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Industry Observations – December 31, 2018

## Building Products Industry

## Select Building Products Public Company Industry Data As of December 31, 2018

(USD in millions, except per share data)

		Market Data						LTM Operating Data			Forward Estimates	
		Price at 12/31/18	% of 52 Week High	Equity Value	Enterprise Value	Debt / Total Capital		Total Assets	LTM Revenue	LTM EBITDA	CY 2018 Revenue Estimate	CY 2018 EBITDA Estimate
Company Name	Ticker											
Lumber, Millwork, Plywood and Structural Wood												
American Woodmark Corporation	AMWD	NasdaqGS:AMWD	\$55.68	37.5%	\$961.24	\$1,976.37	54.0%	\$1,577.12	\$1,552.52	\$219.58	\$1,717.40	\$261.89
Fortune Brands Home & Security, Inc.	FBHS	NYSE:FBHS	\$37.99	51.6%	\$5,371.97	\$8,781.15	51.7%	\$5,964.60	\$5,485.10	\$851.50	\$5,833.09	\$929.27
Trex Company, Inc.	TREX	NYSE:TREX	\$59.36	65.4%	\$3,487.65	\$4,457.89	0.0%	\$434.91	\$666.49	\$188.08	\$743.76	\$218.19
Builders FirstSource, Inc.	BLDR	NasdaqGS:BLDR	\$10.91	46.9%	\$1,251.65	\$3,362.81	77.4%	\$3,193.59	\$7,687.73	\$437.98	\$7,628.25	\$480.23
Universal Forest Products, Inc.	UFPI	NasdaqGS:UFPI	\$25.96	65.9%	\$1,600.59	\$2,145.77	16.6%	\$1,677.17	\$4,467.09	\$253.46	\$4,733.88	\$294.64
Refrigeration and Heating Equipment												
AAON, Inc.	AAON	NasdaqGS:AAON	\$35.06	78.1%	\$1,826.43	\$2,027.78	0.0%	\$314.02	\$425.77	\$74.46	\$500.45	\$115.95
Lennox International Inc.	LII	NYSE:LII	\$218.86	94.9%	\$8,816.40	\$10,846.68	116.8%	\$1,817.20	\$3,883.90	\$564.10	\$3,904.39	\$738.56
Masco Corporation	MAS	NYSE:MAS	\$29.24	63.0%	\$8,932.77	\$13,549.23	97.7%	\$5,393.00	\$8,359.00	\$1,393.00	\$8,628.76	\$1,455.82
A. O. Smith Corporation	AOS	NYSE:AOS	\$42.70	62.4%	\$7,256.91	\$8,315.28	11.4%	\$3,071.50	\$3,187.90	\$623.60	\$3,229.76	\$661.26
Roofing, Siding and Insulation												
Owens Corning	OC	NYSE:OC	\$43.98	45.6%	\$4,807.88	\$9,481.17	46.6%	\$10,046.00	\$6,939.00	\$1,117.00	\$7,232.26	\$1,379.41
Armstrong World Industries, Inc.	AWI	NYSE:AWI	\$58.21	79.3%	\$2,885.25	\$3,938.31	71.4%	\$2,002.50	\$950.70	\$268.50	\$1,046.19	\$387.27
USG Corporation	USG	NYSE:USG	\$42.66	98.1%	\$5,961.98	\$6,722.26	36.0%	\$3,842.00	\$3,336.00	\$377.00	\$3,570.50	\$649.27
Windows and Doors												
Griffon Corporation	GFF	NYSE:GFF	\$10.45	44.4%	\$455.45	\$1,894.14	71.0%	\$2,074.79	\$2,051.14	\$173.83	\$2,213.61	\$190.29
PGT Innovations, Inc.	PGTI	NYSE:PGTI	\$15.85	60.0%	\$918.35	\$1,371.00	49.9%	\$860.54	\$642.71	\$113.81	\$813.07	\$164.18
Masonite International Corporation	DOOR	NYSE:DOOR	\$44.83	59.6%	\$1,188.92	\$2,120.73	53.1%	\$1,851.49	\$2,150.25	\$258.07	\$2,283.77	\$293.10
Quanex Building Products Corporation	NX	NYSE:NX	\$13.59	57.6%	\$453.08	\$744.98	34.8%	\$741.85	\$889.79	\$89.68	\$930.40	\$101.87
Building Products - Other												
Gibraltar Industries, Inc.	ROCK	NasdaqGS:ROCK	\$35.59	72.5%	\$1,129.77	\$1,162.82	26.5%	\$1,053.79	\$1,019.57	\$123.60	\$1,054.80	\$134.50
Insteel Industries, Inc.	IIIN	NasdaqGS:IIIN	\$24.28	55.5%	\$466.72	\$407.79	0.0%	\$311.43	\$459.59	\$53.27	\$483.41	\$51.02
Simpson Manufacturing Co., Inc.	SSD	NYSE:SSD	\$54.13	69.1%	\$2,488.24	\$2,591.49	0.2%	\$1,021.65	\$1,078.81	\$211.04	\$1,144.53	\$240.32

