Introduction

Thank you for purchasing the 2019 Market Outlook. We saw a return to volatility in 2018 with markets set to close the year negative driven by concerns of peaking global growth, rising rates, an unstable administration, and hedge fund liquidations. It was a year with meaningful corrections in February and March, while Q4 saw a sharp correction destroying a multi-year uptrend and entering us into a bear market on a global rush to safety. The sharpest of corrections was seen in growth stocks with many names giving up a few years of upward moves in the matter of months. A "late-cycle" approach to investing is currently required and FCF Yield has been the best valuation framework, as capex/inflation start to weigh on profitability. 2018 may go down as the first year no asset class has gained 5%.

I hope this 2019 outlook can serve as a resourceful guide all year to target best of breed names in these industries when trends are favorable. I do not expect you to blindly follow the ideas presented in this report as every investor has his/her own style of investing, different risk parameters and timeframes, as well as each individual's personal outlooks that may differ with my views. The goal here is to open your eyes to names I favor in 2019 for various reasons, a guide to some key trends and themes in investing, and likely introduce you to some exciting stocks that were not on your watch-list as I have always thrived in discovering under-followed stocks that become superstar performers.

It is also vital to keep in mind the market environment before considering investing in individual names as the majority of stocks will move with the broader markets. Currently fundamentals have been thrown out the window in a liquidation tape where funds are exiting names for no other reason than to raise and preserve capital. When volatility calms and healthier price action is seen, it will be time to step back into markets and utilize this report to get involved with names that are experiencing strong business trends. I will cover many of the breadth and sentiment signals in this report as a guide for timing these moves.

The best piece of simple advice is to buy stocks in quality companies growing both the top and bottom line in attractive industries with positive tailwinds for growth. Quality meaning companies that have consistently exceeded earnings expectations in previous quarters, strong management, positive margins and efficiency ratios (ROE, ROA, ROIC), and healthy balance sheets. Attractive industry meaning an industry showing growth that has meaningful available market remaining, being involved in the secular shifts seen in economies. The 2019 themes section of this report will be helpful for finding those industries. It is important to learn sector specific ratios which I try and present in more detail in the Sector Breakdowns section. Into 2019 it will be important to avoid debt-laden balance sheets in a rising rate environment and we also seem to be seeing a shift to value from growth as all of the weakness in 2018 was driven by multiple compression as earnings have risen solidly. I did a post last year on the 7 classes of great investments to pay attention to and that includes pure revenue growth stories in growing markets, sustainable MOAT, market share takers and disruptors in large TAMs, product mix shift and margin expansion stories, accelerating growth causing multiple re-ratings, new product and replacement/upgrade cycles, and consolidator stories with synergies and growth.

I do not expect you to enter all of these names on day one of 2019 and sit and wait, instead, be active and strategic in entries/exits whether taking a fundamental or technical approach, or even better, a combination. One fairly simple rule I like to use is to avoid longs in names where the 8 week EMA has crossed below the 20 week EMA, and vice versa for shorts, it will keep you on the right side of the trade more often than not. A bearish cross triggered in early October and has saved a lot of agony. Each name mentioned in this report should also be researched further as these are brief views as I am a firm believer that less is more, and you should be able to lay out an investment thesis concisely, but more in depth due diligence always adds value and confidence to the view.

At OptionsHawk we perform fundamental, technical, ownership trends, and options activity analysis while also discovering the likely catalyst for a move, and when all of these individual analyses give the same signal, it is a worthy trade/investment. If you are interested in receiving daily research and live market coverage from OptionsHawk, please visit the website at OptionsHawk.com.

Thank you again and I hope you enjoy this year's report, it is the most extensive to date. Best of luck to everyone in 2019!

S&P 500 (SPX) Technical S&P 500 (SPX) Technical View and Analysis

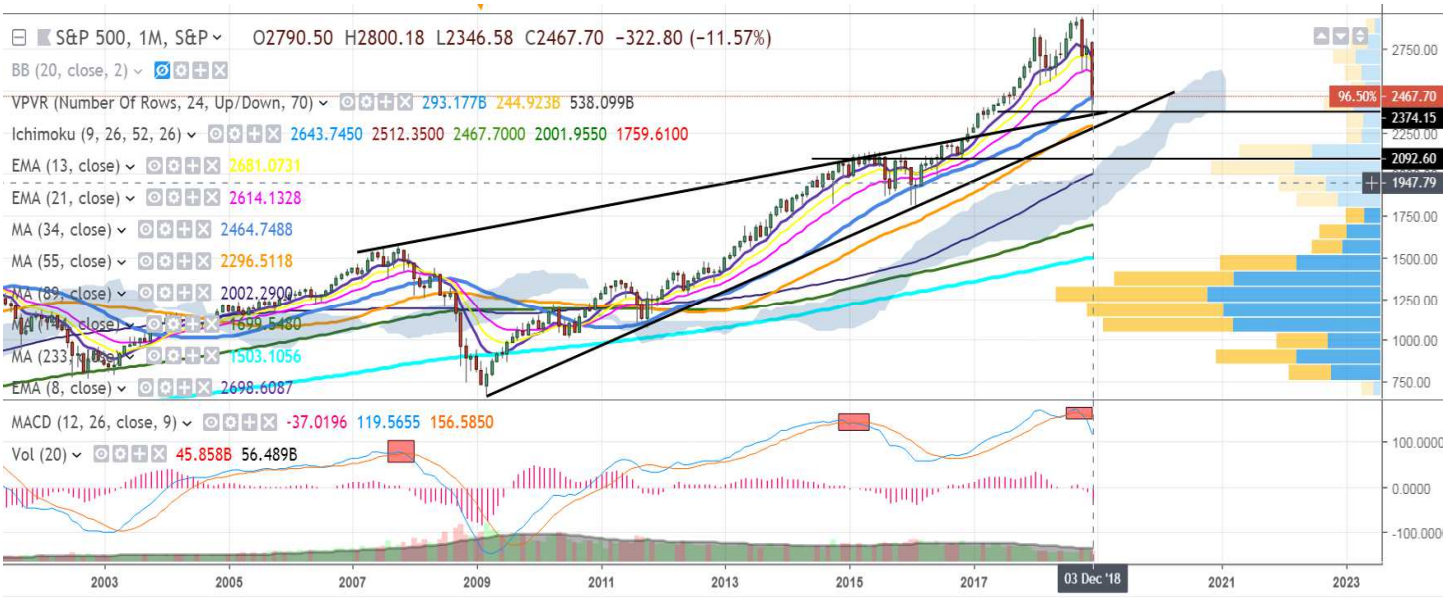
The S&P was in a strong uptrend from the 2016 low to the 2018 high before breaking in October and the weight of momentum has caused the 8, 13, and 21 month moving averages to be downward sloping. The low reached right to the 200 week MA which is an important level if just a cyclical correction in a secular bull market, also the 2,375 level holding on a monthly close would be important as a 50% retracement of the 2016/2018 range. The 34 month MA is also looking to offer some support on a monthly closing basis. The trend line off the 2009/2011/2016 lows comes into play right near the 2,300 level where the rising 55 month MA also lies. A retest of the 2016 breakout would come back closer to the 2,100 level while the most significant volume nodes of support are in the 2,000/2,180 zone, following 2,375 which is trying to hold in December. The selling really accelerated on a break of 2,600 which may be retested early in 2019 on a rebound move though a measured move may need to yet be completed back to 2,300. With the S&P firmly below the weekly IchiMoku cloud, and the 8/21 week bear EMA crossover occurred in mid-October it is a bear trend, a sellers' market. We can target support levels for snapback rallies like the one we saw on 12/26, but for a better swing environment need to see a reversal of these negative momentum signals as well as a VIX below 25.

Key Levels Table

Level	Description	Level	Description
3,160.00	2011/2016 Breakout Measured Move	2,465.00	Weekly Lower Bollinge Band
3,042.00	Weekly Upper Bollinger Band	2,460.00	34 Month MA
2,950.00	Monthly Upper Bolling Band	2,375.00	50% Retrace of the 2016/2018 Range
2,941.00	Record Highs - September 2018	2,352.00	Monthly Lower Bollinge Band
2,770.00	Daily IchiMoku Cloud Upper Band	2,347.00	200 Week MA
2,732.00	Weekly IchiMoku Cloud Upper Band	**2,325.00**	**2009/2011/2016 Trend Support**
2,700.00	Daily IchiMoku Cloud Lower Band	2,300.00	233 Week MA
2,698.00	8 Month MA	2,296.50	55 Month MA
2,691.00	55 Day MA	2,242.00	61.8% Fibonacci of 2016/2018 Range
2,655.00	34 Day MA	2,190.00	Retest of November 2016 Range Breakout
2,645.00	Weekly IchiMoku Cloud Lower Band	2,150.00	Major Volume Node and Retest of 2016 Breakout
2,615.00	21 Month MEA	2,100.00	Monthly IchiMoke Cloud Support
2,595.00	8 Week EMA	2,075.00	38.2% Fibonacci of 2009/2018 Range
2,575.00	21 Day EMA	2,000.00	89 Month MA and Volume Support

Chart

S&P Monthly shows a couple of notable levels, the December 2018 bounce came right at the trend line off 2007 and 2015 highs and the rising trend support and 55 month MA both come into play in the 2300/2325 zone. Considering the damage done to the weekly and daily charts in Q4, it is the only chart worth observing for better reference to important levels for the market.



S&P 2019 Roadmap Scenario

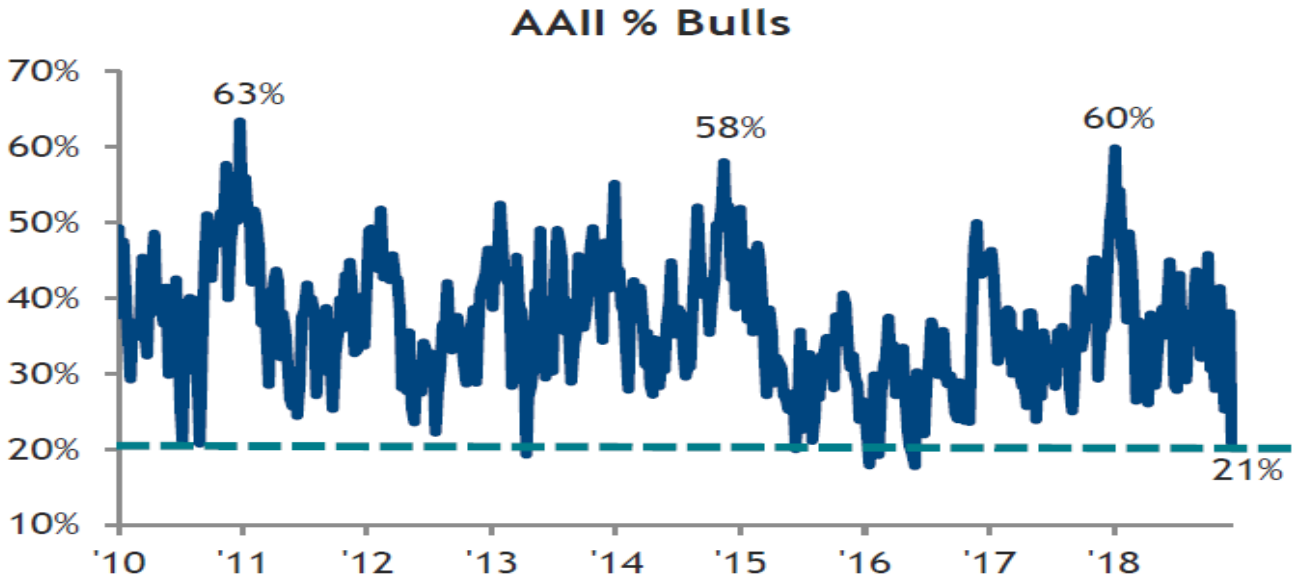
It is extremely difficult to predict where the market will trade a year in advance but it is a worthwhile exercise to expect key levels to align with key event catalysts for the coming investment year. Last year I called for volatility to return and to have at least two sharp corrections, while in 2019 I see heightened volatility remaining but amidst all the uncertainty a year that should be choppy with valuation supportive lower but headwinds to growth restrictive above.

Market Sentiment/Breadth, Macro Picture and Fundamental Analysis

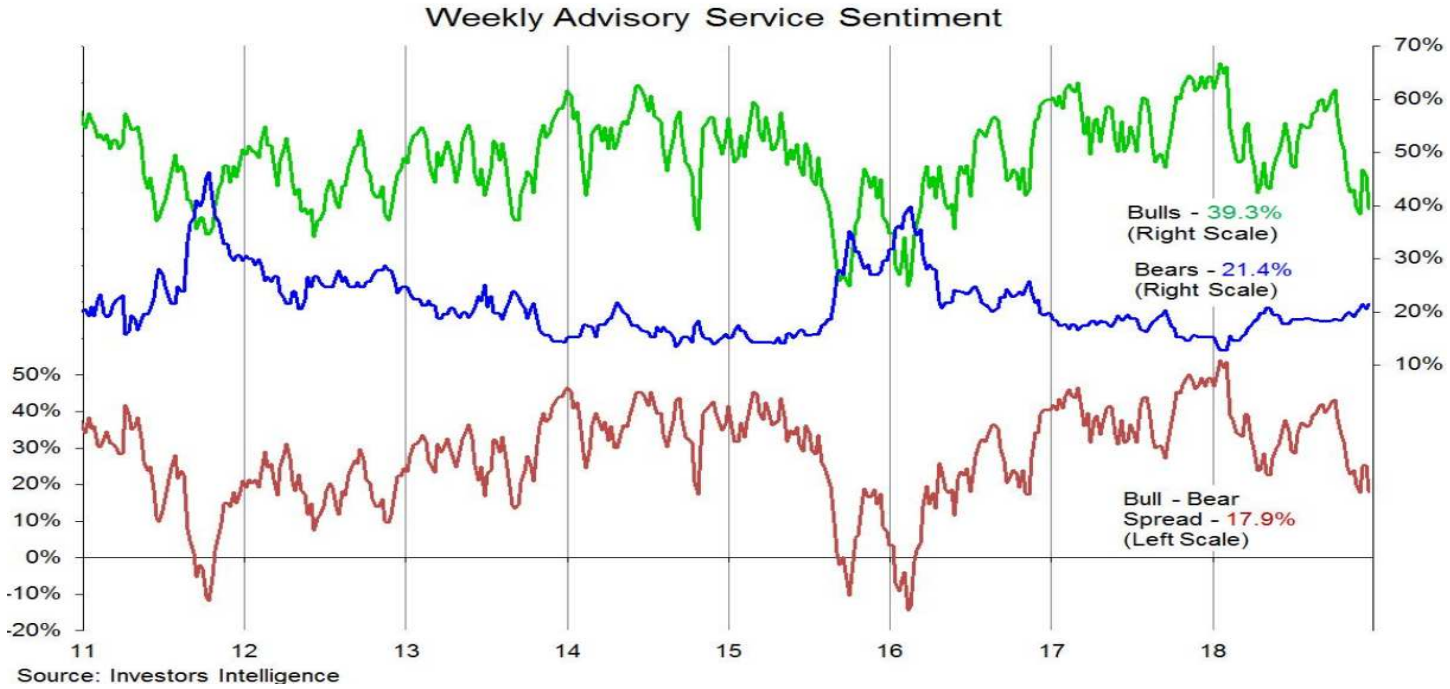
Sentiment/Breadth

AAII Sentiment Survey

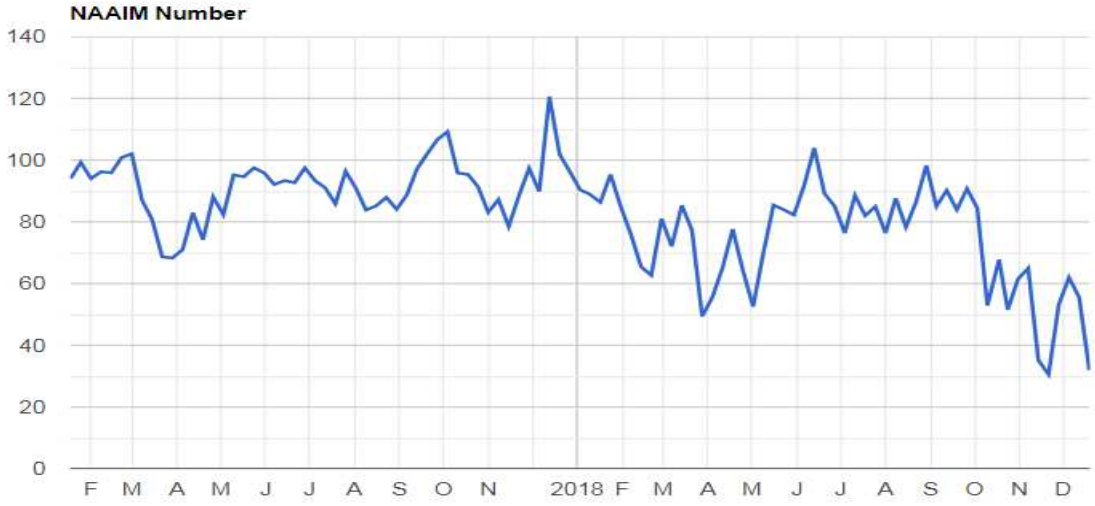
A recent poll from the American Association of Individual Investors (AAII) shows the percentage of bullish investors has dropped to a multi-year low of 21%. This compares to nearly 60% bulls entering 2018, which was the highest since late December 2010 (which also preceded a flat year in the stock market in 2011). Similarly, the Hulbert Sentiment Index shows that bullish newsletter sentiment is in the bottom 5% of historical readings in contrast to a year ago when it was in the top 5%.



The Investors Intelligence Survey



NAAIM Exposure Index

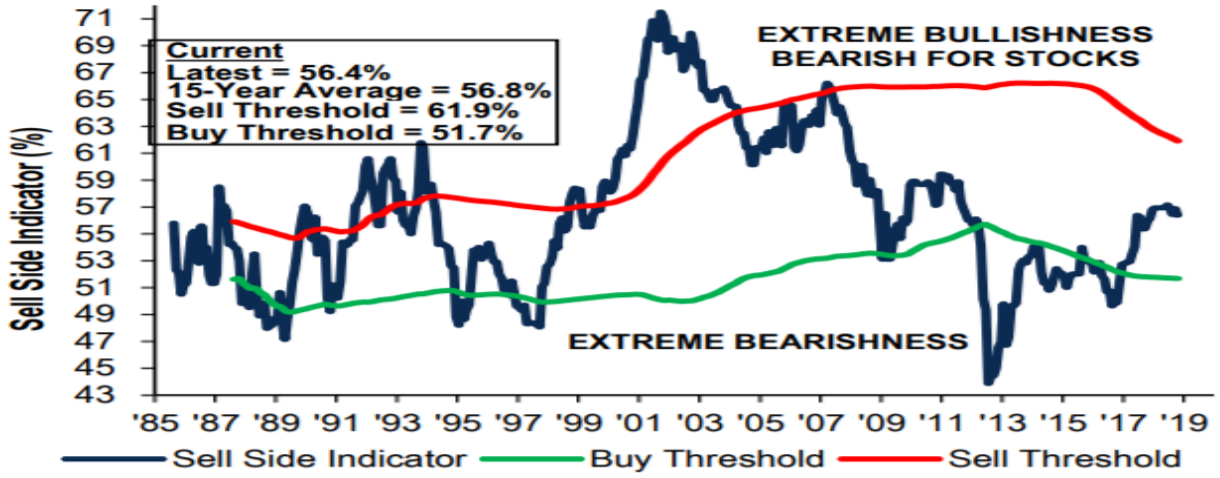


BAML Global Fund Manager Survey

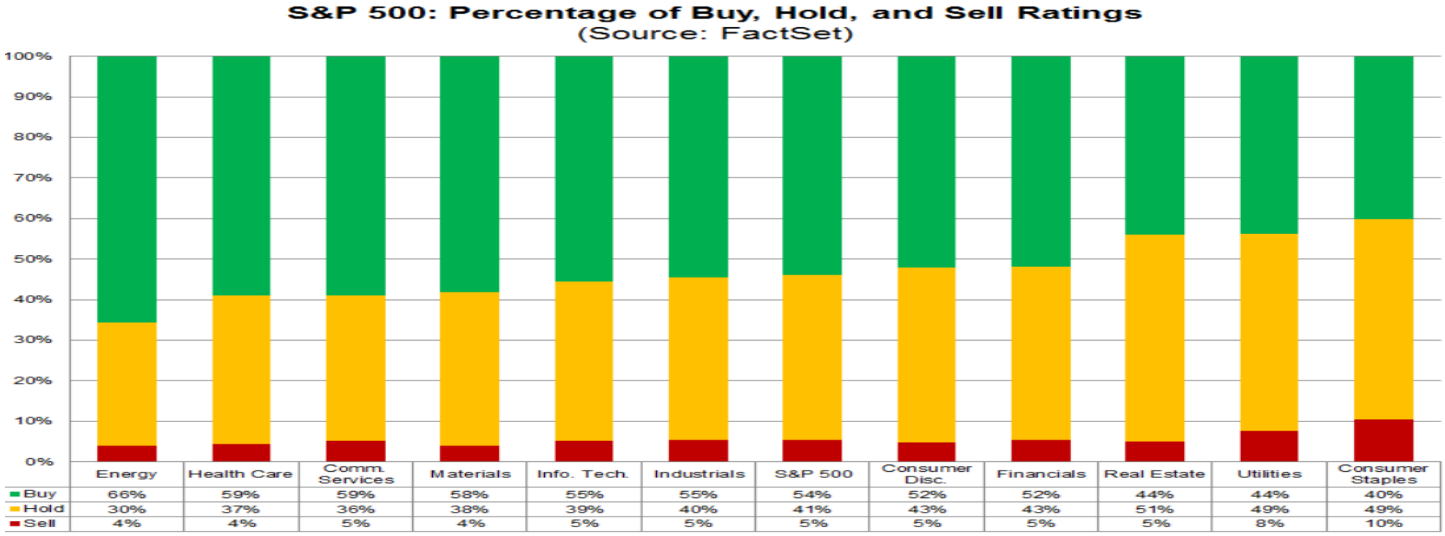
	Current reading	Current signal
BofAML Global FMS Cash Rule	4.7%	Long equities
Buy global equities when cash at or above 4.5%; sell when cash at or below 3.5%		
BofAML Bull & Bear Indicator	3.1	Neutral equities
Buy global equities when the indicator falls below 2.0; sell when it rises above 8.0		
BofAML Global FMS Equities vs. Bonds Rule	-8.0%	Long bonds
Buy equities (bonds) when the model implies equity outperformance (underperformance)		
BofAML Global FMS 10-year Treasury Rule	2.62% yield	Long Treasury bonds
Sell Treasuries when the model implies a >1sd increase in yields in the coming month; buy otherwise.		
BofAML Global FMS High Yield Bond Rule	453bps spread	Short HY bonds
Sell HY bonds when the model implies a >2.5sd increase in spreads; buy HY bonds otherwise.		
BofAML Global FMS VIX Rule	12.1	Short volatility
Buy (sell) volatility when the model implies a >1sd rise (decline) in VIX.		
BofAML Global FMS Global EPS Indicator	15%	EPS growth slowing
Model indicates trend in year-on-year change in 12-month forward global EPS growth.		
BofAML Global FMS EM vs. DM Indicator	-4%	Short EM vs. DM
Model indicates percentage change in the ratio of EM and DM indexes relative to the ratio one year ago.		
BofAML Global FMS Cyclicals vs. Defensives Indicator	n/a	Long Def vs. Cyc

Sell-Side Indicator

Wall Street strategists are recommending investors allocate 56% to equities, still below the current "Sell" threshold of 62%. Note the Sell threshold continues to decline based on the secular downshift in equities allocations. The indicator remains in "Neutral" territory and suggests +10% price returns over the next 12 months.



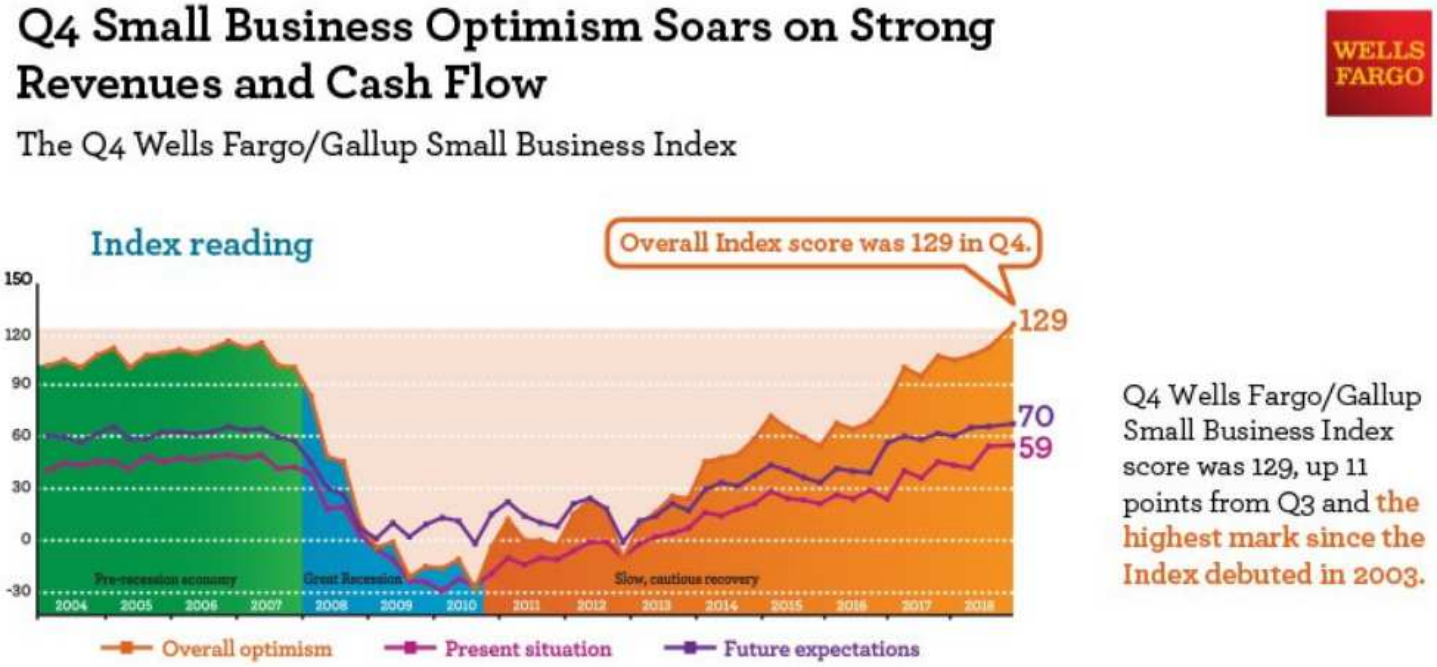
Analyst Ratings



	Energy	Health Care	Comm. Services	Materials	Info. Tech.	Industrials	S&P 500	Consumer Disc.	Financials	Real Estate	Utilities	Consumer Staples
Buy	66%	59%	59%	58%	55%	55%	54%	52%	52%	44%	44%	40%
Hold	30%	37%	36%	38%	39%	40%	41%	43%	43%	51%	49%	49%
Sell	4%	4%	5%	4%	5%	5%	5%	5%	5%	5%	8%	10%

US Consumer Confidence

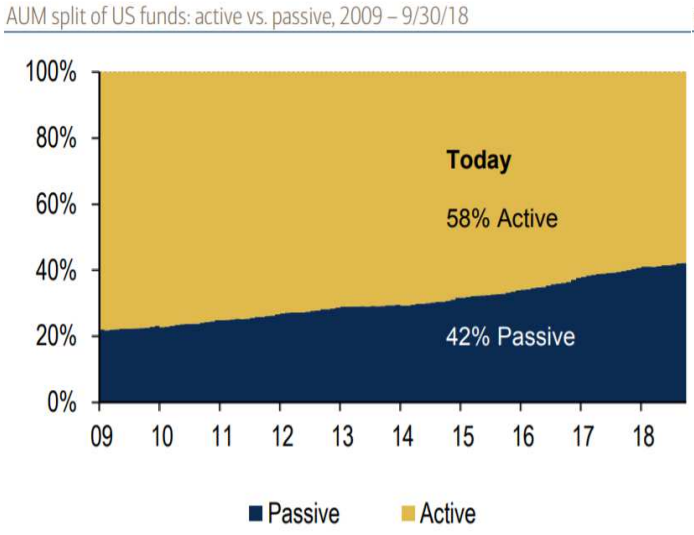
Small Business Optimism

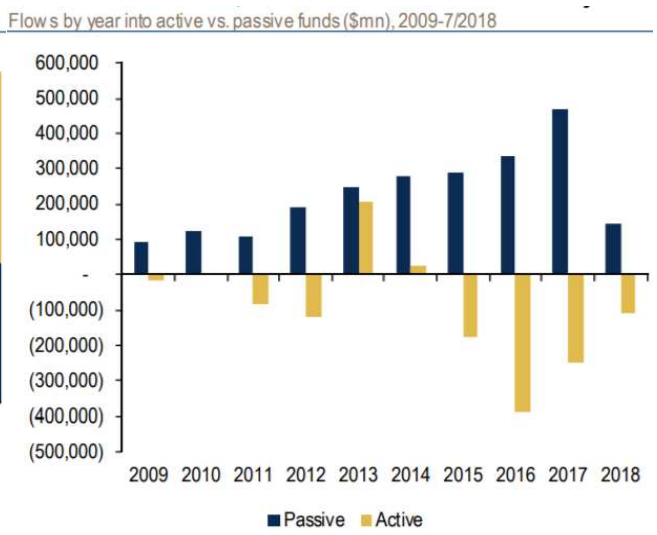


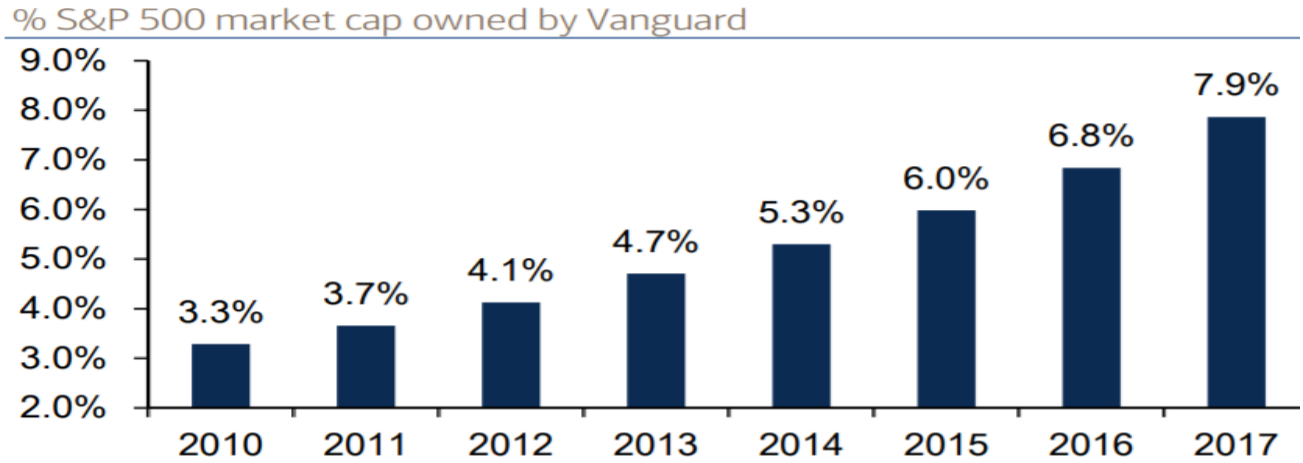
Fund Flows, Short Interest and Insider Trading

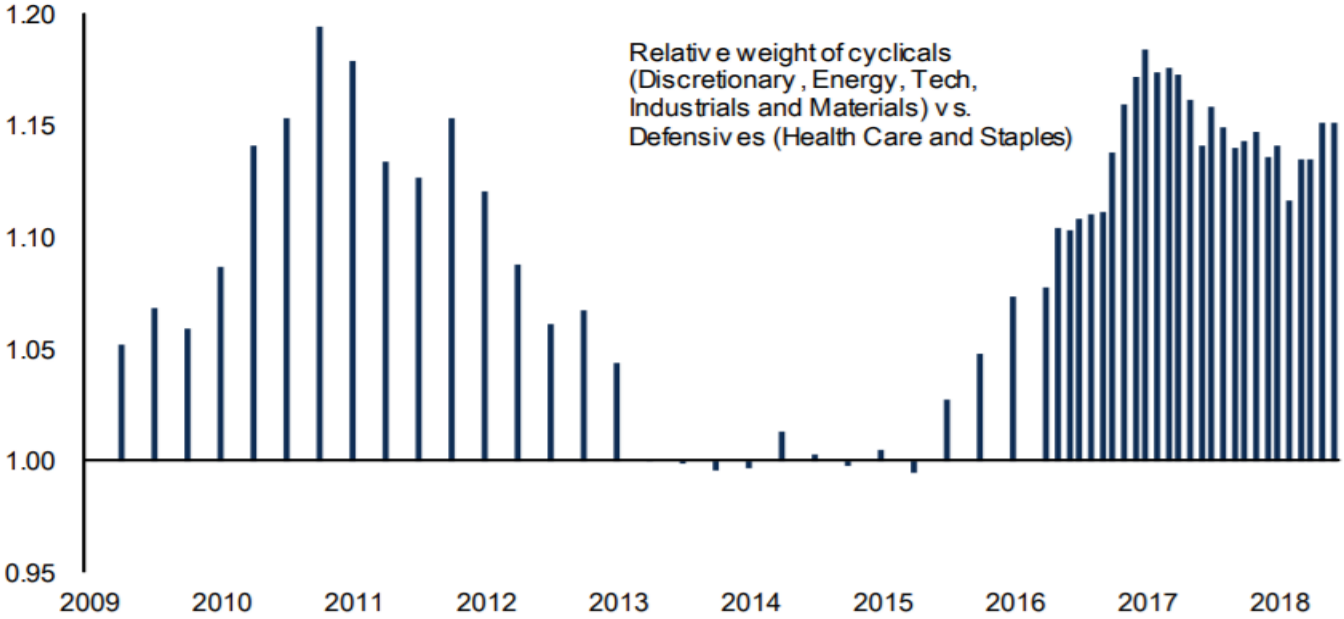
Fund Flows

Fund flows saw a sharp shift in Q4 with a global exodus out of risky assets and during a time when Hedge Funds were concentrated to ten positions and the overall space was crowded into many of the same names, causing a sharp sell-off of early 2018 winners. The relative weightings of cyclicals to defensive hit peak levels and we are seeing a major shift into 2019. Passive management continues to gain share of flows at the expense of active management.

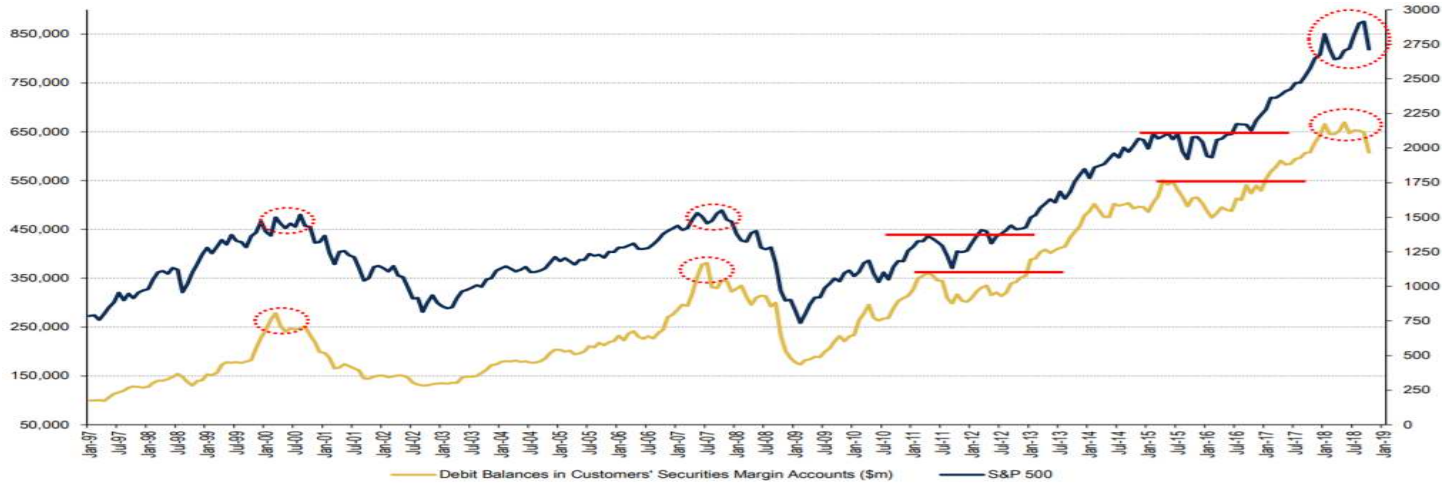


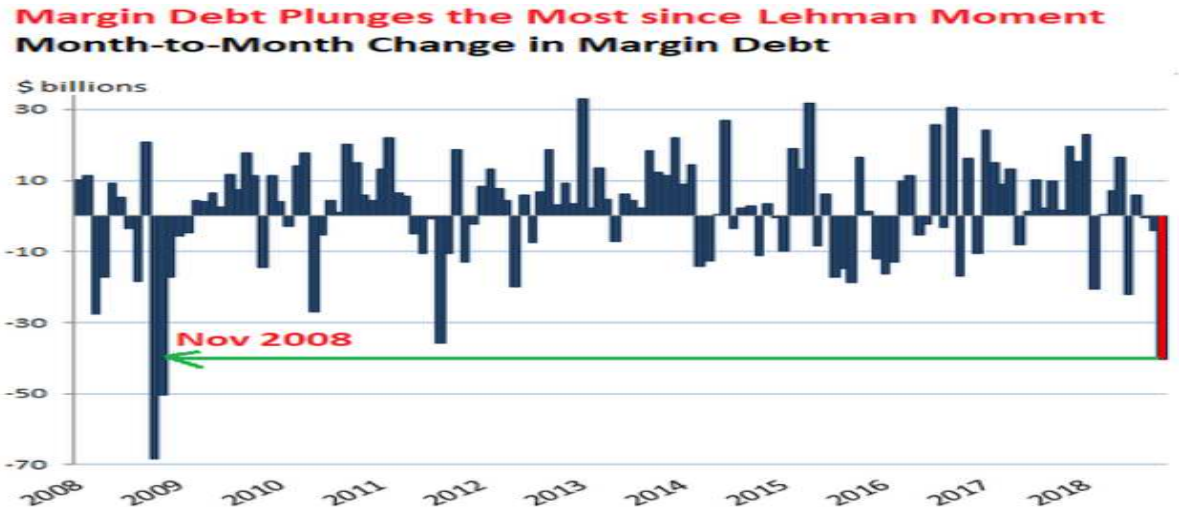




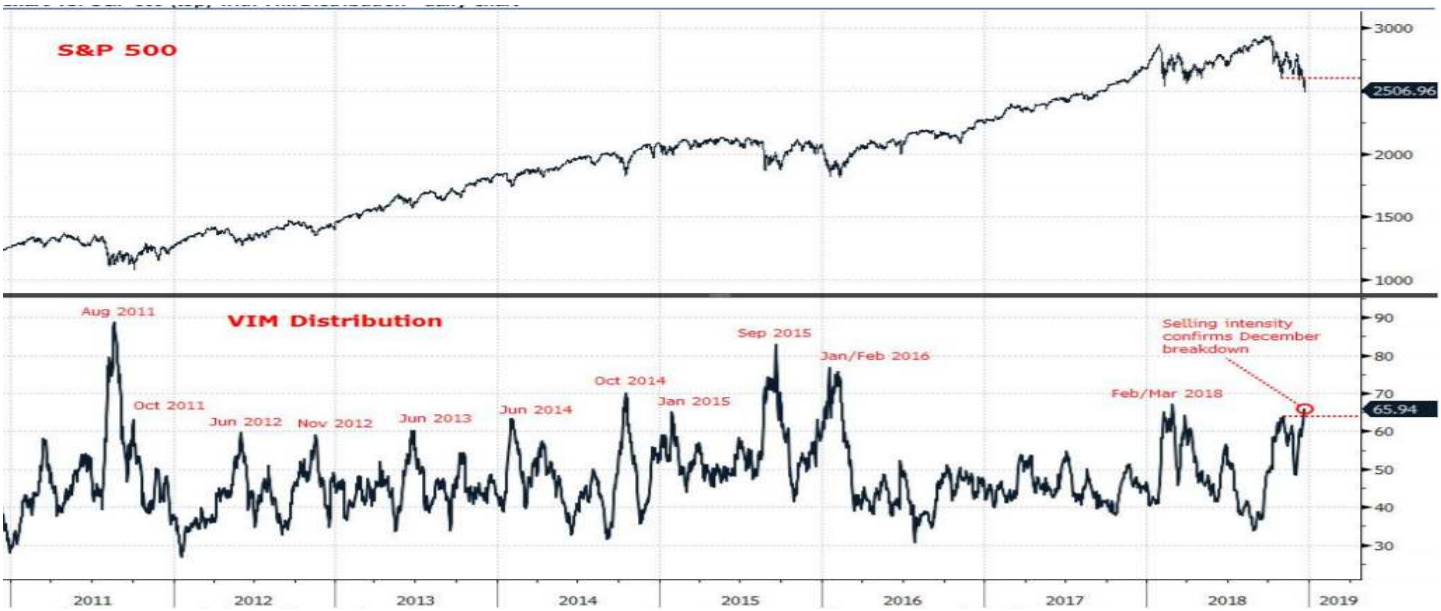


Margin debt remained below its May 2018 record high of $668.9b as the S&P 500 moved to new monthly closing highs in August and September. This 2018 bearish divergence between US equities and margin debt is similar those from 2000 and 2007. The $40.5b October drop has pushed margin debt to new YTD lows to confirm the 2018 bearish divergence. The October 2018 drop of $40.5b for NYSE Margin Debt is the biggest monthly drop since the $66.6b decline in October 2008.

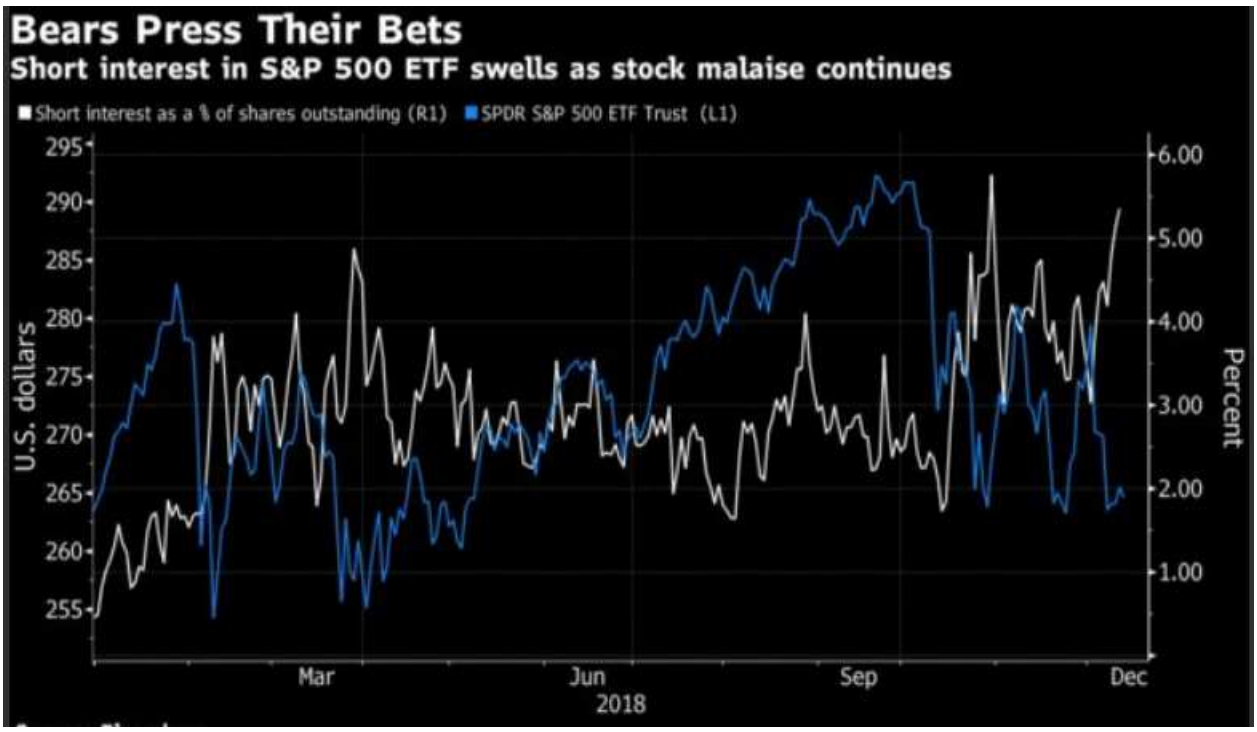




Volume Intensity Model (VIM) Distribution indicator shows expanding selling intensity in December. A new high for VIM Distribution confirms the S&P 500 breakdown and this volume indicator still has room to go to the panic levels from 2016- 2015 and 2011.

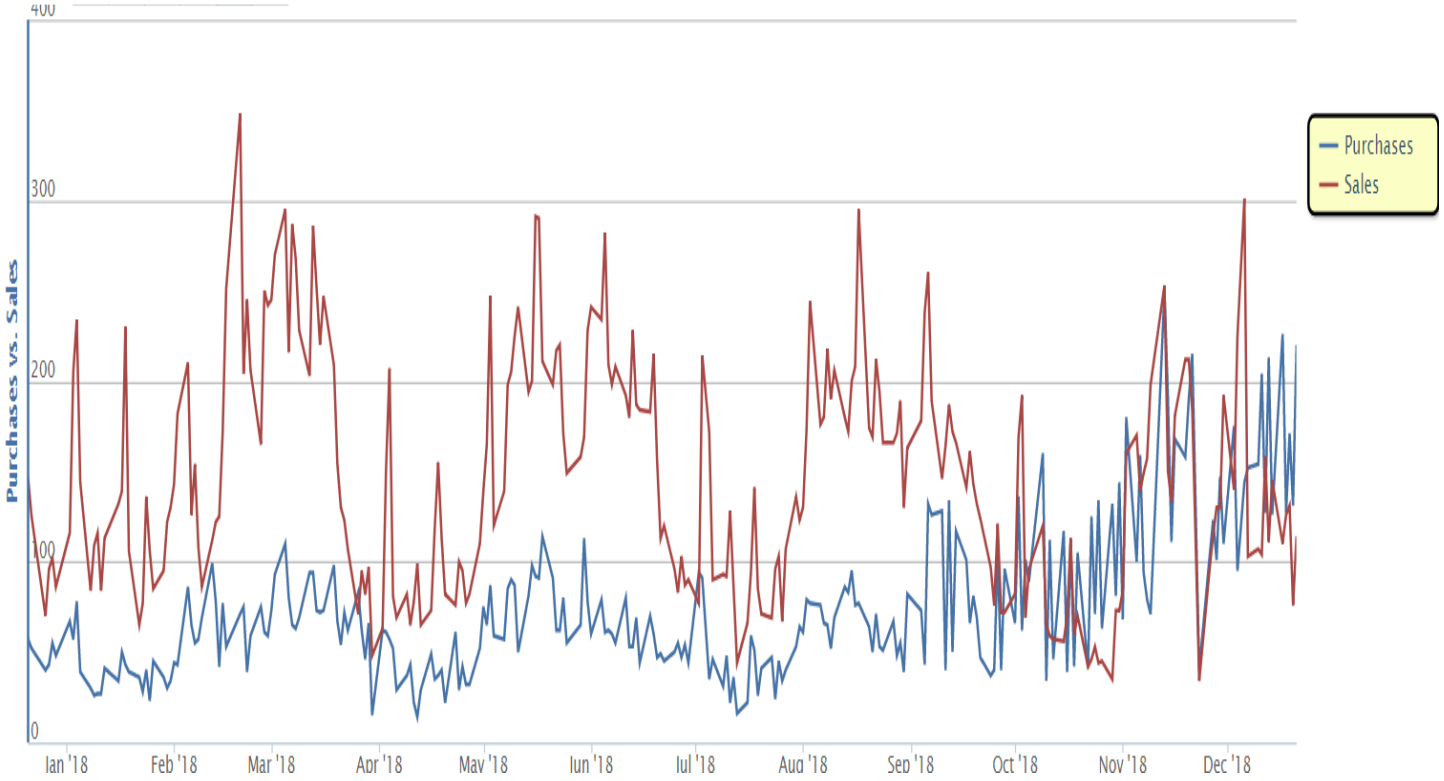


Short Interest



Insider Transaction Ratio

Insider activity is mainly only worth following on the buying side as management only buys its stock for one reason, expectations the stock is undervalued and heading higher, often being a key inflection point for a stock in a downtrend. Tracking insider selling provides very little value as management sells stock for a variety of reasons, and it provides little historical evidence of being a signal.

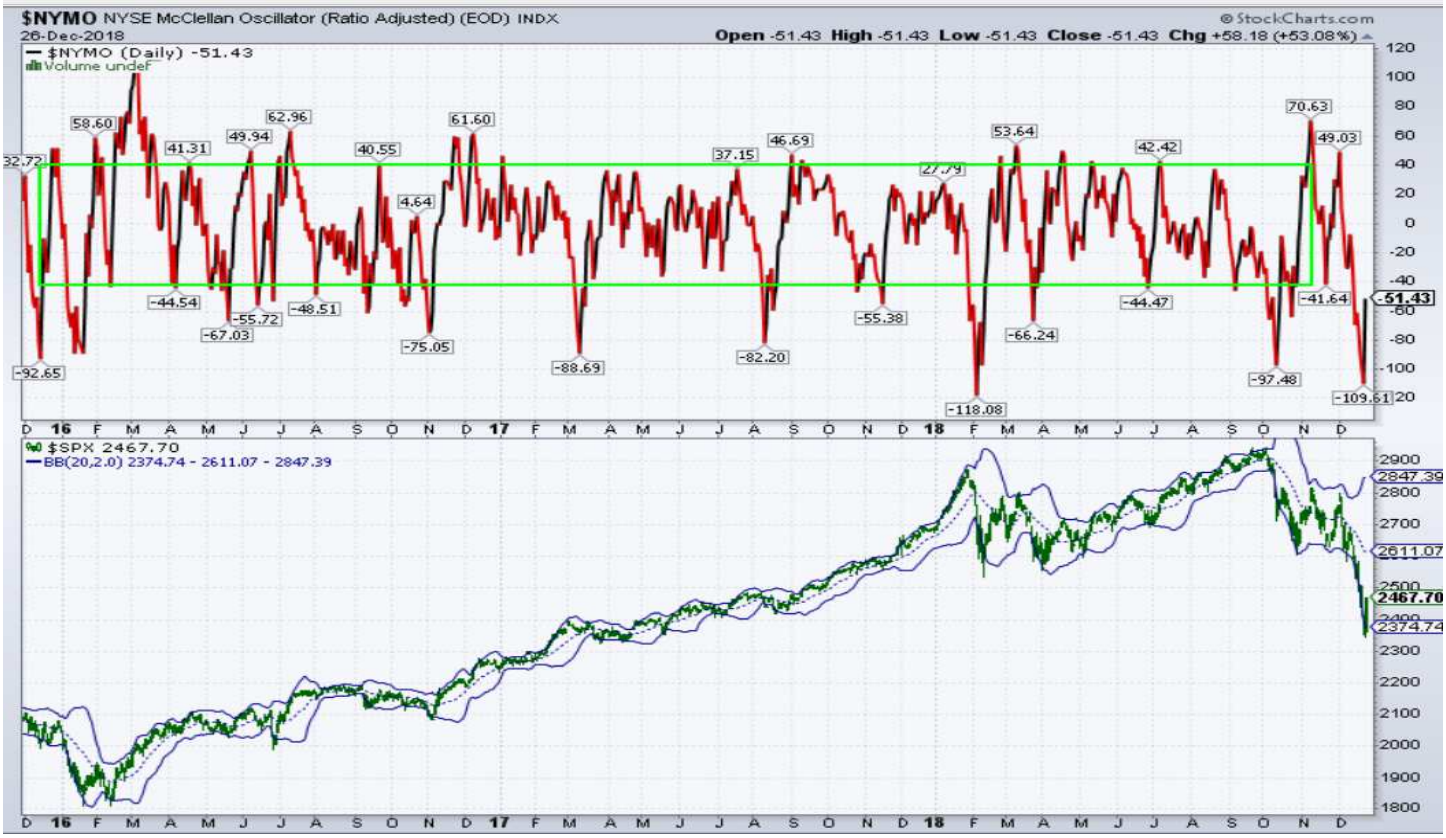


Breadth Readings

Below are a variety of the key breadth readings and some of the signals I utilize for market timing, and always am developing more indicators. One of the newer ones I noticed in 2015 was the S&P's correlation with the performance of Blackrock (BLK) stock, the latter being a slight lead indicator, and worked again in 2018 as BLK diverged from the Q3 rally.

NYSE Cumulative A/D – This is an overall good indicator of breadth and making new highs into year-end, supportive of the bull market the entire way and the rising 40 day EMA an indicator I like as when it touches or breaks, we tend to see pullbacks and any sustained move below that level may indicate an end to the rally. The 40 EMA signal gave a sell signal in early October and has been rejected at that level on bounces, remaining a bearish market.

NYSE McClellan Oscillator (NYMO) – This indicator is useful for timing short term overbought/oversold extremes and in combination with other indicators and sentiment measures can be powerful. It ranged mostly -40 to +40 over the past few years and moves outside were limited until this year we have seen 3 extreme oversold signals with February, October and December. We have not seen many extreme overbought readings over the past two years outside of the November bounce which quickly dissipated.



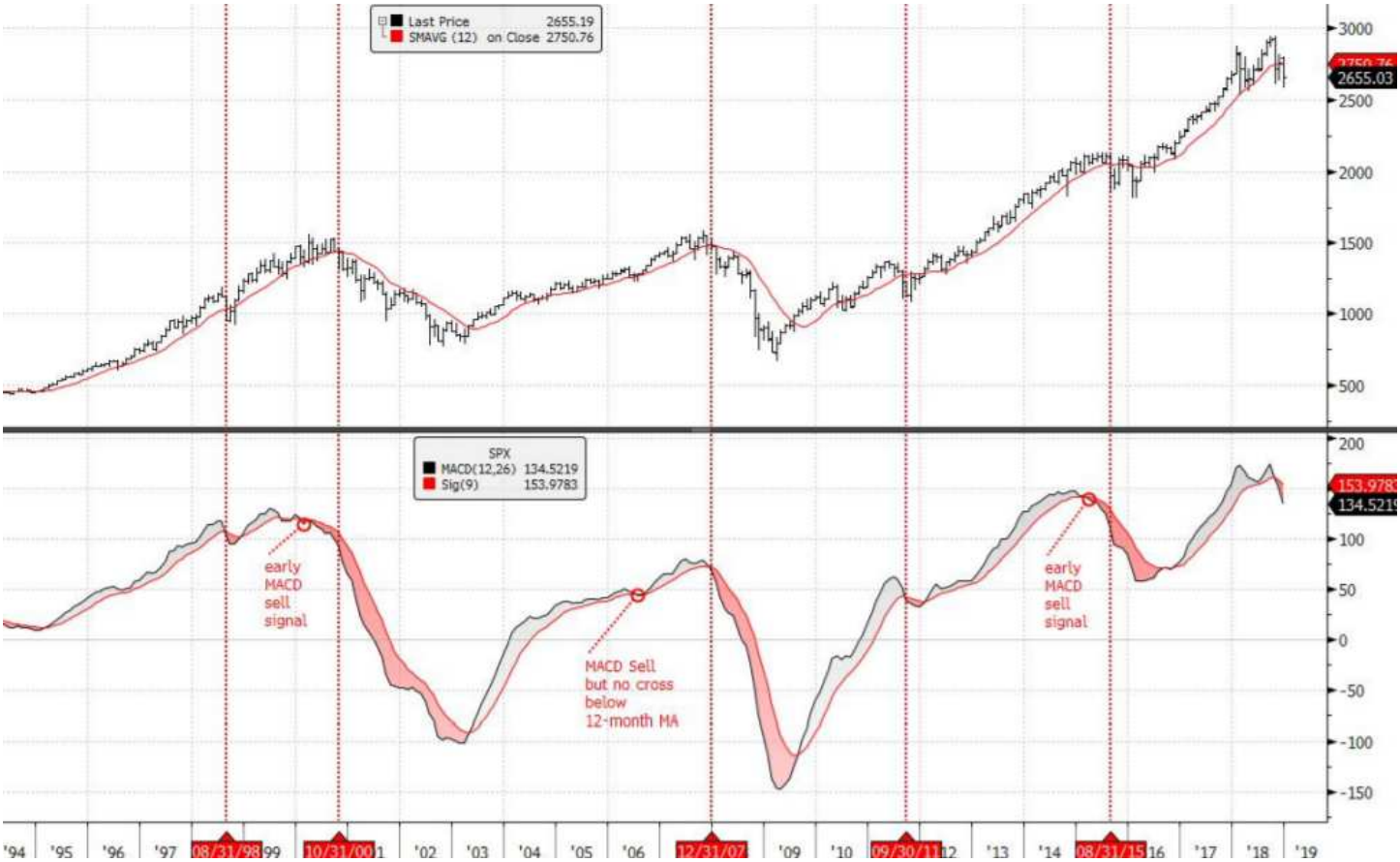
NYSE Summation Index (NYSI) – This indicator is another one to watch for divergences while a very simple but great signal over the years has been looking for 5 or 8 day EMA crossover, above is a buyers' market and below a sellers' market. It is a more active trading signal as can be seen from the number of buy (green) and sell (red) signals in 2018. Its best used after a multi-week trend move in the indicator as a reversal signal. This has been by far one of the greatest signals I use for timing market moves. It was early with an early September signal that gave a very good indication the market was going to head lower.

NYSE Cumulative TICK – This is an indicator I like to combine with 20 EMA crossovers for buy/sell/hold signals, and in 2018 it remained above for much of the time before a break in early September as well as December. It's not quite as powerful or as active of a signal generator of the others.

ARMS Index (TRIN) – This is another useful indicator for judging overbought an oversold conditions and I prefer using the 21 and 55 day moving averages to eliminate the daily noise. A 21 day MA above 1.2 has coincided with market bottoms and worked right into the 12/26 bounce, and conversely readings below 1 have correlated with short-term peaks. The 55 day MA has given less signals but a sustained move above 1.2 for multiple days/weeks has been a general reading of oversold and correlated with key inflection bottoms while moves below 1.05 are overbought and correlate with topping markets.

Moving Averages and Crossovers – The 8/21 week EMA crossover has long been a favorite signal for momentum in individual names and also works with Indices. In general you want to be long when the 8 week is above the 21 week and short when it is below with crossovers being key trend inflection signals. This triggered in mid-October and the sell-off has worsened as momentum has shifted to the downside.

The 12-month moving average (MA) and monthly MACD are good longer-term risk management tools. The S&P 500 generated a monthly MACD sell signal as of 10/31. This is the first sell signal on monthly MACD since March 2015 and a macro risk factor for 2019. Sustaining this bearish signal, as well as monthly closes below the 12-month MA (November closed just above the 12-month MA), increases the risk for a weaker trend (2015-2016) or a bear market for US equities (2000-2003 and 2007-2009).

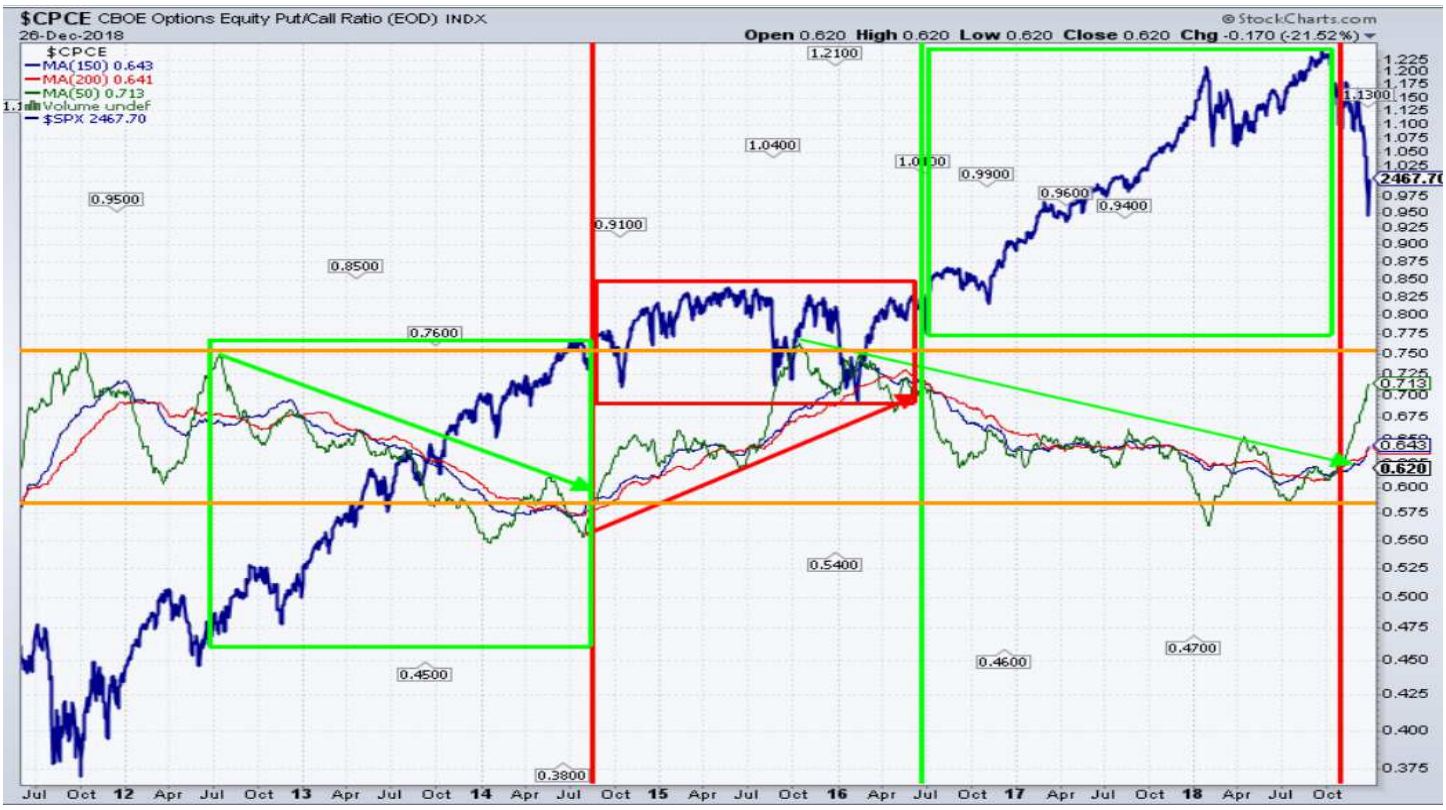


200 Week MA - Investors continue to worry about recessions, yield curve inversions and the Fed hiking cycle but cyclical corrections of similar magnitude during secular bull markets have occurred with or without these macro events. In fact, the two biggest corrections of 27.95% (Dec 1961-June 1962) and 33.51% (Aug 1987-Dec 1987) were not associated with a recession, yield curve inversion or the end of a Fed hiking cycle. The good news is that corrections or "cyclical bear markets" within "secular bull markets" tend to find support above or near the rising 200-week MA. This means that the 200-week MA provides a good secular bull market risk management tool or stop loss. Interestingly, the 200-week MA lines with the average and median corrections of 19.93% and 19.34%. The price action relative to the 200-week MA provides a good gauge for the health of the S&P 500's secular trend. Pullbacks or corrections (aka cyclical bear markets) for the S&P 500 that hold above or near the rising 200-week MA are a secular bull market pattern. Pullbacks that decisively break the 200-week MA are a sign of a secular bear market. Most corrections on the S&P 500 during the 1950-1966 and 1980-2000 secular bull market held between the 100-week MA and the 200-week MA. The 2015-2016 S&P 500 pullback fit this secular bull market correction pattern. The secular bear market periods from 1929-1950, 1966-1980, and 2000-2013 saw sustained periods below these long-term moving averages. This means that the 200-week MA provides a good secular bull market risk management tool or stop loss.

Monthly Ichimoku Cloud - The S&P 500 held at or above the monthly Ichimoku cloud span on corrections or cyclical bear markets during the secular bull markets from 1950-1966 and 1980-2000. The only move below the monthly cloud was an intra-month penetration in August 1982. Using this history as a guide suggests that the monthly cloud is a good trailing secular bull market stop loss. History also suggests that a decisive move below the monthly cloud confirms a secular bear market for US equities. The S&P 500 violated its monthly Ichimoku cloud twice during the 2000-2013 and 1966-1980 secular bear markets and was below the cloud through much of the 1929-1950 secular bear market.

Volatility and Options Sentiment

CBOE Equity Put/Call: This indicator is fairly weak due to its constant changing and overall fallacies such as not accounting for opening/closing nor initiated via a buyer or seller when opening. You can utilize longer term moving averages of the ratio to smooth out the data and come away with some perspectives. The boxes below show periods when the 50, 150, 200 day moving averages were trending down (green boxes) were strong times for markets, while when trending up (red box) markets went sideways to down. We are currently seeing all these moving averages rise, supportive of a bear trend while the 50 MA tends to exhaust itself near 0.75 which it is closing in on.

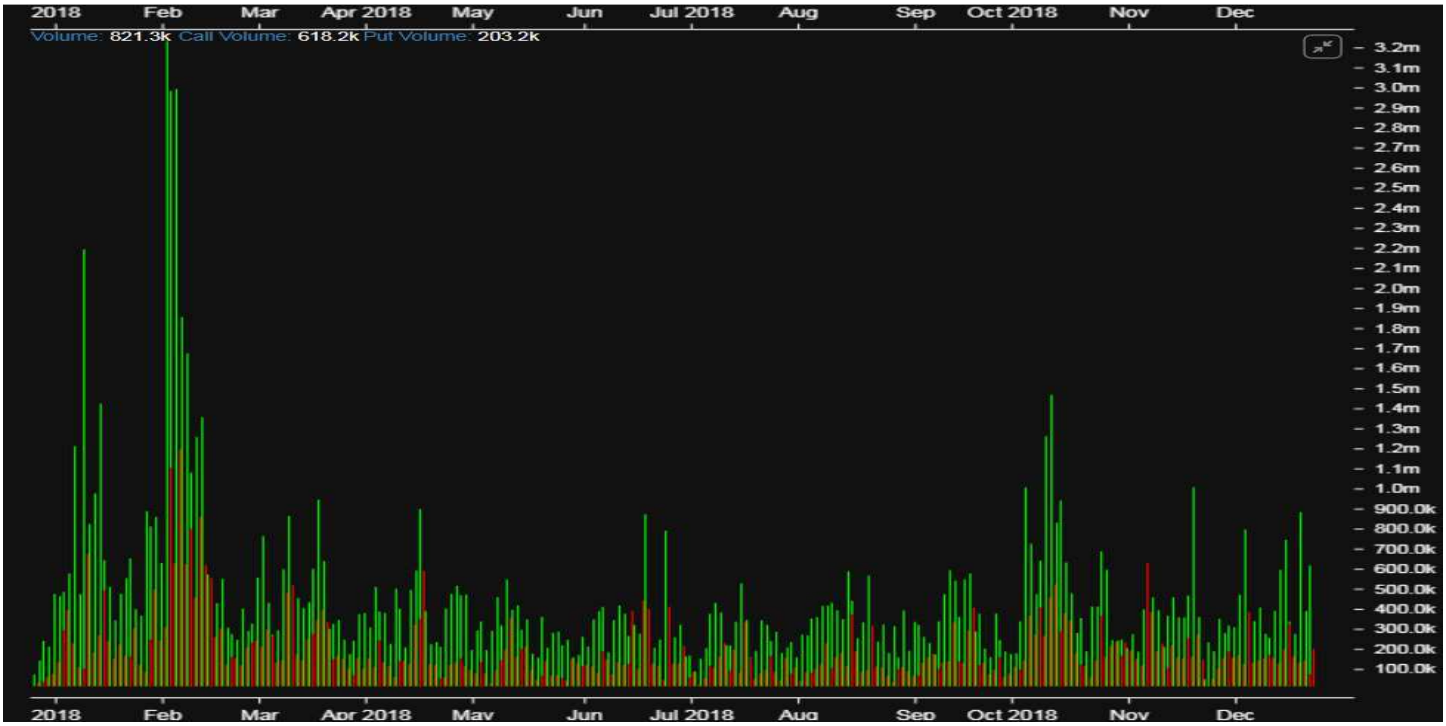


ISEE Sentiment 50 Day MA: ISEE Sentiment 50 day MA gives some sparse signals with below 125 often a good time to be long stocks and readings above 135 overly bullish.

CBOE Skew: Interestingly in 2018 this indicator was not contrarian and instead showed that when OTM puts were in high demand (high skew) it was a time to be nervous for an upcoming market correction, while very low levels (low put demand) tended to be bottoming signals for markets.

VIX:VXV Ratio: This is a great indicator of market fear, when moving above the 1.1 level generally indicative of an overly fearful environment though always best to let price-action confirm. On the other side, readings below 0.8 tend to lead to a sideways and topping market.

VIX Call Volume: VIX call volume above 1M has tended to be a signal of extreme fear seen heavily in the early 2018 corrections as well in October, but lacking in December. Further, a study shows an inverting yield curve tends to lead to a higher volatility environment.



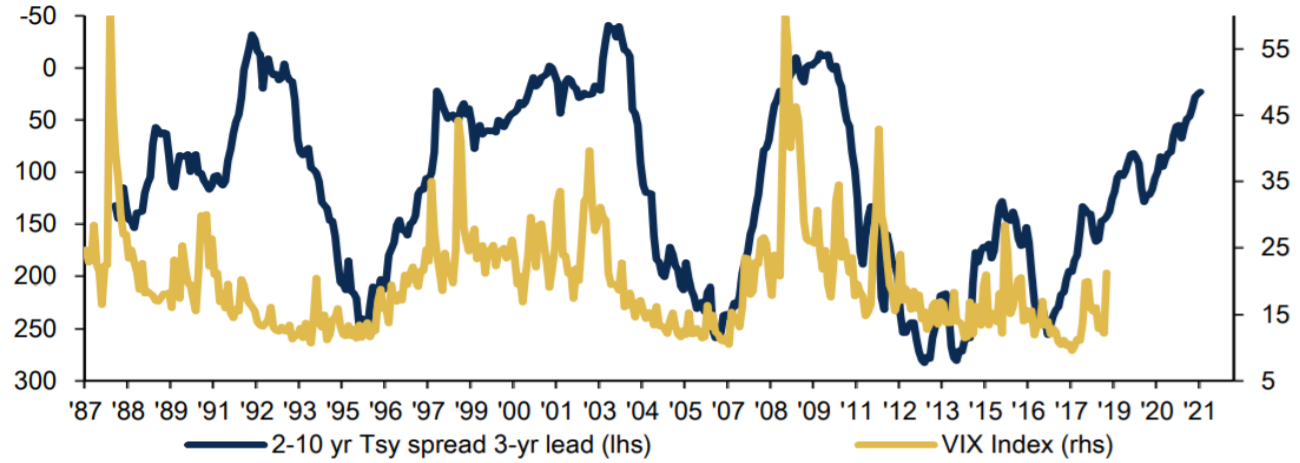
Momentum tends to outperform when the VIX index stays under 25, otherwise momentum tends to underperform.

Table 18: Rule of 25: buy momentum when VIX<25

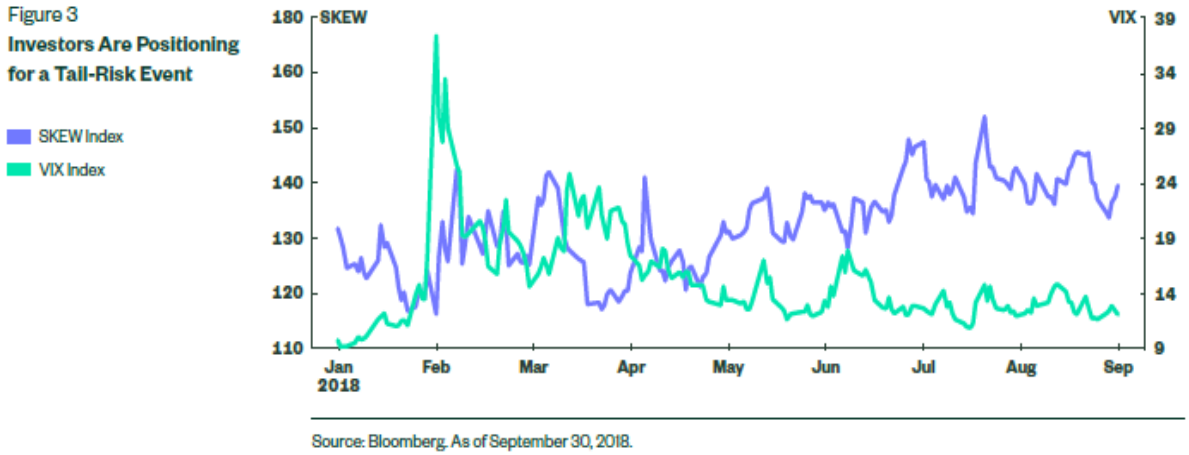
Avg. 1m relative returns vs. equal-wtd. S&P 500, 1990-10/2018

Momentum Factor	VIX > 25	VIX < 25
30wk/75wk MA	-1.1%	0.5%
5wk/30wk MA	-0.5%	0.3%
10wk/40wk MA	-1.0%	0.4%
200 day Price to MA	-0.7%	0.3%
Price Return - 12-mth Perf.	-1.0%	0.5%
Price Return - 9-mth Perf.	-1.1%	0.5%
Price Return - 3-mth Perf.	-0.3%	0.2%
Price Return - 11-mth Perf.	-1.1%	0.5%
Price Return - 12-mth and 1-mth Perf.	-0.7%	0.2%
Price Return - 12-mth and 1-mth Reversal	-0.9%	0.5%
Average:	**-0.9%**	**0.4%**
Median	**-0.9%**	**0.4%**

Yield curve (inverted: 2–10yr spread) vs. the VIX, with a three-year lead (1987-10/2018)

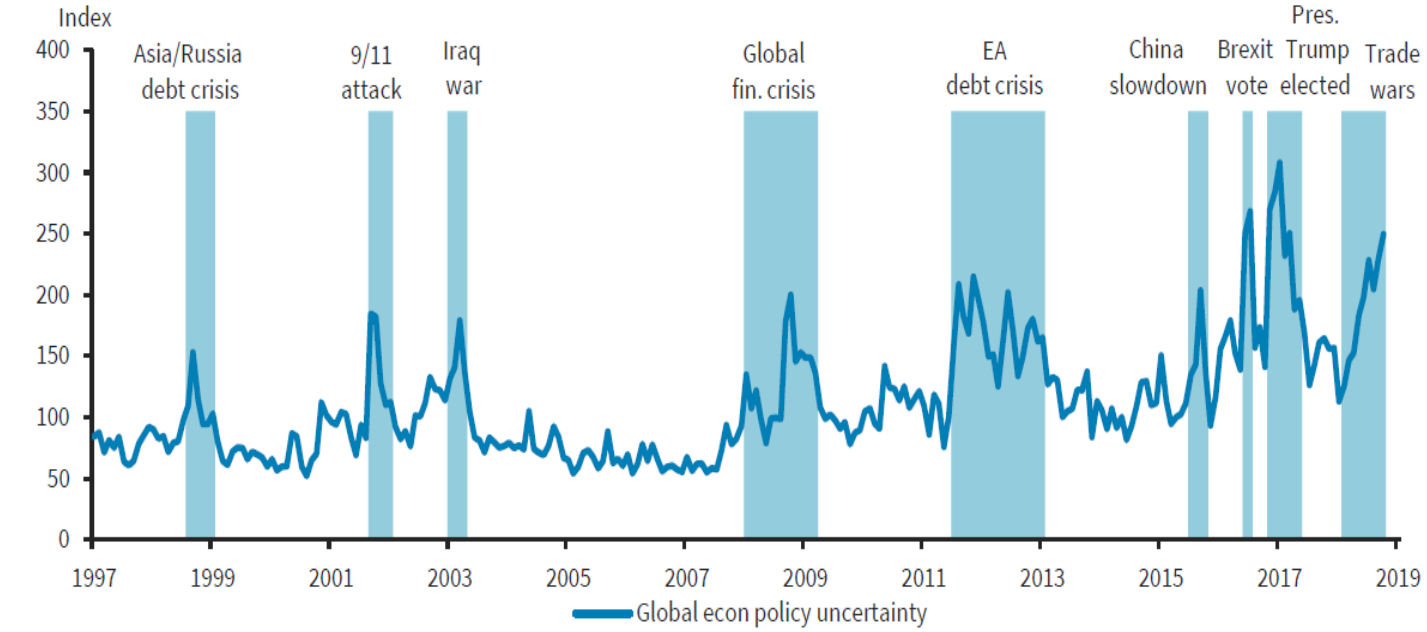


In September we saw evidence of investors positioning their equity portfolios for a correction via the SKEW index, which measures the risk of extreme market moves. While volatility, as represented by the VIX volatility index, has trended downwards, investor positioning for a tail-risk event has been elevated for an extended period.

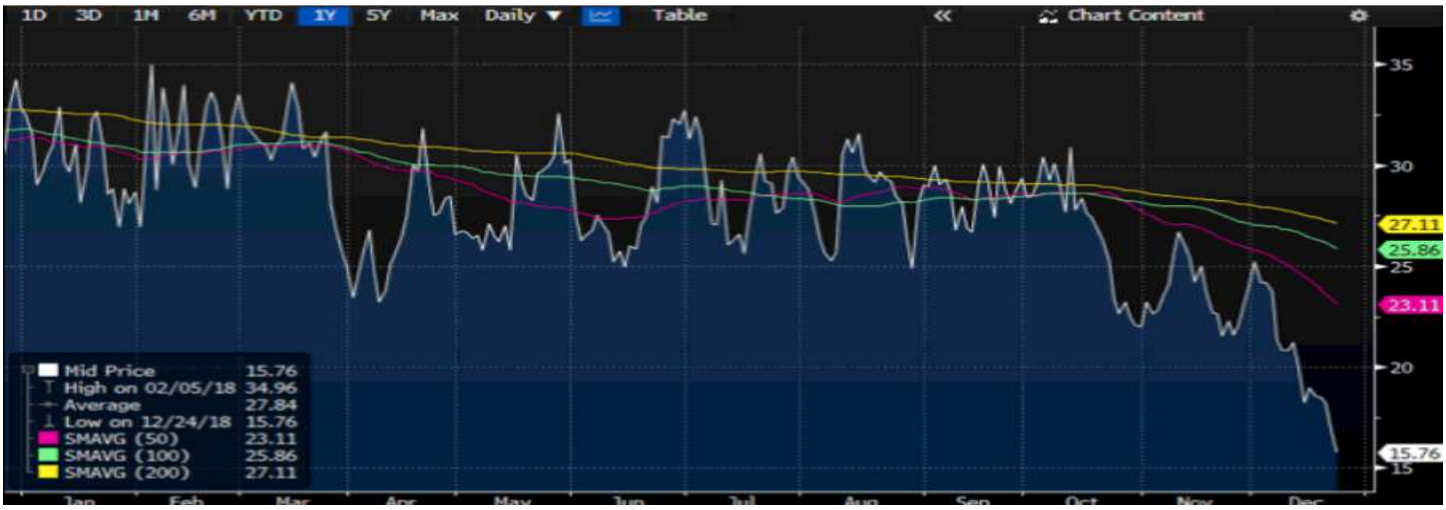


Global Political Economic Policy Uncertainty Index

High global policy uncertainty related to unresolved trade tensions frame the outlook for export-dependent economies

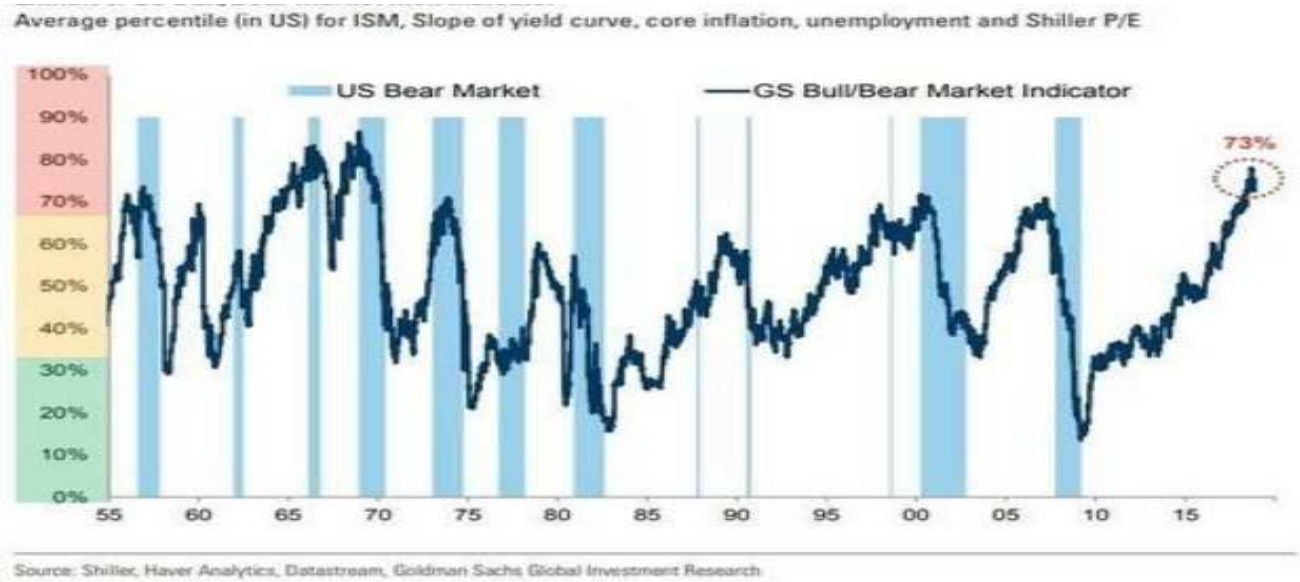


CS Fear Barometer



Goldman Sachs Bear Market Indicator

Goldman's bear market indicator — which takes into account the unemployment rate, manufacturing data, core inflation, the term structure of the yield curve and stock valuation based on the Shiller PE ratio — is at a rare 73 percent, its highest level since the late 1960s and early 1970s. Historically, when the Indicator rises above 60 percent it is a good signal to investors to turn cautious, or at the very least recognize that a correction followed by a rally is more likely to be followed by a bear market than when these indicators are low. It sees three things pointing to a sustained bear market: 1) The growth/inflation mix is turning against equity returns; 2) A sharp decline is often followed by a bounce; 3) The GS Bear Market Risk Indicator is at elevated levels.



Current level of GS Bear Market Risk Indicator's sub-components

	Level	Percentile
Unemployment	3.7	94%
Shiller PE	30.9	93%
ISM	57.7	76%
Term Structure of Yield Curve	0.9	66%
Core Inflation	2.2	36%
GS Bear Market Risk Indicator		**73%**

** 100 percentile means these variables are at their highest level except for SYC and Unemployment where 100% means they are at their lowest.*

BAML Bear Market Signposts (79% Triggered on October 10th)

Indicator	Category	Current value	Trigger	Triggered	Triggered at time of latest peak (9/20/18)	Data since[d]	Hit rate %[b]	Notes	Type of trigger[f]
Fed raising rates	Credit	200bp	>75bp	☑	☑	1983	100%	Bear markets have always been preceded by the Fed hiking rates by at least 75bp from the cycle trough	Stays on
Tightening credit conditions	Credit	-16%	>0%	☐	☐	1990	100%	Each of the last three bear markets has started when a net positive % of banks were tightening C&I lending standards	Resets
Trailing S&P 500 12m returns	Returns	8%	>11%	☐	☑	1936	86%	Minimum returns in the last 12m of a bull market have been 11%	Resets
Trailing S&P 500 24m returns	Returns	30%	>30%	☑	☑	1936	86%	Minimum returns in the last 24m of a bull market have been 30%	Resets
Low quality outperforms high quality (last 6m)	Returns[e]	-1.8ppt	>0ppt	☐	☑	1986	100%	Companies with S&P Quality ratings of B or lower outperform stocks rated B+ or higher	Resets
Momentum outperforming (6m/12m)	Returns[e]	-0.7ppt/+1.4ppt	>0ppt	☐	☑	1986	100%	9m price return (top decile) vs. S&P 500 equalweight index	Resets
Growth outperforming (6m/12m)	Returns[e]	-2.2ppt/+0.2ppt	>0ppt	☐	☑	1986	100%	Consensus projected long-term growth (top decile) vs. S&P 500 equalweight index	Resets
5% pullback over prior 12m	Returns	3	>0	☑	☑	1928	100%	In the preceding 12m of all but one (1961) bull market peak, the market has pulled back by +5% at least once	Resets
Low PE underperforms (6m/12m)	Returns[e]	-6.6ppt/-5.3ppt	<0ppt	☑	☑	1986	100%	Forward 12m earnings yield (top decile) vs. S&P 500 equalweight index	Resets
Conf Board consumer confidence	Sentiment	138	>100	☑	☑	1969	100%	We have yet to see a bear market when the 100 level had not been breached within the last 24m	Resets
Conf Board net % expecting stocks higher	Sentiment	25	>20	☑	☐	1988	100%	Similarly, we have yet to see a bear market when the 20 level had not been breached within the last 6m	Resets
Lack of reward to EPS & sales beats	Sentiment[g]	+0.41ppt	<1ppt	☑	☑	3Q00	100%	Companies beating on both EPS & sales outperformed by <1ppt within the last three quarters of the prior bull market	Resets
Sell side indicator	Sentiment	56.4%	>61.9%	☐	☐	1988	67%	A contrarian measure of sell side equity optimism; sell signal trigged in the prior 6m	Resets
FMS cash levels	Sentiment	5.1%	<3.5%	☐	☐	2001	100%	A contrarian measure of buy side optimism	Resets
Inverted yield curve	Sentiment	29bp	<0bp	☐	☐	1962	71%	Doesn't always lead/catch every peak & of all inversions, all but one (1970) coincided with a bear market within 24m	Stays on
Chg in long-term growth expectations	Sentiment	+4.1ppt	+0.6ppt	☑	☑	1987	100%	While not always a major change, aggregate growth expectations tend to rise within the last 18m of bull markets	Resets
Rule of 20	Valuation	18	>20	☑	☑	1961	100%	Trailing PE + CPI (y/y%) >20 within the last 12m	Resets
VIX rises over prior 3m	Sentiment	25	>20	☑	☐	1986[a]	100%	Market peaks have come amid the VIX >20 at some point within the last 3m	Resets
ERR rule	Growth	Yes[c]	See footnote	☑	☑	1987	100%	Based on 1- and 3-month earnings estimate revision trends; see footnote for more detail	Stays on

Event Schedule of Catalysts 2019

Market Catalysts / Dates
1/6 to 1/11: CES 2019
US/China Trade Talks - Jan. 2019
1/9/19: FOMC Minutes
1/14: Q4 Earnings Reporting Season
1/14: Brexit Vote (Again)
1/14 to 1/16: Retail ICR Conf.
1/22: Davos World Economic Forum
1/23: BOJ Decision
1/24: January Flash PMIs
1/24: ECB Meeting
State of the Union - Late January
1/30: FOMC Decision
3/1: US/China Trade Ceasefire Expires
3/2: US Debt Deciling
April 2019: OPEC Meeting
3/29: Brexit - UK/EU Separation Takes Effect
April 12/14: World Bank / IMF Meetings
June 8/9: G20 Meetings
Oct. 2019: Draghi's Term at ECB Ends

Macroeconomic and Fundamental

The Macro picture is cloudy into 2019 as we are seeing clear slowing growth in China along with expectations for slower growth in Europe and the US, the latter coming down from a one-time boost from tax cuts. We have seen a number of data points roll over in the US while peak cycles in Auto/Housing are weighing on a number of ancillary industries. We are also seeing peak employment while inflation from transportation, craw materials and wages is a major threat to margins, and thus earnings. The Fed has continued to embark on a tightening cycle and financial conditions have weakened severely while the inverting yield curve may signal an upcoming recession. We are in the late stages of a robust economic cycle that became extended on historical measures, so a period of slower growth is more than expected, but the deepness and length of the slowdown is the unknown. A combination of the Fed hiking cycle, rising trade frictions and political turmoil are weighing on estimates for growth. The US is expected to slow more in 2H19 as stimulus fades while China is likely to see further policy easing supporting 6.2 growth, low by China standards. Europe slowed sharply in 2018 from 2H17 but is expected to stabilize near current levels with fiscal expansion and a still accommodative ECB. European political risk and lower growth sets up for continued underperformance for European equities. The fears of a substantial slowdown have yet to be proven as no significant economy is seeing meaningful below trend growth and revisions have only been modestly negative. Lower than expected GDP growth has not weighed on earnings growth to this point at any extent. Recession risk still appears low though economic growth is clearly set to moderate. However, investors should be preparing for persistent heightened volatility and more subdued returns from risky assets. Investors are grappling with the concerns of peak economic and earnings growth along with wildcards that include, trade and monetary policy. Job growth along with rising wages for the first time in this recovery support consumer spending which accounts for 70% of the economy, as does lower taxes and receding gasoline prices. Consumer finances are also relatively healthy with the personal savings rate triple that of the level in the 2007 downturn. Although late cycle, reliable leading indicators are not pointing to an imminent downturn and 2019 global economic growth should still surpass post-crisis averages, supportive of earnings and market upside. RBC notes that the corrections in 2018 exposed stresses in the global equity market but also reset valuations to more reasonable levels. We think the market has the capacity to absorb economic cooling, ongoing tariff risks, and monetary tightening, albeit with volatility. Our constructive view hinges on low recession risks for major economies, particularly the U.S., and the likelihood corporate earnings growth will persist. But 2019 returns could be modest and delivered unevenly; therefore, it is appropriate to trim equity exposure to a Market Weight level in global portfolios from a slight Overweight position.

	Bull case	Bear case
Trade tensions with China	- Positive trade resolution/de-escalation bullish for equities - Multinationals and companies that source from China directly benefit	- Further trade tensions hurt sentiment/global growth - Can squeeze corporate margins from rising costs - Inflation could slow economic activity
Inflation	- Low oil prices could drive margin expansion - Slower wage growth / inflation from rate hikes boosting margins	- Rising wage and material cost inflation hurts margins
USD	- Weakening USD benefits multinational earnings (FX translation), commodity prices, and exports	- Strengthening USD hurts multinational earnings (FX translation), commodity prices, and exports
Infrastructure bill	- Possible infrastructure bill benefits Industrials / Materials	
Peak of market	- Our 10yr valuation framework (which has strong predictive power over subsequent returns) was forecasting +14% annualized returns 10yrs ago, putting the S&P 500 at 4200 by year-end 2019	- We could already be in bear market territory; historically 80-100% of our bear market signposts are flashing red at market peaks, we reached 79% in early Oct. 2018
Credit	- Credit conditions remain benign, with a muted rise in credit spreads and no significant tightening of credit conditions as companies continue to pay down debt	- A surge interest rates, investment grade (IG) migration to high yield (HY), heightened funding costs, economic slowdown, or a significant credit event could rapidly shift risk appetite in credit markets
Economy/cycle	- Our economists see a low probability of a recession - Our US regime indicator suggests we continue to hover between mid and late cycle	- Recessions typically occur ~3 quarters after the market peaks, where we see risk the market peaks in 2019 - Rising late cycle concerns suggest defensive sectors could outperform

U.S. business cycle scorecard

	Start of cycle	Early cycle	Mid cycle	Late cycle	End of cycle	Recession
Inventories		●	○			
Consumer durables		●	●			
Housing			●	●		
Prices			●	●		
Bonds			●	●		
Monetary policy			●	●		
Equity profitability			●	●		
Leverage			●	●	○	
Economic trend			○	●	○	
Credit			○	●	○	
Sentiment				●		
Business investment				●	○	
Employment				●	○	
Equity direction			○	●	●	
Economic slack				●	●	
Volatility				○	●	
Cycle age					●	
Votes for each stage of business cycle	0	2	9	13.5	6.5	0

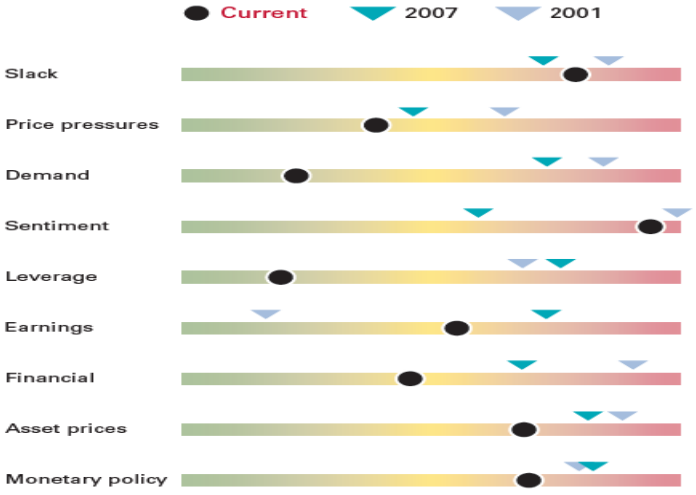
Legend: ● = most likely stage of business cycle; ○ = alternative interpretation.
Source - RBC Global Asset Management

Major economic indicators still in expansion mode

RBC Wealth Management U.S. economic indicator scorecard

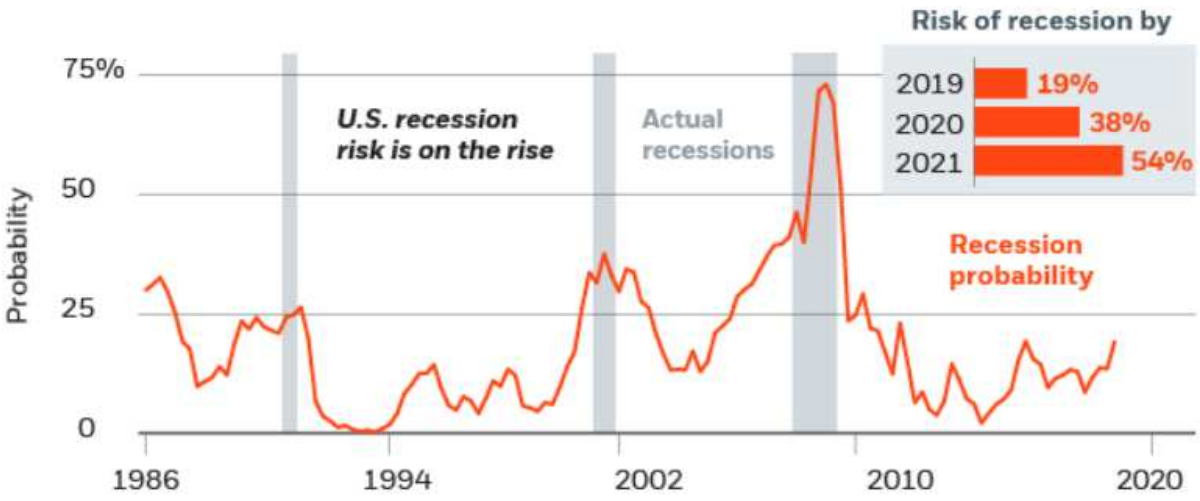
Indicator	Status		
Yield curve (12-month to 10-year)	✔	–	–
Unemployment claims	✔	–	–
Unemployment rate	✔	–	–
Conference Board Leading Index	✔	–	–
ISM new orders minus inventories	✔	–	–
Fed funds vs. nominal GDP growth	✔	–	–
	Expansion	Neutral	Recessionary

No U.S. recession in sight so far.



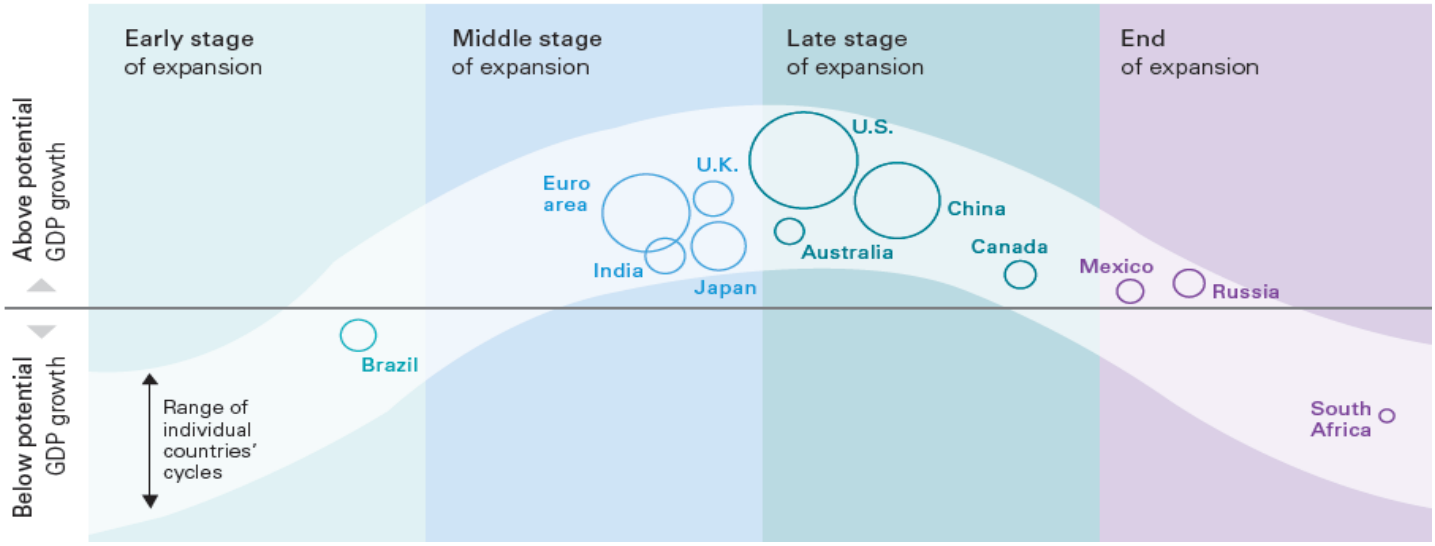
Recession watch

BlackRock estimate of forward-looking U.S. recession probability, 1986–2021



Sources: BlackRock Investment Institute, with data from Thomson Reuters, November 2018. Notes: The chart shows the estimated four-quarter-ahead probability of a U.S. recession. Actual U.S. recessions as defined by the U.S. National Bureau of Economic Research are denoted by the shaded areas. The estimation is done via a series of quantile regressions that estimate the probability that growth will be below a certain threshold. The 2019 and 2020 probabilities (shaded orange) are based on a range of likely outcomes of financial conditions, financial vulnerabilities and growth. The inset chart shows the cumulative probability of being in a recession by the end of each noted year. Forward-looking estimates may not come to pass.

Where are countries in their economic cycles?

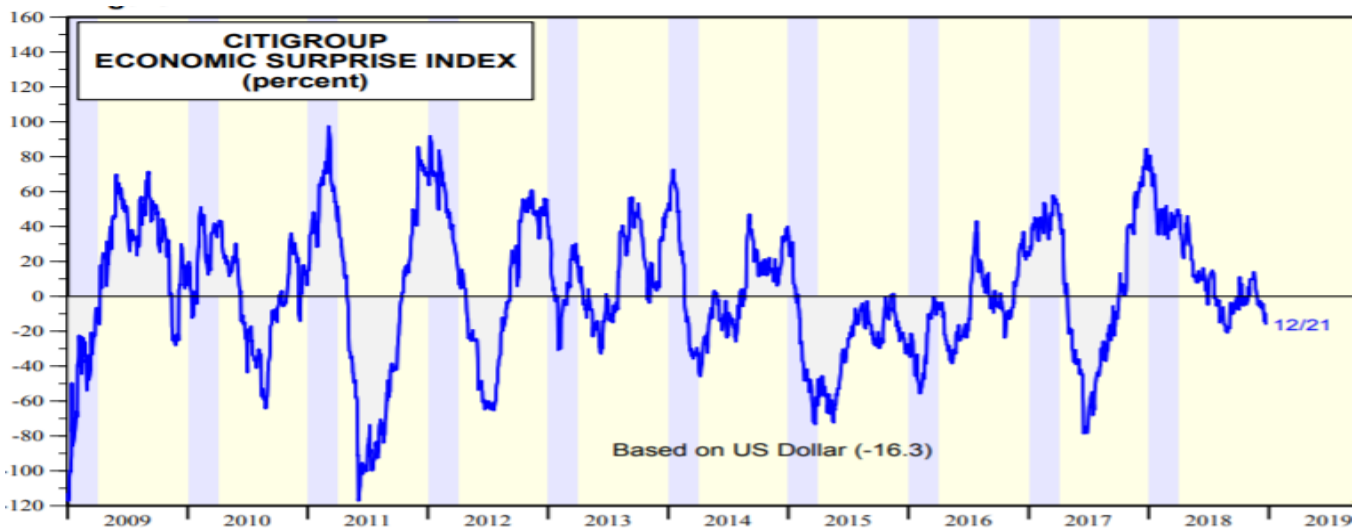


Global Credit Cycles Have Desynchronized

T. Rowe Price estimates of macroeconomic positions

As of October 31, 2018

Citi US Economic Surprise Index:



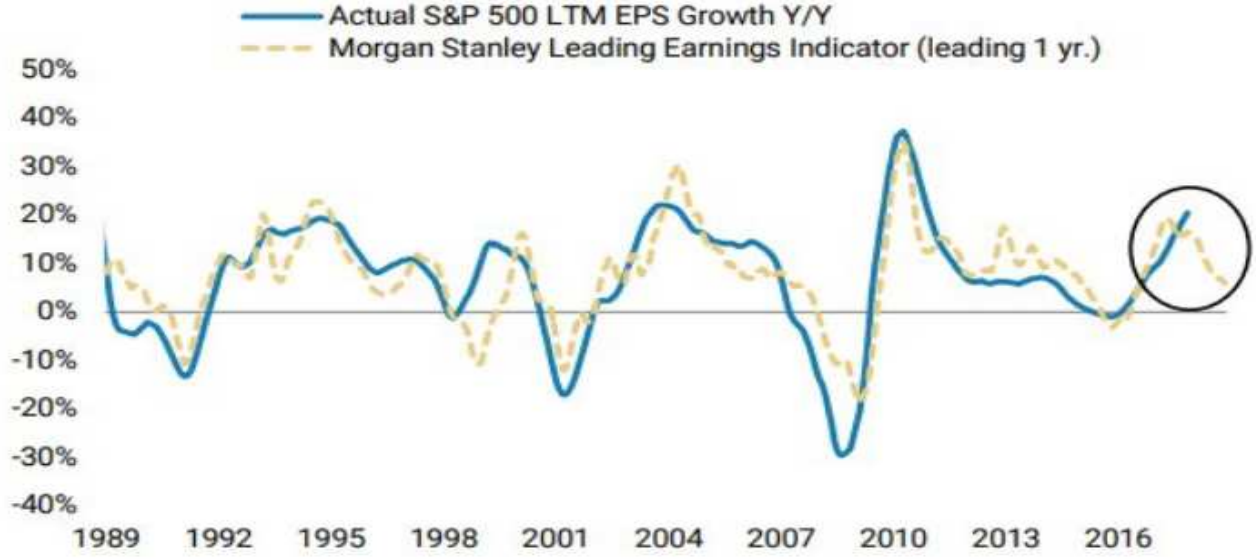
Morgan Stanley Business Conditions Index

Exhibit 3: Morgan Stanley Business Conditions Index Is Signaling PMIs Could Be Ready to Roll ...

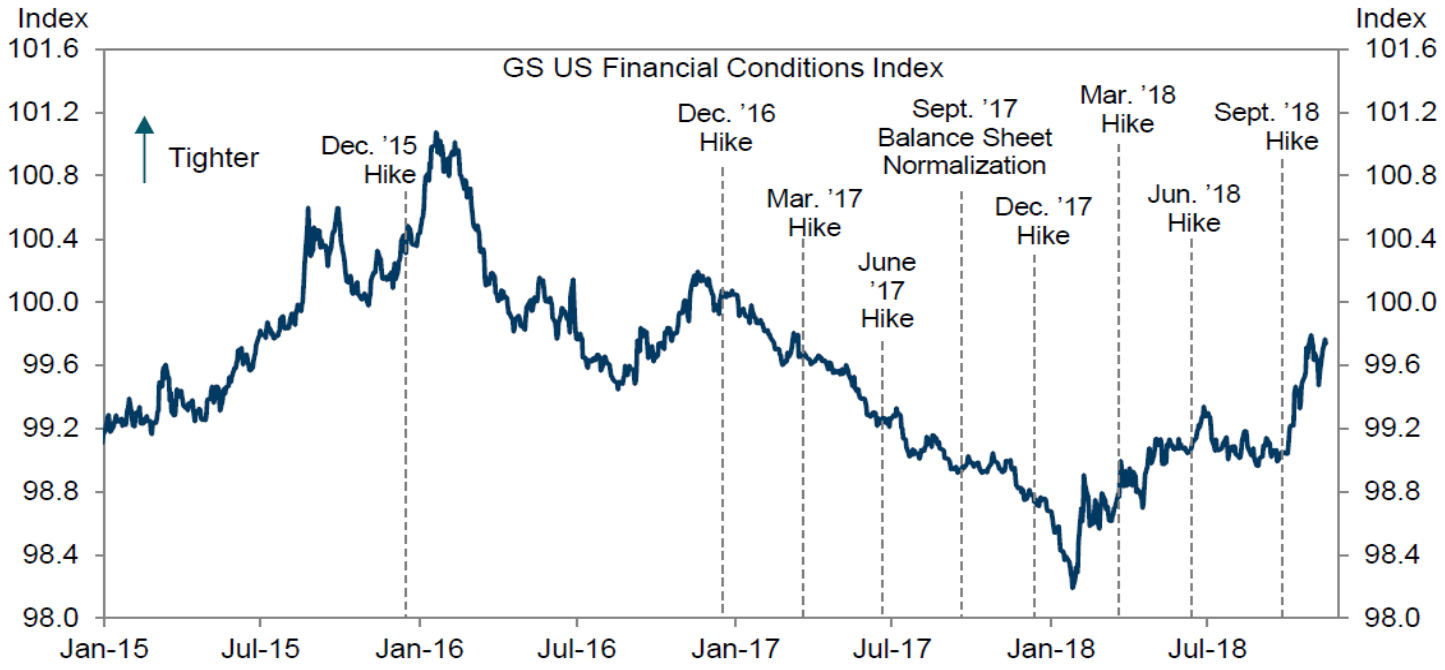
Source: Bloomberg, MS & Co. Research as of December 2018 (MSBCI) and November 2018 (ISM PMI).

Morgan Stanley Leading Earnings Indicator

Exhibit 10: Earnings Growth Due to Fall - Where Will It Level Off?



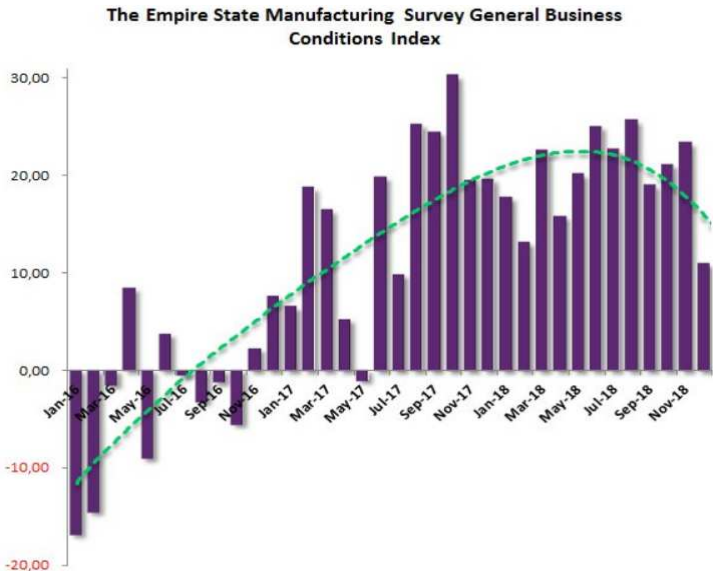
Goldman Sachs Financial Conditions Index



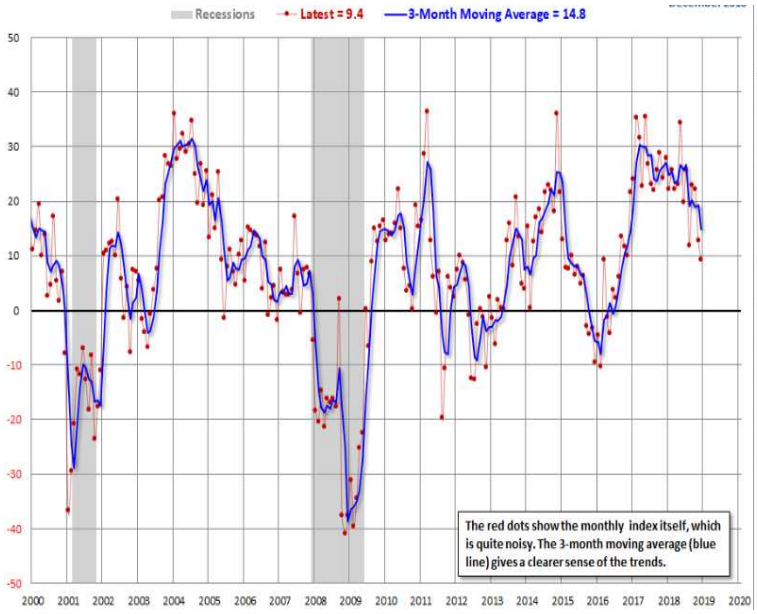
OECD Leading Indicators

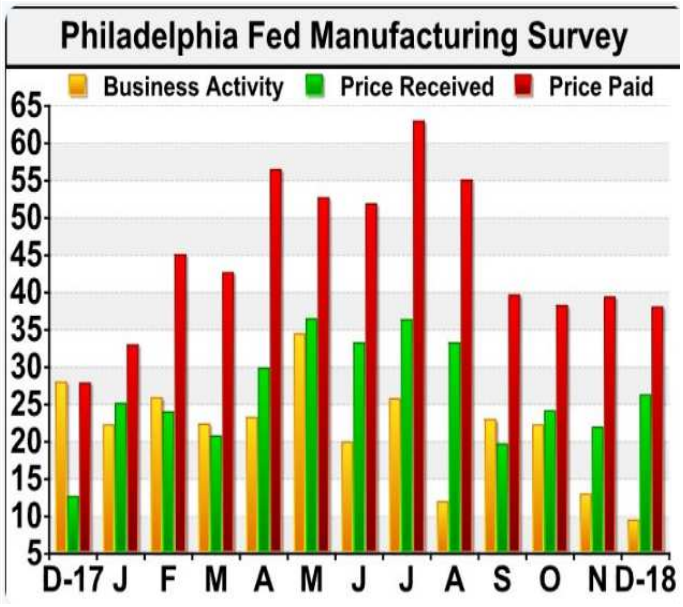
The OECD system of composite leading indicators, first developed in the 1980s, is designed to give early signals of turning-points in economic activity. The OECD CLI system uses the monthly index of industrial production (IIP) as a proxy measure for economic activity. The CLI system focuses on the business cycle, defined as the difference between the smoothed IIP data and its long-term trend. OECD CLIs aim to predict turning-points in this business cycle estimate. A turning-point in the CLI will generally signal a turning-point in the business cycle in 6-9 months. However lead times sometimes fall outside of this range and turning points are not always correctly identified. On top of identifying turning-points, CLIs also have the property of moving in the same direction as the business cycle. However the CLI is optimized to identify turning points and not for judging the speed or strength of a recovery or downturn in the business cycle; and users should not interpret it in this way. A very high or low CLI for example cannot be interpreted as an indication of very high or low levels of economic activity or growth. It merely provides a strong signal of the phase a country is likely to be in its business cycle in the near future.

Empire State Manufacturing Survey

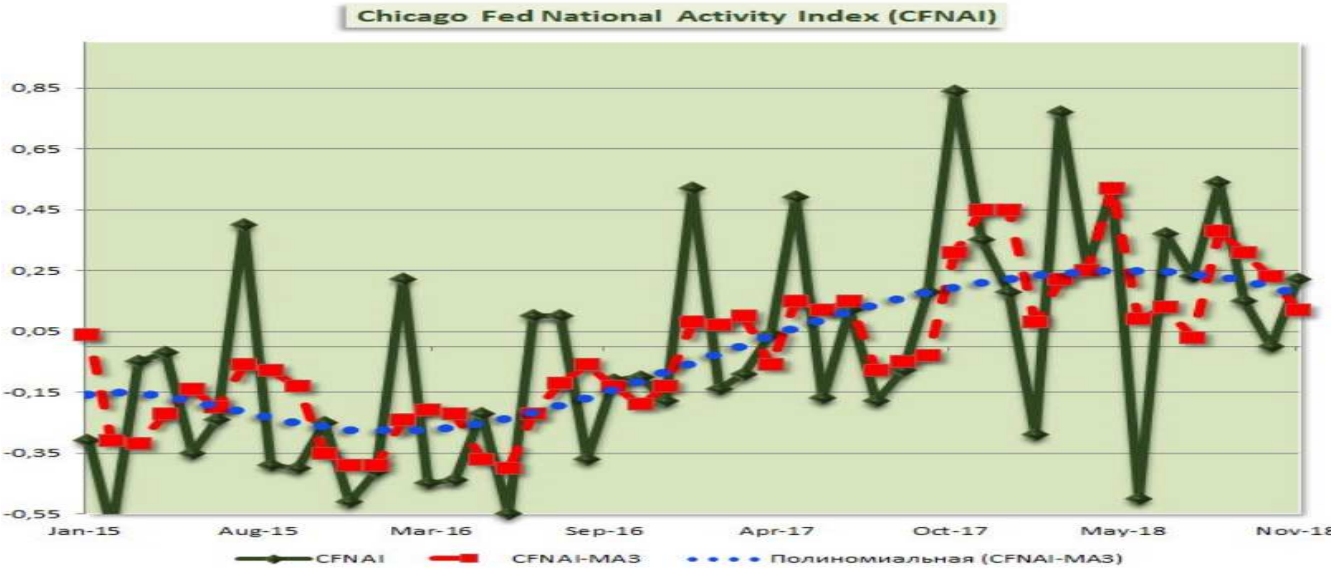


Philly Fed Index





Chicago Fed Index



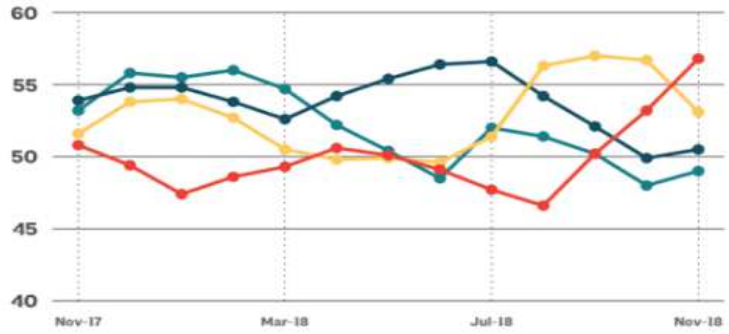
Architecture Billings Index

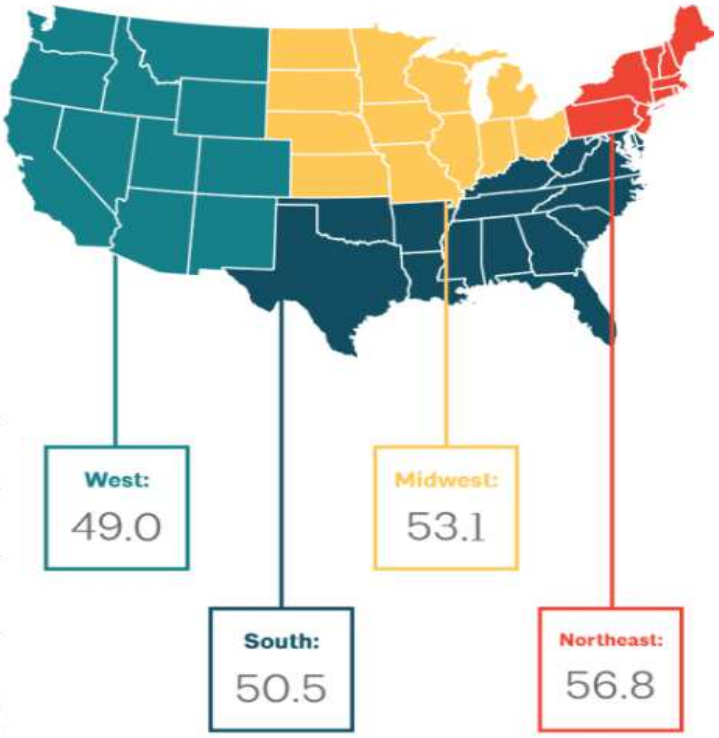
Graphs represent data from November 2017–November 2018.

Regional

Business conditions improve around the country, although softness remains in the West

Graphs represent data from November 2017–November 2018 across the four regions. 50 represents the diffusion center. A score of 50 equals no change from the previous month. Above 50 shows increase; Below 50 shows decrease. 3-month moving average.

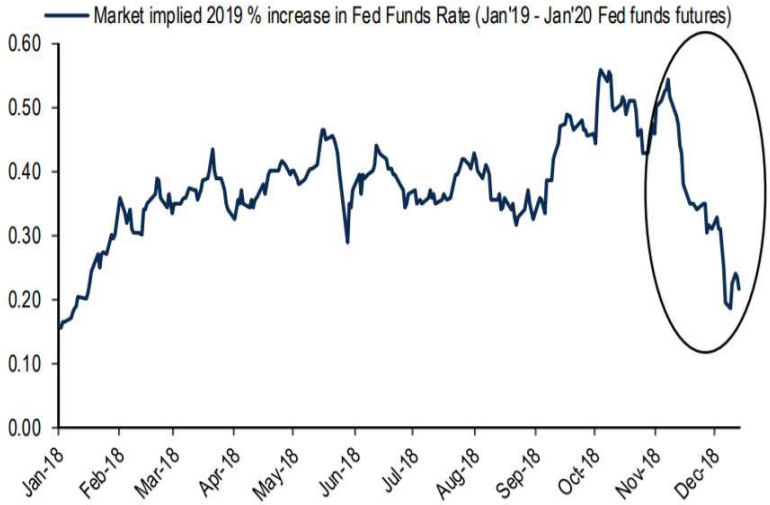


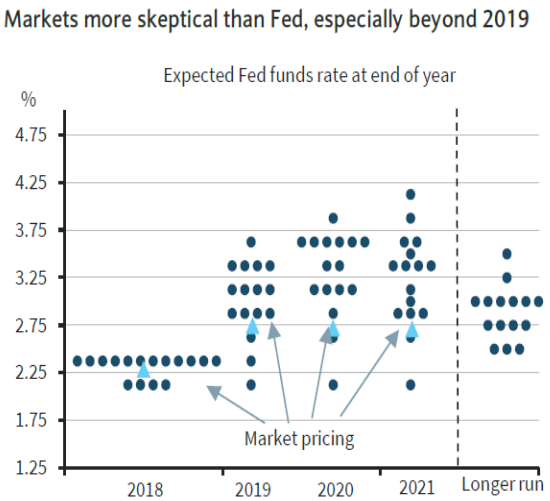


Central Banks

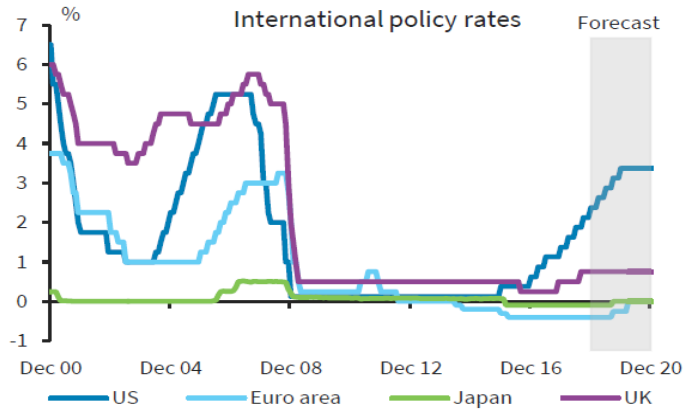
The year 2019 is positioned for wider credit spreads with global monetary policy tightening. The US Fed is seen potentially pausing hikes in 2019 due to pressure from the President as well as keeping an eye on the market's reaction to the December hike. Contrary to popular belief, the S&P 500 has seen strong returns during periods of rising interest rates historically. Historically it is shown rates and rising stock prices have correlated with rising rates up to the 5% level on 10-year yields. The Fed has indicated a plan to withdraw $1.4 Trillion in reserves over the next four years reducing its balance sheet by $425B in 2019, $337B in 2020, and $224B in 2021. Historically as the Fed reduces its balance sheet, stocks outperform bonds, large caps outperform small caps and value outperforms growth. The 10yr Treasury yield is currently in the 15th percentile since 1962. The fed has continues it gradual normalization that was well telegraphed and expected, motivated by the cyclical position of the US economy, not be a disruptive acceleration of inflationary pressures.

Fed Funds Rate 2019

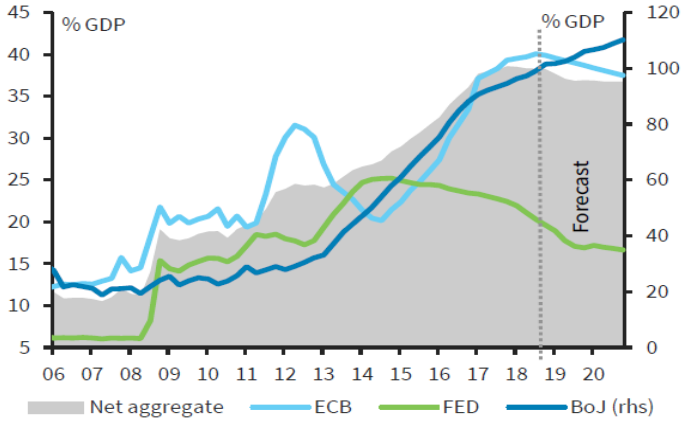




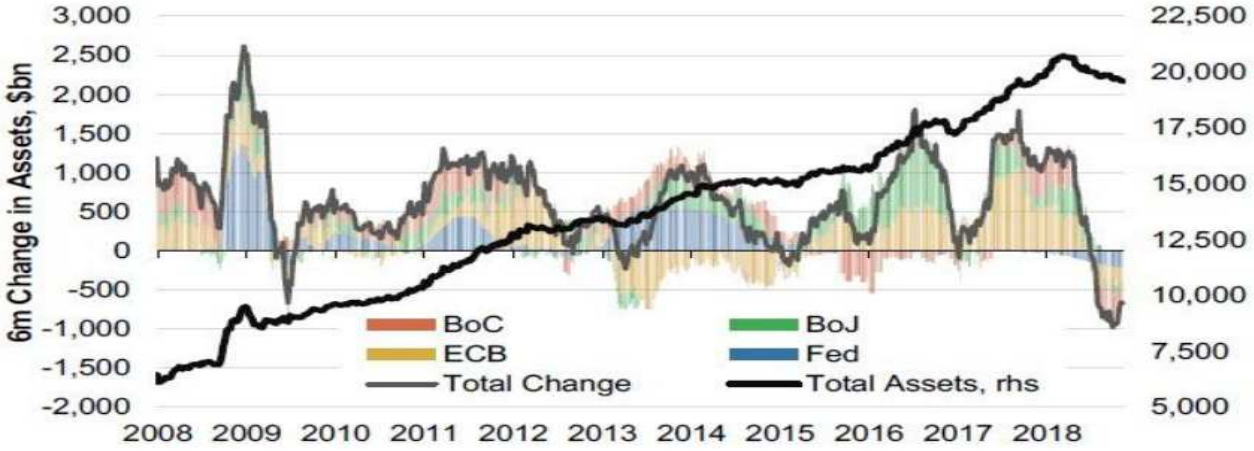
The Fed could continue to hike rates ahead of the rest

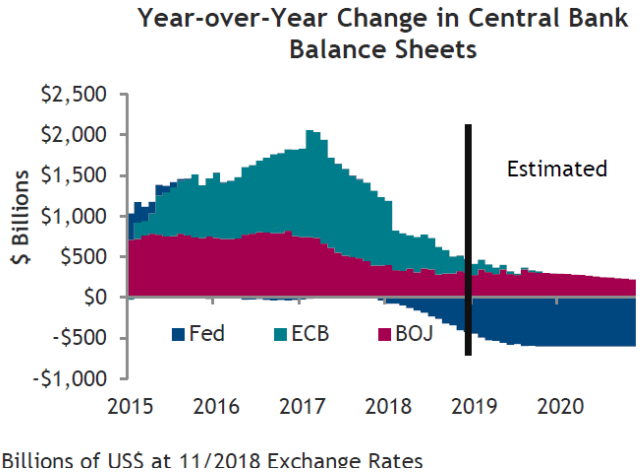


Central banks aggregate balance sheet no longer expands

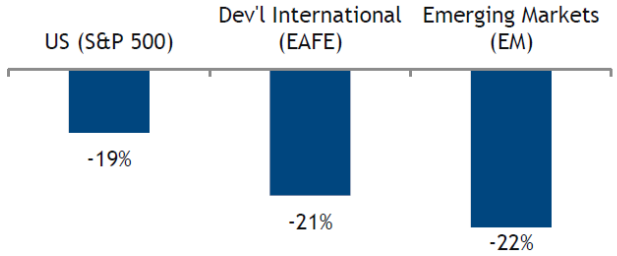


Central Bank Assets and Rolling 6m Change, $bn



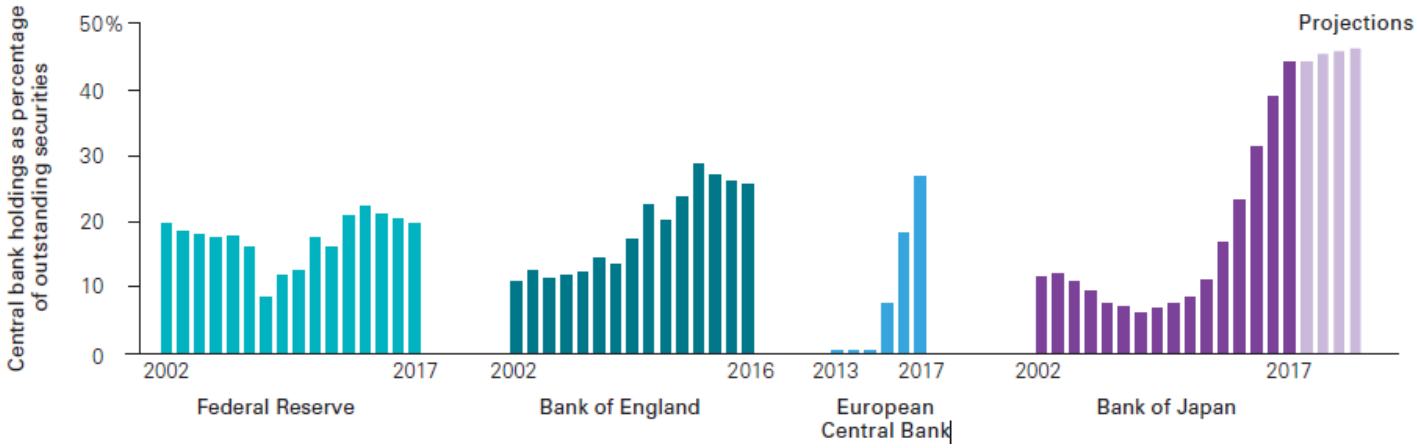


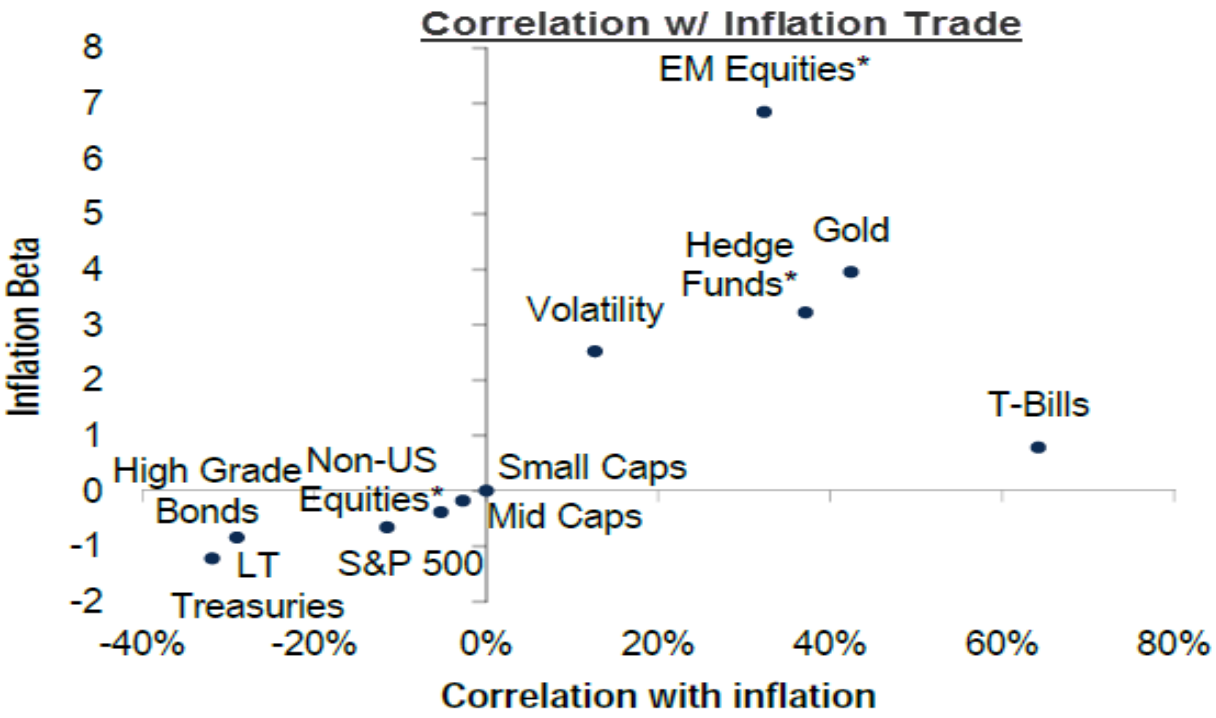
Decline in Forward P/Es from 2018 Peak			
	Peak	Current	Change
US (S&P 500)	18.5	14.9	-19%
Dev'l International (EAFE)	15.5	12.2	-21%
Emerging Markets (EM)	13.5	10.5	-22%



The side effects of monetary easing are growing

Elevated ownership of outstanding government bond securities poses liquidity risks



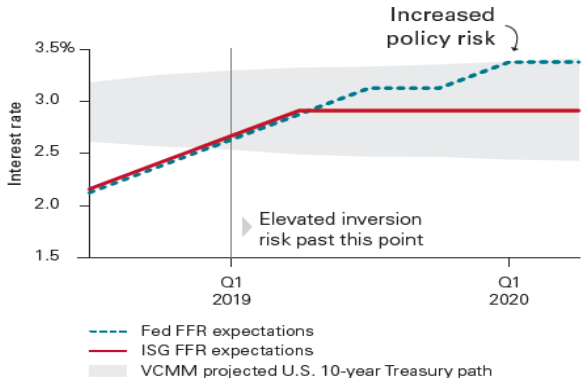


Bonds vs. Stocks

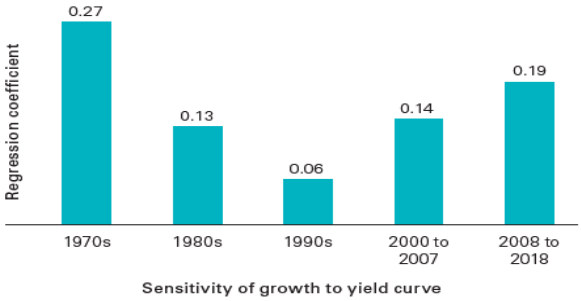
The relationship between bonds and stocks is an important one as we finally enter a higher yield environment, and outside of cash on the sidelines and alternative investments, fund flows are meaningful to understand movement of these asset classes. It is estimated that when/if bond yields hit 2.6% it becomes a potential negative for equities as the equity risk premium spread narrows. Stock valuations have collapsed in Q4 and made the equity risk premium more attractive entering a year of expected better than average growth. In 2018 we saw some large equity fund outflows especially during the Q4 downturn. The inversion of the yield curve remains a fear for markets as a leading indicator of lower economic growth. In addition to the flattening yield curve, investors are concerned about a Federal Reserve rate hike or monetary tightening cycle. The chart below shows that ten out of the last 14 Fed rate hike cycles preceded US recessions. Only the hiking cycles ending in April 1995, August 1984, August 1971, and November 1966 did not precede US recessions.

