

# PENDO ADVISORS, LLC

North American Industry Market Multiples – As of June 30, 2019

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Source: CapitalIQ	Stock Price Multiples			Enterprise Value Multiples			EBITDA Margin		EBITDA Growth	
Median Values	LTM P/E	NTM P/E	PEG	LTM EBITDA	NTM EBITDA	LTM Revenue	3-yr avg.	LTM	3-yr CAGR	NTM
<b>Energy</b>	<b>12.8x</b>	<b>12.3x</b>	<b>1.69x</b>	<b>7.1x</b>	<b>5.9x</b>	<b>2.22x</b>	<b>20.3%</b>	<b>19.8%</b>	<b>14.3%</b>	<b>6.9%</b>
Coal	7.5x	8.8x	3.46x	5.1x	5.5x	1.95x	14.5%	11.6%	(1.1%)	(7.9%)
Equipment & Services	16.1x	15.7x	0.84x	7.7x	6.0x	1.10x	11.0%	12.1%	4.6%	0.9%
Integrated Oil & Gas	15.2x	12.8x	1.35x	6.6x	5.8x	1.68x	20.4%	19.5%	20.1%	(4.8%)
Oil & Gas Exploration / Production	9.0x	11.0x	0.99x	5.0x	4.4x	2.91x	42.0%	42.7%	21.6%	8.6%
Oil & Gas Refining / Marketing	14.5x	10.6x	1.26x	8.9x	7.4x	0.51x	6.8%	3.3%	3.4%	(1.1%)
Oil & Gas Storage / Transportation	15.0x	13.6x	2.62x	11.5x	9.9x	4.20x	30.6%	28.4%	11.7%	7.9%
<b>Industrials</b>	<b>18.5x</b>	<b>15.9x</b>	<b>1.29x</b>	<b>11.4x</b>	<b>9.5x</b>	<b>1.36x</b>	<b>9.7%</b>	<b>9.2%</b>	<b>7.2%</b>	<b>9.3%</b>
Aerospace & Defense	20.2x	17.8x	1.80x	13.3x	11.8x	1.84x	12.1%	11.4%	7.1%	12.9%
Building Products	18.0x	15.6x	1.29x	10.6x	8.8x	1.27x	10.5%	10.8%	9.6%	5.4%
Commercial & Professional Services	18.7x	18.1x	1.30x	11.8x	10.1x	1.41x	9.6%	8.7%	5.5%	10.9%
Construction & Engineering	19.7x	15.1x	1.19x	10.1x	8.0x	0.74x	5.8%	6.1%	12.7%	15.0%
Machinery	21.6x	16.2x	1.37x	11.8x	10.1x	1.56x	11.8%	12.3%	8.1%	7.9%
Transportation	17.0x	12.8x	1.03x	8.1x	6.8x	1.26x	15.1%	13.4%	4.3%	7.4%
<b>Materials</b>	<b>17.2x</b>	<b>14.2x</b>	<b>1.43x</b>	<b>8.4x</b>	<b>7.5x</b>	<b>1.83x</b>	<b>13.2%</b>	<b>13.7%</b>	<b>9.5%</b>	<b>4.8%</b>
Chemicals	18.0x	13.1x	1.31x	9.7x	8.8x	2.14x	13.8%	13.7%	4.9%	1.8%
Construction Materials	20.3x	24.4x	1.50x	10.2x	9.7x	1.62x	19.8%	21.6%	8.0%	9.2%
Containers & Packaging	18.5x	14.4x	1.75x	9.4x	8.7x	1.43x	14.3%	14.4%	9.9%	5.3%
Metals & Mining	14.4x	13.7x	1.24x	7.1x	6.0x	2.15x	11.1%	12.7%	16.2%	12.8%
Paper & Forest Products	9.1x	14.4x	1.09x	6.4x	7.4x	0.85x	10.2%	12.6%	9.4%	(8.6%)
<b>Consumer Discretionary</b>	<b>17.6x</b>	<b>15.3x</b>	<b>1.30x</b>	<b>11.2x</b>	<b>9.8x</b>	<b>1.31x</b>	<b>10.3%</b>	<b>8.8%</b>	<b>3.5%</b>	<b>4.9%</b>
Automobile Manufacturers	12.2x	9.7x	0.65x	10.9x	7.4x	1.06x	9.1%	8.0%	(0.7%)	(0.1%)
Auto Parts & Equipment	13.5x	8.8x	1.37x	5.8x	5.4x	0.85x	9.7%	9.3%	7.8%	2.6%
Consumer Durables & Apparel	17.5x	13.7x	1.08x	10.7x	9.2x	1.10x	9.6%	8.2%	2.1%	6.7%
Hotels, Restaurants & Leisure	22.0x	20.3x	1.77x	11.9x	10.5x	2.31x	17.6%	16.7%	5.3%	5.5%
Media	16.4x	14.0x	1.32x	9.2x	8.4x	2.37x	18.8%	17.6%	5.8%	4.3%
Retailing	15.4x	13.6x	1.27x	10.7x	10.0x	0.88x	8.3%	6.4%	2.1%	3.6%
<b>Consumer Staples</b>	<b>23.6x</b>	<b>21.8x</b>	<b>2.29x</b>	<b>12.8x</b>	<b>12.0x</b>	<b>1.89x</b>	<b>7.8%</b>	<b>5.7%</b>	<b>3.0%</b>	<b>5.5%</b>
Beverages	27.7x	23.9x	1.97x	16.2x	16.0x	3.06x	12.3%	12.9%	10.6%	5.5%
Food Products	24.7x	22.1x	2.67x	13.1x	12.0x	1.54x	8.4%	7.4%	0.6%	3.1%
Food & Staples Retailing	22.8x	16.3x	2.00x	11.2x	9.6x	0.61x	4.9%	4.2%	1.4%	7.3%
Household & Personal Products	24.6x	22.2x	2.69x	13.6x	12.7x	3.19x	9.9%	5.7%	5.5%	8.6%
<b>Healthcare</b>	<b>30.7x</b>	<b>25.1x</b>	<b>1.84x</b>	<b>15.5x</b>	<b>15.4x</b>	<b>6.76x</b>	<b>1.3%</b>	<b>(5.2%)</b>	<b>8.9%</b>	<b>8.6%</b>
Biotechnology	21.6x	20.6x	1.12x	10.7x	12.5x	12.50x	(60.5%)	(49.9%)	8.3%	10.0%
Healthcare Equipment & Supplies	42.4x	31.6x	2.21x	22.5x	19.5x	5.27x	(1.8%)	1.9%	13.4%	9.7%
Healthcare Services	20.8x	23.3x	1.54x	12.6x	11.3x	2.05x	7.0%	5.8%	7.7%	9.8%
Pharmaceuticals	18.9x	19.4x	1.30x	11.3x	14.1x	13.10x	1.1%	(45.5%)	6.7%	9.8%
<b>Information Technology</b>	<b>27.5x</b>	<b>22.2x</b>	<b>1.62x</b>	<b>14.9x</b>	<b>12.9x</b>	<b>2.63x</b>	<b>5.1%</b>	<b>4.7%</b>	<b>11.5%</b>	<b>7.9%</b>
Communications Equipment	25.8x	20.7x	1.57x	14.1x	10.9x	1.35x	4.4%	4.3%	(0.5%)	11.5%
Hardware, Storage & Peripherals	17.0x	17.1x	1.38x	11.1x	9.0x	1.40x	6.7%	6.5%	2.8%	3.6%
Internet Software & Services	40.5x	28.1x	1.87x	19.4x	17.3x	4.33x	2.2%	2.2%	11.2%	11.8%
IT Services	35.7x	21.2x	1.80x	15.3x	12.1x	2.49x	10.1%	8.4%	10.2%	8.7%
Semiconductors	32.5x	22.4x	1.40x	19.1x	16.6x	3.78x	13.7%	8.8%	11.9%	(10.9%)
Software	48.0x	36.6x	2.04x	30.8x	25.0x	5.30x	(6.5%)	(4.3%)	11.9%	15.8%
Technology Hardware & Equipment	19.0x	19.0x	1.38x	11.3x	10.2x	1.33x	4.9%	4.7%	7.5%	7.7%
<b>Telecommunications</b>	<b>20.4x</b>	<b>17.9x</b>	<b>1.33x</b>	<b>10.6x</b>	<b>9.6x</b>	<b>2.58x</b>	<b>15.4%</b>	<b>11.5%</b>	<b>5.9%</b>	<b>5.5%</b>
Alternative Carriers	102.1x	50.1x	1.05x	19.4x	15.0x	4.39x	16.1%	12.5%	9.5%	8.7%
Integrated Telecommunication Services	12.8x	14.2x	2.49x	6.6x	7.7x	2.04x	25.9%	25.5%	5.6%	5.6%
Wireless Telecommunication Services	22.9x	27.9x	2.46x	9.1x	7.9x	1.77x	20.8%	20.1%	16.1%	2.6%
<b>Utilities</b>	<b>22.4x</b>	<b>20.9x</b>	<b>3.77x</b>	<b>13.0x</b>	<b>11.8x</b>	<b>4.46x</b>	<b>30.7%</b>	<b>32.3%</b>	<b>4.3%</b>	<b>8.0%</b>
Electric Utilities	22.0x	20.3x	3.78x	12.7x	11.4x	4.28x	30.7%	32.9%	4.6%	7.4%
Gas Utilities	23.0x	20.9x	4.11x	12.3x	12.4x	3.11x	24.2%	21.2%	2.8%	5.1%
Water Utilities	36.6x	30.4x	4.12x	19.7x	18.5x	8.55x	41.1%	37.9%	1.7%	8.1%
	<b>Price / Earnings Multiples</b>			<b>Price / BV Multiples</b>			<b>Net Income Margin</b>		<b>Return on Equity</b>	
	LTM P/E	NTM P/E	PEG	Book Value		Tangible BV	3-yr avg.	LTM	3-yr avg.	LTM
<b>Financials</b>	<b>13.0x</b>	<b>11.6x</b>	<b>1.31x</b>		<b>1.18x</b>	<b>1.33x</b>	<b>18.3%</b>	<b>23.9%</b>	<b>8.2%</b>	<b>9.8%</b>
Commercial Banks	10.2x	9.6x	1.67x		1.32x	1.69x	27.4%	29.9%	13.0%	13.1%
Investment Banking & Brokerage	13.8x	11.1x	0.97x		1.82x	2.09x	4.0%	9.4%	7.1%	11.2%
Insurance	15.4x	12.5x	1.53x		1.24x	1.45x	7.1%	5.6%	8.8%	8.1%

