



**HOULIHAN
CAPITAL**

Value. Added.



Industry Observations – December 31, 2018

**Aerospace, Defense and Other
Government-Contracted Industries**

Select Aerospace, Defense and Other Government Contractor Public Company Industry Data As of December 31, 2018

(USD in millions, except per share data)

Company Name	Ticker	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
Diversified Contractors											
General Dynamics Corporation	GD	\$157.21	68.4%	\$46,557.70	\$61,144.73	51.4%	\$45,408.00	\$36,193.00	\$5,265.00	\$38,559.39	\$5,394.87
Juniper Networks, Inc.	JNPR	\$26.91	87.4%	\$9,288.10	\$7,584.98	30.7%	\$9,363.30	\$4,647.50	\$794.50	\$4,490.95	\$969.04
Kratos Defense & Security Solutions, Inc.	KTOS	\$14.09	87.6%	\$1,461.87	\$1,813.53	36.5%	\$1,011.90	\$768.50	\$58.10	\$722.15	\$73.93
MasTec, Inc.	MTZ	\$40.56	73.0%	\$3,131.36	\$4,902.28	54.3%	\$4,974.81	\$6,594.73	\$603.71	\$7,535.39	\$774.50
Motorola Solutions, Inc.	MSI	\$115.04	85.9%	\$18,812.25	\$26,227.77	131.6%	\$9,409.00	\$7,343.00	\$1,761.00	\$7,845.11	\$2,127.22
QUALCOMM Incorporated	QCOM	\$56.91	74.4%	\$68,984.17	\$66,937.27	81.9%	\$34,246.00	\$21,539.00	\$6,389.00	\$21,029.05	\$6,666.84
Teledyne Technologies Incorporated	TDY	\$207.07	82.5%	\$7,470.90	\$8,859.03	25.2%	\$3,809.30	\$2,901.80	\$541.70	\$3,011.59	\$600.00
Information Technology and Consulting Contractors											
CACI International Inc	CACI	\$144.03	71.7%	\$3,578.99	\$5,348.57	31.9%	\$4,290.62	\$4,641.69	\$456.86	\$5,187.36	\$482.91
Fortinet, Inc.	FTNT	\$70.43	74.6%	\$11,999.17	\$12,153.79	0.0%	\$3,078.00	\$1,801.20	\$286.70	\$2,087.48	\$545.76
Harris Corporation	HRS	\$134.65	76.7%	\$16,168.77	\$22,347.62	52.8%	\$9,852.00	\$6,445.00	\$1,519.00	\$6,922.05	\$1,571.20
ManTech International Corporation	MANT	\$52.30	76.8%	\$2,077.80	\$2,289.92	0.0%	\$1,795.53	\$1,923.77	\$161.14	\$2,102.11	\$185.76
NetApp, Inc.	NTAP	\$59.67	67.7%	\$15,030.04	\$14,111.47	53.9%	\$8,551.00	\$6,166.00	\$1,267.00	\$6,506.52	\$1,669.98
NIC Inc.	EGOV	\$12.48	70.5%	\$830.79	\$948.63	0.0%	\$310.53	\$344.90	\$84.18	\$339.95	\$79.90
Tyler Technologies, Inc.	TYL	\$185.82	73.6%	\$7,214.14	\$7,811.20	0.0%	\$1,864.62	\$910.77	\$194.07	\$1,038.97	\$315.74
Verint Systems Inc.	VRNT	\$42.31	80.7%	\$2,761.64	\$3,718.76	39.1%	\$2,703.58	\$1,218.25	\$164.58	\$1,330.81	\$326.12
Viasat, Inc.	VSAT	\$58.95	73.4%	\$3,516.38	\$5,506.19	38.1%	\$3,629.72	\$1,950.71	\$160.10	\$2,162.74	\$397.05
VSE Corporation	VSEC	\$29.91	53.4%	\$325.45	\$532.62	37.7%	\$637.07	\$711.02	\$77.61	\$0.00	\$0.00

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 Aerospace, Defense and Other Government Contractor Public Company Industry Data

As of December 31, 2018

(USD in millions, except per share data)

