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Industry Observations – June 30, 2019

Building Products Industry

Select Building Products Public Company Industry Data As of June 30, 2019

(USD in millions, except per share data)

Company Name	Ticker	Market Data					LTM Operating Data			Forward Estimates		
		Price at 06/30/19	% of 52 Week High	Equity Value	Enterprise Value	Debt / Total Capital	Total Assets	LTM Revenue	LTM EBITDA	CY 2019 Revenue Estimate	CY 2019 EBITDA Estimate	
Lumber, Millwork, Plywood and Structural Wood												
American Woodmark Corporation	AMWD	NasdaqGS:AMWD	\$84.62	85.9%	\$1,427.54	\$2,015.50	52.7%	\$1,529.93	\$1,645.32	\$231.73	\$1,680.65	\$244.72
Fortune Brands Home & Security, Inc.	FBHS	NYSE:FBHS	\$57.13	98.1%	\$7,991.39	\$9,893.33	54.6%	\$6,289.20	\$5,558.40	\$873.60	\$5,856.12	\$935.73
Trex Company, Inc.	TREX	NYSE:TREX	\$71.70	79.0%	\$4,194.58	\$4,165.51	18.2%	\$535.65	\$692.61	\$183.09	\$726.60	\$200.77
Builders FirstSource, Inc.	BLDR	NasdaqGS:BLDR	\$16.86	89.4%	\$1,949.14	\$3,759.46	74.6%	\$3,199.47	\$7,655.64	\$487.38	\$7,352.19	\$467.92
Universal Forest Products, Inc.	UFPI	NasdaqGS:UFPI	\$38.06	98.5%	\$2,335.07	\$2,404.28	23.6%	\$1,821.40	\$4,510.45	\$275.03	\$4,614.23	\$292.92
Refrigeration and Heating Equipment												
AAON, Inc.	AAON	NasdaqGS:AAON	\$50.18	95.6%	\$2,615.14	\$2,693.47	0.0%	\$319.53	\$448.69	\$85.39	\$507.26	\$107.35
Lennox International Inc.	LII	NYSE:LII	\$275.00	95.7%	\$10,784.86	\$11,839.70	115.4%	\$2,340.40	\$3,763.10	\$590.60	\$3,823.41	\$708.94
Masco Corporation	MAS	NYSE:MAS	\$39.24	95.7%	\$11,518.86	\$14,518.99	98.7%	\$5,602.00	\$8,347.00	\$1,381.00	\$8,554.22	\$1,436.97
A. O. Smith Corporation	AOS	NYSE:AOS	\$47.16	76.8%	\$7,884.99	\$7,173.17	16.2%	\$3,143.50	\$3,148.10	\$615.90	\$3,231.46	\$652.35
Roofing, Siding and Insulation												
Owens Corning	OC	NYSE:OC	\$58.20	86.5%	\$6,318.75	\$9,936.98	44.5%	\$10,183.00	\$7,127.00	\$1,298.00	\$7,143.18	\$1,278.97
Armstrong World Industries, Inc.	AWI	NYSE:AWI	\$97.20	97.9%	\$4,758.84	\$5,402.62	75.2%	\$1,942.60	\$990.10	\$295.70	\$1,067.64	\$403.04
Cornerstone Building Brands, Inc.	USG	NYSE:CNR	\$5.83	27.0%	\$731.75	\$4,279.33	76.4%	\$5,141.19	\$3,359.22	\$132.17	\$0.00	\$0.00
Windows and Doors												
Griffon Corporation	GFF	NYSE:GFF	\$16.92	85.2%	\$737.60	\$1,837.12	72.0%	\$2,143.91	\$2,122.21	\$183.94	\$2,211.15	\$191.03
PGT Innovations, Inc.	PGTI	NYSE:PGTI	\$16.72	63.3%	\$975.57	\$1,296.44	50.2%	\$890.75	\$731.98	\$125.84	\$786.02	\$146.48
Masonite International Corporation	DOOR	NYSE:DOOR	\$52.68	71.9%	\$1,324.72	\$2,167.55	60.4%	\$1,871.72	\$2,182.54	\$258.93	\$2,235.27	\$287.69
Quanex Building Products Corporation	NX	NYSE:NX	\$18.89	95.6%	\$620.68	\$794.37	38.5%	\$707.04	\$898.92	\$89.57	\$918.23	\$100.65
Building Products - Other												
Gibraltar Industries, Inc.	ROCK	NasdaqGS:ROCK	\$40.36	82.2%	\$1,299.71	\$1,265.82	5.3%	\$866.26	\$1,014.45	\$117.97	\$1,042.33	\$134.22
Insteel Industries, Inc.	IIN	NasdaqGS:IIN	\$20.82	47.6%	\$400.82	\$365.26	0.0%	\$304.80	\$463.68	\$32.26	\$477.38	\$31.72
Simpson Manufacturing Co., Inc.	SSD	NYSE:SSD	\$66.46	84.8%	\$2,968.23	\$2,791.89	4.3%	\$1,030.35	\$1,093.27	\$206.74	\$1,144.92	\$234.57