**Merger & Acquisition Advisory**  
**Fairness & Solvency Opinions**

**Private Placements**  
**Restructuring Advisory**

**Business & Asset Valuation**  
**ESOP / ERISA Advisory**

# PENDO ADVISORS, LLC

Year-Over-Year Trend Analysis: June 2018 to June 2019

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## Stock Price / LTM EPS: June 2018 to June 2019

	Year-Over-Year		Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
	Delta	% Delta													
Energy	(3.9x)	(23.4%)	16.7x	15.9x	16.2x	16.2x	14.1x	12.8x	10.7x	11.6x	12.9x	12.8x	13.0x	12.4x	12.8x
Industrials	(3.3x)	(15.1%)	21.8x	22.1x	21.3x	20.9x	17.5x	17.3x	15.7x	17.8x	19.0x	18.7x	19.5x	17.4x	18.5x
Materials	1.2x	7.5%	16.0x	16.4x	15.7x	15.4x	14.0x	13.0x	12.6x	14.4x	16.1x	16.2x	16.8x	15.9x	17.2x
Consumer Discretionary	(1.2x)	(6.4%)	18.8x	18.6x	18.9x	19.1x	17.4x	16.9x	14.8x	16.6x	17.4x	17.2x	18.7x	17.2x	17.6x
Consumer Staples	2.9x	14.0%	20.7x	20.3x	20.5x	21.0x	20.5x	20.9x	19.5x	20.1x	21.6x	23.6x	24.1x	22.8x	23.6x
Healthcare	2.3x	8.1%	28.4x	29.1x	29.8x	31.3x	28.9x	31.9x	26.9x	29.4x	28.3x	28.9x	28.1x	30.0x	30.7x
Information Technology	(4.1x)	(13.0%)	31.6x	30.9x	31.9x	30.1x	27.7x	27.6x	25.7x	26.2x	26.4x	27.6x	29.6x	26.2x	27.5x
Telecommunications	6.6x	47.8%	13.8x	16.2x	15.6x	15.8x	15.7x	15.4x	14.0x	15.6x	18.2x	19.6x	20.6x	21.2x	20.4x
Utilities	0.4x	1.8%	22.0x	22.8x	21.7x	21.9x	21.0x	20.5x	19.6x	20.1x	22.0x	22.7x	22.5x	21.5x	22.4x
Financials	(5.8x)	(30.9%)	18.8x	17.9x	17.9x	17.6x	15.6x	15.4x	14.0x	13.4x	13.7x	13.2x	13.2x	12.8x	13.0x

## Stock Price / NTM EPS: June 2018 to June 2019

	Year-Over-Year		Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
	Delta	% Delta													
Energy	(4.2x)	(25.5%)	16.5x	16.3x	15.2x	15.2x	13.6x	12.4x	11.4x	14.5x	15.1x	15.0x	14.7x	12.2x	12.3x
Industrials	(1.8x)	(10.2%)	17.7x	18.1x	17.7x	17.8x	15.2x	15.4x	13.4x	14.9x	15.9x	15.4x	15.9x	14.7x	15.9x
Materials	(0.3x)	(2.1%)	14.5x	14.2x	13.4x	13.1x	12.1x	12.0x	11.3x	13.2x	14.0x	13.4x	13.5x	12.0x	14.2x
Consumer Discretionary	(1.2x)	(7.3%)	16.5x	16.8x	17.0x	17.2x	15.3x	15.2x	13.9x	14.9x	16.3x	15.9x	16.5x	15.0x	15.3x
Consumer Staples	1.7x	8.5%	20.1x	20.3x	20.8x	20.2x	20.0x	20.4x	18.8x	20.5x	19.3x	20.0x	20.4x	20.7x	21.8x
Healthcare	2.1x	9.1%	23.0x	23.6x	23.9x	23.9x	21.8x	23.5x	21.9x	23.4x	24.4x	24.0x	23.6x	24.8x	25.1x
Information Technology	0.1x	0.5%	22.1x	21.4x	22.9x	21.8x	19.3x	19.7x	18.2x	19.5x	22.3x	22.8x	23.8x	21.3x	22.2x
Telecommunications	0.0x	0.0%	17.9x	27.0x	29.6x	19.4x	18.0x	17.9x	16.7x	18.1x	17.0x	18.0x	18.7x	17.7x	17.9x
Utilities	1.6x	8.3%	19.3x	19.2x	18.9x	18.7x	19.0x	19.1x	18.5x	19.3x	20.1x	20.8x	20.8x	19.6x	20.9x
Financials	(2.4x)	(17.1%)	14.0x	13.6x	13.8x	13.3x	12.0x	12.2x	10.6x	11.6x	12.1x	11.4x	11.7x	11.2x	11.6x

## Enterprise Value / LTM EBITDA: June 2018 to June 2019

	Year-Over-Year		Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
	Delta	% Delta													
Energy	(3.3x)	(32.0%)	10.4x	10.2x	10.1x	10.2x	9.0x	8.1x	7.1x	7.6x	7.6x	6.9x	6.8x	6.9x	7.1x
Industrials	(0.4x)	(3.4%)	11.8x	12.1x	11.9x	11.8x	10.6x	10.5x	9.7x	10.4x	10.7x	10.6x	11.0x	10.7x	11.4x
Materials	(1.1x)	(11.8%)	9.5x	9.3x	8.7x	8.8x	7.8x	7.5x	7.1x	7.9x	8.1x	8.3x	8.5x	7.9x	8.4x
Consumer Discretionary	0.4x	3.7%	10.8x	10.7x	10.4x	10.5x	9.9x	9.9x	8.9x	9.5x	9.6x	9.8x	10.1x	10.5x	11.2x
Consumer Staples	0.3x	2.4%	12.5x	12.5x	12.6x	12.2x	12.2x	12.2x	11.6x	12.2x	12.7x	12.5x	12.1x	12.6x	12.8x
Healthcare	(0.7x)	(4.3%)	16.2x	16.2x	16.4x	16.6x	15.5x	16.3x	14.3x	15.2x	15.6x	15.7x	16.1x	16.2x	15.5x
Information Technology	(1.6x)	(9.7%)	16.5x	16.6x	16.9x	15.6x	14.2x	14.1x	12.8x	13.5x	15.1x	14.5x	15.6x	14.4x	14.9x
Telecommunications	2.9x	36.8%	7.8x	8.7x	8.6x	10.1x	9.8x	9.8x	9.0x	9.7x	9.5x	9.8x	10.0x	10.3x	10.6x
Utilities	1.3x	11.1%	11.7x	11.6x	11.7x	11.6x	11.7x	11.8x	11.6x	12.0x	12.6x	12.8x	12.8x	12.4x	13.0x

## Enterprise Value / NTM EBITDA: June 2018 to June 2019

	Year-Over-Year		Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
	Delta	% Delta													
Energy	(1.4x)	(19.5%)	7.4x	7.1x	6.8x	6.8x	6.1x	5.9x	5.4x	6.2x	6.5x	6.3x	6.2x	5.8x	5.9x
Industrials	(0.4x)	(4.0%)	9.9x	10.1x	9.9x	10.0x	8.9x	8.9x	8.1x	8.6x	9.1x	8.9x	9.2x	9.1x	9.5x
Materials	(0.1x)	(1.3%)	7.6x	7.4x	7.0x	6.9x	6.7x	6.4x	6.3x	6.9x	7.4x	7.0x	7.0x	6.8x	7.5x
Consumer Discretionary	0.5x	5.8%	9.3x	9.2x	9.1x	9.1x	8.4x	8.6x	7.7x	8.4x	8.5x	8.5x	9.0x	9.3x	9.8x
Consumer Staples	(0.3x)	(2.4%)	12.3x	12.4x	12.3x	12.3x	11.8x	11.4x	10.5x	11.2x	11.5x	11.7x	11.9x	11.8x	12.0x
Healthcare	1.7x	12.4%	13.7x	14.2x	15.0x	14.9x	13.7x	14.1x	13.0x	14.1x	14.4x	14.7x	15.1x	13.8x	15.4x
Information Technology	(0.4x)	(3.0%)	13.3x	13.2x	13.9x	13.0x	11.6x	11.6x	10.5x	11.4x	12.7x	12.6x	13.0x	12.4x	12.9x
Telecommunications	1.8x	22.5%	7.9x	7.6x	7.8x	9.5x	9.0x	9.0x	8.1x	9.1x	9.4x	9.4x	9.8x	9.7x	9.6x
Utilities	1.3x	12.4%	10.5x	10.3x	10.5x	10.8x	10.8x	10.8x	10.5x	10.6x	11.0x	11.7x	11.6x	11.4x	11.8x

