

Corporate Credit Spread Chartbook

Basic Materials Sector

Morningstar Credit Ratings, LLC
February 7, 2018

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Sean T. Sexton, CFA
Credit Analyst
+1 312 348-3077
sean.sexton@morningstar.com

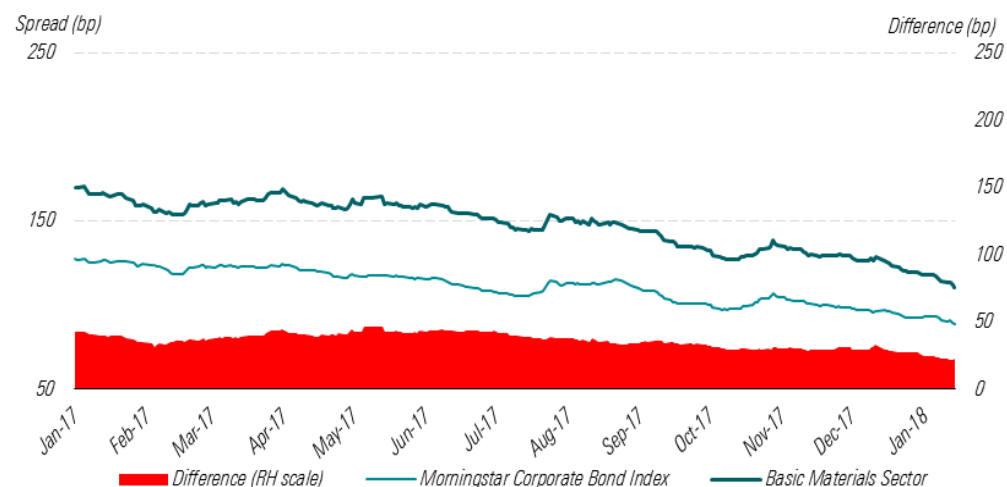
Executive Summary

Ratings activity in the basic materials sector since our last publication in October has mostly been affirmations. We affirmed two agricultural issuers, five chemical issuers, and five metals and mining issuers while upgrading one metals issuer. Overall, spreads generally tightened compared with June for the combined subsectors, with the four subsectors presented in this report averaging 26 basis points tighter while the Morningstar, Inc. Corporate Bond Index was 13 basis points tighter over the same time period.

Historical Sector Spreads

Spreads over Treasuries in the CBI and the Basic Materials Sector Index have both tightened considerably over the past year — the Basic Materials Sector Index by 55 basis points and the CBI by 38 basis points. As of Feb. 1, 2018, the Basic Materials Sector Index traded at a spread premium to the CBI of 23 basis points compared with 40 basis points a year ago. The Basic Materials Sector Index was at a spread over Treasuries of 111 basis points as of Feb. 1, while the CBI was at a spread over Treasuries of 88 basis points. Over the past two years, both the Basic Materials Sector Index and the CBI peaked on Feb. 11, 2016, at a spread of 436 and 216 basis points, respectively.

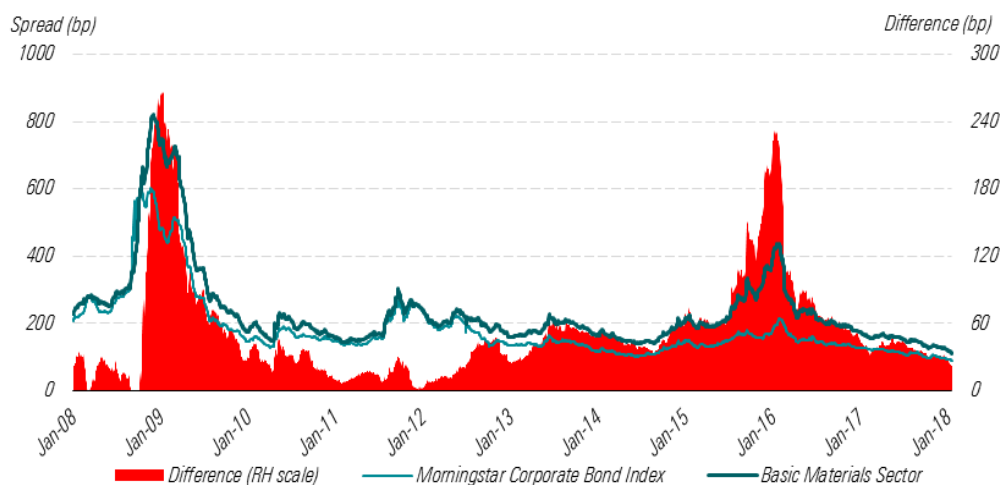
Exhibit 1 Morningstar, Inc. Corporate Bond Index vs. Basic Materials Sector (Trailing 12 Months)



Source: Morningstar Direct. Data as of 2/1/2018.