Notes: LTM (latest twelve months); Enterprise Value (market capitalization less total cash and short-term investments plus short-term borrowings and total long-term debt);

EBITDA (earnings before interest, taxes, depreciation and amortization)

Source: Capital IQ

The material contained in this publication is meant to provide general information regarding valuation topics. This publication does not constitute investment advice with respect to the securities of any company discussed herein, is not intended to provide information upon which to base an investment decision, and should not be construed as such. Professional advice should be obtained before taking any action based on the information contained herein.

Publicly available information utilized in this publication has been obtained from sources deemed to be reliable. Houlihan does not guarantee the accuracy or completeness of the information provided within this publication. The material presented reflects information known to the authors at the time this publication was written and this information is subject to change.

## Select Building Products Public Company Valuation Metrics As of December 31, 2018

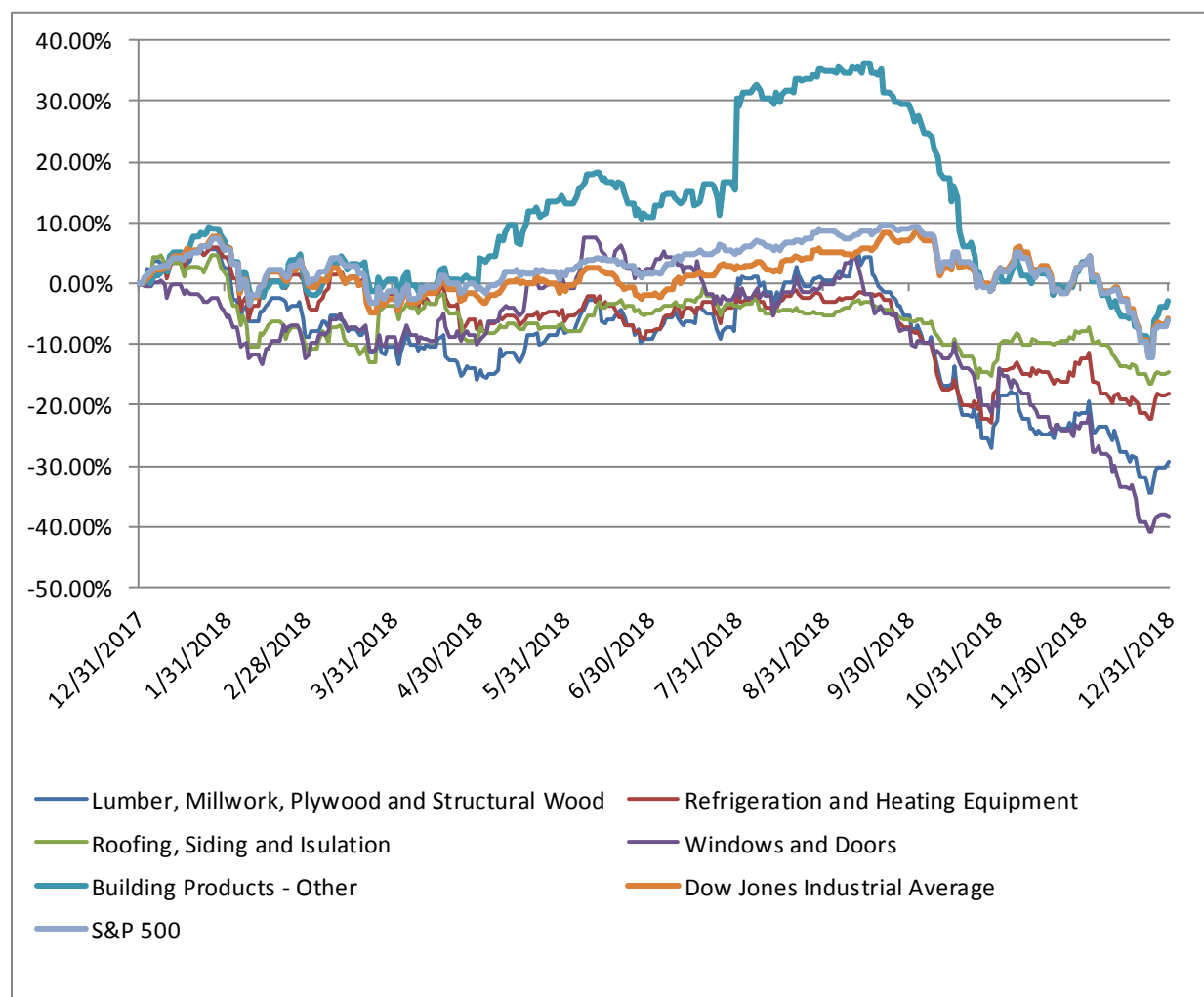
(USD in millions, except per share data)

