverage will only inflict material harm on business activity until profits shrink significantly. The three previous record high ratios of corporate debt to GDP were joined by a 24% average plunge by the yearlong estimate of core profits from its prior record high.

As of early March, the Blue Chip Consensus predicted a deceleration by core pretax profits from 2018's above-trend 7.8% to 4.0% for 2019 and 2.5% for 2020. If the Blue Chip consensus projection of 3.9% average annual growth for core profits during 2021-2025 proves correct, the 10-year Treasury yield may not be spending much time at or above 3% through 2025.

Figure 3: Corporate Leverage Appears Much Lower When Comparing Corporate Debt to Core Profits As Opposed to GDP
sources: Federal Reserve, BEA, Moody's Investors Service, Moody's Analytics



10-Year Treasury Yield Now Resides Well Under Nominal GDP's Annual Increase

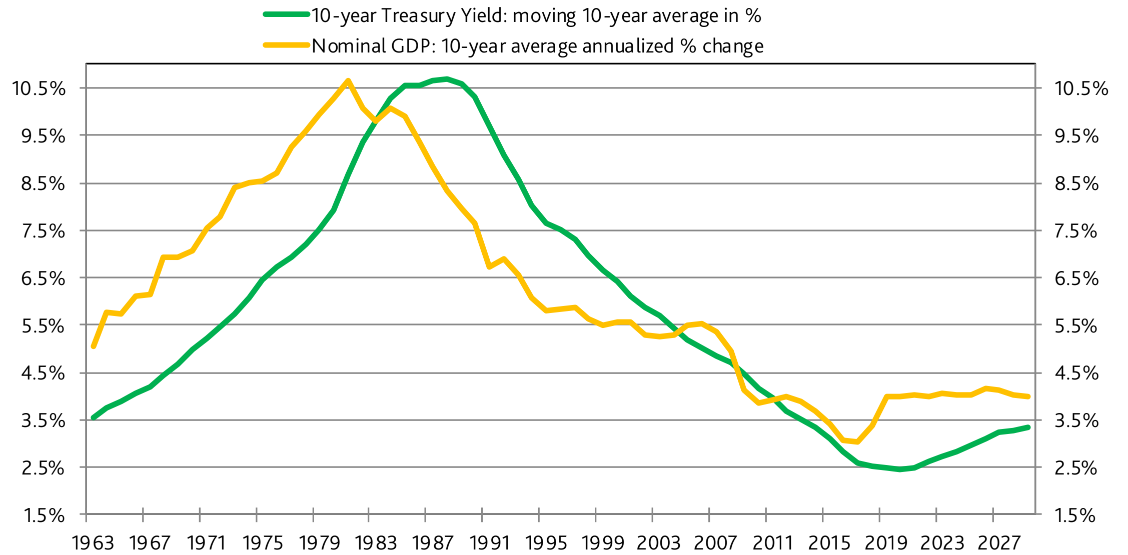
An old rule of thumb was that the 10-year Treasury yield should roughly equal the rate of nominal GDP growth over time. However, the latest 10-year Treasury yield of roughly 2.5% is 1.9 percentage points under the consensus forecast of 4.4% nominal GDP growth for 2019. Moreover, yearlong 2018 showed the average 10-year Treasury yield of 2.91% trailing 5.2% nominal GDP growth by 2.3 percentage points for the deepest discount of the 10-year Treasury yield's calendar-year average to nominal GDP growth since 2012's 2.4 percentage points.

Coincidentally, the annual averages of 1954 through 1979 were 5.4% for the 10-year Treasury yield and 7.7% for nominal GDP growth, which left the 10-year Treasury yield trailing nominal GDP growth by 2.3 percentage points, on average, which just happened to match 2018's difference.

For the 10-years-ended 2029, the Blue Chip consensus expects an average 10-year Treasury yield of 3.4% to lag projected nominal GDP growth of 4.0% by 0.6 of a percentage point. However, there is a reasonable chance that the average 10-year Treasury over the next 10 years may trail nominal GDP growth by 1.0 to 2.0 percentage points, mostly in response to a slower rate of growth for core profits.

In terms of the prospective returns from earnings-sensitive financial assets, one of the world's leading asset managers projects an average 5% return from common equities into the future, which was significantly less than the 8% returns common to the past. If the 10-year Treasury yielded 5% to 6% when the return from common equity averaged 8%, then a 5% return from equities suggests an accompanying 2% to 3% range for the 10-year Treasury yield. In turn, the benchmark Treasury bond yield may average 2.5% through 2029.

Figure 4: Blue Chip Consensus of March 2019 Puts Averages Over the Next 10 Years at 4.0% for Nominal GDP Growth and 3.40% for the 10-year Treasury Yield
10-year observations, actual & predicted
sources: Blue Chip Economic Indicators, Moody's Analytics

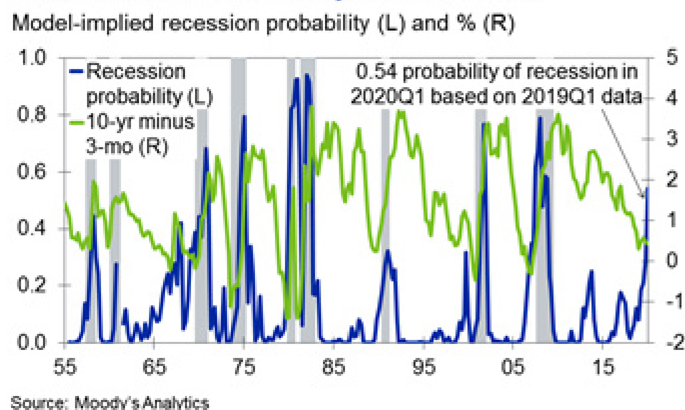


The Week Ahead – U.S., Europe, Asia-Pacific

THE U.S.
By Damien Moore and Ryan Sweet, Moody's Analytics

Listening to the Yield Curve

A lot of ink has been spilled about what the recent inversion in the yield curve does and doesn't tell us about the odds of a U.S. recession. What we do know is that previous inversions in the yield curve, as measured by the spread between 10-year and three-month Treasury yields, have been strongly correlated with recession 12 to 18 months later. However, correlation doesn't imply causation.



In other words, an inverted yield curve doesn't cause a recession but reflects the conditions that ultimately lead to one. Past inversions of the yield curve coincided with tight monetary policy and tighter credit conditions. In fact, over the past couple of decades the economy and credit cycle have been more in sync than previously.

The good news is that monetary isn't overly tight and the credit cycle isn't ending. The biggest credit concerns are for corporations. There has been a significant increase in corporate debt levels. Yet we don't see it as an enormous macroeconomic risk. For one, the corporate financial balance—the gap between total income and spending—remains positive. Also, investment is less dependent on external finance, and the increase in debt reflects corporations' reaction to low interest rates, boosting debt at the expense of equity. Further, risk of higher interest expenses is fading because of the Fed's dovish shift.

