

Commentary

Changes to the Index during the December Rebalance

1. CSRA Inc. (NYSE: CSRA) was added to the index following the split of CSC (NYSE: CSC) into two publicly traded firms--one focused on commercial clients (CSC) and one focused on government (CSRA).
2. BWX Technologies (NYSE: BWXT) was added to the index. Babcox & Wilcox recently sold its power division, changed its name, leaving it almost exclusively focused on its Navy nuclear business.
3. Supercom Ltd (NASDAQ: SPCB) fell below market cap requirements of the index's governing rules.

Commentary

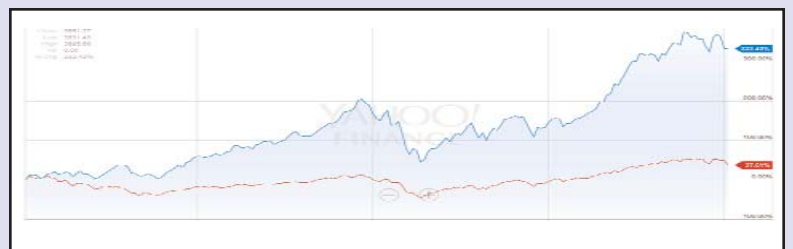
Is This the Perfect Investment? This Sector is a Top Play for 2016

If your goal is to beat the S&P500 consistently, staying invested in a single sector is usually not the right course of action. Buy and forever hold rarely produces long-term results.

Yet one sector has been a best bet for nearly 20 years; in both bull and bear markets. As far back as 1980, an investment in this sector after reinvesting dividends would typically recoup principal losses due to market timing within three years; there was no "lost decade". It also beat the S&P500 in 13 of 16 years and by double digits in almost half those years. Capital preservation with long-term gains.

Since 2000, the sector has returned 333% vs the S&P500 38%.

Sounds too good to be true but the data backs it up. Although it's always a good point to remember that past performance is not indicative of future results, there are a number of reasons why this particular sector has been able to evolve with the global economy and shifts in the market.



SPADE Defense Index Statistics

12/31/15 Close	4120.18
12/31/14 Close:	3987.52
All-time High:	4299.50
All-time Close:	4296.88
24 February 2015	

	SPADE Defense	S&P500
4Q2015	9.09%	6.56%
2015	3.23%	[0.73%]

The sector is question is Aerospace & Defense and the benchmark is the SPADE Defense Index (NYSE: ^DXS). Specifying the benchmark is important in that not all indexes, or the ETFs that track them are created equal. This particular Index was created to reflect the broader sector...not just manufacturing but information technology, reconnaissance, and cyber and adapt as the aerospace and defense sector adapts. More on this later.

All sectors go through business cycles and aerospace and defense is no different. The likely reason the sector has performed so well over time is that the sector is not just influenced by one factor, so it combines a number of different cycles into one market. For example, when you analyze the business of large aircraft systems manufacturers, they market to two distinct but complimentary markets—commercial aerospace and defense. Even in a sector such as defense, manufacturers are typically diversified and not focused on a single product or a single market (such as aircraft) but are involved with ground vehicles or naval vessels, or the varied electronics that go inside them. Outside of manufacturing they also provide a range of services whether training or maintenance related or meeting customer needs related to reconnaissance, information technology, or cybersecurity.

Let's look at some of the factors driving the sector today.