Company Name	Ticker	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
Aerospace and Defense Contractors											
AAR Corp.	AIR	\$37.34	72.5%	\$1,282.84	\$1,458.17	19.0%	\$1,604.20	\$1,889.40	\$127.10	\$2,114.65	\$187.74
OSI Systems, Inc.	OSIS	\$73.30	88.4%	\$1,330.62	\$1,875.30	44.9%	\$1,297.68	\$1,124.08	\$148.75	\$1,191.56	\$196.49
Ball Corporation	BLL	\$45.98	90.2%	\$15,596.01	\$24,290.41	65.4%	\$16,554.00	\$11,635.00	\$1,828.00	\$11,722.88	\$1,993.86
Cubic Corporation	CUB	\$53.74	69.5%	\$1,673.09	\$2,033.92	22.7%	\$1,548.96	\$1,259.77	\$94.27	\$1,455.05	\$159.08
Esterline Technologies Corporation	ESL	\$121.45	99.4%	\$3,599.88	\$3,905.83	26.3%	\$3,017.38	\$2,037.78	\$334.93	\$2,094.47	\$331.74
FLIR Systems, Inc.	FLIR	\$43.54	68.2%	\$6,023.67	\$6,750.96	17.8%	\$2,856.89	\$1,822.01	\$411.21	\$1,847.69	\$464.92
Hexcel Corporation	HXL	\$57.34	78.1%	\$4,936.71	\$6,842.41	42.0%	\$2,824.10	\$2,189.10	\$502.00	\$2,415.95	\$575.35
Huntington Ingalls Industries, Inc.	HII	\$190.31	68.8%	\$8,174.63	\$10,202.62	41.3%	\$6,199.00	\$7,973.00	\$1,216.00	\$8,180.48	\$1,066.92
Northrop Grumman Corporation	NOC	\$244.90	67.9%	\$42,519.47	\$60,650.74	64.1%	\$37,653.00	\$30,095.00	\$5,003.00	\$34,124.87	\$4,787.22
Raytheon Company	RTN	\$153.35	66.7%	\$43,639.88	\$51,920.79	29.8%	\$31,864.00	\$27,058.00	\$3,876.00	\$28,880.29	\$5,260.67
The Boeing Company	BA	\$322.50	81.8%	\$183,143.03	\$235,099.93	97.1%	\$117,359.00	\$101,127.00	\$13,915.00	\$110,912.67	\$17,739.28
TransDigm Group Incorporated	TDG	\$340.06	90.0%	\$17,937.63	\$33,062.47	114.8%	\$12,389.28	\$3,956.47	\$1,895.68	\$4,263.72	\$2,122.21
Triumph Group, Inc.	TGI	\$11.50	38.3%	\$573.11	\$2,686.19	120.4%	\$3,330.51	\$3,392.76	\$127.49	\$2,996.61	\$259.04
United Technologies Corporation	UTX	\$106.48	73.9%	\$91,933.15	\$147,213.61	52.8%	\$134,211.00	\$66,501.00	\$11,256.00	\$77,029.06	\$13,718.16

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

Select Aerospace, Defense and Other Government Contractor Public Company Valuation Metrics As of December 31, 2018

(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
Diversified Contractors											
General Dynamics Corporation	GD	7.0%	29.0%	14.2%	16.9%	14.0%	14.5%	1.7x	1.6x	11.6x	11.3x
Juniper Networks, Inc.	JNPR	3.8%	11.9%	5.3%	-7.6%	-30.9%	17.1%	1.6x	1.7x	9.5x	7.8x
Kratos Defense & Security Solutions, Inc.	KTOS	2.3%	-4.0%	2.8%	24.1%	83.3%	7.6%	2.4x	2.5x	31.2x	24.5x
MasTec, Inc.	MTZ	5.6%	27.8%	8.5%	3.9%	-0.5%	9.2%	0.7x	0.7x	8.1x	6.3x
Motorola Solutions, Inc.	MSI	9.9%	N/A	25.8%	15.1%	4.9%	24.0%	3.6x	3.3x	14.9x	12.3x
QUALCOMM Incorporated	QCOM	6.1%	15.9%	9.1%	-3.5%	0.3%	29.7%	3.1x	3.2x	10.5x	10.0x
Tekdyne Technologies Incorporated	TDY	7.0%	16.0%	9.0%	11.4%	14.9%	18.7%	3.1x	2.9x	16.4x	14.8x
	Mean	6.0%	16.1%	10.7%	8.6%	12.3%	17.2%	2.3x	2.3x	14.6x	12.5x
	Median	6.1%	15.9%	9.0%	11.4%	4.9%	17.1%	2.4x	2.5x	11.6x	11.3x
Information Technology and Consulting Contractors											
CACI International Inc	CACI	5.9%	12.4%	7.5%	5.6%	23.2%	9.8%	1.2x	1.0x	11.7x	11.1x
Fortinet, Inc.	FTNT	5.4%	41.5%	18.1%	20.5%	71.2%	15.9%	6.7x	5.8x	42.4x	22.3x
Harris Corporation	HRS	8.0%	27.0%	11.1%	7.8%	12.5%	23.6%	3.5x	3.2x	14.7x	14.2x
ManTech International Corporation	MANT	4.0%	9.8%	5.2%	16.7%	27.7%	8.4%	1.2x	1.1x	14.2x	12.3x
NetApp, Inc.	NTAP	7.4%	13.7%	15.0%	9.7%	25.9%	20.5%	2.3x	2.2x	11.1x	8.5x
NIC Inc.	EGOV	15.5%	30.7%	24.7%	2.5%	1.0%	24.4%	2.8x	2.8x	11.3x	11.9x
Tyler Technologies, Inc.	TYL	5.8%	14.1%	7.8%	11.5%	5.2%	21.3%	8.6x	7.5x	40.2x	24.7x
Verint Systems Inc.	VRNT	2.6%	5.3%	3.5%	9.5%	65.4%	13.5%	3.1x	2.8x	22.6x	11.4x
Viasat, Inc.	VSAT	-1.9%	-4.9%	-2.2%	24.1%	-1.0%	8.2%	2.8x	2.5x	34.4x	13.9x
VSE Corporation	VSEC	5.2%	14.5%	6.6%	-8.9%	-4.0%	10.9%	0.7x	N/A	6.9x	N/A
	Mean	5.8%	16.4%	9.7%	9.9%	22.7%	15.7%	3.3x	3.2x	21.0x	14.5x
	Median	5.6%	13.9%	7.7%	9.6%	17.9%	14.7%	2.8x	2.8x	14.5x	12.3x

