

**WEEKLY
MARKET OUTLOOK**

Moody's Analytics Research

Weekly Market Outlook Contributors:

Moody's Analytics/New York:

John Lonski
Chief Economist
1.212.553.7144
john.lonski@moodys.com

Yukyung Choi
Quantitative Research

Moody's Analytics/Asia-Pacific:

Katrina Ell
Economist

Moody's Analytics/Europe:

Barbara Teixeira Araujo
Economist

Ross Cioffi
Economist

Moody's Analytics/U.S.:

Ryan Sweet
Economist

Bernard Yaros
Economist

Steven Shields
Economist

Editor
Reid Kanaley

Contact: help@economy.com

Abundant Liquidity Suppresses Defaults

Credit Markets Review and Outlook *by John Lonski*

Abundant Liquidity Suppresses Defaults

>> 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: This will be a record-breaking September for the amount of US\$-denominated investment-grade corporate bond offerings.

Credit Spreads	Investment Grade: We see year-end 2019's average investment grade bond spread marginally above its recent 124 basis points. High Yield: Compared with a recent 427 bp, the high-yield spread may approximate 470 bp by year-end 2019.
Defaults	US HY default rate: Moody's Investors Service's Default Report has the U.S.' trailing 12-month high-yield default rate rising from August 2019's actual 2.9% to a baseline estimate of 3.9% for August 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 6.3% for IG to \$1.356 trillion, while high-yield supply grows by 34.8% to \$374 billion. The very low base of 2018 now lends an upward bias to the yearly increases of 2019's high-yield bond offerings.

>> FULL STORY PAGE 10

Ratings Round-Up

U.S. Corporate Credit Quality Weakens

>> FULL STORY PAGE 14

Market Data

Credit spreads, CDS movers, issuance.

>> FULL STORY PAGE 18

Moody's Capital Markets Research *recent publications*

Links to commentaries on: Cheap money, fallen angels, corporate credit, Fed moves, spreads, yield collapse, inversions, unmasking danger, divining markets, upside risks, high leverage, revenues and profits, riskier outlook, high-yield, defaults, confidence vs. skepticism.

>> FULL STORY PAGE 23

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.

Credit Markets Review and Outlook

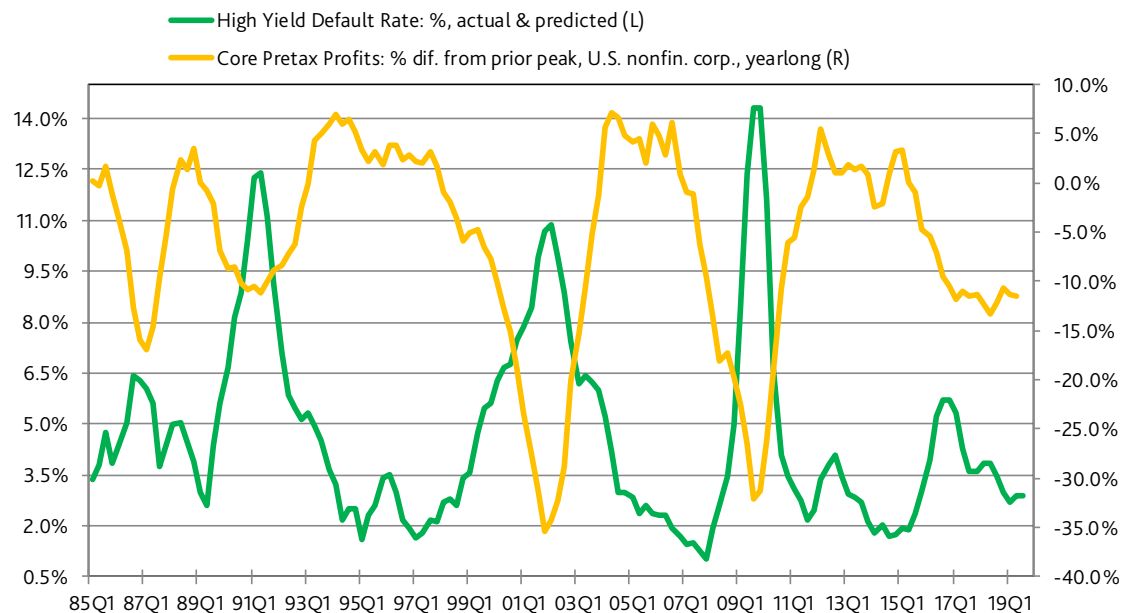
By John Lonski, Chief Economist, Moody's Capital Markets Research, Inc.

Abundant Liquidity Suppresses Defaults

Nothing quite increases the risk of debt repayment like a drop in the income that funds the servicing of outstanding debt. A material drop of 5% or deeper by the yearlong estimate of core pretax profits from their prior high accompanied each prior jump by the U.S. high-yield default rate to 5% or higher. In addition, the yield spreads over Treasuries of Baa- and speculative-grade corporate bonds swelled in response to material contractions of corporate earnings.

Figure 1: Deeper Than 5% Drops by Core Profits from Prior High Led to a Greater than 5% Default Rates

sources: Moody's Investors Service, BEA, Moody's Analytics



Atypically high ratios of corporate debt to either recurring pretax profits or cash flow make it all the more likely that a notable contraction of profits will trigger a sharp upturn by defaults. Moreover, the default rate's reaction to an earnings downturn will depend on systemic liquidity.

Ample financial liquidity can limit the degree to which a broadly distributed shrinkage of profits lifts defaults. For example, the damage inflicted on credit quality by 2015-2016's corporate-earnings recession was contained by plentiful liquidity that facilitated mergers, acquisitions and divestitures, many of which enhanced debt repayment capabilities. At the other extreme, the high-yield default rate's steep and sudden ascent of 2008-2009 was amplified by a pronounced diminution of systemic liquidity. During 2008-2009, the inadequate capitalization of financial institutions helped to quickly reduce systemic liquidity as troubled loans multiplied.

To a considerable degree, systemic liquidity is linked to the level of benchmark interest rates. Though 2015-2016's profits recession overlapped a December 2015 hiking of fed funds from 0.125% to 0.375%, expectations of additional rate hikes during the first nine months of 2016 proved incorrect and the Treasury yield curve maintained its steep slope notwithstanding a drop by Treasury bond yields. Despite December 2015's Fed rate hike, the 10-year Treasury yield's month-long average sank from June 2014's 2.59% to July 2016's 1.49%.

Credit Markets Review and Outlook

By contrast, the Treasury bond market was slow to respond to the gravity of the financial crisis. In response to the financial stress that emerged in August 2007 and reappeared with the March 2008 collapse of Bear Stearns, the 10-year Treasury yield's moving three-month average fell from the 4.95% of the span-ended July 2007 to the 3.64% of April 2008. However, not only was that slide too shallow given the presence of a recession, but the 10-year Treasury yield's three-month average would then rise to the 4.00% of August 2008.