		LTM Operating Statistics						Trading Multiples			
		Return On Assets	Return On Equity	Return On Capital	Revenue Growth	EBITDA Growth	EBITDA Margin	TEV/ LTM Revenue	TEV/ CY 2018 Revenue	TEV/ LTM EBITDA	TEV/ CY 2018 EBITDA
Company Name	Ticker										
Lumber, Millwork, Plywood and Structural Wood											
American Woodmark Corporation	AMWD	8.6%	13.0%	10.3%	46.5%	72.9%	14.1%	1.3x	1.2x	9.0x	7.5x
Fortune Brands Home & Security, Inc.	FBHS	7.7%	16.3%	10.3%	3.8%	0.0%	15.5%	1.6x	1.5x	10.3x	9.4x
Trex Company, Inc.	TREX	28.5%	47.3%	39.4%	23.8%	23.4%	28.2%	6.7x	6.0x	23.7x	20.4x
Builders FirstSource, Inc.	BLDR	6.8%	23.2%	9.2%	13.0%	18.0%	5.7%	0.4x	0.4x	7.7x	7.0x
Universal Forest Products, Inc.	UFPI	7.7%	15.1%	10.0%	16.5%	11.0%	5.7%	0.5x	0.5x	8.5x	7.3x
	Mean	11.9%	23.0%	15.8%	20.7%	25.1%	13.9%	2.1x	1.9x	11.8x	10.3x
	Median	7.7%	16.3%	10.3%	16.5%	18.0%	14.1%	1.3x	1.2x	9.0x	7.5x
Refrigeration and Heating Equipment											
AAON, Inc.	AAON	11.7%	19.1%	15.0%	8.4%	-17.1%	17.5%	4.8x	4.1x	27.2x	17.5x
Lennox International Inc.	LII	16.8%	N/A	32.0%	1.2%	2.5%	14.5%	2.8x	2.8x	19.2x	14.7x
Masco Corporation	MAS	14.2%	622.2%	24.5%	9.4%	7.6%	16.7%	1.6x	1.6x	9.7x	9.3x
A. O. Smith Corporation	AOS	11.0%	26.4%	17.3%	6.4%	5.6%	19.6%	2.6x	2.6x	13.3x	12.6x
	Mean	13.4%	222.6%	22.2%	6.3%	-0.4%	17.1%	2.9x	2.7x	17.4x	13.5x
	Median	14.2%	26.4%	20.9%	7.4%	4.0%	17.1%	2.7x	2.7x	16.3x	13.6x
Roofing, Siding and Isulation											
Owens Corning	OC	4.7%	9.0%	6.1%	12.6%	-3.2%	16.1%	1.4x	1.3x	8.5x	6.9x
Armstrong World Industries, Inc.	AWI	6.5%	73.8%	10.4%	63.9%	16.7%	28.2%	4.1x	3.8x	14.7x	10.2x
USG Corporation	USG	3.7%	10.3%	4.8%	4.1%	-24.4%	11.3%	2.0x	1.9x	17.8x	10.4x
	Mean	5.0%	31.0%	7.1%	26.9%	-3.7%	18.5%	2.5x	2.3x	13.7x	9.1x
	Median	4.7%	10.3%	6.1%	12.6%	-3.2%	16.1%	2.0x	1.9x	14.7x	10.2x
Windows and Doors											
Griffon Corporation	GFF	3.4%	4.2%	4.4%	27.4%	36.0%	8.5%	0.9x	0.9x	10.9x	10.0x
PGT Innovations, Inc.	PGTI	8.9%	24.0%	10.4%	32.1%	52.7%	17.7%	2.1x	1.7x	12.0x	8.4x
Masonite International Corporation	DOOR	6.3%	22.8%	7.9%	7.2%	13.0%	12.0%	1.0x	0.9x	8.2x	7.2x
Quanex Building Products Corporation	NX	3.1%	6.6%	3.8%	2.7%	-3.0%	10.1%	0.8x	0.8x	8.3x	7.3x
	Mean	5.4%	14.4%	6.6%	17.4%	24.7%	12.1%	1.2x	1.1x	9.9x	8.2x
	Median	4.9%	14.7%	6.2%	17.3%	24.5%	11.0%	1.0x	0.9x	9.6x	7.8x
Building Products - Other											
Gibraltar Industries, Inc.	ROCK	6.3%	13.9%	8.5%	6.1%	6.1%	12.1%	1.1x	1.1x	9.4x	8.6x
Insteel Industries, Inc.	IIIN	8.5%	14.1%	11.0%	17.0%	17.8%	11.6%	0.9x	0.8x	7.7x	8.0x
Simpson Manufacturing Co., Inc.	SSD	10.5%	14.9%	12.3%	10.4%	22.2%	19.6%	2.4x	2.3x	12.3x	10.8x
	Mean	8.4%	14.3%	10.6%	11.2%	15.4%	14.4%	1.5x	1.4x	9.8x	9.1x
	Median	8.5%	14.1%	11.0%	10.4%	17.8%	12.1%	1.1x	1.1x	9.4x	8.6x

