



HOULIHAN LOKEY

METALS AND ENGINEERED MATERIALS

MARKET UPDATE | FALL 2019



Metals and Engineered Materials Market Update

Dear Clients and Friends,

Houlihan Lokey is pleased to present its Metals and Engineered Materials Update for the 2H 2019 period.

In this update, we have included a spotlight on the importance of recycling to the metals industry, an overview of recent M&A transactions, a public markets overview, an overview of commodity prices and relevant macroeconomic data, and market valuation metrics to assist you in light of ever-changing market conditions, particularly with respect to Section 232 tariffs. We hope you find this update to be an informative resource for you. If you have any questions about any of the content included within or there is additional content that you would like to see in future updates, please do not hesitate to contact us. We look forward to staying in touch with you.

Regards,



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Metals and Engineered Materials Subverticals Covered

BAR AND WIRE DOWNSTREAM PRODUCTS EXTRUSION FABRICATION

FOUNDRY/INTEGRATED AND MINIMILL STEEL PRODUCTION METAL CASTING

METAL FORGING METAL STAMPING MINING CONSUMABLES

MINING AND MINERAL PRODUCTION NONFERROUS METAL PRODUCTION

PIPE AND TUBE PRECIOUS METAL REFINING RECYCLING

SCRAP/SLAG PROCESSING SERVICE CENTER TRADING OPERATIONS

Issue Spotlight — Recycling

In this issue, we highlight the growing importance of providing environmentally friendly recycling services in the metals industry.

With the increasing importance consumers are currently placing on environmental issues, it is clear that manufacturers must be able to produce goods in a way that minimizes waste, whether they are manufacturing an automobile, appliance, consumer good, or food. To that end, a recent survey by management consulting firm A.T. Kearney found that 71% of consumers consider the environmental impact of their purchasing decisions, and more than half of those have adjusted their decision to buy a product labeled as sustainable.

The good news for those in the metals sector is that many key metals, including both steel and aluminum, are infinitely recyclable without any degradation in quality. Steel, which is the most recycled metal globally, has a recycling rate of approximately 85% across all uses, ranging as high as 99% for steel from scrapped cars. More than 90% of the aluminum—generally the most valuable recycled metal—used in building and automotive applications is recycled; approximately 75% of all aluminum that was ever produced is still in use today.

Furthermore, certifications, such as the TRUE Zero Waste certification, have been gaining popularity and prominence. The certification system, which enables facilities to define, pursue, and achieve their zero-waste goals, cut their carbon footprint, and support public health, has been applied to 305 million square feet of space across 160 projects in 29 states and 13 countries.

Perhaps as a corollary to the increasing importance that is being placed on recycling from consumers, investors have placed a focus on the sector over the past few years. Recent notable transactions in the sector include the sale of Gopher Resource, a recycler of used lead batteries, to Energy Capital Partners; the sale of Johnson Controls' Power Solutions division, which includes lead battery manufacturing and recycling operations, to Brookfield Business Partners; and the sale of General Iron Industries, a scrap metal recycler, to Reserve Management Group.

Houlihan Lokey has been particularly active in the sector over the past six months. From advising Mill Rock Capital on its partnership with Venture Metals and acquisition of Versatile Processing Group (as highlighted on page 4), to advising Metallo on its sale to Aurubis, to advising the Creditors Committee of Eco-Bat, Houlihan Lokey has developed significant knowledge and expertise and is a leading franchise in the sector.

#1 M&A Advisor for All U.S. Transactions in 2018

by Thomson Reuters

No. 1 U.S. M&A Advisor 2018 M&A Advisory Rankings All U.S. Transactions

Advisor	Deals
Houlihan Lokey	207
Goldman Sachs & Co	197
JP Morgan	154
Morgan Stanley	135
Jefferies LLC	117

2018 M&A Advisory Rankings All U.S. Industrial Transactions

Advisor	Deals
Houlihan Lokey	45
Goldman Sachs & Co	44
Generational Equity	41
JP Morgan	36
Rothschild & Co	32

Source: Thomson Reuters

Mergers and Acquisitions

We have extensive expertise in mergers, acquisitions, divestitures, activist shareholder and takeover defense, and other related advisory services for a broad range of U.S. and international clients. Our experience in M&A has earned us consistent recognition throughout the industry. In 2018, we were ranked the No. 1 M&A advisor for all U.S. transactions, and we've been ranked No. 1 for U.S. transactions under \$1 billion for the past 10 years, according to Thomson Reuters.