Investor expectations

The intuitive reason that the yield curve should be strongly correlated with recessions is that long-term rates reflect investor expectations of where real short-term rates will be in the future. In other words, the expectations about future monetary policy are baked into the yield curve. When long-term yields are below short-term yields, this typically implies an expectation that the Fed will be cutting rates to combat a slowing economy or a recession.

There are many "this time is different" arguments for why recession odds are overstated, but a persuasive case must account for why the best barometer is wrong. The most credible argument on that front is that the signal about future rates in Treasury yields has been affected by a combination of lowered perceptions of inflation risk and global quantitative easing along with forward guidance that

has compressed U.S. longer-term yields relative to shorter-term yields. On the short-end of the yield curve, the Treasury's issuance binge of short-term debt has also boosted the three-month yield.

The effect of these factors on the yield curve manifests itself through the term premium, the percentage amount by which an investment in a long-term bond will exceed an investment in a sequence of short-term bonds rolled over for an identical term. The term premium reflects the part of long-term yields that cannot be attributed to the expected path of future short-term rates. Thus, it represents a summary measure of the various conditions that might be affecting long-term rates relative to short-term rates.

The low term premium

Usually the term premium is positive, with an investment in long-term bonds earning more than rolled-over short-term bonds, but that has not been the case since the Great Recession. One reason is that inflation risks can erode the value of fixed-rate long-term bonds more than rolled-over short-term bonds, because the coupon on the rolled-over short-term bonds will be issued at a higher rate as inflation ticks up, which causes investors to demand a higher return on their longer-term bond holdings. Inflation risks are perceived to be at historically lower levels, and that has likely lowered the term premium.

Similarly, global quantitative easing programs have compressed term premiums by creating additional demand for long-term bonds. Forward guidance likely also compresses the term premium by creating less uncertainty for long-term bond investors about their ultimate returns. By lowering the term premium, all of these factors have lowered the term spread without necessarily lowering expectations about future interest rates.

Recession probability model

To see what difference this makes, we estimated a modified version of our recession probability model with and without the term premium. We used estimates of the term premium on 10-year Treasury bonds made by staff economists at the Federal Reserve Bank of New York as an additional factor. They provide time series data on their term premium estimates back to 1961. We include the term premium as a separate driver rather than simply use it as a correction factor for the yield curve driver in the model to allow for the possibility that the term premium changes may only partially negate the signal in the unadjusted yield curve.

The version of the model that includes the term premium modestly improves the fit of the model but sharply lowers the implied probability of recession in 2020 from its recent high of just over 50% to about 25%, which is consistent with the idea that recent changes in the term premium have heavily distorted the recession signal. That is because estimates of the term premium have been sharply lower since the Great Recession, and the lower the term premium, the lower the odds of recession in this alternative model.

Looking ahead

The economic calendar is lighter. The key will be consumer price index for March along with the minutes from the Federal Open Market Committee.

We will publish our forecasts for next week's data on Monday on Economy.com.

EUROPE

By Barbara Teixeira Araujo of Moody's Analytics in Prague

Another Brexit Day Looms

Brexit, as always, will be under the spotlight next week. April 12 is the new Brexit day, and the chances of the U.K. crashing out of the EU with no deal in place remain high. Several parliamentary sessions with indicative votes took place over the past few days but didn't produce majority for any alternative Brexit outcome.

Theresa May has now engaged in talks with the leader of the Labour party, Jeremy Corbyn, in order to try to find a cross-party consensus and break the deadlock. But it is still uncertain that the parties will agree on anything, and their red lines are not compatible. If no agreement is reached, May vouched she will hold a new session of indicative votes next week, but this time they will be legally-binding. While chances remain that it won't produce any clear winners, our view is that the most likely outcome of the votes is expected to be a Brexit with full-membership of the customs union.

Whatever the result of the talks with Corbyn or of the indicative votes, we expect that Theresa May will have to ask for another extension of Article 50 when the EU leaders meet Wednesday, as there will be no time left for whatever option is chosen by parliament to be negotiated with the EU. The EU is likely to accept only a long-term transition, conditional on the U.K. participating on the European Parliament elections in May. The U.K. government won't like it, but its hands will be tied.

On the data front, the focus will be on U.K. monthly GDP for February. We expect that activity in the country fell by 0.1% from the prior month, partially reversing January's 0.5% rise, though we caution that risks are tilted toward an even lower reading. This should have allowed growth in the three months to February to remain steady at 0.2% q/q. On the upside, we expect that services activity continued to increase over the month on higher consumer spending. High-frequency data for the retail sector suggest that retailers enjoyed a comfortable February as spring-like temperatures brought consumers to the High Street and boosted sales in nonfood stores. We expect that stockpiling ahead of Brexit also played a role in boosting consumer goods spending. Anecdotal evidence showed households stocking essential goods—such as medicine—lest they lose access if the U.K. crashes out of the EU without a deal. The bad news is that survey data for other areas of the services sector suggested that firms' services spending remained subdued, so we are penciling in only a 0.1% m/m rise in services activity, slower than the 0.3% recorded in January.

In the production sector, the flip side of the warmer weather was that it depressed demand for heating and thus energy output. We are expecting a big plunge there, in line with high-frequency data from electricity companies. Mining and quarrying should also have declined. A correction there is overdue after two months of strong increases. On the upside, we expect that manufacturing output continued to rise, as stockpiling likely gathered momentum over the month. Overall, though, we are penciling in a 0.1% m/m decline in industrial production, still a relatively good result given that it follows a 0.6% increase in January.

Elsewhere, we expect that construction fell sharply in February—likely by 2% m/m, following a 2.8% rise in January—as firms and households likely delayed many major decisions on building projects. They will continue to do so as long as there is no Brexit deal.

The European Central Bank is holding its monthly monetary policy meeting next week. We don't expect much to happen there. The meeting will not be accompanied by an update of the bank staff's macroeconomic projections. We expect bank head Mario Draghi to only acknowledge that the economic data remains weak and that risks to the outlook continue to abound, though on the upside

he should mention how high-frequency data are suggesting that consumer spending is set to remain solid and offset some of the slowdown in manufacturing. We don't expect the bank will unveil any major details regarding its new TLTRO programme for long-term loans in April; we expect it will do so in June, as some of the members of the bank's governing council have suggested.

