Credit Summary: Steel Dynamics, Inc. (BB+, Positive)
Leverage currently well below its 10-year average.

Morningstar Credit Ratings, LLC
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Contents

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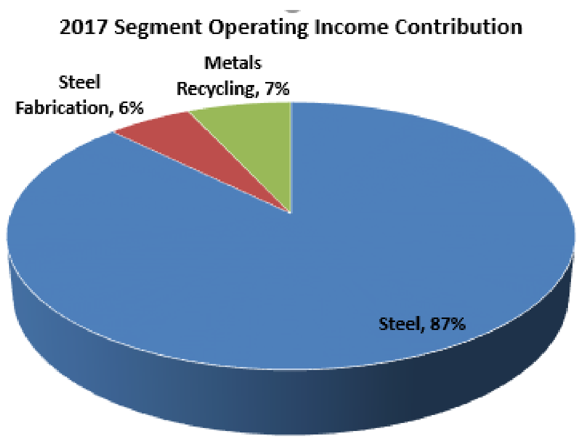
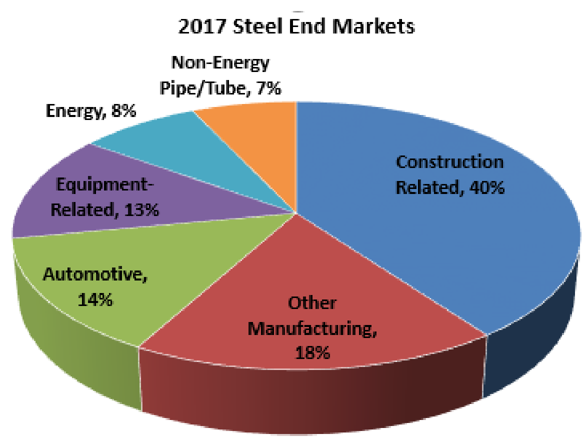
Executive Summary

Steel Dynamics' BB+ rating is supported by the company's low-cost operating profile in the volatile steel industry coupled with its growth ambitions and long-term leverage target of net debt to EBITDA of 3 times or less. The company is a relative newcomer to the steel industry and therefore has some of the most modern and efficient mills in the business. It has a very low operating cost structure and higher productivity than many of its peers because it produces steel in electric arc furnaces, which are less capital intensive, consume less energy, and provide greater operational flexibility than traditional blast furnaces.

Key Takeaways

- The BB+ rating is supported by high Business Risk, a moderate Cash Flow Cushion, and low risk profiles for its Solvency Score and Distance to Default.
- The company has a net debt to EBITDA maximum leverage target of 3.0 times. Net debt to EBITDA is currently 1.0 times, which is a 12-year low. Over the last 10 years, this leverage metric has averaged approximately 3.0 times and peak leverage occurred in 2009 at 6.5 times.
- The company's adjusted EBITDA margins are currently at a 10-year high of approximately 15.5% compared with the 10-year average of approximately 10.7%. However, our forecast consists of declining revenue beginning in 2019 with margins falling but still above the company's 10-year average.
- The recent revision in outlook to positive is driven by the strong operating results and cash flows relative to debt. Our positive outlook reflects potential upward rating momentum if the company maintains its financial leverage sustainably lower than it historically has been.





