



## OptionsHawk Monthly Market Brief – May 2019

### S&P 500 (SPX) Technicals

**Analysis:** The S&P has been riding its rising 8 day MA higher through the month of April after testing the 21 day MA in late March and holding. A rising channel has developed the last three months with current support at 2,865 which aligns with the current 21 day MA while upside resistance all the way up at 3,010 for the end of April. The 2,915 and 2,940 levels are the initial resistance levels from a volume perspective and above 2,940 a move to new record highs while the larger bottoming pattern 2350/2820 range measures to an upside target of 3,290. The first Fibonacci extension of the 2018 high to 2018 Q4 correction low is the 138.2% at 3,165.50. A daily RSI move below 48 would signal caution and below 2,865 can look to support at a retest of the 2,815 key breakout while the 200 day MA now sits at 2,766. On the weekly view RSI has broken a downtrend recently while MACD showing some slight negative divergences on that timeframe but nearing a bullish crossover on the monthly timeframe for the first time since Summer 2016. The upper monthly Bollinger Band has proven to be resistance at prior tops and is currently at 2,960 but expanding and the weekly version is near 2,990. Bulls want to see a firm close above 2,915 for indications momentum can continue higher.

### Key Levels

	<u>Support</u>	<u>Resistance</u>
<b>Level 1</b>	2,890	2,915
<b>Level 2</b>	2,865	2,940
<b>Level 3</b>	2,815	2,960
<b>Level 4</b>	2,766	2,990



## Fundamental Valuation Bands

	<u>2019</u>		<u>Value</u>	<u>2020</u>		<u>Value</u>
	<u>EPS</u>	<u>Multiple</u>	<u>Level</u>	<u>EPS</u>	<u>Multiple</u>	<u>Level</u>
<b>Bull</b>	170	17.5	2975	185	17	3145
<b>Neutral</b>	168	16	2688	180.5	15.5	2800
<b>Bear</b>	165	14	2310	172.5	14	2415

## Market Health/Sentiment Check

<u>Indicator</u>	<u>Level</u>	<u>Implications</u>
Short Term Moving Average Slopes	Rising	Bullish
Long Term Moving Average Slopes	Rising	Bullish
8/21 Week EMA Crossover	Above	Bullish
NYSE McClellan Oscillator (NYMO)	-16	Slight Oversold
NYSE Summation (NYSI)	1046.9	Above 8 MA – Near Bear Cross
NYSE A/D (Cumulative)	137,194	Near New Highs – Bullish
NYSE Cumulative TICK	139,965	Below 20 MA - Bearish
NYSE TRIN 21 MA	1.11	Neutral
NAAIM	93.37	Overly Bullish
AAll Sentiment	37.6% Bullish	Neutral
Investors Intelligence Survey	54.8% Bulls	Neutral
CBOE Equity Put/Call 50 MA	0.611	Broke Uptrend – Bullish
VIX:VXV Ratio	0.83	Complacency

## Macro Catalyst Watch and Review

### Macro Data & Indicators

In the month of April we saw some of the US strength slowdown though remaining in a positive growth phase as ISM Services missed expectations and a number of Regional Fed Surveys came in weak. However, the March Jobs Report beat estimates though average hourly earnings came in light and we saw some positive developments in Retail numbers. Inflation data came in a bit hot in the US which could bring into question the Fed's recent dovish shift. The Atlanta Fed raised its Q1 GDP estimate to +2.8% and March Retail Sales posted the biggest gain in 1.5 years while jobless claims hit the lowest level in 50 years. Citi's US Economic Index ticked higher in April from its lowest level since July 2017 following the US narrowing its trade gap.

We started to see green shoots out of China with a number of strengthening economic reports and seeing a notable upward inflection while stimulus efforts continue. Europe remains a soft-spot with a number of headwinds and most of the data continues to come in weak. Global Trade remains in focus with the US/China closing in on an agreement and now the US/Europe back and forth presenting some challenges.

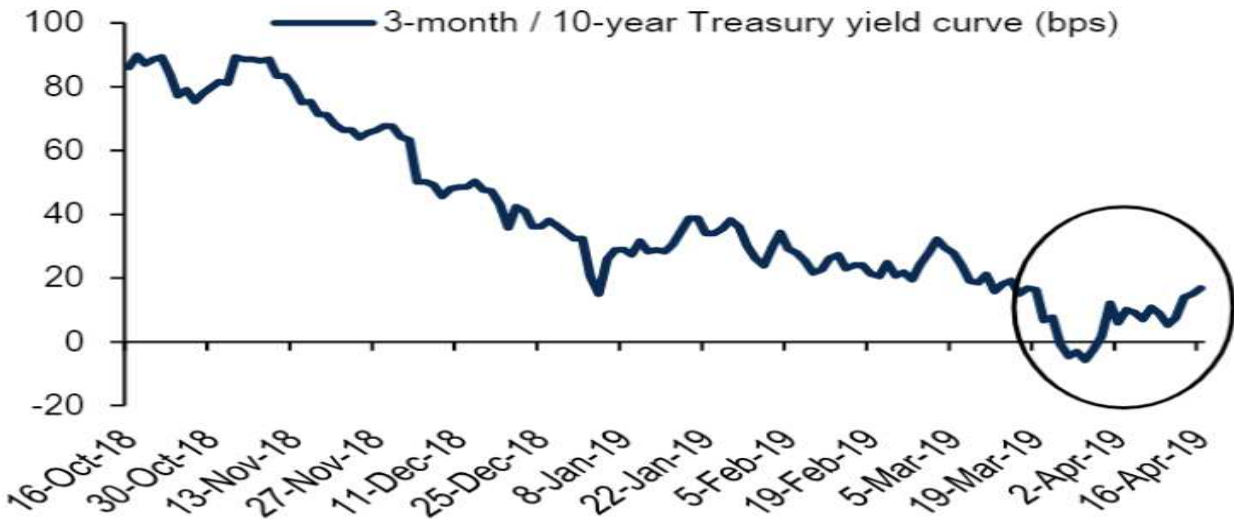
### Central Banks

The Fed continues to outline a dovish message and odds currently favor a cut happening before another hike while nothing is likely to change through 2019. We are seeing stimulus efforts continue in China and Japan while Europe is now questioning its path and the ECB Meeting in May should be a fairly notable event.

## Bonds & Credit

Bond volatility came to a screeching halt and saw Yields recover of lows with the talk of inversion/recession fading throughout the month of April. Credit markets continue to show strength with no major red flags. Junk Bonds are off to the best start to a year since 2009 on “soft-landing” hopes as the Fed shift is seen stalling any US recession.

**Figure 1: Post-March 20-FOMC flattening in curve now reversed ...**



## Catalyst Watch

Date	Event
5/1/2019	FOMC Meeting
5/3/2019	US April Jobs Report
5/23/2019	European Parliamentary Elections
5/26/2019	Trump Visits Japan
6/3/2019	WWDC (Apple)
6/4/2019	Fed Conference in Chicago
6/6/2019	ECB Meeting (TLTRO Terms and Deposit Tiering)
6/8/2019	G-20 Meeting
6/25/2019	OPEC Meeting
6/30/2019	US Bank Stress Tests
9/30/2019	US Budget Expires

## Bull & Bear Flow Monthly Leaderboard

### OPTIONSHAWK DATABASE AGGREGATE FLOW BIAS FOR MAY EXPIRATION

<b>BULLISH</b>	NOW, NFLX, BABA, WDAY, ROKU, CL, TWTR, CRM, ALGN, LVS, KNX, XLNX, SLB, RACE, BA, WP, MPC, TSN, SE, AGN, TPX, WDC, EDU, ACIA, DHI, COHR
<b>BEARISH</b>	GRUB, CHTR, THS, HIIQ, AMGN, PS, RL, MDB, CRI, FTNT, JEC, AMG, ABMD, X, RDFN, TRIP, NUS, UBNT, HSY, IRBT, BMY, RH, MNST, UPS

