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US Corporate Default Monitor - Third Quarter 2017

Defaults slow, except in retail

- **Default rate sustains slide.** The default rate is moving past the damage from the commodity downturn and continues to trend lower. A drop in the quarterly family default count to a three-year low of nine reduced the US speculative-grade default rate to 3.3% at the end of the third quarter from 3.8% at the end of the second quarter. Strong liquidity and economic growth will keep defaults at bay and we project the default rate will slide further to 2.3% a year from now. Our Refunding Indicator also improved in the third quarter with most of our credit cycle gauges showing positive signals.
- **Retail takes lead as commodity strains ease.** Retail accounted for four of the nine US corporate family defaults in the third quarter, with rapidly changing consumer habits and fierce e-commerce competition adding to pressures for highly leveraged companies. Commodity strains have eased as prices recover, with no oil & gas defaults for the first time since the third quarter of 2014, or just after oil peaked in late June that year.
- **Good liquidity continues to take air out of defaults.** Our Liquidity Stress Indicator (LSI) is likely to set a record low in October, meaning good liquidity will keep a lid on defaults. Our broader LSI incorporating companies that do not have public SGL ratings is higher, at roughly 5% at the end of September, but also favorably trending lower. In another positive sign that the default rate should continue to drop, the number of companies rated Caa2-PD or lower fell 35% year-over-year to 75 at the end of the third quarter. Issuers continue to readily invest in growth initiatives and proactively address potential liquidity problems at manageable financing costs.
- **Tinder in place for a rough default cycle, but waiting for a spark.** The favorable default outlook over the next year masks a spec-grade market that is vulnerable to downshifts in the economy and credit market access. In part because we have seen an influx of highly leveraged smaller companies obtaining public ratings - often with loan only structures and owned by private equity - the percentage of US spec-grade issuers rated B3 or lower is already above the peak reached during the Great Recession. Overlaying an economic downturn on this population will likely flare up into a large number of defaults, including the potential for meaningful distressed exchange activity as PE firms maneuver to preserve their equity when companies run into rough times.

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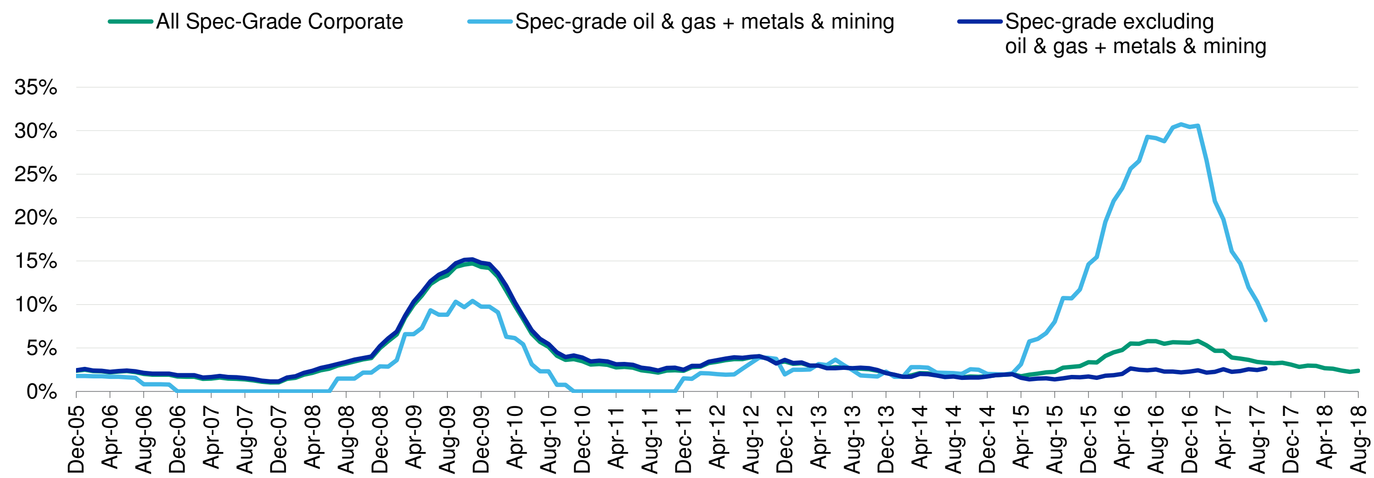
Default rate sustains slide

The default rate is moving past the damage from the commodity downturn and continues to trend lower. A drop in the quarterly family default count to a three-year low of nine reduced the US speculative-grade default rate to 3.3% at the end of the third quarter from 3.8% at the end of the second quarter. Strong liquidity and economic growth will keep defaults at bay and we project the default rate will slide further to 2.3% a year from now (see Exhibit 1).

The default rate trajectory has followed the easing of commodity strains. The recent peak default rate for oil & gas and metals & mining companies was well above the level reached during the Great Recession, but a turn in earnings momentum and renewed capital market access has reversed the trend. From a 30.7% peak in November 2016, the commodity default rate dropped to 8.2% in September for its lowest reading since August 2015 (see Exhibit 1). That has driven down the overall US spec-grade default rate from a recent peak of 5.8% in January 2017 to September's 23-month low.

Exhibit 1
Drop in commodity defaults is pushing default rate lower



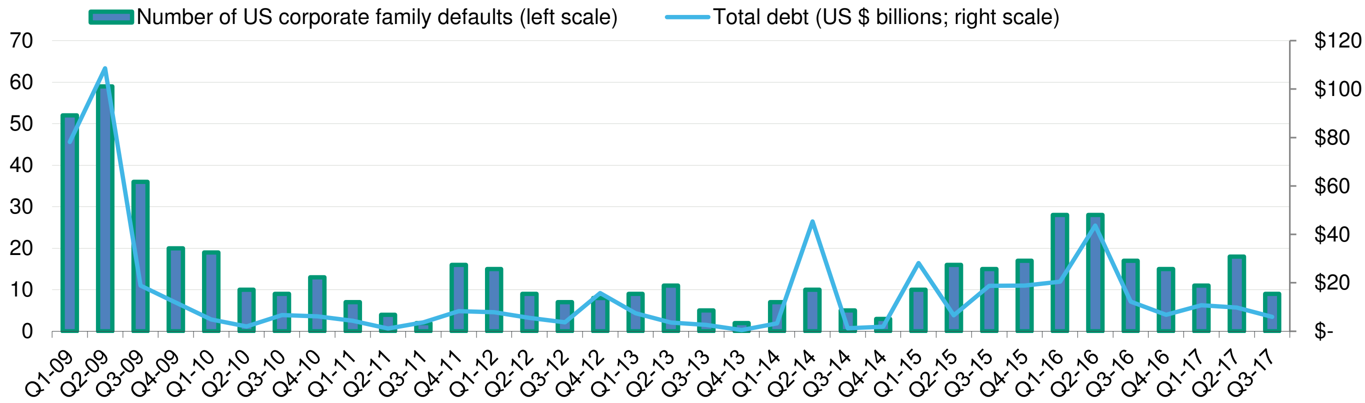
Source: Moody's Investors Service

The commodity downturn produced a significant spike in defaults, but the damage was contained and defaults outside of commodities remained low. More recently, credit strains in retail have lifted defaults outside of oil & gas, but not by enough to make up for the recovery in commodity sectors and the benefits of continued economic growth and strong credit market access for low-rated borrowers. As a result, we expect the default rate will continue to trend lower over the next year.

But the tinder for a rough default cycle is being set. Aggressive transactions with high leverage, large EBITDA adjustments and weakening covenant protections are creating a sizable pool of low-rated issuers whose default and recovery prospects are vulnerable to an economic downturn. Still, the spark that could ignite the default cycle does not appear imminent, and defaults are moderating for now.

The nine US corporate family defaults were half of the 18 recorded in the second quarter and the fewest since the fourth quarter of 2014 (see Exhibit 2), which was around the time the default rate hit a post Great Recession low. The quarterly default count most recently peaked at 28 in the first and second quarters of 2016. There were no oil & gas defaults during the third quarter, representing a significant drop from the peak at 17 in the second quarter of 2016.