Over the past 10 years, we can see in Exhibit 2 that two credit stress events occurred. The more recent event occurred in early 2016 when crude oil, metals, and mined materials prices crashed on macro supply and demand concerns coupled with high debt levels for many issuers in the commodities industry. In comparing the spread differences for the two credit stress events, in the latest event, the spread was only 30 basis points less than the peak spread of 266 basis points, which occurred on Jan. 20, 2009. During the global financial crisis. However, both indexes' spreads were much higher then, with the Basic Materials Sector Index at a spread of 748 basis points in early 2009 and the CBI at a spread of 482 basis points, reflecting the overall systematic stress in early 2009. Another way to think about this is to look at the ratio of the BMAT/CBI over the two periods. In 2009, the ratio was 1.6 times, while it was higher in 2016 at 2.2 times. This compares to the long-term average of approximately 1.5 times.

Exhibit 2 Morningstar, Inc. Corporate Bond Index vs. Basic Materials Sector (Trailing 10 Years)

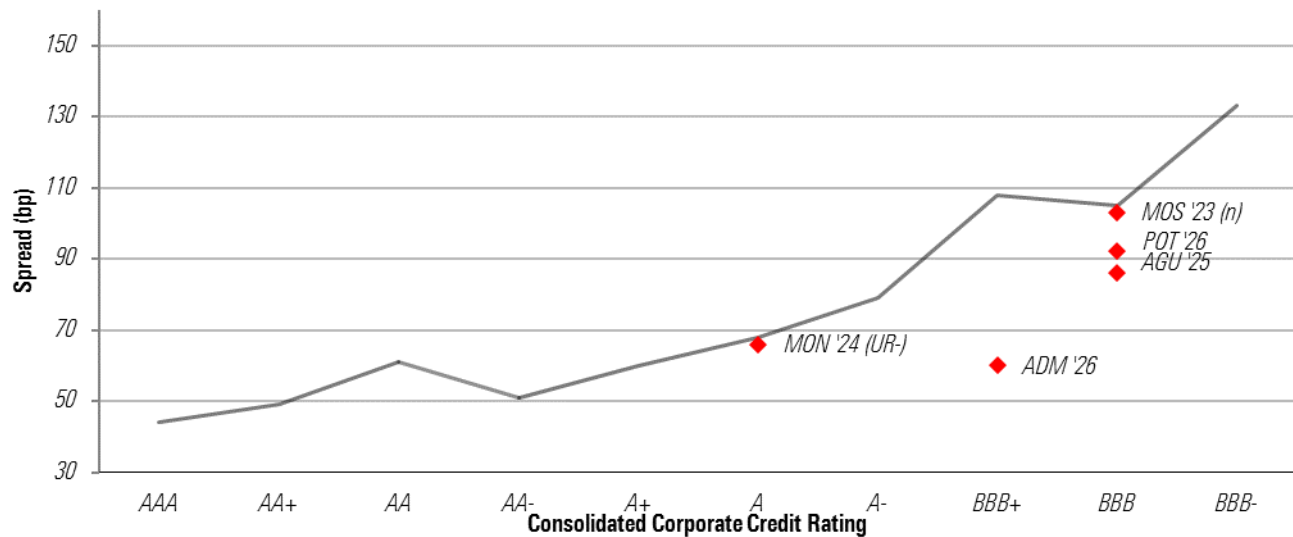


Source: Morningstar Direct. Data as of 2/1/2018

Spread Charts by Basic Materials Sector

Agricultural

Exhibit 3 Agricultural Subsector vs. Morningstar, Inc. Industrials Index



Source: Morningstar Credit Ratings, LLC, Morningstar, Inc. and Interactive Data as of 2/1/2018.

UR = rating under review / (p) = positive outlook / (n) = negative outlook

Credit Trends

On average, bonds in this subsector tightened 26 basis points since our last publication in October versus the CBI, which tightened 13 basis points over the same time period. While earnings and cash flow are generally weaker than previous years, credit spreads in this subsector are largely in line with the Morningstar Inc. Corporate Bond Index. This is due to the relatively conservative capital structures of the agricultural subsector even in down end-market years.