	Key indicators	Units	Moody's Analytics	Last
Tues @ 9:00 a.m.	Italy.: Retail Sales for February	% change	0.2	0.5
Wed @ 7:45 a.m.	France: Industrial Production for February	% change	-1.0	1.3
Wed @ 9:00 a.m.	Italy: Industrial Production for February	% change	0.3	1.7
Wed @ 9:30 a.m.	U.K.: Monthly GDP for February	% change	-0.1	0.5
Wed @ 12:45 p.m.	Euro Zone: Monetary Policy for April	%	0.0	0.0
Thur @ 7:00 a.m.	Germany: Consumer Price Index for March	% change yr ago	1.3	1.6
Thur @ 7:45 a.m.	France: Consumer Price Index for March	% change yr ago	1.3	1.6
Thur @ 2:00 p.m.	Russia: Foreign Trade for February	$ bil	16.0	13.4
Fri @ 8:00 a.m.	Spain: Consumer Price Index for March	% change yr ago	1.3	1.1
Fri @ 10:00 a.m.	Euro Zone: Industrial Production for February	% change	-0.9	1.4

ASIA-PACIFIC

By Katrina Ell and the Asia-Pacific staff of Moody's Analytics in Sydney

Lunar New Year Likely Lifted China's Exports

A suite of China's monthly March data will be released. We look for China's exports to have improved in March, after slumping by 20.7% y/y in February, on the back of the timing in the Lunar New Year. Global demand has weakened and existing tariffs on Chinese goods shipments to the U.S. are providing an additional drag. China's M2 money supply growth likely rose 8.2% y/y in March, matching the average pace in January-February. We expect credit growth to pick up from the second quarter as earlier stimulus measures continue to bear fruit.

Chinese inflation is subdued, increasing odds that the around 3% target for 2019 will be undershot and keeping the light green for further fiscal and monetary policy stimulus measures to be released over 2019, as planned. CPI growth likely hit 1.7% y/y in March, after hitting 1.5% in February, its lowest since January 2018. Food prices are the main drag on the overall headline. Continued weakness in PPI growth is pressuring industrial profits and providing an additional feedback loop on already weakened domestic demand.

India's CPI growth likely ticked up to 3% y/y in March, from 2.6% in February. Weak food prices are the primary reason for CPI remaining below the 4% midpoint of the Reserve Bank of India's target. Food inflation was down by 0.7% y/y after a 2.2% decline in January. Base effects mean that food inflation will be on a bumpy upward trend in 2019. The RBI has delivered 50 basis points in rate cuts so far this year, with the latest being in April. Odds of a further cut in June are high.

	Key indicators	Units	Confidence	Risk	Moody's Analytics	Last
Mon @ Unknown	China Foreign trade for March	US$ bil	3	↓	27.4	34.5
Mon @ 3:00 p.m.	Japan Consumer confidence survey for March	Index	3	←	41.2	41.5
Wed @ 9:00 a.m.	South Korea Unemployment rate for March	%	3	←	3.9	3.7
Wed @ 9:50 a.m.	Japan Machinery orders for February	% change	2	↑	0.3	-5.4
Wed @ Unknown	China Monetary aggregates for March	% change yr ago	3	↑	8.2	8.0
Thurs @ 11:30 a.m.	China Consumer price index for March	% change yr ago	3	←	1.7	1.5
Thurs @ 11:30 a.m.	China Producer price index for March	% change yr ago	2	←	0.5	0.1
Fri @ 10:00 p.m.	India Industrial production for February	% change yr ago	2	←	3.4	1.7
Fri @ 10:00 p.m.	India Consumer price index for March	% change yr ago	3	↑	3.0	2.6

The Long View

First quarter 2019's bond issuance by U.S. based companies increased by 8.0% yearly for investment-grade and sank by 13.5% yearly for high yield.

By John Lonski, Chief Economist, Moody's Capital Markets Research Group
April 4, 2019

CREDIT SPREADS

As measured by Moody's long-term average corporate bond yield, the recent investment grade corporate bond yield spread of 124 basis points resembles its 122-point mean of the two previous economic recoveries. This spread may be no wider than 140 bp by year-end 2019.

The recent high-yield bond spread of 410 bp is thinner that what is suggested by the accompanying long-term Baa industrial company bond yield spread of 199 bp but is wider than what is suggested by the recent VIX of 13.8 points.

DEFAULTS

February 2019's U.S. high-yield default rate of 2.7% was less than the 3.8% of February 2018. Moody's Investors Service now expects the default rate will average 2.1% during 2019's fourth quarter.

US CORPORATE BOND ISSUANCE

Yearlong 2017's US$-denominated bond issuance rose by 6.8% annually for IG, to $1.508 trillion and soared by 33.0% to $453 billion for high yield. Across broad rating categories, 2017's newly rated bank loan programs from high-yield issuers sank by 26.2% to $72 billion for Baa, advanced by 50.6% to $319 billion for Ba, soared by 56.0% to $293 billion for programs graded single B, and increased by 28.1% to $25.5 billion for new loans rated Caa.

First-quarter 2018's worldwide offerings of corporate bonds incurred year-over-year setbacks of 6.3% for IG and 18.6% for high-yield, wherein US$-denominated offerings posted sank by 14.4% for IG and 20.8% for high yield.

Second-quarter 2018's worldwide offerings of corporate bonds eked out an annual increase of 2.8% for IG, but incurred an annual plunge of 20.4% for high-yield, wherein US$-denominated offerings rose by 1.6% for IG and plummeted by 28.1% for high yield.

Third-quarter 2018's worldwide offerings of corporate bonds showed year-over-year setbacks of 6.0% for IG and 38.7 % for high-yield, wherein US$-denominated offerings plunged by 24.4% for IG and by 37.5% for high yield.

Fourth-quarter 2018's worldwide offerings of corporate bonds incurred annual setbacks of 23.4% for IG and 75.5% for high-yield, wherein US$-denominated offerings plunged by 26.1% for IG and by 74.1% for high yield.

First-quarter 2019's worldwide offerings of corporate bonds revealed annual setbacks of 0.5% for IG and 3.6% for high-yield, wherein US$-denominated offerings fell by 2.3% for IG and grew by 7.1% for high yield.

During yearlong 2017, worldwide corporate bond offerings increased by 4.1% annually (to $2.501 trillion) for IG and advanced by 41.5% for high yield (to $603 billion).

For 2018, worldwide corporate bond offerings sank by 7.2% annually (to $2.322 trillion) for IG and plummeted by 37.6% for high yield (to $376 billion). The projected annual percent increases for 2019's worldwide corporate bond offerings are 2.2% for IG and 9.7% for high yield.

US ECONOMIC OUTLOOK

As inferred from the CME Group's FedWatch Tool, the futures market recently assigned an implied probability of 0.0% to at least one Fed rate hike in 2019. In view of the underutilization of the world's productive resources, low inflation should help to rein in Treasury bond yields. As long as the global economy operates below trend, the 10-year Treasury yield may not remain above 3% for long. A fundamentally excessive climb by Treasury bond yields and a pronounced slowing by expenditures in dynamic emerging market countries are among the biggest threats to the adequacy of economic growth and credit spreads.