Recent Houlihan Lokey Deals

Houlihan Lokey recently advised Mill Rock Capital on its investment in Venture Metals and the subsequent acquisition of Versatile Processing Group



and



have acquired



Buy-side Advisor

Closed July 2019

Company Overview

Venture Metals procures, processes, and sells nonferrous scrap metal for recycling and remelting purposes, offering tailored, turnkey solutions to collect, remove, sort, process, and sell recycled metal generated as a byproduct of a production process. Versatile Processing Group is a leading industrial processor of nonferrous and other metals serving the manufacturing, electric utility, and metal recycling industries

Key Value Drivers

- This combined platform is expected to create transformative value through meaningful synergies, including an improved collection model, operational synergies, and cross-commercializing the combined customer network, and further M&A as an industry consolidator
- Positioned to drive growth in a market where increasing demand for scrap recycling solutions is inadequately supplied by a highly fragmented, unsophisticated set of local providers

Houlihan Lokey is pleased to announce that MultAlloy, a subsidiary of FloWorks International, has been acquired by Texas Pipe & Supply



a subsidiary of



a portfolio company of



has been acquired by



Sell-side Advisor

Closed July 2019

Company Overview

MultAlloy is a master distributor of stainless steel and specialty alloy pipe, bar, fittings, and flanges

Key Value Drivers

- Unique business model compared to traditional master distributors, focused on serving local customer requirements through a relationship-driven technical sales team, small volumes of difficult-to-source sizes, grades and alloys, and a national footprint that enables just-in-time service to key markets
- Superior sourcing and supplier engagement to develop long-term, strategic partnerships, procure on a high-frequency, low-volume basis, and mitigate against the impact of commodity price swings

Selected Recent M&A News

\$1.9 Billion Steel Mill Opening Near Corpus Christi Expected to Create 600 Jobs

(Chron, July 24, 2019)

“An Indiana company said it will build a \$1.9 billion steel plant near Corpus Christi, the latest in series of steel mill openings and re-openings in Texas that have followed the Trump administration’s stiff tariffs on foreign steel.

Buffalo LLC, a subsidiary of Steel Dynamics of Fort Wayne, Ind., said it would start construction in 2020 with plant scheduled to open in Sinton, about 30 miles west of Corpus Christi, in 2022. Steel Dynamics, one of the largest steel producers in the country, said the mill would have an annual production capacity of about 3 million tons of steel for energy, automotive, construction and appliance manufacturers and create about 600 jobs paying an average of about \$76,000 a year.

Mark Millett, the president and chief executive officer of Steel Dynamics, said in a statement that the project will create ‘well-paying’ positions and economic growth to the surrounding area.

The Buffalo plant may be the latest indicator that tariffs on steel imports imposed by President Donald Trump are giving a lending hand to the U.S. steel industry. In the year after the tariffs were implemented, Steel Dynamics saw its profits up 55 percent in 2018 to nearly \$1.3 billion.

A handful of steel mills have opened or reopened in Texas over the last year. In Houston, a private investment group plans in 2020 to re-open Bellville Tube Co., a steel mill 50 miles west of Houston that was shuttered in 2014 due to the global trade environment, and in Baytown, JSW Steel plans to upgrade an existing steel mill in a \$500 million expansion.

‘Texas remains the premier economic destination in America because of hardworking Texans and job creators like Buffalo, LLC,’ said Governor Abbott in a statement. ‘This [is] a testament to the strong economic climate we have created in the Lone Star State.’”

Alcoa Has Deal to Sell 2 Spanish Plants to Private Equity Investor

(Pittsburgh Business Times, July 5, 2019)

“Alcoa Corp. on Friday announced that it has signed a conditional share purchase agreement with a Swiss private equity investor to acquire the Pittsburgh-based aluminum giant’s Aviles and La Coruna plants in Spain.

Alcoa (NYSE:AA) said it has reached an agreement with the workers’ representatives relating to the transaction with Parter Capital Group AG of Schindellegi, Switzerland. Financial terms were not disclosed. But a final acquisition is subject to a buyer-provided credit facility to support future operations and if the deal cannot be completed by July 31, the collective dismissal and social plan are expected to go into effect on Aug. 1.