## Enterprise Value / LTM Revenue: June 2018 to June 2019

	Year-Over-Year		Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
	Delta	% Delta													
Energy	(1.26x)	(36.2%)	3.48x	3.44x	3.12x	3.11x	2.79x	2.57x	2.24x	2.42x	2.42x	2.42x	2.45x	2.28x	2.22x
Industrials	(0.13x)	(8.7%)	1.49x	1.52x	1.50x	1.48x	1.34x	1.34x	1.21x	1.29x	1.35x	1.28x	1.34x	1.29x	1.36x
Materials	(0.24x)	(11.6%)	2.07x	2.00x	1.88x	1.84x	1.60x	1.61x	1.62x	1.74x	1.77x	1.78x	1.75x	1.67x	1.83x
Consumer Discretionary	(0.21x)	(13.8%)	1.52x	1.49x	1.45x	1.26x	1.18x	1.21x	1.10x	1.21x	1.14x	1.15x	1.18x	1.28x	1.31x
Consumer Staples	0.11x	6.2%	1.78x	1.79x	1.76x	1.92x	2.05x	2.01x	1.88x	1.96x	1.90x	1.97x	1.91x	1.95x	1.89x
Healthcare	0.91x	15.6%	5.85x	5.87x	6.39x	6.26x	5.80x	5.96x	5.40x	5.95x	6.32x	6.37x	6.39x	6.39x	6.76x
Information Technology	0.03x	1.2%	2.60x	2.71x	2.86x	2.59x	2.38x	2.32x	2.12x	2.31x	2.53x	2.45x	2.66x	2.53x	2.63x
Telecommunications	0.04x	1.6%	2.54x	2.59x	2.60x	2.70x	2.67x	2.57x	2.25x	2.47x	2.53x	2.63x	2.65x	2.77x	2.58x
Utilities	0.50x	12.6%	3.96x	4.03x	4.05x	3.99x	4.11x	4.06x	3.96x	4.22x	4.31x	4.36x	4.28x	4.22x	4.46x

Merger & Acquisition Advisory  
Fairness & Solvency Opinions

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Restructuring Advisory

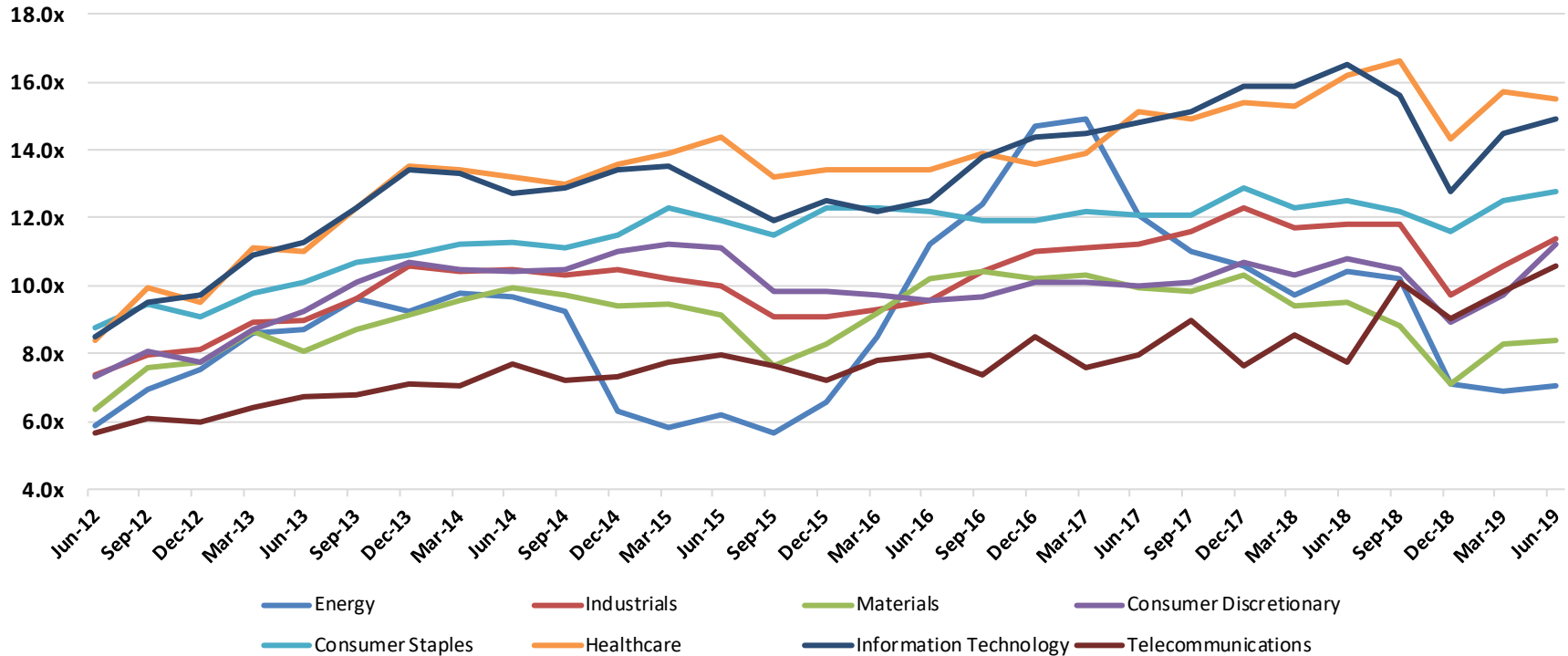
Business & Asset Valuation  
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## Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Energy	5.9x	7.0x	7.5x	8.6x	8.7x	9.6x	9.3x	9.8x	9.7x	9.2x	6.3x	5.8x	6.2x	5.7x	6.6x	8.5x	11.2x	12.4x	14.7x	14.9x	12.1x	11.0x	10.6x	9.7x	10.4x	10.2x	7.1x	6.9x	7.1x
Industrials	7.4x	8.0x	8.1x	8.9x	9.0x	9.6x	10.6x	10.4x	10.5x	10.3x	10.5x	10.2x	10.0x	9.1x	9.1x	9.3x	9.6x	10.4x	11.0x	11.1x	11.2x	11.6x	12.3x	11.7x	11.8x	11.8x	9.7x	10.6x	11.4x
Materials	6.4x	7.6x	7.8x	8.7x	8.1x	8.7x	9.1x	9.6x	9.9x	9.7x	9.4x	9.5x	9.1x	7.7x	8.3x	9.2x	10.2x	10.4x	10.2x	10.3x	9.9x	9.9x	10.3x	9.4x	9.5x	8.8x	7.1x	8.3x	8.4x
Consumer Discretionary	7.3x	8.1x	7.8x	8.7x	9.3x	10.1x	10.7x	10.5x	10.4x	10.5x	11.0x	11.2x	11.1x	9.9x	9.8x	9.8x	9.6x	9.7x	10.1x	10.1x	10.0x	10.1x	10.7x	10.3x	10.8x	10.5x	8.9x	9.8x	11.2x
Consumer Staples	8.8x	9.5x	9.1x	9.8x	10.1x	10.7x	10.9x	11.2x	11.3x	11.1x	11.5x	12.3x	11.9x	11.5x	12.3x	12.3x	12.2x	11.9x	11.9x	12.2x	12.1x	12.1x	12.9x	12.3x	12.5x	12.2x	11.6x	12.5x	12.8x
Healthcare	8.4x	9.9x	9.5x	11.1x	11.0x	12.3x	13.5x	13.4x	13.2x	13.0x	13.6x	13.9x	14.4x	13.2x	13.4x	13.4x	13.4x	13.9x	13.6x	13.9x	15.1x	14.9x	15.4x	15.3x	16.2x	16.6x	14.3x	15.7x	15.5x
Information Technology	8.5x	9.5x	9.8x	10.9x	11.3x	12.3x	13.4x	13.3x	12.7x	12.9x	13.4x	13.5x	12.7x	11.9x	12.5x	12.2x	12.5x	13.8x	14.4x	14.5x	14.8x	15.1x	15.9x	15.9x	16.5x	15.6x	12.8x	14.5x	14.9x
Telecommunications	5.7x	6.1x	6.0x	6.4x	6.7x	6.8x	7.1x	7.1x	7.7x	7.2x	7.3x	7.8x	8.0x	7.6x	7.2x	7.8x	8.0x	7.4x	8.5x	7.6x	8.0x	9.0x	7.6x	8.5x	7.8x	10.1x	9.0x	9.8x	10.6x

Source: Capital IQ

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**Merger & Acquisition Advisory**