## Hawk Vision – 5 Technical Set-Ups in Quality Fundamental Stocks (Hawk 350 Universe) with Options Flow

\*\*\* We highlight these kind of set-ups daily in the OptionsHawk Trading Hub\*\*\*

**JP Morgan (JPM)** strong weekly breakout and RSI breaks downtrend, looks to challenge record highs.

Date	Description	Volume	Open_Int	Price	%Change	Delta	Impl Vol	Prob.ITM	Premium Paic	Symbol
4/12/2019	JPM 100 17 MAY 19 115 CALL	9,209	3,687	\$0.72	260.00%	0.24	15.11%	22.87%	\$663,048	JPM190517C115
4/5/2019	JPM 100 (Weeklys) 10 MAY 19 108 CALL	1,594	297	\$1.38	-8.00%	0	#ERROR!	0.00%	\$219,972	JPM190510C108
3/26/2019	JPM 100 18 APR 19 100 CALL	3,601	5,489	\$1.69	5.63%	0.45	19.56%	43.41%	\$601,367	JPM190418C100
3/25/2019	JPM 100 18 APR 19 100 CALL	2,619	3,575	\$1.78	-16.43%	0.44	22.30%	41.43%	\$479,277	JPM190418C100
3/13/2019	JPM 100 20 SEP 19 105 CALL	4,137	8,611	\$5.60	7.07%	0.5	19.48%	45.26%	\$2,316,720	JPM190920C105
3/7/2019	JPM 100 17 MAY 19 100 PUT	1,028	764	\$2.68	24.65%	-0.37	20.90%	40.57%	\$265,224	JPM190517P100
2/19/2019	JPM 100 20 SEP 19 105 CALL	6,440	1,930	\$6.40	-4.48%	0.51	21.51%	44.57%	\$4,153,800	JPM190920C105
2/6/2019	JPM 100 20 SEP 19 95 PUT	1,000	306	\$3.35	0.90%	-0.28	21.39%	34.62%	\$340,000	JPM190920P95
1/25/2019	JPM 100 19 JUN 20 105 CALL	1,001	337	\$9.80	1.03%	0.508	22.83%	41.23%	\$980,980	JPM200619C105
1/15/2019	JPM 100 21 JUN 19 95 CALL	1,047	550	\$10.15	2.53%	0.68	25.41%	61.76%	\$1,067,940	JPM190621C95
1/3/2019	JPM 100 15 JAN 21 125 CALL	1,003	598	\$4.00	0.00%	0	#ERROR!	0.00%	\$401,200	JPM210115C125
10/17/2018	JPM 100 15 JAN 21 110 CALL	1,000	218	\$15.35	20.39%	0.54	24.73%	41.39%	\$1,560,000	JPM210115C110
8/28/2018	JPM 100 21 JUN 19 110 CALL	1,005	1,470	\$12.20	-5.43%	0.64	21.69%	57.51%	\$1,236,150	JPM190621C110
7/31/2018	JPM 100 17 JAN 20 110 PUT	6,236	4,432	\$9.25	5.11%	-0.37	22.07%	47.96%	\$5,799,480	JPM200117P110
7/18/2018	JPM 100 17 JAN 20 130 CALL	3,448	2,057	\$4.86	5.65%	0.31	20.37%	23.18%	\$1,706,760	JPM200117C130



**Nike (NKE)** breaks out of large weekly cup and handle with room to run in the rising channel pattern.

Date	Description	Volume	Open_Int	Price	%Change	Delta	Impl Vol	Prob.ITM	Premium Paic	Symbol
4/18/2019	NKE 100 (Weeklys) 10 MAY 19 88 PUT	1,409	249	\$0.86	-21.82%	-0.34	16.91%	35.05%	\$125,401	.NKE190510P88
4/11/2019	NKE 100 19 JUL 19 90 CALL	1,223	1,189	\$1.96	-3.45%	0.33	21.74%	29.26%	\$247,046	.NKE190719C90
4/10/2019	NKE 100 17 MAY 19 87.5 CALL	3,604	5,488	\$0.95	6.74%	0.31	18.35%	28.58%	\$342,380	.NKE190517C87.5
4/8/2019	NKE 100 17 MAY 19 82.5 PUT	1,788	1,844	\$1.21	16.35%	-0.32	19.69%	34.70%	\$216,348	.NKE190517P82.5
4/5/2019	NKE 100 (Weeklys) 26 APR 19 85 CALL	1,210	675	\$1.69	-3.98%	0.552	17.98%	53.44%	\$204,490	.NKE190426C85
4/4/2019	NKE 100 17 JAN 20 82.5 PUT	1,003	502	\$5.85	1.74%	-0.39	24.61%	47.46%	\$586,755	.NKE200117P82.5
4/4/2019	NKE 100 (Weeklys) 26 APR 19 85 CALL	1,220	220	\$1.76	31.34%	0.54	18.46%	52.57%	\$217,160	.NKE190426C85
3/27/2019	NKE 100 21 JUN 19 82.5 PUT	964	652	\$3.23	11.76%	-0.47	21.04%	51.38%	\$311,372	.NKE190621P82.5
3/27/2019	NKE 100 21 JUN 19 85 CALL	1,022	1,394	\$2.41	-13.31%	0.42	21.22%	37.90%	\$246,302	.NKE190621C85
3/22/2019	NKE 100 19 JUL 19 75 CALL	921	195	\$10.40	-23.53%	0.762	28.89%	71.06%	\$957,840	.NKE190719C75
3/22/2019	NKE 100 18 APR 19 82 PUT	2,558	1,550	\$1.03	19.77%	-0.32	21.18%	34.41%	\$278,850	.NKE190418P82
3/22/2019	NKE 100 18 OCT 19 90 CALL	502	127	\$4.00	-37.50%	0.4	24.39%	32.91%	\$200,800	.NKE191018C90
3/21/2019	NKE 100 17 MAY 19 90 CALL	1,210	1,178	\$2.68	25.82%	0.43	25.98%	38.91%	\$326,700	.NKE190517C90
3/21/2019	NKE 100 17 MAY 19 80 CALL	308	92	\$8.60	2.50%	0.79	29.48%	75.72%	\$264,880	.NKE190517C80
3/20/2019	NKE 100 19 JUL 19 80 PUT	1,060	729	\$2.15	10.82%	-0.25	26.05%	30.58%	\$231,080	.NKE190719P80
3/20/2019	NKE 100 19 JUL 19 95 CALL	1,087	869	\$2.00	-5.66%	0.27	23.45%	23.25%	\$207,617	.NKE190719C95
3/19/2019	NKE 100 17 MAY 19 87.5 CALL	2,607	529	\$3.70	1.93%	0.54	24.76%	49.81%	\$964,590	.NKE190517C87.5
3/19/2019	NKE 100 20 SEP 19 90 CALL	1,020	32	\$5.20	4.00%	0.5	23.60%	43.18%	\$550,800	.NKE190920C90



*Spotify (SPOT) forms a tight weekly wedge after clearing a downtrend and weekly RSI holds near 50 line.*