EUROPE

By Barbara Teixeira Araujo of Moody's Analytics
April 4, 2019

GERMANY

Thursday was mixed for the German economy. On the downside was that the country's new factory orders figures were dreadful; orders plunged further in February—down by 4.2% m/m—and fell short of our expectations of a small rebound. This chimes in nonetheless with the survey data released over the past few days, which all but suggest that the country's manufacturing sector has fallen into recession. Prospects of a recovery in coming months remain subdued, as foreign demand continues to slow in line with the loss of momentum in China, the U.S. and the U.K.

On the upside was that Germany's construction PMI rose further in March, to a 14-month high of 55.6, up from 54.7 in February. Not only output and employment rose, but new orders also picked up while companies became more optimistic regarding the year-ahead outlook. Even better was that March rounded off the best quarterly performance for the sector since the third quarter of 2017. And with services sector activity also rising strongly on the back of solid consumer spending, this leaves only manufacturing as a drag on the economy, notably because it is extremely dependent on export demand.

Across the Channel, Thursday brought grim figures for the U.K. economy. Car registrations fell sharply in March—down by 3.4% m/m and fully reversing the previous month's 1.4% rise—supporting our view that overall growth fell off a cliff over the month. The result is especially disappointing because March is a key barometer for the car industry due to the release of new license plate numbers. We are not surprised by this decline, though, as the prolonged uncertainty over Brexit was always expected to push households into wait-and-see mode, especially regarding car purchases and the housing market. As long as there is no deal and no clarity over the U.K.'s future, we expect that car sales will remain subdued.

UNITED KINGDOM

Theresa May held talks with the leader of the Labour party, Jeremy Corbyn, in an attempt to find a cross-party compromise on Brexit that will command a majority in parliament. While the move is in our view long overdue, it is still not certain that both parties will manage to arrive at any consensus. A great majority of Labour lawmakers are pro-remain, meaning that they wouldn't look kindly on Corbyn becoming co-author of Brexit and risk being blamed for its outcome.

If May and Corbyn fail to strike a deal, May promised that a series of legally binding alternatives for Brexit would be put to a parliamentary vote. The most likely outcome of these votes is a Brexit that consists of full membership in the customs union; such a motion lost by just three votes during Monday's indicative voting process, while the other options were far less popular.

In any case, it looks almost impossible for the government to manage all of this before Wednesday next week, when EU leaders will hold talks on Brexit prior to the April 12 deadline. True, May said she would ask for another short-term extension of Brexit day until May 22, but our view is that the EU is unlikely to grant it, as EU leaders have repeatedly claimed this could threaten the European Parliament elections. So unless both parties move quickly and find a deal by next week, a long-term extension—with the U.K. taking part in EU elections—is still likely. And given that Labour is now involved, chances are high that at the end Brexit will be more on the soft side than on the hard one.

Wednesday brought horrific figures for the U.K. economy. The U.K. services PMI plunged to 48.9 in March from 51.3 in February, the second-worst reading in the last decade. This slump suggests not only that the broader U.K. economy contracted in March but also that output stalled over the first quarter as a whole. We caution against reading too much into the PMI figures, however; they cover sectors accounting for only 70% of GDP, excluding retailing, government consumption, energy production, and mining and quarrying. High-frequency data suggest that, with the exception of energy, those sectors performed rather well in the three months to March. We thus continue to expect that the U.K. economy grew 0.1% to 0.2% q/q in the first quarter, following a 0.2% gain in the fourth.

ASIA PACIFIC

By Katrina Ell of Moody's Analytics
April 4, 2019

NEW ZEALAND

New Zealand's economy often fades into the background when looking at economies in the Asia-Pacific region, but it shouldn't. The insight and thought leadership recently demonstrated by the central bank and the government show that the country has more to offer than the size of its GDP. The Reserve Bank of New Zealand recognized the downside risks plaguing the global and local economies in mid-2018 and flagged that easier monetary policy settings could be on the horizon, well before other major players paused their tightening paths.

Central bank's foresight

The RBNZ indicated in mid-2018 that the next interest rate move was "balanced up or down." At the time monetary easing seemed unlikely. The overwhelming consensus was that monetary policy normalization would begin from mid-2020 and the tightening path would be gradual.

The central bank's neutral tone was bold given that the neighbouring Reserve Bank of Australia was using much more hawkish language and was definitive that the next move would be up, even if it were more than a year away.

The RBA's and RBNZ's monetary policy paths tend to move closely together. This is facilitated by their structurally similar economies. New Zealand is a large exporter of soft commodities, Australia a large exporter of hard commodities, and China is a key market for both. Exchange rates for both countries consequently move with commodity prices over the cycle. Strong institutions and stable governments are also features.

Fast forward less than a year to appreciate the RBNZ's foresight. Since mid-2018, the global growth outlook has slowed, the base case for the Federal Reserve is that there will be no more rate hikes this year, and Brexit uncertainty remains a significant drag on sentiment in Europe, threatening to cause a faster slowdown in global demand. The European Central Bank changed its tune and in early March returned to increasing stimulus, after saying only a few months earlier that it could see rate hikes on the horizon.

The RBA has completely changed its tune as consumption and Australia's broader economic outlook are weaker than they were a few months ago. This has prompted financial markets to respond by pricing in a 70% chance of 50 basis points' worth of rate cuts in the next 12 months. The RBA has also dropped the expectation from its monetary policy statements that the next move is up.

RBNZ on the rate cut bandwagon

In March, the RBNZ took a more dovish stance. The central bank kept the official cash rate at 1.75%, but indicated that "the more likely direction of our next OCR move is down." As the central bank sees it, the downside risks to the outlook have increased from both a domestic and international perspective.

In particular, global growth has weakened, domestic spending momentum has slowed, and the New Zealand dollar has strengthened. A stronger exchange rate is problematic given the economy is heavily reliant on soft commodity exports as a source of income.

The Long View

The slower domestic outlook is being partially driven by slower net migration. After peaking in mid-2017, it has been slowing since, so a major lift to consumption in recent years now is fading. In addition, there is softness in the housing market, largely by design after a strong run-up in some pockets, and business investment and broader conditions have softened. The forecast increase in government spending likely will not be enough to offset weakness elsewhere in the coming year.

Our baseline scenario remains that the RBNZ will keep the official cash rate on hold at 1.75% until mid-2021. Risks of policy easing have increased, but at this stage we don't foresee that the weakness offshore and domestically will be enough to drive the RBNZ to ease.