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

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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 June 30, 2019

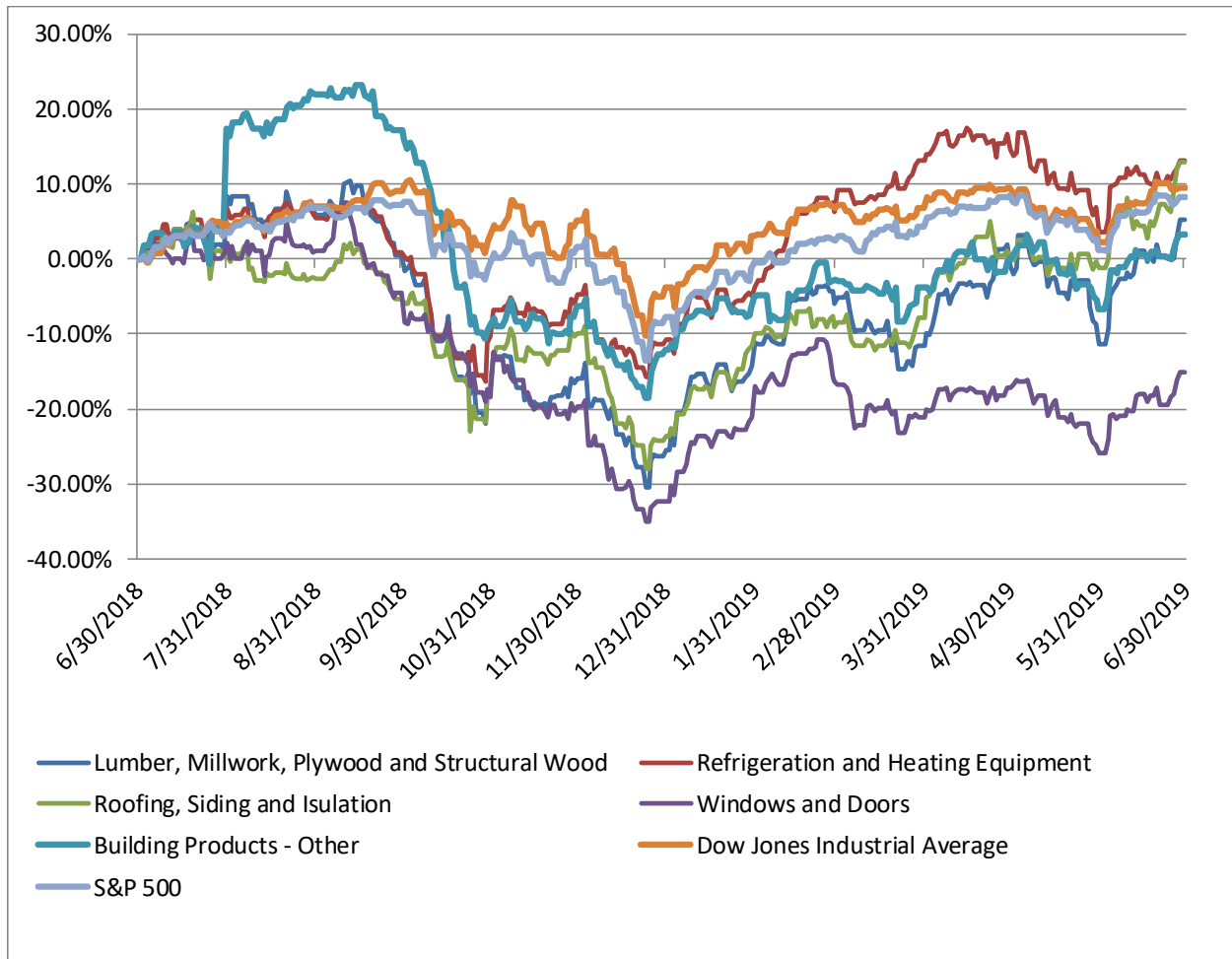
(USD in millions, except per share data)