**Portfolio Valuation**  
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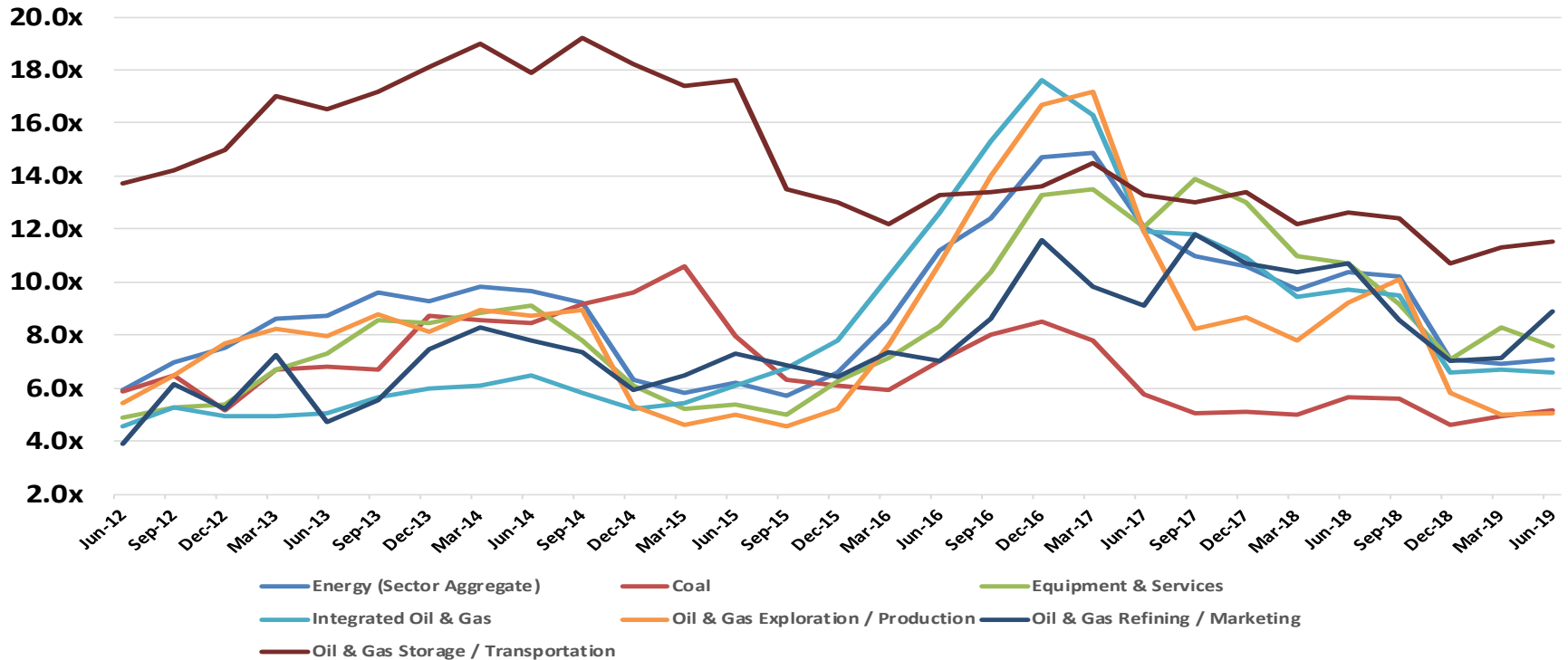
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**Restructuring Advisory**

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## Energy Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Energy (Sector Aggregate)	5.9x	7.0x	7.5x	8.6x	8.7x	9.6x	9.3x	9.8x	9.7x	9.2x	6.3x	5.8x	6.2x	5.7x	6.6x	8.5x	11.2x	12.4x	14.7x	14.9x	12.1x	11.0x	10.6x	9.7x	10.4x	10.2x	7.1x	6.9x	7.1x
Coal	5.9x	6.5x	5.1x	6.7x	6.8x	6.7x	8.7x	8.6x	8.4x	9.2x	9.6x	10.6x	8.0x	6.3x	6.1x	5.9x	7.0x	8.0x	8.5x	7.8x	5.8x	5.0x	5.1x	5.0x	5.6x	5.6x	4.6x	4.9x	5.1x
Equipment & Services	4.9x	5.3x	5.4x	6.7x	7.3x	8.6x	8.5x	8.9x	9.1x	7.8x	6.1x	5.2x	5.4x	5.0x	6.2x	7.2x	8.3x	10.4x	13.3x	13.5x	12.1x	13.9x	13.0x	11.0x	10.7x	9.2x	7.1x	8.3x	7.7x
Integrated Oil & Gas	4.6x	5.3x	4.9x	4.9x	5.1x	5.7x	6.0x	6.1x	6.5x	5.8x	5.2x	5.4x	6.1x	6.8x	7.8x	10.2x	12.6x	15.3x	17.6x	16.3x	11.9x	11.8x	10.9x	9.5x	9.7x	9.5x	6.6x	6.7x	6.6x
Oil & Gas Exploration / Production	5.5x	6.5x	7.7x	8.2x	7.9x	8.8x	8.1x	9.0x	8.7x	8.9x	5.3x	4.6x	5.0x	4.6x	5.2x	7.6x	10.7x	14.0x	16.7x	17.2x	11.9x	8.2x	8.7x	7.8x	9.2x	10.1x	5.8x	5.0x	5.0x
Oil & Gas Refining / Marketing	3.9x	6.1x	5.2x	7.3x	4.7x	5.6x	7.5x	8.3x	7.8x	7.3x	5.9x	6.5x	7.3x	6.9x	6.4x	7.4x	7.0x	8.6x	11.6x	9.8x	9.1x	11.8x	10.7x	10.4x	10.7x	8.6x	7.1x	7.2x	8.9x
Oil & Gas Storage / Transportation	13.7x	14.2x	15.0x	17.0x	16.5x	17.2x	18.1x	19.0x	17.9x	19.2x	18.2x	17.4x	17.6x	13.5x	13.0x	12.2x	13.3x	13.4x	13.6x	14.5x	13.3x	13.0x	13.4x	12.2x	12.6x	12.4x	10.7x	11.3x	11.5x

Source: Capital IQ

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**ESOP / ERISA Advisory**  
**Merger & Acquisition Advisory**

**Portfolio Valuation**  
**Business & Asset Valuation**

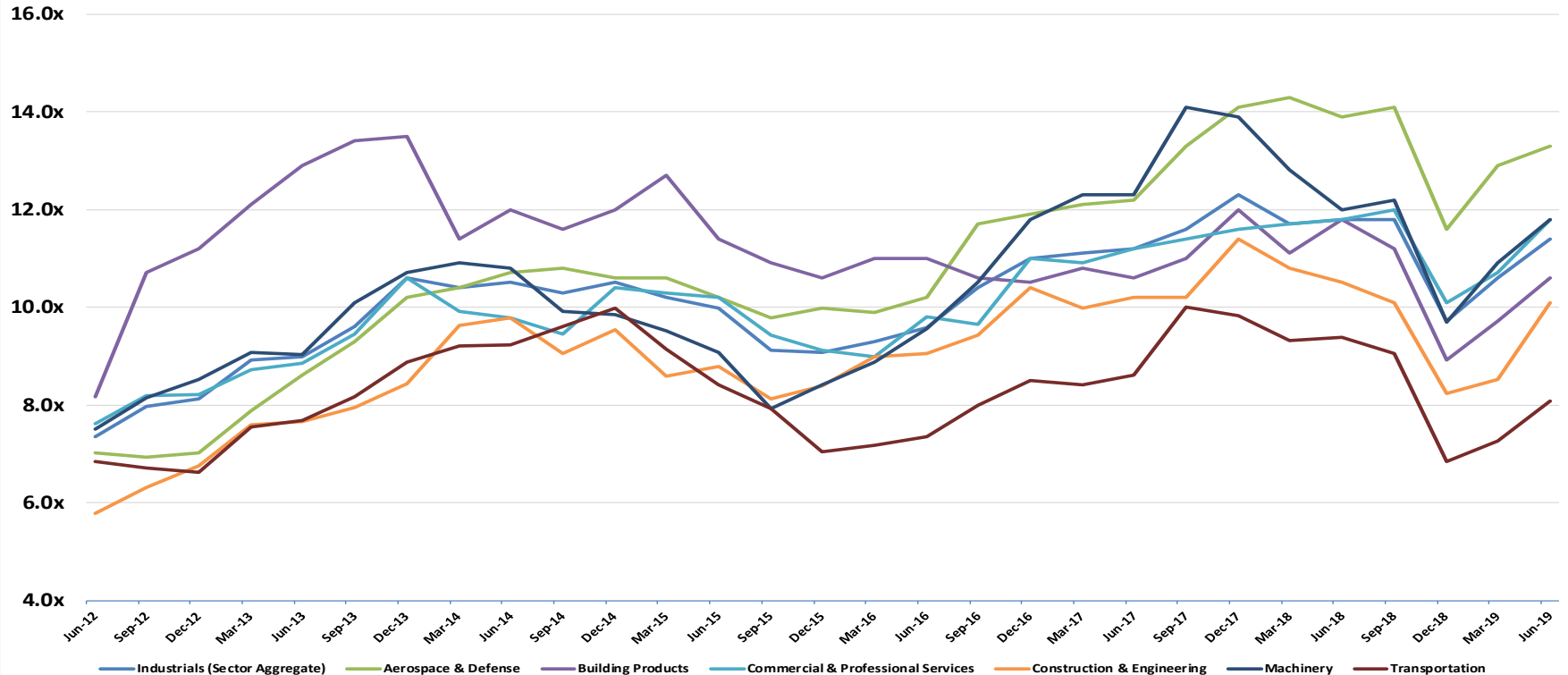
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## Industrials Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Industrials (Sector Aggregate)	7.4x	8.0x	8.1x	8.9x	9.0x	9.6x	10.6x	10.4x	10.5x	10.3x	10.5x	10.2x	10.0x	9.1x	9.1x	9.3x	9.6x	10.4x	11.0x	11.1x	11.2x	11.6x	12.3x	11.7x	11.8x	11.8x	9.7x	10.6x	11.4x
Aerospace & Defense	7.0x	6.9x	7.0x	7.9x	8.6x	9.3x	10.2x	10.4x	10.7x	10.8x	10.6x	10.6x	10.2x	9.8x	10.0x	9.9x	10.2x	11.7x	11.9x	12.1x	12.2x	13.3x	14.1x	14.3x	13.9x	14.1x	11.6x	12.9x	13.3x
Building Products	8.2x	10.7x	11.2x	12.1x	12.9x	13.4x	13.5x	11.4x	12.0x	11.6x	12.0x	12.7x	11.4x	10.9x	10.6x	11.0x	11.0x	10.6x	10.5x	10.8x	10.6x	11.0x	12.0x	11.1x	11.8x	11.2x	8.9x	9.7x	10.6x
Commercial & Professional Services	7.6x	8.2x	8.2x	8.7x	8.9x	9.5x	10.6x	9.9x	9.8x	9.4x	10.4x	10.3x	10.2x	9.4x	9.1x	9.0x	9.8x	9.6x	11.0x	10.9x	11.2x	11.4x	11.6x	11.7x	11.8x	12.0x	10.1x	10.7x	11.8x
Construction & Engineering	5.8x	6.3x	6.8x	7.6x	7.7x	8.0x	8.4x	9.6x	9.8x	9.1x	9.5x	8.6x	8.8x	8.1x	8.4x	9.0x	9.1x	9.4x	10.4x	10.0x	10.2x	10.2x	11.4x	10.8x	10.5x	10.1x	8.2x	8.5x	10.1x
Machinery	7.5x	8.2x	8.5x	9.1x	9.0x	10.1x	10.7x	10.9x	10.8x	9.9x	9.9x	9.5x	9.1x	7.9x	8.4x	8.9x	9.6x	10.5x	11.8x	12.3x	12.3x	14.1x	13.9x	12.8x	12.0x	12.2x	9.7x	10.9x	11.8x
Transportation	6.8x	6.7x	6.6x	7.5x	7.7x	8.2x	8.9x	9.2x	9.2x	9.6x	10.0x	9.1x	8.4x	7.9x	7.1x	7.2x	7.3x	8.0x	8.5x	8.4x	8.6x	10.0x	9.8x	9.3x	9.4x	9.1x	6.8x	7.3x	8.1x