Exhibit 2
Defaults trend lower



Source: Moody's Investors Service

The amount of defaulted debt also continued the downward trend for this year, with $5.9 billion in the third quarter the lowest tally since the fourth quarter of 2014 (see Exhibit 2, above). The Toys 'R' Us bankruptcy was by far the largest default of the quarter, affecting $3.3 billion of rated debt. Toys 'R' Us previously completed a distressed exchange default in August 2016. There were no other defaults affecting $1 billion or more of rated debt during the third quarter.

Retailer True Religion Apparel, Inc. was the only other bankruptcy default in the third quarter, while the five distressed exchanges were the most frequent default type. The mix of defaults this year – 45% distressed exchange, 34% bankruptcies, and 21% missed interest and principal payments – is roughly in line with the averages for 2014-2016. See Appendix B for the list of companies that defaulted in the third quarter.

The economic backdrop is favorable for the next year. Moody's Macroeconomic Board forecasts that US real GDP growth will increase from 1.6% in 2016 to 2.2% in 2017 and 2.3% in 2018. In addition, we changed our North American industry sector outlook (ISO) to positive in October (see "Positive slant of ISO roster reflects landscape of solid credit conditions", October 2017). Our ISOs represent our view of fundamental business conditions for an industry over the next 12 to 18 months and reflect the positive economic growth forecasts. Of the 39 ISOs that at least partially relate to US companies, the eight positive industry outlooks exceed the three negative industry outlooks.

Our credit cycle gauge indicators reflect the positive growth expectations and generally point to a continued moderation of the default rate over the next 12 months (see Exhibit 3). The rebound in commodity sectors, stable cash flow performance bolstered by economic growth, and favorable borrowing conditions are driving a reduction in the LSI, which at 3.0% at the end of September was close to its 2.8% record low from April 2013. The B3 negative and lower list is trending downward both in terms of number of companies (214 in September) and as a percentage of the spec-grade population (14.6% in September) with the latter slightly below the 15.1% average since 2007.

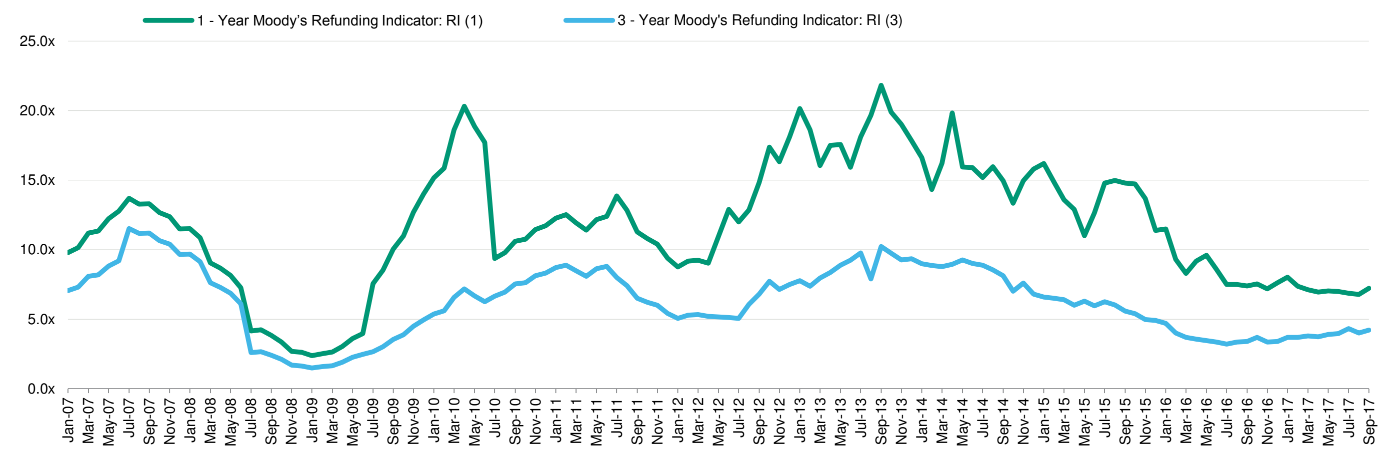
Exhibit 3
Moody's Credit Cycle Gauge indicates default risks continue to ease

Indicator	Sep '17	Sep '16	LT Avg**	Record Worst
Liquidity Stress Indicator	3.0%	7.1%	6.7%	20.8%
B3-Neg / Lower	214	269	194	291
3-Year Refunding Indicator	4.2x	3.4x	6.3x	1.5x
Bond Covenant QualityIndicator	4.48	4.32	4.05	4.52
Loan Covenant Quality Indicator*	4.04	3.55	3.66	4.06
	Sep '18	Sep '17		
Default Rate (forecast)	2.3%	3.3%	4.7%	15.0%
		Trending Worse	Neutral	Improving

*LCQI is calculated quarterly with latest data as of June 2017. **LT Avg: LSI: from 2002; B3-Neg: from 2007, Refunding: from 2007, CQI: from 2011, Default Rate: from 1990.
Source: Moody's Investors Service

An issuer friendly market is helping most companies to fund new investments and proactively address potential liquidity issues. Investors with sizable funds to put to work that are on the hunt for yield in this low-rate environment are making it easier for issuers to secure favorable rates and covenant terms. To that end, our bond CQI and LCQI are both hovering near their record worst levels (see Exhibit 3, above), indicating that covenant protections have deteriorated. For issuers, good market access has eased what is still above average refinancing risk. Our Three-Year Refunding Indicator has trended higher (see Exhibit 4), meaning that coverage of bond maturities over the next three years at the current rate of bond issuance is rising.

Exhibit 4
Gains in refunding indicator show pace of bond offerings picking up relative to forward maturities



Moody's Refunding Indicator is a ratio of bond issuance to upcoming bond maturities. It increases when refunding risk falls. For more information about the indicator, please see Moody's Refunding Indicator, Frequently Asked Questions.
Source: Moody's Investors Service

Retail takes lead as commodity strains ease

Retail accounted for four of the nine US corporate family defaults in the third quarter, with lower-rated, highly leveraged companies under the greatest duress as consumer demand rapidly shifts and e-commerce competition accelerates. Commodity strains have eased as prices recover with no oil & gas defaults for the first time since the third quarter of 2014 or just after oil prices peaked around $108 per barrel in late June that year.

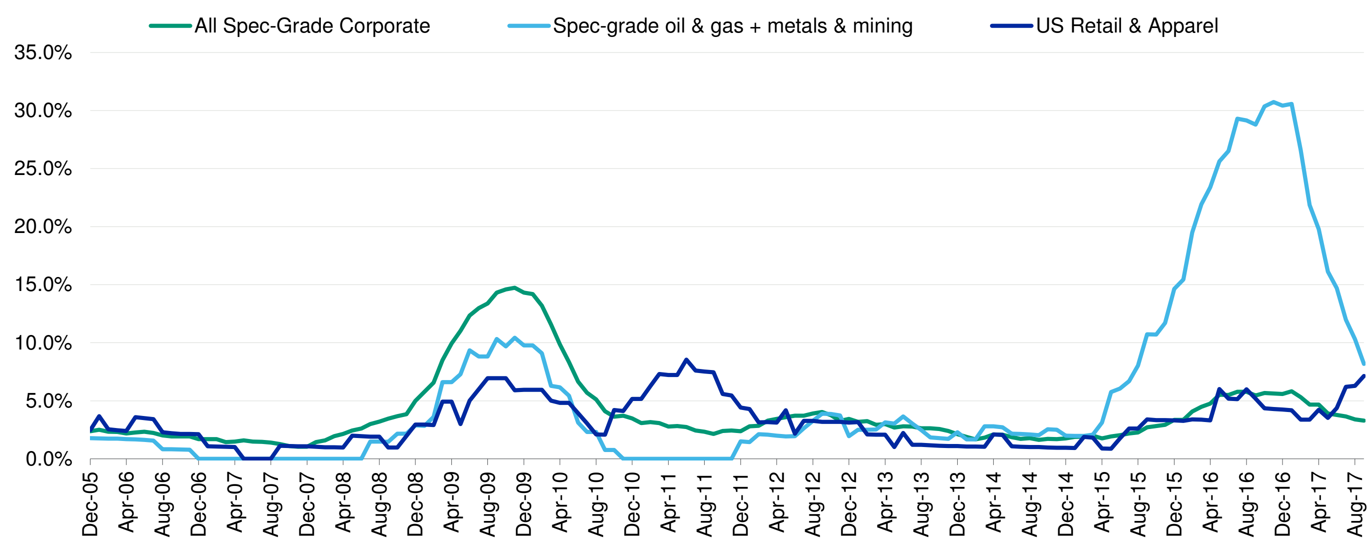
The decline in bricks & mortar store traffic, in conjunction with the shift in consumer spending to digital channels, is contributing to retail earnings weakness and increased credit strains this year. However, the results are not uniform and while some retailers are having a tough time navigating the secular shifts, other retailers are benefitting. In addition, not all retailers experiencing earnings weakness face elevated default risk. In many instances, their leverage is modest and they have the financial flexibility to invest to capitalize on evolving shopping habits.