The yield curve remains a relevant leading indicator of economic growth

a. Further flattening expected; inversion risk increases in 2019

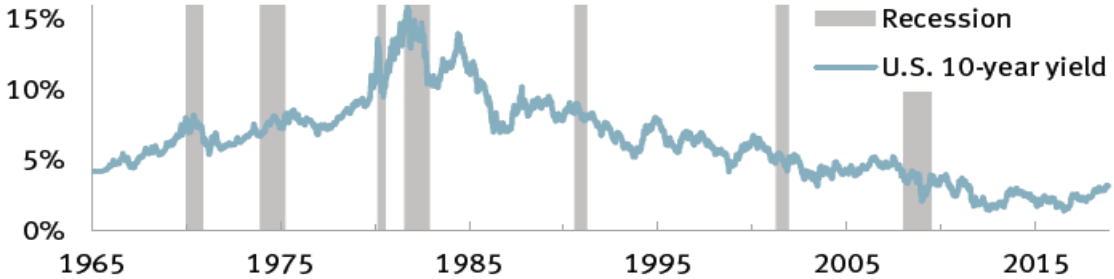


b. Relationship of growth to yield curve has not deteriorated in the quantitative-easing era



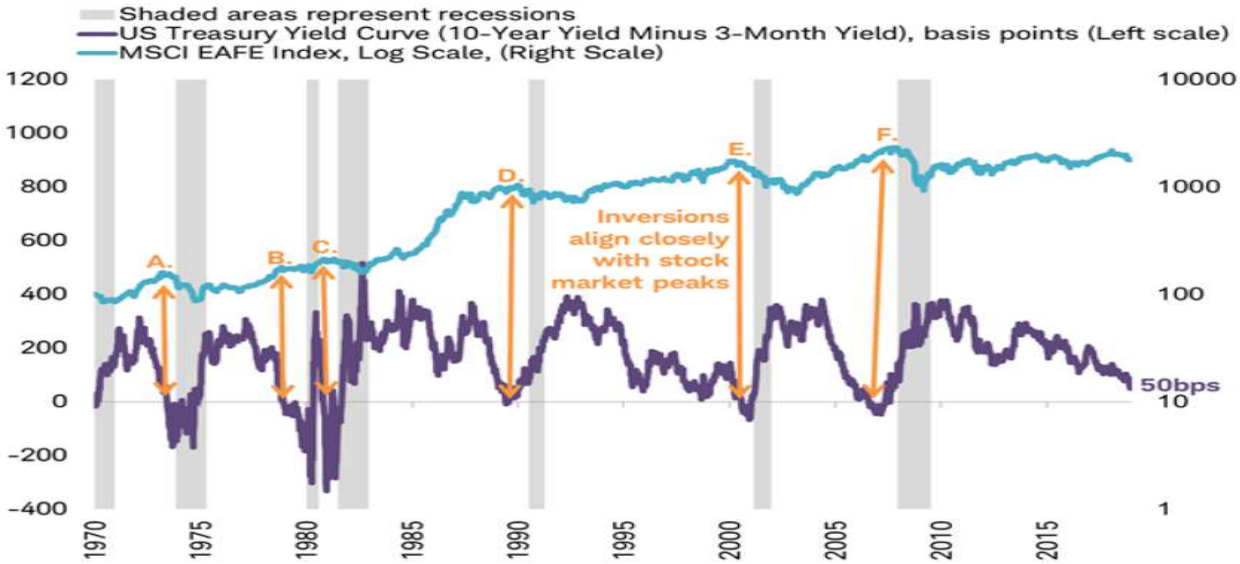
Notes: Data are through June 30, 2018. Sensitivity is represented by coefficients

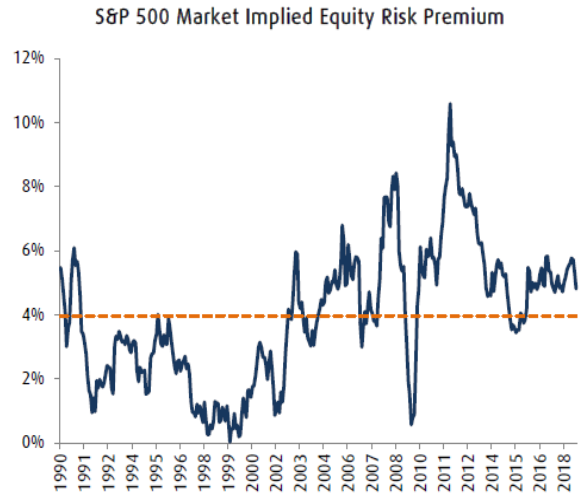
Government bond yields typically move higher later in the economic cycle



Source - Board of Governors of the Federal Reserve System, St. Louis Federal Reserve

The U.S. yield curve: 50 years of signaling peaks in international stocks





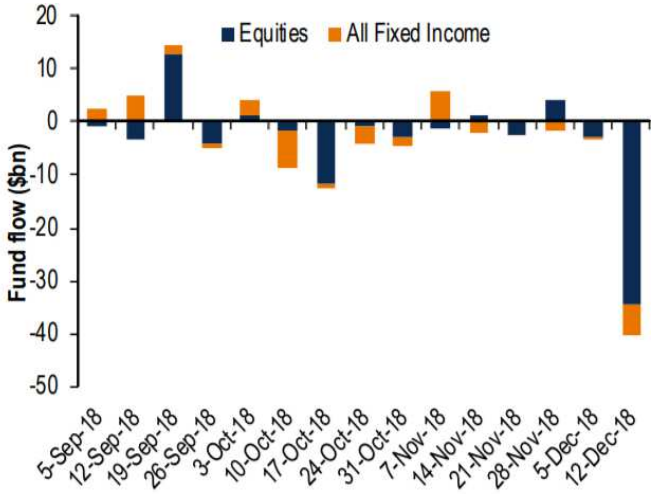


Figure 23: Weekly equity fund flows, $bn

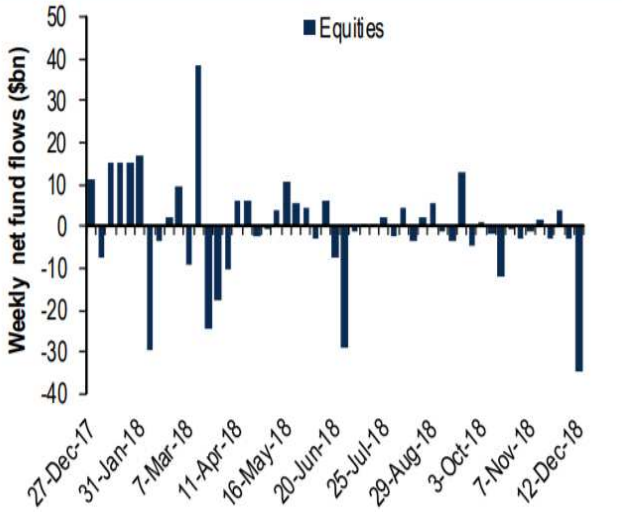
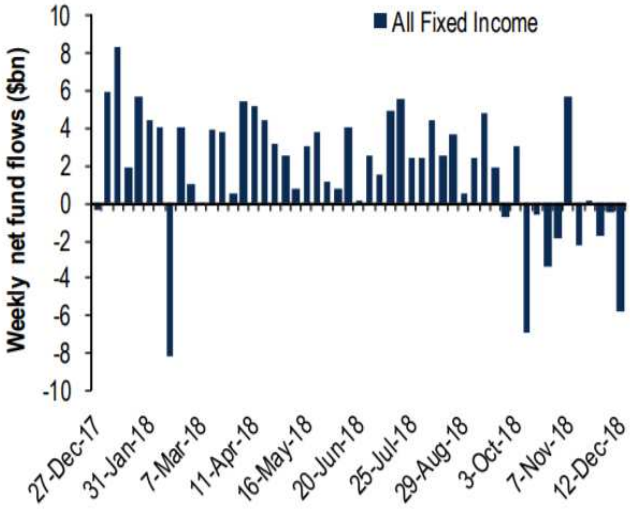


Figure 24: Weekly fixed income fund flows, $bn



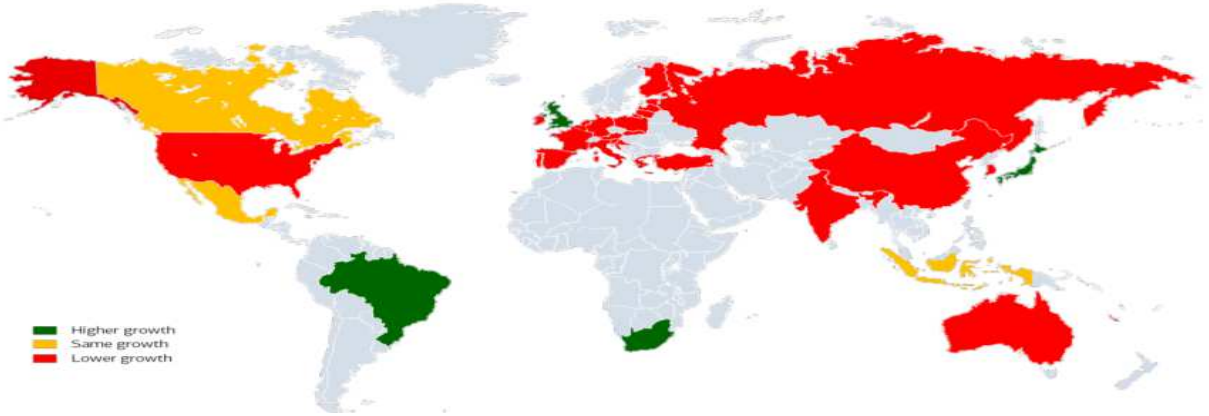
Market Valuation and Fundamentals

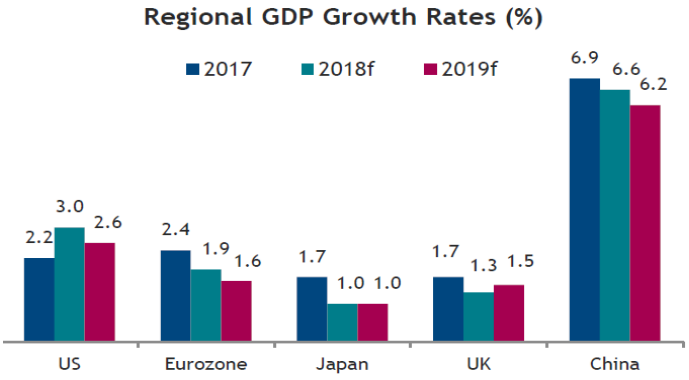
It was a wild year for markets with strong returns despite some early year corrections up until late September but then a mass exodus out of risky assets influenced by a number of key headwinds and less optimism into 2019 turned many of these winners into losers, emphasizing the old saying "Don't count your chickens until they're hatched." It was a year of record earnings growth, though boosted by a one-time tax reform factor. Earnings fundamentals remain positive and there remains some room for further margin upside, though rising costs is becoming a more influential headwind. We are seeing a rotation out of cyclicals with many indications of the US being "late-cycle." The year saw major multiple compression outlining the fears of this being a peak in the earnings and economic growth cycle, but still a number of strong secular trends to the benefit of a number of stocks that will be highlighted in the Sector Breakdown section. I noted in last year's report that multiple expansion will no longer be able to support high stock prices due to entering the peak of a cycle, and this played out rapidly in Q4 as investors were willing to pay much lower multiples considering a mdoerating growth outlook. The sell-off in Q4 has created a more attarctive environment for finding values and being a stock picker, especially is this is more of a 2011 cyclical bear correction in a secular bull market due to moderating growth, but unlikely to result in a recession. The major factors influencing the health of the consumer remain positive tailwinds, though rising rates with inflation concerns can quickly dampen the healthy of the consumer. There are not a ton of positive catalysts for markets in 2019 outside of a Trade resolution with China and an Infrastructure Spending Plan. A positive into 2019 is years where markets saw P/E contraction along with double-digit earnings growth, like 2018, the following year have seen strong results due to stabilized P/Es and rising earnings.

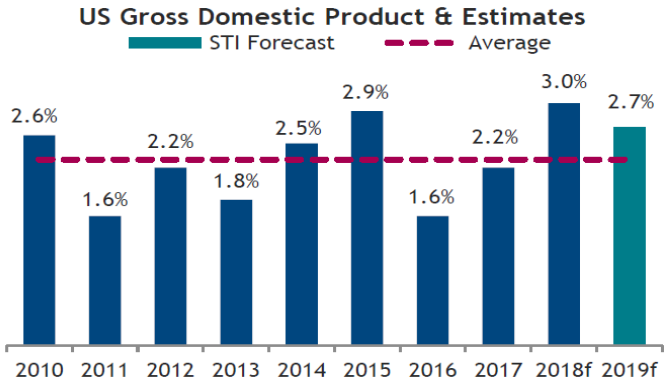
Figure 10: Market Statistics Following Double-Digit Earnings Growth Years with P/E Contractions

Year	Price Return	Earnings Growth	P/E Point Contraction	Price Return Next Year	Earnings Growth Next Year	P/E Point Change Next Year
1959	8%	17%	(1.5)	(3%)	(4%)	0.1
1962	(12%)	15%	(5.3)	19%	10%	1.5
1973	(17%)	27%	(6.6)	(30%)	9%	(4.3)
1984	1%	21%	(1.9)	26%	(2%)	2.9
1987	2%	26%	(2.9)	12%	23%	(1.1)
1988	12%	23%	(1.1)	27%	1%	3.0
1993	7%	29%	(3.5)	(2%)	18%	(2.9)
1994	(2%)	18%	(2.9)	34%	19%	1.9
2002	(23%)	19%	(10.4)	26%	19%	1.2
2004	9%	24%	(2.4)	3%	13%	(1.6)
2005	3%	13%	(1.6)	14%	15%	(0.2)
2010	13%	47%	(4.6)	(0%)	15%	(2.0)
2011	(0%)	15%	(2.0)	13%	0%	1.7
*2018	(3%)	26%	(4.9)	?	?	?
Average	0%	23%	(3.6)	11%	10%	0.0
Average ex-1973 recession	2%	22%	(3.3)	14%	11%	0.4

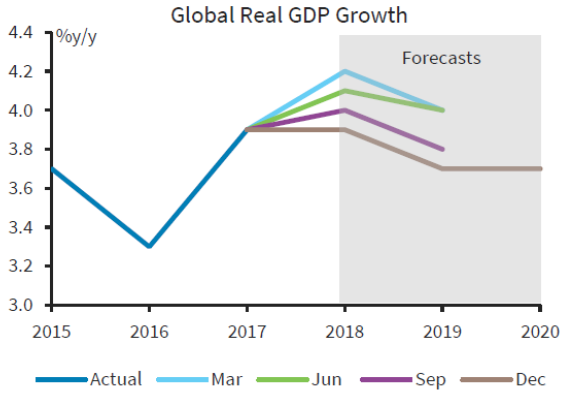
Chart 1: Global GDP growth set to slow in 2019



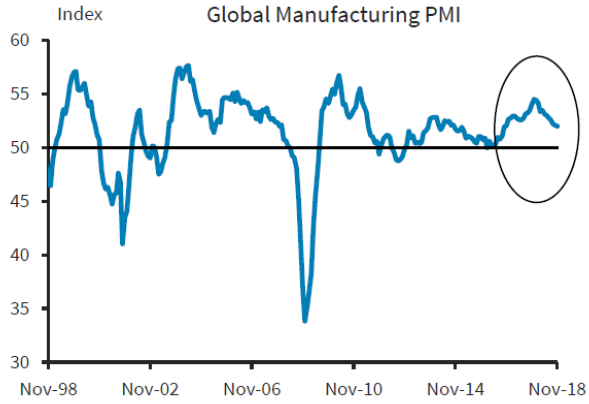


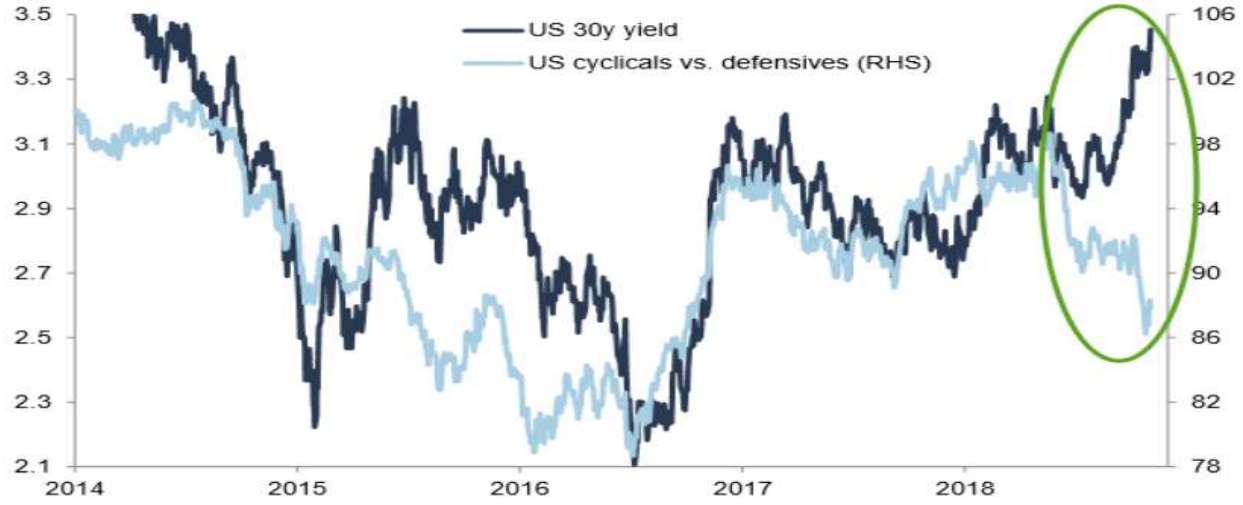


2018 was a year of revising down…



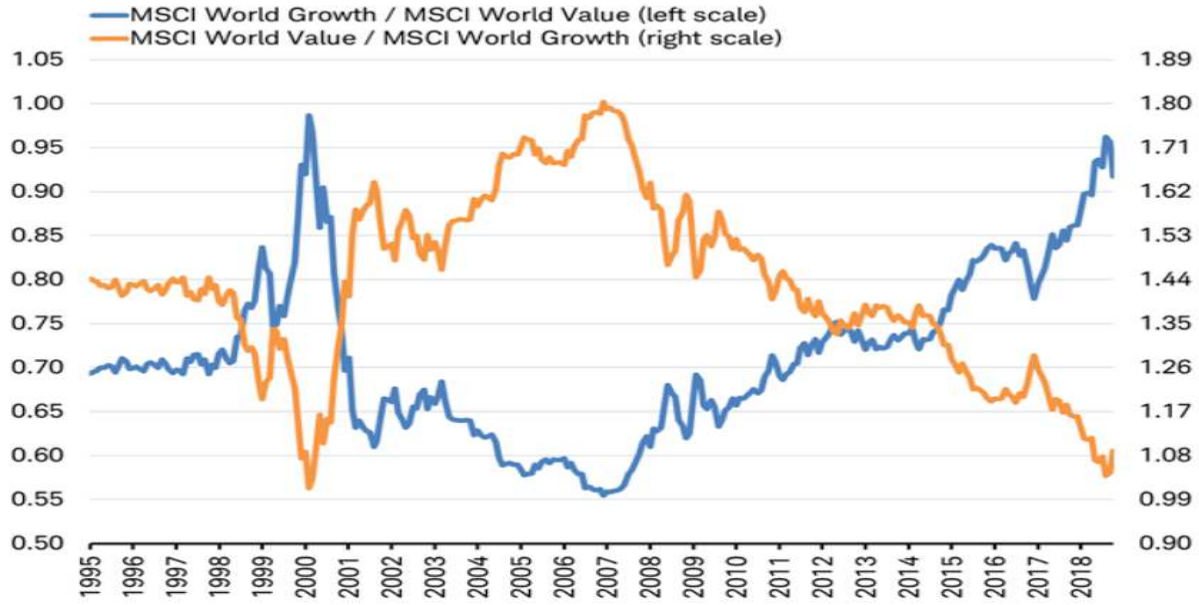
as the synchronized global upswing had peaked in late 2017 …





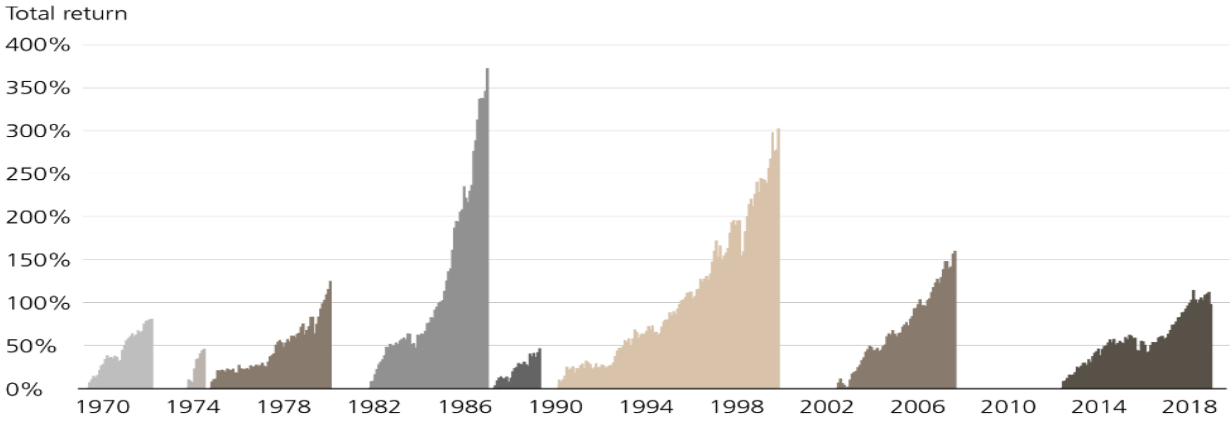
Source: Datastream, Goldman Sachs Global Investment Research

Growth and value stocks



How much longer can the bull run?

Cumulative return for the MSCI All Country World Index over its longest bull markets (1970–88 data approximated based on MSCI World Index data), in %

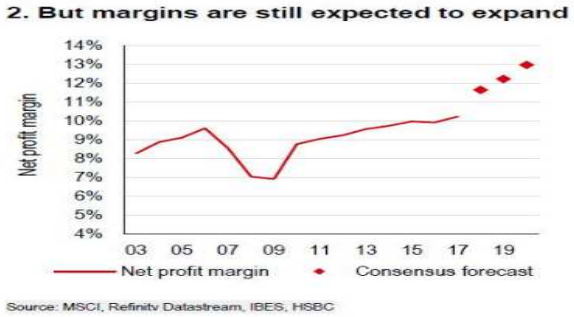


Source: Thomson Reuters, Bloomberg, UBS, as of 1 November 2018

Valuation

My projections for 2019 are as follows, and assign a 20% probability of the bull case, 60% probability of the base case, and 20% probability of the bear case to arrive at a year-end S&P 500 value of 2,420, a flat year for markets. In the second half of 2019 the FY20 estimates start to come into focus as a forward-looking market and likely deal with further moderating earnings growth for a lower multiple on a higher number.

	EPS	Trading Multiple	S&P Value	Annual Return
Bear Case	$165	12X	1,980	-19.18%
Base Case	$173	14X	2,425	-1.02%
Bull Case	$178	16X	2,850	16.3%



Earnings Growth: For Q4 2018, the estimated earnings growth rate for the S&P 500 is 12.4%. If 12.4% is the actual growth rate for the quarter, it will mark the fifth straight quarter of double-digit earnings growth for the index. Estimated earnings growth rate for CY 2019 is 7.9%. All eleven sectors are projected to report year-over-year growth in earnings, led by the Industrials, Consumer Discretionary, Energy, and Financials sectors. The estimated (year-over-year) revenue growth rate for CY 2019 is 5.3%. All eleven sectors are expected to report year-over-year growth in revenues, led by the Communication Services and Health Care sectors. Heading into 2019, there are concerns in the market about the stronger U.S. dollar and slower international economic growth. Given these concerns, S&P 500 companies with higher international revenue exposure expected to underperform S&P 500 companies with lower international revenue exposure in terms of earnings growth and sales growth in CY 2019

Earnings Revisions & Margins: On September 30, the estimated earnings growth rate for Q4 2018 was 16.6%. All eleven sectors have lower growth rates today (compared to September 30) due to downward revisions to EPS estimates. Despite concerns about rising costs, the estimated net profit margin (based on aggregate estimates for revenues and earnings) for the S&P 500 for 2019 is 11.8%. If 11.8% is the actual net profit margin for the index, it will mark the highest (annual) net profit margin for the index since FactSet began tracking this metric in CY 2008. Eight of the eleven sectors are projected to see higher net profit margins in CY 2019 relative to CY 2018.

Valuation: The forward 12-month P/E ratio for the S&P 500 is 14.2. This P/E ratio is below the 5-year average (16.4) and below the 10-year average (14.6).

Earnings Themes 2019:

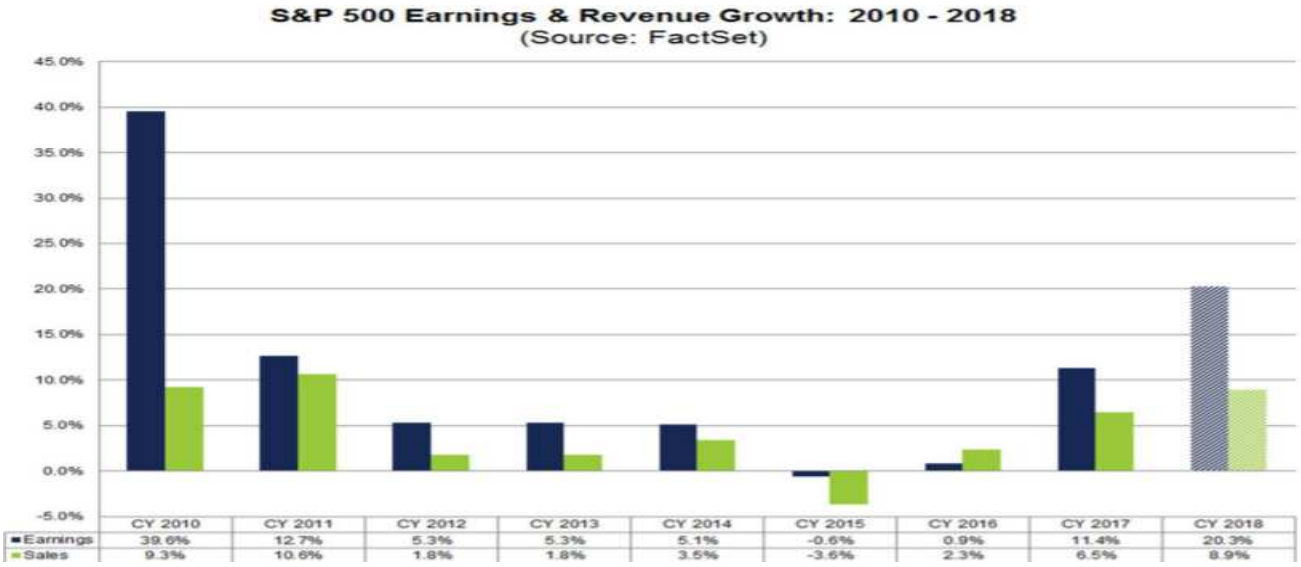
Foreign Exchange Rates: The U.S. dollar shifted from a tailwind to a headwind during the course of 2018, as the U.S. dollar strengthened relative to a number of currencies. On Q3 earnings calls, 20 of the 30 companies in the Dow 30 cited a negative impact from the stronger dollar.

Rising Costs: Several S&P 500 companies have discussed rising costs (including raw materials, wages, and transportation costs) on earnings calls in 2018.

Rising Interest Rates

Slower International Economic Growth: GDP growth in Europe and China is expected to be lower in 2019 relative to 2018.

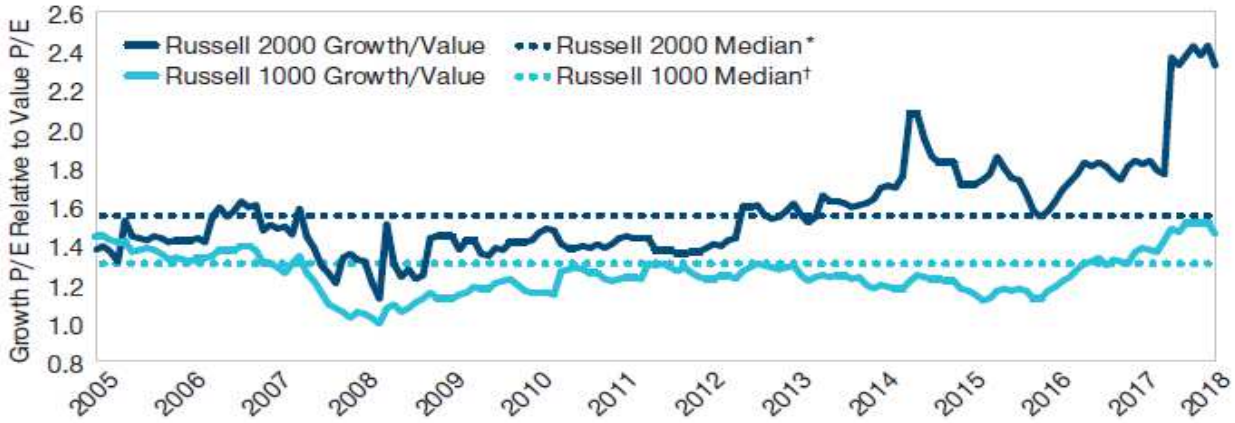
Escalating Tariffs: In Q3, roughly 30% of S&P 500 companies discussed tariffs on earnings calls. Generally speaking, most companies stated that current tariffs were "manageable."



Equity Valuations Are Bifurcating

One-year forward P/E ratio, growth relative to value

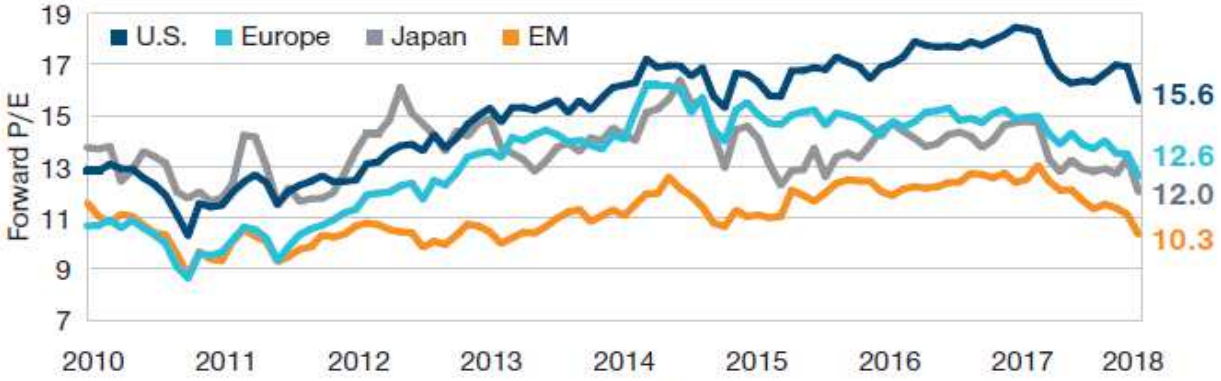
As of October 31, 2018



U.S. Equity Valuations Appear High Versus Rest of World

12-Month forward price/earnings ratios

As of October 31, 2018

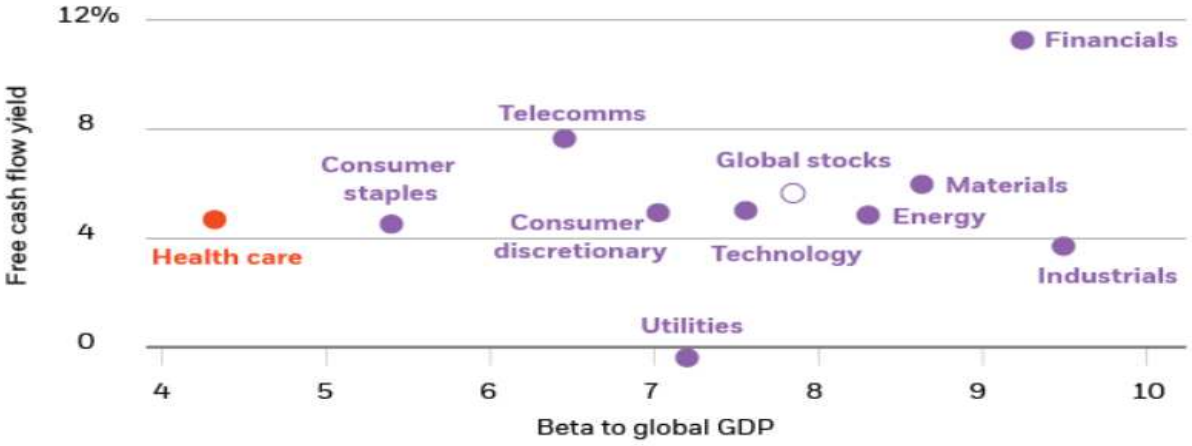


Sources: FactSet Research Systems, MSCI, and T. Rowe Price.

U.S. = MSCI USA Index, Europe = MSCI Developed Europe Index, Emerging Markets (EM) = MSCI Emerging Markets Index, Japan = MSCI Japan Index.

Seeking healthy fundamentals

Free cash flow yield and sensitivity to global growth by sector, 2018



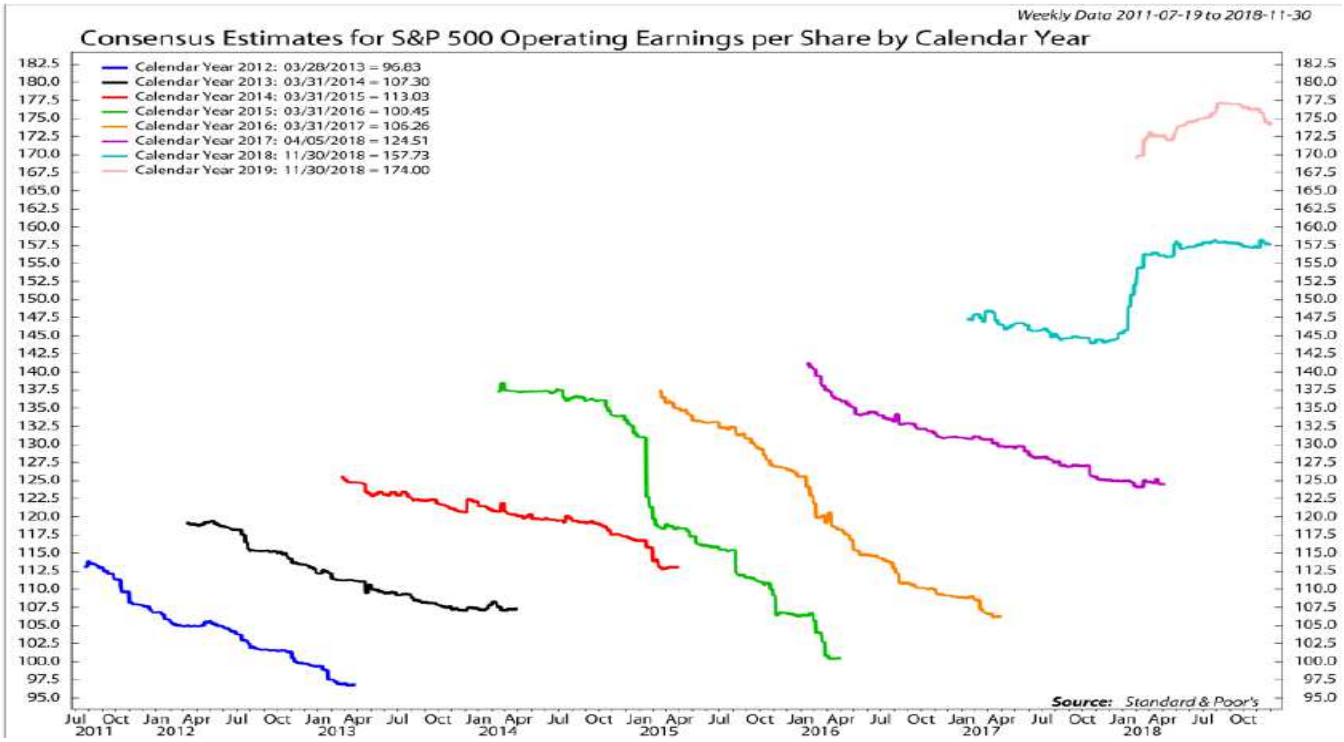


Exhibit 9: 2018 Is Expected to Represent a "Peak" Earnings Growth Year

S&P 500 YoY Trailing 4Q EPS Growth
actuals + estimates

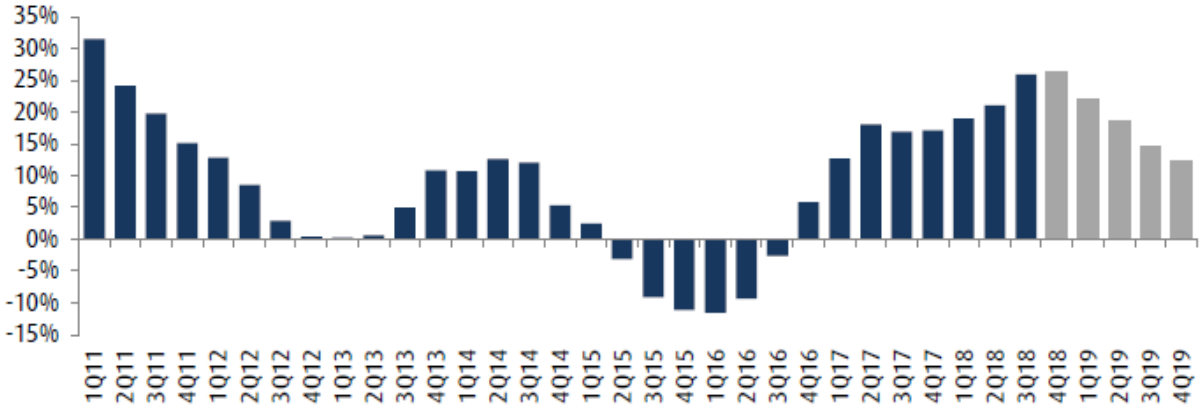
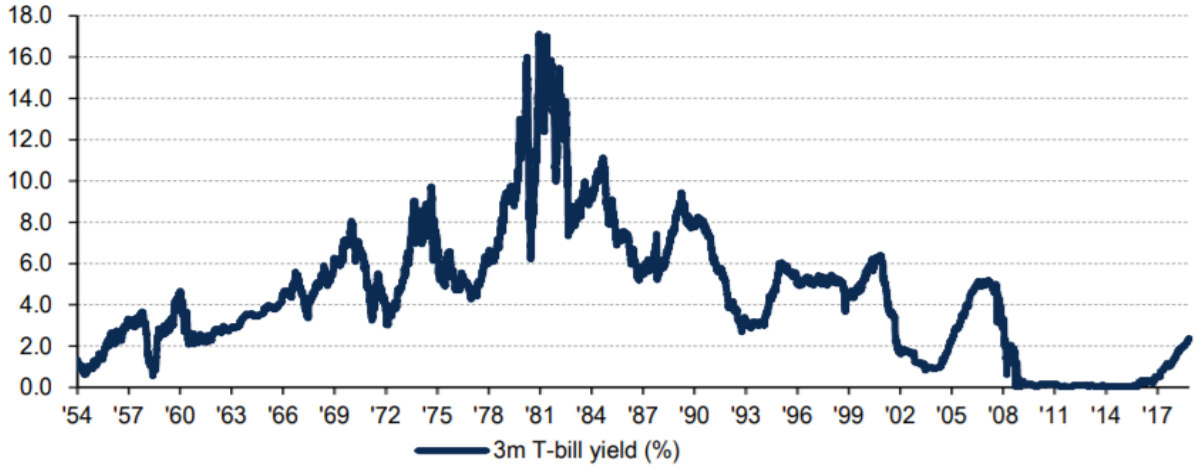
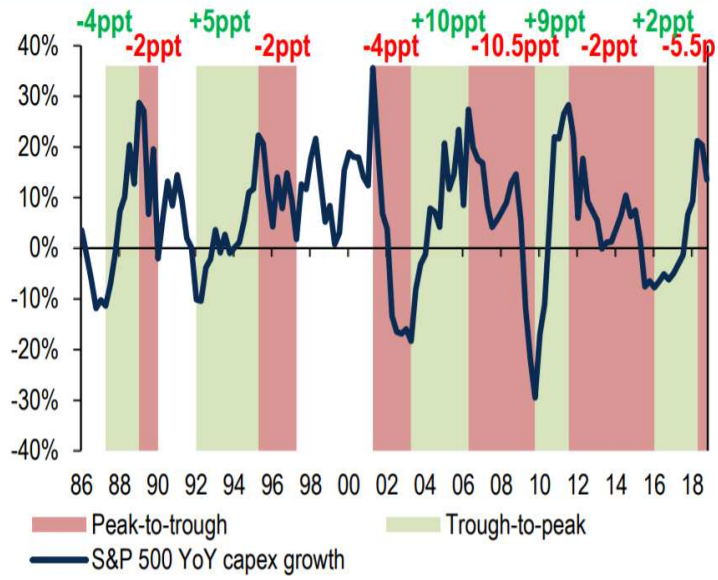


Chart 1: Cash yields are now higher than the dividend yield of 1.9% of S&P 500 stocks
3-month US Treasury bill yield (%), 1954-present



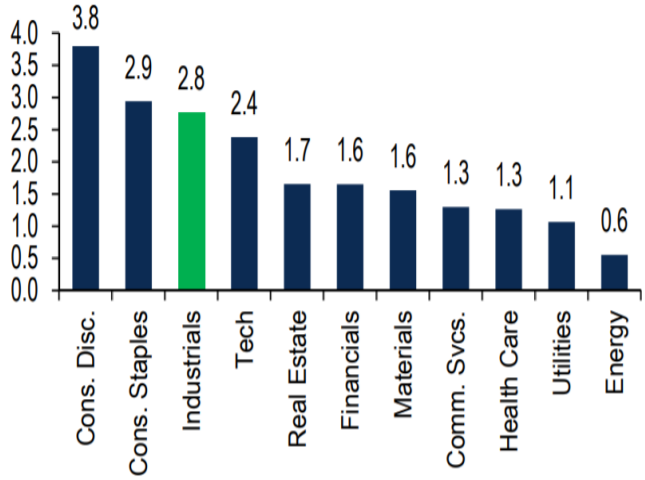
S&P 500 quarterly YoY capex growth, 1987-3Q18



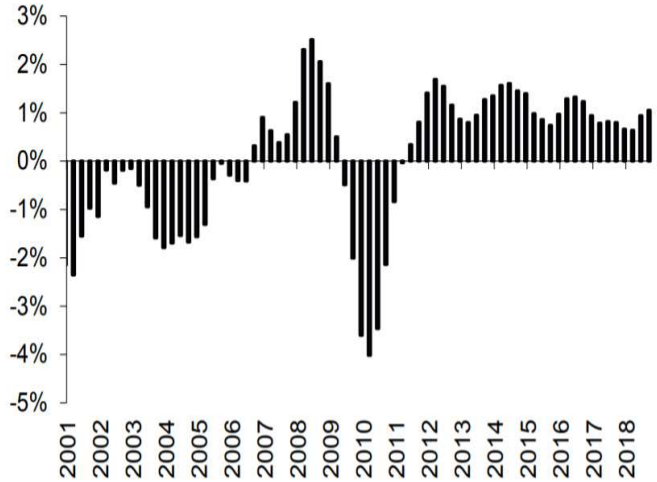
Key risk: tight labor market, wage inflation

Chart 73: Industrials is one of the most labor-intensive sectors

Employees/sales ($mn) by S&P 500 sector as of 10/17/18



Net buyback impact to S&P 500 YoY EPS by quarter, 2001-3Q18



Relative Fwd. P/E high quality (B+ or better) and low quality (B or worse) stocks (1987-10/2018)

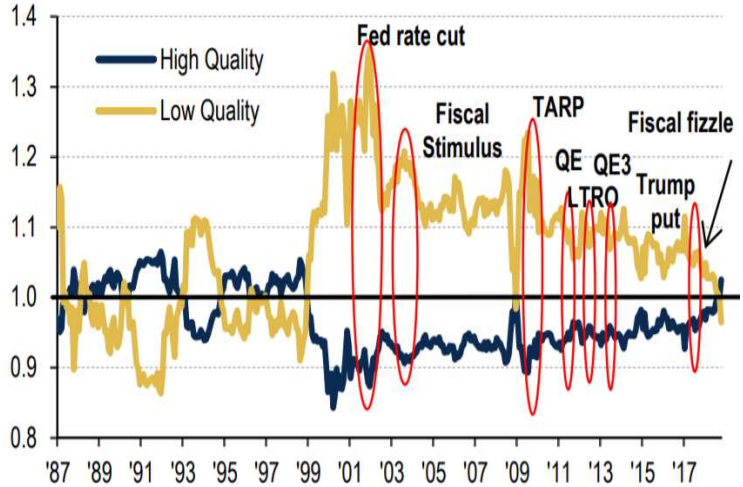


Exhibit 15: 3rd Year of Presidency Has Been Best for Stocks, Especially With a Republican President

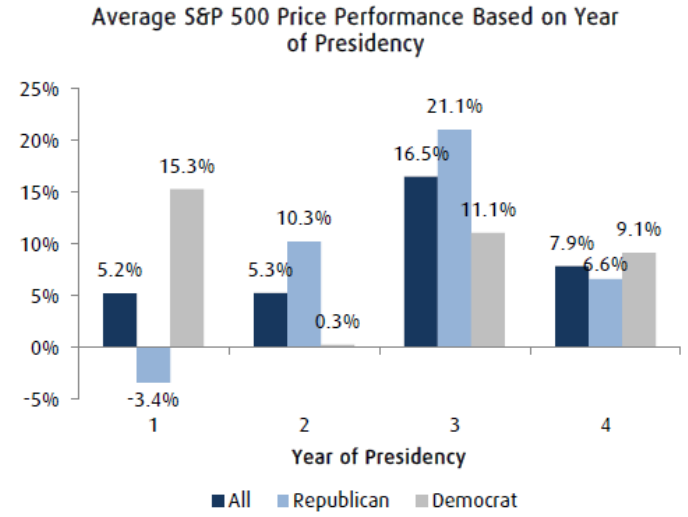
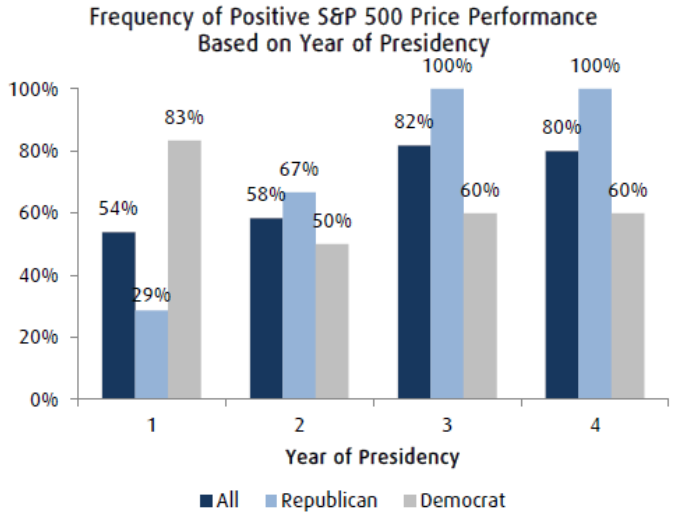
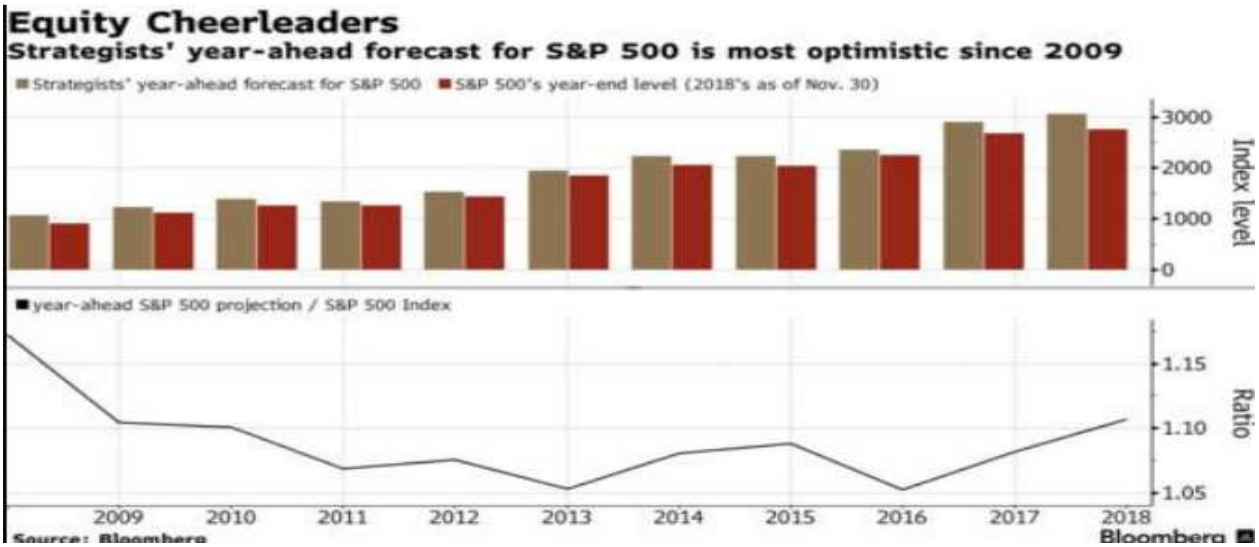


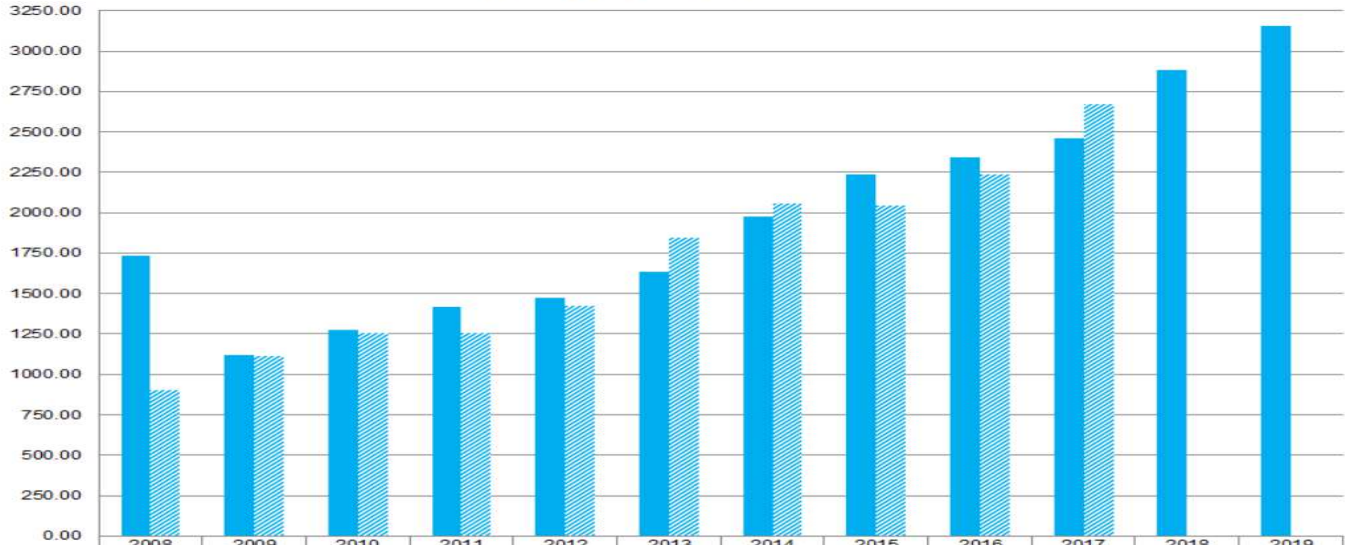
Exhibit 16: S&P 500 Has Posted Gains 82% of Time During President's 3rd Year in Office



Sell-Side 2019 Market Projections



S&P 500: Bottom-Up Target Price Estimate (Start of Year) vs. Actual
(Source: FactSet)



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Target (Start of Yr.)	1733.70	1118.63	1275.10	1414.72	1475.43	1631.88	1973.78	2236.26	2342.52	2461.96	2882.76	3157.49
Actual (End of Yr.)	903.25	1115.10	1257.64	1257.60	1426.19	1848.36	2058.90	2043.94	2238.83	2673.61		

Firm	Strategist	2019 Close	2019 EPS
Bank of America	Savita Subramanian	2,900	$170.00
Bank of Montreal	Brian Belski	3,150	$174.00
Barclays	Maneesh Deshpande	3,000	$176.00
Bernstein	Noah Weisberger	3,150	$170.00
BTIG	Julian Emanuel	3,000	$172.00
Canaccord	Tony Dwyer	3,200	$168.00
Citigroup	Tobias Levkovich	3,100	$172.50
Credit Suisse	Jonathan Golub	3,350	$174.00
Deutsche Bank	Binky Chadha	3,250	$175.00
Goldman Sachs	David Kostin	3,000	$173.00
Jefferies	Sean Darby	2,900	$173.00
JPMorgan	Dubravko Lakos-Bujas	3,100	$178.00
Morgan Stanley	Mike Wilson	2,750	$171.00
RBC	Lori Calvasina	2,900	$171.00
Scotiabank	Hugo Ste-Marie	3,000	$175.00
Stifel Nicolaus	Barry Bannister	2,800	$168.00
UBS	Keith Parker	3,200	$175.00
Wells Fargo	Chris Harvey	3,079	$173.37
	Mean	3,052	$173.05
	Median	3,079	$173.00
	High	3,350	$179.00
	Low	2,750	$168.00

Citi: S&P target of 3,100 (EPS $172.5). It sees estimates for 2019 EPS growth slipping to 6% and setting up a meet or beat environment. It sees recent action as a reset for lower 2019 expectations and some normalization in the growth/value relationship.

Morgan Stanley: S&P target of 2,750. After a roller coaster ride in 2018 driven by tighter financial conditions and peaking growth, expecting a range-bound year driven by disappointing earnings and a Fed that pause with valuation a key factor in stock selection. Bull case of 3,000 and bear case of 2,400.

Bank of America: S&P target of 2,900. Sees the peak in homebuilders in Q4 2017 as a leading indicator with a two year lag and expects widening credit spreads in 2019.

Model	Category	Time Horizon	2019 Target	Expected Return (Annualized)	Current Weight in Forecast
BofAML Fair Value Model	Fundamental/Valuation	Medium Term	2,688	-1.6%	30%
Sell Side Indicator	Sentiment	Medium Term	3,058	10.4%	40%
Estimate Revisions	Fundamental/Sentiment	Short-term	3,071	10.8%	5%
Long-term Valuation Model	Valuation	Long-term	2,930	6.3%	20%
12-Month Price Momentum	Technical	Medium Term	3,054	10.3%	5%
		Official S&P 500 Target	**2,900**	**+5.3%**	

Bernstein: S&P target of $2,950. We expect 2019 to be a bridge between a period of acceleration and a period of retrenchment. The US is entering a slowdown phase, but not as bad as feared.

Canaccord: S&P target of 3,250.

Goldman Sachs: S&P target of 3,000. It expects a lower allocation to stocks and a shift to higher quality companies, defined as strong balance sheet, stable sales growth, low EBIT deviation and high ROE.

Barclays: S&P target of 3,000 (EPS $176). It sees margin compression driven by tariffs and wage inflation. Capex spending is not accelerating and companies are using repatriated cash to pay down debt and buybacks.

Credit Suisse: S&P target of 2,925 (EPS $174). It sees EPS growth decelerating to 7.7% in 2018 but expects multiple expansions, noting the threat of yield curve inversion given the narrowing gap between government bond yield and further tightening from the Fed.

Deutsche Bank: S&P target of 3,250.

Jefferies: S&P target of 2,900.

CSFB: S&P target of 3,350.

UBS: S&P target of 3,200 (EPS $175). It sees headwinds to earnings as higher labor costs, USD strength and slowing growth but stock buybacks pose a tailwind.

BMO Capital: S&P target of 3,150 (EPS $174). The outlook depends on margins remaining sustainable in the face of interest rate and tariff challenges. It has a bull case of 3,400 if corporate reinvestments surprise to the upside.

Exhibit 1: 2019 S&P 500 Target Models

Scenario	Price	EPS	Rationale
Bull	3,400	$190	Corporate reinvestment surprises to the upside, while economic growth accelerates faster than expected: • EPS growth maintains a double-digit growth pace, while increased share buybacks offset higher interest rate valuation impact • Risk premiums decline closer to average, while price multiples remain resilient • Margin fears alleviated as potential tariff impact is not as damaging as expected
Base	3,150	$174	Stocks continue to grind higher, but with periods of elevated volatility in between: • Risk premiums remain largely static and path of interest rates grinds higher, but slower than expected • Margins prove to be sustainable despite interest rate and tariff challenges • EPS growth matches current expectations helping to offset somewhat moderate price multiple compression • Economic momentum continues while inflation remains in check
Bear	2,500	$155	Fundamental and economic momentum stall leading to market consolidation: • Fed policy miscue as path of rate increases inverts the curve despite low levels of inflation • Tariffs take a big bite out of margins leading to disappointing earnings results • Price multiples contract faster than expected as investors begin pricing a recession

JP Morgan: S&P target of 3,100 with EPS at $178, seeing 2018 as a third reset of the bull market characterized by significant deleveraging and an unwinding of crowded trades. Forward fundamentals appear healthy in terms of earnings, investment spending, corporate balance sheets and leverage. It sees a 55% probability of a trade deal with China, 35% cease-fire, and 10% tariff escalation scenario.

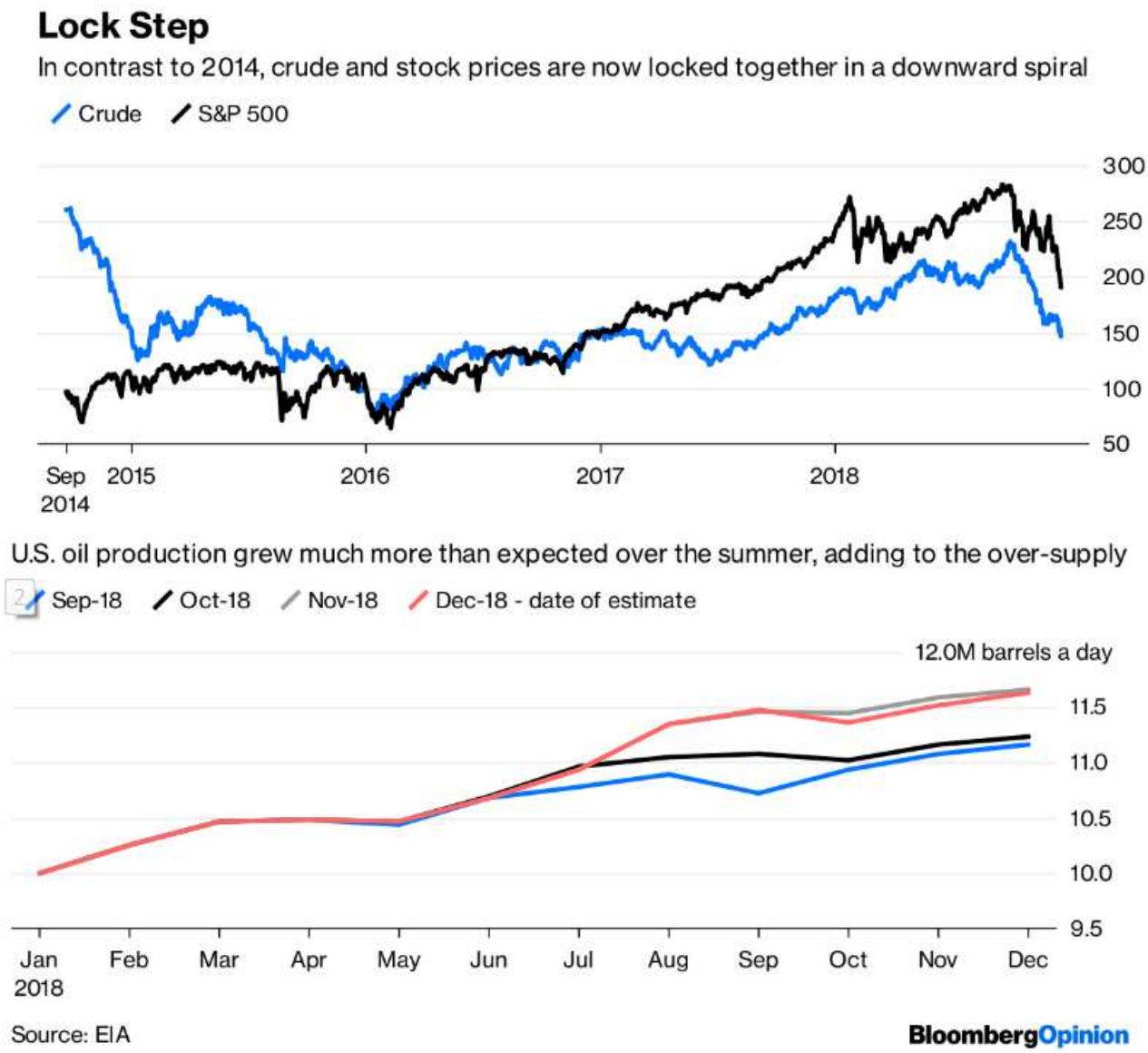
Gold Technical View and Analysis

Gold (GLD) is looking more attractive on the chart into 2019 after a large fie year rounded base has formed and some relative strength to equities emerging. The major defined range of note is $112/$129 and a move outside of that range can start a strong directional trend move. If weekly RSI can get above 70 it would be the strongest in more than five years and a bullish signal. Gold is having its best month in two years on an overall flight to safety across global markets. Lower bond yields and a weaker USD in 2019 can drive investment demand from China & India, the weaker USD likely influenced by a more dovish Fed and hawkish ECB/BOJ. Furthermore, positioning data in the futures market suggests speculators are showing little faith in the upside for gold prices, historically a contrarian bullish signal. A rapid economic slowdown and/or a continued flight from risky assets can also support higher gold prices.

Oil Technical View and Analysis

Oil has been volatile in 2018 and very weak into the end of year on concerns of slowing global growth, weak demand from China, and record product and rising output from the US shale boom. The US Energy Information Administration (EIA) raised its 2019 crude oil production forecast by 1.18 mbpd from this year, now expecting the U.S. to average 12.06 mbpd in 2019. The combination of oversupply and weaker demand give a murky outlook for Oil in 2019. On the chart Oil failed in 2018 at a key lower high trend from 2009 and 2014 peaks. It fell under major $43 support and rebounded modestly. In 2015/2016 Oil traded under $30, a

level to watch if the selling continues. OPEC is likely to further cut output to provide a short-term floor in prices but the demand/supply imbalance is concerning.



Top 25 Long Investment Ideas for 2019 in Large/Mid Cap Stocks (Growth at a Reasonable Price)

Overview: Snapshot of Top 25 with Entry Levels for 1/2 and Full Positions as Well as a Target, and Stop. These are optimal levels for those who are price sensitive but the charts are always changing. This year we are looking for 30% gains for targets and 15% stops for losses from the average entry price. The names will be discussed in more detail within the Sector Breakdowns section.

2019 Desired Weightings: *Energy/Metals/Chemicals 15%, Tech 15%, Financials 12.5%, Utility/Telecom 7.5%, Consumer Staples 10%, Consumer Discretionary 12.5%, Industrials 12.5%, Healthcare 17.5%*

Portfolio

Ticker	Company	Market Cap	P/E	FY19 EPS Growth	Entry 1/2	Entry 2/2	Target	Stop
GOOGL	Alphabet Inc.	$700B	21.04	12.87%	$915.0	$825.0	$1,135.0	$740.0
UNH	UnitedHealth Group	$235.5B	16.31	14.13%	$225.0	$200.0	$275.0	$180.0
DIS	Walt Disney	$157B	13.97	5.06%	$101.0	$95.0	$130.0	$83.0
PYPL	PayPal Holdings	$93.8B	27.08	20.36%	$77.0	$70.0	$100.0	$65.0
NEE	NextEra Energy	$83.65B	20.77	7.93%	$175.0	$160.0	$220.0	$145.0
INTU	Intuit Inc.	$50B	25.3	12.90%	$175.0	$160.0	$220.0	$144.0
ILMN	Illumina, Inc.	$42B	43.75	10.93%	$255.0	$235.0	$330.0	$210.0
REGN	Regeneron Pharma	$36.4B	15.25	4.64%	$330.0	$295.0	$430.0	$265.0
PGR	Progressive Corp	$35.3B	12.33	0.29%	$56.5	$48.0	$68.0	$44.0
KDP	Keurig Dr Pepper	$35.2B	17.49	37.81%	$23.5	$22.0	$30.0	$19.0
APD	Air Products	$34.5B	16.77	13.27%	$150.0	$140.0	$190.0	$123.0
EW	Edwards Lifesciences	$30.85B	27.74	10.66%	$135.0	$125.0	$175.0	$110.0
ROP	Roper Tech	$27.4B	21.06	4.57%	$237.0	$220.0	$300.0	$195.0
ORLY	O'Reilly Auto	$27B	18.57	10.53%	$315.0	$280.0	$400.0	$250.0
DG	Dollar General	$26.5B	14.94	11.04%	$95.0	$88.0	$120.0	$77.5
XLNX	Xilinx, Inc.	$20.7B	23.16	8.48%	$76.0	$72.0	$100.0	$62.5
TEAM	Atlassia	$19.55B	83.99	23.85%	$70.0	$64.0	$90.0	$57.0
WCN	Waste Connections	$19.25B	25.75	11.93%	$71.0	$65.0	$88.5	$58.0
RACE	Ferrari N.V.	$19B	27.53	13.46%	$92.0	$85.0	$115.0	$75.0
AME	AMETEK	$15.45B	18.08	10.24%	$62.0	$55.0	$76.0	$50.0
MOS	Mosaic Co	$11B	11.7	26.56%	$27.5	$26.0	$35.0	$23.0
DRE	Duke Realty	$9.5B	61.36	-57.13%	$25.0	$22.0	$30.5	$20.0
HFC	HollyFrontier	$8.83B	6.78	25.01%	$45.0	$40.0	$55.0	$36.0
HLF	Herbalife Nutrition	$8.8B	17.84	10.96%	$55.0	$50.0	$68.5	$44.5
RGLD	Royal Gold	$5.6B	38.53	36.87%	$78.0	$71.0	$86.5	$65.0

Top 20 Short Investment Ideas for 2019

With Each Short I Provide a "Better Option" of a Similar Market Cap Stock in a Related Industry for those Interested in a Pairs Trades

Ticker	Company	Market Cap	P/E	FY19 EPS Growth	Entry 1/2	Entry 2/2	Target	Stop	Better Option
AMGN	Amgen Inc.	$118B	12.41	1.95%	$187.0	$195.0	$145.0	$220.0	VRTX
PM	Philip Morris	$105B	12.5	5.39%	$70.0	$80.0	$55.0	$89.5	STZ
PSX	Phillips 66	$39B	8.46	8.73%	$87.0	$92.0	$67.0	$103.0	VLO
MAR	Marriott	$35.5B	16.18	3.33%	$110.0	$120.0	$85.0	$132.5	EXPE
BAX	Baxter	$34.1B	19.26	8.90%	$67.0	$70.0	$52.0	$79.0	ISRG
ADSK	Autodesk	$27.2B	37.51	228.92%	$126.0	$134.5	$95.0	$150.0	TYL
MCO	Moody's Corp	$26B	16.26	8.01%	$140.0	$150.0	$105.0	$167.0	INFO
CLX	Clorox	$19.8B	23.03	6.56%	$158.0	$164.0	$120.0	$175.0	HELE
BXP	Boston Properties	$17.55B	36.47	-5.44%	$118.0	$124.0	$95.0	$135.0	ARE
CERN	Cerner	$16.45B	18.33	9.24%	$53.5	$59.0	$42.0	$65.0	MDSO
OMC	Omnicom Group	$16B	12.15	2.55%	$72.0	$75.5	$55.0	$80.0	TWTR
CTL	CenturyLink	$16B	12.13	8.96%	$17.0	$19.5	$13.5	$21.0	VZ
BBY	Best Buy Co.	$13.3B	8.87	6.21%	$55.0	$60.0	$40.0	$65.0	HAS
DISH	DISH Network	$11.76B	10.06	-17.53%	$28.0	$32.0	$20.0	$35.0	CMCSA
CMG	Chipotle Mexican Grill	$11.32B	32.98	40.35%	$430.0	$455.0	$330.0	$500.0	DNKN
CHRW	C.H. Robinson	$11.15B	16.24	8.76%	$84.0	$88.0	$64.5	$97.0	FDX
GDDY	GoDaddy	$10.6B	77.49	126.32%	$65.0	$70.0	$50.0	$78.0	VRSN
NOV	National Oilwell Varco	$10B	34.39	2600.00%	$27.5	$30.0	$20.0	$33.0	WHD
DATA	Tableau Software	$9.5B	69.52		$115.0	$121.0	$88.5	$135.0	SPLK
CVGW	Calavo Growers	$1.35B	20.73	42.62%	$75.0	$82.0	$55.0	$90.0	BG

Top 25 Small Cap ($1B to $5B) for 2019

Ticker	Company	Market Cap	P/E	FY19 EPS Growth	Entry 1/2	Entry 2/2	Target	Stop
TTD	The Trade Desk	4.7B	38.29	14.86%	$102.0	$94.0	$150.0	$78.0
OLLI	Ollie's Bargain Outlet	$3.89B	29.44	18.17%	$60.0	$54.0	$80.0	$45.0
SAVE	Spirit Airlines	$3.84B	9.65	31.37%	$52.5	$49.0	$70.0	$41.0
CHH	Choice Hotels	$3.84B	16.18	8.78%	$65.0	$61.0	$85.0	$50.0
NSP	Insperity	$3.8B	20.68	15.04%	$85.0	$77.5	$110.0	$65.0
FGEN	FibroGen	$3.4B			$40.0	$35.0	$55.0	$30.0
CHDN	Churchill Downs	$3.26B	17.66	1.28%	$215.0	$203.0	$280.0	$167.0
CHGG	Chegg	$2.94B	41.23	25.35%	$24.5	$22.0	$32.0	$18.5
AWI	Armstrong World	$2.91B	13.11	17.74%	$56.5	$52.0	$73.0	$44.0
DORM	Dorman Products	$2.77B	18.1	10.44%	$80.0	$76.0	$105.0	$62.5
CYBR	CyberArk Software	$2.53B	34.77	10.27%	$62.0	$56.5	$80.0	$47.5
STRA	Strategic Education	$2.31B	17.74	33.09%	$103.0	$95.0	$135.0	$80.0
ASND	Ascendis Pharma	$2.28B			$50.0	$46.0	$80.0	$38.0
SFNC	Simmons First National	$2.25B	9.51	6.50%	$22.0	$20.0	$28.5	$17.0
GHDX	Genomic Health,	$2.2B	49.34	15.94%	$59.0	$52.0	$75.0	$45.0
TRNO	Terreno Realty	$2.1B	51.6	-20.92%	$35.0	$32.0	$45.0	$27.0
IPAR	Inter Parfums	$2.01B	34.22	13.66%	$59.5	$52.5	$76.0	$45.0
OTTR	Otter Tail	$2B	22.64	5.01%	$49.0	$46.0	$60.0	$40.0
GLOB	Globant S.A.	$1.99B	25.64	24.85%	$51.0	$46.0	$65.5	$39.0
FN	Fabrinet	$1.78B	12.36	8.37%	$46.0	$43.0	$60.0	$35.5
MEDP	Medpace Holdings	$1.76B	16.41	15.37%	$42.0	$37.5	$55.0	$32.0
AIMC	Altra Industrial Motion	$1.6B	7.17	17.89%	$23.0	$20.0	$33.0	$17.0
SEDG	SolarEdge Tech	$1.58B	10.75	-0.93%	$31.5	$28.5	$40.5	$25.0
AVAV	AeroVironment	$1.51B	42.31	5.66%	$59.0	$53.0	$80.0	$45.0
KALU	Kaiser Aluminum	$1.43B	11.36	18.91%	$83.0	$75.0	$105.0	$65.0

Top 35 Attractive Micro Caps for 2019 ($200M to $1B)

Ticker	Company	Market Cap	P/E	FY19 EPS Growth	Sales Q/Q	Gross Margins	ROI
RDWR	Radware	$981M	35	29.79%	10.90%	-2.90%	81.80%
CHEF	Chefs' Warehouse	$927M	30	26.44%	11.20%	5.90%	25.30%
LRN	K12	$915M	27	10.57%	9.80%	4.30%	35.80%
CARB	Carbonite	$877.5M	13	10.62%	26.10%	-4.90%	71.50%
INSP	Inspire Medical Systems	$862.5M		69.40%	79.50%	15.80%	80.10%
KAI	Kadant	$858.8M	14	16.09%	8.40%	5.60%	43.90%
ADUS	Addus HomeCare	$858.8M	27	22.77%	26.70%	8.70%	26.70%
TPIC	TPI Composites	$844.8M	18	279.83%	0.60%	37.00%	8.90%
TCMD	Tactile Systems Tech	$805.3M	104	14.41%	28.30%	9.30%	50.20%
NXRT	NexPoint Residential	$795.5M		-185.70%	-1.60%	0.70%	91.80%
ITRN	Ituran Location	$743.4M	10	25.83%	-11.90%	29.10%	51.80%
QNST	QuinStreet	$738M	17	33.64%	29.20%	10.20%	14.70%
NVTA	Invitae	$737M			106.60%	-42.50%	40.50%
VIVO	Meridian Bio	$731M	20	7.54%	6.80%	10.30%	61.10%
DLTH	Duluth Holdings	$718M	22	20.76%	27.50%	14.40%	55.10%
EHTH	eHealth	$706.5M	25	38.04%	29.50%	-8.20%	99.50%
BAND	Bandwidth	$696.5M			22.30%	12.70%	47.40%
RUTH	Ruth's Hospitality	$692.5M	15	6.90%	16.20%	24.80%	27.70%
SRDX	Surmodics	$683.5M	150	254.84%	14.40%	-3.80%	33.40%
NVEE	NV5 Global	$681.2M	14	18.17%	14.10%	10.40%	48.60%
TCX	Tucows	$645.7M	34	7.27%	-1.80%	14.20%	27.10%
KRNT	Kornit Digital	$637M	26	64.04%	32.40%	-1.40%	49.20%
LIND	Lindblad Expeditions	$590.5M	31	79.74%	3.10%	4.90%	50.30%
WINA	Winmark	$578.5M			7.90%	75.90%	96.30%
MPX	Marine Products	$567M	19	5.33%	21.60%	29.80%	22.40%
LNTH	Lantheus	$559M	15	13.31%	11.30%	16.40%	49.90%
SOI	Solaris Oilfield	$525M	4.5	47.66%	206.50%	17.70%	
BOOT	Boot Barn	$435M	11	14.31%	17.50%	8.60%	31.30%
IIPR	Innovative Industrial	$435M	23	158.55%	143.80%	-0.40%	96.60%
ATTU	Attunity	$385M	31	26.09%	34.50%	-11.90%	86.60%
MCFT	MasterCraft Boat	$344M	6	13.37%	44.00%	33.30%	26.40%
SSTI	ShotSpotter	$307M	174	157.10%	35.30%	-121.10%	55.60%
FNKO	Funko,	$293M	12	35.02%	23.90%	11.00%	38.40%
GRVY	Gravity Co.	$254M			133.20%	28.90%	29.80%
IIN	IntriCon	$211M	25	29.17%	19.90%	6.80%	32.10%

Top International Stocks to Own In Each Sector for 2019

Ticker	Company	Sector	Market Cap	PE	FY19 EPS Growth	Entry 1/2	Entry 2/2	Target	Stop
BHP	BHP Billiton	Basic Materials	$125B	18.5X	-6.60%	$44.0	$41.0	$60.0	$38.5
DEO	Diageo	Consumer Goods	$86.25B	18.85X	8.35%	$136.0	$127.0	$165.0	$110.0
SNE	Sony	Consumer	$60.8B	10.75X	-12.65%	$45.5	$42.0	$55.0	$36.5
CP	Canadian Pacific	Services - Transports	$24.6B	14.1X	16.00%	$167.0	$157.0	$202.0	$136.0
IR	Ingersoll Rand	Industrial	$22.15B	14.1X	13.10%	$87.5	$83.5	$110.0	$72.0
WLTW	Willis Tower	Financial	$19.45B	13.45X	11.85%	$145.0	$133.0	$170.0	$120.0
CHKP	CheckPoint	Tech	$16.1B	16.5X	6.70%	$98.0	$88.0	$115.0	$80.0
ICLR	ICON PLC	Healthcare	$6.75B	17.95X	11.80%	$118.0	$110.0	$145.0	$96.0
AQN	Algonquin Power	Utility	$4.8B	-	-	$10.0	$9.0	$12.0	$8.0

Diversified Portfolio of 12 High Yield Stocks to Own for 2019

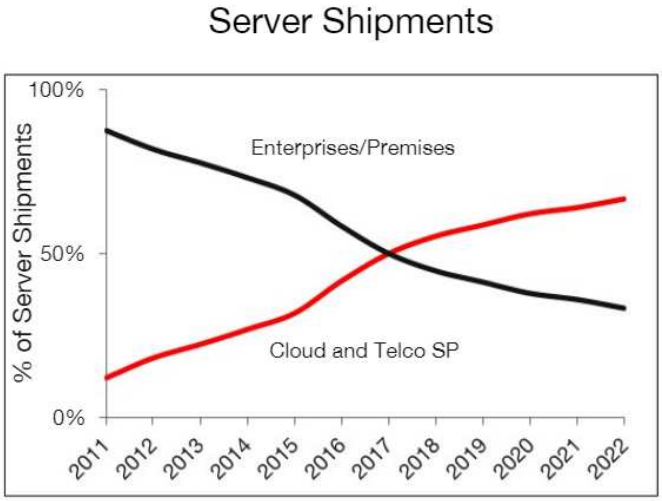
Ticker	Company	Market Cap	PE	FY19 EPS Growth	Dividend Yield	Entry 1/2	Entry 2/2	Target	Stop
NVS	Novartis	$214B	15.15X	6.10%	3.58%	$82.5	$76.5	$100.0	$67.0
MRK	Merck	$195B	15.5X	8.35%	3.02%	$70.0	$66.5	$85.0	$58.0
AVGO	Broadcom	$102.5B	9.3X	14.40%	4.33%	$235.0	$220.0	$285.0	$190.0
VALE	Vale SA	$68B	7.45X	24.00%	3.95%	$12.0	$11.0	$14.5	$9.5
VLO	Valero	$30.6B	7.8X	47.90%	4.47%	$68.0	$63.0	$90.0	$55.0
ETN	Eaton	$28.85B	11.3X	9.80%	3.98%	$65.0	$59.0	$77.5	$52.0
DTE	DT Energy	$21B	18.3X	-1.30%	3.31%	$110.0	$105.0	$133.0	$90.0
GRMN	Garmin	$12.3B	17.4X	1.80%	3.46%	$60.0	$56.0	$72.5	$49.0
TPR	Tapestry	$9.55B	10.6X	10.90%	4.11%	$30.0	$26.0	$40.0	$23.5
PKG	Packaging Corp	$7.6B	9.3X	8.15%	3.91%	$75.0	$71.0	$100.0	$62.0
VICI	Vici Properties	$7.45B	11.2X	13.10%	6.17%	$18.0	$16.0	$21.0	$14.5
WSO	Watsco	$5.05B	19X	8.76%	4.34%	$128.0	$115.0	$150.0	$105.0

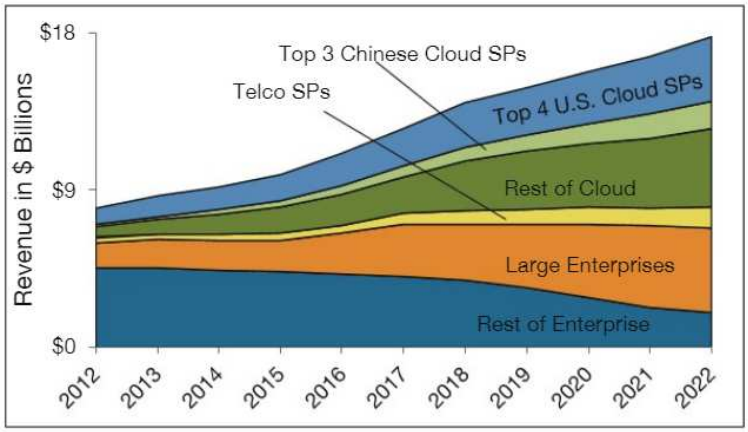
Top 5 High Beta Stocks for 2019

Caterpillar (CAT) shares are down 23% YTD with plenty of notable fears surrounding China, a global economic slowdown, and rising costs. The $71.1B leader in machinery trades 9.4X Earnings and 38.4X FCF with a 2.86% dividend yield, and though its cycle looks to be peaking in 2018, its multiples are already compressed to the low end of the historic range while still expecting to outgrow the S&P 500. A slowing Fed and improvements with China relations in 2019 can be a big boost for CAT to again enter a multiple expansion period.

Workday (WDAY) has been impressive in 2018 climbing 42% and one of the very few to be positive in Q4 after posting fantastic earnings. WDAY is a leader in HCM Software and trades 11X EV/Sales with 20-25% revenue growth seen each of the next two years. WDAY continues to take market shares and win major deals in its markets, and while valuation is high, it is the premiere operator and seeing accelerating trends in a massive HCM market converting over to better technology. It should be able to continue to steal share from legacy providers and emerge as a major Tech leader.

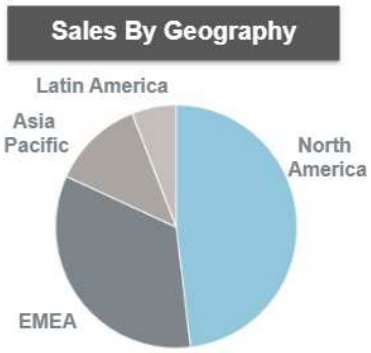
Arista Networks (ANET) has a $15B market cap trading 21.7X Earnings and 39.9X FCF with shares -18% YTD though growing revenues rapidly and taking market share as a technological leader in networking equipment. It continues to steal share from Cisco and the cloud migration remains a major secular trend it is benefitting from and likely to show superior growth for many years to come while a $15B market cap could also make it attractive as a takeout target. It is a highly attractive growth asset and could look to expand in new markets such as Security as well as other networking equipment markets.

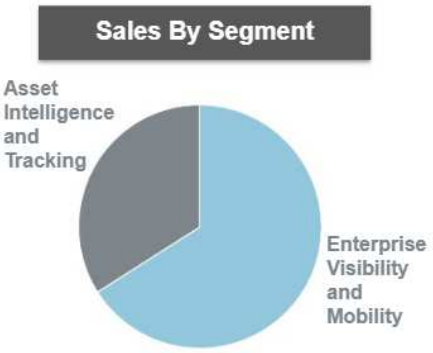




Mercado-Libre (MELI) has a $13.2B market cap and is a leading growth name to play the emerging growth of Brazil and its ecommerce and payment markets. MELI is expecting 40-50% topline growth each of the next three years and will also enter an accelerated EPS growth stage now that it has transformed its business model. Competition is a factor but it is a leader in both of the massive markets it is participating with a strong outlook or growth. After a bumpy investment phase for its free shipping, Brazilian postal price increased and a driver's strike, it enters a strong wave of profitability for the coming years ahead.

Zebra Tech (ZBRA) has a $7.9B market cap and has seen shares rise 40% YTD, a top performer as a seller of automatic identification and data capture products. ZBRA trades 12.55X Earnings, 1.93X Sales and 11.9X FCF with 12.8% topline growth in 2018 expected to face tough comps in 2019, but valuation already reflecting that headwind. It has a leading 40% market share in barcode printing as well as Enterprise Mobile Computing and Data Capture Solutions. ZBRA is positioned well for megatrends such as IoT, Enterprise Mobility, Cloud Computing, and E-Commerce. It sees a $24B addressable market opportunity and has been de-levering after making some acquisitions. ZBRA has long been a favorite and remains positioned to outperform.





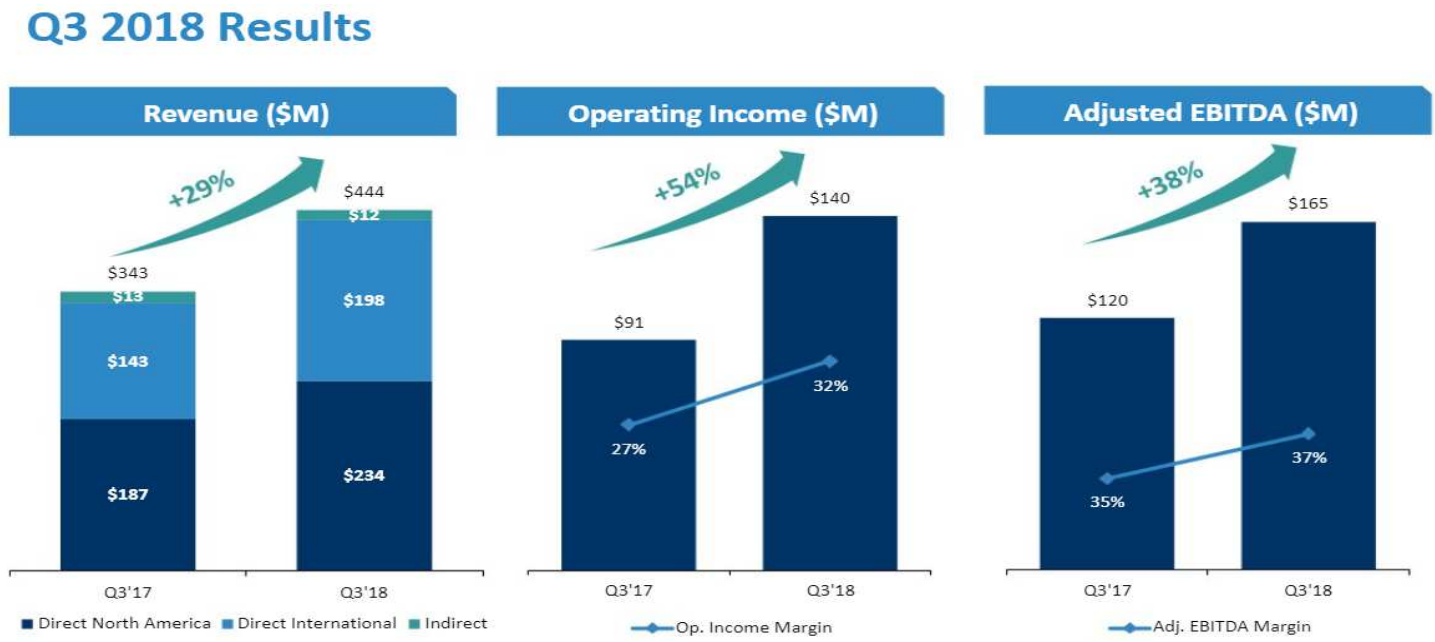
8 Contrarian Stock Picks for 2019

(High Short Float with Strong Business Trends & Growth at a Reasonable Price)

Shopify (SHOP) has a $15B market cap as a leading provider of a commerce platform for small and medium sized businesses and positioned well to capitalize on the entrepreneurial and ecommerce trends. SHOP trades 7.6X EV/Sales for FY19 estimates and growing revenues rapidly with no signs of a slowdown as metrics have been robust the last few reports. Short interest at 11.2% of the float remains near record highs. It is in the early stages of its International expansion and enterprise solutions, a new growth contributor. Small and Medium sized businesses will continue to need to transform digitally and SHOP is one of the best ways to play a number of strong secular themes.

Match Group (MTCH) has a $10.7B market cap as an owner of key dating product brands, most notably Tinder. Short interest is 36% of the float, though much do to the IAC stake and arbitrage players on the

spread. MTCH trades 23.2X Earnings, 21.65X FCF and 8.4X EV/Sales. Revenue growth is seen at 13-15% each of the next three years with EPS growth set to accelerate. Tinder is seeing strong monetization trends with 61% growth in average subscribers and 24% ARPU growth. The global dating market is expected to hit $12B in 2020 ex-China with MTCH likely at least at a 20% market share.



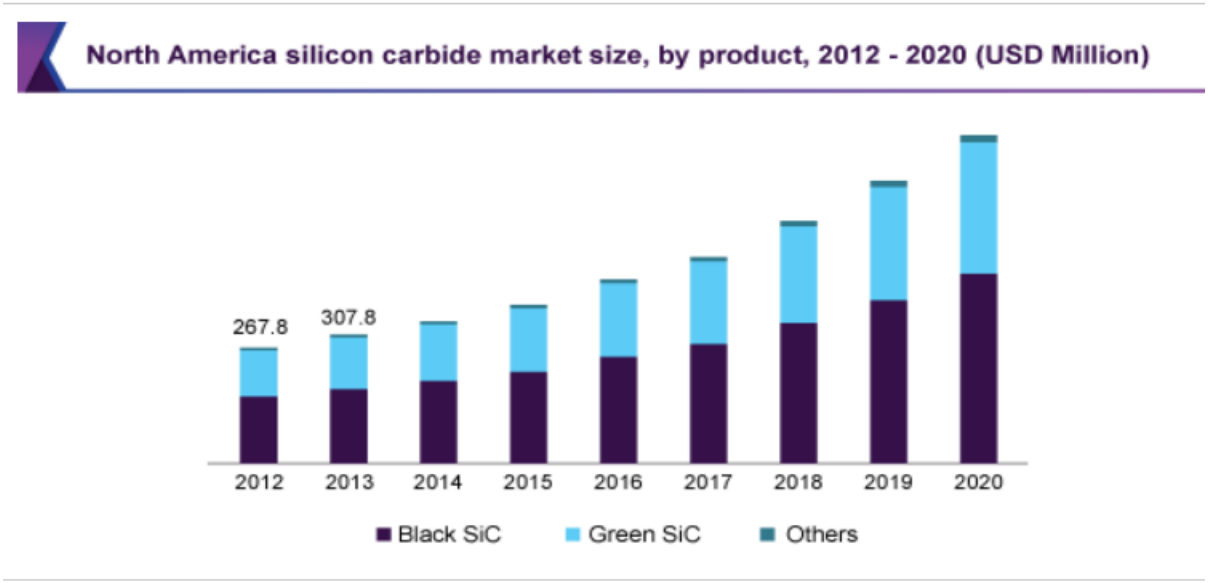
Sarepta Therapeutics (SRPT) is a $6.7B Biotech that has seen shares rise 77% in 2018 though down 33% in Q4 as a "baby with the bathwater" selling notion in risky Biotechs. SRPT has seen revenues jump to $300M in 2018 from $5.4M in 2016 and expects $630.7M in 2020. SRPT has seen strong success in gene therapy and is a very attractive asset. SRPT has been generating superior data to peers in its space and has plenty of catalysts beyond its core micro-dystrophin market. SRPT still has 14.6% of its float short, though declining much of 2018, and looks to be a multi-product growth story over the next few years and could be an attractive M&A target.

World Wrestling (WWE) has a $5.5B market cap with shares +128% in 2018 as one of the few success stories in Media driven by strong engagement and the launch of its DTC product. WWE shares trade 54.7X Earnings and 6.35X Sales. It expects to reach $1.3B in revenues for 2020, up from $801M in 2017. WWE has signed strong contracts and is expanding in international markets. Short interest at 17% of the float is back near a five year high. It is seeing robust growth in digital expanding potential for incremental ad sales and continues to be a strong brand with a loyal base. The international expansion story is in the early innings as well as the digital shift.

Ceridian (CDAY) is a $4.6B provider of HCM solutions trading 6.9X EV/Sales with revenue growth seen at 9.2% in 2019 and accelerating in 2020 and 2021. CDAY is transforming into a cloud technology company targeting a large $20B fragmented market and becoming a margin expansion story. Dayforce is its flagship HCM cloud product seeing 95% retention. Short interest is hitting new highs at 22.5% of the float. With an 11M share secondary out of the way it looks like an intriguing growth and margin expansion story in a transforming HCM market. International will be a focal point so it can expand its available markets.

Carvana (CVNA) is a $4.48B e-commerce platform disrupting the used cars market and trades 2.5X EV/Sales with revenue growth seen at 83.5% and 53.3% the next two years while profitability remains a ways out, also a fairly levered balance sheet in its investment stage. Short interest at 10.7% of the float is reaching record highs. The company sees significant opportunity to grow traffic at their online and mobile platforms which will help them gain share in the $1T auto market. The company held an Analyst Day recently where they outlined plans to expand gross margins to 15%-19% and EBITDA margins to 8%-13.5%. Increased competition from larger legacy player KMX has been a bear thesis. However, CVNA has a strong advantage as an early-mover and tackling a massive market due for major disruption.

Cree (CREE) has a $4.25B market cap and shares positive YTD trading 32.5X Earnings and 31.2X FCF with revenue growth back in a double digit phase and strong EPS growth seen the next few years. CREE short interest remains elevated at 10.7% of the float, though fairly flat for 2018. CREE also has a substantial cash position it can deploy. Its Wolfspeed acquisition has proven to be a smart one, disrupting the Semi market with 5G and Electric Vehicles key tailwinds. CREE has a major longer term opportunity in the silicon carbide market as well. Its core LED business seems to be bottoming on volumes and pricing as well.

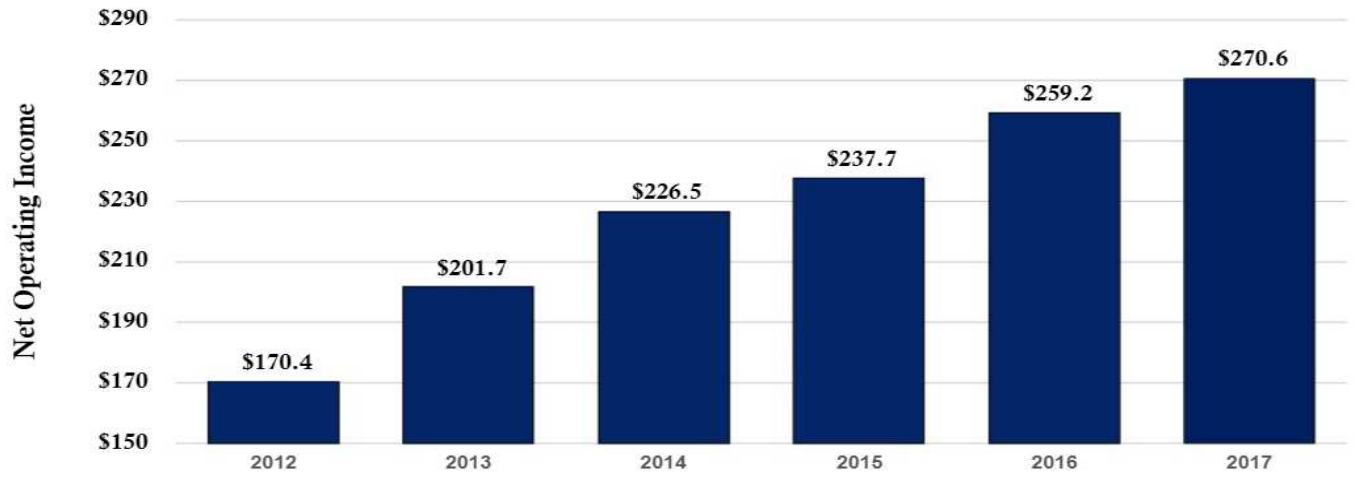


Deckers Outdoor (DECK) has a $3.6B market cap and trades 16.85X Earnings, 1.85X Sales and 10.45X FCF with a strong balance sheet. The footwear maker has seen a strong recovery in growth in 2018 as well as profitability. It is seeing strong numbers in its DTC business and has key brands like Teva, Sanuk, and UGG. DECK has also been a successful margin expansion story. Short interest remains elevated at 10% of the float, though trending lower in 2018. DECK is positioned to exceed its 2020 targets and becoming a more diversified brand portfolio story with further margin expansion seen ahead.

12 Hidden Gems for 2019 (Value and Growth Trading < 100K Shares/Day)

PS Business Parks (PSB) is a $3.6B REIT that owns and operates commercial properties in the multi-tenant industrial and office spaces. It trades 20X FFO with a 3.17% yield and posting double digit FFO growth. It is primarily located in California, Texas, and Virginia with a very diverse customer base. It has low leverage and has historically outperformed peers across multiple time periods. It is an excellent REIT that is an unknown.

- Six consecutive years of strong NOI growth, averaging 3.7% annual Same Park NOI growth since 2012



RMR Group (RMR) is a $1.77B real estate management service provider trading 22.3X Earnings and 8.35X FCF with a 2.54% yield and no debt. RMR manages REITS including HPT, SNH, GOV, SIR, and ILPT as well as TA and FVE. RMR has been seeing strong cash flows and a higher percentage of recurring revenues. RMR is a unique company but has adjusted EBITDA margins near 60% and overall solid fundamentals.

ESCO Tech (ESE) is a $1.7B provider of engineered solutions in Filtration, RF Testing, Utility Solutions and Technical Packaging. It trades 20X Earnings, 2.2X Sales and 22.55X FCF with a 0.49% yield. ESE is coming off two big years of growth and sees things normalizing the next two years with 3-5% revenue and 8-10% EPS growth. ESE is seeing strong backlog growth and utilizing cost controls to raise its margin ceiling across a diversified line of businesses. It is a very interesting company with a bevy of growth drivers across its key four business segments.

Stepan Co. (SCL) is a $1.64B maker of specialty chemicals trading 13.4X Earnings, 0.82X Sales and 24.7X FCF with a 1.39% yield. SCL expects revenue to grow 4-5% the next three years and EPS seen jumping 14-15% each of the next two years. It is transitioning into a higher growth and margin portfolio with plenty of optionality to use M&A into new products and geographies.

ePlus (PLUS) is a $960M software provider allowing for optimization of IT and supply chain processes trading 12.3X Earnings, 0.7X Sales and 22.33X FCF with a strong balance sheet. PLUS is currently forecasted to see very modest topline growth with 7-12% EPS growth. PLUS is focused on cloud, security and digital infrastructure with partners like Cisco, Dell EMC, HPE, NetApp, Palo Alto, and VMware. It is a value name with margin upside.

Piper Jaffray (PJC) is a $940M investment brokerage, a consolidating industry, trading 8.9X Earnings and 1.15X Sales with a 2.42% yield. It has faced tough comps the last three quarters but now coming out of that and Q1/Q2 2019 set up positively. Shares are priced attractively and could see further consolidation in the space, and it would be a clear target.

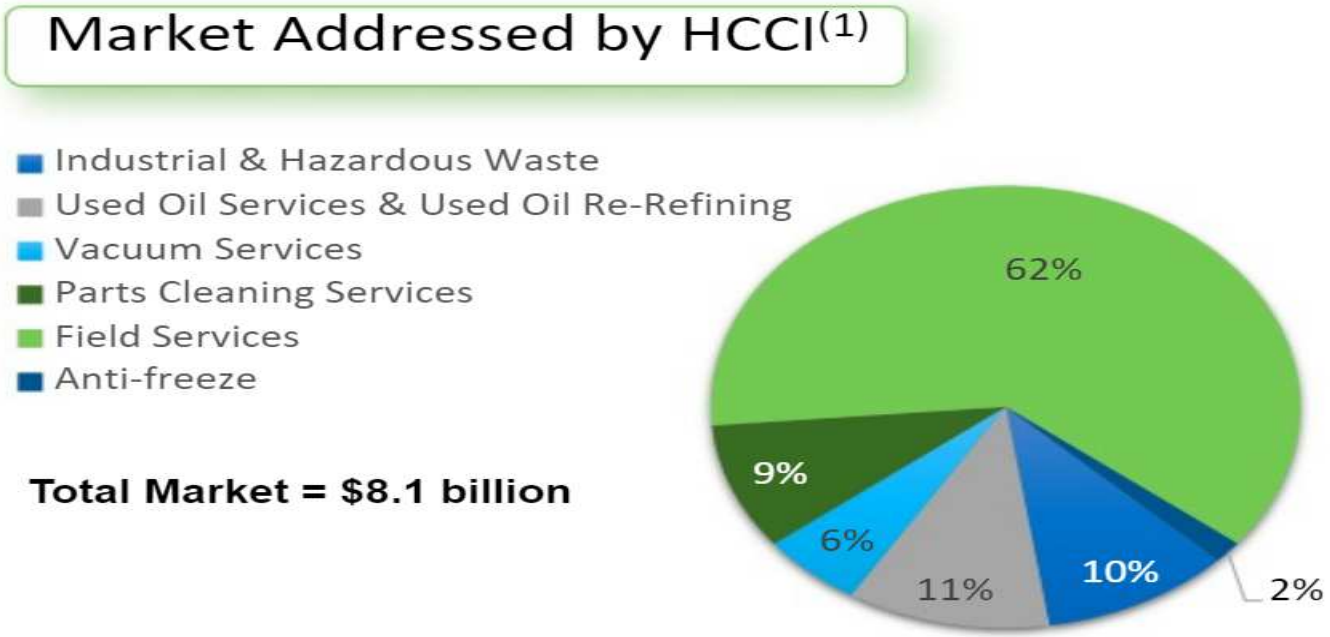
Gorman-Rupp (GRC) is an $850M maker of pump and pump systems trading 18.5X Earnings, 2.1X Sales and 37.4X FCF with a 1.72% yield and no debt. GRC expects 5% revenue and 4.3% EPS growth next year. It raised the dividend in October and announced a $2/share special dividend. It has limited analyst coverage and information but screens attractive.

Unitil (UTL) is a $772M utility in the Southeast and Northeast trading 10.3X EBIYDA with a 2.82% yield. It has solid topline and bottom-line growth for a Utility. It is rapidly expanding its natural gas systems and has seen improving margins and customer growth. In Q3 customer contracts jumped 25% Y/Y. It is an attractive small cap name in a sector of large players.

CSW Industrial (CSWI) is a $730M diversified industrial trading 17.1X Earnings, 2.2X Sales and 19.1X FCF. CSWI is seeing 5%+ quarterly growth and EPS rose 27% in 2018 with projections for 21% growth in 2019. It saw strong growth in industrial products due to plumbing and HVAC, two key end-markets. Shares are up 4% YTD holding up much better than larger peers and definitely a unique story to be aware of in Industrials.

SP Plus (SP) is a $624M provider of parking management, ground transportation and other services trading just 10.8X Earnings and 10.66X FCF. SP has seen EPS growth from $0.98/share in 2015 to $2.87/share projected for 2020. In October the company spent $275M to acquire a leading baggage delivery and remote airline check-in provider, as it continues to expand an intriguing portfolio of businesses. SP has a large presence in a highly fragmented industry and continues to see cost benefits from scale. It trades cheap with fairly resilient services, a very interesting unknown story.

Heritage Crystal Clean (HCCI) is a $500M provider of cleaning and waste services to manufacturing and vehicle maintenance sectors. Shares trade 17.5X Earnings, 1.24X Sales and 27.2X FCF with a strong cash position and little debt. It operates in an $8B market opportunity that is highly fragmented. HCCI will be lapping tough comps next year but does expect 8% topline and 70% EPS growth. It has a 35% adjusted EBITDA CAGR. It is a unique niche name that could attract M&A interest from Clean Harbors (CLH).



Wildan (WLDN) is a $360M provider of technical and consulting services trading 17.55X Earnings, 1.44X Sales and 18.45X FCF. Its acquisition of Lime Energy positions it well for new growth opportunities, a provider of energy solutions in California and the Northeast. It services will be in demand due to regulatory mandates for energy efficiency. WLDN deems itself an electric grid solutions company. Its ROIC is above some peers I have liked in the past like NVEE and TTEK. WLDN is also a strong EBITDA margin expansion story.

Simulations Plus (SLP) is a $300M developer of drug discovery software for modeling and simulation. It trades 32X Earnings and 9.3X EV/Sales with 23.5% FCF margins and 34.7% EBIT margins. Revenue growth is seen slowing to 9.6% in 2019 from above 20% the last two years. Today, there is growing momentum within the industry to adopt and apply model-based drug development in pharmaceutical drug development, drug safety and efficacy and personalized medicine, yet, its adoption, breath of application and impact still lies for the most part in our future. A recent report by Infinium Global Research on the computation of biology market projected the market to grow at a compounded annual growth rate of 21% over the forecasted period 2018 to 2024. The report included Simulations Plus in its portfolio of leaders in the space. It noted "Some of the major factors driving the growth of computational biology market are growing number of clinical studies in pharmacokinetics and pharmacogenomics for drug discovery & development, an upsurge of drug designing, personalized medicine, and disease modeling. Furthermore, growing demand for predictive models and increasing funding from governments and private organizations for R&D in this field are also boosting the growth of computational biology market. In addition, advantages such as reducing risks involved in human clinical trials for testing drugs during their development phase, offered by computational biology to also augment growth in this market. Extensive use of this technology in a large number of applications in academics, industrial and commercial sectors are further fueling the growth of this market. On the flip side lack of properly trained professionals is hampering the growth of computational biology market."

2019 Investment Themes

In this section, we'll look at general market themes which will be prevalent in 2019. A lot of the individual names were covered in the sector breakdowns, so this area will focus more on the current status of the underlying theme, potential market size, and drivers going forward. A lot of themes in 2019 will be continuations of those we covered in 2017 and 2018 but as they mature, different elements start to become more relevant and that will be the same in 2019 again.

Cannabis

Cannabis stocks were one of the hottest areas for investment in 2018 and expectations remain high for the sector in 2019 as larger entrants continue to look for exposure to the space. 2018 was a pivotal year for cannabis stocks as they were firmly put in the spotlight for main street amid some major legislative victories (see below). And more states are moving towards more relaxed laws. Late in 2018, we saw some states take pre-emptive steps to reform cannabis laws in 2019. In MO, lawmakers are drawing up recreational usage bills after the state approved medical use in the November elections. VA is also expected to debate a decriminalization bill and TX has twelve different cannabis-related bills in motion. A path to national decriminalization is now in sight with House democrats circulating a proposal which could see a debate sometime in 2019.

What happened in 2018? Some Major Headlines

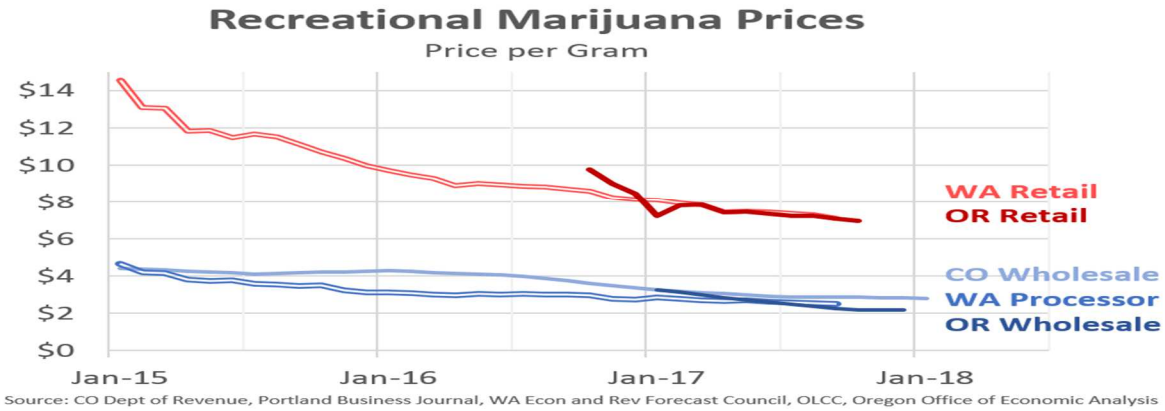
- Canada Legalizes Marijuana, Becomes 2nd Nation in World to Do So
- Constellation Brands Invests $5B in Canopy Growth
- AB InBev, Tilray Team Up for Cannabis Beverages
- Altria Invests $1.7B in Cronos Group
- Novartis, Tilray Announce Partnership
- Vermont Approves Marijuana Legalization Bill
- Voters Approve Medical Cannabis in Missouri, Oklahoma, and Utah
- Michigan Ballot-Measure Passes to Legalize Marijuana
- President Trump Voices Support for Marijuana Bill
- Farm Bill Passes, Legal Hemp Takes Another Step Forward
- Mexico's Incoming President Supports Legalization

Hemp has gotten attention late in 2018 after the Farm Bill put the crop under the discretion of the Agriculture department. Hemp does not produce the psychoactive element of marijuana but can be a very profitable development for farmers who are seeing shrinking profits-per-acre from traditional crops. Hemp is the driver for CBD which is the compound being used in everything from beverages and health products to pet snacks. This is what beverage giants like **AB InBev (BUD)** and **Constellation (STZ)** are focusing their efforts on. There are smaller beverage companies focusing on CBD as well including **New Age (NBEV).** The calming effect of CBD is also why biopharmaceuticals like **Novartis (NVS)** see value in the crop for use in treating anxiety, MS, epilepsy and others. **GW Pharma (GWPH)** continues to advance trials in epidiolex for a variety of indications using CBD in epilepsy, LGS, Dravet, and others. The

other notable names in the space are **Aurora (ACB), Cronos (CRON), Tilray (TLRY),** and **Aphria (APHA).** There are a number of OTC stocks as well but not very liquid.

According to a report by the Brightfield Group, the hemp/CBD market could hit $22B by 2022. The mix is seen as being 46% pharmaceutical, 28% direct sales, 9% natural/specialty retailer, 7% medical practitioner and then the rest mass market retail. There have also been some loftier estimates for the overall industry. TLRY's CEO has said that he believes the global TAM for cannabis is $150B but that includes a legal framework in every country which seems untenable. CGC's CEO has said that he sees even bigger potential as cannabis will disrupt significant markets like alcohol and tobacco. The following is from Constellation Brands earlier in 2018.

The theme for 2019 within cannabis may be tempered expectations. Canada has already discussed slowing down the number of licenses for physical stores with production capacity for recreational marijuana seeing shortages. The CEO of CRON thinks the shortages could last throughout the year as struggles with how the government set up the market are dealt with in an efficient manner. Edibles, vaping, beverages and other forms of use will go on sale in the country in 2019 as well, potentially easing some issues. Chris Walsh, founding editor of Marijuana Business Daily, said at a conference in November that sales trends are also slowing from the high-double-digit growth of previous years. He also said that pricing is continuing to come down on a price-per-gram basis as more states legalize recreational activity and more competition enters the space. This will continue in 2019.



Next year could also see changes in banking restrictions impact the industry. Congress could take legislative action to lift restrictions on how the industry collects payment. Currently, most of the industry is running on cash. The two laws which are in focus are the SAFE Act and the STATES Act. The latter would open up tax deductions to the industry as well. Cowen said that one potential headwind for the bill is that is sponsored by Democrat Elizabeth Warren who has publicly feuded with the President. One last headwind in 2019 would be agency policy towards CBD. Despite the Farm Bill passage, other agencies like the FDA would need to change policy before products could be marketed. CBD is still considered largely illegal by the organization despite the recent actions.

Macau

Macau has long been the focus for gaming operators as the largest revenue driver for many of the world's biggest casinos. **Wynn Resorts (WYNN)** and **Las Vegas Sands (LVS)** both receive more than 50% of their revenue from the region while **MGM** is closer to 20%. The region has undergone a resurgence since 2016 following Chinese President Xi Jinping's crackdown on corruption and has now posted 28 consecutive months of revenue growth. Although far from the record higher $45B in gross gaming revenues in 2013, the outlook for industry has been boosted by higher visitation numbers, especially middle-class gamblers. Gross gaming revenues rose by double-digits in seven of the first eleven months of the year with blowout comps in January, March, and April. Growth slowed into year-end and faces threats in 2019 from the ongoing US trade war, license renewal questions, and economic slowdowns in China.

	Monthly Gross Revenue		
	2018	2017	Variance
Jan	26,260	19,255	+36.4%
Feb	24,300	22,991	+5.7%
Mar	25,950	21,232	+22.2%
Apr	25,728	20,162	+27.6%
May	25,489	22,742	+12.1%
Jun	22,490	19,994	+12.5%
Jul	25,327	22,964	+10.3%
Aug	26,559	22,676	+17.1%
Sept	21,952	21,362	+2.8%
Oct	27,328	26,633	+2.6%
Nov	24,995	23,033	+8.5%
Dec	-	-	-

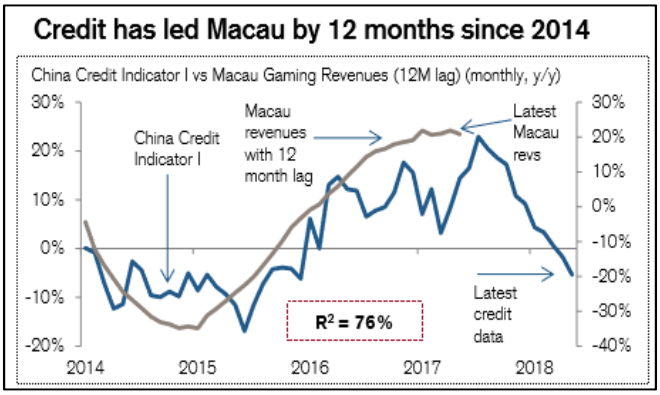
2018 was a weak year for the stocks. MGM was down over 29.5%, LVS down over 27.5%, and WYNN down over 40%. **Melco Crown Resorts (MLCO),** which has more concentrated exposure than the other three, was down 42%.

What happened in 2018? Some major headlines:

- Steve Wynn Exits Wynn Resorts Amid Scandal
- Hong Kong-Zhuhai-Macau Bridge Opens
- Japan Legalizes Casino Gambling
- Typhoon Shuts Down Gambling-Hub

Long-term growth expectations remain steady for the region at 5-10% up to $44.5B by 2020. The 2018 market was estimated to be around $37B. This would be an 11% CAGR. The Macau government lowered expectations for 2019 recently expecting $11.3B in taxes stemming from gaming in 2019. In the first 10 months of 2018, the government has already collected $10.95B. Longer-term, volatility expected as the region is more exposed to trade policy. Chinese consumption estimates are for 10-13% growth at a 4% GDP and any change there would impact sentiment in gaming. CSFB estimates that long-term penetration can be as high as 0.75% of GDP which is low relative to other developed markets.

There are a number of drivers impacting growth. (1) Casinos have shifted their focus towards mass market in the last two years as VIP which has drawn concern from many that GGR will decline in 2019. Consensus is for a modest Y/Y fall in 2019 as VIP gaming slows but bigger resorts are diversifying revenue bases more into dining and entertainment which will soften the fall. A recent report from Brookings estimated that two in three visitors to the island don't gamble which presents both a significant opportunity to bring in new players as well as an opportunity for non-gaming elements. Wynn remains committed to the high roller, diverging a bit from peers. According to the University of Macau, 5% of mass market players are 60% of revenues, so an important segment to target. (2) The opening of the $20B Hong Kong / Zhuhai / Macau bridge (HGZM) in October helped boost numbers as drive-time between the two has been cut to less than an hour. Visitors originating from Hong Kong rose 9.3% in November. The opening of the Lotus bridge will also boost traffic while infrastructure improvements in the city itself will make Macau more efficient. A light rail is expected to open in 2019. (3) The middle class continues to be a big impact on Macau's growth. China's middle class is around 400M. Also, reportedly only 8.7% of Chinese citizens hold a passport, so there's significant room for more outbound tourism which grew in 2018. At the WEF, Ctrip CEO Sun predicted passport holders would double by 2020 to over 240M.



2019 will be a year where some big questions will be renewal. Six answered. One major overhang will be license 2020 however casinos are set to renew their licenses in issue. In there is no policy in place to address the 2019 and did November, the city presented their policy for was expected. not discuss the process for renewal which may be pushed They did however signal that the timeline draw more out for operators to bid, a move which will uncertainty to a sector already facing issues from the global slowdown and trade tensions. MGM's license expires in 2020. And, as the US/China trade war continues to move forward, the license process could become a political chip much like M&A was used in 2018. CSFB estimates the cost of each license will be 1-5% of equity value. They see LVS at $5.1B, MGM at $4B, and WYNN at $8B.

There is a big positive catalyst hanging out for casino operators in Asia and that is Japan. The country's parliament approved an historic bill in July which will open up the $15.8B market to gambling and resorts for the first time. The move has long been held up due to concerns about addiction. The move will allow for integrated resorts, those which include casino games as well as entertainment, dining, and hospitality. It is seen as a way to boost foreign investment. According to the Nikkei, "An initial three casino licenses will be issued, with a 30% gaming tax to be paid to the central and local governments. Gaming areas are limited to 3% or less of total resort floor space. Entry will be free to international visitors but cost 6,000 yen ($50) for Japan residents, who will also be limited to three visits a week and 10 per month." LVS, MGM, Caesars, Hard Rock Int'l, Melco, Galaxy Entertainment, and Genting have all expressed interest. Japan is considered one of three of the most attractive regions for gaming with Brazil and India. It welcomes 16M international visitors in 2018, up 16% and would help with a potential slowdown in Macau.

<u>Animal Health & Pets</u>

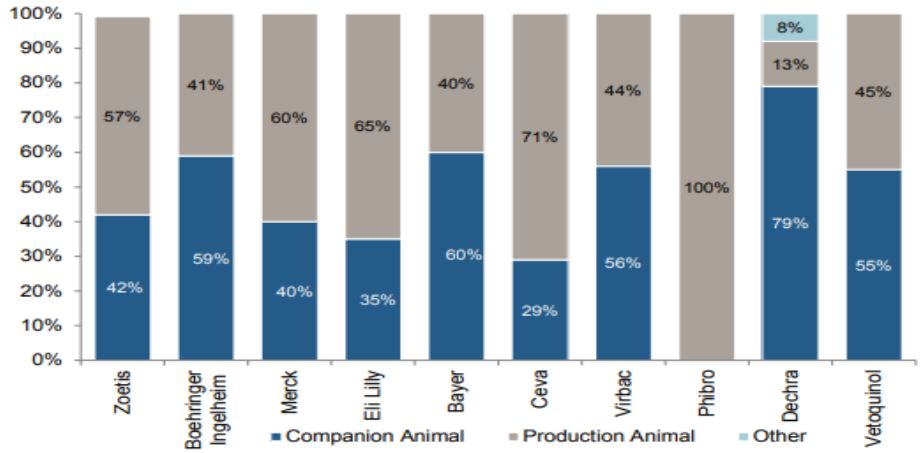
Animal health has proven to be one of the more resilient healthcare niches in the space with strong growth and fewer of the headwinds that plague the rest of the sector like government reform, reimbursement, and generic developments. The area has seen more focus since 2016 when Pfizer spun out **Zoetis (ZTS).** In the product space, there are six major players if you include large-cap pharma. In terms of revenue, ZTS is the largest at $5.3B, then **IDEXX Labs (IDXX), Boehringer Ingelheim**, **Merck (MRK)**, **Elanco (ELAN)** and **Bayer**. There are a number of smaller names in the space from **Ceva**, which had $1.2B in sales, and **Abaxis (ABAX)** to **Virbac**, **Philbro (PAHC)**, **Dechra**, and **Vetoquinol**. In terms of distributors / retail, there are four major players. **Henry Schein (HSIC)** is the largest and then smaller players are **Patterson (PDCO), Petmed (PETS)** and **PetIQ (PETQ).** Finally, there are some smaller biotech names focused on pet-health including **Aratana (PETX), Kindred (KIN),** and **Trupanion (TRUP).**

The space has seen a lot of changing dynamics as M&A, spin offs, and divestitures dominated the news cycle this year. Some news of note:

- Bayer Plans to Leave Animal Health Industry
- Elanco IPO Raises $1.5B in Spin from Eli Lilly
- Henry Schein Spinning Off Animal Health Business, Merge with Vets First
- General Mills Acquires Blue Buffalo for $8B

The global animal health market is roughly $150B and split into two segments, companion animals and livestock or production animals. Some names like PAHC are 100% production animals while Bayer, Boehringer, and Dechira are majority focused on companion animals.

Figure 6: Revenue mix : Companion Animal vs. Livestock, Leading Animal Health Companies, based on 2017 Revenue

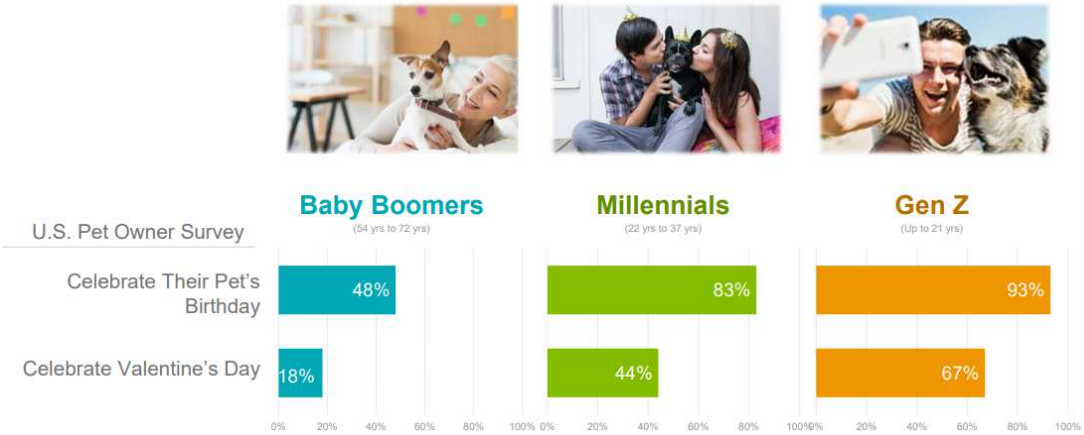


Source: Company data, Credit Suisse estimates

Livestock represents the largest segment of the space at roughly 60%. The world population is estimated to reach 9.8B people by 2050 so meat production will need to keep pace using more scarce resources. Merial, the animal health division of Sanofi, said in 2016 that animal protein production will need to rise 30% by 2030 to help feed the growing global population. The industry is growing 5-6% annually with drivers from global population growth and a shift to higher-quality food in both developed and emerging markets. CSFB estimates that the global production market is $19B and benefits from scarcity and government mandates for self-sufficiency. Both EMEA as well as Latin America are facing growing middle class markets which is necessitating more efficient animal control.

The companion animal space is also seeing steady growth. Recent surveys from the National Pet Owners Survey from the APPA estimating that 68% of households (~85M) have a companion animal. This is up from 56% in 1988, the first year they began collecting data. Pet adoption is also rising, up 2%. Overall expenditures in the industry are over $72B, according to the APPA, and up from $17B in 1994. In 2017, the breakdown on spending was $29B on food, $15B on OTC medicine and supplies, $17B on vet care, $6B on services such as grooming, and $2B on other items. Veterinarians control around 58% of the medicine/vaccines market followed by retailers like PetSmart/PetCo. Smaller player Petmed Express (PETS) has around a 5% market share.

Companion animals are also growing among younger demographics which are spending more and becoming a larger segment of the economy.



Key drivers in 2019 will be new patient traffic, higher volumes in diagnostic testing, priority on health and wellness in pets, and new prescription-only parasiticides. M&A will also likely continue with some smaller names like ABAX in focus as a potential bolt-on piece for a larger operator. Finally, online is expected to continue be a growing market for veterinary services.

Gene Therapy

Gene therapy continued to be one of the most hotly watched areas of biotech in 2018. The experimental treatment which uses genetic modification has drawn endless debate about the limits of what the new tech can do. According to Allied Research, the gene therapy market remains small in size right now relative to other major areas of pharmaceuticals but has potential to reach $4B by 2023.