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

Source: Capital IQ

Select Aerospace, Defense and Other Government Contractor Public Company Valuation Metrics As of December 31, 2018

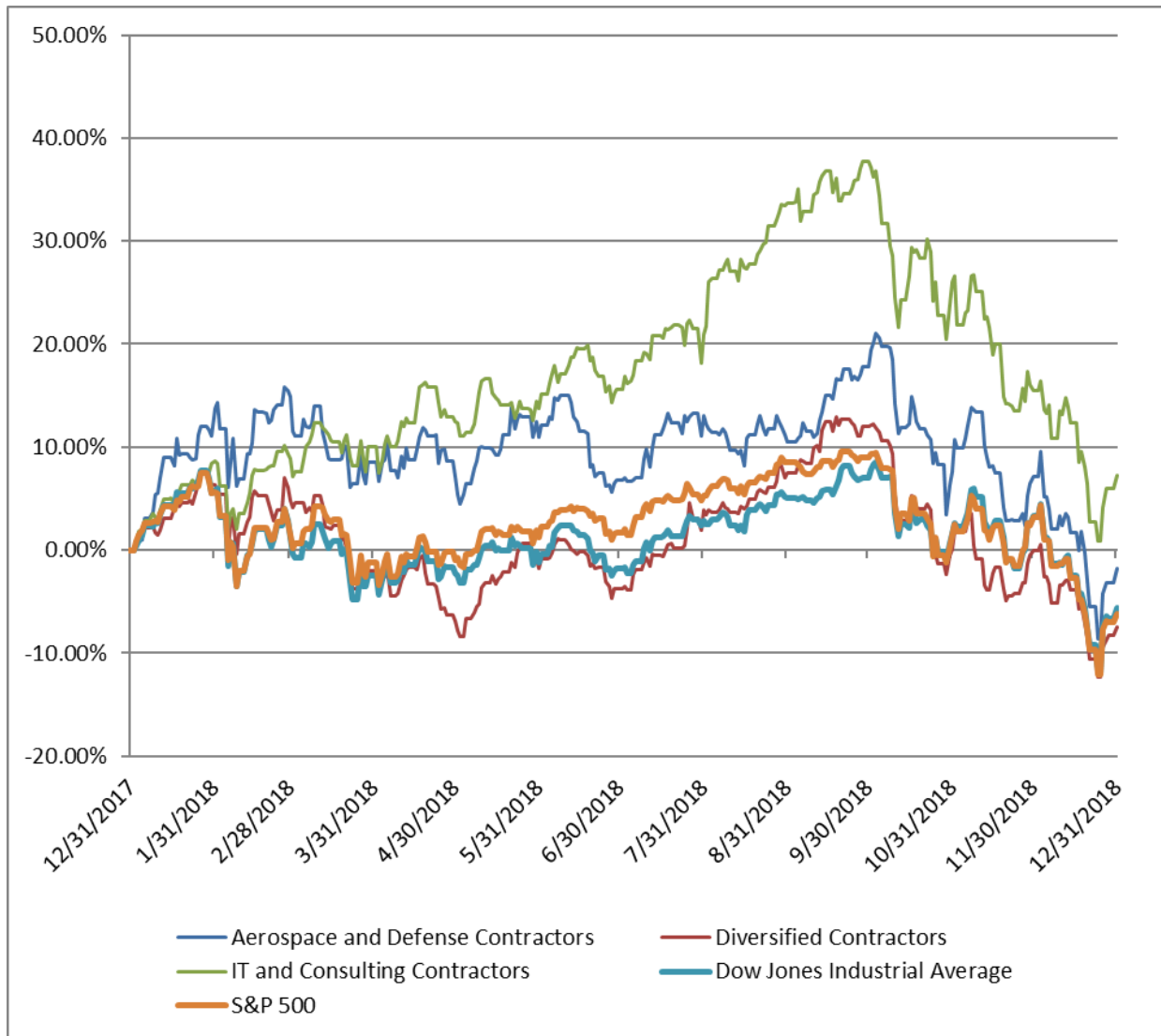
(USD in millions, except per share data)