Notes: LTM (latest twelve months); NTM (next twelve months); EBITDA (earnings before interest, taxes, depreciation and amortization); TEV (total enterprise value)

Source: Capital IQ

## Building Products Public Company LTM Equity Performance As of December 31, 2018



Note: The indices are derived from the equity performance of the previously listed companies. Source: Capital IQ

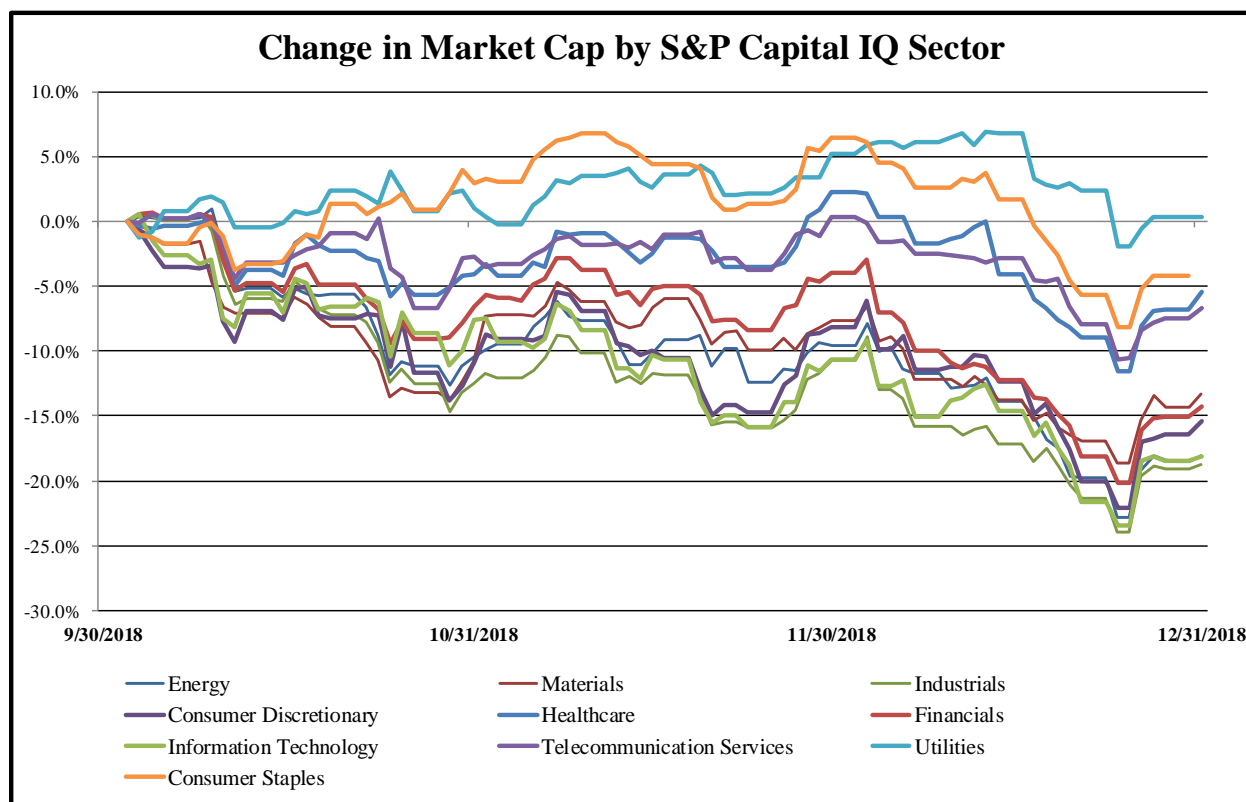
## Recent M&A Activity in the Building Products Industry December 31, 2017 to December 31, 2018

(USD in millions)

