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CREDIT OPINION
21 December 2020

Update

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RATINGS

thyssenkrupp AG

Domicile	Essen, Germany
Long Term Rating	B1
Type	LT Corporate Family Ratings
Outlook	Developing

Please see the ratings section at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

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thyssenkrupp AG

Update following rating affirmation

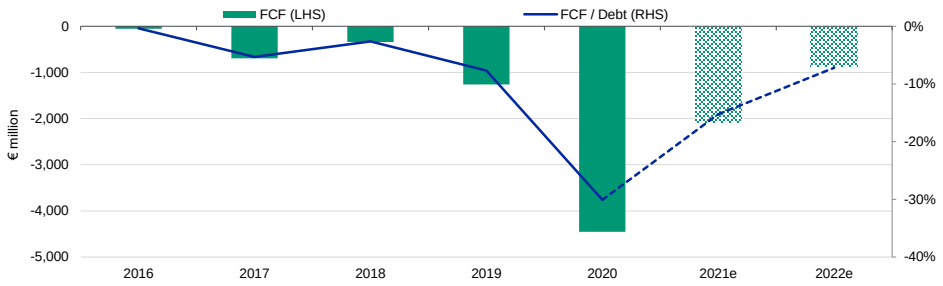
Summary

On 17 December 2020, we affirmed thyssenkrupp AG's (tk) B1 corporate family rating (CFR), with a developing outlook. The affirmation balanced the group's recently weakened performance mitigated by the strength of its balance sheet, in particular the substantial cash balances. The developing outlook indicates the uncertain success of initiated restructuring yielding necessary improvements in profitability and cash flow generation, and management's ongoing review of certain businesses, which we expect to be largely completed by spring 2021.

Credit challenges incorporated in the rating further include a still-weak macroeconomic environment and the recent demand slump across tk's key end-markets, such as the automotive sector, which was severely hit by the coronavirus pandemic; increased raw material and restructuring costs, which, together with restructuring costs weighed on the group's profitability in fiscal 2020 (negative Moody's-adjusted EBITA margin of -7.5%); tk's very weak metrics and highly negative free cash flow (FCF); and its weakened business profile after the disposal of its elevator division.

The rating positively reflects the group's significant scale and diversified global revenue streams; improved liquidity, underpinned by a cash balance of around €11.5 billion and fully available credit lines as of 30 September 2020; and a strategy focused on turning around profitability and improving cash flow in all segments.

Exhibit 1
tk's FCF will likely remain negative over the next two years
Moody's-adjusted FCF and FCF/Debt



Source: Moody's Investors Service

Credit strengths

» Large size and a diversified product portfolio

» A reported net cash position of more than €5 billion as of 30 September 2020 and strongly improved liquidity following the sale of the elevator business

» Strategy with a clear focus on improving profitability and returning to positive FCF

Credit challenges

» Very weak profitability (negative EBIT from continuing operations in fiscal 2020)

» Large-scale restructuring, which will strain the group's profitability and cash flows over the next two years

» A weakened business profile after the sale of the stable elevator business

Rating outlook

The developing outlook balances (1) the risk that tk will be unable to turn around its currently mostly highly loss-making and cash burning businesses by executing extensive restructuring and envisaged portfolio adjustments in a timely manner, with (2) our expectation of steady improvements in tk's operating performance and credit metrics from fiscal 2021. The developing outlook further reflects the expectation that tk will make a final decision on the future of its steel operations and certain "Multi-Track" (MT) businesses by mid-fiscal 2021 with implications for our assessment on its business profile. Furthermore, the developing outlook reflects the uncertainties regarding the medium term financial policy (including how the substantial cash balances may be used) also in the context of ongoing portfolio adjustments and their impact on credit metrics.

Factors that could lead to an upgrade

We would consider upgrading the ratings, if tk

» improves its profitability towards a 4% Moody's-adjusted EBITA margin,

» reduces its leverage to 4.5x debt/EBITDA,

» generates positive FCF,

» maintains its solid liquidity,

all on a sustained basis.