What happened in 2018? Some noteworthy headlines:

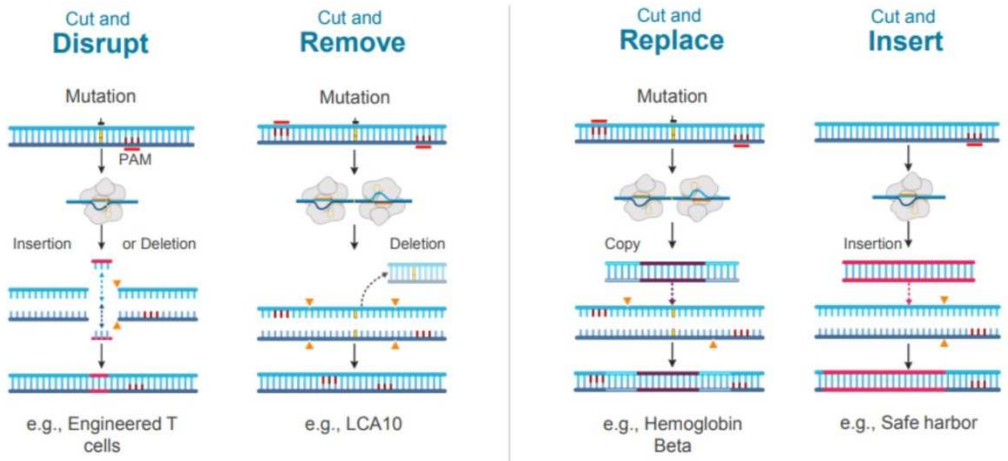
- Chinese researcher claims first gene-edited babies
- NIH Proposes Modernizing Human Gene Therapy Oversight
- FDA Approves Spark's Luxturna Gene Therapy
- CRISPR Paper Puts Group Pressure as Technique Could be rejected by body
- Novartis Acquires AveXis for $8.7B

The number of approvals however could jump as a significant number of indications moves towards pivotal trials. In August, the NIH proposed new guidelines for approval of gene therapy trials that would remove the protocol submission, review, and reporting requirements. Gene and cell therapy applications have spiked in the last two years with more than 1,500 INDs. At the 2018 BIO Convention in Boston, FDA director Scott Gottlieb said he expects the FDA to approve 40 gene therapies by 2022 and he was optimistic about cures for diseases like sickle cell by 2028. In July, the organization unveiled six new draft guidelines for the therapy. They focus on developing hemophilia, rare disease and retinal disorder gene therapies.

There were two approvals in the space in 2017 (Gilead's Yescarta and Novartis's Kymriah). In 2018, we saw more positive data which has helped de-risk elements of the therapy including Spark's Luxturna which was approved to treat inherited eye disease. Key names with clinical stage data upcoming include **Glaxo (GSK)** (EMA approval), **Uniqure (QURE)** (EMA approval), **Spark (ONCE)** (FDA approval), **Bluebird Bio (BLUE)** (Phase 2 and 3), AveXis (Phase 2 and 3), **BioMarin (BMRN)** (Phase 2 and 3), **Voyager (VYGR)** (Phase 1b), and **Sangamo (SGMO)** (Phase 1 and 2).

Pricing remains a concern. Spark's Luxturna costs $850,000 before discounts. Kymriah costs $475,000. Yescarta costs $373,000 and has the widest patient base of any drug at around 7,500 patients. The FDA has said they will solicit feedback from patients, companies, and others before drafting guidance framework in 2019.

CRISPR is the process most closely identified with gene therapy since it was first discussed in 2012. The process differs from traditional gene therapy as its more focused on only the mutated bit of the gene. CRISPR is a genome editing tool by which Cas proteins enter the body and recognize and eliminate problematic DNA. The process has its detractors who see the therapy as unethical but from a science POV the risks stem from introducing hundreds of unintended mutations into the genome.



Source: Editas Medicine

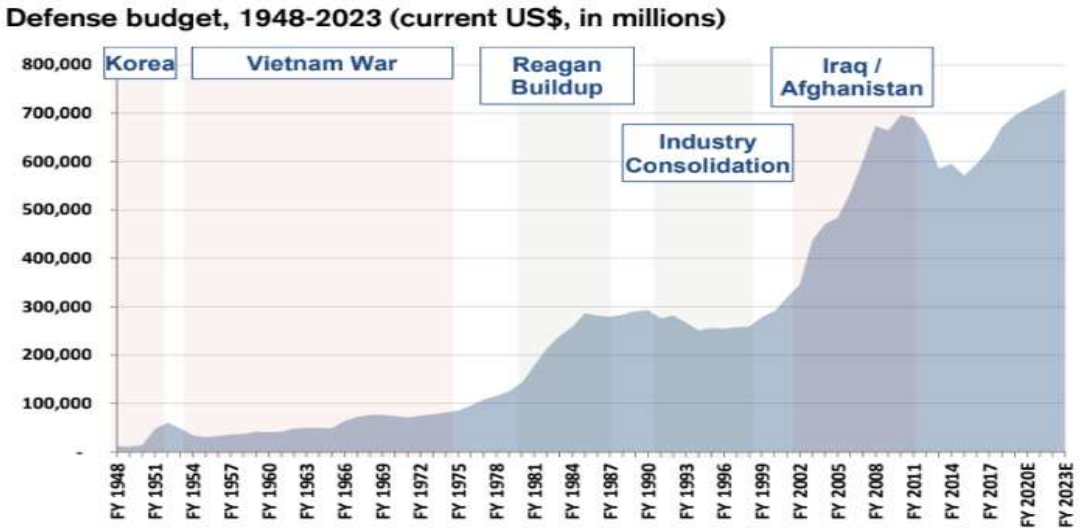
CRISPR took some big steps forward in 2018 which drew the controversial practice into the spotlight. In November, a researcher in China shocked the biotech community when he announced he had altered the embryos of two babies to make them resistance to HIV infection. The report has been lacking evidence and data but set off alarms from others as ethical concerns above use on humans have been pervasive for years. The US and many others have made it illegal to deliberately alter the genes of human embryos.

In August, the investor of CRISPR said that he believes the first human therapy is still 5-10 years away. In October, scientists working at the University of Pennsylvania reported that they had successfully altered the DNA of laboratory mice in the womb, a very early proof of concept.

Editas Medicine (EDIT) is probably the name most associated with gene editing and was co-founded by one of the scientists who discovered how to use CRISPR in humans. Feng Zhang was at the Broad Institute which won a patent for the process before UC-Berkley scientists and EDIT is reaping the benefit of the IP advantage. **Intellia Therapeutics (NTLA)** was founded by one of the UC-Berkeley scientists who took her IP to the private-sector. NTLA has partnerships with Regeneron (REGN) and Novartis (NVS). **Crispr Therapeutics (CRSP)** founded by yet another scientist involved in the creation of the process. CRSP has partnerships with Vertex (VRTX), Bayer, and others to develop gene editing therapies in 'high risk diseases.' They have programs in development in cystic fibrosis, DMD, hemophilia, sickle cell, and others.

Defense Spending and the New Age

President Trump has been a boon to military budgets committing $750B in December to the industry, a reversal from early concerns that he would shrink the budget. The higher estimate comes after an anticlimactic proposal of $686B in February. Since he took office, the President has pledged to rebuild the military by growing the Army, building a 350-ship Navy, and increasing the Air Force capabilities. The budget encompasses both the base spending (necessary spending to maintain the day-to-day operations) and the OCO which has a contingency budget for extraordinary events.



The Army's budget is much more cyclical than either the Navy or the Air Force due to a greater proportion of OCO due to exposure to overseas wars. Approximately 50% of the Navy's procurement budget goes towards shipbuilding. The US defense budget, globally, is the largest by any country at more than 30% of the global total. The largest programs in 2018 were the F-35 from **Lockheed Martin (LMT),** the Virginia submarine from **General Dynamics (GD) / Huntington Ingalls (HII),** the Ford aircraft carrier from HII, the AEGIS from GD/HII, and the KC-46A tanker from **Boeing (BA).**

What happened in 2018?

- L-3, Harris Merge in $19B Deal
- Trump Commits Record $750B to Defense in 2019
- North Korea Announces Denuclearization Plan
- General Dynamics Acquires CSRA for $9.6B
- TransDigm Acquires Extant for $525M
- Boeing Acquires KLXI for $4.25B
- Boeing Holds Talks with Woodward on Deal
- Trump Announces Troop Withdrawals in Afghanistan, Syria

Looking forward to 2019, the key early driver will be the President's budget request in February. This will be an early indicator of how much money will come into the sector in outer years and be devoted to contractors. Early indications are that Trump will request $700B for 2020, down from this year's big boost, however he went very low early in 2018 as well before raising it. There are some concerns amid industry-leaders that the President makes decisions very much in the moment and the number could fluctuate. We'll also get our earliest look at FY guidance from General Dynamics and

Raytheon (RTN). The second big event to watch will be the appropriations bills which come out in late Summer and early Fall. These will typically be signed by October.

There are a number of individual contracts assigned throughout the year. Domestic deals are signed daily and largely don't make much of an impact on stocks. International contracts are less often but still expected periodically. LMT has a high amount of exposure to the International deals (30% of sales) for both air defense and tactical aircraft. RTN also has a high exposure to International with over 32% of sales. Their Patriot missile defense system is often in play with other countries and RTN is most often associated with upside due to rising geopolitical tensions. In December, reports indicated that the US and Turkey were close to a deal.

A big event to watch in 2019 will be the replacement program for the Minuteman III. The current ground-based deterrent system is nearing the end of its lifespan. The Air Force is moving towards replacing it with a new ground-based strategic deterrent, aka GBSD. In August 2017, the AF selected **Boeing (BA)** and **Northrop Grumman (NOC)** as the two primary competitors to design a replacement. Both are entering their second of a three year process. The program is likely to cost $80B+ and would give significant long-term visibility to both companies.

Finally, hypersonic is a growing area of spend as well. Hypersonic weapons travel at Mach 5 or higher and are the leading development for both Russia and China. This requires the use of a non-traditional jet engine known as the SCRAMJET as well as different materials and development. There are two types of hypersonic weapons being developed: Cruise missiles and glide vehicles, the latter flying above 100,000 feet. The FY19 budget for the group is $256M, up from $85.5M in FY17. And going into the 2020 budget, the focus will again be on boosting both the US's offensive capabilities as well as its defending against its threat. Current defense capabilities are tailored for ballistic objects which follow predictable trajectories but hypersonic weapons would need to use a space-based sensor system. The top companies operating in the space are **Lockheed Martin (LMT), Raytheon (RTN),** and **AeroJet Rocketdyne (AJRD).** BAE Systems is also testing engines for flight.

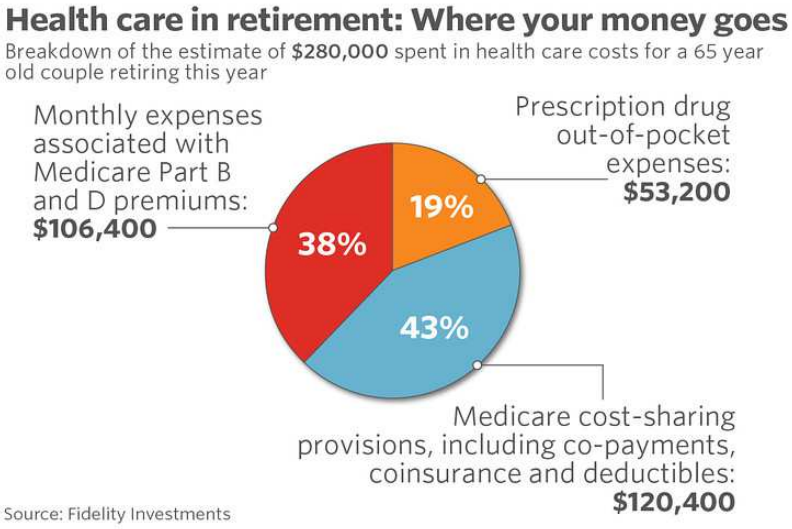
Senior Healthcare

The aging of the baby boomers, a group which will be around 70M people as of 2019, is expected to continue to have a significant impact on businesses and individuals in 2019. Life expectancy remains high with the CDC forecasting 78.6 years on average although slowing in 2018 due to rising deaths from opioids, pneumonia, influenza, and diabetes. BAML estimates that by the end of the decade the number of persons aged 65+ will outnumber children under five. Over the next 15 years, the percentage of the population over 65 will grow each year to almost 20%. Spending on healthcare will grow at an annualized rate of 5.8% over the next decade and grow at 1.3% faster than GDP.

What happened in 2018? Some key headlines:

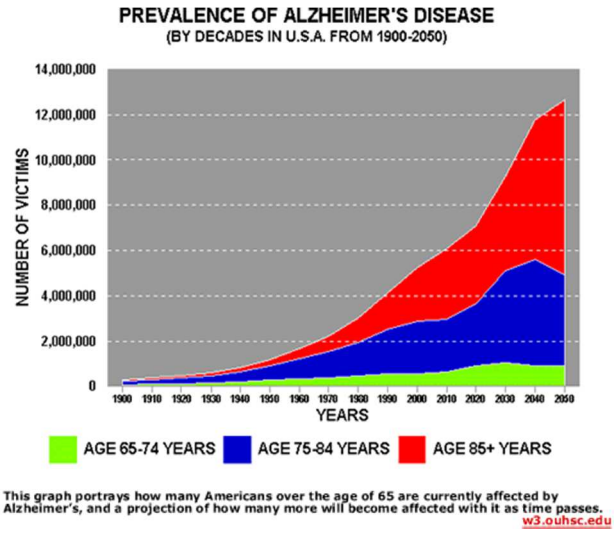
- Trump Proposes Lower Drug Prices
- House Passes Bipartisan Hospice Bill
- Fewer Patients Winding Up in Nursing Homes, Driving Facility Closures
- Older Americans Flock to Medical Marijuana
- Alzheimer's Burden Will Double by 2060, CDC Warns
- Social Security Strained as Baby Boomers Age
- More Retirees Becoming Renters, Study Shows

Healthcare is the most significantly impacted area from the ageing boom as the group accounts for 75% of healthcare spending each year with 80% of older adults suffering from at least one chronic condition. According to Fidelity, an average 65-year-old couple will spend $280,000 in retirement on healthcare. They estimate that 43% of that will go towards Medicare cost-sharing, 38% towards Medicare Part-B and D premiums, and 19% towards out-of-pocket prescription drug costs. The role of Baby Boomers can be seen on both the care-side and medical-side.



Healthcare REITs like **Welltower (WELL), HCP, Brookdale (BKD),** and **Sabra (SBRA)** are all beneficiaries of rising spending in long-term care in both nursing homes and demand for skilled nurses. Around 12M Americans need long-term care every year and more than half of that figure is above 65. The number is expected to double by 2050 to over 27M. Total spending for long-term care is expected to rise to $346B by 2040 with about 55% of Medicaid spending directed towards nursing homes and other facilities. According to BAML, Up to 2/3 of US adults aged 65+ need assistance with daily living activities and those that reach 65 will have a 40% likelihood of eventually entering a nursing home. The biggest risk to the nursing home model is federal reimbursement and changes to the Medicare rates. This will continue to be a headwind in 2019.

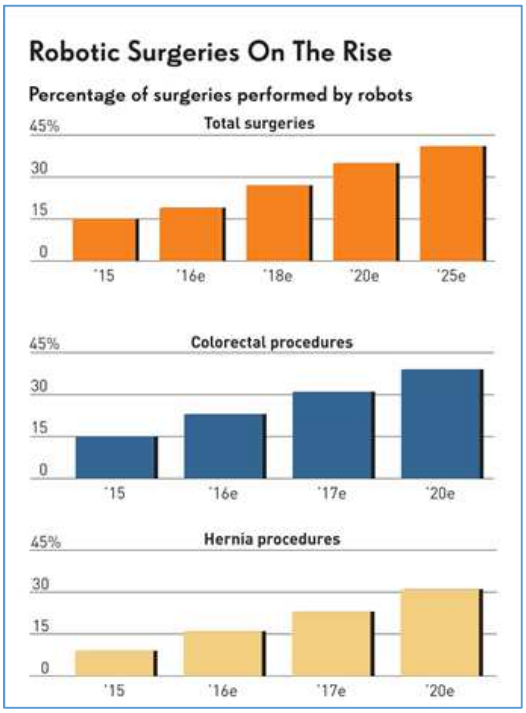
Hospice and home health care is also growing with more than 64% of patients 80 years of age or older. The volume of patients using hospice has also risen with 1.2M admissions in 2016. Medicaid spending on hospice topped $16.9B in 2016 with over 92% of that money was spent on routine care. Analytics firm Excel Health reported in August that home health admissions rebounded in 2018 after a slow-start in 2017. They note that hospice admissions have been growing pretty steadily over the last eight quarters. **Amedisys (AMED), LHC Group (LHCG),** and **Addus (ADUS)** are all benefitting from increased focus on home healthcare and hospice.



In biotech, Alzheimer's remains the key focus. An estimated 5.7M Americans have the disease with 5.5M over 65 impacted and it remains the sixth leading cause of death in the US. For seniors over 85, the number rises to 40% of deaths from Alzheimer's since 2000 has increased 123%. The societal cost from the disease is estimated to be around $277B in 2018 and could cost the nation over $1T by 2050. There is no current cure and trials for the disease have largely proven to be universal failures. **Biogen (BIIB)** and partner Eisai are developing a candidate with data expected in late 2019 or early 2020. Roche is also developing a treatment which started Phase 3 trials in March of 2018.

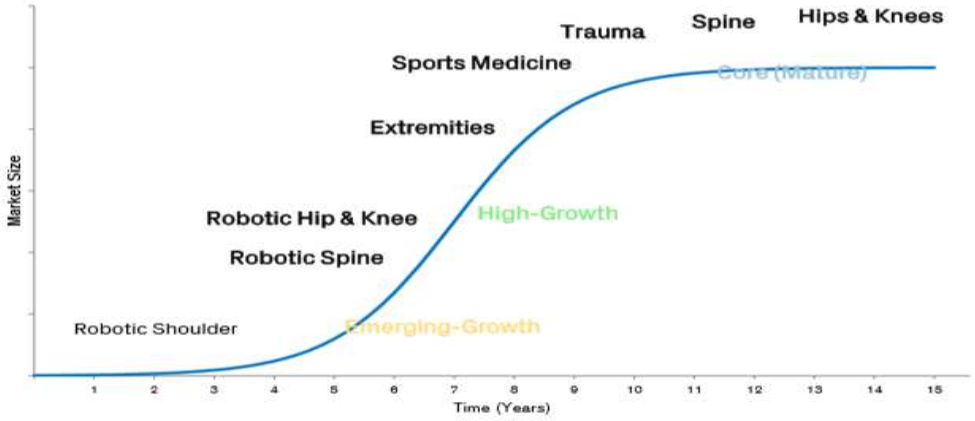
Medical Robotics

The growth of minimally invasive surgical procedures is one of the key areas for growth in med-tech and devices. MIS uses a number of techniques to operate with less damage to the body and thus reduce the amount of recovery time. It also has shown to have fewer complications and will cut down on hospital visit length. The growing ageing population is driving the need for more efficient, less traumatic procedures for the elderly. RBC estimates that more than 35% of all surgeries will be performed using robotic assistance by 2025. This is up from around 15% in 2015. One factor driving growth and adoption will be usage in emerging markets like Brazil, India, and China where the number of skilled practitioners is smaller than in developed countries.



There are two types of operation which are considered minimally invasive. Robotic surgery uses 3-D imaging to operate with better accuracy. In areas like knee surgery and hip surgery, the use of robotics is key to precision and predictability. In spine, robotics will reduce the use of x-ray exposure. But, not all MIS procedures use robotic assistance. Endoscopic surgery or "keyhole" surgery is being used more frequently across a number of indications. Physicians have expanded use of MIS throughout a number of indications from thoracic, colectomy, heart, kidney, neurosurgery, orthopedic and many other surgeries.

The global market for minimally invasive surgical systems is expected to grow to $40.5B by 2025, a CAGR of 10.9% according to BIS. This is being driven by surgical need and the rising geriatric population. CSFB expects the market for orthopedics to reach $4B by 2025 which includes both system sales as well as pull-through products. The number of surgical robots in use in hospitals has more than doubled since 2015 to over 3,000 while the usage mix has expanded in ortho and spine which now comprise around 16% of the overall market. Robotic ortho procedures are primarily in hip and knee while spine, trauma, and sports medicine are the next largest segments. Extremities such as joint reconstruction around shoulder and elbow is next largest.



Ortho Growth Cycle

Key products on the market today:

- **Intuitive Surgical's (ISRG)** da Vinci is used for general and urological surgery;
- **Stryker's (SYK)** MAKO system is used for hip and knee replacement;
- **Globus (GMED)'s** GPS robot is for spinal fusion surgery;
- **Medtronic's (MDT)** Mazor X robot is used for spinal fusion

What to watch for in 2019? On the product-side, we'll see updates from a number of companies including GMED and SYK. Intuitive Surgical will rollout their SureForm 60 which will expand the number of tools available to physicians in their fourth-gen systems. The device will add more range of motion and more intelligence to the da Vinci system. The FDA approved the 60mm stapler which will be an industry-first and can be used in general, thoracic, pediatric, and other

surgeries. It will also help them in Hernia which is a growing area. The company also hopes to expand more Internationally.

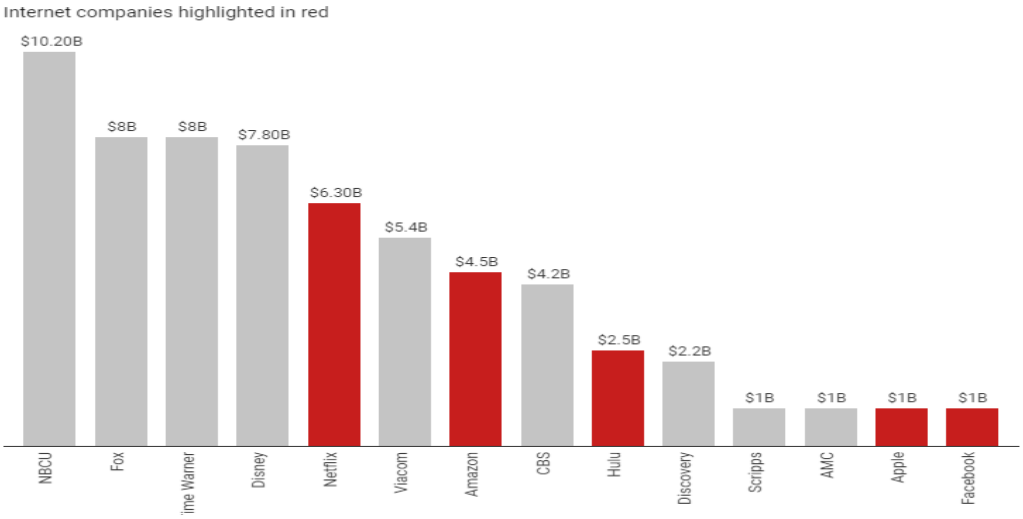
Medtronic's long-expected robotics platform dubbed Hugo, a direct competitor to the da Vinci, is also expected to roll out in FY20 after many delays. This is one of the largest R&D programs the company has ever undertaken and was originally expected to debut in late 2018 but delays in software integration and testing have pushed back its debut. MDT believes that the system can expand the market for MIS and give them significant share.

Zimmer Bio (ZBH) will roll out their Rosa robot for knee surgery in Q1. In 2017, the company acquired Medtech to expand into robotic surgery. The first procedure using Rosa for a total knee arthroplasty was done in December. Rosa is anticipating FDA approval in both brain and spinal surgery. For the year, ZBH expects to expand indications and gain market share in the space.

Big Hollywood Goes OTT and Content Spend Grows

The growth of digital media continued to explode in 2018 with **Netflix (NFLX), Hulu, Amazon (AMZN)** and others all making big strides in membership. They are also firmly in the mainstream for legitimacy with Netflix and HBO tying each other for 23 Emmy wins this year. AMZN had five wins. NFLX had 112 nominations, leading the pack. Netflix remains the leader in the space and reported almost 6M new adds in Q3 to 60M. Internationally, the company now has over 78M members streaming content from their site. Hulu continues to grow as well with over 20M subscribers while Amazon's Prime service, which includes their video content, has over 100M.

As more options surface for people to choose from, the focus now turns to original content where costs have been ballooning over the last two years. NFLX projects 2018 content spend to top $12B, up from around $9B in 2017 and $2B from 2013. This is about double what Amazon spends and four-times larger than what either HBO or Hulu spend according to UBS. One name which isn't often mentioned in the space is **Apple (AAPL).** The company spent $500M on original video content in 2017, according to Loup Ventures, and that figure is expected to rise to $4.2B by 2022. In early 2018, Re/Code looked at how internet companies stacked up relative to their traditional peers:

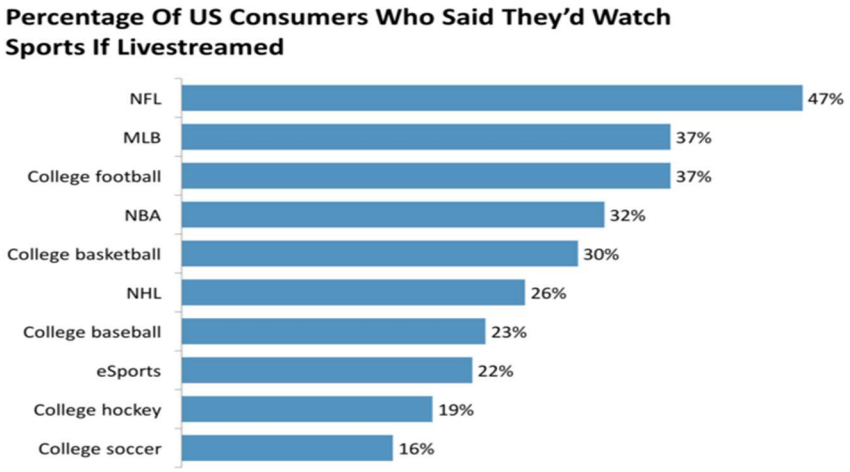


Netflix, Amazon, and Hulu all outspent smaller rivals like **Discovery (DISCA), Scripps (SNI),** and **AMC Networks (AMCX).**

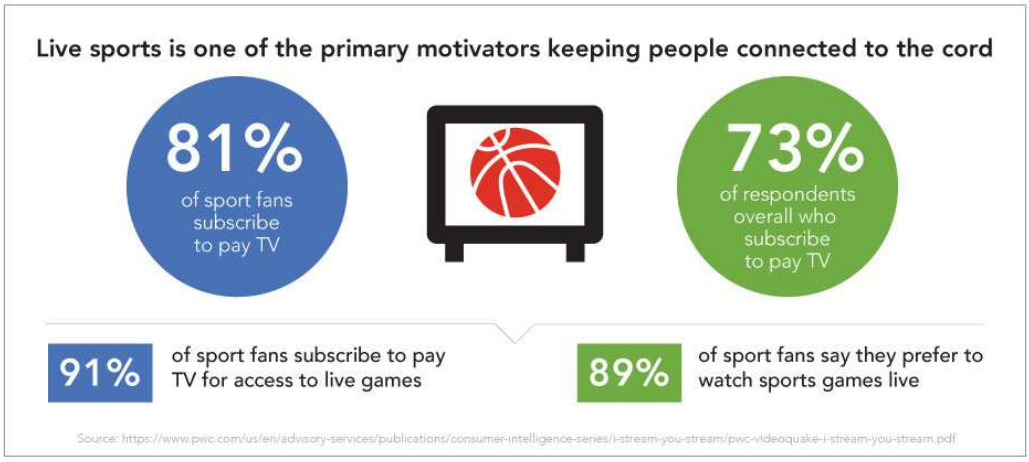
The only names which spend more are traditional Hollywood and in 2019 that will pose a risk to the well-established OTT brands as direct to consumer becomes more of a focus. **Disney (DIS)** is set to roll out its OTT service late next year and **AT&T (T)** is also planning a service in Q4. **Viacom (VIAB)** will also explore an OTT offering. And with it, they'll bring some sizable dollars to the space.

AT&T is looking to leverage their $85B Time Warner purchase and plans to expand HBO's budget. They can also bundle a number of Turner networks together to appeal to broader audiences. Warner Media already launched DC Universe, a DC-comics focused OTT offering in 2018. Disney's platform will be their 'priority' in 2019. According to Ampere Analysis, DIS will comprise 11% of the entire 2019 content spending globally and 23% of the US. The firm estimates Disney/FOX will spend $22B. **Comcast (CMCSA)** is another traditional outlet to consider. In 2018, they reached a deal to acquire Sky and now the combined company will be a major force. Ampere estimates that Comcast will be 9% of the global market and 14% of the US market for content spending, around $21B.

One big area in the space to watch in 2019 is sports. According to a survey from Morning Consult, the demand for streaming sports is growing. Nearly half of respondents would watch NFL if a streaming offering existed while 37% would watch MLB, 32% would watch NBA, and 26% would watch NHL. College sports would also attract sizable audiences.



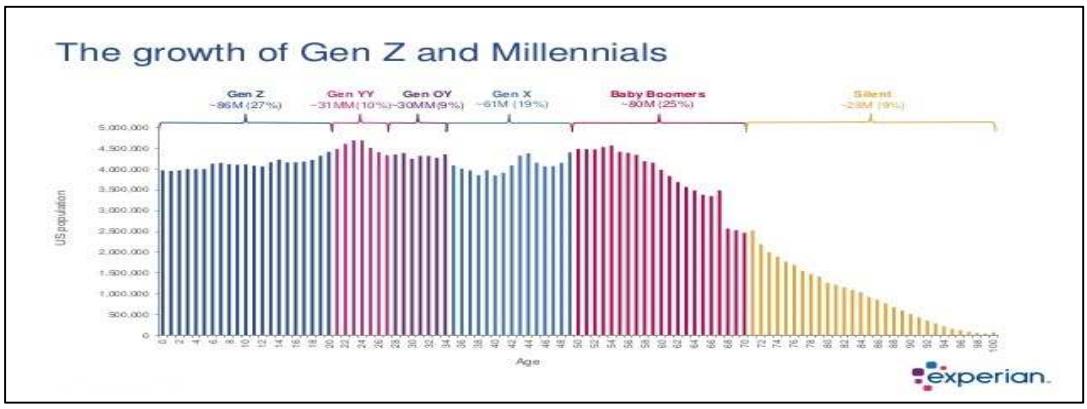
A separate survey from PwC found that 91% of sports fans subscribe to pay TV for live access to games and is one of the primary reasons for not 'cutting the cord.'



A number of companies have shown an interest in bring live sports to the OTT space. AMZN has shown a willingness to get into the space already. In 2017, they paid $50M for ten Thursday night football games and it renewed that deal in 2018. They also signed a deal with the Premier League to broadcast twenty soccer matches in the US. In late November, it was reported that the company was interested in bidding for some of Fox's 22 regional sports networks. The move is seen by many as shrewd as it would not only give them unique content but also a big platform for their growing ad business. Hulu has been streaming live sports for nearly a year now through an add-on to their basic service cost. In September, they noted that most subscribers to live TV were there for sports content and nearly half viewed the World Cup. Netflix said in September that they had no plans for live sports content. In 2019, many traditional media companies like ESPN/ABC and TBS will be within a year of renewals with the major leagues, so it will be a key area to watch as OTT makes its mark on the next-gen deals.

Millennials and Generation Z

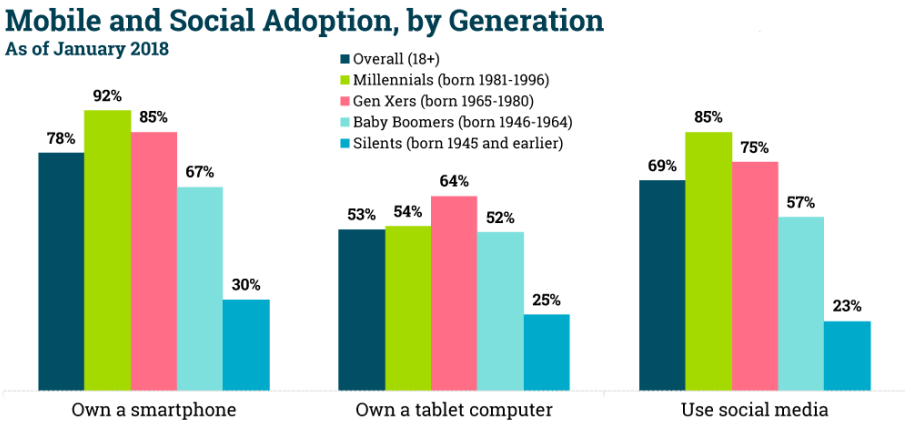
Millennials continue to be a growing force in the economy as they enter the workforce, drive family building, and hit peak spending years. And, increasingly Generation Z, is now driving technological adoption, social growth, and major shifts in retailing from apparel to food. This is presenting a unique challenge to companies which are looking to adapt to this growing segment of the population. According to Experian, the number of people under 19 in the US is around 86M people right now while Millennials are 31M. Together, these two groups make up nearly 40% of the population.



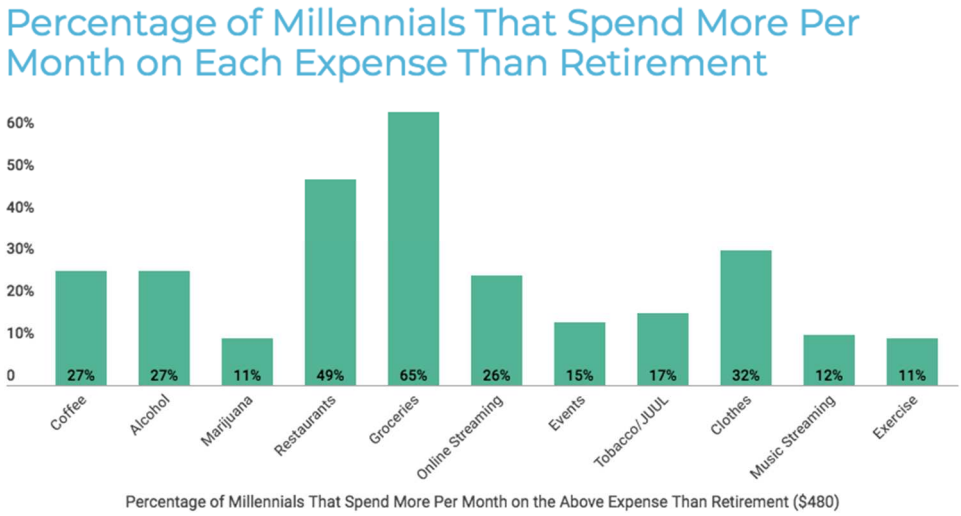
According to Bloomberg, Gen Z will move to around 32% of the global population in 2019, moving ahead of millennials. The latter group will represent the biggest proportion of age groups in the four largest economies (US, China, Japan, Germany) and the combined population will be around 2B. India's Gen Z population will reach 472M in 2019, more than double that of China. Immigration has been a main driver of Millennial growth and the generation is expected to peak in 2036 at 81.1M. From a spending POV, this is the most powerful demographic in terms of emerging market size. BAML estimates the total income of both groups is $21T (35% of the global gross income) and will reach $62T by 2030.

The groups which are most impacted by the younger demo are entertainment, tech, and the gig economy, which will be put squarely in focus in 2019 with the **Uber** and **Lyft** IPOs expected. They are also causing major shifts in mobile payments and housing.

Tech, especially driven by mobile, is the main focus for this generation. The Millennial generation is one which is 90% penetrated by smart phones. According to Pew Research, 85% of millennials use social media, by far the most concentrated of any demographic. According to BAML, this generation checks their phones 150X per day with 50B instant messages sent. Social media remains a top spot for this generation. **Facebook (FB)** continues to dominate the social media user landscape with their four main properties. Their core offering has over 2.27B MAUs while Instagram hit 1B MAUs in 2018. What's App remains huge internationally with 1.3B MAUs and Messenger has 1.2B. **Twitter (TWTR), Pinterest,** and **Snapchat (SNAP)** round of the world for US users.



The use of digital technology by this generation has also driven disruption in the food service industry. LendEDU put out a report earlier this year which stated that more and more millennials are choosing to eat out rather than save. They found that 49% spend more on dining out each month than put towards retirement. More than 25% are spending more on just coffee. More and more companies are building out digital ordering and other features to attract these groups. The average digital order is 20% higher than traditional orders made via a human cashier, according to E&Y, and those restaurants who use this tech have solidified its position as a favorite of Gen Z consumers. Companies like **Dominos (DPZ), McDonalds (MCD),** and **Starbucks (SBUX)** have been at the forefront of this shift. Delivery services are now also becoming a bigger factor. **Grub Hub (GRUB), Door Dash, Postmates, Just Eat**, and **Delivery Hero** are all competing in the space.



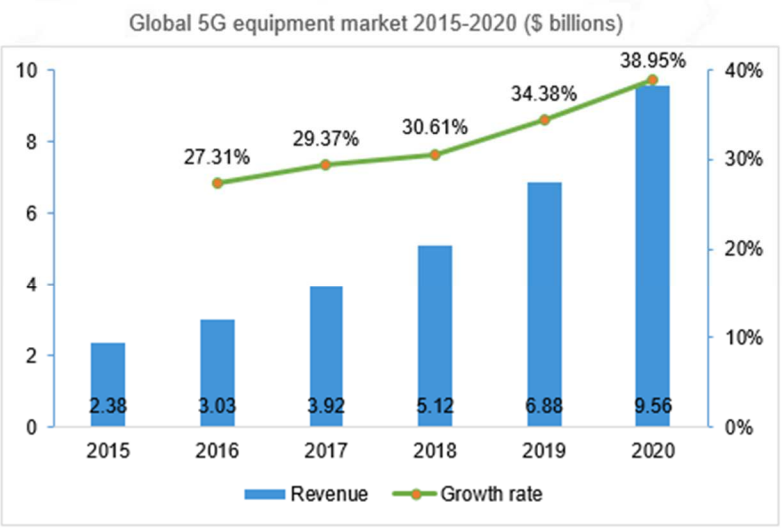
Finally, housing is an area which is being impacted by the younger demographics. According to Pew Research, home ownership rates among these groups is more than double what is was in 2014. In 2019, the expectation is that around 20% of the millennial population will be looking to move which will cause a major impact on the housing market. Among first-time buyers, nearly two-thirds are millennials. But, Gen Z is going to make a bigger impact according to a Property Shark report in November. The firm's survey work shows that the younger demographic is not only more optimistic about housing but 83% are planning to buy a home within the next five years. Some key characteristics: Gen Z is more likely to move into affordable markets, put less than $10,000 down, and they're OK buying less expensive existing homes which need work which is a tailwind for renovation leaders like **Home Depot (HD)** and **Lowe's (LOW). Pulte (PHM)** is one of the best positioned builders in affordable housing, especially in key areas of the US where millennials are looking, and screens cheap.

One key characteristic about this younger generation and housing is their need and want for their own research. This aspect, combined with their use of mobile, has been a tailwind for names like **Zillow (Z),** Realtor.com, Trulia, **RedFin (RDFN),** and other online real estate companies. According to Nationwide, 99% of millennials used the internet to find their home. This compares to 89% for Boomers and 77% for the Silent Generation. 58% of millennials used a mobile device which his about 12% higher than any other demographic.

<u>5G Growth</u>

The growth of big data has necessitated the development of faster networks with better latency which can adapt to the more connected world. From autonomous vehicles to more data-hungry smartphones, real-time gaming, and video streaming, we consume more data than ever before and our current infrastructure is not suited for its growth. The move

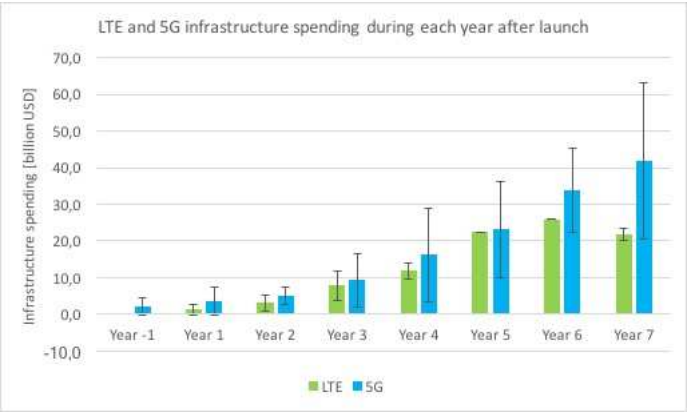
to 5G is expected to be the answer to this emerging issue. In fact, some have said that this new technology will be the next major revolution in tech which will allow companies to leverage new capabilities for consumers. The move to 5G will be a huge enabler for IoT growth as well as smart infrastructure development. It will make connected processes and communication exponentially faster while allowing for better response time. This will be critical importance as HD video becomes more commonplace, AI and machine learning become more critical, and emerging tech like VR/AR see greater adoption.



Source: Technavio

Deloitte says that the number of companies deploying 5G in 2019 will be 25 and that number will double to 50 in 2020. 72 operators are currently testing the technology. The number of handsets using 5G is set to jump to 15-20M by 2020, less than 1% of sales, before going to 100M in 2021. BAML estimates that the economic benefit of 5G is $275B with telcos building out the systems while $93B is to be spent on construction. And the 5G capex cycle is likely less in terms of dollars from the 4G cycle but higher margin with less infrastructure needed to be completely replaced. Capex budgets for telecoms are expected to remain flat in 2019/2020. One major reason for this, Deloitte speculates, is that "companies have pre-loaded spending by investing in denser fiber networks in anticipation of 5G in the future, as well as by purchasing 5G-ready radio hardware that can be upgraded to full 5G with software upgrades when the time for launch comes."

The beneficiaries of 5G's rollout are infrastructure and carriers. Chipmakers are poised to benefit and **Qualcomm (QCOM)** with an early lead going into the year. The company revealed their latest Snapdragon chip in December which has support for 5G tech. This is the first chip the company has released which can be paired with their 5G modems.



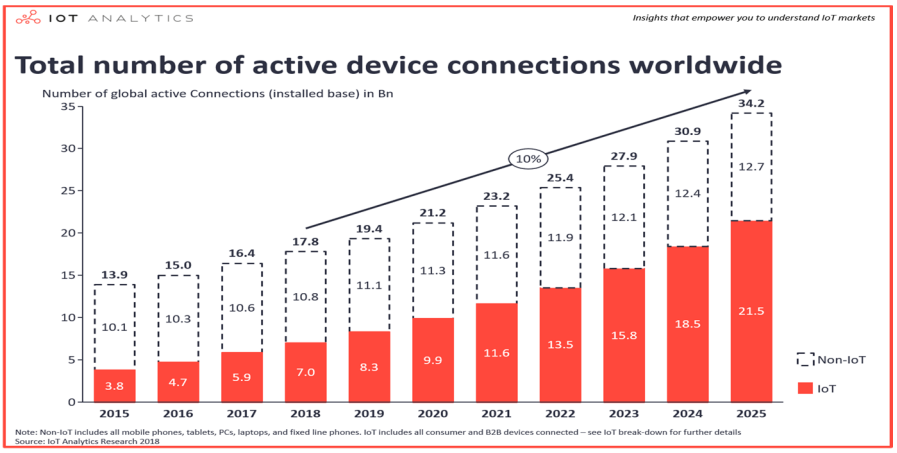
All three of the major telecom operators have plans for 5G which will advance in 2019. **Verizon (VZ)** will have its first residential operations in use in markets like Los Angeles before announcing plans for a nationwide roll out. This move has come with some criticism however as VZ uses non-standard tech which isn't technically 5G despite higher speeds. The company will switch to industry-standard in 2019. **AT&T (T)** is lagging behind their plan to roll out 5G in twelve markets for 2018 with just days left in the year. However, they announced 19 new cities for 2019 which will get their next-gen service. They have also noted a focus on enterprise for the early roll outs, including industrial manufacturing facilities in Texas. Both companies have plans with Samsung to build 5G phones in 2019. Apple will reportedly wait until 2020 for a 5G iPhone. **Sprint (S)** and **T-Mobile (TMUS)** are also planning 2019 launches followed by a nationwide expansion in 2020. The former is expected to roll out in nine markets while the latter in thirty cities.

The decade-long development of 4G saw around 200,000 towers added to the US infrastructure system and was over $200B to build out. The major carriers will all be adding small-cell towers with 5G and some estimates expect another

300,000 could be added over the next decade. GSM Association expects that the revamp of America's wireless networks could cost $500B. The primary names in the space are **American Tower (AMT)** and **Crown Castle (CCI).** Each owns and operates thousands of miles of fiber and towers, as well as land where new structures can be built.

Connected Tech

Connected tech continues to be a major theme from IoT to industrials and automotive to the home. The emerging technology is changing how people live as well as how they interact with other infrastructures. R&D investments continue to advance in industrial and manufacturing while security is also becoming big business, as expected, with more devices connecting.



In August, IDC estimated that more than 7B IoT devices were connected globally. This includes both consumer-side devices as well as B2B. The total number of connected devices was 17B, so IoT becoming a major percentage of the overall mix. IOT Analytics estimates the number of IoT devices that are active is expected to grow to 10B by 2020 and 22B by 2025. Bain predicts that annual revenues for vendors selling hardware, software, and other solutions is to exceed $470B by 2020 including about $85-$90B from industrials. McKinsey sees the market growing at 32.6% CAGR through 2020 although some estimates are calling for 39% CAGR with the market hitting $1T by 2024. Bain thinks industrials and healthcare are the markets where IoT is still in the earliest innings of development.

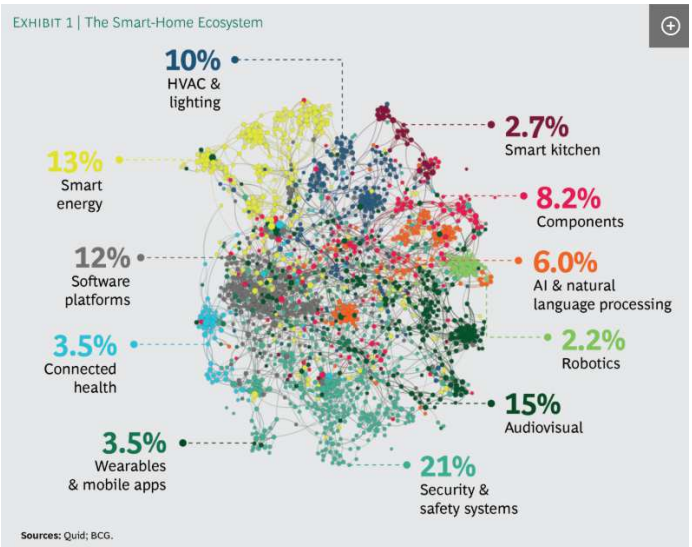
Consolidation/partnerships have been a key aspect of recent years. In 2018:

- **Siemens** bought Mendix for $730M, a low-code developer
- **Microsoft (MSFT)** announced a $5B investment in IoT initiatives
- **Rockwell (ROK)** invested $1B in PTC for an IoT partnership
- **Intel (INTC)** divested their industrial IoT company Wind River Systems to TPG
- **LogMeIn (LOGM)** sells Xively to Google for $50M
- **Amazon (AMZN)** bought Ring for $1B
- **GE** Announced it was spinning off GE Digital into a standalone IoT company

The industrial market is probably the most intriguing from a growth potential with companies like **Rockwell (ROK), Honeywell (HON),** and others transforming into more software-centric companies. Deloitte believes the industrial semiconductor market will grow to $49B by 2020, a 9.8% CAGR. Of that figure, $8.4B is on IoT. They noted that Y/Y growth for industrial semiconductor is faster than all of the semiconductor space which is expected to be flat in 2019. Automotive IoT is expected to be a $10.5B market by 2020.

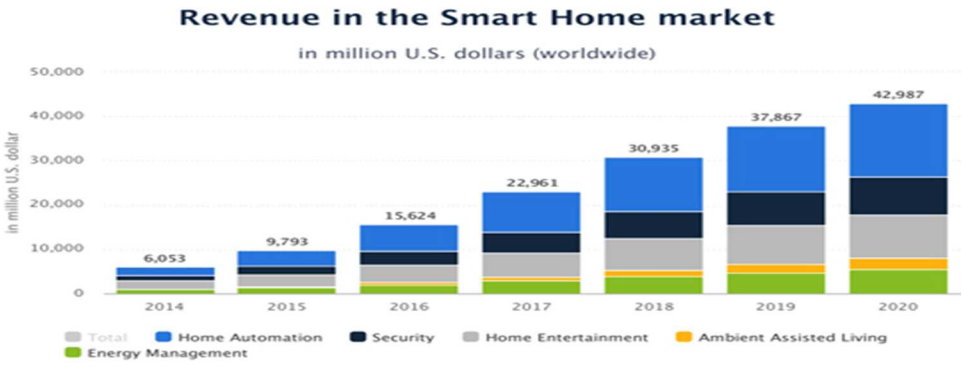
Wearables remain the most-consumer-facing aspect of connected tech and continues to mature with a focus on healthcare in 2019. This past year saw a big shift from basic wearables to smart tech as the global share of fitness trackers shrunk to 37%. Global shipments of wearables are expected to reach 190M by 2022, an 11% CAGR according to IDC. Smart watches are now the fastest growing segment, overtaking fitness trackers, with 58% share. **Apple's (AAPL)** Watch OS will remain the top market share at 35% by 2022 with Android gaining share to 22%. Samsung, **Fitbit (FIT),** and **Garmin (GRMN)** are other key names to watch.

In 2018, the connected home took another major step forward with devices disrupting everything from energy efficiency and safety to entertainment and daily tasks. Voice control got better with devices like **Amazon's (AMZN)** Alexa adding more skills and new standalone products added depth to the already growing landscape. According to BCG, the smart home market is led by Security (21%) and Audio/Visual (15%) while Software (12%), Energy (13%), and HVAC/Lighting (10%) are also growing.



The overall market for the smart home industry is expected to reach $54B by 2022, growing at a CAGR of 14.5%. IDC said that speakers and video products continue to drive growth in the space with those devices representing nearly two-thirds of the market. IHS Markit says that in 2010 less than 1% of homes in the US had a connected device like a thermostat or security system – and by 2025 that number will be 10%. The global market has grown to over $15B in 2018 with the Americas 48% of revenue although Europe a growing market. McKinsey notes that there are still struggles in the market as sales have lagged behind the growth in household penetration.

We've seen more deals in 2018 in the space as well. Earlier in the year, Amazon bought Ring, a maker of internet-enabled doorbells and cameras for $1B. In February, Get.no acquired a majority stake in Future Home AS, a maker of control, monitoring, and automation solutions for the home. Legrand acquired Netatmo, a maker of smart cameras and other connected objects. BCG noted that one of the most active areas for investment in the space has been safety/security with more than 20 deals done in the space in each of the last three years. They also note that Health/Wellness investments have increased in recent years. The largest deals in the space have been in HVAC with Nest's deal with **Google (GOOG)** and SmartThings' deal with Samsung. One factor which has become more apparent in 2018 is competition in the space as more consumer-facing products reach market. **IRobot (IRBT)** is a name which is at risk as they face competition from peers like Shark, Eufy, Samsung, and many others.



<u>Other themes to watch in 2019</u>

- **Interest Rates** – The tightening cycle continued in 2018 with four rate increases and the ninth since it began normalizing rates in 2015. The final hike in December came despite pressure from the White House to pause the hikes amid market volatility. Officials are expecting two hikes in 2019, down from the expectation for three, but the Fed coming off more Hawkish in their December comments. The normalization process has the biggest impact on banks and growth in NIM which is driving EPS expansion. A 10bps increase in NIM would add help the big banks' EPS with **BAC** up 5%, **Citi** up 5.9%, **JPM** up 4%, and **WFC** up 4.7%.

- **Cloud and AI** - Cloud remains an essential underlying theme which impacts all of the major names. Gartner estimates that Worldwide Public Cloud Services revenue will surpass $300B by 2021. These markets include SaaS ($117B market by 2021), PaaS ($27B market), Iaas ($83.5B market), and cloud services ($58B). AI has continued to grow as we have more connected devices and the amount of information processed continues to build. Accenture reported that technologies powered by AI will increase productivity by 40% through 2035 with IT, communications, and financial services the three industries poised to benefit most. Big data is something which every tech company is getting involved with as its market size grows. The market is expected to grow at 26%

CAGR to over $118.5B by 2022. This is driving demand in areas like data warehousing and advanced analytics.

- **Break Up Big Tech** – In the Fall, Washington and Silicon Valley squarely faced off with the President publicly sparring with Twitter and others due to alleged bias. Facebook, Google, and others testified in front of congress as well over privacy issues and use of personal data. With the animosity came calls to break up the big tech companies and in 2019 it could get more momentum**. Alphabet (GOOG), Amazon (AMZN), Apple (AAPL), Facebook (FB),** and others could be targeted. Antitrust rules have already been explored in Europe against the companies.

- **Liquidified Natural Gas (LNG)** – The LNG market has matured over the last 2-3 years to become an integral part of the energy market. Continued production in US shale gas production has pushed prices to 15-year lows and led to a big surge in export interest for LNG. Imports of LNG set a record in 2018 growing 8.5% with the largest demand from China, Japan, South Korea and India. Next year is expected to remain strong before a Russian pipeline goes online in 2020 and Japan restarts some projects. US export capacity is expected to double by 2030 with about 90MMtpa of FIDs in the next 2-3 years. The overall market is estimated to be around $90B. The majority of contracts in LNG are long-term (20+ years) and 20% of those will expire by 2020. The next ten years will see over 80% of global LNG trade renegotiated, according to Bloomberg. Key names in the space include **Cheniere (LNG)** and **Golar LNG (GLNG).**

- **Cyber security** – The group again took center stage in 2018 as the geopolitical hacking scandals crossed the headlines and risks grew. Governments, companies, and individual risk all rose this year as poor practices were exposed and the stakes increased. According to Varonis the number of targeted breaches is rising 25% per year on average with 130 large-scale attacks per year. The average amount spent by organizations to protect against a cyber-attack rose 23% while the average cost of a malware attack rose to $2.4M. IoT attacks were up 600% as more connected devices enter the consumer space. Email remains the biggest source of malware as phishing attacks are most common. **Cyber Ark (CYBR)** said that 56% of IT managers believe those style attacks are the top threat faced. Other key names in the space are **FEYE, PANW, CHKP, ZS, SPLK,** and **FTNT.**

- **Franchisees Fight Back** – In late 2018, several stories started to emerge in the casual dining space with franchisees increasingly worried about cash flows after years of weak traffic. **McDonalds (MCD)** operators are considering an association to take their concerns to the franchisor. The group is feeling heat after years of remodels, changes to the menu, added tech offerings, and challenges to find and keep workers. The MCD issue would be a very visible move and likely trigger wider looks across the industry. **Jack in the Box (JACK)** franchisees publicly complained about the company's CEO and wanted representation on the board in October. **Tim Horton's (QSR)** franchisees sued their franchisor in August. **Subway** franchisees publicly complained in late 2017 after a 25% drop in traffic.

Investment Theme Portfolio of 15 Stocks

Components: *CGC, MLCO, ZTS, BLUE, AJRD, RTN, LHCG, MDT, GMED, DIS, FB, GRUB, Z, ROK, MSFT*

▲ Ticker	Company	Market Cap	P/E	P/S	P/B	P/FCF	EPS next 5Y	Sales past 5Y	Price
AJRD	Aerojet Rocketdyne Holdings, Inc.	2.56B	19.69	1.29	6.17	10.47	20.00%	13.50%	32.75
BLUE	bluebird bio, Inc.	4.92B	-	124.54	2.43	-	-	153.30%	91.25
CGC	Canopy Growth Corporation	6.22B	-	88.29	5.07	-	-	-	26.81
DIS	The Walt Disney Company	150.97B	13.88	2.54	3.07	17.59	7.32%	5.70%	100.35
FB	Facebook, Inc.	358.47B	16.73	6.91	4.45	20.54	17.90%	51.50%	123.92
GMED	Globus Medical, Inc.	4.11B	26.85	5.92	3.56	32.53	11.95%	10.50%	41.38
GRUB	GrubHub Inc.	6.18B	59.93	6.69	4.29	30.32	26.26%	52.70%	67.84
LHCG	LHC Group, Inc.	2.85B	50.05	1.79	2.11	79.49	18.23%	11.00%	88.79
MDT	Medtronic plc	117.42B	24.85	3.87	2.33	-	8.57%	12.50%	85.80
MLCO	Melco Resorts & Entertainment Limited	8.68B	27.95	1.70	3.39	-	12.82%	5.30%	17.22
MSFT	Microsoft Corporation	745.87B	22.48	6.49	8.40	39.09	13.68%	7.20%	94.13
ROK	Rockwell Automation, Inc.	17.16B	16.57	2.57	10.70	23.39	12.50%	1.00%	141.77
RTN	Raytheon Company	42.37B	15.99	1.60	3.70	26.50	26.43%	0.80%	146.67
Z	Zillow Group, Inc.	3.94B	-	3.15	1.73	-	-	-	28.32
ZTS	Zoetis Inc.	39.16B	26.99	6.85	18.06	31.63	16.64%	4.10%	79.28

99 M&A Candidates for 2019

Components: *AGCO,AGX,AJRD,ALLK,AMCX,APPF,AR,ARNC,ASGN,ATSG,ATUS,AXTA,B,BDC,BEAT,BG,BL,BRKR,BWA,CARB,CARS,CASY,CBPX,CHEF,CHSP,CLVS,CMC,COLM,CR,CRS,CVLT,CWST,DECK,DIN,DK,EIG,ELY,ENTG,EPAY,EVR,EXEL,EXPO,FIVN,GKOS,GLUU,GMED,GWR,HTLD,HXL,IDA,ITGR,JACK,LAZ,LBRT,LNTH,LPLA,MCS,MDSO,MED,MGRC,MLNX,MMS,MOH,MPWR,MSA,NAV,NLSN,NMIH,NSP,OLLI,ON,PAGP,PE,PENN,PFPT,POR,POWI,PSTG,PVTL,RETA,REXR,RTEC,RUTH,SAGE,SAVE,SBGI,SEE,SMTC,SSD,THRM,TPH,TTEK,TTMI,TWNK,UPWK,VRTU,VSM,WRE,ZS*

2018 M&A Review

Worldwide M&A rose to a record $3.3 Trillion while overall deal activity fell 9% in the first three quarters of 2018. The third quarter of 2018 registered a 32% decline compared to the second quarter of the year, and marks the slowest quarter for global deal making since the second quarter of 2017. Cross-border M&A activity totaled US$1.3 trillion, a 56% increase compared to first nine months of 2017 and the strongest first nine months for cross-border M&A since 2007.

Exit Multiple Matrix - Year to Date Average Rank Value / EBITDA — Jan 1 – Sept 30

2018 UP / 2018 DOWN	World	2017	Americas	2017	USA	2017	Canada	2017	EMEA	2017	Europe	2017	UK	2017	Asia ex. Japan	2017	Japan	2017
Consumer Products and Services	13.3x	14.3x	12.3x	14.2x	12.5x	17.3x	10.7x	10.7x	14.0x	11.1x	14.2x	10.1x	16.4x	8.2x	12.2x	22.6x	19.2x	13.0x
Consumer Staples	15.6x	14.0x	12.2x	14.3x	9.7x	16.6x	41.5x	-	13.8x	9.3x	13.1x	9.1x	8.1x	8.1x	18.3x	18.6x	13.2x	13.0x
Energy and Power	13.3x	14.2x	12.0x	16.7x	13.1x	17.9x	7.8x	17.3x	12.3x	12.5x	12.8x	13.1x	16.3x	19.3x	18.1x	14.9x	7.4x	-
Healthcare	19.8x	16.6x	16.9x	14.0x	18.1x	13.9x	14.4x	14.4x	13.6x	15.3x	13.6x	15.1x	14.2x	17.7x	22.7x	19.6x	6.5x	17.6x
High Technology	18.1x	15.3x	19.2x	18.0x	21.0x	19.5x	10.2x	15.2x	13.7x	12.7x	14.0x	12.7x	13.1x	12.5x	20.0x	17.1x	18.5x	10.0x
Industrials	14.1x	14.5x	12.4x	15.0x	12.8x	15.8x	10.3x	24.3x	12.2x	12.1x	12.4x	12.2x	8.6x	6.9x	16.5x	17.4x	8.2x	7.9x
Materials	13.9x	13.3x	16.3x	14.1x	14.9x	16.9x	22.6x	14.0x	9.7x	9.8x	8.7x	10.4x	9.7x	9.7x	16.8x	15.1x	9.5x	10.7x
Media and Entertainment	15.2x	14.4x	13.2x	10.4x	10.2x	10.1x	9.2x	7.0x	11.2x	13.8x	10.3x	13.9x	8.2x	13.2x	19.4x	21.1x	21.0x	7.3x
Real Estate	19.2x	22.4x	26.7x	23.2x	26.7x	23.2x	-	24.0x	18.9x	25.6x	20.2x	25.6x	4.7x	4.7x	16.7x	21.4x	22.6x	14.7x
Retail	13.5x	13.4x	15.7x	12.5x	13.8x	12.2x	17.8x	17.8x	12.8x	10.6x	12.8x	9.8x	15.4x	5.7x	17.7x	20.6x	11.2x	12.7x
Telecommunications	18.0x	12.2x	16.3x	9.6x	9.3x	8.6x	14.0x	14.0x	14.2x	11.4x	14.2x	9.5x	-	-	21.7x	15.1x	-	5.3x
Average Industry Total	15.5x	14.8x	15.0x	15.4x	14.9x	16.3x	14.4x	15.6x	12.9x	12.7x	12.9x	12.5x	12.4x	11.4x	18.2x	17.7x	14.4x	10.9x

Bid Premium Matrix - Year to Date Average Premium to 4 Week Stock Price — Jan 1 – Sept 30

2018 UP / 2018 DOWN	World	2017	Americas	2017	USA	2017	Canada	2017	EMEA	2017	Europe	2017	UK	2017	Asia ex. Japan	2017	Japan	2017
Consumer Products and Services	22.8	23.7	31.2	35.8	30.1	39.0	35.2	35.2	25.1	19.1	25.1	19.2	32.4	35.5	18.9	18.6	23.8	22.8
Consumer Staples	22.9	20.2	21.3	18.1	22.6	19.6	5.8	-	27.7	25.2	21.4	25.8	37.3	28.8	19.8	19.5	12.6	17.7
Energy and Power	27.6	21.8	23.6	19.4	20.9	20.7	28.4	20.2	27.0	26.3	24.9	25.2	25.5	11.2	29.4	23.1	23.6	23.6
Financials	25.8	28.5	27.7	33.2	28.1	32.3	23.1	23.1	25.8	27.9	25.6	27.9	28.5	24.5	23.6	24.5	27.3	15.4
Healthcare	25.8	27.9	38.8	34.5	42.4	39.9	31.6	26.4	34.5	36.1	33.7	36.3	34.8	28.7	16.6	15.7	32.9	32.9
High Technology	24.4	23.3	36.8	28.2	34.4	27.3	46.4	29.4	34.4	19.8	34.4	19.2	48.7	23.0	21.8	22.5	16.0	13.2
Industrials	24.1	25.2	24.4	35.1	23.8	30.3	27.7	47.5	27.2	22.1	26.9	21.9	45.2	45.6	22.6	21.6	25.4	24.4
Materials	25.5	28.4	28.0	30.8	21.3	37.8	28.9	30.6	15.0	22.3	17.9	23.1	18.7	31.3	21.1	22.5	19.3	12.6
Media and Entertainment	18.2	22.2	21.5	18.3	15.3	18.8	20.2	36.4	19.8	22.5	20.9	23.8	42.7	14.7	17.4	27.2	8.3	17.1
Real Estate	18.9	18.3	19.0	16.0	21.7	16.1	13.2	15.8	11.7	14.6	11.5	14.6	-	-	22.5	23.6	22.2	27.6
Retail	22.3	20.8	30.2	23.7	29.7	23.6	34.3	34.3	19.1	29.5	19.1	29.5	-	92.4	21.3	22.9	18.3	10.7
Telecommunications	20.7	29.2	12.6	39.3	15.1	29.9	17.1	17.1	36.6	30.5	36.6	35.1	-	-	18.2	24.3	-	41.9
Average Industry Total	23.9	24.9	27.8	29.6	27.0	29.1	28.4	30.7	25.6	23.6	25.4	23.2	37.2	30.4	21.0	22.0	20.2	17.6

The largest deals in 2018 were:

- **CIGNA (CI)** Announced a $67B Deal for **Express Scripts (ESRX)** in Managed Care
- **Takeda** Announced a $62B Deal for **Shire (SHPG)** in Pharma
- **Energy Transfer (ETP)** and **Energy Transfer (ETE)** Agreed to a $61.8B Merger in MLPs
- **IBM** Acquired **Red Hat (RHT)** in a $34B Deal in Tech
- **Comcast (CMCSA)** Acquired **Sky PLC** for $47.9B in Media
- **L-3 (LLL)** and **Harris (HRS)** Announced a $33.5B Merger in Defense Communications
- **T-Mobile (TMUS)** Announced a $26.5B Deal for **Sprint (S)** in Telecom
- **Marathon Petro (MPC)** Announced a $23.3B Deal for **Andeavor (ANDV)** in Refining
- **Broadcom (AVGO)** Acquired **CA Tech (CA)** for $18.4B in Tech
- **AXA** Announced a $15B Deal for **XL Capital (XL)** in Insurance
- **General Growth (GGP)** was Acquired by **Brookfield Property** in a $15B Deal in REITS

- **Dr. Pepper (KDP)** Announced a $13.9B Deal for **Keurig Green Mountain** in Consumer Goods
- **General Dynamics (GD)** Announced a $9.6B Deal for **CSRA**
- **Concho (CXO)** Announced a $9.5B Deal for **RSP Permian (RSPP)** in Oil & Gas
- **Diamondback Energy (FANG)** Acquired **Energen (EGN)** for $9.2B in Oil & Gas
- **ConAgra (CAG)** Announced an $8.1B Deal for **Pinnacle Foods (PF)** in Consumer Goods
- **Barrick Gold (ABX)** Acquired **Randgold (GOLD)** for $7.8B in Basic Materials
- **Dun & Bradstreet (DNB)** was Acquired by Private Equity in a $6.9B Deal in Services
- **Bemis (BMS)** was Acquired by **Amcor** in a $6.8B Deal in Packaging

A few other notable deals by sector included:

Healthcare:

- **Sanofi (SNY)** Announced a $4.3B Deal for **Ablynx (ABLX)**
- **Celgene (CELG)** Announced a $9B Deal for **Juno Therapeutic (JUNO)**
- **Alexion (ALXN)** Announced an $855M Deal for **Wilson Therapeutics**
- **Emergent Bio (EBS)** Announced a $735M Deal for **Adapt Pharma**
- **Roche** Announced a $5.3B Deal for **Foundation Medicine (FMI)**
- **Glaxo (GSK)** Announced a $5.1B Deal for **Tesaro (TSRO)**
- **Novartis (NVS)** Announced a $2.1B Deal for **Endocyte (ECYT)**
- **J&J (JNJ)** Announced a $1B Deal for **HC2 (HCHC)**
- **Sanofi (SNY)** Announced an $11.6B Deal for **Bioverativ (BVIV)**
- **Eli Lilly (LLY)** Announced a $1.6B Deal for **ARMO Bio (ARMO)**
- **Illumina (ILMN)** Announced a $1.2B Deal for **Pacific Bio (PACB)**
- **Celgene (CELG)** Announced a $1.1B Deal for **Impact Bio**
- **Novartis (NVS)** Announced an $8.7B Deal for **AveXis (AVXS)**
- **Tivity (TVTY)** Announced a $1.3B Deal for **Nutrisystem (NTRI)**
- **KKR** Announced a $9.9B Deal for **Envision Health (EVHC)**
- **ResMed (RMD)** Announced a $750M Deal for **Matrix-Care**
- **Zoetis (ZTS)** Announced a $2B Deal for **Abaxis (ABAX)**
- **Fortive (FTV)** Announced a $2.7B Deal for **Advanced Sterilization Products**
- **Wellltower (HCN)** Announced a $2.1B Deal for **Quality Care (QCP)**
- **WellCare (WCG)** Announced a $2.5B Deal for **Meridian**
- **RCCH Health** Announced a $5.6B Deal for **LifePoint Hospitals (LPNT)**
- **Veritas** Announced a $4.9B Deal for **Cotiviti**
- **Centerbridge Partners** Announced a $1.4B Deal for **Civitas (CIVI)**
- **Boston Scientific (BX)** Announced a $4.2B Deal for **BTG PLC**
- **Stryker (SYK)** Announced a $1.4B Deal for **K2M (KTWO)**
- **Varian (VAR)** Announced an AUD1.585B Deal for **Sirtex**
- **Medtronic (MDT)** Announced a $1.64B Deal for **Mazor Robotics (MZOR)**
- **Altaris Capital** Announced a $1.1B Deal for **Analogic (ALOG)**

Tech:

- **GTT Communication (GTT)** Announced a EUR1.9B Deal for **Interoute**
- **Wedding-Wire** Announced a $933M Deal for **XO Group (XOXO)**
- **SAP AG (SAP)** Announced an $8B Deal for **Qualtrics**
- **Shutterfly (SFLY)** Announced an $825M Deal for **Lifetouch**
- **Best Buy (BBY)** Announced an $800M Deal for **Great Call**
- **MicroChip (MCHP)** Announced an $8.35B Deal for **Micro-Semi (MSCC)**
- **Microsoft (MSFT)** Announced a $7.5B Deal for **Git-Hub**
- **CommScope (COMM)** Announced a $7.4B Deal for **Arris (ARRS)**
- **Renesas** Announced a $6.7B Deal for **Integrated Devices (IDTI)**
- **Salesforce.com (CRM)** Announced a $6.5B Deal for **Mulesoft (MULE)**
- **SS&C Tech (SSNC)** Announced a $5.4B Deal for **DST Systems (DST)**
- **Adobe (ADBE)** Announced a $4.75B Deal for **Marketo (MKTO)**

- **Brookfield Business** Announced a $4.6B Deal for **Westinghouse**
- **Atos SE** Announced a $3.57B Deal for **Syntel (SYNT)**
- **KLA Tencor (KLAC)** Announced a $3.4B Deal for **Orbotech (ORBK)**
- **Francisco Partners** Announced a $3.4B Deal for **VeriFone (PAY)**
- **II-VI (IIVI)** Announced a $3.2B Deal for **Finisar (FNSR)**
- **Twilion (TWLO)** Announced a $2B Deal for **Send-Grid (SEND)**
- **Fortive (FTV)** Announced a $2B Deal for **Accruent**
- **Siris Capital** Announced a $2B Deal for **Web Group (WEB)**
- **Plantronics (PLT)** Announced a $2B Deal for **Polycom (PLCM)**
- **SAP AG (SAP)** Announced a $2.64B Deal for **Calidus (CALD)**
- **Cloudera (CLDR)** Announced a $2.375B Merger with **Horton-Works (HDP)**
- **Cisco (CSCO)** Announced a $2.35B Deal for **Duo Security**
- **PayPal (PYPL)** Announced a $2.2B Deal for **iZettle**
- **Thomas Bravo** Announced a $2.1B Deal for **Imperva (IMPV)**
- **MKS Instruments (MKSI)** Announced a $1B Deal for **Electro-Scientific (ESIO)**
- **Motorola Solutions (MSI)** Announced a $1B Deal for **Avigilon**
- **Vista Equity** Announced a $1.94B Deal for **Apptio (APTI)**
- **Digital Realty (DLR)** Announced a $1.8B Deal for **Ascenty**
- **Lumentum (LITE)** Announced a $1.8B Deal for **Oclaro (OCLR)**
- **CVC** Announced a $1.8B Deal for **Converg-One (CVON)**
- **Cabot Micro (CCMP)** Announced a $1.6B Deal for **KMG Chemical (KMG)**
- **Adobe (ADBE)** Announced a $1.6B Deal for **Magento**
- **Workday (WDAY)** Announced a $1.55B Deal for **Adaptive Insights**
- **BlackBerry (BB)** Announced a $1.4B Deal for **Cylance**
- **SS&C (SSNC)** Announced a $1.45B Deal for **Eze Software**
- **Trimble (TRMB)** Announced a $1.2B Deal for **Viewpoint**
- **Inovalon (INOV)** Announced a $1.2B Deal for **ABILITY Network**
- **Roper (ROP)** Announced a $1.1B Deal for **PowerPlan**
- **Sycamore Partners** Announces a $1.1B Deal for **Commerce-Hub (CHUBA)**
- **Quad-Graphic (QUAD)** Announced a $1.4B Deal for **LSC Comm. (LKSD)**
- **Vista Equity** Announced a $1.95B Deal for **Mind-Body (MB)**

Consumer:

- **Marriott Vacations (VAC)** Announced a $4.7B Deal for **Ilg (ILG)**
- **Siris Capital** Announced a $4.4B Deal for **Travelport (TVPT)**
- **Wal-Mart (WMT)** Announced a $16B Deal for **FlipKart**
- **Inspire Brands** Announced a $2.3B Deal for **Sonic (SONC)**
- **Duration Capital** Announced a $580M Deal for **Bojangles (BOJA)**
- **NexStar (NXST)** Announced a $6.4B Deal for **Tribune (TRCO)**
- **Gray TV (GTN)** Announced a $3.6B Deal for **Raycom**
- **Wyndham (WYND)** Announced a $1.95B Deal for **LaQuinta (LQ)**
- **Blackstone (BX)** Announced a $4.6B Deal for **LaSalle Hotels (LHO)**
- **LVMH** Announced a $2.6B Deal for **Belmond (BEL)**
- **United Natural (UNFI)** Announced a $2.9B Deal for **SuperValu (SVU)**
- **Eldorado (ERI)** Announced a $1.85B Deal for **Tropicana (TPCA)**
- **Stars Group (TSG)** Announced a $4.7B Deal for **Sky Gaming**
- **Leggett (LEG)** Announced a $1.25B Deal for **Elite Comfort**
- **Sirius (SIRI)** Announced a $3.5B Deal for **Pandora (P)**
- **JM Smucker (SJM)** Announced a $1.7B Deal for **Ainsworth Pet Nutrition**
- **US Food (USFD)** Announced a $1.8B Deal for **Service Group Foods**
- **Tyson (TSN)** Announced a $2.16B Deal for **Keystone Foods**
- **Energizer (ENR)** Announced a $2B Deal for **Spectrum (SPB) Lighting** Business
- **Pepsi (PEP)** Announced a $3.2B Deal for **Soda-Stream (SODA)**

- **Spectrum (SPB)** Announced a $3.5B Deal for **HRG Group (HRG)**
- **Coca Cola (KO)** Announced a $5.1B Deal for **Costa**
- **Nestle** Announced a $7.1B Deal for **Starbuck's (SBUX) Consumer** Business
- **International Flavor (IFF)** Announced a $7.1B Deal for **Frutarom**
- **General Mills (GIS)** Announced an $8B Deal for **Blue Buffalo (BUFF)**
- **P&G (PG)** Announced a $3.4B Deal for **Merck's (MRK) Consumer** Business
- **Michael Kors (KORS)** Announced a EUR1.83B Deal for **Versace**
- **Nidec** Announced a $1.08B Deal for **Whirlpool's (WHR) Embraco** Unit

Energy/Materials:

- **Holly Frontier (HFC)** Announced a $655M Deal for **Sonneborn**
- **Williams (WMB)** and **Williams Partners (WPZ)** Announced a $10.5B Merger
- **Enbridge (ENB)** Announced an $11.5B Merger with **Spectra (SEP), Enbridge (EEP, EEQ)**
- **EnCana (ECA)** Announced a $5.5B Deal for **Newfield (NFX)**
- **Western Gas (WGP)** Announced a $4B Deal for **Anadarko's (APC) Midstream** Business
- **Chesapeake (CHK)** Announced a $3.98B Deal for **Wild-Horse (WRD)**
- **Denbury (DNR)** Announced a $1.7B Deal for **Penn Virginia (PVAC)**
- **Cimarex (XEC)** Announced a $1.6B Deal for **Resolute (REN)**
- **TransOcean (RIG)** Announced a $2.7B Deal for **Ocean Rig (ORIG)**
- **Precision Drilling (PDS)** Announced a $1B Deal for **Trinidad Drilling**
- **Kosmos (KOS)** Announced a $1.225B Deal for **Deep Gulf Energy**
- **Ensco (ESV)** Announced a $3.9B Deal for **Rowan (RDC)**
- **WestRock (WRK)** Announced a $4.3B Deal for **Kapstone (KS)**
- **Greif (GEF)** Announced a $1.8B Deal for **Caraustar Industries**
- **Lyondell (LYB)** Announced a $2.25B Deal for **A. Schulman (SHLM)**
- **Univar (UNVR)** Announced a $2B Deal for **Nexeo (NXEO)**
- **Knauf** Announced a $7B Deal for **USG Corp (USG)**
- **Clayton, Dubilier & Rice** Announced a $2.54B Deal for **Ply-Gem (PGEM)**

Industrial/Utility:

- **Boeing (BA)** Announced a $4.25B Deal for **KLX (KLXI)** in Aerospace
- **TransDigm (TDG)** Announced a $4B Deal for **Esterline (ESL)** in Aerospace
- **Spirit (SPR)** Announced a $650M Deal for S.R.I.F. in Aerospace
- **CK Holdings (KKR)** Announced a EUR6.2B Deal for **Fiat's Automotive Business** in Auto Parts
- **Tenneco (TEN)** Announced a $5.4B Deal for **Federal Mogul** in Auto Parts
- **Taylor Morrison (TMHC)** Announced a $963M Deal for **AV Homes (AVHI)** in Homebuilding
- **Emerson (EMR)** Announced an $810M Deal for **Textron (TXT) Tools & Test** Unit
- **Applied Industrial (AIT)** Announced a $768M Deal for FCX Performance
- **Allied Industrial (AIMC)** Announced a $3B Merger with **Foritve's (FTV) Automation** Unit
- **Worley Parsons** Announced a $3.3B Deal for **Jacob's (JEC) Energy, Chemicals, Resource** Business
- **Colfax (CFX)** Announced a $3.15 Deal for DJO Global
- **United Rental (URI)** Announced a $2.1B Deal for Blue Line Rental
- **Brookfield Business (BBU)** Announced a $13.2B Deal for **Johnson's (JCI) Power Solutions** Unit
- **Hitachi** Announced an $11B Deal for **ABB's (ABB)** Power Grid Unit
- **Middleby (MIDD)** Announced a $1B Deal for **Taylor Co.** in Beverage Solutions
- **Polaris (PII)** Announced an $805M Deal for Boat Holdings
- **Woodward (WWD)** Announced an $859M Deal for L'Orange GmbH
- **Wabtec (WAB)** Announced an $11B Deal for **GE's (GE) Transports** Business
- **Science Applications (SAIC)** Announced a $1.5B Deal for **Engility (EGL)**
- **Thor (THO)** Announced a $2.45B Deal for Erwin Hymer
- **ITE Rail** Announced a $1.75B Deal for **America Rail (ARII)**
-

Financial:

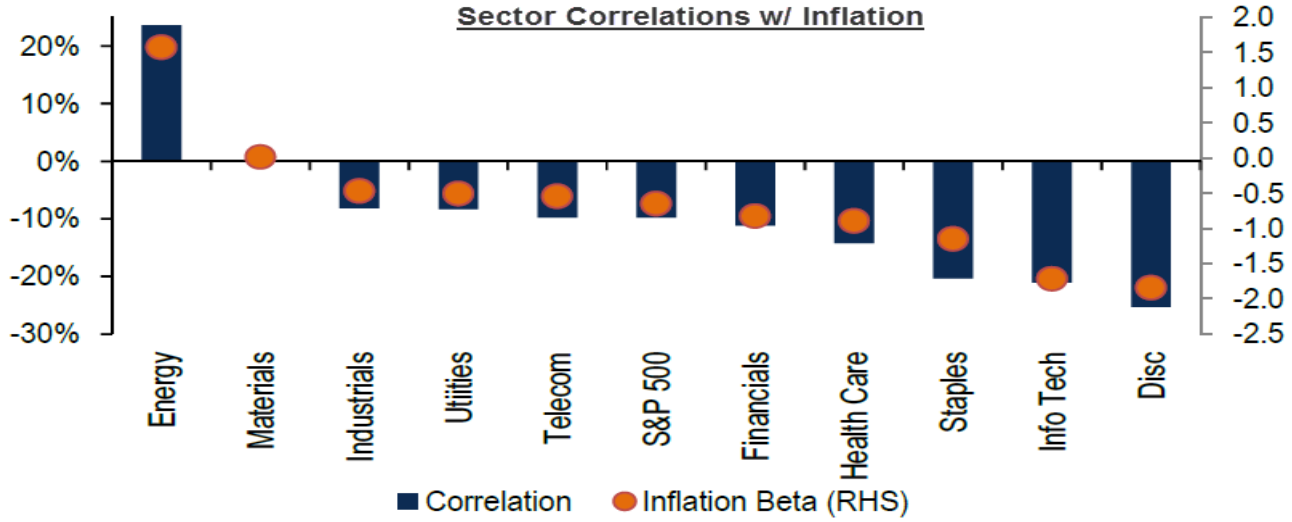
- **ProLogis (PLD)** Announced an $8.4B Deal for **DCT Industrial (DCT)**
- **Greystar** Announced a $4.1B Deal for **Education Realty (EDR)**
- **Oncor Electric Delivery** Announced a $1.275B Deal for **InfraREIT (HIFR)**
- **BOK Financial (BOKF)** Announced a $1B Deal for **Co-Biz (COBZ)**
- **Veritex (VBTX)** Announced a $1B Deal for **Green Bancorp (GNBC)**
- **Synovus (SNV)** Announced a $2.9B Deal for **FCB Financial**
- **Blackstone (BX)** Announced a $7.6B Deal for **Gramercy Property Trust**
- **TransUnion (TRU)** Announced a $1.4B Deal for Call Credit
- **Searchlight Capital** Announced a $2B Deal for **Mitel (MITL)**
- **Global Payments (GPN)** Announced a $700M Deal for Advanced-MD
- **Kemper (KMPR)** Announced a $1.4B Deal for **Infinity Property (IPCC)**
- **Hartford (HIG)** Announced a $2.1B Deal for **Navigator Group (NAVG)**
- **Apollo (APO)** Announced a $2.6B Deal for **Aspen (AHL)**
- **Lincoln (LNC)** Announced a $3.3B Deal for **Liberty Insurance**
- **AIG (AIG)** Announced a $5.56B Deal for **Validus (VR)**
- **Marsh and McLennan (MMC)** Announced a $6.4B Deal for **Jardine Lloyd Thompson**
- **Corporate Properties** Announced a $6B Deal for **WP Carey (WPC)**
- **CME Group (CME)** Announced a $5.5B Deal for **Nex Group**
- **Hellman & Freidman** Announced a $3.02B Deal for **Financial Engine (FNGN)**
- **IHS Markit (INFO)** Announced a $1.856B Deal for **Ipreo**
- **SilverLake** Announced a $3.5B Deal for **BlackHawk Network (HAWK)**
- **Apollo (APO)** Announced a $3.5B Deal for **One Main (OMF)**
- **Fidelity National (FNF)** Announced a $1.2B Deal for **Stewart (STC)**
- **Virt Financial (VIRT)** Announced a $1B Deal for **ITG (ITG)**
- **State Street (STT)** Announced a $2.6B Deal for **Charles River Development**
- **Blackstone (BX)** Announced a $3.07B Deal for **Investa Office Fund**
- **Fifth Third (FITB)** Announced a $4.7B Deal for **MB Financial (MBFI)**

Utility

- **CenterPoint (CNP)** Announced a $6B Deal for **Vectren (VVC)**
- **Next-Era (NEE)** Announced a $6.475B Deal for Gulf Power and $1B Deal for **Trans Bay Cable**
- **Aqua America (WTR)** Announced a $4.275B Deal for Peoples
- **Dominion (D)** Announced a $14.6B Deal for **SCANA (SCG)**
- **SJW (SJW)** Announced a $1.1B Deal for **Connecticut Water (CTWS)**

Sector Breakdowns

****My goal here is to provide a clear and concise view of key valuation metrics, management efficiency ratios, and YTD performance to show what worked in 2018. I then briefly touch on some of the top fundamental names in each group. This is a brief analysis that can serve as a guide throughout the year as we see sector trends develop by closely monitoring earnings reports. It is important to remember that these are current snapshots and projections, and one must due his/her due diligence throughout the year following the earnings reports and management commentary, as the trends in these metrics are more important than the metrics themselves. I strongly encourage you to read the most recent earnings transcript and transcripts from investment conferences to better understand these companies. Active sector rotation has become more vital than ever in managing portfolios throughout the year, so this section can serve as a guide as to the best of breed type names to target. I would note that late cycle favors free cash flow over earnings or sales and it is also a time to favor companies only burning cash through R&D and not increased capex spending or leverage.****

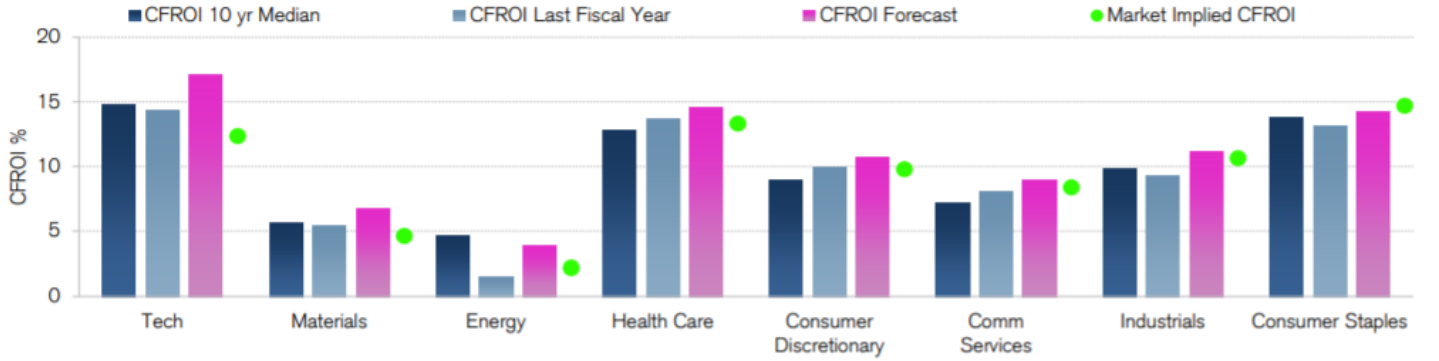


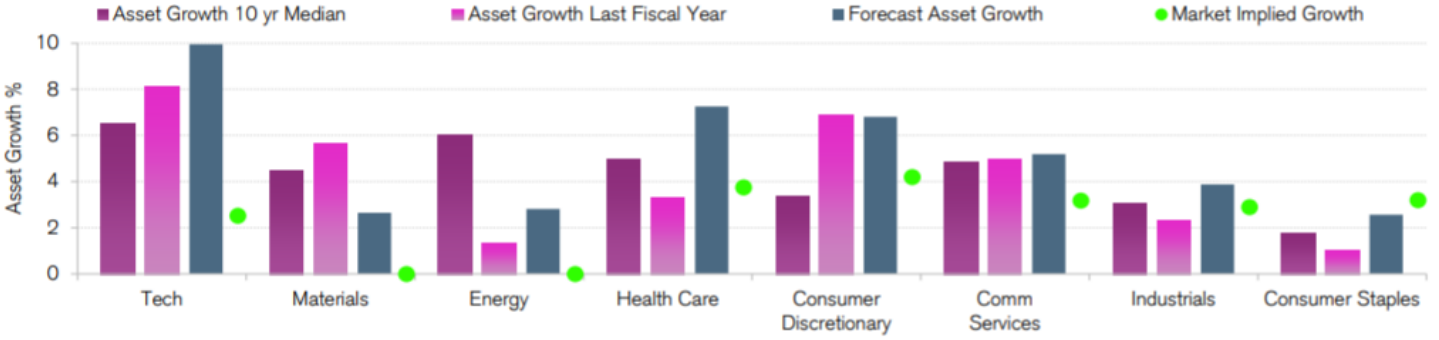
Sector Correlations to Macro Factors and Relative Performance

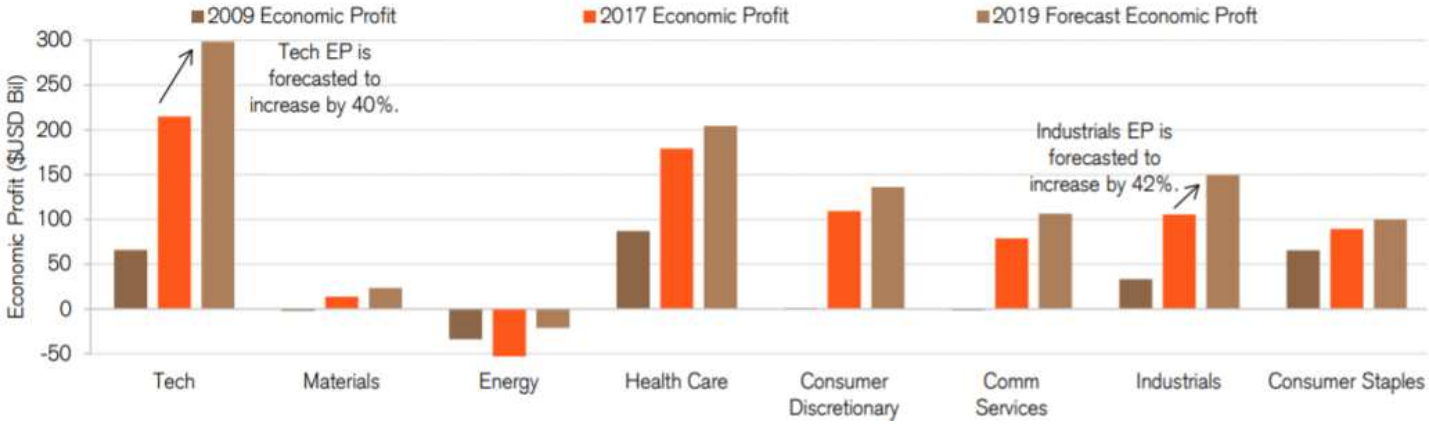
	GDP	Inflation	Nominal Rates	Real Rates	USD	Oil	China
Comm Svcs	-0.13	-0.18	-0.81	0.71	0.07	-0.02	-0.04
Discretionary	-0.17	-0.13	-0.08	0.56	0.14	-0.08	-0.06
Staples	-0.34	-0.47	-1.56	-1.61	0.04	-0.07	-0.14
Energy	0.16	0.66	2.05	-0.94	-0.19	0.23	0.06
Financials	-0.20	-0.02	-1.38	2.71	0.06	-0.05	0.01
Health Care	-0.23	-0.34	-0.49	-2.07	0.04	-0.04	-0.17
Industrials	0.11	0.01	0.62	0.71	-0.03	-0.02	0.04
Technology	0.26	0.06	1.29	0.67	0.02	0.02	0.13
Materials	0.07	0.53	1.31	-0.72	-0.16	0.03	0.13
Real Estate	0.07	0.08	0.48	-2.62	-0.08	-0.03	0.01
Utilities	-0.42	-0.27	-2.37	-2.78	0.05	-0.02	-0.09

Exhibit 6: Summary of Valuation Multiples and Key Valuation Drivers, by Sector

Sector	Metric	Average Adjusted R-Square	Statistically Significant Drivers				
1 Consumer Durables/Discretionary	P/S	0.259	ROA	Days Payable	Fixed Asset Turns	Assets/Equity	
2 Consumer Staples	P/S	0.502	ROA	3-yr Rev Growth	Inventory Turns	Days Payable	Assets/Equity
3 Banks	P/B	0.130	ROE				
4 Financials (ex-banks)	P/B	0.412	ROA	1-yr Rev Growth	3-yr Rev Growth	ROE	1-mo price reversal
5 Healthcare (ex-Pharma & Biotech)	P/S	0.315	ROA	3-yr Rev Growth	Cash		
6 Pharmaceuticals & Biotechnology	P/S	0.281	Cash				
7 Industrials	P/E	0.271	Days Payable	Days Receivable	Assets/Equity		
8 Energy	P/E	0.555	1-yr Rev Growth	2-yr Rev Growth	3-yr Rev Growth	Inventory turns	days payable
			days receivable	assets/equity			
9 Materials	P/E	0.960	1-yr Rev Growth	3-yr Rev Growth	Fixed Asset Turns		
10 Technology Software & Services	P/S	0.407	ebitda %	1-yr Rev Growth			
11 Technology Hardware & Semiconductors	P/S	0.143	ebitda %	3-yr Rev Growth	Inventory Turns	days receivable	
12 Utilitiies	P/S	0.662	1-yr Rev Growth	3-yr Rev Growth	Fixed Asset Turns	assets/equity	debt/capital
13 Other	P/S	0.687	ROA	ebitda %	1-yr rev growth	3-yr rev growth	days payable
			days receivable	1-mo price reversal	cash		

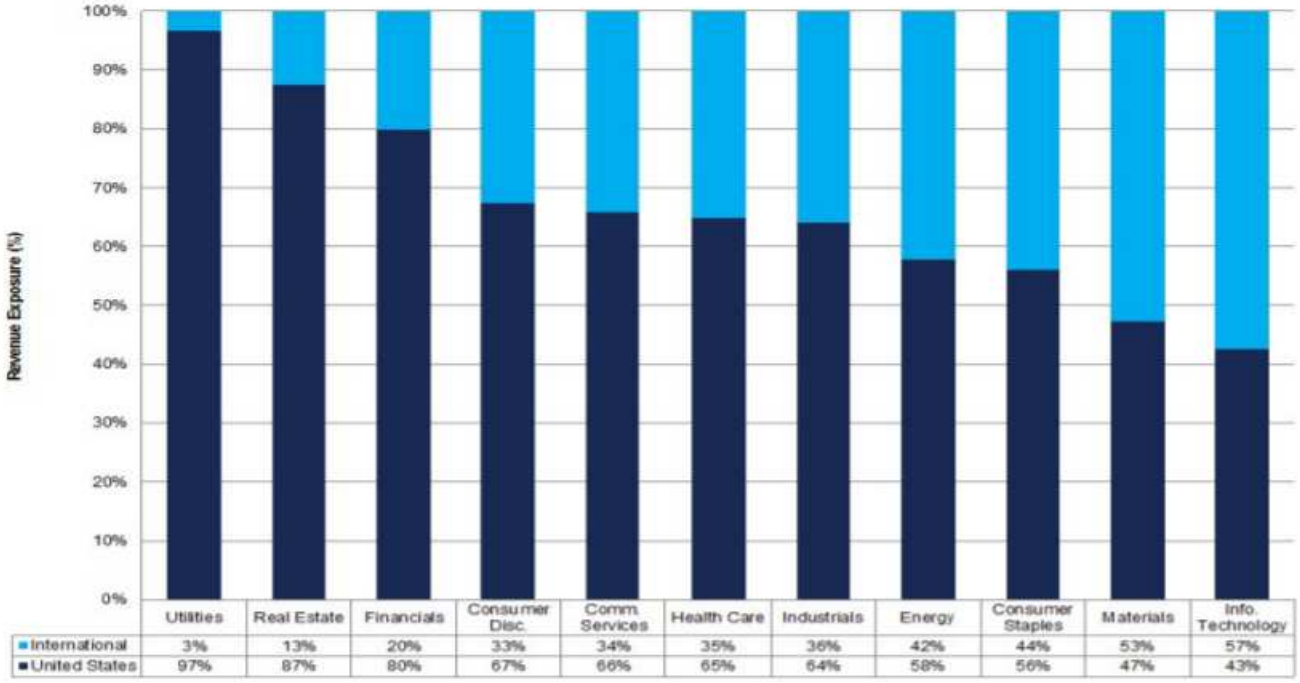






S&P 500: Aggregate Sector Geographic Revenue Exposure (%)

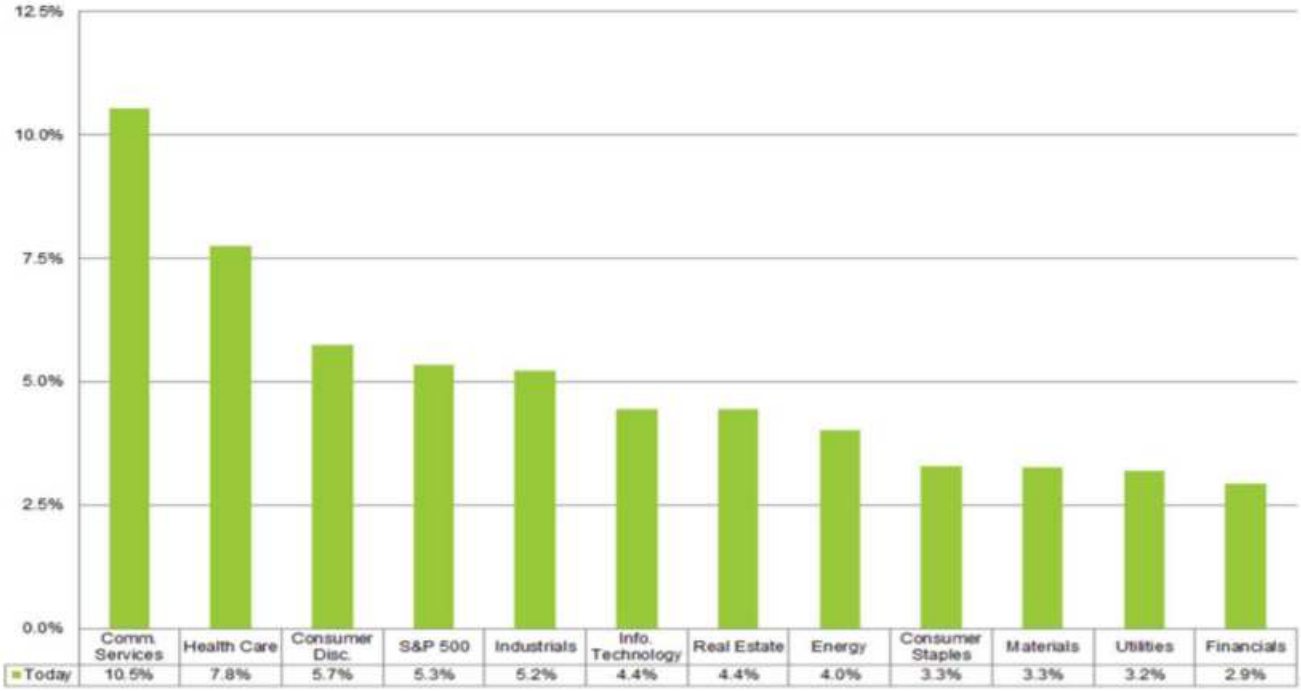
(Source: FactSet)



	Utilities	Real Estate	Financials	Consumer Disc.	Comm. Services	Health Care	Industrials	Energy	Consumer Staples	Materials	Info. Technology
International	3%	13%	20%	33%	34%	35%	36%	42%	44%	53%	57%
United States	97%	87%	80%	67%	66%	65%	64%	58%	56%	47%	43%

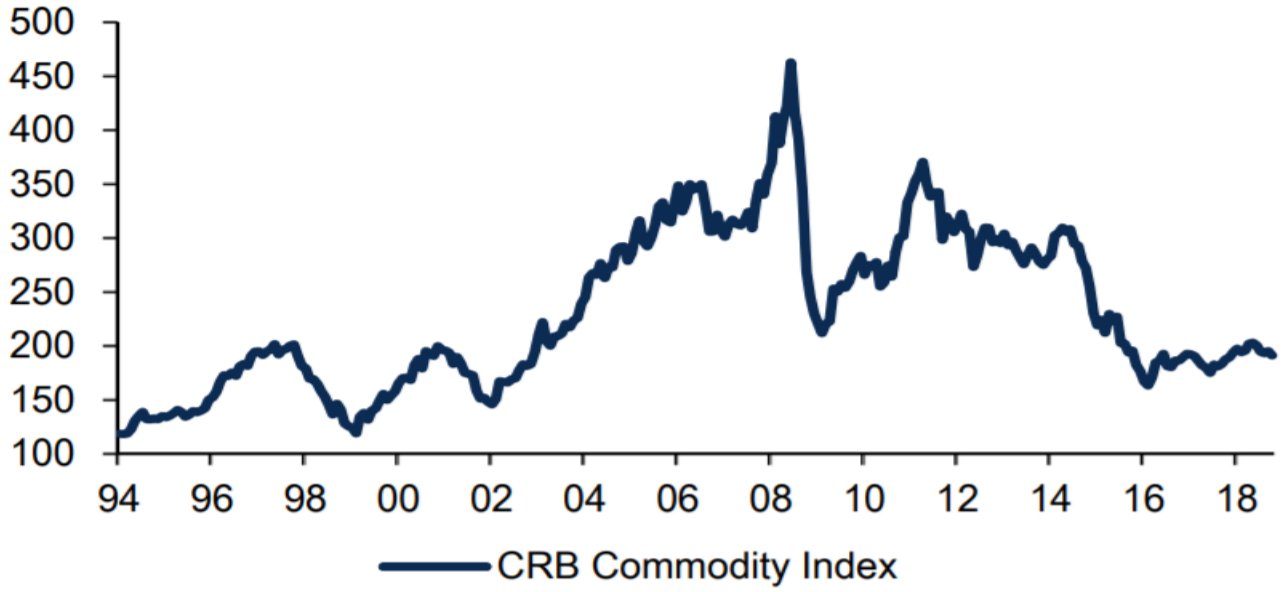
S&P 500 Revenue Growth: CY 2019

(Source: FactSet)

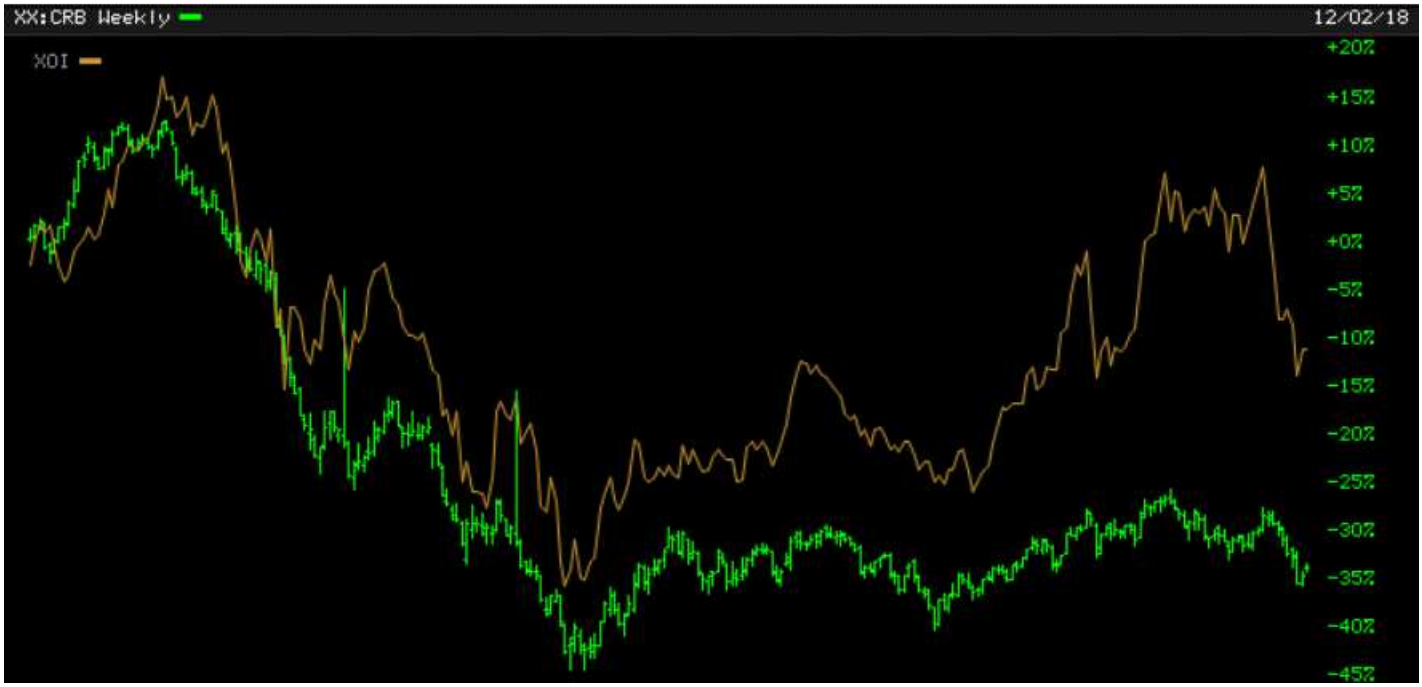


	Comm. Services	Health Care	Consumer Disc.	S&P 500	Industrials	Info. Technology	Real Estate	Energy	Consumer Staples	Materials	Utilities	Financials
Today	10.5%	7.8%	5.7%	5.3%	5.2%	4.4%	4.4%	4.0%	3.3%	3.3%	3.2%	2.9%

Basic Materials: *The materials group tends to perform well in rising inflation environments but the strength of the US Dollar in 2018 has proven to be too much of a headwind. The Metals Index is down 20% YTD while Oil & Gas Exploration is down 12% YTD and Precious Metal Miners are down 15%. The Materials ETF (XLB) which is heavily weighted to Chemicals is down 10%. Into 2019 the major headwinds remain USD strength and weakening demand from China. Worsening trade tensions and weaker global economic growth are risks into 2019. Goldman is optimistic on commodities for 2019 seeing a dislocation between price and fundamentals. The group is oversold and sentiment is at an extreme with speculative net longs hitting new lows across many commodities. Market forecast for Brent in 2019 is still rather bullish, with the Brent expected to average US$75.50 per barrel in 2019 according to a survey by S&P Global Platts of 11 top oil forecasters, while the US Energy Information Administration expects Brent to average US$72 per barrel. A recent dovish tone by Fed officials and the outlook for inflation could also weigh on this group. The current set-up for this group is not great into 2019 with multiple headwinds and few tailwinds, though valuations and sentiment can allow for a recovery, and there are plenty of best of breed names to focus on as dispersion of fundamentals in this group is quite wide.*



CRB Commodity Index vs. Oil & Gas Index (5 Year)

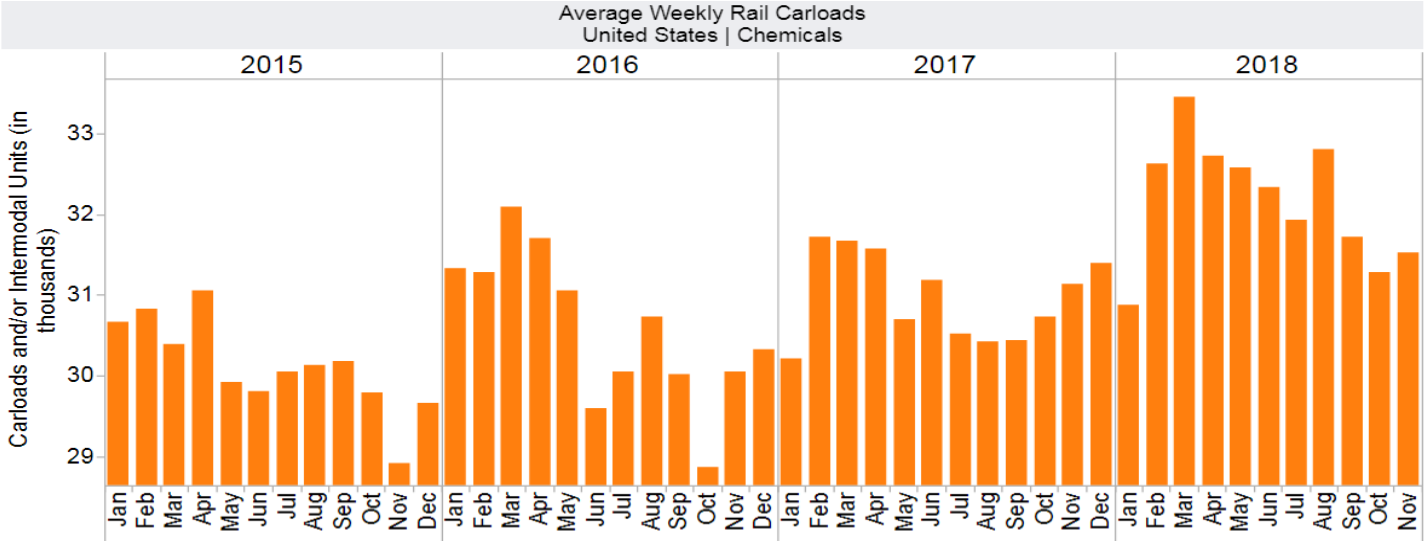


Chemicals

Components: ACET, ADM, ALB, ANDE, APD, ASH, ASIX, AXTA, BAK, BCPC, BG, CBT, CC, CE, CF, CVGW, DWDP, EMN, FDP, FMC, FUL, GRA, HUN, HWKN, IFF, IOSP, KOP, KRA, KRO, LIN, LYB, MEOH, MOS, MTX, NEU, NGVT, NTR, NXEO, OEC, OLN, PAH, POL, PPG, RPM, RYAM, SCL, SHLM, SHW, SMG, SQM, SXT, TROX, VNTR, VSM, WLK

The chemical sector is very cyclical in nature with profitability impacted by the imbalances between capacity and demand, which can be volatile. Production costs are mostly driven by the price of energy and feedstocks, so there is a tight relationship with energy prices, and cost advantages in this industry often separate the leaders from the laggards. The Chemical Activity Barometer is closely correlated to the Industrial Production Index. The chemical industry has consistently led the US economy business cycle given its early position in the supply-chain. The main segments within this group are Petrochemicals, Specialty Chemicals and Agrochemicals.

The Chemical Activity Barometer in 2018 is seeing less Y/Y growth and starting to roll over in Q4. Performance in the group shows 20 of the 53 components down 20% or more YTD with a month to go, and a recent rise in Natural Gas prices provides an additional headwind along with overall slowing of Industrial Production across the globe. The Trade War is also causing issues, a leading figure recently stating that capacity utilization is already deteriorating globally along with temporary demand destruction. The American Chemistry Council (ACC) provides monthly data and in 2018 breaking down the industry we see strength in Plasticizers, Oilfield Chemicals, Food Additives, Flavors & Fragrances, Electronic Chemicals, Cosmetic Chemicals, and Corrosion Inhibitors. The recent downturn in Energy prices is likely to once again weigh on companies with exposure to Oil/Petro chemicals. The coatings industry has seen unprecedented raw inflation, FX volatility, and a fall-off in key end markets in addition to the end of the cycle in Auto.



The chemical industry is massive and plays a part in nearly all manufacturing businesses, Dow DuPont broke down some of the key markets in a recent Investor Presentation broken into Advanced Polymers & Transports, Electronics & Imaging, Safety & Construction, Industrial Biosciences, and Nutrition & Health.

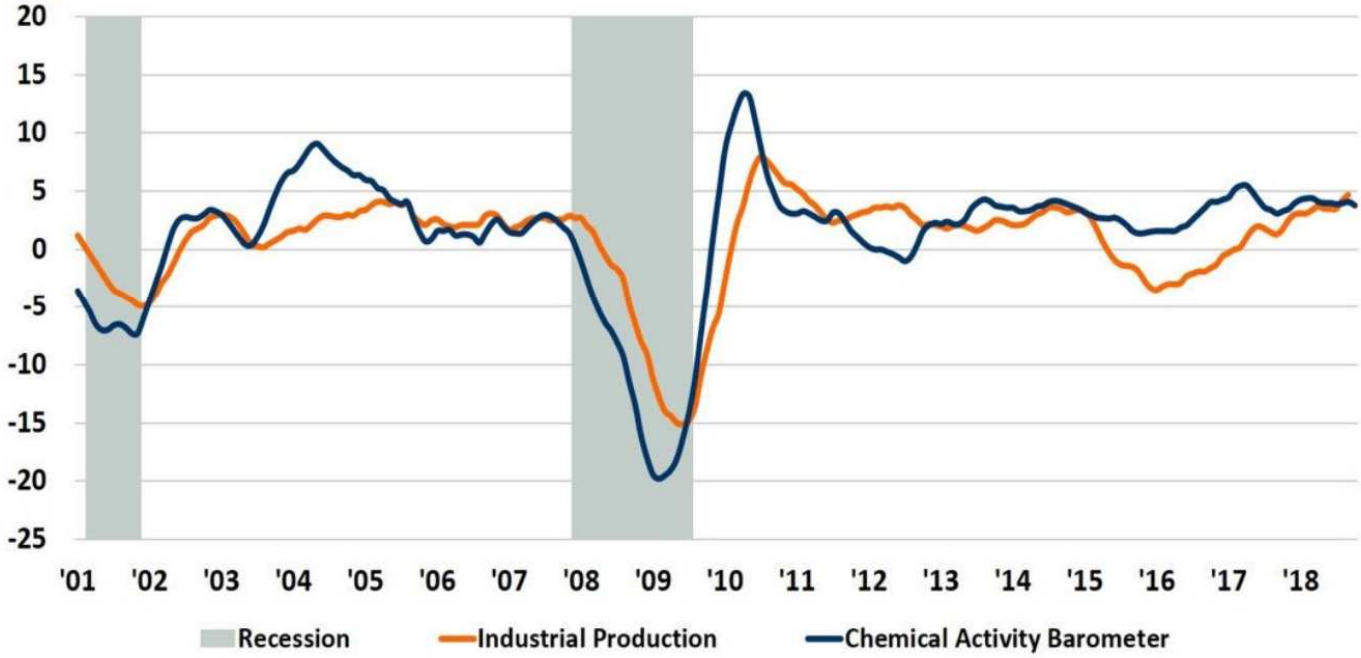
Our Solution Space		Market Size*
	**Medical & Pharma Packaging** › Medical Device Packaging › Pharma Cold Chain Packaging	$4B
	**Water** › Residential, Industrial, Wastewater Filtration › Specialty Processing	$5B
	**Aerospace & Automotive xEV** › Aerospace Light Weighting › xEV Electrical & Thermal Insulation Systems	$3B
	**Construction** › Building Thermal Management › Weatherization › Air-Sealing › Solid Surfaces	$20B
	**Personal Protective Equipment** › Chemical, Fire, Electrical, Biological and Ballistics Protection	$19B

Our Solution Space		Market Size*
	**Industrial Biotechnology** › Food and grain processing › Home and personal care › Animal health and nutrition › Carpet and apparel **Solutions** › Enzymes, yeast & probiotics › Specialty polyesters › Enzymatic polysaccharides	$15B
	**Microbial Control** › Energy and water › Preservatives › Home and personal care **Solutions** › Specialty biocides	$7B
	**Clean Technologies** › FCC scrubbing › Acid and alkylation solutions **Solutions** › Process technology and equipment › Catalyst › Emissions control solutions › Industry support solutions	$2B

Our Solution Space		Market Size*
	**Food & Beverage** › Dairy › Beverages › Bakery › Confectionary and snacks › Frozen desserts and fruit applications › Meat and poultry	$10B
	**Dietary Supplements** › Probiotics – concentrates › Probiotics – finished formats › Microbiome solutions › Nutraceuticals	$2B
	**Pharma Excipients** › Immediate release tablets › Controlled release tablets › Hard capsules › Non-gelatine, vegan soft capsules › Enterics and solubility enhancement › Anti-reflux	$3.5B

Chemical Activity Barometer vs. Industrial Production Index

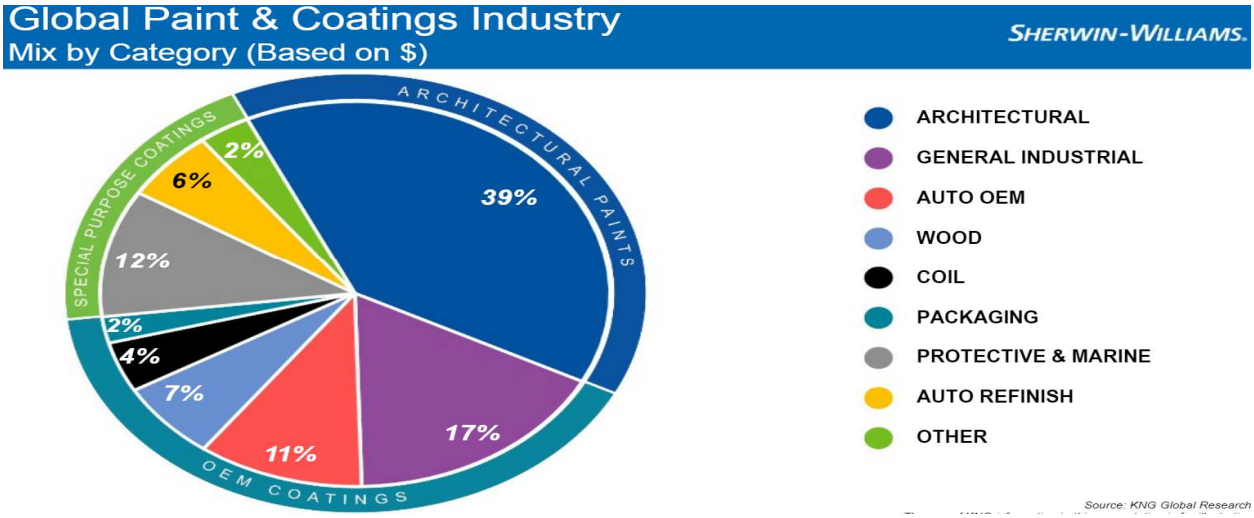
% Change Year-over-Year (3MMA)



October 2018

In terms of top performers in 2018 Mosaic (MOS) leads the way +39% YTD as we saw a bit of a resurgence in Agricultural commodity names, while a top idea from 2018 Ingevity (NGVT) is +36%. Hawkin (HWKN) is a small cap that performed well, while RPM International (RPM) and Ashland (ASH) also putting in solid years. Albemarle (ALB), PPG (PPG), and Sherwin Williams (SHW) are a few names showing some 2H relative strength after 1H weakness. Dow DuPont (DWDP) the largest player in this group recently held an Investor Day highlighting a vision for higher ROIC, EBIT growth and FCF with ample growth opportunities and deal synergies. Demand trends remain particularly strong for industrial gases, a group that saw a large merger between Praxair and Linde complete in 2018.

I am not optimistic on the Paints/Coatings names in 2019 with headwinds from peak auto and a slowdown in housing, Sherwin Williams (SHW), PPG (PPG), Axalta (AXTA), and RPM International (RPM) the main US players. **Axalta (AXTA)** is the best value at 9.9X EBITDA and has the strongest EBITDA margins at 19.9%, so it holds strategic value as a M&A target, and has previously been targeted by Nippon Paints.



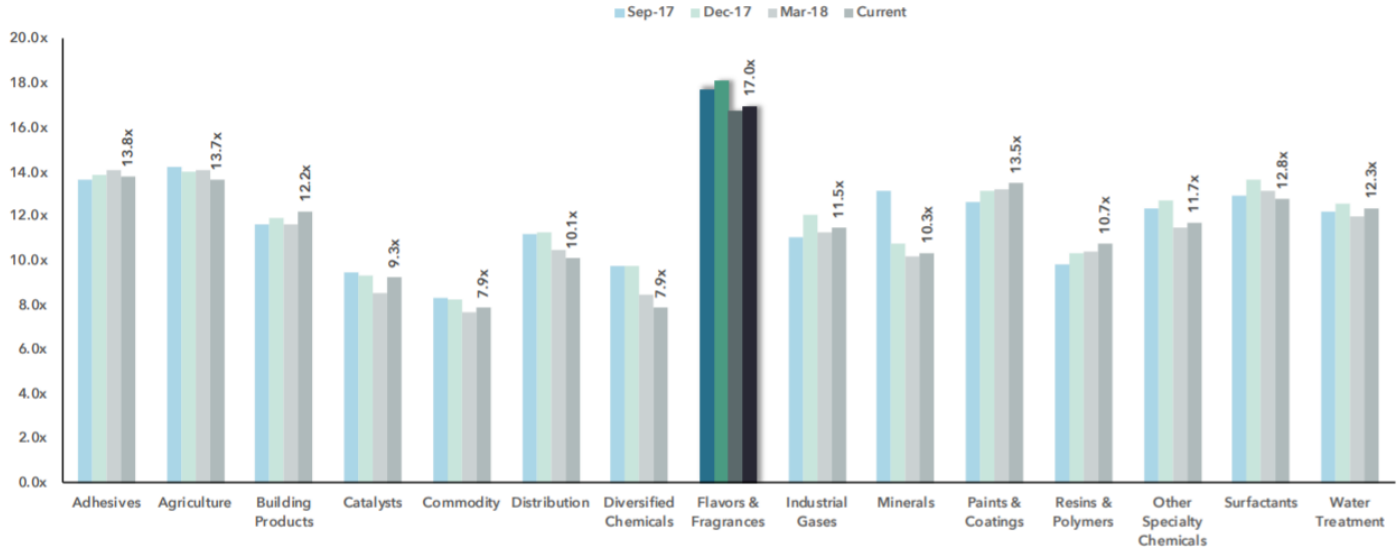
Into 2019 it will be important to focus on the names that serve the healthiest end-markets such as Pharma, Nutrition and Health. While rising costs and energy inflation are expected to be a drag on results, the offset is volumes (tied to industrial production), and pricing strength. Capital allocation will also be in focus this coming year with many of the larger players having plenty of capacity to do deals or buy back stock. Another key to security selection in this group will be the top operators that can successfully manage costs. A Bloomberg report in late November noted that Saudi Aramco has $100B and wants to buy up chemical companies as it pushes ahead with plans to diversify away from its reliance on sales of crude, so M&A a potential theme in 2019. One large deal in 2018 was International Flavor (IFF) spending $7.1B on Frutarom to create an industry leader in naturals, while KMG (KMG) in electronics and A Schulman (SHLM) in plastics were two other notable deals. Specialty chemicals continued to see the most deals in 2018.

Top 10 Chemicals deals YTD in 2018

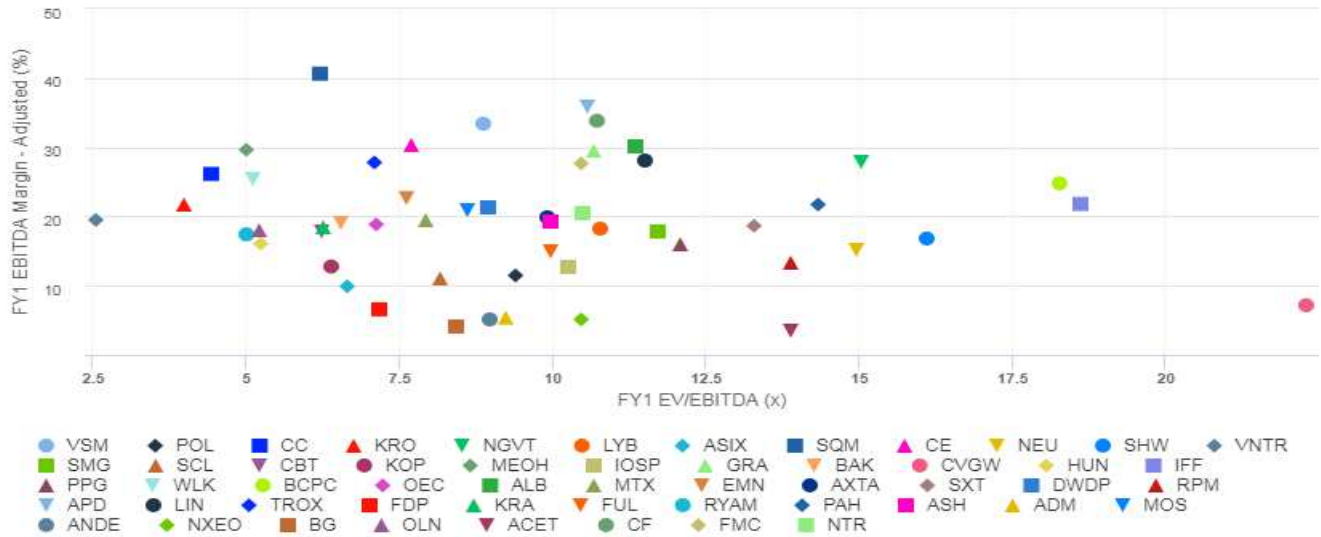
Announced	Target name	Target nation	Acquirer name	Acquirer nation	Status	Deal value[1]	Category
03/27/18	Akzo Nobel NV-Specialty Chemicals Business	Netherlands	Carlyle Group	United States	Pending	12,566	Specialty Chemicals
05/10/18	Yantai Wanhua Chemical Industry Co. Ltd.	China	Wanhua Chemical Group Co. Ltd.	China	Pending	10,239	Specialty Chemicals
05/07/18	Frutarom Industries Ltd.	Israel	International Flavors & Fragrances Inc.	United States	Pending	6,355	Specialty Chemicals
07/05/18	Praxair Inc.-European Industrial Gas Business	Spain	Taiyo Nippon Sanso Corp.	Japan	Pending	5,827	Industrial Gases
07/20/18	Arysta LifeScience Ltd.	United States	UPL Corp. Ltd.	India	Pending	4,200	Fertilizers and Agricultural Chemicals
05/17/18	Sociedad Quimica Y Minera de Chile SA	Chile	Inversiones TLC SpA	Chile	Pending	4,066	Specialty Chemicals
04/16/18	Bayer AG	Germany	Temasek Holdings (Pvt) Ltd.	Singapore	Pending	3,699	Specialty Chemicals
07/16/18	Linde AG - NA and SA Gas business	United States	Messer Group & CVC	Germany	Pending	3,300	Industrial Gases
09/13/18	Momentive Performance Chemicals	United States	SJL Partners, KCC Corp. and Wonik Qnc Corp.	South Korea	Pending	3,100	Specialty Chemicals
02/15/18	A Schulman Inc.	United States	LyondellBasell Industries NV	United States	Completed	2,250	Specialty Chemicals

In terms of valuation, the specialty chemical names have historically traded at a premium to the basic chemical stocks. P/E, EV/Revenues and EV/EBITDA can all be used as valuation metrics, while EBITDA margins & ROIC tends to determine whether a name should trade at a premium or discount to peers. FCF Yield is another important metric. Historically, transactions in the space have taken place at 1.35X Sales, and 10X EBITDA the last four years. A great breakdown on sub-sector EBITDA multiples is provided below.