Steel Dynamics Overview

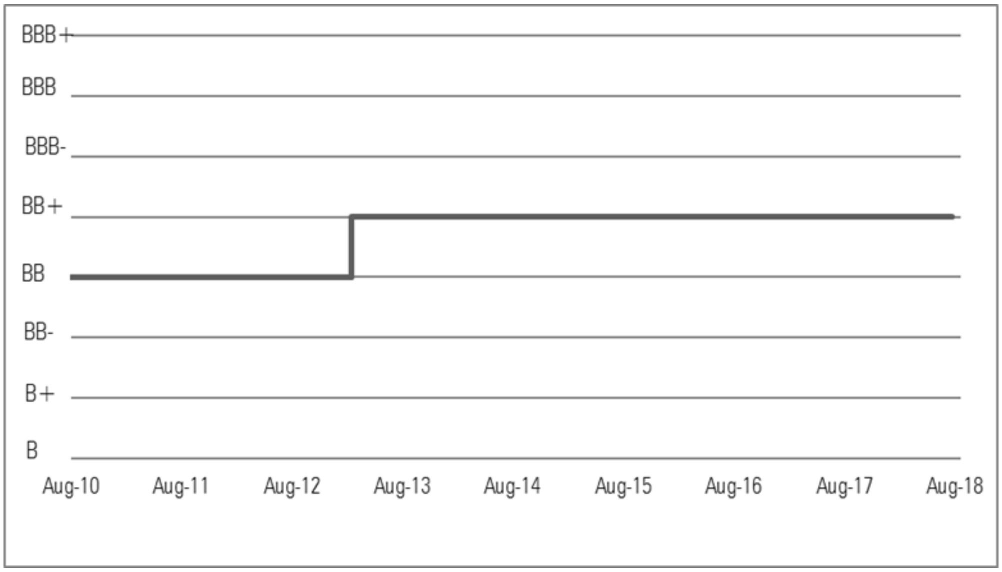
Company Description

Steel Dynamics is based in Fort Wayne, Indiana, and operates six scrap-based steel minimills in the U.S. with 11 million tons of annual steel production capacity. Founded in 1993, it manufactures steel products that primarily serve the construction, automotive, and machinery end markets. The company also processes and sells recycled ferrous and nonferrous metals and operates a steel fabrication business that manufactures products for the nonresidential construction industry. The vast majority of the company's operating profits are derived from its steel operations segment, and approximately 95% of the company's sales are domestic.

Credit Rating History

- Affirmed at BB+ on 8/30/2018
- Affirmed at BB+ on 8/25/2017
- Affirmed at BB+ on 8/11/2016
- Upgraded to BB+ from BB on 2/21/2013
- Initiated on 8/9/2010 at BB

Exhibit 1 Steel Dynamics Credit Rating History



Source: Morningstar Credit Rating, LLC

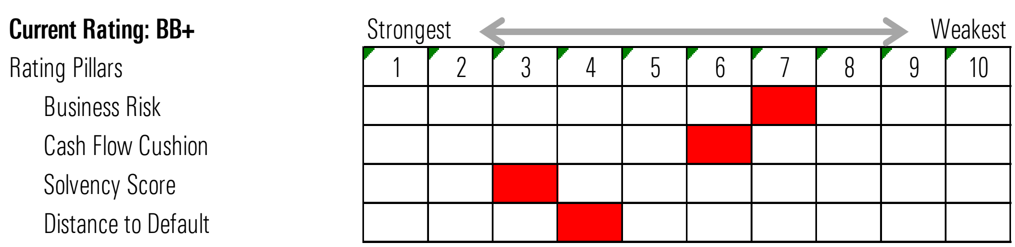
Credit Rating Rationale

Steel Dynamics’ BB+ rating reflects credit pillars that include high Business Risk, a moderate Cash Flow Cushion ranking, and a low risk Solvency Score and Distance to Default ranking. The company’s Business Risk reflects high industry cyclicality and a lack of an economic moat as assigned by Morningstar’s Equity Research Group. Its Cash Flow Cushion is supported by strong operating cash flow combined with low levels of capital spending requirements, a modest dividend, and a moderate debt maturity schedule over the next five years, while its Solvency Score reflects moderate leverage in its capital structure, strong internal liquidity, and robust interest coverage. Its Distance to Default ranking primarily stems from the company’s market capitalization (approximately $11 billion) of its common equity relative to its debt balance of $2.4 billion. Steel Dynamics continues to generate positive free cash flow as a result of its low-cost manufacturing process and in-house sourcing of scrap metal. Its low cost profile and low capital expenditure requirements have allowed it to produce positive free cash flow in each of the last 10 years. While the company is low cost and has also established an important strategic foothold in raw materials, investing in both iron- and scrap-producing assets that provide better control over input supply and costs, Morningstar’s Equity Research Group does not view this as sufficient to support an economic moat. Steel Dynamics’ net debt to EBITDA leverage has averaged approximately 3.0 times over the last 10 years, which is in line with its maximum debt target. Net debt to EBITDA is currently 1.0 times at the end of June, which is a multi-year low. In 2009, this metric spiked to 6.5 times as a result of industry cyclicality. Our current rating also takes into account the company's growth ambitions that can take the form of debt funded acquisitions.