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
Aerospace and Defense Contractors											
AAR Corp.	AIR	3.5%	8.6%	4.8%	12.7%	7.8%	6.7%	0.8x	0.7x	11.5x	7.8x
OSI Systems, Inc.	OSIS	4.4%	7.0%	6.2%	8.9%	-14.8%	13.2%	1.7x	1.6x	12.6x	9.5x
Ball Corporation	BLL	4.2%	11.9%	6.6%	5.9%	4.3%	15.7%	2.1x	2.1x	13.3x	12.2x
Cubic Corporation	CUB	1.9%	1.1%	2.5%	13.3%	109.5%	7.5%	1.6x	1.4x	21.6x	12.8x
Esterline Technologies Corporation	ESL	4.7%	7.6%	5.6%	0.7%	19.5%	16.4%	1.9x	1.9x	11.7x	11.8x
FLIR Systems, Inc.	FLIR	7.7%	7.0%	9.2%	2.3%	9.5%	22.6%	3.7x	3.7x	16.4x	14.5x
Hexcel Corporation	HXL	8.5%	19.6%	10.3%	10.9%	10.3%	22.9%	3.1x	2.8x	13.6x	11.9x
Huntington Ingalls Industries, Inc.	HII	10.2%	38.9%	20.6%	8.2%	10.8%	15.3%	1.3x	1.2x	8.4x	9.6x
Northrop Grumman Corporation	NOC	7.2%	42.2%	11.6%	15.7%	1.5%	16.6%	2.0x	1.8x	12.1x	12.7x
Raytheon Company	RTN	6.6%	25.8%	12.7%	6.7%	2.1%	14.3%	1.9x	1.8x	13.4x	9.9x
The Boeing Company	BA	7.0%	2545.0%	57.2%	8.3%	14.8%	13.8%	2.3x	2.1x	16.9x	13.3x
TransDigm Group Incorporated	TDG	9.8%	N/A	10.8%	11.8%	14.0%	47.9%	8.4x	7.8x	17.4x	15.6x
Triumph Group, Inc.	TGI	0.9%	-180.9%	2.0%	5.3%	-65.0%	3.8%	0.8x	0.9x	21.1x	10.4x
United Technologies Corporation	UTX	4.8%	15.6%	7.6%	11.1%	14.5%	16.9%	2.2x	1.9x	13.1x	10.7x
	Mean	5.8%	196.1%	12.0%	8.7%	9.9%	16.7%	2.4x	2.3x	14.5x	11.6x
	Median	5.7%	11.9%	8.4%	8.6%	9.9%	15.5%	2.0x	1.8x	13.3x	11.8x

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

Source: Capital IQ

Aerospace, Defense and Other Government Contractor 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