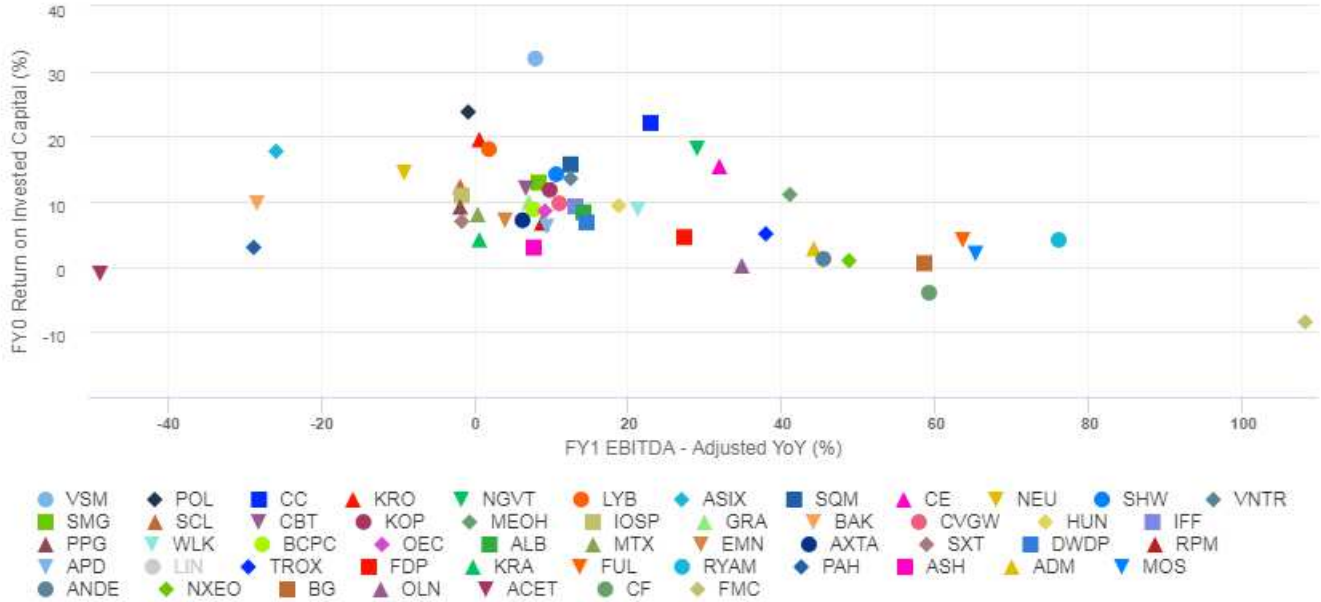
GM Chemical Index: Public Trading EBITDA Multiples by Sub-Sector[1]



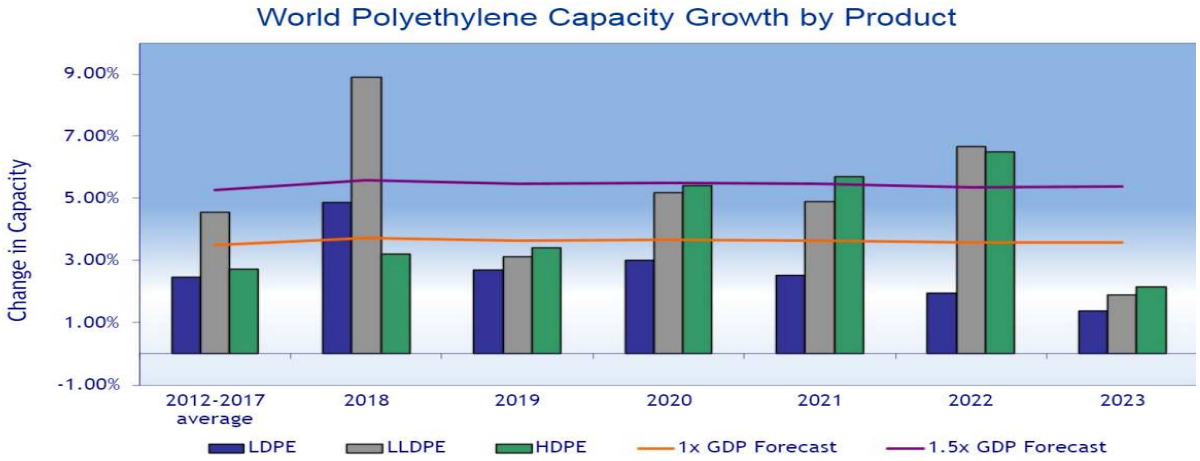
EV/EBITDA versus EBITDA Margins



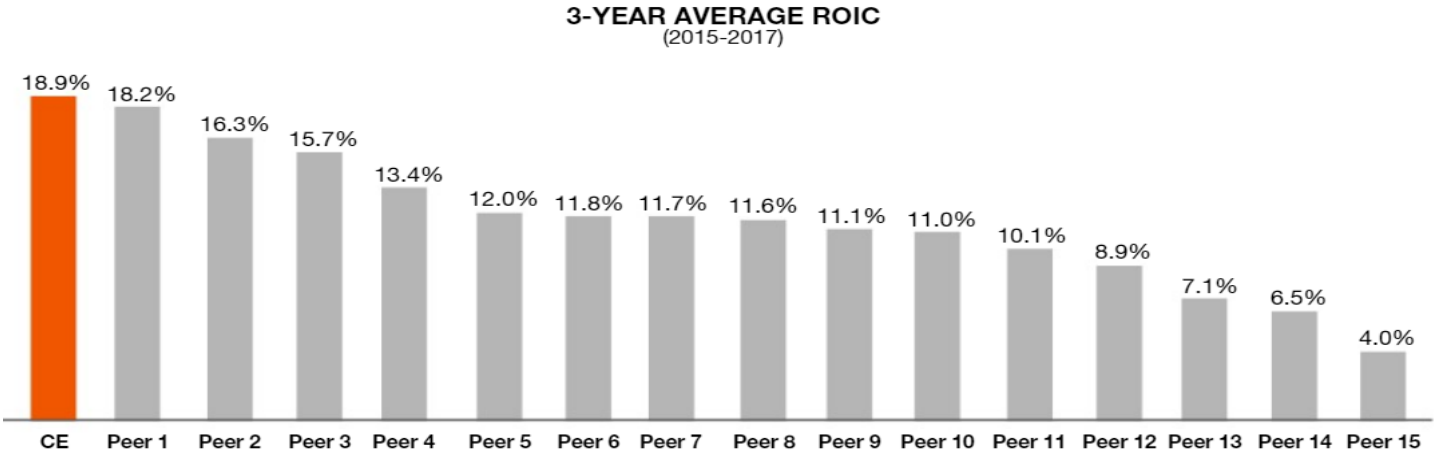
EBITDA Growth vs. ROIC



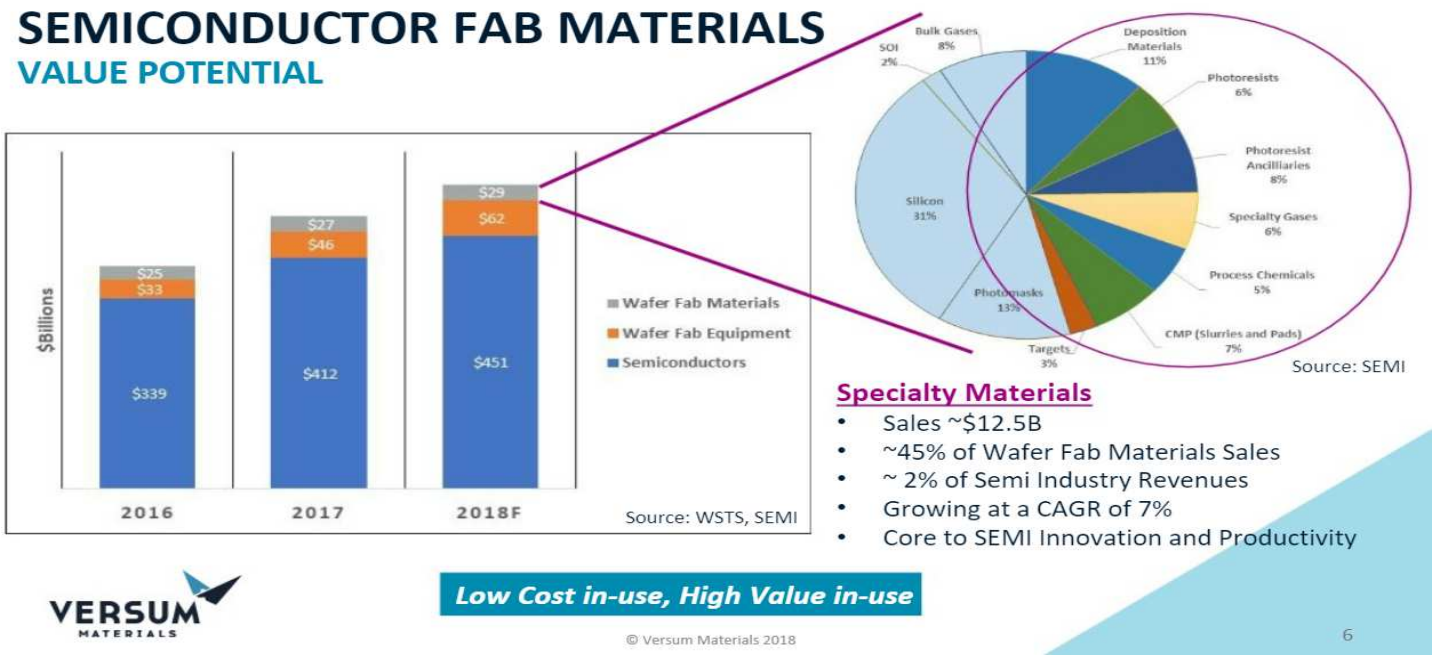
Westlake Chemicals (WLK) falls into the value category with shares down 35.5% YTD and the $9B Company trading 8.15X Earnings, 6.6X FCF and 5X EBITDA with a 1.46% dividend yield. WLK sees revenue growth slowing to 4-6% the next two years and EPS forecasted to decline Y/Y in 2019 before rebounding 14% in 2020. WLK is a leading integrated plastics materials company that is a global leader in specialty PVC and a leader in specialty LDPE in the Americas. WLK has a long term capacity CAGR of 16.9% and remains on track to achieve $250M in synergy savings and cost reductions from its Axiall acquisition. WLK is above peer averages for ROIC, ROA and is an EBITDA margin leader. Shares have been under pressure due to trade concerns as well as potential margin pressures from rising natural gas prices, but it has an advantaged cost position. In September the Company announced a $265M deal to acquire NAKAN and remains a top capital allocator. WLK will face some headwinds in 2019 but is trading at trough valuation levels, retesting a key breakout level from mid-2017, has potential for further capital deployment in late 2019, and is a top operator.



Celanese (CE) remains a favored chemical name with shares -6.4% YTD and the $13.5B Company trading 8.9X Earnings, 20.75X FCF, and 7.5X EBITDA with a 2.5% dividend yield. CE has posted double digit topline growth each of the last two years and expects 4-5% annual growth the next two years. CE has seen strong margin expansion, EPS growth, FCF growth, and capital returns over the last five years. Its Acetate Tow market has declined with the China reset and flat earnings are seen through 2020 with upside form strategic options. Its Engineered Materials segment continues to deliver robust growth with Celanese's leading breadth of solutions. It sees growth opportunities in Medical/Pharma, Energy Storage, and via bolt-on acquisitions that are also expected to expand margins. CE has been one of the top reporters in the group and also shown the ability to consistently raise prices. It screens well across every metric and should continue to outperform its peer group.



Versum (VSM) is a $3.6B maker of specialty materials for semiconductor and display industries trading 12.7X Earnings, 26.1X FCF and 8.8X EBITDA with a 0.96% dividend yield. Its 33% EBITDA margins are very strong and after two years of topline growth at 16% and 21% is expecting a slowdown to 3-5%. Although the Semiconductor industry has come under some pressure on peak cycle fears there remains growth in volumes and innovation as we are in the early innings of the digital revolution. This was shown with its latest earnings report that was a strong beat and raise quarter as it benefits from increased 3D NAND production. VSM offers solid growth with high margins, low capital intensity and strong cash flows and also is targeting M&A opportunities. VSM has $400M in cash and strong cash flows with ample capacity for deals at 1.3X Debt/EBITDA. The recent 25% decline in shares appears to be an opportunity to own a high quality business with solid growth prospects and a leading margin profile.



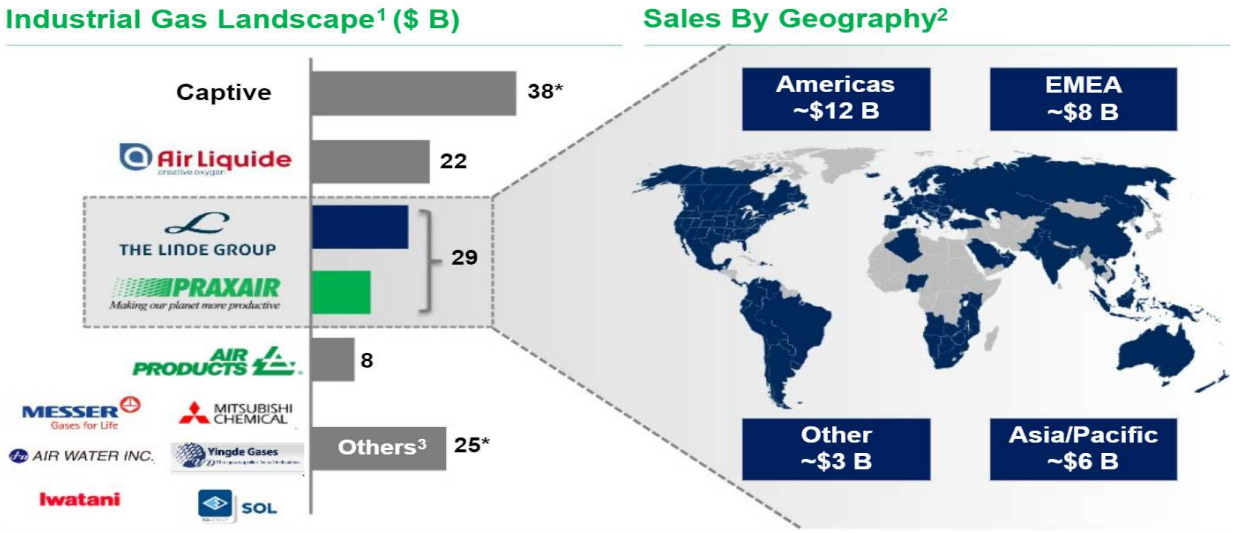
FMC Corp (FMC) is a $10.8B chemicals Co. trading 12.9X Earnings, 2.4X Sales, 53X FCF and 10.4X EBITDA with a 0.82% dividend yield. It trades at a premium valuation to the group but I like that it is positioned in the Ag solutions space and 21.6% adjusted EBITDA margins. FMC has been active in M&A and reshaped its portfolio spinning off the more volatile Lithium business in the form of Livent (LTHM). FMC is integrating the DuPont deal seeing strong EBITDA margins in the mid-30% range and upside optionality in India & China. FMC will host an Investor Day 12-3 and the long term outlook is positive as it outgrows crop protection peers, expands margins, and improves leverage with stronger cash flows. With cash flows set to improve FMC may look to capital allocation with buybacks, dividends & M&A. FMC has a strong position in Latin America and new insecticide product launches expected to drive growth. FMC is set to trade around 9X EBITDA after the spin-off with a historical 7-12X multiple and the global crop protection market experiencing stronger than normal growth.

Sociedad Quimica y Minera de Chile (SQM) is an $11B South American Company trading at a premium valuation of 12.7X EBITDA, 18.9X Earnings, 4.82X Sales and 48.3X FCF but offers a strong 4.79% dividend yield and above-average growth. SQM grew revenues at 12% and 11% the last two years and sees 9.4% growth in 2018 followed by 15% growth in 2019, also with a strong EPS growth outlook. SQM has leading 39.8% adjusted EBITDA margins and Lithium is the main story to this investment case. SQM has seen some weakness on lower lithium volumes lately but pricing has sustained, up 24% Y/Y while pricing trends are also positive in iodine and potash markets. SQM is positioned well in the lithium market with all of its projects at the low-end of the cost curve and offers a high quality product or battery producers. SQM has a 23% market share in Lithium and on track for new production projects in 2020 and 2021. The demand outlook is positive across its offerings and pricing trends remain favorable. The lithium boom is seen continuing and SQM offers the best in class operations with low cost assets and low capital intensity. A key overhang in the Nutrien (NTR) stake sale should be resolved in early 2019 as well.

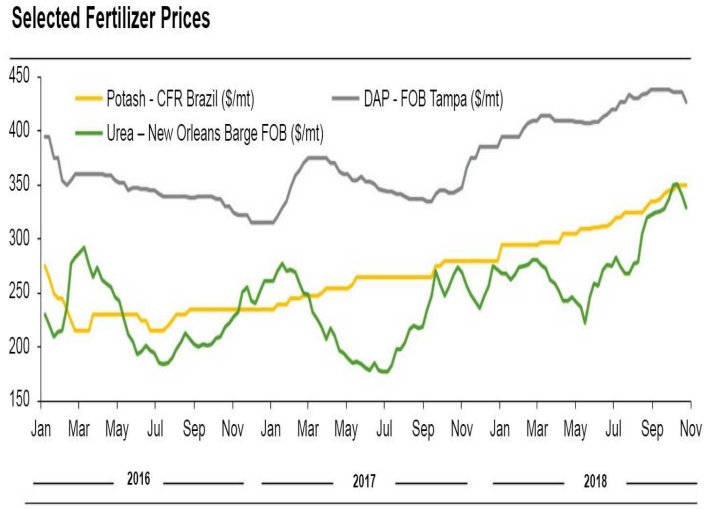
Ingevity (NGVT) was a top idea for 2018 and remains a favorite performing the best of the group this year at +35% YTD. The $4B specialty chemical Co. trades at a premium valuation of 20X Earnings, 3.7X Sales, 29.75X FCF and 14.9X EBITDA with 25% adjusted EBITDA margins. NGVT is a top growth play with topline growth of 7% in 2017 and 15% in 2018 expected to see around 10% growth each of the next two years along with 20%+ EPS growth. NGVT is continuing to see strong volume growth, pricing, and productivity improvements. Its performance chemicals segment focused on Oilfield Technologies (tied to rig counts), Pavement Technologies, and Industrial Specialties. The performance materials segment is tied to the Automotive industry with its environmental emission control products that are seeing strong growth from rising global emission standards, including China. NGVT is positioned to be a leading growth name in this sector for years to come with both organic and acquisition growth opportunities, while also setting up for a period of strong free cash flow growth that will allow for capital returns. NGVT has solid visibility going out 3-4 years and is fairly immune from the auto deceleration due to changing regulatory factors causing a need for its technologies in new vehicles.

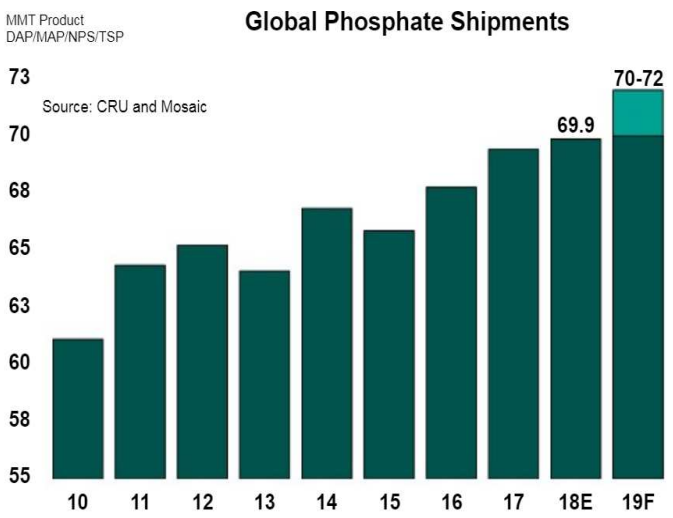
	Performance Materials	Performance Chemicals		
	Carbon Technologies	Pavement Technologies	Oilfield Technologies	Industrial Specialties
2017 Sales	$349 million	$163 million	$78 million	$382 million
2017 Segment EBITDA [1]	$142 million	$101 million		
Market Position	#1 in automotive	#1 or #2	#1 or #2 in oil-based muds	#1 or #2
Applications	▪ Automotive ▪ Process purification	▪ Pavement preservation ▪ Recycling ▪ Evotherm® technologies	▪ Well Service Additives ▪ Production and Downstream	▪ Adhesives ▪ Agrochemicals ▪ Lubricants ▪ Inks ▪ Intermediates
Select Competitors	CABOT, kuraray	CECA ARKEMA, AirMax, lamberti, DRT, KRATON, RESPOL		
Select Customers	Aisan, MAHLE, DELPHI	ERGON, FlintGroup, HALLIBURTON, SOLENIS, ENNIS-FLINT, arbors		

Air Products (APD) is a $35B industrial gas leader trading 17X Earnings, 3.95X Sales and 10.6X EBITDA with a 2.77% dividend yield. APD has excellent 35% EBITDA margins and after 9% topline growth in 2018 is expecting around 6.5% growth each of the next two years with 9-15% annual EPS growth. APD has seen enhancement to its portfolio, improved profit margins and a strengthened balance sheet over the last 5 years and is likely to make some key capital allocation decisions soon. It has $3B in cash and a Debt/EBITDA ratio of 0.3X. It is targeting $1-$1.5B in acquisitions and $2-$2.5B in buybacks. Gasification is driving a wave of growth with APD positioned to be a supplier of syngas. Insiders were active buyers of the stock near $160 in November. The company is coming off another solid quarter with strength in both volumes and pricing. It has a robust project backlog with visibility through 2022 and concerns of energy inflation are starting to wane. APD is smaller than an industry of giants with Captive, Air Liquide, and Linde, but screens as the healthiest combination of growth and margin leadership.



Mosaic (MOS) screened as the best combination of value and growth among the fertilizer plays, trading just 8.5X EBITDA compared to peers above 10X. MOS trades 14.3X Earnings and 18.7X FCF with a 0.28% dividend yield and seeing robust growth in 2018 set to normalize back to 4.8% topline and 28.6% EPS growth in 2019. MOS has been seeing strengthening volumes and pricing, a trend expected to continue in 2019. MOS has the highest phosphate capacity and 4th highest Potash capacity, and focused on the Americas. The company has been focused on reducing costs the last few years and has seen both production costs and SG&A costs fall. MOS saw better potash sales last quarter with volumes up 9% while Brazil volumes were up almost 40% after their Vale Fertilizantes acquisition. Last quarter, they noted that stronger demand is helping offset a tighter phosphate market and they expect global demand to hit a new record next year at 70M to 72M tons. MOS should continue to benefit in 2019 from tighter Phosphate/Potash markets and better conditions in Brazil.





A few notable smaller cap plays worth looking into include **Ferro (FOE), Hawkins (HWKN), North Tech (NTIC), and Orion Engineered Carbons (OEC).**

OEC is a $1.56B producer of carbon black products used in tires, rubbers, inks, coatings and batteries and trades just 7X EBITDA with 18.9% EBITDA margins and a strong growth outlook. It should see multiple expansion with its shift toward more of a specialty orientation. Industry dynamics remain favorable for a strong pricing outlook.

FOE is a $1.6B maker of specialty materials trading 9X EBITDA with 16.5% EBITDA margins and coming off two years of robust topline growth with 20.8% EPS growth seen for 2019. Ferro supplies functional coatings for glass, metal, ceramic and other substrates and color solutions in the form of specialty pigments and colorants for a broad range of industries and applications. Ferro products are sold into the building and construction, automotive, electronics, industrial products, household furnishings and appliance markets. FOE has been generating strong organic growth while optimizing operations to improve margins and is finally starting to offset raw material inflation with better pricing.

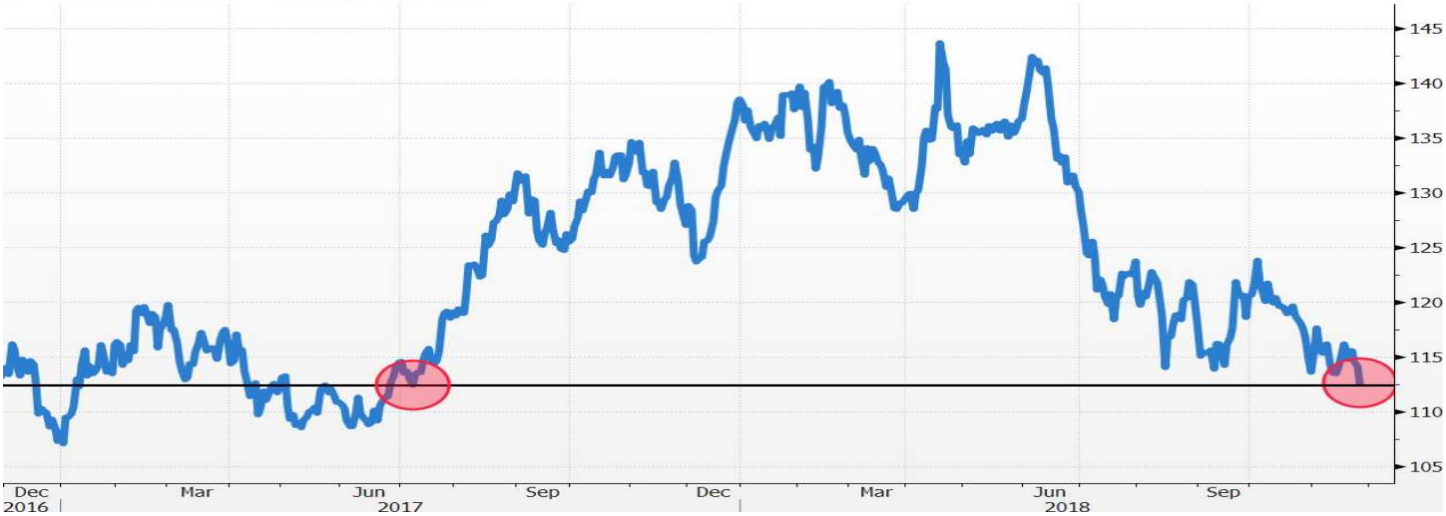
NTIC is a $148M maker of corrosion inhibiting products trading 20.85X Earnings and 16.8X FY17 EBITDA. NTIC grew revenues 20% in 2017 and 30% in 2018 with robust EPS growth as well. NTIC is enhancing its market shares via joint ventures and also growing its Oil & Gas business. The corrosion market is estimated above $3B with 5-10% annual growth and its Bioplastics market is a $1B market growing 25% annually.

HWKN is a $453M chemical Co. focused on Industrial, Water Treatment and Health & Nutrition trading 8.3X 2018 EBITDA growing revenues 13.7% in 2016, 16.8% in 2017, and 4.3% in 2018 with 2019 setting up to be a year of easier comps and a return to double digit Y/Y growth.

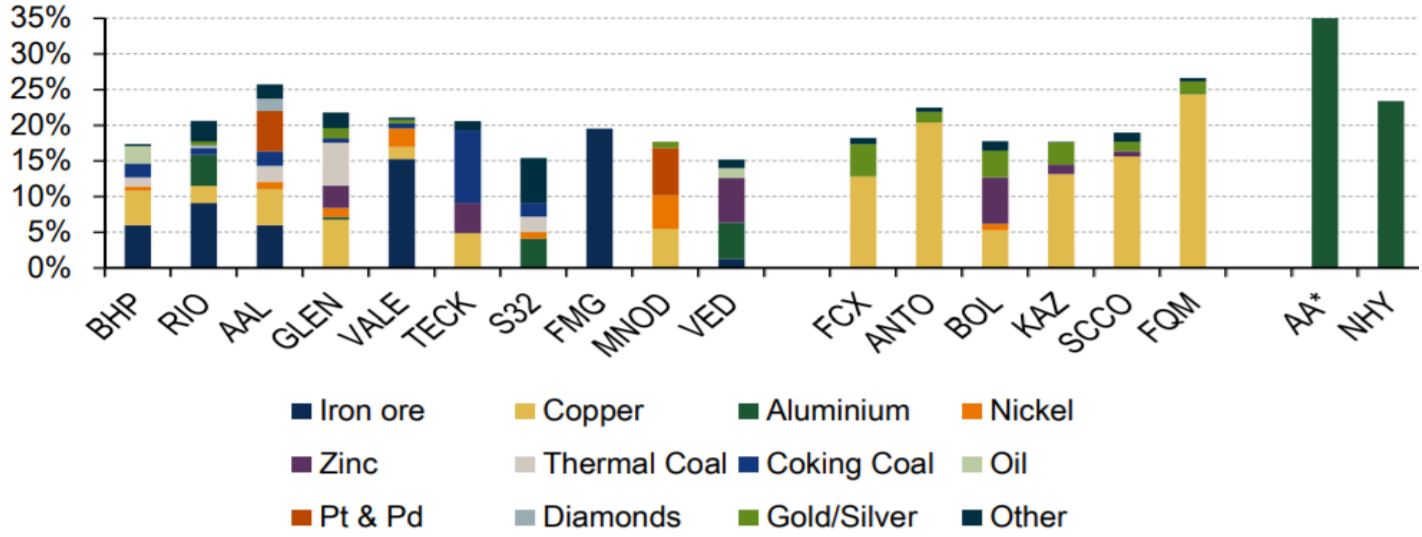
Metals

Components: *BHP, RIO, VALE, SCCO, MT, PKX, NUE, FCX, NEM, ABX, FNV, TECK, AEM, GG, STLD, GOLD, ACH, WPM, AA, TX, RS, RGLD, CCJ, AU, KL, X, BTU, CLF, ARLP, WOR, CMC, HSC, PAAS, CMP, KALU, ARCH, PVG, SSRM, CSTM, MTRN, CEIX, SCHN, IIIN, TMST, ZEUS, NEXA, TS, ATI, VMI, CRS, GTLS, MLI, BOOM, EAF*

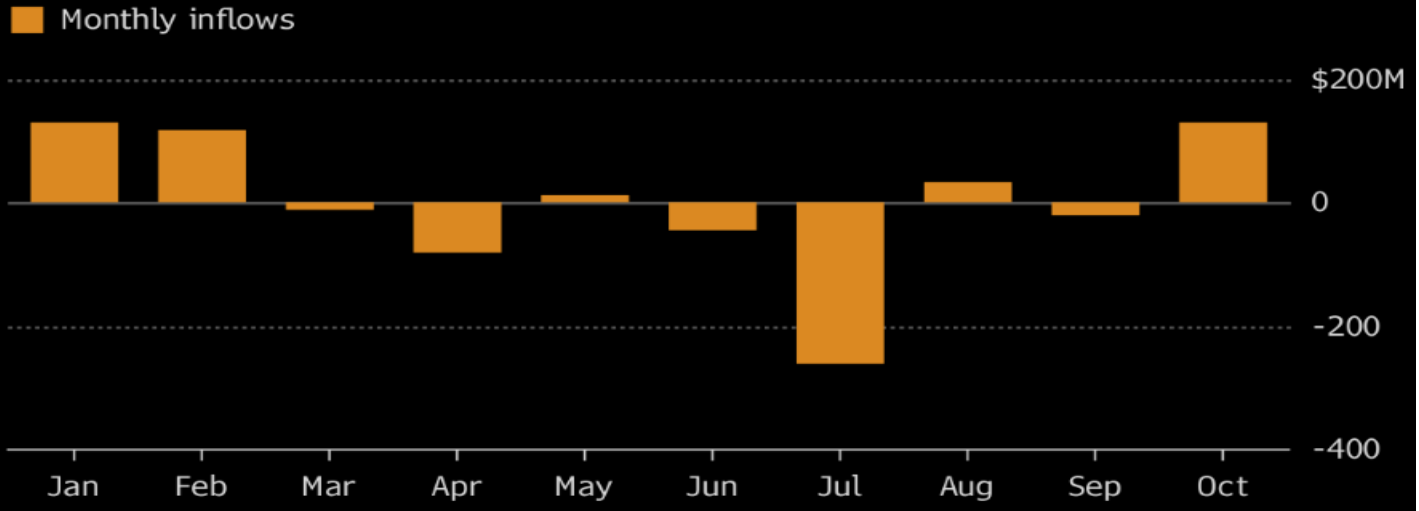
Bloomberg Industrial Metals Subindex
Lowest Since July 2017



The Killer Chart: EBITDA change for a 10% move in key commodity prices



Base Metals' Appeal
ETFs lure most cash since January



Source: Bloomberg

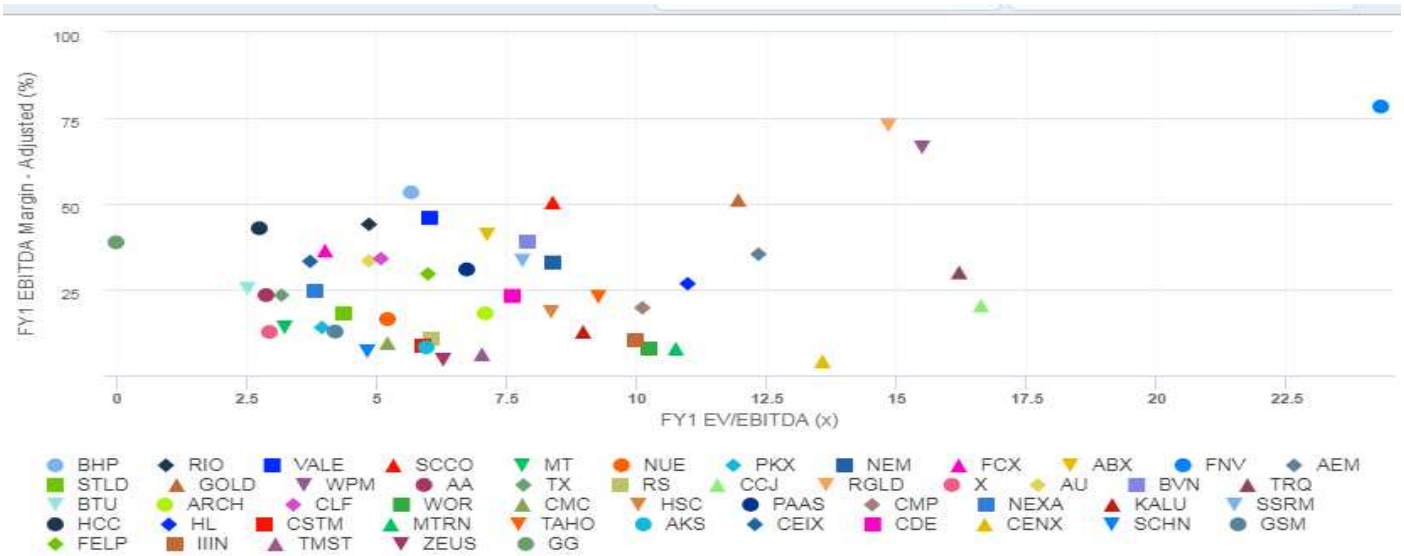
Bloomberg

The metals group can be broken up into two basic groups, Industrial metals like Coal, Steel, Aluminum, Copper & Iron Ore, and the Precious Metals like Platinum, Silver, and Gold. It was a tough year for Metals with pressure from USD strength and 22 of the 46 components down 15% or more YTD. The Industrial metals like Aluminum, Copper and Steel were hit the hardest with the China slowdown also weighing as Industrial production strength is slipping. Iron Ore was an area of strength with VALE/CLF both higher YTD while KL was a standout performer in Gold, and Uranium pure-play Cameco (CCJ) gained 31.75%.

Stock selection within this group can be tricky, though there generally is little dispersion among the names as metal stocks tend to trade day to day with the movement in the underlying commodity as supply/demand dynamics shift. It is a very industrial driven group with close ties to end-markets such as Auto, Aerospace, Construction, and Energy. Aluminum is primarily used in Transports/Packaging, Copper in Construction/Electrical, Iron/Steel in Auto, Construction and Oil/Gas, Nickel in Consumer/Industrial, and Zinc in Construction.

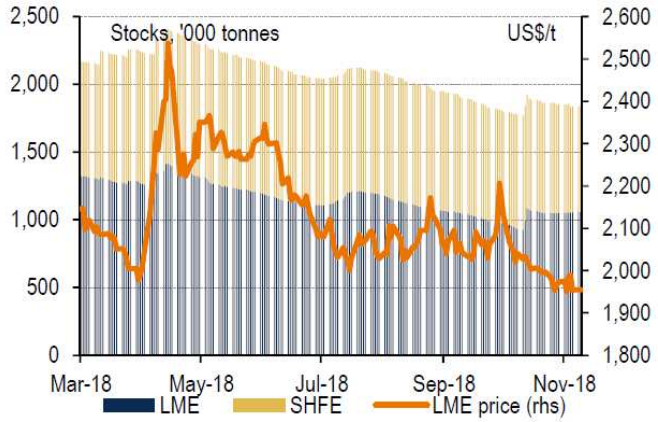
This is a very cyclical group and important to determine where on the commodity price and/or economic cycle markets are currently. The volatility in pricing results in volatile revenues, earnings and cash flows, which can make valuation techniques difficult. The high fixed costs required also leads to debt-heavy balance sheets. With these mining companies, metrics are often counter-intuitive, such as the PE Ratio, it is often best to buy when PE's are historically high (indicating low earnings), and sell when PE's are low (indicating peak/high earnings), due to the cyclical swings. A good approach to valuing many of these companies is to look at 10 years of earnings/revenues, and value the company based on where it is in the current cycle to calculate where earnings/revenues will get at mid-cycle and late-cycle stages. Seasonality stats show February and October as strong months, while January, March, May, September, November and December are weaker. The group continues to face headwinds from oversupply and slowing growth in China as well as USD strength.

EV/EBITDA versus EBITDA Margins

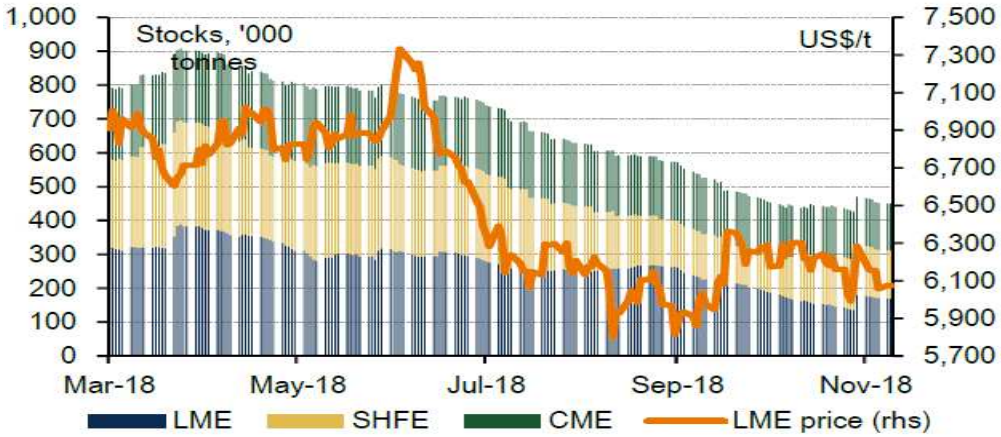


Heading into 2019 the FX remains at the forefront of commodity traders' minds while the economic slowdown of China remains a significant headwind as well as the Fed tightening cycle and a worsening credit cycle. Commodities do, however, tend to perform well in late business cycle phases and many key commodity inventories are at or below 5 year averages, any acceleration to economic growth can turn commodities into an effective inflation hedge. Gold could rally if the USD strength fades. Nickel is a market seeing increased demand from electric vehicles and Zinc under pressure in 2018 from declining shortfalls in mine supply.

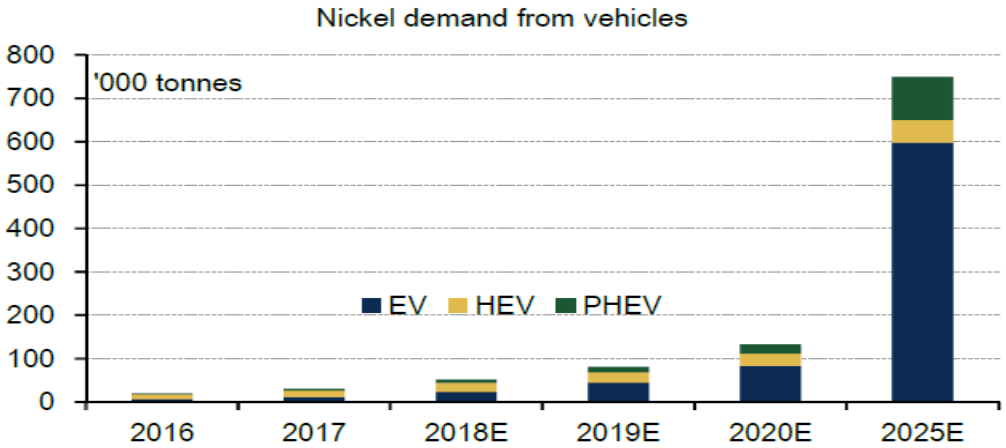
In the **Aluminum** market a rebalance of the market in China has been the story in 2018 and fundamentals are starting to strengthen, but sanctions on Rusal (7% of total market supply) are now in focus, the potential for a rally if removed. As shown below Alumina has become expensive while inventory declines have persisted, a global market in deficit. **Alcoa (AA)** trading less than 3X EBITDA with a strong balance sheet looks very undervalued from a historical perspective. AA posted a solid Q3 and tightness in the alumina market should allow that to continue. **Kaiser Aluminum (KALU)** is the other investable name in the group trading at a premium valuation of 9X EBITDA but continuing to deliver growth. KALU has 46% exposure to Aerospace & Defense, making it a preferred name. It has managed through notable headwinds like rising metal and freight costs while aero destocking in moderating. It is seeing content growth with its specialty products and also sets up as a margin expansion story.



In the **Copper** market prices have been under pressure much of the year from weakening Chinese demand and tariff concerns, and copper tends to react to Chinese stimulus with an 11 month lag, so may not return to favor until late 2019. Inventories have come down modestly as shown below. With the US economy set to weaken in 2019 and Europe remaining subdued, the demand picture remains unattractive while costs to miners are rising with Sulphuric Acid and Diesel prices.



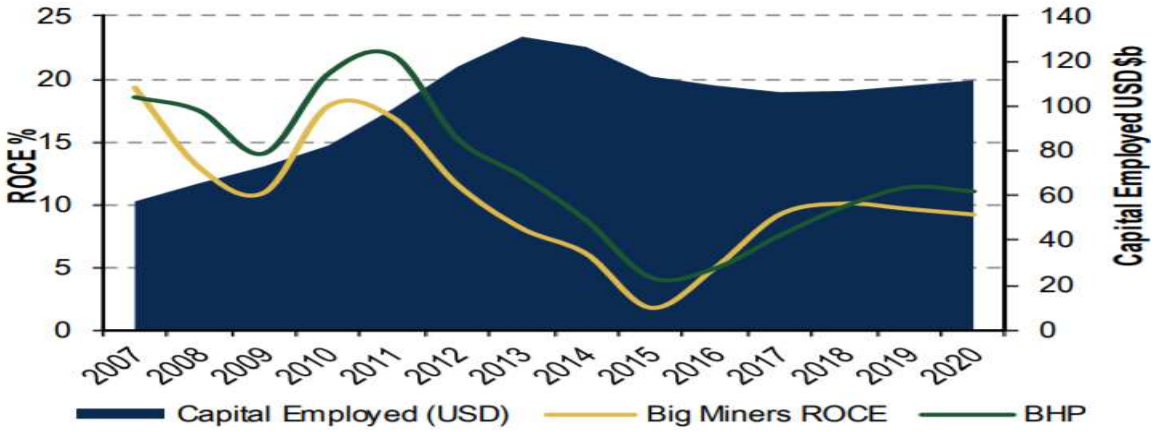
Nickel has been one of the stronger metals though supplies are rising with Indonesia set to increase supplies, but the demand picture from electric vehicles puts a floor under price, as seen below. **Cobalt** prices have also been in a strong trend due to Electric Vehicle demand.



The **Gold** market sold off early in the year but has moved sideways much of the second half. The strength in the USD and real rates has pressured prices, but China's potential credit bubble could result in further easing and boost Gold. After the Fed's Powell gave a more dovish outlook for rates in 2019 it could start a positive shift for Gold.

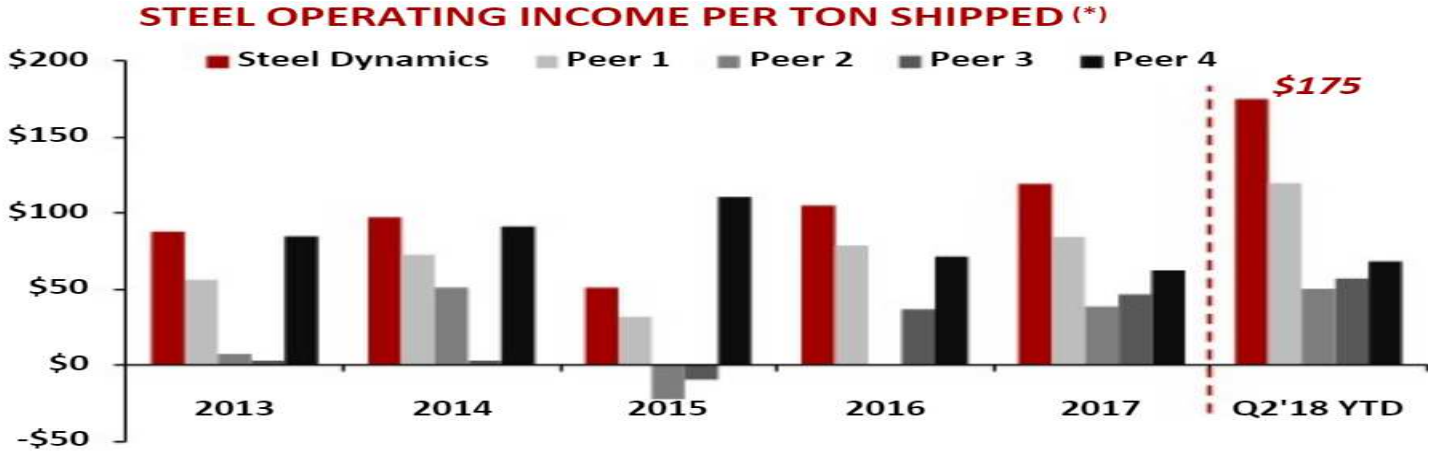
Royal Gold (RGLD) is this year's top play in Gold, always prefer the royalty plays due to mining costs, and RGLD trades at a 50% discount on EBITDA valuation to former favorite Franco Nevada (FNV). Its 73% EBITDA margins are comparable to FNV's 78% margins. RGLD also has plenty of portfolio optionality.

BHP Billiton (BHP) is the preferred diversified metals play in 2019, offering a 5.6% dividend yield while trading 5.7X EBITDA. BHP sold its US onshore assets to BP smartly and will return $10.4B to shareholders through off-market buyback and special dividends. Capital allocation is likely the focus in 2019 with buybacks, dividends and potential acquisitions.



Vale SA (VALE) with a $76B market cap remains the best way to position in Iron Ore and trades 6.3X EBITDA and 9X FCF with a 3.8% yield. VALE also has a strong 9.9% FCF yield and 11% ROIC while strengthening its balance sheet as it pays down debt. VALE recently had a more positive tone on copper and will explore options for its accumulated cash flow with special dividends, buybacks, and acquisitions. VALE has a lot of potential key projects coming online as well. The shifting dynamics of the Chinese steel industry with mine depletion and stricter environmental standards is leading to the need for higher quality iron ore and VALE is a supplier that is 82% premium products. VALE also is positioning for the electric vehicle revolution with its Nickel assets. VALE shares are inexpensive and the cash returns will be a key catalyst supporting shares.

Steel Dynamics (STLD) remains the favored Steelmaker trading cheap to most peers at 4.4X EBITDA while offering a better growth profile, an 11.8% FCF yield and leading 10.8% ROIC. STLD has always posted the best quarterly numbers in the group and continues to see favorable pricing and demand trends. Headwinds remains for the industry with weakness in Auto and Construction, but STLD is a low-cost producer that withstands weaker times better.



A couple small cap names worth a look at are **Harsco (HSC) and CONSOL (CEIX).** HSC is a $2.1B specialty metals Co. trading 8.3X EBITDA with 18.5% EBITDA margins. HSC is coming off some beat and raises this year as it sees positive secular trends in environmental solutions, rail safety and energy resource development. HSC is also seen to have ample room for further margin expansion and FCF growth. CEIX trades 3.7X EBITDA with 33% EBITDA margins. It is focused on coal which has seen multiple years of under-investment and seeing rising global demand, though US coal consumption in 2018 is the lowest in nearly forty years.

The Industrial Metal Fabrication names that include specialty metals names can also be included in this group. **Carpenter Resources (CRS) and Haynes (HAYN)** screen as the most attractive. CRS has a $2B market cap and trades 7X EBITDA with a strong history of both revenue and EPS growth and above-average margins. CRS makes specialty alloys and high performance materials with Aerospace & Defense accounting for 52% of sales. HAYN is a small name with a $407M market cap trading 7.7X EBITDA with double digit revenue growth and strong FCF. HAYN produces high performance nickel and cobalt based alloys with 48% of sales to Aerospace. HAYN has room for operational improvements to increase margins and its attractiveness as an investment and capacity increases will boost results.

Oil & Gas Exploration (Upstream):

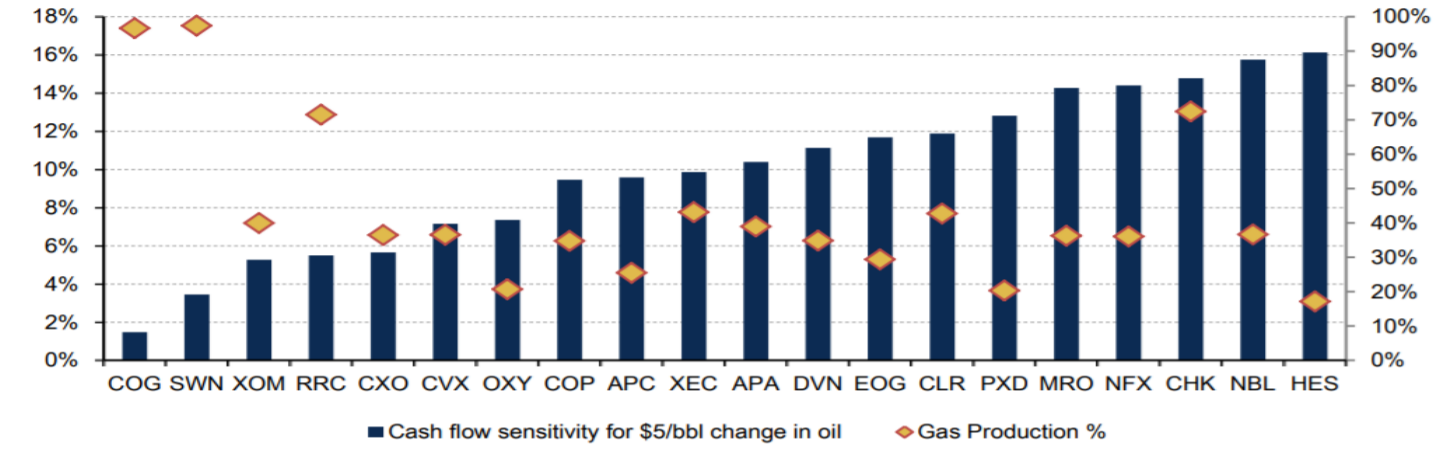
Components:*APA,APC,AR,CDEV,CHK,CLR,CNQ,COG,COP,CRZO,CVE,CVX,DO,DVN,EGN,EOG,EQT,ESV,FANG,HES,HP,JAG,MRO,MTDR,NBL,NBR,NE,NFG,NFX,OXY,PDCE,PE,PXD,RIG,RRC,SU,SWN,WLL,WPX,XEC,XOM, RDS.A, TOT, BP, PBR, ECA, MUR, YPF, SM, CPE, TELL, ROAN, TUSK, VNOM, LNG*

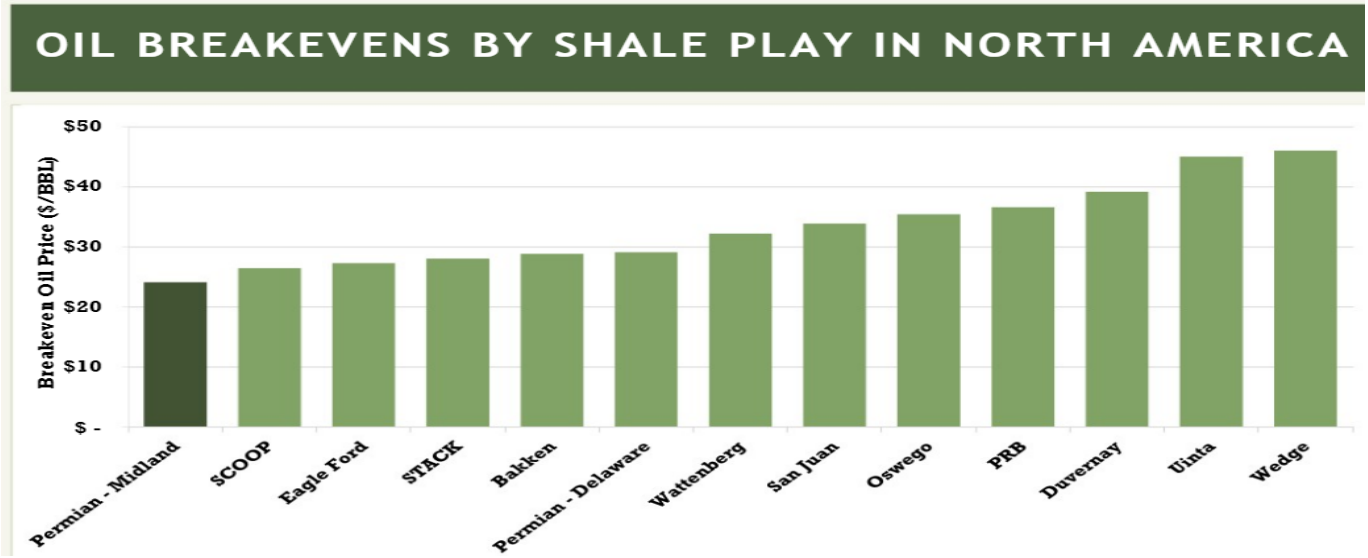
Similar to the Metals & Mining group, the Oil & Gas E&P names also operate in a cyclical nature and much of the trading is closely correlated with the underlying commodity, Oil or Gas, and the weekly data points on supply and demand. Seasonality shows that February and April are strong months for the E&P names, while September, November and December tend to be weak.

The group can really be divided into two, the Oil producers and Gas producers. While many names produce both, the percentage of production is generally skewed in one direction, and the notable Natural Gas dominant producers are AR, COG, CNX, SWN, EQT and RRC. Another way to divide the group is with onshore and offshore, the latter mainly featuring ESV, DO NE, RDC, RIG, and HP. Lastly, in the entire Energy complex, the companies are often separated into Upstream, Midstream, Downstream, Services, and Integrated Majors. The industry is currently undergoing an efficiency drive that is driving up well productivity rates and lowering breakeven prices.

In evaluation this group, EV/EBITDA and P/FCF are valuable, but better metrics that are not as easily found such as EV/Proved Reserves, EV/2P and EV/Daily Production can give better insight. It is also always important to understand the cost leaders, names that can withstand down-cycles better with stronger balance sheets and a lower cost of breakeven. Similar to Financials, the balance sheet is often the most important with these stocks, as the reserves are the asset that will generate future revenues/earnings. The debt/cash flow ratio can be a useful gauge of balance sheet health. Revenues are difficult to model with the wild price swings, and a sensitivity analysis can be performed for an expected range and probability of outcomes, but also have to take into account the company's hedging efforts. P/E and Revenue multiples lose a lot of value because Energy companies have large depreciation numbers, impairment charges, write-downs, and unusual tax situations. EBITDAX is also a modification often used, the X being exploration expenses. Acreage valuation is another method using transactions in the various regions as a guide to figure out $M/Acre. Reserve replacement ratio is yet another metric for this industry.

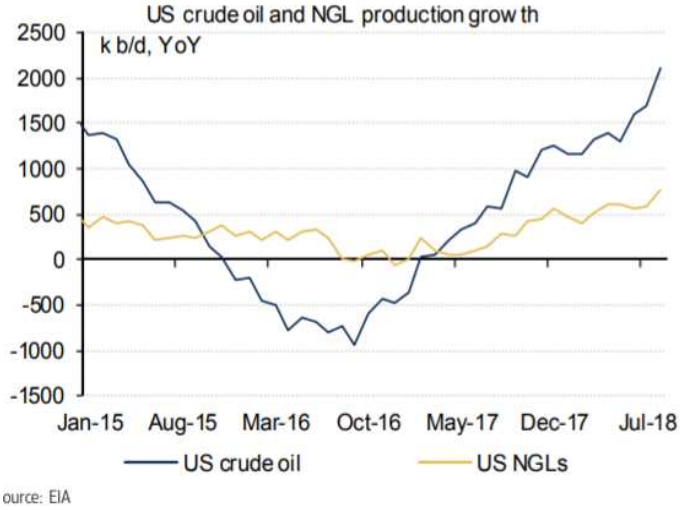
Chart 3: Oil beta favors international oils





Sentiment in the sector is extremely negative into 2019 with Crude Oil down sharply back near the $50/barrel level. The supply situation is being dominated by politics with Russia and Saudi Arabia in focus for potential further production cuts, while demand has been weakened by slowing growth and China, and likely slowing in the US/Europe moving forward.

When assessing this group there are so many industry-specific metrics to observe but overall I am looking for cost leaders (efficient drilling), strong balance sheets, production growth, and a higher Oil mix and trading at a reasonable valuation. A few notable outperformers in the group in 2018 were Petrobras (PBR), Venom (VNOW), Mammoth (TUSK), Conoco (COP), Whiting (WLL), Cheniere (LNG) and Hess (HES). We have seen an uptick in M&A with much of the group at low valuations compared to historic norms, including Cimarex (XEC) buying Resolute (REN), EnCana (ECA) buying Newfield (NFX), Chesapeake (CHK) buying WildHorse (WRD), Denbury (DNR) buying Penn Virginia (PVAC), and most notable Diamondback (FANG) buying Energen (EGN).



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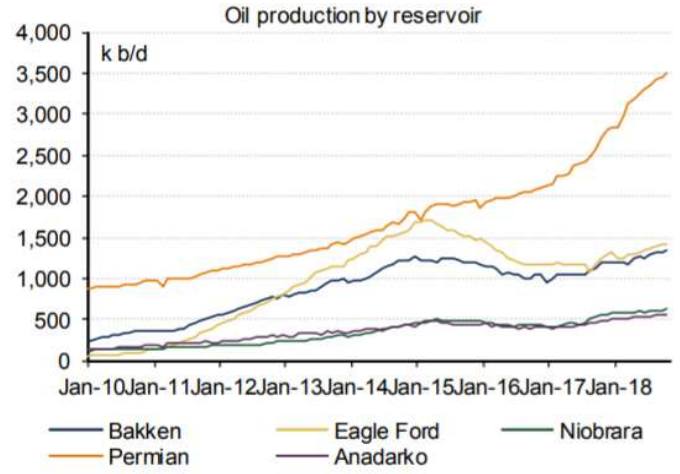

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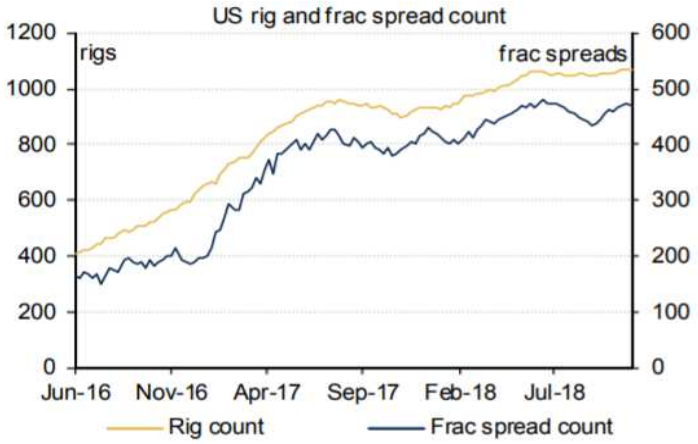
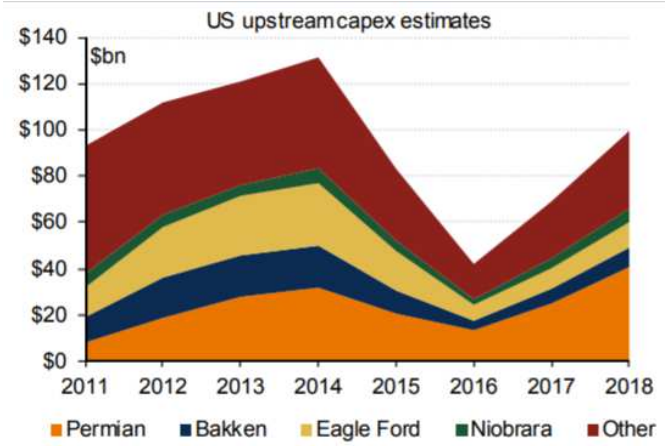


Source: Bloomberg



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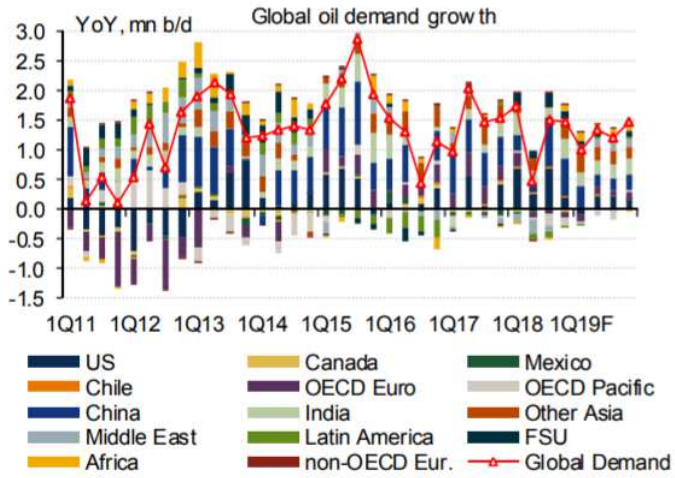
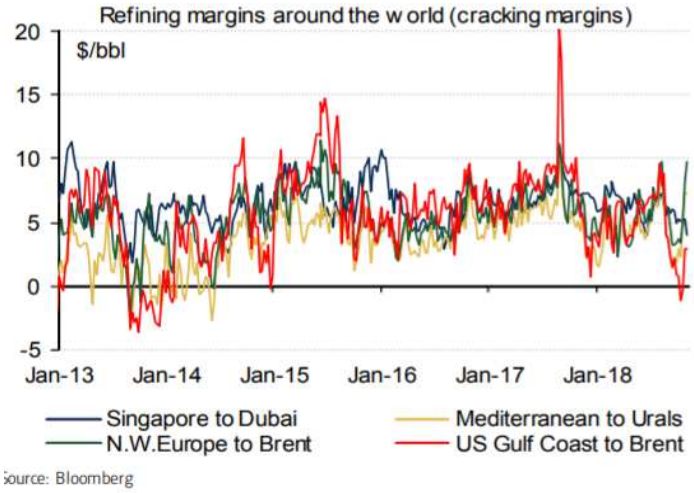




	Production Growth (boe)					EV / DACF					Net Debt / EBITDA				
Company	4Q18	4Q19	4Q20	4Q21	4Q22	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
APC	10%	7%	18%	14%	11%	6.4x	6.0x	5.6x	4.7x	4.2x	1.9x	1.7x	1.4x	0.9x	0.4x
APA	13%	6%	8%	4%	4%	5.7x	5.4x	5.5x	5.1x	5.0x	1.6x	1.6x	1.7x	1.6x	1.5x
COG	21%	15%	14%	8%	7%	9.7x	7.1x	9.0x	7.7x	6.9x	0.7x	0.0x	-0.4x	-0.7x	-1.1x
CHK	-18%	-3%	9%	3%	9%	5.9x	5.1x	4.4x	3.8x	3.5x	4.0x	3.7x	3.3x	2.8x	2.4x
CVX	12%	1%	-1%	-4%	-3%	7.8x	7.3x	6.7x	6.7x	6.8x	0.6x	0.3x	0.0x	-0.1x	-0.1x
XEC	20%	17%	14%	12%	9%	5.8x	5.4x	4.5x	3.9x	3.5x	0.5x	0.6x	0.5x	0.4x	0.2x
CXO	46%	20%	21%	19%	16%	11.3x	8.4x	6.7x	5.2x	4.4x	1.4x	1.1x	0.8x	0.4x	0.1x
COP	3%	2%	2%	0%	2%	6.7x	6.8x	7.0x	6.9x	6.8x	0.6x	0.6x	0.5x	0.3x	0.2x
CLR	12%	14%	12%	11%	4%	6.7x	6.4x	5.6x	4.8x	4.4x	1.5x	1.2x	0.8x	0.3x	-0.1x
DVN	-3%	6%	3%	2%	2%	5.1x	4.6x	4.6x	4.2x	4.0x	1.7x	1.1x	1.0x	0.7x	0.4x
EOG	17%	17%	16%	13%	9%	8.0x	8.0x	6.9x	5.8x	5.2x	0.6x	0.5x	0.3x	0.0x	-0.2x
HES	-14%	22%	10%	3%	18%	12.4x	8.4x	6.2x	6.3x	5.2x	1.8x	1.8x	1.3x	1.3x	1.0x
MRO	1%	6%	6%	2%	1%	5.3x	5.6x	5.2x	4.7x	4.7x	1.0x	1.0x	1.0x	0.7x	0.6x
NFX	20%	10%	13%	4%	4%	3.8x	3.6x	3.2x	3.0x	2.9x	1.3x	1.4x	1.3x	1.0x	0.7x
NBL	-7%	15%	30%	9%	-3%	7.1x	5.9x	4.0x	3.5x	3.5x	1.6x	2.1x	1.3x	0.8x	0.5x
OXY	14%	10%	6%	10%	6%	7.2x	6.7x	7.1x	6.6x	6.1x	0.7x	0.7x	0.7x	0.5x	0.3x
PXD	5%	16%	17%	16%	16%	8.3x	6.0x	5.3x	4.4x	3.8x	0.2x	0.1x	0.0x	-0.2x	-0.4x
RRC	4%	14%	9%	11%	9%	6.8x	7.2x	7.4x	5.9x	4.9x	3.3x	3.3x	3.7x	3.0x	2.4x
SWN	7%	-13%	11%	12%	4%	4.5x	6.8x	8.4x	6.0x	5.3x	1.0x	1.9x	3.0x	2.6x	2.4x
XOM	-2%	3%	2%	1%	4%	9.8x	7.9x	7.8x	7.6x	7.1x	0.6x	0.3x	0.1x	-0.1x	-0.3x
Average	8%	9%	11%	7%	6%	7.2x	6.4x	6.1x	5.3x	4.9x	1.3x	1.3x	1.1x	0.8x	0.5x

	Op. Cash Flow					Capex					FCF Yield After dividends				
Ticker	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
APC	6,030	6,882	7,500	8,976	10,316	5,951	4,650	5,197	5,212	5,465	-1%	6%	6%	11%	15%
APA	3,773	3,975	3,951	4,200	4,348	3,521	2,978	3,163	3,066	3,058	-1%	4%	3%	5%	7%
COG	1,181	1,672	1,338	1,555	1,747	881	823	663	737	737	2%	7%	5%	6%	8%
CHK	1,971	2,325	2,737	3,204	3,574	2,247	6,382	2,832	2,848	2,847	-8%	-124%	-3%	11%	22%
CVX	30,141	34,503	37,612	37,663	36,966	13,740	14,489	17,112	20,341	20,457	3%	5%	5%	3%	3%
XEC	1,517	1,646	1,969	2,306	2,564	1,672	1,850	1,994	2,062	2,170	-2%	-3%	-1%	2%	4%
CXO	2,722	3,648	4,625	6,058	7,212	2,619	3,583	4,166	4,864	5,453	0%	0%	2%	4%	6%
COP	12,404	12,181	11,776	11,940	12,183	6,102	6,101	6,094	6,101	6,074	6%	6%	6%	6%	6%
CLR	3,412	3,609	4,179	4,942	5,393	2,639	2,805	2,994	3,144	2,983	4%	4%	7%	10%	13%
DVN	2,637	3,442	3,443	3,759	3,948	2,604	2,549	2,657	2,637	2,725	-1%	5%	4%	6%	6%
EOG	8,101	8,069	9,507	11,359	12,628	6,069	6,538	7,270	8,168	7,617	3%	1%	2%	3%	6%
HES	1,513	2,415	3,360	3,300	4,060	2,291	2,995	3,185	3,220	3,750	-7%	-5%	-1%	-1%	0%
MRO	3,217	3,047	3,279	3,663	3,699	2,583	2,720	3,001	2,854	2,854	3%	1%	1%	4%	5%
NFX	1,463	1,511	1,697	1,864	1,937	1,535	1,524	1,692	1,534	1,495	-2%	0%	0%	9%	12%
NBL	2,077	2,946	4,425	5,250	5,309	3,317	3,324	3,409	3,551	3,494	-12%	-5%	7%	12%	13%
OXY	7,445	9,187	8,587	9,333	10,021	5,024	5,184	5,429	5,490	5,426	0%	3%	1%	2%	4%
PXD	3,217	4,468	5,087	6,143	7,192	2,853	4,047	4,491	4,941	5,363	1%	1%	2%	4%	6%
RRC	1,050	1,009	965	1,244	1,531	992	1,069	1,239	1,276	1,377	1%	-2%	-7%	-1%	3%
SWN	1,325	855	643	933	1,067	1,171	1,337	1,224	1,365	1,239	5%	-15%	-19%	-14%	-6%
XOM	38,131	46,700	47,682	49,027	52,223	23,844	28,161	28,964	29,300	30,167	0%	1%	1%	1%	1%

	Production Growth (boe)					EV / EBITDA					Net Debt / EBITDA				
Company	4Q18	4Q19	4Q20	4Q21	4Q22	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
CDEV	52%	34%	13%	9%	nm	8.6x	7.1x	5.5x	4.8x	4.4x	0.9x	1.3x	1.3x	1.1x	1.0x
CPE	50%	23%	11%	13%	nm	7.2x	5.4x	5.2x	4.5x	4.3x	2.3x	1.8x	1.8x	1.4x	1.3x
EPE	2%	16%	7%	16%	nm	6.4x	5.5x	5.0x	4.3x	3.6x	6.1x	5.3x	5.0x	4.4x	3.9x
ECA	24%	6%	6%	12%	12%	6.0x	4.1x	3.8x	3.2x	2.7x	1.7x	1.1x	0.9x	0.6x	0.3x
FANG	50%	109%	22%	15%	nm	8.3x	4.0x	3.2x	2.7x	2.4x	2.0x	1.0x	0.7x	0.4x	0.2x
HK	226%	48%	43%	32%	nm	15.4x	6.2x	4.3x	3.1x	2.5x	10.2x	5.6x	5.2x	4.8x	4.6x
JAG	56%	15%	17%	12%	nm	7.8x	6.6x	5.1x	4.3x	3.9x	1.1x	1.4x	1.4x	1.2x	1.2x
LPI	20%	6%	14%	12%	nm	3.7x	4.3x	3.5x	2.9x	2.7x	1.7x	2.4x	2.4x	2.2x	2.1x
MTDR	25%	15%	31%	15%	nm	6.5x	6.8x	5.4x	4.3x	4.1x	1.7x	2.1x	2.0x	1.8x	1.6x
OAS	23%	16%	19%	25%	nm	7.5x	5.2x	4.5x	3.5x	3.0x	3.7x	2.8x	2.7x	2.4x	2.1x
PDCE	34%	22%	9%	19%	nm	8.8x	4.2x	3.6x	2.9x	2.6x	2.9x	1.6x	1.5x	1.4x	1.1x
PE	47%	26%	18%	19%	nm	7.0x	6.7x	5.5x	4.4x	3.8x	1.5x	1.7x	1.6x	1.4x	1.4x
SM	10%	18%	13%	8%	nm	3.5x	4.8x	4.0x	3.5x	3.4x	1.8x	2.7x	2.4x	2.2x	2.1x
WLL	5%	2%	5%	6%	nm	4.2x	5.0x	4.7x	4.3x	4.3x	2.0x	2.1x	1.6x	1.1x	0.7x
WPX	10%	21%	15%	13%	nm	6.5x	5.7x	5.1x	3.9x	3.8x	1.8x	1.7x	1.6x	1.1x	1.0x
WRD	6%	7%	9%	0%	nm	7.9x	4.8x	4.5x	4.4x	3.9x	2.1x	1.4x	1.5x	1.3x	1.0x
Average	40%	24%	16%	14%		7.2x	5.4x	4.6x	3.8x	3.5x	2.7x	2.3x	2.1x	1.8x	1.6x

	Op. Cash Flow					Capex					FCF Yield After dividends				
Ticker	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
CDEV	656	703	901	1,044	1,144	977	1,167	1,148	1,061	1,178	-7%	-10%	-5%	0%	-1%
CPE	445	593	617	740	761	605	661	672	671	651	-7%	-3%	-3%	3%	5%
EPE	486	478	538	671	857	681	540	650	879	1,190	-63%	-20%	-36%	-67%	-107%
ECA	2,239	2,431	2,653	3,204	4,038	2,000	2,068	2,269	2,634	2,938	3%	5%	5%	8%	15%
FANG	1,624	3,484	4,331	5,144	5,876	1,525	3,421	3,833	4,336	4,586	1%	1%	4%	7%	11%
HK	54	129	190	265	322	478	399	548	669	635	-89%	-56%	-75%	-85%	-66%
JAG	430	457	578	685	730	696	738	778	738	790	-10%	-11%	-8%	-2%	-2%
LPI	514	451	544	662	727	714	630	796	827	802	-16%	-15%	-20%	-13%	-6%
MTDR	687	511	655	819	842	1,483	700	936	927	728	-28%	-7%	-10%	-4%	4%
OAS	971	885	1,020	1,330	1,566	1,121	1,160	1,330	1,667	1,612	-6%	-10%	-12%	-13%	-2%
PDCE	763	854	1,007	1,222	1,346	888	1,071	1,173	1,420	1,227	-5%	-8%	-6%	-8%	5%
PE	1,218	1,244	1,541	1,914	2,207	1,749	1,926	2,079	2,337	2,563	-8%	-10%	-8%	-6%	-5%
SM	758	883	1,058	1,222	1,278	1,279	1,142	1,289	1,257	1,257	-22%	-11%	-10%	-1%	1%
WLL	1,062	1,011	1,112	1,249	1,262	745	699	726	746	724	10%	10%	13%	17%	18%
WPX	933	1,317	1,474	1,976	2,063	1,343	1,554	1,567	1,729	1,750	-7%	-4%	-2%	4%	5%
WRD	573	677	724	749	848	818	807	824	639	707	-11%	-6%	-5%	5%	6%

Once again into 2019 with the volatile price environment with uncertain demand and over-supply we want to focus on the Energy companies with the best assets, strongest balance sheets, cheap valuation and cost-production advantages. Names that fit these parameters being selective among the Majors, Large Caps and SMID Caps include **Anadarko (APC), Pioneer (PXD), Cimarex (XEC),** and **Diamondback (FANG).**

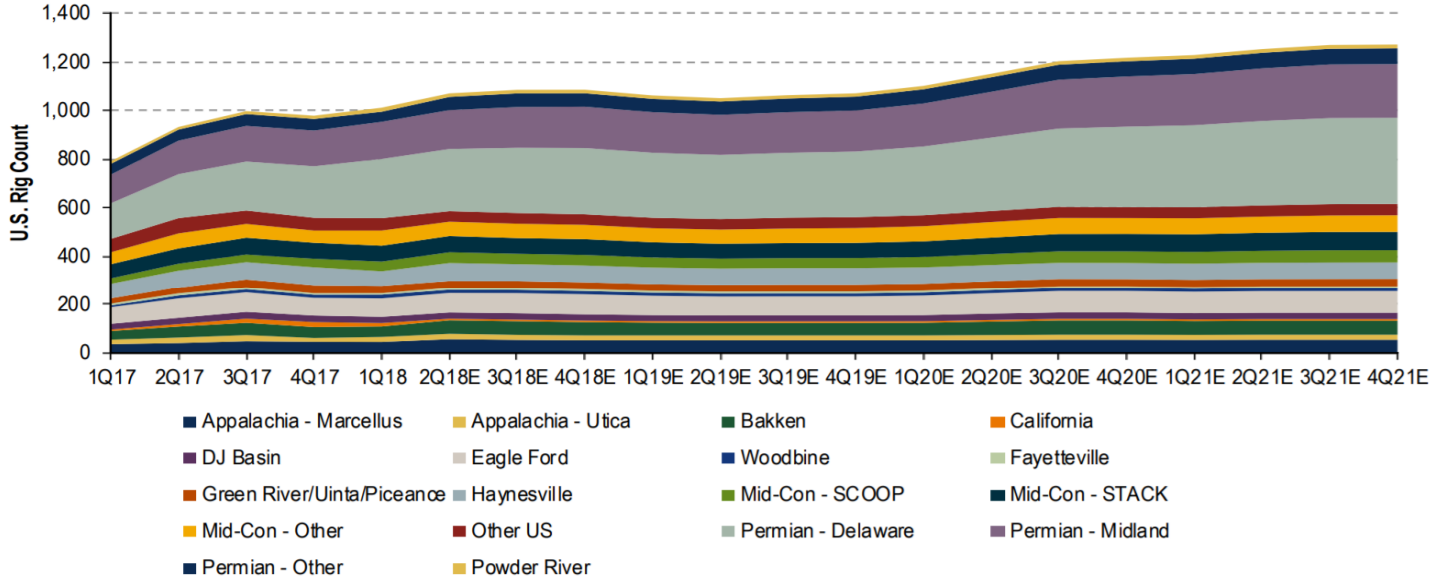
Oil & Gas Services:

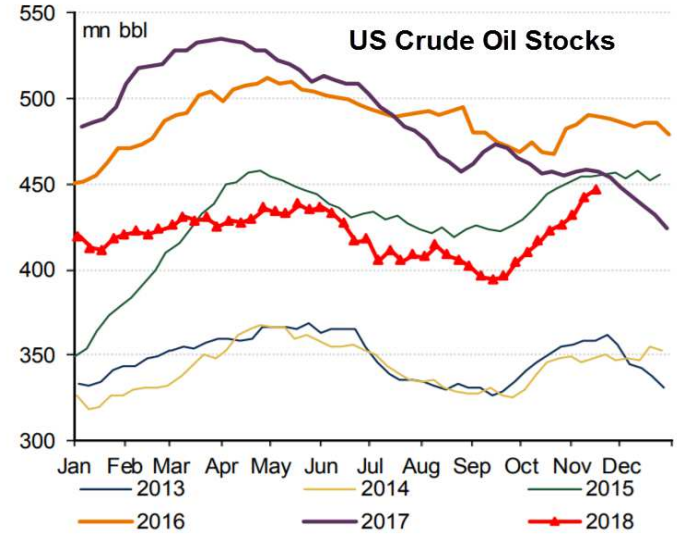
Components: *BHGE, BRS, CJ, CKH, CLB, DNOW, DRQ, FET, FMSA, FRAC, FTI, HAL, HCLP, MDR, MRC, NOV, OII, OIS, PDS, PTEN, PUMP, RES, SLB, SLCA, SPN, USAC, WFT, APY, LBRT, AROC, HLX, EXTN, FTSI, SOI, KLXE, NGS, GEOS, WHD, NBR*

The Energy Services group also trades very correlated to its underlying commodity and is closely tied to the E&P companies as their CAPEX budgets directly impact demand for the services group. With the sharp downturn in Oil prices, a lot of companies cut production targets resulting in a major downturn in earnings for this group, but recent indications from the CEO's of leaders like Halliburton (HAL) and Schlumberger (SLB) are seeing a modest uptick and signs of stabilization. The weekly rig count data is also closely correlated with performance in this group. Only 4 of the 38 names in this group are positive YTD (GEOS, HLX, WHD and DNOW). Pressure Pumping is one of the stronger themes in the group with names leveraged to that theme being FTSI, PUMP, FRAC, RES, and CJ. US Land Rig focused names are HP, PTEN and NBR. Offshore focused names like SPN, NOV, WFT, CLB and FET continue to look like an area to avoid due to longer-term disadvantages.

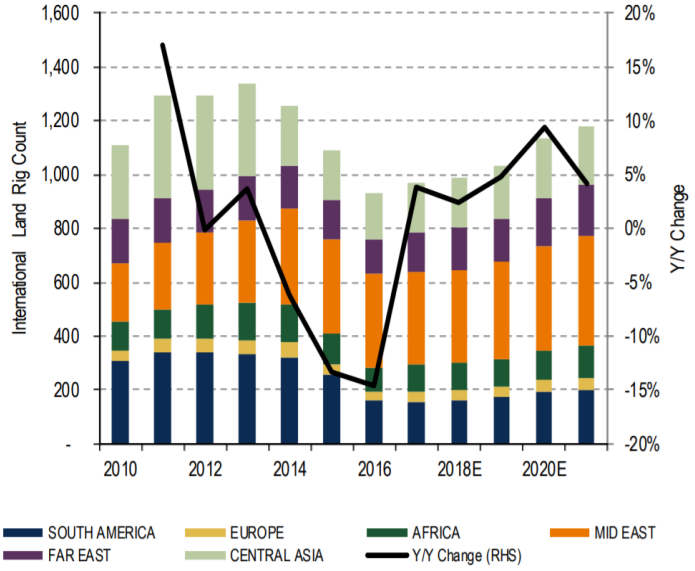
EV/EBITDA, EV/Revenues, EBITDA margins and looking at debt levels with balance sheet ratios will all be appropriate in analyzing this group. Stocks are now trading in line with historical EV/EBITDA valuations of 8X.

Recent oil price volatility (November the worst month for oil prices since October 2008) is likely to cause further downward revisions to most of these names in early 2019 though US production growth continues to trend upwards it could be curtailed by E&P companies being more cautious is this oil price environment. The companies in this group continue to focus on technology improvements to increase efficiencies. Into 2019 consensus estimates are falling with US capex now expected down 2% Y/Y, rig count flat, and very little US onshore oil production growth. International is seen to have modest 5% rig count growth though could see OPEC cuts weigh on the Internationally focused names like Schlumberger (SLB). The group is likely one to focus more on in 2H19 as it could see some acceleration of growth into 2020. The area to focus on for bulls is likely US onshore with a focus on US shale spending dominating incremental E&P spending. Last quarter more than a few companies noted allocating portions of offshore spending to onshore.





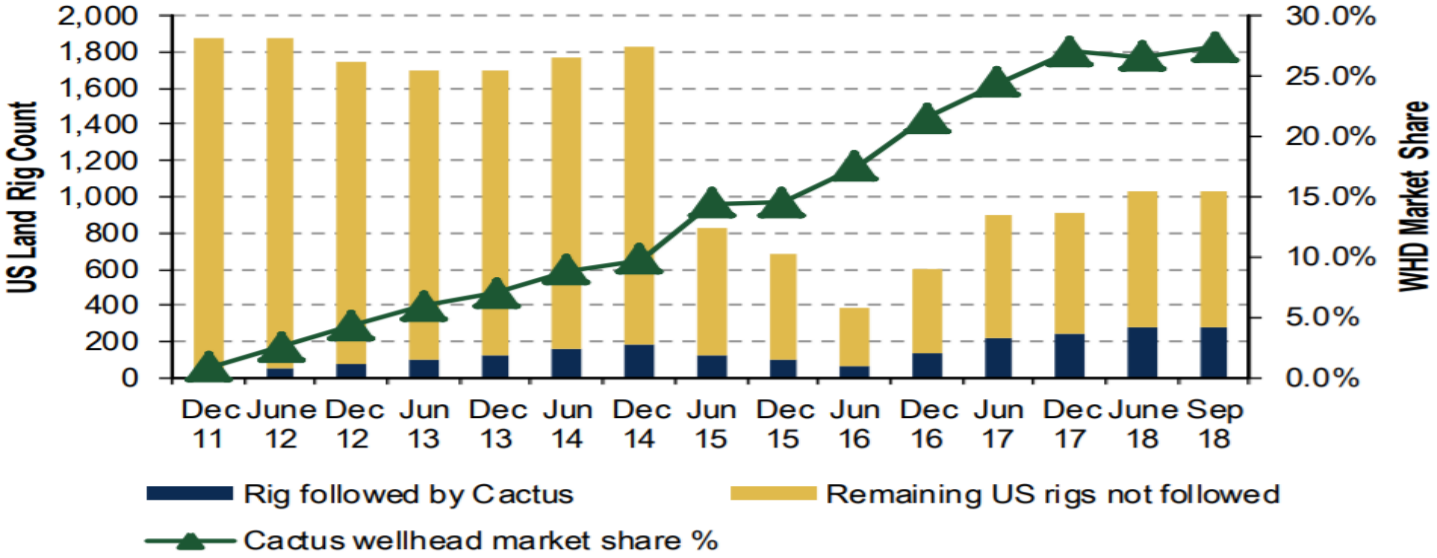
Source: US DOE



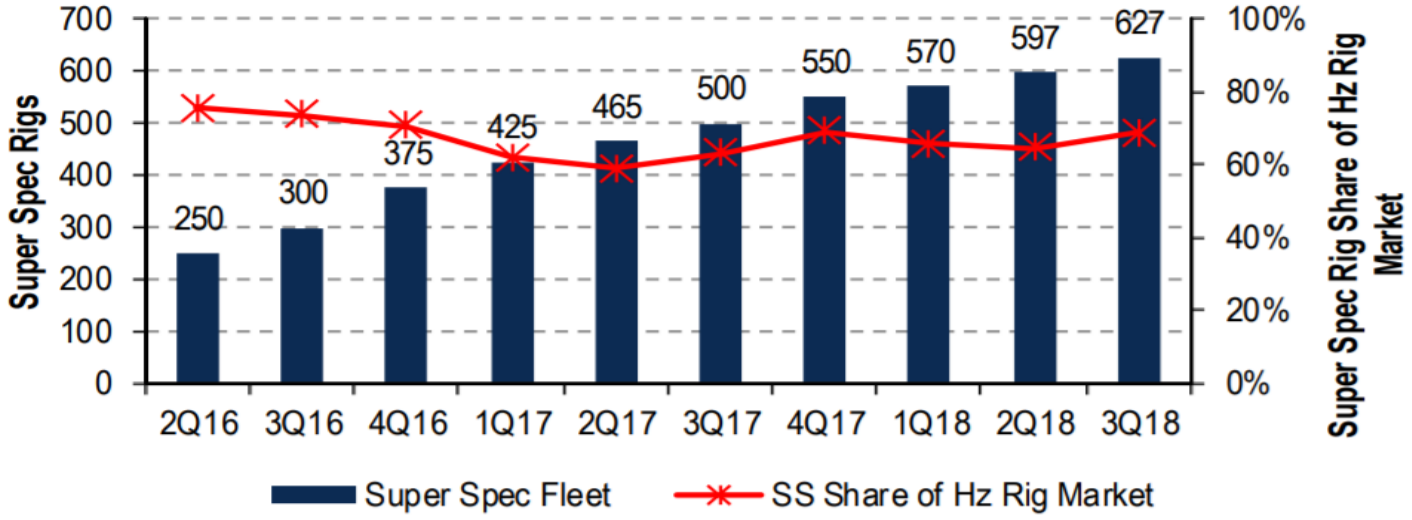
EV/EBITDA versus EBITDA Margins

ProPetro (PUMP) remains a favorite name with its strong growth profile and exposure to pumping and onshore drilling. The $1.46B Co. trades 7.1X Earnings and 3.9X EBITDA with 124.7% topline growth in 2017 and 72.6% growth in 2018 expected to be followed up with 22.7% growth in 2019. In November the company announced a $400M deal for Pioneer Natural's (PXD) pressure pumping assets. PUMP screens positively to peers and has key exposure to the Permian Basin as well as industry leading utilization.

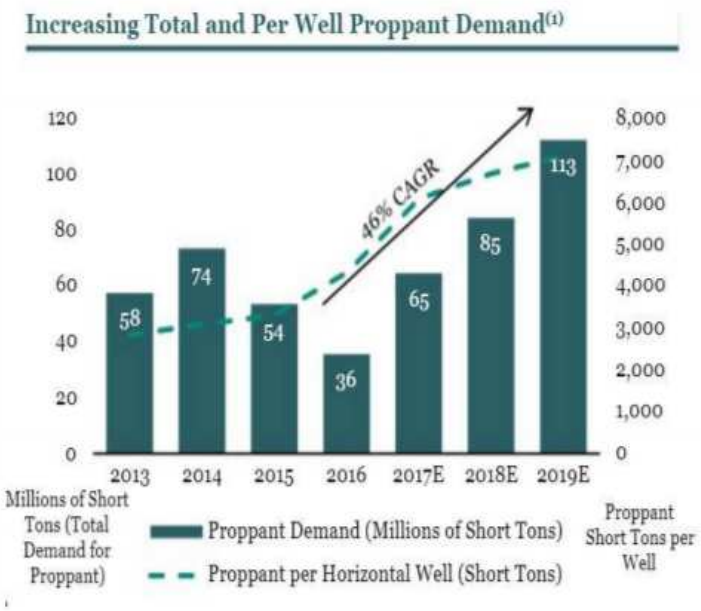
Cactus (WHD) is a premium valuation name in this group but exhibiting some of the strongest fundamental metrics, the $2.34B maker of wellheads and pressure equipment trading 14.3X Earnings, 10.9X EBITDA and 17X FCF. Its 32.5% EBITDA margins are superior and it is a market share taker, growing revenues 120% in 2017 and 62% in 2018 with 17.6% growth seen in 2019. Cactus is a precision manufacturing company with its primary business being the design, manufacture, and sale of wellhead assemblies, which are used on every oil and gas well drilled to provide a platform off of which all work in the well is performed. Market share is denominated by the number of rigs "followed," or rigs which you supply wellhead assemblies to as wells are drilled. As a result, WHD has a 27.4% market share, up from about ~9% four years ago. The CEO of WHD either founded or ran two of the three primary competing companies and WHD is known for quality, innovation, reliability and performance. After three consecutive quarters of beating expectations, WHD has proven it can successfully leverage its pre-existing wellhead customers to penetrate the frac rental market through its frac stack and zipper manifold offerings. In an effort to expand its presence across the completion market, WHD is developing new complementary rental products to reduce human intervention during the completions process. WHD has no debt and best-in-class FCF margin, an eventual candidate to return cash to shareholders.



Patterson-UTI Energy (PTEN) is the favored mid-cap as a value at 5.2X EBITDA with a strong balance sheet and exposure to North American land and the increased prevalence of super-spec rigs. It is also leveraged to a turnaround in the pressure pumping market and super-spec rig demand is exceeding supply with day-rates moving higher. PTEN outperformed peers in Q3 as one of the few names not to see negative revisions, and while dragged lower recently by the US fracking market, trades at attractive valuation to peers and levered to the strongest themes in the industry.



Solaris Oilfield Infrastructure (SOI) is a smaller name of interest, the $642M Co. trading 6.3X EBITDA that has seen revenues of $67.4M in 2017 expected to reach $320M in 2020. SOI is a maker of mobile proppant management systems and provider of real-time inventory management solutions serving the oil & natural gas industries. The company facilitates increased per well proppant consumption levels with innovative solutions and has a 15% market share in Mobile Proppant Management Systems. Its customers include Devon Energy, Apache & EOG Resources with most of its systems deployed in the Permian Basin. A recovery in oil prices is driving increased drilling activity and E&P companies are focused on higher recovery rates & returns. There is a clear trend of increased proppant usage and SOI's solutions are a beneficiary. The company has expanded into transloading logistics with its new Kingfisher Facility that is targeting the STACK / SCOOP area. The biggest challenges to the Oil & Gas industry currently are shortages with labor and trucking capacity, and SOI solutions improve efficiency of each of these. SOI has stellar 62% EBITDA margins and a debt-free balance sheet.



Pipelines/Midstream - MLP's:

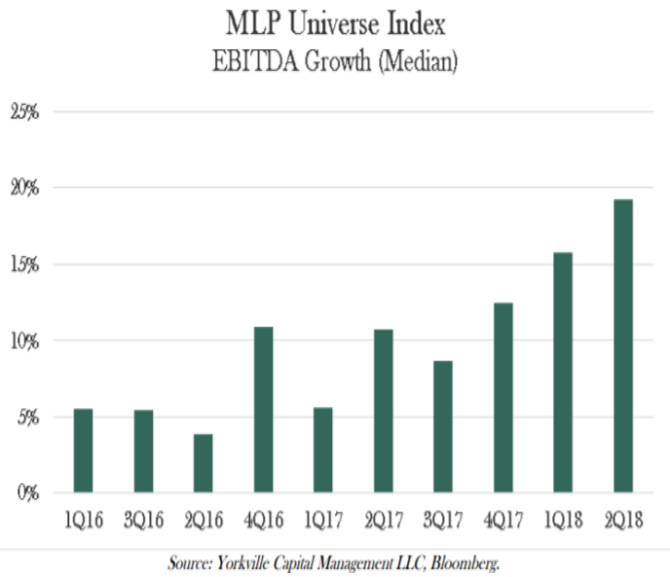
Components: *AMID ANDX APU BKEP BWP CAPL CCLP CNNX DCP DKL DM EEP ENBL ENLC ENLK EQGP EQM ETE ETP FGP GLP GPP HEP MMLP MPLX NBLX NGL NS NSH OKE PAA PAGP PBFX PSXP SEP SHLX SMLP SNMP SRLP SUN TCP TEGP TEP TLP USDP VLP WES WGP WPZ BPL CEQP ENB EPD GEL KMI MMP SPH TRGP TRP CNXM VNOM*

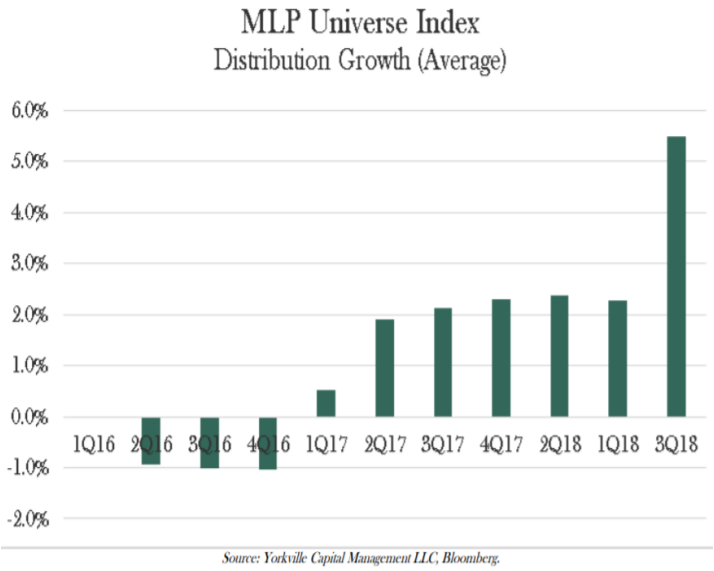
The midstream energy group consists mainly of MLP's and traditional EBITDA-based multiples are often used to value the companies, and a group where dividend yield plays a larger role for investors and take into considering distribution history and growth. Similar to the other Energy-based industries, the underlying commodity determines much of the movements of these stocks as it impacts the demand for midstream operations. The Distributable Cash Flow Coverage ratio is one way to evaluate the health of a MLP. 2018 was another tough year for the group once again with many of the names down 15% or more, and the JPM Alerian MLP ETN is -9% YTD. In 2018 most of the group is lower with Energy weakness with notable outperformers including VNOM, CQP, CEQP, PAA, TLP and CNXM.

Rising production implies the need for new midstream and downstream infrastructure, particularly in the Permian. The need for new pipelines to move crude, natural gas and NGLs to market centers along the Gulf Coast and to handle huge volumes of produced water in the basin is driving substantial growth opportunities for many MLPs/midstream companies with more projects yet to be captured. This wave of production is also driving significant demand for downstream services, including fractionation, storage/terminaling and of course, export facilities. <any MLPs/midstream companies announced growth capex increases for the 2018-2020 period, which should drive future earnings growth. Exports of crude, natural gas and NGLs will be a key industry focus and an important growth driver for the next several years. The sector saw a significant amount of asset sales in 1H18 motivated by securing funding for capex, expediting deleveraging initiatives and refocusing the businesses.

In general we want to concentrate on names with growing and safe distributions as these are utilized more as instruments for income rather than growth. MLPs are seen to be in the middle innings of a strong secular growth cycle with partnerships growing cash flows that have been paying down debt and internally fund growth capex. MLPs have

been in a derisking cycle and the next move could be back to distribution growth. MLP stock performance historically has been tied to distribution growth.

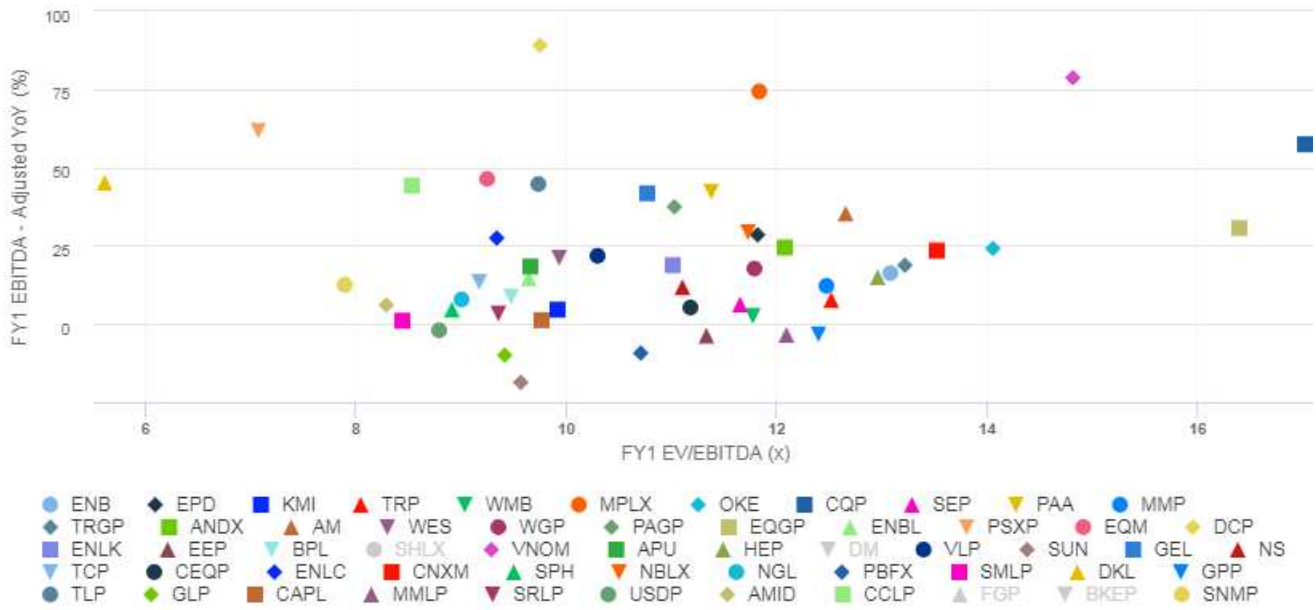




Ticker	Name	Segment	Sector	Market Cap.	Yield	Dist. Growth YoY	Dist. Coverage	Net Debt/ EBITDA
EPD	Enterprise Products Partners LP	Infrastructure	Natural Gas Pipelines	$57,295	6.6%	2.4%	1.6	3.8
ET	Energy Transfer LP	Infrastructure	Natural Gas Pipelines	$38,131	8.4%	3.4%	1.3	2.9
MPLX	MPLX LP	Infrastructure	Gathering & Processing	$26,308	7.7%	8.5%	1.4	4.1
CQP	Cheniere Energy Partners LP	Infrastructure	Natural Gas Pipelines	$18,237	6.2%	31.8%	1.5	6.6
SEP	Spectra Energy Partners LP	Infrastructure	Natural Gas Pipelines	$17,810	8.6%		1.1	3.5
PAA	Plains All American Pipeline LP	Infrastructure	Crude Oil Pipelines	$16,726	5.2%	0.0%	1.9	4.0
MMP	Magellan Midstream Partners LP	Infrastructure	Refined Product Pipelines	$13,801	6.5%	8.0%	1.3	2.9
ANDX	Andeavor Logistics LP	Infrastructure	Crude Oil Pipelines	$9,161	11.0%	4.5%	0.9	4.1
WES	Western Gas Partners LP	Infrastructure	Gathering & Processing	$7,406	8.7%	6.6%	1.1	3.9
WGP	Western Gas Equity Partners LP	Infrastructure	General Partners	$6,345	8.2%	10.7%	1.0	3.9
EQGP	EQGP Holdings LP	Infrastructure	General Partners	$6,055	6.3%	38.2%	1.0	3.9
EQM	EQM Midstream Partners LP	Infrastructure	Natural Gas Pipelines	$5,810	9.4%	13.8%	1.3	
PSXP	Phillips 66 Partners LP	Infrastructure	Refined Product Pipelines	$5,807	6.8%	22.6%	1.5	2.6
ENBL	Enable Midstream Partners LP	Infrastructure	Gathering & Processing	$5,779	9.5%		1.3	3.6
AM	Antero Midstream Partners LP	Infrastructure	Gathering & Processing	$5,174	6.4%	29.4%	1.3	2.3
DCP	DCP Midstream LP	Infrastructure	Gathering & Processing	$4,884	9.2%	0.0%	1.2	4.5
EEP	Enbridge Energy Partners LP	Infrastructure	Crude Oil Pipelines	$4,706	12.9%	0.0%	1.1	4.1
ENLK	EnLink Midstream Partners LP	Infrastructure	Gathering & Processing	$4,672	11.8%	0.0%	1.2	4.1
BPL	Buckeye Partners LP	Infrastructure	Refined Product Pipelines	$4,542	10.1%		1.1	4.9
SHLX	Shell Midstream Partners LP	Infrastructure	Crude Oil Pipelines	$4,217	8.1%	20.1%	1.2	2.6
VNOM	Viper Energy Partners LP	Commodity	Exploration & Production	$3,726	7.7%		0.9	1.7
APU	AmeriGas Partners LP	Commodity	Downstream	$3,455	10.2%	0.0%	1.0	4.6
BSM	Black Stone Minerals LP	Commodity	Exploration & Production	$3,430	8.8%	18.4%	1.3	
HEP	Holly Energy Partners LP	Infrastructure	Refined Product Pipelines	$2,966	9.5%	3.1%	1.0	4.1
DM	Dominion Energy Midstream Partners LP	Infrastructure	Natural Gas Pipelines	$2,946	7.9%	22.0%	1.0	
VLP	Valero Energy Partners LP	Infrastructure	Refined Product Pipelines	$2,914	5.2%	14.8%	1.8	3.0
AMGP	Antero Midstream GP LP	Infrastructure	General Partners	$2,758	3.9%	144.1%	1.0	(0.1)
GEL	Genesis Energy LP	Infrastructure	Crude Oil Pipelines	$2,703	9.8%	8.0%	1.5	5.5
NS	NuStar Energy LP	Infrastructure	Refined Product Pipelines	$2,587	9.9%	-45.2%	1.3	5.2
ARLP	Alliance Resource Partners LP	Commodity	Natural Resources	$2,558	10.7%	4.0%	1.5	0.6

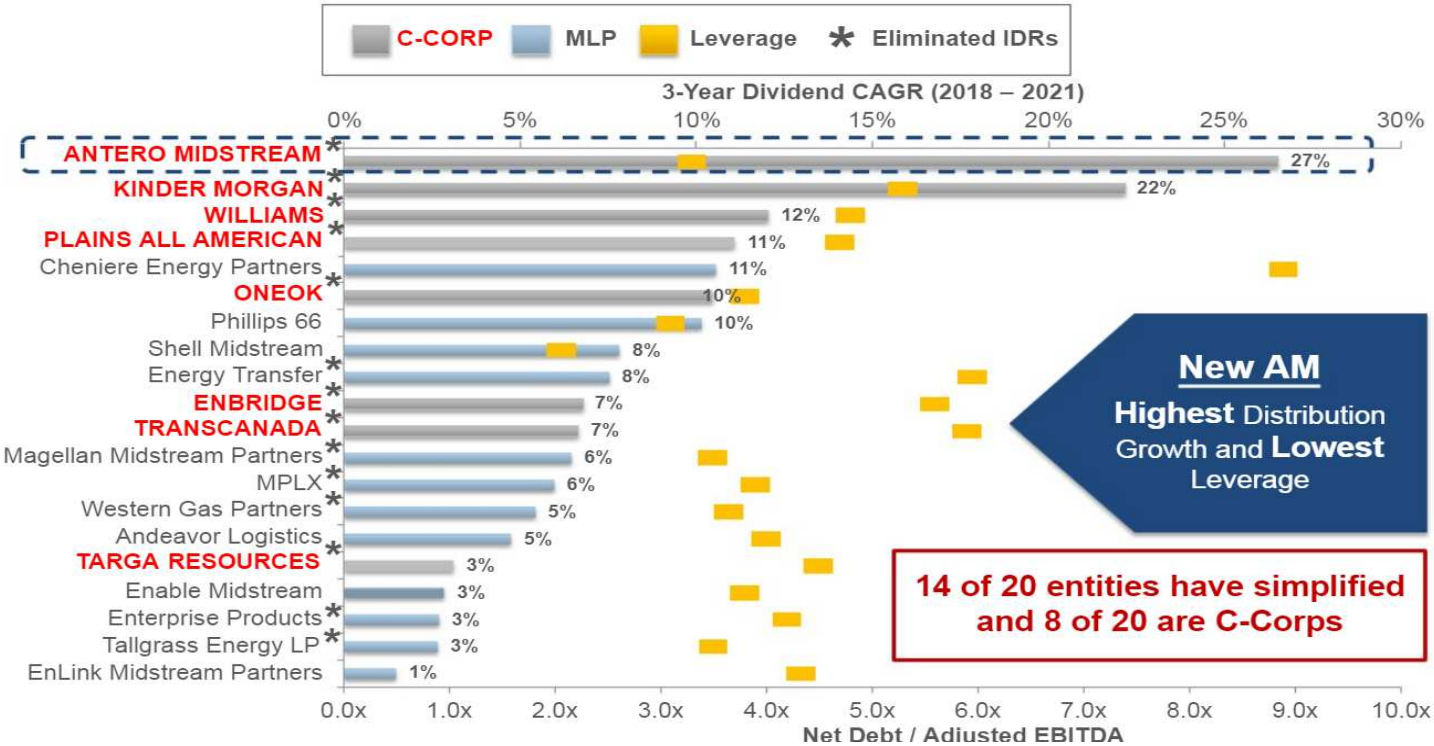
SUN	Sunoco LP	Commodity	Downstream	$2,307	11.8%	0.0%	1.2	4.5
TCP	TC PipeLines LP	Infrastructure	Natural Gas Pipelines	$2,124	8.7%	-35.0%	2.0	6.5
CEQP	Crestwood Equity Partners LP	Infrastructure	Natural Gas Pipelines	$2,115	8.1%	0.0%	1.3	4.0
ENLC	EnLink Midstream LLC	Infrastructure	General Partners	$2,072	9.3%		1.3	4.2
CVRR	CVR Refining LP	Commodity	Downstream	$2,043	26.0%	-4.3%	N/A	0.2
BPMP	BP Midstream Partners LP	Infrastructure	Crude Oil Pipelines	$1,767	6.9%		1.2	(0.3)
SPH	Suburban Propane Partners LP	Commodity	Downstream	$1,440	10.3%	0.0%	1.4	4.4
NBLX	Noble Midstream Partners LP	Infrastructure	Gathering & Processing	$1,314	6.8%	20.0%	1.9	2.2
USAC	USA Compression Partners LP	Commodity	Energy Services	$1,301	14.5%	0.0%	1.0	6.4
CNXM	CNX Midstream Partners LP	Infrastructure	Gathering & Processing	$1,152	7.7%	15.0%	1.3	2.8
NGL	NGL Energy Partners LP	Commodity	Downstream	$1,148	16.8%	0.0%	1.1	5.5
TGP	Teekay LNG Partners LP	Commodity	Marine Transportation	$1,079	4.1%	0.0%	3.6	11.8
GLOP	GasLog Partners LP	Commodity	Marine Transportation	$1,061	9.2%	2.4%	1.1	4.3
HESM	Hess Midstream Partners LP	Infrastructure	Gathering & Processing	$1,051	7.4%	15.1%	1.2	(0.1)
PBFX	PBF Logistics LP	Infrastructure	Crude Oil Pipelines	$911	10.0%		1.2	3.6
SMLP	Summit Midstream Partners LP	Infrastructure	Gathering & Processing	$902	18.7%	0.0%	1.0	4.0
GMLP	Golar LNG Partners LP	Commodity	Marine Transportation	$848	13.3%	-30.0%	0.7	4.8
EVA	Enviva Partners LP	Commodity	Natural Resources	$761	8.9%		N/A	4.9
DKL	Delek Logistics Partners LP	Infrastructure	Crude Oil Pipelines	$744	10.4%	10.5%	1.3	5.1
WLKP	Westlake Chemical Partners LP	Commodity	Downstream	$733	7.4%		N/A	
TOO	Teekay Offshore Partners LP	Commodity	Marine Transportation	$681	2.4%	0.0%	10.0	8.1
TLP	TransMontaigne Partners LP	Infrastructure	Refined Product Pipelines	$667	7.8%	6.6%	1.3	5.4
KNOP	KNOT Offshore Partners LP	Commodity	Marine Transportation	$655	10.4%	0.0%	1.5	5.1
OMP	Oasis Midstream Partners LP	Infrastructure	Gathering & Processing	$595	8.5%		1.2	
HCLP	Hi-Crush Partners LP	Commodity	Energy Services	$591	15.4%	50.0%	1.3	1.1
GLP	Global Partners LP/MA	Commodity	Downstream	$587	11.0%	2.7%	1.4	5.3
HMLP	Hoegh LNG Partners LP	Commodity	Marine Transportation	$569	10.3%	2.3%	1.1	3.3
SXCP	SunCoke Energy Partners LP	Commodity	Natural Resources	$567	13.1%	-32.7%	1.4	3.3
KRP	Kimbell Royalty Partners LP	Commodity	Exploration & Production	$554	9.8%	45.2%	1.0	
FELP	Foresight Energy LP	Commodity	Natural Resources	$545	6.0%		N/A	4.0
CAPL	CrossAmerica Partners LP	Commodity	Downstream	$544	13.3%	-16.3%	1.0	4.8

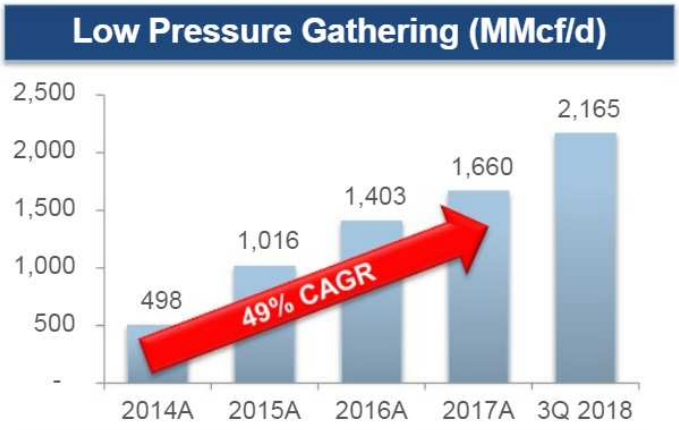
EV/EBITDA versus EBITDA Growth

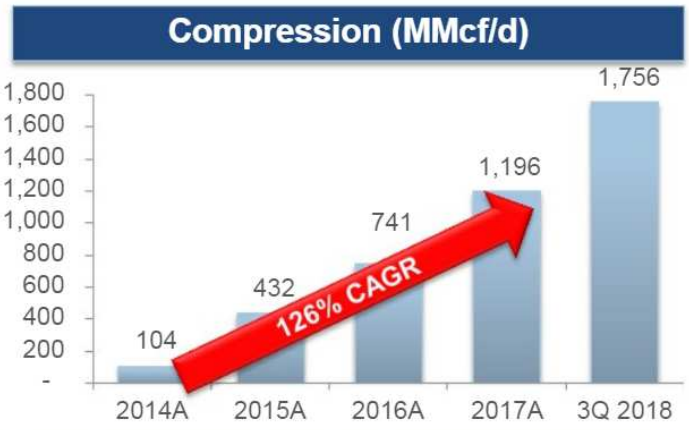


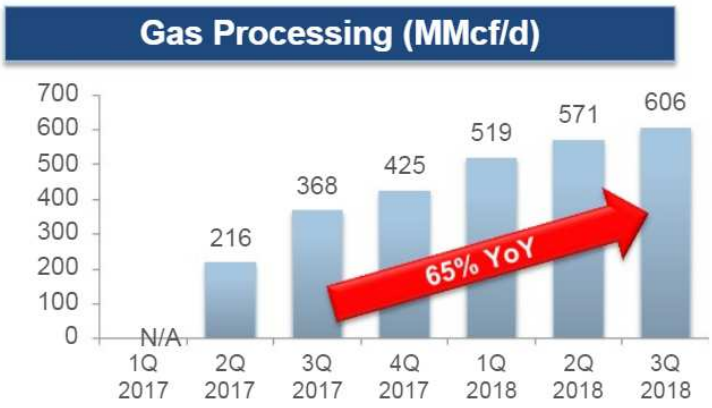
After screening all the names on valuation, EBITDA growth, distribution growth, operational efficiency, and balance sheet health, a few names stood out above the rest.

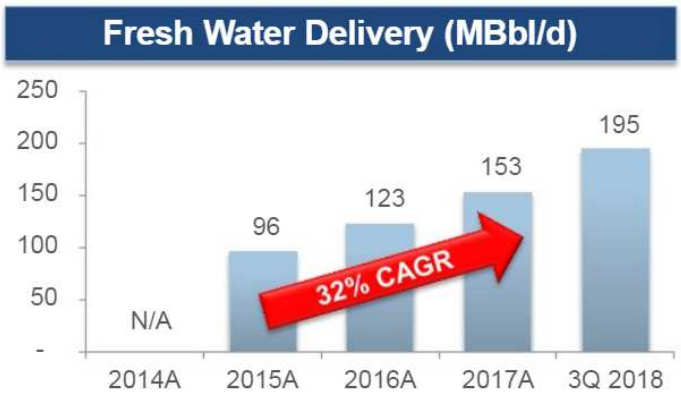
Antero Midstream (AM) is a $5.2B midstream name trading 12.3X EBITDA with a 6.4% dividend yield. AM has a 29.4% distribution growth rate and Debt/EBITDA fairly low at 2.3X. AM has seen rapid revenue growth long with 20% EPS growth. AM earns 65% of EBITYDA from Gathering/Compressions and 35% from Water and is focused in the Marcellus and Utica shale. AM announced on 10/9 plans to convert to C-Corp. structure that will save $375M in taxes through 2022, which is expected to close in Q1 2019. AM also has $2.7B in project backlog. AM is one of the best ways for exposure to Natural Gas Midstream.





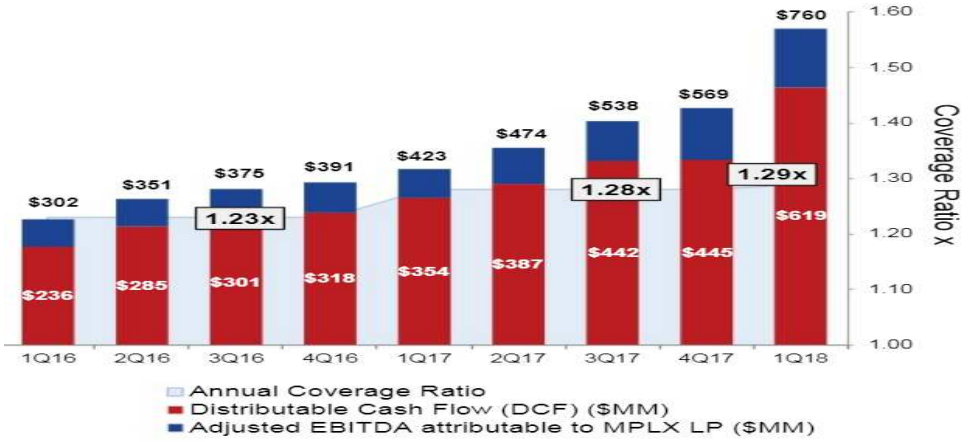




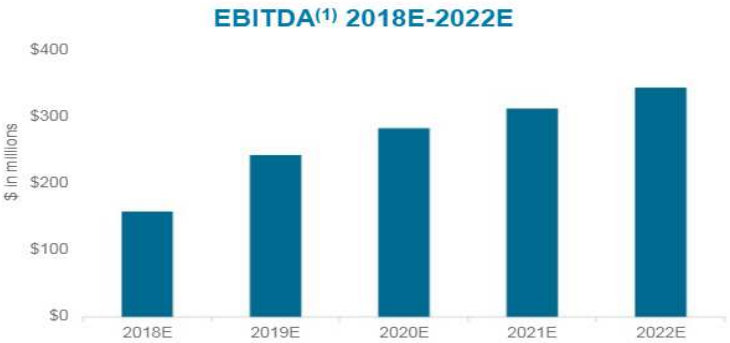


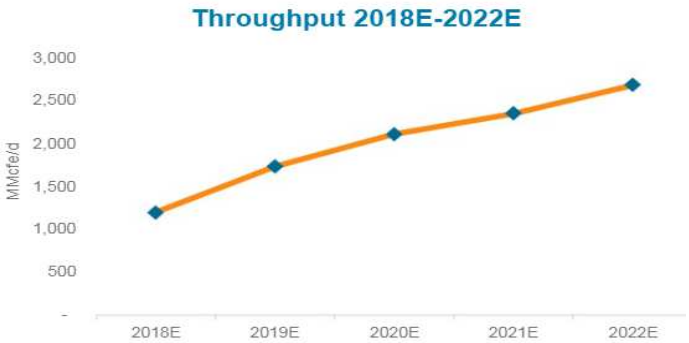
Phillips 66 Partners (PSXP) is a $5.86B pipeline play trading 6.9X EBITDA with a 6.78% dividend yield. PSXP has 22.6% distribution growth, distribution coverage of 1.5X, and Debt/EBITDA at 2.6X. PSXP distribution growth has a 30% CAGR since its IPO in 2013. It has a ton of new products coming online through next year at typical EBITDA build multiples of 6-8X. PSXP has an EBITDA CAGR of 11% through 2022 and all organic with its high quality growth assets. One main overhang for it is the heaviest incentive distribution rights (IDR) burden in the group, and the market has punished IDRs with a lack of visibility into IDR eliminations.

MPLX LP (MPLX) is one of the larger names with its $27B market cap and trading 10.7X FY19 EBITDA with a 7.45% dividend yield. MPLX is a midstream energy infrastructure name with a focus on logistics, storage, gathering, and processing. MPLX has a large presence in the Marcellus/Utica basins and a strong footprint in STACK while growing its presence in the Permian basin. MPLX is growing organically with eleven plants expected to be completed by the end of this year. It is well positioned as the largest processor in the Northeast for natural gas which is where the majority of US growth is seen occurring. Management indicated last quarter a strategic review to assess option for MPLX and ANDX after Marathon Petro (MPC) bought Andeavor (ANDV).



CNX Midstream (CNXM) has a $1.2B market cap and trades 9.3X FY19 EBITYDA with a 7.48% dividend yield. CNXM sees distribution growth of 15% with a 1.3X coverage ratio and Debt/EBITDA at 2.8X. CNXM is also focused on the Utica and Marcellus basins.

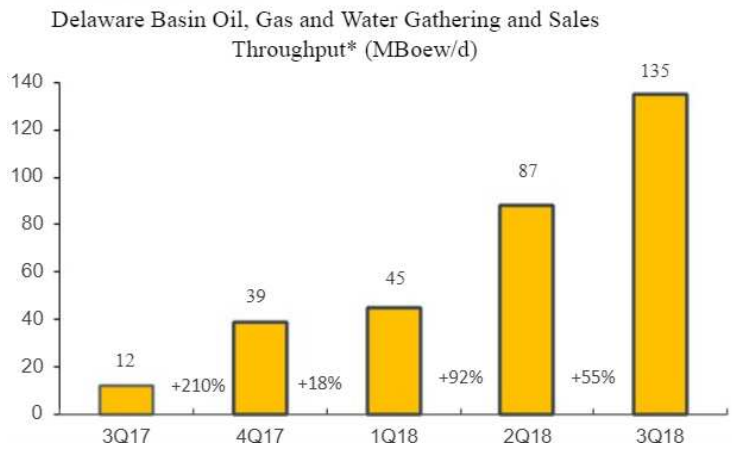


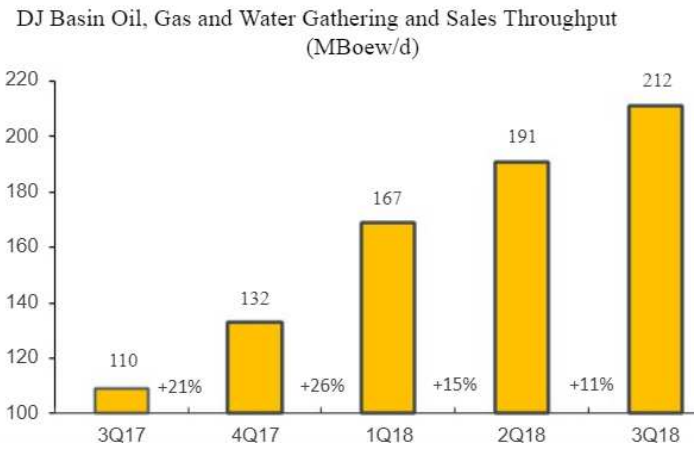


Financial Guidance

Attributable to the Partnership (CNXM)	2018E	2019E	2020E	2021E	2022E
Throughput (Mmcfe/d)	1,150 - 1,240	1,600 - 1,800	2,000 - 2,200		
($ in millions)					
Capital Expenditures	$80 - $90	$330 - $350	$80 - $90		
EBITDA	$150 - $165	$230 - $250	$275 - $295		
Distributable Cash Flow	$120 - $135	$185 - $205	$220 - $240		
Distribution Coverage	1.2x - 1.4x	1.5x - 1.6x	1.4x - 1.5x		
LP Distribution Growth Target	*15%*	*15%*	*15%*	*15%*	*15%*

Noble Midstream (NBLX) has a $1.35B market cap and trades 8.9X FY19 EBITDA with a 6.78% dividend yield. NBLX also carries a 20% distribution growth rate, 1.9X coverage ratio and Debt/EBITDA at 2.2X. NBLX also carries a strong growth profile and the rejection of CO Prop 112 should allow shares to re-rate higher. NBLX screens strong to peers across all metrics and coming off an upside quarter while moving towards its goal of 50% EBITDA contribution from the Permian Basin by the end of 2020. NBLX is seeing strong volume ramps with Black Diamond and Advantage projects, and across all the important metrics is the one name in the group that is most impressive.





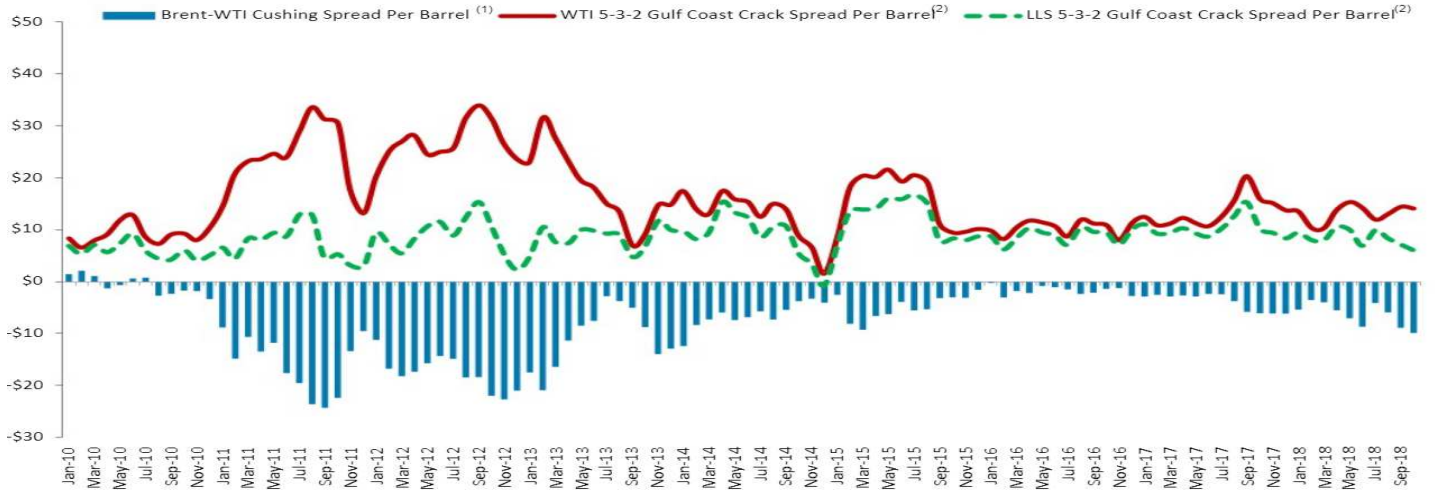
Refiners (Downstream):

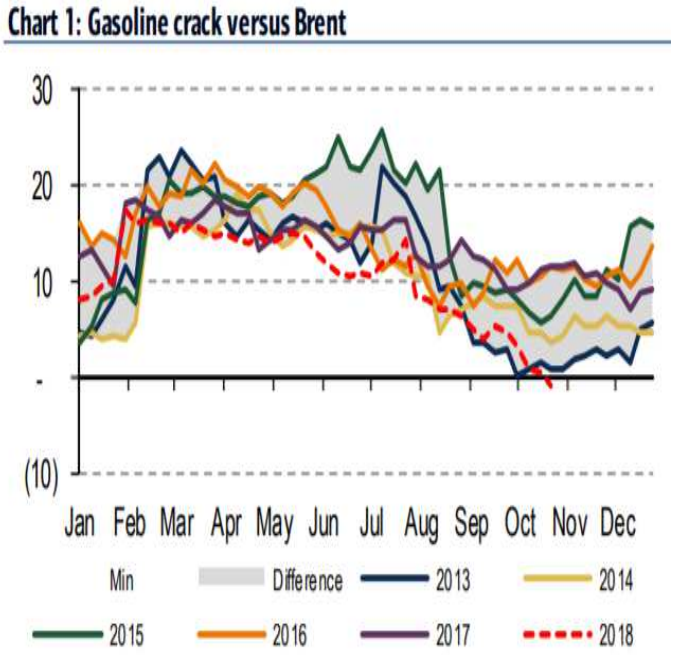
Components: *MPC, PSX, VLO, HFC, PBF, VVV, CVI, DK, INT, PARR, AE*

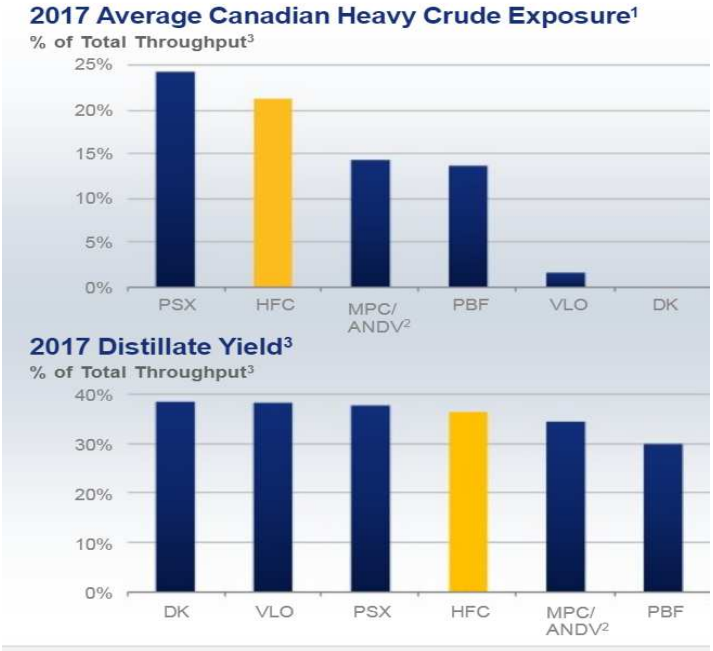
The refining group is one of the smaller ones and has always been one of the more correlated, the names tend to move together in multi-day trend moves, and much of it is tied to the crack spreads, the price of selected finished products minus the total barrels of crude needed to create those products. It is a group that is great to trade, but less alluring to invest with the ever-changing margins leading to very inconsistent and volatile earnings. It is also a group where geographical presence is important due to the differing prices from supply/demand in different regions of the US, and the World for that matter. Every Wednesday the EIA releases oil demand and inventory data that can gauge US refined products demand, an indicator worth paying attention to for trading this space. Another metric in refining is the Nelson Complexity Index, which assigns a number to the complexity of a certain physical or chemical process, and scores the refinery on how much crude can be run by those complex processes in relation to the facility's overall processing capacity, the higher the number the better. Cost efficiency is also extremely important in this group as the companies have little pricing control, so refinery utilization is often a number observed as well as operational costs per barrel of produced product. Levered FCF Margin and ROIC are two key metrics for this group as overall industry dynamics leave little room for income/revenue growth, so cash flow generation is important.

In 2018 many of the names started the year off strong through peak Summer driving season but have since fallen with DK and HFC leading performers up 11.9% and 13.5% YTD respectively while 8 of the 11 are red. The EIA noted in November that high gasoline inventories along with flat Y/Y demand is driving refining margins to five-year lows. High levels of US gasoline production in 2018 have outpaced gasoline consumption growth in 2017, leading to average inventories in November that are 14.8 million barrels higher than at the same time in 2017. 4Q is shaping up to be tough for the US refiners. Brent based gasoline cracks are now in negative territory and heavy crude differentials on the water have narrowed over the last month. While these trends started in late 3Q, they have intensified in the last few weeks. The Trump administration has suggested a phased implementation of low Sulphur bunker fuel rules (IMO 2020) is the latest curve ball to dent confidence in the magnitude and extent of margin windfalls that have dominated the discussions around refining sector for much of the past year.