For a positive rating action, we would also evaluate the implications of a potential change in tk's business profile amid management's ongoing strategic review of certain business units.

Factors that could lead to a downgrade

We could downgrade the ratings if tk's

» Moody's-adjusted EBITA margin does not recover to at least 1.5% by fiscal 2022,

» leverage remains above 4.0x Moody's-adjusted net debt/EBITDA until fiscal 2022,

» negative FCF could not be reduced towards breakeven by fiscal 2023,

» current solid liquidity weakens significantly.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

Negative rating pressure could also build from a potential further weakening in tk's business profile in course of its current strategic review of certain business units or a shift in its financial policy.

Key indicators

Exhibit 2
thyssenkrupp AG [1]

	Sep-15	Sep-16	Sep-17	Sep-18	Sep-19	Sep-20
Revenue (USD billion)	$49.1	$42.2	$45.8	$49.4	$38.4	$32.4
EBITA Margin %	3.7%	3.5%	3.6%	2.8%	-1.0%	-7.5%
EBITA / Interest Expense	2.0x	2.7x	2.5x	2.2x	-0.6x	-3.4x
Debt / EBITDA	4.8x	5.4x	4.7x	5.2x	16.5x	-14.5x
RCF / Net Debt	16.8%	14.1%	25.9%	14.8%	7.8%	-26.7%
FCF / Debt	-0.2%	-0.4%	-6.1%	-2.6%	-7.7%	-30.1%

[1] All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
Source: Moody's Financial Metrics™

Profile

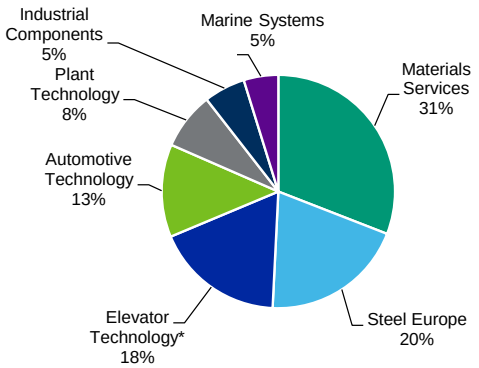
Germany-based thyssenkrupp AG is a diversified industrial conglomerate operating in around 60 countries. In fiscal 2020 (ended 30 September 2020), tk reported revenue of €29 billion and company-adjusted EBIT of negative €1.6 billion from continuing operations, and had around 104,000 employees as of 30 September 2020.

The group is active in capital goods manufacturing through its Plant Technology (PT), Marine Systems (MS), Automotive Technology (AT) and Industrial Components (IC) segments, and steel manufacturing and steel-related services through Steel Europe (SE) and Materials Services (MX). In fiscal 2020, the group segmented certain weak-performing business units as MT (for sale, closure or continuation in partnerships) while maintaining a focus on the MX, AT and IC segments and following a dual-track strategy (retain or consolidate) for its SE and MS segments.

In fiscal 2020, steel manufacturing and steel-related services represented around 51% of the group's total sales, and the capital goods businesses represented 49%.

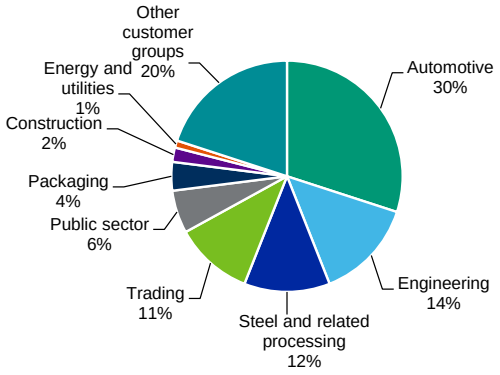
On 31 July 2020, tk sold its Elevator Technology division to a consortium of private-equity firms led by Advent International and Cinven for a purchase price of around €17 billion. tk, through a €1.25 billion reinvestment, retained an around 19% stake in the business.