Higher Systemic Leverage Requires Lower Benchmark Interest Rates

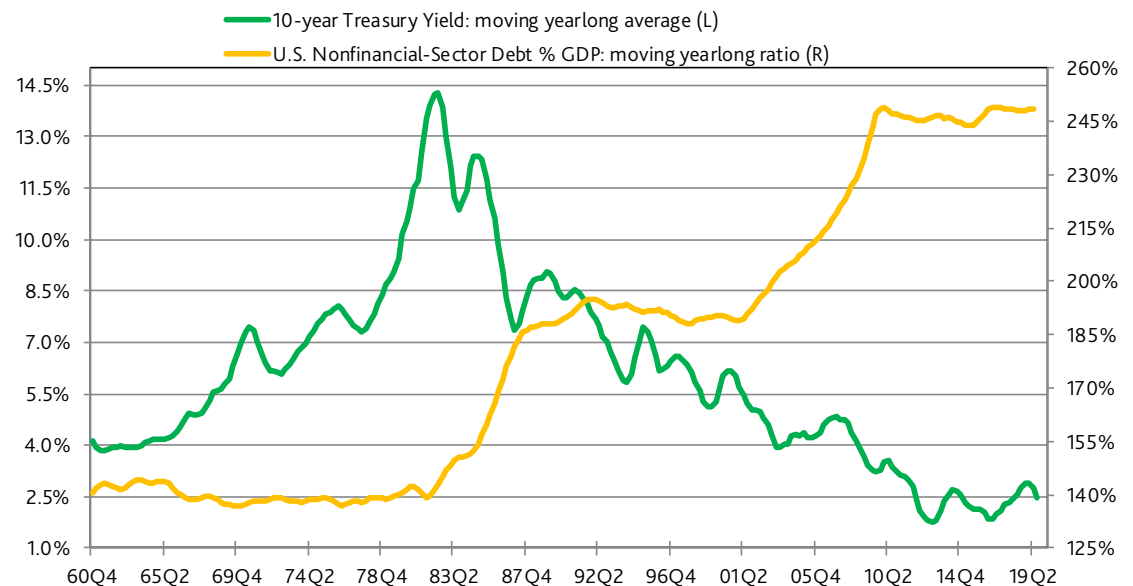
Perhaps, the credit market now realizes that the leveraging up of the U.S. economy requires historically low benchmark interest rates for the purpose of assuring adequate expenditures growth. For some time, we have discussed the seemingly paradoxical inverse relationship between the ratio of nonfinancial-sector debt to GDP (a proxy for macro leverage) and benchmark interest rates.

Basically, as macro leverage, or the ratio of nonfinancial-sector debt to GDP, increases, any increase in benchmark borrowing costs becomes more burdensome for the underlying pace of business activity. Because it takes less of an increase in borrowing costs to slow business activity, benchmark interest rates are lower than otherwise at higher readings for macro leverage, all else being the same.

Conversely, at comparatively high ratios of nonfinancial-sector debt to GDP, any reduction in benchmark borrowing costs supplies less of a lift to business activity. Already elevated readings on macro leverage limit the extent to which lower benchmark borrowing costs spur debt-funded spending. In turn, as systemic leverage increases, interest rate reductions may need to be deeper than otherwise if a harsh downturn is to be avoided.

Figure 2: Elevated Ratio of U.S. Nonfinancial-Sector Debt to GDP Lends a Downward Bias to Benchmark Interest Rates

sources: Federal Reserve, BEA, Moody's Analytics



When U.S. private- and public-sector nonfinancial-sector debt approximated 191% of GDP during the 1990s, the 10-year Treasury yield averaged 6.66%. For the 10-years-ended June 2019, private- and public-sector nonfinancial-sector debt rose to 248% of GDP as the average 10-year Treasury yield fell to 2.49%.

In addition, the underlying pace of business activity has been slower at higher systemic leverage. For example, compared to its 3.2% average annualized advance for the 10-years-ended 1999, U.S. real GDP subsequently slowed to a 2.1% average annual rise for the 10-years-ended June 2019.

Credit Markets Review and Outlook

In addition, the average annualized growth rate of core pretax profits slowed from the 7.3% of the 10-years-ended 1999 to 5.3% for the 10-years-ended June 2019. However, the deceleration by core pretax profits was more pronounced for nonfinancial corporations—the 10-year average annualized growth rate of this group's profits from current production sank from the 7.2% of the span-ended 1999 to the 4.4% of the span-ended June 2019.

Underlying Credit Quality Influences Meaning of Aggregate Leverage Ratios

All else the same, aggregate ratios of corporate debt to GDP, pretax profits, and EBITDA should be higher as the ratio of high-grade corporate bonds to total corporate bonds outstanding falls. (High-grade corporate bonds have ratings of A2 and higher and generally conform to companies having a P1 rating for commercial paper.)

For the year-ended June 2019, nonfinancial-corporate debt approximated a historically elevated 841% of the group's core pretax profits partly because high-grade corporate bonds approximated a relatively low 30% of the total amount of U.S. corporate bonds outstanding.

When the ratio of corporate debt to core pretax profits previously climbed to 841% in 2009's second quarter, 47% of outstanding U.S. corporate bonds were high-grade. Upon reaching 841% in 2000's second quarter, high-grade's share was 54%. And when the ratio climbed to 841% in 1989's final quarter, 51% of outstanding U.S. corporate bonds were high-grade.

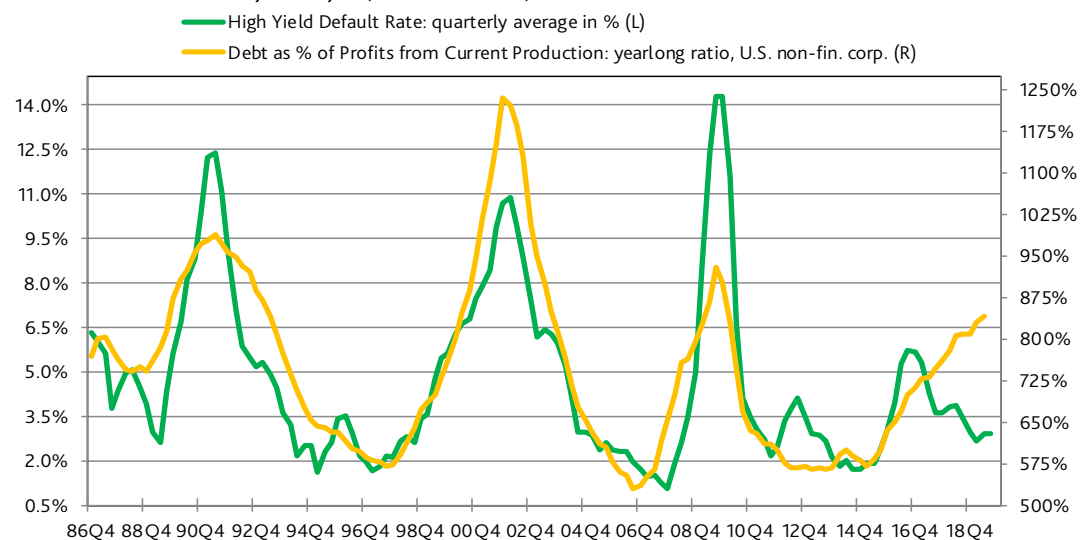
High-grade's declining share of outstanding U.S. corporate bonds was accompanied by a jump in the share of bonds having a medium-grade rating of Baa or A3, whose leverage ratios should exceed those of high-grade bonds. Medium-grade bonds' share of outstanding U.S. corporate bonds soared from 2007's 25% to the 54% of 2019's second quarter. At the same time, high-grade's share sank from 57% to 30%, while speculative-grade's share dipped from 18% to 16%.