High leverage was a common issue in retail defaults. All seven rated retailers that defaulted this year were leveraged buyouts by private equity firms and have financial policies that we would consider aggressive. Similarly, the lowest-rated retailers are also owned by private equity firms. Bain Capital was the only PE firm with ownership stakes in multiple retailers that defaulted - Toys 'R' Us and Gymboree.

Retailers are also a sector where weak covenants have contributed to credit risks. Asset transfers outside of restricted subsidiaries at firms such as J. Crew Group (Caa2 stable), Neiman Marcus Group LTD (Caa2 negative) and Claire's Stores (Ca negative) highlighted the pitfalls of loose covenant protections (see As Stressed Retailers Weigh Asset Transfers, Recovery Rates Taking Hit, May 2017). The companies transferred valuable assets to unrestricted subsidiaries outside their credit agreement restricted groups, effectively stripping collateral from their secured lenders. J. Crew's intellectual property (IP) transfer facilitated the exchange offer of unsecured holding company notes for new notes secured by the IP assets transferred as well as non-convertible preferred stock and equity. We viewed the transaction, which closed in July, as a distressed exchange.

The retail & apparel default rate has closed the gap with the default rate for commodity sectors, which has fallen precipitously. At 7.1% in September, the 12 month US retail & apparel speculative-grade default rate is up from 4.3% at the end of 2016 (see Exhibit 5). The commodity default rate has dropped to 8.2% from 30.4% over the same time frame.

Exhibit 5
Retail default rate has moved higher as commodity defaults have dropped significantly



Default rates are for US-based companies.
Source: Moody's Investors Service

There were multiple defaults among commodity-oriented companies outside of the oil & gas sector, including a missed interest payment by coal miner Armstrong Energy, Inc. In addition, Floworks International LLC, a distributor of pipes, valves and fittings to the energy and industrial sectors swapped its senior secured notes for a new term loan and equity in a transaction we consider a distressed exchange.

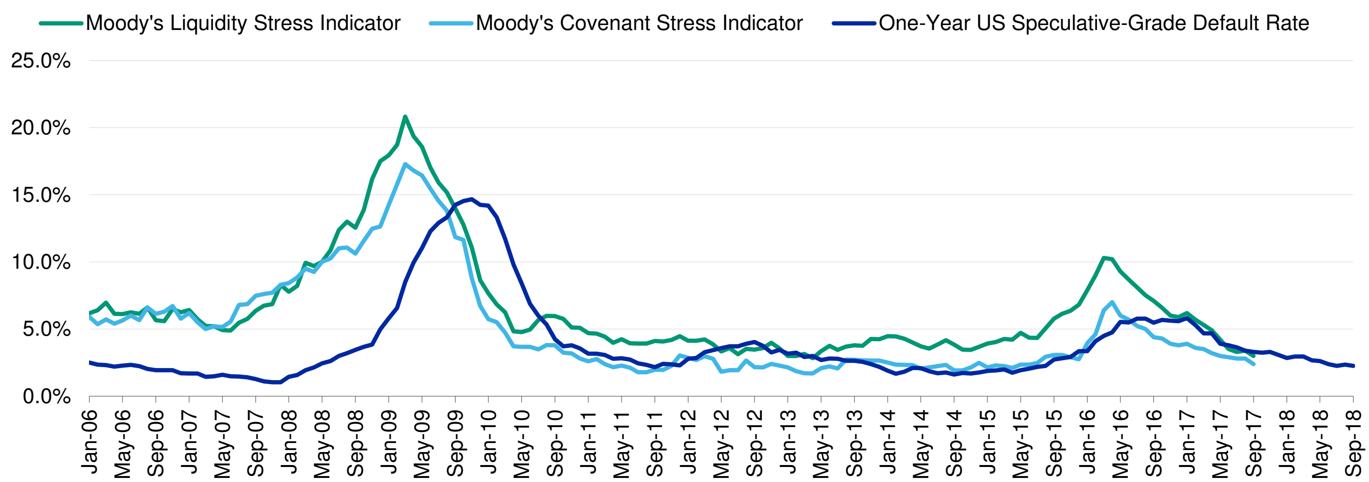
Good liquidity continues to take air out of defaults

The LSI is likely to set a record low in October, meaning good liquidity will keep a lid on defaults. Our broader LSI incorporating companies that do not have public SGL ratings is higher, at roughly 5% at the end of September, but also favorably trending lower. A market favorable to issuers continues to allow most companies to invest in growth initiatives and proactively address potential liquidity problems at manageable financing costs.

Liquidity is a primary default driver and the LSI has a good leading relationship with the US speculative-grade default rate (see Exhibit 6). A falling LSI signals an easing of default pressures and a declining default rate. Following April 2013's 2.8% record low LSI, the then-benign 3.0% US spec-grade default rate would go on to fall further, reaching a post-Great Recession bottom of 1.6% in September 2014. The economy and investor sentiment continue to be resilient, shrugging off concerns about geopolitical tensions, major natural disasters, slow legislative progress and central bank tightening to bolster liquidity. Earnings growth along with favorable conditions to refinance maturities, keep interest costs manageable and raise investment funds continue to bolster growth opportunities and financial flexibility. Limited covenant violation risk that is at least partially attributable to the growing prevalence of covenant-lite structures is also a positive for liquidity.

Exhibit 6

LSI likely to set a new record low in October, a further sign that defaults will decline



July 2017 - June 2018 is projected

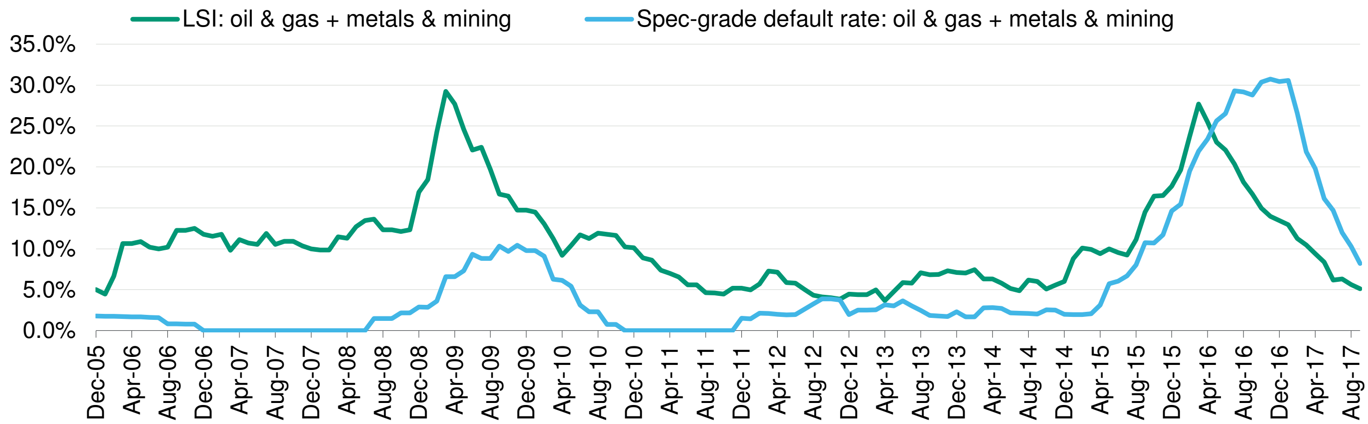
Source: Moody's Investors Service

Commodity defaults have followed closely on the heels of shifts in the liquidity of commodity sectors (see Exhibit 7). The LSI for commodity companies began to move decisively higher toward the end of 2014 when the spec-grade commodity default rate was in a 2% range. The commodity default rate peaked in November 2016 at 30.7% eight months after the commodity LSI crested at 27.7% in March 2016. Both indicators have since moved decisively lower as commodity prices have rebounded despite oil remaining well below its pre-crisis peak. A 5.1% commodity LSI in September was the lowest since October 2014 and signals that the 8.2% commodity default rate is likely to continue trending lower over the next six to 12 months.