Close Date	Target	Acquirer	Target Company Primary Industry	Implied Enterprise Value
11/16/2018	Ply Gem Parent, LLC	NCI Building Systems, Inc.	Building Products	\$3,606.47
6/20/2018	Ash Grove Cement Company	CRH plc	Construction Materials	\$3,500.00
4/12/2018	Ply Gem Midco, Inc.	Clayton, Dubilier & Rice, Inc.	Building Products	\$2,260.61
4/27/2018	Bluegrass Materials Company, LLC	Martin Marietta Materials, Inc.	Construction Materials	\$1,625.00
12/13/2018	Plants & Paving Division of The Lane Construction Corporation	Eurovia (SA)	Construction Materials	\$555.00
8/13/2018	WWS Acquisition, LLC	PGT Innovations, Inc.	Building Products	\$360.00
12/5/2018	ACG Materials, LLC	Arcosa, Inc.	Construction Materials	\$315.00
3/29/2018	Lehigh White Cement Company	CEMEX, Inc.; Aalborg Cement Company Inc.	Construction Materials	\$275.69
10/15/2018	Silver Line Division of Andersen Corporation	Ply Gem Midco, Inc.	Building Products	\$190.00
6/4/2018	CornellCookson, Inc.	Clopax Building Products Company, Inc.	Building Products	\$180.00
7/2/2018	ATCO Rubber Products, Inc.	Mueller Industries, Inc.	Building Products	\$162.80
7/2/2018	US Concrete & Quarries Business of Boral Limited	Brannan Sand and Gravel Company, LLC	Construction Materials	\$127.00
6/24/2018	Ready Mix Concrete Operations and Transportation Assets of	CRH plc	Construction Materials	\$118.50
11/23/2018	Glen-Gery Corporation	Brickworks Limited	Construction Materials	\$110.00
6/24/2018	Trident Cement Plant in Three Forks, Montana	Grupo Cementos de Chihuahua, S.A.B. de C.V.	Construction Materials	\$107.42
3/15/2018	Ashland Products Inc.	Amesbury Group Inc.	Building Products	\$101.00
12/31/2018	Armstrong Wood Products, Inc.	American Industrial Partners	Building Products	\$100.00
5/21/2018	Four Asphalt Terminal Assets and 50% Interest in the Paramount-	Andeavor	Construction Materials	\$75.00
12/3/2018	Aran Isle, Inc.	Patrick Industries, Inc.	Building Products	\$54.00
9/5/2018	North American Business of Uponor Infra Oy	Wynnchurch Capital, LLC	Building Products	\$47.36
9/3/2018	Concrete Specialties, Inc.	Oldcastle Infrastructure	Construction Materials	\$46.60
3/30/2018	FlyAsh Beneficiation and Mineral Grinding Technologies of SCB	Charah Solutions, Inc.	Construction Materials	\$35.00
1/2/2018	Blue Diamond Industries, LLC	Hexatronic Group AB (publ)	Building Products	\$23.00