continued on page 3

2015 Results

1	Mercury Computer	40.54%	27	AAR Corp	-5.36%
2	Leidos	31.90%	28	SAIC	-7.57%
3	Northrop Grumman	28.10%	29	Heico	-10.00%
4	OSI Systems	25.28%	30	Cubic Corp	-10.24%
5	Harris	21.00%	31	FLIR Systems	-13.12%
6	Transdigm	16.35%	32	Teledyne Tech	-13.67%
7	Booz Allen	16.28%	33	Aerojet Rocketdyne	-14.43%
8	Raytheon	15.12%	34	United Technologies	-16.46%
9	Huntington Ingalls	12.80%	35	Moog	-18.14%
10	Lockheed Martin	12.76%	36	Kratos Defense	-19.75%
11	Hexcel	11.95%	37	Oshkosh Truck	-19.75%
12	Boeing	11.24%	38	American Science	-20.27%
13	Rockwell Collins	9.26%	39	Vectrus	-23.76%
14	Aerovironment	8.15%	40	Engility	-24.11%
15	CACI	7.66%	41	Esterline Tech	-26.15%
16	Ball Corp.	6.69%	42	Sparton	-29.46%
17	Honeywell	3.65%	43	FireEye	-29.46%
18	Kaman	1.80%	44	Taser Intl	-34.71%
19	Woodward	0.87%	45	Ducommun	-35.84%
20	Mantech Intl	0.03%	46	Comtech	-36.26%
21	General Dynamics	-0.19%	47	Triumph Group	-40.87%
22	Textron	-0.24%	48	Key W Holdings	-42.00%
23	Curtiss Wright	-2.96%	49	Supercom	-48.87%
24	Viasat	-3.20%	50	Digital Globe	-49.43%
25	Precision Castparts	-3.68%	51	Intelsat	-76.04%
26	L-3	-5.31%			

The Benefit of Diversification

The current quarter highlights the benefits of diversification. The benchmark SPADE Defense Index rose 3.23%....even as only 17 of the 50+ firms in the index beat this level.

The Large Primes Outperform Again

Following a period in the early 2000s when mid-cap defense contractors, especially those involved with information technology drove the sector higher, recent years have seen a period of outperformance by the the large primes. 2015 was no exception.

Northrop Grumman	28.10%
Raytheon	15.12%
Lockheed Martin	12.76%
Boeing	11.24%
General Dynamics	-0.19%

Inside the 2015 Results

- Large systems manufacturers led the sector while hardware suppliers saw mixed results.
- M&A: Firms with significant M&A activity were rewarded: Harris for its acquisition of Exelis and CACI for several deals as well. Precision Castparts (which is being acquired by Warren Buffett) held steady due to the pending deal.
- Though business remained relatively steady, satellite companies with high levels of debt (DigitalGlobe, Intelsat) significantly underperformed as the debt market got tighter as an interest rate upcycle began.

ETF Statistics (NYSE: PPA)

Powershares Aerospace & Defense

Exchange / Ticker Symbol:	NYSE / PPA
Assets (12/31/15)	\$311.2 M
Closing Price (12/31/15)	\$35.64
Yield (12-Month Yield)	0.94%
4Q2015 Volume	5,627,000
Turnover	12%

source: Yahoo Finance

Portfolio Price / Earnings*	16.94
Portfolio Price / Book*	2.53
Portfolio Price / Sales*	1.27
Portfolio Price / Cash Flow*	8.21
Earnings Growth Rate*	12.19%
Beta (3 year)*	0.78
Alpha (3 year)*	13.43
R-squared (3 years)	51.70

Yahoo Finance

The SPADE Defense Index has outperformed the broader market for 5 consecutive years and in 13 of 16 years, 7 times by double digits.

Performance (ex div)

	SPADE Defense Index	S&P500	Alpha (bps)
2015	3.23%	[0.73%]	396
2014	11.77%	11.39%	38
2013	48.27%	29.60%	1867
2012	16.30%	13.41%	289
2011	[2.75%]	[0.00%]	[275]
2010	9.62%	12.78%	[316]
2009	21.71%	23.45%	[174]
2008	[38.03%]	[38.49%]	46
2007	22.17%	3.53%	1864
2006	19.33%	13.62%	571
2005	5.30%	3.00%	230
2004	20.47%	8.99%	1148
2003	37.27%	26.38%	1089
2002	[2.87%]	[23.37%]	2050
2001	0.94%	[13.04%]	1488
2000	4.98%	[10.14%]	1512
1999	15.31%	19.53%	[422]
1998	6.63%	26.67%	[2004]