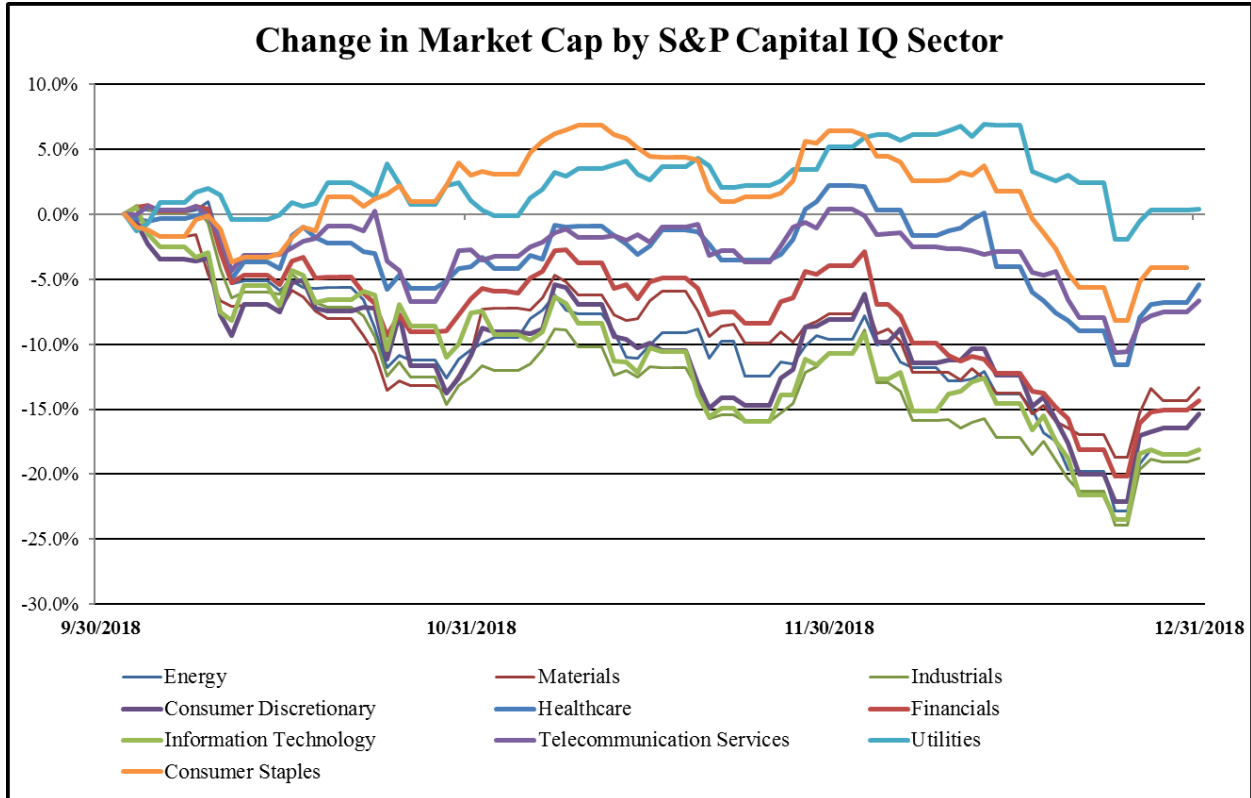
Recent M&A Activity in Aerospace, Defense and Other Government Contracted Industries December 31, 2017 to December 31, 2018

(USD in millions)