Source: Capital IQ

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**Portfolio Valuation**  
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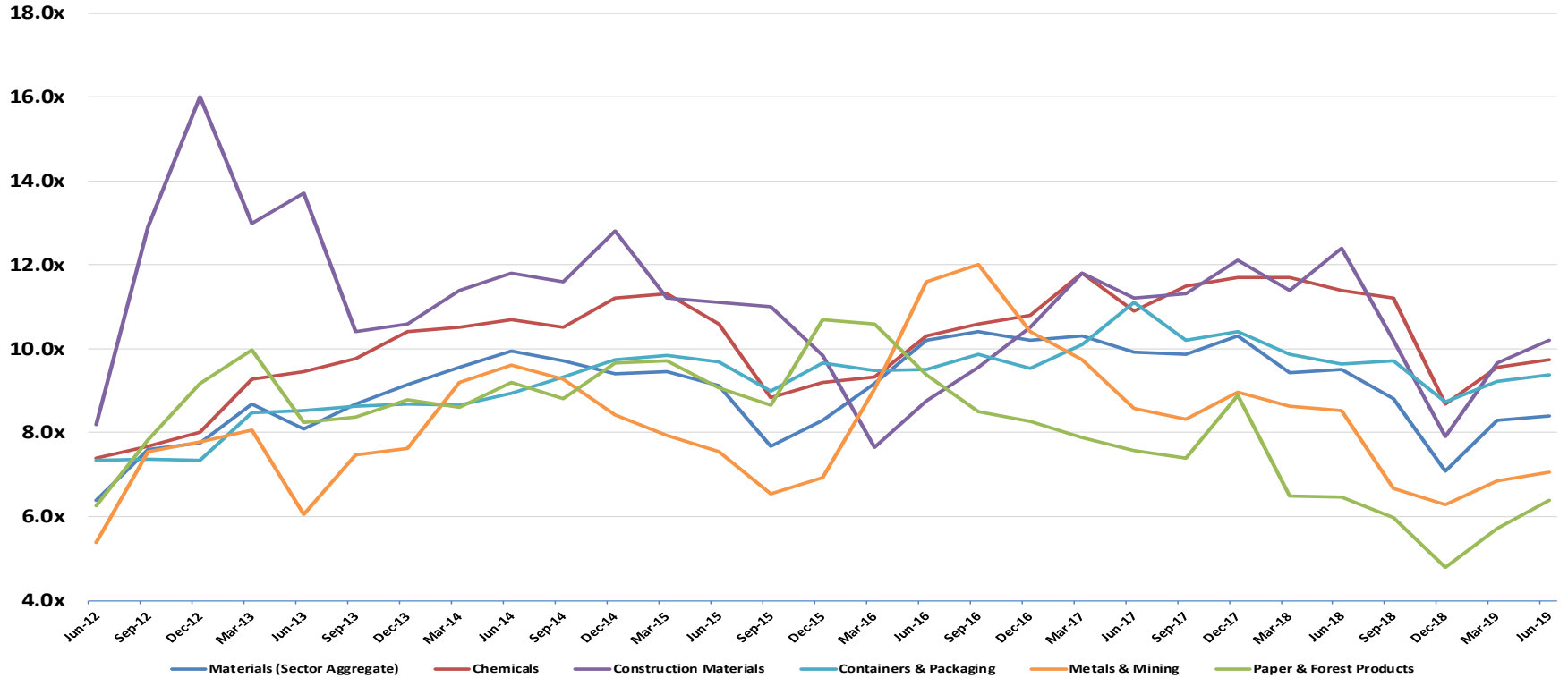
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## Materials Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	
Materials (Sector Aggregate)	6.4x	7.6x	7.8x	8.7x	8.1x	8.7x	9.1x	9.6x	9.9x	9.7x	9.4x	9.5x	9.1x	7.7x	8.3x	9.2x	10.2x	10.4x	10.2x	10.3x	9.9x	9.9x	10.3x	9.4x	9.5x	8.8x	7.1x	8.3x	8.4x	
Chemicals	7.4x	7.7x	8.0x	9.3x	9.5x	9.8x	10.4x	10.5x	10.7x	10.5x	11.2x	11.3x	10.6x	8.8x	9.2x	9.3x	10.3x	10.6x	10.8x	11.8x	10.9x	11.5x	11.7x	11.7x	11.4x	12.4x	10.2x	7.9x	9.7x	10.2x
Construction Materials	8.2x	12.9x	16.0x	13.0x	13.7x	10.4x	10.6x	11.4x	11.8x	11.6x	12.8x	11.2x	11.1x	11.0x	9.8x	7.7x	8.8x	9.6x	10.5x	11.8x	11.2x	11.3x	12.1x	11.4x	12.4x	10.2x	7.9x	9.7x	10.2x	
Containers & Packaging	7.3x	7.4x	7.3x	8.5x	8.5x	8.6x	8.7x	8.7x	8.9x	9.3x	9.7x	9.8x	9.7x	9.0x	9.7x	9.5x	9.5x	9.9x	9.5x	10.1x	11.1x	10.2x	10.4x	9.9x	9.6x	9.7x	8.7x	9.2x	9.4x	
Metals & Mining	5.4x	7.6x	7.8x	8.1x	6.1x	7.5x	7.6x	9.2x	9.6x	9.3x	8.4x	7.9x	7.6x	6.6x	6.9x	9.0x	11.6x	12.0x	10.4x	9.8x	8.6x	8.3x	9.0x	8.6x	8.5x	6.7x	6.3x	6.9x	7.1x	
Paper & Forest Products	6.3x	7.8x	9.2x	10.0x	8.3x	8.4x	8.8x	8.6x	9.2x	8.8x	9.7x	9.7x	9.1x	8.7x	10.7x	10.6x	9.4x	8.5x	8.3x	7.9x	7.6x	7.4x	8.9x	6.5x	6.5x	6.0x	4.8x	5.7x	6.4x	

Source: Capital IQ

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**Merger & Acquisition Advisory**

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**Business & Asset Valuation**