Company Name	Ticker	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
Lumber, Millwork, Plywood and Structural Wood											
American Woodmark Corporation	AMWD	5.7%	13.9%	6.6%	31.6%	38.4%	14.1%	1.2x	1.2x	8.7x	8.2x
Fortune Brands Home & Security, Inc.	FBHS	7.6%	17.3%	9.8%	3.9%	1.6%	15.7%	1.8x	1.7x	11.3x	10.6x
Trex Company, Inc.	TREX	21.4%	41.3%	26.6%	17.1%	9.9%	26.4%	6.0x	5.7x	22.8x	20.7x
Builders FirstSource, Inc.	BLDR	7.7%	42.1%	10.1%	6.3%	24.8%	6.4%	0.5x	0.5x	7.7x	8.0x
Universal Forest Products, Inc.	UFPI	7.6%	14.4%	9.4%	10.3%	14.9%	6.1%	0.5x	0.5x	8.7x	8.2x
	Mean	10.0%	25.8%	12.5%	13.8%	17.9%	13.7%	2.0x	1.9x	11.8x	11.2x
	Median	7.6%	17.3%	9.8%	10.3%	14.9%	14.1%	1.2x	1.2x	8.7x	8.2x
Refrigeration and Heating Equipment											
AAON, Inc.	AAON	13.2%	19.7%	16.5%	7.3%	4.9%	19.0%	6.0x	5.3x	31.5x	25.1x
Lennox International Inc.	LII	14.7%	N/A	25.2%	-4.8%	0.4%	15.7%	3.1x	3.1x	20.0x	16.7x
Masco Corporation	MAS	13.6%	666.7%	23.0%	7.2%	7.8%	16.5%	1.7x	1.7x	10.5x	10.1x
A. O. Smith Corporation	AOS	10.8%	25.1%	16.6%	3.4%	1.8%	19.6%	2.3x	2.2x	11.6x	11.0x
	Mean	13.1%	237.2%	20.3%	3.3%	3.7%	17.7%	3.3x	3.1x	18.4x	15.7x
	Median	13.6%	25.1%	19.8%	5.3%	3.4%	17.8%	2.7x	2.7x	15.8x	13.8x
Roofing, Siding and Insulation											
Owens Corning	OC	5.4%	12.0%	6.8%	4.4%	22.3%	18.2%	1.4x	1.4x	7.7x	7.8x
Armstrong World Industries, Inc.	AWI	7.6%	54.0%	12.1%	9.9%	26.9%	29.9%	5.5x	5.1x	18.3x	13.4x
Cornerstone Building Brands, Inc.	USG	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	1.3x	N/A	32.4x	N/A
	Mean	4.3%	22.0%	6.3%	4.8%	16.4%	17.3%	2.7x	3.2x	19.4x	10.6x
	Median	5.4%	12.0%	6.8%	4.4%	22.3%	18.2%	1.4x	3.2x	18.3x	10.6x
Windows and Doors											
Griffon Corporation	GFF	3.7%	5.0%	4.8%	24.5%	40.8%	8.7%	0.9x	0.8x	10.0x	9.6x
PGT Innovations, Inc.	PGTI	9.1%	18.9%	10.4%	35.9%	40.1%	17.2%	1.8x	1.6x	10.3x	8.9x
Masonite International Corporation	DOOR	5.8%	12.0%	7.2%	5.8%	4.3%	11.9%	1.0x	1.0x	8.4x	7.5x
Quanex Building Products Corporation	NX	3.3%	-2.7%	4.0%	3.5%	-5.2%	10.0%	0.9x	0.9x	8.9x	7.9x
	Mean	5.5%	8.3%	6.6%	17.4%	20.0%	11.9%	1.1x	1.1x	9.4x	8.5x
	Median	4.7%	8.5%	6.0%	15.1%	22.2%	10.9%	0.9x	0.9x	9.4x	8.4x
Building Products - Other											
Gibraltar Industries, Inc.	ROCK	6.7%	10.8%	8.8%	1.9%	-1.9%	11.6%	1.2x	1.2x	10.7x	9.4x
Insteel Industries, Inc.	IIIN	4.0%	7.0%	4.9%	8.2%	-33.5%	7.0%	0.8x	0.8x	11.3x	11.5x
Simpson Manufacturing Co., Inc.	SSD	10.1%	14.4%	11.9%	9.1%	13.8%	18.9%	2.6x	2.4x	13.5x	11.9x
	Mean	6.9%	10.7%	8.5%	6.4%	-7.2%	12.5%	1.5x	1.5x	11.9x	10.9x
	Median	6.7%	10.8%	8.8%	8.2%	-1.9%	11.6%	1.2x	1.2x	11.3x	11.5x