Nevertheless, the average annual default rates of medium-grade bonds are not substantially higher than the default rates of high-grade bonds. For example, the unweighted average one-year default rate for bonds rated Aa3, A1, or A2 equals 0.07%, which is not much different from the unweighted average one-year default rate of 0.16% for bonds graded A3, Baa1, Baa2, or Baa3. Even the Baa3 bottom rung of the medium-grade ratings ladder shows a comparatively low average one-year default rate of 0.24%. Far higher than the default rate of medium-grade bonds is the 4.07% average one-year default rate of speculative-grade (or high-yield) bonds.

Unlike second quarter 2019's U.S. high-yield default rate of 2.9%, the default rates were much higher for each of the just mentioned three episodes. More specifically, the default rates were 12.3% in 2009's second quarter, 6.6% in 2000's second quarter, and 5.6% in 1989's final quarter.

Figure 3: Correlation Between High-Yield Default Rate and Corporate Debt as % of Core Pretax Profits Drops from 0.83 of 1986-2010 to Subsequent 0.40

sources: Moody's Analytics, Federal Reserve, BEA



Credit Markets Review and Outlook

High-Yield Ignores the Now Problematic Outlook for Profits Growth

Further differentiating the current situation's relatively low 2.9% default rate from the previously mentioned incidents where the debt-to-profits ratio reached 841% would be core profits' declining trends of 1989, 2000, and 2009 compared to 2019's rising trend. Nevertheless, not only has the latest rise by core profits been meek, but the sustainability of earnings growth is problematic.

Early September's Blue Chip consensus forecast has the sum of financial- and nonfinancial-company core pretax profits rising by merely 0.5% in 2019 and by 2.2% in 2020. However, the latter projection is somewhat at odds with the consensus forecast of a slowing by U.S. nominal GDP growth from 2019's prospective 4.2% to 2020's 3.9%. A recovery by profits in 2020 may need help from slower growth by labor costs, which seems unlikely given a now very low unemployment rate of 3.7%.

The recent below-average high-yield bond spread of 427 basis points suggests that the above-average risks surrounding the related outlooks for profits and defaults have yet to be fully priced in. However, the accompanying and above-average 194 bp spread of long-term industrial company bonds better accounts for the downside risks attendant to the earnings outlook.

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

THE U.S.

By Bernard Yaros of Moody's Analytics

What the Impeachment Inquiry Means for the Economy

House Speaker Nancy Pelosi announced on Tuesday that the House would start a formal impeachment inquiry against President Trump. This marks a startling turning point after Democrats had long shown reluctance to move forward with impeachment out of fear that it would backfire politically.

Since the outcome of the 2018 midterms, Moody's Analytics never expected the relationship between the president and House Democrats to be harmonious. The academic literature finds that a shift from unified to divided government tends to produce a fivefold increase in the number of congressional hearings and quadruple their duration. However, the emergence of the impeachment inquiry, prompted by Trump's phone call with his Ukrainian counterpart, does add more fuel than expected to tension between the president and House Democrats, with some implications for the U.S. economy.

Shutdown concerns

The impeachment inquiry comes days after the House passed a short-term spending bill to avert a partial government shutdown on October 1 and to fund the government through November 21. The Senate was expected to vote on the measure Thursday, and the president planned to sign it, according to reports.

Our baseline assumption is that Pelosi's announcement won't impact the Senate's vote on the stopgap spending bill, nor the president's willingness to sign it. However, we're eyeing the November 21 deadline with a bit more caution than before.

The inquiry is set to absorb Capitol Hill's attention, which will likely stymie progress on the 12 appropriations bills needed to fully fund the federal government through September 2020. This could force lawmakers to kick the can down the road once again, leading to another stopgap bill in November. Though short-term funding resolutions are preferable to a shutdown, they still represent a failure of fiscal policymaking.

Short-term spending bills create uncertainty for agencies, which have to restrict their spending and hiring cycles to the close confines of the stopgap measure. This often leads to lost productivity, since agencies are forced to make repetitive, inefficient, short-term contracts. Government contractors are not immune to these effects as well.

The conflict torpedoed

A lot can happen between now and November 21, and ultimately, the biggest downside risk to the fiscal 2020 budget process is that the inquiry leads to a debilitating level of partisan conflict in Capitol Hill that torpedoed a timely funding bill by the November 21 deadline, thereby leading to a shutdown.

All else being equal, a November shutdown is more problematic to the economy than an October one, given the sheer amount of year-end holiday spending that occurs around Black Friday, Cyber Monday, and the lead-up to Christmas. A silver lining is that Washington DC is increasingly gearing up for the 2020 election, which should diminish lawmakers' appetite for political brinkmanship over the budget.

Other economic implications tied to the inquiry are less serious. Pelosi's announcement reduces the likelihood that Congress will pass any bipartisan legislation on drug pricing or infrastructure prior to the 2020 election. However, the odds of this happening were already near rock-bottom. This week's development will also further complicate passage of NAFTA's replacement—the United States-Mexico-Canada Agreement—which will add more uncertainty for regional economies such as Texas that rely significantly on trade with Mexico.

The Week Ahead

Looking ahead

The economic calendar is full next week. Key U.S. data will include September employment figures from the Bureau of Labor Statistics, the ADP employment report, construction spending, home prices, factory orders and the Texas manufacturing outlook.

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

EUROPE

By Barbara Teixeira Araujo of Moody's Analytics

Inflation Again Will Fall Short of the ECB's Target

The coming week will be extremely busy on the data front for Europe. In the spotlight will be the September preliminary inflation figures for the euro zone and the final estimate of U.K. second quarter GDP growth. We don't expect either of them to be market movers. Our view is that euro zone headline inflation will hold only steady at 1% y/y in September, underscoring the need for loose monetary policy in the currency area while at the same time suggesting that the European Central Bank was right to deliver September's substantial policy package. True, the details should show an increase in the core rate to 1% y/y from 0.9%, as core goods inflation is expected to rise to 0.4% from 0.3% on a rebound in game and toys inflation, while services inflation is expected to have remained steady. But we caution that 1% is still far away from the bank's target for underlying inflation pressures to reach and stabilize at around 2%.

We expect that euro zone noncore inflation pressures eased. First, energy inflation should have declined further due to base effects in oil prices. This downward drag will carry over into October, but energy inflation should start rising again from November given that Brent prices fell significantly in November 2018. Second, we expect that prices of fresh food fell back in September following two months of strong increases related to weather developments, especially as September's weather fell back in line with seasonal norms.

U.K. GDP

On U.K. GDP, we expect final numbers will confirm that the economy contracted by 0.2% q/q in the second quarter after a 0.5% jump in the first. It is nonetheless worth noting that we expected a correction in the three months to June following a stockbuilding-related jump before the initial March Brexit deadline. The details should show that business investment and exports fell as expected as firms at home and abroad unwound the accumulated inventories, while consumers remained a bright spot—with household spending rising by 0.5% q/q—and so did government spending.

While we continue to expect growth to recover in the third quarter—we pencil in a diametrically-opposed 0.2% q/q rise—risks are tilted heavily to the downside. First, it looks like car manufacturing won't rebound by as much as we initially expected as anecdotal evidence suggest that some firms shut down again in August despite having also closed in April on the back of contingency planning. In addition, survey numbers suggest that firms are not stockpiling to the extent they did before the March 31 deadline, despite the fact that the risks of a no-deal Brexit are much higher than they were in March given Boris Johnson's harsh no-deal rhetoric. The weaker external outlook and the heightened trade war tensions bring no relief. Risks are that exports continued to underperform due to the slowdown in global growth. Our hopes lie with the British consumers, who remain a bright spot given that wages continued to accelerate over the summer, while employment gains remained substantial.