A stabilization and recovery in commodity earnings is contributing to the decline in liquidity pressures and defaults. All of our metals & mining industry outlooks are stable and two of the five oil & gas outlooks (global exploration & production and global midstream) are positive with the others stable. In addition, commodity companies have regained market access to fund investments, pushed out maturities, and amended covenants, while asset sales have helped to reduce debt. However, we believe North American E&P companies will need a WTI oil price above $50 per barrel to demonstrate meaningful capital efficiency (see "Higher than $50 per barrel WTI essential for a meaningful return on capital", September 2017).

Exhibit 7

Commodity default rate closely tracks liquidity trends



Source: Moody's Investors Service

The liquidity of other companies dependent on the energy sector has also improved. Examples include fracking sand providers Farimount Santrol, Inc. and Hi-Crush Partners L.P. whose SGL ratings were upgraded another notch to SGL-2 in October following earlier upgrades to SGL-3 from SGL-4 in May. Actions such as these contributed to an improvement in the LSI excluding oil & gas companies to a record low 2.4% in September.

Our sector LSIs show broad based improvement in liquidity among different industry groups. Significant drops have pushed the LSIs for exploration & production (E&P) and oilfield services (OFS) companies below the 10% level that we typically view as worrisome. Aerospace & defense is the only sector with a LSI above 10% at the end of September, although that represented just two companies (Triumph Group, Inc. and Wesco Aircraft Hardware Corp.). At the peak of the last downturn, 16 of the 21 sectors detailed in Exhibit 8 (page 8) had LSIs above 10% including 11 at or above 20%.

Exhibit 8

Energy and utility LSIs have dropped sharply, yielding top spots to aerospace/defense and transportation services

Sector	Current Number of SGL-4 Issuers	Current 9/30/2017	1 Year Ago 9/30/2016	Yearly Change	Recession Peak 3/31/2009
Aerospace/Defense	2	10.5%	4.5%	6.0%	10.0%
Transportation Services	2	9.5%	13.0%	-3.5%	25.0%
Energy E&P	5	7.9%	28.4%	-20.4%	32.0%
Energy OFS	2	7.4%	28.6%	-21.2%	9.1%
Media	2	5.1%	4.3%	0.8%	56.7%
Utilities	1	4.8%	27.8%	-23.0%	0.0%
Retail, Apparel & Restaurants	2	3.5%	3.2%	0.3%	20.4%
Paper, Packaging & Forest Products	1	3.4%	3.6%	-0.1%	17.6%
Construction & Engineering	1	3.1%	7.7%	-4.6%	6.3%
Metals & Mining	1	3.0%	0.0%	3.0%	43.8%
Chemicals	1	2.9%	7.9%	-5.0%	14.3%
Consumer Products & Proteins	1	2.5%	4.5%	-2.0%	20.7%
Business and Consumer Services	2	1.6%	3.8%	-2.2%	11.5%
Automotive		0.0%	0.0%	0.0%	50.0%
Energy Other		0.0%	2.4%	-2.4%	23.1%
Gaming		0.0%	0.0%	0.0%	41.7%
Healthcare Services & Products		0.0%	0.0%	0.0%	9.1%
Manufacturing		0.0%	0.0%	0.0%	14.8%
Technology & Semiconductors		0.0%	4.3%	-4.3%	0.0%
Telecom & Cable		0.0%	0.0%	0.0%	20.6%
Wholesale Distribution		0.0%	0.0%	0.0%	20.0%
Composite	**23**	**3.0%**	**7.1%**	-4.1%	**20.8%**

Count is companies with a SGL-4 rating as of March 31, 2017; ranking is highest to lowest based on sector Liquidity Stress Indicators
Energy E&P is Independent exploration & production; Energy OFS is oilfield services
Energy Other is midstream and refining & marketing; Metals & Mining includes coal
In the “Yearly Change” column darkening red indicates increases, while darkening green indicates decreases
Source: Moody's Investors Service

The 3.5% retail, apparel & restaurant LSI in September is roughly flat with its year ago 3.2% level. However, the liquidity of retailers is subject to sudden changes if, for example, trade credit tightens or sales do not meet expectations such as in the all-important holiday season. For example, Toys 'R' Us, which had a SGL-2 rating at the time of its default in September, indicated in its bankruptcy filing that deterioration in trade credit terms was a contributing factor. Historically, defaults by companies with a SGL-2 rating are not the norm. The default rate for SGL-4s (32.1% on average since 2002) is considerably higher than for companies rated SGL-3 (4.9%) and SGL-2 (1.5%). The two retail/apparel companies with SGL-4 ratings at the end of September were Claire's Stores, Inc. and Vince, LLC (Caa2 negative).

SGL ratings provide an incomplete picture of retail sector liquidity since a number of smaller rated retailers do not have public SGL ratings. Factoring in our internal liquidity assessments as well as public SGL ratings, the retail, apparel & restaurant LSI climbed to 7.1% in September from 6.2% in June. This is still below the 10% level that we consider worrisome.

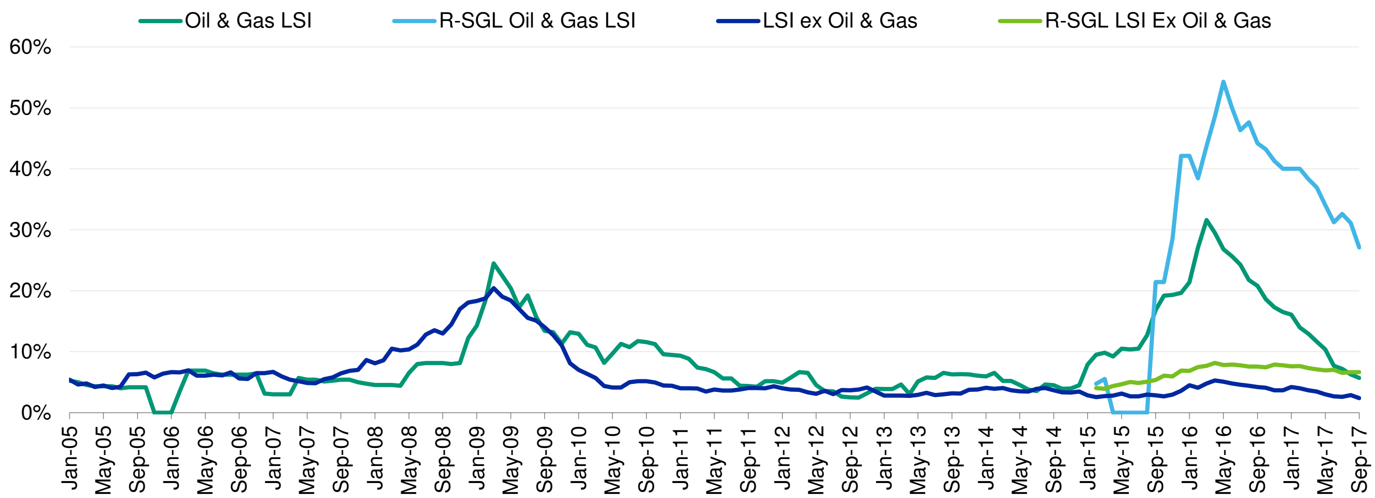
Liquidity for companies without public SGLs is weaker but still trending favorably

A measure of liquidity stress based on our liquidity assessments of companies that do not have public SGL ratings is higher than the LSI based solely on public SGL ratings. We have tracked data on these research SGLs (R-SGLs) since February 2015. The 27.1% oil & gas LSI for companies with R-SGLs was higher than the 5.7% oil & gas LSI for companies with public SGL ratings. Similarly, the 6.6% LSI excluding oil & gas for R-SGL issuers in September was above the 2.4% LSI excluding oil & gas companies among the population of issuers with public SGL ratings. However, all four of these indicators are trending lower (see Exhibit 9).