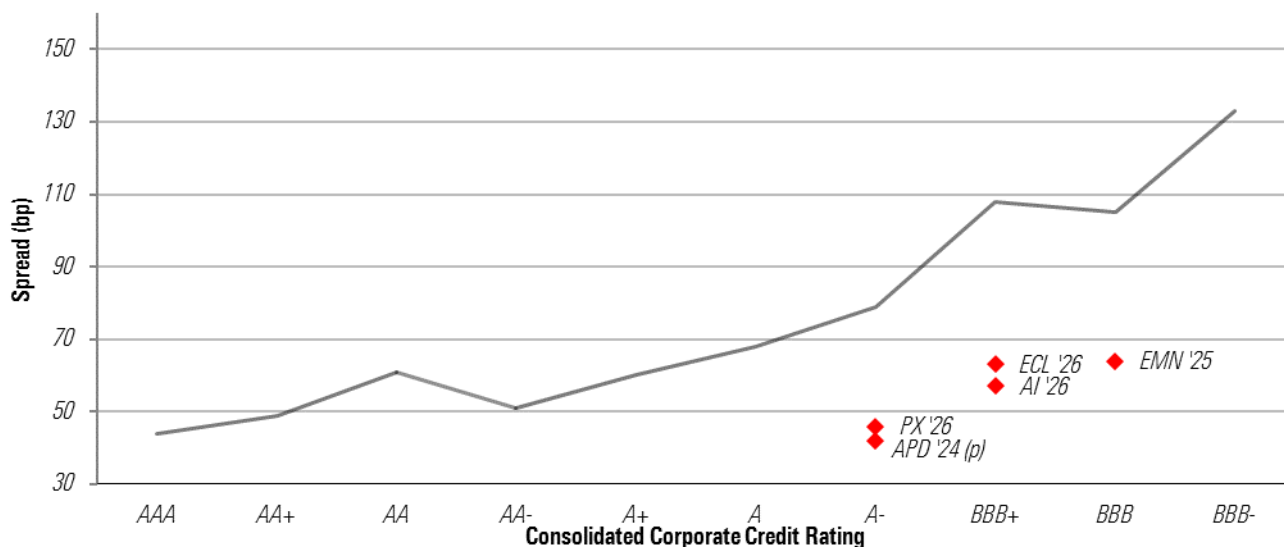
This subsector is in the midst of consolidation, as Monsanto (A, UR-) is anticipated to be purchased in a largely debt-financed transaction by Bayer AG (A-, UR-) later this year.

Issuer Highlights

- ▶ In December, we affirmed the rating of Archer Daniels Midland at BBB+. The affirmation reflected its moderate risk profiles for its Business Risk, Cash Flow Cushion, Solvency Score, and Distance to Default credit pillars.
- ▶ Mosaic's negative outlook reflects the potential for fertilizer prices to remain depressed for the intermediate term that could cause the company's BBB rating to be pressured.

Chemicals

Exhibit 4 Chemicals Subsector vs. Morningstar, Inc. Industrials Index



Source: Morningstar Credit Ratings, LLC, Morningstar, Inc. and Interactive. Data as of 2/1/2018.

UR = rating under review / (p) = positive outlook / (n) = negative outlook

Credit Trends

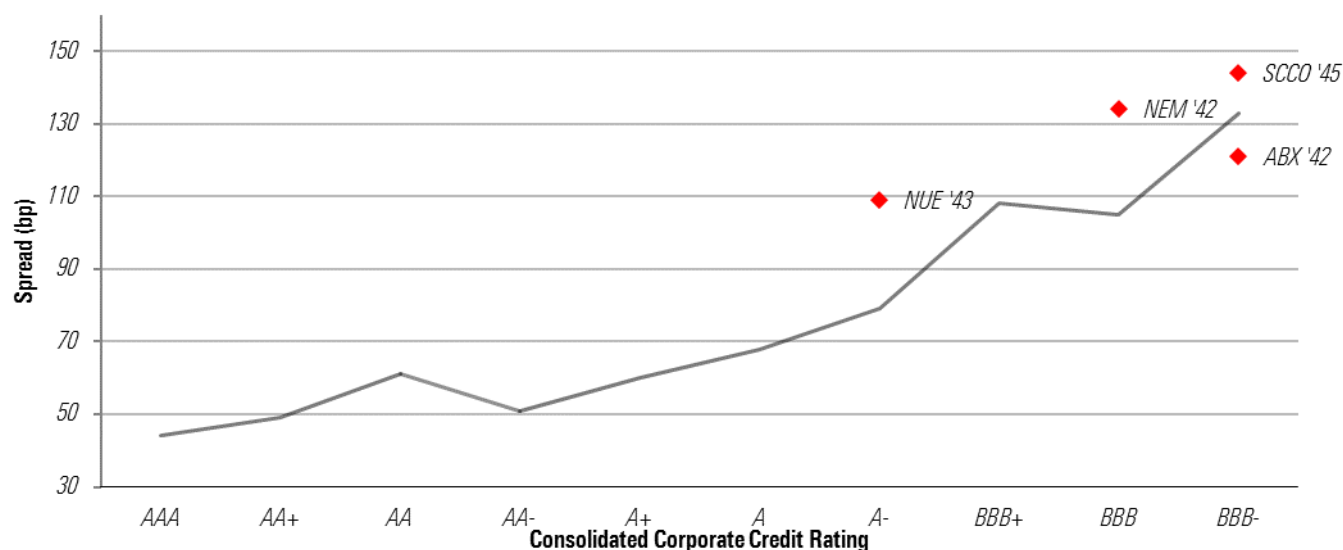
On average, bond spreads in the chemicals subsector tightened 16 basis points since our last publication versus the CBI, which tightened 13 basis points. The chemicals subsector is stable, since most end markets for these issuers have remained relatively strong over the past several months. Spreads in this subsector trade well below the spreads indicated by the Industrials Index for their respective credit rating. Further mergers and acquisitions in this sector are possible due to the consistent free cash flow profiles of many issuers and the still low interest rates available to many corporate borrowers.