Commercial Aerospace

Commercial aerospace remains strong as manufacturers work through a massive production backlog. The sector operates on a cycle that can last 10 to 20+ years and is driven by a more globally connected world that benefits as the world economy grows and in ways that allow it to operate more efficiency, such as different sized vehicles for different markets. More people and an increase in trade means more flights. New technologies that can reduce costs help offset the cost to modernize their fleets. That is where we are now, in the midst of an upcycle with air carriers modernizing to reduce the cost of operations and/or expanding fleets to serve Mideast and Asian market expansion.

A Dangerous World

The defense sector is driven by increasing government spending or a shift toward investment (whether procurement, R&D, or outsourced operations and support). But the

topline number is not the only factor. It is influenced by the perceived need by nations for security. According to the British paper, "The Independent," only 11 countries in the world are conflict free. The world of worry continues to change. New threats on the current worry list include: North Korean nukes, Saudi Arabia vs. Iran, Syrian instability, and how to stop the lone or small group wanting to make a statement. Old threats including Iran nukes, ISIS, and perceived Russian and Chinese transgressions into neighboring regions continue. According to the Institute of Economics and Peace, in 2014 [and reported by Bloomberg Business on 16 November 2015] there were 13,370 acts of terror in 93 countries costing \$52.9 billion (equal to the GDP of Bulgaria). A recent University of Maryland study reported in Foreign Policy magazine stated that large terrorist attacks in which 100+ people were killed rose from an average of 4.2 per year from 1978 to 2013, to 38 in the past two years. Large scale attacks could be the new norm. Not a pleasant thought but one that is likely on the minds of policymakers around the world.

International Sales

Even as U.S. defense spending reached a plateau and dropped, global spending was roughly flat at around \$1.8 trillion (yes that is trillion with a "T"), down just 0.4% as Asia and Oceania spending rose roughly 5% led by China and Australia. To serve and support our allies, the U.S. Congress has shown a willingness to approve sales and relax export licensing rules to the benefit of US defense companies. Defense exports approved by the DCSA and Congress rose to \$34B and \$47.1B in fiscal years 2014 and 2015, respectively.

Ability to Adapt

Change is a constant part of the aerospace and defense sector and its that ability to change that has enabled the sector as a whole to be resilient. Though stalwarts now, in the 1980s Lockheed Martin (LMT) and Northrop once considered merging to save both companies from near bankruptcy. A lot of the lessons from that downturn are being employed today enabling today's defense firms to be more resilient to changes.

At the turn of the century, the sector benefited from increased U.S. government spending; moreso in the aftermath of the 9/11 attacks on the World Trade Center and the Pentagon. Engaging in two wars in Iraq and Afghanistan, and other smaller engagements around the globe; spending by the DoD reached a peak in 2010...yet the performance

of defense stocks continues to thrive.

In the early 2000s, the focus was on building IT intelligence, reconnaissance, and communications capabilities to fill in gaps and coordination issues, which had failed to identify the 9-11 attacks. This result was the emergence of a number of new public companies and small entrepreneurial firms in the sector; many of which fueled acquisitions in later years.

In subsequent years, spending shifted toward war operations and then to replenishing infrastructure “consumed” during the wars and the building out of tanks, aircraft, and ships.

Still many of the best-known “pure plays” in the sector generate significant revenue outside of their defense clients; to civil and commercial clients they can offer the services and skills they honed in the defense world. Recent research also shows that on a total market cap basis, nearly 25% of the weighting in the Index is from firms that perform cybersecurity and information technology activities in support and of strategic importance to the military and intelligence agencies. This becomes important as we move forward and additional resources slowly shift from the development of new large systems toward the digital battlefield and platforms such as drones (or UAVs) that gather data, and software and services that enhance mobility, protect and secure data, and can analyze big data sets. Sound familiar? It’s many of the same technology trends you hear about which are driving the commercial world. Only in the case of the defense sector, companies involved in this area have targeted a single customer that can invest more than a hundred billion dollars annually.