Alcoa also said it expects to record restructuring-related charges in the third quarter of 2019, estimated to range from \$100 million to \$140 million, pre- and after-tax, or \$0.54 to \$0.75 per share, depending on whether an acquisition or collective dismissal occurs. Related cash outlays are expected to be approximately \$100 million to \$130 million, with approximately half to be paid in 2019.”

Selected Recent M&A News (cont.)

Liberty Steel Acquires Johnstown Wire Technologies

(The Tribune-Democrat, June 11, 2019)

“Liberty Steel, part of the London-headquartered GFG Alliance, acquired [Johnstown Wire Technologies] from Aterian Investment Partners, a private equity firm, according to announcements made by the two companies on Monday.

‘It’s nothing but good news is the way I see it for Johnstown Wire,’ JWT CEO Jack Miller said. ‘It’s not somebody that’s got a reputation that’s coming in and breaking up businesses and selling off the pieces.’

The company’s structure is expected to remain the same, according to Grant Quasha, GFG Alliance’s chief investment officer in the United States.

‘We’re happy with the management team and workforce,’ Quasha said. ‘And they’ll remain in place as they exist today.’

JWT, a 638,000-square-foot mill that employs 250 workers, is the largest producer of value-added carbon and alloy wire in North America. It is a top-three U.S. producer of the types of steel that Liberty expects will be used to modernize the nation’s infrastructure—CHQ, electro-galvanized, aluminized and spring wire.

More than half of JWT’s output is sold into the transportation sector.

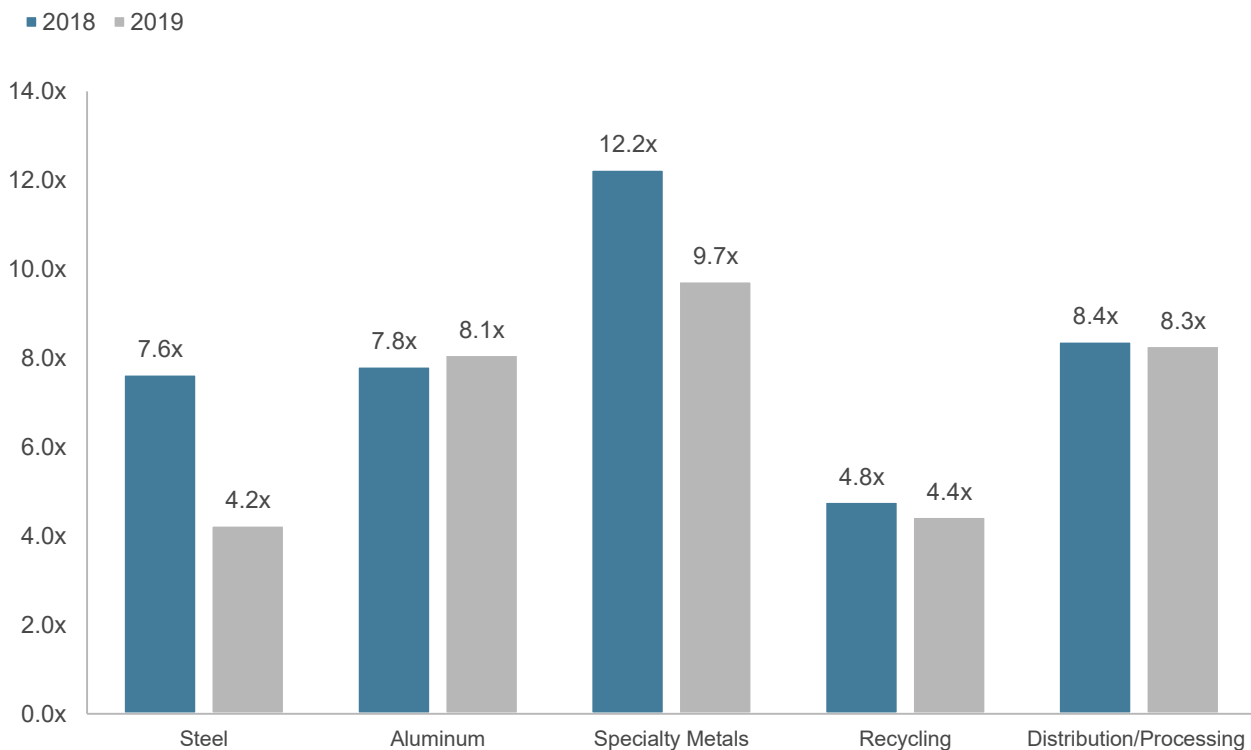
‘They’re looking to grow in the markets that we supply,’ Miller said. ‘What that means directly? I couldn’t tell you at this point.’