Brexit

On the Brexit front, things will also be hectic. While the U.K. parliament was supposed to remain suspended until October 14, lawmakers reconvened on Wednesday after the country's Supreme Court

The Week Ahead

found Boris Johnson's decision to prorogue parliament unlawful. The opposition is calling for the prime minister to resign right away, but it looks like he intends to stay in his position for the time being. He continues to claim he will deliver Brexit by October 31, deal or no deal. Negotiations with the EU are ongoing, but it seems that insufficient progress was achieved over the past week. The EU is insisting that Johnson presents an alternative plan for the Northern Ireland backstop as soon as possible—the informal deadline is next Friday—but as of now the U.K.'s negotiating team hasn't put forward any credible option.

Our view has not changed: it is unlikely the deadlock will be broken and a deal reached by October 17-18, when an extraordinary Brexit EU summit is scheduled. The Benn bill (passed by parliament at the start of September) states that in such a case the prime minister would have to ask the EU for another Brexit delay by October 19. Fears are nonetheless growing that Boris Johnson will try to circumvent the law and push for a no-deal exit on October 31. This is not our base case, though, as we expect the opposition would take down the government—through a vote of no confidence—if it appeared clear that Johnson was going towards the cliff edge.

	Key indicators	Units	Moody's Analytics	Last
Mon @ 7:00 a.m.	Germany: Retail Sales for August	% change	1.1	-2.2
Mon @ 8:30 a.m.	Spain: GDP for Q2	% change	0.5	0.7
Mon @ 9:00 a.m.	Germany: Unemployment for September	%	5.0	5.0
Mon @ 9:00 a.m.	Italy: Unemployment for August	%	9.9	9.9
Mon @ 9:30 a.m.	U.K.: GDP for Q2	% change	-0.2	0.5
Mon @ 10:00 a.m.	Euro Zone: Unemployment for August	%	7.5	7.5
Tues @ 10:00 a.m.	Euro Zone: Preliminary Consumer Price Index for September	% change	1.0	1.0
Wed @ 2:00 p.m.	Russia: GDP for Q2	% change yr ago	0.9	0.5
Thur @ 10:00 a.m.	Euro Zone: Retail Sales for August	% change	0.3	-0.6
Fri @ 2:00 p.m.	Russia: Consumer Price Index for September	% change	4.4	-0.2

ASIA-PACIFIC

By Katrina Ell of Moody's Analytics

Tankan Survey Likely to Show Low Manufacturer Confidence

A barrage of Japan's August economic data is due. Numbers are likely to be more positive than usual, particularly on the consumption front given front-loading ahead of the 1 October consumption tax hike from 8% to 10%. This pick up is expected to have lasted through September, before a sharp pullback from October, as with prior VAT increases. Dampening front-loading of household consumption is coming from the trade dispute between South Korea and Japan, which has seen Japanese consumers shun South Korean-made consumer goods including clothing, cosmetics and autos.

Japan's Tankan survey is expected to show that manufacturers' business confidence remains down in the dumps. The Tankan survey slumped to 7 in the June quarter, its lowest reading in almost three years and is expected to hit 8 in the September quarter. Important weights on business confidence are coming from the uncertainty generated by the trade war, slowing global demand, and more recently trade tensions with South Korea resulting in export restrictions on both sides.

South Korea's exports are forecast to contract for a tenth straight month in September. Exports fell by 13.6% y/y in August, following an 11% decline in July. The decline, observed across a majority of key markets, was led by sluggish demand from China, which contracted by 21.3% y/y in August from 16.6% in July. Tech remains a consistent source of weakness, while pronounced falls in shipments to Japan are a more recent development on the downside.

China's manufacturing PMI is expected to rise to 49.7 in September, from 49.5 in August. The slight improvement is coming on the back of further deployment of stimulus, alongside some improvement in trade relations with the U.S. ahead of the next round of high-level talks between Beijing and

The Week Ahead

Washington in October. That being said, the outlook remains for ongoing weakness, with offshore demand a particular drag.

	Key indicators	Units	Confidence	Risk	Moody's Analytics	Last
Mon @ 9:00 a.m.	South Korea Retail trade for August	% change	2	↑	0.2	-0.9
Mon @ 9:50 a.m.	Japan Retail trade for August	% change	2	←	0.5	-2.3
Mon @ 9:50 a.m.	Japan Industrial production for August	% change	3	↓	0.5	1.3
Mon @ 11:00 a.m.	China Official Manufacturing PMI for September	Index	3	←	49.7	49.5
Mon @ 5:30 p.m.	Thailand Foreign trade for August	US\$ bil	3	←	2.3	1.7
Tues @ 9:00 a.m.	South Korea Consumer price index for September	% change yr ago	3	←	0.3	0.0
Tues @ 9:30 a.m.	Japan Unemployment rate for August	%	3	↑	2.3	2.2
Tues @ 9:50 a.m.	Japan Tankan Survey for Q3	Index	3	↓	8.0	7.0
Tues @ Unknown	South Korea Foreign trade for September	US\$ bil	3	←	1.9	1.7
Wed @ 3:00 p.m.	Japan Consumer confidence survey for September	Index	3	←	37.0	37.1
Thurs @ 11:30 a.m.	Australia Foreign trade for August	A\$ bil	3	←	6.7	7.3
Fri @ 11:30 a.m.	Australia Retail trade for August	% change	4	←	0.3	-0.1
Fri @ 2:00 p.m.	Malaysia Foreign trade for August	MYR bil	3	↑	9.9	14.3

The Long View

This will be a record-breaking September for the amount of US\$-denominated investment-grade corporate bond offerings.

By John Lonski, Chief Economist, Moody's Capital Markets Research Group
September 26, 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 is slightly wider than its 122-point mean of the two previous economic recoveries. This spread may be no wider than 130 bp by year-end 2019.

The recent high-yield bond spread of 427 bp is thinner than what is suggested by both the accompanying long-term Baa industrial company bond yield spread of 194 bp and the recent VIX of 16.2 points.

DEFAULTS

August 2019's U.S. high-yield default rate was 2.9%. The high-yield default rate may average 3.4% during 2020's first quarter, according to Moody's Investors Service.

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.

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 3.0% for IG and grew by 7.1% for high yield.

Second-quarter 2019's worldwide offerings of corporate bonds revealed an annual setback of 2.5% for IG and an annual advance of 17.6% for high-yield, wherein US\$-denominated offerings sank by 12.4% for IG and surged by 30.3% 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 5.2% for IG and 24.8% for high yield. When stated in U.S. dollars, issuers based outside the U.S. supplied 60% of the investment-grade and 57% of the high-yield bond offerings of 2019's first half.

The Long View

US ECONOMIC OUTLOOK

As inferred from the CME Group's Fed Watch Tool, the futures market recently assigned an implied probability of 64% to a cutting of the federal funds rate at the October 30, 2019 meeting of the Federal Open Market Committee. 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 2.00% 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 and Ross Cioffi of Moody's Analytics
September 26, 2019

GERMANY

The few data points we got for the euro zone on Thursday surprised to the upside. First, Germany's GfK consumer confidence indicator rose in October—the gauge is forward-looking—following six consecutive months of decline. Granted, at 9.9 the gauge is still reading below its the past-year average of 10.3, but at least it brought some hope that German consumers are managing to remain afloat despite the country's manufacturing sector being in full-blown recession.