The sector is rife with diversification...both internal among various defense-related activities, and external, serving customers found in civil government and the commercial world. It is why the sector has been so resilient over the past several decades.

Key Issues for 2016

The U.S. Presidential Elections

Clinton or Sanders, Trump, Bush, Rubio, et al. The outcome of the November presidential election will have a profound impact on the direction that defense spending takes. And depending on who the candidates from both parties are, there will be no shortage of rhetoric. While all candidates support the “soldier” and want to protect the United States and its citizens, they have different beliefs on how and what type of military is needed to accomplish that. Even though no actual changes to the budgets will take place until after the elec-

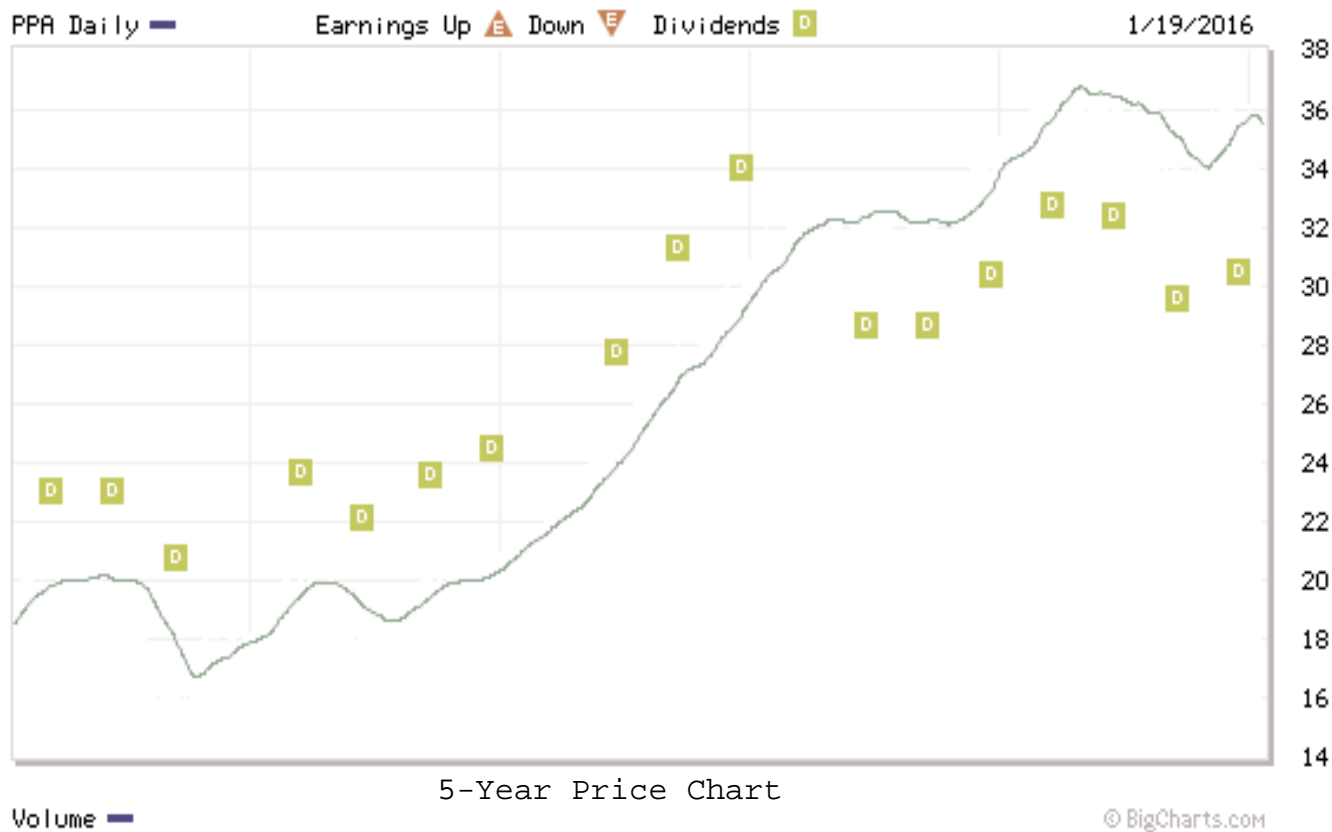
tion, stock traders do trade on the rhetoric. Buy the rumor, sell the news. Until the candidates are chosen and the debates begin, there is no way to know how big an issue this will be.