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 June 30, 2019



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

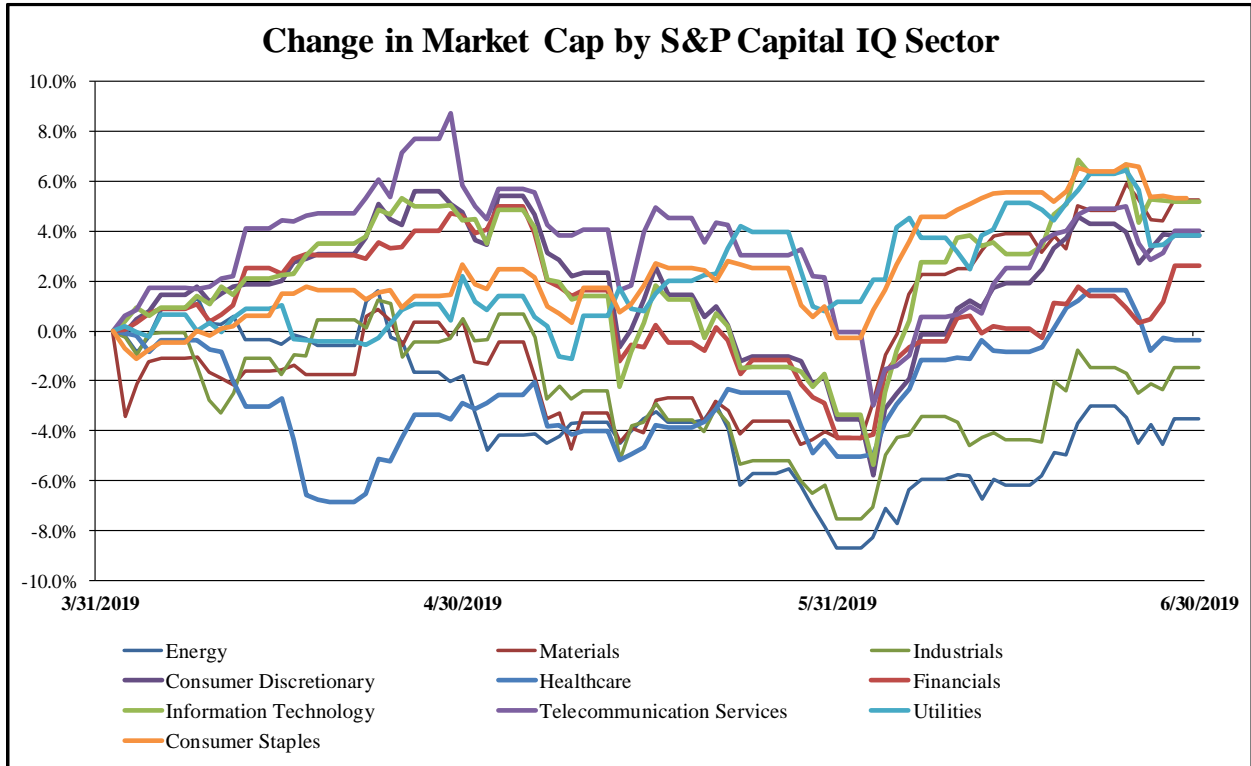
Recent M&A Activity in the Building Products Industry June 30, 2018 to June 30, 2019