Helping boost consumer confidence is a tight labour market and rising wages, which suggests that household spending should increase further in coming months and offset weakness in investment and in the external sector. But risks abound, especially as leading surveys indicate that employment in manufacturing is now declining and that the sector's weakness has started to spill over into services firms. If the overall labour market situation worsens in coming months, this would hit confidence and strain wage growth, which would in turn push consumers into caution mode and dent spending.

Despite our stable outlook for consumer spending, we still expect the German economy to enter technical recession in the third quarter. Survey and hard data point towards another sharp plunge in manufacturing output in the three months to September on the back of waning demand from home and abroad, while the performance of the construction sector was likely also disappointing. Services probably did not contribute much, thus failing to keep growth in positive territory.

The other upbeat piece of data Thursday was the euro zone's M3 money growth for August. Broad money growth climbed to 5.7% y/y from 5.1% in July, the highest reading since the start of 2009. We keep track of these data since M3 money growth is closely correlated to GDP growth in the euro zone; the reading suggests that fears of an upcoming recession in the currency area may be exaggerated.

Adding to the good news is that lending growth also gained strong momentum in August. Loans to nonfinancial corporations rose by 4.3% y/y, accelerating from an upwardly revised 4% in July and also its highest since 2009. Across the major economies, growth was strongest in France at 8.3% y/y, while Germany's followed at 6.8%. On the downside, lending growth to Italian business continued to contract.

FRANCE

Unlike their British and German counterparts, French consumers will have a strong third quarter, with France's consumer confidence index rising to 104 in September. After nine consecutive months of gains, September's reading is the highest since January 2018. The increase reflects the benefits to household spending that the government's concessionary tax cuts and bonus schemes from earlier this year have had. Compared with August, more consumers plan to make big-ticket purchases while fewer intend to save over the next 12 months. Optimism over future personal finances has also increased.

Consumers' fears over unemployment have been trending downward and dropped in September to their lowest levels since January 2018. Although we don't have employment data for September, the August data were released today and support this optimism. Jobless claims fell by 20,100 in August, erasing nearly all the increases accrued between May and July of 20,500. We expect consumer spending will stay solid this year on the back of wage and employment growth, easing inflation, and tax cuts.

The Long View

The situation is gloomier in the U.K. Domestic political chaos continues as Prime Minister Boris Johnson returned home to face an increasingly hostile Parliament. After the Supreme Court ruled that his suspension of Parliament was unlawful, the opposition has stepped up its demands for his resignation. But the opposition is still failing to offer a cohesive and clear alternative. Uncertainty rules, and British stocks and sterling are taking hits. Unlike the French, British consumers are truly in the doldrums. Testifying to the lower consumer confidence was a further fall in credit card lending by major banks, decelerating to an annualized rate of 3.3% in August. Net mortgage approvals dropped on a monthly basis, though they are up 9% from August 2018. But despite the gain in mortgage lending, the data still show a battered British consumer.

ASIA PACIFIC

By Katrina Ell of Moody's Analytics

September 26, 2019

MARKET OUTLOOK

China's August activity data were overwhelmingly disappointing. Industrial production, fixed asset investment, exports, and retail trade cooled further from July. The data had been expected to show at least a modest upturn, given the additional U.S. tariffs on Chinese goods imports that went into effect on 1 September. In the past, months before a tariff increase have shown evidence of front-loading.

Forward indicators, including new orders and new export orders in the official manufacturing PMI, suggest ongoing weakness in activity, even as Beijing looks to step up support and the trade negotiations between the U.S. and China are in a more conciliatory mood heading into the high-level discussions in October.

Production slumps to a multiyear low

Industrial production was the worst of the lot, slumping to an almost 18-year low of 4.4% y/y, from July's already-peak 4.8%. The pace of deterioration has accelerated in the September quarter, with industrial production at 5.6% y/y year to date in August. Activity cooled in manufacturing and mining.

Manufacturing production slowed to 4.3% y/y in August, from 4.5% in July, whereas mining rose 3.7% y/y in August, following a 6.6% expansion in July. Power supply was up 5.9% y/y in August, after 6.9% in July.

The numbers extend the weak sentiment from last week, as factory-gate prices fell at their fastest pace in the last three years and a factory survey showed that activity fell for the fourth consecutive month. Moreover, China's copper imports, a metal used extensively in power and infrastructure industries, fell by 3.8% y/y in August.

Fixed asset investment not much chop

Fixed asset investment cooled to 5.5% y/y YTD in August, the slowest pace in a year, and followed from 5.7% in July. Weakness in fixed asset investment was a case of the uptick in infrastructure spending being overshadowed by softness in property construction and manufacturing.

The measured approach to infrastructure spending through this latest slowdown is evident in the comparison between reconstruction and new construction spending in 2009 when the large stimulus package was released, compared with current conditions.

Ailing vehicle sales

Retail trade softened to 7.5% y/y in August, below expectations for improvement on the 7.6% expansion in July. A decent chunk of the slump in retail trade in the third quarter has been at the hand of autos, which represent around 10% of retail trade. Total auto sales fell 6.9% y/y in August, according to the China Association of Automobile Manufacturers. This marked the 14th consecutive month of contraction.

The implementation of new vehicle emission standards earlier than the central government's 2020 deadline by 15 cities and provinces hurt sales from July onwards. The 15 cities and provinces account for more than 60% of car sales, according to the association. Sales jumped in June as consumers front-loaded purchases ahead of subsidy reductions.

Catching deluge in a paper cup

The Long View

The emphasis on additional fiscal and monetary stimulus has heightened. The People's Bank of China has already cut the amount of cash that banks must hold as reserves to its lowest level since 2007, while local governments' fund-raising restrictions have been loosened and the Loan Prime Rate has been reduced by 11 basis points, since August. The central bank may exercise some restraint to contain acceleration of the debt burden. However, the current situation builds pressure on policymakers to adopt a more aggressive fiscal and monetary stance to counter the near-term risks to the economy, which now threaten to put China's growth below 6% going into 2020.

Beijing has already set out to downwardly adjust future growth expectations. Premier Li Keqiang acknowledged that China will find it "very difficult" to maintain a growth rate of 6% or more, after growing by 6.3% in the first half of 2019.

Oil price shock scenario

We used our global macroeconomic model to examine the impact of an oil price shock on China's GDP growth. Under the baseline, Brent crude oil averages US\$66.82 per barrel in the December quarter and US\$65.40 per barrel in 2020. In the oil price shock scenario Brent rises to US\$68.09 per barrel in the December quarter and US\$71.22 per barrel in 2020.

The simulation is timely given the recent devastating attack on Saudi Arabian oil facilities and is an example of heightened geopolitical tensions in the region, which may keep upward pressure on global oil prices. It could be that the price impact of various tensions is not transient and instead has more medium-term impacts.

In the baseline, China's GDP growth is forecast at 6.1% in 2019 and 5.8% in 2020. In the oil price shock scenario, GDP growth in 2019 is broadly unchanged but by 2020 slows to 5.5%.

From a consumption perspective, higher fuel prices will further dent already-weakened discretionary spending. Consumers are grappling with a spike in food prices, which have been rising since February, so higher fuel prices will add to the pain. From a manufacturing perspective, it will likely help bring producer prices out of deflation but will add to input costs in an already-weakened demand environment.