What Black Swan events will emerge

Economic recession and the rise in interest rates will impact all sectors, but aerospace and defense has historically shown an ability to weather these downturns and rebounds. Militarily, there are a number of black swan possibilities: from the North Korea nuclear test, escalation of incidents on the polar and/or Asian seas, or another international incident like what took place between Russia and the Ukraine. Will the recent executions in Saudi Arabia exacerbate tensions with Iran. And what impact will lower oil prices have on a Middle East populace who see services severely cut?

Where we are headed: Investment Ideas for 2016

Investors in defense companies are well aware that they exhibit low valuations compared to the broader market, [ie. a number of companies still have a price/sales ratio below 1.0]. They also benefit from longer term, multi-year contracts providing stability that purely commercial firms do not have. And while new firms enter the market, many find the time required and rules to compete onerous. Security clearances, military procurement rules, and entrenched multi-year incumbents all serve to create a more stable competitive environment.



About the SPADE Defense Index

The SPADE Defense Index (NYSE: DXS) provides an investment benchmark for the value that the market ascribes to companies involved with defense, homeland security, and space.

The Index is designed to reflect the broad diversity of activities that is representative of companies involved with the sector – including industrial firms that manufacture aircraft, tanks, ships, and missiles; and those involved with current and next generation systems related to network centric warfare and information technology; intelligence, surveillance, and reconnaissance; satellites; border security; and defense systems that protect the lives of our servicemen and servicewomen.

 SPADE Indexes specializes in designing and managing equity benchmarks for ETF and other products.

Licensed Products

Exchange Traded Fund - ETF

Licensed to Invesco Powershares, the Powershares Aerospace & Defense Portfolio ETF (NYSE: PPA) is designed to track the performance of the SPADE Defense Index.

Rules

The Index was designed to be RIC (registered investment company) compliant for the purpose of enabling financial products. Companies are required to meet a variety of eligibility criteria including market valuation, liquidity, and listing on a major U.S. exchange. Full details are available on our website.

- * Market Cap: Minimum \$100M
- * Share Price: Minimum \$5.00
- * Sufficient Liquidity