We tend to assign SGL ratings to spec-grade companies with publicly available financial statements. The companies are typically larger issuers of debt in the US and Canada and, on average, have higher Corporate Family Ratings (CFRs). As a result, the SGL population generally excludes a lot of private-equity owned companies, loan-only issuers and smaller companies that do not have public financial statements. Trends in R-SGLs provide greater visibility into the liquidity position and trends of these companies.

Because we see a strong relationship between liquidity and CFRs, trends in SGLs and R-SGLs together provide a more complete picture of speculative-grade liquidity including lower-rated companies that are more vulnerable to default. At the end of September, the population of R-SGL issuers in the US and Canada (just over 800) was slightly higher than the population of companies with public SGL ratings (779).[1]

Exhibit 9
Liquidity for R-SGL companies is weaker but still trending favorably



Data is for North American companies. R-SGLs are liquidity assessments for companies that do not have public SGL ratings utilizing the same liquidity analysis framework. We do not publicly disclose R-SGLs on individual companies.
Source: Moody's Investors Services

Decline in Caa2-PD and lower population another favorable default signal

In another positive sign that the default rate should continue to drop, the number of companies rated Caa2-PD or lower fell 35% year-to-year to 75 at the end of the third quarter. The Caa2-PD or lower population has steadily declined since peaking at 118 in June 2016. Part of the decline continues to be attributed to default-related withdrawals, but the drivers are trending more favorably in 2017 with a greater incidence of upgrades (see Exhibit 10). For example, upgrades contributed to seven removals from the Caa2-PD or lower list in the third quarter - a level that was roughly even with the first two quarters and well above the pace of 2016 when just 12 removals were because of upgrades for the entire year.

The pace of downgrades to Caa2-PD or lower has also slowed considerably in 2017 relative to 2016, meaning fewer companies are experiencing pressures that lead to elevated default risk. A diminished flow of companies to the lowest rating levels signals fewer defaults over the next year. See Appendix C for the list of US non-financial companies rated Caa2-PD or lower at the end of September.

Exhibit 10

Drop in Caa2-PD and lower list a favorable sign that defaults will subside

Companies with PDR of Caa2-PD or lower

Activity Type	Q3-17	YTD 2017	2016
Population, Beginning of period	83	111	74
Downgrades	9	27	99
Upgrades	(7)	(23)	(12)
Assignments	1	1	3
Withdrawn	(8)	(26)	(20)
Defaulted inperiod but ratings not withdrawn	5	20	50
Total number of defaults in period	(8)	(35)	(83)
Population, End of period	75	75	111

Source: Moody's Investors Service

Retail has the third highest percentage of companies rated Caa2-PD or lower, trailing only the E&P and OFS sectors. But in contrast to the two energy sectors where the rating mix is on a decidedly improving trend, the percentage of retailers rated Caa2-PD or lower is increasing. The 500 basis point climb (to 8.1% at the end of the third quarter from 3.1% at the end of the third quarter of 2016) over the last year was the largest among sectors (see Exhibit 11). High leverage is a culprit in addition to the industry trends with eight of the 10 retail, apparel and restaurants rated Caa2-PD or lower owned by private equity.

A still-high percentage of oil & gas companies have low ratings with roughly half of those companies having already defaulted during the energy price rout. But, the percentage of speculative-grade companies in the E&P and OFS sectors rated Caa2-PD or lower has declined meaningfully by 20.2% and 18.1%, respectively, over the last year.

Despite our negative outlook for the automotive sector, there are no auto or parts suppliers rated Caa2-PD or lower and the sector's LSI is 0% based on public SGL ratings and just 2.6% when also factoring in our R-SGL assessments. LSIs for other economically-sensitive industries such as manufacturing, chemicals, and construction are also at modest levels.

Exhibit 11

Companies rated Caa2-PD or lower: high percentage of OFS and E&P companies still have very low ratings

Sector	Current Number of Issuers	Current 10/1/2017	1 Quarter Ago 7/1/2017	1 Year Ago 10/1/2016	Yearly Change
Energy OFS	10	35.7%	41.9%	53.8%	-18.1%
Energy E&P	16	22.2%	23.6%	42.5%	-20.2%
Retail, Apparel & Resturants	10	8.1%	7.9%	3.1%	5.0%
Media	4	8.0%	9.6%	5.3%	2.7%
Metals & Mining	3	7.7%	5.0%	13.5%	-5.8%
Transportation Services	3	7.3%	9.8%	7.9%	-0.6%
Aerospace/Defense	2	5.9%	5.9%	14.3%	-8.4%
Gaming	2	5.4%	5.7%	7.9%	-2.5%
Construction & Engineering	2	5.0%	7.5%	8.2%	-3.2%
Utilities	1	4.8%	5.0%	11.8%	-7.0%
Paper, Packaging & Forest Products	2	4.4%	2.4%	2.4%	2.0%
Energy Other	2	4.3%	4.1%	3.9%	0.3%
Business and Consumer Services	11	3.1%	3.4%	5.8%	-2.7%
Consumer Products & Proteins	2	2.3%	3.6%	3.4%	-1.1%
Wholesale Distribution	1	1.8%	4.1%	4.2%	-2.3%
Manufacturing	2	1.8%	2.7%	3.8%	-2.0%
Chemicals	1	1.5%	1.6%	1.6%	0.0%
Technology & Semiconductors	1	0.9%	0.0%	1.0%	-0.1%
Automotive	0	0.0%	0.0%	3.0%	-3.0%
Healthcare Services & Products	0	0.0%	0.0%	0.0%	0.0%
Telecom & Cable	0	0.0%	0.0%	0.0%	0.0%
Total	**75**	**5.1%**	**5.7%**	**8.0%**	

Count is number of companies with a PD rating of Caa2-PD or lower; percentages are the ratio of companies rated Caa2-PD or lower to the total number of spec-grade companies in the respective industries.
Energy E&P is Independent exploration & production; Energy OFS is oilfield services
Energy Other is midstream and refining & marketing; Metals & Mining includes coal
In the "Yearly Change" column darkening red indicates increases, while darkening green indicates decreases
Source: Moody's Investors Service

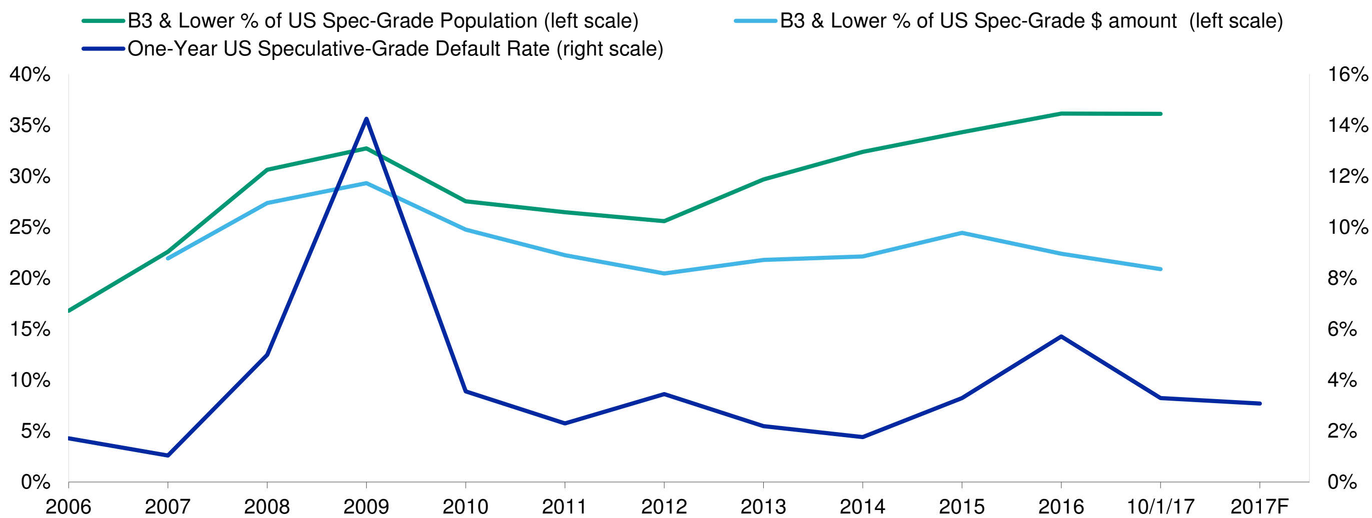
Tinder in place for a rough default cycle, but waiting for a spark

The favorable default outlook over the next year masks a spec-grade market that is vulnerable to downshifts in the economy and credit market access. In part because we have seen an influx of highly leveraged smaller companies obtaining public ratings - often with loan only structures and owned by private equity - the percentage of US spec-grade issuers rated B3 or lower is already above the peak reached during the Great Recession. Overlaying an economic downturn on this population will likely flare up into a large number of defaults, including the potential for meaningful distressed exchange activity as PE firms maneuver to preserve their equity when companies run into rough times.