Exhibit 3
Net sales by segments
Fiscal 2019-20



*Elevator Technology was sold on 31 July 2020.
Source: Company's filings

Exhibit 4
Sales by customer group



Source: Company's filings

tk's shareholder structure has been relatively stable over the last six years. The group's largest shareholders are the Alfried Krupp von Bohlen und Halbach Foundation, which holds around 21% of the voting rights, and Cevian Capital AB, which has a stake of around 15%. As of 9 December 2020, tk had a market capitalisation of around €4 billion.

Detailed credit considerations

Persistent operational difficulties exacerbated by the pandemic continue to constrain tk's rating

In fiscal 2020, tk's operating performance was hurt by a pandemic-induced demand slump across its key end-markets. In particular, sharp volume losses because of production stoppages in the automotive sector, which currently accounts for around 30% of the group revenue, led to a decline in tk's sales from continuing operations by 15% year over year to €29 billion in fiscal 2020. At the same time, increased raw material and restructuring costs further squeezed tk's EBIT, which plunged to negative €1.6 billion on a company-adjusted basis and excluding the sold elevator business. The profit decline was mainly driven by the SE segment, which alone contributed EBIT adjusted of negative €946 million while most other segments also had negative or weaker year-on-year results. Because of the profit erosion, significant one-time working capital effects and largely stable capital spending, tk's negative FCF before M&A increased to a €5.5 billion cash drain in fiscal 2020, from the €1.8 billion a year earlier. In response to the weakened economic environment and recent underperformance, tk announced extended restructuring plans, affecting 11,000 employees worldwide, compared with 6,000 previously.

Although we expect demand to clearly rebound in 2021 and support a gradual strengthening in tk's performance and credit metrics, levels will likely remain weak for the B1 rating over the next two years. The uncertainty surrounding the success of the implemented and targeted restructuring will remain high. However, if the restructuring measures are effective and the recovery is stronger than we expect, tk's rating positioning could strengthen over the next 12-18 months. We also acknowledge the group's intention to sell, close or continue in partnerships certain weakly performing (MT) businesses and evaluate various strategic options for its SE segment. Depending on management's final decision, which we expect by mid-fiscal 2021, certain scenarios could be beneficial for tk's credit profile and our rating assessment. However, these would need to be balanced with their potential implications on the group's business profile and financial policy, which is reflected in the developing outlook.

The disposal of tk's elevator business significantly strengthened its balance sheet and liquidity but weakened its business profile

After the completion of the sale of the elevator business in July 2020, which resulted in around €15 billion net financial debt reduction (net of a €1.25 billion reinvestment by tk) and a reported €5 billion net cash position as of 30 September 2020, tk's balance sheet has significantly strengthened. Considering a cash position of around €11.5 billion and committed credit lines of €1.6 billion available at the same date, we regard tk's current liquidity as solid, which was strained before the disposal of the elevator business against its increasing cash burn during the last two years.

The significant cash proceeds will enable tk to fund its ongoing negative FCF, including additional sizeable restructuring cash costs over the next two years, and reduce its debt at the scheduled maturities. Given that the visibility into future cash needs is still relatively limited, we recognise the group's current preference to maintain a high cash balance to protect its liquidity, before considering other uses, such as (partial) funding of its large pension deficit (€8.3 billion as of the end of September 2020) or voluntary debt repayments. Such measures are positive for tk's credit metrics and financial policy. The B1 rating does not incorporate the potential use of cash for larger acquisitions or shareholder distributions, which we understand are not considered by management at present.

However, the sale of the elevator division, which had been tk's most stable, profitable and cash-generative business, has weakened its business profile, which is now dominated by lower-margin activities such as the steel and materials businesses with high exposure to cyclical end-markets (for example, automotive, engineering, construction) and typically volatile steel and raw material prices. However, we acknowledge the group's ongoing review of its MT businesses for potential sale, closure or continuation in partnerships, which contributed more than -€590 million to EBIT and -€1.1 billion to its FCF in fiscal 2020. For some of these businesses, tk has already received non-binding offers (for example, PT) or a closure becomes likely (for example, the heavy plate unit in 2021).