5/4/2018	Certain Assets of Popple Construction, Inc. and Pioneer	New Enterprise Stone & Lime Co., Inc.	Construction Materials	\$22.30
12/19/2018	Wolf Paving & Excavating Of Madison, Inc.	N/A	Building Products	NA
12/18/2018	Independence Materials Group/KBH Management Software	Groundworks Companies	Building Products	NA
12/17/2018	Avanti Industries, LLC	Pella Corporation	Building Products	NA
12/13/2018	Noke, Inc. / Active Supply and Design (CDM) Ltd	Janus International Group, LLC	Building Products	NA
12/3/2018	Brooks Products, Inc.	Jensen Enterprises, Inc.	Building Products	NA
11/21/2018	Valley Precast, Inc.	Oldcastle Infrastructure	Construction Materials	NA
11/19/2018	Tri County Concrete, LLC	Sunroc Corporation	Construction Materials	NA
11/15/2018	Washtenaw Door & Trim, Inc.	Mans Lumber and Millwork	Building Products	NA
6/30/2018	Willow Oak Stone Quarry (nka:Luck Stone Kershaw Plant)	Luck Stone Corporation	Construction Materials	NA
11/9/2018	Northeast Building Products Corporation	Harvey Industries, Inc.	Building Products	NA
11/6/2018	Concrete Fibers Business of Propex Holding, LLC	Sika AG	Construction Materials	NA
11/6/2018	HomeRight, Inc.	Wagner SprayTech Corp.	Building Products	NA
11/6/2018	Rillito River Solar, LLC	Esdec B.V.	Building Products	NA
10/31/2018	Gyford Productions, LLC	Rowmark, LLC	Building Products	NA
10/25/2018	Superior Mason Products LLC	Latium USA Trading, Inc.	Building Products	NA
10/22/2018	Custom Glass Solutions LLC	Stellex Capital Management LP	Construction Materials	NA
10/18/2018	Dan Copp Crushing Corp./Karandan Enterprises Inc.	North American Recycling and Crushing, LLC	Construction Materials	NA
10/19/2018	Truss Systems, Inc. (nka:Drexel Truss Systems)	Drexel Building Supply, Inc.	Building Products	NA
10/16/2018	Woon-Tech, Inc.	Hoskin & Muir, Inc.	Construction Materials	NA
10/11/2018	Indiana Limestone Company, Inc.	Polycor Inc.	Construction Materials	NA
10/8/2018	Shur-Line LLC/Bulldog Hardware LLC	World and Main, LLC	Building Products	NA
10/5/2018	Lewis Cabinet Specialties Group, LLC	LongWater Opportunities LLC; LongWater Fund II,	Building Products	NA
10/3/2018	Pebble Technology, Inc.	Graycliff Partners	Building Products	NA
10/2/2018	Eggers Industries, Inc.	VT Industries, Inc.	Building Products	NA
10/2/2018	HomeGuard Building Products, Inc.	Ox Engineered Products, LLC	Building Products	NA