Perhaps a dovish shift is all that is needed from the central bank to address one of the downside risks plaguing the growth outlook: the stronger New Zealand dollar. The change of tune from the RBNZ saw the kiwi lose 1.3% against the U.S. dollar in that day's afternoon trade; perhaps the credible rate cut signal will be enough to relieve exchange rate pressure.

Ratings Round-Up

Downgrades Galore for U.S. Firms

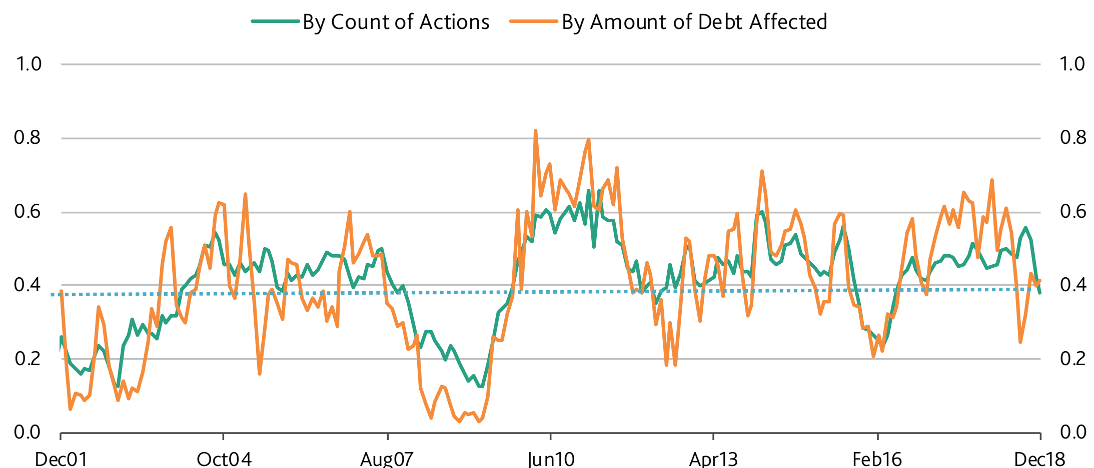
By Steven Shields

U.S. credit rating changes were largely negative last week, with downgrades accounting for 69% of total rating activity. Unlike weeks past in which downgrades comprised the majority of rating changes but the minority of affected debt, downgrades accounted for 71% of all affected U.S. debt. American Water Works Company, Inc.'s credit rating was downgraded from A3 to Baa1, reflecting increased leverage, high dividend growth, and cash flow concerns stemming from federal tax reform. The downgrade impacted $5.7 billion in debt, but the company outlook was lifted to stable from negative. The other notable rating change was also a U.S. utility. Niagara Mohawk Power Corp. was downgraded from A2 to A3. While the company's outlook is stable, the broader industry outlook for regulated U.S. utilities will remain negative this year due to lower cash flow and higher debt from capital spending. The recent shift in downgrades controlling credit rating activity comes as no surprise with upside potential for rating activity limited this far into the business cycle. All told, the economy's fundamentals remain strong, and the Fed's dovish pivot reduces the risk that financial market conditions will suddenly tighten or a credit crunch will ensue.

Meanwhile, European activity increased for the second consecutive week. Five of the nine ratings changes were upgrades, though downgrades controlled the majority of affected debt. The most noteworthy credit rating change was Casino Guichard-Perrachon SA's downgrade from Ba1 to Ba3 in April. The French mass-market retailer had $7.6 billion in debt affected by this week's downgrade. On the flip side, the most notable upgrade was automotive manufacturer Peugeot S.A. The firm received an upgrade to Baa3 from Ba1 thanks to the firm's strong liquidity, increased cash flow and profitability. Additionally, the Opel acquisition from General Motors in 2017 positions Peugeot well within the European auto market and has already positively contributed to its cash flow.

FIGURE 1

Rating Changes - US Corporate & Financial Institutions: Favorable as % of Total Actions



* Trailing 3-month average

Source: Moody's

Ratings Round-Up

FIGURE 2

Rating Key

BCF	Bank Credit Facility Rating	MM	Money-Market
CFR	Corporate Family Rating	MTN	MTN Program Rating
CP	Commercial Paper Rating	Notes	Notes
FSR	Bank Financial Strength Rating	PDR	Probability of Default Rating
IFS	Insurance Financial Strength Rating	PS	Preferred Stock Rating
IR	Issuer Rating	SGLR	Speculative-Grade Liquidity Rating
JrSub	Junior Subordinated Rating	SLTD	Short- and Long-Term Deposit Rating
LGD	Loss Given Default Rating	SrSec	Senior Secured Rating
LTCF	Long-Term Corporate Family Rating	SrUnsec	Senior Unsecured Rating
LTD	Long-Term Deposit Rating	SrSub	Senior Subordinated
LTIR	Long-Term Issuer Rating	STD	Short-Term Deposit Rating

FIGURE 3

Rating Changes: Corporate & Financial Institutions – US

Date	Company	Sector	Rating	Amount ($ Million)	Up/ Down	Old LTD Rating	New LTD Rating	IG/ SG
3/27/19	FIRSTENERGY CORP.-JERSEY CENTRAL POWER & LIGHT COMPANY	Utility	SrUnsec/LTIR	1,727	U	Baa2	Baa1	IG
3/28/19	HARMAN INTERNATIONAL INDUSTRIES, INC.	Industrial	SrUnsec	793	U	Baa2	Baa1	IG
3/28/19	OWENS & MINOR, INC.	Industrial	SrSec/BCF /LTCFR/PDR	550	D	B1	B2	SG
3/28/19	XCEL ENERGY INC.	Utility	SrUnsec/BCF/LTIR /Sub/JrSub/PS	3,400	D	A3	Baa1	IG
3/28/19	EVERGREEN ACQCO 1 LP	Industrial	PDR		D	Caa3	Ca	SG
3/28/19	IVY HOLDINGS, INC.-PROSPECT MEDICAL HOLDINGS, INC.	Industrial	SrSec/BCF /LTCFR/PDR		D	B1	B3	SG
3/29/19	NATIONAL GRID PLC-NIAGARA MOHAWK POWER CORPORATION	Utility	SrUnsec/LTIR	4,474	D	A2	A3	IG
3/29/19	GO DADDY OPERATING COMPANY, LLC	Industrial	SrSec/BCF /LTCFR/PDR		U	Ba3	Ba2	SG
4/1/19	COMPASS MINERALS INTERNATIONAL, INC	Industrial	SrUnsec/SrSec /BCF/LTCFR/PDR	250	D	B1	B2	SG
4/1/19	AMERICAN WATER WORKS COMPANY, INC.	Utility	SrUnsec/LTIR	5,725	D	A3	Baa1	IG
4/1/19	CHENIERE CORPUS CHRISTI HOLDINGS, LLC	Industrial	SrSec	4,250	U	Ba3	Ba2	SG
4/2/19	SUNGARD AVAILABILITY SERVICES CAPITAL INC.	Industrial	SrUnsec/SrSec /BCF/LTCFR/PDR	425	D	Caa3	C	SG