Improving profitability continues to be a key challenge, especially after the demand slowdown in 2020

tk's profitability has been weak historically and has contracted rapidly amid slowing economic conditions since 2019, the pandemic-driven demand slump and the deconsolidation of its profitable elevator business in 2020, combined with intensified restructuring. As a result,

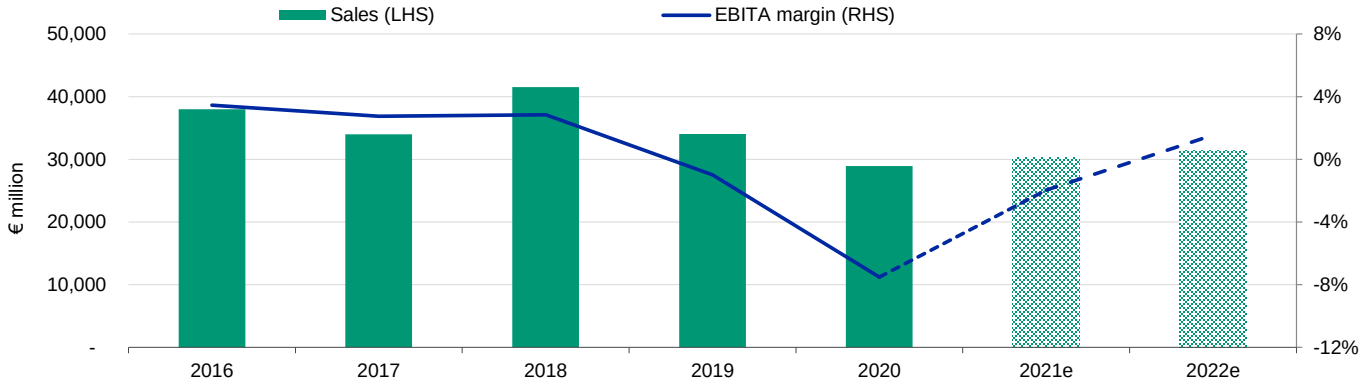
tk's Moody's-adjusted EBITA margin dropped to -7.5% in 2020 from -1% in 2019 and 2.8% in 2018. The only segments that positively contributed to tk's company-adjusted EBIT in 2020 were IC and MS, whereas all other continuing business segments incurred high losses. In particular, SE's negative €946 million company-adjusted EBIT was strained by increased excess capacity and exceptionally narrow steel margins, with steel prices falling to a four-year low in June 2020 and increasing raw material (especially iron ore) costs. In addition, tk's administrative costs remain at a high level and weigh on its profitability, although cost-saving measures have been implemented and have helped reduce its general and administrative costs by 17% in 2020.

To turn around profitability, tk's strategy ("newtk") aims at preparing its weak-performing MT businesses for sale, exit or continuation in partnerships, while focusing on its MX, IC and AT segments, which it plans to develop internally or in alliances. For SE and MS, tk pursues a dual-track strategy, encompassing standalone development or consolidation, including a potential full sale of the steel business, for which it is currently evaluating a non-binding offer from Liberty Steel Group.

Given the significant restructuring required to achieve the targeted profitability improvements, execution risks remain high and the associated costs are difficult to estimate with any certainty at this stage. We, therefore, expect tk's Moody's-adjusted EBITA margin to remain negative in 2021, before reaching adequate levels for the B1 rating in the following two years (3.5% by fiscal 2023), based on its current perimeter.