Close Date	Target	Acquirer	Target Company Primary Industry	Implied Enterprise Value
11/26/2018	Rockwell Collins, Inc. (nka:Collins Aerospace)	United Technologies Corporation	Aerospace and Defense	\$30,365.22
6/6/2018	Orbital ATK, Inc. (nka:Northrop Grumman Innovation Systems,	Northrop Grumman Corporation	Aerospace and Defense	\$9,355.03
4/2/2018	ECS Federal, LLC	On Assignment, Inc. (nka:ASGN Incorporated)	Aerospace and Defense	\$775.00
6/29/2018	L-3 Communications Vertex Aerospace LLC and Related Assets	American Industrial Partners	Aerospace and Defense	\$540.00
4/24/2018	Extant Components Group Holdings, Inc.	TransDigm Group Incorporated	Aerospace and Defense	\$525.00
4/25/2018	SGT, Inc.	KBRwyle Technology Solutions, LLC	Aerospace and Defense	\$355.00
1/19/2018	FMH Aerospace Corp.	AMETEK, Inc.	Aerospace and Defense	\$235.00
12/31/2018	Navistar Defense LLC	Olive Investor, L.P.	Aerospace and Defense	\$200.00
5/31/2018	Cubic Global Defense, Inc. and Omega Training Group, Inc.	Valiant Integrated Services LLC	Aerospace and Defense	\$138.00
4/11/2018	Universal Avionics Systems Corporation	Elbit Systems Ltd.	Aerospace and Defense	\$120.00
11/26/2018	Firstmark Corporation	Ontic Engineering and Manufacturing, Inc.	Aerospace and Defense	\$97.00
7/13/2018	SKANDIA, Inc.	TransDigm Group Incorporated	Aerospace and Defense	\$84.00
7/2/2018	Applied Defense Solutions, Inc.	L3 Technologies, Inc.	Aerospace and Defense	\$50.00
7/31/2018	Aitech Defense Systems, Inc.	First Israel Mezzanine Investors Ltd.	Aerospace and Defense	\$30.00
10/1/2018	All Assets and Technical Data Rights of NavCom Defense	Extant Components Group Holdings, Inc.	Aerospace and Defense	\$27.00
7/2/2018	Beaver Aerospace & Defense, Inc.	Héroux-Devtek Inc.	Aerospace and Defense	\$23.50
11/29/2018	Avborne Accessory Group, Inc.	AerSale Inc.	Aerospace and Defense	\$21.50
7/5/2018	CAD Enterprises, Inc.	Hickok Incorporated	Aerospace and Defense	\$21.00
2/16/2018	Willard Marine, Inc.	Future Mobility Solutions Limited	Aerospace and Defense	\$6.85
12/21/2018	Air Rescue Systems Corp	Mammoth Energy Services, Inc.	Aerospace and Defense	\$2.70
11/30/2018	Substantially All Assets Of American Fuel Cell & Coated Fabrics	LB Advisors, LLC	Aerospace and Defense	\$1.62
12/3/2018	VT Aviation Services, Inc./Aviation Academy of America Inc.	Vaayu Aerospace, Inc.	Aerospace and Defense	\$1.50
12/19/2018	T Brennan Aircraft Cleaning, LLC/Performance Carpet and	Sharp Details, Inc.	Aerospace and Defense	NA
11/8/2018	Silver Wings Aerospace, Inc.	Wencor Group, LLC	Aerospace and Defense	NA
11/9/2018	WACO Aircraft Corporation	Dimor Group Inc.	Aerospace and Defense	NA
11/1/2018	McCallie Associates, Inc.	Alutiq, LLC	Aerospace and Defense	NA
11/1/2018	Domain X Technologies, LLC	Analytic Services Inc.	Aerospace and Defense	NA
10/26/2018	Superior Technical Ceramics Corp.	Artemis Capital Partners	Aerospace and Defense	NA
10/19/2018	Ideal Aviation Illinois LLC	Jet Aviation AG	Aerospace and Defense	NA
10/17/2018	AMTEC Less-Lethal Systems, Inc.	PACEM Defense LLC	Aerospace and Defense	NA
10/17/2018	Operating Business and Assets of Votaw Precision Technologies,	Doerfer Corporation	Aerospace and Defense	NA
10/16/2018	Assets of S3 Aero Specialists	Jet Support Services, Inc.	Aerospace and Defense	NA
10/11/2018	CORTEK, Inc.	DecisionPoint Corporation	Aerospace and Defense	NA
10/10/2018	Assets of Panasonic Weather Solutions	FLYHT Aerospace Solutions Ltd.	Aerospace and Defense	NA
10/9/2018	The Atlas Group	F.M.I., Inc.	Aerospace and Defense	NA
10/1/2018	kSARIA Corporation	Behrman Capital	Aerospace and Defense	NA
9/27/2018	Federal Energy Infrastructure Solutions, LLC	Johnson Controls Federal Systems Inc.	Aerospace and Defense	NA
9/20/2018	TPGS, LLC	GAP Solutions Inc.	Aerospace and Defense	NA
9/13/2018	Gryphon Technologies LC	CDI Government Services, Inc.	Aerospace and Defense	NA
10/1/2018	Manufacturing line of Gulfstream G500 and G600 of The Nordam	Gulfstream Aerospace Corporation	Aerospace and Defense	NA
8/31/2018	Assets of BTL Machine, Inc.	Acromil Corporation	Aerospace and Defense	NA
8/30/2018	Optical Display Engineering	Inertial Airline Services, Inc.	Aerospace and Defense	NA
8/24/2018	Ausley Associates Inc.	MAG DS Corp.	Aerospace and Defense	NA
8/13/2018	Washington State Space Coalition	Aerospace Futures Alliance of Washington	Aerospace and Defense	NA
9/25/2018	Millennium Space Systems, Inc.	The Boeing Company	Aerospace and Defense	NA
3/31/2018	EPIR Technologies, Inc.	Leonardo DRS, Inc.	Aerospace and Defense	NA
8/9/2018	Applied Micro Design, Inc.	Patriot Technologies, Inc.	Aerospace and Defense	NA
8/22/2018	Macaulay-Brown, Inc.	Alion Science and Technology Corp.	Aerospace and Defense	NA
8/1/2018	Edge Space Systems, Inc.	Lentech, Inc.	Aerospace and Defense	NA
7/26/2018	Precision Aviation Group, Inc.	GenNx360 Capital Partners	Aerospace and Defense	NA
7/26/2018	Business & Assets of Spec Ops, Inc.	HDT Global, Inc.	Aerospace and Defense	NA
7/25/2018	Merchant Aviation LLC	Adp Ingenierie SA	Aerospace and Defense	NA
7/24/2018	Assets of Shield Aviation, Inc.	ISR Systems, Inc.	Aerospace and Defense	NA
7/9/2018	Perfekta, Inc.	Cadence Aerospace, LLC	Aerospace and Defense	NA
8/7/2018	Selmet, Inc.	WP CPP Holdings, LLC	Aerospace and Defense	NA