Source: Moody's

Ratings Round-Up

FIGURE 4

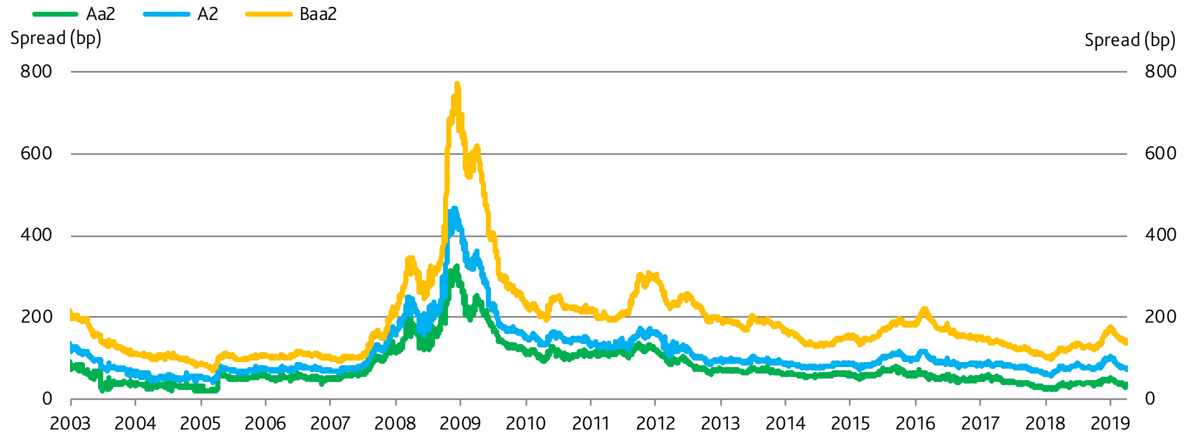
Rating Changes: Corporate & Financial Institutions – Europe

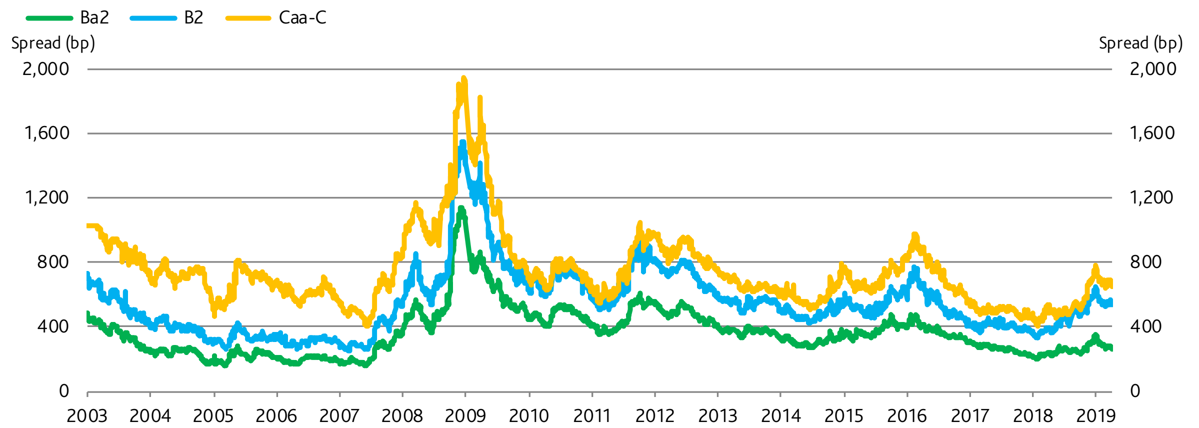
Date	Company	Sector	Rating	Amount ($ Million)	Up/ Down	Old LTD Rating	New LTD Rating	Old STD Rating	New STD Rating	IG/SG	Country
3/28/19	PEUGEOT S.A.	Industrial	SrUnsec /MTN/CP	2,751	U	Ba1	Baa3	NP	P-3	SG	FRANCE
3/28/19	BANK URALSIB	Financial	LTD		U	B3	B2			SG	RUSSIA
3/28/19	FINANCIERE TOP MENDEL SAS	Industrial	LTCFR/PDR		D	B1	B3			SG	FRANCE
3/28/19	PRAESIDIAD GROUP LIMITED	Industrial	SrSec/BCF /LTCFR/PDR		D	B2	B3			SG	UNITED KINGDOM
4/1/19	BANCO COMERCIAL PORTUGUES, S.A.	Financial	SrUnsec /LTD/Sub/PS	1,134	U	Ba3	Ba2			SG	PORTUGAL
4/1/19	PERMANENT TSB GROUP HOLDINGS PLC	Financial	SrUnsec/LTIR /LTD/STD/MTN	25	U	Ba2	Baa3	NP	P-3	SG	IRELAND
4/2/19	SUEDZUCKER AG-SUEDZUCKER INTERNATIONAL FINANCE B.V.	Industrial	BACKED Junior Subordinate	786	D	B1	B2			SG	NETHERLANDS
4/2/19	BANCO COMERCIAL PORTUGUES, S.A. -BANK MILLENNIUM S.A.	Financial	LTD		U	Baa2	Baa1			IG	POLAND
4/2/19	CASINO GUICHARD -PERRACHON SA	Industrial	SrUnsec/LTCFR /Sub/MTN/PDR	7,590	D	Ba1	Ba3			SG	FRANCE

Source: Moody's

Market Data

Spreads





Market Data

CDS Movers

Figure 3. CDS Movers - US (March 27, 2019 – April 3, 2019)

CDS Implied Rating Rises	CDS Implied Ratings		
Issuer	Apr. 3	Mar. 27	Senior Ratings
Ford Motor Company	B1	B3	Baa3
United Airlines, Inc.	Ba3	B2	Ba3
United Rentals (North America), Inc.	Ba3	B2	Ba3
Freeport-McMoRan Inc.	Ba3	B2	Ba2
MGM Resorts International	Ba3	B2	Ba3
Arconic Inc.	Ba3	B2	Ba2
Encompass Health Corp.	Ba3	B2	B1
ServiceMaster Company, LLC (The)	Ba3	B2	B2
KB Home	B1	B3	B1
United Continental Holdings, Inc.	Ba3	B2	Ba3