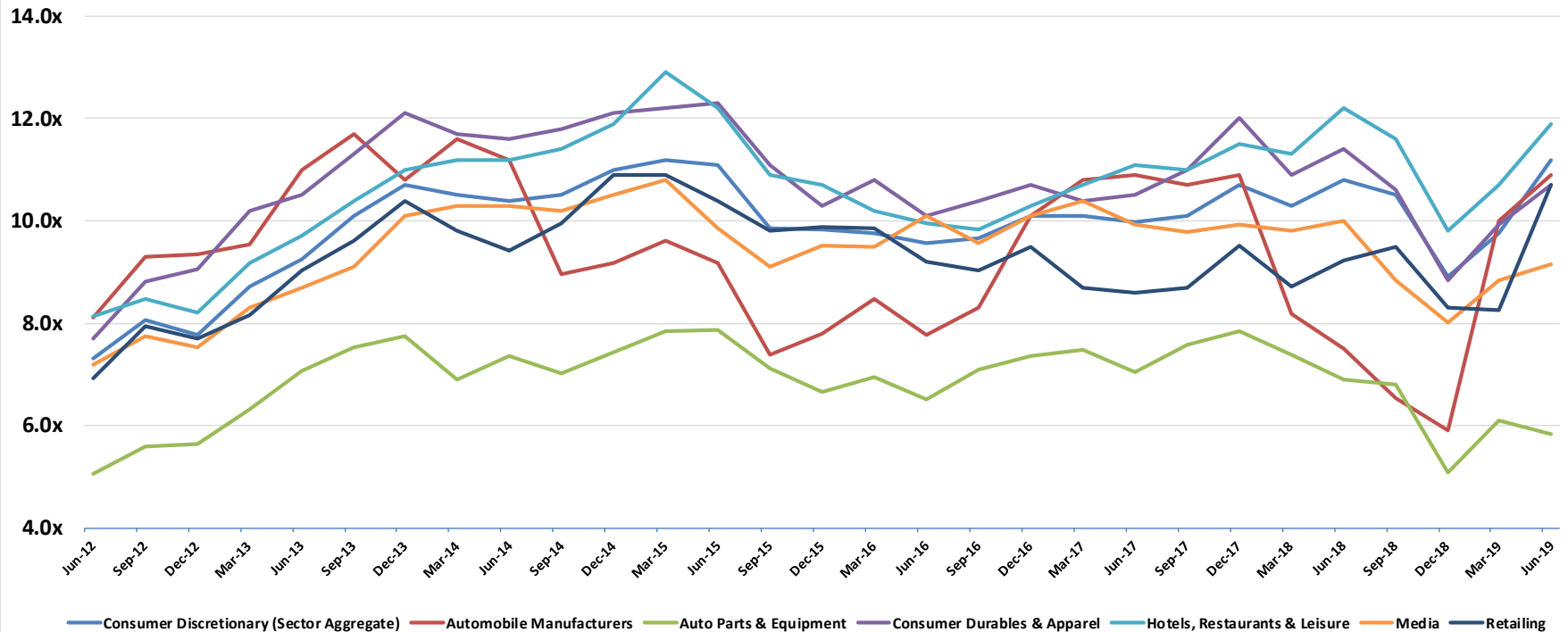
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## Consumer Discretionary Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	
<b>Consumer Discretionary (Sector Aggregate)</b>	7.3x	8.1x	7.8x	8.7x	9.3x	10.1x	10.7x	10.5x	10.4x	10.5x	11.0x	11.2x	11.1x	9.9x	9.8x	9.8x	9.6x	9.7x	10.1x	10.1x	10.0x	10.1x	10.7x	10.9x	10.3x	10.8x	10.5x	8.9x	9.8x	11.2x
Automobile Manufacturers	8.1x	9.3x	9.4x	9.5x	11.0x	11.7x	10.8x	11.6x	11.2x	9.0x	9.2x	9.6x	9.2x	7.4x	7.8x	8.5x	7.8x	8.3x	10.1x	10.8x	10.9x	10.7x	10.9x	8.2x	7.5x	6.5x	5.9x	10.0x	10.9x	
Auto Parts & Equipment	5.1x	5.6x	5.6x	6.3x	7.1x	7.5x	7.7x	6.9x	7.4x	7.0x	7.4x	7.8x	7.9x	7.1x	6.7x	6.9x	6.5x	7.1x	7.4x	7.5x	7.0x	7.6x	7.9x	7.4x	6.9x	6.8x	5.1x	6.1x	5.8x	
Consumer Durables & Apparel	7.7x	8.8x	9.1x	10.2x	10.5x	11.3x	12.1x	11.7x	11.6x	11.8x	12.1x	12.2x	12.3x	11.1x	10.3x	10.8x	10.1x	10.4x	10.7x	10.4x	10.5x	11.0x	12.0x	10.9x	11.4x	10.6x	8.8x	9.9x	10.7x	
Hotels, Restaurants & Leisure	8.1x	8.5x	8.2x	9.2x	9.7x	10.4x	11.0x	11.2x	11.2x	11.4x	11.9x	12.9x	12.2x	10.9x	10.7x	10.2x	9.9x	9.8x	10.3x	10.7x	11.1x	11.0x	11.5x	11.3x	12.2x	11.6x	9.8x	10.7x	11.9x	
Media	7.2x	7.7x	7.5x	8.3x	8.7x	9.1x	10.1x	10.3x	10.3x	10.2x	10.5x	10.8x	9.9x	9.1x	9.5x	9.5x	10.1x	9.6x	10.1x	10.4x	9.9x	9.8x	9.9x	9.8x	10.0x	8.8x	8.0x	8.8x	9.2x	
Retailing	6.9x	7.9x	7.7x	8.2x	9.0x	9.6x	10.4x	9.8x	9.4x	10.0x	10.9x	10.9x	10.4x	9.8x	9.9x	9.9x	9.2x	9.0x	9.5x	8.7x	8.6x	8.7x	9.5x	8.7x	9.2x	9.5x	8.3x	8.3x	10.7x	

Source: Capital IQ

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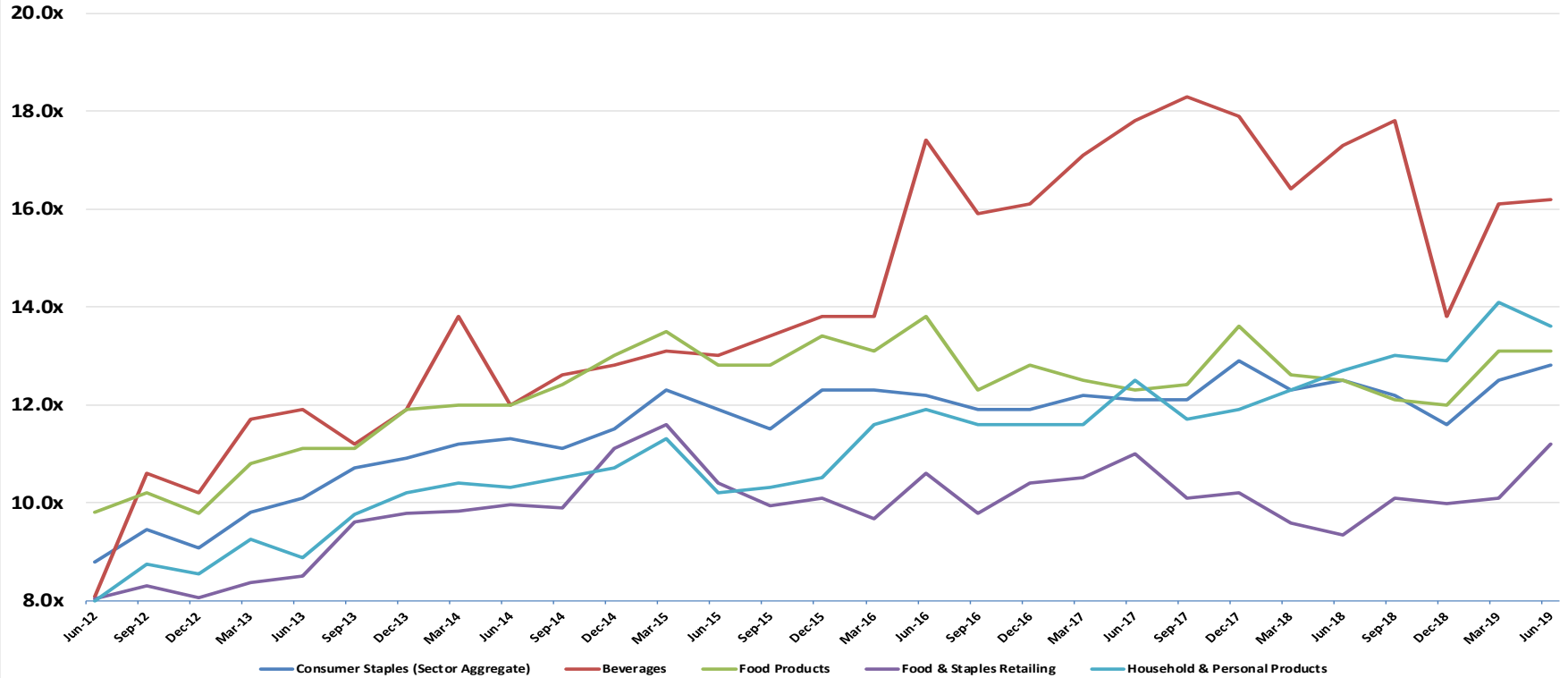
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## Consumer Staples Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Consumer Staples (Sector Aggregate)	8.8x	9.5x	9.1x	9.8x	10.1x	10.7x	10.9x	11.2x	11.3x	11.1x	11.5x	12.3x	11.9x	11.5x	12.3x	12.3x	12.2x	11.9x	11.9x	12.2x	12.1x	12.1x	12.9x	12.3x	12.5x	12.2x	11.6x	12.5x	12.8x
Beverages	8.1x	10.6x	10.2x	11.7x	11.9x	11.2x	11.9x	13.8x	12.0x	12.6x	12.8x	13.1x	13.0x	13.4x	13.8x	13.8x	17.4x	15.9x	16.1x	17.1x	17.8x	18.3x	17.9x	16.4x	17.3x	17.8x	13.8x	16.1x	16.2x
Food Products	9.8x	10.2x	9.8x	10.8x	11.1x	11.1x	11.9x	12.0x	12.0x	12.4x	13.0x	13.5x	12.8x	12.8x	13.4x	13.1x	13.8x	12.3x	12.8x	12.5x	12.3x	12.4x	13.6x	12.6x	12.5x	12.1x	12.0x	13.1x	13.1x
Food & Staples Retailing	8.0x	8.3x	8.1x	8.4x	8.5x	9.6x	9.8x	9.8x	10.0x	9.9x	11.1x	11.6x	10.4x	9.9x	10.1x	9.7x	10.6x	9.8x	10.4x	10.5x	11.0x	10.1x	10.2x	9.6x	9.3x	10.1x	10.0x	10.1x	11.2x
Household & Personal Products	8.0x	8.8x	8.5x	9.2x	8.9x	9.8x	10.2x	10.4x	10.3x	10.5x	10.7x	11.3x	10.2x	10.3x	10.5x	11.6x	11.9x	11.6x	11.6x	11.6x	12.5x	11.7x	11.9x	12.3x	12.7x	13.0x	12.9x	14.1x	13.6x