Exhibit 5

We expect tk's profitability to improve on the back of a market recovery and restructuring



Sources: Company's filings and Moody's Financial Metrics™

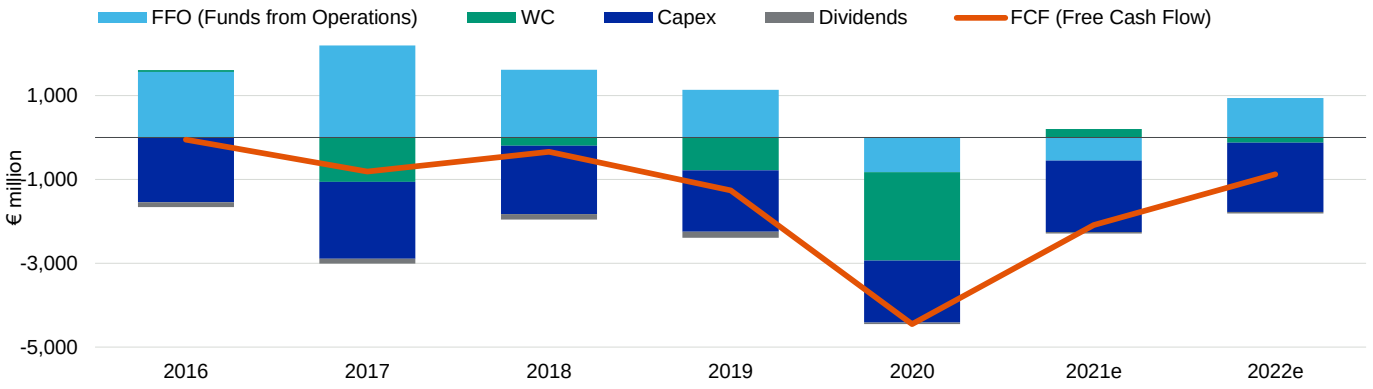
FCF will likely remain negative until fiscal 2023 and leverage high for the B1 rating

The group's persistent negative Moody's-adjusted FCF has reached a record low in fiscal 2020, amounting to negative €4.5 billion or a €5.1 billion drain, excluding the discontinued elevator business. Although significant negative one-off effects, such as the termination of working capital measures (up to €3 billion), a €370 million cartel fine and around €200 million of restructuring cash costs, contributed to the cash burn, FCF excluding these costs still clearly exceeded the group's negative €1.3 billion Moody's-adjusted FCF in fiscal 2019.

For fiscal 2021, the group guided towards continued negative reported FCF before M&A of up to €1.5 billion, followed by expected improvements, while we expect its Moody's-adjusted FCF to remain negative until fiscal 2023. Our forecast reflects a slower recovery in tk's margins over the next three years, increasing capital spending (€1.5 billion plus €140 million annual lease principal payments) and somewhat higher working capital needs than the group projects. We do not expect tk to initiate regular dividends, although such payments, potentially higher restructuring payments or larger acquisitions pose downside risks. That said, a return to at least breakeven FCF is required for a positive rating action, which we currently regard unlikely over the next two years.

Exhibit 6

We expect tk's Moody's-adjusted FCF to improve but remain negative over the next two years



Sources: Company's filings and Moody's Financial Metrics™

Given our expectation of only scheduled debt repayments over the next few years and assuming that the pension deficit will not be funded, a progressive earnings recovery (up to €2 billion EBITDA forecasted by us until fiscal 2023) should help tk reduce its leverage towards 5x Moody's-adjusted debt/EBITDA by fiscal 2023. In the meantime, we expect tk's net leverage to return to 4x net debt/EBITDA (Moody's-adjusted) from fiscal 2022, which are both levels commensurate with a B1 rating.

Environmental, social and governance considerations

As one of the leading steelmakers in Europe, tk faces high environmental risks, mainly related to air pollution and carbon dioxide (CO_2) emissions. As we expect emission allowances in Europe to tighten over the next few years, companies with an insufficient coverage of free allowances will likely see carbon costs increase. We believe tk is sufficiently covered with CO_2 emission rights, although the group does not disclose any detailed information on this matter.

With its Carbon2Chem project (German state funded), tk plans to chemically convert CO_2 from steel mill gases into ammonia, which is used in the production of artificial fertilisers. The group is further developing cleaner steel production by replacing coking coal with hydrogen at one blast furnace in Duisburg. These plans and the ambition to reduce its combined greenhouse gas emissions by 30% by 2030 reflect tk's high awareness of the increasing relevance of environmental matters in its industry.