Ratings Round-Up

Ratings Round-Up

U.S. Corporate Credit Quality Weakens

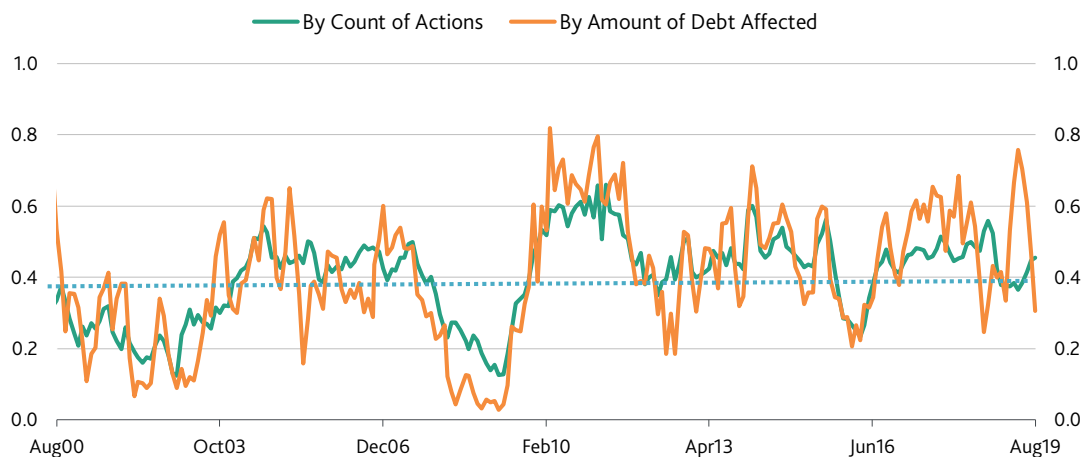
By Michael Ferlez

U.S. corporate credit quality weakened last week, with positive rating changes accounting for only 10% of total activity. In keeping with recent trends, corporate credit downgrades were consolidated to smaller, speculative-grade companies with limited impact on their industry or the broader economy. The sole upgrade last week was made to Leidos Inc. The U.S. aerospace defense company saw its senior unsecured credit rating raised to Ba1. Elsewhere, the most notable downgrade was made to Ultra Resources Inc. which saw its senior secured and unsecured credit rating cut to C. According to Moody's Investors Service, the downgrade reflected the company's decision to suspend drilling given the low commodity price environment in order to preserve drilling inventory for when conditions turn more favorable. The downgrade affected \$1.8 billion in debt.

European rating activity remained weak with downgrades outnumbering upgrades five-to-one. The lone upgrade was made to Credit Agricole S.A. The French bank saw its senior unsecured credit rating upgraded one-notch to Aa3 from A1. The upgrade by Moody's Investors Service reflects improvements in capitalization and asset risk as well as the firm's stable earnings. The upgrade affected \$104 billion in outstanding debt. On the other hand, downgrades were concentrated in smaller speculative-grade companies. The most notable downgrade was to O1 Properties Finance JSC. The Russian real estate company saw its senior unsecured credit rating cut from B3 to Caa1 reflecting a deterioration in asset coverage.

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

Ratings Round-Up

FIGURE 3

Rating Changes: Corporate & Financial Institutions – US

Date	Company	Sector	Rating	Amount (\$ Million)	Up/ Down	Old LTD Rating	New LTD Rating	IG/ SG
9/18/19	SHERIDAN INVESTMENT PARTNERS II, LP	Industrial	SrSec/BCF /LTCFR/PDR		D	Caa2	Ca	SG
9/18/19	BRUIN E&P PARTNERS, LLC	Industrial	SrUnsec	600	D	B3	Caa1	SG
9/19/19	ULTRA PETROLEUM CORP. -ULTRA RESOURCES, INC.	Industrial	SrSec/SrUnsec /BCF/LTCFR/PDR	1,772	D	Caa2	C	SG
9/19/19	MCDERMOTT INTERNATIONAL, INC.- MCDERMOTT TECHNOLOGY (AMERICAS), INC.	Industrial	SrUnsec/SrSec /BCF/LTCFR/PDR	1,300	D	Caa1	Caa2	SG
9/19/19	COHU, INC.	Industrial	SrSec/BCF /LTCFR/PDR		D	B1	B2	SG
9/19/19	SHAPE TECHNOLOGIES GROUP, INC.	Industrial	SrSec/BCF /LTCFR/PDR		D	B2	B3	SG
9/19/19	ELEVATE TEXTILES HOLDING CORPORATION-ELEVATE TEXTILES, INC.	Industrial	SrSec/BCF /LTCFR/PDR		D	B1	B2	SG
9/23/19	AMERICAN RENAL HOLDINGS COMPANY, INC. -AMERICAN RENAL HOLDINGS, INC.	Industrial	SrSec/BCF /LTCFR/PDR		D	B2	B3	SG
9/24/19	SPEEDWAY MOTORSPORTS, LLC	Industrial	SrUnsec /LTCFR/PDR	200	D	Ba2	B1	SG
9/24/19	LEIDOS HOLDINGS, INC. -LEIDOS, INC	Industrial	SrUnsec /SrSec/BCF	422	U	Ba2	Ba1	SG

Source: Moody's

Ratings Round-Up

FIGURE 4

Rating Changes: Corporate & Financial Institutions – Europe

Date	Company	Sector	Rating	Up/ Down	Old LTD Rating	New LTD Rating	IG/ SG	Country
9/18/19	SCHMOLZ + BICKENBACH AG	Industrial	SrSec/LTCFR/PDR	D	B3	Caa1	SG	SWITZERLAND
9/18/19	OBOL FRANCE 1 SAS-OBOL FRANCE 3 SAS	Industrial	SrSec/BCF/LTCFR/PDR	D	B2	B3	SG	FRANCE
9/19/19	GROUPE CREDIT AGRICOLE -CREDIT AGRICOLE S.A.	Financial	SrUnsec/JrSrUnsec/LTIR /LTD/Sub/MTN/PS	U	A1	Aa3	IG	FRANCE
9/19/19	PRO-GEST S.P.A.	Industrial	SrUnsec/LTCFR/PDR	D	B2	Caa1	SG	ITALY
9/23/19	PETKIM PEROKIMYA HOLDING A.S.	Industrial	SrUnsec/LTCFR/PDR	D	B1	B2	SG	TURKEY
9/24/19	O1 PROPERTIES LIMITED-O1 PROPERTIES FINANCE JSC	Industrial	SrUnsec	D	B3	Caa1	SG	RUSSIA