Liberty Steel, in its press release, said it intends to ‘drive growth at JWT as the U.S. updates its infrastructure and electricity networks, thereby increasing demand for steel products such as support cables and guard rails for bridges and for electrical power lines.’

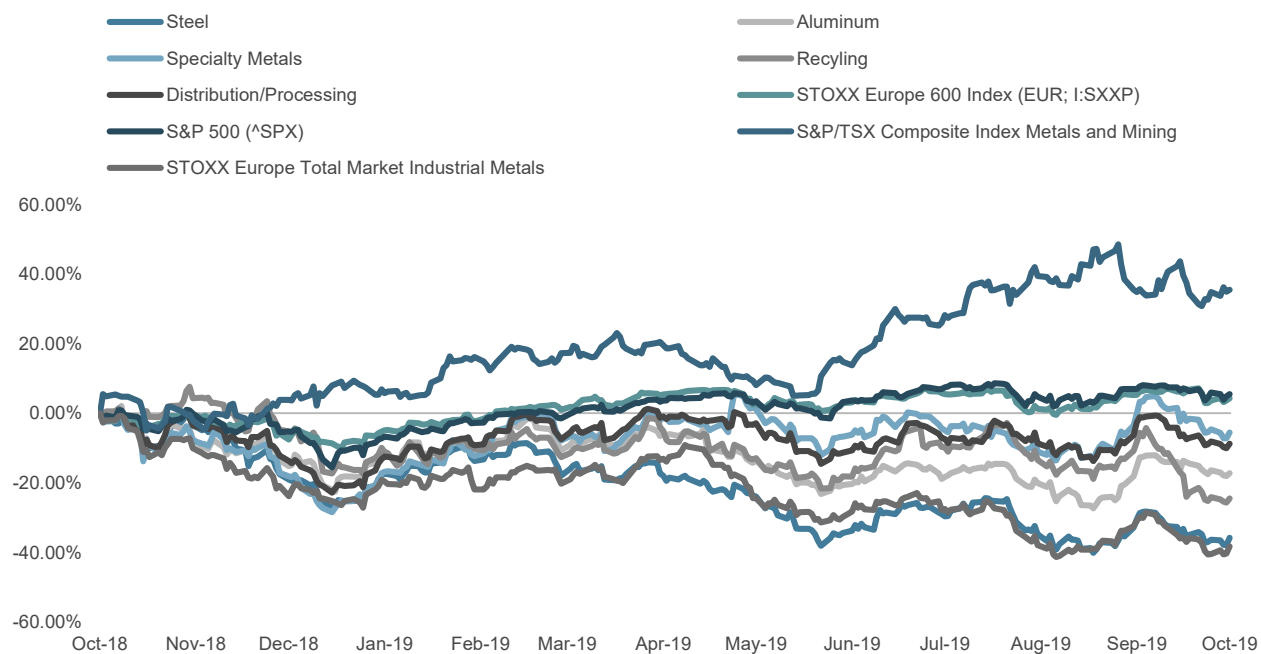
The company already operates melting and rolling operations in Georgetown, South Carolina and Peoria, Illinois.”

Public Markets Overview

Median TEV/EBITDA Multiples



Stock Price Index



Selected Commodity Prices

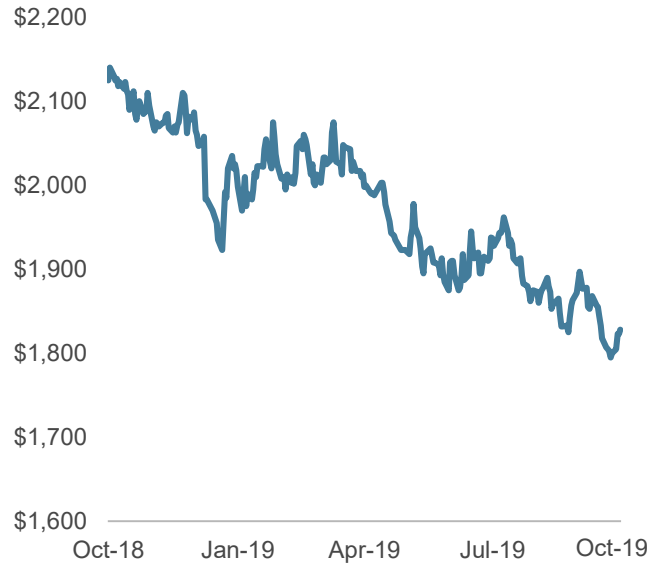
Steel — Hot Rolled Coil

(\$ per short ton)