The key governance aspects for tk include its diverse shareholder base, including the Alfried Krupp von Bohlen und Halbach Foundation (21% of voting rights) and the Swedish investment firm Cevian Capital (around 15%). The partly diverging strategic interests of these parties had created an environment of difficult and lengthy decision-making in the past, although we believe this risk has somewhat softened after the disposal of the elevator business.

In our view, the social considerations most relevant for tk are health and safety, which we understand is a key priority for the group; and a high risk of strikes, with most of tk's German workforce being organised in unions, which are particularly relevant amid the current evaluation of significant organisational changes, including a potential lay off of 11,000 employees.

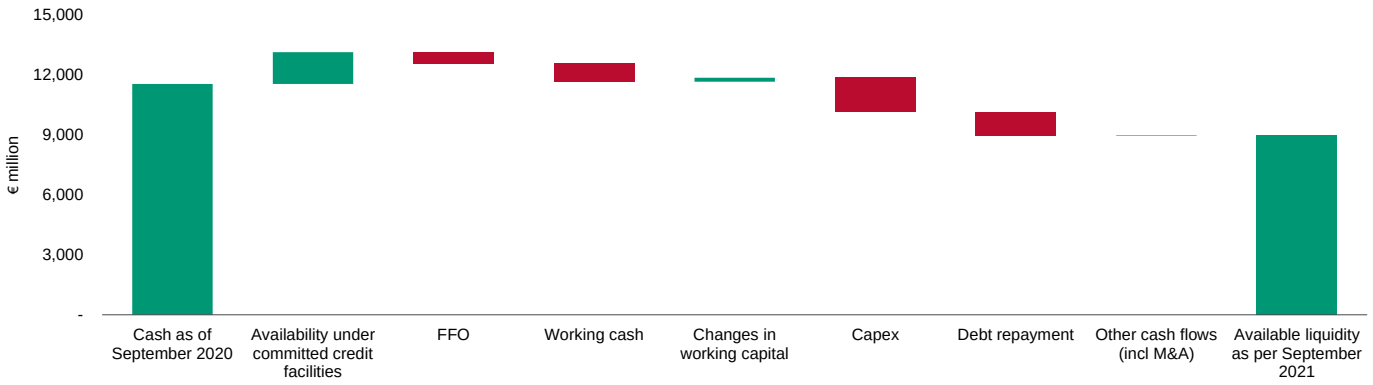
Liquidity analysis

tk's liquidity has strengthened significantly after the disposal of the group's elevator business, and we consider the group's liquidity strong. The €11.5 billion cash position and €1.6 billion available committed credit lines as of 30 September 2020 provide sufficient funding sources for the group's ongoing negative FCF (around €1.5 billion in 2020/21 forecasted), and the scheduled debt repayments of €1.1 billion and €1.5 billion (excluding leases) in fiscal 2021 and fiscal 2022, respectively.

Following the disposal of the elevator business, tk terminated its €2 billion syndicated credit facility in September 2020, which was to mature originally in March 2021. With the termination, tk will save the associated interest costs and not be required to comply with any maintenance covenants in its remaining credit facilities.

Exhibit 7

tk's sizeable cash position will comfortably cover its negative FCF and short-term debt maturities



Sources: Company information and Moody's Investors Service

Methodology and scorecard

The principal methodology used in rating tk is our Manufacturing Methodology (March 2020), which can be found on www.moodys.com. The scorecard-indicated outcome of B1 is currently in line with the assigned rating.