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Jan-16		SPADEFENSE Index						Market	Forward	Price/	Price/	PEG	
		*											
		31-Dec-15	30-Sep-15	31-Dec-14	31-Dec-15	YTD	QTD	intraday	(ttm)	ttm	mrq	expected	forward %
Company	Ticker	Float %	Price	Price	Price	% Ch	% Ch	Cap	P/E	Sales	Book	5 yr	Div Yld
AAR Corp	AIR	0.35%	18.97	27.78	26.29	-5.36%	38.59%	0.92	12.17	0.57	1.05	1.70	1.10%
Aerjet Rocketdyne	AJRD	0.38%	16.18	18.30	15.66	-14.43%	-3.21%	1.01	17.21	0.61		-4.89	
American Science & Engineering	ASEI	0.11%	35.56	51.90	41.38	-20.27%	16.37%	0.30	34.77	2.41	2.12	-4.16	4.80%
AeroVironment	AVAV	0.26%	20.18	27.25	29.47	8.15%	46.04%	0.69	98.23	2.55	1.96	-13.95	
Boeing Co	BA	6.46%	130.95	129.98	144.59	11.24%	10.42%	96.87	15.33	1.01	14.58	1.71	2.50%
Booz Allen	BAH	1.74%	26.31	26.53	30.85	16.28%	17.26%	4.58	17.33	0.86	17.01	2.18	1.70%
Ball Corp	BLL	3.76%	62.20	68.17	72.73	6.69%	16.93%	9.91	19.60	1.22	9.67	3.55	0.80%
BWX Technologies (1July15 split)	BWXT	1.28%	26.36	24.45	31.77	29.94%	20.52%	3.17	19.83	1.11	10.24	1.94	0.80%
Caci Intl	CACI	0.85%	73.97	86.18	92.78	7.66%	25.43%	2.25	15.67	0.69	1.52	2.01	
Comtech	CMTL	0.12%	20.61	31.52	20.09	-36.26%	-2.52%	0.32	14.05	1.10	0.82	0.88	5.95%
Rockwell Collins	COL	4.02%	81.84	84.48	92.3	9.26%	12.78%	12.12	15.64	2.34	6.56	1.87	1.40%
CSRA Inc. (16Nov15 split)	CSRA	0.02	31.9	31.9	30	-5.96%	-5.96%	4.77	15.01	1.20	5.48		1.44%
Cubic Corp	CUB	0.48%	41.94	52.64	47.25	-10.24%	12.66%	1.27	16.94	0.90	1.70	4.59	0.60%
Curtiss Wright	CW	1.19%	62.42	70.59	68.50	-2.96%	9.74%	3.13	16.04	1.46	2.42	1.67	0.75%
Ducommun	DCO	0.07%	20.07	25.28	16.22	-35.84%	-19.18%	0.18	7.91	0.26	0.72	-4.93	
Digital Globe	DGI	0.42%	19.02	30.97	15.66	-49.43%	-17.67%	1.10	71.18	1.55	0.86	196.24	
Engility	EGL	0.45%	25.78	42.8	32.48	-24.11%	25.99%	1.19	13.31	0.63	1.27	13.31	
Esterline Technologies	ESL	0.91%	71.89	109.68	81.00	-26.15%	12.67%	2.40	12.68	1.25	1.58	1.11	
FireEye	FEYE	1.26%	31.82	31.58	20.74	-34.33%	-34.82%	3.33		5.79	2.97	-0.60	
Flir Systems	FLIR	1.49%	27.56	32.31	28.07	-13.12%	1.85%	3.88	16.13	2.52	2.41	1.19	1.55%
General Dynamics	GD	5.58%	137.95	137.62	137.36	-0.19%	-0.43%	43.42	14.41	1.38	4.11	1.53	2.00%
Heico	HEI	1.38%	48.22	60.40	54.36	-10.00%	12.73%	3.64	27.59	3.09	4.53		0.30%
Huntington Ingalls	HII	2.26%	107.15	112.46	126.85	12.80%	18.39%	5.96	13.57	0.85	4.04	1.59	1.50%
Honeywell Intl	HON	6.35%	94.69	99.92	103.57	3.65%	9.38%	79.82	15.76	2.07	4.56	1.82	2.26%
Harris Corp	HRS	3.91%	73.15	71.82	86.90	21.00%	18.80%	10.81	14.04	1.90	3.14	9.46	2.20%