Aluminum

(\$ per metric ton)



Copper

(\$ per pound)



Nickel

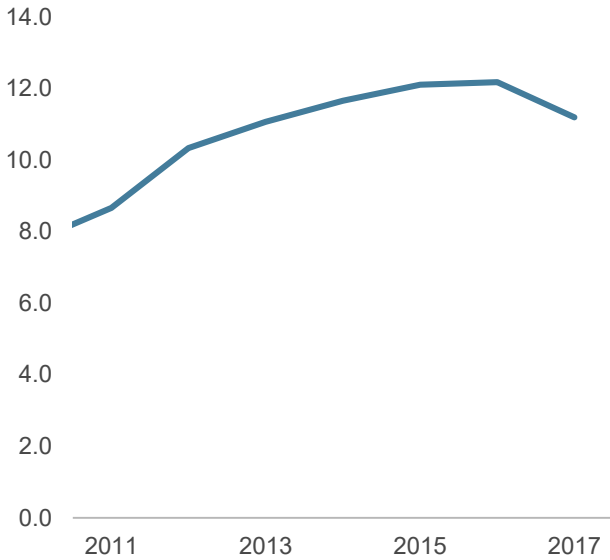
(\$ per metric ton)



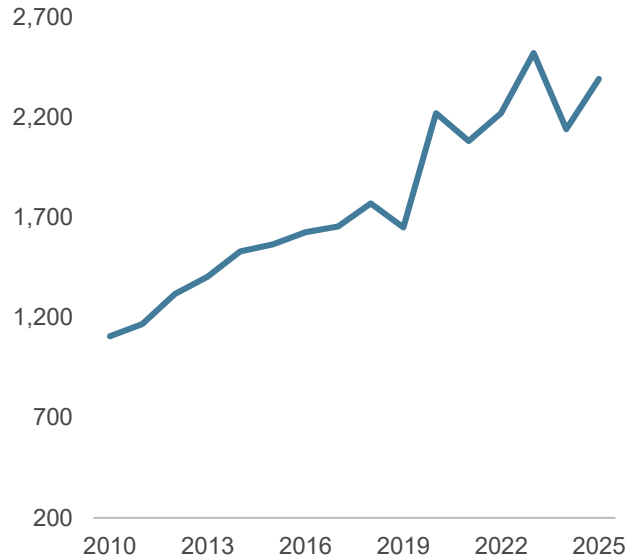
Selected Macroeconomic Data

Annual U.S. Automobile Production

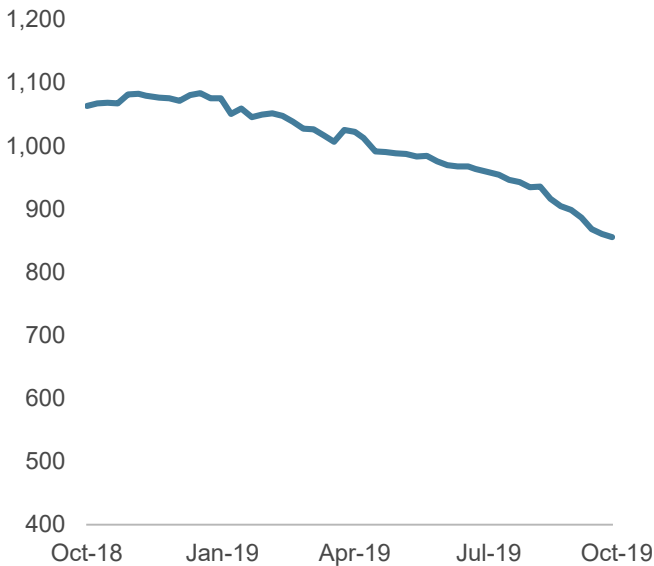
(in millions of units)