Pillar Analysis

Steel Dynamics possesses a high Business Risk profile, a moderate Cash Flow Cushion risk ranking, and a low-risk Solvency Score ranking and Distance to Default ranking. A better cash flow cushion risk ranking would provide upward momentum to the rating that could be a result of sustained high steel volumes and margins. Downward pressure to the rating could result from worse volumes and margins than projected that could drive the Business Risk, Cash Flow Cushion, or Distance to Default pillars weaker.

Exhibit 2 Steel Dynamics Credit Pillar Summary



Source: Morningstar Credit Ratings, LLC

- Business Risk (7): Steel Dynamics' high Business Risk is affected by Morningstar Equity Research Group’s view that the company does not merit an economic moat, its product concentration and the steel industry's high cyclicality.

  Below are elements to calculate the Business Risk Pillar (higher number is better).
  - Size (8 out of 10): Steel Dynamics' revenue of approximately $11 billion ranks its size an 8 out of 10. The company's revenue would need to more than double for the size element to increase enough to lower the firm's Business Risk.
  - Economic Moat (1 out of 10): Morningstar's Equity Research does assign an economic moat to Steel Dynamics. While the company's cost profile is low, it does not maintain a significant enough cost advantage relative to its peers to merit a moat.
  - Uncertainty (5 out of 10): Steel Dynamics has a high uncertainty due to the unpredictable nature of future cash flows that result from inherent industry cyclicality.
  - Product/Customer Concentration (2 out of 5): Steel Dynamics' products are not diversified beyond steel although its customer concentration is more spread out. This element is unlikely to change.
  - Management (3 out of 5): Steel Dynamics has growth aspirations that are sometimes debt funded. A large example of this was the acquisition of its Columbus, Mississippi, steel mill that resulted in debt increasing to $3.1 billion from $1.8 billion in September 2014. Given this and the company's net debt target, we score management's actions to support credit quality a 3.
  - Dependence on Capital Markets (3 out of 5): The company's nearest maturity is $700 million in 2021, and the company's capital and dividend requirements are estimated to be approximately $450 million annually, resulting in a modest dependence on capital markets.
  - Cyclicality (1 out of 5): Steel Dynamics is subject to the inherent price and volume cyclicality of the steel industry.
- Cash Flow Cushion (6): Existing cash on hand ($720 million) plus projected free cash flow after capital expenditures and dividends should cover cash requirements over the next five years by approximately 1.3 times, which results in a moderate risk profile for this pillar.
- Solvency Score (3): This pillar is supported by a modestly leveraged capital structure (total liabilities/total assets), solid liquidity, and a strong working capital position.
- Distance to Default (4): This pillar's risk ranking reflects the company's enterprise value relative to its equity market value and its equity volatility relative to the market's volatility, which results in a low risk ranking. Enterprise value is approximately $12.6 billion with an equity market value of approximately $11 billion.

Financial Projections

Our base-case scenario assumes a decrease in revenue and margins resulting in a decline in EBITDA from record levels. Margins are down but still above the 10-year average of 10.7%. Notwithstanding this, our forecast shows the company is still robustly free cash flow positive and gross debt to EBITDA rises to near 2.0 times versus its 10-year average of 3.4 times. Our forecast assumes no major acquisitions but continued buybacks to prevent the buildup of excess cash on hand. Note, in this scenario, gross debt to EBITDA is significantly below historical averages.

Exhibit 3 Projection Estimates

$MM	2014	2015	2016	2017	2018e	2019e	2020e	2021e	2022e
Revenues	8,756	7,594	7,777	9,539	11,718	10,201	9,259	9,320	8,816
% Growth		-13%	2%	23%	23%	-13%	-9%	1%	-5%
Adjusted EBITDA	863	706	1,172	1,405	2,205	1,717	1,561	1,455	1,250
Margin	9.9%	9.3%	15.1%	14.7%	18.8%	16.8%	16.9%	15.6%	14.2%
Free Cash Flow	506	939	655	575	817	955	719	415	364
as % of Revenue	5.8%	12.4%	8.4%	6.0%	7.0%	9.4%	7.8%	4.5%	4.1%
Debt	3,024	2,595	2,357	2,382	2,381	2,381	2,381	2,381	2381
Gross Debt/EBITDA (x)	3.5	3.7	2.0	1.7	1.1	1.4	1.5	1.6	1.9

Source: Morningstar Credit Ratings, LLC

Peer Comparison

Shown on Exhibit 4 are the mini-mill steel producers that employ low cost, electric arc steel making technology. Nucor is by far the largest in term of revenue and EBITDA and possesses the highest rating. Steel Dynamics' net debt to EBITDA has averaged approximately 3.0 times over the last 10 years, while Nucor's 10-year average net debt to EBITDA is 1.5 times and Commercial Metals' 10-year average is 4.4 times.