Date	Description	Volume	Open.Int	Price	%Change	Delta	Impl Vol	Prob.ITM	Premium Paid	Symbol
4/15/2019	SPOT 100 17 MAY 19 140 PUT	639	517	\$7.10	28.62%	-0.48	42.78%	53.40%	\$479,250	.SPOT190517P140
4/11/2019	SPOT 100 (Weeklys) 26 APR 19 147 CALL	704	64	\$1.38	-29.95%	0.29	27.19%	27.40%	\$109,120	.SPOT190426C147
4/4/2019	SPOT 100 17 MAY 19 145 CALL	742	214	\$6.00	-22.38%	0.46	39.37%	40.63%	\$482,300	.SPOT190517C145
4/1/2019	SPOT 100 15 JAN 21 125 CALL	200	5	\$40.19	1.75%	0.7	43.05%	48.42%	\$820,000	.SPOT210115C125
3/21/2019	SPOT 100 15 JAN 21 140 PUT	150	89	\$25.82	-1.45%	-0.36	40.40%	56.19%	\$387,300	.SPOT210115P140
3/14/2019	SPOT 100 15 JAN 21 150 PUT	100	23	\$32.30	-1.22%	-0.42	40.05%	61.88%	\$323,000	.SPOT210115P150
3/1/2019	SPOT 100 18 OCT 19 165 CALL	203	5	\$8.30	-36.15%	0.37	39.58%	26.29%	\$168,490	.SPOT191018C165
2/26/2019	SPOT 100 19 JUL 19 170 CALL	1,702	639	\$5.90	-20.70%	0.32	37.34%	23.70%	\$1,072,260	.SPOT190719C170
2/26/2019	SPOT 100 19 JUL 19 190 CALL	1,701	186	\$2.20	-26.67%	0.15	35.55%	10.77%	\$433,755	.SPOT190719C190
2/21/2019	SPOT 100 15 JAN 21 190 CALL	309	191	\$21.62	-0.14%	0.46	40.11%	25.96%	\$668,058	.SPOT210115C190
2/21/2019	SPOT 100 17 JAN 20 200 CALL	500	334	\$7.55	-5.63%	0.27	37.38%	16.93%	\$377,500	.SPOT200117C200
2/20/2019	SPOT 100 15 JAN 21 115 PUT	600	41	\$15.60	-8.34%	-0.22	44.19%	43.46%	\$936,000	.SPOT210115P115
2/14/2019	SPOT 100 19 JUL 19 120 PUT	399	78	\$5.50	-11.72%	-0.2	46.40%	29.18%	\$235,410	.SPOT190719P120
2/12/2019	SPOT 100 19 JUL 19 165 CALL	1,700	216	\$6.93	17.46%	0.34	39.65%	24.64%	\$1,178,100	.SPOT190719C165
2/12/2019	SPOT 100 19 JUL 19 185 CALL	1,702	30	\$3.18	47.91%	0.18	38.40%	12.44%	\$541,236	.SPOT190719C185
2/12/2019	SPOT 100 19 JUL 19 195 CALL	1,700	2	\$1.92	35.21%	0.13	37.67%	8.26%	\$326,400	.SPOT190719C195



**Palo Alto Networks (PANW) forms a weekly bull pennant amidst Tech pullback.**

Date	Description	Volume	Open.Int	Price	%Change	Delta	Impl Vol	Prob.ITM	Premium Paic	Symbol
4/16/2019	PANW 100 15 JAN 21 200 PUT	450	46	\$16.40	-18.00%	-0.22	33.17%	35.92%	\$738,000	.PANW210115P200
4/2/2019	PANW 100 18 APR 19 235 CALL	662	74	\$8.05	-13.90%	0.62	28.29%	60.01%	\$541,200	.PANW190418C235
3/29/2019	PANW 100 17 MAY 19 240 CALL	201	131	\$11.10	11.00%	0.58	26.94%	54.01%	\$223,110	.PANW190517C240
3/14/2019	PANW 100 15 JAN 21 220 PUT	150	27	\$25.85	0.51%	-0.3	33.11%	45.96%	\$387,750	.PANW210115P220
2/27/2019	PANW 100 21 JUN 19 250 CALL	517	394	\$20.10	60.29%	0.58	31.15%	51.03%	\$1,039,170	.PANW190621C250
1/8/2019	PANW 100 21 JUN 19 180 PUT	1,500	167	\$13.50	-12.62%	-0.36	37.55%	45.21%	\$2,055,000	.PANW190621P180
10/16/2018	PANW 100 17 JAN 20 200 PUT	514	117	\$24.95	8.48%	-0.38	33.65%	51.92%	\$1,282,430	.PANW200117P200
2/14/2018	PANW 100 17 JAN 20 165 CALL	346	17	\$30.30	12.06%	0.59	36.16%	38.80%	\$1,048,380	.PANW200117C165
1/30/2018	PANW 100 17 JAN 20 155 PUT	500	38	\$25.00	6.43%	-0.4	31.66%	56.94%	\$1,250,000	.PANW200117P155



**Vistra Energy (VST) consolidates in a symmetrical triangle beneath new highs.**

Date	Description	Volume	Open.Int	Price	%Change	Delta	Impl Vol	Prob.ITM	Premium Paic	Symbol
4/16/2019	VST 100 18 OCT 19 22 PUT	6,504	12	\$0.54	-22.86%	-0.18	29.00%	23.94%	\$422,760	.VST191018P22
4/16/2019	VST 100 18 OCT 19 30 CALL	6,500	164	\$0.61	-41.90%	0.24	25.11%	18.85%	\$422,500	.VST191018C30
4/10/2019	VST 100 17 MAY 19 25 CALL	679	226	\$1.40	22.81%	0.67	28.93%	63.93%	\$105,245	.VST190517C25
4/4/2019	VST 100 19 JUL 19 27 CALL	669	104	\$1.00	-15.97%	0.42	25.98%	36.58%	\$73,590	.VST190719C27
4/2/2019	VST 100 17 MAY 19 28 CALL	5,092	0	\$0.40	N/A	0.26	26.65%	23.24%	\$203,680	.VST190517C28
4/2/2019	VST 100 17 MAY 19 24 PUT	5,015	375	\$0.40	14.29%	-0.19	30.09%	21.63%	\$200,600	.VST190517P24



## Options Radar Highlights

**4/4/19**

**Boingo Wireless (WIFI)** early unusual buys 1,075 May \$25 calls up to \$1.30, and action continuing this morning with volume up to 2,080. WIFI is now also seeing 895 November \$25 calls bought up to \$3.50 to open, and today's action the first notable open interest in the name. It is interesting because **WIFI** was mentioned by OpCo on 3-27 "We expect cash EBITDA margins to double in seven years, but the company is highly likely to be acquired before then." On the chart shares put in a nice base above the \$20 level, and next major resistance is clearing \$25.50 as shares work on a weekly bull engulfing candle this week. The \$990M maker of wireless connectivity solutions trades 4X Sales and 6.65X Cash. WIFI has a long runway for growth as they continue to accumulate wireless rights at airports, military bases, and stadiums, building out small-cell networks and monetization efforts from carrier fees. The company is benefitting from the growth in mobile data traffic with 80% of consumption through wi-fi and views their current market opportunity at just 8% penetration. WIFI sees 10-12% revenue growth each of the next three years. It is the largest operator of indoor wireless networks and has an impressive RFP win rate and a massive market potential as it scales. It sees big opportunity in Military and Multi-Family settings. Analysts have an average target of \$32 on shares and short interest elevated near a three year high at 8.8% of the float. CSFB has an Outperform rating and \$29 target it recently lowered as it steps up CapEx estimates and lowered DAS revenue growth estimates. Guidance was recently lowered due to an extension of large NY DAS contracts which caused confusion for investors Craig Hallum noted and would be aggressive buyers. Hedge Fund ownership rose 4.6% in Q4 filings.

**4/8/19**

**Xilinx (XLNX)** with more than 1,250 May \$130 calls being bought on the day up to \$6.10 and follows an opening sale of 1,000 ITM September \$130 puts on Friday for \$1.2M. XLNX has been a favorite for put sales into recent strength with activity at the April \$130, \$129, and \$128 strikes while the May \$125 and June \$130 puts also sold all within the last week. Shares are trading in a narrow flag under \$130.50 and above its 13-EMA with a breakout targeting \$140. XLNX has shown relative strength among the Semi's all year up 51.8% vs 28.64%. The \$32.66B company trades 33.7X earnings, 11.25X sales, and 9.4X cash with a 1.12% yield. They expect 75% EPS growth in 2019 and 10.4%/16.3% through 2021 with revenue growth in the low-double digits. XLNX is well positioned with end-market exposure to 5G, the data center refresh cycle and struck partnership Microsoft last year in cloud. AI is an emerging area of strength. The company launched Alveo last year, their accelerator card, which is expected to see strong uptake in the 2H of 2019 and an incremental driver in 2020 and beyond. Analysts have an average target for shares of \$105 with 14 buy ratings, 10 hold, and 1 sell. Mizuho raising their PO to \$140 on 3/29 after checks with the supply chain and talks with Asian contacts. The firm thinks XLNX is gaining significant traction in 5G with Orders up potentially 50% Y/Y as they are getting 95% of orders. Institutional ownership fell 22.5% last quarter. Short interest is 2.4%.