Issuer Highlights

- ▶ In October, we affirmed the rating of PPG Industries at BBB+.
- ▶ In December, we affirmed the ratings of Air Products & Chemicals and Praxair both at A-. Air Products & Chemicals' positive outlook reflects the potential for an upgrade if the company maintains low leverage relative to its cash flow generation.
- ▶ Also, in December, we affirmed the ratings of Dow Chemical and DuPont at BBB and A-, respectively and then subsequently withdrew those ratings.

Metals and Mining

Exhibit 5 Metals and Mining Subsector vs. Morningstar, Inc. Industrials Index



Source: Morningstar Credit Ratings, LLC, Morningstar, Inc. and Interactive. Data as of 2/1/2018.

UR = rating under review / (p) = positive outlook / (n) = negative outlook

Credit Trends

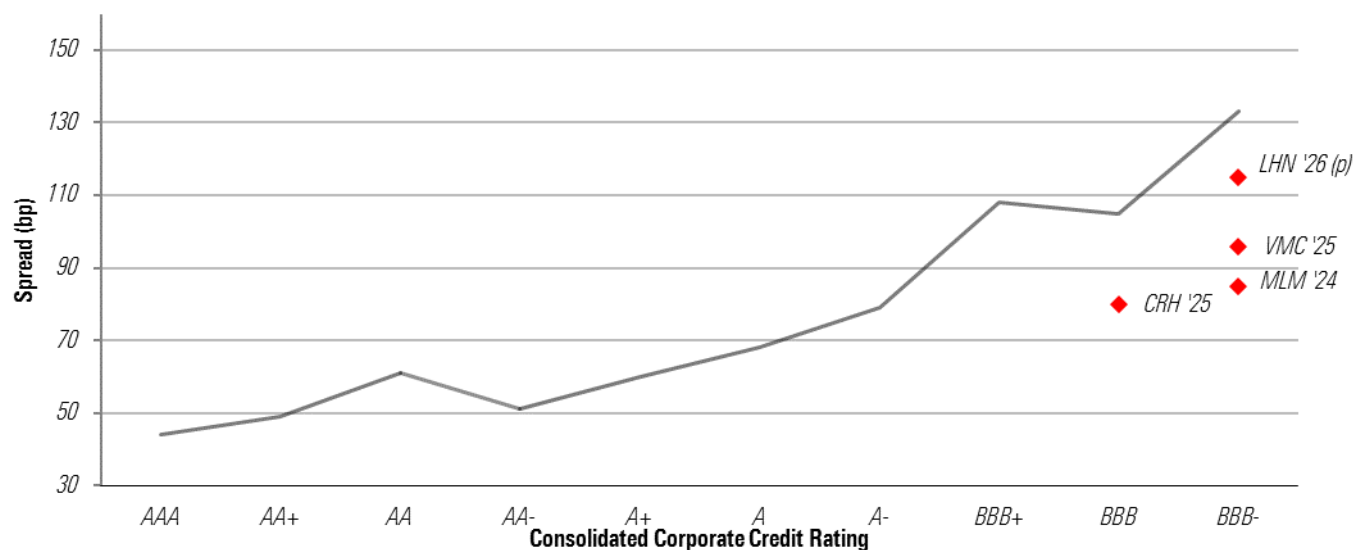
On average, bond spreads in this subsector widened 38 basis points since our last publication versus the CBI, which tightened 13 basis points. For easier comparison purposes, we depict longer-dated bonds above for the investment-grade issuers that we rate in the metals and mining subsector. We expect the credit profiles for these investment-grade issuers to remain resilient. In the non-investment-grade part of the subsector, some of our rated issuers have positive rating outlooks, reflecting possible upgrades. Many of the non-investment-grade issuers have made self-help credit-enhancing efforts over the past several quarters, such as deleveraging via asset sales, equity issuances, etc.