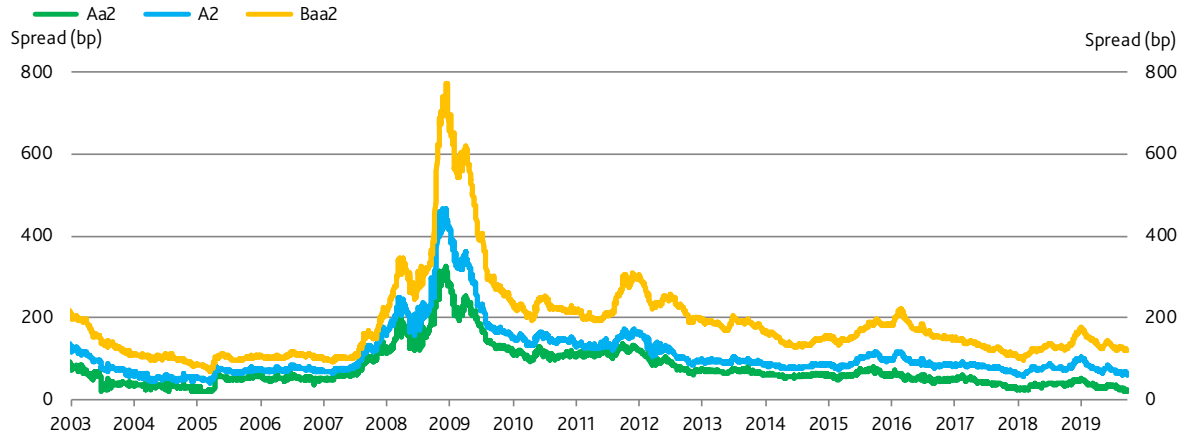
Source: Moody's

Market Data

Market Data

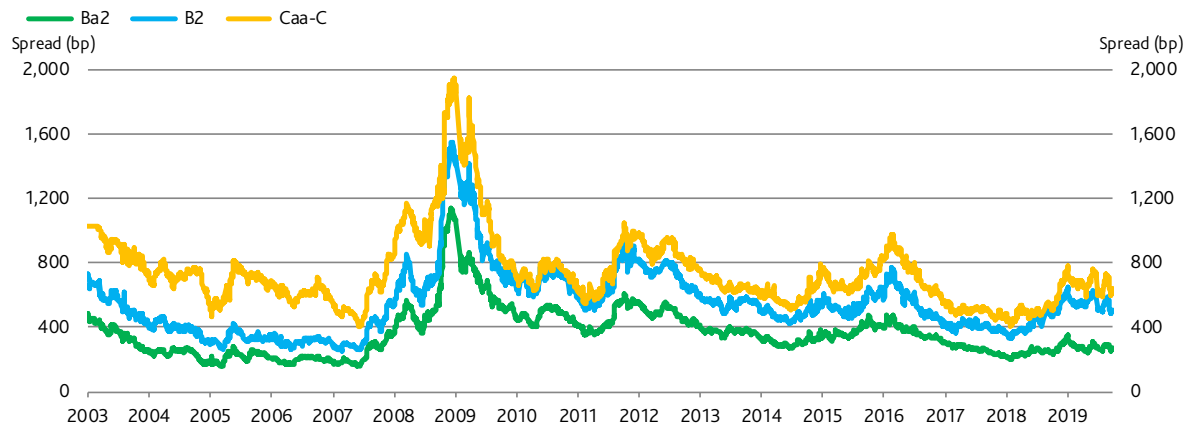
Spreads

Figure 1: 5-Year Median Spreads-Global Data (High Grade)



Source: Moody's

Figure 2: 5-Year Median Spreads-Global Data (High Yield)



Source: Moody's

Market Data

CDS Movers

Figure 3. CDS Movers - US (September 18, 2019 – September 25, 2019)

CDS Implied Rating Rises		CDS Implied Ratings		
Issuer		Sep. 25	Sep. 18	Senior Ratings
Ally Financial Inc.		Baa3	Ba1	Ba2
John Deere Capital Corporation		A3	Baa1	A2
Microsoft Corporation		Aa2	Aa3	Aaa
Exxon Mobil Corporation		Aa3	A1	Aaa
3M Company		Aa2	Aa3	A1
Occidental Petroleum Corporation		Baa3	Ba1	Baa3
General Electric Company		Ba1	Ba2	Baa1
Enterprise Products Operating, LLC		Baa1	Baa2	Baa1
Intel Corporation		A1	A2	A1
CSC Holdings, LLC		Ba1	Ba2	B3

CDS Implied Rating Declines		CDS Implied Ratings		
Issuer		Sep. 25	Sep. 18	Senior Ratings
Ashland LLC		A2	Aa3	Ba3
Bank of America Corporation		A3	A2	A2
Wells Fargo & Company		A3	A2	A2
International Business Machines Corporation		A2	A1	A2
Procter & Gamble Company (The)		Aa1	Aaa	Aa3
Johnson & Johnson		Aa3	Aa2	Aaa
Ford Motor Company		B2	B1	Ba1
Merck & Co., Inc.		Aa3	Aa2	A1
Altria Group Inc.		Baa2	Baa1	A3
Bank of America, N.A.		A3	A2	Aa2

CDS Spread Increases		CDS Spreads		
Issuer	Senior Ratings	Sep. 25	Sep. 18	Spread Diff
Frontier Communications Corporation	Caa3	8,807	6,152	2,656
Nabors Industries Inc.	B1	886	695	191
Diamond Offshore Drilling, Inc.	B3	693	503	189
Dean Foods Company	Caa3	3,701	3,533	168
Chesapeake Energy Corporation	B2	1,128	981	147
McClatchy Company (The)	Caa2	1,652	1,516	136
United States Steel Corporation	B3	674	553	122
AK Steel Corporation	B3	949	850	99
Staples, Inc.	B3	519	452	67
Sprint Communications, Inc.	B3	236	170	66

CDS Spread Decreases		CDS Spreads		
Issuer	Senior Ratings	Sep. 25	Sep. 18	Spread Diff
Penney (J.C.) Corporation, Inc.	Caa3	3,141	3,638	-497
Neiman Marcus Group LTD LLC	Ca	5,452	5,667	-214
Rite Aid Corporation	Caa2	2,112	2,167	-56
BellSouth Corporation	Baa2	87	99	-12
Qwest Corporation	Ba2	211	222	-11
Embarq Corporation	Ba2	302	309	-7
Constellation Brands, Inc.	Baa3	145	148	-4
Credit Suisse (USA) Inc.	A1	70	75	-4
Cameron International Corporation	Baa1	74	78	-4
Enterprise Products Operating, LLC	Baa1	59	62	-3

Source: Moody's, CMA

Market Data

Figure 4. CDS Movers - Europe (September 18, 2019 – September 25, 2019)

CDS Implied Rating Rises		CDS Implied Ratings		
Issuer	Sep. 25	Sep. 18	Senior Ratings	
Landesbank Baden-Wuerttemberg	A1	A3	Aa3	
Alliander N.V.	A2	Baa1	Aa2	
Italy, Government of	Ba1	Ba2	Baa3	
Belgium, Government of	Aaa	Aa1	Aa3	
Barclays Bank PLC	Baa1	Baa2	A2	
Ireland, Government of	Aa2	Aa3	A2	
Portugal, Government of	A1	A2	Baa3	
HSBC Holdings plc	A3	Baa1	A2	
Finland, Government of	A3	Baa1	Aa1	
Nordea Bank Abp	Aa1	Aa2	Aa3	

CDS Implied Rating Declines		CDS Implied Ratings		
Issuer	Sep. 25	Sep. 18	Senior Ratings	
Novafives S.A.S.	Caa3	Caa1	Caa1	
BNP Paribas	Aa3	Aa2	Aa3	
ING Groep N.V.	A3	A2	Baa1	
Danske Bank A/S	A1	Aa3	A2	
Electricite de France	A3	A2	A3	
Bayerische Motoren Werke Aktiengesellschaft	A3	A2	A1	
Orange	Aa3	Aa2	Baa1	
Deutsche Telekom AG	Aa3	Aa2	Baa1	
Anheuser-Busch InBev SA/NV	A2	A1	Baa1	
Credit Suisse Group AG	A3	A2	Baa2	