**4/17/19**

**AutoDesk (ADSK)** modestly lower with Software names and testing the 8 MA after a big run in shares and seeing 1,000 October \$175 calls bought to open this morning \$15.70 to \$16.40. ADSK also has 4,500 of the May 10th (W) \$170/\$175 call spreads and \$160/\$155 put spreads in open interest, and other notable positions are the 2,450 January \$190 calls and 1,000 July \$170 calls. The \$37.9B maker of software for design and visualization trades 35.75X Earnings and 9.6X FY21 EV/Sales. ADSK has been transitioning to a cloud/subscription model and posted 25% revenue growth in 2019 with 27.8% seen this year, FY20, while EPS cycle strong now with \$10/share in earnings seen for FY24 after \$1.01/share in FY19. ADSK held an Investor Day in late March outlining its strategy that is available on its Company IR site. Analysts have an average target of \$184 on shares and short interest at 2% of the float has declined 28% Q/Q. Mizuho started shares at Buy last week noting it is successfully extending its value proposition beyond its traditional design base" with expansions of lifestyle management, construction, and generative design and those will increase penetration with existing customers while expanding the overall TAM. CSFB raised its target to \$188 as it moves from a transition period to one of growth. KeyBanc has a \$196 target seeing ample growth drivers to power its next leg of growth. Hedge Fund ownership fell 2.74% in Q4 filings, Viking Global and Point-State Capital notable position closes, while Lone Pine took a new stake making ADSK a 3.34% position and Egerton Capital also with a new position along with Alkeon.

## Trades of the Week

Posted Weekly at OptionsHawk.com <https://www.optionshawk.com/trade-of-the-week/>

## Earnings Recap

Strong Beats	Bullish Themes	Weak Outlooks	Bearish Themes
JPM, MS, C, BLK	Banks	SNA, PPG	Automotive OEM + Europe
DAL, UAL, JBLU	Airline Outlooks	SLB, GTLS	North American Oil Services
ERIC, MLNX, POL	5G	FDX, JBHT	Trucking & Logistics – Weather/Pricing
TXT, HON	Aerospace		
CSX, KSU, UNP	Rails		
PGR, TMK, RLI	Insurance – Life & P&C		
SCHW, ETFC	Brokers		

## Earnings Preview

**Service-Now (NOW)** will report earnings 4/24/19 after the close with the Street looking for \$0.54 EPS and \$766M in Revenues (+30% Y/Y), and Q2/FY19 seen at \$0.66/\$826M and \$3.11/\$3.43B. NOW shares have closed higher on earnings each of its last 12 earnings reports with a six quarter average max move of 7.4% and average closing move of 4.63%. The \$42.86B software leader trades 55.45X Earnings, 73.1X FCF and 12.2X EV/Sales. NOW is forecasted to grow revenues 31.5% in FY19 versus the 37.9% and 36% growth each of the last two years and EPS seen reaching \$5.50/share by FY21 from \$1.19/share in FY17. NOW is one of the best revenue growth and FCF margin names in Software, the latter at 21.6% in FY18, a top “Rule of 40” name. Analysts have an average target near \$250 and short interest at 5.4% of the float is down 20% Q/Q. NOW is coming off a strong quarter with 29% billings growth and saw strength across all products with emerging products like HR, CSM and Security gaining global traction and ITOM emerging as the next major growth driver with 70% growth in 2018, and has helped accelerate ACV the last few quarters. CSFB was out late last week constructive into the quarter though Q1 seasonally quiet quarter, seeing a substantial long-term growth opportunity and best-in-class economics. Piper raised its target to \$260 late last week after strong checks for Q1. Deutsche Bank raised its target to \$270 on 3-20 noting the early Q4 launch of the new ITSM Pro edition at a 50% list price premium could be a material growth catalyst. Jefferies was out positive in early March noting the large opportunity NOW has in US Federal which is currently less than 10% of its business. Hedge Fund ownership fell 21.6% in Q4 filings, Point-State exiting a large position along with Whale Rock while Tiger Global, Hitchwood and Lone Pine all reduced stakes. Jericho Capital took a new \$110M stake with an 11.11% portfolio weighting making NOW its 2<sup>nd</sup> largest holding, Melvin Capital added to its position, and Tremblant Capital started a new position. On the chart NOW shares have shown relative strength amidst a few sell-offs in high growth Software names chopping in this \$230/\$250 range for 8 weeks and a move above the outer band can target \$270 upside. Support levels seen at \$230, \$220 and \$210. NOW options are pricing in a 5.6% earnings move and 30 day IV Skew at +6.2% is steep compared to the +3.6% 52-week average. NOW has a notable 10,000 contract May \$190 call buy in open interest from 1/31 that opened for \$39M, currently valued closer to \$49M. It has also seen 1,000 January 2021 \$200 puts sold to open positive on the long-term viability and 1,500 of the January 2020 \$210/\$175 bull risk reversals. The August \$260 calls also with 500 bought in open interest. In June there is elevated open interest at the \$230, \$220, and \$210 put strikes from buyers, more than 5000 contracts in total. My overall feel into the quarter is NOW may not impress enough to see a big upside reaction and could see an initial move lower, but it remains a top Software name to own into weakness.

	1Q Seasonality				2Q Seasonality			
	Total Revenue	Sub. Revenue	Total Billings	Sub Billings	Total Revenue	Sub. Revenue	Total Billings	Sub Billings
1Q13	14.3%	13.8%	15.2%		2Q13	18.9%	12.3%	4.8%
1Q14	11.1%	11.9%	9.7%		2Q14	19.9%	13.1%	3.7%
1Q15	7.1%	7.9%	-2.3%	n/a	2Q15	16.4%	11.4%	5.1%
1Q16	7.1%	9.3%	3.0%	4.2%	2Q16	11.6%	8.7%	-0.5%
1Q17	8.1%	9.1%	-1.0%	-1.1%	2Q17	13.2%	9.3%	-4.6%
1Q18	7.8%	9.3%	-6.1%	-6.7%	2Q18	7.1%	7.7%	-3.4%
1Q19E*	7.2%	7.9%	-15.9%	-16.7%	2Q19E*	7.4%	8.1%	-1.8%
3Y Average	7.7%	9.2%	-1.4%	-1.2%	3Y Average	10.6%	8.6%	-2.8%
5Y Average	8.2%	9.5%	0.6%	n/a	5Y Average	13.6%	10.0%	0.1%

\*Consensus estimates



## Industry Snapshot of the Month

### Industry Snapshot (INDU) – Industrial Products – Energy & Aerospace

Components: WWD, MOG.A, ESL, KAMN, CW, BWXT, DCO, CFX, CR, ATU

This month taking a look at Industrial products specifically with a focus in Aerospace and Energy markets with mid-cap market sizes. Industrials tend to trade with their respective end-markets and in this case Aerospace has been the most consistent strong growth area while Energy has been choppy with its cyclical nature. Favorable longer term Macro trends include population growth, economic development, globalization of natural gas and higher energy efficiency. Many of these companies have specific niches, Woodward (WWD) is a provider of energy control and optimization solutions, Curtiss Wright (CW) has exposure to Commercial Aerospace OEM, Nuclear Reactors, and Industrial Vehicles, and Crane (CR) is involved in Fluid Handling, Payment Tech, and Aerospace components. BWX Tech (BWXT) is a pure-play on Nuclear power and Colfax (CFX) focused on Air & Gas Handling and Fabrication Technology. Moog (MOG.A) is mostly positioned in Aerospace Controls & Components and Kaman (KAMN) has a split of Aerospace exposure and Industrial Distribution of Bearings, Fluid Power, and Automation products & services. Woodward (WWD) is a name I like but has a lot of moving pieces right now as it integrates the L'Orange acquisition.

**Metrics:** The 10 stocks trade on average 11.5X EV/EBITDA, 14.2X Earnings with Debt/EBITDA at 1.8X and 14.5% EBITDA margins.

