



Commentary

**June 2016 Rebalance: Changes to the SPADE Defense Index**

There were no changes nor corporate actions made to the SPADE Defense Index during 2Q16.

**New Indexes**

Earlier this year SerenityShares Investments LLC was launched to help bring to market three new indexes it has developed.

Funds that will track the **SPADE Core U.S. Index** and the **SPADE Core MultiAsset Index** are designed to simplify how people and organizations invest and enable them to do so with ETF-sized fees and in a liquid and transparent manner. These two passive indexes are designed to automatically rebalance and rotate among dozens of sectors to determine the best place to invest...even if it means moving to cash and preserving capital during protracted downturns.

The **SPADE Impact Index** was developed for those who believe that one should not just invest, but should invest in a better world. The Index looks at all publicly listed companies and applies positive screens focused on such areas as forestry and land stewardship, clean energy, and access to local healthcare to create the universe of eligible firms.

SerenityShares has begun filing the necessary documents with the SEC and has partnered with organizations such as USBancorp Fund Services, a subsidiary of the 6th largest bank in the United States and the New York Stock Exchange. The firm is also currently in the midst of a capital raise to fund the back office operations.

**Aerospace & Defense Sector Commentary**

A long standing analogy of describing the slow ability to change ones path is that of trying to turn a battleship. One cannot simply switch directions and make a right turn. A battleship instead requires a slow gradual curve until changes in direction are felt. When investing in the defense sector the trends follow a similar analogy. Whereas some economic sectors like metals, technology, or consumer discretionary react more rapidly to changing economic conditions, with the defense sector, changes come much slower. A large

**SPADE Defense Index Statistics**

6/30/16 Close	4322.79
12/31/15 Close	4120.18
All-time High:	4375.71
	8 June 2016

	SPADE Defense	S&P500
1Q16	-1.09%	0.77%
2Q16	6.08%	1.90%
YTD	4.92%	2.69%

**Licensed Products**

**Exchange Traded Fund - ETF**

The SPADE Defense Index has been licensed by and serves as the underlying index for the Powershares Aerospace & Defense ETF (NYSE: PPA).

percentage of the sector's sales come from government budgets, multi-year contracts, or the acquisition and planning of very long lead time infrastructure and the sector exhibits stability rarely found elsewhere.

Changes in government budgets, in particular, are like steering a battleship. Even when Congress decides to make a change, the impact likely won't be felt in the next quarter but in a year and sometimes more. Lockheed Martin once commented after their stock dropped when there was talk of Congress reducing the number of F-35 fighters being bought, that what was more important to them was the shift from a planned order to a contract to begin production. They knew that forecasted reductions for an order that might take place 10 years in the future could easily change multiple times over the ensuing years as needs change. What was more important was getting a hard contract for the next few years of production,

**2Q16 Leaders**

1	Key W	49.70%
2	American Science	35.10%
3	TASER	26.74%
4	Vectrus	25.23%
5	L-3	23.79%
6	Digital Globe	23.64%
7	Huntington Ingalls	22.70%
8	Mercury Computer	22.46%
9	Sparton	21.01%
10	Transdigm	19.67%

**2Q16 Laggards**

1	Comtech	[45.06%]
2	Kratos Defense	[17.17%]
3	CACI	[15.27%]
4	CSRA	[12.90%]
5	OSI Systems	[11.24%]
6	FireEye	[8.45%]
7	Rockwell Collins	[7.67%]
8	FLIR Systems	[6.07%]
9	Leidos	[4.87%]
10	Hexcel	[4.74%]