Rating methodology and scorecard factors

Exhibit 8

Rating factors

thyssenkrupp AG

Manufacturing Industry Scorecard [1][2]	Current FY 09/30/2020		Moody's 12-18 Month Forward View As of 12/8/2020 [3]	
Factor 1 : Scale (20%)	**Measure**	**Score**	**Measure**	**Score**
a) Revenue (USD Billion)	$32.4	Aa	$35-$38	Aa
Factor 2 : Business Profile (25%)				
a) Business Profile	Ba	Ba	Ba	Ba
Factor 3 : Profitability and Efficiency (5%)				
a) EBITA Margin	-7.5%	Ca	-2% to 1.5%	Ca
Factor 4 : Leverage and Coverage (35%)				
a) Debt / EBITDA	-14.5x	Ca	>20x	Ca
b) Retained Cash Flow / Net Debt	-26.7%	Ca	-11% to 15%	Caa
c) Free Cash Flow / Debt	-30.1%	Ca	-15% to -7%	Ca
d) EBITA / Interest Expense	-3.4x	Ca	-1.0x to 1.0x	Ca
Factor 5 : Financial Policy (15%)				
a) Financial Policy	Ba	Ba	Ba	Ba
Rating:				
a) Scorecard-Indicated Outcome		B1		B1
b) Actual Rating Assigned				B1

[1] All ratios are based on adjusted financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.
[2] As of fiscal 2020.
[3] This represents Moody's forward view, not the view of the issuer.
Source: Moody's Financial Metrics™

Appendix

Exhibit 9

Peer comparison [1]

(in USD million)	thyssenkrupp AG B1 Developing			CNH Industrial N.V. Baa3 Stable			ArcelorMittal Ba1 Stable			Howmet Aerospace Inc. Ba3 Negative		
	FYE Sep-18	FYE Sep-19	FYE Sep-20	FYE Dec-18	FYE Dec-19	LTM Jun-20	FYE Dec-18	FYE Dec-19	LTM Sep-20	FYE Dec-18	FYE Dec-19	LTM Sep-20
Revenue	$49,430	$38,393	$32,364	$27,831	$26,149	$23,218	$76,033	$70,615	$54,600	$14,014	$14,192	$12,635
EBITDA	$3,011	$1,117	-$1,144	$2,736	$2,392	$1,051	$10,573	$3,941	$1,800	$2,162	$2,463	$2,060
Total Debt	$15,203	$17,865	$17,353	$6,948	$7,284	$8,894	$25,536	$27,778	$27,372	$9,653	$9,040	$7,693
Cash & Cash Equivalents	$3,498	$4,048	$13,550	$4,553	$4,407	$4,638	$2,172	$4,867	$6,617	$2,277	$1,648	$1,365
EBITA margin	2.8%	-1.0%	-7.5%	5.8%	5.3%	0.4%	9.7%	1.4%	-2.1%	11.1%	13.2%	12.7%
EBITA / Int. Exp.	2.2x	-0.6x	-3.4x	3.2x	3.5x	0.3x	7.3x	1.1x	-1.5x	2.8x	3.7x	2.6x
Debt / EBITDA	5.2x	16.5x	-14.5x	2.5x	3.0x	8.5x	2.4x	7.0x	15.2x	4.5x	3.7x	3.7x
RCF / Net Debt	14.8%	7.8%	-26.7%	89.2%	69.1%	27.6%	36.7%	14.4%	9.9%	20.5%	24.9%	20.6%
FCF / Debt	-2.6%	-7.7%	-30.1%	5.7%	-1.6%	-5.8%	2.9%	7.7%	10.4%	6.2%	11.1%	14.3%

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end. LTM = Last 12 months. RUR* = Ratings under review, where UPG = for upgrade and DNG = for downgrade.
Source: Moody's Financial Metrics™

Exhibit 10

Historical Moody's-adjusted debt breakdown [1]

thyssenkrupp AG

(in EUR million)	FYE Sep-15	FYE Sep-16	FYE Sep-17	FYE Sep-18	FYE Sep-19	FYE Sep-20
As Reported Debt	**7,955**	**7,612**	**7,256**	**5,376**	**7,415**	**6,502**
Pensions	4,700	5,408	4,808	6,523	7,616	8,274
Operating Leases	1,008	1,062	1,020	924	1,093	0
Securitizations	226	237	212	248	246	6
Non-Standard Adjustments	14	15	16	18	17	16
Moody's-Adjusted Debt	**13,903**	**14,334**	**13,312**	**13,089**	**16,387**	**14,798**