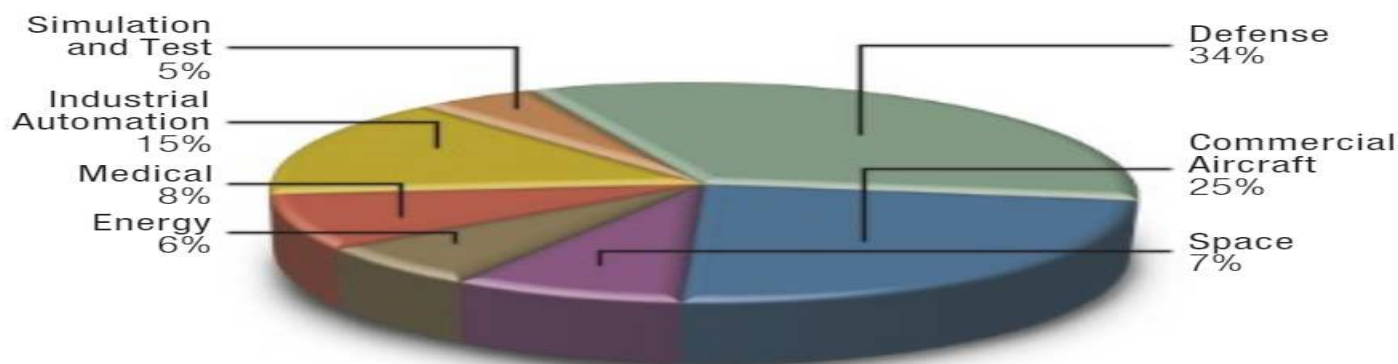
Symbol	Company Name	Curr MCap	LTM EV/E BITD A...	EBITDA Adj [% Chg. FY18-...	FY2 P/E (x)	FY1 EPS Dil. Adj...	FY2 EPS Dil. Adj...	FY1 Sales YoY (%)	FY2 Sales YoY (%)	LTM EBITDA Adj % Sales...	3 Y ROIC	FY17 Net Debt/E BITD...	FY1 EV/FCF (Yesterda y) (x)	FY0 Unlev FCF % Sale...
Tickers														
WWD	Woodward, Inc.	5,962	15.2x	48.3%	18.14x	20.8%	13.4%	18.0%	6.6%	15.73%	8.59	1.6x	24.9x	2.46%
CR	CRANE CO /DE/	5,162	9.1x	3.5%	12.51x	6.4%	10.0%	(1.3%)	4.2%	18.25%	12.45	0.3x	16.2x	4.77%
BWXT	BWX Technolog...	4,759	14.9x	10.0%	17.84x	4.9%	11.2%	5.7%	7.1%	19.16%	28.64	0.9x	48.9x	2.03%
CW	CURTISS WRIG...	4,712	10.5x	5.0%	14.83x	7.8%	8.6%	5.3%	3.2%	20.70%	10.24	0.9x	16.9x	3.02%
ESL	ESTERLINE TEC...	3,637	-	9.9%	0.00x	15.6%	7.4%	1.5%	3.8%	14.50%	7.16	1.8x	-	2.02%
CFX	Colfax CORP	3,509	9.2x	66.1%	10.33x	12.3%	13.1%	34.2%	5.8%	12.41%	3.06	2.2x	20.1x	9.93%
MOG.A	MOOG INC.	3,018	10.2x	10.5%	14.61x	17.0%	10.1%	6.1%	3.9%	12.72%	7.61	2.0x	20.1x	-
KAMN	KAMAN Corp	1,632	12.1x	(0.1%)	18.64x	(0.6%)	13.1%	3.2%	4.0%	8.54%	4.75	1.3x	20.8x	2.62%
ATU	ACTUANT CORP	1,543	12.2x	7.8%	18.62x	7.9%	16.4%	(2.0%)	2.2%	12.56%	6.85	2.9x	23.0x	4.68%
DCO	DUCOMMUN INC...	511	9.8x	12.7%	16.21x	168.3%	14.0%	4.9%	3.7%	10.49%	2.75	3.9x	20.4x	1.10%
Mean	none	3,445	11.5x	17.4%	14.17x	26.0%	11.7%	7.6%	4.4%	14.50%	9.21	1.8x	23.5x	3.63%

### Favored Fundamental Companies

**Crane (CR)** screened well versus peers on EBITDA margins, low Debt/EBITDA, strong FCF and yet carries a valuation of just 9.1X EV/EBITDA which is well below the peer average. CR is coming off a 20% revenue growth year and 2019 more of a transition year with revenues seen down 1.3% before reaccelerating in 2020. Its Aerospace & Electronics systems include Airplane Landing Systems, Cabin Solutions, Electrical Power Solutions, Fluid Management, Microwave Solutions and Sensing Components. Program wins and new pursuits are driving future growth and a strong backlog allows for earnings visibility. Crane Currency is an integrated supplier of secure, durable and well-designed bank notes for central banks all over the World and Crane could pursue M&A in this space or Fluid Management as incremental upside drivers. The Fluid Handling business has exposure to Chemical, Power, O&G, and Non-Residential Commercial with growth drivers including tighter emission standards, cryogenic solutions for LNG, smart industries, and innovation. The division has been undergoing cost savings and expanding margins. The Payment Merchandising and Tech division is real interesting benefitting from growth in global bank note issuance, and plenty of long-term growth drivers. Crane has maneuvered well through lower end market growth periods with improving productivity and investing in new products and capabilities. Although topline growth is lacking in 2019, it will see EPS growth as a year of margin expansion and position it well for the future when end-markets improve.

**Moog (MOG.A)** is another favorite trading 9.8X FY19 EV/EBITDA and having one of the stronger growth and ROIC profiles, though its 12.7% EBITDA margins are on the lower end of the spectrum. MOG.A sees 6% revenue growth in 2019 after 8.5% growth in 2018, its best year since 2011, while EPS seen growing at a 17% clip once again. Moog earns 45% of revenues from Aircraft Controls, 20% from Components, 19% Industrial Systems, and 16% Space & Defense. It has 58% exposure to the US. MOG.A exited its wind pitch control business in 2018 which positions it for better margins and sees growth across all of its industries increasing in 2019. Moog is an under-followed name but checks all the boxes as a long-term fundamental value.

## REVENUE BY MARKET



### Competitors

- Aircraft Controls: Curtiss-Wright, Liebherr, Nabtesco, Parker Hannifin, UTC and Woodward.
- Space and Defense Controls: Airbus, ATA Engineering, Bradford Engineering, Chess Dynamics, Cobham, Curtiss-Wright, ESW, EOS, Fulcrum Concepts LLC, General Dynamics, Glenair, Honeywell, Kearfott, Kollmorgan, Kongsberg, LORD, Marotta, Mission Systems, RUAG, Rafael, PVP Advanced, SABCA, Sargent Aerospace & Defense, Schleifring, SEAKR, Silent Sentinel, SL Montevideo, SwRI, UTC, Vacco, Valcor, ValveTech and Woodward.
- Industrial Systems: Atos, Allen-Bradley, Bosch Rexroth, Cardinal Health, Danaher, DEIF Wind Power, E2M Technologies, Eaton, ICU Medical, KEB, MTS Systems Corp., Parker Hannifin, Siemens, Smiths Medical and SSB Wind Systems.