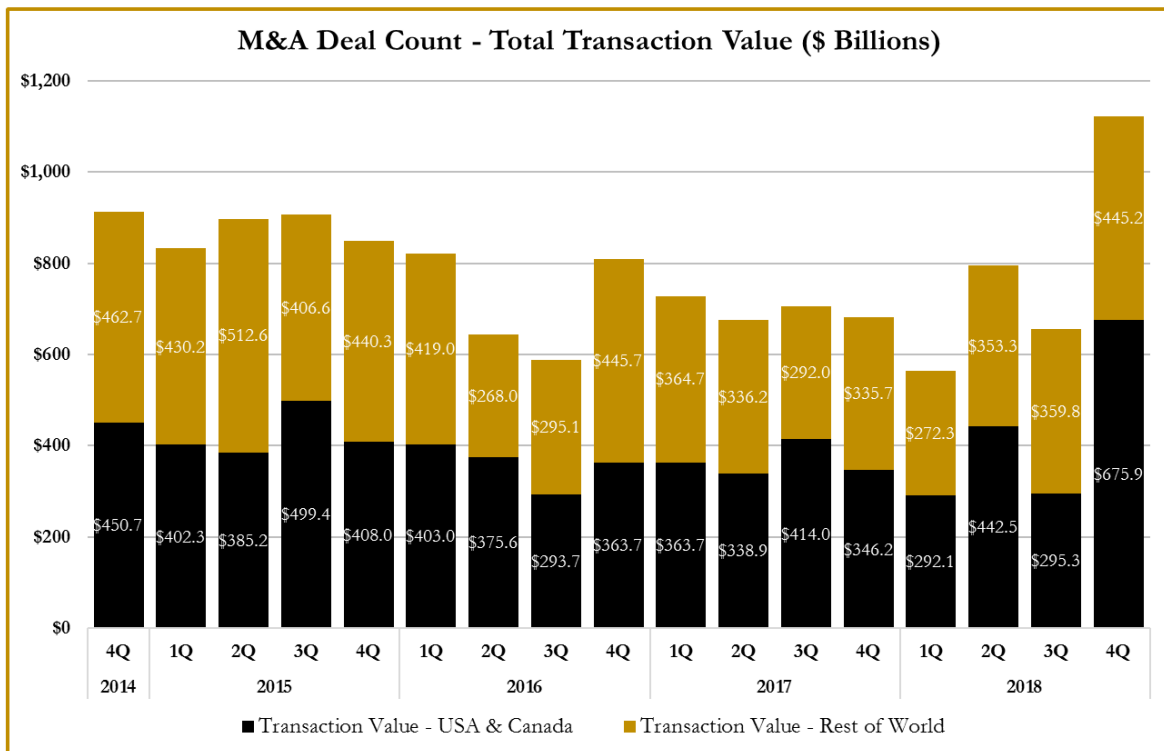
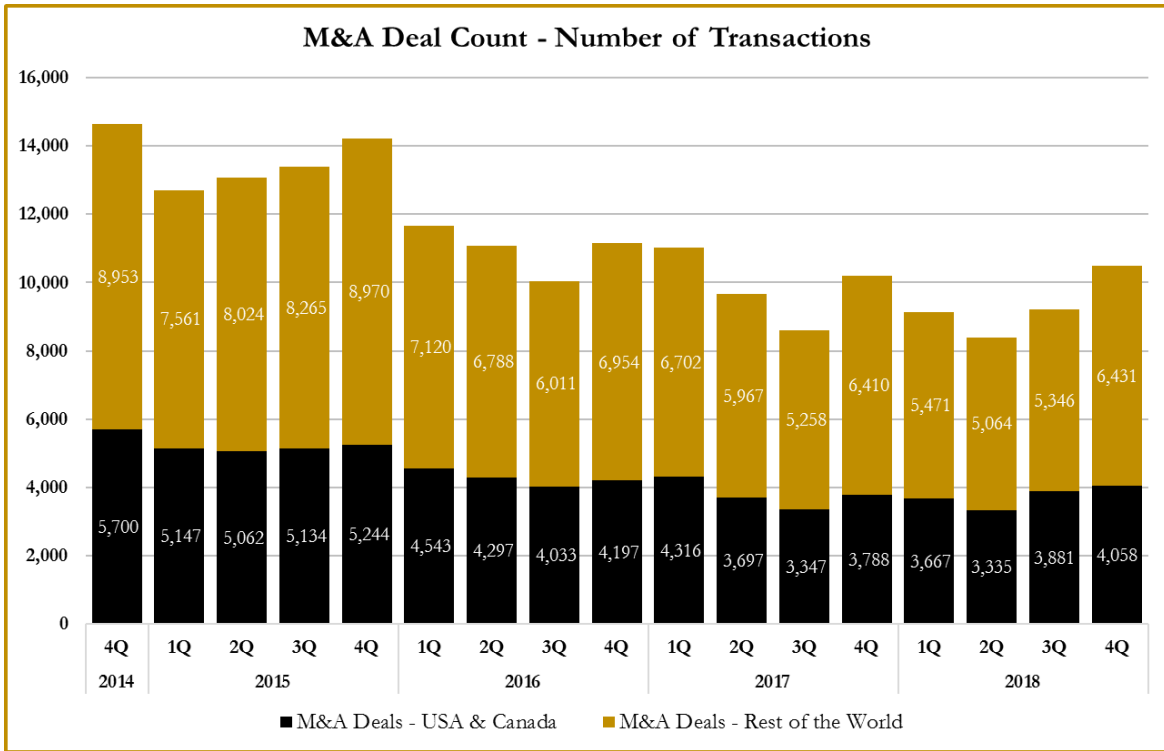
Source: Capital IQ