The percentage of US spec-grade companies rated B3 or lower edged up to 36.1% at the end of September from 35.8% at the end of June. This share was essentially unchanged from the year-end 2016 level despite generally positive rating transitions and benefit of defaults, which through withdrawals cull the ranks of the lowest-rated companies. But the percentage of companies rated B3 or lower peaked at a smaller 32.7% during the last downturn at the end of 2009 (see Exhibit 12). Over time we expect a weaker rating distribution will lead to a higher default rate, with both the level and directional movement of ratings being factors in Moody's default forecasting model. The other key factors in the default forecasting model are high yield bond spreads and the unemployment rate.

A large number of low-rated companies are managing to live with weak balance sheets because the economy is projected to grow and sufficient liquidity is keeping them afloat. Companies that have been able to push out maturities and maintain revolver borrowings low enough to avoid triggering springing financial maintenance covenants in covenant-lite loans have greater flexibility to weather periods of earnings weakness. A shift to a weaker economy, geopolitical issues that disrupt trade flows or diminished capital market access will likely lead to a large number of defaults.

Exhibit 12
Share of spec-grade market with low ratings is high, indicating vulnerability to an economic downturn



US domiciled non-financial companies; excludes utilities.
Source: Moody's Investors Service

The rating distribution based on the dollar amount of debt outstanding is somewhat less worrisome because it's less concentrated in low ratings. The percentage of US spec-grade debt rated B3 or lower fell to 20.9% at the end of September from 22.4% at the end of 2016 and remains below the recession peak of 29.3% (see Exhibit 12). This would dampen aggregate credit losses even if our expectation holds true that average family recovery rates will be below average in the next major wave of defaults.

Appendix A: Moody's Definition of Default

Moody's definition of default is applicable only to debt or debt-like obligations (e.g., swap agreements). For details, please refer to

Moody's Rating Symbols and Definitions.

Appendix B: Q2 Defaults

US Non-Financial Corporate Family Defaults - Third Quarter 2017

Company	Default Type	Industry
Armstrong Energy, Inc.	Missed interest payment	Energy: Coal
Boart Longyear Management Pty Limited	Distressed exchange	Services: Business
Chinos Intermediate Holdings A, Inc.	Distressed exchange	Retail: Specialty
Floworks International LLC	Distressed exchange	Wholesale Distribution: Metals
GenOn Mid-Atlantic, LLC	Missed principal and interest payments	Energy: Unregulated - Electricity Production
Opal Acquisition, Inc.	Distressed exchange	Services: Business
Tops Holding II Corporation	Distressed exchange	Retail: Food & Grocery
Toys 'R US, Inc.	Bankruptcy	Retail: Specialty
True Religion Apparel, Inc.	Bankruptcy	Retail: Specialty

Appendix C: Companies With PDRs of Caa2-PD or Below as of September 30, 2017

Company	Probability of Default Rating	CFR & Outlook	SGL Rating	Industry Sector
Abaco Energy Technologies LLC	Caa2-PD	Caa1, POS	N/A	Energy: Oil Services
API Heat Transfer ThermaSys Corporation	Caa2-PD	Caa2, NEG	N/A	Manufacturing: Component
Armstrong Energy, Inc.	D-PD	Ca, NEG	N/A	Mining
Ascent Resources - Marcellus LLC	Ca-PD/LD	Ca, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Azure Midstream Energy LLC	Caa2-PD	Caa2, NEG	N/A	Energy: Gas - Midstream
Boart Longyear Limited	Caa2-PD	Caa2, NEG	SGL-3	Services: Business
Brock Holdings III, Inc.	Caa2-PD	Caa2, NEG	N/A	Services: Business
California Resources Corp.	Caa2-PD	Caa2, NEG	SGL-4	Energy: Oil & Gas - Exploration & Production
Cenveo Corporation	Caa2-PD	Caa2, STA	SGL-3	Media: Printing
Claire's Stores, Inc.	Ca-PD	Ca, NEG	SGL-4	Retail: Department Stores
Cloud Peak Energy Resources LLC	Caa2-PD	Caa2, STA	SGL-3	Energy: Coal
CompuCom Systems, Inc.	Caa2-PD	Caa2, NEG	N/A	Technology Services: IT Services
Comstock Resources, Inc.	Caa2-PD	Caa2, STA	SGL-3	Energy: Oil & Gas - Exploration & Production
Correct Care Solutions Group Holdings, LLC	Caa2-PD	Caa2, NEG	N/A	Services: Consumer
Crosby US Acquisition Corp.	Caa2-PD	Caa2, STA	N/A	Manufacturing: Heavy Machinery
CROSSMARK Holdings, Inc.	Caa2-PD	Caa2, NEG	N/A	Services: Business
Cumulus Media Inc.	Caa3-PD	Caa2, NEG	SGL-3	Media: Broadcast TV & Radio Stations
David's Bridal, Inc.	Caa2-PD	Caa2, STA	N/A	Retail: Specialty
Dixie Electric, LLC	Ca-PD	Ca, NEG	N/A	Energy: Oil Services
EV Energy Partners, L.P.	Caa2-PD	Caa2, STA	SGL-4	Energy: Oil & Gas - Exploration & Production
EXCO Resources, Inc.	Ca-PD	Ca, NEG	SGL-4	Energy: Oil & Gas - Exploration & Production
Fairmount Santrol, Inc.	Caa2-PD	Caa1, POS	SGL-3	Manufacturing: Building Materials
Fairway Group Holdings Corp.	Caa2-PD	Caa2, NEG	N/A	Retail: Food & Grocery
Fieldwood Energy LLC	Caa3-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
GenOn Mid-Atlantic, LLC.	D-PD	Caa1, NEG	SGL-3	Energy: Unregulated Electricity Production
Gibson Brands, Inc.	Caa3-PD	Caa3, NEG	N/A	Consumer Products: Durables
HBC Holdings LLC	Caa2-PD	Caa2, STA	N/A	Wholesale Distribution: Building Materials
Hexion Inc.	Caa2-PD	Caa2, STA	SGL-3	Chemicals: Commodity Specialty
HGIM CORP.	Ca-PD	Caa3, NEG	N/A	Energy: Oil Services - Offshore Support Transportation
Hornbeck Offshore Services, Inc.	Caa3-PD	Caa3, NEG	SGL-3	Energy: Oil Services - Offshore Support Transportation
iHeartCommunications, Inc.	Caa3-PD	Caa2, NEG	SGL-4	Media: Broadcast TV & Radio Stations
Indra Holdings Corp	Caa2-PD	Caa2, STA	N/A	Consumer Products: Apparel & Shoes
ION Geophysical Corporation	Caa2-PD	Caa2, STA	SGL-3	Energy: Oil Services
IronGate Energy Services, LLC	C-PD	C, STA	N/A	Energy: Oil Services
LBI Media, Inc.	Caa2-PD/LD	Caa2, NEG	N/A	Media: Broadcast TV & Radio Stations
Legacy Reserves LP	Caa2-PD	Caa2, STA	SGL-3	Energy: Oil & Gas - Exploration & Production
Liberty Tire Recycling Holdco, LLC	Caa2-PD	Caa2, STA	N/A	Environment: Waste Management