CDS Spread Increases		CDS Spreads		
Issuer	Senior Ratings	Sep. 25	Sep. 18	Spread Diff
CMA CGM S.A.	B3	1,544	1,271	274
Novafives S.A.S.	Caa1	706	526	181
Iceland Bondco plc	Caa2	526	434	92
Sappi Papier Holding GmbH	Ba1	394	321	73
Vedanta Resources Limited	B2	485	415	70
Jaguar Land Rover Automotive Plc	B1	720	668	52
Altice Finco S.A.	Caa1	324	273	51
TUI AG	Ba2	321	272	49
Atlantia S.p.A.	Baa3	160	121	39
Ardagh Packaging Finance plc	B3	191	153	38

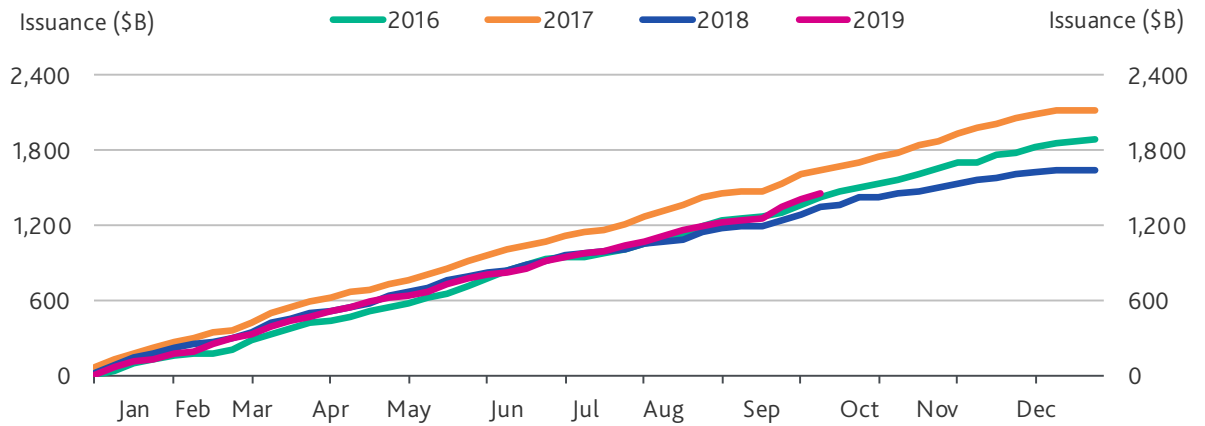
CDS Spread Decreases		CDS Spreads		
Issuer	Senior Ratings	Sep. 25	Sep. 18	Spread Diff
PizzaExpress Financing 1 plc	Caa2	5,939	6,247	-308
Boparan Finance plc	Caa1	2,047	2,312	-264
Casino Guichard-Perrachon SA	B1	597	630	-33
DEPFA BANK plc	A2	175	198	-23
Eurobank Ergasias S.A.	Caa1	725	738	-13
Permanent tsb p.l.c.	Baa3	212	224	-12
Piraeus Bank S.A.	Caa2	817	826	-9
Alpha Bank AE	Caa1	622	627	-5
National Bank of Greece S.A.	Caa1	567	572	-5
EWE AG	Baa1	108	113	-5

Source: Moody's, CMA

Market Data

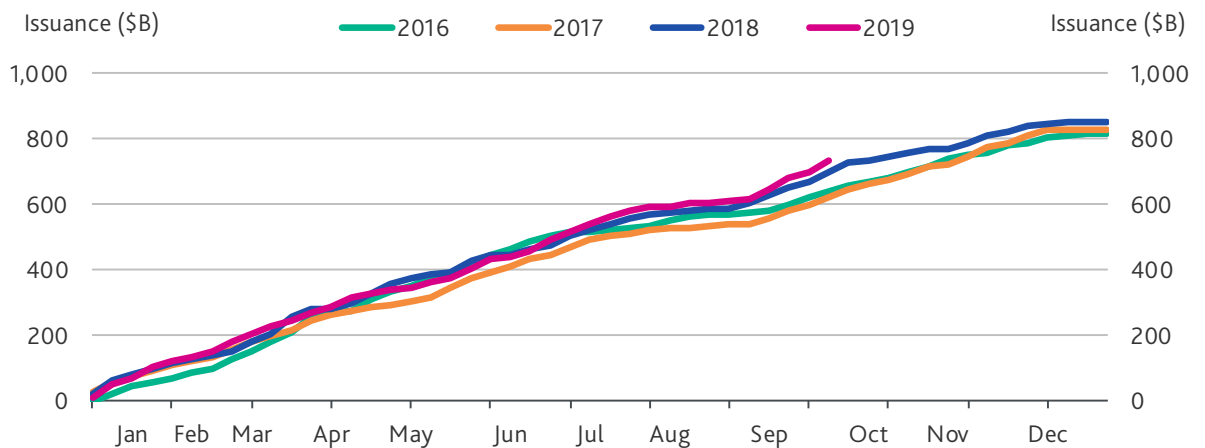
Issuance

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	26.925	5.285	34.846
Year-to-Date	1,065.601	311.565	1,450.932

	Euro Denominated		
	Investment-Grade	High-Yield	Total*
	Amount \$B	Amount \$B	Amount \$B
Weekly	26.907	3.258	32.335
Year-to-Date	642.786	68.607	733.132

* Difference represents issuance with pending ratings.

Source: Moody's/ Dealogic

Moody's Capital Markets Research recent publications

Cheap Money in Action (Capital Markets Research)

Bond Implied Ratings Hint of More Fallen-Angel Downgrades (Capital Markets Research)

Leading Credit-Risk Indicator Signals A Rising Default Rate (Capital Markets Research)

Upon Further review, Aggregate Financial Metrics Worsen (Capital Markets Research)

Faster Loan Growth Would Bode Poorly for Corporate Credit Quality (Capital Markets Research)

Likelihood of a 1.88% Fed Funds Rate by End of July Soars (Capital Markets Research)

Market Implied Ratings Differ on the Likely Direction of Baa3 Ratings (Capital Markets Research)

Below-Trend Spreads Bank on Profits Growth, Lower Rates and Healthy Equities (Capital Markets Research)

Global Collapse by Bond Yields Stems from Worldwide Slowdown (Capital Markets Research)

Borrowing Restraint Likely Despite Lower Interest Rates (Capital Markets Research)

The Fed Cured 1998's Yield Curve Inversion (Capital Markets Research)

Extended Yield Curve Inversion Would Presage Wide Spreads and Many Defaults (Capital Markets Research)

Business Debt's Mild Rise Differs Drastically from 2002-2007's Mortgage Surge (Capital Markets Research)

Earnings Slump Would Unmask Dangers of High Leverage (Capital Markets Research)

Credit May Again Outshine Equities at Divining Markets' Near-Term Path (Capital Markets Research)

Not Even the Great Depression Could Push the Baa Default Rate Above 2% (Capital Markets Research)

Benign Default Outlook Implies Profits Will Outrun Corporate Debt (Capital Markets Research)

Upside Risks to the U.S. Economy (Capital Markets Research)

Outstandings and Rating Changes Supply Radically Different Default Outlooks (Capital Markets Research)

High Leverage Offset by Ample Coverage of Net Interest Expense (Capital Markets Research)

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)

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

Report Number: 1196531

Contact Us

Americas: 1.212.553.4399

Editor
Reid Kanaley
help@economy.com

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.moody.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. ("MJJK") 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 MJJK. 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. MJJK 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.

MJJK 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 MJJK or MSFJ (as applicable) have, prior to assignment of any rating, agreed to pay to MJJK or MSFJ (as applicable) for ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

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