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end. LTM = Last 12 months. RUR* = Ratings under review, where UPG = for upgrade and DNG = for downgrade.
Source: Moody's Financial Metrics™

Exhibit 11

Historical Moody's-adjusted EBITDA breakdown [1]

thyssenkrupp AG

(in EUR million)	FYE Sep-15	FYE Sep-16	FYE Sep-17	FYE Sep-18	FYE Sep-19	FYE Sep-20
As Reported EBITDA	**2,525**	**2,332**	**2,255**	**2,030**	**602**	**(1,274)**
Pensions	(8)	9	(11)	1	16	(26)
Operating Leases	336	354	340	307	311	0
Securitizations	2	2	2	2	2	1
Unusual	103	(16)	256	205	65	281
Non-Standard Adjustments	(33)	(46)	(15)	(15)	(6)	(4)
Moody's-Adjusted EBITDA	**2,925**	**2,635**	**2,827**	**2,530**	**990**	**(1,022)**

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments. FYE = Financial year-end. LTM = Last 12 months. RUR* = Ratings under review, where UPG = for upgrade and DNG = for downgrade.
Source: Moody's Financial Metrics™

Exhibit 12

Historical Moody's-adjusted financial data

thyssenkrupp AG

EUR million	FYE Sep-15	FYE Sep-16	FYE Sep-17	FYE Sep-18	FYE Sep-19	FYE Sep-20
INCOME STATEMENT						
Revenue	42,778	38,000	41,447	41,534	34,036	28,899
EBITDA	2,925	2,635	2,827	2,530	990	(1,022)
EBIT	1,469	1,312	1,473	1,182	(336)	(2,173)
Interest Expense	806	485	581	545	573	633
BALANCE SHEET						
Cash & Cash Equivalents	4,540	4,111	5,298	3,012	3,713	11,555
Total Debt	13,903	14,334	13,312	13,089	16,387	14,798
Net Debt	9,363	10,223	8,014	10,077	12,674	3,243
CASH FLOW						
Funds from Operations (FFO)	1,700	1,566	2,197	1,618	1,135	(826)
Cash Flow From Operations	1,634	1,610	1,135	1,420	354	(2,935)
Capital Expenditures	(1,538)	(1,542)	(1,828)	(1,632)	(1,465)	(1,477)
Dividends	125	120	122	131	148	40
Free Cash Flow (FCF)	(29)	(52)	(815)	(343)	(1,259)	(4,452)
Retained Cash Flow (RCF)	1,575	1,446	2,075	1,487	987	(866)
RCF / Debt	11.3%	10.1%	15.6%	11.4%	6.0%	-5.9%
FCF / Debt	-0.2%	-0.4%	-6.1%	-2.6%	-7.7%	-30.1%
PROFITABILITY						
EBIT margin %	3.4%	3.5%	3.6%	2.8%	-1.0%	-7.5%
EBITDA margin %	6.8%	6.9%	6.8%	6.1%	2.9%	-3.5%
INTEREST COVERAGE						
EBIT / Interest Expense	1.8x	2.7x	2.5x	2.2x	-0.6x	-3.4x
EBITDA / Interest Expense	3.6x	5.4x	4.9x	4.6x	1.7x	-1.6x
(EBITDA - CAPEX) / Interest Expense	1.7x	2.3x	1.7x	1.7x	-0.8x	-3.9x
LEVERAGE						
Debt / EBITDA	4.8x	5.4x	4.7x	5.2x	16.5x	-14.5x
Net Debt / EBITDA	3.2x	3.9x	2.8x	4.0x	12.8x	-3.2x

Source: Moody's Financial Metrics™

Ratings

Exhibit 13

Category	Moody's Rating
THYSSENKRUPP AG	
Outlook	Developing
Corporate Family Rating	B1
Senior Unsecured	B1/LGD4
Commercial Paper -Dom Curr	NP
Other Short Term -Dom Curr	(P)NP

Source: Moody's Investors Service

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