Jet Airplane Deliveries

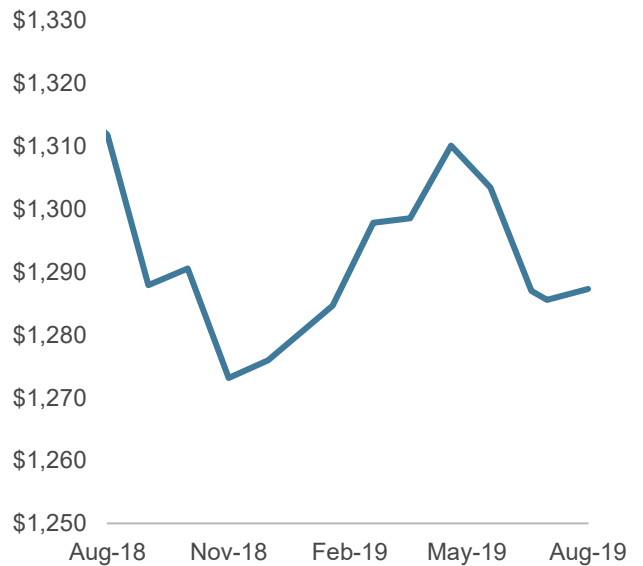


U.S. Oil and Gas Rig Count



U.S. Total Construction Spending

(\$ in billions)



Selected Public Comparables

Steel

(as of 10/11/2019; \$ in millions, except per-share data)

Company Name	Ticker	Stock Price	% of		Equity Value	Enterprise Value	LTM 10/11/2019				Enterprise Value/	
		10/11/2019	52-Week High	52-Week High			Revenue	Margin	EBITDA	Margin	Revenue	EBITDA
AK Steel Corp.	NYSE:AKS	\$2.17	45.1%	\$4.81	\$725	\$3,235	\$6,791	13.9%	\$669	9.8%	0.5x	4.8x
ArcelorMittal	ENXTAM:MT	\$13.60	48.9%	\$27.81	\$14,155	\$26,139	\$75,316	9.8%	\$7,534	10.0%	0.3x	3.5x
Gerdau S.A.	BOVESPA:GGBR4	\$3.01	71.1%	\$4.23	\$5,071	\$8,350	\$11,481	13.0%	\$1,591	13.9%	0.7x	5.2x
Nucor Corp.	NYSE:NUE	\$46.95	72.8%	\$64.48	\$15,222	\$18,602	\$25,031	16.3%	\$3,957	15.8%	0.7x	4.7x
Steel Dynamics, Inc.	NASDAQGS:STLD	\$26.54	61.0%	\$43.50	\$6,408	\$7,812	\$11,715	17.6%	\$1,797	15.3%	0.7x	4.3x
United States Steel Corp.	NYSE:X	\$11.18	37.5%	\$29.84	\$1,731	\$3,738	\$14,464	12.0%	\$1,262	8.7%	0.3x	3.0x
Median							\$13,090	13.4%	\$1,694	11.9%	0.6x	4.5x
Mean							\$24,133	13.7%	\$2,802	12.3%	0.5x	4.3x

Aluminum

(as of 10/11/2019; \$ in millions, except per-share data)

Company Name	Ticker	Stock Price	% of		Equity Value	Enterprise Value	LTM 10/11/2019				Enterprise Value/	
		10/11/2019	52-Week High	52-Week High			Revenue	Margin	EBITDA	Margin	Revenue	EBITDA
Alcoa Corp.	NYSE:AA	\$17.48	43.0%	\$40.68	\$3,468	\$6,578	\$12,164	22.7%	\$2,206	18.1%	0.5x	3.0x
Century Aluminum Co.	NASDAQGS:CENX	\$5.48	51.8%	\$10.57	\$547	\$852	\$1,932	NM	NM	NM	0.4x	NM
Constellation SE	NYSE:CSTM	\$11.12	78.5%	\$14.16	\$1,740	\$4,229	\$6,714	9.4%	\$405	6.0%	0.6x	10.4x
Gränges AB (publ)	OM:GRNG	\$87.00	791.2%	\$11.00	\$782	\$1,107	\$1,367	32.9%	\$142	10.4%	0.8x	7.8x
Hindalco Industries Ltd.	BSE:500440	\$2.50	72.2%	\$3.46	\$5,877	\$11,342	\$18,779	30.5%	\$2,162	11.5%	0.6x	5.2x
Kaiser Aluminum Corp.	NASDAQGS:KALU	\$86.18	74.9%	\$114.99	\$1,547	\$1,807	\$1,553	18.9%	\$189	12.2%	1.2x	9.5x
UACJ Corp.	TSE:5741	\$13.52	53.3%	\$25.38	\$810	\$4,065	\$6,026	10.1%	\$359	6.0%	0.7x	11.3x
Median							\$6,026	20.8%	\$382	10.9%	0.6x	8.7x
Mean							\$6,934	20.7%	\$911	10.7%	0.7x	7.9x