Source: Capital IQ

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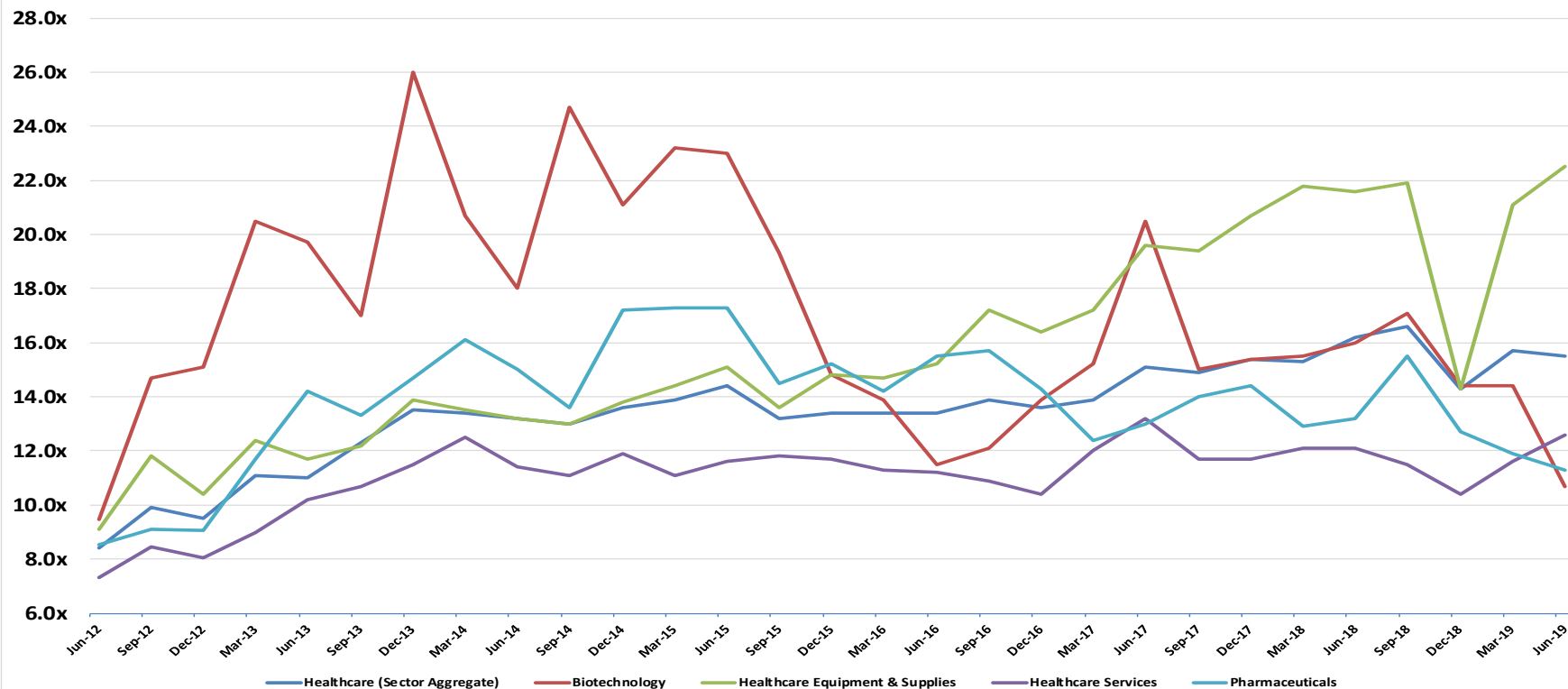


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## Healthcare Sector Enterprise Value / LTM EBITDA



Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Healthcare (Sector Aggregate)	8.4x	9.9x	9.5x	11.1x	11.0x	12.3x	13.5x	13.4x	13.2x	13.0x	13.6x	13.9x	14.4x	13.2x	13.4x	13.4x	13.9x	13.4x	13.9x	15.1x	14.9x	15.4x	15.3x	16.2x	16.6x	14.3x	15.7x	15.5x	
Biotechnology	9.5x	14.7x	15.1x	20.5x	19.7x	17.0x	26.0x	20.7x	18.0x	24.7x	21.1x	23.2x	23.0x	19.3x	14.8x	13.9x	11.5x	12.1x	13.9x	15.2x	20.5x	15.0x	15.4x	15.5x	16.0x	17.1x	14.4x	14.4x	10.7x
Healthcare Equipment & Supplies	9.1x	11.8x	10.4x	12.4x	11.7x	12.2x	13.9x	13.5x	13.2x	13.0x	13.8x	14.4x	15.1x	13.6x	14.8x	14.7x	15.2x	17.2x	16.4x	17.2x	19.6x	19.4x	20.7x	21.8x	21.6x	21.9x	14.3x	21.1x	22.5x
Healthcare Services	7.3x	8.4x	8.0x	9.0x	10.2x	10.7x	11.5x	12.5x	11.4x	11.1x	11.9x	11.1x	11.6x	11.8x	11.7x	11.3x	11.2x	10.9x	10.4x	12.0x	13.2x	11.7x	11.7x	12.1x	12.1x	11.5x	10.4x	11.6x	12.6x
Pharmaceuticals	8.5x	9.1x	9.1x	11.7x	14.2x	13.3x	14.7x	16.1x	15.0x	13.6x	17.2x	17.3x	17.3x	14.5x	15.2x	14.2x	15.5x	15.7x	14.3x	12.4x	13.0x	14.0x	14.4x	12.9x	13.2x	15.5x	12.7x	11.9x	11.3x