Exhibit 4 Comparison Table (LTM Data - 6/30/18)

Company	Nucor	Steel Dynamics	Commercial Metals
Morningstar Rating	A-	BB+	BB+
Moat	None	None	None
LTM Credit Metrics			
Revenues ($MM)	22,291	10,474	4,419
Adjusted EBITDA ($MM)	2,951	1,624	315
Adj. EBITDA %	13%	16%	7%
Total Debt ($MM)	4,291	2,370	1,159
Cash & Equivalents ($MM)	1,486	720	600
Net Debt ($MM)	2,805	1,650	559
Mkt. Capitalization ($MM)	20,072	11,058	2,423
EV ($MM)	22,877	12,708	2,982
EV/Debt	5.3	5.4	2.6
EV/EBITDA	7.8	7.8	9.5
Debt/EBITDA	1.5	1.5	3.7
Net Debt/EBITDA	1.0	1.0	1.8
Interest Expense ($MM)	168.9	130.0	31.0
EBITDA/Interest	17.5	12.5	10.2
CFO	1,575	922	247
Capex	621	186	195
FCF	954	736	52
Dividends	486	155	56
FCF post Dividends	468	581	(4)
FCF/Debt	22%	31%	4%

Source: Morningstar Credit Ratings, LLC

Bond Pricing Comparison

Company	Rating	Outlook	Coupon	Maturity	Price	Yield	Spread
Nucor Corporation	A-	Stable	3.95%	05/01/2028	98.2	4.19%	96
Steel Dynamics	BB+	Positive	4.125%	09/15/2025	94.3	5.12%	195
Commercial Metals	BB+	Stable	5.375%	07/15/2027	93.0	6.43%	322

Source: Interactive Data, as of Oct. 5, 2018

Capital Structure

Steel Dynamics' capital structure consists of approximately $2.4 billion of senior unsecured debt and $3.7 billion of book common equity. Current market capitalization of its equity is approximately $11 billion.

The company is reporting record levels of adjusted EBITDA on a latest 12 months (LTM) basis and resulting debt to adjusted LTM EBITDA was 1.5 times as of June 30 and net debt to adjusted LTM EBITDA was approximately 1.0 times. LTM free cash flow was approximately $700 million. Cash and equivalents on hand were approximately $720 million at June 30, and the firm's $1.2 billion secured revolving credit facility (RCF) due 2023 was fully available. Financial covenants on the secured RCF are a maximum of 5.0 times net debt to adjusted EBITDA and minimum interest coverage 2.5 times, and the RCF is currently secured by substantially all the company's receivables and inventories. On Sept. 4, Steel Dynamics authorized an additional $750 million share repurchase program after its $450 million repurchase program was completed in August.

Significant debt maturities are $700 million due in 2021, $400 million due in 2023, $500 million due in 2024, $350 million due in 2025, and $400 million maturing in 2026. The 5.125% notes due 2021 are currently callable at 101.281, while the 5.25% notes due 2023 are currently callable at 102.625. Finally, Steel Dynamics is not burdened by legacy pension and retirement liabilities, which are common among other industry players.

Exhibit 5 Debt Structure ($ in Millions) - 6/30/18

	Amount	xEBITDA
Long Term Notes		
5.125% due 2021	700	
5.250% due 2023	400	
5.500% due 2024	500	
4.125% due 2025	350	
5.000% due 2026	400	
Other Long Term Debt	20	
Gross Debt	2,370	1.5x
Cash (6/30/18)	720	
Net Debt	1,650	1.0x
Adj. EBITDA (LTM)	1,624	

Source: Company filings, Morningstar Credit Ratings, LLC

Capital-Allocation Policy

Steel Dynamics' capital allocation policy is to first and foremost pursue growth opportunities whether it be organic or inorganic. An example of inorganic growth would the late 2014 acquisition of its sixth steel mill in Columbus, Mississippi, from Severstal for $1.625 billion in cash. This acquisition was funded mostly with new debt. Another use of for capital for the company is to pay a competitive and growing dividend as its size and earnings increase. Steel Dynamics currently pays about $175 million annually in dividends, which equates to a current yield of approximately 1.6%. A final use of capital is to use the company's stock repurchase program to buy back equity. Early in September, Steel Dynamics announced it had authorized an additional $750 million on its share repurchase program after completing its $450 million share repurchase program in August. As stated previously, Steel Dynamics' debt target is a maximum net debt to EBITDA of 3.0 times.