**YTD 2016 Results**

1	KeyW	65.12%
2	TASER	43.90%
3	Digital Globe	36.59%
4	Vectrus	36.38%
5	Mercury Computer	25.40%
6	Huntington Ingalls	32.46%
7	SAIC	27.46%
8	Mantech	25.07%
9	Curtiss Wright	22.99%
10	Heico	22.90%
11	L-3	22.74%
12	Oshkosh Truck	22.21%
13	Northrop Grumman	17.73%
14	Viasat	17.03%
15	Aerojet Rocketdyne	16.73%
16	Woodward	16.07%
17	Trasndigm	15.43%
18	Lockheed Martin	14.29%
19	BWX Tech	12.59%
20	Honeywell	12.31%
21	Teledyne Tech	11.67%
22	FLIR Systems	10.26%
23	Raytheon	9.17%
24	Sparton	8.90%
25	United Tech.	6.75%
26	Kaman	4.19%
27	General Dynamics	1.37%
28	Kratos Defense	0.00%
29	Ball Corp	[0.60%]
30	CACI	[2.55%]
31	Booz Allen	[3.92%]
32	Harris Corp	[3.98%]
33	Orbital ATK	[4.70%]
34	AeroVironment	[5.67%]
35	Rockwell Collins	[7.76%]
36	American Science	[9.59%]
37	Boeing	[10.18%]
38	Hexcel	[10.36%]
39	Triumph Group	[10.69%]
40	Moog	[11.02%]
41	AAR	[11.22%]
42	Textron	[12.97%]
43	Leidos	[14.91%]
44	Cubic	[15.01%]
45	FireEye	[20.59%]
46	CSRA	[21.90%]
47	Esterline Tech	[23.41%]
48	OSI Systems	[34.43%]
49	Engility	[34.98%]
50	Comtech	[36.09%]

**ETF Statistics (NYSE: PPA)**

**Powershares Aerospace & Defense**

Exchange / Ticker Symbol:	NYSE / PPA
Assets ( 6/30/16)	\$314.5 M
Closing Price ( 6/30/16)	\$37.44
Yield (TTM)	1.70%
2Q2016 Volume	2,245,700
Turnover	14%

source: Yahoo Finance

Portfolio Price / Earnings*	18.34
Portfolio Price / Book*	3.51
Portfolio Price / Sales*	1.29
Portfolio Price / Cash Flow*	11.53
Earnings Growth Rate*	9.44%
Beta (3 year)*	0.82
Alpha (3 year)*	10.23
R-squared (3 years)*	63.63

Yahoo Finance

Commentary (continued from page 1)

not what the perceived need was in 2025-2030.

So as I write this quarter's analysis of the sector, I am reminded that the sector is a battleship in its movements. The key topic of conversation now is the forthcoming presidential election. Unfortunately, little is expected to change the perception of aerospace and defense over the next quarter as both candidates, though they may have different agendas and means for accomplishing it, are in favor of a strong defense and homeland security.

From a business perspective, over the past several quarters (and really years) I've commented that the sector is benefitting on a number of fronts.

- Government defense budgets have ceased declining and the prospects for growth are positive.
- International sales of defense hardware continues to grow and Congress's has shown a willingness to approve them.
- The security of the world remains in turmoil with a number of hot spots generating attention and keeping the concept of security front and center and any concept of peace dividend far at bay.
- The manufacture of commercial aircraft continues to be active; although new sales have tapered off a bit due to economic issues around the globe and the fact that a decade's worth of orders are already in the pipeline.

Ultimately one only need to look at the performance of the SPADE Defense Index (NYSE: DXS), the benchmark for the sector. 2016, like the years prior, have seen a regular stream of new all-time-highs. As the Index moves steadily higher, it become clear that investing in defense is like steering a battleship, slow and steady.

Previous research, detailed in an *SPADE Investor* a few years back, showed that the sector has a 35+ year track record (since the 1980s) whereby an investment in the sector tracking the index, made at any time, has recovered from a subsequent decline after reinvesting dividends within roughly a two-year period. Although past performance is not indicative of future results (you knew that was coming), one has to wonder if the defense sector (as defined by the SPADE Defense Index) might be a near perfect long-term investment choice.