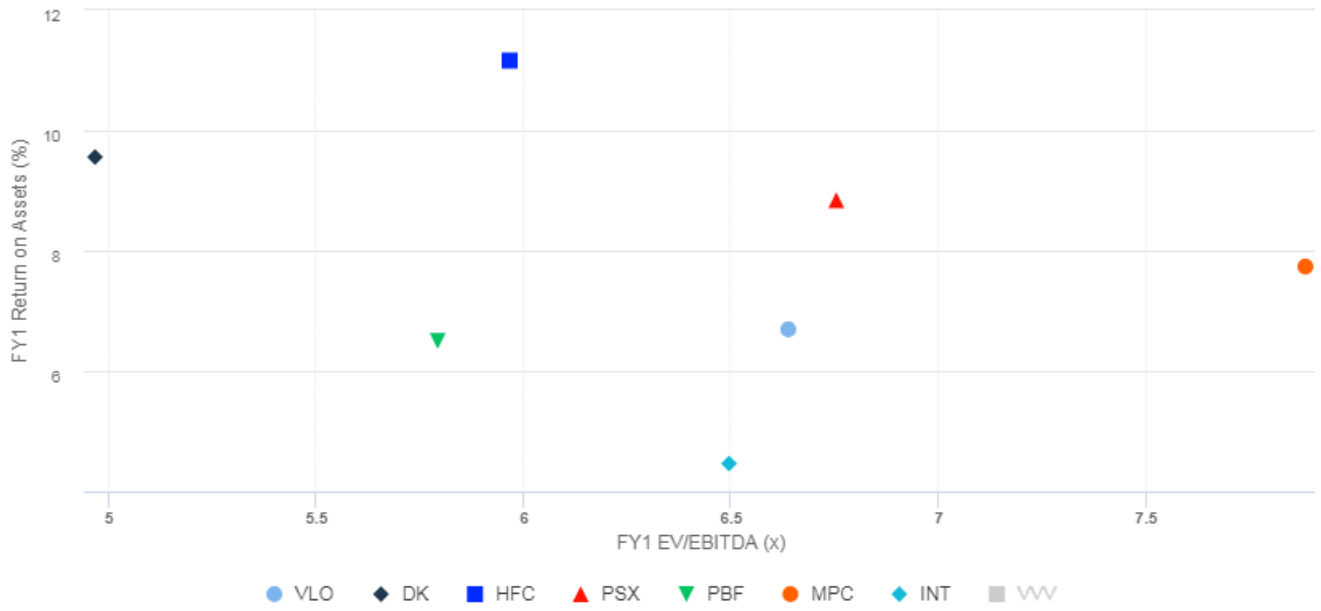
Brent/WTI Spread



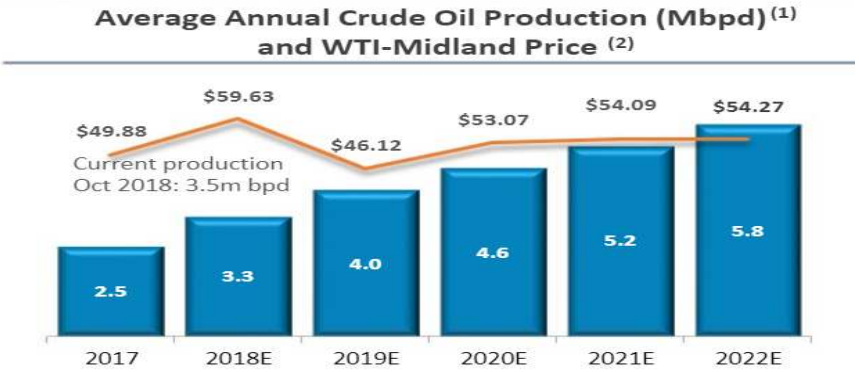




EV/EBITDA versus ROA



Delek (DK) screens favorably in this group with it cheap at 5X EBITDA while having one of the best growth profiles and lowest Debt/EBITDA at 0.8X. The $3.2B refiner has seen revenues and EPS surge in 2017/2018 though sees tougher times ahead as does the rest of the industry, but its balance sheet will allow it to better withstand a down cycle. It is expecting Permian production growth to continue as shown below. DK has a lot of cash and is interested in returning cash to shareholders. Delek also continues to integrate is Alon (ALJ) acquisition and is benefitting from widening Permian crude differentials.

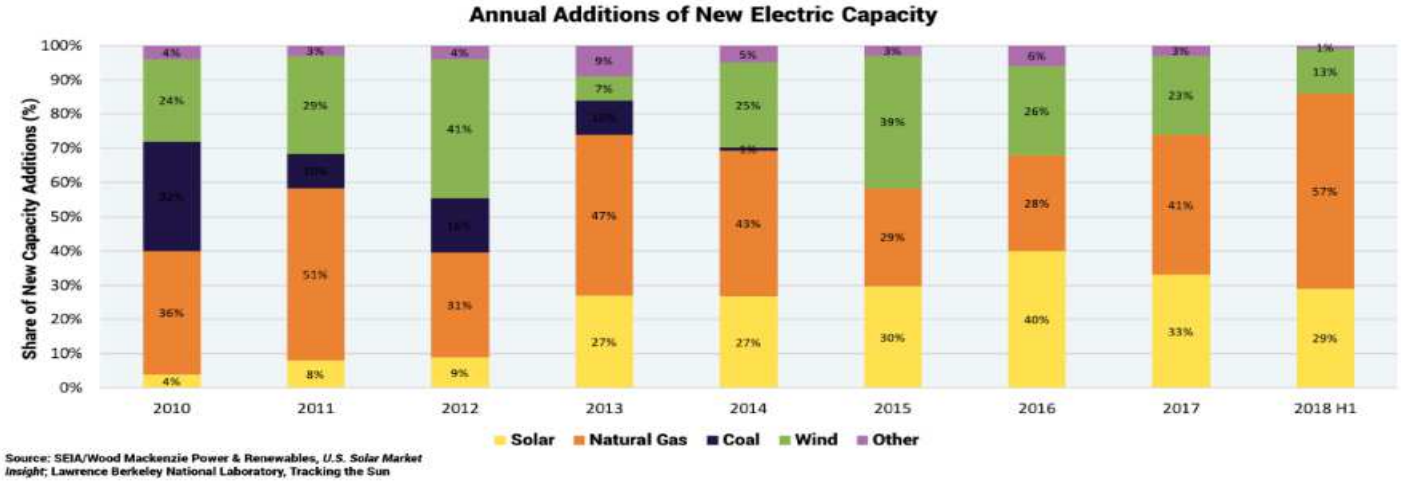


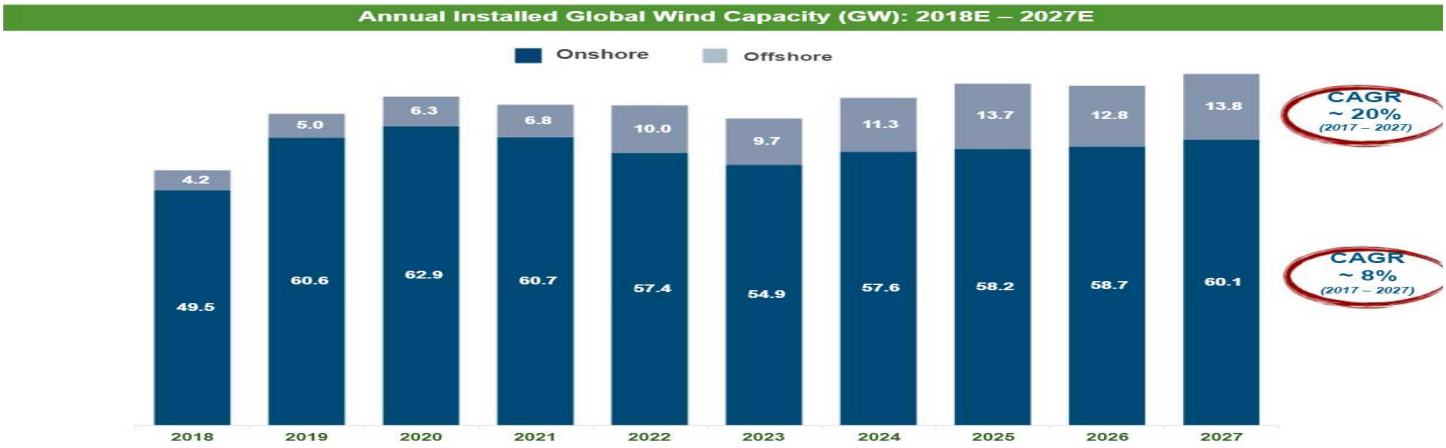
Holly Frontier (HFC) is the other favored name in the group with a market cap of $10.2B trading 5.3X FY19 EBITDA with a 2.27% dividend yield. HFC has the strongest margins to peers and a less levered balance sheet at 0.8X Debt/EBITDA. It also carries the highest ROA at 11.2%. HFC announced a deal on 11/13 for Sonneborn for $655M expected to be immediately accretive to EPS, cash flow and EBITDA margins. HFC is a more diversified play with Refining, Midstream, and Specialty Lubricant segments. HFC is positioned to benefit from IMO 2020 on wider heavy crude differentials and higher distillate crack spreads.

Renewable Energy:

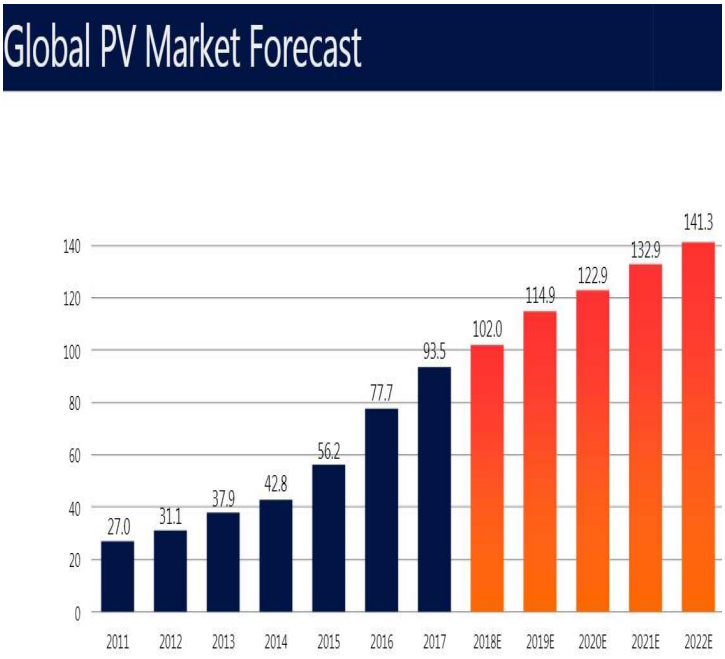
Components: *REGI, CSIQ, FSLR, HASI, ITRI, NEP, NYLD, ORA, PEGI, SEDG, SPWR, TPIC, VECO, RUN, VSLR, JKS, ENPH, DQ, BEP, AY*

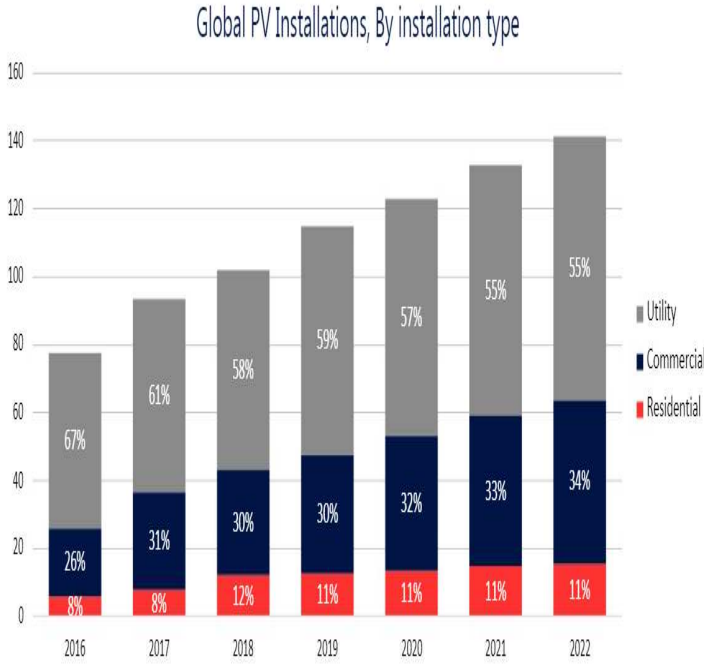
There are a limited number of ways to play the renewable energy group but for the most part we are looking at solar energy providers and Alternative Energy Utilities. In 2018 two names really emerged in the group with RUN +140% and REGI +126%. A major potential headwind coming is the Administration is discussing ending subsidies for wind and solar energy. The World's largest solar panel manufacturer, Jinko (JKS), noted in late November that demand in China was rebounding and expected to return next year. Costs to install solar have dropped more than 70% since 2010 allowing the industry to expand into new markets. The EIA forecasts 10.27 GW-AC of solar will be installed in 2019, implying 7% growth from 2018. One nuance of the slowdown in 2019 solar generation growth comes from the EIA's Hodge stating that he expects 60% of the solar capacity deployed in 2019 to come online in December. This would make for a very uneven market during the first 11 months. China policy remains supportive for the solar industry according to comments from the National Energy Administration. In the Wind turbine market the CEO of Vestas, the largest producer, recently was positive along with Siemen's predicting 10% sales growth for 2019. Vestas also has order backlog at a record high. Below are some of the better graphics found giving a solid overview of the industry. It is mostly smaller cap companies in this grouping but a few intriguing name for longer term investors playing the longer term positive trends of increased installations, lower costs, and better technology. We typically value Solar firms on an EV/EBITDA basis and keeping a close eye on margin trends and ASPs. Recently signed and passed legislation, SB 100 and SB 700, indicates an increasingly favorable regulatory construct for resi solar in the core CA market. The ITC safeharbor developments will also be closely watched that could allow for doubling of US solar demand from 2020 to 2023. Global clean energy investment was $67.8B in Q3 2018, down 6% Y/Y.



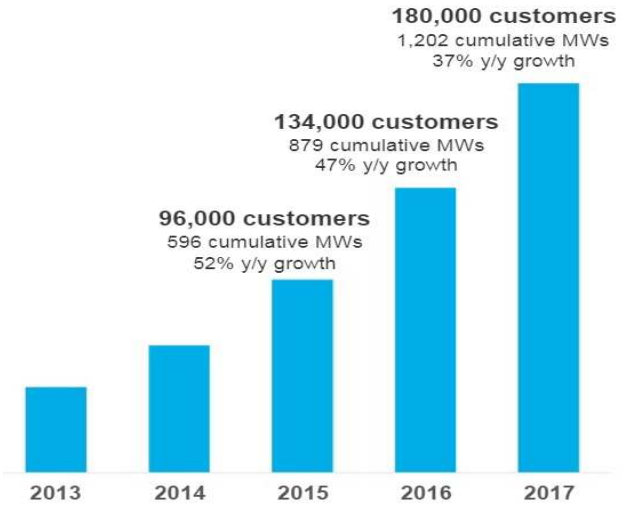


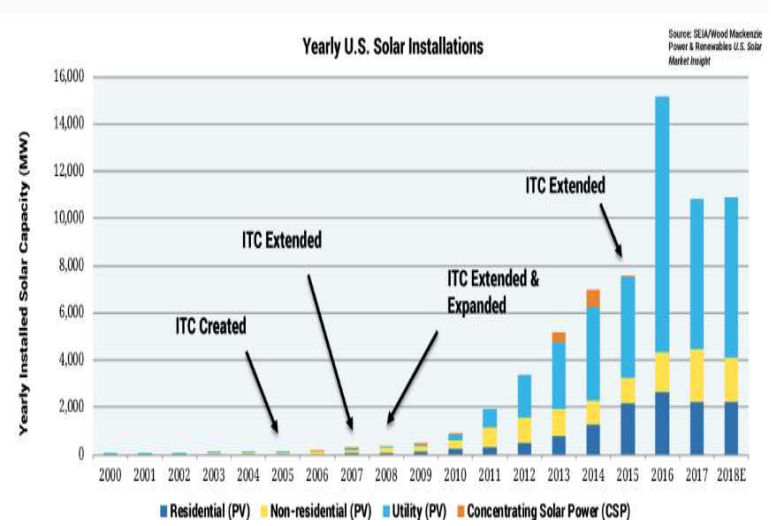
Solar Edge (SEDG) with a $1.9B market cap trading cheap at 6.9X EBITDA with standout margins is the preferred inverter name. SEDG is expected to hit 52% revenue growth in 2018 and projected for 16% growth in 2019. It is capitalizing on the growing PV market and gaining market share, in the US residential market its share hit 48.2% in Q2 from 1.7% back in 2012. It is a technology leader and also made an interesting acquisition in July to offer power solutions to data centers and other applications. It also sees growth for Kokam, a battery producer, with annual grid-connected energy storage revenues set to expand to $8B in 2025 from $1.8B in 2018. SEDG is expanding laterally to become a full service provider, and though it has seen some near-term margin pressures, it still has attractive metrics. SEDG is positioned in a multi-year growth opportunity.

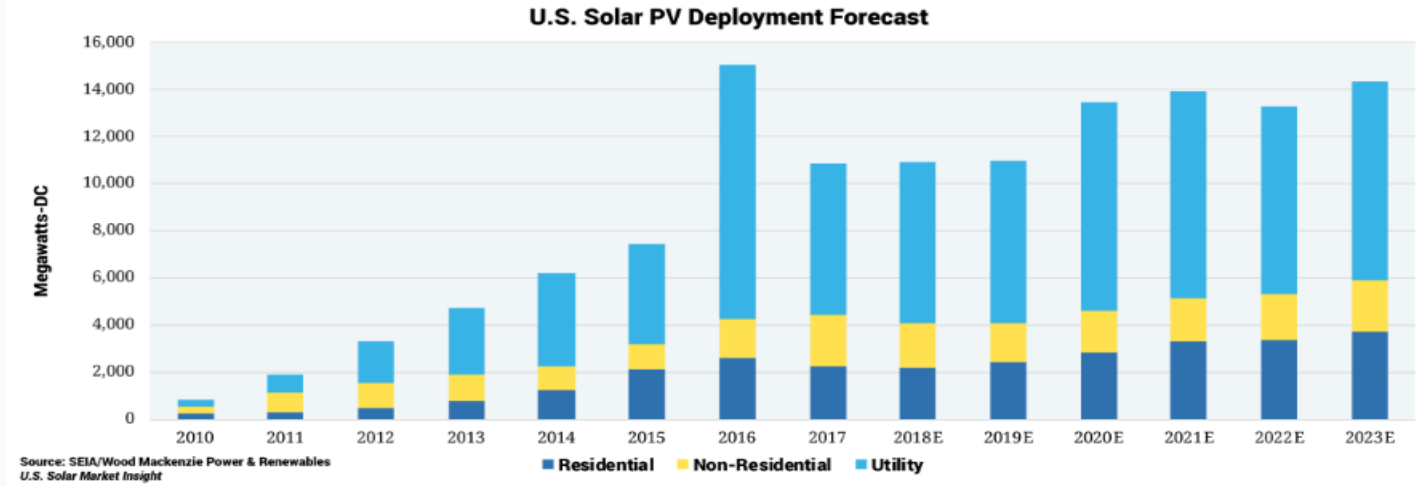


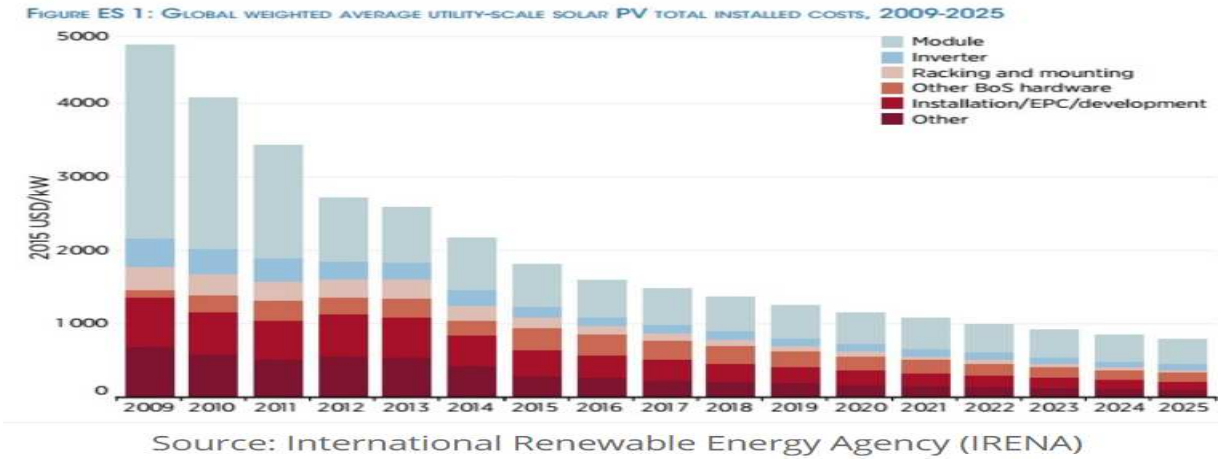


SunRun (RUN) has a $1.6B market cap and trades 47.5X FY19 EBITDA, 16.45X Earnings and is well positioned for the growing US residential market. RUN is set to reach 35% revenue growth this year and forecasts 10.8% growth next year. RUN is a provider of rooftop solar & battery storage and saw 34% customer growth in 2017. Residential solar has a very low 2% penetration rate expected to reach 13% by 2027 and RUN is the leader that has consistently gained market share. RUN is cash flow positive and accumulating a good amount of cash. An acceleration of deployment growth along with cost reductions can boost shares further in 2019.

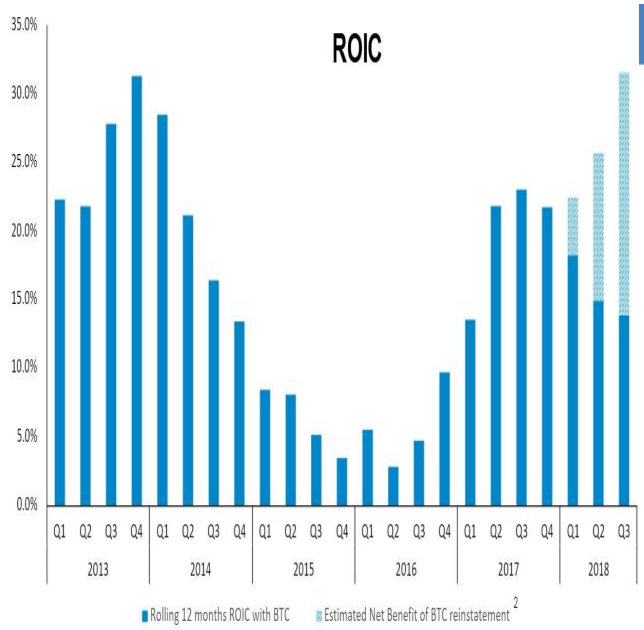


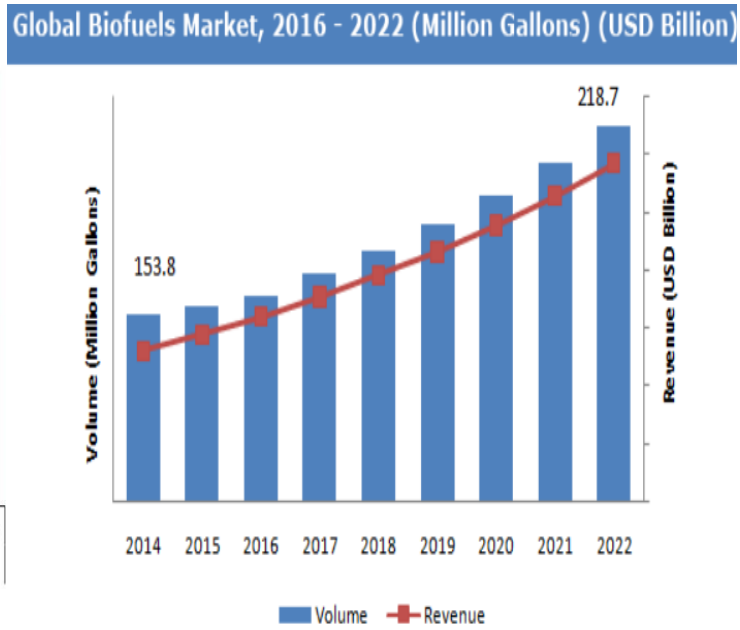






Renewable Energy Group (REGI) is a $1.02B biofuel play trading 7.4X FY19 EBITDA and in an industry that is currently a tiny portion of overall clean energy investment with ample room for growth. REGI is North America's largest advanced biofuel producer serving the growing demand for cleaner diesel fuels, which offer 50-90% lower emissions. It is also seeing margin expansion with lower cost feedstock, and demand for global distillates expected to ramp due to IMO 2020. California is a major driver of growing demand and more states are discussing low carbon fuel standards. REGI is relatively unknown and under covered, but a leader is a market with a lot of room for growth. The Biofuel market was valued at USD 168 billion in 2016, is expected to reach USD 218.7 billion in 2022 and is anticipated to grow at a CAGR of 4.5% between 2017 and 2022.





TPI Composites (TPIC) is a $908.5M maker of wind blades trading 19.8X Earnings, 7.3X FY19 EBITDA and with around $100M in cash on hand. TPIC is a strong topline growth story and EPS seen reaching $2.43/share in 2020 from $0.48/share in 2016. It had a ROIC of above 27% in 2017 which has trended up from 18% in 2014 and operates with 10.9% EBITDA margins. The wind energy market is seeing strong growth in emerging markets and blades are important for efficient utilization of capital. TPIC has long term supply agreements that provides up to $6.3B in potential revenue through 2023. Estimates call for the aerospace composites market to grow to $43B in 2022 from $24.5B in 2016. TPIC has a longer term outlook for 12%+ EBITDA margins and a 35% ROIC. Wind energy is becoming more competitive with a 69% decrease in LCOE (levelized cost of energy) over nine years. TPIC has grown its global market share of wind blades to 13% in 2017 from 9% in 2016. TPIC is also diversifying through Proterra to target the clean transportation markets and also aerospace markets.

Key Customers with Significant Market Share

Global Onshore Wind

Rank	OEM	2015–2017 Share[1]
1	Vestas	15%
2	SGRE[2]	13%
3	Goldwind	12%
4	GE Wind	11%
5	Enercon	6%
6	Nordex Group	6%
7	United Power	5%
8	Envision	5%
9	Mingyang	4%
10	Senvion	3%
	TPI Customer Market Share	~54%

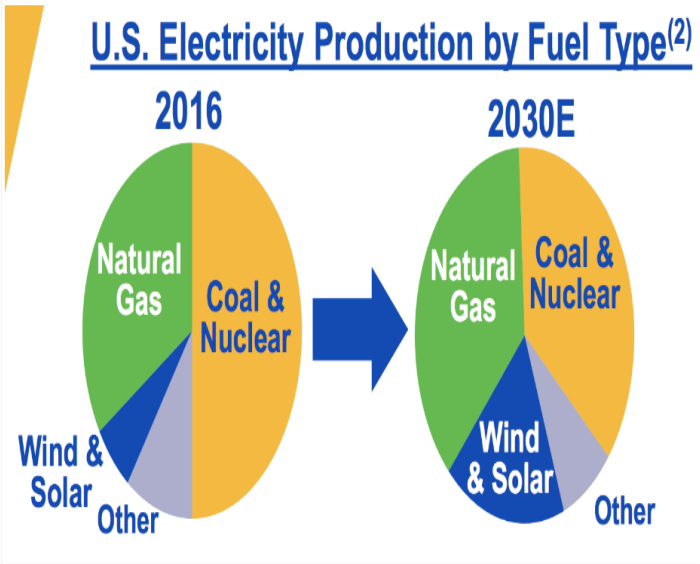
Global Onshore Wind exc. China

Rank	OEM	2015–2017 Share[1]
1	Vestas	25%
2	SGRE[2]	21%
3	GE Wind	19%
4	Enercon	10%
5	Nordex Group	10%
6	Senvion	5%
7	Suzlon	3%
8	INOX	2%
9	Goldwind	<1%
10	ReGen Powertech	<1%
	TPI Customer Market Share	~90%

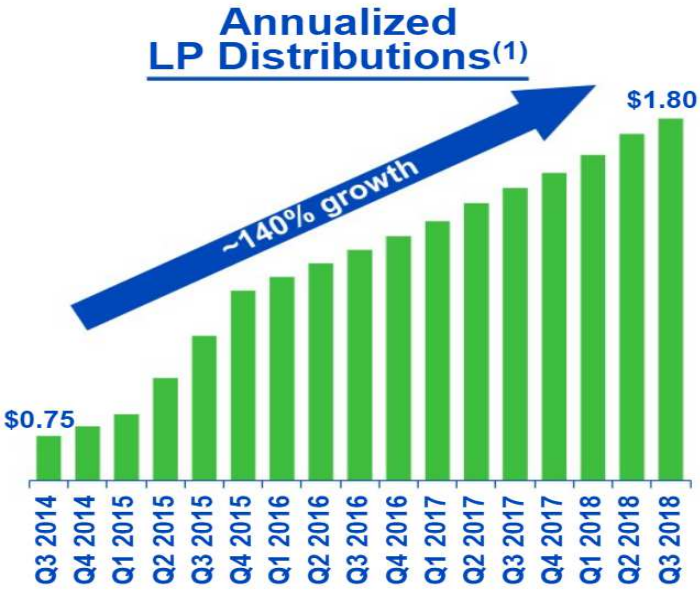
= TPI Customer = Chinese Players

Current Customer Mix – 50[3] Dedicated Lines

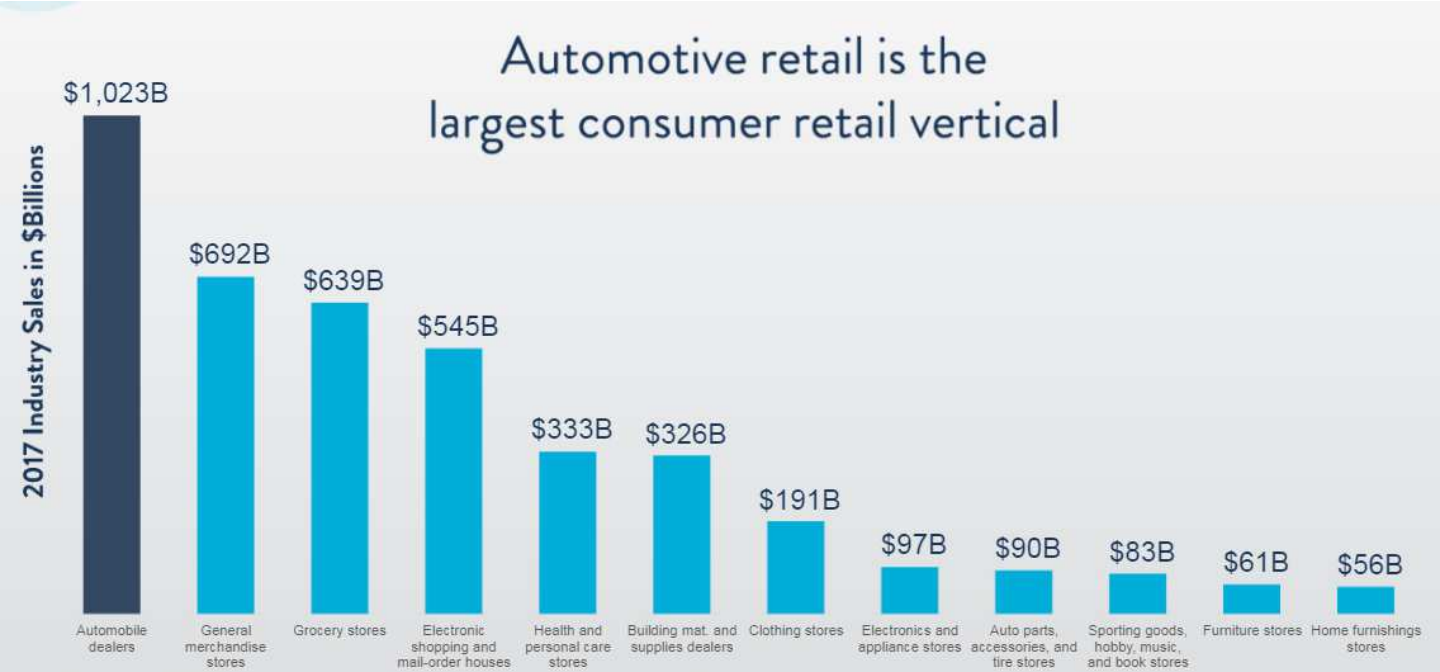
NextEra Energy Partners (NEP) is the preferred Yield-Co stock with a $2.6B market cap and 3.85% dividend yield offering a better balance sheet and stronger growth than peers. NEP trades 7.5X FY19 EBITDA and revenues seen growing 47.6% next year and 26% the year after. NEP has stable cash flows with long-term contracts, 4100MW to wind and 600MW to solar as well as 4Bcf total natural gas pipeline capacity. NEP has a much stronger history of distribution growth than peers. NEP continues to transition its portfolio and has a deep pool of acquisition targets.



Source: NextEra Energy Partners



Consumer Goods: *The outlook for the consumer goods sector in 2019 is mixed as it encompasses a lot of industries. The auto industry accounts for many of the names and faces ongoing concerns with tariffs as well as rising interest rates. Customers have been transitioning to SUVs and Pickups from Cars. The Food & Beverage industry has seen lackluster sales growth and has focused more on cost cutting, but performed well lately as a flight to safety trade. Housing is another big contributor to this sector with home goods and appliances, and the housing market has really softened in 2018 due to rising mortgage rates. The Packaging & Paper industry has come under pressure from rising costs, both raw materials and transportation. The apparel and footwear industry also faces a lot of concerns with tariffs but has seen some of the best performers YTD in this sector like Fossil, Canada Goose, Lululemon, Under Armour, and Decker's Outdoor. 2018 will go down as a good year for retail. Sales, excluding gasoline and autos, will grow 4.9%, better than 2017's 4.2% pace, and the best since 2011. On a positive note consumer confidence continues to trend higher to multi-year highs, and consumers are generally in great financial health, so the spending side of the equation is there, making stock selection crucial across these industries. Financial health should continue to benefit from rising wages and cheaper gasoline. The Millennial peak spending years plays an important part here, identifying consumption trends being vital to stock selection.*

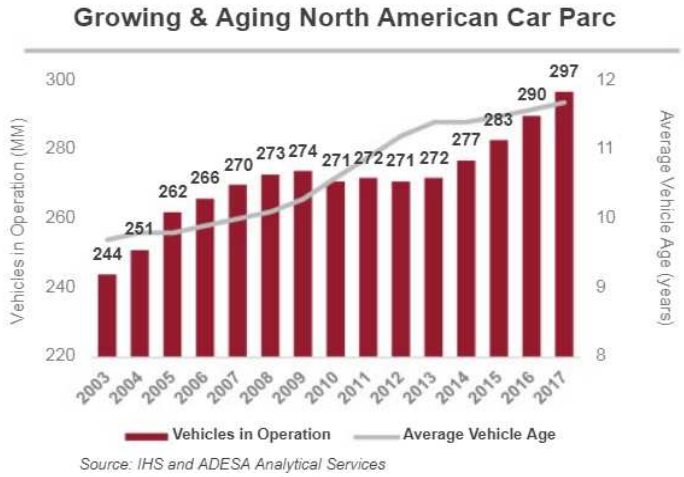


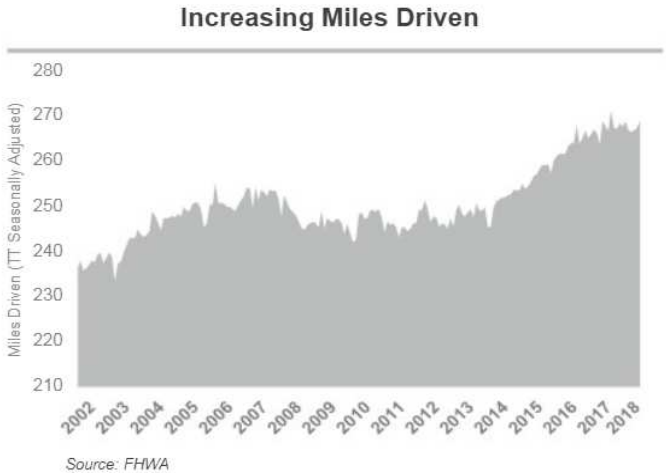
Truck and Auto Related:

Components: *TSLA, TM, GM, HMC, TTM, F, FCAU, RACE, NIO, APTV, LEA, LKQ, BWA, ALV, WBC, ALSN, GNTX, VNE, DORM, MNRO, DAN, VC, TEN, THRM, DLPH, AXL, MTOR, CPS, SMP, PLOW, SRI, MOD, TOWR, HOG, PII, THO, FOXF, LCII, MPX, WGO, CWH, REVG, MCFT, MBUU, PCAR, OSK, NAV, HY, WNC, CPRT, KMX, GT, CVNA, CARG, CARS, PAG, AN, LAD, RUSHA, ABG, GPI, SAH, CRMT, ADNT, KAR, MGA, RBA, MCFT, BC, PATK*

This group I compiled has a few industries wrapped under the same Truck & Auto theme, so we have Auto Dealerships, Auto Manufacturers, Auto Parts, Recreational Vehicles, and lastly the Heavy Truck makers. It was a tough year overall for this group with nearly half of the names down 20% or more YTD. There were a few names that bucked the trends like Tesla (TSLA), Carvana (CVNA) and Fox Factory (FOXF).

We can return to more traditional valuation metrics for this group like EV/EBITDA, P/E, and P/OCF while also taking into account debt coverage ratios, inventory turnover, and operational efficiency ratios in a highlight competitive industry with high capital expenditures such as gross margins, ROIC and ROE. Specific to the auto dealerships, same store sales trends is a required metric.

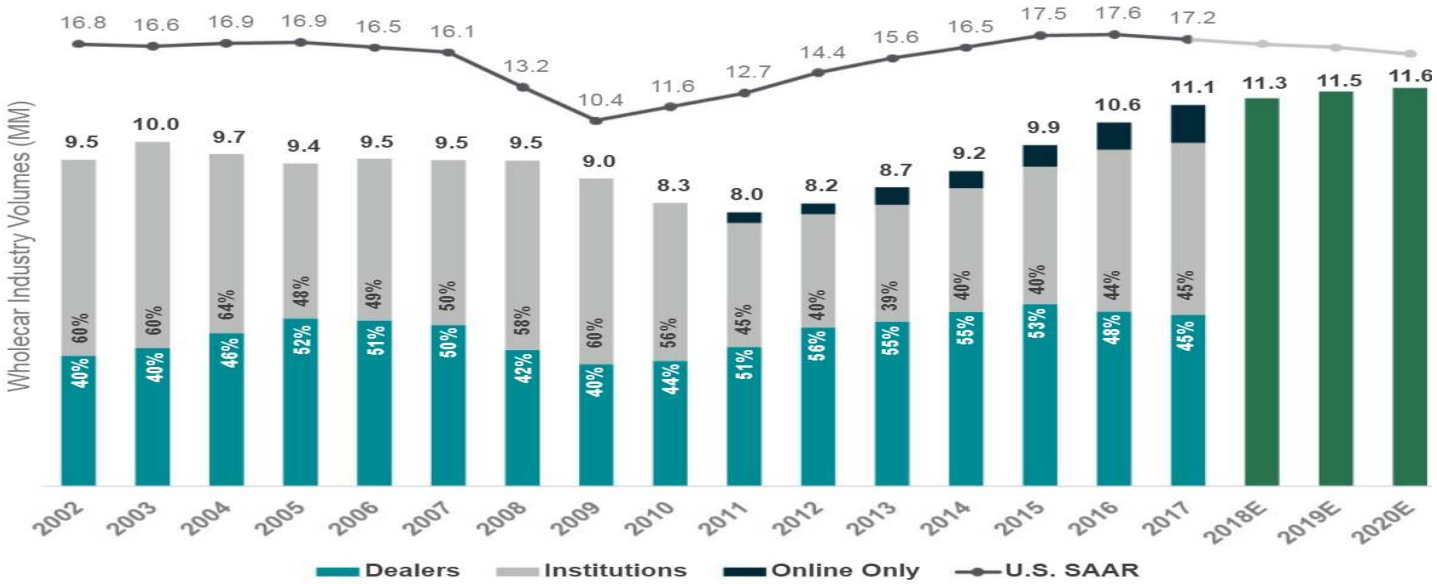




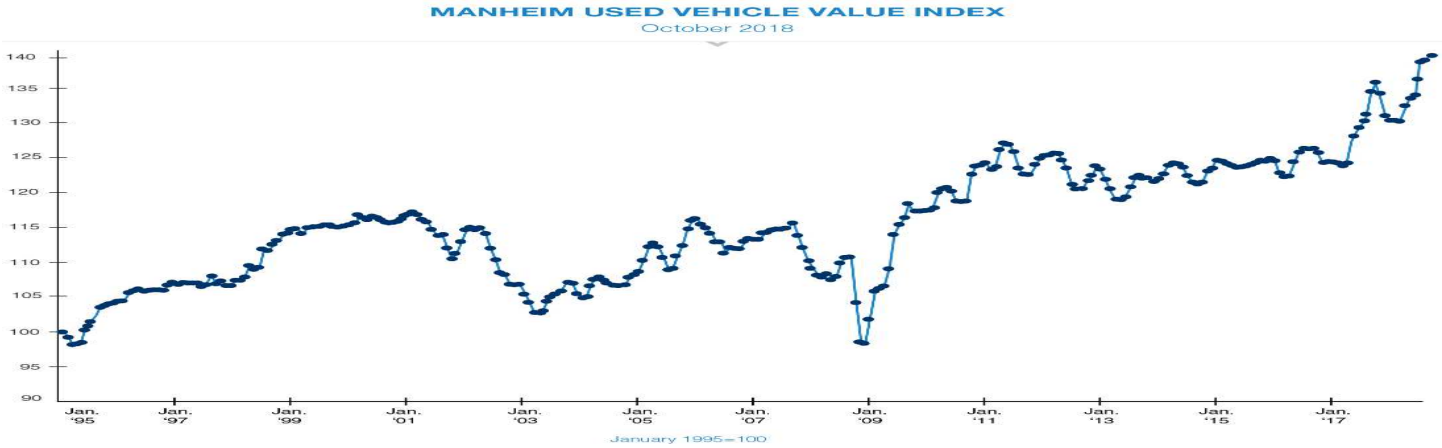
Industry data is also very important in timing investments in this group with the cyclical nature of auto production levels, also taking into account gasoline prices, consumer financial health, and overall state of the economy are a must. Government regulations, such as CAFÉ mandates will require automakers to invest in technology to improve fuel efficiency and reduce emissions, set to rise to 55mpg in 2025 from 38.6mpg in 2016. Safety features and connected car are also top themes in this industry with Automaker becoming pseudo-tech companies. Autonomous vehicles is another major theme that is set to change the automotive landscape. Class 8 Truck sales were strong much of the year but saw a big downturn in November and fears are that it may be a peak in the cycle. FTR raised its North American Class 8 truck factory shipments forecast to 350,000 units, for a year-over-year increase of 8%. The Manheim Used Vehicle Value Index hit another record high in October. The next major catalysts for the group are CES January 8th-11th, Detroit Auto Show January 14th-18th, and 2019 outlooks during Q1 earnings season. It appears 2019 is shaping up to be somewhat of a challenging year, in light of ongoing industry headwinds that were cited in Q3 reports like deteriorating/volatile sales, production schedules, raw material inflation, FX, and fading price/mix. It sets up as a year of likely negative earnings revisions.

Auto Dealers is the first group to focus on with average multiples on 9.7X EBITDA, 7.2% EBITDA margins, and Debt/Equity at 2.4X.

KAR Auction (KAR) is a bit differentiated in this group and has 23.6% EBITDA margins, well above the traditional dealers. KAR is a $7.3B used car auction and salvage auction services company trading 17.1X Earnings, 10.6X EBITDA and 21.5X FCF with a 2.58% dividend yield. KAR has been around double digit revenue growth for five straight years and sees it cooling to 6% in 2019 while EPS growth seen at 8%. KAR is seeing strong momentum in its ADESA and IAA businesses with 45% and 60% of vehicles sold online respectively. It is also seeing higher RPU due to rising used vehicle values. The fundamentals of the salvage market are strong due to increased miles driven, gaining vehicles, and more distractions causing frequent accidents, although autonomous driving in a long term potential headwind to business. KAR recently acquired CarsOnTheWeb for EUR91M to boost its expansion into Europe.



Penske (PAG) is a combination of cheap valuation at 7.2X EBITDA with the strongest Y/Y EBITDA growth and best FCF yield, but its margins are the weakest. Penske has operations in Retail Automotive, Heavy-Truck Retail, and Truck Leasing. PAG has launched an ecommerce initiative with over 33% of US vehicle sales attributed to internet/digital. PAG should be more resilient than peers in a tough environment with its diversified businesses and also is trading at a cheap valuation.

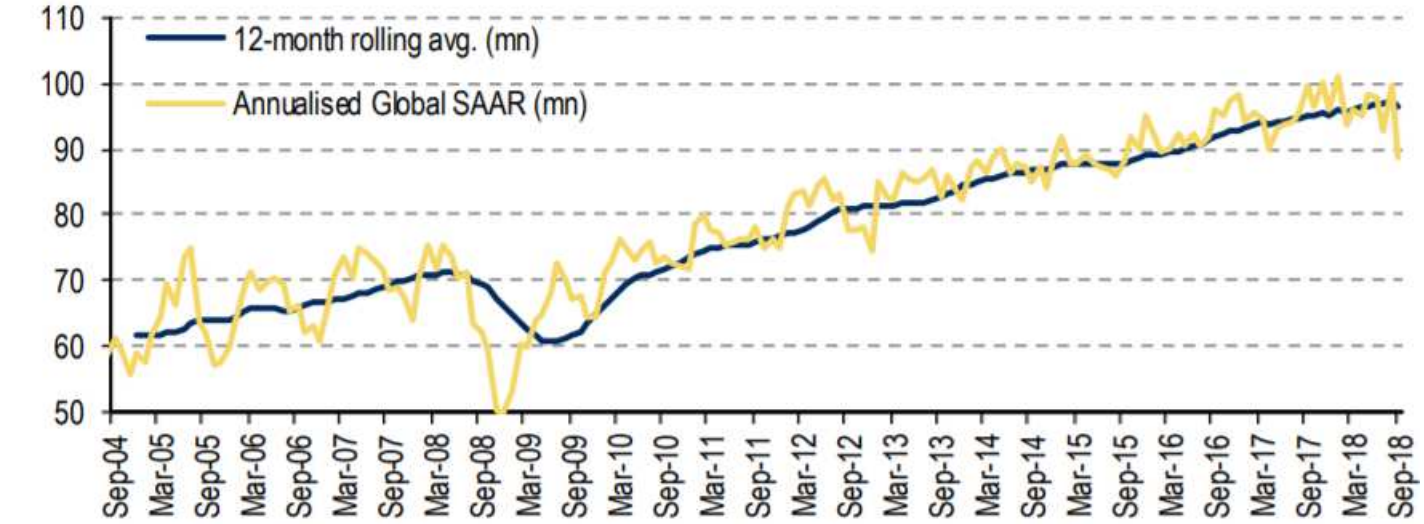


The more exciting sub-group are the online automotive marketplace plays CARG, CARS and CVNA.

Carvana (CVNA) is arguably the leader of this group with a $6B market cap and experiencing rapid revenue growth, a company that did $365M in sales in 2016 and expects $5.57B in 2020. CVNA recently held an Analyst Day outlining long term targets. A Director bought nearly $900K in stock in November at $44.46/share. It is experiencing strong growth in units sold as well as gross profit per unit. CVNA is in the early innings of changing the way people buy cars, a massive market, and has plenty of upside room for better conversion rates and higher GPU. CVNA has seen some recent weakness on competitive threats from CarMax (KMX) offering a digital product, but this $800B annual US used car market has room for multiple players.

Automakers have struggled through 2018 with peaking sales and rising costs with Tesla (TSLA) the main outperformer. We have seen some positives in recent monthly numbers, average transaction prices continue to increase, up 1.1% YoY (+$364/vehicle) in October, driven largely by the ongoing favorable mix shift away from passenger cars toward CUV/SUV/trucks partially supported. In October, average incentives, as measured by TrueCar, declined YoY (down 2.8% YoY or $103/unit) for the second consecutive month, a divergence from what has been a trend of consistently increasing incentives over the past few years.

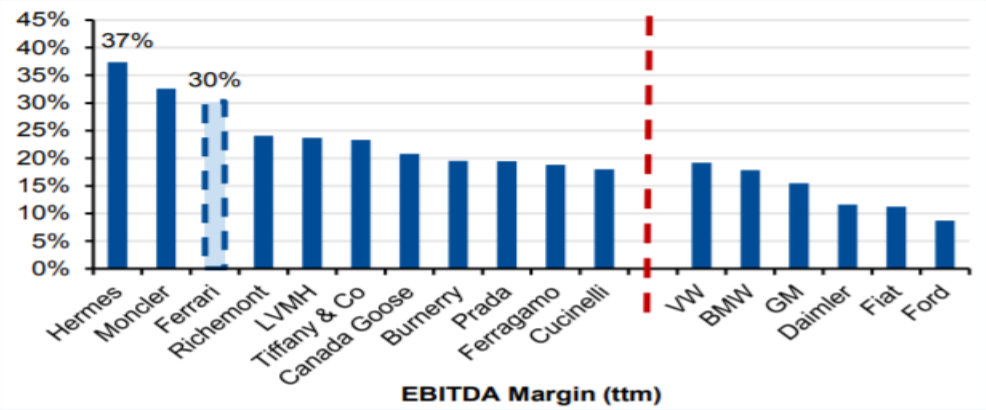
The global SAAR has been gradually rising since early 2009, reaching an all time high of 100.1mm in Jan 2018. September 2018 Global SAAR stands at 88.4mm units, while the 95.8mm YTD SAAR is in line with our 2018 forecast of 95.2mm.



Source: BofA Merrill Lynch Global Research.

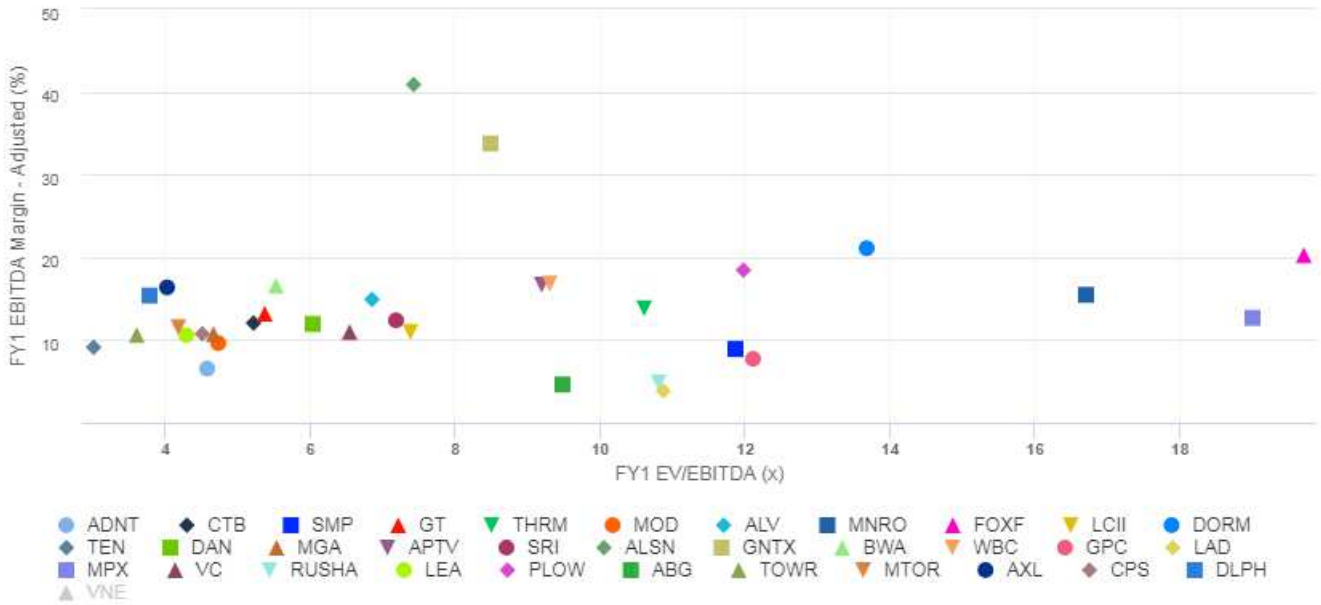
Ferrari (RACE) is the most attractive name in this group despite its premium valuation of 30X Earnings and 20X EBITDA. RACE operates with 32.5% EBITDA margins which is more than double of the next closest, Toyota, and also has an impressive 24.3% ROIC. RACE remains an iconic asset with substantial opportunities for growth. RACE will be launching more cars than normal in 2019 and continues to post better than expected margins with ASPs moving higher and fleet mix inflecting to special editions and hybrids. Shipments totaled 2,262 units in Q3 2018, up 216 units or +10.6% vs. prior year.

RACE has luxury-type margins (well above auto peers), with room to grow toward pinnacle luxury brands (like Hermés)



Auto Parts has a large number of these components for this industry grouping and more than half are down over 20% YTD. A few outperformers were MNRO, DORM, THRM, SMP, and SRI. The industry has seen a large number of key executive departures in 2018 which tends to correlate with cyclical companies at or near the peak. With industry-wide headwinds and a likelihood for negative earnings revisions it will be important to identify potential winners that are operating better in a tough environment.

EV/EBITDA vs. EBITDA Margins

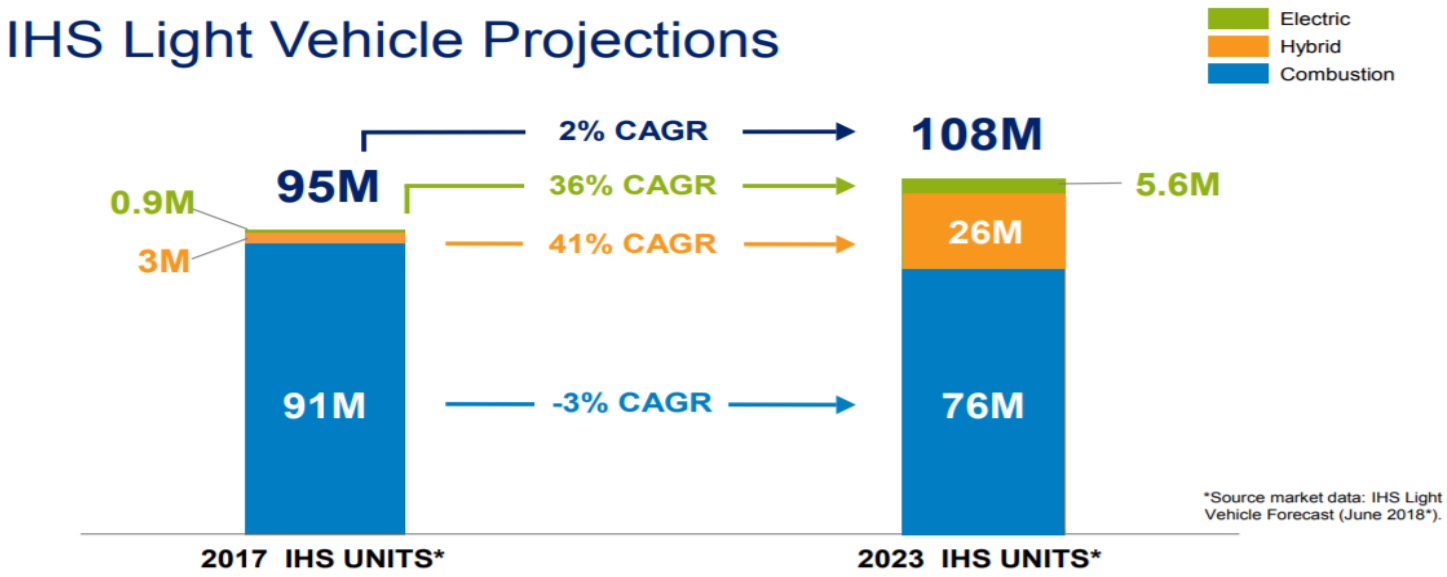


Allison Transmission (ALSN) is the first quality name of note, though more in the commercial/heavy industry, the $5.9B Co. trades 9.3X Earnings, 8.6X FCF and 7.4X EBITDA with a 1.32% yield. ALSN grew revenues 23% in 2017 and 19% in 2018 with growth set to slow in 2019 and 2020. Its 40% EBITDA margins and 25% FCF margin stand out well above peers. ALSN has a 60% global market share of fully-automatic transmissions with virtually no exposure to the cyclical Class 8 line-hail tractor market. North-America on-highway accounts for 49% of revenues and 30-40% of volume driven by municipal spending, while seeing room to penetrate other markets and well as expand geographically. ALSN is seeing strong cash flows and has a $2B buyback in place, sizable for its market cap. Housing, Construction and Energy are major drivers for heavy truck demand. In North America automatic transmissions account for 84% of on-highway while outside North America the penetration is a mere 5%. ALSN indicated that NA On-Highway will experience a tailwind next year, as supply chain constraints in the current year largely persist through Q3 and Q4. ALSN is investing in its supply chain in order to counteract supply chain constraints, and management does not necessarily view the current market as the absolute peak. ALSN already trades at a tough valuation and has a dominant market share, strong margins, and shareholder friendly capital allocation.

North America On-Highway End Market

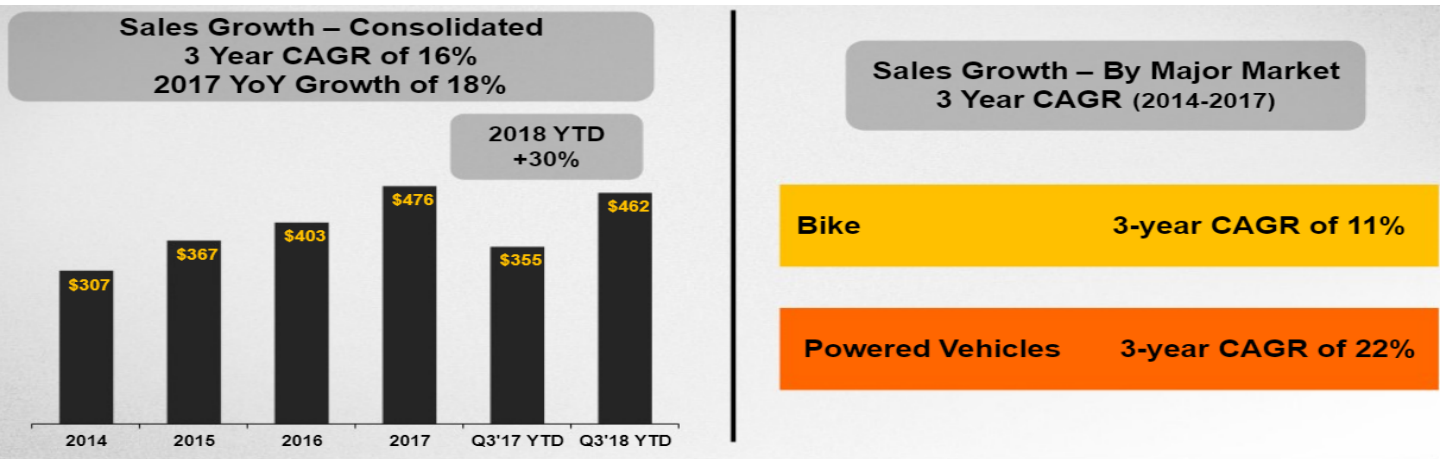
		Underserved	Core Addressable Market				Underserved	
		Class 4-5	Motor Home	School Bus	Class 6-7	Class 8 Straight	Class 8 Metro	
Vehicles								
Weight (000s of lbs)		14 – 19 lbs	16 – 33 lbs	16 – 33 lbs	19 – 33 lbs	33 lbs+	33 lbs+	
2017 Industry Units Produced		100,003	21,802	37,600	96,463	79,006	55,447	
2017 Allison Share	0%	4%	38%	88%	71%	68%	7%	

Borg Warner (BWA) is the other quality name in a tough group, the $7.7B maker of engines and drivetrains trading at a trough valuation of 5.5X EBITDA, 8X Earnings and 19X FCF with a 1.8% yield. BWA has EBITDA margins of 16.6% and a 13.8% ROIC. It sees moderate 4-6% revenue growth and 6-10% EPS growth the next few years. BWA is a propulsion system leader for combustion, hybrid, and electric vehicles with 82% exposure to light vehicles and with higher content per vehicle of the faster growing hybrid and electric markets. BWA had 20% penetration for turbochargers in 2017 and expects 67% penetration by 2027 and sees rising penetration in variable cam timing and dual clutch module markets as well. Its outlook for FCF in 2023 is $1B, a 12% CAGR from 2018. BWA offers trough valuation with slid growth and exposure to growing electric and hybrid vehicle markets.

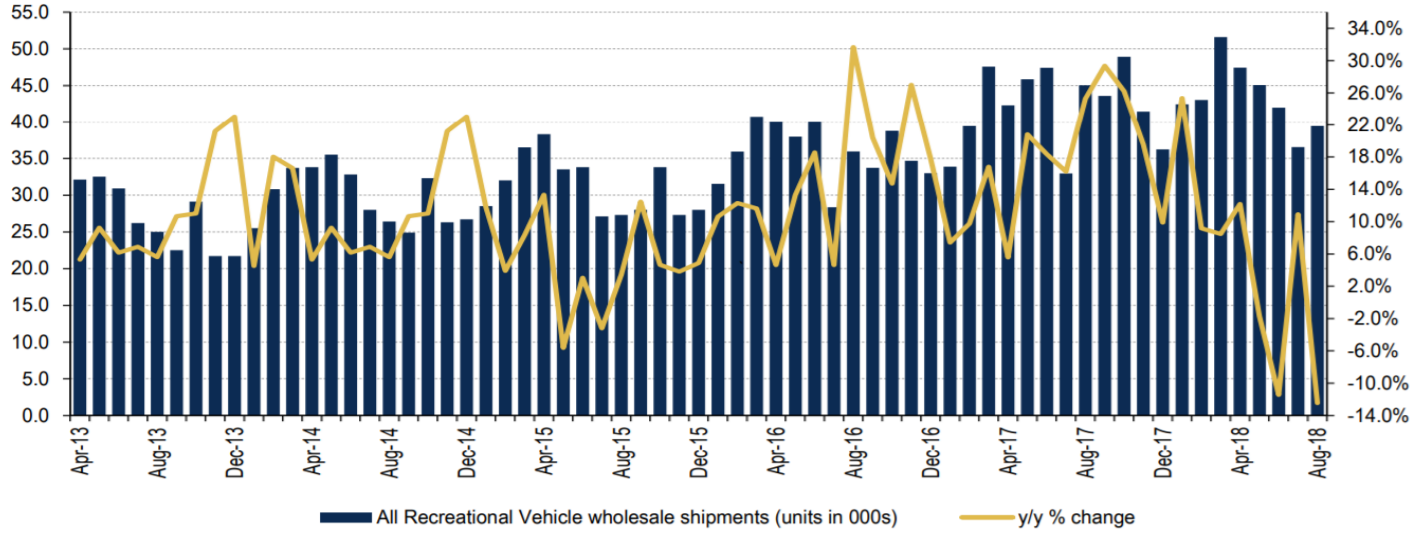


Dorman (DORM) has been a strong performer this year up 40% YTD so worth looking in the story. The $2.82B Co. trades 18.45X Earnings, 3X Sales, and 13.7X EBITDA. DORM is targeting another year of accelerated growth in 2019 with 7.2% topline growth and sees 10.4% of EPS growth. DORM is a supplier of automotive replacement parts to the aftermarket benefitting from industry dynamics such as increased miles driven, lower gas prices, and growing average ages of vehicles. DORM is also looking to expand to medium & heavy duty markets which is just 2% of current sales. It has stable operating margins and a strong balance sheet that is debt-free while delivering organic sales at a 13% CAGR.

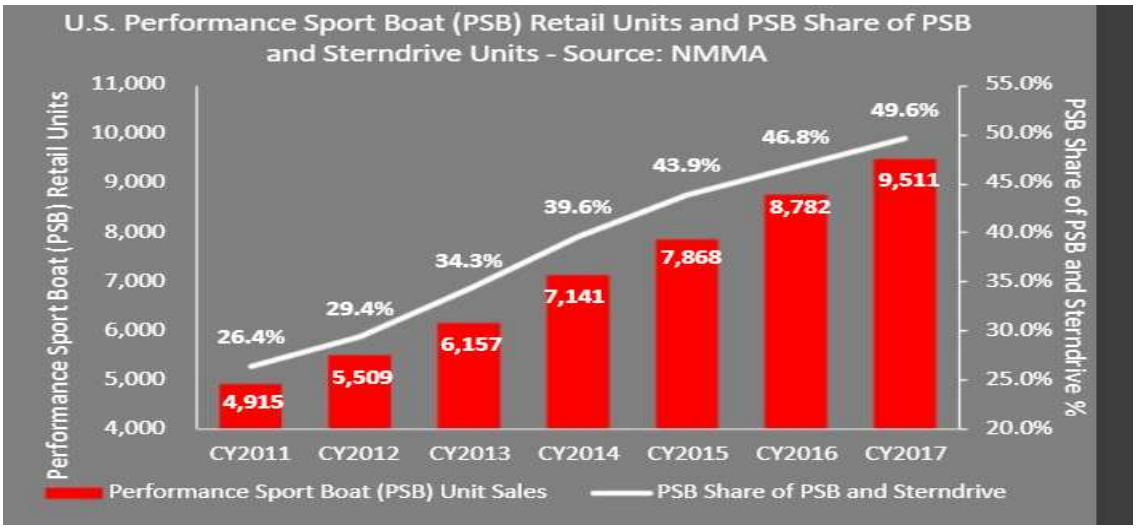
Fox Factory (FOXF) is a $2.52B maker of parts for recreational vehicles that has seen shares climb 65% in 2018 after being a favorite for many years. FOXF trades 26X Earnings, 19.7X EBITDA and 36X FCF, a premium valuation, but set to deliver 30% revenue growth in 2018 and 38% EPS growth. FOXF delivered a 23.9% ROIC last year and operates with 20% EBITDA margins. It sees room for growth by expanding to categories like lift kits, brakes, and wheels from its core suspension offering. It also wants to target new vehicles and new geographies. The main concern here is valuation with growth set to moderate in 2019, but it remains a market share gainer deserving of a premium valuation and at least a name for growth investors to target on any weakness.



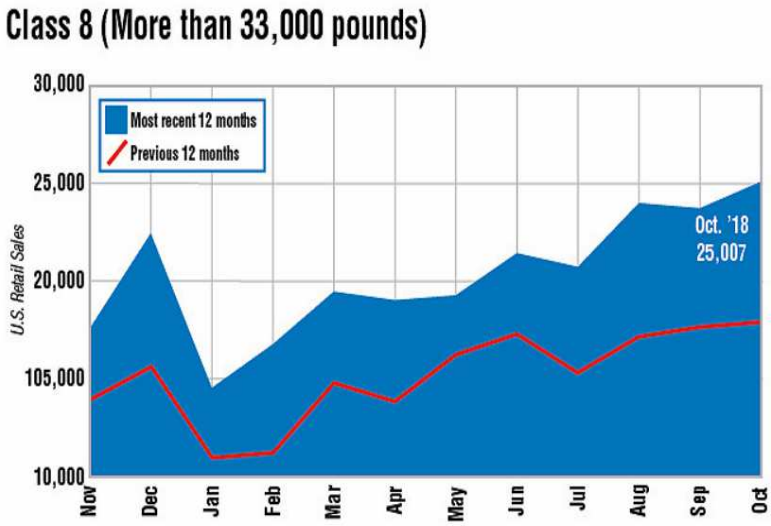
RV's and Boats are on opposite ends of the spectrum as the RV stocks were crushed in 2018 after a multi-year strong cycle, while boat names performed very well. The RVIA continues to show weak shipments in the RV space as the group faces very tough comps through November. If the cycle does turn better the name to focus on is **Thor (THO)** with the cleanest balance sheet, a 2.59% yield and a 22% ROIC. Neither HOG nor PII look overly compelling on valuation/growth into 2019 with tariff headwinds.

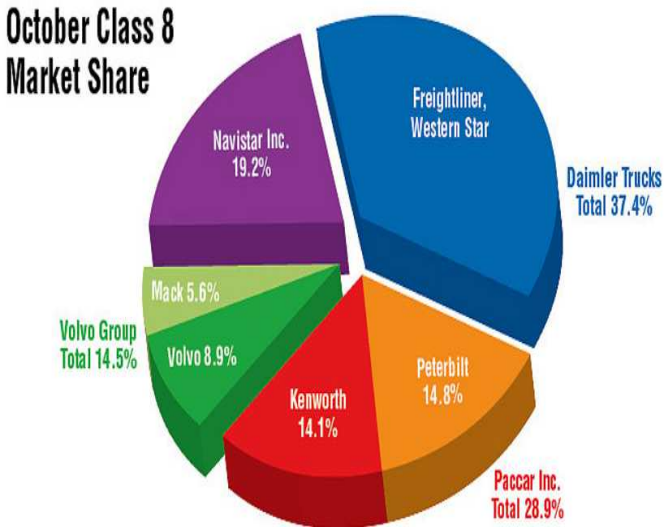


Mastercraft (MCFT) trades cheap to boating peers as a small cap at 6.4X EBITDA despite high 17.4% EBITDA margins, a strong growth outlook, a leading 23% ROA and 48.6% ROIC, and the best FCF yield. MCFT is coming off a record setting quarter for sales & profit and continues to see strong retail demand. In September the company bought Crest Marine, a maker of pontoon boats, for $80M. Demand trends remain very strong in Performance Sport Boats where MCFT has a leading market share. It is maintaining a leading market shares and increasing profit margins. MCFT shares are only +6.75% YTD and fundamentals are strong to support outperformance in 2019.

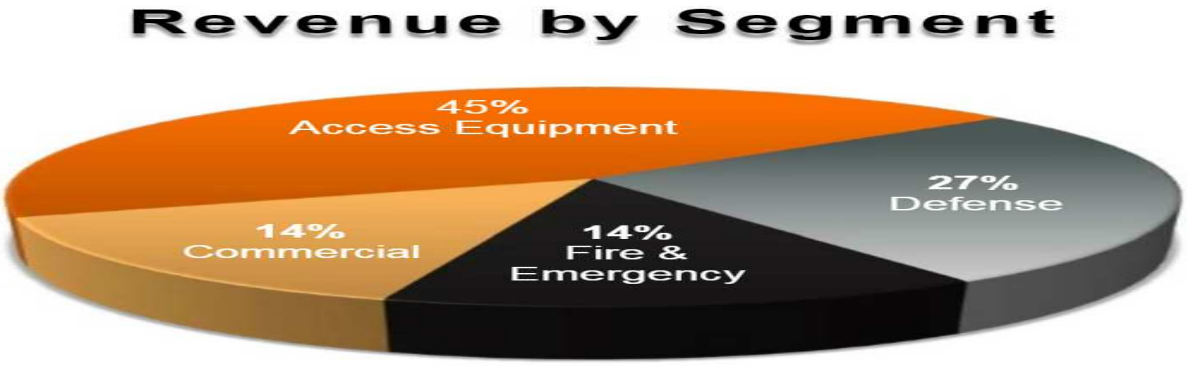


Heavy Truck Makers is a small group as names often associated like Cummins (CMI) and Eaton (ETN) will be discussed further with the Industrials. This group has had a very rough 2018 and a lot of evidence of peak cycle. Class 8 expectations for 2019 are around 335,000 with indications of moderating freight activity and trade policy uncertainty. In 2018 orders came in 33% higher than prior record rates from 2006 as pressure on fleets called for added capacity and better fuel mileage, drive amenities and safety features caused a surge in orders in 2018. **PACCAR (PCAR)** is the margin leader in the group and screens well across metrics, but also trades at a premium valuation of 9.2X EBITDA.





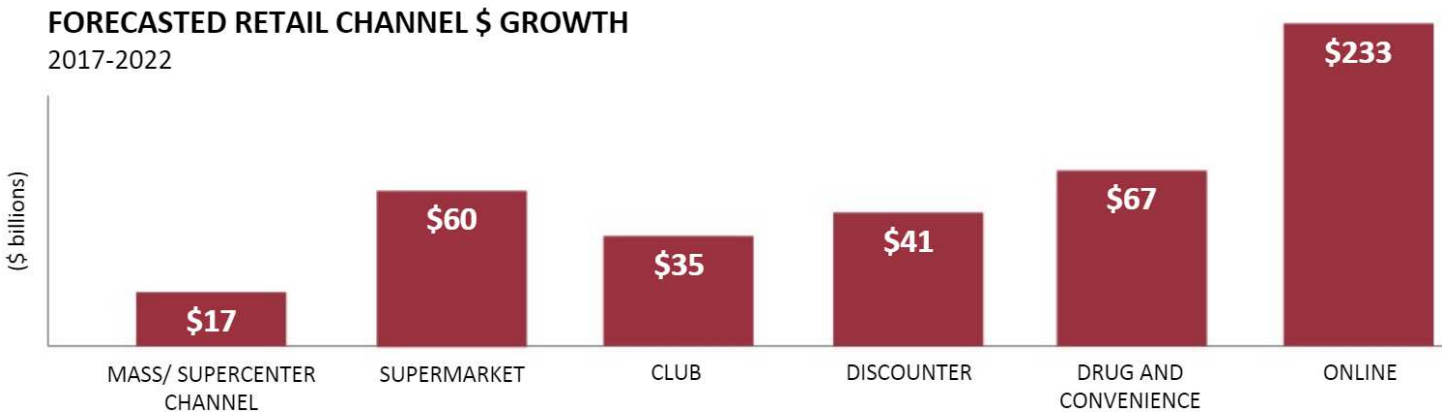
Oshkosh (OSK) is a nice balance at cheap 6.4X EBITDA levels while having 10.1% EBITDA margins and best in class 14.6% ROIC and 8.6% FCF yield. The $4.86B Co. is also more insulated from Class 8 concerns with it seeing double digit growth in the Access Equipment segment related to construction activity and also has a presence in Defense and Fire & Emergency markets. It could be a strong performer in 2019 on any indications of an Infrastructure Spending package. It has 80% exposure to the US and is a market share leader across most of its segments. OSK has guided down Defense margins for 2019 but sees International expansion from foreign orders as a longer term upside driver to that segment.



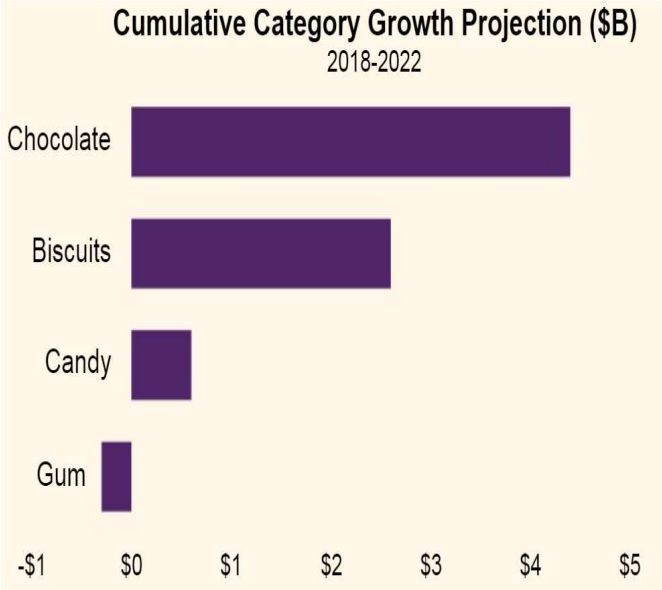
<u>Food, Beverage, and Cigarettes:</u>

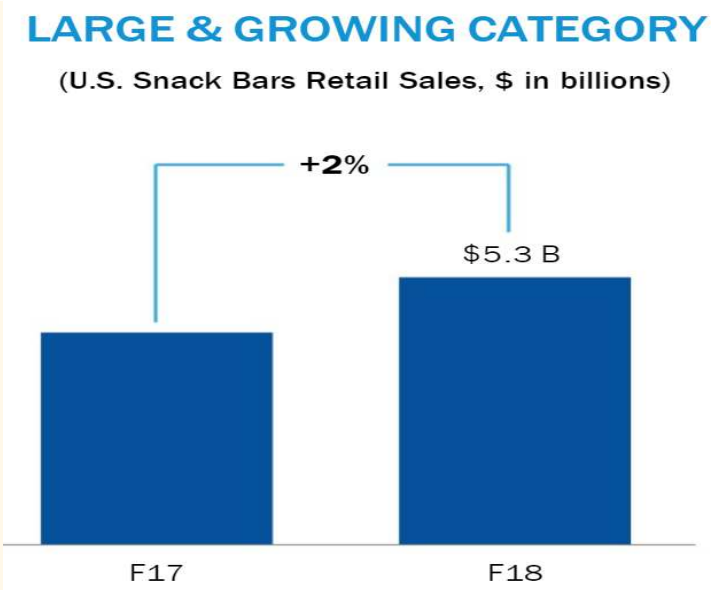
Components: *GIS, K, MKC, CAG, CPB, SJM, INGR, FLO, NOMD, JJSJ, THS, BGS, TWNK, JBSS, FARM, WTW, SYY, USFD, HAIN, CORE, CHEF, UNFI, BUD, ABEV, FMX, TAP, SAM, BREW, STZ, DEO, BF.B, MGPI, PEP, KO, KDP, MNST, FIZZ, COT, PRMW, PM, MO, BTI, VGR, KHC, LW, POST, LANC, PPC, SAFM, CALM, FRPT, HRL, TSN, NTRI, HSY, MDLZ, TR, DF, CCEP, ACB, TLRY, CGC*

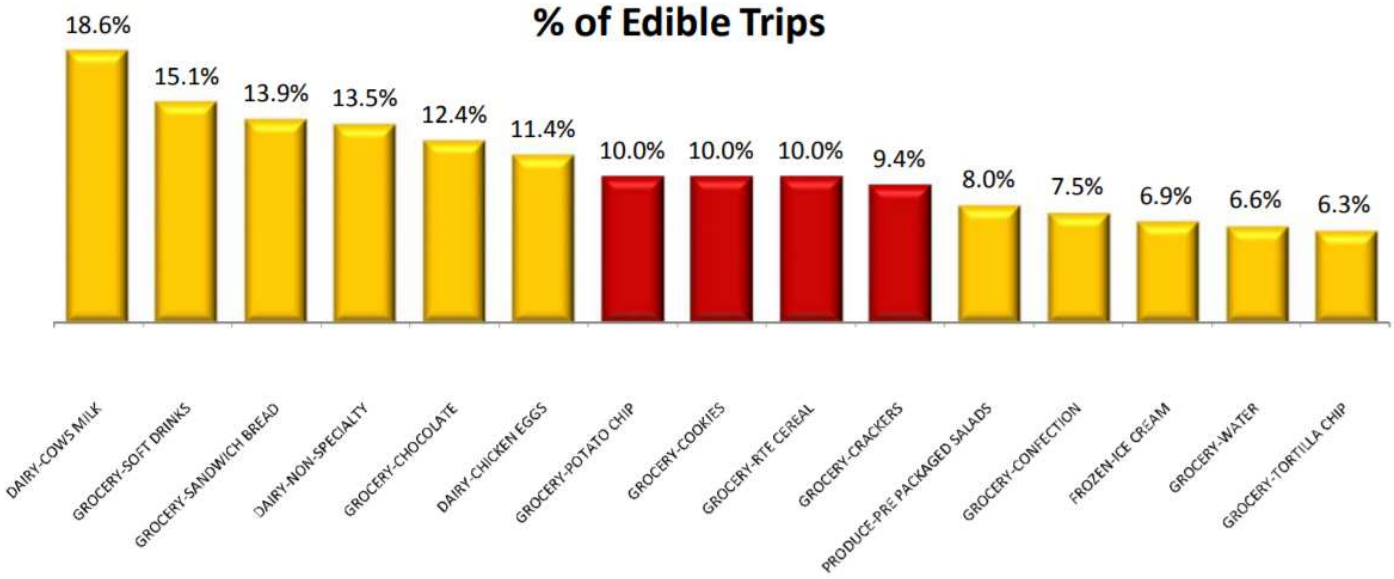
The Food & Beverage industry had a mixed year with 30 of the 58 names in this group down 20% or more YTD but recently with better price action as the market moves to risk-off mode. Private-Label threats and rising costs remains two major headwinds in a group lacking much topline growth and cost-cutting has been the focus of many of the management teams. Hershey (HSY) has 53% exposure to soft commodities, and General Mills (GIS) and Kellogg (K) each with around 13% exposure to grain prices. Packaging costs impacts Dr. Pepper (DPS) at 50%, Campbell Soup (CPB) at 31.5%, Coca Cola (CCEP) at 25% and Coke (KO) at 24%. Lower tax rates have created a short-term boost to EPS, but does nothing to improve the underlying health of the businesses. A few standout performers in 2018 include KDP, CHEF, FRPT, MKC, SAM, LANC, LW, and HRL. Consumption trends are always changing and growth been seen for food & beverage in ecommerce like the much broader retail landscape. New products and e-commerce are two focuses of companies for growth.



The US Food Industry is expected to grow at a 2.9% CAGR through 2022 according to PMMI with meat and snack foods expected to outperform. The Beverage industry is seeing solid growth in specialty areas. The CPG model has changed dramatically with rapidly evolving channels, the digital revolution, insurgent brands and a focus on local foods. There are niche areas with growth and need to focus on companies in these areas, such as the global flavor market has a 5 year CAGR of 5%.

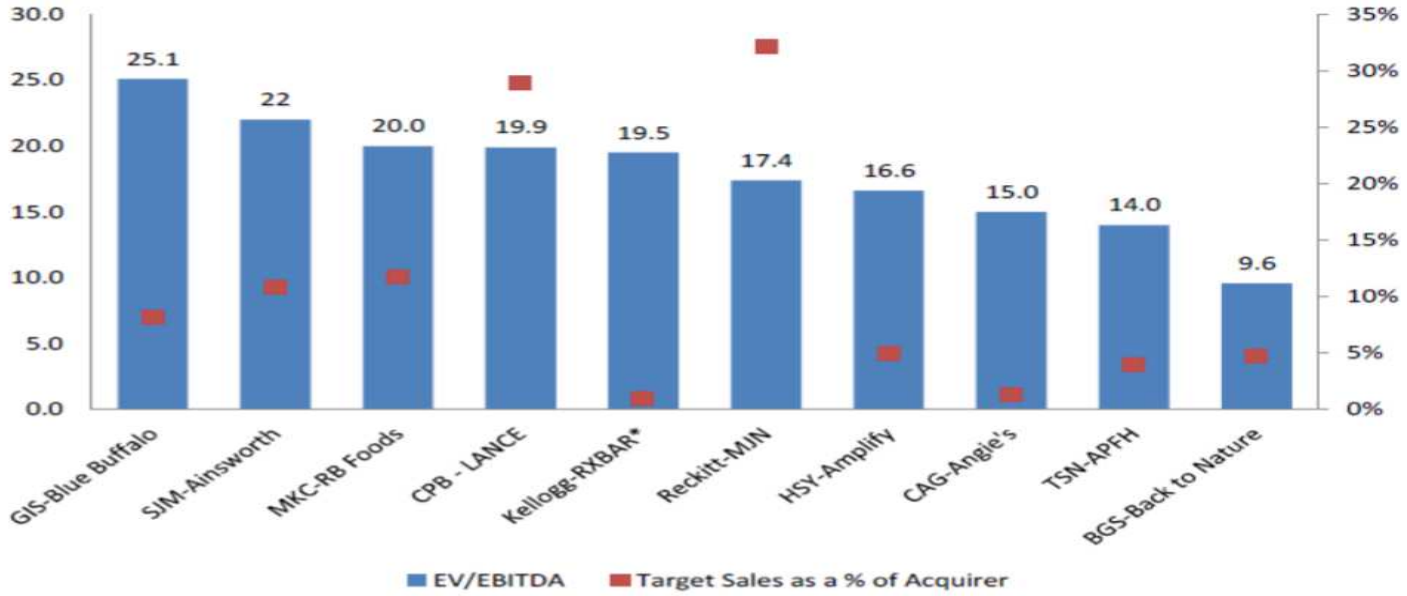






Source: Nielsen; Panel data, 52 weeks ended 9/8/18

The push towards natural and organic is one trend dominating the food industry. Health and Wellness (H&W) now accounts for 10-15% of overall sales with the following CAGR: Natural Products 11.3%, Organic 12.4%, and Gluten Free at 15%, which is a large discrepancy with the 1.5% growth for traditional products. The large Food & Beverage manufacturers have spent more than $20B in deals since 2012 in acquiring H&W companies, and estimate multiples growing to above 2X sales in Food and 3X in Beverages. The impact of new brands coming to market, as seen with over 20% of current brands available appearing within the last four years, is impacting shelf space and a competitive threat to the larger players losing market share. We have seen large CPG companies pay large multiples to acquire faster-growing, contemporary brands as seen below.



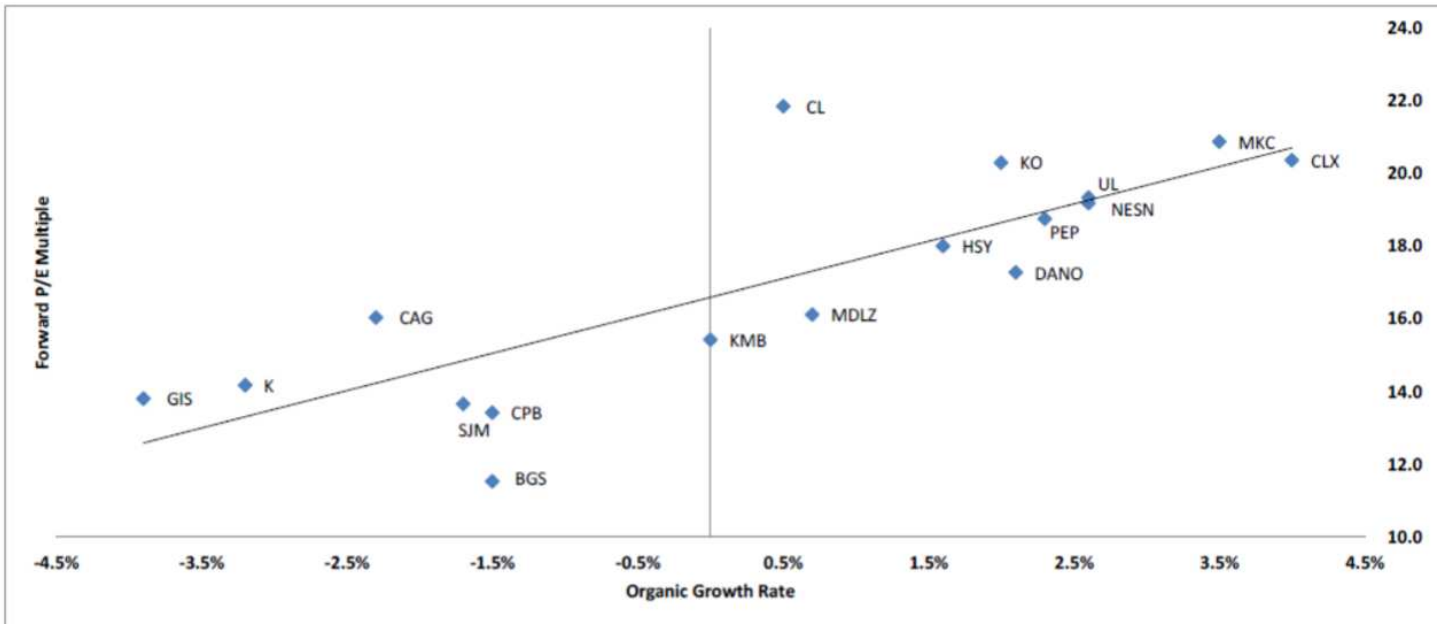
Traditional valuation metrics are useful in this group with P/E, EV/EBITDA, P/S, and EBITDA margins, while FCF/Debt is a custom ratio that has long correlated with strong stocks in this industry. Below is a handy table of commodity costs for food & beverage companies.

	CPB	CAG	GIS	HSY	K	KHC	LW	MDLZ	MKC	SJM	THS	CCEP	KDP	KO	PEP
SOFT COMMODITIES															
Rice	1.0%	0.5%	1.0%		4.0%			1.0%		3.0%	1.0%				
Oats		0.5%	2.0%		1.0%	0.7%		2.0%		3.0%	2.0%				
Corn	1.0%	2.0%	2.0%	1.0%	3.5%	1.7%		2.0%		4.0%	3.0%		0.5%		2.1%
Wheat	3.0%	3.0%	3.0%	1.0%	6.0%	2.0%		5.0%		5.0%	7.0%				
Soybeans	1.0%	1.0%	1.0%		1.0%	2.0%		1.0%	1.0%	2.0%	4.5%				
Tomatoes	9.5%	2.0%	1.0%			2.3%				1.0%					
Potatoes	2.0%	2.0%	1.0%		1.0%	0.6%	20.0%			1.0%					4.0%
Orange Juice														3.0%	2.5%
Apple Juice													3.6%	2.0%	1.0%
Sugar	3.0%	2.0%	3.0%	10.0%	3.0%	4.0%		8.0%		1.0%	1.5%	10.0%			
HFCS		1.0%	1.0%	2.0%	1.0%	4.0%				1.0%	1.5%		5.4%	10.0%	4.5%
Corn oil	1.5%	3.0%	1.0%		1.5%	1.1%	3.0%	3.0%	1.0%	1.0%	1.5%				
Soybean oil	1.5%	2.0%	3.0%		1.5%	2.0%	3.0%	3.0%	1.0%	1.0%	2.0%				4.3%
Palm oil	1.5%	1.5%	1.0%	2.0%	1.0%	1.0%		1.0%	1.0%	1.0%	2.0%				
Chicken	4.0%	5.5%	0.5%			3.0%				5.0%	1.0%				
Beef	2.0%	3.5%	0.5%			4.0%				3.5%	1.0%				
Pork	2.0%	4.0%	0.5%			6.0%				3.5%					
Peanuts		2.0%	1.0%	2.0%	3.0%	5.0%		1.0%		8.0%	4.0%				
Milk	3.0%	1.0%	3.0%	10.0%	2.5%	4.0%		3.5%		2.0%	1.0%				2.5%
Cheese		1.0%	1.0%	7.5%	1.0%	12.0%		3.5%			1.5%				2.5%
Coffee						7.0%				8.0%	1.0%		7.4%		
Cocoa			1.0%	15.0%	1.0%			10.0%		1.0%			7.4%		
Vegtables		2.5%	2.0%				5.0%		5.0%	1.0%	6.5%				
HARD COMMODITIES															
Diesel/ "Heating Oil"	2.0%	1.0%	2.0%	3.0%	3.0%	2.0%	10.0%	1.0%	5.0%	1.0%	2.0%	1.0%	6.3%	2.5%	2.7%
Nat Gas	4.0%	5.0%	6.0%	4.5%	10.0%	5.0%	10.0%	5.0%	5.0%	1.0%	3.0%	1.0%	2.4%	2.5%	2.7%
Aluminum	15.0%	3.5%	3.0%	2.0%	1.0%	2.0%		1.0%		1.0%	1.0%	10.0%	12.3%	7.0%	5.4%
Container Board	5.0%	5.0%	6.0%	4.0%	6.0%	5.0%	15.0%	5.0%		1.0%	8.0%	4.0%	7.8%	3.0%	5.6%
Tinplate										2.0%	2.0%				
PET/Resin	10.0%	9.5%	5.0%	10.0%	6.0%	5.2%	5.0%	4.0%	15.0%	11.0%	7.0%	11.0%	12.3%	11.0%	10.2%
Labor/Overhead/dep/Logistics	26.0%	35.0%	35.0%	21.0%	35.0%	18.0%	20.0%	25.0%	25.0%	22.0%	25.0%	13.0%	16.9%	54.0%	37.6%
Other Inputs	2.0%	1.0%	13.5%	5.0%	7.0%	0.4%	9.0%	15.0%	41.0%	5.0%	10.0%	50.0%	17.7%	5.0%	12.4%
Check	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

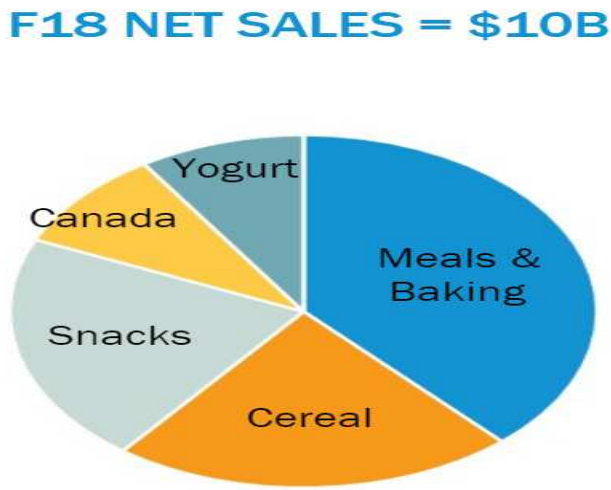
We can break this group down to make for easier analysis into Food, Non-Alcoholic Beverage, Alcoholic Beverage, Cigarettes and Cannabis, and Wholesale.

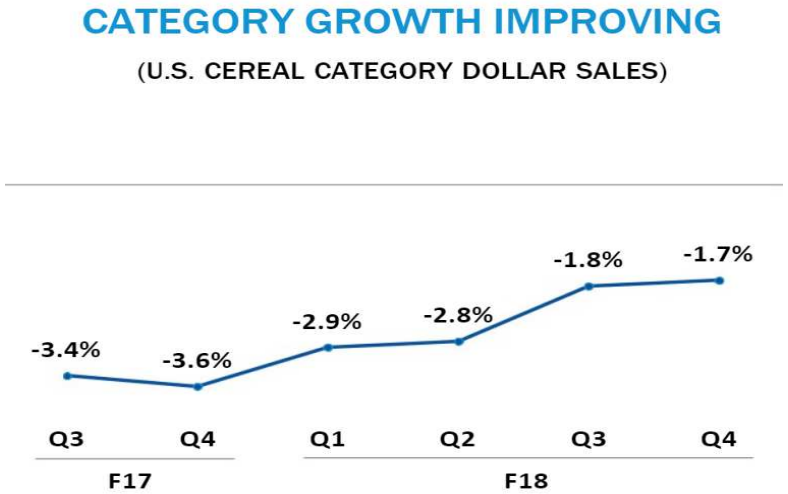
Food is the largest group and has a lot of low growth names utilizing cost cuts and seeking growth opportunities via M&A and new product launches. **Fresh Pet (FRPT)** shares are up 67% YTD as one of the only pet food pure play stocks after Blue Buffalo was acquired by General Mills for $8B at 6.3X Sales. **McCormick (MKC)** is another top performer up

47.5% as the flavors market remains immune from the slowdown in other spaces. It is just way to rich now on valuation with growth set to fade. Five of the top performers are now trading at 15X EBITDA multiples or higher, difficult to see room for much more appreciation moving forward though **FRPT** at 4.7X Sales is still well below the multiple paid for BUFF. The market tends to award large P/E valuation premiums to companies demonstrating organic growth. Many names continue to trade at historically high multiples with low growth, so overall there are more shorts than longs in the group.



General Mills (GIS) screened the best of the large CPG names with a $22.9B market cap trading 10.9X EBITDA with 20% EBITDA margins and the strongest FCF. GIS shares are down 32% YTD but see a return to 6% EPS growth in 2019 which would be its best since 2011 and has taken a lot of initiatives to capture growing areas in food. It paid a hefty price for Blue Buffalo but it does put it in a leadership position for a strong growth market. It is focused on growing the US Yogurt market, improving in emerging markets and strengthening its innovation. Price/Mix has been improving for four straight quarters and its core Cereal market looks to be improving while its share of the Yogurt market also continues to improve. GIS is targeting $1B in net ecommerce sales by FY20. It sees FY19 as a historic level for new product sales contribution near 6%. Its Nature Valley has a leading market shares at 27.5% of the US snack bar market and GIS continues to increase its exposure to the growing natural & organic brands. GIS has a lot of opportunity to continue to reshape its portfolio and management has a realistic view of the industry and steps needed to be taken. It stands out above peers as a name hit hard in 2018 that could find its footing in 2019.





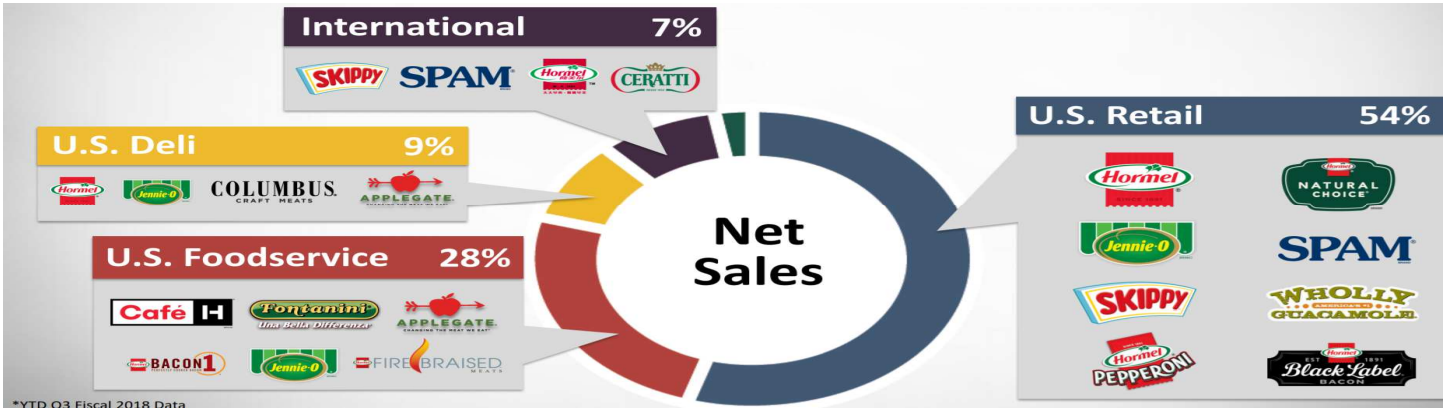
Hershey (HSY) is the snacks pick in the group narrowly edging out MDLZ due to a better margin, growth, and operational efficiency profile. The $22.3B Co. trades 19X Earnings, 13.7X EBITYDA and 2.88X Sales with a 2.7% dividend yield. HSY is set to grow its topline 4% in 2018, best year since 2013, and sees EPS growth of around 5% each of the next two years and continues to deliver a strong ROIC at 17%. HSY recently has shifted to a strong focus on its digital strategy. Hershey is a name very exposed to soft commodity price movements in Cocoa and Sugar. HSY should be more

immune from market competition as a clear brand leader that continues to innovate and have pricing strength, while also likely to benefit from a longer Easter in 2019.

Lamb Weston (LW) remains an attractive name in the group despite a rich valuation at 22X Earnings, 3.05X Sales and 15X EBITDA. LW has a 15.4% ROIC and operates with 24% adjusted EBITDA margins. It continues to see steady 4.5%+ organic topline growth and EPS growth in the double digits. LW is #1 in the US frozen potato category and #2 globally. LW has consistently delivered growth and margin expansion enabling its higher multiple.

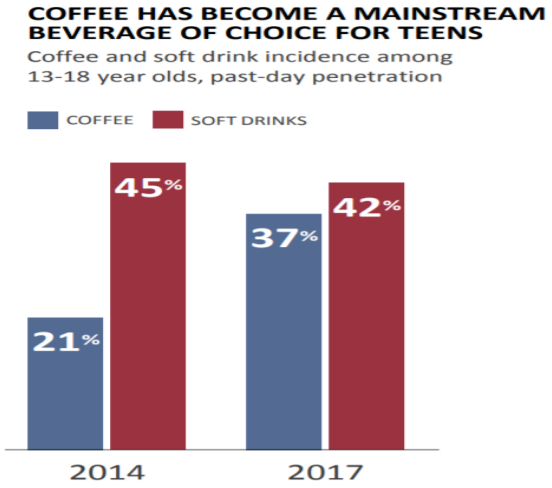
Nomad Foods (NOMD) is a $3.25B distributer of frozen foods in Western Europe trading 12.95X Earnings, 1.38X Sales and 16X FCF. NOMD has EBITDA margins near 17% with a 6% ROIC and strong FCF. It has one of the better growth profiles with 10.7% topline growth in 2018 expected to be followed by 7.2% growth in FY19. NOMD has a #1 or #2 market share in 90% of its markets and continues to show margin accretion and effectively utilizing acquisitions to on-trend category exposure. Fish accounts for 40% of sales, Vegetables 20%, Meals 10% and Poultry 10%. NOMD has a 14% market share in the EUR25B Western Europe frozen food market. New launches as a percentage of NOMD revenues continues to rise hitting 6% in 2018. It sees long term EBITDA margin expansion to 20%. NOMD is at or near the top for best combinations of value/growth in this group with strong management and plenty of incremental opportunities for both sales and earnings growth.

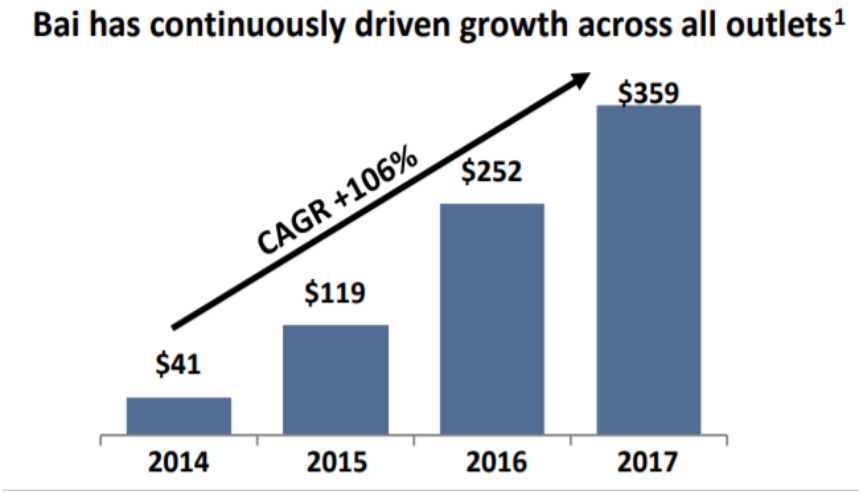
Hormel (HRL) is a clear leader in the protein group with a $23.7B market cap trading rich at 22.7X Earnings, 2.48X Sales and 16.4X EBITDA with a 1.69% yield. HRL does have 14.5% EBITDA margins which is far superior to its peer group and a 19.6% ROIC in 2018 while delivering impressive FCF. HRL has been a great operator forever with earnings growth 28 of the last 32 years and 52 straight years of raising its dividend. HRL has a strong management team and has outlined an aggressive growth outlook through 2020 driven by innovation and an underappreciated opportunity in food service and also seeks to continue to improve margins. Hormel is becoming a more global company and also has expanded into new markets and well balanced across generational brackets of consumption trends. Hormel also has a very strong balance sheet and a commitment to returning cash to shareholders.



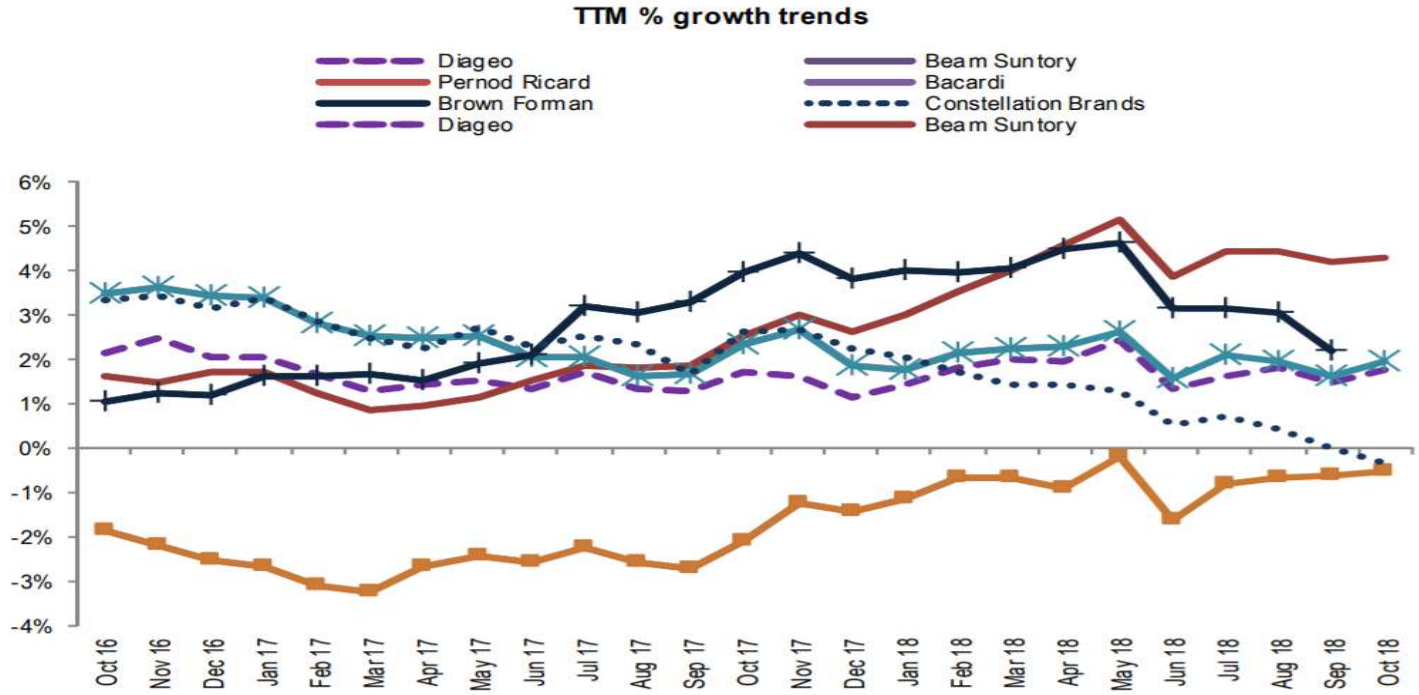
Beverages-Non-Alcoholic has seen a strong performance in the second half of 2018 with PEP, KO, and KDP all strongly higher. The group trades at an average 15.7X EBITDA multiple with 23.8% EBITDA margins. **Monster (MNST)** is the ROIC and Margin leader in this group and thus trades at a 20.4X EBITDA multiple, but its exposure to the convenience store channel makes it attractive as does its growth profile and impressive FCF.

Keurig Dr. Pepper (KDP) is the other name to focus on with a $36.5B market cap trading 17.6X EBITDA, 17.95X Earnings, and 5.82 X Sales with a 2.28% yield. KPD is targeting the deeper trends within the beverage industry with strength in Coffee and Bottled Water. It has leading non-Cola brands like Dr. Pepper and Canada Dry as well as Snapple in Tea. Bai is the fastest growing flavored enhanced water brand. It also owns the Mott's brand, a leader in apple sauce and apple juice. Other key leading brands include Fiji Water, Vita Coco, and Body Armor. KDP is also a leader in the ecommerce space with its Coffee brands. It is set to deliver annual synergies of $200M/year through 2021 and gives exposure to fast growing brands in the beverage industry.





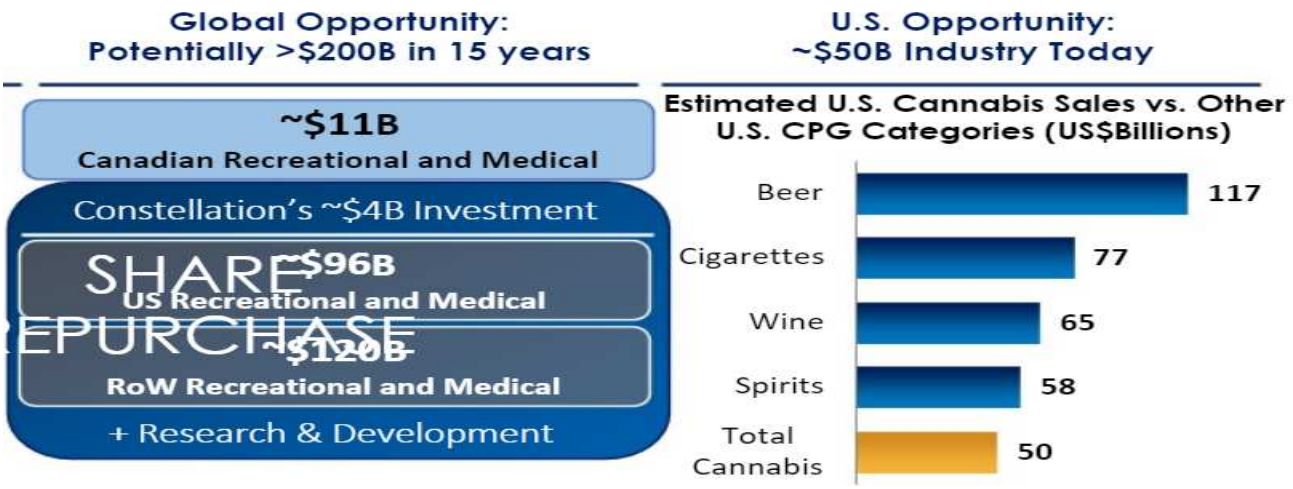
Beverages-Alcoholic, Cigarettes, & Cannabis is a group that has really struggled in 2018 with most of the names down 10-30% YTD while SAM a lone outperformer up 39%. The group is trading at an average multiple of 15.2X EBITDA and raw material inflation has played a major role this year. We have seen a number of these companies explore moves into the fast growing cannabis markets through strategic acquisitions. I do not see a very good outlook for cigarette names with increased regulations & taxes and overall weakening demand trends.



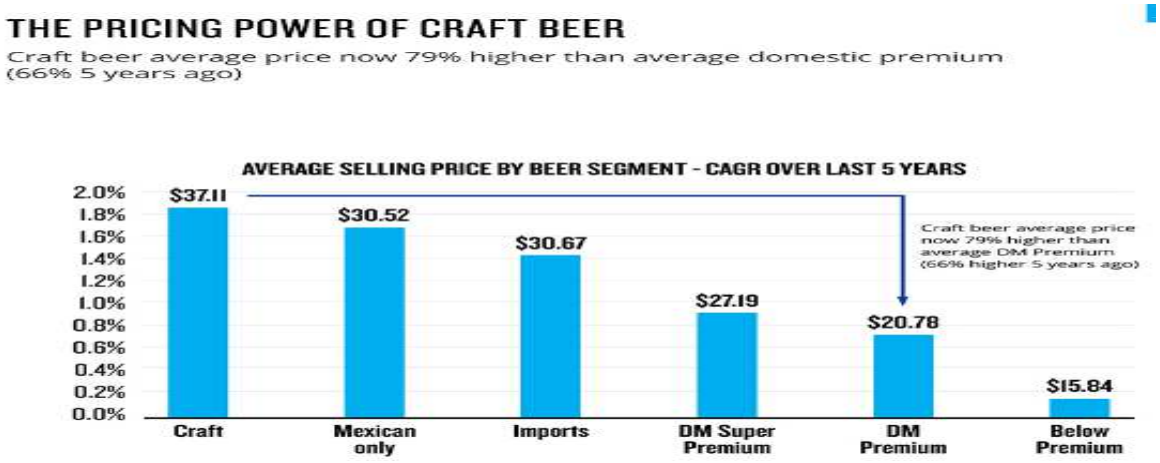
Source: NABCA

Constellation (STZ) edges out Diageo (DEO) as the favored Spirits name that also gives exposure to high-end beer markets. STZ shares have pulled back in 2H18 and the $35.9B Co. trades 18.4X Earnings, 4.55X Sales and 13.7X EBITDA with a 1.57% yield. STZ continues to expect solid 6-7% topline growth and 8-12% EPS growth while delivering strong FCF. STZ is investing in Cannabis which it sees as a major opportunity, a market expected to reach $200B in 15 years. STZ has the strongest of brand portfolios across high-end beer and wine while upside optionality in Cannabis and a historically strong management team.

Volume CAGR	Spirits	Wine	High-End Beer	All Other Beer
10 Year[3] (2007-2017)	2%	2%	5%	-3%
5 Year[3] (2012-2017)	2%	2%	6%	-4%



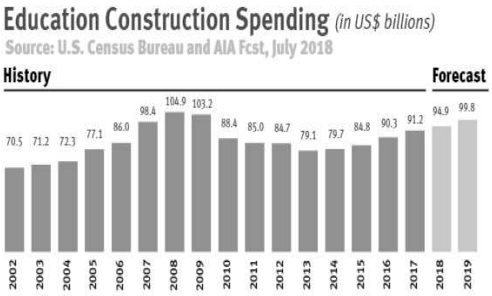
Boston Beer (SAM) has been a standout performer in 2018 and though trading rich at 31.3X Earnings, 15.6X EBITDA and 3.25X Sales it offers the best growth profile, 51% gross margins, impressive FCF with little debt, and a 3 year ROIC near 25%. SAM does face plenty of competition in the craft beer space but has been making strategic acquisitions. SAM has room for margin improvement and craft beer pricing power remains robust. SAM has a new CEO and new brands are driving a new growth period for the company.

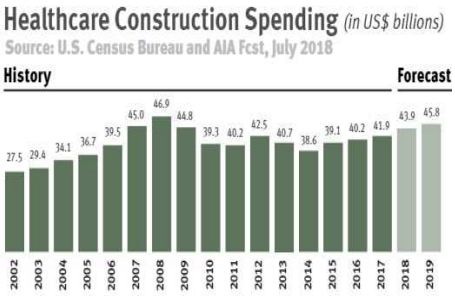


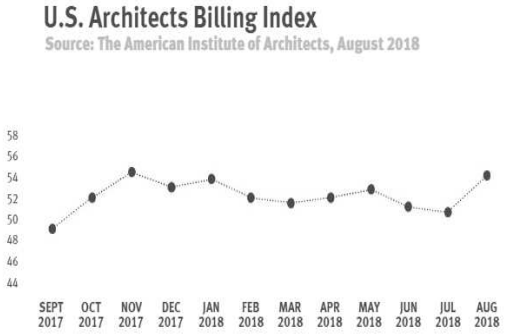
Home/Office Related Goods:

Components: *AYI, ENR, HELE, HNI, KNL, LEG, LZB, MLHR, NWL, SCS, SNBR, TPX, TUP, WHR, PRPL, LOVE, LCUT, YETI, HAS, MAT, FNKO, ACCO, EBF*

This is another group that performed poorly in 2018 with only FNKO and HELE positive performers, and both were up sharply. Spending in the home cooled with weakening housing numbers while office spending also cooled, and a lot of these are larger items where rising freight costs have weighed as well as raw material inflation. The Toys & Games market is large at $86.8B with 2% global growth in 2018, expected to grow to $93.8B in 2022 led by growth in Asia, Africa, and South America. The global household appliance market is expected to grow at a 7% CAGR 2019-2023 according to Technavio with smart appliances set to double as innovation drives growth. The appliance market is closely correlated with housing and consumer confidence. The opportunity for ecommerce spending remains a big upside growth driver for many of these names needing a strong digital presence as well as innovating to match changing consumer trends, a constant theme across these company's investment presentations. A few of these names have undergone or are undergoing big portfolio changes like Newell (NWL). Although the overall environment is not great there are a number of strong stories in this group.

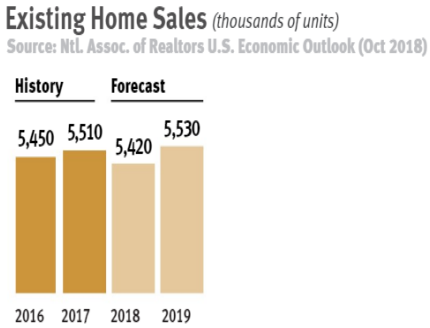


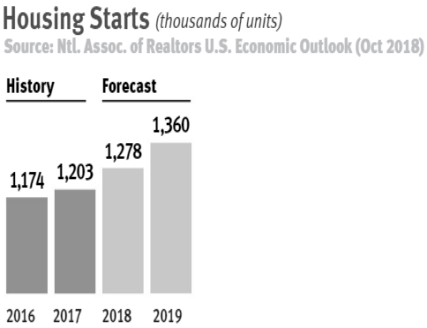


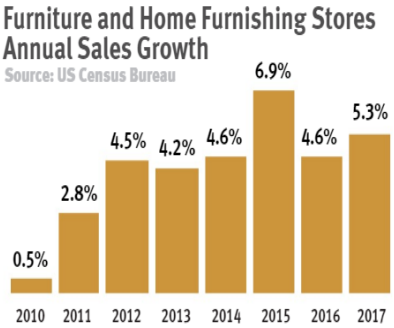


AIA Consensus Construction Forecast
(% YOY Growth)
Source: The American Institute of Architects, July 2018

	2018	2019
Non-Residential	4.7%	4.0%
Commercial Total	6.7%	3.4%
Office	6.6%	4.1%
Health	4.7%	4.4%
Education	4.0%	5.2%
Hotel	7.9%	3.6%







Hasbro (HAS) shares have held in this year down around 7.5% YTD and the $11.1B toymaker trades 16.75X Earnings, 2.3X Sales and 42.5X FCF with a 3% dividend yield. HAS is forecasted to return to topline growth of 8.3% next year and 16% EPS growth while having an impressive 20% ROIC in 2017. The total toy market is $88.8B and Hasbro has an 11.2% market share. It owns a ton of top brands in many categories and has an emerging digital segment. It has strong cash flows and continues to raise its dividend as well as buy back stock. The CEO bought over $1M in stock on 10-31-18. Management came through a very disruptive 2018 with the Toys 'R Us liquidation well and should be on the upswing into 2019-2020. The final Star Wars film in late 2019 can be a growth driver next year as well as the Frozen sequel.

Acuity Brands (AYI) is a $4.83B provider of lighting and building management solutions that was a favorite short for 2018 and with shares down 33% YTD it is looking more attractive. AYI is now trading 10.95X Earnings, 1.3X Sales and 16.75X FCF with an 18.7% ROIC and 15% EBITDA margins. In May two Directors bought over $700K in stock near $113. AYI is forecasted to hit 5.5% topline growth the next two years and 7-15% annual EPS growth. Its sales are divided into 50% new construction and 50% renovation with 85% coming non-residential. It estimates an addressable market of $20B in 2018 and a $500B installed base, AYI a leader in nearly every category it services. Weakness in margins has been a key negative to shares but looking like it may tough in 2018 with pricing actions in 2019 set to offset rising costs of electronic components, freight, steel and wages. At 8.5X EBITDA shares have come down from 14.3X in 2016. AYI is a former star that has now fallen back on valuation and sets up more positively, remaining an organic growth story with a leadership position in a large market.

Figure 3: Value of U.S. Lighting Shipments

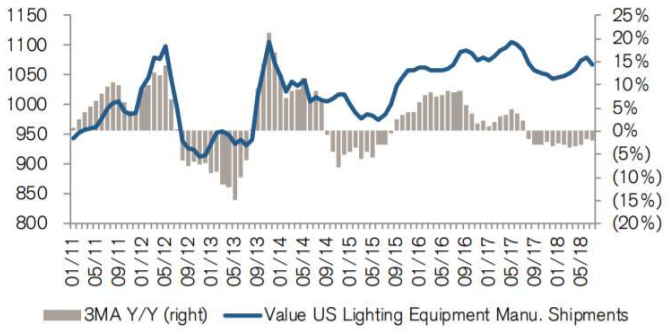
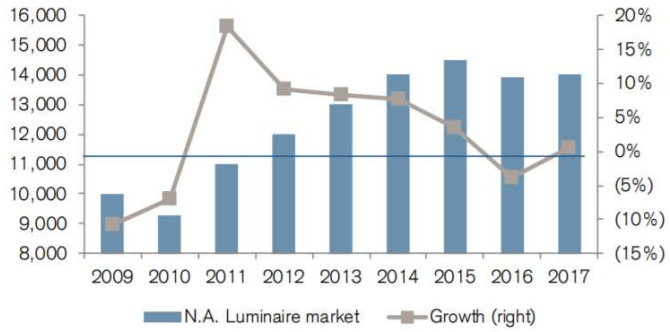


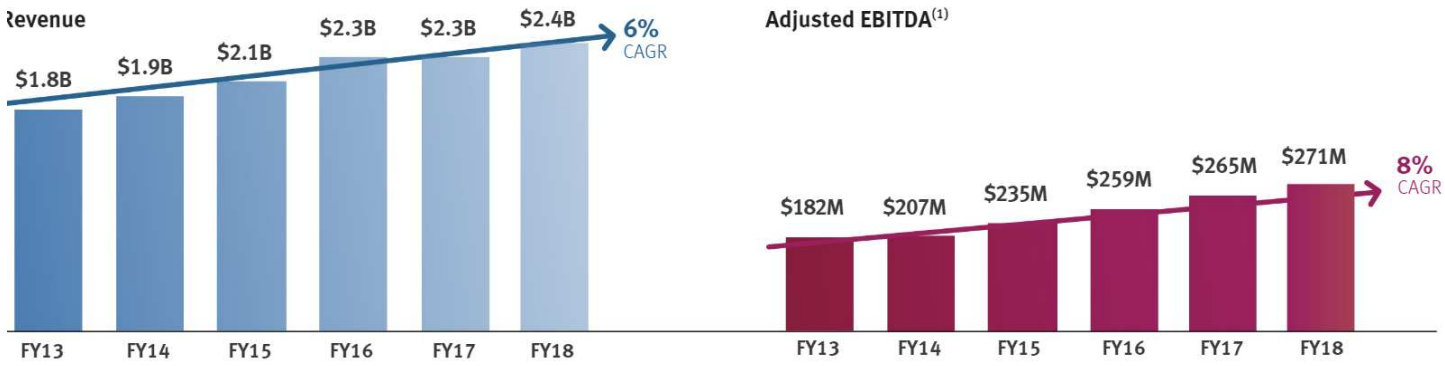
Figure 4: N.A. Luminaire Market Growth



Helen of Troy (HELE) is a $3.67B consumer products company that has seen shares climb 42% YTD and now trades 15.6X EBITDA, 16.83X Earnings and 2.34X Sales. HELE posted a 26% ROIC in 2018 with 16% EBITDA margins and sees modest 4.4% topline and 8.3% bottom-line growth in 2019. Health & Home is 45.8% of sales, Housewares 30.8% and Beauty 23.4%. Some of its most notable brands include Vicks, Braun, Febreze, Pur and Hydro Flask. In 2019 HELE has posted strong results with its online channel +24.2% and also reducing inventory and deleveraging. It sees further opportunity to expand margins. Nielsen data recently showed increased demand for air quality devices with the California wildfires. HELE is also a beneficiary of the flu season with its thermometers and Vicks products. HELE is one of the best operated companies in the consumer segment and has been posting beat and raise quarters in 2018 with no signs of momentum slowing.

Sleep Number (SNBR) screens well in the mattress group at 15.4X Earnings, 0.84X Sales, and 8X EBITDA with an impressive ROIC. SNBR is forecasted to see 5-7% annual revenue growth and expectations calling for 30.8% EPS growth in 2019. SNBR is an innovator in the industry and building a loyal customer base while advertising effectively. It is a disruptor in the industry and while bed-in-a-box is disrupting the low end market, the high end market continues to grow. The new 360 bed line roll out saw robust orders according to management and sets up for a strong Q4. SNBR does face macro headwinds such as rising interest rates and a slowing housing market, but shares are attractively valued with a strong outlook for high tech mattresses.

Herman Miller (MLHR) is a $1.95B maker of office furniture systems trading 10.2X Earnings, 0.8X Sales and 22.35X FCF with a 2.46% yield. MLHR has 11.4% EBITDA margins which is above peers and a consistent 13% ROIC. It also offers a better growth profile than peers with 6% revenue and 17.6% EPS growth rates seen for 2019. MLHR is targeting a $41B+ market and sees ample growth opportunities in transforming studios, e-commerce, and is targeting expansion in operating margins. MLHR has a new CEO in place as of August and although not a sexy growth story, it is consistent with a clear vision and trades very cheap.

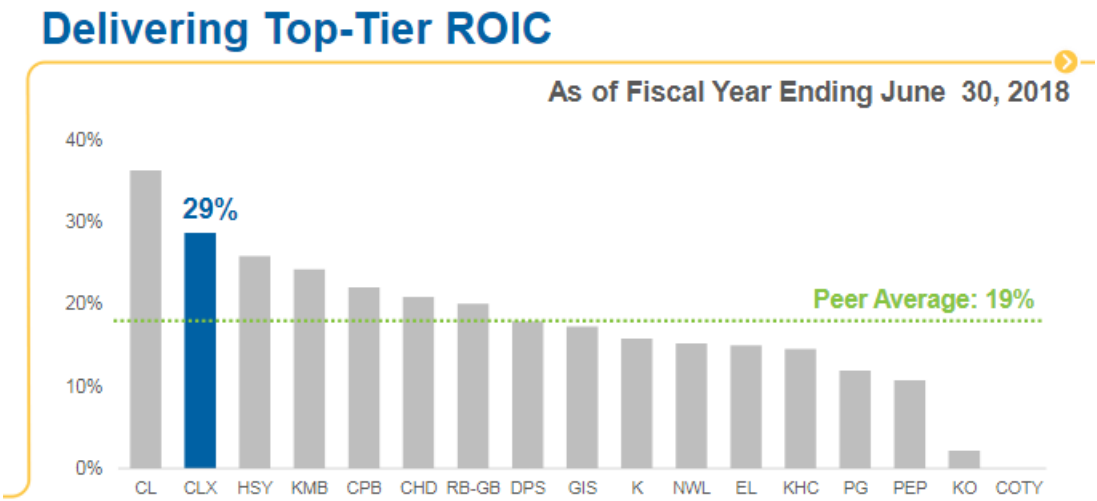


Yeti (YETI) is a recent IPO that has a leadership position in the cooler space while expanding into new markets and worth a look as a powerful luxury brand. The $1.4B Co. trades 16.6X Earnings and 1.9X Sales with around 15% EBITDA margins and in 2017 a 15.7% FCF margin. YETI is targeting 19.6% revenue growth in 2018 followed by 12% each of the next two years. In its Q3 report it saw very strong Drinkware numbers while Coolers came in weak, but it should once again be a hot product for the Holiday spending period. YETI reaffirmed its long-term growth algorithm of +10-15% revenue growth, gross margin between 50-52%, and adjusted EBITDA margin between 19-22%. YETI is a strong DTC story via its website and also has ample expansion opportunities in International markets. YETI is a multi-year growth name that is not trading terribly rich on valuation, and likely becomes a multiple expansion name with room to see robust growth in new markets like apparel.

Household, Personal Care & Services:

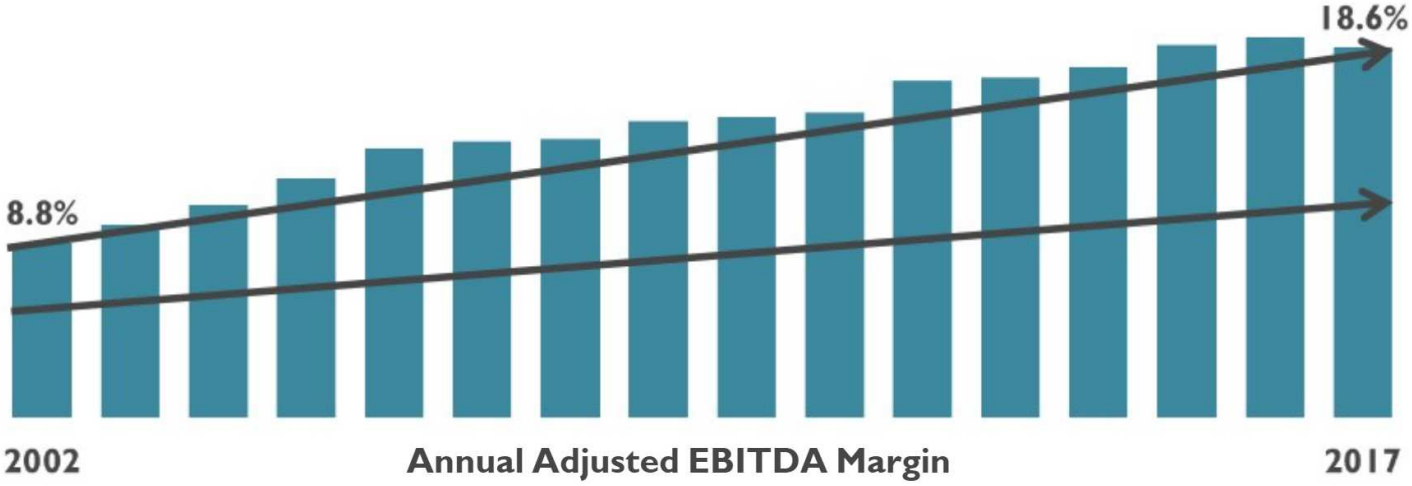
Components: *BFAM, SCI, WTW, NTRI, CHD, CLX, PG, UL, CL, EL, KMB, HLF, COTY, NUS, EPC, IPAR, REV, ELF, LFVN, MATW, ECL, PBH, MED*

The primary driving force to the global personal care market is rising disposable income and the beauty market has always been one of the most resilient. The global beauty and personal care market is anticipated to reach $716.6B by 2025 with a 5.9% CAGR driven by a growing preference for natural/organic products, adoption of Augmented Reality, urbanization, growing demand for anti-aging products, and increasing popularity of men's grooming products.