Appendix

Steel Dynamics Moat and Trend

The following description comes directly from Morningstar's Equity Research Group.

"We assign a no-moat rating to Steel Dynamics. Steelmakers mainly sell undifferentiated, commodified products; thus, the most likely route to establishing an economic moat is low-cost production. Historically, Steel Dynamics' fleet of highly efficient electric arc furnaces has provided the company with a clear-cut cost advantage. However, the steelmaking cost curve, which was already flat relative to the cost curves of other commodities, has flattened further in recent years. As a result, even though Steel Dynamics still operates on the lower end of the industry cost curve, the magnitude of its cost advantage relative to its peers is relatively modest. We assert that the company will be unlikely to out earn its cost of capital over the coming business cycle.

"Electric arc furnaces, also known as minimills, require a lower investment per unit of installed capacity and are significantly less energy- and labor-intensive than blast furnaces. Additionally, unlike blast furnaces, electric arc furnaces allow for the use of complementary, high-iron-content feedstocks that help reduce per-unit steelmaking costs. These complementary feedstocks include direct-reduced iron, hot-briquetted iron, and pig iron. Steel Dynamics produces liquid pig iron and HBI via its Iron Dynamics operations.

"Because recycled ferrous scrap metal used to produce steel in electric arc furnaces is imbued with impurities, owing to its exposure to other naturally occurring elements in use, steel produced by electric arc furnaces is typically lower-quality than steel produced via blast furnace. Therefore, electric arc furnace operators are generally unable to service end markets that require high-strength, flat-rolled steel such as the automotive market. This is not the case for Steel Dynamics, however, because the company boosts the iron content of melts for its flat-rolled and engineered bar steel divisions with liquid pig iron and HBI that are produced in-house.

"Steel Dynamics' flat-rolled steelmaking operation in Butler, Indiana, which accounts for roughly one third of the company's total steel output, sources liquid pig iron that is produced in a facility next door to its minimills. This allows for the application of incremental iron units to the melt without the burden of freight costs. This facilitates the production of high-strength, flat-rolled steel using only a fraction of the metallurgical coal required by its peers that operate blast furnaces. As a result, Steel Dynamics is able to leverage its highly efficient minimills to compete with blast furnace operators in end markets requiring high-strength steel at favorable per-unit operating costs.

"Thanks to its position on the lower half of the industry cost curve, we forecast that Steel Dynamics' returns on invested capital will modestly exceed its cost of capital in a midcycle operating environment. Over the past decade, which reflects a full economic cycle within the steel industry, Steel Dynamics generated an average return on invested capital of 9%, below our 12% midcycle forecast.

"We assign a stable moat trend to Steel Dynamics, as the firm's position on the industry cost curve is unlikely to change materially in the coming years. The low-cost operating model provided by the use of minimills has created a shift toward investment in electric arc furnaces that now produce about 60% of steel made in the U.S., up from roughly 50% at the turn of the century. Even so, we expect Steel Dynamics’ favorable position on the industry cost curve to remain relatively stagnant.

"Declining iron ore spot prices have led to a shakeup of our steel company moats, as self-sufficient players that were once considered low-cost have been squeezed further to the right on the cost curve. Low iron ore prices improve the unit costs of Steel Dynamics’ peers that import their iron ore needs. However, this threat is largely mitigated by the fact that low iron ore prices support lower unit costs for the high-iron-content feedstocks that Steel Dynamics consumes in combination with ferrous scrap metal.

"Additionally, iron ore and scrap prices tend to move in tandem; thus, when iron ore prices decline, Steel Dynamics tends to benefit from lower scrap prices. This consideration, however, is partially offset by the fact that the majority of the company's metal recycling volumes are consumed by its steelmaking business and the rest is sold on the open market. Therefore, as scrap prices decline, the steelmaking business’ operating margins would likely improve while the recycling business’ operating margins would deteriorate.