### M&A Deal of the Month

**Anadarko Petro (APC)** was a top deal in April 2019 as **Chevron (CVX)** offered \$33B in a cash and stock deal valuing the company at \$33B, a healthy near 30% premium to its closing price. The offer worked out to near 7.35X EV/EBITDA and reports confirmed that **Occidental Petro (OXY)** also made an offer so we could continue to see more M&A deals in the Oil & Gas space as prices have strengthened in Q1 and **Exxon (XOM)** continues to look to put capital to work as well. APC did have some International assets but its focus was UN Onshore, specifically the DJ Basin and Delaware Basin. The Delaware Basin is the 2<sup>nd</sup> largest component of the larger Permian Basin. The Niobrara shale is seen as an attractive part of the DJ Basin and other top players include **Noble (NBL)**, **Devon (DVN)**, **EOG (EOG)**, **PDC Energy (PDCE)** and **Whiting (WLL)**. Leading producers in the Permian Basin include **Apache (APA)**, **Pioneer Natural (PXD)**, **Diamondback (FANG)**, **Parsley (PE)** and **Concho (CXO)**. We will use these peers as comps to look for values and the next potential M&A target in the space. A few quality of **APC** when looking versus peer averages include positive FY+1 EBITDA growth, ROA above 5%, positive ROIC, EBITDA margins above 50% and positive FCF margins. This allows us to eliminate lesser peers like Noble (NBL), PDC (PDCE) and Apache (APA). None of the companies hit all the metrics as well as Anadarko (APC) but some overall notes:

- The names trading below 6X EV/EBITDA include DVN, APA, and WLL and among those **Whiting (WLL)** stands out with attractive FCF, Margins and the cheapest valuation.

- The names trading between 6X-7X EV/EBITDA include PE, FANG and NBL and among those **Diamondback (FANG)** is the most attractive name though it recently did a large deal for **Energen (EGN)** and **Parsley (PE)** looks like the most like M&A target in this grouping.
- The premium valued names trading near 8X EV/EBITDA include CXO, PXD, and EOG with each having strong and weak metrics. **Concho (CXO)** stands out with its superior margins and EBITDA growth though is the most richly valued name at 8.1X EV/EBITDA.

In closing, the most likely M&A targets in this group are likely **Whiting (WLL)**, **Parsley (PE)** and/or **Concho (CXO)**.

Symbol	Company Name	FY1 EV/EBITDA (x)	FY1 EBITDA Adj YoY (%)	FY1 ROA (%)	FY1 P/FCF (x)	FY1 Net Debt/EBITDA (x)	EBITDA A-CapEx	LTM ROIC (Apr 19, 19 (%)	LTM EBITDA Adj % Sales...	LTM LFCF mgn (Apr 19, 19...
Tickers										
CXO	CONCHO RESO...	8.1x	20.6%	3.76%	(1,093.1x)	1.3x	1.99	4.64%	68.45%	(8.12%)
PXD	PIONEER NATU...	7.9x	11.1%	8.06%	109.6x	0.2x	2.14	7.82%	40.12%	(2.81%)
EOG	EOG RESOURC...	7.9x	(0.9%)	8.60%	41.5x	0.6x	1.75	13.95%	46.50%	11.44%
NBL	NOBLE ENERGY...	6.9x	(7.9%)	1.54%	(0.1x)	2.1x	2.10	0.58%	59.08%	(23.70%)
FANG	Diamondback En...	6.7x	111.4%	6.80%	97.3x	1.3x	2.09	6.26%	72.34%	(4.91%)
PE	Parsley Energy, Inc.	6.5x	7.1%	6.29%	(29.1x)	1.4x	2.52	5.47%	72.39%	(35.30%)
APC	ANADARKO PET...	6.0x	6.8%	5.65%	12.8x	1.9x	1.83	3.05%	57.26%	2.77%
DVN	DEVON ENERGY...	5.5x	(23.9%)	4.39%	31.4x	1.1x	1.59	(19.64%)	38.06%	4.79%
APA	APACHE CORP	4.9x	(10.3%)	4.12%	(37.6x)	1.7x	1.77	2.41%	64.70%	1.73%
WLL	WHITING PETRO...	4.4x	(12.3%)	2.26%	17.1x	2.3x	1.70	2.31%	60.51%	6.78%
PDCE	PDC ENERGY, INC.	4.0x	14.3%	4.87%	32.1x	1.2x	2.31	(4.66%)	55.82%	(4.71%)
Mean	none	6.3x	10.5%	5.12%	(74.4x)	1.4x	1.98	2.02%	57.75%	(4.73%)

### Small Cap of the Month

AudioCodes (AUDC) is a \$460M Israel-based maker of data networking products that has seen shares double since last July. Shares trade 17.6X Earnings, 2.6X Sales, and 19X FCF with a 1.37% dividend yield. AUDC grew revenues 12.4% in 2018, its best year since 2010, and EPS has risen from \$0.26/share in 2016 to \$0.78/share estimated in 2019. AUDC has a close relationship with Microsoft and operates in a number of areas such as analog media, low/mid density digital gateways, MSVRs, contact centers, call recording, voice recognition, IP Phones, and signal processing chips. The company has very little Analyst coverage and offers very little at its Investor Relations site but is a solid grower trading at a very reasonable valuation with a strong balance sheet and yield. Gross Margins are fairly strong at 62.8% while R&D as a percentage of sales is high at 19.7%, a good sign for a Tech growth company while also having 13.5% FCF margins. Also, the CEO and CTO own 30% of the company. From its most recent transcript, the following comments stand out:

\* The strength of our business is related to 2 fundamental key trends, which support our continued business momentum. The steady evolution in growth of the underlying markets we serve. First is the global digital transformation trend to move in the enterprise towards a digital workplace, and the second one is the global transition of networks to all-IP.

\* Touching on 1 key business, the Microsoft space. Last year in 2018, business reached above \$70 million. That is a leap of more than 30% from the year ago, which ended at about \$55 million. All in all, we have seen in the Microsoft space a migration, focus from Skype for Business to Teams. Teams is getting warm reception in the market. And in 2018, we'd generally been quite busy adapting our One Voice solution product to Teams from our current Skype for Business portfolio. We started in mid-2018 with migrating our direct route SBC, and we plan to complete the transition by mid-2019 with other components of the One Voice solution. As for why we're that positive about trends in this market? Well, in December 2018, Spiceworks released the result of a survey examining the adoption of collaborative chat applications in businesses across North America and Europe. Skype for Business continues to hold the #1 spot with 44% of businesses. Focus this that by the end of 2020, Skype for Business will be used by 53% of the users.

\* I'll just mention one more data point that if you look on a worldwide basis, while penetration of Unified Communications and Unified Communications as a Service was about 20% in North America and only about 4% on a global basis, there's much to be achieved in coming years. We see accelerated adoption in North America, growing beyond 4% a year. The same goes for the global expansion.

\* We also have deployed SBC in public clouds. We have been the first to deploy decomposed session border controllers on AWS on Amazon, and then we have been the first to be certified on Microsoft Azure direct route SBC. So plenty of growth in 2018. Going into the key themes that will dictate our priorities in 2019 in the SBC space, we will invest heavily in cloud SBC, in WebRTC that will streamline our voice connections over the internet, in good quality of service and then we'll keep investing in the Microsoft Teams. We will invest also into the service provider business, both access and interconnect, security application, transcoding application, etc.



## Theme of the Month

### 2020 Ad Spending

It may be early but the 2020 election cycle is already shaping up to be the most expensive in history. There are seventeen candidates already in the running for the Democratic nomination with more expected to come this week (Joe Biden the most notable -- and perhaps recognizable in the entire field). They're raising money at a furious pace. In the last quarter, Bernie Sanders raised \$20M and Elizabeth Warren hit \$16.5M while Kamala Harris, Kristin Gillibrand, and John Delaney all raised over \$10M. GOP candidate Donald Trump has raised over \$30M.

The election will be a boon to advertising dollars, both through traditional and new avenues. The impetus to control information, interact with voters, and build name recognition will all be of high priority for candidates. In 2016, the Presidential campaign alone -- from primaries to election day -- cost \$2.4B according to OpenSecrets tabulations. Over \$4B went to congressional races at the state and local level. So, where do those dollars go and who benefits?

Despite the prominence of social media as a percentage of the mix over the last three years, TV still is the dominant medium. Pew Research estimates that just about 60% of Americans get their news from cable, local, and network news on television. Nearly 40% get their news online either through social media or apps. Print newspapers and radio were smaller parts of the mix and declining from the prior cycle. The demographics towards TV skew older with more than 75% above 50 years old getting their news primarily from TV.