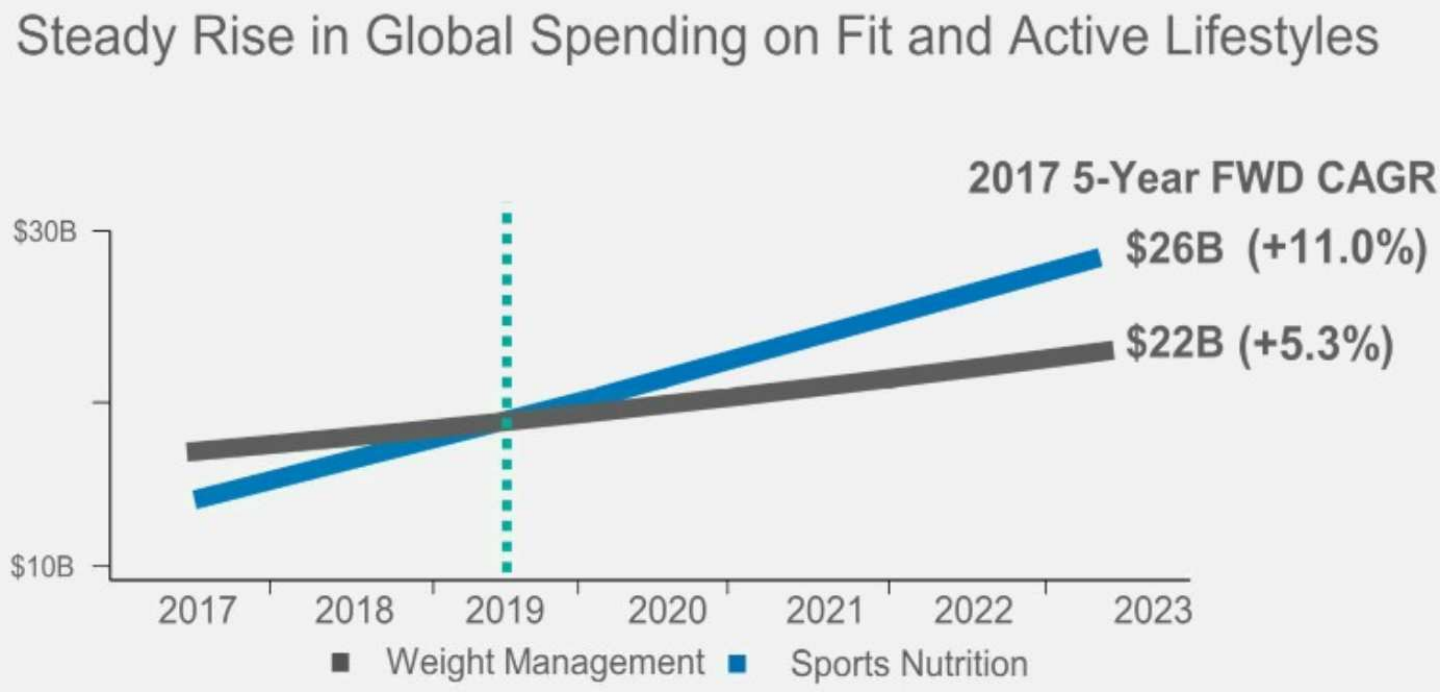
There are numerous interesting stories in this group worth a closer look on the long side:

Bright Horizons Family Solutions (BFAM) is one of the few ways to gain exposure to the rising cost and need of child care and early education, the $6.93B does trade at a premium scarcity valuation of 32.4X Earnings, 3.7X Sales, 37X FCF and 19.6X EBITDA. BFAM has consistently grown revenues 7-11% annually and continues to have that outlook with double digit EPS growth. BFAM has a significant scale and expanding International presence with 705 centers in the US and seeing capacity for 88,900. Demographic trends like full time working women and two parent households as dual career earners support its business. It is also seeing strong growth from adjacent services. It sees sustainable 8-10% organic growth with a balance of new centers, tuition increases, enrollment increases and adjacent services contributing. BFAM offers a stick, recurring revenue base with high free cash flow conversion.

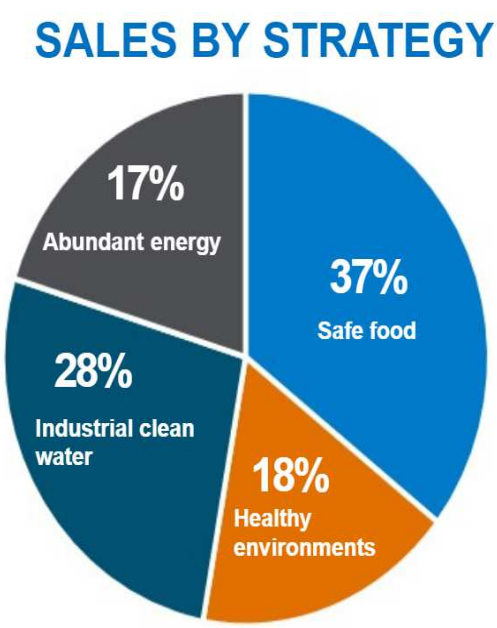


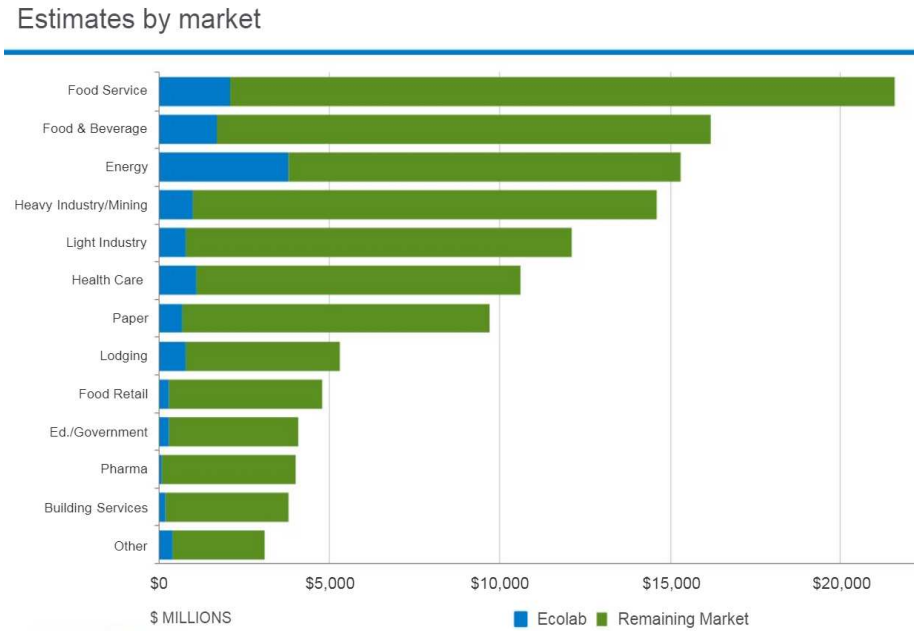
Inter Parfums (IPAR) is a $1.85B provider of fragrances trading 32.2X Earnings, 2.86X Sales and 17.9X EBITDA with a 1.87% dividend yield. IPAR has historically delivered a 5-7% ROIC and operates with 15.7% EBITDA margins. The company has delivered double digit topline growth the last three years and sees EPS continuing to grow strongly with a forecast of $2.15/share in 2020, up from $1.33/share in 2017. Its growth strategy involves growing existing brands, entering new categories, e-commerce initiatives, and acquiring new brands. Mont Blanc is its largest brand and anticipates a Winter 2019 launch of "Explorer", a new blockbuster fragrance. Jimmy Choo is its 2nd largest brand and will be launching a new men's scent in Fall 2019. The fragrance industry is $49.5B in size with a 5.2% CAGR the last five years while IPAR has delivered a 10.9% growth rate. IPAR is a solid growth story and despite elevated valuation, a unique company with upside levers to growth with an active new launch cycle in 2019.

Herbalife (HLF) has performed very well in 2018 with shares up 66.77% yet still only trades 17.85X Earnings and 1.85X Sales with a lot of cash at a market cap of $8.83B. HLF grew revenues more than 10% in 2018 as its best year since 2013 and sees a very strong outlook for EPS growth with $4.76/share forecasted in 2021, up from $2.43/share in 2017. It continues to benefit from global trends like Obesity, Aging, Rising Healthcare Costs, Rise of Entrepreneurs, Wellness and Social Selling. It is estimated that 53% of the US population will be freelancers in 2028, a strong change from 36% in 2017. HLF operates in an attractive category growing 2-3X the rate of the Food industry. It also benefits from its presence with the Millennials, accounting for 50% of new members. HLF has bought back $4.5B in stock since 2007. It estimates penetration of just 19.7% to the $16B weight management category, 1.5% to the $98.7B Health & Wellness category, and 0.5% to the $14B Sports Nutrition category. Distributor Productivity is also rising due to technology with mobile ordering now accounting for 54% of sales. HLF sets up for another year of strong growth and earnings beats.

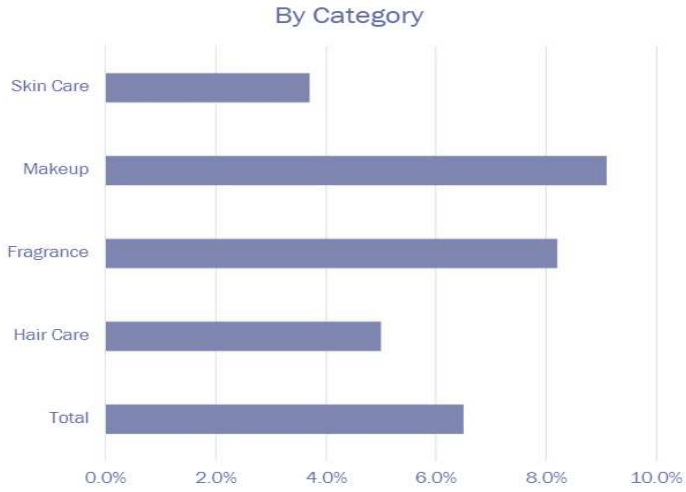


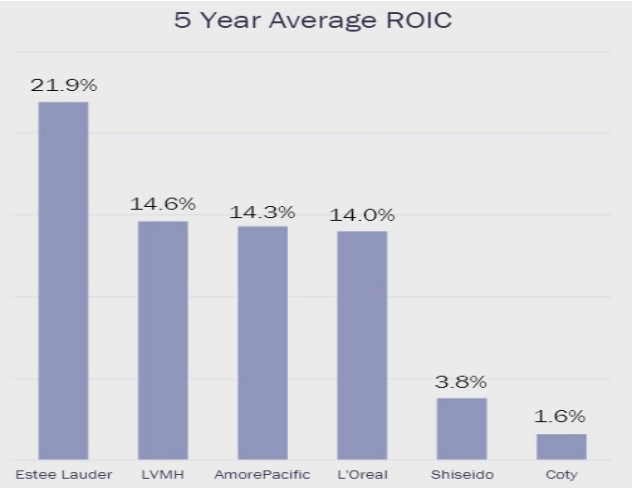
Ecolab (ECL) is a $45.5B provider of water, hygiene and energy technologies that has consistently been a strong operator and trades 26.1X Earnings, 3.13X Sales and 27.9X FCF with a 1.06% yield. ECL is forecasting consistent 5-6% revenue growth and 10-12% EPS growth the next few years and has tended to be conservative. ECL has a ten year EPS CAGR of 11% versus the S&P 500 at 4%. It is undergoing significant margin initiatives and targeting a 20% ROIC, and has returned $8B to shareholders over the last decade. ECL has also been making inroads with its digital initiatives and also expects $200M of annual SG&A savings by 2021. It operates in a massive $125B market and has a leading market shares in a highly fragmented industry. It is a combination of consistent growth, strong management, low penetration resulting in plenty of opportunity, and expanding margins.





Estee Lauder (EL) remains the preferred play in Beauty with a $51.3B market cap trading 25.5X Earnings, 3.7X Sales and 44.25X FCF with a 1.25% dividend yield. EL grew revenues 15.7% in 2018 and sees 4.5-7% annual growth the next few years with EPS growth reaccelerating to double digits in 2020. EL has seen ROIC steady near 20% the last few years and has 20.4% EBITDA margins with strong FCF. It is seeing a mix shift from Department stores to higher growth channels and has been a very strong digital presence. EL has seen some weakness in 2018 on China tariff costs (30% of products imported from China), but is seeing accelerating growth drivers with China and Travel. EL is a strong story with resilient markets and deserving of a premium valuation. It has reduced exposure to Department Stores and accelerating to high margin areas like specialty, travel retail, an e-commerce.



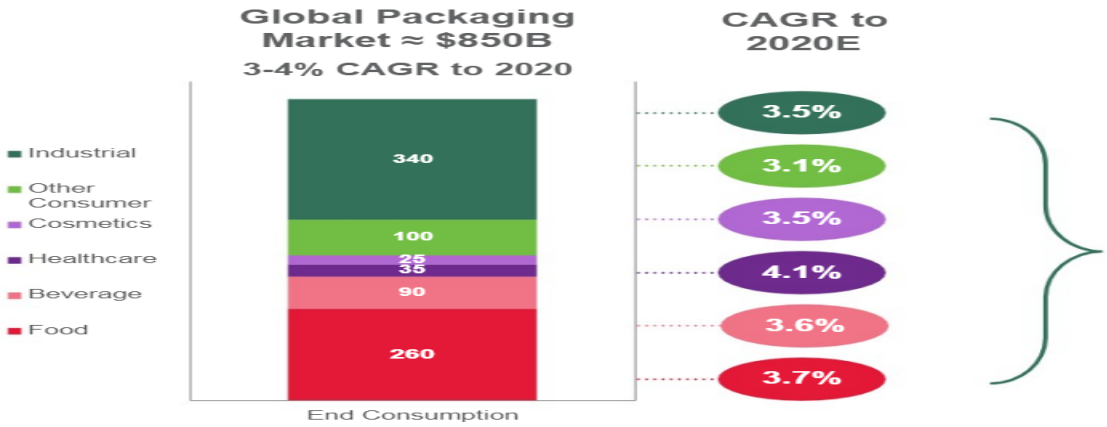


Packaging and Paper:

Components: *ATR,AVY,BERY,BLL,BMS,CCK,GEF,GPK,IP,KS,OI,PKG,SEE,SLGN,SON,SWM,UFS,WRK, FBR, NP, VRS, MERC, GLT, VRTV, ARD, TRS*

The packaging industry is mainly broken into Rigid, Paperboard, Plastic and Labels and industry average EBITDA multiples have risen to 10X. For the stocks above, the breakdowns are as follows: Plastics: BERY, ATR, BMS, SEE; Paperboard: GEF, GPK, IP, WRK, PKG, KS; Metals/Glass: BLL, CCK, OI, SLGN. Sonoco (SON) is a diverse player that does not fit in one group.

The industry is strongly tied to demands from consumer packaging, and raw material and energy costs play a key role. There is a strong correlation with consumer confidence as an indicator of personal consumption to the packaging industry. The seven success factors for companies in this sector are management of raw material inflation, reduction of waste, effective capital expenditure, operation performance measurement, profitability management, innovation, and supply chain management. Also consumer shifts to online commerce has played a role in breaking out the winners and losers of this group.

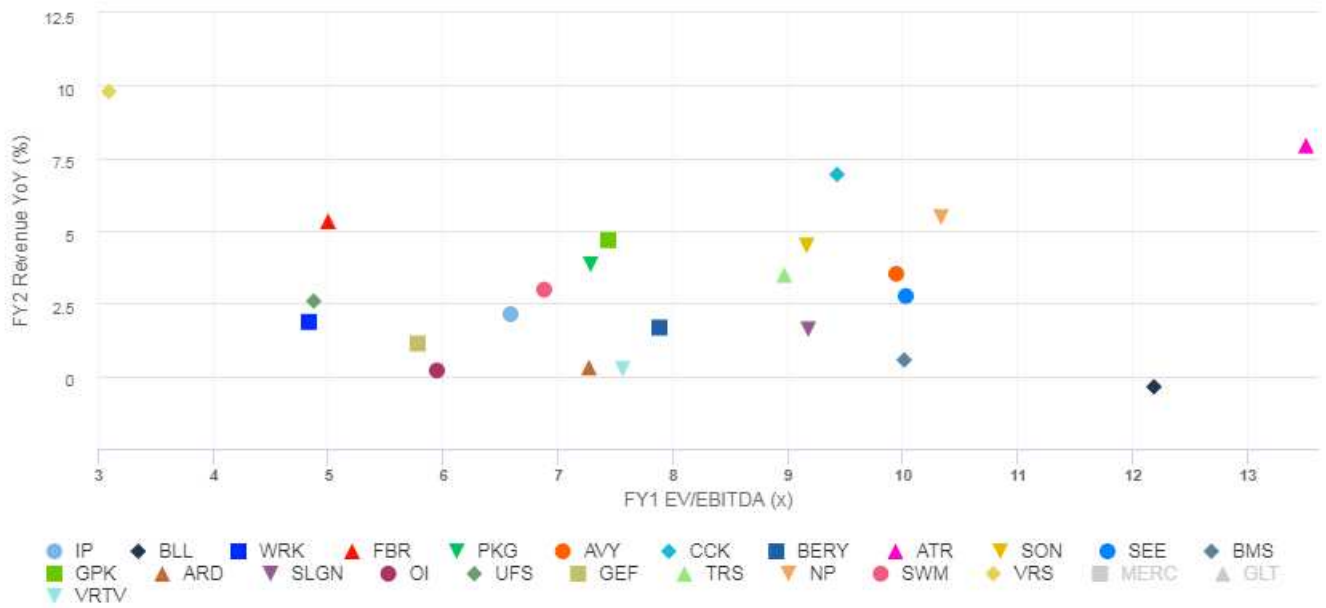


RFID is one space seeing significant growth in the apparel industry where Avery Dennison (AVY) has a 50% market share, a $300M business growing 15-20%, and potential expand to new markets.

EV/EBITDA, Revenue Growth, EBITDA Margins, and Cash Flows are all important metrics to observe in this group. EBITDA-Capex spread has been found to be a useful measure of performance of packaging companies. Working Capital Metrics like days sales outstanding, days inventory outstanding, and days payable outstanding are also useful to assess management.

The group currently trades above 7.9X EBITDA which is in-line with its 8X historical average over a 10 year period, and EV/Sales at 1.2X compares to an average of 1.1X. A steepening yield curve, the spread between the 10 year and 2 year, has historically been positive for the paper/forest stocks in the group.

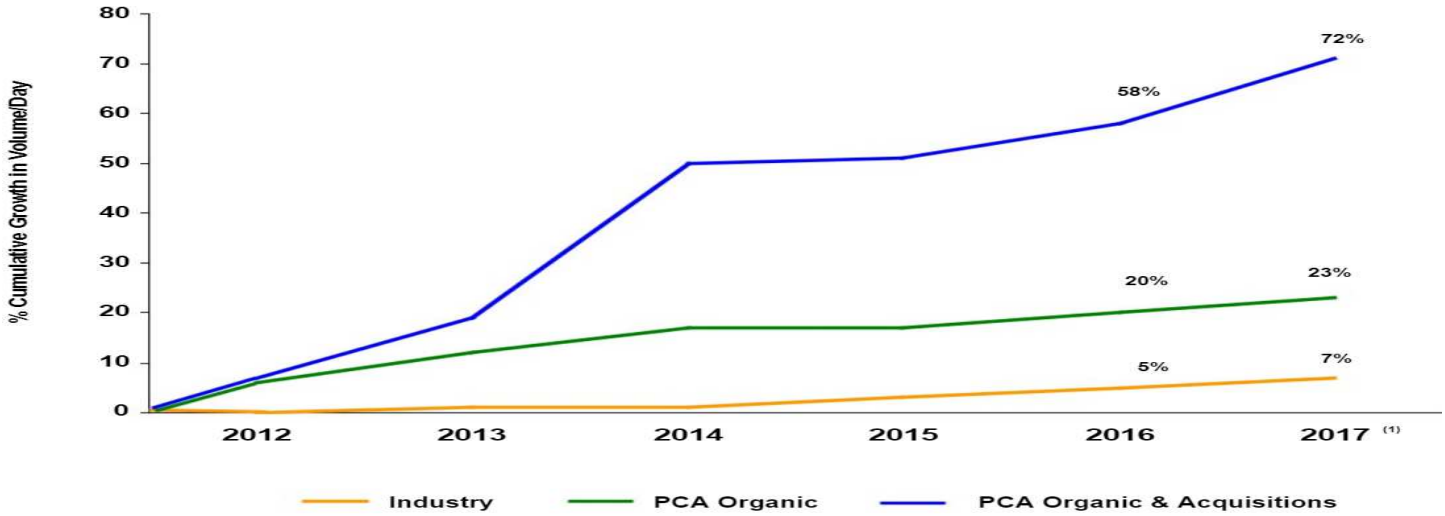
EV/EBITDA vs. Revenue Growth



Aptar Group (ATR) is a $6.34B name in the group that trades at premium valuation levels of 22.6X Earnings, 2.35X Sales, 33.7X FCF and 13.4X EBITDA. ATR has been a steady performer with shares up 15% YTD and does have a better growth profile than most of its peers, 11.4% revenue growth in 2018 and 7.9% growth seen for 2019 while EPS growth 10-15%. ATR has 19% EBITDA margins and a 14% ROIC. Beauty & Home is 53% of sales, Pharma is 33% and Food & Beverage is 14%, the Pharma division with significantly better EBITDA margins at 34% compared to the other segments. The company set long-term targets of 4-7% core sales growth, 14-16% ROIC, and 20-22% EBITDA margins. Valuation is the one concerns with the slow growth from two of its segments, but Pharma is a best-in-class business and it has a defensive nature with a strong balance sheet.

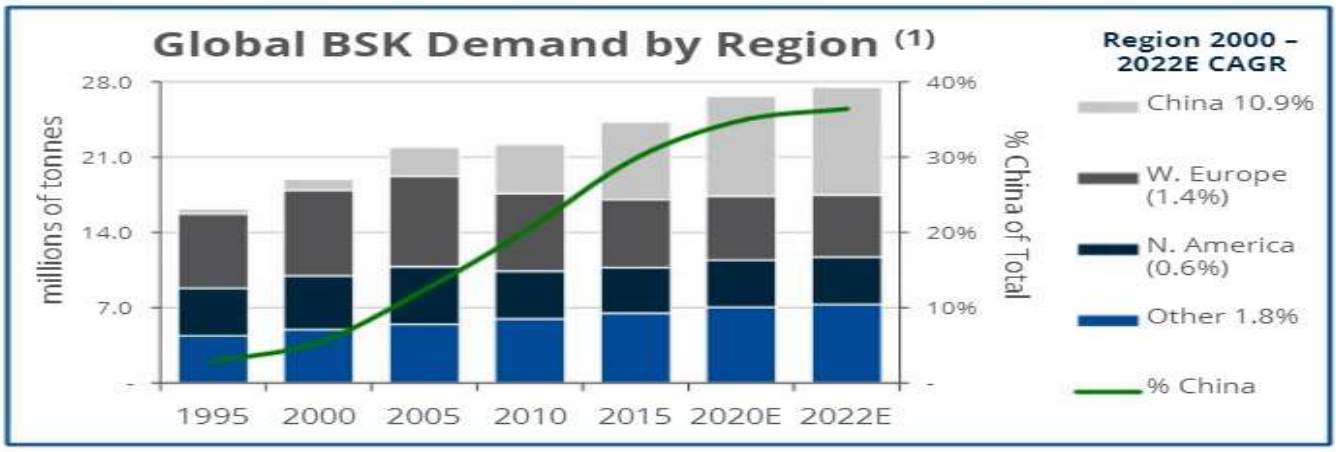
	Metric	3 Year Average	2017	YTD 2018	Long-term Target
Aptar beauty + home	Core sales growth[1]	-1%	2%	8%	3-6%
	Adj. EBITDA[2] /Sales %	14%	13%	13%	15-17%
Aptar pharma	Core sales growth[1]	7%	8%	11%	6-10%
	Adj. EBITDA[2]/Sales %	35%	34%	36%	32-36%
Aptar food + beverage	Core sales growth[1]	3%	6%	6%	6-10%
	Adj. EBITDA[2] /Sales %	19%	18%	16%	18-21%

Packaging Group (PKG) screens most attractive with the $9B Company trading 10.66X Earnings, 1.29X Sales and 10.55X FCF with a 3.42% yield. PKG has 20% EBITDA margins and after two years of strong topline growth expects things to cool in 2019. PKG is a producer of containerboard and corrugated packaging and has long had the best volume growth, margins and ROIC in the industry while having the lowest leverage. PKG is expected to see benefits in 2018 from the Wallula conversion and its strong FCF and low leverage allow it to potentially make acquisitions. PKG is an attractive value/yield combination and the market looks far too pessimistic while it also offers upside capital deployment optionality.



Fibria Celulose (FBR) is a $9.6B short fiber pulp exporter in Brazil trading 14.6X FCF and 5X EBITDA. FBR grew revenues 33.5% last year and 42.3% in 2018 with EPS also in a strong cycle. FBR has 38.5% EBITDA margins and screens attractively in this group with a very strong FCF outlook and low Debt/EBITDA ratio of 1.18X. Global market demand remains strong with Asia a key region, and FBR is seeing strong pricing for pulp while also the lowest volatility of the soft commodities. FBR has also seen margins expand with its cash production costs consistently moving lower. FBR has seen its ROIC rise to 20%, a new record. It continues to deleverage its balance sheet and add capacity. It sees a very positive outlook for pulp prices through 2021, noting it has not seen such a positive scenario since the late 1990's and early 2000's.

Mercer (MERC) is the small cap that screens extremely cheap at 4X Earnings, 4.45X FCF and 3.5X EBITDA with a 4.26% dividend yield. MERC grew revenues 25.5% in 2017, 24% in 2018 and sees 35% growth in 2019. It has 21.6% EBITDA margins and the balance sheet is 1.5X Debt/EBITDA. NBSK Pulp is its main sales contributor with 30% exposure to China while Wood Products and Energy/Bio-Chemicals smaller contributors. Key uses for NBSK include tissues and specialties. MERC is a solid fundamental small cap value name with a lot of tailwinds.

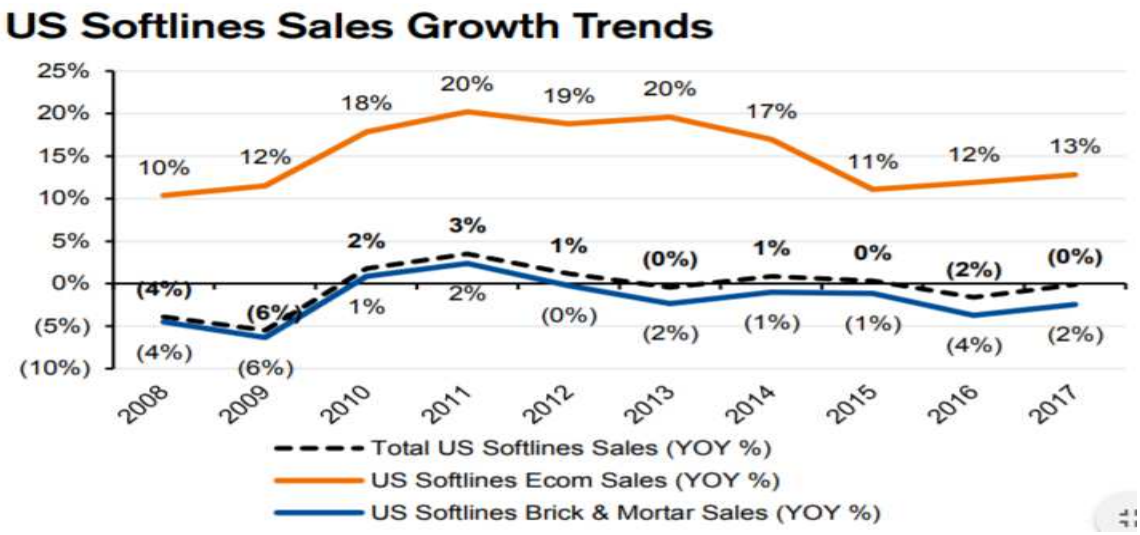


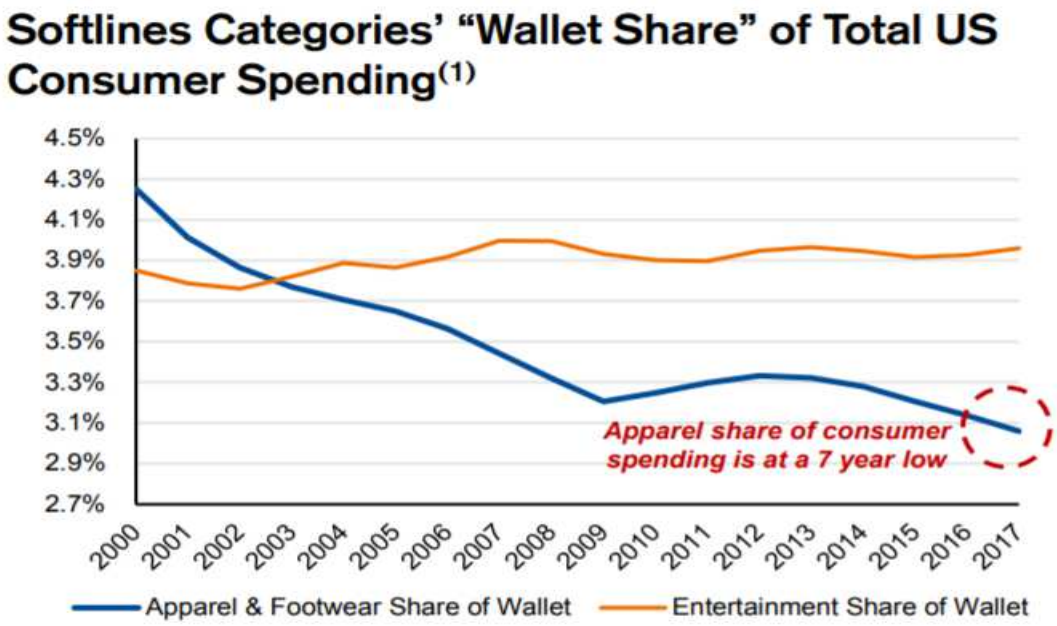
<u>Textile – Apparel & Footwear:</u>

Components: *CAL, COLM, CRI, CROX, DECK, FOSL, GCO, GIII, GIL, GOOS, HBI, JILL, KORS, LULU, NKE, OXM, PVH, RL, SFIX, SHOO, SIG, SKX, IF, TPR, UAA, VFC, VRA, WWW, BKE, WEYS*

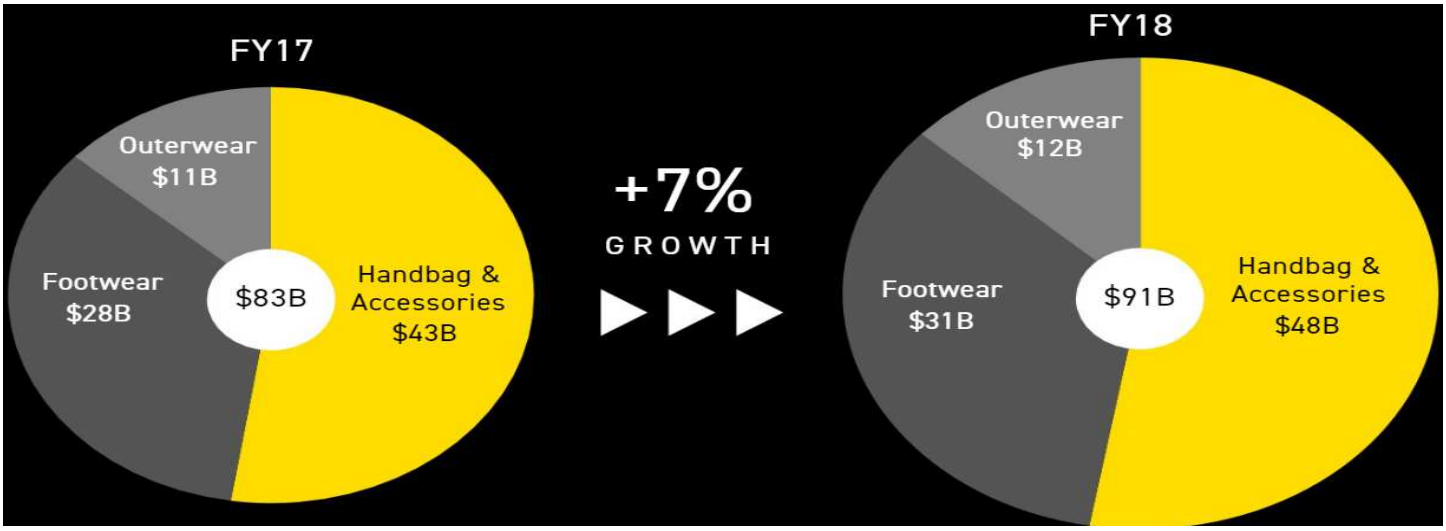
The apparel industry has seen plenty of headwinds continue in 2018 with store traffic weakness from excess retail capacity with the growth of e-commerce, a weak pricing environment with heavy promotional activity, and market shifts to lower margin value stores and "Fast Fashion." Personal Consumption data is showing clothing/footwear as taking less of the pie over the last few years, a downward trend. Athletic footwear was long the impervious group but recent sales numbers have sharply declined as have the ASP's while Adidas has emerged as the new leader in the group. Online continues to show growth while brick and mortar sales struggle, so having a strong e-commerce infrastructure is vital as DTC has been the bright spot for many of these names. Smaller private labels have also emerged as a major threat to many of the larger names. Tariff concerns have weighed on the group in the second half with many sourcing from China.

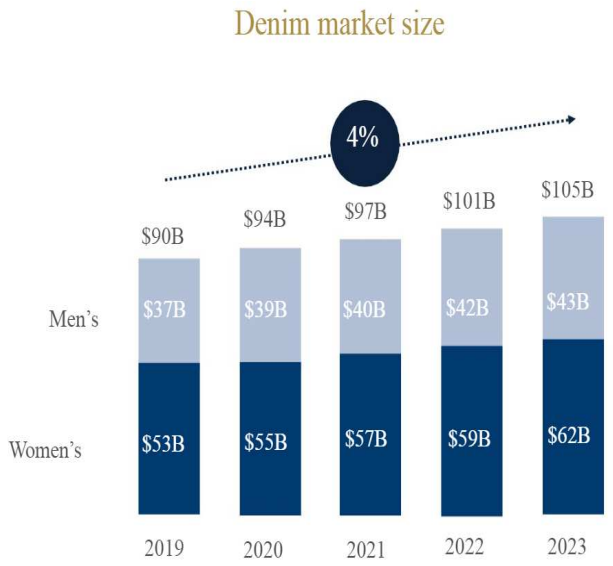
The US Softline market is a $400B market with 17% ecommerce driven and accounting for mid-teens growth while brick and mortar seeing declining sales.

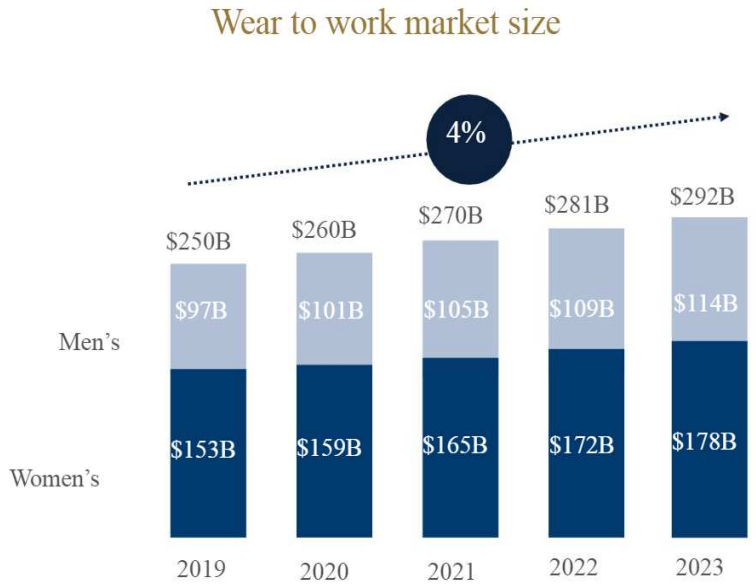




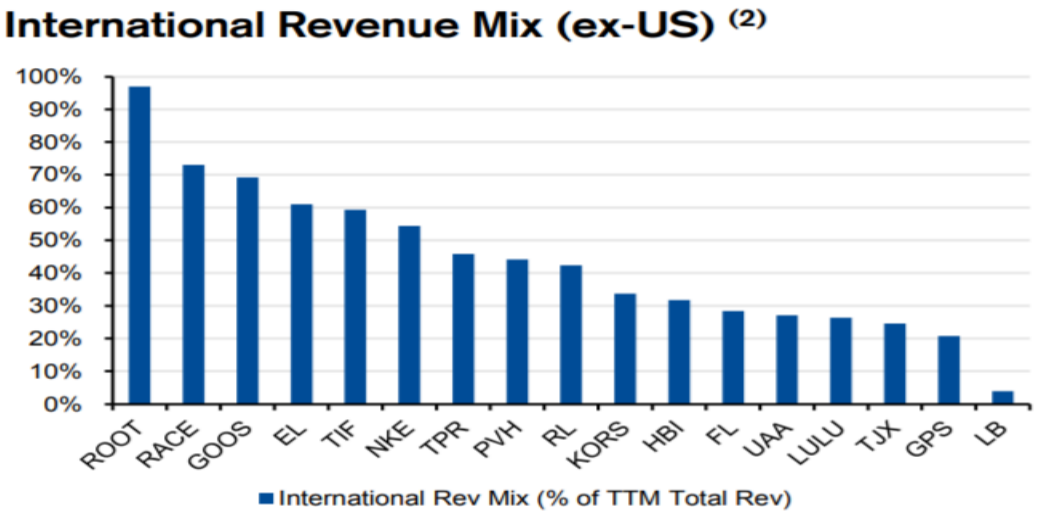
Performance in 2018 was mixed with half the names positive YTD and half negative. Notable leaders this year were former beaten up names like FOSL, UAA and CROX, while LULU, DECK, COLM and NKE remained leaders. KORS, TPR, SKX, CRI, and PVH has rough years.







Evaluation of this group uses basic metrics like P/E and P/S, and also have to pay close attention to margins and inventories. The strategic priorities of most of these companies include winning over the new Millennial generation, expanding to new products and geographies, operating efficiently to boost margins, and having a strong digital plan. Another important factor to consider is International is a better growth area for softline apparel and offers higher margins.

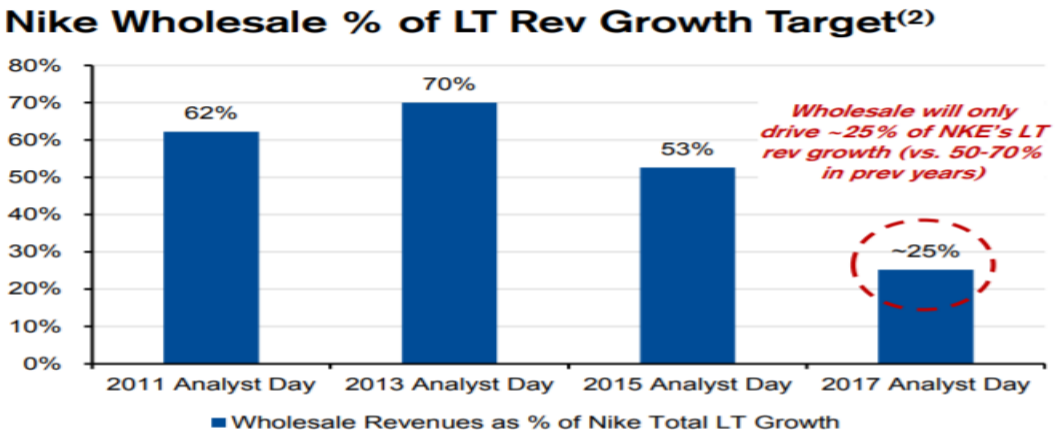


Canada Goose (GOOS) is a margin and growth leader in this group but at 11.9X sales valuation is wildly out of its peer group with most names below 2X making it hard to trust.

Lululemon (LULU) is also a premium valuation name in the group but not as much of an extreme, the $17.6B athletic-wear maker trading 26.5X Earnings, 5.75X Sales and 37.6X FCF. LULU growth was reinvigorated in FY2019 with 22.5% revenue growth, best since 2013, and coming off a recent quarter with +18% comps. LULU has 52.8% gross margins, strong FCF, and an inventory turnover ratio of 4X. It is seeing strong growth in means wear and impressive e-commerce numbers with 30% traffic increase last quarter. Its International expansion opportunity is massive and posted 61% growth in Asia last quarter. It is one of the few impressive growth stories in Retail and continues to innovate with new products allowing for sustainable outsized comp growth. Estimates are likely still too low with the Company vision of $4B revenue in 2020 with Men's moving to 25% from 19%, E-Commerce to 25% from 20%, and International to 25% from 10%. LULU also has further margin expansion on the positive mix shift to DTC.

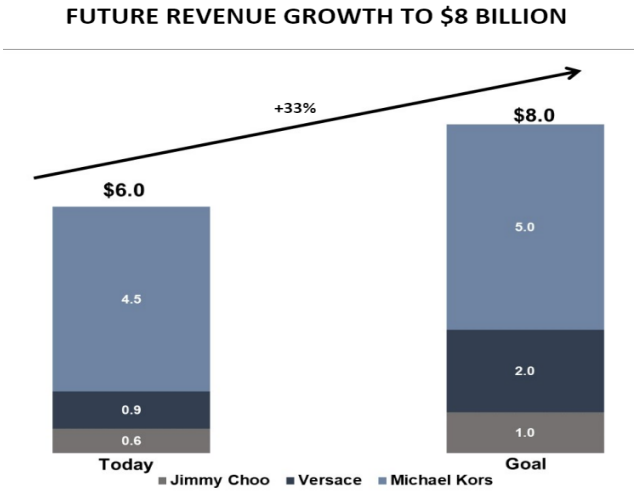
Nike (NKE) remains a leader and continue to favor athletic apparel & footwear to the other segments, the $119B Co. trading 23.1X Earnings, 3.18X Sales and 35.75X FCF with a 1.2% dividend yield. NKE sees consistent 7.5% revenue growth ahead annually and 10-18% EPS growth. It operates with impressive 25% ROIC though gross margins at 43.8% are one area that needs improvement. Nike is set to see margin benefits from the mix shift with its Nike Direct as it is undergoing a large digital transformation with Q1 digital revenues +36%. Valuation remains near the upper end of historical levels but the margin expansion opportunity and potential to win back global market share makes it one of the

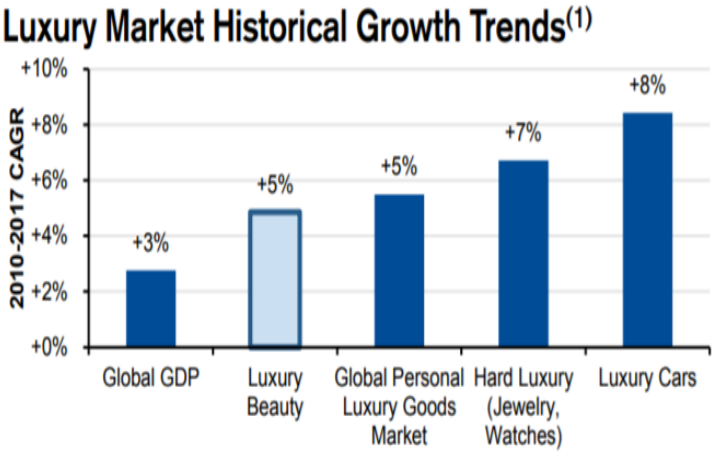
more attractive names in the apparel universe. NKE could face another quarter of FX headwinds but the USD weakening in 2019 could be a further upside catalyst for shares.



Colombia Sportswear (COLM) with a $6.3B market cap is an attractive outerwear Co. with shares performing well in 2018 +22% YTD. Shares trade 21.65X Earnings, 2.38X Sales and 45.4X FCF with a 1.09% yield. COLM is efficiently run and set to post double digit revenue growth in 2018 for the first time since 2015, while having a double digit EPS growth outlook. COLM owns key brands like Sorel & Mountain Hard Wear. COLM is building out its omni-channel and enhancing its e-commerce platform that can be meaningful growth drivers in 2019. COLM tends to be tied to the Winter weather and thus far trending favorably. COLM is positioned for further organic growth and margin expansion, a favorite name in the group.

Michael Kors (KORS) has a $6.3B market cap and shares are down 37% YTD, one of the weakest performers in the entire group, but overall just a feeling that shares have become far too cheap on valuation at 7.5X Earnings, 6.35X FCF and 1.24X Sales. KORS remains a leader in the group with 30%+ ROIC and impressive 60.6% gross margins, and though topline growth has slowed it is integrating some key acquisitions that can start to benefit. The company is focusing on new products and raising wholesale prices in the core business while expanding Jimmy Choo store footage. They see a big opportunity in accessories towards a $1B annual revenue goal. KORS also did a $2.12B deal for Versace in August which should be boosted by KORS strong capabilities in e-commerce and marketing. KORS saw revenues of $4.72B in 2018 and sees a path to $8B. KORS has a powerful portfolio of luxury brands and trades at obscenely cheap levels. The KORS brand is implying negative FY19 growth but showing signs of improvement and as SSS trends improve its multiple can quickly expand.





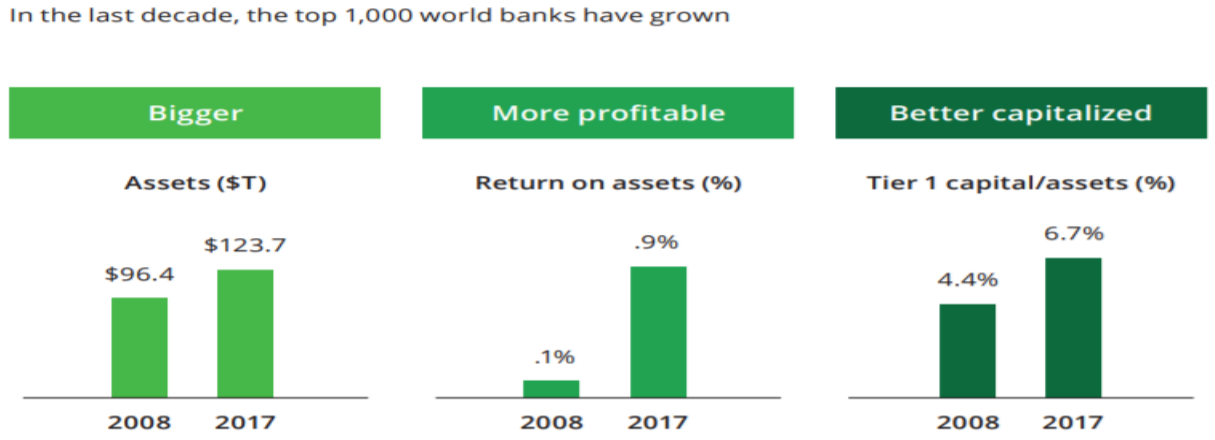
Weyco (WEYS) is a micro-cap that screened well in this group, a $328M Co. trading 1.13X Sales and 37.6X FCF with a 2.95% dividend yield. WEYS has 39% gross margins and an 11.1% unlevered FCF margin. Weyco offers footwear under brands like Florsheim, Nunn Bush, Stacy Adams, BOGS, Rafters and Umi. It has seen some weakness in sales due to Department Store exposure but overall a fairly strong fundamental story that looks to be seeing improving trends across its brands.

Financials: *Financials are having a poor 2018 despite high hopes into the year on regulation, tax reform, a strong economy and rising rates. Heading into 2019 there are now fears of slowing growth in the US, weakening Housing/Auto cycles, and the Fed potentially pausing in 2019. The Bank ETF (KBE) is down 15% YTD and the highly rate sensitive Regional Bank ETF (KRE) is down 13.65%. Insurance (KIE) has performed modestly better down 5.6%. Valuations remain historically cheap while capital returns have been improving, though another key headwind is worsening credit metrics. Financials Services again outperformed with payments being a strong area of growth due to multiple secular shifts. A flattening/inverting yield curve into 2019 is a major area of focus for many of the Financials.*

Banks:

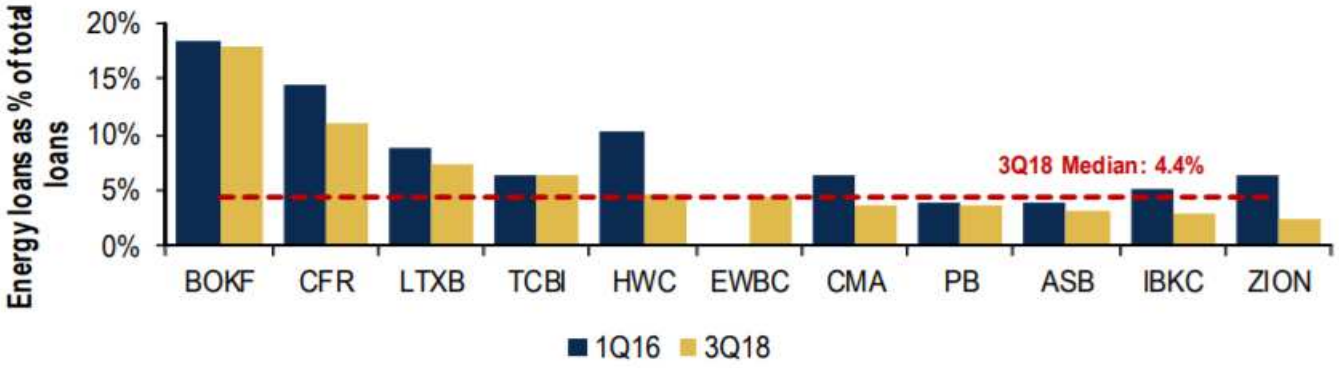
Components: *ALLY, SC, WD, PFSI, JPM, BAC, WFC, C, RY, TD, BNS, PNC, BMO, CM, IBN, STI, BAP, FRC, BSAC, CMA, STL, HOMB, SFNC, RNST, GWB, BBT, RF, FHN, PNFP, IBKC, FNB, HWC, OZK, BXS, CSFL, TRMK, FCB, CADE, IBTX, CFG, SBNY, SNV, BKU, UBSI, SSB, WSBC, UBSH, TOWN, BANR, RGBN, UCBI, ABCB, SBCF, WSFS, CHCO, SBSI, FBNC, USB, KEY, FITB, HBAN, CBSH, TFSL, WTFC, MBFI, TCF, ASB, CBU, CHFC, ONB, FFBC, FMBI, FRME, PRK, BUSE, SRCE, MTB, WBS, VLY, FULT, INDB, NBTB, STBA, FCF, TMP, BNCL, SIVB, ZION, PACW, WAL, UMPQ, GBCI, FHB, BOH, CVBF, CATY, FIBK, PPBI, HOPE, WABC, HFWA, TCBK, CFR, BOKF, PB, FFIN, UMBF, TCBI, IBOC, HTLF, BANF, MS, GS, SAN, HSBC, WBK, UBS, LYG, BCS, RBS, CS, EWBC, SFBS, ITUB, BBD, MFG, KB, DB, CIB, BCH, WF, BPOP, GGAL, BMA, BFR, PBCT, NYCB, ISBC, COLB, WAFD, CFFN, AX, NWBI, PFS, FBC, BHLB, COOP, KRNY, OCFC*

This group is large with 148 components with the numerous $1B to $5B regional banks and has an average YTD performance of -13.7%. The group tends to trade very correlated as Macro influences outweigh individual company attributes, but there are still plenty of metrics to find the best investments. It is a challenging group to find outperformers, only 5 stocks up 10% more this year with BPOP, COOP, FFIN, CBU, and CBSH and all the top performers for the most part sub $5B market caps. There is also the numerous foreign options for targeting specific economies ranging from Europe to South America.

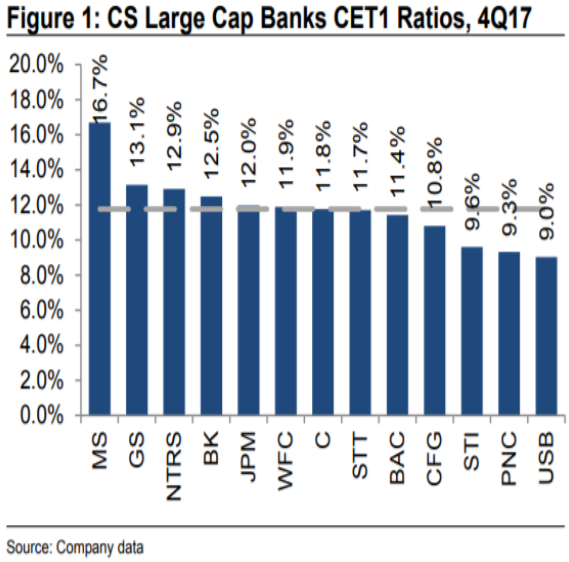


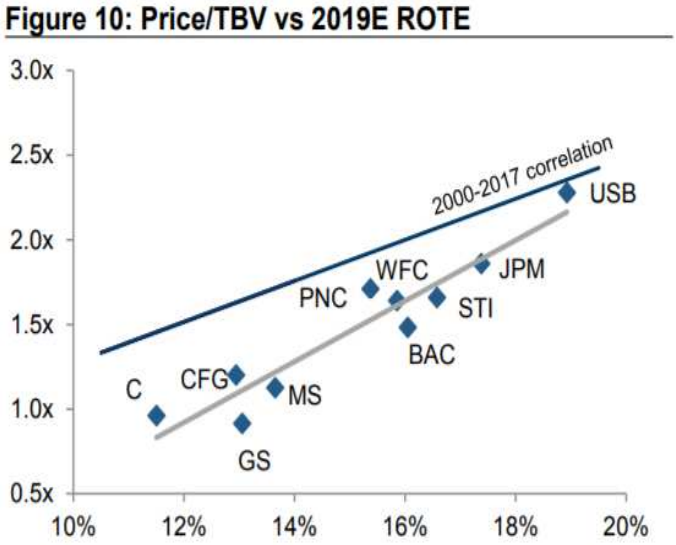
Historically a flattening yield curve has been negative for Bank stock performance and multiples while 2019 now expecting to see the Fed limit hikes with probability of a Recession increasing. Expectations are still calling for synchronized global growth but with the US slowing a bit. Banks could be hit when reporting Q4 results due to lower IB activity and weak markets. Management from large cap Banks have remained optimistic on loan growth, keeping deposit costs contained, improving profitability and client satisfaction with digitalization, and operational efficiencies.

The recent sell-off in Oil can weigh on a number of Banks with Energy exposure:



The main metrics for evaluation Bank stocks include ROE, ROA, P/B, P/E, NIM trends, Dividend, Cost/Income Ratio, Balance Sheet (Deposits), Credit Quality (Charge-Offs, Nonperforming Assets/Loans, Loan Loss Reserves, Tier 1 Capital)

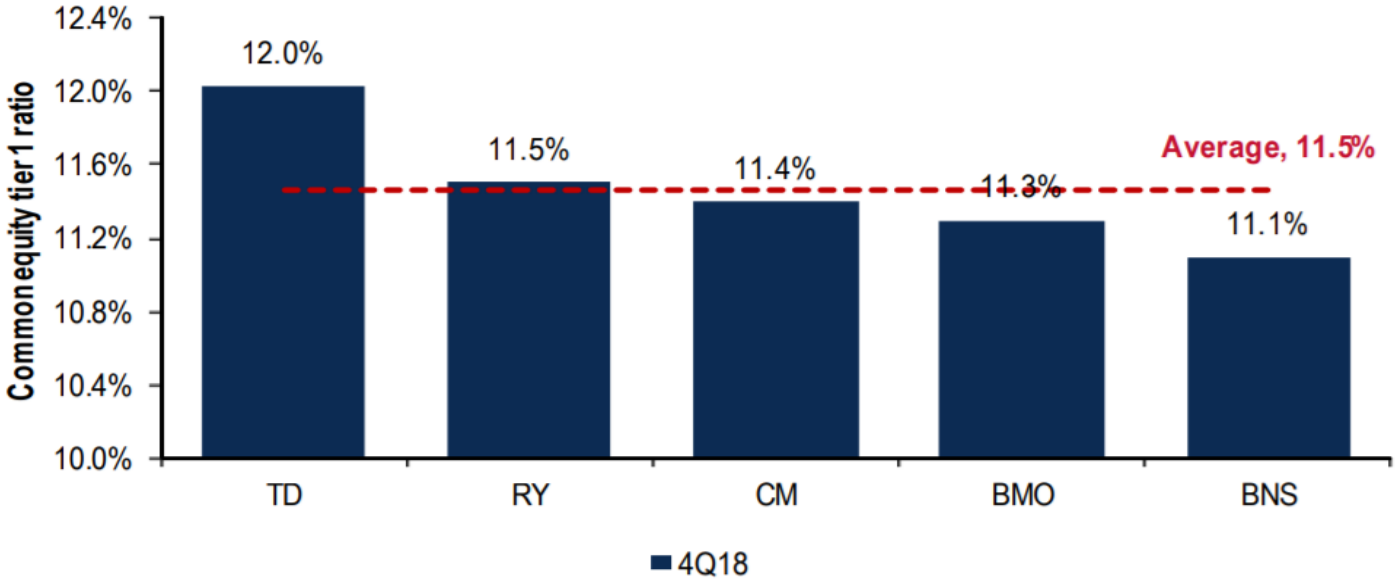




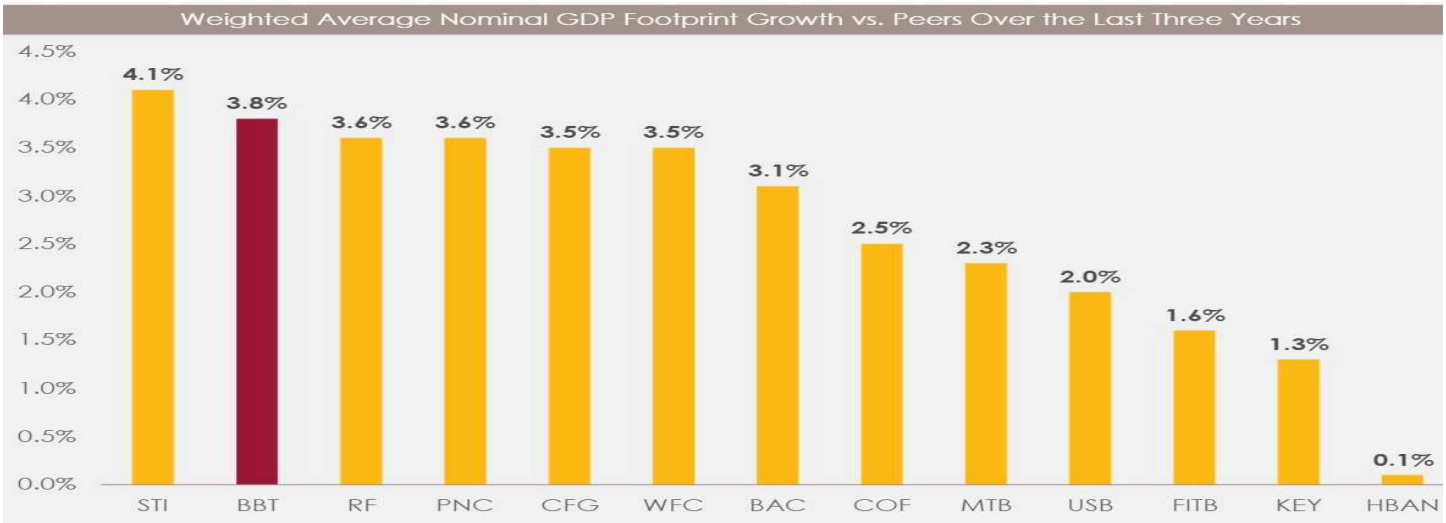
Thinning this large group down was an arduous task but in search of Banks trading at low valuations with solid dividend yield, strong ROE to peers, topline growth, and across other metrics a few names stood out. I also wanted to look at names that exhibited some relative strength in Q3/Q4 as current conditions such as weak Energy, lower growth, market volatility, and weak housing appear likely to persist. I will not go into too much detail with these names because as noted previously there is not a lot of dispersion in the group and they all tend to trade based on the same Macro factors.

JP Morgan (JPM) remains the favorite mega cap Bank trading 1.4X book value with a 13.7% ROE and topline growth. JPM has been selected to lead the Lyft IPO which is likely to be valued near $15B. It continues to outperform peers and beat estimates last quarter with 6% core loan growth and 14% client investment asset growth. It is the most fundamentally sound name which is needed in tougher environments.

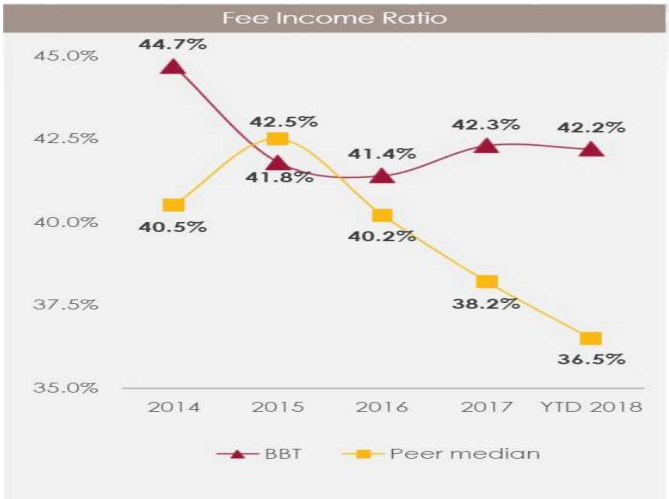
Toronto Dominion (TD) is the preferred Canadian bank trading 1.6X Book and 9.9X Earnings with a 15.3% ROE and impressive growth. TD has been active in M&A including a $792M deal for Greystone Investments and could look to a large deal for a US bank in 2019. It has strong credit metrics and though the Macro backdrop for Canada has worsened and late cycle fears are present, its revenue diversity and capital position is more defensive. TD has the highest tier 1 ratio to peers.

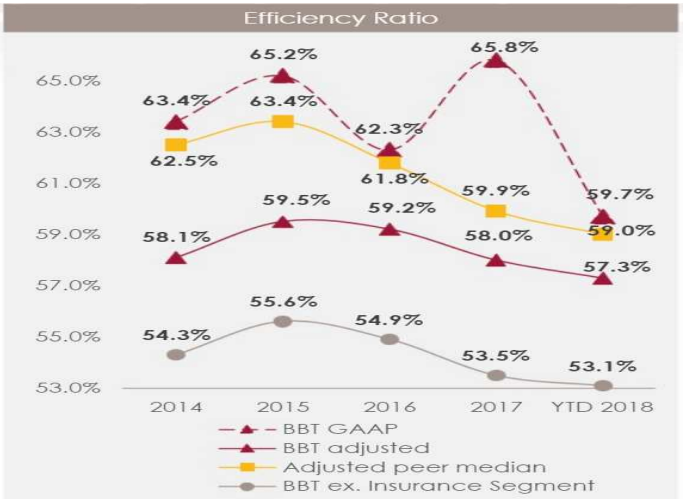


Moving more to the Regional Banks:

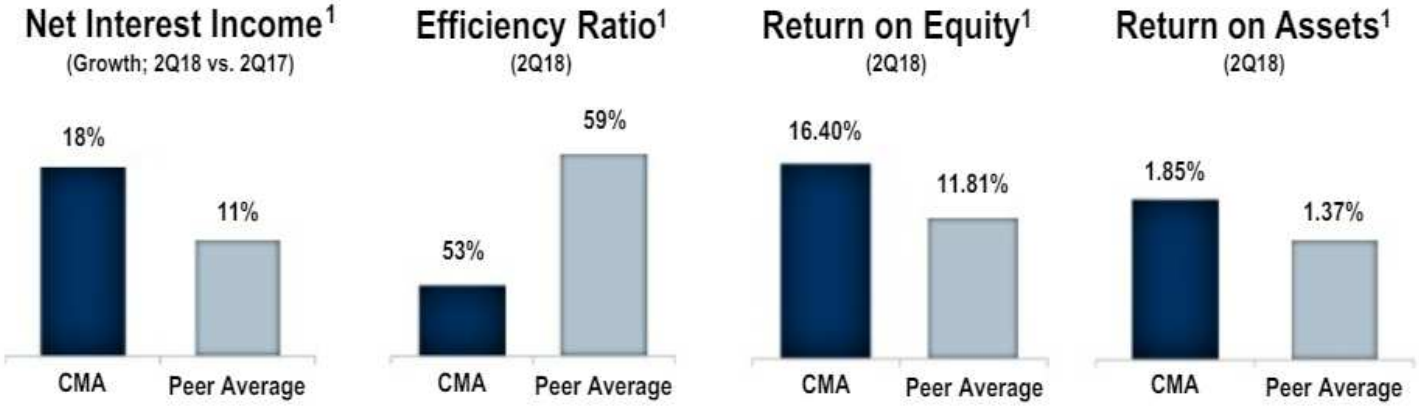


BB&T (BBT) is another favorite among the larger names trading 11.7X Earnings, 1.3X Book and with an 11.8% ROE and 3.3% dividend yield. BBT is undergoing an optimization effort driving strong profitability and also diversifying its revenues model to allow for strong growth. It is investing heavily in Tech while also controlling expenses closing branches. BBT is an evolving leader in Banks that screens attractive to peers across all metrics.

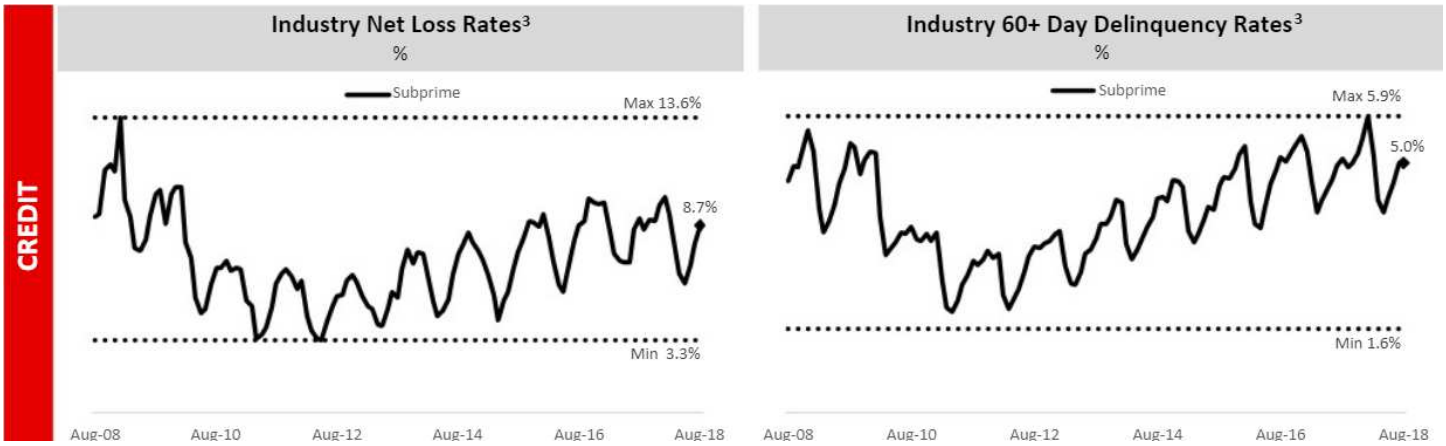




Comerica (CMA) is an $11.5B Bank trading 10X Earnings and 1.5X Book with a 15.9% ROE and 2.6% dividend yield. The majority of its loans and deposits come from California, Texas, and Michigan. It has reduced its exposure to Energy loans the past few years and is seeing strong growth trends across its main metrics. It has the best ROA and ROE of its peer group. CMA has seen some NIM compression lately that has weighed on shares but remains well positioning for a rising rate environment.



Santander (SC) is the favored consumer vehicle loan name edging out ALLY, trading 0.9X Book and 7X Earnings with a 13.6% ROE and 2.8% dividend yield. It remains likely that SC's parent company purchases the remaining 1/3 of shares at a premium within the next few years. SC made a lot of progress in 2018 resolving regulatory issues and accelerating originations. Weakness in the auto cycle is keeping SC's multiple low but the Chrysler Capital resolution and potential consolidation are mostly in focus. SC has managed well and although there is likely limited upside to shares there is even less downside at these levels.



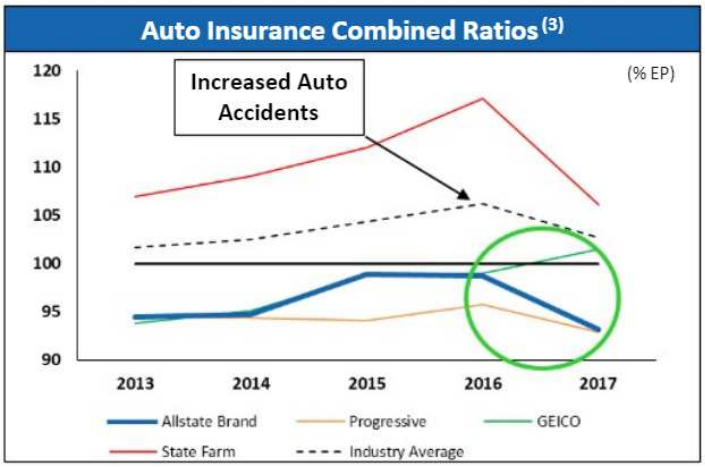
Webster (WBS) is the favorite mid-cap trading 1.8X Book and 14.1X Earnings with a $4.85B market cap. WBS has a strong 12.9% ROE with a 2.4% dividend yield and double digit revenue growth. WBS has seen strong growth in loans while reducing its Loan/Deposit ratio well below Northeastern bank peers. It is using a unique approach of funding high yielding commercial loans with low-cost health savings account deposits. Its investment in HSA Bank is growing aggressively. WBS has a major funding advantage to peers and is likely to continue taking market share.

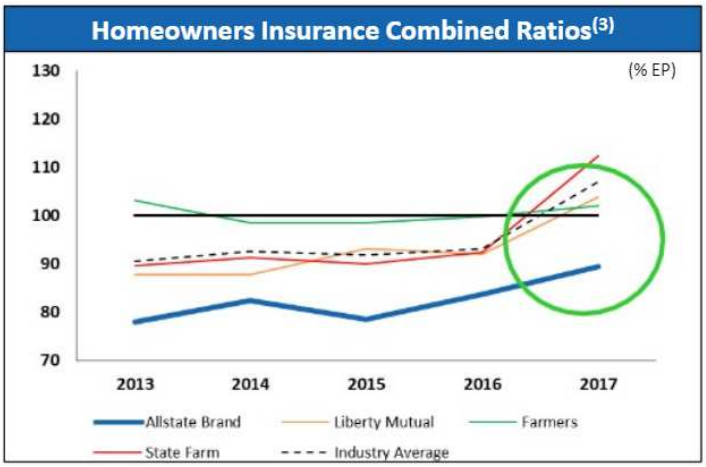
Moving to the smaller names in the $1B to $5B market cap there were eleven names that stood out above peers, WTFC, GBCI, BOH, FRME, HOMB, CATY, SFNC, FIBK, INDB, HTLF and SBCF. Narrowing them down further, standouts included **Wintrust (WTFC), Simmons (SFNC), First Merchants (FRME), and Seacoast (SBCF).**

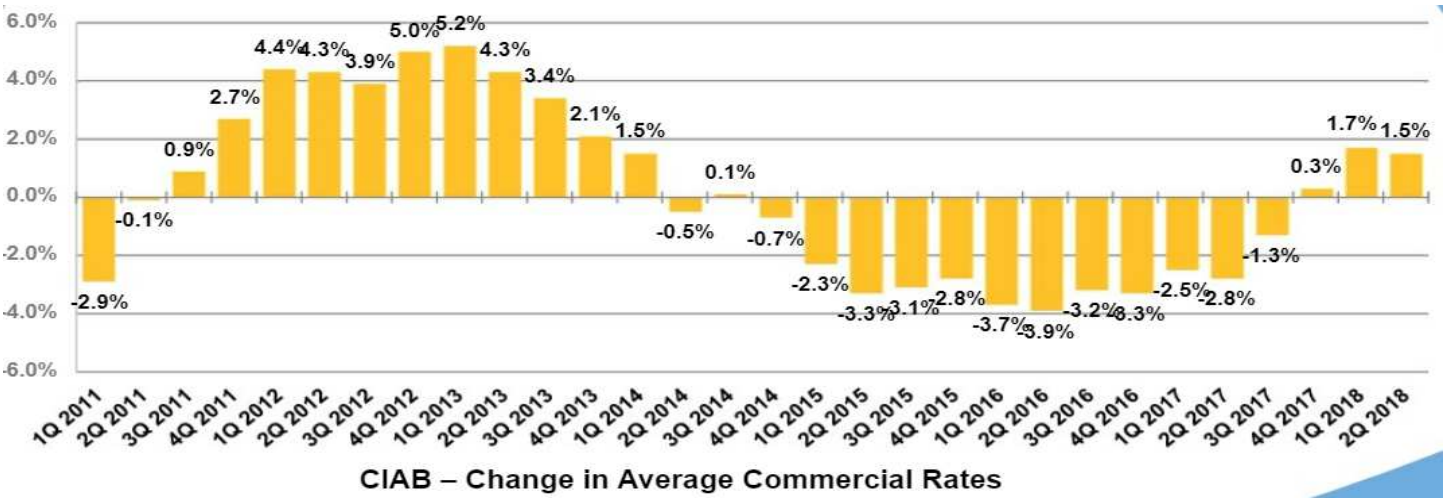
Insurance:

Components: *AFL, UNM, AIZ, CNO, EIG, TRUP, MMC, AON, WLTW, AJG, EQH, BRO, ERIE, CRVL, GSHD, MET, PRU, MFC, PFG, LNC, AEG, RGA, TMK, PRI, BHF, AEL, GNW, FFG, FG, NWLI, FNF, AGO, NMIH, AMBC, BRK.B, CB, PGR, AIG, TRV, ALL, SLF, MKL, HIG, L, CINF, CAN, ACGL, WRB, Y, RE, AFG, ORI, RNR, FAF, THG, AXS, KMPR, MTG, SIGI, RDN, ESGR, ANAT, RLI, MCY, WTM, NGHC, AHL, ARGO, PRA, AFGE, SG, HMN, STFC, UVE, UFCS, SAFT, KNSL, AMSF, JRVR, STC, TPRE, UIHC*

This group is broken into Life & Health (MET, PRU, AFL, LNC, UNM, TMK, PFG, BHF), Property and Casualty (BRK.B, ALL, TRV, CB, CINF, PGR, WRB, CNA, L), Multi-Line (HIG, AIG, AIZ), Reinsurers (RGA, RE, ACGL, RNR, AHL), and Brokers (AON, MMC, WLTW, AJG, BRO, PRI, AFSI). ROE is a strong measure of profitability and P/B often used in valuation, while specific ratios to the group are combined and operating ratios, underwriting leverage, investment yield, and investment return. The most simplistic, yet effective approach, is looking at Price/Book and Price/Earnings compared to ROE, which has shown the strongest coefficient of determination of performance.





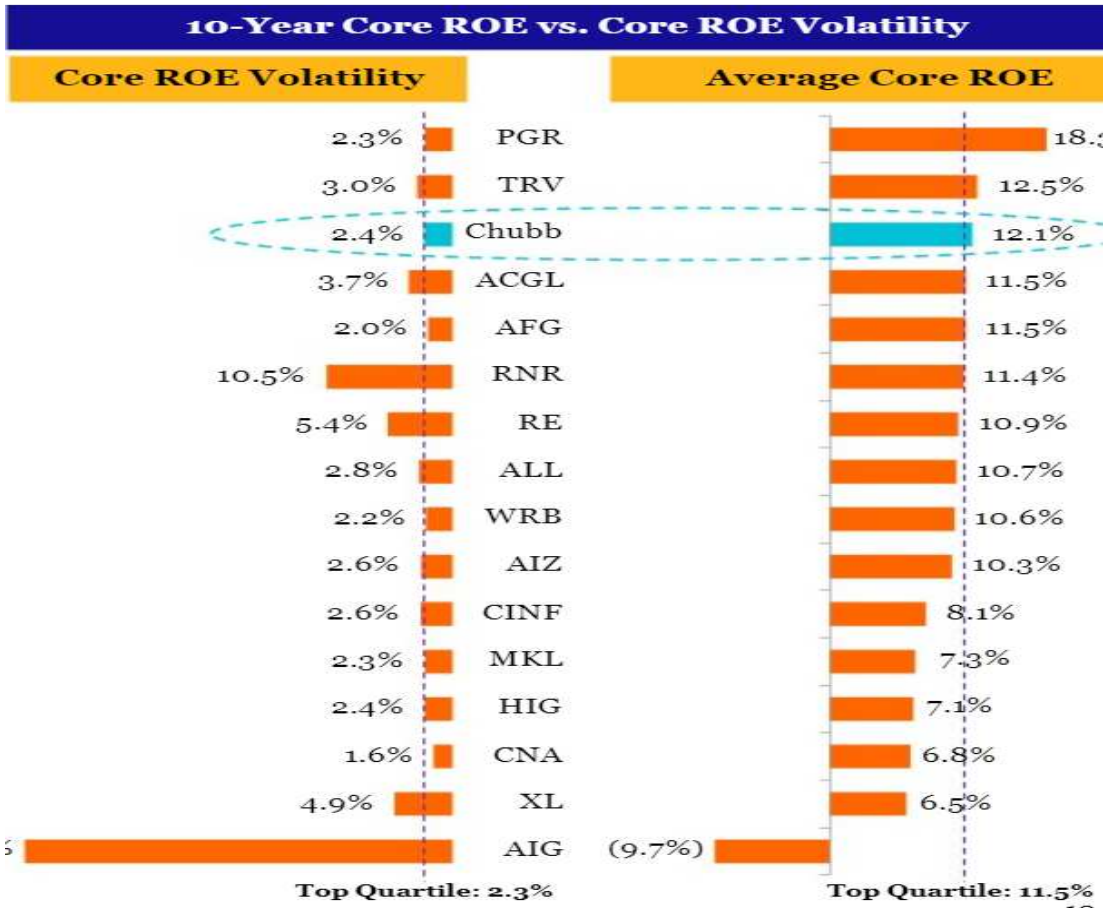


CIAB – Change in Average Commercial Rates

The P&C Insurance group differs from many other companies as revenues hold less importance and metrics like Net Premiums Written and Net Premiums Earned, and their respective ratios are observed. The combined ratio is another metric, the sum of the Loss and Expense ratios, and 100% minus that ratio is the Underwriting Margin. Investment income is also closely watched, often called Float, and secondary source of earnings and closely tied to the rate environment. Reserves is another balance sheet item of important, and a Reserves-to-Loss ratio should be in the 2.5 to 1 range. An increasing occurrence of catastrophes makes for more difficult times for many of these names.

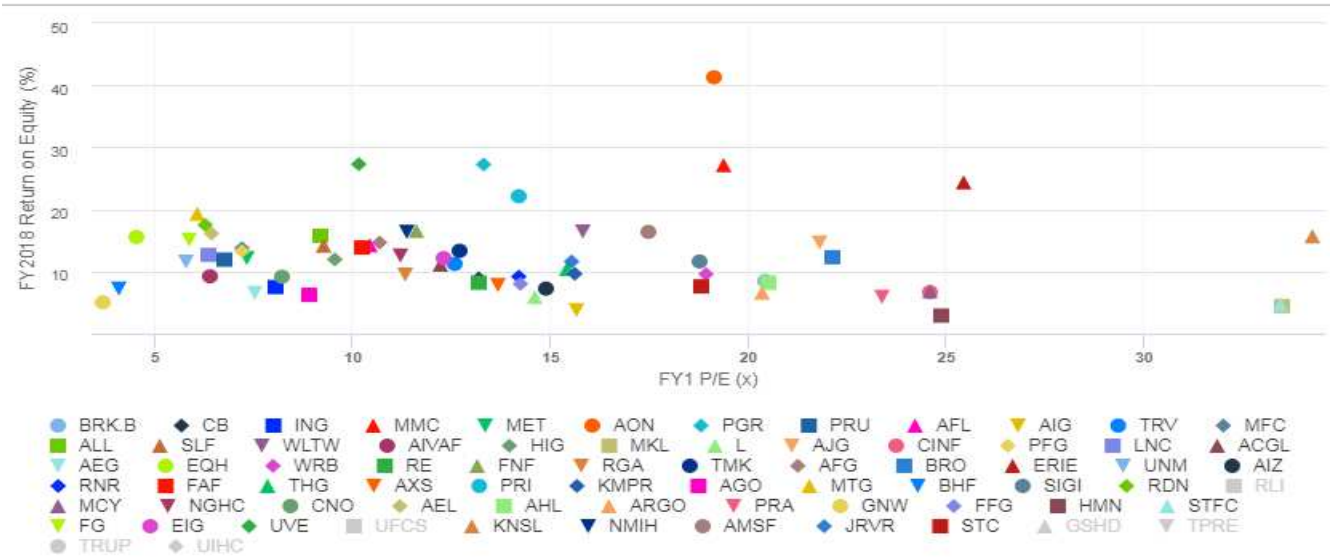
U.S. Commercial P&C: 2015 to 1H 2018 Average Expense Ratio by Market Cap	
Chubb	29.5%
Large (>$15B)	33.6%
Medium ($5B to $15B)	32.5%
Small (<$5B)	36.1%

Avg. Combined Ratio	3-Year	5-Year	10-Year
Chubb	**90.0%**	**89.3%**	**90.2%**
Travelers	93.8%	92.3%	93.7%
Allstate	94.0%	93.6%	95.8%
CNA	95.5%	96.3%	98.4%
Hartford	97.8%	98.0%	97.4%
Zurich	100.1%	99.2%	98.9%
AIG	113.0%	109.2%	109.1%
Peer Average	**99.0%**	**98.1%**	**98.9%**



The Reinsurance group tends to insure the P&C companies against various natural disasters and other events. The combined ratio is one again important here, and this business is very cyclical with Hurricane Season, June 1st to November 30th, while most policies are written near the end of the calendar year.

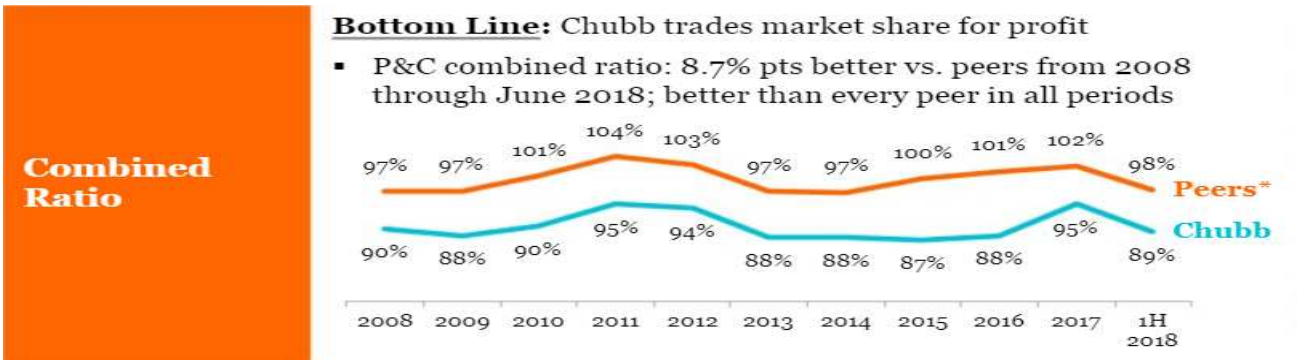
P/E vs. ROE



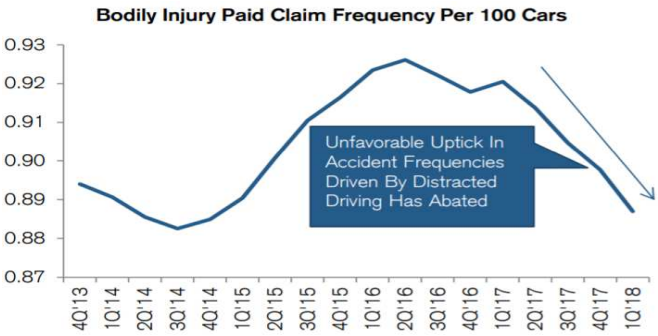
This is another large group with around 81 names above $1B market caps and performed better than Banks in 2018 with nearly half the names positive YTD. It is best to break the group up into market cap brackets.

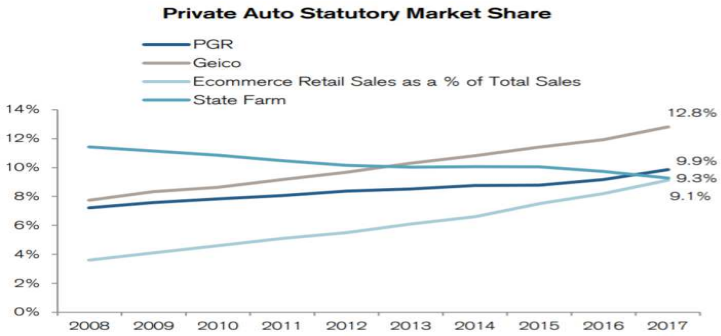
For the $10B+ companies, the best of breed names are:

Chubb (CB) is a $59B P&C leader trading 11.5X Earnings, 1.1X Book and yields a 2.28% dividend. CB stands out above its peers on most key metrics. CB has faced catastrophe expenses from Wildfire losses and Hurricane Michael but has managed well. Chubb has the best combined ratio among all US and international peers while also executing on its growth strategies. It is a diversified insurance play that stacks up well versus peers.

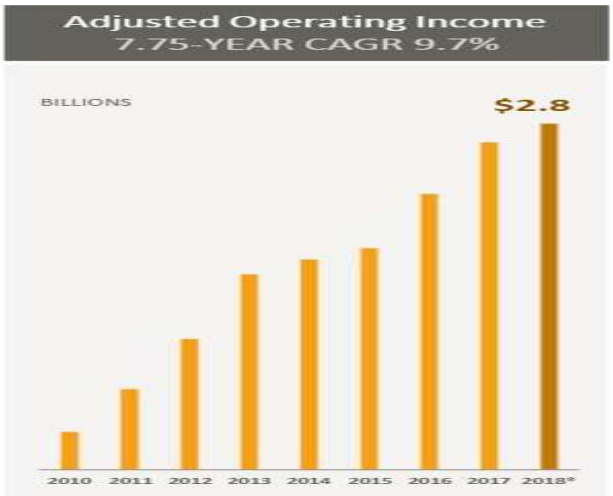


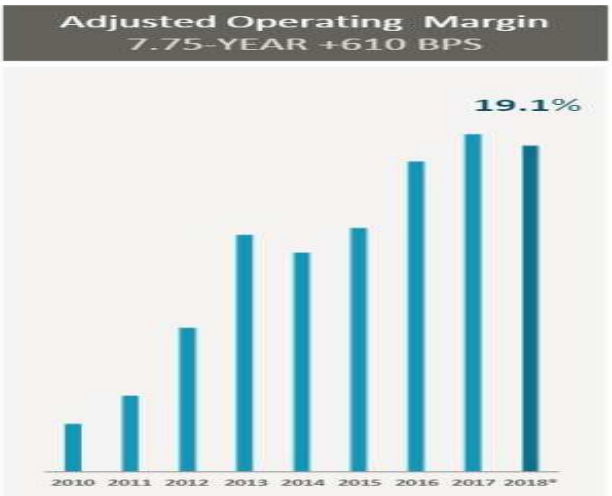
Progressive (PGR) was a top pick from 2018 and performed well versus peers up 12.7% YTD. The $38B Co. trades 13.3X Earnings, 3.3X Book and has an impressive 27% ROE. Its growth rates are way above industry averages and is a brand that reaches the millennial class strongly. PGR has numerous positive catalysts such as its pioneering of telematics, capitalizing on the consumer shift to digital purchases, and proprietary business and homeowner insurance initiatives to be future growth drivers. PGR does trade at premium valuation levels but is the superior operator.





Marsh & McLennan (MMC) is a $42.3B insurance service provider trading 17.9X Earnings and 5.4X Book with a 2% dividend yield. MMC is showing steady 5-6% topline growth and 8-10% EPS growth. Risk & Insurance Services account for 55% of revenues and Consulting is 45%. MMC has been expanding its global presence with the US now accounting for just 47% of revenues and it has been shifting to higher growth areas. MMC has room for additional margin expansion and has been a historically strong performer with low volatility and high visibility.

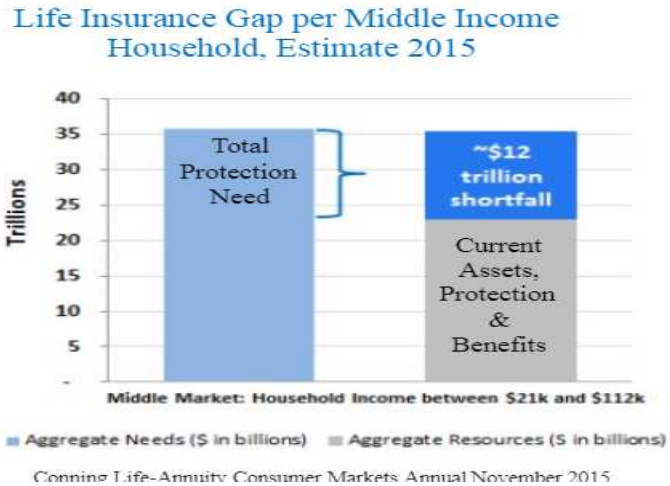


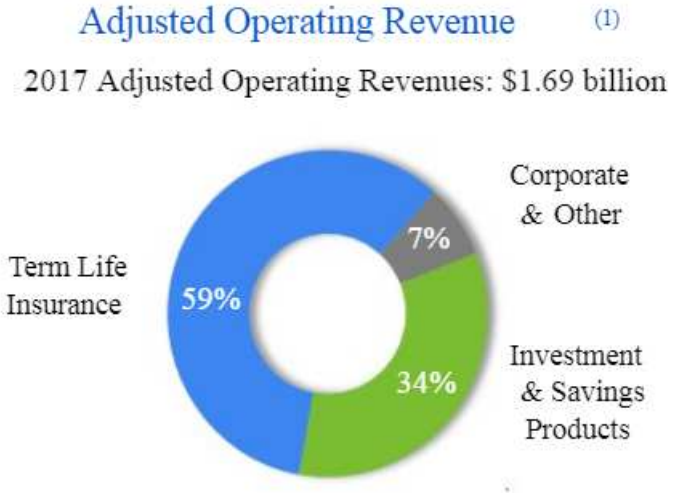


Lincoln National (LNC) has an $11.85B market cap and trades 0.8X Book and 6.4X Earnings with a 12.7% ROE. LNC has a strong growth outlook for 2019 and expects 8.7% EPS growth. LNC is a consistent performer that has been expanding its ROE and trades at one of the cheapest valuations. It is seeing momentum in its Annuities business and its acquisition of Liberty is working out better than expected. It also has been lowering its expense ratio. LNC fits into the category of a value name that is seeing positive momentum across key metrics and likely to come back into favor.

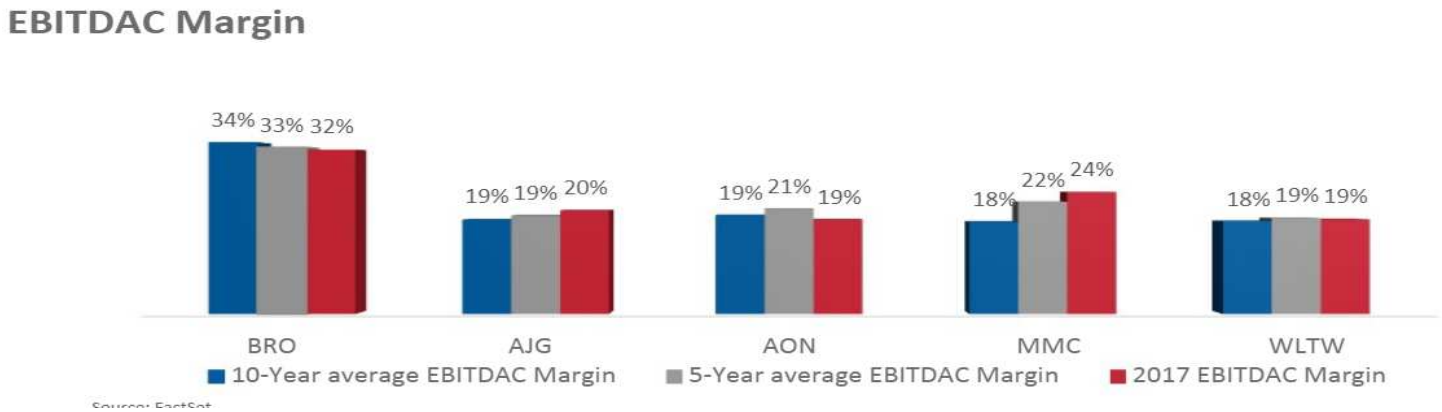
For the $3B to $10B companies, the best of breed names are:

Primerica (PRI) is a $4.63B provider of financial products to households trading 12.85X Earnings, 3.15X Book and has a 0.96% yield with a 20%+ ROE. PRI has seen double digit revenue growth each of the last two years and sees EPS continuing to grow at a 10%+ rate the next two years. It sees a growth opportunity in the huge unmet need of people in the middle income market and has a large sales force. It sees major demographic trends like millennials, female decision markets, diverse markets and the Gig Economy benefitting demand for its offerings. It is an attractive mid-cap to peers with its growth profile and plenty of untapped market potential.

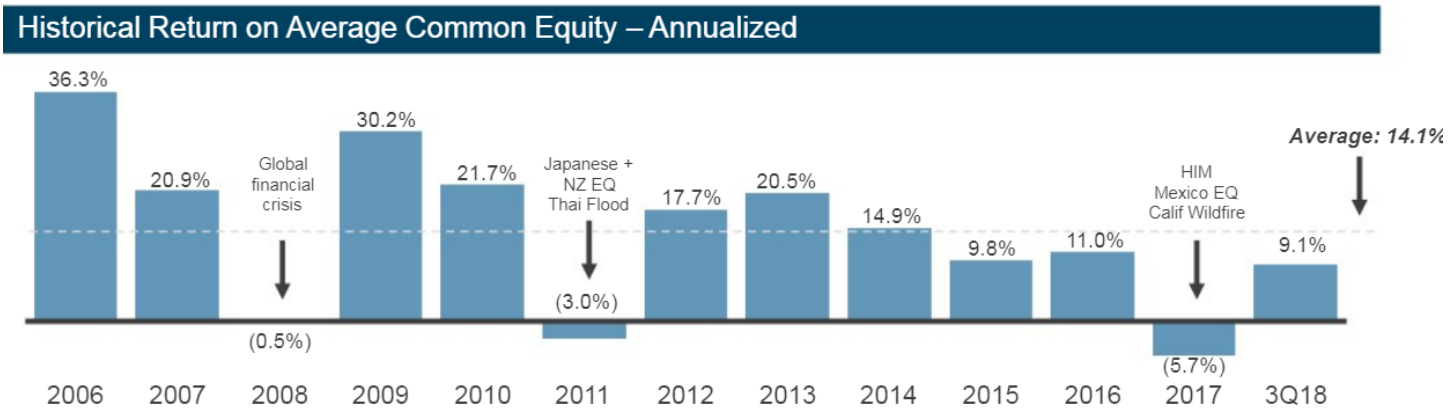




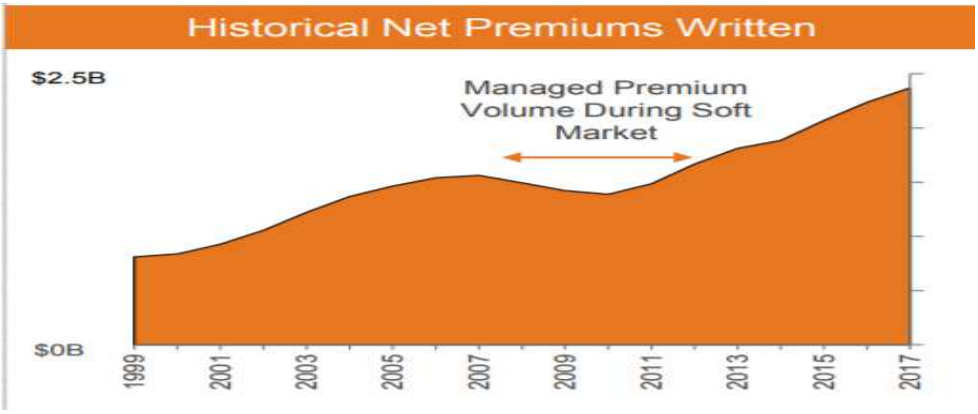
Brown & Brown (BRO) is an insurance broker with a $7.77B market cap trading 20.35X Earnings and 2.53X Book with a 1.16% yield. BRO has one of the stronger growth profiles and has a top FCF yield of 11.8%. It has a long track record of profitable growth and integrating acquisitions. Its retail segment targets Commercial, Personal, and Employee Benefits lines of insurance, a highly fragmented market with room for market share growth. It screens well versus peers on margins and cash flows while historically has been a strong stock performer. Organic growth did disappoint in the latest quarter but the September Investor Day outlined plans for new product initiatives and technology enhancements to drive growth.



Renaissancere (RNR) made the cut in the reinsurance group, a $5.27B market cap trading 12.2X Earnings and 1.27X Book with a 0.97% dividend yield. RNR expects 26% revenue growth in 2019 and sees EPS above $12/share by 2020 from $9.60/share in 2018. Catastrophe reinsurance dominates RNR's underwriting profitability and after a disappointing 2018 for pricing, estimates are calling for 10% rises in 2019 that will flow directly to RNR's bottom line. The reinsurance market has seen major consolidation and RNR remains a takeout target, in October TimeSqaure called for the company to explore a sale. RNR did recently do a deal for Tokio Millennium, so the odds of a deal have lessened. RNR has a strong relationship with State Farm, the largest P&C provider in the US.



Selective Insurance (SIGI) is a $3.84B insurer trading 2.17X Book and 16.1X Earnings with a 1.25% yield and 11.6% ROE. SIGI screens well for its growth outlook though its high exposure to commercial auto could present some headwinds in 2019. It has shown a strong ability to raise prices and its combined ratio has improved since 2011. SIGI's progress with rate increases, expense saving and underwriting initiatives, including a focus on the pressured areas of their business (excess and surplus, personal lines, and commercial auto) set up for further margin increases.



For the sub $3B companies there are a few standout names across the appropriate metrics that are worth a closer look, including **Universal (UVE), Corvel (CRVL), NMI Holding (NMIH), Kinsale (KNSL),** and **Goosehead (GSHD).**

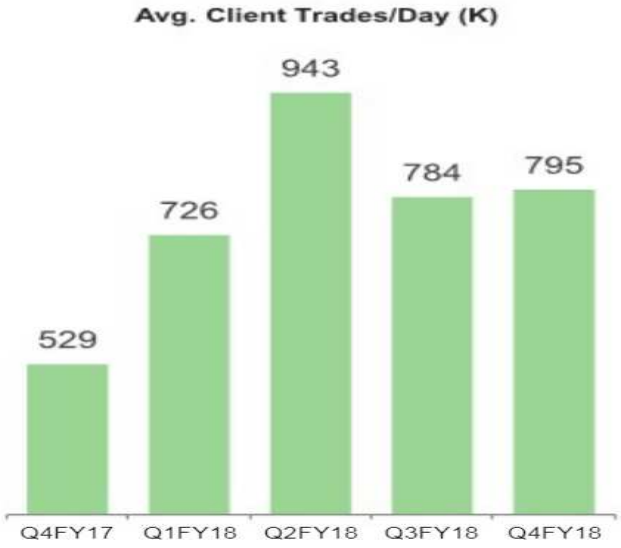
Exchanges, Brokers, and Asset Mgmt.:

Components: *BLK, BK, BX, STT, TROW, NTRS, KKR, BEN, AMP, SEIC, ATH, IVZ, VOYA, OAK, JEF, CG, AMG, ARES, LAZ, EV, JHG, EVR, NOAH, AB, FII, PSEC, LM, MC, APAM, HLNE, CNS, PJT, WDR, CNN, CME, SCHW, AMTD, NMR, ETFC, MKTX, LPLA, VIRT, BGCP, HLI, COWN, ICE, NDAQ, CBOE, ARCC, APO, MAIN, RJF, SF, PJC, GHL, IBKR*

This group within the Financials includes the Asset Managers, Investment Brokerages and Exchanges. This is another group seen to benefit from a rising rate environment with Exchanges and Brokers particularly sensitive to rates, and the former enjoying a recent rise in market volatility.

In the investment brokerage group, DARTs is a group-specific metric released monthly, daily average revenue trades. The group also tends to benefit from strong markets and increased trading activity. Net Interest Margin, Net New Assets, and Total Client Assets are other observable metrics. The improving rate/market backdrop and lower tax rates are both tailwinds into 2018, while questions remain on potential rising costs/competition. Increased capital flexibility should lead to dividend raises, buybacks, and further M&A. We transition more to an EV/EBITDA valuation approach instead of P/Book.

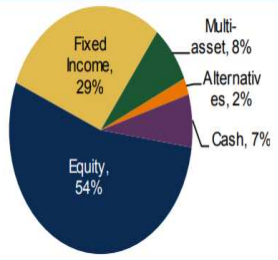
Ameritrade (AMTD) with a $29.2B market cap is the favored play among the online brokers in 2019, shares modestly lower YTD, but trading at the cheapest valuation of 11.4X Earnings and 8.8X EBITDA. AMTD also offers a solid 2.39% dividend yield and a 25% ROE. AMTD is a technology leader in the space and attracting a larger share of advisors while also having plenty of capital to remain active in M&A. It has been posting impressive results and will continue to benefit from the Scottrade acquisition. It saw a 20% Y/Y rise in net new client assets last quarter. IN a tougher operating environment ahead of the online brokers, it is more defensive and offers the best value.



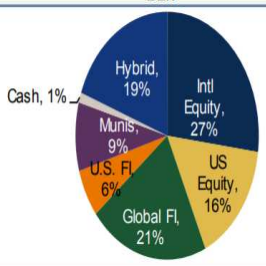
In the Asset Manager group, benefits should be seen from pro-growth policies and tax reforms as well as deregulation, although the ability to see new funds remains in question with the recent shift to passive investing. The group can be broken into Traditional (AB, AMG, APAM, ATH, BEN, BLK, CNS, EV, FII, IVZ, JNS, LM, OMAM, TROW, VRTS, WDR, WETF) and Alternative (APO, ARES, BX, CG, FIG, KKR, OAK, OZM). One specific ratio for the traditional names in Market Cap / AUM. For the Alternative Managers, Price / Distributable Earnings (DE), and Distributable Earnings / Unit. In 2018 we started to see a trend for Alternative Managers transitioning to C-Corp to take advantage of new tax laws. ROE also remains an important metric as it does with most Financials.

Company	Ticker	Rating	Price 12/4/2018 (Local)	Mkt Cap Millions $	EPS 4Q18E BofAML (Local)	EPS 4Q18E Street (Local)	EPS 2018E BofAML (Local)	EPS 2018E Street (Local)	EPS 2019E BofAML (Local)	EPS 2019E Street (Local)	Growth 2019E Street %	P/E 2018E BofAML X	P/E 2018E Street X	P/E 2019E BofAML X	P/E 2019E Street X	EV / EBITDA 2019E BofAML X	Debt / EBITDA 2019E BofAML X	MRQ AUM Billions $	Curr Mkt Cap / AUM %	Div Yield 2018E Street %
Traditional Asset Managers																				
AllianceBernstein	AB	Buy	29.98	8,048	0.65	0.68	2.68	2.69	2.49	2.61	(3.1)	11.2	11.1	12.1	11.5	8.4	0.5	550	1.5	9.2
Affiliated Mgrs Group	AMG	Buy	105.15	5,539	3.66	3.67	14.65	14.78	14.78	15.70	6.2	7.2	7.1	7.1	6.7	7.1	1.9	830	0.7	1.1
Artisan Partners	APAM	Underperform	25.42	1,956	0.68	0.67	3.00	2.99	2.50	2.73	(8.8)	8.5	8.5	10.2	9.3	6.6	0.7	117	1.7	9.4
Franklin Resources	BEN	Neutral	33.27	17,071	0.73	0.73	3.22	3.22	2.60	2.86	(11.1)	10.3	10.3	12.8	11.6	6.4	0.4	717	2.4	2.8
BlackRock	BLK	Buy	408.75	64,860	6.70	6.84	27.58	27.74	27.32	28.03	1.0	14.8	14.7	15.0	14.6	10.6	0.8	6,442	1.0	3.1
BrightSphere	BSIG	Buy	12.68	1,348	0.45	0.45	1.87	1.88	1.79	1.91	1.8	6.8	6.8	7.1	6.6	5.4	1.4	238	0.6	3.2
Cohen & Steers	CNS	Underperform	35.59	1,664	0.61	0.61	2.45	2.45	2.40	2.50	1.9	14.5	14.5	14.8	14.2	9.3	0.0	60	2.8	3.7
Eaton Vance	EV	Buy	38.95	4,555	0.75	0.77	3.18	3.20	3.38	3.34	4.5	12.2	12.2	11.5	11.7	7.0	0.9	440	1.0	3.6
Federated Investors	FII	Underperform	25.42	2,555	0.61	0.61	2.39	2.36	2.40	2.40	1.6	10.6	10.8	10.6	10.6	8.0	0.5	437	0.6	4.2
Invesco	IVZ	Neutral	19.53	8,033	0.64	0.65	2.63	2.65	2.45	2.72	2.7	7.4	7.4	8.0	7.2	6.7	2.1	981	0.8	6.1
Janus Henderson	JHG	Underperform	22.79	4,527	0.70	0.70	2.84	2.84	2.62	2.79	(1.7)	8.0	8.0	8.7	8.2	5.5	0.4	378	1.2	6.3
Legg Mason	LM	Underperform	27.65	2,365	0.78	0.79	2.45	2.49	3.15	3.32	33.2	11.3	11.1	8.8	8.3	6.4	3.6	755	0.3	4.9
T. Rowe Price	TROW	Buy	95.27	22,927	1.71	1.80	7.30	7.48	6.82	7.47	(0.1)	13.0	12.7	14.0	12.8	8.0	0.0	1,084	2.1	2.9
Victory Capital	VCTR	Buy	11.62	787	0.41	0.43	1.67	1.69	2.43	2.45	44.8	7.0	6.9	4.8	4.7	3.6	1.0	64	1.2	0.0
Virtus	VRTS	Neutral	91.37	653	3.08	3.40	12.27	12.60	12.13	13.36	6.0	7.4	7.3	7.5	6.8	5.4	1.7	106	0.6	2.4
Waddell & Reed	WDR	Underperform	19.56	1,532	0.57	0.55	2.25	2.22	1.87	2.00	(9.9)	8.7	8.8	10.5	9.8	6.0	0.4	80	1.9	5.1
WisdomTree	WETF	Underperform	6.70	1,025	0.08	0.09	0.34	0.35	0.34	0.34	(3.4)	19.6	19.0	19.4	19.6	12.6	2.1	59	1.7	1.8
Average											**3.9**	**10.5**	**10.4**	**10.7**	**10.3**	**7.2**	**1.1**		**1.3**	**4.1**
Average (ex WETF)											**4.3**	**9.9**	**9.9**	**10.2**	**9.7**	**6.9**	**1.0**		**1.3**	**4.3**
Alternative Asset Managers																**P/DE**	**'19 DE/unit**			
Apollo Global Management	APO	Buy	26.45	11,027	(0.10)	0.39	0.69	1.21	2.93	3.08	154.5	38.1	21.8	9.0	8.6	8.0	3.30	270	4.1	6.8
Ares Management	ARES	Buy	22.07	4,896	0.31	0.39	1.32	1.39	1.53	1.69	21.6	16.7	15.9	14.4	13.1	14.4	1.53	125	3.9	5.0
The Blackstone Group	BX	Buy	32.71	40,299	0.26	0.65	2.57	2.96	2.91	3.26	10.1	12.7	11.0	11.3	10.0	11.4	2.86	457	8.8	6.8
The Carlyle Group	CG	Buy	17.57	6,142	(0.06)	0.47	1.34	1.83	2.37	2.65	44.9	13.1	9.6	7.4	6.6	6.3	2.80	212	2.9	7.1
Hamilton Lane	HLNE	NR	36.72	2,081	-	0.42	-	1.76	-	2.01	14.2	-	20.9	-	18.3	-	-	48	4.3	2.2
Kohlberg Kravis Roberts & Co.	KKR	Neutral	22.20	18,477	0.46	0.57	1.83	1.91	2.20	1.87	(2.2)	12.1	11.6	10.1	11.9	10.1	2.20	195	9.5	2.7
Oaktree Capital Group	OAK	Neutral	40.62	6,383	0.73	0.62	2.94	2.84	3.31	3.24	14.3	13.8	14.3	12.3	12.5	11.3	3.58	124	5.2	7.0
Average											**36.8**	**17.8**	**15.0**	**10.7**	**11.6**	**10.3**			**5.5**	**5.4**

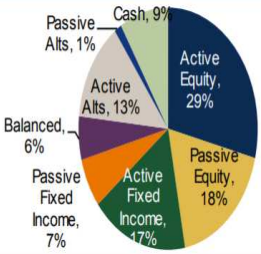
BLK



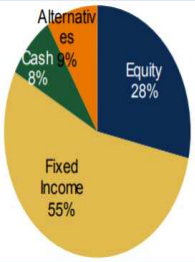
BEN



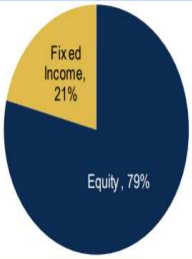
IVZ



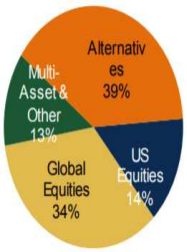
LM



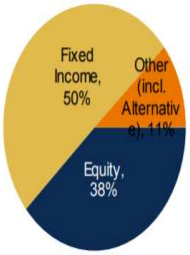
TROW



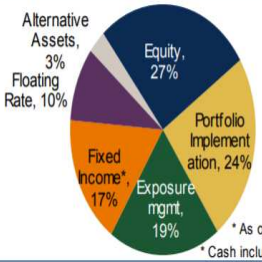
AMG



AB

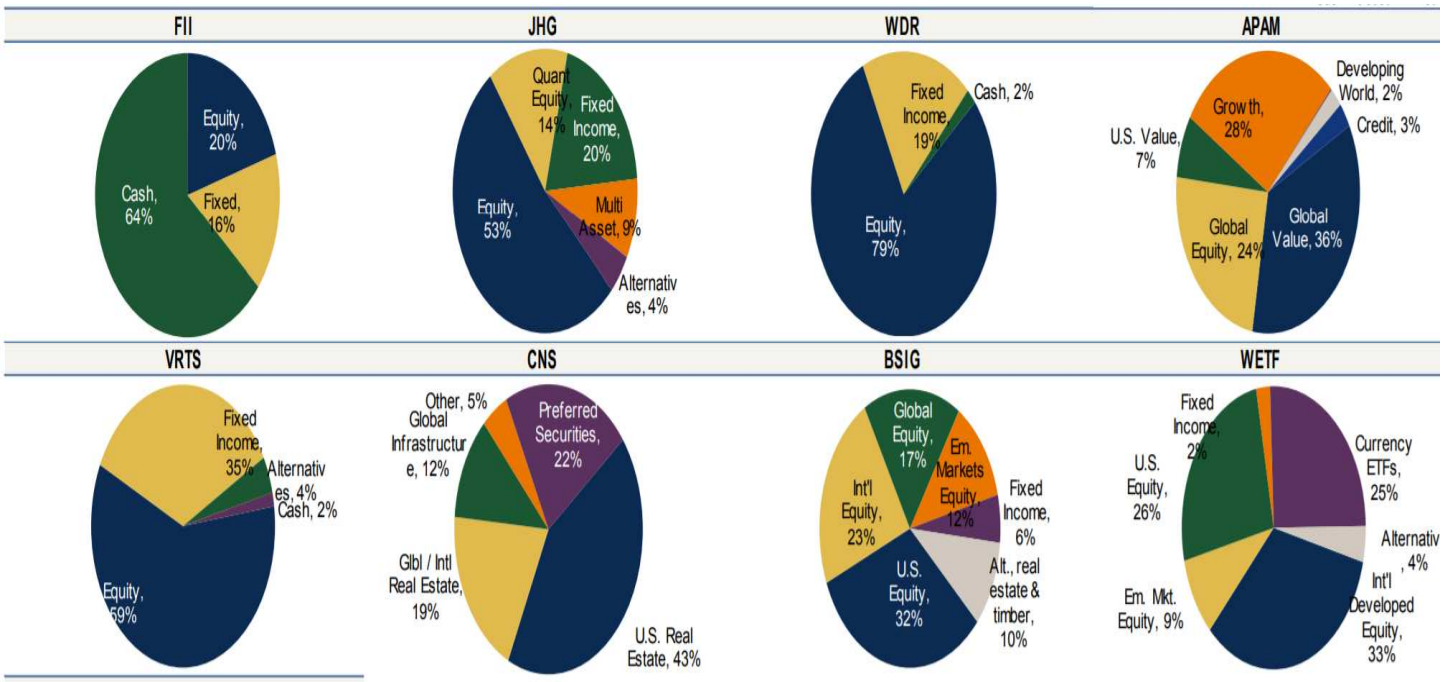


EV



* As of 6/30/2018

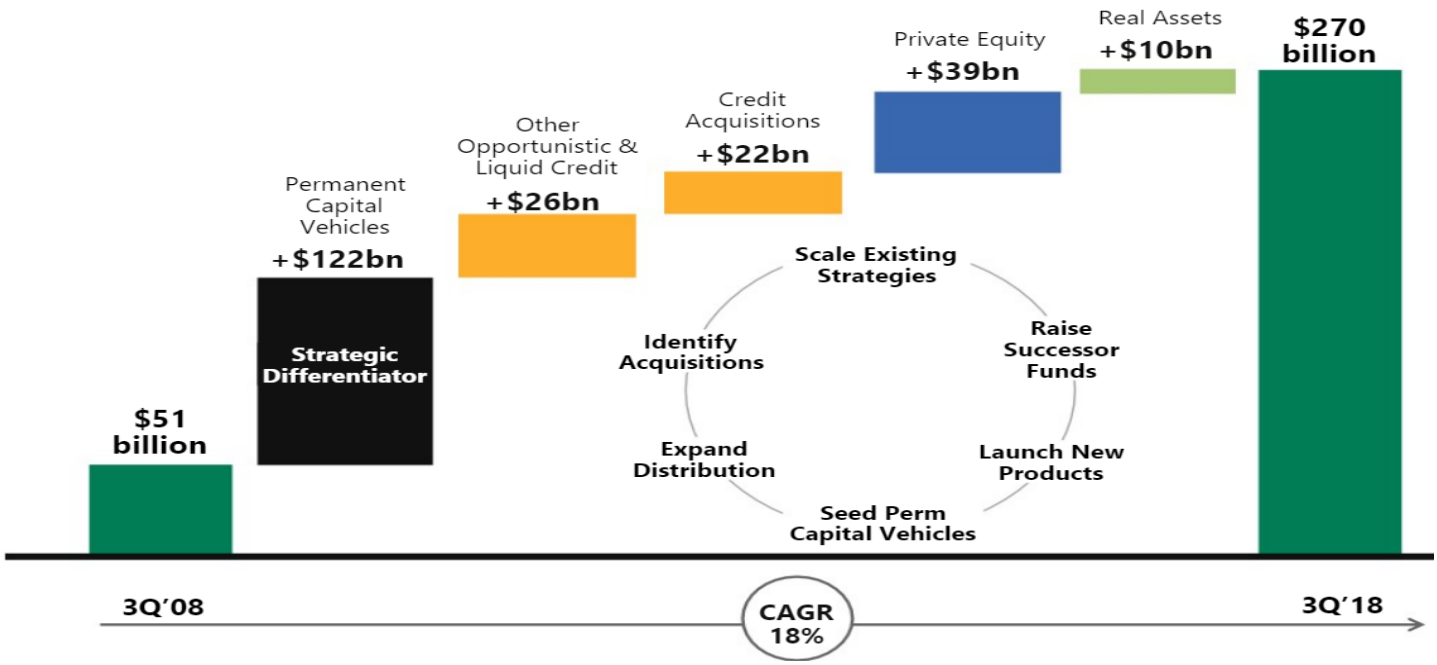
* Cash included in Fixed



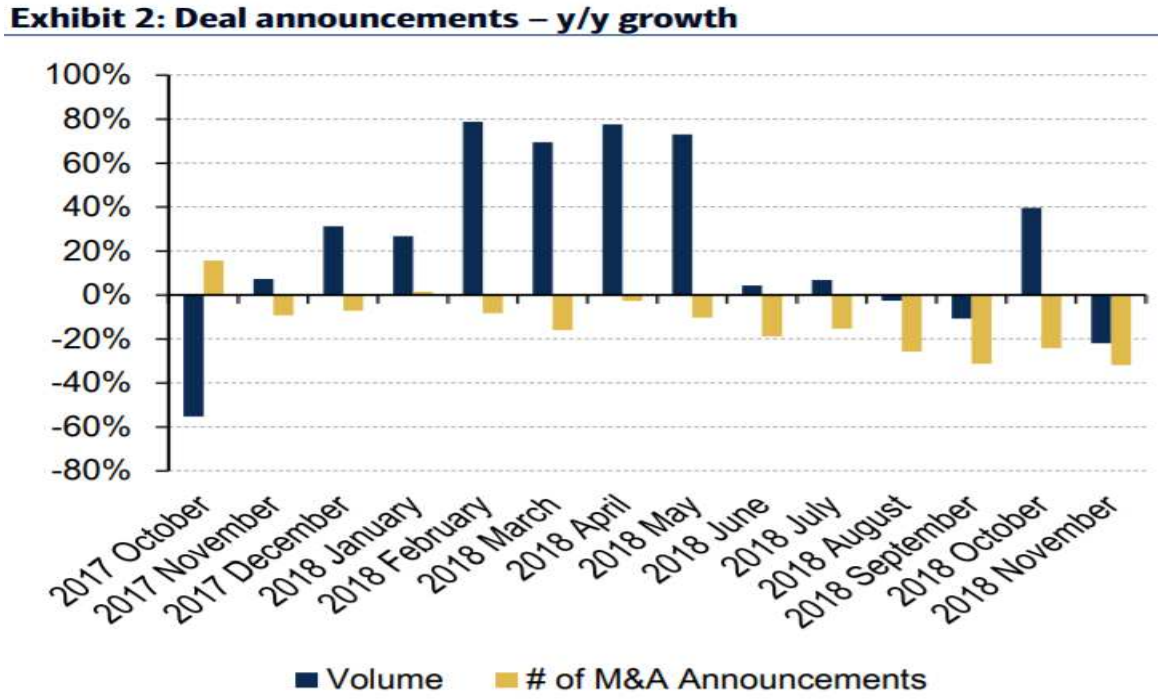
T Rowe Price (TROW) is a $23B asset manager with shares down 10% YTD, trading 12.55X Earnings and 8.3X EBITDA with a 3% dividend yield. TROW has a high 30% ROE and has seen impressive growth the past two years. AUMs have been declining across the industry with market volatility but TROW has held up better than peers. It has a strong balance sheet with a lot of cash and has been beating margin estimates. It has seen traction on new products and generated multiple quarters of inflows. Shares trade at an attractive valuation and it is a better operator than its peers.

Apollo Global (APO) is the preferred name in alternative investments trading 8X Earnings and 14.7X EBITDA with a 7.6% dividend yield. APO has been active with M&A in 2018 and is seen to be a likely C-Corp conversion. APO has significant dry powder ($48B) to deploy capital and recent market weakness is allowing for more opportunity. It continues to see impressive AUM growth. Its Credit division as $183B AUM, Private Equity $73B, and Real Assets $15B. Since inception in 1990 it has a 25% IRR on its fund. APO sets up well into 2019 and 2020 in this group.

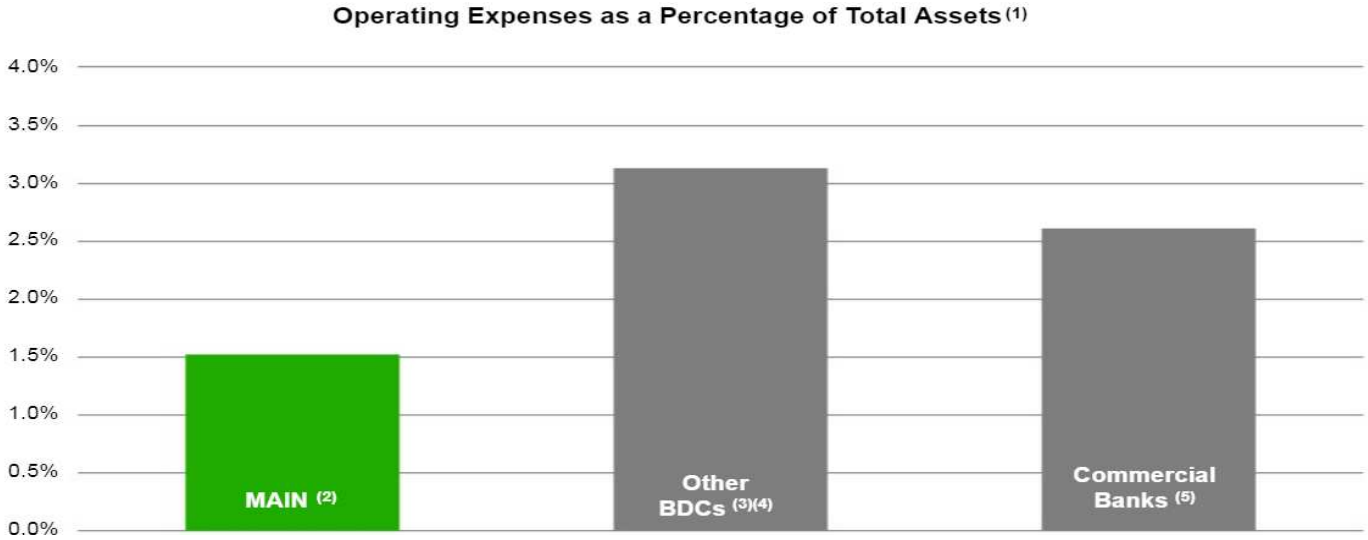
AUM growth over the past ten years driven by the proliferation of yield-oriented permanent capital vehicles and continued success in opportunistic investing businesses



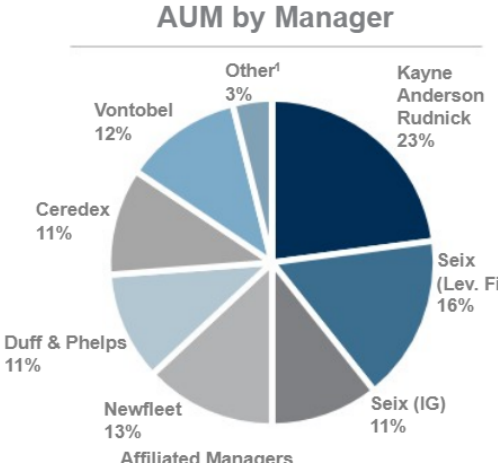
Evercore (EVR) is a favorite smaller cap Asset Manager with a $3.72B market cap trading 9.9X Earnings and 6.7X EBITDA with a 2.61% dividend yield. EVR has industry leading profitability ratios and a 13.8% FCF yield. It is a leading independent firm for M&A, a top research provider, and generating a 19% CAGR for advisory revenues. It continues to take market share from peers while also expanding operating margins and returning capital to shareholders. The M&A advisor group has sold off this year on expectations of a softer deal pipeline in 2019. Once again, into a tougher environment, I favor the best value that is also the best operator in the M&A advisor group.

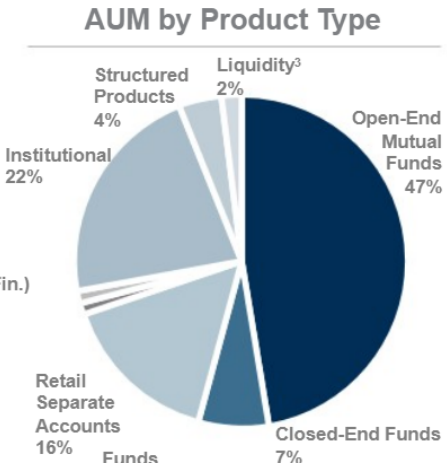


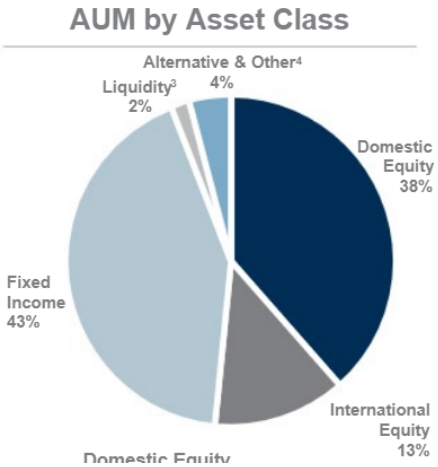
Main Street Capital (MAIN) is a better looking small cap in this group, the $2.3 business development Co. trades 14.45X Earnings with a 6.23% dividend yield. MAIN sees another year of double digit topline growth in 2019. MAIN invests in lower middle market companies with 69% of its portfolio in debt investments and 26% in Equity. It has a significant operating cost advantage to peers. It operates a diversified portfolio across many industries that limits risk. MAIN is a unique asset manager play and one worth a look as an investment.



Virtus (VRTS) with a $635M market cap is the smallest name that screened well, trading 6.6X Earnings and 14.7X EBITDA with a 2.54% yield. VRTS grew revenues 31.9% in 2017 and 33.5% in 2018. VRTS manages $89B in a multi-boutique structure offering a broad array of investment strategies. VRTS is seeing positive net flows versus peers and showing good expense management with margins expanding. VRTS is on pace to exceed peer averages in 2019 on organic growth yet trades at a major discounted valuation. It is a small cap value with a nice yield.







Exchanges are seeing the benefits from increased market volatility leading to higher trading volumes with strength in Options and Futures driving much of the upside.