Hexcel	HXL	1.67%	44.86	41.49	46.45	11.95%	3.54%	4.39	18.14	2.35	3.67	1.92	0.90%
Intelsat	I	0.17%	6.43	17.36	4.16	-76.04%	-35.30%	0.45	3.04	0.18		1.00	
Kaman	KAMN	0.42%	35.85	40.09	40.81	1.80%	13.84%	1.11	14.89	0.62	2.02	1.08	1.73%
KEY W Holding	KEYW	0.09%	6.15	10.38	6.02	-42.00%	-2.11%	0.24		0.78	0.89	-0.19	
Kratos Defense & Security	KTOS	0.09%	4.22	5.02	4.10	-18.33%	-2.84%	0.24		0.31	0.92	-0.55	
Leidos	LDOS	1.54%	41.31	43.52	56.26	29.27%	36.19%	4.06		0.82	4.32		2.22%
L-3 Communications Hldgs	LLL	3.56%	104.52	126.21	119.51	-5.31%	14.34%	9.37	16.44	0.82	2.08	6.89	2.15%
Lockheed Martin	LMT	6.37%	207.31	192.57	217.15	12.76%	4.75%	66.73	17.78	1.48	24.01	2.59	3.00%
Mantech International'a'	MANT	0.43%	25.55	30.23	30.24	0.03%	18.36%	1.14	20.71	0.74	0.98	2.95	2.73%
Moog Inc.	MOGA	0.87%	54.07	74.03	60.60	-18.14%	12.08%	2.23	13.26	0.90	2.28	1.04	
Mercury Computer Sys	MRCY	0.24%	15.91	13.92	18.36	31.90%	15.40%	0.64	29.61	2.74	1.77	3.83	
Northrop Grumman	NOC	4.50%	165.95	147.39	188.81	28.10%	13.78%	34.44	18.07	1.45	6.10	2.64	1.60%
Orbital ATK (merged 2/10/15)	OA	2.00%	71.87	116.25	89.34	40.54%	24.31%	5.26	16.16	1.34	2.81	1.54	1.20%
OSI Systems	OSIS	0.66%	76.96	70.77	88.66	25.28%	15.20%	1.75	20.62	1.89	3.15	1.30	
Oshkosh Truck	OSK	1.11%	36.33	48.65	39.04	-19.75%	7.46%	2.85	11.09	0.48	1.55	4.40	1.90%
Precision Castparts	PCP	4.54%	229.71	240.88	232.01	-3.68%	1.00%	31.92	16.87	3.30	2.78	1.29	0.05%
Raytheon Co	RTN	4.82%	109.26	108.17	124.53	15.12%	13.98%	33.00	15.59	1.46	3.3	2.41	2.30%
SAIC	SAIC	0.79%	40.21	49.53	45.78	-7.57%	13.85%	2.08	15.41	0.50	5.45	3.42	2.65%
Sparton	SPA	0.07%	21.57	28.34	19.99	-29.46%	-7.32%	0.20	9.52	0.49	1.7	0.89	
TASER International Inc.	TASR	4.05%	22.02	26.48	17.29	-34.71%	-21.48%	0.93	46.73	5.06	6.39	3.73	
Transdigm	TDG	1.19%	212.41	196.35	228.45	16.35%	7.55%	12.26	19.25	4.52		1.57	
Teledyne Technologies	TDY	0.74%	90.30	102.74	88.70	-13.67%	-1.77%	3.14	16.43	1.36	2.23	1.70	
Triumph Group	TGI	3.96%	42.08	67.22	39.75	-40.87%	-5.54%	1.96	6.95	0.50	0.87	2.96	0.40%
Textron	TXT	6.40%	37.64	42.11	42.01	-0.24%	11.61%	11.50	14.59	0.85	2.48	1.20	0.20%
United Technologies	UTX	0.08%	88.36	115.00	96.07	-16.46%	8.73%	85.22	14.62	1.34	2.82	1.46	2.63%
Vectrus	VEC	1.12%	22.04	27.40	20.89	-23.76%	-5.22%	0.22	9.67	0.2	2.73		
Viasat Inc	VSAT	1.19%	63.01	63.03	61.01	-3.20%	-3.17%	2.95	31.78	2.12	2.71	1.72	
Woodward	WWD		40.70	49.23	49.66	0.87%	22.01%	3.14	15.09	1.58	2.79	1.68	0.80%

Data Provided by Yahoo Finance, Thomson Reuters (P/E, PEG), Morningstar (div)