Specialty Metals

(as of 10/11/2019; \$ in millions, except per-share data)

Company Name	Ticker	Stock Price	% of		Equity Value	Enterprise Value	LTM 10/11/2019				Enterprise Value/	
		10/11/2019	52-Week High	52-Week High			Revenue	Margin	EBITDA	Margin	Revenue	EBITDA
Allegheny Technologies Inc.	NYSE:ATI	\$18.18	61.6%	\$29.50	\$2,549	\$3,998	\$4,143	14.9%	\$445	10.7%	1.0x	9.0x
Carpenter Technology Corp.	NYSE:CRS	\$45.08	80.0%	\$56.33	\$2,370	\$2,913	\$2,380	18.7%	\$358	15.0%	1.2x	8.1x
Haynes International, Inc.	NASDAQGS:HAYN	\$28.29	75.7%	\$37.39	\$428	\$414	\$483	11.5%	\$32	6.7%	0.9x	12.8x
Materion Corp.	NYSE:MTRN	\$57.93	80.5%	\$71.97	\$1,192	\$1,167	\$1,195	22.6%	\$76	6.4%	1.0x	15.3x
Median							\$1,787	16.8%	\$217	8.7%	1.0x	10.9x
Mean							\$2,050	16.9%	\$228	9.7%	1.0x	11.3x

Selected Public Comparables

Recycling

(as of 10/11/2019; \$ in millions, except per-share data)

Company Name	Ticker	Stock Price	% of 52-Week High	52-Week High	Equity Value	Enterprise Value	LTM 10/11/2019			Enterprise Value/		
		10/11/2019	High	High	Value	Value	Revenue	Margin	EBITDA	Margin	LTM Revenue	LTM EBITDA
Derichebourg	ENXTPA:DBG	\$3.46	68.6%	\$5.04	\$567	\$693	\$3,184	22.9%	\$202	6.3%	0.2x	3.4x
Schnitzer Steel Industries, Inc.	NASDAQGS:SCHN	\$22.52	77.9%	\$28.90	\$512	\$651	\$2,255	13.0%	\$160	7.1%	0.3x	4.1x
Sims Metal Management Ltd.	ASX:SGM	\$7.05	77.8%	\$9.06	\$1,350	\$1,106	\$4,664	11.7%	\$196	4.2%	0.2x	5.6x
Median							\$3,184	13.0%	\$196	6.3%	0.2x	4.1x
Mean							\$3,368	15.8%	\$186	5.9%	0.2x	4.4x

Distribution/Processing

(as of 10/11/2019; \$ in millions, except per-share data)

Company Name	Ticker	Stock Price	% of 52-Week High	52-Week High	Equity Value	Enterprise Value	LTM 10/11/2019			Enterprise Value/		
		10/11/2019	High	High	Value	Value	Revenue	Margin	EBITDA	Margin	LTM Revenue	LTM EBITDA
Klöckner & Co SE	XTRA:KCO	\$5.78	54.0%	\$10.70	\$559	\$1,258	\$7,690	17.7%	\$155	2.0%	0.2x	8.1x
MRC Global Inc.	NYSE:MRC	\$12.29	64.9%	\$18.93	\$913	\$2,172	\$4,034	17.1%	\$202	5.0%	0.5x	10.8x
NOW Inc.	NYSE:DNOW	\$11.50	69.8%	\$16.47	\$1,116	\$1,173	\$3,147	20.2%	\$127	4.0%	0.4x	9.2x
Olympic Steel, Inc.	NASDAQGS:ZEUS	\$10.34	48.3%	\$21.41	\$156	\$447	\$1,762	18.3%	\$42	2.4%	0.3x	10.6x
Reliance Steel & Aluminum Co.	NYSE:RS	\$95.57	90.8%	\$105.25	\$6,666	\$8,733	\$11,629	28.1%	\$1,165	10.0%	0.8x	7.5x
Russel Metals Inc.	TSX:RUS	\$14.97	71.0%	\$21.08	\$933	\$1,380	\$3,230	19.0%	\$243	7.5%	0.4x	5.7x
Ryerson Holding Corp.	NYSE:RYI	\$6.63	57.5%	\$11.53	\$312	\$1,537	\$4,846	17.6%	\$242	5.0%	0.3x	6.4x
Worthington Industries, Inc.	NYSE:WOR	\$33.38	74.5%	\$44.78	\$1,934	\$2,747	\$3,627	12.5%	\$211	5.8%	0.8x	13.0x
Median							\$3,831	18.0%	\$206	5.0%	0.4x	8.7x
Mean							\$4,996	18.8%	\$298	5.2%	0.4x	8.9x