(USD in millions)

Close Date	Target	Acquirer	Target Company Primary Industry	Implied Enterprise Value
4/24/2019	USG Corporation	Gebr. Knauf KG.	Building Products	\$6,937.26
11/16/2018	Ply Gem Parent, LLC	NCI Building Systems, Inc. (nka:Cornerstone Building	Building Products	\$3,606.47
6/4/2019	Formica Corporation	Broadview Holding B.V.	Building Products	\$840.00
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
10/15/2018	Silver Line Division of Andersen Corporation	Ply Gem Midco, Inc.	Building Products	\$190.00
2/20/2019	Environmental Materials, LLC	Ply Gem Industries, Inc.	Construction Materials	\$186.00
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
11/23/2018	Glen-Gery Corporation	Brickworks Limited	Construction Materials	\$110.00
12/31/2018	Armstrong Wood Products, Inc.	American Industrial Partners	Building Products	\$100.00
3/29/2019	VPI Quality Windows, Inc.	JELD-WEN Holding, Inc.	Building Products	\$57.49
12/3/2018	Arran 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
3/4/2019	Business and Assets of Architectural Components Group, Inc.	Armstrong World Industries, Inc.	Building Products	\$43.10
12/31/2018	T.A.C. Ceramic Tile Co.	L.A.R.K. Industries, Inc.	Building Products	\$42.50
8/16/2018	Steel Ceilings, Inc.	Armstrong World Industries, Inc.	Building Products	\$12.30
2/28/2019	Liquid Asphalt Terminal in Panama City, Florida	Construction Partners, Inc.	Building Products	\$10.85
1/31/2019	MSD Research, Inc.	CSW Industrials, Inc.	Building Products	\$10.10
6/25/2019	Soho Studio Corp./TileBar	LongueVue Capital, LLC; LongueVue Capital	Building Products	NA
6/25/2019	Noise Barriers, LLC	Sound Seal Inc.	Building Products	NA
6/19/2019	MPL Holdings, LLC	Wynnchurch Capital, LLC; Wynnchurch Capital	Building Products	NA
6/17/2019	Stellar Materials LLC	Unifrax Corporation	Construction Materials	NA
6/11/2019	Silvercote, LLC and the Assets of Silvercote's Canadian Operations	Distribution International, Inc.	Building Products	NA
6/11/2019	United Poly Systems, LLC	Industrial Opportunity Partners LLC; Industrial	Building Products	NA
6/11/2019	Paving Division of Dayton Superior Corporation	Simplex Construction Supplies, Inc.; T-street Capital	Construction Materials	NA
6/10/2019	DaVinci Roofscapes, L.L.C.	Royal Building Products (USA) Inc.	Building Products	NA
6/5/2019	Water Street Brass Corporation	Top Knobs	Building Products	NA
6/5/2019	Alumafold Pacific, Inc.	Material Sciences Corporation	Building Products	NA
6/5/2019	Assets of International Granite & Marble corp.	Cosmos Granite (East), LLC	Construction Materials	NA
5/30/2019	Sargent and Greenleaf, Inc.	OpenGate Capital, LLC	Building Products	NA
5/20/2019	Assets of Heppner Hardwoods	Saroyan Hardwoods, Inc	Building Products	NA
5/7/2019	USA Sliding Doors, Inc.	AdvanTec Manufacturing USA Inc.	Building Products	NA
5/3/2019	Diversified Fall Protection	North Branch Capital, LLC; Baird Principal Group	Building Products	NA
5/3/2019	NASG Holdings Inc.	Custom Glass Solutions LLC	Construction Materials	NA
5/1/2019	Construction Tie Products Inc.	Prosoco, Inc.	Construction Materials	NA
4/29/2019	T. Christy Enterprises, Inc.	Weld-On Adhesives, Inc.	Building Products	NA
4/22/2019	Trus-Way, Inc.	Parr Lumber Company	Building Products	NA
4/4/2019	Sonic-Shield LLC	New England Soundproofing	Building Products	NA
4/4/2019	Optimal Precision Partners, LLC	BroCo Holdings, LLC.	Construction Materials	NA
4/2/2019	Allied Concrete Products LLC	Oldcastle Architectural, Inc.	Construction Materials	NA
4/2/2019	Wood Ceilings Business of Norton Industries, Inc.	CertainTeed Corporation	Building Products	NA
4/1/2019	PCS Holdings LLC	Chaney Enterprises, LP	Construction Materials	NA
3/31/2019	Non-Core Product Lines of Halex	N/A	Building Products	NA
3/20/2019	United Materials, LLC	Votorantim Cimentos North America, Inc.	Construction Materials	NA
3/19/2019	Sound Seal Inc.	The Stephens Group, LLC	Building Products	NA
3/18/2019	Windsor Rock Products, Inc.	RiverBend Materials	Construction Materials	NA