Company	Probability of Default Rating	CFR & Outlook	SGL Rating	Industry Sector
Mashantucket (Western) Pequot Tribe, CT	Ca-PD	Ca, NEG	N/A	Gaming: Casinos
NANA Development Corporation	Caa2-PD	Caa2, NEG	N/A	Defense: Services
Neiman Marcus Group LTD LLC	Caa2-PD	Caa2, NEG	SGL-2	Retail: Department Stores
Neovia Logistics Intermediate Holdings, LP	Caa2-PD	Caa2, STA	N/A	Transportation Services: Logistics
Nesco, LLC	Caa3-PD	Caa3, NEG	N/A	Services: Rental Services
New Millennium Holdco, Inc.	Caa3-PD	Caa3, NEG	N/A	Services: Consumer
Nine West Holdings, Inc.	Caa3-PD	Caa3, STA	N/A	Consumer Products: Apparel & Shoes
Northern Oil and Gas, Inc	Caa2-PD	Caa2, NEG	SGL-4	Energy: Oil & Gas - Exploration & Production
PaperWorks Industries, Inc.	Caa3-PD	Caa3, NEG	N/A	Forest Products: Pulp & Paper
Pinnacle Holdco S.A.R.L.	Caa3-PD	Caa3, NEG	N/A	Technology: Software
Pioneer Energy Services Corp.	Caa3-PD	Caa3, NEG	SGL-4	Energy: Oil Services
Preferred Proppants, LLC	Caa3-PD	Caa3, NEG	N/A	Manufacturing: Building Materials
PTC Group Holdings Corp.	Caa2-PD	Caa2, STA	N/A	Metals & Mining: Steel & Speciality Metals
Remington Outdoor Company, Inc.	Caa2-PD	Caa2, STA	N/A	Consumer Products: Durables
Sable Permian Resources, LLC	Caa3-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Sears Holdings Corp.	Caa2-PD	Caa2, STA	SGL-3	Retail: General Merchandise
Seitel, Inc.	Caa2-PD	Caa2, STA	SGL-3	Energy: Oil Services - Drilling
Sheridan Investment Partners I, LLC	Ca-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Sheridan Investment Partners II, LP	Caa3-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Sheridan Production Partners I-A, LP	Ca-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Sheridan Production Partners II-A, LP	Caa3-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Sheridan Production Partners II-M, LP	Caa3-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Sheridan Production Partners I-M, LP	Ca-PD	Caa3, NEG	N/A	Energy: Oil & Gas - Exploration & Production
Southcross Holdings Borrower LP	Caa3-PD	Caa3, NEG	N/A	Energy: Gas - Midstream
Sprint Industrial Holdings, LLC	Caa2-PD	Caa2, STA	N/A	Services: Rental Services
Stafford Logistics, Inc.	Ca-PD	Caa3, NEG	N/A	Environment: Waste Management
STG-Fairway Acquisitions, Inc.	Caa2-PD	Caa2, STA	N/A	Services: Business
TOMS Shoes, LLC	Caa2-PD	Caa2, STA	N/A	Consumer Products: Apparel & Shoes
Town Sports International Holdings, Inc.	Caa2-PD	Caa2, STA	SGL-3	Services: Consumer
Transworld Systems, Inc.	Caa2-PD	Caa2, NEG	N/A	Services: Business
Tunica-Biloxi Gaming Authority	D-PD	Ca, NEG	N/A	Gaming: Casinos
TurboCombustor Technology, Inc.	Caa2-PD	Caa1, STA	N/A	Aircraft & Aerospace: Parts
UTEX Industries, Inc.	Caa2-PD	Caa2, STA	N/A	Energy: Oil Services
Vantage Drilling International	Caa2-PD	Caa3, NEG	SGL-3	Energy: Oil Services - Drilling
Velocity Pooling Vehicle, LLC	Caa2-PD	Caa2, NEG	N/A	Retail: Specialty
Vince, LLC	Caa2-PD	Caa2, NEG	SGL-4	Consumer Products: Apparel & Shoes
W&T Offshore, Inc.	Caa2-PD	Caa2, STA	SGL-3	Energy: Oil & Gas - Exploration & Production
W/S Packaging Group, Inc.	Ca-PD	Caa3, STA	N/A	Packaging: Plastics

Source: Moody's Investors Service

Appendix D: Rating Changes and Assignments Affecting Caa2-PD or Lower List in Q3 2017

Downgrades to Caa2-PD or below

Armstrong Energy, Inc. (Ca negative; D-PD): The downgrade to Ca from Caa1 follows the company's July 17, 2017 announcement that the company entered into a Forbearance Agreement with the holders of approximately $158 million in aggregate principal amount (representing approximately 79% of the outstanding principal amount) of the Company's Senior Secured Notes due 2019. Under the agreement, the noteholders will not exercise their rights with respect to the company's failure to make its June 15, 2017 interest payment upon the expiration of the 30-day grace period, until the earlier of August 14, 2017 or a certain termination event as defined in the Agreement, e.g. Chapter 11 bankruptcy filing.

Brock Holdings III, Inc. (Caa2 negative; Caa2-PD): The downgrade to Caa2 from Caa1 reflects the imminent maturity of Brock's debt capital structure, the negative impact of this maturity on Brock's liquidity profile, the deterioration in operating results and credit metrics, and the expectation that the company's credit profile will remain weak over the next 12 to 18 months.

CROSSMARK Holdings, Inc. (Caa2 negative; Caa2-PD): The downgrade to Caa2 from Caa1 reflects mounting pressure on CROSSMARK's liquidity, which in conjunction with a fully levered balance sheet heightens the perceived risk of default over the forward rating horizon. In particular, CROSSMARK's free cash flow turned negative for the first half of 2017, and we expect potential covenant pressure in early 2018 to constrain revolver availability.

David's Bridal, Inc. (Caa2 stable; Caa2): The downgrade to Caa2 from Caa1 reflects David's Bridal's heightened risk of a balance sheet restructuring or other distressed exchange in light of its high leverage and 2019 nearest maturities. Following earnings declines in the first half of 2017, debt/EBITDA increased to 9.25 times for LTM 2Q 2017 (as calculated by the company based on management adjusted EBITDA). While we expect earnings to improve and project adequate liquidity in the next several quarters, any growth may not be sufficient to reduce leverage towards a sustainable level of 6 times in the near term.

PaperWorks Industries Inc. (Caa2 negative; Caa3-PD): The downgrade to Caa3 from Caa1 reflects weaker-than-expected financial performance amid challenging coated recycled board industry conditions, weak liquidity over the next few quarters as well as high refinancing risk given projected high leverage and nearing maturity of the whole capital structure in 2019. Any negative variance in financial performance or additional increases in raw material costs could further strain the company's liquidity and increase the likelihood of default.

Pinnacle Holdco S.a.r.l. (Paradigm; Caa3 negative; Caa3-PD): The downgrade to Caa3, from Caa1 reflects Paradigm's deteriorating liquidity position, which we view as having a high probability of being exhausted by year-end 2017. Also, without intervention from the company's sponsor in the form of an equity cure, there is a high likelihood of a minimum-EBITDA covenant breach by as soon as its next measurement date, for the period ended September 30th, 2017. As of June 30th, Paradigm had slightly below $10 million of cash and $10 million of availability under a $25 million revolver, and we expect the company to generate negative free cash flow of around $20 million for the second half of 2017.

TOMS Shoes, LLC (Caa2 stable; Caa2-PD): The downgrade to Caa2 from Caa1 reflects our expectations that weak industry-wide apparel and footwear conditions particularly in the wholesale channel will make it challenging for TOMS to avoid increased reliance on its revolver. The company has made significant progress in its turnaround plan, including supply chain efficiencies, product improvement, assortment optimization, and SG&A cost savings. However, despite these improvements, TOMS credit metrics remain very weak and its liquidity remains tight. The ongoing deterioration in the apparel environment poses a threat to TOMS' ability to grow earnings and generate positive free cash flow. We expect this to result in higher revolver reliance, leaving the company with a limited liquidity cushion to manage any earnings weakness.