Source: Capital IQ

## S&P Capital IQ - Sector Last 3 Month Equity Performance As of December 31, 2018

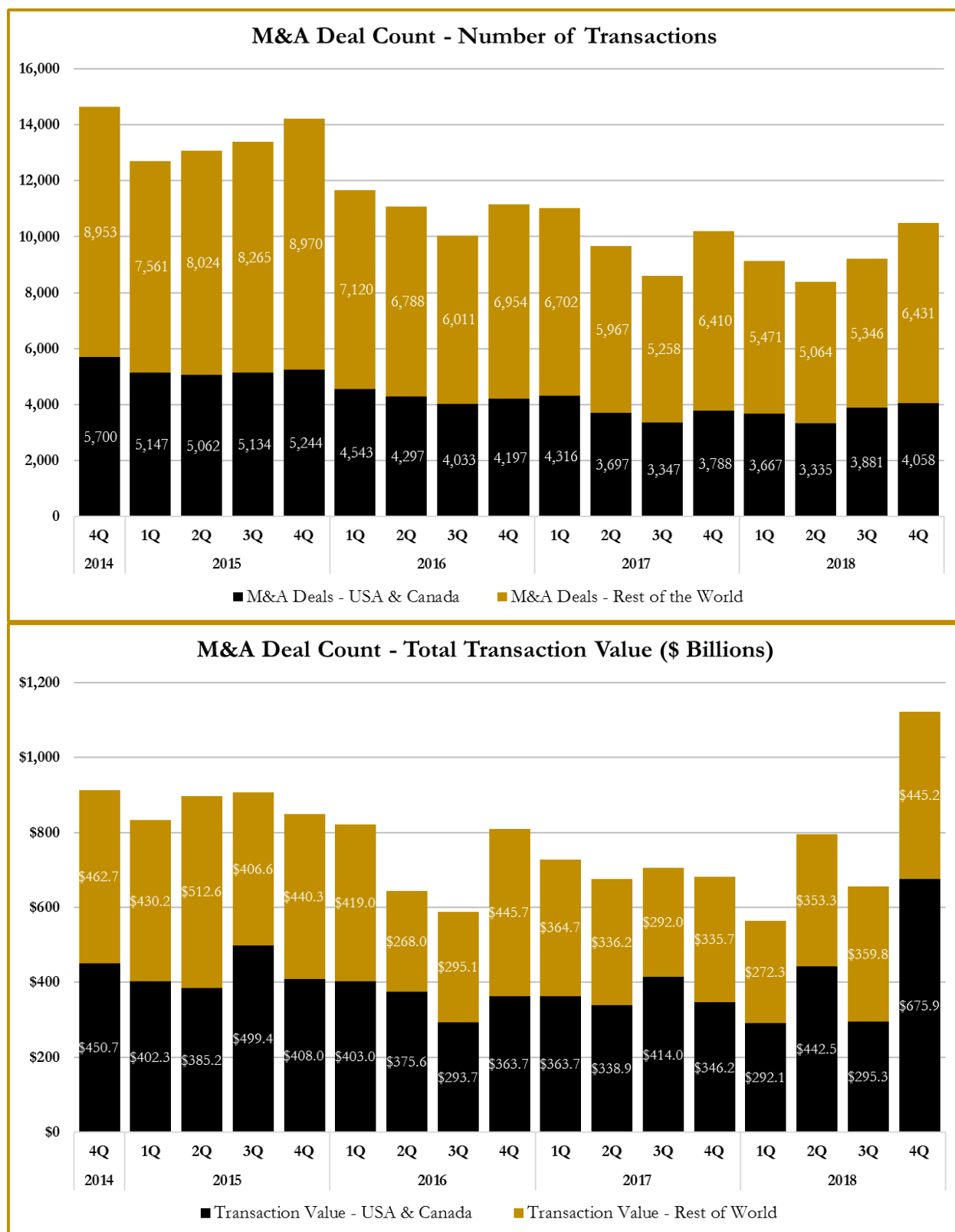


Note: The indices are derived from the equity performance of the S&P Capital IQ Sectors. Source: Capital IQ