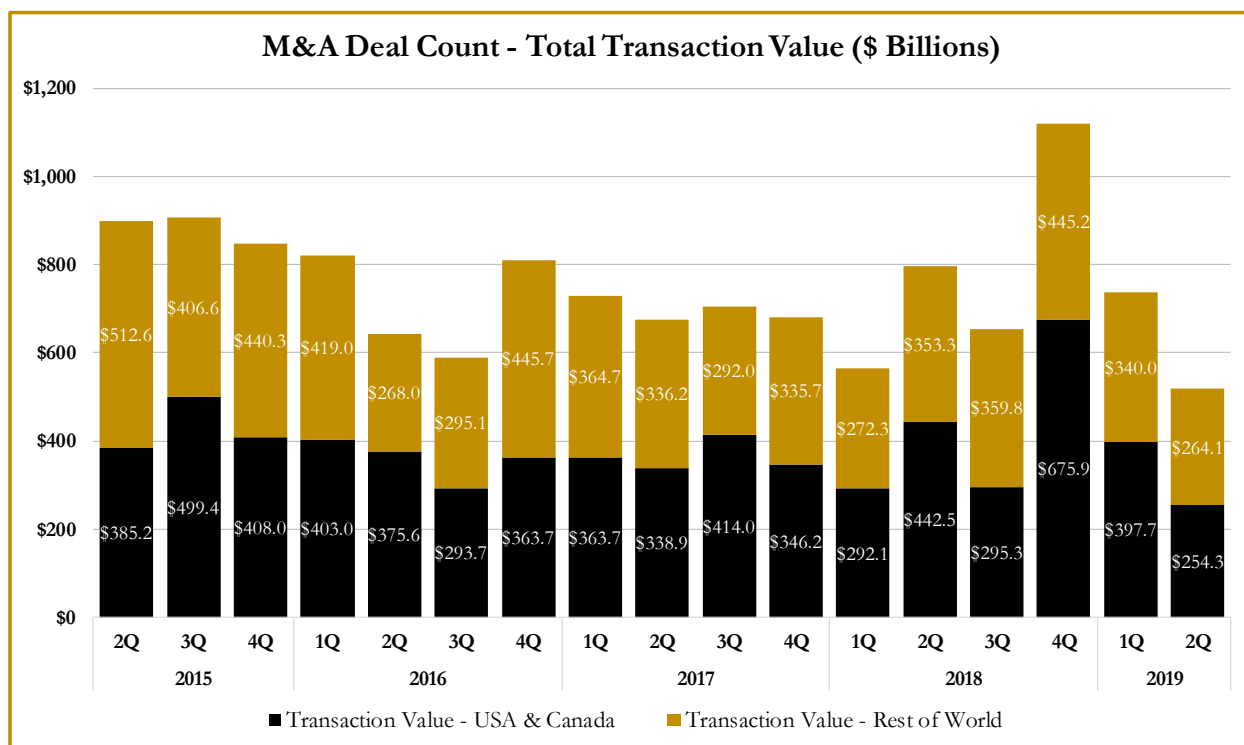