**Presidential Election Year Performance (ex div)**

Feb-Apr	Defense	S&P500	Alpha
2016	8.29%	6.45%	184 bps
2012	3.61%	6.51%	[290 bps]
2008	1.78%	0.51%	127 bps
2004	[0.82%]	[2.16%]	134 bps
2000	10.52%	4.16%	636 bps

May - July	Defense	S&P500	Alpha
2016	6.21%	5.24%	97 bps
2012	[4.62%]	[1.32%]	[330 bps]
2008	[10.48%]	[8.53%]	[195 bps]
2004	2.74%	[0.50%]	324 bps
2000	[6.03%]	[1.49%]	[454 bps]

Aug - Oct	Defense	S&P500	Alpha
2016	TBD	TBD	TBD
2013	6.00%	2.38%	362 bps
2008	[24.34%]	[23.56%]	[78 bps]
2004	5.63%	2.59%	304 bps
2000	13.30%	[0.10%]	1334 bps

Nov-Jan	Defense	S&P500	Alpha
2016/17	TBD	TBD	TBD
2012/13	8.58%	6.08%	250 bps
2008/09	[4.00%]	[14.74%]	1074 bps
2004/05	5.08%	4.51%	57 bps
2000/01	[0.91%]	[4.43%]	352 bps

**What to take away from this data?**

1. Defense stocks have outperformed the market in the first two 2016 analysis periods.
2. During Presidential election cycles, the May-July timeframe has the greatest negative performance probability.
3. Election run-up and post-election, defense stocks outperformed the market significantly during each of the past four presidential election cycles.

	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]



3-Year Weekly Chart Comparing the Powershares Aerospace & Defense ETF "PPA" (black) with the SP500 (yellow)