"We would revisit our moat trend rating if our long-term forecasts for iron ore prices and ferrous scrap prices were to diverge, perhaps driven by changes in ferrous scrap availability. Overall, however, we are comfortable with our stable moat rating for the time being, as we are unable to identify any trends that will definitively cause Steel Dynamics’ competitive position to materially improve or deteriorate in the years to come."

Steel Dynamics

All values (except per share amounts) in: USD Millions	2015	2016	2017	Forecast 2018	2019	2020	2021	2022
Income Statement								
Revenue	7,594	7,777	9,539	11,718	10,201	9,259	9,320	8,816
Gross Profit	732	1,335	1,582	2,462	1,936	1,756	1,633	1,421
Operating Income	356	861	1,067	1,578	1,068	891	771	552
Adjusted EBITDA	706	1,172	1,405	2,205	1,717	1,561	1,455	1,250
Net Income	(130)	382	813	1,037	690	552	455	284
Balance Sheet								
Cash + Investments	727	841	1,029	415	674	969	1,060	1,100
Total Debt	2,595	2,357	2,382	2,381	2,381	2,381	2,381	2,381
Total Adjusted Debt	2,595	2,357	2,534	2,533	2,533	2,533	2,533	2,533
Cash Flow Statement								
Cash Flow From Operations	1,054	853	740	1,077	1,305	1,090	787	735
Capital Expenditures	(115)	(198)	(165)	(260)	(350)	(371)	(371)	(371)
Free Cash Flow (CFO-Capex)	939	655	575	817	955	719	415	364
Free Cash Flow / Sales	12.4%	8.4%	6.0%	7.0%	9.4%	7.8%	4.5%	4.1%
Growth (% YoY)								
Revenue	-13.3%	2.4%	22.7%	22.8%	-12.9%	-9.2%	0.7%	-5.4%
Gross Profit	-24.3%	82.4%	18.5%	55.6%	-21.4%	-9.3%	-7.0%	-13.0%
Operating Income	-38.7%	142.0%	23.9%	47.9%	-32.3%	-16.6%	-13.5%	-28.4%
Adjusted EBITDA	-18.3%	66.1%	19.9%	57.0%	-22.1%	-9.1%	-6.8%	-14.1%
Profitability (%)								
Gross Margin	9.6%	17.2%	16.6%	21.0%	19.0%	19.0%	17.5%	16.1%
Operating Margin	4.7%	11.1%	11.2%	13.5%	10.5%	9.6%	8.3%	6.3%
Adjusted EBITDA Margin	9.3%	15.1%	14.7%	18.8%	16.8%	16.9%	15.6%	14.2%
Net Margin	-1.7%	4.9%	8.5%	8.9%	6.8%	6.0%	4.9%	3.2%
Adjusted ROIC	2.8%	12.0%	11.1%	21.4%	15.2%	14.0%	12.8%	10.4%
Adjusted RONIC	23.4%	-561.4%	-14.2%	94.1%	116.8%	64.1%	-109.3%	202.0%
Coverage / Cash Flow								
Adjusted EBITDA / Interest Expense	4.6	8.0	10.5	17.0	13.2	12.0	11.2	9.6
(Adj. EBITDA-CapEx) / Int. Exp.	3.8	6.7	9.2	15.0	10.5	9.1	8.3	6.8
Adj. EBITDAR / (Int. Exp. + 1/3 Rents)	4.6	8.0	10.1	16.3	12.7	11.6	10.8	9.3
Dividends / FCF	14%	21%	25%	22%	18%	22%	35%	39%
Share repurchase (issuance) / FCF	-1%	2%	44%	101%	52%	56%	72%	83%
Leverage								
Total Debt / Adj. EBITDA	3.7	2.0	1.7	1.1	1.4	1.5	1.6	1.9
Net Debt / Adj. EBITDA	2.6	1.3	1.0	0.9	1.0	0.9	0.9	1.0
Total Adj. Debt / Adj. EBITDAR	3.7	2.0	1.8	1.1	1.5	1.6	1.7	2.0
EV /Adj. EBITDA	8.8	8.7	8.4		-	-	-	-
Debt / Capital	49%	45%	42%	41%	41%	41%	41%	42%
FCF / Total Debt	36%	28%	24%	34%	40%	30%	17%	15%

Morningstar® Credit Research

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