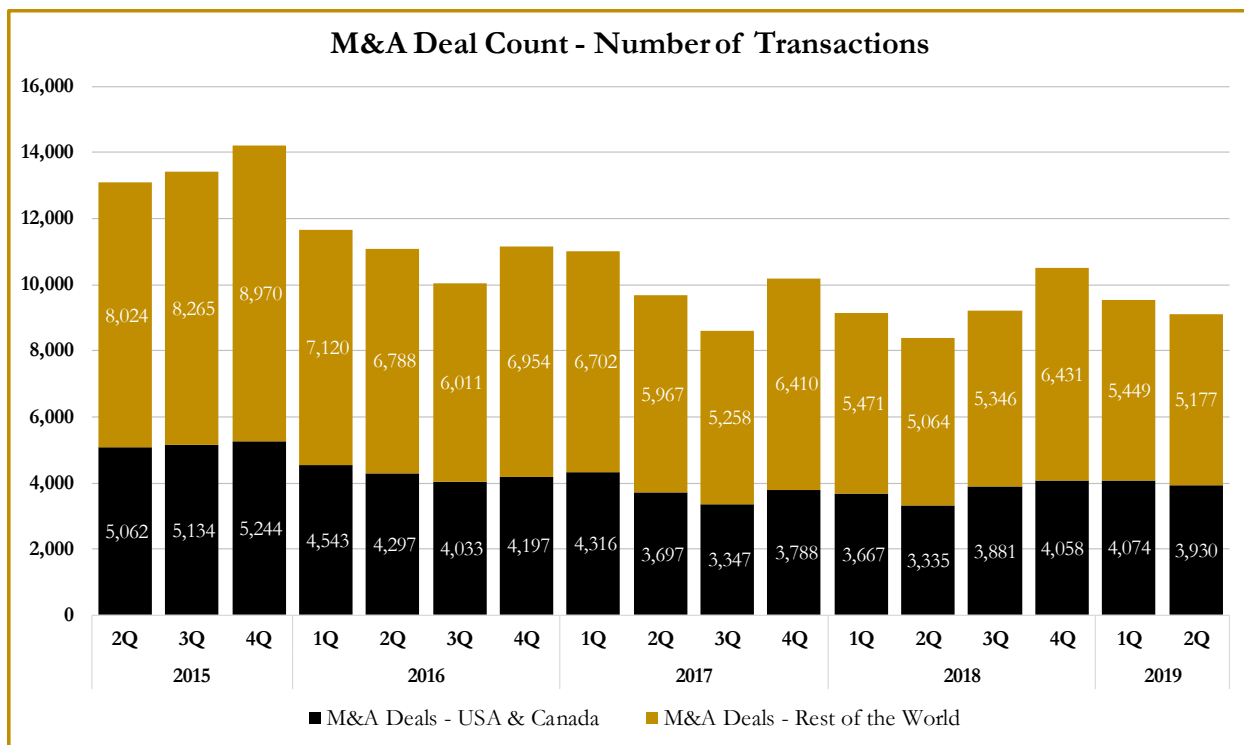
Source: Capital IQ