CDS Implied Rating Declines	CDS Implied Ratings		
Issuer	Apr. 3	Mar. 27	Senior Ratings
Dish DBS Corporation	Caa3	Caa1	B1
Hertz Corporation (The)	Ca	Caa2	B3
Qwest Corporation	Ba3	Ba1	Ba2
R.R. Donnelley & Sons Company	Ca	Caa2	B3
Pride International, Inc.	Caa3	Caa1	B3
KeySpan Corporation	A1	Aa2	Baa1
Lexmark International, Inc.	Ca	Caa2	Caa3
McClatchy Company (The)	Ca	Caa2	Caa2
Oracle Corporation	Aa3	Aa2	A1
Caterpillar Financial Services Corporation	A3	A2	A3

CDS Spread Increases		CDS Spreads		
Issuer	Senior Ratings	Apr. 3	Mar. 27	Spread Diff
Dean Foods Company	B3	2,191	1,716	475
Neiman Marcus Group LTD LLC	Ca	3,134	2,939	196
Rite Aid Corporation	Caa2	1,529	1,425	104
Qwest Corporation	Ba2	209	145	63
Pride International, Inc.	B3	574	528	46
Avon Products, Inc.	B3	410	387	23
Service Corporation International	Ba3	157	144	12
Owens Corning	Ba1	202	192	10
EOG Resources, Inc.	Baa1	102	94	8
Meritage Homes Corporation	Ba2	266	258	8

CDS Spread Decreases		CDS Spreads		
Issuer	Senior Ratings	Apr. 3	Mar. 27	Spread Diff
K. Hovnanian Enterprises, Inc.	Caa3	2,453	2,738	-285
Frontier Communications Corporation	Caa1	2,281	2,418	-138
AK Steel Corporation	B3	739	824	-85
McClatchy Company (The)	Caa2	726	789	-63
Unisys Corporation	B2	250	300	-50
American Axle & Manufacturing, Inc.	B2	310	358	-47
YRC Worldwide Inc.	Caa1	637	681	-44
Chesapeake Energy Corporation	B3	533	576	-43
Meritor, Inc.	B1	192	233	-41
Realogy Group LLC	B1	492	531	-39

Source: Moody's, CMA

Market Data

Figure 4. CDS Movers - Europe (March 27, 2019 – April 3, 2019)

CDS Implied Rating Rises	CDS Implied Ratings		
Issuer	Apr. 3	Mar. 27	Senior Ratings
thyssenkrupp AG	B1	B3	Ba2
Ardagh Packaging Finance plc	Ba3	B2	B3
Marks & Spencer p.l.c.	Ba2	B1	Baa3
Italy, Government of	Ba3	B1	Baa3
France, Government of	Aa1	Aa2	Aa2
Societe Generale	A1	A2	A1
BNP Paribas	Aa3	A1	Aa3
Turkey, Government of	B3	Caa1	Ba3
Credit Agricole S.A.	Aa2	Aa3	A1
Credit Agricole Corporate and Investment Bank	Aa2	Aa3	A1

CDS Implied Rating Declines	CDS Implied Ratings		
Issuer	Apr. 3	Mar. 27	Senior Ratings
Ukraine, Government of	Caa3	Caa1	Caa1
National Grid Electricity Transmission plc	Baa1	A2	A3
National Bank of Greece S.A.	Ca	Caa2	Caa2
National Grid Plc	Baa1	A2	Baa1
CMA CGM S.A.	Ca	Caa2	B3
Portugal, Government of	Baa2	Baa1	Baa3
Poland, Government of	Baa2	Baa1	A2
Alpha Bank AE	Caa3	Caa2	Caa2
Swedbank AB	A3	A2	Aa2
Slovakia, Government of	A2	A1	A2

CDS Spread Increases		CDS Spreads		
Issuer	Senior Ratings	Apr. 3	Mar. 27	Spread Diff
Boparan Finance plc	Caa1	1,489	1,359	130
PizzaExpress Financing 1 plc	Caa2	2,556	2,495	61
Ensco plc	B3	528	485	43
Heathrow Finance plc	Ba1	215	201	14
Romania, Government of	Baa3	110	99	12
Casino Guichard-Perrachon SA	Ba1	465	454	11
National Grid Electricity Transmission plc	A3	60	49	11
National Grid Plc	Baa1	57	46	11
TUI AG	Ba2	247	236	11
Swedbank AB	Aa2	52	44	8

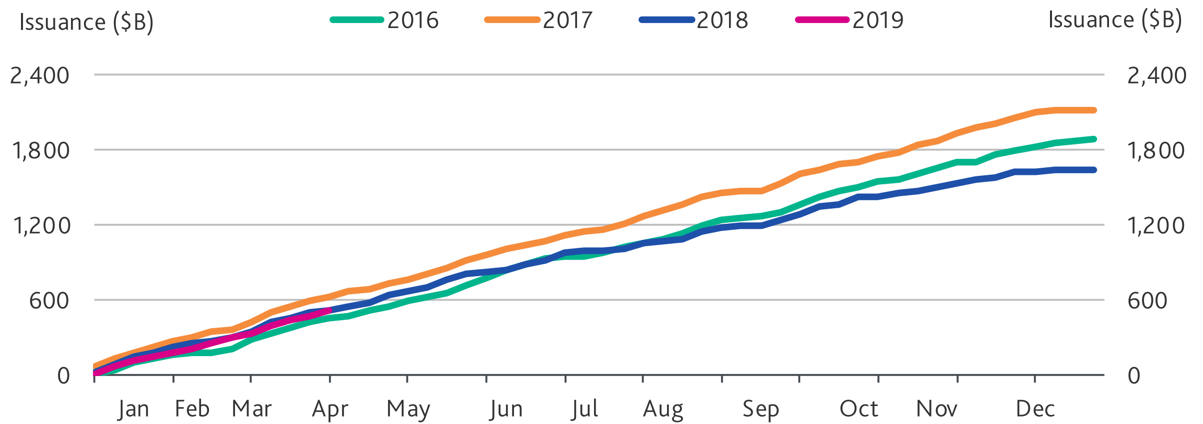
CDS Spread Decreases		CDS Spreads		
Issuer	Senior Ratings	Apr. 3	Mar. 27	Spread Diff
Russian Standard Bank	Caa2	1,049	1,187	-138
Novafives S.A.S.	Caa1	532	624	-92
Yapi ve Kredi Bankasi A.S.	B1	443	531	-88
Jaguar Land Rover Automotive Plc	Ba3	575	651	-76
Turkey, Government of	Ba3	374	449	-75
CMA CGM S.A.	B3	699	759	-60
Altice Finco S.A.	Caa1	407	460	-54
thyssenkrupp AG	Ba2	221	262	-41
Ineos Group Holdings S.A.	B1	277	318	-41
Telecom Italia S.p.A.	Ba1	220	253	-33