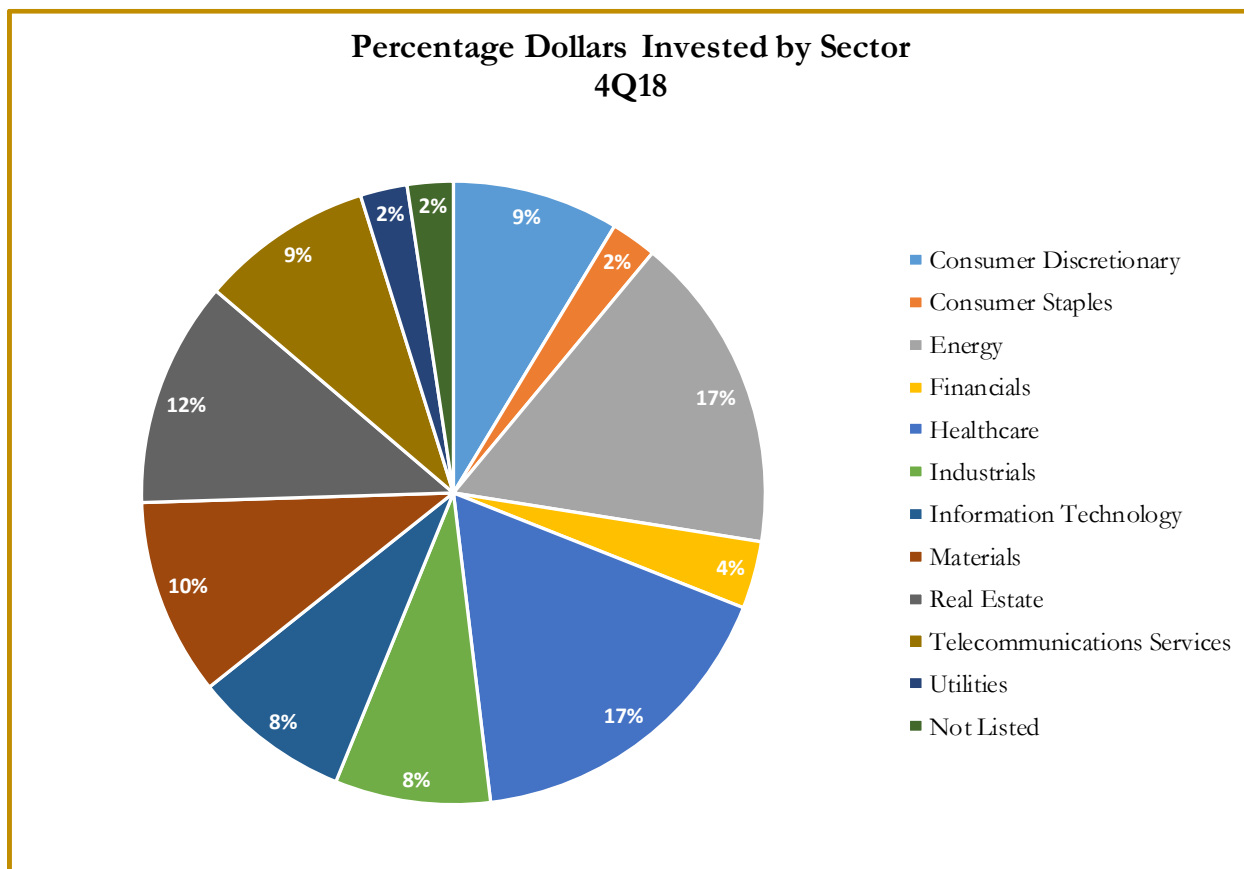


## M&A Deal Flow Statistics by S&P Capital IQ Sector

### As of December 31, 2018



## M&A Deal Flow Statistics by S&P Capital IQ Sector As of December 31, 2018







## About Us

Houlihan Capital is a leading, solutions-driven valuation, financial advisory and boutique investment banking firm. We pride ourselves on being thought leaders in an ever-changing landscape.

Houlihan Capital is SOC-compliant, a FINRA and SIPC member and committed to the highest levels of professional ethics and standards.

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We provide an array of services that include enterprise valuations, portfolio valuation, valuation of carried interest, transaction opinions, tax and financial reporting compliance, purchase price allocations, and a wide variety of consulting services through our Financial Advisory Group.

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Our team provides support for a wide variety of situations including commercial and shareholder disputes, derivatives and structured finance litigation, and fraudulent conveyance.

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