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

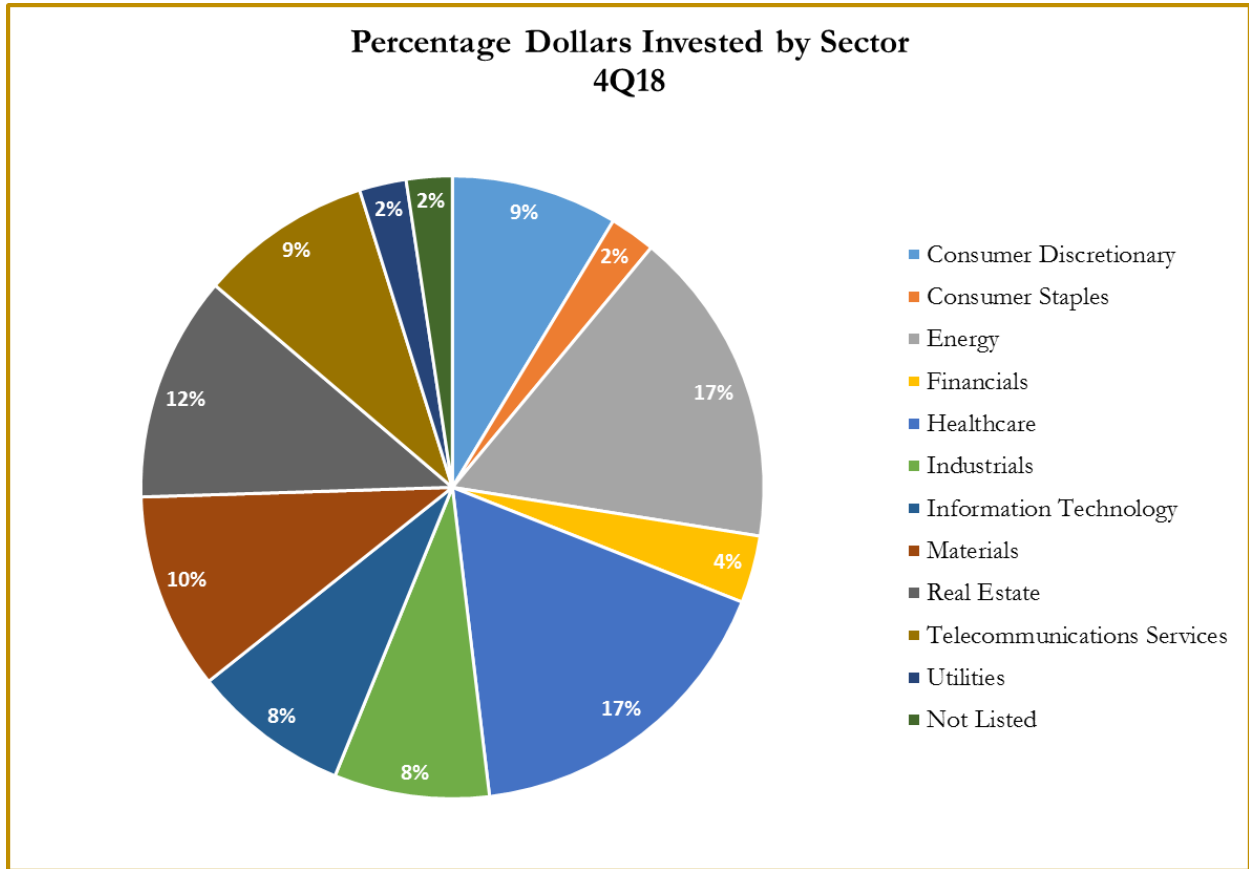


Note: The indices are derived from the equity performance of the S&P Capital IQ Sectors. Source: Capital IQ

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.

Valuation & Financial Advisory

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.

Investment Banking

Through our Investment Banking Group, we offer sell side/buy side advisory and capital raises. Through our Special Situations desk, we provide services that fit outside the archetypal verticals, including liquidity solutions, transactional advisory, and secondary market advisory and trading.

Litigation Support

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

For additional information about our industry expertise and services, visit:

www.houlihancapital.com

Andrew Smith

asmith@houlihancapital.com
312.450.8610

Paul Clark

pclark@houlihancapital.com
312.450.8656

Michael Norton

mnorton@houlihancapital.com
312.450.8628

Monica Blocker

mblocker@houlihancapital.com
312.450.8699