First, **Gray Television (GTN)** is a \$2.39B company which trades 7.5X earnings, 2.2X sales, and 9.4X FCF. GTN jumped in Q4 after reporting record political spending sending revenues up 40% Y/Y. The company has been buying up smaller stations across the US to build out their regional scale and capitalizing on a number of important races outside of the Presidency. They have more #1 or #2 stations in more key regions than any other peer which allows them to secure better rates on ads. Here's CEO Hilton Howell during their last call on how big 2020 can be: "I've been around almost 30 years now, we have never gotten presidential ad money this early in the cycle. And for us to have Presidential ad money at this point, I think it's going to be literally just raining money in 2020. And all of our states and we seeing Gray happily, we win essentially every battleground state that is defined by 538 in the country, and literally everyone. And I don't think the Democrats are doing that one mistake in terms of ignoring Wisconsin, Michigan, any of the rest of those areas that are so important in 2020. And I think the Republicans, you're not going to have like we had with the last presidential election here, the President sitting back, thinking that celebrity can win him the election. He's sitting on a huge war chest right now and I think 2020 is going to be gargantuan in my opinion."

Second is **Nexstar (NXST)**, a \$5.39B company which trades 10.45X earnings, 1.95X sales, and 9.59X FCF. The company struck a \$4.1B deal in December to acquire Tribune, adding 42 television stations and a cable network. The move will result in the largest TV station company in the country with more than 200 stations and reach into 39% of US households. NXST is gaining leadership in major media markets like NY, Chicago, and Los Angeles. Here's the company last quarter on how political drives growth: "[we expect] a very substantial and possibly unprecedented spending level related to the 2020 presidential election cycle. I would tell you that the presidential election is probably going to come earlier this year, meaning for the primary reasons than we have seen in prior cycles. It will also be more robust because you will have a larger field of candidates and you may have opposition on the incumbents' party. And so you're also going to see spending that will need to occur from our President which we did not see in 2016 to that degree. And then lastly, PAC and party monies that should be more robust to support eventual candidates beyond the primary. So, you're going to just see overall activity larger than what we saw in 2016 on both sides of the parties in addition to money standards."

Finally, **Sinclair (SBGI)** is a \$4.15B company which trades 9.59X earnings, 1.36X sales, and 8.87X FCF. The company is coming off a strong quarter with revenues up 25%. They saw \$255M in political ad spending in 2018 and expect to see double-digit growth this cycle across both television and digital revenues. Here's COO Steven Marks on 2020: "I will tell you, we like our chances on the political dollars. All you got to do is take a look at what goes on every day, and to become -- the best TV show on the planet is watching politics. Every other day there's somebody joining the race. It

really bodes well for local broadcasters. It's going to be quite a robust, I believe, fourth quarter in spending. And I think 2020, we're not going to be able to get out of the way of the money. It's going to be literally hand over fist. But hard to put a dollar figure on it, but it's going to be enormous."

Other names which will benefit, although a smaller portion of their revenue base, are CBS, CMCSA, NWSA, TGNA, and DIS. The New York Times (NYT) will also likely see a boost in subs due to the election.

## IPO Watch

Tradeweb Markets (TW) recently came public and the \$8.77B operator of marketplaces in the financial sector trades 35.5X FY18 earnings and 13.3X Sales. TW will report its first public quarter on 5-9-19 and on 5-29-19 will present at the Bernstein Strategic Decisions Conference followed by a 6-5-19 presentation at the Sandler Global Exchange and Brokerage Conference. On 4-11 the company reported March ADV (average daily volume) of \$646.6B, a new record for the company. TW operated a leading electronic platform with notable competitors CME Group (CME) and Intercontinental (ICE), and overall an industry that has seen a lot of consolidation over the past few years. TW notes it has 2500+ client firms and 95% of the top 100 global asset managers use its platform with its focus on Rates, Credit, Equities and Money Markets. TW's FCF grew 27% in 2017 and 28% in 2018. It generates 55% of revenues from Rates, 20% from Credit, 5% from Money Market, and 6% of Equity. Adjusted EBITDA margins were 38.3% in 2017 and 42.5% in the first three quarters of 2018 before dipping to 36.5% in Q4. In terms of revenues, Transaction fees increased by \$103.9 million or 38.9% to \$370.9 million for the combined year ended December 31, 2018 from \$267.0 million for the year ended December 31, 2017 from increased Institutional transactional volumes for U.S. credit products, derivative products (led by Dollar swaps, European interest rate swaps and U.S. and European credit default indexes), U.S. and European ETF, European repurchase agreements and U.S. Treasury, as well as adjustments to contracts as a result of MiFID II pursuant to which annual subscription fees were replaced with monthly minimum transaction fees and the product launch of China bonds. Subscription fees decreased by \$4.0 million or (2.1%) to \$190.5 million for the combined year ended December 31, 2018 from \$194.5 million for the year ended December 31, 2017 due primarily to a \$10.9 million decline from MiFID II contract adjustments where certain annual subscription fees were replaced with monthly minimum transaction fees, partially offset by a \$2.5 million increase in market data fees, a \$1.4 million increase in Retail fees and a \$3.4 million increase in Institutional fees. Commissions increased by \$15.9 million or 16.5% to \$112.7 million for the combined year ended December 31, 2018 from \$96.7 million for the year ended December 31, 2017 primarily due to higher trading volumes in our Wholesale client sector for U.S. credit products, repurchase agreements, U.S. ETF and U.S. Treasury. The revenue increase was partially offset by lower municipal bond, ARM and specified pool trading volumes.

	Year Ended December 31,				ADV Change
	2018		2017		
	ADV	Volume	ADV	Volume	
	(dollars in millions)				
Rates	\$354,999	\$88,870,842	\$254,103	\$63,671,445	39.7%
Credit	12,658	3,186,209	7,554	1,864,700	67.6%
Equities	7,798	1,962,566	4,817	1,214,081	61.9%
Money Markets	173,743	43,462,916	132,105	33,060,749	31.5%

	Tradeweb Markets LLC			
	Successor	Predecessor		
	October 1, 2018 to December 31, 2018	January 1, 2018 to September 30, 2018	Year Ended December 31, 2017	Year Ended December 31, 2016
(in thousands, except share and per share data)				
<b>Statement of Operations Data:</b>				
<b>Revenues</b>				
Transaction fees	\$ 97,130	\$273,751	\$267,020	\$230,171
Subscription fees <sup>(1)</sup>	46,519	143,981	194,534	191,983
Commissions	32,840	79,830	96,745	91,663
Other	2,148	8,209	4,669	4,587
Gross revenue	178,637	505,771	562,968	518,404
Contingent consideration <sup>(2)</sup>	—	(26,830)	(58,520)	(26,224)
Net revenue	178,637	478,941	504,448	492,180

From the S-1

- “Electronic trading continues to increase across the markets in which we operate as a result of market demand for greater transparency, higher execution quality, operational efficiency and lower costs, as well as regulatory changes. As market participants seek to trade across multiple asset classes, reduce their costs of trading and increase the effectiveness of their trading, including through the use of data and analytics, we believe the demand for our platforms and electronic trading solutions will continue to grow.” In terms of market size “
- “Based on industry sources and management estimates, we estimate that the global notional value outstanding for rates and credit was approximately \$590 trillion as of June 2018. When combined with money markets and equities, the market size for our platforms increases to an estimated notional value of approximately \$605 trillion. The markets in which we participate are actively traded, and we estimate that trading in rates, credit, ETFs and money markets generated average daily trading volumes of approximately \$1.9 trillion, \$0.1 trillion, \$0.1 trillion and \$1.9 trillion, respectively, through the first nine months of 2018. As electronic trading in these markets continues to develop, we believe we are well positioned to increase our share of these markets over time. Major market participants include large asset managers, hedge funds, central banks, banks and dealers, insurance companies, corporations, proprietary trading, brokerage and retail advisory firms, governments and retail investors.”
- “Trading volumes are influenced by, among other things, the amount of notional securities outstanding, new issuances, market volatility, regulation and economic factors such as growth and monetary policy. We believe we are well positioned to benefit from secular and cyclical trends impacting many of the markets in which we operate.”