Source: Capital IQ

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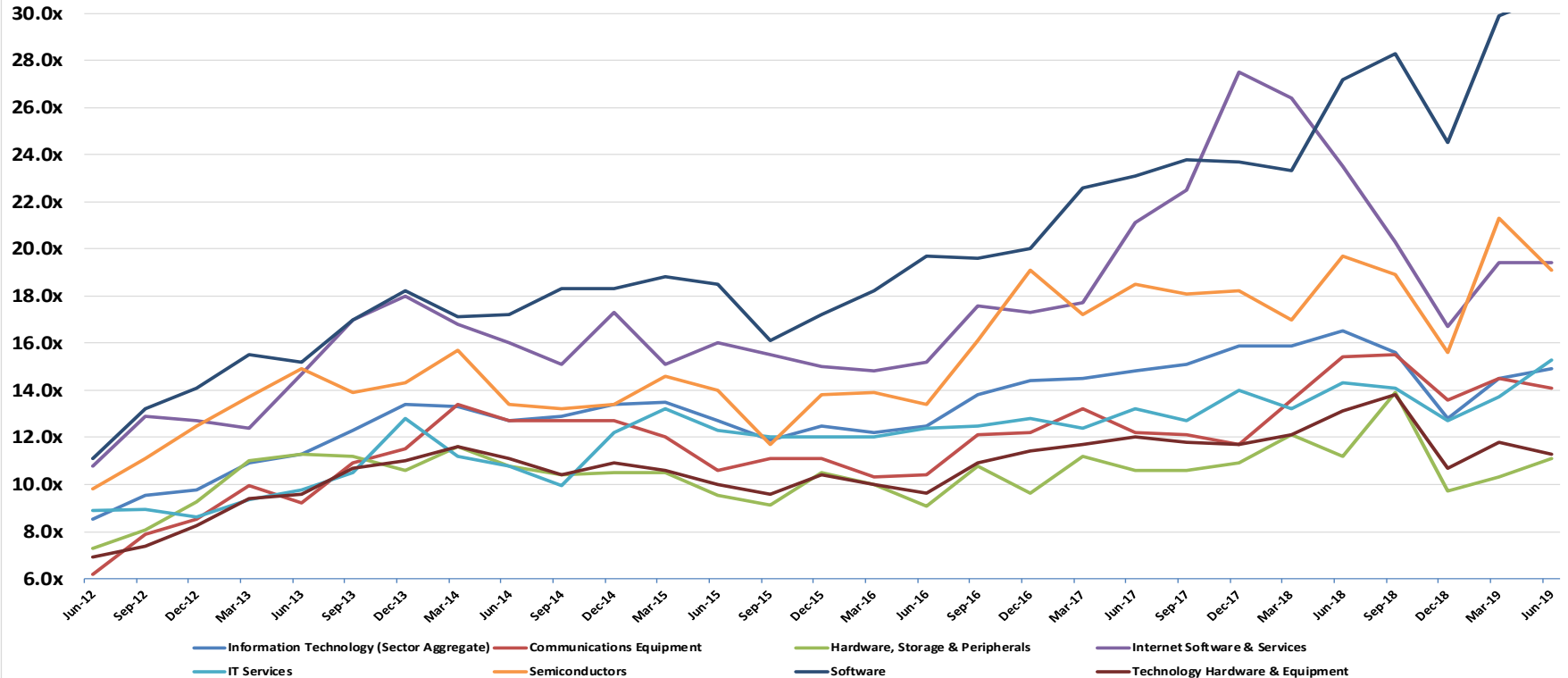
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## Information Technology Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Information Technology (Sector Aggregate)	8.5x	9.5x	9.8x	10.9x	11.3x	12.3x	13.4x	13.3x	12.7x	12.9x	13.4x	13.5x	12.7x	11.9x	12.5x	12.2x	12.5x	13.8x	14.4x	14.5x	14.8x	15.1x	15.9x	15.9x	16.5x	15.6x	12.8x	14.5x	14.9x
Communications Equipment	6.2x	7.9x	8.5x	10.0x	9.2x	10.9x	11.5x	13.4x	12.7x	12.7x	12.7x	12.0x	10.6x	11.1x	11.1x	10.3x	10.4x	12.1x	12.2x	13.2x	12.2x	12.1x	11.7x	13.6x	15.4x	15.5x	13.6x	14.5x	14.1x
Hardware, Storage & Peripherals	7.3x	8.1x	9.3x	11.0x	11.3x	11.2x	10.6x	11.6x	10.8x	10.4x	10.5x	10.5x	9.5x	9.1x	10.5x	10.0x	9.1x	10.8x	9.6x	11.2x	10.6x	10.6x	10.9x	12.1x	11.2x	13.9x	9.7x	10.3x	11.1x
Internet Software & Services	10.8x	12.9x	12.7x	12.4x	14.7x	17.0x	18.0x	16.8x	16.0x	15.1x	17.3x	15.1x	16.0x	15.5x	15.0x	14.8x	15.2x	17.6x	17.3x	17.7x	21.1x	22.5x	27.5x	26.4x	23.5x	20.3x	16.7x	19.4x	19.4x
IT Services	8.9x	9.0x	8.6x	9.4x	9.8x	10.5x	12.8x	11.2x	10.8x	9.9x	12.2x	13.2x	12.3x	12.0x	12.0x	12.4x	12.5x	12.8x	12.4x	13.2x	12.7x	14.0x	13.2x	14.3x	14.1x	12.7x	13.7x	15.3x	
Semiconductors	9.8x	11.1x	12.5x	13.7x	14.9x	13.9x	14.3x	15.7x	13.4x	13.2x	13.4x	14.6x	14.0x	11.7x	13.8x	13.9x	13.4x	16.1x	19.1x	17.2x	18.5x	18.1x	18.2x	17.0x	19.7x	18.9x	15.6x	21.3x	19.1x
Software	11.1x	13.2x	14.1x	15.5x	15.2x	17.0x	18.2x	17.1x	17.2x	18.3x	18.3x	18.8x	18.5x	16.1x	17.2x	18.2x	19.7x	19.6x	20.0x	22.6x	23.3x	23.8x	23.7x	23.3x	27.2x	28.3x	24.5x	29.9x	30.8x
Technology Hardware & Equipment	6.9x	7.4x	8.3x	9.4x	9.6x	10.7x	11.0x	11.6x	11.1x	10.4x	10.9x	10.6x	10.0x	9.6x	10.4x	10.0x	9.6x	10.9x	11.4x	11.7x	12.0x	11.8x	11.7x	12.1x	13.1x	13.8x	10.7x	11.8x	11.3x

Source: Capital IQ

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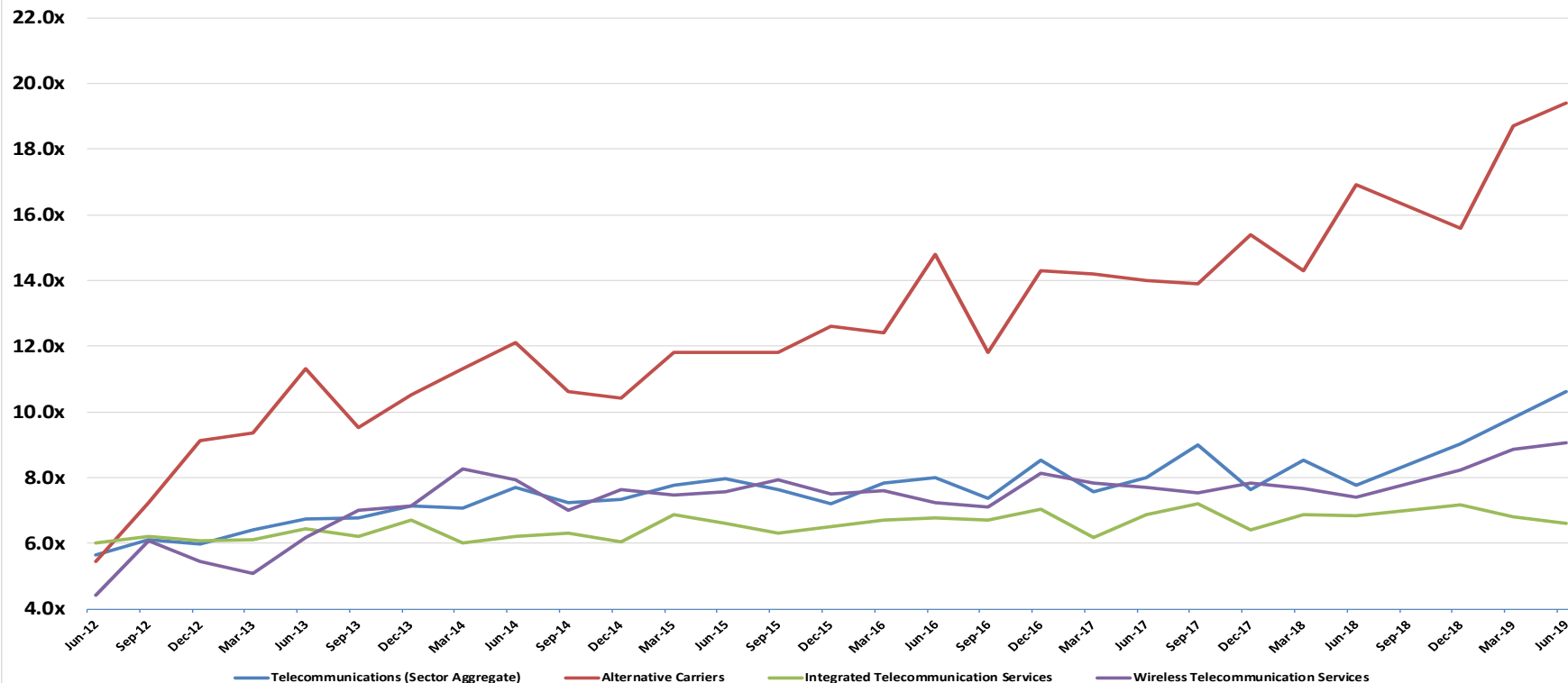
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## Telecommunications Sector Enterprise Value / LTM EBITDA



### Enterprise Value Multiple Observations - Period from June 30, 2012 through June 30, 2019

	Jun-12	Sep-12	Dec-12	Mar-13	Jun-13	Sep-13	Dec-13	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19
Telecommunications (Sector Aggregate)	5.7x	6.1x	6.0x	6.4x	6.7x	6.8x	7.1x	7.1x	7.7x	7.2x	7.3x	7.8x	8.0x	7.6x	7.2x	7.8x	8.0x	7.4x	8.5x	7.6x	8.0x	9.0x	7.6x	8.5x	7.8x	10.1x	9.0x	9.8x	10.6x
Alternative Carriers	5.4x	7.2x	9.1x	9.3x	11.3x	9.5x	10.5x	11.3x	12.1x	10.6x	10.4x	11.8x	11.8x	11.8x	12.6x	12.4x	14.8x	11.8x	14.3x	14.2x	14.0x	13.9x	15.4x	14.3x	16.9x	21.0x	15.6x	18.7x	19.4x
Integrated Telecommunication Services	6.0x	6.2x	6.1x	6.1x	6.4x	6.2x	6.7x	6.0x	6.2x	6.3x	6.0x	6.9x	6.6x	6.3x	6.5x	6.7x	6.8x	6.7x	7.0x	6.2x	6.9x	7.2x	6.4x	6.9x	6.8x	6.8x	7.2x	6.8x	6.6x
Wireless Telecommunication Services	4.4x	6.1x	5.5x	5.1x	6.2x	7.0x	7.1x	8.3x	7.9x	7.0x	7.6x	7.5x	7.6x	7.9x	7.5x	7.6x	7.2x	7.1x	8.1x	7.8x	7.7x	7.5x	7.8x	7.7x	7.4x	8.6x	8.2x	8.9x	9.1x

Source: Capital IQ

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