					EPS						Growth	P/E				EV / EBITDA	Div Yield
			Price	Mkt Cap	4Q18E		2018E		2019E		2019E	2018E		2019E		2019E	2018E
			12/4/2018	Millions	BofAML	Street	BofAML	Street	BofAML	Street	Street	BofAML	Street	BofAML	Street	Street	Street
Company	Ticker	Rating	(Local)	$	(Local)	(Local)	(Local)	(Local)	(Local)	(Local)	%	X	X	X	X	X	%
Online Brokers																	
TD Ameritrade	AMTD	Buy	51.73	29,091	1.01	0.99	3.55	3.53	4.10	4.08	15.7	14.6	14.7	12.6	12.7	10.7	2.3
E*Trade	ETFC	Buy	48.65	12,369	1.01	1.02	3.60	3.61	4.23	4.21	16.5	13.5	13.5	11.5	11.6	10.7	-
Focus Financial	FOCS	Neutral	29.03	1,897	0.49	0.49	1.74	1.72	2.16	2.31	33.9	16.6	16.8	13.4	12.6	13.1	-
Gain Capital	GCAP	NR	7.23	320	-	0.04	-	0.82	-	0.63	(23.0)	-	8.8	-	11.5	1.1	3.3
Interactive Brokers Group	IBKR	NR	56.66	23,532	-	0.60	-	2.16	-	2.61	20.9	-	26.3	-	21.7	12.7	0.7
Charles Schwab	SCHW	Buy	43.01	58,083	0.62	0.64	2.41	2.44	2.87	2.89	18.6	17.8	17.6	15.0	14.9	12.2	1.0
Average											**13.8**	**15.6**	**16.3**	**13.1**	**14.1**	**10.1**	**1.9**
U.S. Exchanges																	
CBOE Holdings	CBOE	Buy	103.90	11,658	1.22	1.23	4.71	4.72	5.00	4.95	4.8	22.1	22.0	20.8	21.0	15.3	1.1
Chicago Mercantile Exchange	CME	Buy	188.20	67,331	1.63	1.65	6.67	6.69	7.20	7.29	8.9	28.2	28.1	26.1	25.8	20.4	2.7
IntercontinentalExchange	ICE	Buy	79.12	45,065	0.90	0.91	3.55	3.55	3.90	3.89	9.6	22.3	22.3	20.3	20.3	15.2	1.2
NASDAQ OMX	NDAQ	Neutral	90.40	14,822	1.19	1.22	4.76	4.79	5.15	5.19	8.2	19.0	18.9	17.6	17.4	13.3	1.9
Virtu Financial	VIRT	NR	25.03	4,737	-	0.39	-	1.68	-	1.73	3.1	-	14.9	-	14.4	16.8	3.8
Average											**6.9**	**22.9**	**21.2**	**21.2**	**19.8**	**16.2**	**2.2**
Non-U.S. Exchanges																	
Deutsche Boerse *	DB1 GY	Buy	115.00	24,784	-	1.29	5.37	5.27	5.97	6.02	14.4	21.4	21.8	19.3	19.1	13.0	2.3
Euronext*	ENX FP	Buy	51.40	4,081	-	0.83	3.14	3.33	3.58	3.64	9.4	16.4	15.4	14.4	14.1	-	3.1
London Stock Exchange *	LSE LN	Buy	40.39	17,886	-	-	1.77	1.72	2.00	2.01	17.1	22.8	23.5	20.2	20.1	12.8	1.5
HK Exchanges & Clearing *	388 HK	Neutral	239.80	38,429	-	1.73	7.60	7.59	7.77	8.31	9.5	31.6	31.6	30.9	28.8	-	2.8
Singapore Exchange	SGX SP	NR	7.30	5,729	-	-	-	0.35	-	0.35	1.2	-	21.0	-	20.8	13.1	4.2
BM&F Bovespa *	BVMF3 BZ	Buy	27.90	14,914	0.36	0.33	1.47	1.24	1.77	1.45	17.0	19.0	22.6	15.8	19.3	14.4	2.9
ASX *	ASX AU	Neutral	61.05	8,673	-	0.60	2.40	2.41	2.57	2.49	3.3	25.4	25.4	23.7	24.5	3.3	3.6
Average											**10.2**	**22.8**	**23.0**	**20.7**	**21.0**	**11.2**	**2.9**

Chart 1: CBOE 2017 Revenue Breakdown

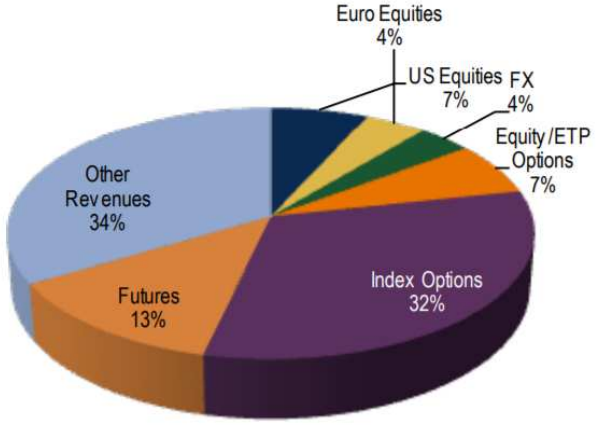


Chart 2: CME 2017 Revenue Breakdown

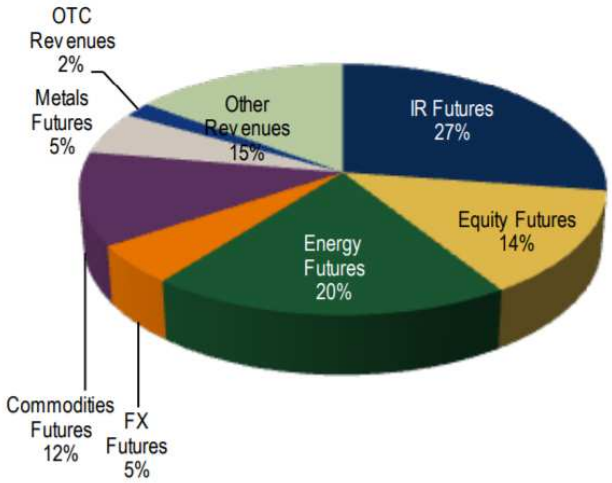


Chart 3: ICE 2017 Revenue Breakdown

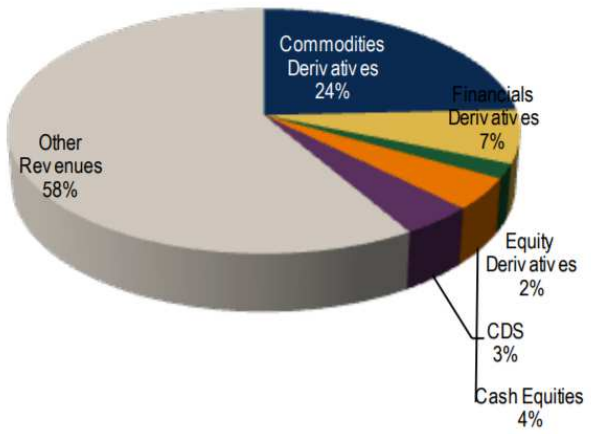
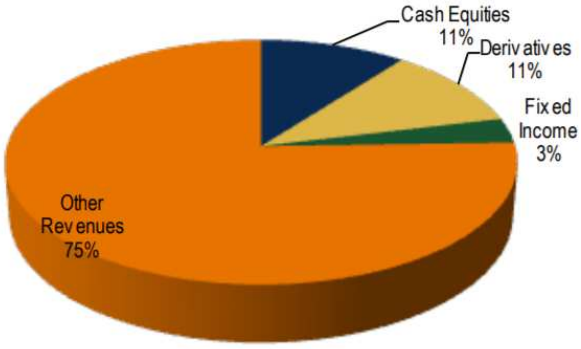
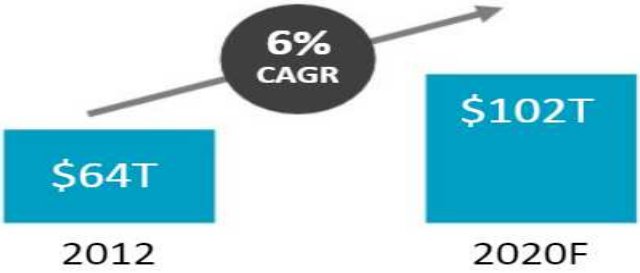


Chart 4: NDAQ 2017 Revenue Breakdown



NASDAQ (NDAQ) has a $14.7B market cap and trades 16.7X Earnings and 13.6X EBITDA, a discount to its notable peers while having strong operating metrics. NDAQ earnings most of its revenues on the Tech & Services side with more than 70% from recurring and subscription, providing strong visibility, and has seen operating margins expand the last few years. It has a strong 6.1% FCF yield with FCF CAGR of 16% since 2014. Secular demand drivers for advanced analytics are boosting business as well as a growing demand for passive investment vehicles. NDAQ also sees strong growth opportunities in new International markets. It sees low to mid single digit growth for Market Data, mid to high for Index, and double digit growth for Investment Data & Analytics. NASDAQ sets up favorably versus peers into 2019.

Global Asset Management AUM Growth[1]



Alternative Investments AUM Growth[2]

Financial Tech and Services:

Components: *ADP, FICO, EPAY, V, MA, PYPL, SQ, AXP, COF, DFS, SYF, TSS, EFX, WU, CACC, PAGS, GDOT, SLM, FCFS, NAVI, NNI, WRLD, QIWI, OMF, BCO, BKFS, BR, FDS, MORN, RELX, MCO, SPGI, FISV, WP, FLT, INFO, VRSK, FDC, GPN, TRU, ADS, WEX, EEFT, MMS, CATM, ENV, TNET, MSCI, CLGX, CBRE, CSGP, JLL, RLGY, NCR, HRB, RMAX, GSKY, JKHY, FIS, NLSN*

This expansive groups falls under the Financials umbrella but features an array of different industries with Credit Services, Payment Processors and Technology, Financial Data Analytics, and Real Estate Services. In here we find some of the best growth names in this sector due to the prominence of online payments and overall higher global consumer spending.

The credit card / services group including MA, V, AXP, DFS, COF, SQ, PYPL and SYF is one where we look at industry-specific metrics like NCO (net charge-off) and DQ (delinquency) rates. It is also a group set to benefit from higher rates, reduced regulations, and increased consumer optimism. PayPal (PYPL) is the disruptor in this group with the increased amount of online transactions and now has partnerships with both V and MA. Square (SQ) is another up and coming name in the group with the growth in mobile payments.

In 2018 the group saw mixed performance with more than half the names positive YTD led by Square (SQ), and payments continued to lead with GDOT, EPAY, MA, EEFT, and V among top gainers. Weakness was seen in names tied to real estate like RMAX, RLGY, CLGX as well as ancillary credit names like ADS and SYF. Less popular credit card plays DFS and COF struggled as well with each down more than 15% YTD.

Data & Services is one of the better performing groups in the market with 13 of the 22 components up 10% or more YTD. The Business and Information Services group tends to be more defensive in nature and hold up with concerns of slowing global growth, trade, and rising rates, outside of staffing and commercial real estate. The value of data appears to be in the early stages of its evolution allowing for a long runway for growth, the main disparities lie in end markets and competitive landscapes. According to IDC, the data analytics space has potential to be $200-220b+ by 2020, with revenue growth exceeding a 10% CAGR. Nielsen (NLSN) is a name in this group that is being pursued in a deal by Private Equity.

Figure 4: Info Services End Markets + Estimated TAM [$B]

Company	Ticker	Rating	Market cap [$m]	Price	PT	% to PT	Account	Auto	Consumer	Energy	Finance	Ind'ls	Ins/HC	Legal	Media	Mtg	Other	Est. TAM [$be]
Equifax [1]	EFX	OP	$11,971	$99	$125	26%	0%	7%	46%	0%	25%	0%	4%	0%	0%	18%	0%	$70.0
FactSet	FDS	N	8,663	228	238	5%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	30.0
IHS Markit	INFO	OP	20,698	53	65	24%	0%	29%	0%	22%	35%	10%	0%	0%	4%	0%	0%	38.0
Nielsen	NLSN	N	9,613	27	29	7%	0%	0%	48%	0%	0%	0%	0%	0%	52%	0%	0%	17.0
Thomson Reuters	TRI	N	25,751	51	55	8%	30%	0%	0%	0%	0%	0%	0%	65%	5%	0%	0%	44.0
TransUnion [2]	TRU	N	11,600	63	70	12%	0%	0%	45%	0%	0%	0%	5%	0%	0%	10%	40%	70.0
Verisk Analytics	VRSK	N	19,819	120	125	4%	0%	0%	0%	21%	8%	0%	71%	0%	0%	0%	0%	16.0

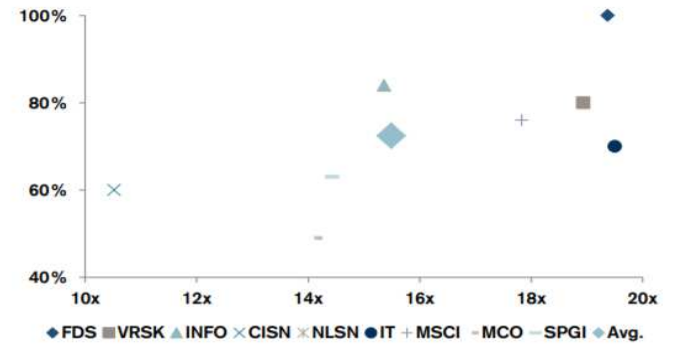
[1] Consumer includes corporate, employers, resellers, consumer, commercial, retail + telco

[2] Includes auto exposure in consumer

Source: company filings and Credit Suisse estimates

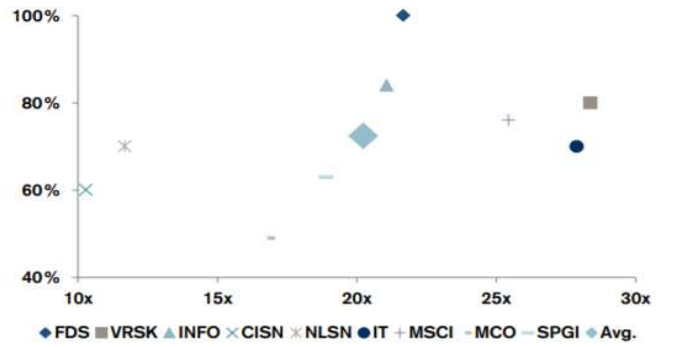
Source: Company data, Credit Suisse estimates.

Figure 12: Subscription Revenue + EV/EBITDA



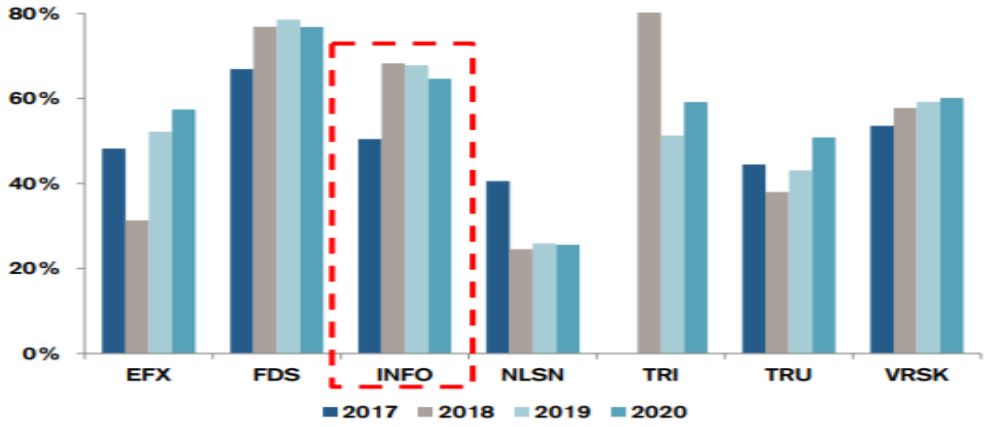
Source: Company data, Credit Suisse estimates.

Figure 13: Subscription Revenue + P/FCF

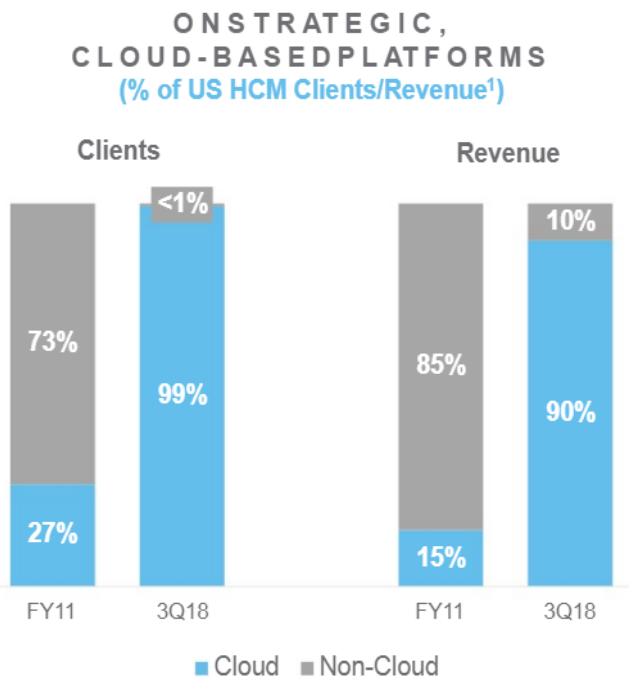


Source: Company data, Credit Suisse estimates.

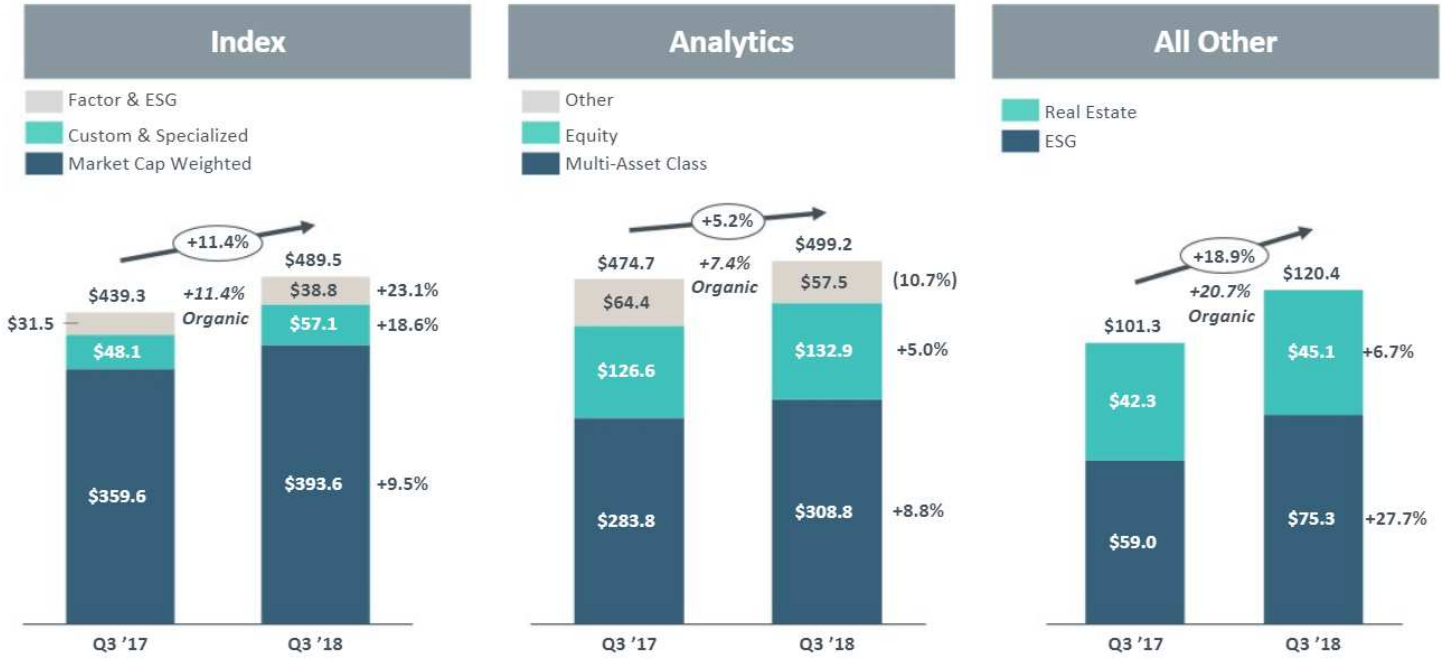
Figure 14: Information Services FCF Conversion



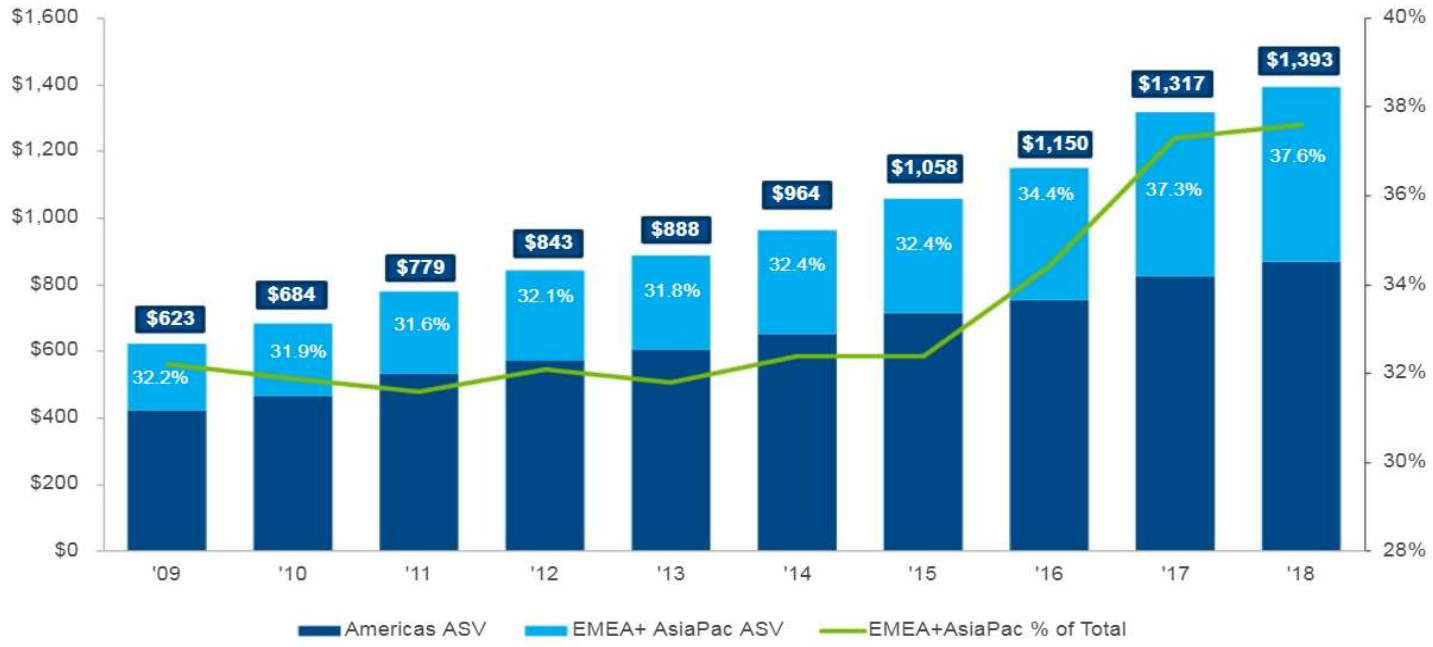
Automatic Data Processing (ADP) has a $63B market cap and provides employer services trading 23.3X Earnings and 18X EBITDA with a 2.26% yield. ADP sees steady 6-8% annual revenue growth the next three years and strong double digit EPS growth. ADP is a margin expansion story and operates in a highly competitive HCM market. ADP is transforming through technology, closing the gap with the cloud providers, and seeing momentum in bookings growth and retention. It had 19.8% EBITDA margins in FY17 and hitting 21-22% in FY19 with guidance for 23-25% in FY21. ADP is positioned well in fast growing markets with plenty of penetration remaining and a successful transformation story in the middle innings.



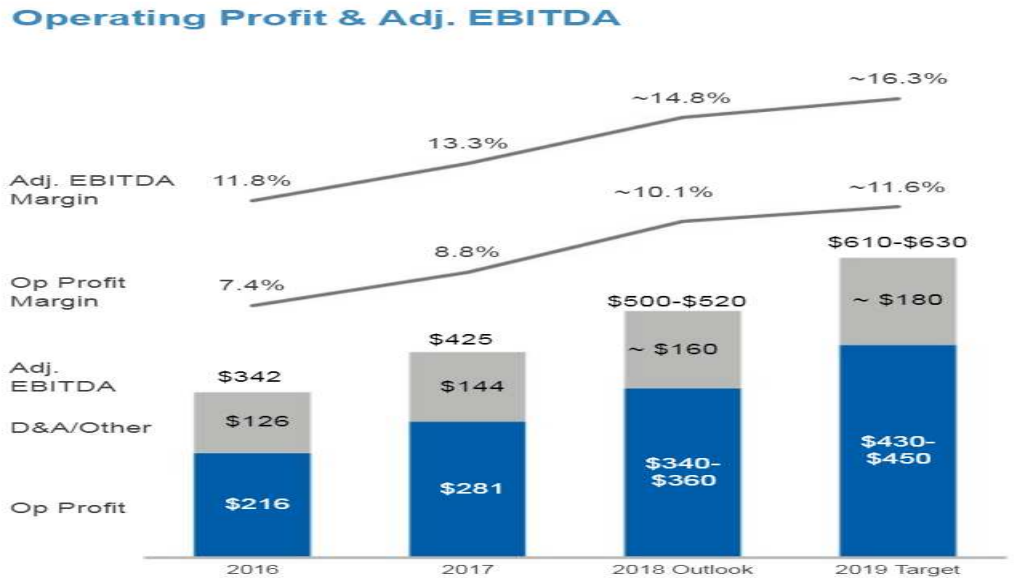
MSCI (MSCI) is a $13.8B provider of investment decision support tools trading 25.75X Earnings, 33.6X FCF and 18.9X EBITDA with a 1.5% dividend yield. MSCI has a strong growth outlook for both revenues and EPS the next few years. It has leading EBITDA margins that are expanding and strong subscription growth numbers. Innovation and content creation are driving revenue growth. MSCI has seen some weakness with market volatility and outflows lately but long term secular trends of active to passive, social, and alternative investments benefit it for a long term investor. The investment industry is massive and transforming, and MSCI Index and Analytics subscription solutions will continue to see strong demand in all markets.



FactSet Data (FDS) is an $8.8B provider of financial information and analytical solutions trading 21.6X Earnings, 33.4X FCF and 17.6X EBITDA with a 1.12% yield. FDS is projected at stable 5-7% annual revenue growth and 8-12% EPS growth, a consistent strong performer for many years. It has proven to be a market share gainers in the $30B information services industry and has been winning key contracts. FDS is determined to accelerate organic growth and cut costs, and continues to launch new products expanding its verticals. It recently won a key wealth management contract with Merrill Lynch and organic annual subscription value accelerated. Wealth, CTS and Analytics are growing double digits while the core Research segment is seeing flat revenues. User count was +3.4% Y/Y last quarter. Estimates for 2019 are likely conservative, and sets up for another beat and raise year.



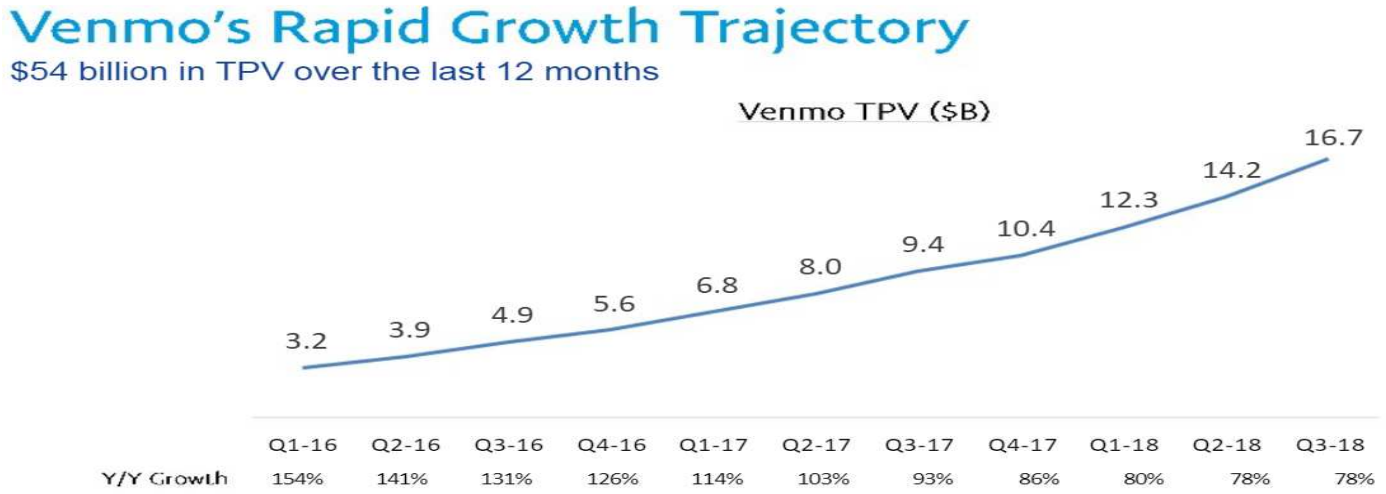
Brink's (BCO) is a $3.46B cash management provider trading 15.45X Earnings and 9X EBITDA. BCO revenue growth of 3.1% in 2018 slowed from 10.8% in 2017 while EPS growth is the real story here, posting 32.5%, 35.3% and 10% growth the last three years with 25%+ growth seen each of the next two years. Brink's has seen a lot of insider buying in 2018 and shares -15% YTD, and is integrating its deal for Dunbar that expands scale and cuts the tax rate. The global cash market is $16.5B and BCO is the leader, South America accounting for 46% of its operating profit. Financial Institutions and Retail account for the majority of its customers. Although many think cash is dead, it still accounts for 85% of global consumer transactions. BCO expects 7% organic revenue growth in 2019 and a 22% jump in EBITDA. It also sees EBITDA margins rising to 16% from 12% and growing faster than peers but trades at a discount.



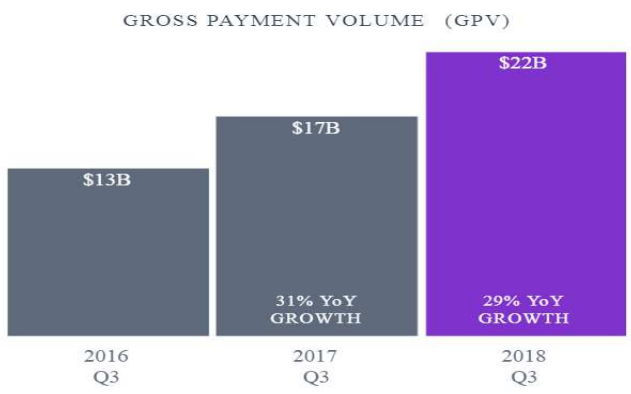
Payments & Finance is a group that includes the credit card names as well as other consumer financing companies. Digital payments remains a strong growth market and the popularity of IoT devices will continue to allow shopping from a myriad of devices. The tailwinds in this space remain strong and there are a number of high quality investments.

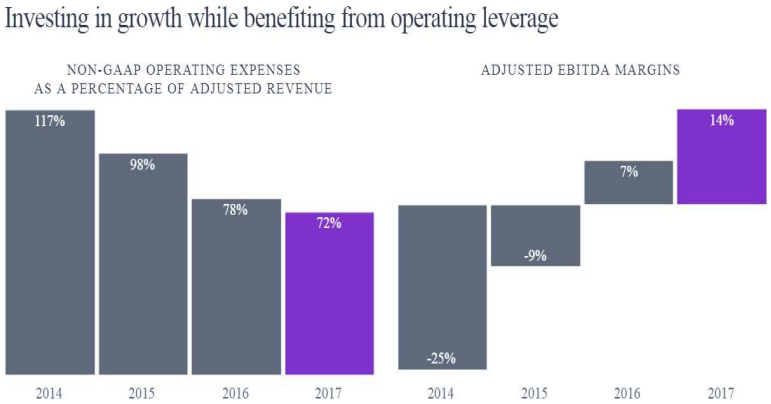
Visa (V) with a $312.5B market cap is the largest payments name preferred into 2019 as I look for it to close the valuation gap to MasterCard (MA). V trades 22.2X Earnings, 31X FCF and 19X EBITDA and sees double digit topline growth the next three years and 15% EPS growth per year. V is pursuing a cashless society and the digital payments opportunity remains massive while its deal for Visa Europe can provide additional accretion driving upside to estimates. V has exposure to fast growing markets like international, B2B payment flows and cross-border. Visa management sees a large opportunity remaining in ecommerce and excited about prospects for Visa Direct. Visa has a lot of positive tailwinds working in its favor over the long term despite any near-term Macro concerns.

PayPal (PYPL) is a $105.5B leader in online payments with shares +17.5% YTD and trading 30X Earnings, 31X FCF and 19.8X FY19 EBITDA. PYPL growth is slowing modestly but still sees 15%+ topline growth annually and 20% EPS growth. It continues to post strong TPV growth and has been making key strategic acquisitions while its Venmo continues to see robust growth. Rising competition from Square and Apple are always a concern, but the market is large enough to support multiple winners, and PYPL continues to expand its partnerships. Holiday ecommerce spending in Q4 is accelerating and should support a strong start to 2019. PYPL is benefitting from TGT/WMT omni-channel efforts that offer PYPL checkout. On 12/6 Hulu announced the ability to pay with Venmo, another potential upside driver. User and transaction continue to outpace estimates while engagement is also seeing positive momentum. PYPL has scarcity value as one of the few ways to play one of the strongest secular trends, digital payments, and a name that remains a must own.

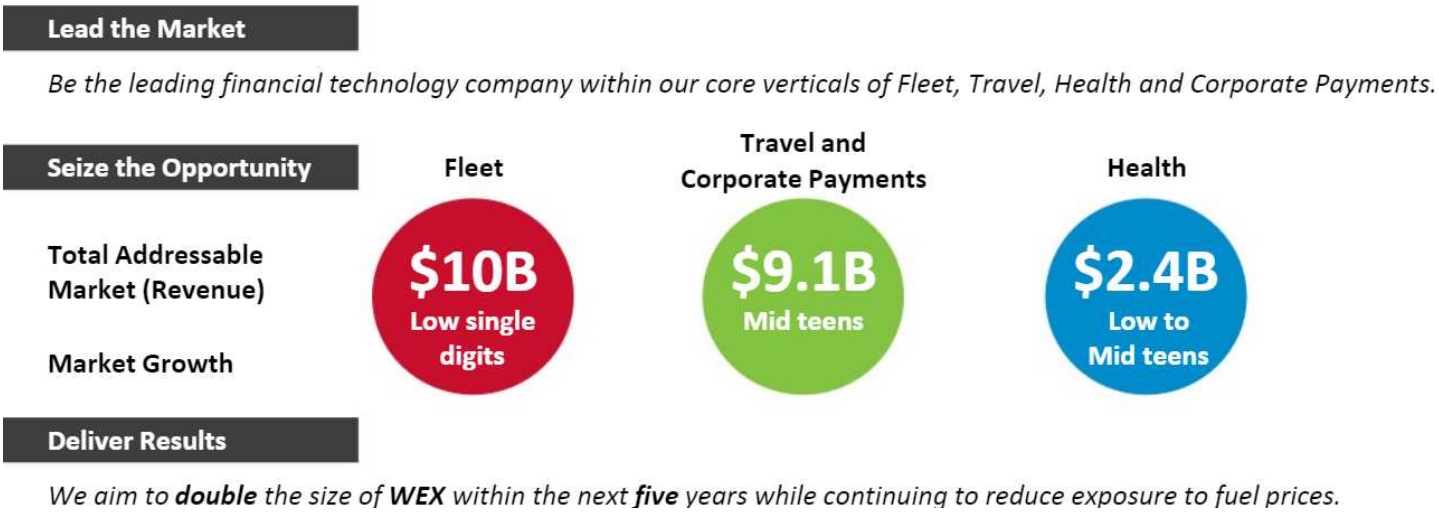


Square (SQ) has a $28.45B market cap with shares rising 83% YTD, a fantastic year, and trades rich at 89.5X Earnings and 11.4X EV/Sales FY19. SQ is set to see robust growth in revenues and EPS for many years as America sees more and more people move to entrepreneurial fields. SQ is a direct way to play strength in small and medium sized businesses as well as digital payments and sees a $26B revenue opportunity in payments as well as E-Commerce, Software, Square Capital, and Caviar, amounting to a $70B commerce ecosystem. There is also a massive opportunity in International markets, 5X the opportunity of that in the US. A recent CFO departure has caused some concern with the stock but it keeps posting phenomenal results with a clear opportunity for more upside. Valuation is the only concern but at this stage in SQ's growth I feel it can be ignored as the company has many years to grow into its valuation.

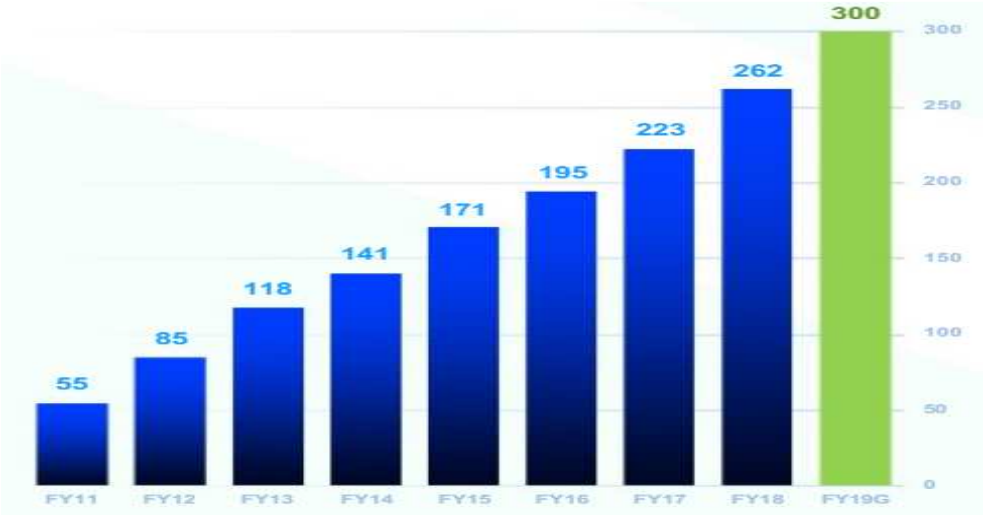




Wex (WEX) is a lesser known $6.6B provider of corporate card payment solutions trading 13X EBITDA, 4.6X Sales, 16X Earnings and 18.15X FCF. WEX has grown revenues sharply the last few years and sees around 10% growth each of the next two years and EPS growth near 15%. It has improved its growth profile moving into new markets and geographies as it pivots to a broader fin-tech company. WEX is targeting doubling the size of the company within five years while reducing exposure to fuel prices. The recent weakness in Energy could lead to some downside in its core business but WEX is diversifying away and winning business in other key verticals. Estimates are that every 10 cent move in fuel prices impacts WEX earnings by 18 cents per share. Shares have already pulled back 25% off recent highs due to correlation with Oil, and it feels like a buying opportunity.

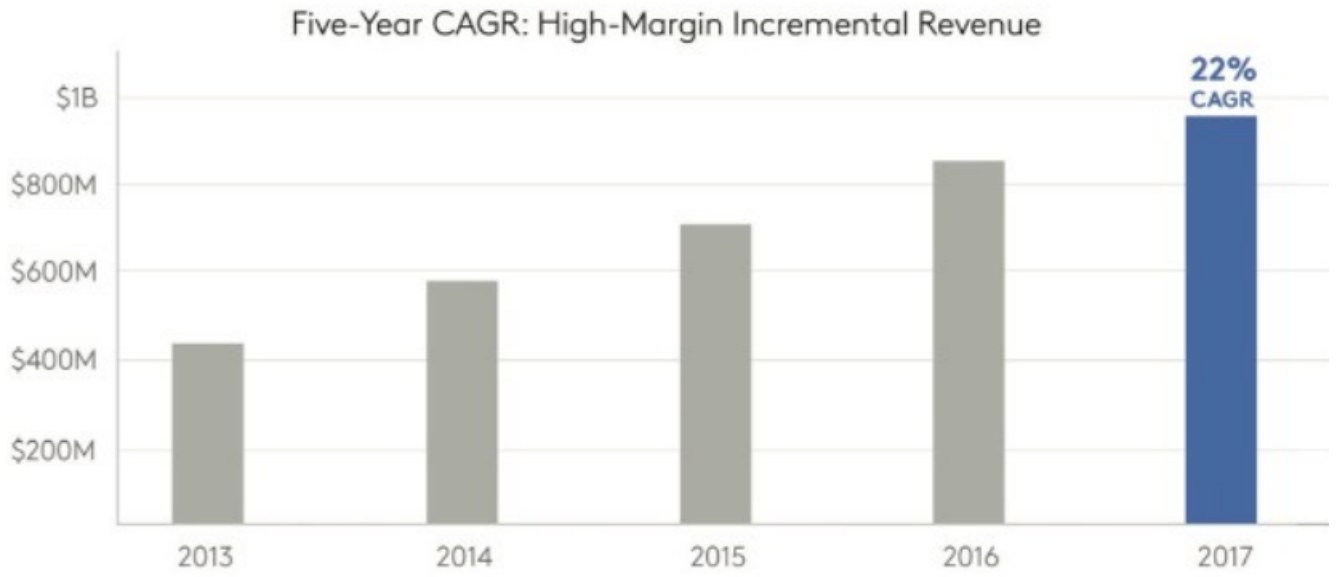


Bottomline Tech (EPAY) is a $2.23B provider of software solutions to businesses trading 30X Earnings, 39.55X FCF and 18.6X FY20 EBITDA. EPAY posted 12.8% revenue growth in 2018 and sees 8% in 2019 before accelerating back to double digits, while EPS growth seen accelerating as well the next three years. EPAY is a small player in large and growing markets targeting 15-20% annual subscription and transaction growth and 86% recurring. Digital Banking and Legal Spend are two key focuses. EPAY is growing at a strong rate while also seeing strong profitability, and at its small market cap would make a nice acquisition target.



Property & Real Estate has been one of the weaker groups due to the slowdown in housing throughout 2018. CSGP, the top pick from last year, was the only strong performer +25% YTD.

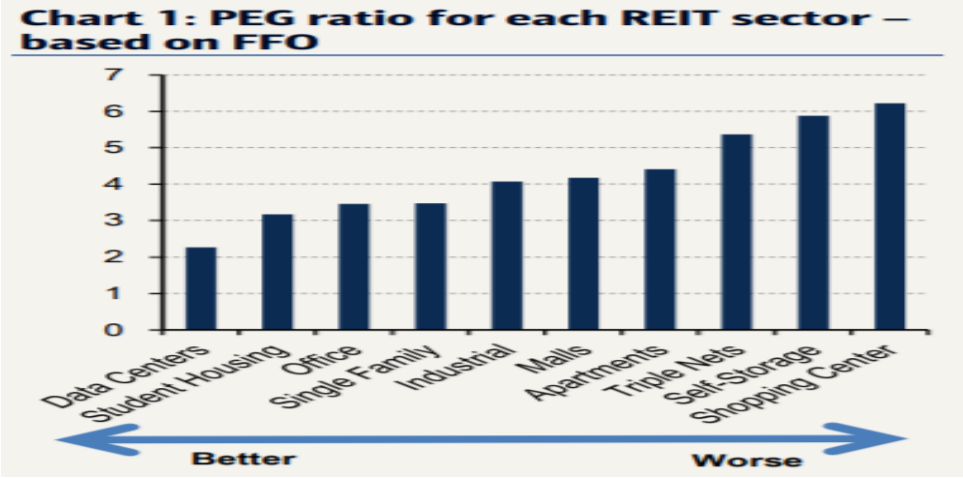
Costar Group (CSGP) is still the highest quality name in this tough group, the $13.85B leader in information and analytics for the commercial real estate industry trades 37.6X Earnings and 23.9X FY19 EBITDA, rich valuation. CSGP continues to forecast 15%+ annual topline growth and 20% EPS growth while having very strong margins compared to peers with excellent pricing power. CSGP has seen strong cross-sell opportunities from the integration of the LoopNet database. CSGP continues to expand margins and has key portfolio assets like Lands of America and Apartments.com. CoStar also did a deal for Cozy Services putting it in position to become a leading platform in CRE for multifamily owners and managers. CSGP is a top tier operator and is investing in new markets and geographies while investors will focus on margins, but pricing discipline has kept that in-line.

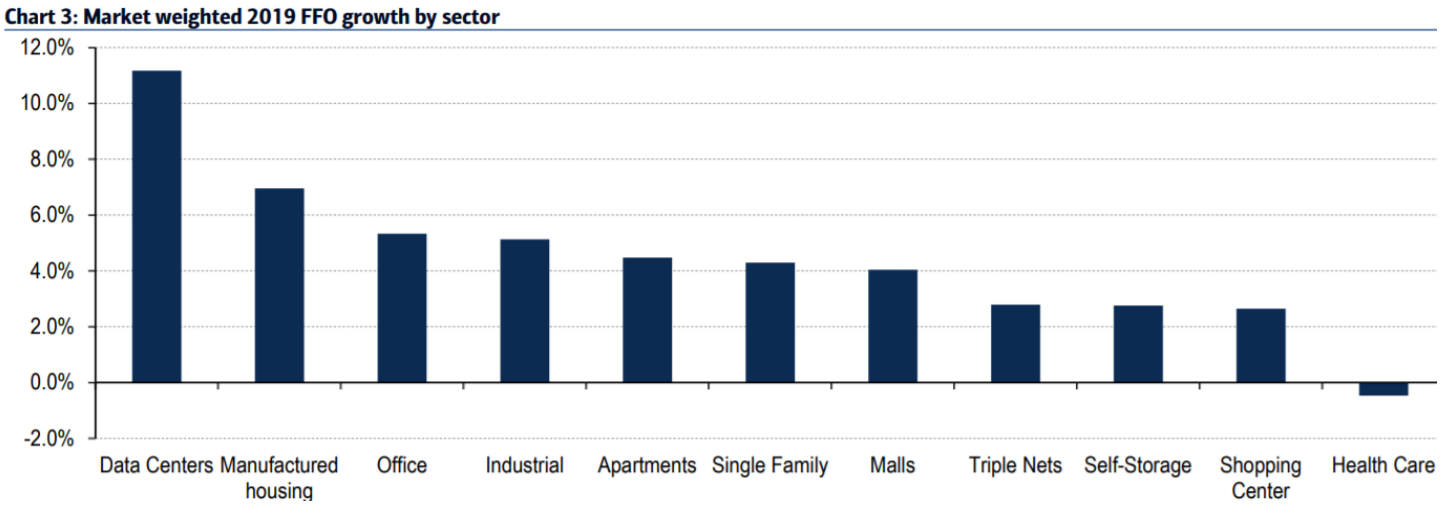


REITS:

Components: *SPG, PLD, PSA, WELL, EQR, AVB, VTR, BXP, O, ESS, HCP, VNO, ARE, EXR, MAA, WPC, UDR, REG, DRE, FRT, SUI, ELS, CPT, VICI, NNN, SLG, MGP, OHI, VER, AIV, KIM, LPT, MAC, KRC, STOR, MPW, DEI, CUBE, HTA, PEB, EPR, BRX, HPP, HIW, HPT, FR, COLD, RHP, HR, EGP, WRI, CUZ, TWO, RLJ, SRC, NHI, SNH, DOC, MFA, TCO, REXR, STAG, CLNY, RPAI, OFC, BDN, CXP, PDM, TRNO*

The REIT group is one of the harder ones to be a stock picker as they trade more as bond instruments, often showing strength when the market is seeking safety/yield, but we can still find some names that have positive fundamental trends and offer an income investment. The group mainly falls into categories of their end-markets such as Diversified, Industrial, Residential, Retail, Hotel/Motel, Healthcare, Tech, and Office.





I have included 69 REITS in this grouping (Tower & Data Center excluded to be covered with Tech), and 30 of the names are positive YTD with top performers mainly in the $5B to $15B market caps. When analyzing this group the focus is on FFO (Funds from Operation), so valuation is P/FFO, and often analyze top-down, finding a strong industry theme and then looking to individual beneficiaries. We also look at Adjusted FFO, P/NAV and NAV growth, Interest Coverage, Debt/Equity, and Debt Coverage as well as the importance of dividend yields to investors in this group. Balance sheet strength will be important in 2019 given Macro risks. Apartments, Data Centers, Industrial, and Housing look best positioned for growth. Healthcare is estimates to set up for the weakest growth followed by shopping centers and self-storage. For Apartment REITS the best rent growth markets given job and wage growth per REIS are expected to be Orlando, Seattle, Atlanta and Phoenix. Demand remains solid with demographic tailwinds from millennials and boomers looking to live in urban settings and/or near suburban transport nodes. In Industrial, Despite concerns over the trade war, market fundamentals are strong as tenants invest in supply chains and e-commerce distribution to remain competitive. Delivery times for both retail and business customers must compress, and tenants need well-located and efficient warehouses to achieve this goal. Industrial demand is most closely correlated with GDP growth and consumer spending.

Interest rates are very important to this group, correlation between the 10 Year Yield and FTSE NAREIT was -0.66 for the period between 1/31/1985 through 11/28/18.

Chart 6: Leverage (net debt to EBITDA)

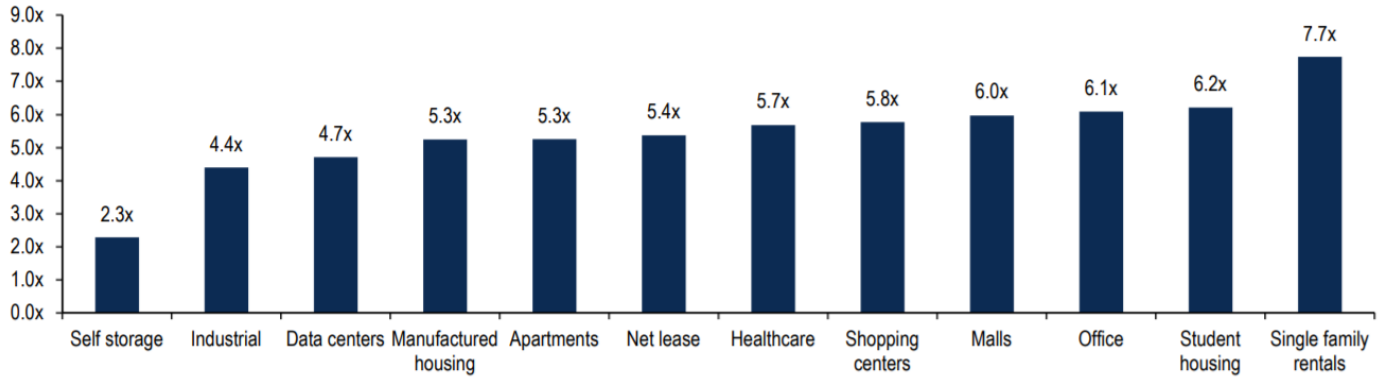


Table 10: Most Attractive Distribution Growth*

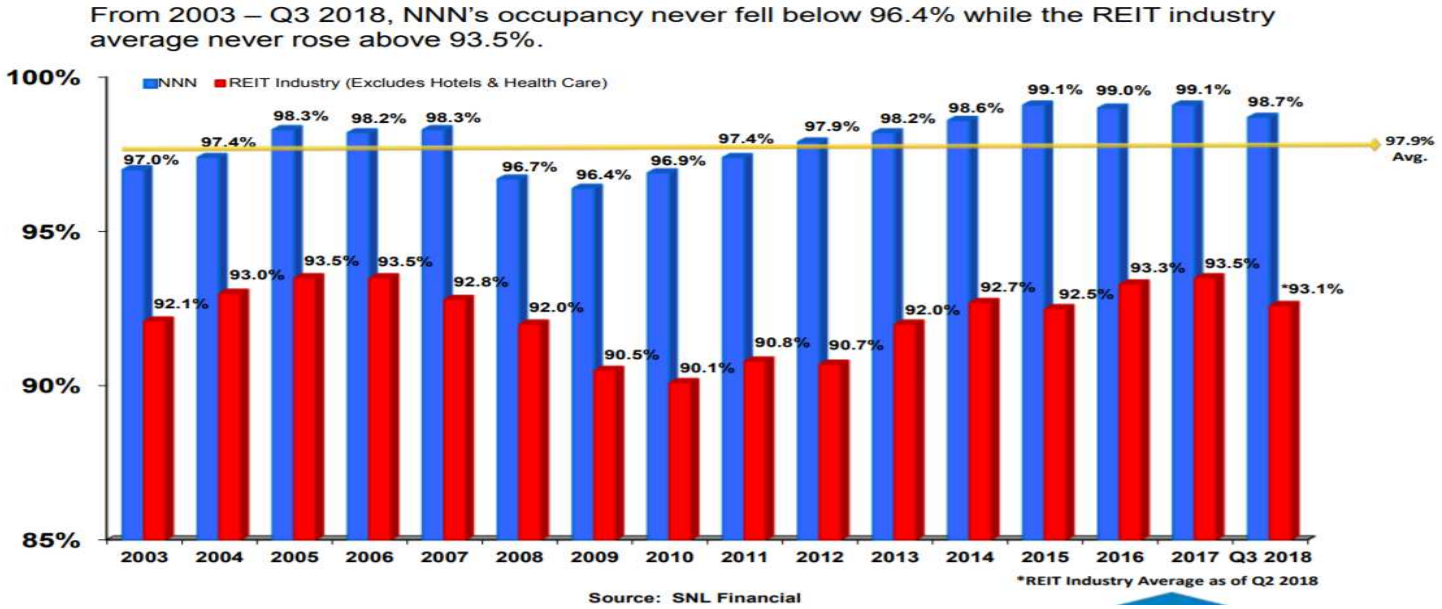
Ticker	2019 AFFOx	*Sensitivity Distr. Growth 3yr CAGR
EQIX	17.1x	34.2%
CONE	15.6x	24.4%
QTS	15.2x	21.3%
PGRE	23.0x	18.3%
ELS	27.6x	16.4%
SUI	23.2x	16.1%
AVB	21.3x	15.2%
KRC	24.6x	14.6%
REXR	31.5x	14.5%
ESS	21.9x	14.1%

Table 11: Least Attractive Distribution Growth*

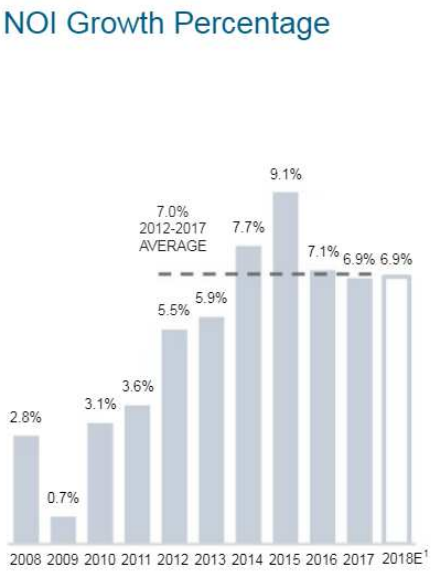
Ticker	2019 AFFOx	*Sensitivity Distr. Growth 3yr CAGR
SNH	8.7x	0.0%
OHI	13.1x	0.5%
VER	10.8x	0.6%
MPW	13.9x	0.8%
VTR	19.0x	1.0%
SBRA	10.3x	1.0%
WELL	19.1x	1.5%
STAG	16.5x	1.5%
RPT	14.8x	1.9%
HIW	19.3x	1.9%

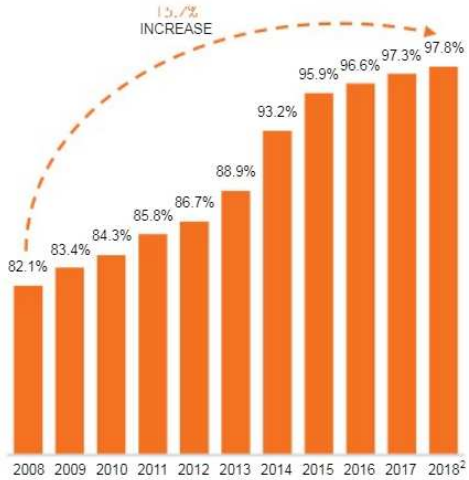
After screening through these metrics into respective groups, top fundamentally positioned names are:

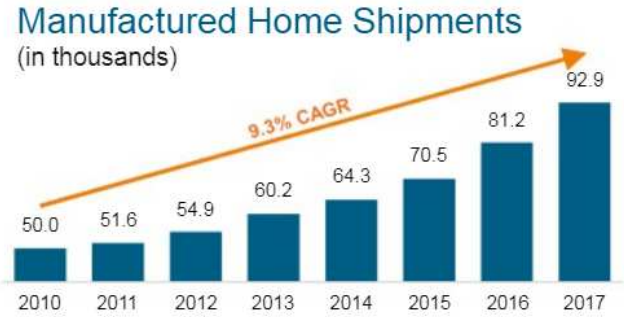
National Retail (NNN) screens well in Retail REITS with a $7.9B market cap, steady FFO growth, a 3.9% dividend yield, and one of the stronger balance sheets while trading 18.8X FFO and 1.2X NAV. NNN has a strong balanced portfolio and has shown the ability to manage well through tougher times. NNN has a lower risk balance sheet and is better positioned for a rising rate environment than peers with its higher acquisition cap rates. Its top tenants are 7-Eleven, Mister Car Wash, LA Fitness, Camping World, AMC Theaters, Taco Bell, Sunoco, and BJ's Wholesale.



Sun Community (SUI) is a $9.25B Residential REIT trading 23.4X FFO with a 2.7% dividend yield and growing FFO double digits with a strong balance sheet. SUI manages manufactured housing and RV communities. It has been posting some of the strongest SS growth in the industry and fundamentals remain healthy in age communities. It has also used acquisitions including a recent deal for an Australian Manufactured Housing market. SUI screens strong across all metrics and is positioned in a growing sub-industry.



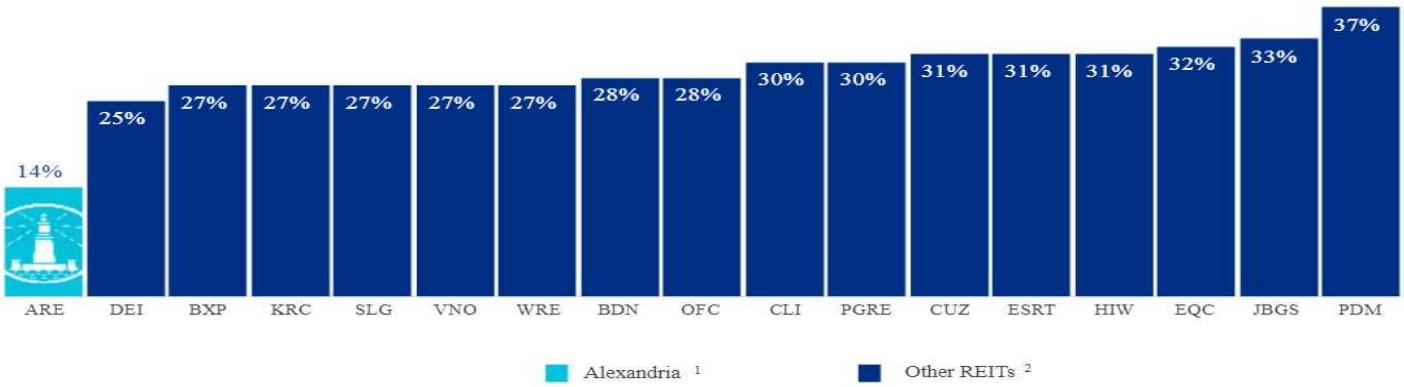




Alexandria Real Estate (ARE) is a $13B Office REIT that stands out among peers trading 18.4X FFO with 9%+ FFO growth, 7% NAV growth and Debt/Equity below 1X. It narrowly edged out second favorite **Liberty (LPT)**. ARE recently outlines a plan to double revenues by 2022. It has the strongest exposure to life science real estate while having a strong balance sheet and positioned in strong Coastal markets. It is a margin leader with strong tenants and resulting in high quality cash flows.

Alexandria's Low Leasing Costs and Maintenance Capital Expenditures

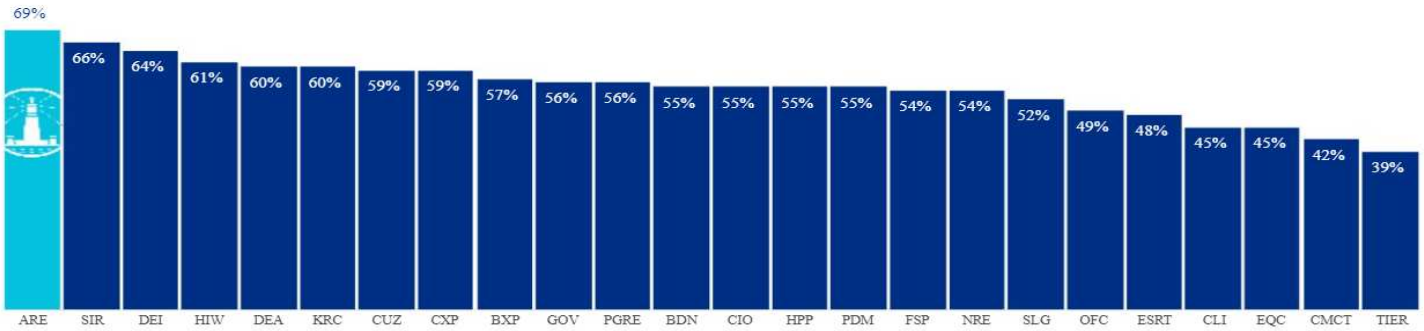
Result in Superior Long-Term Return on Investment



MAINTENANCE CAPITAL EXPENDITURES AS A PERCENTAGE OF NET OPERATING INCOME

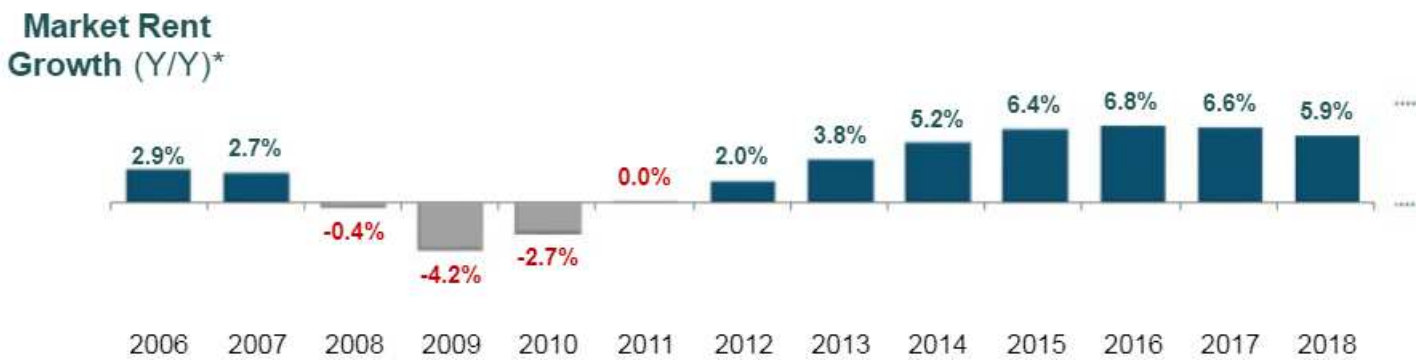
Alexandria's Strong EBITDA Margins

Consistently Outperform Office REITs



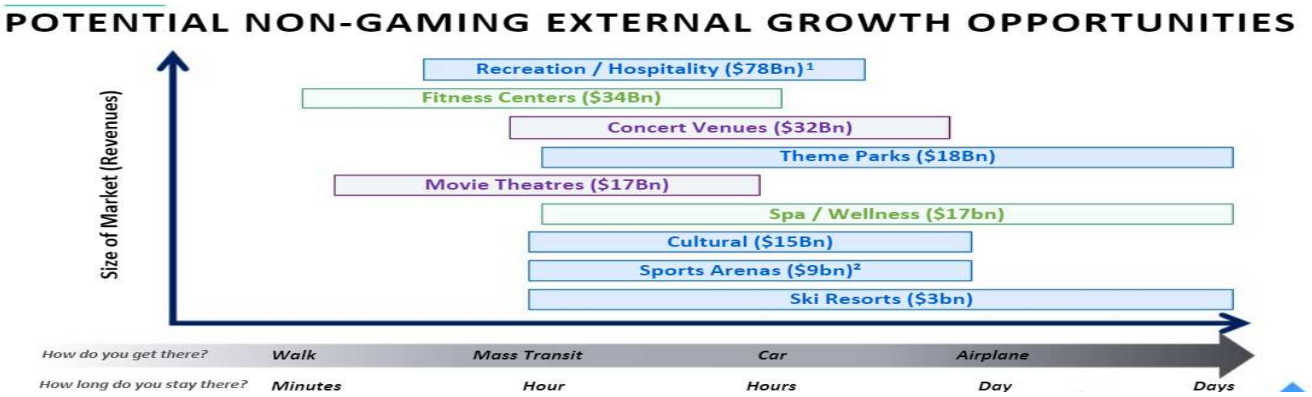
Americold (COLD) and **Terreno Realty (TRNO)** are two smaller Industrial REITS that screen well while **Duke Realty (DRE)** a $10B leader. COLD is a unique operator of temperature-controlled warehouses, an industry that is resilient and growing as the food industry evolves. TRNO is positioned in 6 key coastal markets and is best located among the logistics REITS. DRE trades at a discount valuation while offering solid growth prospects and a strong development pipeline. Logistic REITS have multiple tailwinds with positive growth forecasts as shown below. E-Commerce is causing a strong demand for incremental Industrial square footage. DRE has the best in class property portfolio and Amazon is its largest tenant.

	Correlation[1]	Growth Forecast	Trend
E-Commerce Sales	75% correlated to modern logistics facility [2] absorption	14-17%[3]	↑
Retail Sales[4]	45%	4.5-5.5%[4]	↗
Brick 'n Mortar Sales[4]	60%	3.0-4.0%[4]	↗
GDP	55%	3.0-3.2%[5]	↗
Inbound Port Traffic, Intermodal Rail, Retail Inventories, Industrial Production	60%	3.0-3.5%[6]	↗

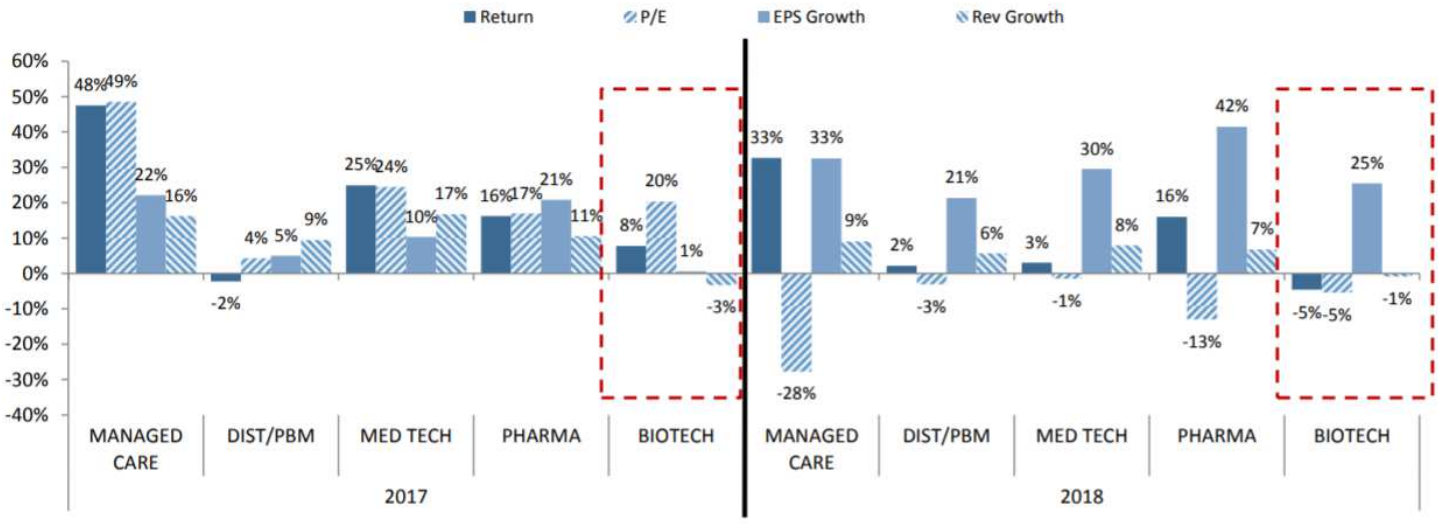


Medical Properties West (MPW) is a $6.2B Healthcare REIT trading 12.4X FFO with solid growth and a 5.9% dividend yield. Acute Care Hospitals account for 72.8% of revenues and Inpatient Rehab is 23.5%. MPW has been derisking its portfolio and screens above peers in the Healthcare space on most metrics.

VICI Properties (VICI) is an $8.265B attractive name in the Gaming/Hospitality REIT group, trading 14.2X FFO with strong FFO growth and a 4.8% yield. Its coverage ratios are one concern, at levels well below peers. VICI sees ample opportunities for growth in the gaming markets and is evaluating a lot of potential deals. VICI offers quality, above-average growth, and a nice yield for exposure to these markets.

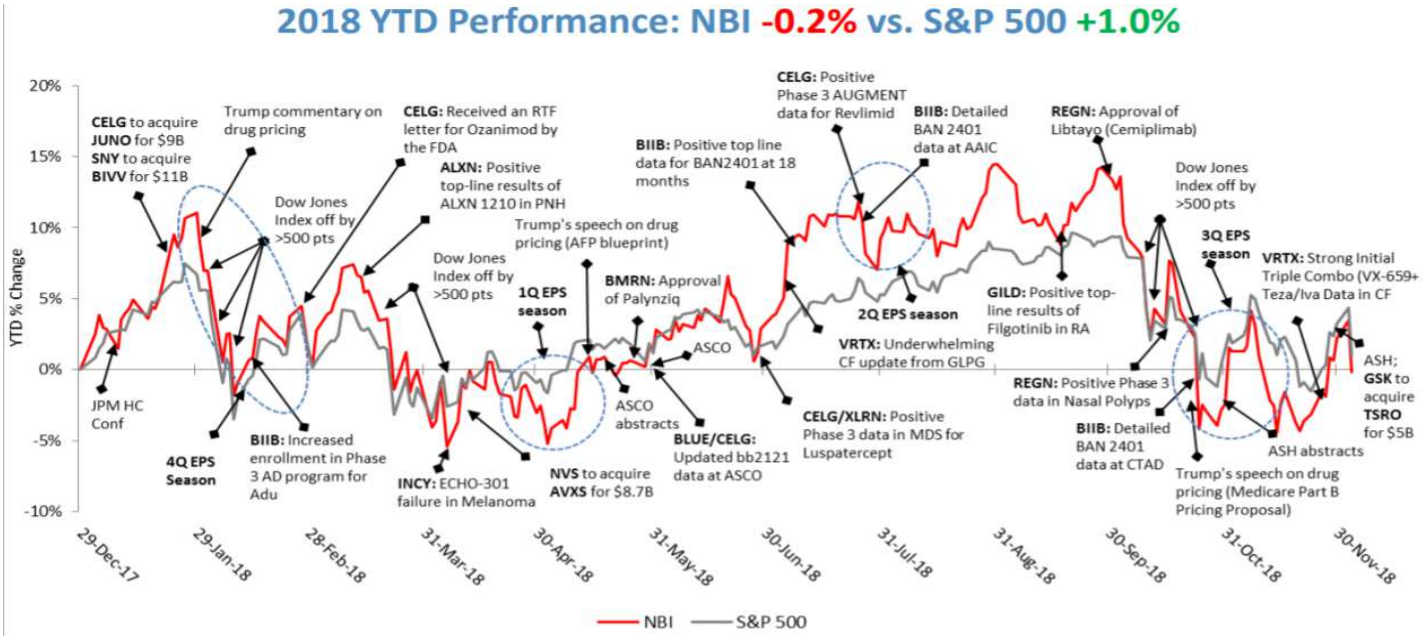


Healthcare: *Healthcare stocks were one of the more resilient sectors in 2018 currently +11% YTD. Biotech has struggled towards the end of the year with XBI down 5% in an overall risk-off move for markets. Health-Care Equipment (XHE) remained a bright spot at +16.5% YTD as positive tailwinds remain from technology advancements and an aging population. Healthcare Providers (IHF) stayed on a strong run gaining 20% YTD and a group seeing major consolidation as a continuing theme as the CVS/AET and ESRX/CI deals look to get through the DOJ and close in 2019. The Trans-catheter Mitral Valve (TMV) market is seen as one of the most important MedTech growth markets of the next decade, with Abbott (ABT) and Edward's (EW) best positioned. Tesaro (TSRO), a PARP play in Biotech, received a sizable premium in a $5.1B deal in Q4 and M&A remains a key theme in Biotech.*

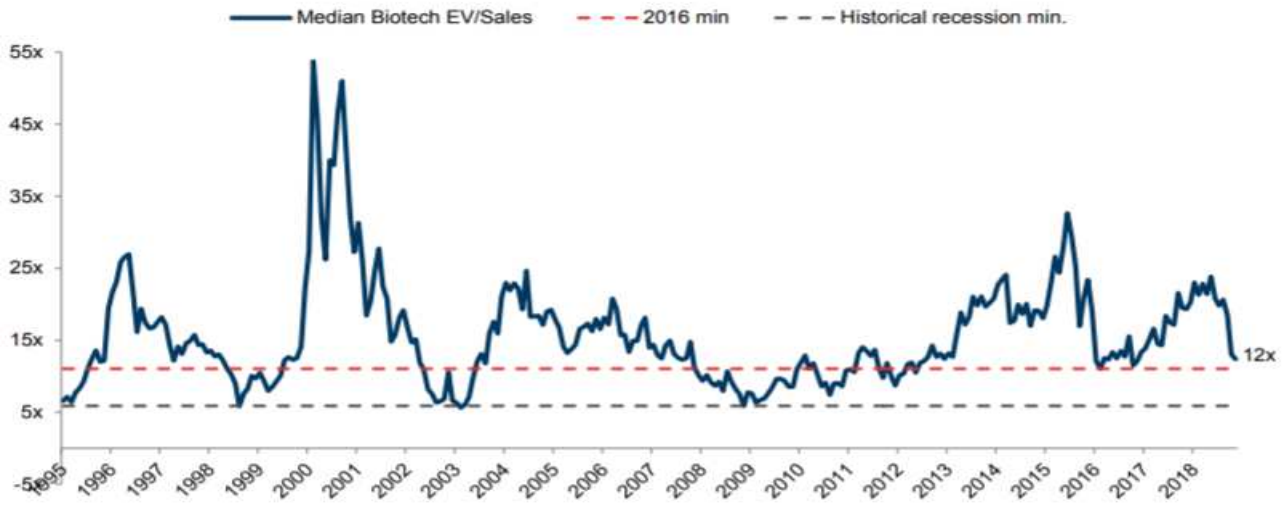


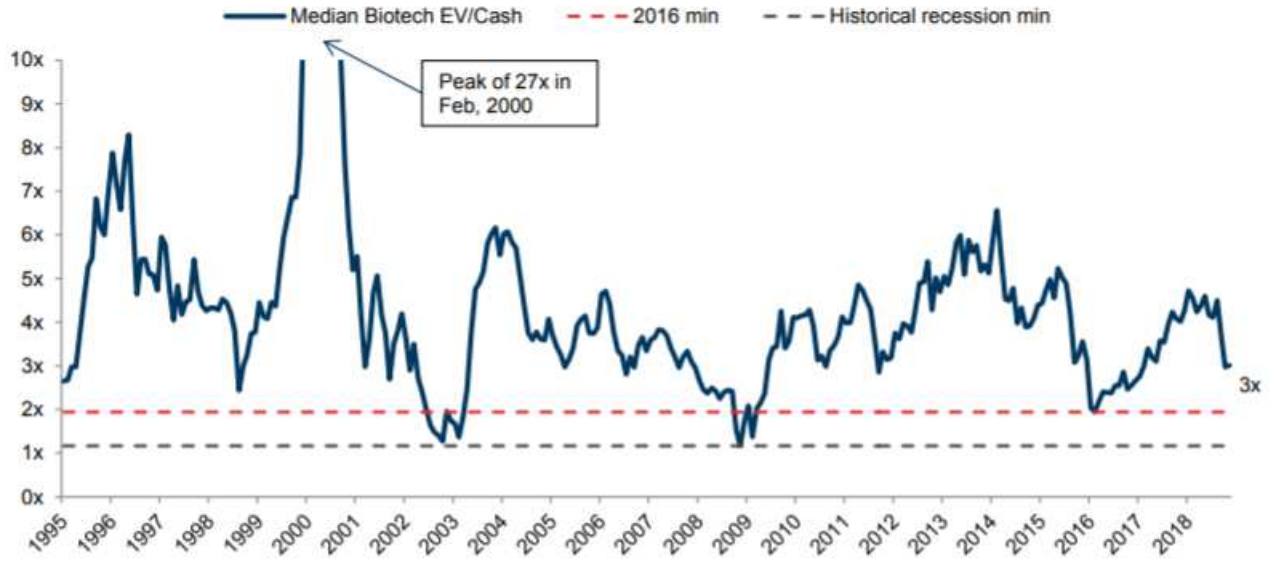
Biotech:

Components: *AMGN, GILD, NVO, BIIB, CELG, VRTX, REGN, ALXN, BMRN, INCY, GRFS, SGEN, SRPT, BGNE, JAZZ, ALNY, IONS, NBIX, NKTR, EXEL, BLUE, GLPG, AMRN, ALKS, SAGE, UTHR, LOXO, IMMU, FGEN, ARRY, EBS, AGIO, ICPT, LGND, ARGX, ALLO, AKCA, ACAD, ORTX, RGEN, ASND, ALLK, BPMC, RARE, GBT, HALO, MYOK, XLRN, XNCR, FOLD, ARNA, CORT, CRSP, RGNX, RETA, ATRA, DNLI, PTCT, ANAB, MDGL, INVA, ONCE, BHVN, RUBY, TBPH, ESPR, EDIT, CBM, VNDA, WVE, ENTA, PTLA, AIMT, ARWR, MRTX, GTHX, INSM, SGMO, XON, CDXS, QURE, CLVS, BOLD, PBYI, RVNC, NVAX, RTRX, AERI, GWPH, IRWD, MDCO, ZGNX*



In this group of 91 stocks over $1B in market cap, only a select few are set to earn a profit in 2018, which makes traditional valuation metrics like P/E difficult. EV/Sales is often used for companies with marketed products, that multiple saw a floor of 6X in Aug. 2002 and Nov. 2008 and 11X during the Feb. 2016 sell-off, and is back to 11X after reaching a peak of 23X. EV/Cash is often used for non-profitable, non-revenue generating names where valuations are driven by long-duration risky pipeline assets with net cash per shares a backstop.Risk-Adjusted-Value is one way to value early-stage Biotech companies, Market Potential*Market Share*Likelihood of Approval, though a lot of those inputs are subjective. The most important thing when analyzing Biotech companies is having an idea of important catalysts, which tend to driver share performance for the names yet to earn meaningful revenues, and we have a full Biotech preview later in the report. I tend to favor names in early stages of commercialization for drugs with large market potential showing robust growth trajectories for the next 1-3 years. The individual smaller names carry plenty of risk, but also offering alluring upside, and each name needs to be thoroughly researched. Cash positions for smaller Biotechs are important as well, an in depth study showed the most closely correlated variable with performance.





Goldman Sachs notes Amid macro concerns, rising interest rates, muted levels of M&A activity and potential changes to US drug pricing dynamics, the biotech sector has underperformed (NBI/XBI -2.75%/-8.25% vs. S&P -0.86% YTD) despite a number of new product cycles, innovative therapeutic modalities and pipeline catalysts that have generally played out as expected. Over the past 3 months, smid-cap biotech has sharply declined, with the Russell 2000 Biotech Index down >-20% since September on a general risk-off sentiment across the market despite unchanged fundamentals and positive catalysts. Given this backdrop, a key question into 2019 is on biotech valuation amongst all these moving pieces.

In 2018, 25 of these 91 names have dropped 22% or more YTD, while 31 have risen 25% or more, a very bifurcated industry where stock selection is perhaps most critical of all industries. The FDA was active approving 55 new drugs in 2018 compares to 46 in 2017 and 22 in 2016, the highest since the mid 90's. Valuations have been depressed to multi-year lows with large cap Bio leaders trading 11X FY19 compared to Pharma at 15X. Drug Pricing remains the major headwind as companies for years raised prices to boost results and now rely on volumes and innovation with new products. M&A once again underwhelmed in 2018 and saw a lot of buybacks near the end of the year. A JPM buy side survey sees SRPT, NBIX, SAGE, CLVS, AMRN and ARGX has the most likely 2019 M&A targets. Bio-Similar is another major theme impacting the Biotech sector. A strong USD weighs mostly on BMRN, ALXN, BIIB, and CELG. Celgene (CELG) was a longtime leader of this group and shares are down 32% YTD on patent cliff concerns causing a severe contraction in its trading multiples.

M&A activity could center on assets in "hot" therapeutic areas

Focus expected to remain on "hot" areas with high strategic value (based on company business models, business reports, etc.)

- **Oncology / Hematology:** Agios (AGIO), Allogene (ALLO), Array (ARRY), bluebird (BLUE), Clovis (CLVS), Deciphera (DCPH), Global Blood (GBT), G1 Therapeutics (GTHX), Halozyme (HALO), Incyte (INCY), ImmunoGen (IMGN), Nektar (NKTR), Puma (PBYI), Seattle Genetics (SGEN), Radius (RDUS), Rigel (RIGL)
- **NASH**: Galmed (GLMD), Madrigal (MDGL), Viking Therapeutics (VKTX)
- **CNS:** Acadia (ACAD), Neurocrine (NBIX), Sage (SAGE), Intra-Cellular (ITCI), Aptinyx (APTX)
- **Orphan disease:** Ascendis (ASND), Alnylam (ALNY), Amicus (FOLD), Audentes (BOLD), BioCryst (BCRX), BioMarin (BMRN), Crinetics (CRNX), Ionis (IONS), Orchard (ORTX), PTC Therapeutics (PTCT), Sarepta (SRPT), Solid (SLDB), Ultragenyx (RARE), Rubius (RUBY), United Therapeutics (UTHR), Vertex (VRTX)

The main innovation themes are Gene Therapy, Central Nervous System disorders with huge unmet medical needs, Cell Therapy, Oncology, and Orphan Diseases.

Select BTD Drugs to Watch in 2019

Drug	Company	Indication
Venetoclax	ABBV	Acute Myeloid Leukemia
Nuplazid	ACAD	Dementia-related psychosis
Givosiran	ALNY	Acute Hepatic Porphyria
Lumasiran	ALNY	Primary Hyperoxaluria Type 1
Tezepelumab	AMGN	Severe asthma
Braftovi + Mektovi + Erbitux	ARRY / LLY	BRAF V600E-mutant mCRC
EBV-CTL	ATRA	EBV-associated lymphoproliferative disease
LentiGlobin	BLUE	Beta-thalassemia Major
Val rox	BMRN	Hemophilia A
bb2121	CELG/BLUE	Relapsed/refractory multiple myeloma
JCAR017	CELG/JUNO	Relapsed/refractory aggressive large B-cell NHL
Voxelotor	GBT	Sickle cell disease
Yescarta	GILD	Refractory, aggressive NHL
SPK-9001	ONCE	Hemophilia B
Tafamidis	PFE	Transthyretin Cardiomyopathy
Dupilumab	REGN	Atopic dermatitis
Libtayo	REGN	CSCC
SAGE-547	SAGE	Post-partum depression
Elzonris	STML	BPDCN
VX-661/ivacaftor	VRTX	Cystic Fibrosis

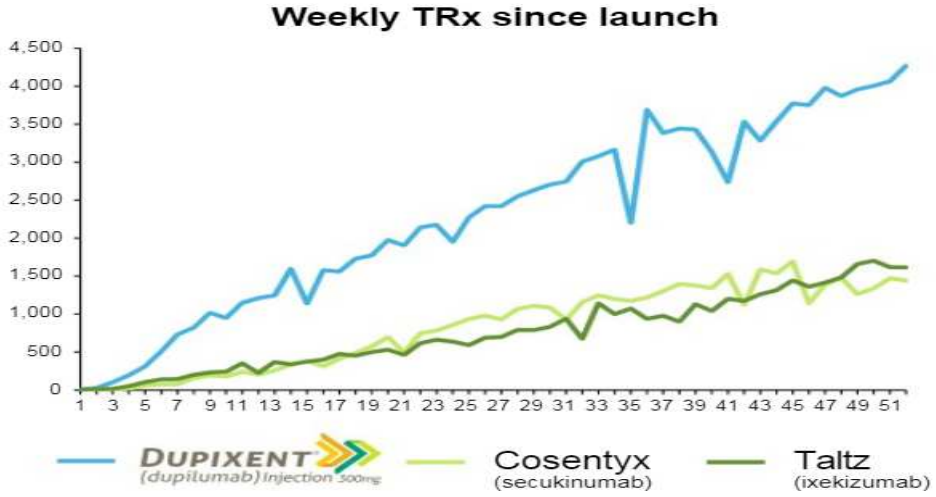
Potential Candidates for BTD in 2019

Drug	Company	Indication
AG-348	AGIO	Pyruvate Kinase Deficiency
NYX-783	APTX	Post-Traumatic Stress Disorder
Vosoritide	BMRN	Achondroplasia
Avacopan	CCXI	ANCA Associated Vasculitis and/or C3 Glomerulopathy
JCARH125	CELG	Relapsed/refractory multiple myeloma
bb21217	CELG/BLUE	Relapsed/refractory multiple myeloma
SD-101	DVAX	PD-1 Refractory Melanoma and / or Head and Neck Cancer
Tilsotolimod	IDRA	PD-1 Refractory Melanoma
Rilonacept	KNSA	Recurrent Pericarditis
Selinexor	KPTI	Relapsed/refractory DLBCL
Optune	NVCR	Mesothelioma
SPK-8011	ONCE	Hemophilia A
OTL-102	ORTX	X-Linked Chronic Granulomatous Disease
OTL-103	ORTX	Wiskott-Aldrich Syndrome
OTL-200	ORTX	Metachromatic Leukodystrophy
DTX301	RARE	Ornithine transcarbamylase deficiency
DTX401	RARE	Glycogen storage disease type 1a
REGN 1979	REGN	Relapsed/refractory NHL
Tavalisse	RIGL	wAIHA

There are only a dozen $10B+ Biotech stocks, and among them the best positioned into 2019 are:

Vertex Pharma (VRTX) remains a favorite large cap Biotech, shares outperforming this year at +15.7% YTD, and though trading at premium valuation levels of 40.9X Earnings and 16.3X Sales, it has rapidly been growing revenues since 2015 and seen numerous successful clinical trials. VRTX has a dominant position in the Cystic Fibrosis market and is developing medicines for pain and sickle cell as well. It will report VX-445 Phase 3 data in Q1 2019. VRTX operating margins have risen to 35% in 2018 from 17% in 2016. In 2019 launches of SYMDEKO and SYMKEVI are expected to drive growth while potential upside seen in reimbursement agreements in the UK and France. The triple combo data and filing will be key in 2019 while developments on any competition in CF have to be watched, but expect VRTX to pivot to other areas to drive further growth in the future. The triple combo has potential for peak sales of $6B in the US and TripleRx should reach the market in 2020.

Regeneron Pharma (REGN) has a $41.2B market cap and trades 16.8X Earnings and 6.5X Sales with shares flat YTD. REGN has posted strong revenue growth the past few years and sees 10% growth in 2019 while EPS growth seen slowing to 4.5% after a 32% growth year in 2018. Eylea has been REGN's top revenue earner and could see growth reaccelerate with the diabetic retinopathy indication coming online. REGN has an intriguing IO pipeline and as seen strength in its Dupixent launch which will expand to asthma. REGN is the perfect combination of having its lead horse drug Eylea, strong launches in new approved drugs, and a robust pipeline. REGN recently made inroads into hematology with REGN1979 showing encouraging results. Additional catalysts in 2019 are expected EU approval of Dupixent in asthma and Libtayo in 2Q19 and 1H19.

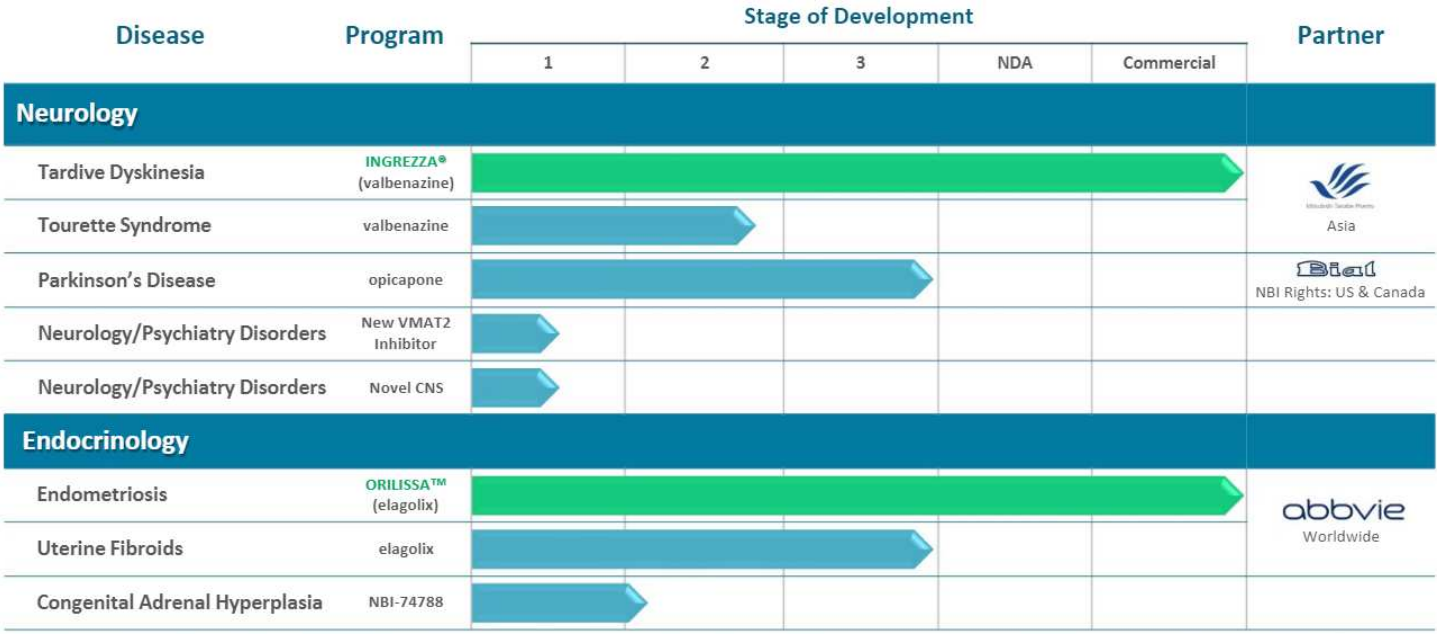


Then we have sixteen names in the $4B to $9B market cap range, favorites into 2019 are:

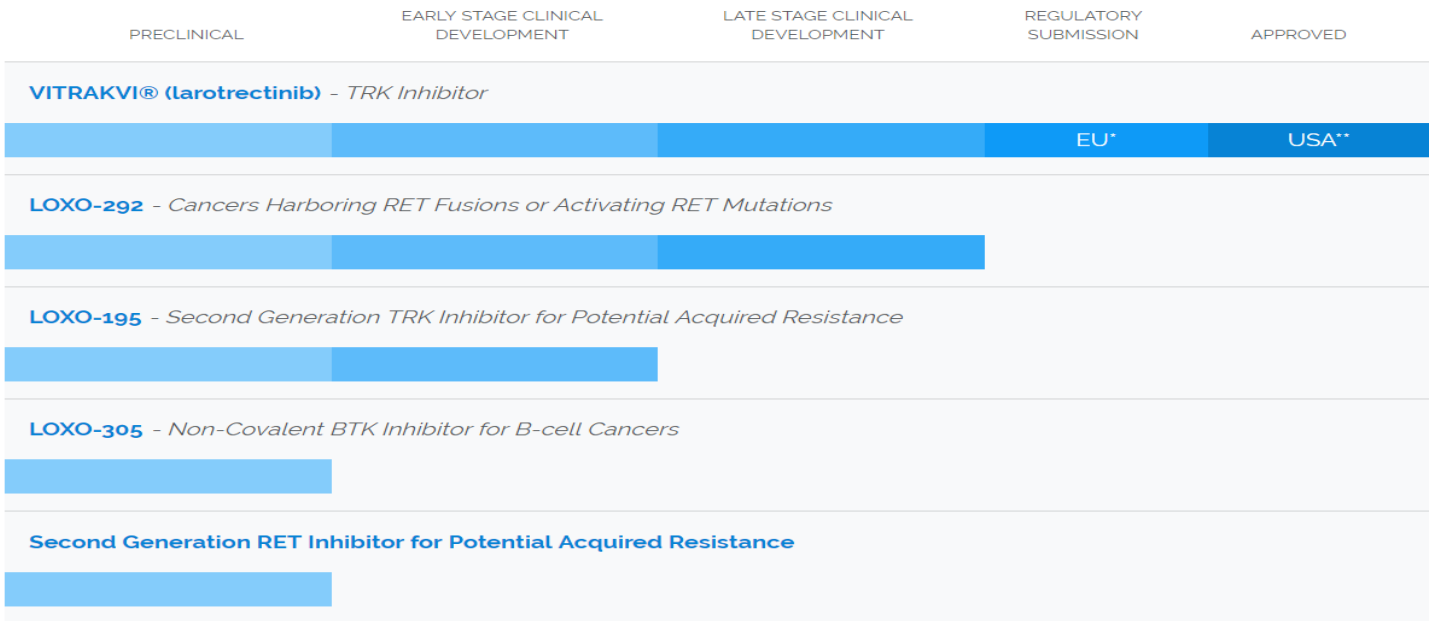
Exelixis (EXEL) has a $6.54B market cap and trades 16.85X Earnings and 8.8X Sales with shares -30% YTD. EXEL has seen revenues of $37M in 2015 rise to $817M in 2018 and sees $1.33B by 2021 with EPS expected to more than triple from 2017 levels. EXEL has a Jan. 2019 PDUFA for sNDA in L HCC and also COSMIC-311 pivotal trial is enrolling. EXEL

has over $600M in cash and seen a lot of success with its launches. CABOMETYX grew 75% Y/Y last quarter as the preferred choice in 2nd and 3rd line kidney cancer providing better potency and safety than I/O challengers. EXEL is running several programs investigating its cabozantinib in combination with I/O drugs. EXEL makes a lot of sense as a potential M&A target, and has 20,000 February $16 calls in open interest positioned for Jan. 2019 catalysts.

Neurocrine (NBIX) is a $6.85B Biotech focused on neurological disorders trading 43X Earnings and 16.5X Sales with shares -5.9% YTD after a late year fall on disappointing data from Valbenazine in children and adolescents with moderate to severe Tourette syndrome. NBIX has seen rapid revenue growth after an extremely successful launch of Ingrezza posting 977% growth in 2017 and 177% growth in 2018. It sees another 42% growth for 2019 and EPS jumping to $1.65/share from $0.16/share. NBIX has over $800M in cash and investments and ORILISSA was recently approved by the FDA adding another revenue generating asset. NBIX plans on filing a NDA for Opicapone for Parkinson's in Q2 with an anticipated 2020 launch. Phase 2 data for NBI-74788 for CAH in adults is expected in Q1 2019. NBIX has many programs while Ingrezza is not seen reaching peak sales of $1.9B until 2029 ($576M for FY19), so this is a long term growth story.



Loxo Oncology (LOXO) is a $4.3B Biotech that started earnings revenues in 2018 and sees 11.9% growth in 2019. LOXO shares are +66% YTD after multiple positive clinical developments. LOXO recently received accelerated approval of Vitrakvi and priced it at $32,800, the highest for a targeted/precision cancer therapy. The drug is seen to have peak sales potential of $1B by 2026 with LOXO receiving a 50/50 split with Bayer. The market will now be focusing on the rest of its pipeline after LOXO's first drug shattered the efficacy standard for targeted oncology therapy.



In the $2.5B to $4B market cap range we have another 18 stocks, and the best looking names include:

Fibrogen (FGEN) is a $3.6B Biotech working to treat unmet medical needs and saw 43% sales growth in 2018 with 40%+ seen in 2019 and 2020 as well. Roxadust results for anemia in CKD is the main catalyst for shares in 2019 while its Pamrevlumab has posted positive Phase2B data in IPF and promising data in pancreatic cancer. It is partnered with AstraZeneca and Astellas for Roxadust, and if successful I would think it could be an acquisition target. Management is targeting March/April 2019 for completion of the MACE analysis with a NDA likely to follow in June. FGEN is a bit of a binary play but with data presented in China/Japan the probability of success appears high.

Ascendis (ASND) is a $2.7B Biotech developed a human growth hormone with a Phase 3 readout for it expected in Q1 2019 with $10/$15 per share value on success which would also increase probability of M&A. The year ahead sets up as a key transitional year with value creation from the company's platform. ASND could capture 1/3 of the hGH market with peak sales potential of $1.2B. ASND has numerous other pipeline updates due for 2019 and early year momentum can carry it through 2019 as a top performer.

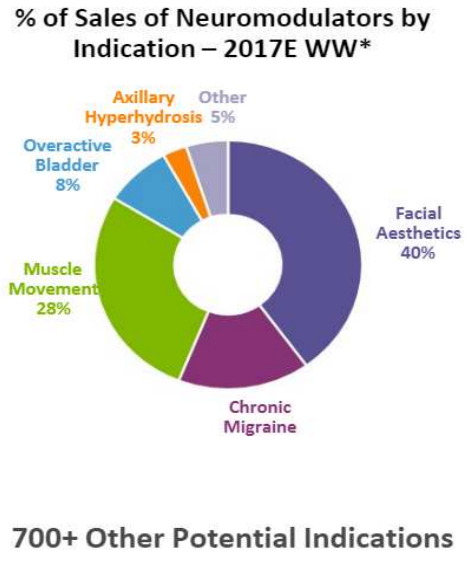
Internal Endocrinology Pipeline

PRODUCT CANDIDATE	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	POTENTIAL WW MARKET[1]	WW COMMERCIAL RIGHTS
TransCon hGH	Pediatric Growth Hormone Deficiency				> $3 billion[2]	ascendis pharma
	Adult Growth Hormone Deficiency					
TransCon PTH	Hypoparathyroidism				> $2 billion[3]	ascendis pharma
TransCon CNP	Achondroplasia				> $1 billion	ascendis pharma

Array Bio (ARRY) is a $3.53B Biotech trading 16.6X FY19 sales and shares performing well in 2018 up 23.9%. ARRY recently hit a significant milestone with their Braftovi + Mektovi launch in the US and in the earliest stages of commercialization. They also received approval in Europe. The company is also moving forward with trials for patients with BRAF-mutant mCRC and received breakthrough therapy designation from the FDA. They expect topline data in 1H19. ARRY has a deep pipeline with a lot of collaboration efforts. ARRY is another key catalyst play for 2019.

Then there is a massive group of 45+ names with $2.5B or less market caps, the more speculative group, and some interesting names are:

Revance (RVNC) is an $800M Biotech with shares -42% YTD that is not generating meaningful sales yet and trades 3.85x cash value. RVNC had a strong 2017 after reporting positive results from its Sakura Phase 3 trials for glabellar lines, and RT002 set up as a longer term threat to Allergan's Botox. Neuromodulators is a $4B global market set to nearly double by 2025. RVNC's RT002 is differentiated from other approved products in the space and now will attack other indications. RVNC has pulled back this year mainly due to a lack of catalysts and became a forgotten name, but at this valuation once again looks attractive.



	2018 – 2021	2022 – 2025	2026+
	COMMERCIAL LAUNCH	ADVANCE PIPELINE	ACCELERATE GROWTH
CLINICAL RESULTS	• Phase 3 in glabellar lines (open-label) & cervical dystonia • Phase 2 plantar fasciitis, upper limb spasticity & chronic migraine	• Phase 3 in upper limb spasticity & chronic migraine	• Phase 2 & 3 in new neuroscience indications
EXPECTED APPROVAL/ LAUNCH	• Glabellar lines (2020) • Cervical dystonia (2021/22)	• Plantar fasciitis • Upper limb spasticity • Biosimilar to BOTOX®	• Chronic migraine • New neuroscience indications
PARTNER/ FINANCIAL	• Biosimilar/Mylan • Partner ex-North America	• Achieve P&L profitability • Target Sales > $1 Billion	• Target Sales > $3 Billion

Wave Life Sciences (WVE) is a $1.48B Singapore based Biotech targeting genetic defects and trades 7X cash. It has a diverse pipeline and targeting a lot of CNS disorders, a key growth market. WVE received a $170M payment from Takeda, its key partner, earlier this year that validated the CNS candidates. WVE has a catalyst-rich 2019 with proof of concept data in Huntington's in 1H as well as safety/efficacy of its DMD treatment.

Pipeline spanning multiple modalities, novel targets

CNS	TARGET	ESTIMATED U.S. PREVALENCE*	MECHANISM	DISCOVERY	CANDIDATE	CLINICAL	WAVE'S COMMERCIAL RIGHTS	PARTNER
Huntington's disease	mHTT SNP1	~10k / ~35k	A	●	●	Phase 1b/2a	50% Global	Takeda
Huntington's disease	mHTT SNP2	~10k / ~35k	A	●	●	Phase 1b/2a	50% Global	Takeda
Amyotrophic lateral sclerosis	C9orf72	~1,800	A	●	●		50% Global	Takeda
Frontotemporal dementia	C9orf72	~7,000	A	●	●		50% Global	Takeda
Spinocerebellar ataxia 3	ATXN3	~4,500	S	●	○		50% Global	Takeda
CNS diseases	Multiple†		○	●	○		Milestones & Royalties	Takeda
MUSCLE								
Duchenne muscular dystrophy	Exon 51	~2,000	E	●	●	Phase 1/OLE	100% Global	—
Duchenne muscular dystrophy	Exon 53	~1,250	E	●	●		100% Global	—
Duchenne muscular dystrophy	Exons 44, 45, 52, 54, 55	~1,500	E	●	○		100% Global	—
Neuromuscular diseases	Multiple		○	●	○		100% Global	—
OPHTHALMOLOGY								
Retinal diseases	RHO, USH2A, ABCA4, CEP290	~10,000	○	●	○		100% Global	—
HEPATIC								
Metabolic liver diseases	APOC3 and Multiple (4)‡		S	●	○		Milestones & Royalties	Pfizer

BioHaven (BHVN) is a $1.55B Biotech with shares +35% YTD and trading 9.2X cash, not yet earnings revenues. BHVN reported positive results in December for its rimegepant study, and also for its Zydis trial. BHVN is focused on the migraine market and rimegepant could reach $1B+ peak sales. Its Glutamate Platform is also targeting Alzheimer's and Anxiety for with ongoing Phase 2/3 trials. It sees having 3 marketed drugs by 2021, so this can become a commercial launch story.

BIOHAVEN CORPORATE OVERVIEW

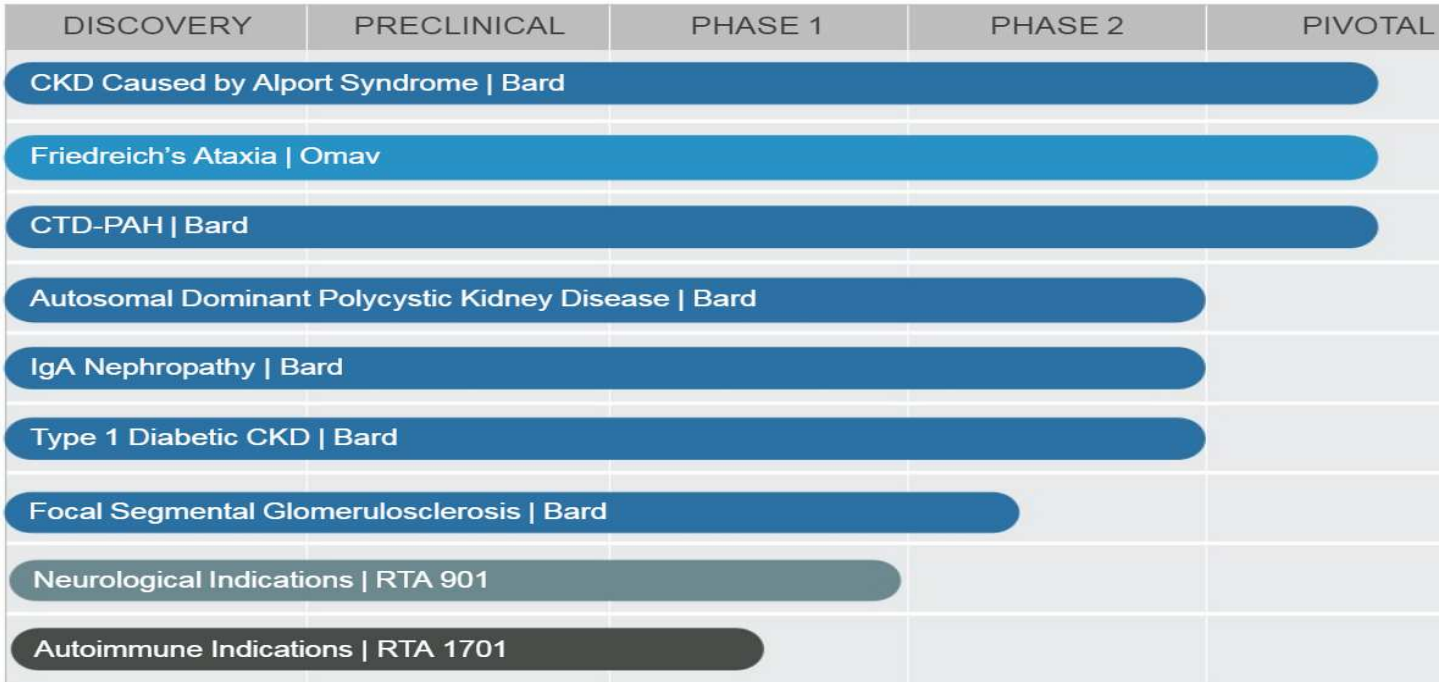
CGRP PLATFORM
- 2 positive Phase 3 acute treatment trials
- BHV-3500 anticipate Ph 2/3 start 1H2019
- **Rimegepant: submit NDA in 2019 for acute treatment of migraine**

GLUTAMATE PLATFORM
- Initiate Phase 2/3 trials in Alzheimer's, ataxia, GAD, and OCD
- **Nurtec: file NDA for ALS in 4Q2018**

MPO PLATFORM
- **Neuroinflammation**
- Phase 2 in Multiple System Atrophy (MSA) Completed by AZ[1]
- **BHV-3241: Commence Phase 3 in 2019**

Acceleron (XLRN) is a $2.2B Biotech targeting rare diseases trading 7.2X cash value with revenues set to start in 2019 with 290% Y/Y growth. Luspatercept is seeking to provide a better treatment for anemia than peers Amgen (AMGN)'s Epogen and Pfizer's (PFE) Retacrit. XLRN has said that the US/EU addressable market for those with lower-risk MDS (MEDALIST) is over 40,000 while those with beta-thalassemia (BELIEVE) is over 20,000. They think their total addressable market among all of their anemia drugs is 115,000, a potential multi-billion dollar brand. The company's sotatercept is under the radar and could become the first disease modifying agent in pulmonary arterial hypertension, though topline data for the Pulsar trial not expected until 1H 2020. Celgene is a notable holder of a $300M stake.

Reata Pharma (RETA) is a $1.95B Biotech trading 5.2X cash without significant revenues with its lead product targeting chronic kidney disease caused by Alport syndrome. RETA has a deep pipeline with three pivotal studies and many expansion opportunities. Bardoxolone is being developed in five rare forms of chronic kidmey disease. CARDINAL is a global Phase 2/3 trial of Bard for treatment of Alport Syndrome. The company is addressing kidney disease caused by several rare conditions, many with no approved therapies. Recent data point to a differentiated, favorable efficacy & safety profile, not only for AS-CKD, but we believe also read on the PoS in other CKD indications, & bode well for larger more advanced trials.

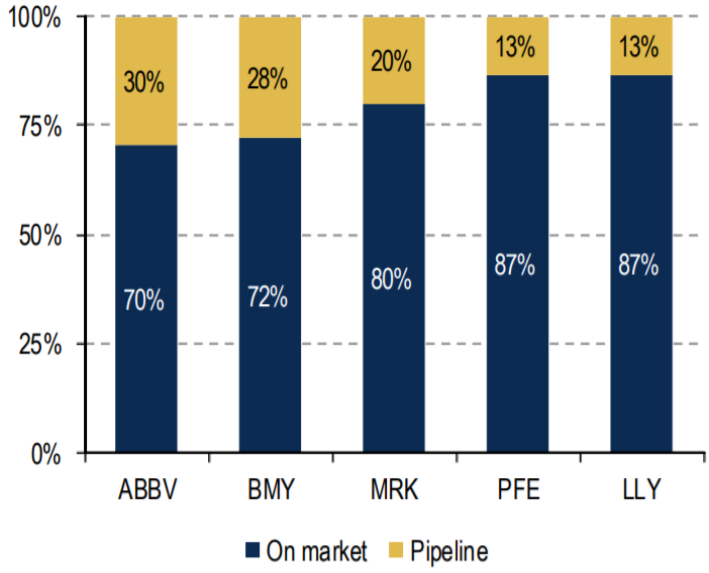


Pharma, Drugs, and Generic:

Components: *ABBV, PFE, NVS, MRK, JNJ, LLY, SNY, AZN, GSK, BMY, HRTX, TEVA, ENDP, MYL, BHC, PRGO, AGN, ZTS, ELAN, HZNP, PCRX, MNK, SUPN*

Pharma was a real bright spot most of the year with very strong performance from Merck, Eli Lilly, and Pfizer during the year while AbbVie (ABBV) and Bristol Myers (BMY) lagged. J&J was having a strong year as well until a December report came out regarding its cover-up of asbestos in baby powder. Smaller cap names Horizon (HZNP) and Heron (HRTX) led performance each up more than 35% YTD and Zoetis (ZTS) put in another solid year in animal health. Mylan and Perrigo were the weakest performers as headwinds persist for generic drug makers.

Pharma has benefitted from the markets move to safety while having less pricing concerns than Biotech companies, manageable patent expiries, strong pipelines and new product launches, and M&A optionality. The major players have significant cash positions and strong balance sheets to target growth through Biotech acquisitions with the industry trading well below historical valuations after recent weakness.



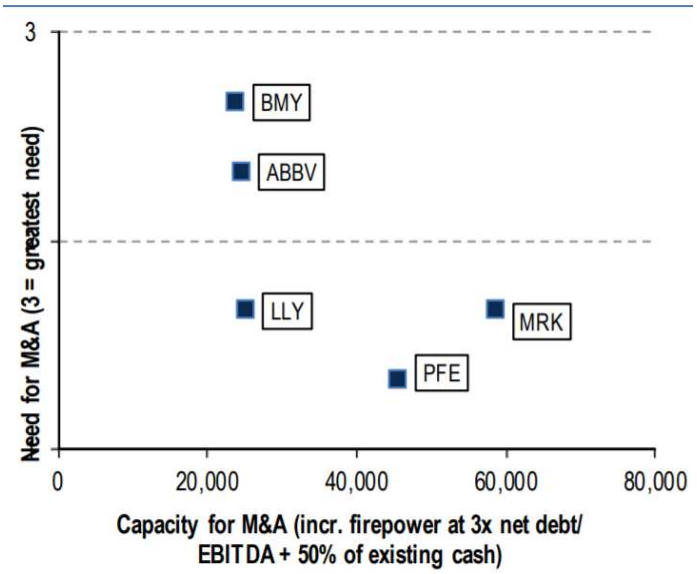
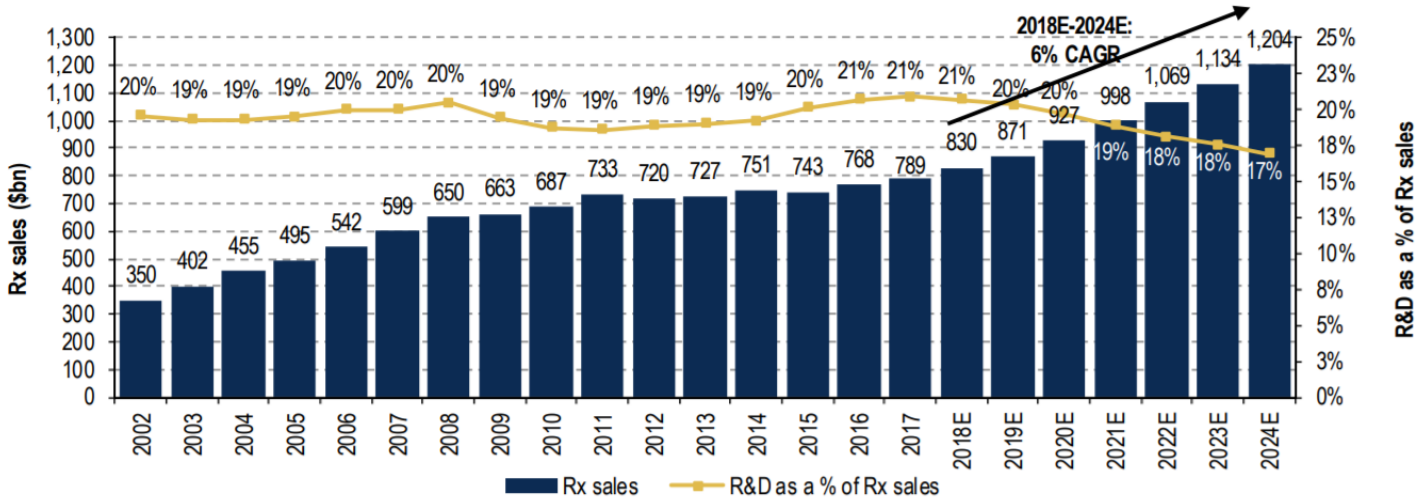


Figure 23: 1H19 Clinical Catalysts in US Pharmaceuticals

Company	Ticker	Drug	Catalyst Description (Phase 3 Data unless otherwise stated)	Timing
Pfizer Lilly	PFE/LLY	tanezumab	Chronic pain (osteoarthritis and low back pain)	1H19
Bristol-Myers Squibb	BMY	Opdivo + chemo	1L NSCLC (CheckMate 227; Pt. 2: OS data PDL1+)	1H19
Allergan	AGN	rapastinel	MDD (adjunctive therapy)	1H19
Pfizer	PFE	PF-04965842 (JAK)	Atopic dermatitis	1H19
Pfizer	PFE	gene therapy	DMD (early data on first few patients in therapy)	1H19
MERCK	MRK	Keytruda	1L gastric (KEYNOTE-062, mono/combo)	1H19
MERCK	MRK	Keytruda	2L+ HCC	1H19
MERCK	MRK	Keytruda	SCLC (KEYNOTE-064)	1H19
AstraZeneca MERCK	AZN/MRK	Lynparza	1L pancreatic (POLO)	1H19
AstraZeneca Lilly	AZN/LLY	Imfinzi/Treme	1L NSCLC NEPTUNE OS data	1H19
Lilly	LLY	Tradjenta	Diabetes, Type 2 (CAROLINA CV outcomes)	1H19
abbvie Johnson&Johnson	ABBV/JNJ	Imbruvica	Pancreatic cancer	1H19
Galapagos	GLPG	filgotinib	Rheumatoid arthritis (FINCH 1 and FINCH 3)	1H19

Chart 11: Prescription (Rx) sales by the top 500 pharma and biotech companies (2002-2024E)

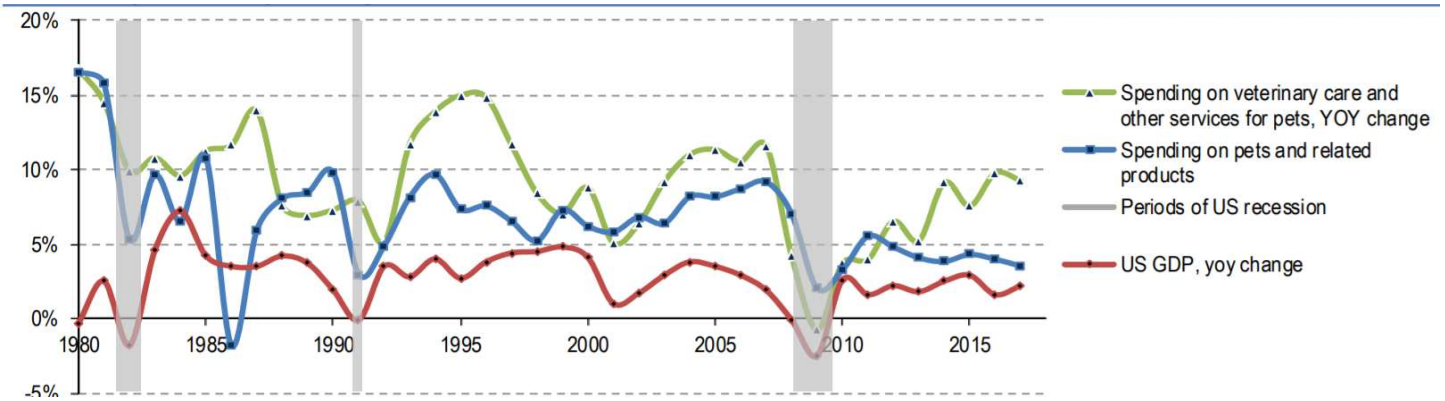


Novartis (NVS) with a $224B market cap trades 15.9X Earnings, 4.25X Sales and yields a 3.4% dividend. NVS is seeing 4% topline growth in 2018, its best year of growth since 2011 and sees a strong path ahead of EPS growth. Novartis is in a strong product cycle and has a lot of potential upside catalysts in 2019. It has 13 new products expected to generate $17B in incremental sales through 2023. NVS will have catalysts such as AVXS-101 for spinal muscular atrophy in Q2 with $4B peak sale potential, Entresto's PARAGON results in Q3 with $3B peak sales potential, Mayzent approval in secondary progressive MS in March with $2.8B peak sale potential, Ofatumab Phase 3 data in relapsing MS, Fevipiprant Phase 3 data in 2H19, and Approval/Launch of RTH258 in wet-AMD mid-year. NVS also will be spinning off Alcon in 1H19. Novartis brought in a new CEO in Feb. 2018 that is focused on innovation and cost controls. He has already divested the JV in the GSK consumer business, got rid of problematic Sandoz US oral solids and dermatology business, and did a big gene therapy deal for Avexis. NVS is a top Pharma growth story looking a few years out.

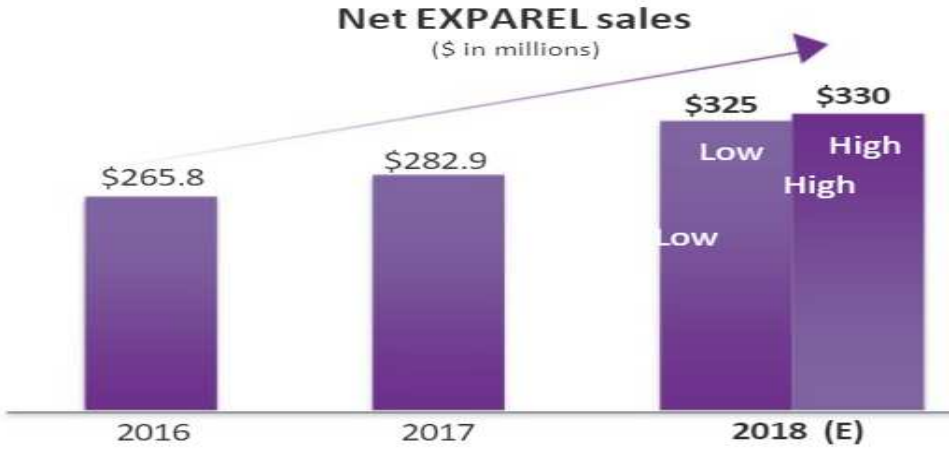
Table 6: Novartis sales drivers 2018-2023E

Product	Mechanism	Indication	Launch date	Sales 2018E	Sales 2023E	Peak sales 2025E	CAGR 18-23E	$ incremental growth 18-23E	% Incremental growth 18-23E
Cosentyx	Anti-IL17 mAb	(Psoriasis, PSA, AS)	2Q15	2,858	4,706	5,061	10%	1,847	18%
Entresto (LCZ696)	ARB/ NEP antagonist	HF-REF	3Q15	1,001	2,962	3,252	24%	1,962	19%
Entresto PARAGON	ARB/ NEP antagonist	HF-PEF	3Q15	0	900	1,500	n/a	900	9%
AVXS-101 Type1	Gene therapy for SMN1 Gene	Spinal muscular atrophy	3Q19	0	1,149	1,036	n/a	1,149	11%
AVXS-101 Type2/3	Gene therapy for SMN1 Gene	Spinal muscular atrophy	3Q19	0	1,029	1,321	n/a	1,029	10%
Mayzent/BAF312	S1P receptor modulator	SPMS	1Q19	0	1,300	1,794	n/a	1,300	12%
Ofatumumab	anti-CD20	MS	1Q19	0	1,300	1,950	n/a	1,300	12%
RTH258 (ESBA-1008)	anti-VEGF	Wet AMD	3Q19	0	1,822	2,653	n/a	1,822	17%
Aimovig	CGRP inhibitor	Migraine	3Q18	12	750	827	128%	738	7%
Fevipiprant/QAW039	DP2 blocker	Asthma	3Q18	0	500	790	n/a	500	5%
Kymriah.	CAR-T	DLBCL	2Q18	12	1,280	1,717	154%	1,268	12%
Kymriah	CAR-T	ALL	1Q18	79	341	399	34%	263	3%
Kisqali (LEE011)	CDK4/6 inhibitor	HR+,HER2- metastatic breast cancer	2Q17	270	1,480	1,663	41%	1,210	12%
Alpelisib/BYL719 fulvestrant	PI3Kα inhibitor	Breast cancer	4Q19	0	600	814	n/a	600	6%
Crizanlizumab/SEG101	PI3Kα inhibitor	Sickle cell disease	4Q19	0	400	600	n/a	400	4%
ACZ885 (Canakinumab)	IL-1B antibody	NSCLC	4Q19	0	400	800	n/a	400	4%
Total driver sales				**4,231**	**20,920**	**26,179**	**38%**	**16,689**	**160%**
Total pharma sales				**34,861**	**45,298**	**48,419**	**5%**	**10,436**	**100%**
% Pharma sales				**12%**	**46%**	**54%**			

Zoetis (ZTS) is the animal health leader with a $43.6B market cap trading 25.6X Earnings, 7.6X Sales and 35.2X FCF. It announced a key deal in May to acquire Abaxis. Companion Animal segment continues to be the major growth driver for the company. The company announced a $2B buyback in December and raised its dividend as capital deployment becomes a key factor. ZTS is best positioned in the strong animal health market with robust profitability and cash flows. It has growth opportunities with new products and also room for further long term margin expansion.



Pacira Pharma (PCRX) is a $1.94B specialty pharma with its lead product EXPAREL, an opioid alternative, and trades 32.3X Earnings. PCRX is seeing 16% topline growth in 2018, best year since 2015, and forecasting 15% growth in 2019 while EPS is on a robust growth path to $2/share in 2020 from $0.21/share in 2017. PCRX also has $9/share in cash. EXPAREL has been seeing significant growth and a recent partnership with J&J boosted results expanding opportunities. PCRX has a big growth opportunity with expanded indications for EXPAREL. With the ongoing Opioid crisis in the US, PCRX is positioned to provide an alternative and is seeing strong sales momentum.

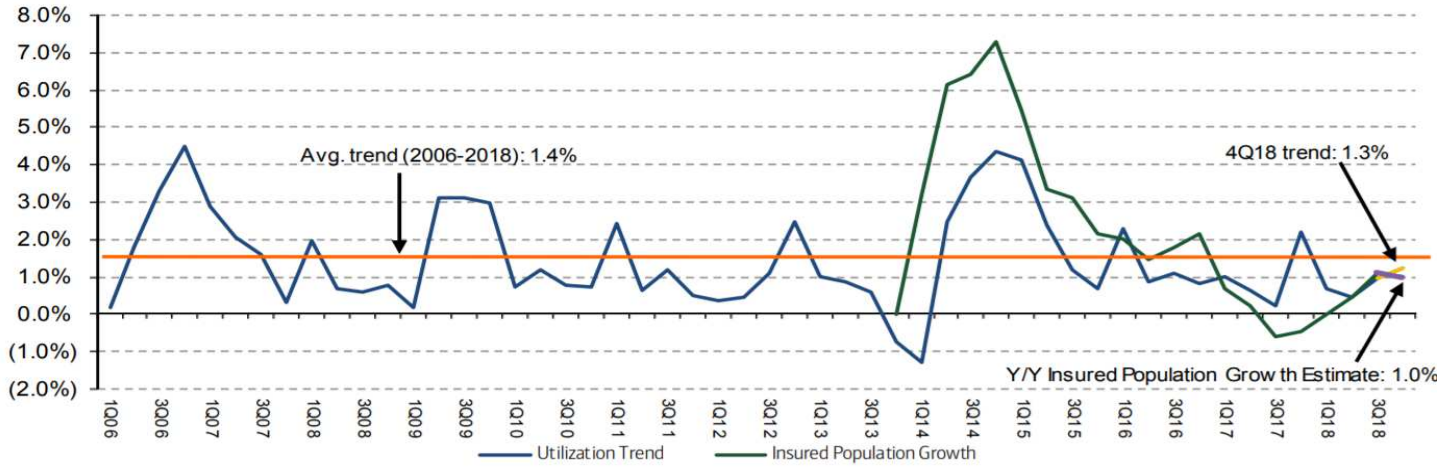


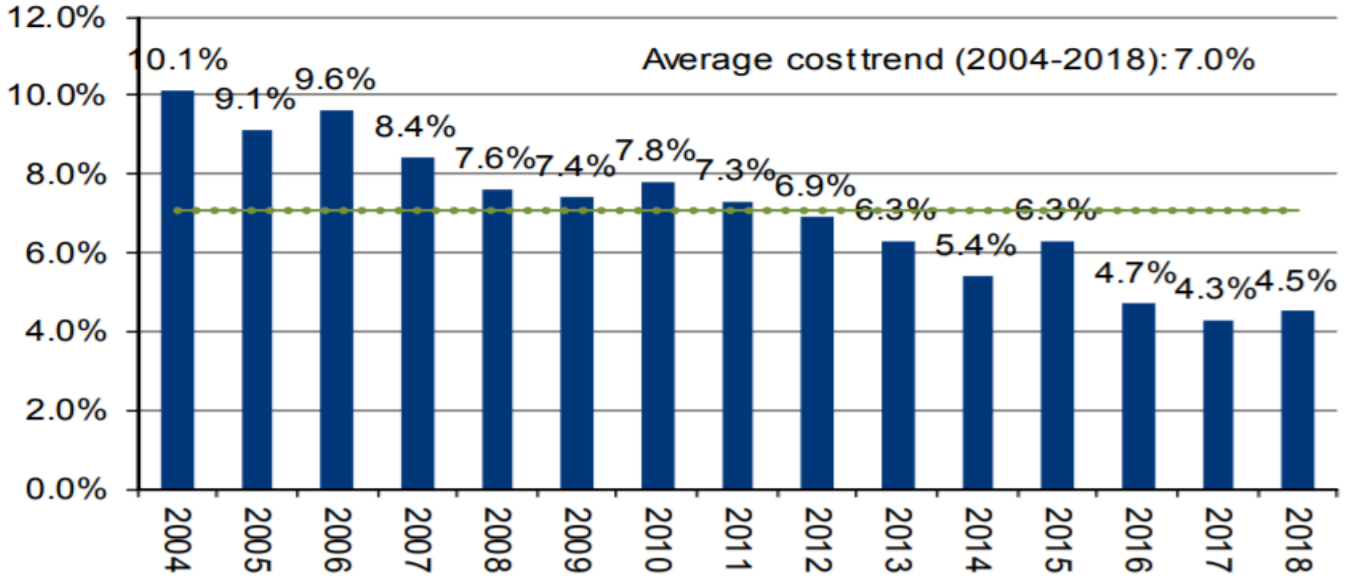
Managed Care, Hospitals, Distributors and Labs/Testing:

Components: *EHTH, IDXX, NEOG, QDEL, SRDX, VIVO, UNH, CVS, ANTM, ESRX, CI, HUM, CNC, WCG, MOH, MGLC, HIIQ, CHE, AMED, LHCG, ADUS, HCA, UHS, EHC, THC, SEM, SGRY, CYH, ENSG, BKD, NHC, TMO, IQV, A, LH, DGX, PKI, EXAS, BIO, ICLR, PRAH, CRL, BRKR, SYNH, GH, GHDX, MEDP, NTRA, NVTA, HSKA, FMS, DVA, MD, ACHC, USPH, PAHC, TVTY, PRSC, ILMN, MYGN, QGEN, WAT, HOLX*

This group performed very well in 2018 with 45 of the 57 names positive YTD led by 100% gains in home health leaders AMED and ADUS. Diagnostics remains a hot space with GHDX, SRDX, and NTRA some top performers. The managed care names had yet another strong year with each around +20% YTD. Weakness was mainly in specialized services names like FMS, MD, and DVA and the two big Lab plays DGX/LH both are down 13% YTD.