### **Peer Valuation Comps**

At 31.7X EV/EBITDA TW trades rich to CBOE/ICE/CME/NDAQ which average closer to 17X while MKTX is more relevant as a niche instrument play like TW trades 39.25X. MKTX EBITDA grew 11% in 2018 while TW grew its EBITDA more than 25% though MKTX’s 55% EBITDA margins compared to TW’s 40% deserve a premium multiple. TW is the faster revenue growth play at above 25% compared to MKTX in the 10-12% range. TW is difficult to value as it lacks a lot of close peers due to its low exposure to Equity markets. If it can show a path to higher margins, it screens attractive to MKTX for growth investors.

## Insider Buying Activity Monthly Recap

For Detailed Write-Ups Visit <https://www.optionshawk.com/options-trader/insider-trading-spotlight/>

Filing Date	Trade Date	Ticker	Company	Insider Name	Insider Title	Price	Qty	Owned	ΔOwn	Value
4/18/2019 17:57	4/16/2019	CAG	Conagra Brands Inc.	Gregor Joie A	Dir	\$29.99	10,000	64,650	18%	\$299,865
4/17/2019 17:15	4/16/2019	JPM	Jpmorgan Chase & Co	Hobson Melody L	Dir	\$111.03	18,000	81,140	29%	\$1,998,443
4/12/2019 10:20	4/10/2019	ABEO	Abeona Therapeutics Inc.	Buono Stefano	Dir	\$7.80	70,000	70,000	New	\$546,250
4/11/2019 18:09	4/10/2019	LNDC	Landec Corp ca	Obus Nelson	Dir	\$10.33	30,000	2,820,300	1%	\$309,900
4/11/2019 17:04	2/9/2018	HK	Halcon Resources Corp	Ares Management LLC	Dir, 10%	\$6.90	1,113,466	21,855,288	5%	\$7,682,915
4/11/2019 16:37	4/9/2019	SYRS	Syros Pharmaceuticals, Inc.	Akkaraju Srinivas	Dir	\$7.50	533,332	1,593,270	50%	\$3,999,990
4/10/2019 17:30	12/17/2018	HIIQ	Health Insurance Innovations, Inc.	Gabos Paul G	Dir	\$30.63	15,000	64,869	30%	\$459,519
4/10/2019 15:24	4/8/2019	LNDC	Landec Corp ca	Obus Nelson	Dir	\$10.33	30,000	2,790,300	1%	\$310,000
4/8/2019 17:15	4/8/2019	TW	Tradeweb Markets Inc.	Bruni Enrico	MD, Europe, Asia	\$27.00	30,000	104,358	40%	\$810,000
4/8/2019 17:14	4/8/2019	TW	Tradeweb Markets Inc.	Hult William	Pres	\$27.00	12,000	344,543	4%	\$324,000
4/8/2019 17:12	4/8/2019	TW	Tradeweb Markets Inc.	Olesky Lee	CEO	\$27.00	20,000	418,948	5%	\$540,000
4/8/2019 17:10	4/8/2019	TW	Tradeweb Markets Inc.	Warshaw Robert J	CFO	\$27.00	8,000	62,983	15%	\$216,000
4/5/2019 17:08	4/3/2019	REV	Revlon Inc /de/	Perelman Ronald O	Dir, 10%	\$21.10	65,000	46,033,321	0%	\$1,371,665
4/4/2019 21:42	4/3/2019	WBA	Walgreens Boots Alliance, Inc.	Barra Ornella	Co-COO	\$54.56	18,000	1,744,425	1%	\$982,080
4/4/2019 21:11	4/3/2019	RMBL	Rumbleon, Inc.	Dixon Denmar John	Dir	\$4.77	50,415	1,193,473	4%	\$240,249
4/4/2019 20:49	4/2/2019	LYFT	Lyft, Inc.	Jarrett Valerie B	Dir	\$72.00	3,000	20,471	17%	\$216,000
4/4/2019 20:48	4/2/2019	LYFT	Lyft, Inc.	Wilderotter Mary Agnes	Dir	\$72.00	3,500	13,562	35%	\$252,000
4/4/2019 16:34	4/3/2019	BICX	Biocorrx Inc.	Lucido Louis C.	Dir	\$15.00	200,000	245,411	440%	\$3,000,000
4/3/2019 19:42	4/2/2019	CYCN	Cyclerion Therapeutics, Inc.	Currie Mark G	Pres	\$14.81	270,107	321,755	523%	\$4,000,285
4/3/2019 19:20	4/2/2019	EVA	Enviva Partners, LP	Enviva Holdings, LP	Dir, 10%	\$29.74	1,681,237	13,586,375	14%	\$49,999,988
4/3/2019 13:51	4/1/2019	HY	Hyster-Yale Materials Handling, Inc.	Rankin Alfred M Et Al	COB	\$64.62	3,248	617,653	1%	\$209,883
4/2/2019 19:06	4/1/2019	REV	Revlon Inc /de/	Perelman Ronald O	Dir, 10%	\$20.22	115,000	45,968,321	0%	\$2,324,833
4/2/2019 17:48	4/1/2019	COST	Costco Wholesale Corp /new	Meisenbach John W	Dir	\$242.65	3,000	24,833	14%	\$727,935
4/1/2019 16:47	3/29/2019	EQT	Eqst Corp	McNally Robert Joseph	Pres, CEO	\$20.80	12,660	198,247	7%	\$263,328
4/1/2019 16:41	3/29/2019	ESPR	Esperion Therapeutics, Inc.	Mayleben Timothy M	Pres, CEO	\$40.00	5,000	61,163	9%	\$200,000
4/1/2019 16:09	3/28/2019	KFS	Kingsway Financial Services Inc	Stilwell Joseph	Dir, 10%	\$3.01	135,341	1,615,566	9%	\$406,909
4/1/2019 13:15	3/29/2019	HY	Hyster-Yale Materials Handling, Inc.	Rankin Alfred M Et Al	COB	\$62.49	3,631	614,405	1%	\$226,901
4/1/2019 12:54	3/28/2019	HY	Hyster-Yale Materials Handling, Inc.	Rankin Alfred M Et Al	COB	\$62.46	3,633	610,776	1%	\$226,927

## Sector ETF Set-Up of the Month

Solar (TAN) is nearing its highest monthly close in more than 3 years and top holdings include First Solar (FSLR), Solar-Edge (SEDG), Xinyi Solar, Sun-Run (RUN), Scatec Solar ASA, Canadian Solar, Enphase (ENPH), SunPower (SPWR), Encavis AG, and Jinko (JKS). It has nice exposure to multiple geographies and some positive tailwinds including progress in US/China trade talks as rising Oil costs causing a renewed need for looking at Energy alternatives. Solar continues to mature and become less costly allowing it to be more accessible. Despite some headwinds from the Trump Administration the longer term move towards alternative energy remains inevitable and demand is starting to pick back up due to state initiatives promoting solar power. Duke Energy (DUK) just accounted a trio of solar projects and the European Commission has set up an aggressive agenda to move solar mainstream. It looks to be a potential good time to invest in the sector as it looks to break out of a long monthly basing pattern.





## Monthly Educational and Insightful Links

Howard Marks "Growing the Pie" <https://www.oaktreecapital.com/docs/default-source/memos/growing-the-pie.pdf>

JP Morgan Q2 Guide to the Markets <https://am.jpmorgan.com/gi/getdoc/1383614189296>

Matthew Granade, Point72, Interview <https://ritholtz.com/2019/03/transcript-matthew-granade-point72/>

Dorsey Asset Mgmt. on Competitive Advantages [https://dorseyasset.com/wp-content/uploads/2016/07/mit-sloan-investment-conference\\_competitive-advantage-and-capital-allocation\\_dorsey-asset-management\\_march-2017.pdf](https://dorseyasset.com/wp-content/uploads/2016/07/mit-sloan-investment-conference_competitive-advantage-and-capital-allocation_dorsey-asset-management_march-2017.pdf)

### **Disclaimer:**

Not Investment Advice or Recommendation

Any descriptions "to buy", "to sell", "long", "short" or any other trade related terminology should not be seen as a recommendation.

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