Issuer Highlights

- ▶ In November, we affirmed the ratings of Barrick Gold at BBB-. Barrick's rating reflects its high Business Risk credit pillar coupled with moderate risk profiles for its Cash Flow Cushion and Distance to Default credit pillars, as well as a low risk profile for its Solvency Score pillar.
- ▶ Also in November we affirmed Newmont Mining at BBB. Newmont's credit rating reflects high Business Risk coupled with low risk profiles for its Cash Flow Cushion, Solvency Score, and Distance to Default.

Building Materials

Exhibit 6 Building Materials Subsector vs. Morningstar, Inc. Industrials Index



Source: Morningstar Credit Ratings, LLC, Morningstar, Inc. and Interactive Data as of 2/1/2018.

UR = rating under review / (p) = positive outlook / (n) = negative outlook

Credit Trends

On average, bond spreads in this subsector tightened 24 basis points since our last publication compared with the CBI, which tightened 13 basis points. The credit trends for issuers covered by Morningstar Credit Ratings in the building materials subsector have been positive. Either issuers are experiencing positive revenue growth and EBITDA due to expanding demand factors or they are deleveraging (LafargeHolcim).

Issuer Highlights

For LafargeHolcim (BBB-), the positive outlook reflects our expectation that debt/EBITDA will improve to 3.0 times and its Solvency Score will improve to a moderate risk position by the end of 2018. ■■■

Exhibit 7 Morningstar Credit Ratings Sector Coverage: Basic Materials

| Issuer | Ticker | Corporate Rating | Rating Outlook | Analyst |
|----------------------------------|---------------|-------------------------|-----------------------|----------------|
| Agriculture | | | | |
| Archer-Daniels Midland Co. | ADM | BBB+ | Stable | Sexton |
| Agrium | AGU | BBB | Stable | Sexton |
| CF Industries | CF | BB | Stable | Sexton |
| Monsanto | MON | A | UR- | Sexton |
| Mosaic | MOS | BBB | Negative | Sexton |
| Potash Corp. of Saskatchewan | POT | BBB | Stable | Sexton |
| Building Materials | | | | |
| CRH | CRH | BBB | Stable | Sexton |
| LafargeHolcim | LHN | BBB- | Positive | Sexton |
| Martin Marietta Materials | MLM | BBB- | Stable | Sexton |
| Summit Materials | SUM | B+ | Stable | Sexton |
| Vulcan Materials | VMC | BBB- | Stable | Sexton |
| Chemicals | | | | |
| Air Liquide | AI | BBB+ | Stable | Sexton |
| Air Products and Chemicals Inc | APD | A- | Positive | Sexton |
| Eastman Chemical | EMN | BBB | Stable | Sexton |
| Ecolab | ECL | BBB+ | Stable | Sexton |
| PPG Industries | PPG | BBB+ | Stable | Sexton |
| Praxair | PX | A- | Stable | Sexton |
| Metals and Mining | | | | |
| Anglo American | NGLOY | BB+ | Positive | Sexton |
| ArcelorMittal | MT | BB+ | Stable | Sexton |
| Arconic Inc. | ARNC | BB+ | Stable | Sexton |
| Barrick Gold | ABX | BBB- | Stable | Sexton |
| Commercial Metals | CMC | BB+ | Stable | Sexton |
| Freeport McMoran | FCX | BB- | Positive | Sexton |
| Newmont Mining | NEM | BBB | Stable | Sexton |
| Nucor | NUE | A- | Stable | Sexton |
| Steel Dynamics | STLD | BB+ | Stable | Sexton |
| Southern Copper | SCCO | BBB- | Stable | Sexton |
| Teck Resources | TECK | BB | Stable | Sexton |
| United States Steel | X | B | Positive | Sexton |
| Vale | VALE | BB+ | Positive | Sexton |
| Paper and Forest Products | | | | |
| Weyerhaeuser | WY | BBB- | Stable | Sexton |

Morningstar® Credit Research**For More Information**

Gregg Novek
+1 646 560-4529
gregg.novek@morningstar.com



22 West Washington Street
Chicago, IL 60602 USA

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