Recent Transactions

Metals and Engineered Materials: 2019 Transactions

(\$ in millions)

Announced Date	Target	Target Description	Acquirer	Deal Value	Price/			Implied EV	EV/	
					LTM Earnings	BV	TBV		Revenue	EBITDA
Aug-19	Venture Metals, LLC	Recycling and remelting of nonferrous metal	Mill Rock Capital Management LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aug-19	Versatile Processing Group Inc.	Industrial processor of nonferrous metal	Venture Metals, LLC	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aug-19	City Pipe & Supply Corp.	Distributor of pipes, valves, and fittings	Russel Metals Inc.	\$120	N/A	N/A	N/A	\$120	0.6x	N/A
Aug-19	Northside Industries Inc.	Metal fabrication company	Decisive Dividend Corp.	\$12	N/A	N/A	N/A	\$12	0.9x	3.7x
Jul-19	MultAlloy, Inc.	Distributor of stainless steel	Texas Pipe & Supply Co.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jul-19	Alcoa Corp. — Spanish plants	Producer of aluminum products	PARTER Capital Group AG	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jun-19	Johnstown Wire Technologies	Producer of carbon and alloy wire	Liberty Steel	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jun-19	ATI — forging assets	Specialty materials manufacturer	Wynnchurch Capital, LLC	\$37	N/A	N/A	N/A	N/A	N/A	N/A
May-19	Atlantic Gold Corp.	Gold exploration and development	Nord Pacific Ltd.	\$595	N/A	4.3x	4.3x	\$569	5.3x	9.5x
May-19	Kauffman Engineering, LLC	Electrical wire manufacturer	Monomoy Capital Partners	N/A	N/A	N/A	N/A	N/A	N/A	N/A
May-19	Steel-Craft Corp.	Full-service fabricator	MiddleGround Capital	N/A	N/A	N/A	N/A	N/A	N/A	N/A
May-19	700 Valve Supply LLC	Distributor of industrial valves	BBH Capital Partners	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Apr-19	International Wire Group	Manufacturer of engineered wire products	Atlas Holdings LLC	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Apr-19	Anvil International	Manufacturer of piping systems	Smith-Cooper International	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Apr-19	Peterson American Corp.	Manufacturer of engineered metal products	MiddleGround Capital	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Apr-19	Global Brass and Copper Inc.	Fabrication of nonferrous products	Wieland-Werke AG	\$1,320	N/A	N/A	N/A	\$1,210	0.7x	10.1x
Mar-19	IPSCO Tubulars Inc.	Production of tubular goods	Tenaris S.A.	\$1,287	N/A	N/A	N/A	\$1,287	0.9x	7.8x
Mar-19	Sabre Industries, Inc.	Infrastructure solutions	The Jordan Company, LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feb-19	Newmont Goldcorp Corp.	Exploration of gold, copper, and silver	Barrick Gold Corp.	\$23,209	49.x	1.7x	1.8x	\$19,764	2.7x	7.3x
Feb-19	Paragon Metals, Inc.	Manufacturer of engineered components	Stelllex Capital Management LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feb-19	United Steel Supply, LLC	Distributor of galvanized steel products	Steel Dynamics, Inc.	\$134	N/A	N/A	N/A	\$165	N/A	5.0x
Jan-19	California Brazing	CNC machining and heat treatment	Trive Capital	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: Screening criteria includes select FY19 metals and mining transactions more than \$10 million in deal value
Source: SNL, S&P Capital IQ, and public filings

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