### 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.

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

### 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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Jul-16						Market	Forward	Price/	Price/	PEG	
		31-Mar-16	30-Jun-16	YTD	QTD	intraday	(ttm)	ttm	mrq	expected	forward %
Company	Ticker	Price	Price	% Ch	% Ch	Cap	P/E	Sales	Book	5 yr	Div Yld
AAR Corp	AIR	23.27	23.34	-11.22%	0.30%	0.81	16.64	0.47	0.89	1.45	1.36%
Aerojet Rocketdyne	AJRD	16.38	18.28	16.73%	11.60%	1.16		0.67	-9.02	1.16	
American Science & Engineering	ASEI	27.69	37.41	-9.59%	35.10%	0.26		2.58	2.03	-10.30	5.43%
AeroVironment	AVAV	28.32	27.80	-5.67%	-1.84%	0.64	71.28	2.36	1.73	-4.79	
Boeing Co	BA	126.94	129.87	-10.18%	2.31%	82.73	17.55	0.84	20.10	1.43	3.52%
Booz Allen	BAH	30.28	29.64	-3.92%	-2.11%	4.39	15.27	0.79	10.39	2.20	2.10%
Ball Corp	BLL	71.29	72.29	-0.60%	1.40%	10.25	77.40	1.29	9.46	3.24	0.75%
BWX Technologies (1July15 split)	BWXT	33.56	35.77	12.59%	6.59%	3.71	28.41	2.54	13.74	1.99	1.03%
Caci Intl	CACI	106.70	90.41	-2.55%	-15.27%	2.20	15.99	0.62	1.38	1.94	
Comtech	CMTL	23.37	12.84	-36.09%	-45.06%	0.30		0.6	0.53	-0.86	9.76%
Rockwell Collins	COL	92.21	85.14	-7.76%	-7.67%	11.08	16.96	2.12	5.51	1.73	1.61%
CSRA Inc. (16Nov15 split)	CSRA	26.9	23.43	-21.90%	-12.90%	3.83	44.21	0.87	57.25	1.15	1.71%
Cubic Corp	CUB	39.96	40.16	-15.01%	0.50%	1.08	32.28	0.74	1.44	0.98	0.65%
Curtiss Wright	CW	75.67	84.25	22.99%	11.34%	3.75	24.24	1.68	2.83	1.91	0.66%
Digital Globe	DGI	17.30	21.39	36.59%	23.64%	1.35	47.22	1.88	1.12	222.42	
Engility	EGL	18.76	21.12	-34.98%	12.58%	0.78		0.35	1.11	-4.23	
Esterline Technologies	ESL	64.07	62.04	-23.41%	-3.17%	1.82	40.44	0.92	1.12	1.20	
FireEye	FEYE	17.99	16.47	-20.59%	-8.45%	2.74		3.97	2.60	-0.46	
Flir Systems	FLIR	32.95	30.95	10.26%	-6.07%	4.26	22.19	2.61	2.49	1.00	1.62%
General Dynamics	GD	131.37	139.24	1.37%	5.99%	42.56	15.06	1.33	3.95	1.61	2.27%
Heico	HEI	60.13	66.81	22.90%	11.11%	4.48	31.81	3.40	4.9	1.73	0.25%
Huntington Ingalls	HII	136.94	168.03	32.46%	22.70%	7.90	17.81	1.07	5.09	1.61	1.24%
Honeywell Intl	HON	112.05	116.32	12.31%	3.81%	88.65	18.88	2.24	4.79	2.00	2.09%
Harris Corp	HRS	77.86	83.44	-3.98%	7.17%	10.41	94.60	1.44	3.04	0.35	2.49%
Hexcel	HXL	43.71	41.64	-10.36%	-4.74%	3.87	17.88	1.98	3.06	1.38	1.04%
Kaman	KAMN	42.69	42.52	4.19%	-0.40%	1.15	20.64	0.63	2.01	3.08	1.73%
KEY W Holding	KEYW	6.64	9.94	65.12%	49.70%	0.39		1.2	1.61	3.71	
Kratos Defense & Security	KTOS	4.95	4.10	0.00%	-17.17%	1.95	17.52	0.36	1	-1.59	
Leidos	LDOS	50.32	47.87	-14.91%	-4.87%	3.48	13.02	0.65	3.06	2.11	2.77%
L-3 Communications Hldgs	LLL	118.50	146.69	22.74%	23.79%	11.29		1.07	2.53	1.46	1.98%
Lockheed Martin	LMT	221.5	248.17	14.29%	12.04%	75.56	21.95	1.56	23.39	2.12	2.74%
Mantech International'a'	MANT	31.99	37.82	25.07%	18.22%	1.43	27.09	0.87	1.15	3.07	2.36%
Moog Inc.	MOGA	45.68	53.92	-11.02%	18.04%	1.95	16.63	0.77	1.82	0.00	
Mercury Computer Sys	MRCY	20.30	24.86	35.40%	22.46%	0.99	48.55	3.86	2.17	5.11	
Northrop Grumman	NOC	197.90	222.28	17.73%	12.32%	40.11	20.18	1.67	6.99	2.34	1.67%
Orbital ATK (merged 2/10/15)	OA	86.94	85.14	-4.70%	-2.07%	4.99	15.87	1.07	2.50	1.27	1.45%
OSI Systems	OSIS	65.49	58.13	-34.43%	-11.24%	1.10	27.71	1.21	1.98	-1.79	
Oshkosh Truck	OSK	40.87	47.71	22.21%	16.74%	3.50	17.31	0.57	1.81	4.88	1.66%
Raytheon Co	RTN	122.63	135.95	9.17%	10.86%	40.39	21.08	1.69	3.96	2.18	2.16%
SAIC	SAIC	53.34	58.35	27.46%	9.39%	2.62	23.45	0.56	6.92	3.61	2.25%
Sparton	SPA	17.99	21.77	8.90%	21.01%	0.21	24.38	0.47	1.69	1.18	
TASER International Inc.	TASR	19.63	24.88	43.90%	26.74%	1.31	85.79	6.10	8.43	2.75	
Transdigm	TDG	220.34	263.69	15.43%	19.67%	13.97	30.35	4.61	-14.37	1.58	
Teledyne Technologies	TDY	88.14	99.05	11.67%	12.38%	3.42	18.52	1.47	2.33	0.68	
Triumph Group	TGI	31.48	35.50	-10.69%	12.77%	1.76		0.43	1.79	1.51	0.48%
Textron	TXT	36.46	36.56	-12.97%	0.27%	9.83	14.14	0.69	1.89	1.22	0.23%
United Technologies	UTX	100.10	102.55	6.75%	2.45%	85.82	12.02	1.50	2.97	1.68	2.67%
Vectrus	VEC	22.75	28.49	36.38%	25.23%	0.30	9.47	0.25	3.11	0.00	
Viasat Inc	VSAT	73.48	71.40	17.03%	-2.83%	3.49	162.27	2.40	3.01	2.81	
Woodward	WWD	52.02	57.64	16.07%	10.80%	3.52	23.19	1.73	3.07	2.00	0.81%

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