Source: Moody's, CMA

Market Data

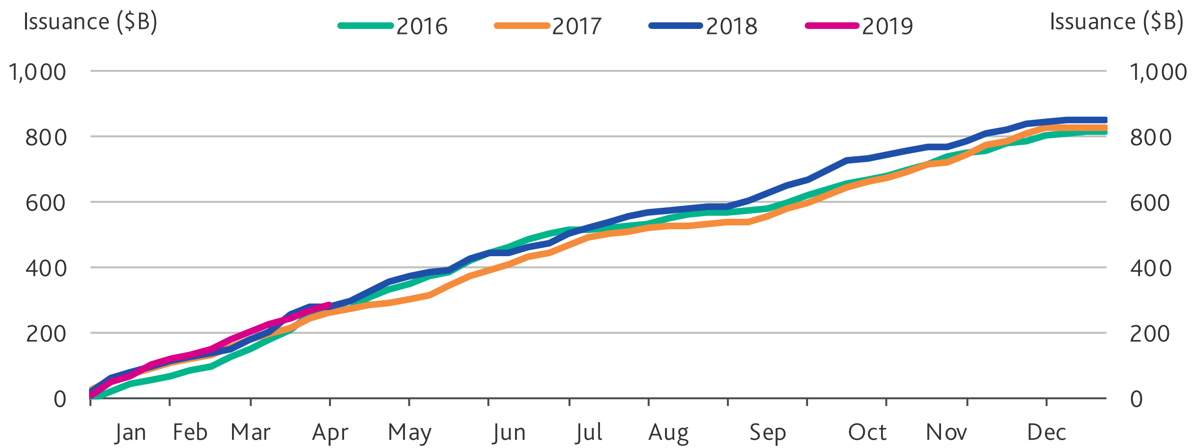
Issuance

Figure 5. Market Cumulative Issuance - Corporate & Financial Institutions: USD Denominated



Source: Moody's / Dealogic

Figure 6. Market Cumulative Issuance - Corporate & Financial Institutions: Euro Denominated



Source: Moody's / Dealogic

Market Data

Figure 7. Issuance: Corporate & Financial Institutions

	USD Denominated		
	Investment-Grade	High-Yield	Total*
	Amount $B	Amount $B	Amount $B
Weekly	30.736	10.900	42.978
Year-to-Date	379.768	109.701	514.336

	Euro Denominated		
	Investment-Grade	High-Yield	Total*
	Amount $B	Amount $B	Amount $B
Weekly	15.368	2.430	18.370
Year-to-Date	255.974	22.867	284.054

* Difference represents issuance with pending ratings.

Source: Moody's/ Dealogic

Moody's Capital Markets Research recent publications

Subdued Outlook for Revenues and Profits Portend Lower Interest Rates (Capital Markets Research)

Fed Will Cut Rates If 10-Year Yield Breaks Under 2.4% (Capital Markets Research)

Riskier Outlook May Slow Corporate Debt Growth in 2019 (Capital Markets Research)

Replay of Late 1998's Drop by Interest Rates May Materialize (Capital Markets Research)

High-Yield Might Yet Be Challenged by a Worsened Business Outlook (Capital Markets Research)

Default Outlook Again Defies Unmatched Ratio of Corporate Debt to GDP (Capital Markets Research)

Equity Analysts' Confidence Contrasts with Economists' Skepticism

Fed's Pause May Refresh a Tiring Economic Recovery (Capital Markets Research)

Rising Default Rate May be Difficult to Cap (Capital Markets Research)

Baa-Grade Credits Dominate U.S. Investment-Grade Rating Revisions (Capital Markets Research)

Upper-Tier Ba Rating Comprises Nearly Half of Outstanding High-Yield Bonds (Capital Markets Research)

Stabilization of Equities and Corporates Requires Treasury Bond Rally (Capital Markets Research)

High Leverage Will Help Set Benchmark Interest Rates (Capital Markets Research)

Medium-Grade's Worry Differs from High-Yield's Complacency (Capital Markets Research)

Slower Growth amid High Leverage Lessens Upside for Interest Rates (Capital Markets Research)

Core Profit's Positive Outlook Lessens Downside Risk for Credit (Capital Markets Research)

Unprecedented Amount of Baa-Grade Bonds Menaces the Credit Outlook (Capital Markets Research)

Gridlock Stills Fiscal Policy and Elevates Fed Policy (Capital Markets Research)

Navigating Choppy Markets: Safety-First Equity Strategies Based on Credit Risk Signals

Net Stock Buybacks and Net Borrowing Have Yet to Alarm (Capital Markets Research)

Financial Liquidity Withstands Equity Volatility for Now (Capital Markets Research)

Stepped Up Use of Loan Debt May Yet Swell Defaults (Capital Markets Research)

Financial Market Volatility May Soon Influence Fed Policy (Capital Markets Research)

Equities Suggest Latest Climb by Treasury Yields Is Excessive (Capital Markets Research)

Profits Determine Effect of High Corporate Debt to GDP Ratio (Capital Markets Research)

Higher Interest Rates Suppress Corporate Borrowing (Capital Markets Research)

Middling Ratio of Net Corporate Debt to GDP Disputes Record Ratio of Corporate Debt to GDP (Capital Markets Research)

There's No Place Like Home for U.S. Investors (Capital Markets Research)

Significant Differences, Eerie Similarities (Capital Markets Research)

Base Metals Price Slump May Dispute Benign Default Outlook (Capital Markets Research)

Profit Outlook Offsets Record Ratio of Corporate Debt to GDP (Capital Markets Research)

Upon Further Review, Debt to EBITDA Still Falls Short as an Aggregate Predictor (Capital Markets Research)

To order reprints of this report (100 copies minimum), please call 212.553.1658.

Report Number: 1169577

Editor
Reid Kanaley
reid.kanaley@moodys.com

Contact Us

Americas:	1.212.553.4399
Europe:	+44 (0) 20.7772.5588
Asia:	813.5408.4131

© 2019 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND ITS RATINGS AFFILIATES ("MIS") ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MOODY'S PUBLICATIONS MAY INCLUDE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS AND MOODY'S OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. CREDIT RATINGS AND MOODY'S PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. NEITHER CREDIT RATINGS NOR MOODY'S PUBLICATIONS COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS AND PUBLISHES MOODY'S PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS OR MOODY'S PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

CREDIT RATINGS AND MOODY'S PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing the Moody's publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any rating, agreed to pay to Moody's Investors Service, Inc. for ratings opinions and services rendered by it fees ranging from $1,000 to approximately $2,700,000. MCO and MIS also maintain policies and procedures to address the independence of MIS's ratings and rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold ratings from MIS and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJKK or MSFJ (as applicable) for ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.