S&P Capital IQ - Sector Last 3 Month Equity Performance
As of June 30, 2019

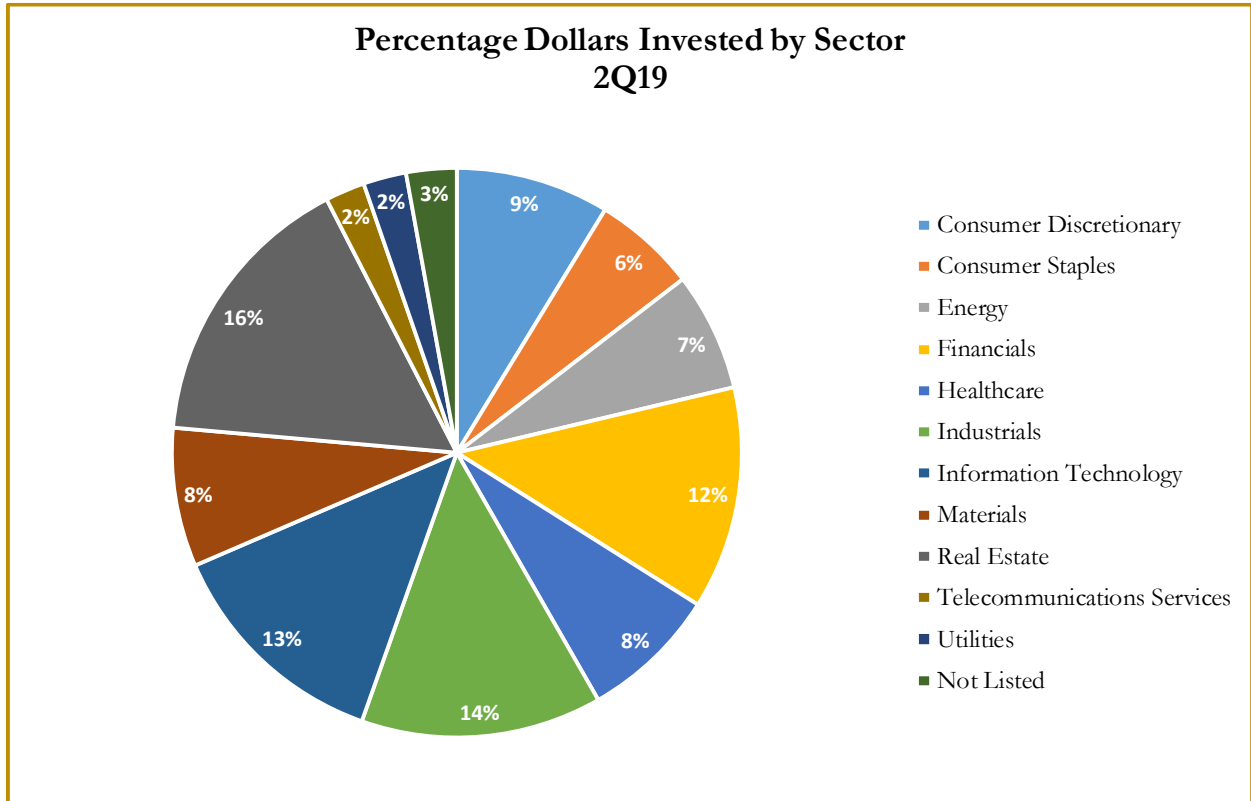


Note: The indices are derived from the equity performance of the S&P Capital IQ Sectors. Source: Capital IQ

M&A Deal Flow Statistics by S&P Capital IQ Sector As of June 30, 2019



M&A Deal Flow Statistics by S&P Capital IQ Sector
As of June 30, 2019





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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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