Tops Holding II Corporation (Caa1 negative; Ca-PD as of July 19, 2017; see upgrade section): The downgrade to Ca-PD from Caa1-PD follows the exchange offer announced on July 10, 2017. We indicated a completion of the exchange offer as outlined will constitute a distressed exchange. We upgraded the PDR to Caa1-PD/LD from Ca on August 10, 2017 following completion of the exchange offer.

Toys "R" Us, Inc. (Ratings WR; last: B3 stable; D-PD): The downgrade to D-PD from B3-PD was prompted by Toys' September 18, 2017 announcement that it had initiated Chapter 11 bankruptcy proceedings. There was no action on the B3 CFR. We subsequently withdrew the ratings on September 21, 2017.

Assignments

GenOn Mid-Atlantic, LLC (GenMA; Caa1 negative; D-PD): As a result of the bankruptcy filing at its parent companies -- GenOn Americas Generation, LLC. and GenOn Energy Inc., for which the ratings were withdrwn - GenMA is now evaluated as an independent entity. We have therefore assigned GenMA a Caa1 CFR and a PDR of D-PD. The PDR reflects the missed payment on GenMa's pass-through certificates, which were due June 30, 2017. GenMA's Caa1 rating reflects a high expected recovery rate on the defaulted certificates.

Upgrades to Caa1-PD and above

BioScrip, Inc (Caa2 stable; Caa1-PD): The upgrade to Caa1-PD from Caa2-PD reflects the decreased probability of default in the next 24 months due to the extended maturity profile and the additional liquidity provided by the transaction. These factors combined provide the company a longer runway to achieve operational improvement and the targeted cost savings. BioScrip's nearest debt maturity is now August 2020. The Caa2 CFR was affirmed. While the refinancing alleviates $80 million in 2018 maturities, the Caa2 CFR continues to reflect very high leverage and the company's weak liquidity profile. Debt to EBITDA will be around 15 times pro forma for the transaction and we remain concerned about the longer term viability of the capital structure.

Chinos Intermediate Holdings A, Inc. (Caa2 stable; Caa1-PD): The upgrade to Caa1-PD/LD from Caa3-PD on July 14th reflects the decreased probability of default in the next 24 months due to the extended maturity and J.Crew's adequate liquidity profile following completion of an exchange offer. J.Crew has about a 3-year runway to de-lever before starting to address its nearest maturity. Even though the company is working on a number of turnaround initiatives, this is a tall order since earnings would have to grow roughly by 70% from current levels to reduce leverage from 10.3 times today to what we view as a more sustainable level of 6 times. The affirmation of the Caa2 CFR reflects the PDR assessment and our estimate of 35% recovery rate in an event of default. The Caa2 CFR and Caa1-PD PDR were moved from Chinos and reinstated to J. Crew Group, Inc. on July 18th.

FTS International Inc. (Caa1 positive; Caa1-PD): The upgrade to Caa1 from Caa3 is driven by our expectation for FTS International's earnings and key credit metrics to strengthen from distressed levels due to the dramatic improvement in demand and pricing outlook for hydraulic fracturing services from upstream companies. The positive outlook reflects the potential for utilizing the company's sizable cash balance for debt reduction as well as the anticipated strengthening of cash flow generation through year-end 2018.

K. Hovnanian Enterprises, Inc. (Caa2 stable; Caa1-PD): The upgrade to Caa1-PD from Caa2-PD reflects our estimate of 35% expected recovery rate. Application of the new senior secured note proceeds reduces refinancing risk by moving out the over $722 million maturity wall in 2020 to more manageable tranches in 2022 and 2024. Still, Hovnanian will have to refinance or repay the over $400 million maturing in 2019. The Caa2 CFR reflects Hovnanian's high refinancing risk as well as its debt to capitalization over 100%, weak liquidity profile, low interest coverage, and shrinking revenue base. The company had pulled back on community investment in an effort to create liquidity to meet upcoming maturities and this will have a cascading effect on revenue in 2017 and 2018 as we expect declines to match its shrinking community count.

Lonestar Resources America Inc. (Caa1 stable; Caa1-PD): The upgrade to Caa1 from Caa2 reflects the steady progress the company has made developing its resources, gaining scale and improving its capital structure. Although we expect the company's credit metrics to improve significantly through year-end 2018, the company will face challenges and significant costs developing its largely undeveloped acreage position in the Eagle Ford Shale, which constrain its rating.

Sabre Industries, Inc. (Caa1 stable; Caa1-PD): The upgrade to Caa1 from Caa2 is based on the sustained improvement in Sabre's credit metrics since late 2016 and expectation of continued improvement through 2018. Credit metrics are expected to be solidly positioned at the Caa1 CFR level with debt/EBITDA (including Moody's standard adjustments) expected to range from 5.5x to 6.0x over the next twelve to eighteen months versus over 7.5x a year ago. Further improvement in credit metrics is likely to emanate from continued moderate EBITDA growth.

Tops Holding II Corporation (Caa1 negative; Caa1-PD; see downgrade section): The upgrade to Caa1-PD/LD from Ca on August 10, 2017 follows completion of the announced exchange offer. We subsequently removed the /LD from the PDR. Previously, we downgraded Tops' PDR to Ca-PD from Caa1-PD on July 19, 2017 and affirmed the Caa1 CFR after the company announced the exchange offer.

Moody's Related Research

Special Comments and Sector In-Depth Reports:

- » Leveraged Finance Interest - North American Edition, October 2017 (1095734)
- » SGL Monitor: LSI revisits record low in show of liquidity strength, October 2017 (1096362)
- » Moody's B3 Negative and Lower Corporate Ratings List: Shrinking List Points to Lower Default Rate, October 2017 (1094738)
- » North American Covenant Quality Indicator: CQI remains near record-worst as lower-rated bonds provide less protection, October 2017 (1095046)
- » North American Loan Covenant Quality Indicator: Covenant rotections hover at weak levels as investors accept risk for little reward, October 2017 (1091993)
- » Corporate Defaults and Recoveries - US: Cov-Lite Loans Dominate the Market, Will See Worse than Average Default Recoveries, May 2017 (1072306)
- » Corporate Defaults and Recoveries - US: Lessons from a Trillion Dollars in Defaults, April 2017 (1057669)
- » Non-Financial Corporations - Global Industry Sector Outlooks: Positive slant of ISO roster reflects landscape of solid credit conditions, October 2017 (1083974)
- » US Refunding Risk Quarterly: 1Q - Spec-Grade Refunding Risk Eases as Issuance Picks Up, May 2017 (1075035)
- » Refunding Risk and Needs 2017-2021: Speculative-Grade Corporations - US: Record $1 Trillion of Spec-Grade Debt Matures in Next 5 Years, February 2017 (1056813)
- » US Retail: Expect more growing pains during current period of unprecedented change, August 2017 (1084949)
- » Lessons Learned: 2016's E&P Bankruptcies, What a Difference a Year Makes, September 2017 (1088331)
- » Debt and Taxes: What Tax Reform Proposals Could Mean Across Industries, July 2017 (1081964)
- » Debt and Taxes: Credit Implications of New Tax Reform Proposals, March 2017 (1059162)
- » Corporate Defaults and Recoveries - US: Private-Equity Tactics Keep Firm-Wide Recoveries Close to Average, November 2016 (1048773)
- » Corporate Defaults and Recoveries - US: Lessons Learned from the 2015 Oil Bust, September 2016 (1034213)
- » Corporate Defaults and Recoveries - US: First-Tier Risk for Second-Lien Debt, May 2016 (1021701)
- » EBITDA: Used and Abused, November 2014 (173806)

Default Reports:

- » Annual Default Study: Corporate Default and Recovery Rates, 1920-2016, February 2017 (1059749)
- » Monthly Default Report: June Default Report, September 2017 (1095239)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Endnotes

1 These figures do not include R-SGLs that we maintain on companies in Europe and Asia. For information on liquidity trends based on R-SGLs in those regions, please see www.moodys.com/sgl. We typically assign public SGL ratings to companies only in the US and Canada.

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CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

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