In Managed Care we have seen benefits from consolidation and the overall move to a higher number of insured citizens. The latest Gallup Well Being Index showed a 12.2% uninsured rate. The outlook for 2019 looks to be positive with surveys pointing to a stable pricing environment. Cost trends have come in lower than initial guidance every year since 2010. Centers for Medicare and Medicaid Services (CMS) Office of the Actuary previewed an important component of Medicare Advantage benchmark rates for 2020. Fee-For-Service (FFS) United States Per Capita Costs (USPCC) are expected to grow by 3.86% in 2020 compared to the 2019 FFS USPCC projection used to establish the 2019 Medicare Advantage benchmarks in April. This is slightly below the 4% implied 2020 trend from the final 2019 rate notice, but still an overall strong rate. Industry exchange enrollment is expected to be down 4-5% in 2019 due to the repeal of the individual mandate and expansion of short term plans. United Health (UNH) is a clear industry leader and provided a very optimistic view at its November Investor Day. Recent survey results also are showing Q4 weakening volumes in hospitals, a positive for MCOs.

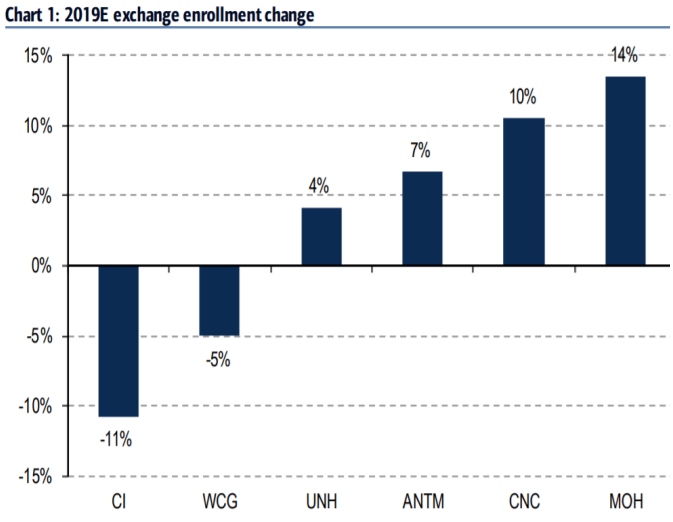


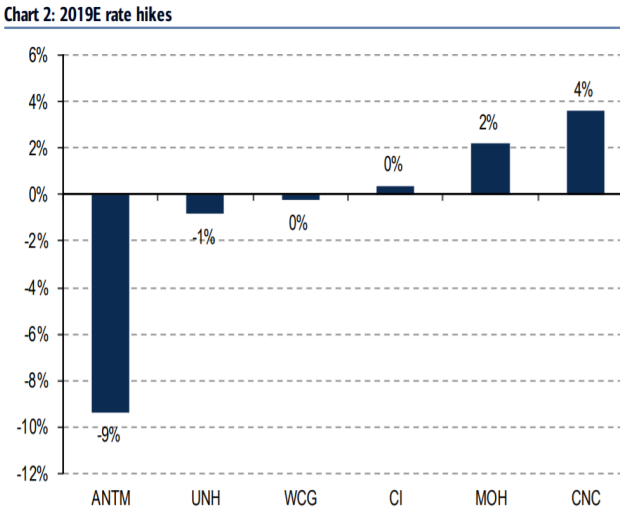


Source: Milliman Medical Index (MMI)

United Health (UNH) has a $262B managed care leader with shares +20% YTD in a strong uptrend and trading 18X Earnings with a 1.36% dividend yield. UNH is a rare mega cap offering long term 8-10% topline growth CAGR and 10-15% EPS growth. UNH remains in the early inning of a long growth cycle and also expects further margin expansion. Its Optum unit also continues to drive substantial growth. It estimates 1 trillion in annual US health care spending on people not in managed care. UNH is as well a run company as there is in the sector and should be a core large cap growth holding.

Centene (CNC) is the other favorite in managed care with a $26.6B market cap trading 15.25X earnings and 15X FCF. CNC also screened well last year and shares are +26% YTD with a 24% revenue growth year and 40% EPS growth. CNC sees a long outlook of above-average growth and is seeing strong enrollments and pricing into 2019. It is winning in existing markets and also in new markets like Iowa and New Mexico. Centene Forward is an initiative focused on improving the company with up to $500M in savings expected while improving margins. CNC is building its Medicare Advantage business, increasing its footprint in individual exchange markets and increasing specialty offerings. It is an impressive company in a strong and growing industry.





In Home Health & Long-Term Care the aging US population remains a key growth theme. CMC recently released the final 2019 Medicare home health payment regulation calling for a +2.2% rate update, the best in 11 years. The new payment model, PDGM, is seen as a minor headwind with budget cuts to the group.

LHC Group (LHCG) is the favored name trading 15.7X EBITDA compared to AMED at 20.1X and the latter +135% YTD while LHCG is +62% and faces lesser budget cut headwinds. ADUS remains an attractive small cap growth story in the group as well. The home health business is benefitting from a transition to value-based reimbursement and seen as a

lower cost of care with higher quality. Market shares gains, acquisitions, and joint ventures with hospitals are all growth levers. LHCG announced a deal for Almost Family (AFAM) back in November 2017 and has seen positive synergies, margins, and admission trends.

National Healthcare Corp (NHC) is a $1.2B provider of services to healthcare facilities trading 30.15X FCF with a 2.5% dividend yield. It is a relative unknown without analyst coverage or a lot of information but it screened well in this group and shares with momentum, +30% YTD.

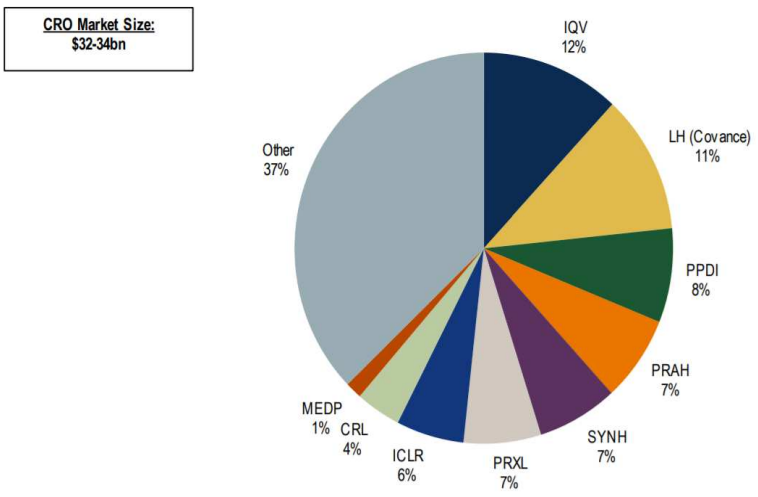
In the Hospital sub-group there were some strong performers in 2018 with HCA, THC and EHC though Q4 performance is lagging due to slower hospital volumes as well as slower birth rates. Q1 tends to reap benefits of flu related visits.

HCA Health (HCA) is the clear leader of the group although UHS is fairly attractive as well. The $45B leader trades 12.5X Earnings, 0.98X Sales and 17.7X FCF with a 1.1% yield. HCA is seeing 5-7% revenue growth and better admissions trends to peers. It operates a diversified set of facilities and services. A favorable Medicare backdrop as well as contributions from a string of acquisitions sets HCA up well for 2019.

In Specialized health services **DaVita (DVA)** is the only large cap worth a look on valuation trading 12.3X Earnings while still having a stable growth outlook. It will be selling the DaVita Medical Group and expected to deploy capital with potential to repurchase 30% of its shares over the next 18 months.

US Physical Therapy (USPH) is a $1.37B small cap play that trades fairly rich at 39.1X Earnings and 23.7X EBITDA but operates in a strong niche with a strong growth outlook. It is the only pure play for PT clinics and is the 3rd largest operator. The US Rehab market is estimated at $30B with favorable demographics such as aging and obese population. It operates in a highly fragmented market with plenty of opportunity to expand. USPH offers a strong balance sheet and cash flows with a history of returning capital to shareholders.

The largest and most exciting sub-group are the labs and diagnostics with preventative medicine in focus as a major driver of savings in the healthcare system. Industry fundamentals in CROs (Contract Research Organizations) have been very strong and there has been a wave of consolidation. The group is benefitting from BioPharma R&D spend, strong biotech financing activity and a robust drug pipeline. According to EvaluatePharma, global biopharma R&D spend is projected to reach $172bn in 2018. Out of this, approximately two-thirds, about $112-117bn, is allocated to drug development, which is the total market opportunity for CROs. The CRO market size is the drug development spend that is outsourced and estimated at approximately $33bn and growing at 5-7% annually. The net book-to-bill ratio measures the relationship between net orders received and net service revenues recognized by a CRO. It is calculated by dividing net new business wins by net service revenue recognized (or earned) during the same period of time. In general, a ratio greater than one indicates that more orders were received than billed, which typically reflects healthy demand for services. Conversely, a ratio below one might suggest soft demand for services. The Biotech sector has ample cash and continues to spend, positive for both the CROs and Life Science Tools segments. LH/DGX have both recently cut outlooks due to more test insourcing by hospitals, PAMA impact, more claim denials and other factors. Those two are likely best to avoid as there are much better growth stories in this group.



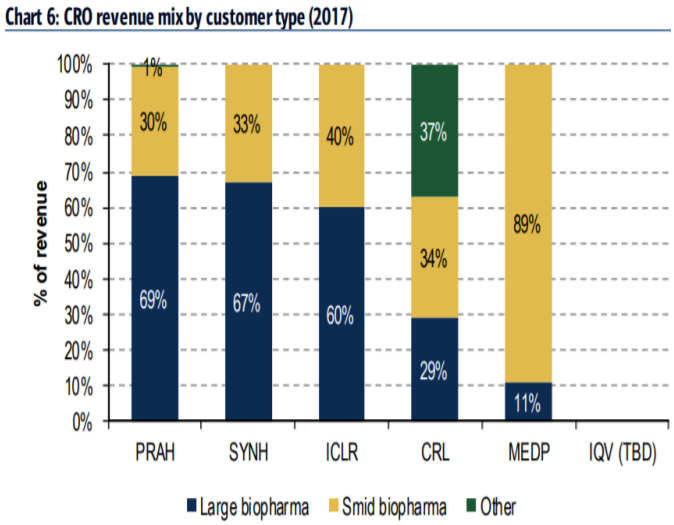
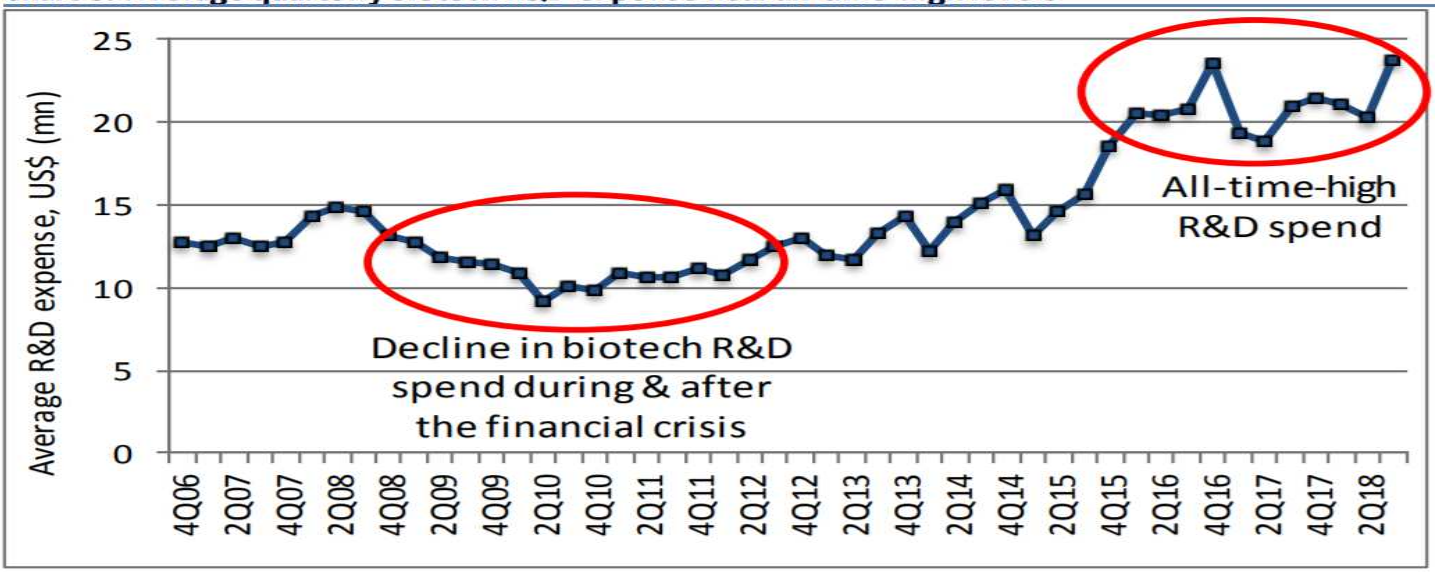
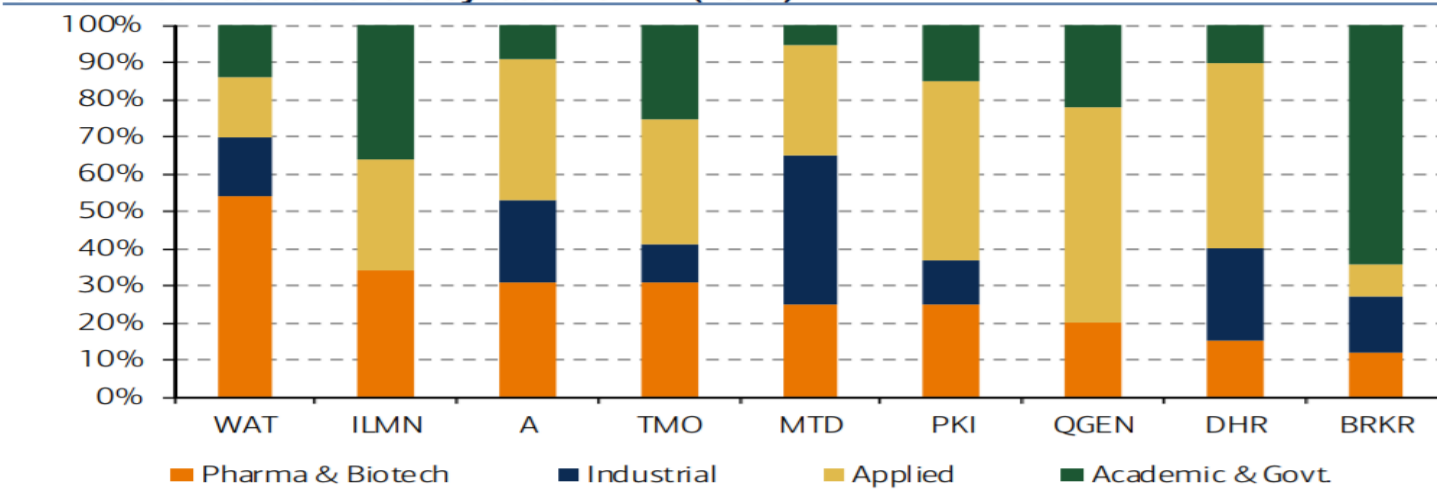


Chart 5: Average quarterly biotech R&D expense near all-time-high levels



Life Science Tools remains an attractive industry or growth. There are a number of excellent investments in this group.

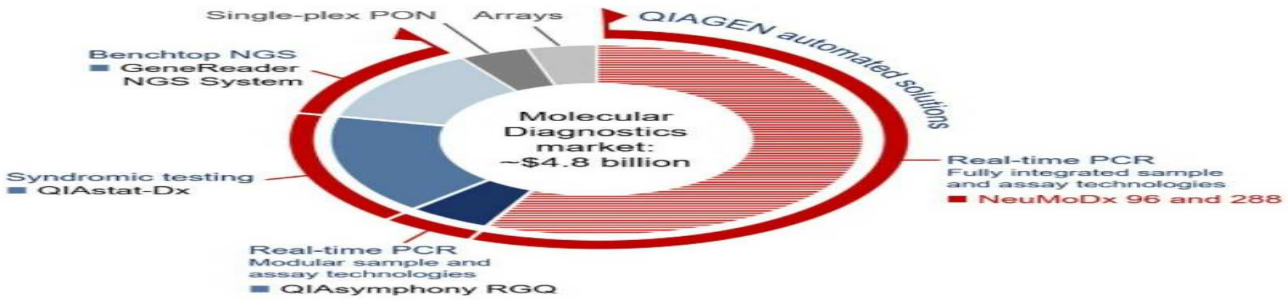
Chart 7: Estimated revenues by customer mix (Tools)



Illumina (ILMN) with a $50B market cap remains a long time favorite despite trading 51.2X Earnings and 44X FCF. ILMN is growing revenues 20.8% in 2018 and sees 12-15% growth the next few years forward with similar EPS growth rates. ILMN announced a deal this year to acquire Pacific Bio for $1.2B, an emerging next generation DNA sequencing company. The deal should expand ILMN's TAM by $2.5B giving ILMN exposure to a new area. ILMN has been posting impressive quarters all year and NovaSeq remains in the early stages of its product cycle. The direct-to-consumer genomics business is in the early stages with just 5% penetration. Illumina growth momentum is set to continue through 2019 and remains a favorite med-tech name.

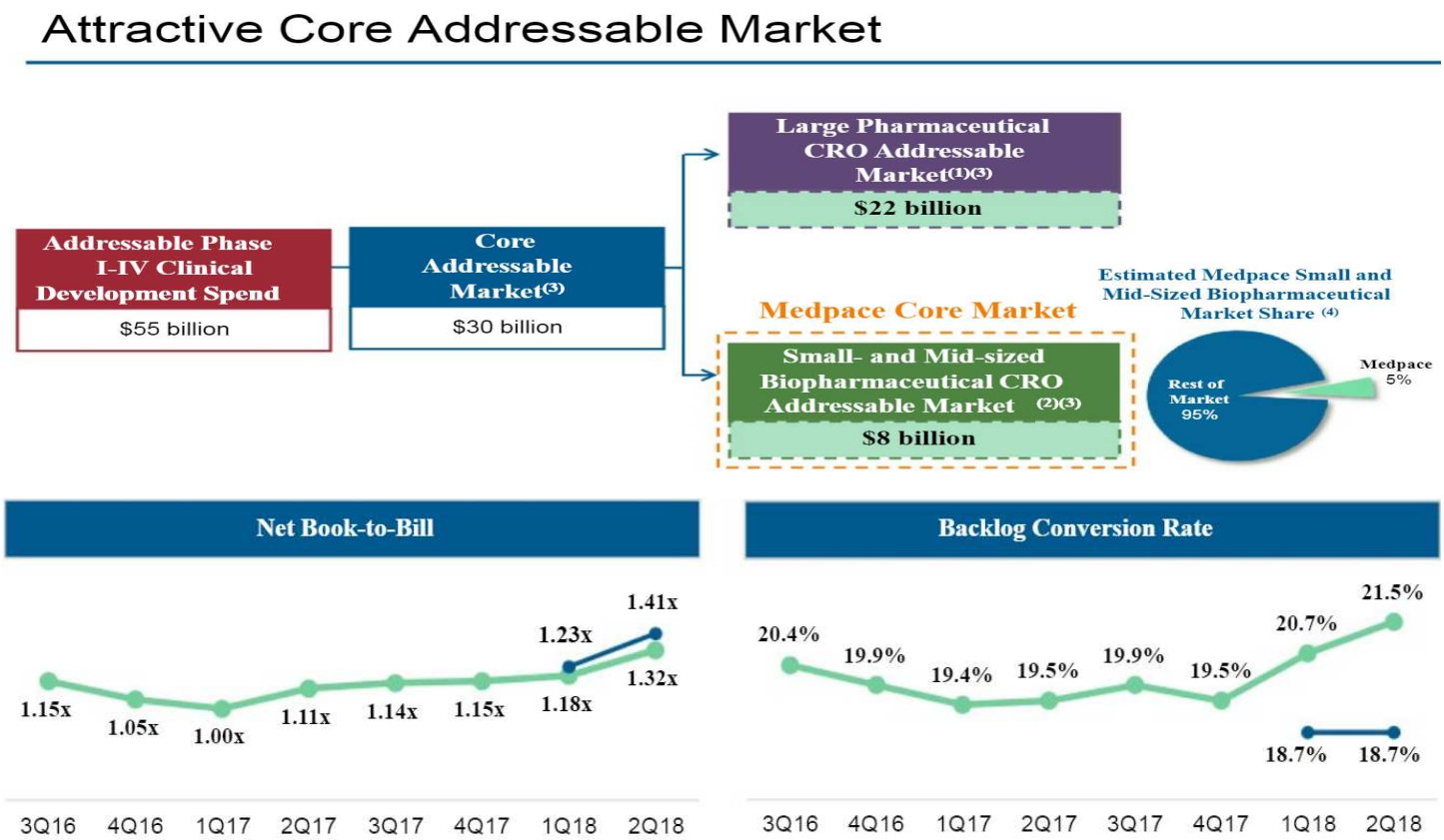
Qiagen (QGEN) has an $8B market cap as a leader in molecular testing solutions and trades 23.35X Earnings and 28X FCF. QGEN sees steady 6-8% topline growth and 8-10% EPS growth. QGEN is in the middle of a transformation to target attractive growth opportunities and has attractive margins to peers.

A full portfolio for all major Molecular Diagnostics segments

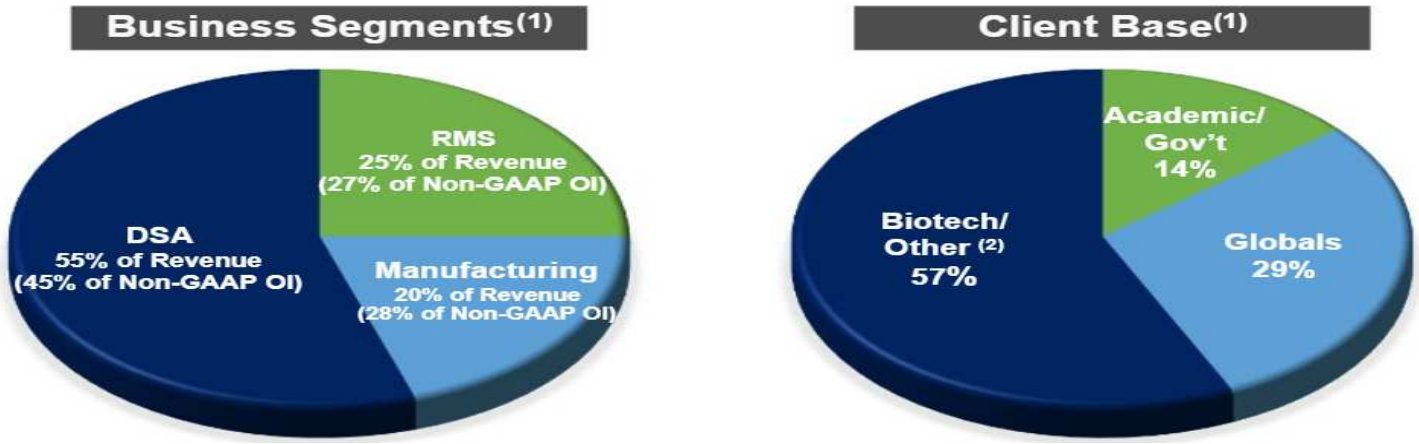


In CROs the fundamental outlook remains very healthy as well across the group, but the best positioned are:

Medpace (MEDP) has a $1.97B market cap and shares +47% YTD but still screens cheap to peers at 18.5X Earnings and 13.5X FCF. MEDP has a long outlook for double digit revenue and EPS growth. It has one of the strongest growth profiles in the CRO space and robust margins. Small Biopharma accounts for 60% of its customers and the group is well financed for at least three years out and it has relatively low customer concentration. It estimates 5% penetration in large and growing markets. MEDP has an impressive book to bill ratio, an important metric. MEDP trades at a discount to peers but its metrics suggest it should trade at a premium.



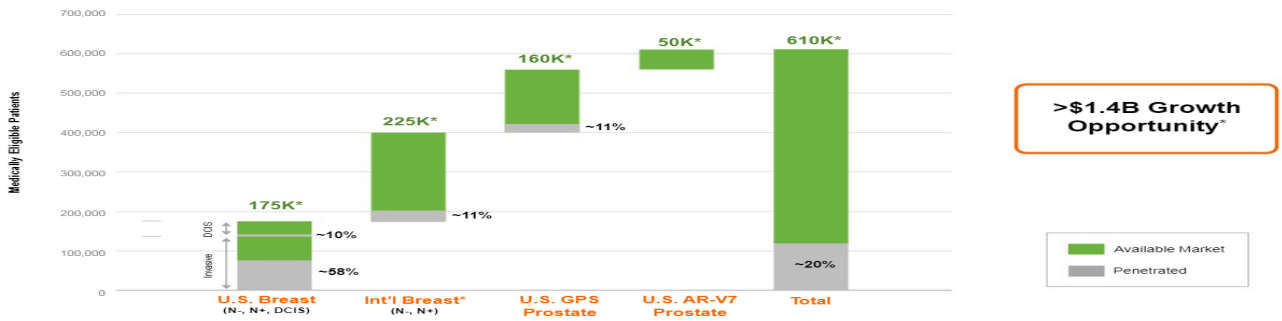
Charles River Labs (CRL) surprisingly screened best in the group of mid-large caps with a $6.1B market cap trading 19.55X Earnings, 2.85X Sales and 19X FCF. CRL has long been a consistent performer and shares are +14% YTD. CRL has seen major revenue growth the last three years and continues to have a positive growth outlook. CRL is seeing organic growth trends accelerate with a strong industry backdrop. It is targeting a $15B outsourced market with mid to high single digit growth. It has a vision through 2023 for greater operating efficiencies and automation. CRL has used M&A as a growth strategy and operating margins have underwhelmed in recent quarters, so improvements would boost shares.



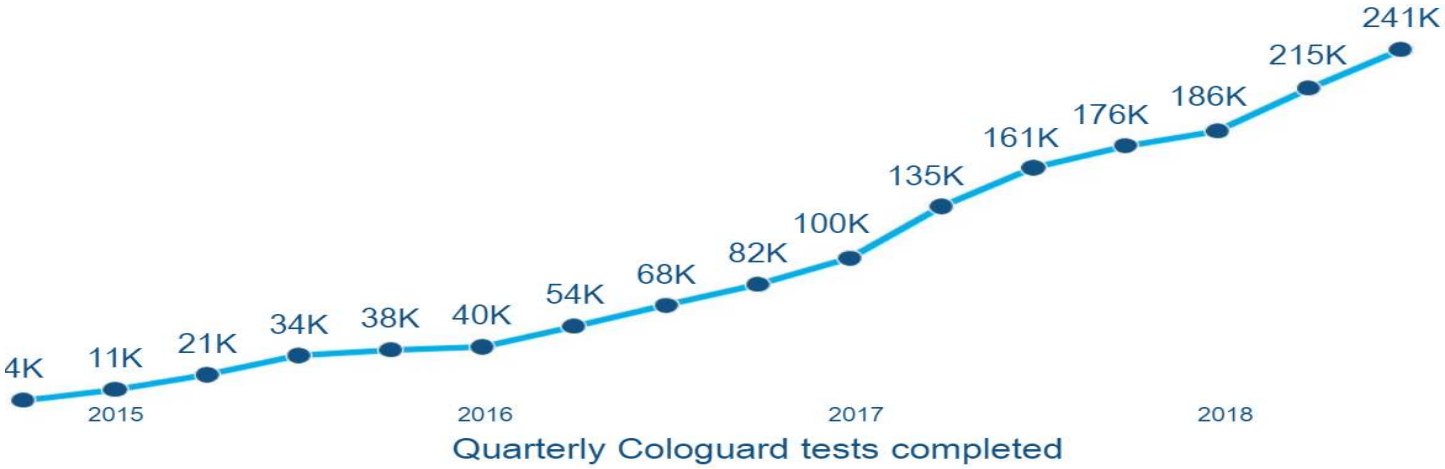
Lastly we have a group of exciting small cap growth names in the diagnostics space that includes EXAS, GH, NEOG, GHDX, MYGN, QDEL, NTRA, NVTA, SRDX, and HSKA.

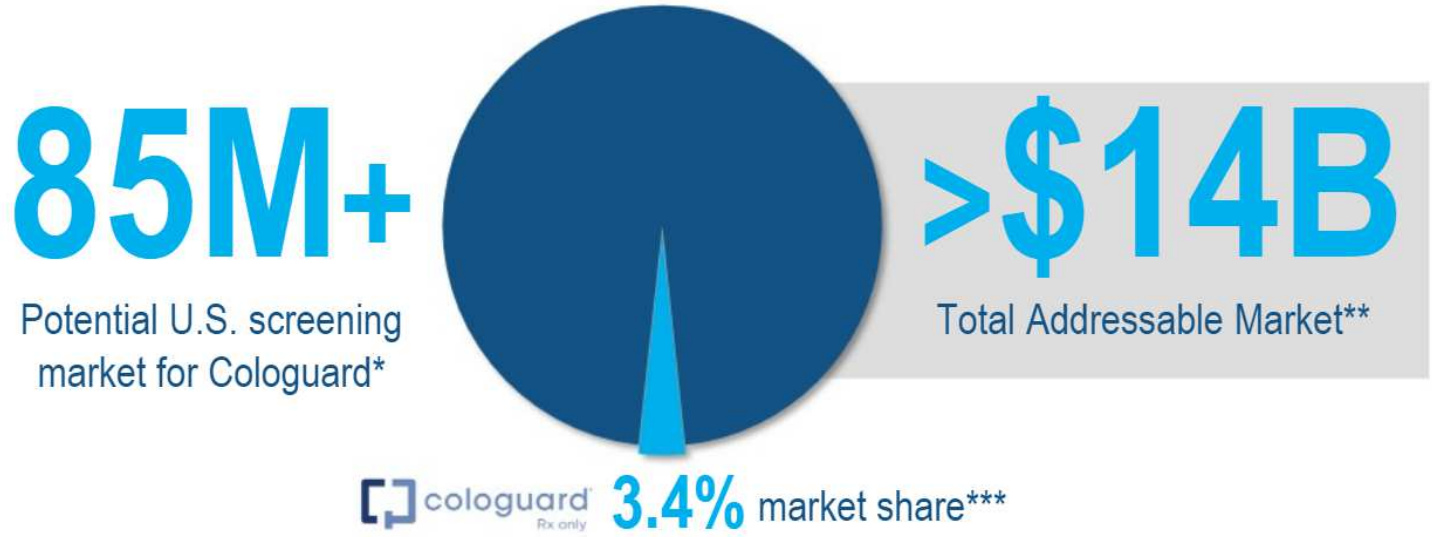
Genomic Health (GHDX) is the margin leader with a $2.59B market cap and a discovery early in 2018 with shares now +102.75% YTD. GHDX trades 57X Earnings and 51X FCF. It is seeing 14.8% revenue growth this year and sees 12.4% growth in 2019 and a long term EPS target of $3/share. It sees a $1.4B market opportunity with current penetration of just 20%, and mostly in Breast cancer, while seeing a lot of potential in International markets and the Prostate vertical. GHDX trades pricey but is a unique growth name with a lot of momentum and would make a very attractive M&A target.

>$1.4B Near-Term Growth Opportunity with Currently Marketed Tests



Exact Sciences (EXAS) is an $8.77B diagnostics company focused on early detection of cancers, specifically colorectal. EXAS is expecting roust growth after 167% revenue growth in 2017 and 65% in 2018 it sees another 60% growth in 2019. Colon cancer is America's second deadliest cancer behind lung and also the most preventable. EXAS is providing an easy way for screening. EXAS is seeing strong test demand while also seeing growth in average revenue per test. EXAS sees an addressable market of 85M tests and $14B+ in revenues where it currently has just a 3.4% market share. Cologuard looks to become the standard of care and it makes perfect sense as people are much more comfortable with an at-home stool test. EXAS is also targeting new areas like liver cancer detection.





Guardant Health (GH) has a $3.5B market cap as a late 2018 IPO focused on non-invasive cancer diagnostics. GH is in a period of robust growth and profitability is a long way off, targeting $415M in revenues in 2022 with $81.7M in 2018. From its S1 "Our liquid biopsy-based tests are comprehensive and address many of the challenges of tissue biopsies. We believe our tests can expand the scope of precision oncology to earlier stages of the disease, improve patient outcomes and lower healthcare costs. We estimate the market opportunity for our current commercial and pipeline products is over $35 billion in the United States, comprising applications for both clinicians and biopharmaceutical customers and addressing early to late-stage disease." GH is hard to value at this stage but has a massive growth opportunity and looks to have a leading technology advantage.

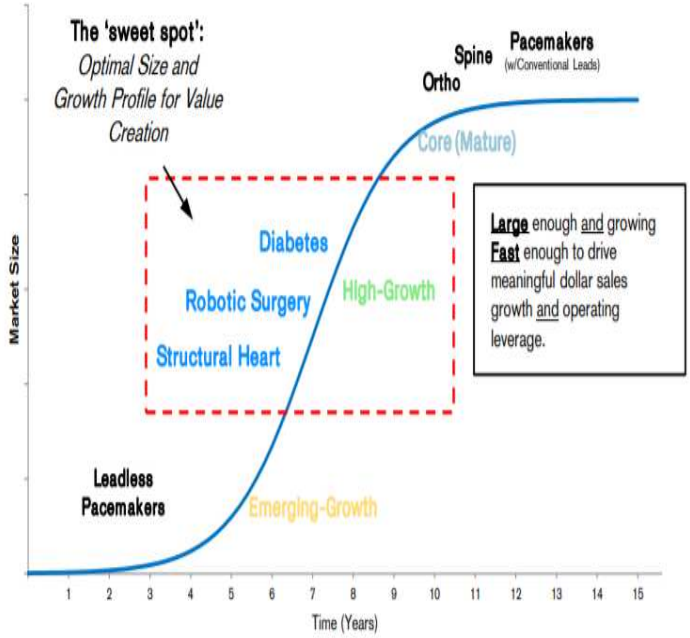
Myriad Genetics (MYGN) is the elder of the group offering value but still solid growth, the $2.37B company trading 16.1X Earnings and 25.8X FCF. MYGN sees 2019 as an acceleration of growth year with 11.9% topline seen and EPS seen jumping 45% Y/Y and has major longer term earnings power. MYGN focused on six medical specialties, Urology, Neuro, Dermatology, Oncology and Preventative Care. It has an outlook for 30%+ operating margins and 7 products generating $50M+ in revenues. MYGN has a strong pipeline of products targeting major markets. Its new products are driving growth and most of its testing markets are at the very early stages of market adoption. There is sure to be a lot of competition in the space but MYGN looks undervalued.

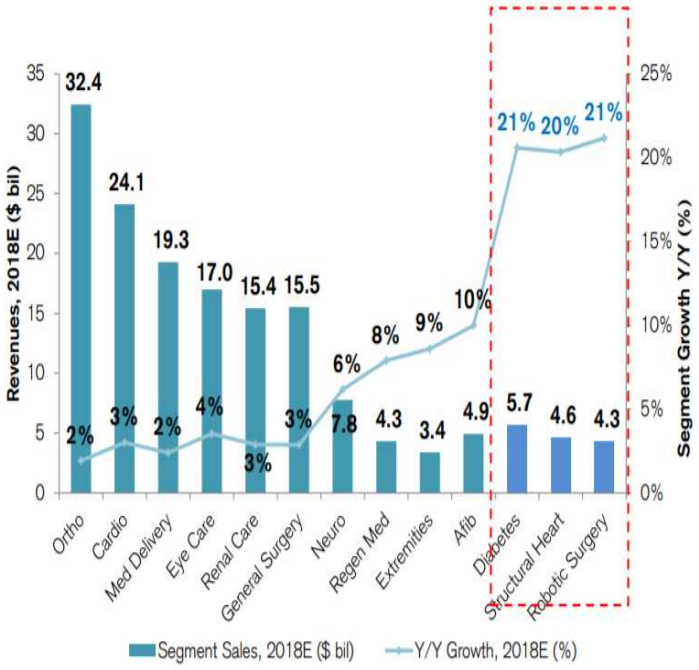
Product	Clinical Question	Global Market Size	Technology
myRisk riskScore	Will I get cancer?	$4B 1.5 million patients	28 gene DNA sequencing >80 SNPs + clinical data
genesight	What antidepressant should I take?	$10B 5 million patients	12 genes multiplex PCR proprietary algorithm
Counsyl Foresight	Is my baby at risk for genetic disease?	$4B 8M patients	>175 gene DNA sequencing
Counsyl Prelude	Does my baby have a chromosomal disorder?	$4B 8M patients	Whole genome sequencing of cfDNA
VectraDA	Should I change my RA treatment?	$3B 3 million patients	12 protein markers proprietary algorithm
Prolaris	How aggressively should I treat my prostate cancer?	$1.2B 400,000 patients	46 RNA markers proprietary algorithm
EndoPredict	How aggressively should I treat my breast cancer?	$0.9B 350,000 patients	12 RNA markers proprietary algorithm
myPath	Is this skin lesion melanoma?	$0.9B 600,000 patients	23 RNA markers proprietary algorithm
BRACAnalysis CDx myChoice HRD	Should I use a PARP inhibitor to treat my cancer?	$6.0B 1.5 million patients	2 gene DNA sequencing tumor DNA sequencing proprietary algorithm

Medical Devices, Equipment, and Supplies:

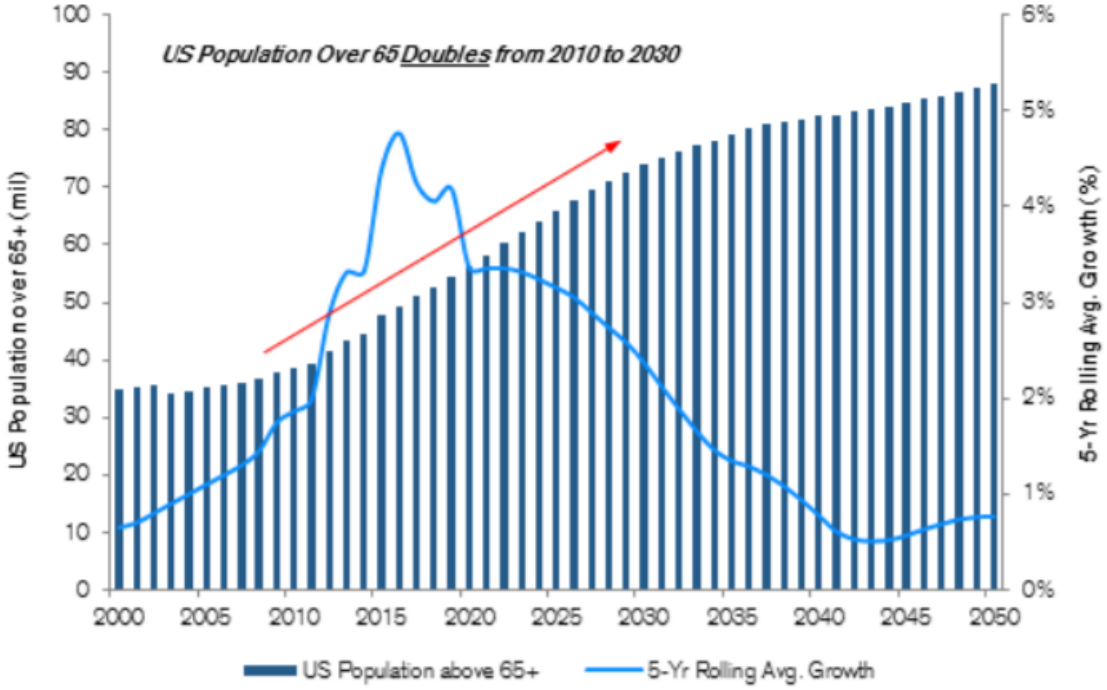
Components: *TECH, DXCM, BEAT, NEO, MDT, ABT, SYK, BSX, EW, ZBH, ALGN, SNN, ABMD, LIVN, GMED, WMGI, NVCR, NUVA, ITGR, CNMD, NVRO, AXGN, CRY, BABY, OFIX, CSII, INSP, VREX, XENT, LNTH, BDX, ISRG, BAX, RMD, COO, TFX, VAR, STE, XRAY, HRC, MASI, HAE, PODD, ICUI, PEN, IART, CMD, MMSI, INGN, GKOS, AVNS, TNDM, IRTC, NXTM, STAA, ATRI, ATRC, LMNX, TCMD, ANGO, OSUR*

The medical device/technology group contains more than 60 stocks ($500m+) and is always one of the more exciting areas for investing, especially in smaller cap names with great products. The big three important factors for these names are product pipeline, operating leverage, and execution. Med-Tech fundamental shave been improving the last few years with higher operating margins and access to cash, and cash repatriation could drive further consolidation in the space. Revenue growth is generally driven by product introductions and hospital patient enrollments. Structural Heart, Robotic Surgery, and Diabetes are the major growth themes expected to generates more than 40% of total sales growth in the industry through 2025 while currently representing just 10% of total market revenues. More mature markets are seen as Spine, Open Heart Surgery, and Insulin Pumps and Pens. Structural Heart is a $5B market seen growing at a 19% CAGR through 2025, Robotics a $4B market seen reaching $14B in 2025 with an 18% CAGR, and Diabetes a $6B market with a 15% CAGR to a $15B market in 2025.





Aging U.S. population is a significant driver for MedTech

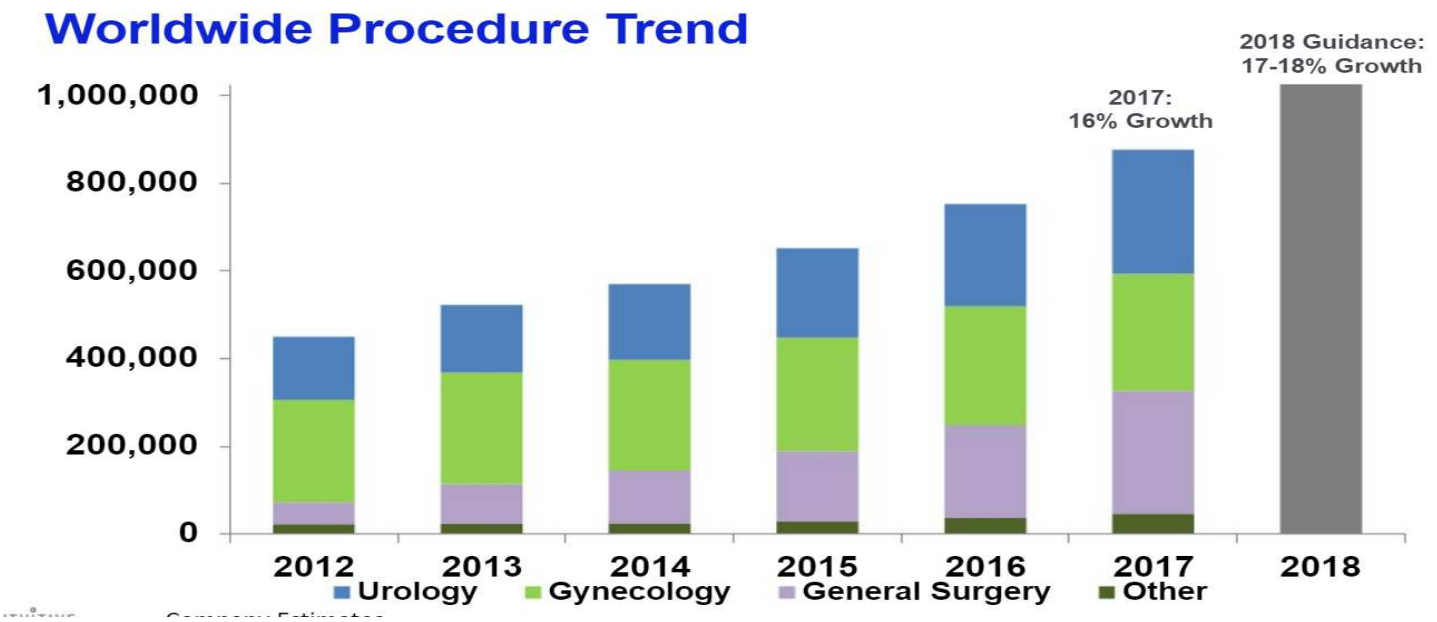


There are a ton of quality growth companies in this group, large caps alone have MDT, ABT, ISRG, and EW as four names I continue to like.

To attack such a large group I will first look at the $15B+ names which trade at an average P/E of 2X, 20X EBITDA, 31% EBITDA margins, 13% ROIC, 24% FCF Margin, and Net Debt / EBITDA of 0.8X.

Intuitive Surgical (ISRG) shares are +34% YTD and the $59.3B leader in robotic surgeries trades 39X Earnings, 59.25X FCF and 14.3X EV/Revenues. ISRG has seen accelerating topline growth every year since 2015 and with 18.4% growth in 2018 is expected to decelerate a bit to 15% growth in 2019 while EPS growth seen continuing at a 12-15% annual rate. ISRG has been beating and raising estimates all year with quarterly 20% procedure growth and continues to expand its footprint. ISRG has a recurring revenues model (71%) and also upside from services revenue. ISRG continues to see higher adoption in a large general surgery market and develop core European and Asian markets with an increased installed base. ISRG continues to see expanding markets with its new Ion product having a $6B to $7B market and a multibillion opportunity in stapling and energy. ISRG has set a high bar but still sees growing opportunities with

upside drivers in Hernia, Japan, and China. ISRG is in an upgrade cycle and launching Ion and SP products, so although there is potential for increased competition from CMR's Versius Robotics and others, ISRG is the far and away leader in an exciting growth market.

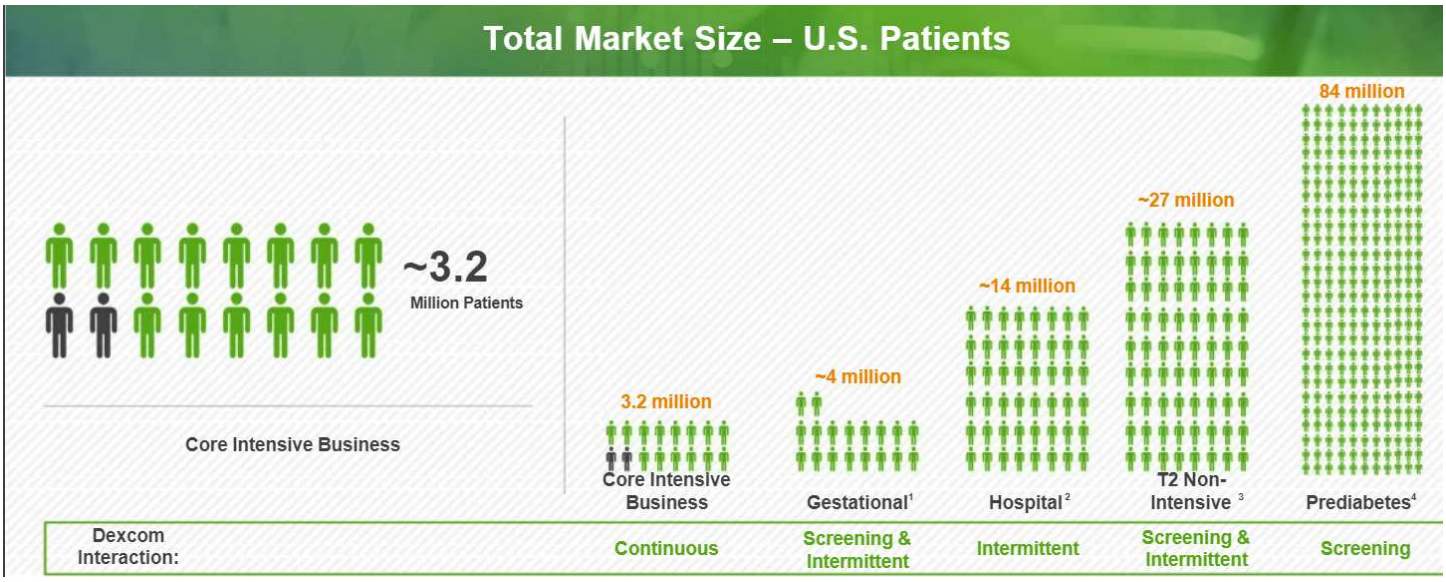


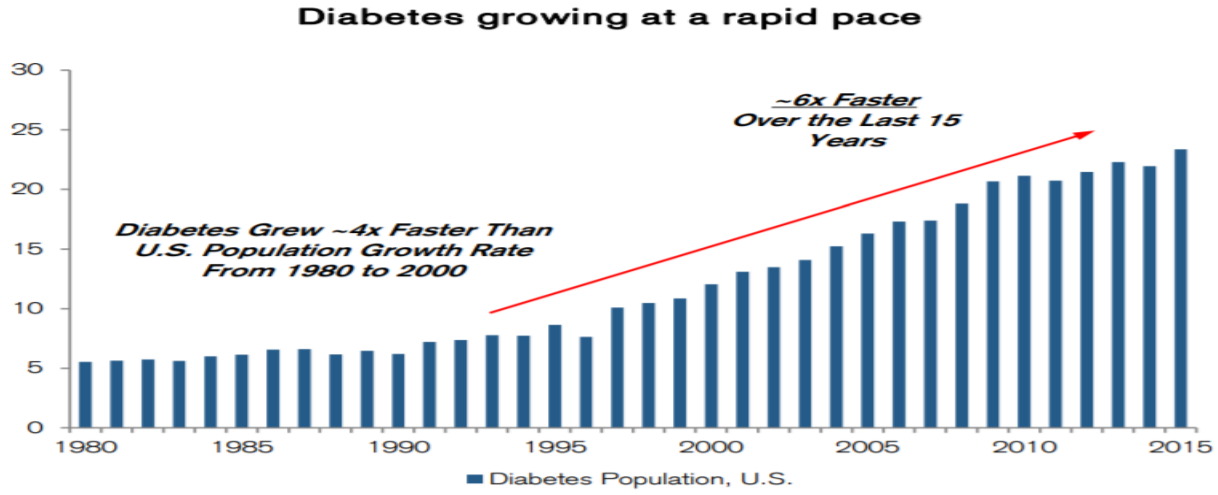
Edwards Life Sciences (EW) is a $34.8B leader in heart med-tech trading 30.8X Earnings, 32.6X FCF and 8.7X EV/Sales. EW is coming off three years of double digit revenue growth and sees this dipping to closer to 9% in 2019 and 11% in 2020 while EPS growth seen at similar rates. EW has 16-17% R&D spend as a percentage of sales as it continues to invest in the future and seeing momentum in multiple breakthrough structural heart valve therapies. The TAVR business is seeing growing at a mid-teen rate and hitting $5B by 2021. Its TMTT business is also expected to start contributing to growth. EW is also generating a lot of FCF and buying back stock. EW recently highlighted at its Investor Day the TAVR and Mitral markets can reach $10B in sales by 2024. EW is setting up as a better 2H19 and 2020 story as growth reaccelerates, and potential for Boston Scientific (BSX) to get Lotus approved can be an early headwind in 2019. EW will have Low Risk TAVR data in March and European data for PASCAL in March or May with approvals/launches expected mid to late 2019. Mitral is a very strong longer term growth opportunity for EW and ABT.

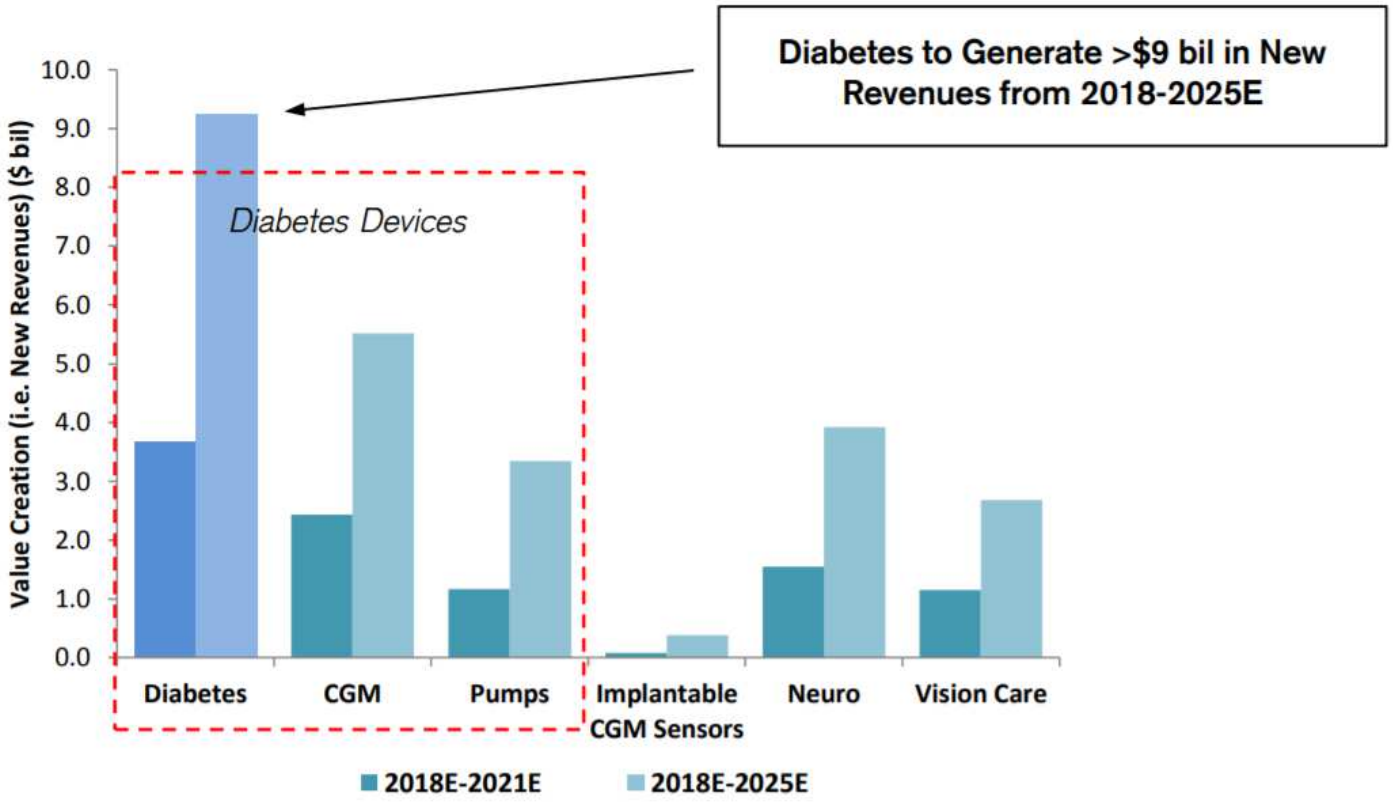
	Underlying Sales	Underlying Growth
Transcatheter Aortic Valve Replacement	$2,400-2,700	11-15%
Transcatheter Mitral & Tricuspid Therapies	~$40	NM
Surgical Structural Heart	$810-850	1-3%
Critical Care	$670-710	5-7%
Total Edwards	$3,900-4,300	9-12%

The $4B to $15 group has a number of exciting growth names.

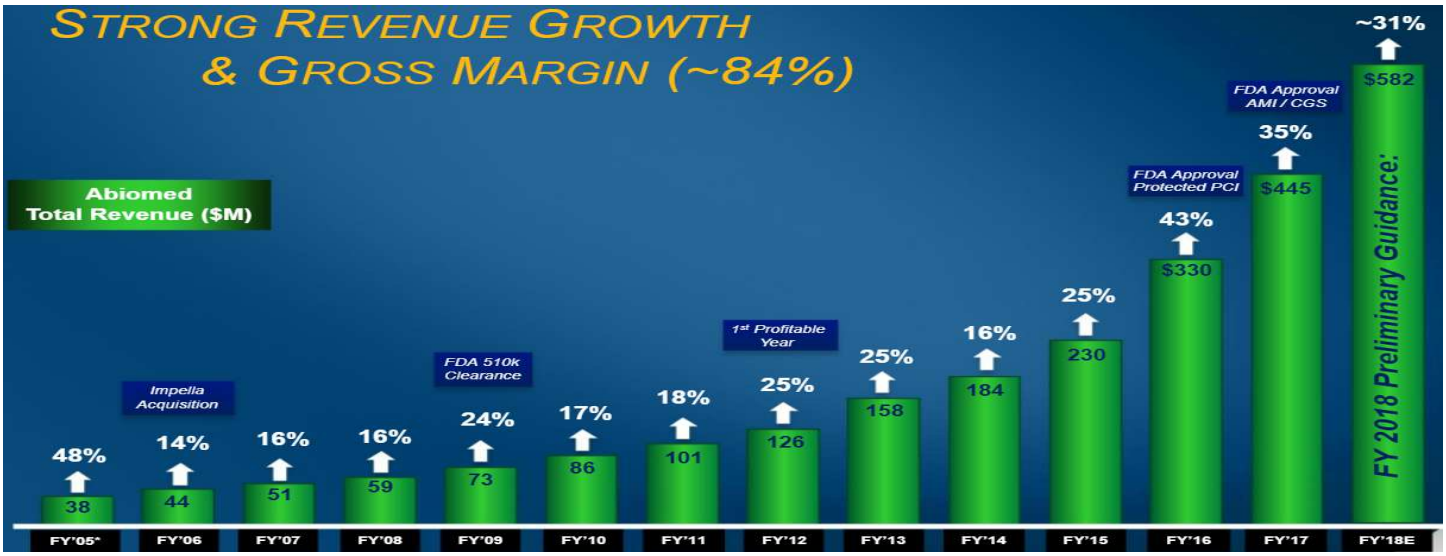
DexCom (DXCM) is an $11.4B provider of glucose monitoring systems trading 10.6X EV/Sales and expected to turn profitable in 2019. DXCM has seen revenues grow rapidly and sees another 20% topline growth for 2019 and 2020. DXCM is tackling a large market that is underpenetrated and has an early technological lead over peers. Its G6 launch has been very strong and it has been beating estimates and raising its outlook. The Diabetes market is a massive one and DXCM is transforming the best care seeing $2-$2.5B in revenues by 2023 as well as greater than 25% EBITDA margins. Diabetes patients fight long battles and the intermittent monitoring that has been the standard is not effective, and DXCM offers a continuous monitoring platform. DXCM is likely to exceed long term targets that are not taking into account any contributions from new geographies or new markets. DXCM is in the early innings of an expansive growth strategy and will be a strong cash flow generator and margin expansion name in the next few years.


Total Market Size – U.S. Patients
~3.2
Million Patients
Core Intensive Business
3.2 million
Core Intensive Business
~4 million
Gestational[1]
~14 million
Hospital[2]
~27 million
T2 Non-Intensive[3]
84 million
Prediabetes[4]
Dexcom Interaction:
Continuous
Screening & Intermittent
Intermittent
Screening & Intermittent
Screening

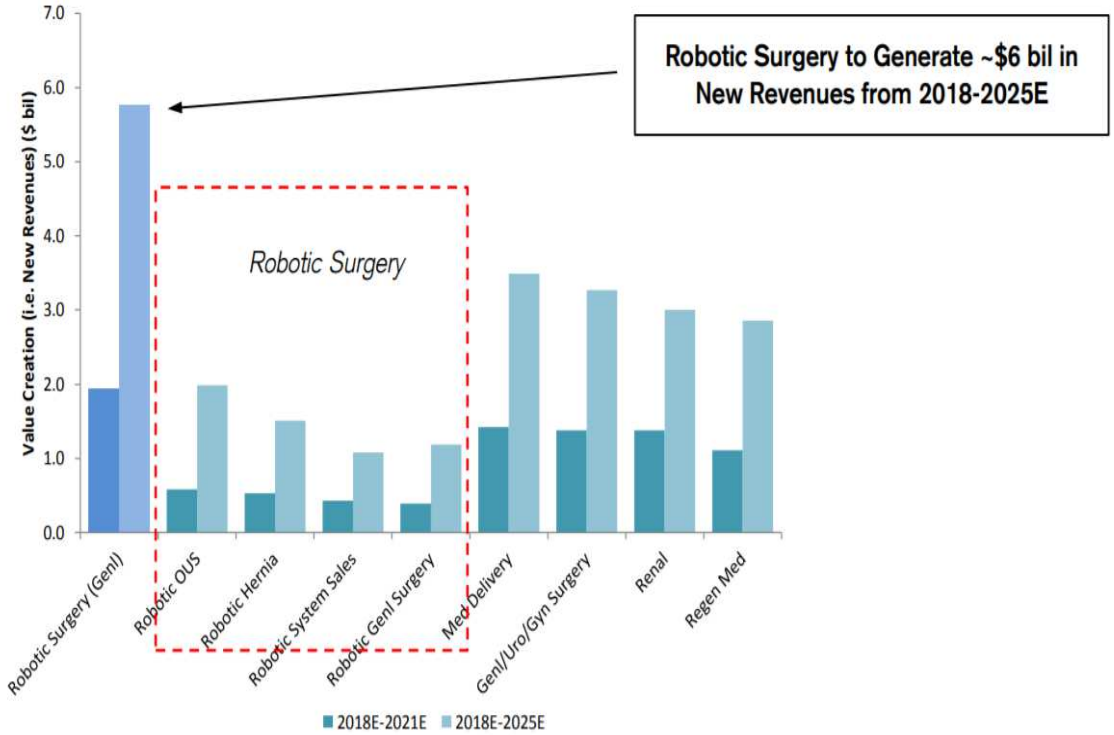

Diabetes growing at a rapid pace
~6x Faster Over the Last 15 Years
Diabetes Grew ~4x Faster Than U.S. Population Growth Rate From 1980 to 2000
30
25
20
15
10
5
0
1980
1985
1990
1995
2000
2005
2010
2015
Diabetes Population, U.S.


Diabetes to Generate >$9 bil in New Revenues from 2018-2025E
Value Creation (i.e. New Revenues) ($ bil)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Diabetes Devices
Diabetes
CGM
Pumps
Implantable CGM Sensors
Neuro
Vision Care
2018E-2021E
2018E-2025E

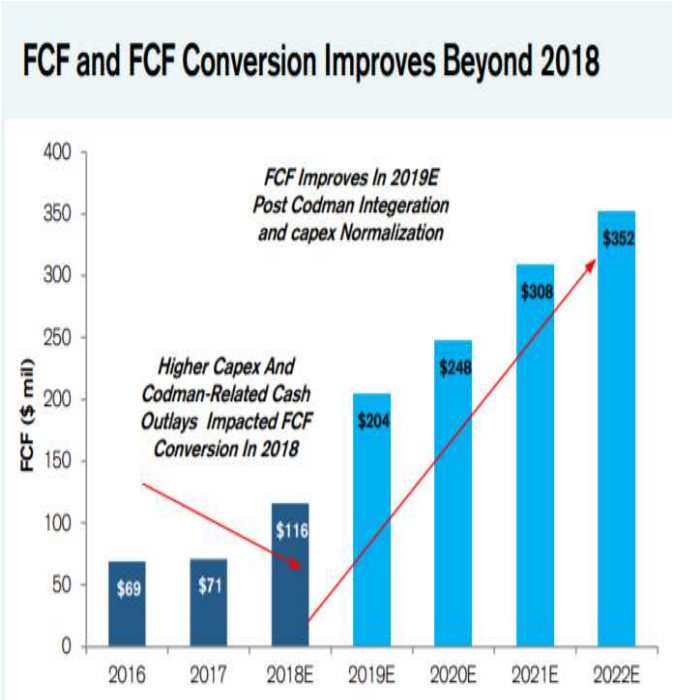
ABIOMED (ABMD) is a $14.93B maker of heart pumping devices trading 63.4X Earnings, 96.5X FCF and 17.9X EV/Sales. ABMD has posted 35% and 33% revenue growth the last two years and sees 30% in 2019 and 28% in 2020. ABMD is just starting to tap international markets with 67% revenue growth last quarter. ABMD still is only penetrating around 10% of US patients and 12% of German patients for its existing opportunity while future opportunities are immense in Japan as well as with new products. In November it presented STEMI DTU results that looked very promising and can expand its addressable market by 250,000 patients. ABMD is working towards becoming the new standard of care and has a long runway for further growth while operating at 84% gross margins. The Heart Recovery field is estimated as a $5B market in the US alone.

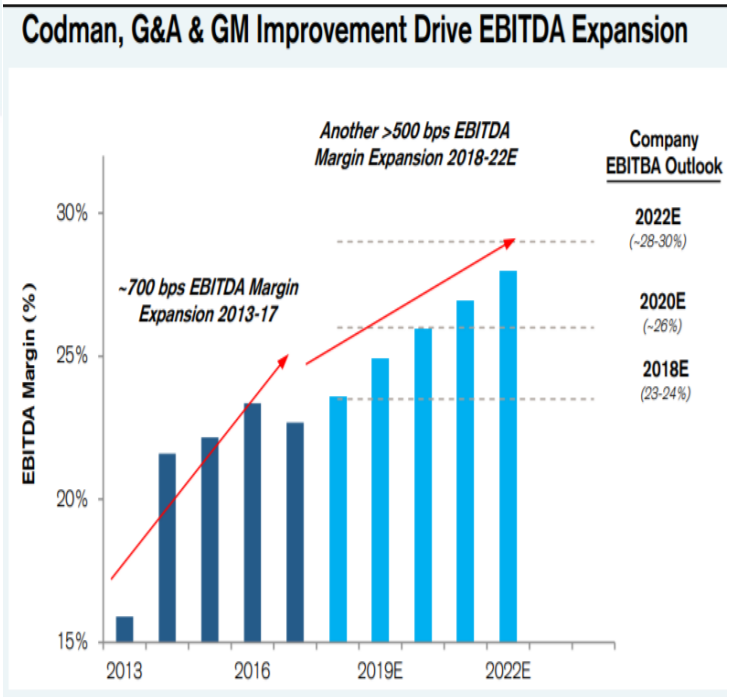


Globus Medical (GMED) is a $4.55B med-tech name with a focus on spinal markets trading 25.5X Earnings, 36X FCF and 6.9X EV/Sales with a high margin business. GMED has seen revenues grow 12.8% and 10.9% the last two years and for 2019 and 2020 expects 8.5% and 9.6% growth. The spinal market is expected to continue to see growth from a combination of favorable patient demographics, improving technologies leading to more fusion procedures, an expanding patient base, and international demand. GMED is also entering robotics and sold more in Q4's first month than all of Q3, though will face increased competition from Medtronic's next-gen robot in 2019. There has been a lot of consolidation in the spinal market and I have long felt GMED is an ideal acquisition target. It has best-in-class profitability and is seeing acceleration of its core business. With robotic surgery disrupting a $10B spine market and GMED one of two key players, it is an attractive long term growth story.



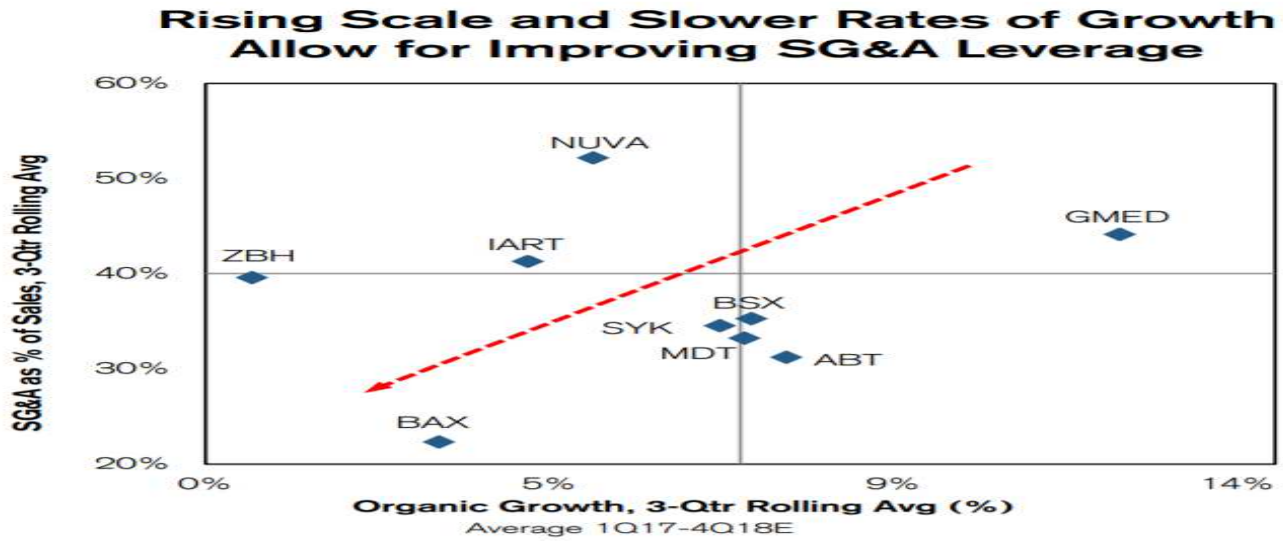
Integra (IART) is a $4.2B maker of surgical implants and other instruments trading 18.25X Earnings, 41X FCF and 3.6X EV/Sales, a value name with its multiple contracting with 2019 and 2020 topline growth seen at 5%, a far change from 2015-2018 robust growth. It has used acquisitions to drive recent growth but still generating 6.2% organic growth last quarter. It is currently integrating Codman Specialty Surgery and Orthopedics & Tissue Tech. IART should continue to be a strong earnings generator for many years and sees the extremities business stabilizing in 1H19 that has recently dragged shares lower. It may not offer the robust growth of some peers, but valuation already reflects this, and it is a strong business with plenty of long term prospects while margin and cash flow upside could be positive drivers as well as new product launches.



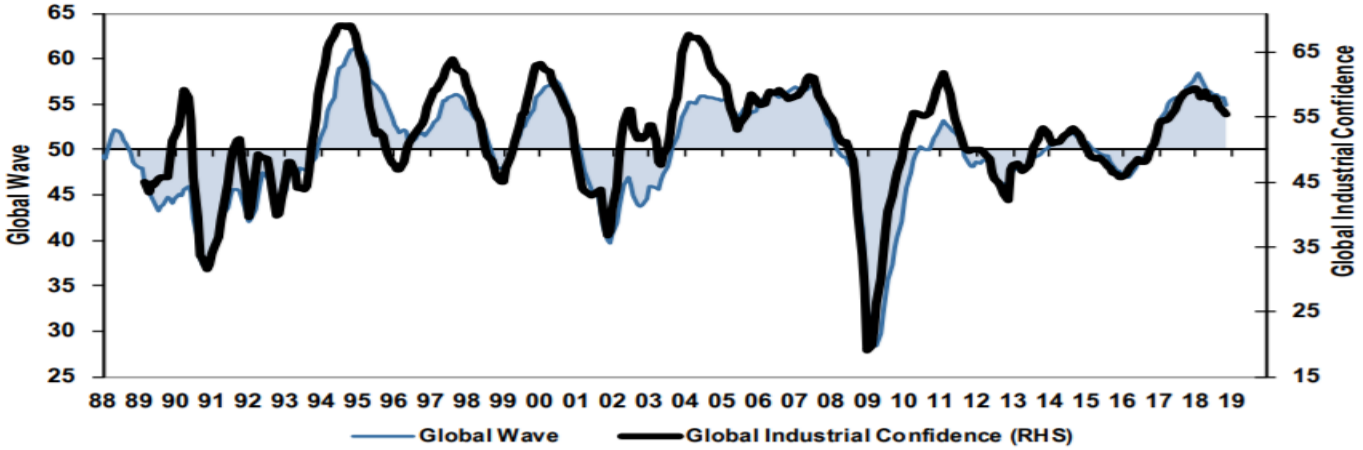


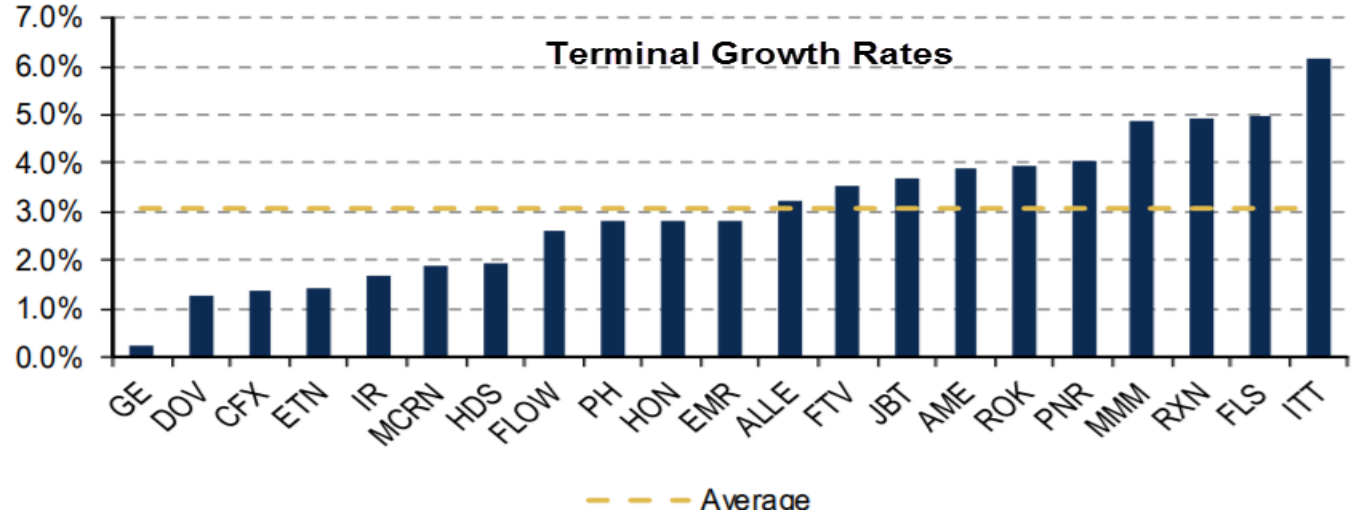
There are 32 names with market caps under $4B and a number are favorites due to the wide array of exciting growth opportunities in the space. A few I continue to like that have previously done work on are **NovoCure (NVCR)** in brain cancer, **Merit Medical (MMSI)** a high margin name with an exciting product portfolio, **Galukos (GKOS)** in glaucoma, **Biotelemetry (BEAT)** in connected health, **Tandem (TNDM)** is diabetes, **STAAR Surgical (STAA)** in vision correction, **Tactile Medical (TCMD)** in chronic diseases, and **Inspire Medical (INSP)** in sleep apnea.

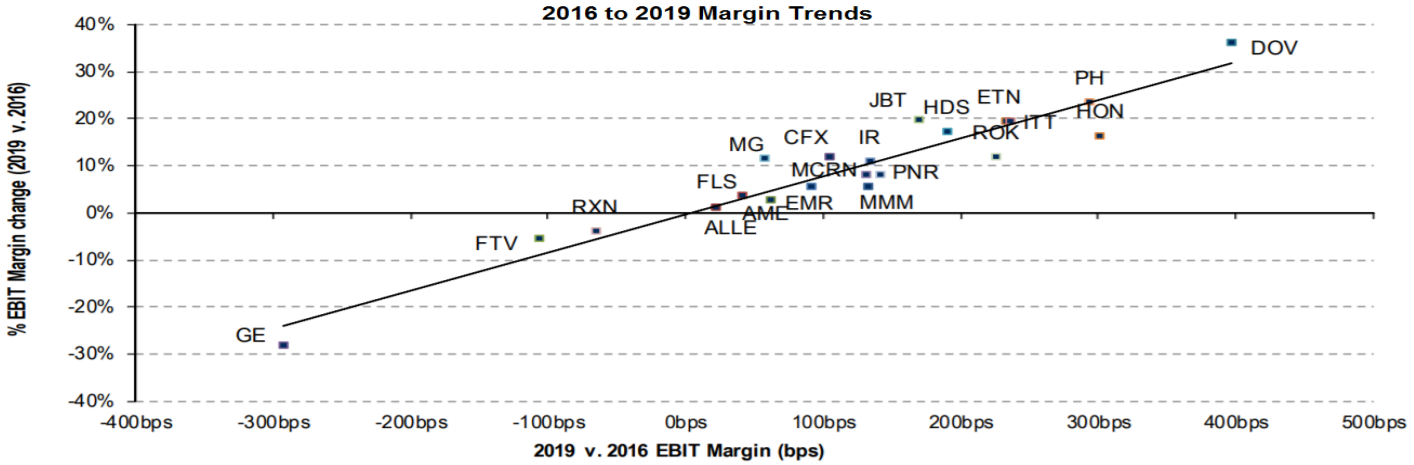
Atrion (ATRI) is a $1.44B maker of fluid delivery products that does not see a lot of recognition due to it trading at $775/share and average daily volume below 10,000 shares. After a few years of choppy and modest growth it has strung together a few positive growth quarters and trades 7.5X EV/Sales. ATRI is small but has a leading market position in a number of its niche target markets. It is a name lacking much analyst coverage but shares have performed well this year +23%.



Industrials: *The Industrial group has been volatile this year after a strong June-September run, it has pulled back sharply by 15% in Q4 on concerns of rising costs and slowing global growth. The Energy exposed names have recovered have fallen back on hard times and Housing/Auto have weakened. The potential for a major infrastructure package in the US can still provide upside, while the overall health in global manufacturing has supported strong earnings across the group. Automation and Robotics is a strong theme in the Industrial group leading to lower costs and better efficiency. Oher mega-trends include population growth requiring more electricity, energy efficiency, intelligent products and connectivity, and environmental concerns. Transports (IYT) are breaking down sharply into year-end down 10% YTD and back to November 2017 levels with many indications of freight having peaked. There are so many diverse markets within the Industrial group that it makes it the most interesting to do deep dives into earnings reports and discover read-throughs for other companies operating in those markets. Some of those markets include Electrical, Hydraulics, Aerospace, Defense, Oil & Gas, Power Systems, Vehicle, Pumps and Flow, Artificial Lift, HVAC, Food Equipment, Automation and Controls, Residential Equipment, Connectivity, Water Systems, Welding, and Tools. This group is more sensitive to the USD and interest rates while capital intensity brings higher credit risk.*



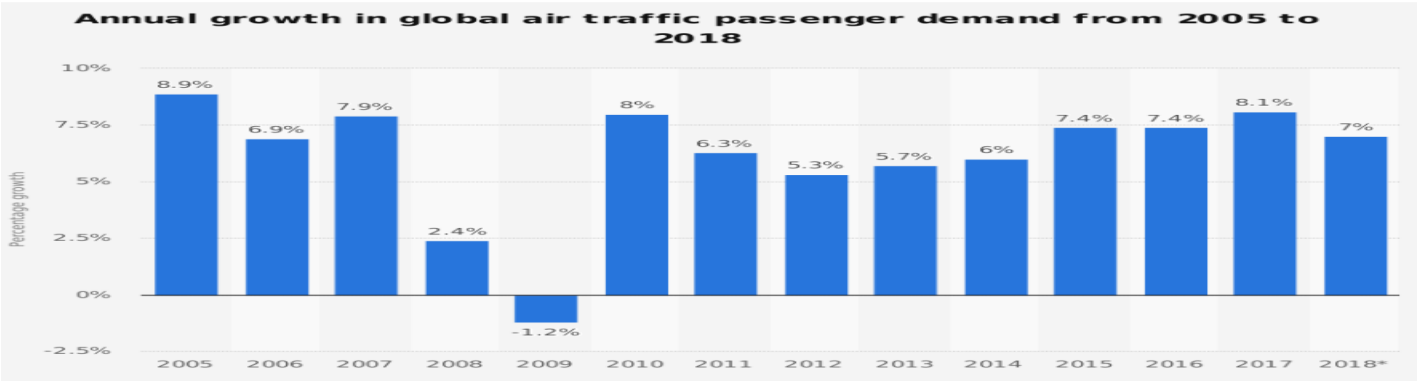




Aerospace/Defense:

Components: *AER, BA, UTX, LMT, GD, RTN, TDG, LLL, HEI, HII, SPR, ESLT, CAE, HXL, WWD, BWXT, MOG.A, AVAV, KAMN, AIR, ATRO, TDY, FLIR, CUB, HRS, NOC, TXT, AJRD, MANT, LDOS, CACI, HON, ERJ, MRCY*

The Aerospace & Defense group has weakened as the year went on with a few standout performers like AVAV, HEI, TDG and CACI is stock-specific stories, while Defense names have been very weak despite budget growth. Aerospace fundamentals remain strong though many names have suffered losses on fears of Chinas trade concerns. After a busy year of deals in 2017 with Rockwell Collins and Orbital ATK acquired, in 2018 we have seen TransDigm (TDG) acquire Esterline for $4B, and Boeing acquire KLX Inc. for $4.25B. We also saw a major merger in Defense Electronics between L-3 (LLL) and Harris (HRS). A big story in 2019 will be the United Tech (UTX) separation into three entities.



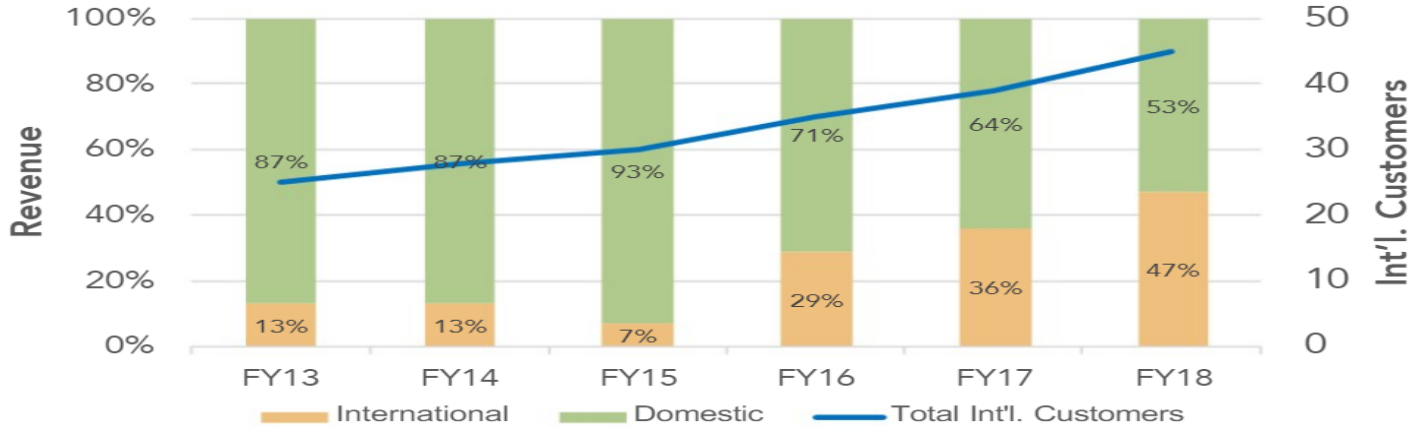
United Tech (UTX) shares are -6.85% on the year but have traded in a large $116-$144 range and currently sit 15.25X Earnings, 12X EBITDA and in a strong growth period after acquiring Rockwell Collins and into 2019 plan on splitting the company into three entities. The move should unlock value with shares trading at a deep discount to its peers. UTX also provides a more defensive play in the industry with a clear catalyst in a more uncertain Macro period. UTX sees the move creating better results, increasing M&A opportunities, broadening the investor base and strengthening its financial profile.

Hexcel (HXL) has a $5.1B market cap and is a key materials supplier to the Aerospace industry. HXL trades 16.9X Earnings, 35.2X FCF and 12.2X EBITDA with strong margins and impressive growth profile. Commercial Aero represents 70% of its revenues and it has a strong competitive advantage and growing share in growing markets. Its composite materials are seeing strong demand on the light weighting trend and has a 9 year, $10B backlog to Boeing and Airbus where next-generation engines contain more composite content. After a long investment period it is now seeing less CAPEX and stronger FCF. It recently acquired ARC Tech for $160M that provide exposure to military with strong organic growth. Its Roussillon facility comes online next year that should return it to a margin expansion story. Boeing is exploring an alternative for its New Midsize Airplane (NMA) that could provide an additional platform for HXL and be a strong growth driver.

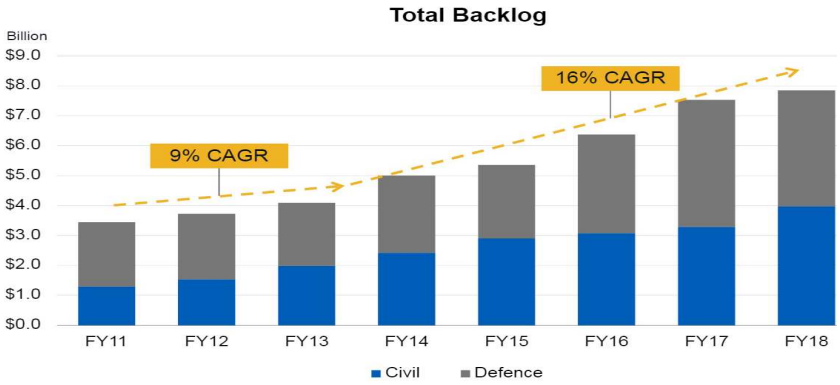
The Defense industry is expected to benefit from the new Administration with a focus on increased spending. An exciting new frontier is Space Age 2.0 with the US space market expected to grow to $2.7 Trillion in 2045 from $339B in 2016. A few names with exposure to Space include BA, NOC, LMT, RTN, VSAT, MOG.A, GD, LLL, UTX, HEI and HXL. The IATA forecasts passenger demand to double over the next twenty years, so Aerospace names remain positioned for steady growth. The IATA forecasts 6% growth in air traffic demand in 2019. Defense names have also seen some weakness due to less global tensions with Iran and North Korea, but remains a possible upside catalyst if tensions return. Rising commodity prices has been a headwind for these names. With a weakening Macro backdrop the expectation if more defensive positioning and outperformance of high quality, low risk, high, yield and stable growth stocks. Trump has requested a $20B increase to the Defense budget for FY20. Defense names are trading fairly cheap and modernization is a key theme to the sector.

Raytheon (RTN) shares are down nearly 10% YTD and has seen its outlook weaken but screens cheap to peers with a better margin and growth profile. The $49.1B Co. trades 14.3X Earnings, 1.85X Sales, 30.7X FCF and 10.9X EBITDA with a 2% dividend yield in a healthy defense spending environment. It is coming of a strong quarter of bookings with the book to bill ratio at 1.28 though operating margins have contracted 60bps this year. RTN also fits a favored theme for 2019 with defensive value names offering high quality and dividend yields. RTN also offers a strong FCF yield and strong balance sheet. Its Patriot program saw $8B of incremental bookings and the overall record backlog gives solid visibility.

Aerovironment (AVAV) trades at a premium valuation in this group but offers outsized growth. The $1.76B maker of unmanned aircraft systems trades 49X Earnings, 5.75X Sales and 33X FY20 EBITDA. AVAV is seeing strong topline the growth the last two years and sees a long runway for that to continue. AVAV is seeing stronger contributions to growth now from International customers. It also has a Tactile Missile System segment at 24% of revenues and sees a multi-billion dollar opportunity in commercial information solutions with integrated drones, sensors, and analytics. AVAV shares have pulled back around 40% from 2018 highs into year-end, offering an opportunity at a much better level into one of the more explosive growth opportunities in Defense and only pure play on unmanned aircraft systems.

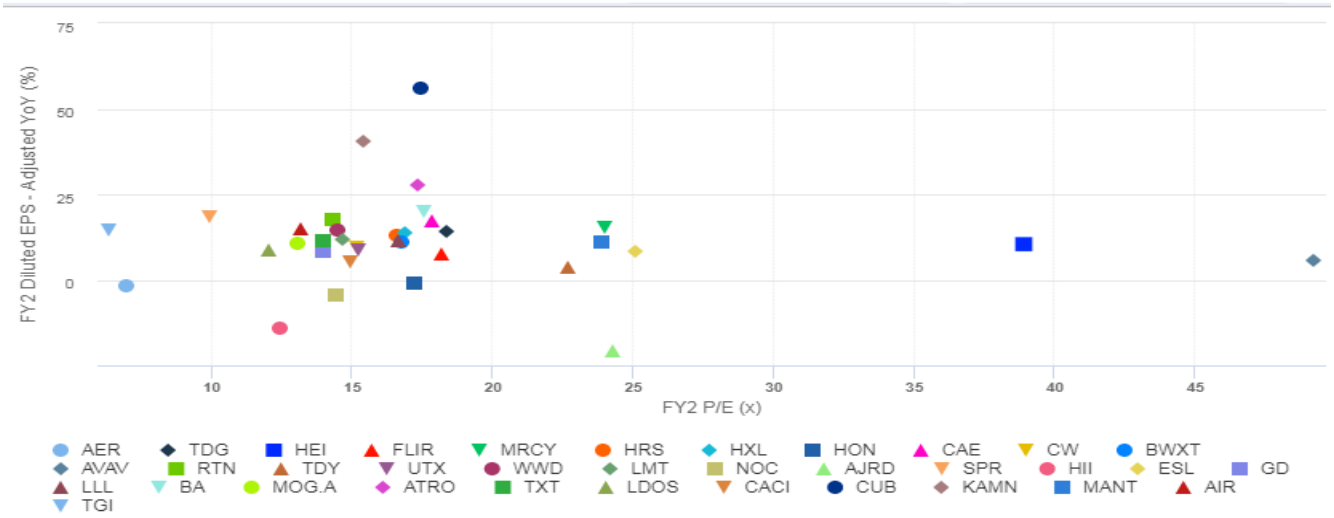


CAE Inc. (CAE) has a $5.22B market cap trading 17.9X Earnings, 37.4X FCF and 12.3X EBITDA with a 1.54% dividend yield. CAE has 20%+ EBITDA margins and 7-12% revenue growth outlook with 7-20% EPS growth. CAE operates in three segments, Civil Aviation Training, Defense/Security, and Healthcare. CAE has a large moat with a highly recurring business and underlying secular tailwinds. More passenger trips and aircraft result in higher demand for training programs. A medical technology revolution and increased use of simulation in Healthcare opens up a large opportunity for CAE in that sector. CAE also has a strong balance sheet that is well below its optimal debt/capital level and could pursue accretive growth deals. CAE is a perfect balance of value and growth operating in a strong industry with a multi-year growth cycle outook.



BWX Tech (BWXT) shares have been hit in 2018 down over 30% but the $4.15B Co. now trades 16.75X Earnings and 13.8X EBITDA with a 1.53% dividend yield and 19% EBITDA margins. BWXT is mainly focused in Nuclear Operations, the only maker of reactor components in North America. It is seeing demand driven growth from the US Navy and its nuclear propulsion as well as commercial nuclear power in Canada. It sees a future opportunity in medical radioisotopes. BWXT expectations have been reset into 2019 and has plenty of upside growth drivers to exceed estimates next year.

PE vs EPS Growth

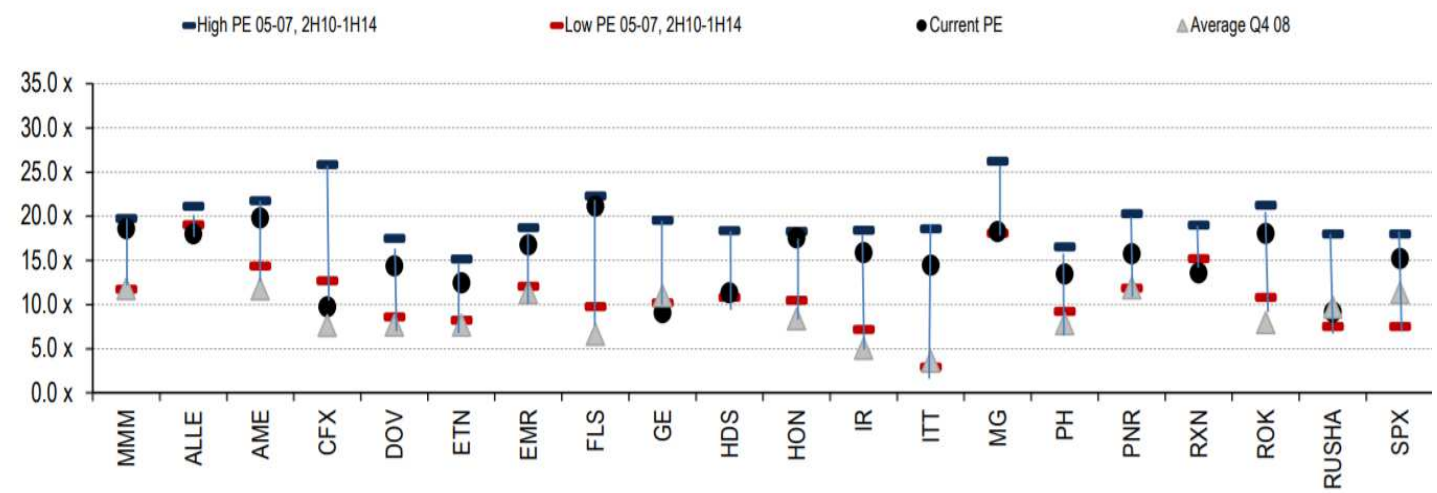


Industrial Machinery and Equipment:

Components: *MLAB, CAT, DE, CNHI, AGCO, TEX, LNN, ALG, CMCO, EMR, AOS, FELE, BDC, AIMC, OSIS, ATKR, AMOT, MMM, GE, ITW, ABB, ETN, ROP, IR, CMI, ROK, AME, XYL, DOV, IEX, ZBRA, GGG, NDSN, MIDD, FLS, CR, CW, ITT, GTES, GNRC, RBC, RXN, CFX, HI, JBT, WBT, ATU, FLOW, RAVN, SPXC, TNC, KAI, GRC, CSWI, PH, PNR, B, WTS, MWA, NPO, SNHY, CCF, SXI, URI, MGRC, HRI, HEES, FTV, LII*

This is a sizable group of 69 names with many diversified into many end-markets, but I kept a chart below of some end-market exposures that can be helpful. Zebra Tech (ZBRA), a longtime favorite, was the only real standout performer in 2018 while 55 of the 69 components of this group are negative YTD. General Electric (GE), once considered an Industrial powerhouse, is down 60% YTD and often in the news. A combination of slowing growth in China and US/China trade tensions has weighed on a number of the names. In the 1990's we saw a relative valuation of higher quality industrial names (lower cyclicality, higher organic growth) expand relative to lower quality in a similar environment. Historically, the US, Europe, and Japan were the biggest contributors to capex growth, but over the past decade China has risen to be the largest driver of capex. We are also seeing lower Oil prices weight on names with exposure to the O&G industry while weak housing/auto weighing on a number of names as well. Fluid power products are still showing growth as well as robust pricing, but growth trends are slowing. A number of management teams across this group have also showed some concern for Europe slowing in 2019.

Exhibit 1: Multi-industrial coverage stocks consensus PE ranges – current vs. range since 2005 vs. pre-financial crisis vs. Q4 2008



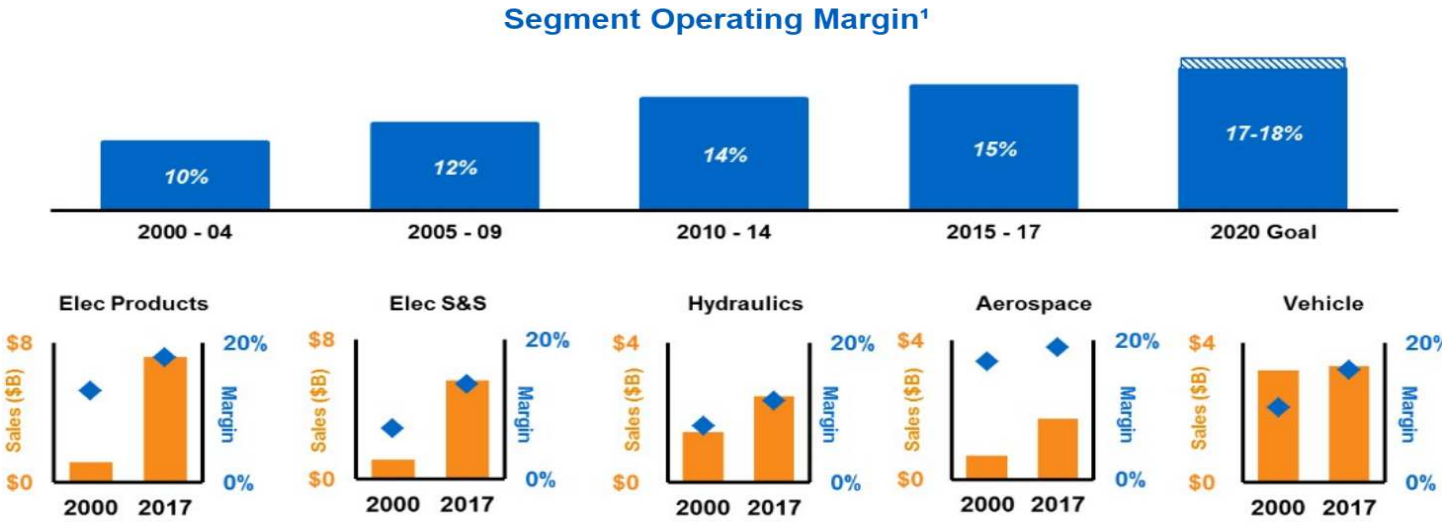
Breakout by End Market

End Market	3M	ALLE	AME	CFX	DOV	ETN	EMR	FLOW	FLS	FTV	GE	HDS	HON	IR	ITT	JBT	MCRN	MG	PH	PNR	ROK	RXN
Industrial	19%		21%	28%	11%	17%	20%	15%	9%	19%			17%	18%	21%		14%	16%	33%	21%	4%	21%
Metals & Mining			10%	4%		2%		2%	2%		0%								3%		14%	4%
Agriculture						2%			2%										5%			2%
Construction	1%			3%		2%													12%		4%	3%
Healthcare	17%		13%		3%		2%		5%	9%	14%						6%		2%			
Residential	8%	29%				6%	6%				1%	49%	4%				9%			25%	4%	5%
Consumer	11%		5%		35%		2%	36%	2%	34%				5%		69%	44%		1%	13%	25%	12%
Electronics & Tech / Data Centers	9%		20%							5%							7%		3%		7%	
Infrastructure & Government	1%	34%			6%	6%		1%										4%		6%		11%
Auto	11%			4%	7%	8%				14%			6%		27%		20%		5%		9%	
Truck & Transportation	3%		2%	4%		8%		3%	2%	5%	3%				18%				10%		2%	2%
Buildings & Non-res Construction		37%		11%		14%	4%					51%	23%							21%		12%
Aerospace & Defense			16%			9%				5%	20%		27%		15%	31%		12%	16%			9%
Utilities / Power Gen	4%		7%	25%		9%	7%	8%	14%	5%	30%							8%		10%		6%
Data Centers						9%																
HVAC & Refrigeration					14%		20%							77%					4%			
Oil & Gas			6%	19%	22%	5%	23%	21%	44%		24%		14%		15%			56%	5%		8%	
Telecom	1%																		2%			
Chemicals				2%	2%		11%	11%	18%				2%		4%			4%			5%	
Security & Protection	12%																					
Finance											7%											
Water								1%	4%											6%	5%	13%
Software / SASS	3%					2%	4%			5%	2%		8%								12%	
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

The best way to attack this group will be by market cap and see if there are any standout opportunities in those brackets. In the $20B+ group there are many notable names like Caterpillar, Deere, Cummins and Emerson. Considering weakening conditions the focus this year is on quality, value, strong balance sheet and better than peer average growth. These names trade on average 11.6X EBITDA with 21.1% EBITDA margins and 1.5X Debt/EBITDA.

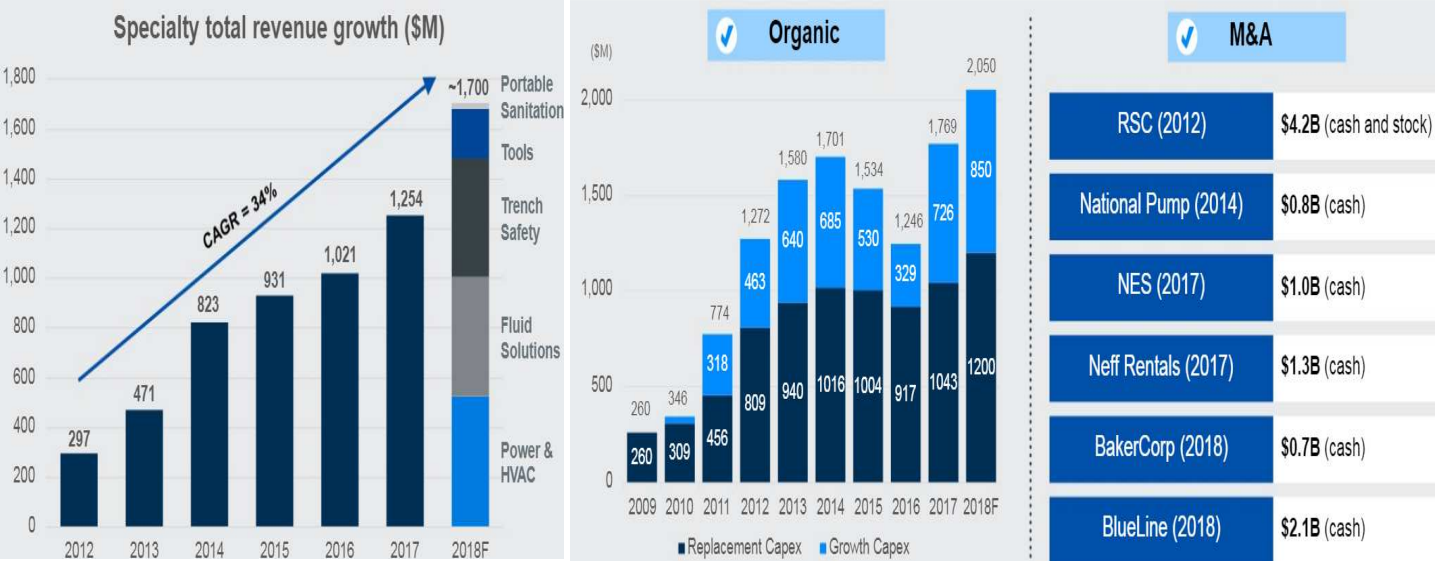
Roper (ROP) has a $29B market cap and trades at a premium valuation of 18X EBITDA but its 36.25% EBITDA margins make it a best-in-class name. ROP grew revenues 21.6% in 2017 and 12.2% in 2018 with an outlook for 4-5% growth the next two years. It is more immune from many of the headwinds seen in the Industrial group and is making moves into a number of high margin software niches. It has a long history of margin expansions with its asset-light business model and has deployed $9B in acquisitions over the last 7 years. It is seeing strong organic growth across its main business segments as well.

Eaton (ETN) screened best among the names trading less than 10X EBITDA, offering healthy margins and growth with strong FCF. ETN has 17.76% EBITDA margins and expects to follow up a 5.8% topline growth year in 2018, best since 2013, with 4% growth in 2019 and near 10% EPS growth. It posted record margins in its Electrical Products, Systems & Services, and Aerospace segments last quarter and is seeing solid booking trends with a strong backlog. It sees secular trends such as global urbanization, environmental regulations, energy efficiency, intelligent products & connectivity, and demand for superior value solutions as key growth drivers. The majority of its businesses are in the early to mid-stages of the growth cycle. ETN is a value name in strong end-markets delivering growth and margin expansion, a high quality name in an uncertain environment.



In the $5B to $20B market cap range there are fifteen names trading on average 13X EBITDA with 22.3% EBITDA margins and at 2.1X Debt/EBITDA.

United Rentals (URI) shares have been hit very hard this year down 38.5% but is trading at very cheap valuation despite a levered balance sheet. The $8.83B Co. trades 5.5X Earnings, 5X EBITDA and has 48.2% EBITDA margins. The cycle for URI is slowing but is still showing substantial growth to peers and has just an 11% market share in a highly fragmented industry that continues to consolidate, while equipment rental trends continue to outpace growth in construction spending. URI has room for margin expansion during this period of moderating growth as it sees room for productivity enhancements using technology. Its specialty business has seen robust growth and now accounts for 21% of total revenues. URI has steadily been improving its ROIC to 10%+ and also transformed its FCF profile. It is one of the best capital allocators and current leverage is just below its historical average. URI valuation has gotten to extreme fear levels and at the current annualized FCF rate and stock price, the company could buy back the entire compaby within 5-6 years.



Middleby (MIDD) with a $6.2B market cap screens well across all metrics, trading at a premium valuation of 17X EBITDA with 17.76% EBITDA margins. MIDD is set to grow the topline 15% in 2018 and an outlook for nearly 10% growth next year and 20% EPS growth. Commercial Foodservice accounts for 64% of its revenues and carries 28% EBITDA margins, an $8B market opportunity. The company has been investing internationally and seeing strong growth in those markets. Its Debt/EBITDA is back to elevated levels of 3X so expect some deleveraging in the coming year. It is seeing strong growth from new products, representing 25% of sales over three years. Restaurants are upgrading old equipment with new Technology focusing on automation and efficiency. MIDD is in a good situation and I like its more defensive profile with a focus on a stronger end-market in foodservice.

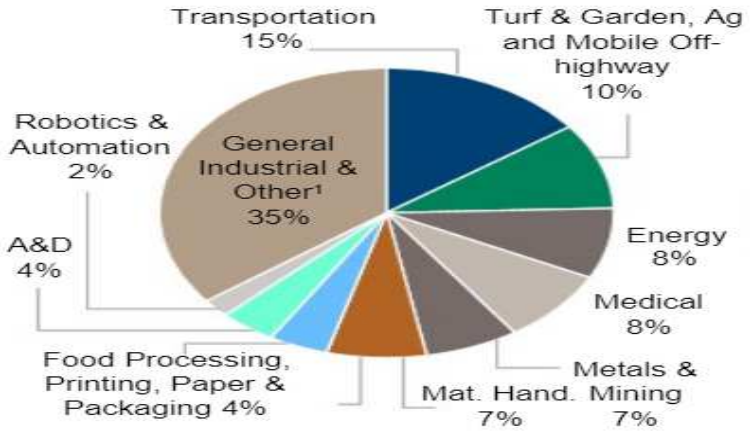
Ametek (AME) once again screened as one of the highest quality Industrial names, the $16.7B Company trading 19.5X Earnings, 14.3X EBITDA with 26.35% EBITDA margins. AME is a leader in electronic instruments and electromechanical devices and is a solid play on the trend of factory automation. It spent $1B in acquisitions in 2018, including its largest Telular bringing software-enabled IoT capabilities. AME trades at an attractive valuation while providing some of the best growth prospects in the group and having more durable growth end-market exposure. It also has proven to have one of the strongest management teams in the industry.

In the $2B to $5B market cap range there are fifteen names trading on average 9.5X EBITDA with 16.1% EBITDA margins and Debt/EBITDA at 1.9X.

Curtis Wright (CW) is a $4.55B maker of precision components trading 15.2X Earnings, 16X FCF and 15.2X EBITDA with 20.7% EBITDA margins. CW is coming off 7.7% and 8% revenue growth years and in 2019 sees 6.2% revenue growth with 9.6% EPS growth. It mainly serves Defense, Commercial Aerospace, and General Industrial markets, Defense accounting for 41% of revenues. CW is a strong FCF company and its end-markets provide a stronger backdrop supported by an increasing Defense budget and strength in Commercial Aero markets. CW could see major upside on a resolution with China where it has a major opportunity in its reactors business. It is a major beneficiary of the US Navy modernization trend.

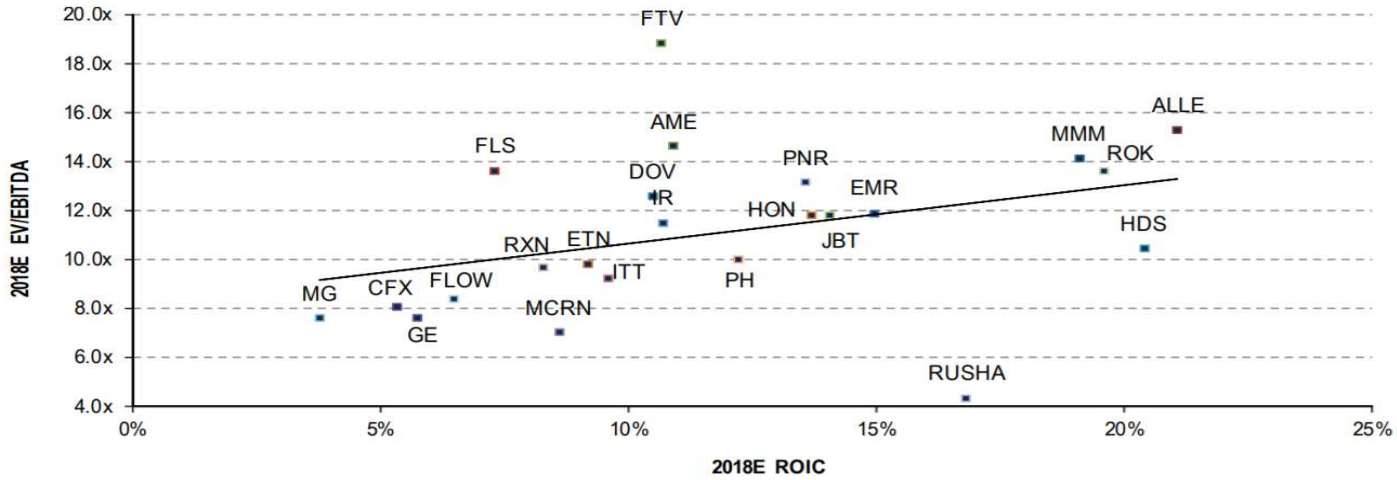
That leaves 25 names under $2B market caps trading on average 10.9X EBITDA with 17.77% EBITDA margins and Debt/EBITDA at 1.5X.

Altra Industrial Motion (AIMC) is a $1.73B maker of mechanical power transmission components trading 12.9X EBITDA with 15.75% EBITDA margins and Debt/EBITDA at 2.1X. AIMC merged with Fortive's Automation & Specialty platform in a transformational move and sees 425bps of margin improvement over five years and $1B in cumulative FCF. The deal moves Altra into higher growth and higher margin businesses of motors, gearing and controls. AIMC will be a merger integration story in 2019 and this looks like a very positive deal, while the company will also look to quickly delver its balance sheet. At 12.9X EBITDA with rising margins and a better growth profile, shares look attractive.



Helios (SNHY) is a $1.2B maker of products in the fluid systems space and trades 16.8X Earnings, 14X EBITDA and has 24% EBITDA margins with Debt/EBITDA low at 0.6X. SNHY has seen revenues jump 150% since 2015 and sees another 18.7% growth in 2019 with substantial EPS growth in the forecast. It has a vision of $1B+ sales by 2025 with its global technology leadership position. It has high growth, high margins and operates in fast growing segments of hydraulics and intelligent controls. It sees the Electronic Control segment market as a $3.5B one alone. SNHY is a favorite small cap in the Industrial sector.

EV/EBITDA vs. ROIC

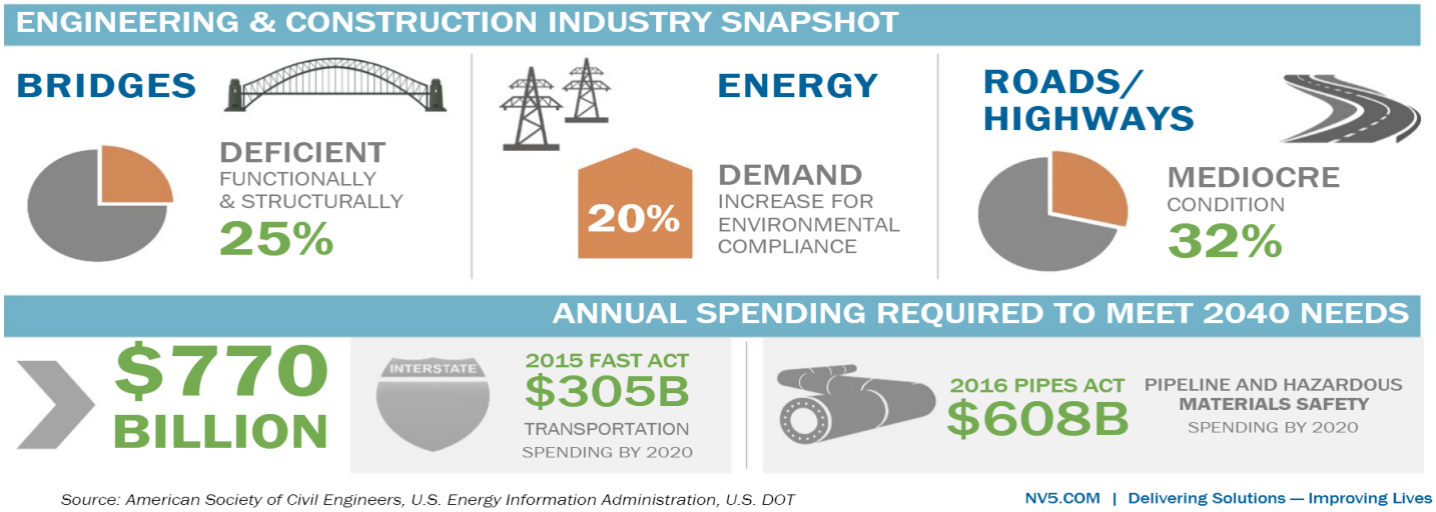


Building Materials and Tools:

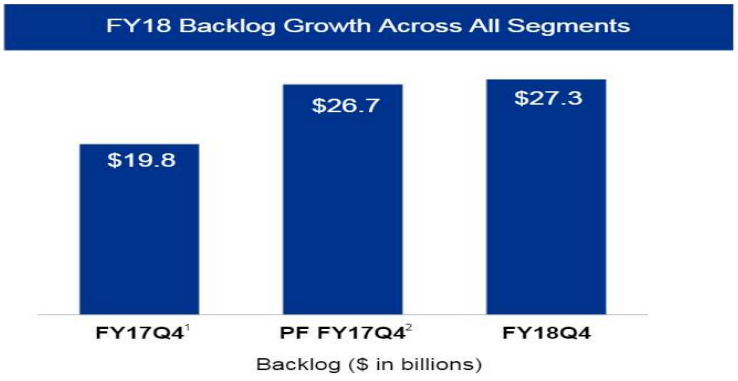
Components: *AAON, VMC, MLM, MAS, USG, MDU, OC, TREX, AWI, BECN, JELD, SUM, BLDR, DOOR, IBP, BMCH, PGTI, CPBX, APOG, NCS, GMS, USCR, JEC, ACM, TTEK, KBR, NVEE, AMRC, WLDN, ALLE, AMWD, MHK, AXE, FAST, GWW, HDS, MSM, WCC, AIT, EME, FIX, PWR, FLR, MTZ, GVA, DY, PRIM, TPC, AGX, OSB, LPX, WY, CSL, WMS, TSE, MYE, CRH, CX, JHX, EXP, CPAC, WCC, ROCK, SWK, ROLL, TKR, SNA, TTC, LECO, SSD*

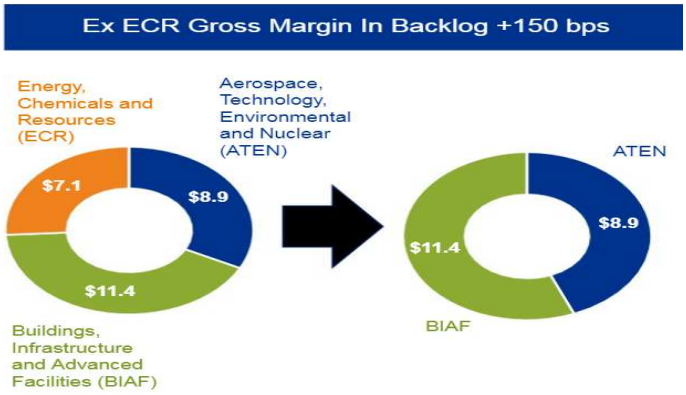
This group includes building materials, HVAC suppliers, contractors and heavy construction, industrial equipment distributors, and tools. The AIA forecasts 4% growth in nonresidential construction for 2019. Thirty of the 68 names in this group are down 25% or more YTD as weakening trends in the housing market have weighed. The one potential upside driver in 2019 is any developments on the Infrastructure spending front. On the CAPEX front in Oil & Gas we saw solid growth in 2018 off trough 2017 levels and budgets remain positive, up 3% Y/Y for 2019. These estimates are with Oil at $50. Mining CAPEX also recovered in 2018 and sees modest growth for 2019.

The Contractors, Technical Services and Heavy Construction group trades 9.2X EBITDA with 8.26% EBITDA margins. E&C multiples have historically been correlated to the energy capex cycle and saw a lot of PE compression in 2018.



Jacobs Engineering (JEC) is an $8.4B best of breed engineering & construction play trading 10X Earnings, 8.8X EBITDA and generating solid growth/FCF with a 1% dividend yield. JEC is projected for 11.9% revenue and 16.9% EPS growth in 2019 after a strong 2018, recently seeing strength in Aerospace, Tech, Environment and Nuclear while backlog has surged in Buildings/Facilities. In 2018 it made strategic moves acquiring CH2M and selling its energy and mining arm to Worley for $3.3B so it can focus on higher margin businesses. JEC is a transformation story that can see a re-rate in 2019. It has a lot of flexibility with capital allocation with debt/EBITDA at 1.1X. JEC is also levered to any uptick in infrastructure spending.





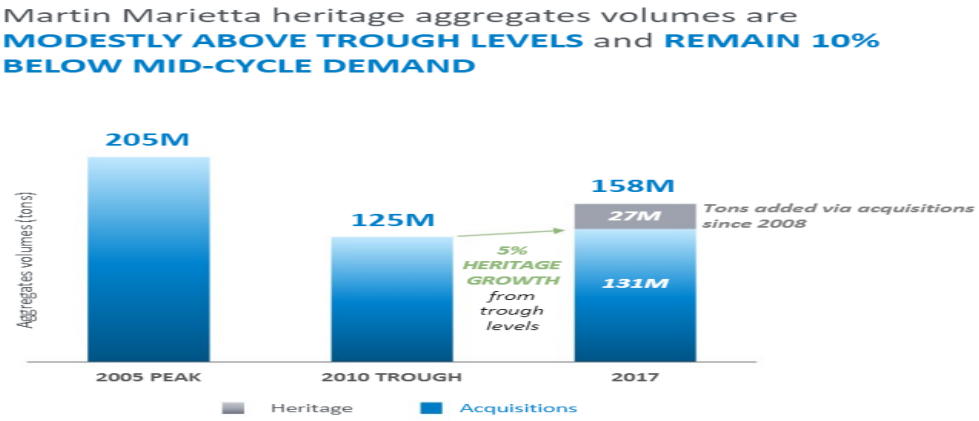
NV5 Global (NVEE) is a smaller name, $780M market cap, and a top discovery from last year in this group. It has performed well up 14.3% YTD despite being down 30% in Q4. Shares trade 16X Earnings, 28.5X FCF and 15.3X EBITDA with 12.37% EBITDA margins. NVEE has seen revenues quadruple since 2014 and sees 23.7% growth in 2019 with 18-20% EPS growth each of the next two years as well. NVEE has been using an acquisition strategy and its backlog continues to expand, a unique roll up play in this group. It is positioned to continue to benefit from expanding local government budgets.

The Industrial Equipment group trades 10.4X EBITDA with 11.85% EBITDA margins.

Fastenal (FAST) with a $15.45B market cap trading 18.9X Earnings, 14X EBITDA and yielding a 3% dividend is the preferred name with its impressive 22.87% EBITDA margins as it benefits from scale. It has seen a 15% CAGR in its vending devices while onsite programs account for 20% of revenues but 40% of its growth. It sees a large opportunity ahead of a $25B market potential. It recently reported November sales +12.3%. FAST is set to face some deceleration in growth in 2019 with 9% topline growth seen, down from 12.8% in 2018 while worries surround rising cost pressures. Margins are a key story here and it has faced pressures from tariffs. It has tended to trade in the 12-16X EBITDA range, so at the lower end on weakness a high quality name still offering ample growth and best-in-class operations.

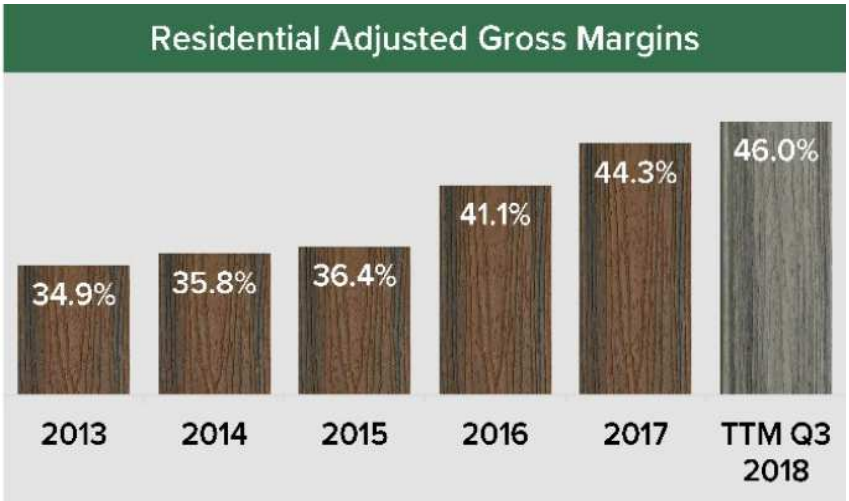
The Building Materials group with a commodity focus trades 11.3X EBITDA with 21.95% EBITDA margins.

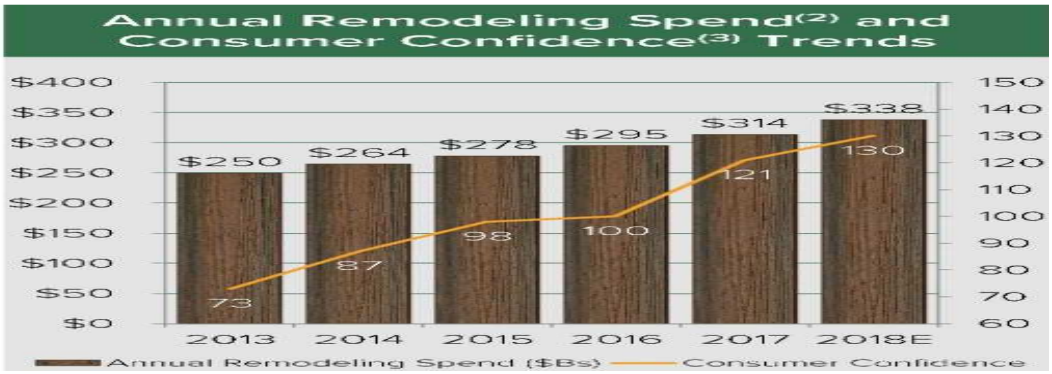
Martin Marietta (MLM) has an $11B market cap and trades 18X Earnings, 13X EBITDA and with 25.85% EBITDA margins, standing out in a fairly unattractive group unless we see an infrastructure spending package. MLM shares are down 20% YTD and saw soft growth throughout 2018, but anticipates an accelerating in 2019. Geographical location is critical to its industry and MLM is positioned in the higher growth areas. Pricing is a key swing factor and aggregates have seen 5% annual growth since 2005 while volumes have weakened. It has seen project delays and freight constraints but still expects a rebound in the US construction growth cycles. Rising interest rates and cost inflation are a notable headwind and 2019 may be a peak year in growth, though much of this already being priced into shares. It would be an attractive name at 11X EBITDA.



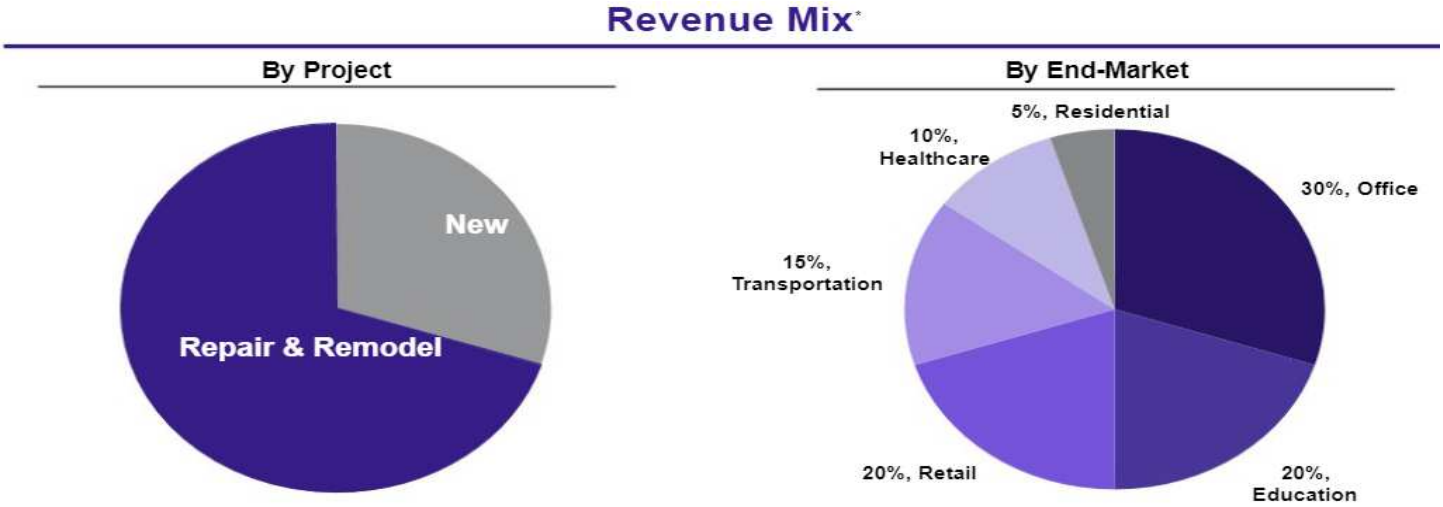
The specialty building materials names trade 9.6X EBITDA with 17.3% EBITDA margins.

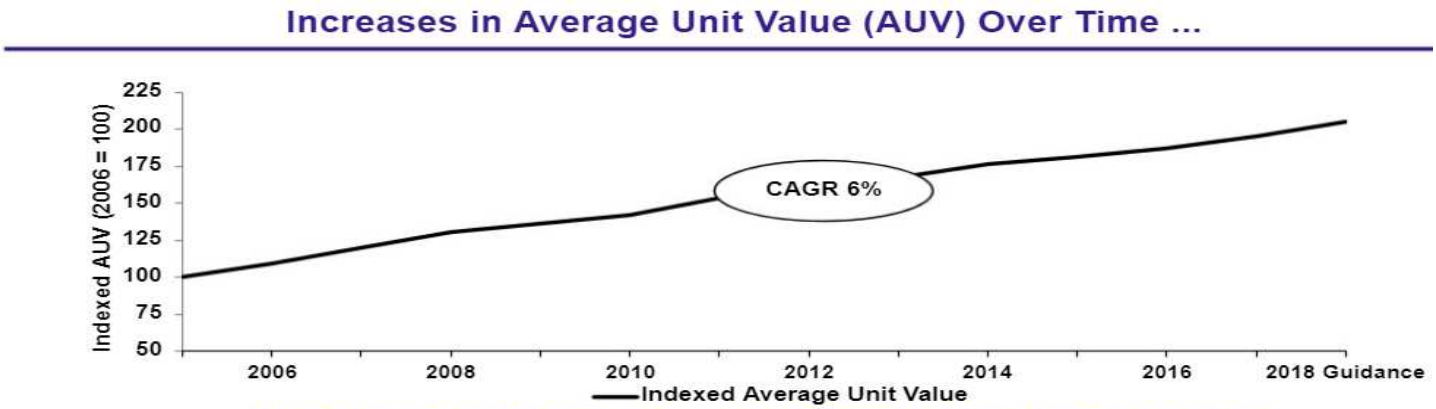
Trex (TREX) has a $3.43B market cap and trades 22.35X Earnings, 34.65X FCF and 17.2X EBITDA with 28.15% EBITDA margins. Shares are just +4.99% YTD after pulling back hard in Q4, down 32%. The long term opportunity in the maker of decking products remains vast with Wood decks still above 80% of the total market and TREX continues to expand its margins. Although housing has weakened we are not seeing weakness in renovation and house pricing, so demand for TREX should remain strong in 2019. It has a dominant brand position and has positioned well with digital and consumer engagement. TREX offers a value proposition, costing more upfront, but saving buyers over the long run with its long lifespan and no maintenance. Outdoor property improvements account for 34% of home improvement spending and rising consumer confidence has the repair and remodeling project growth at 7.7% in 2018.

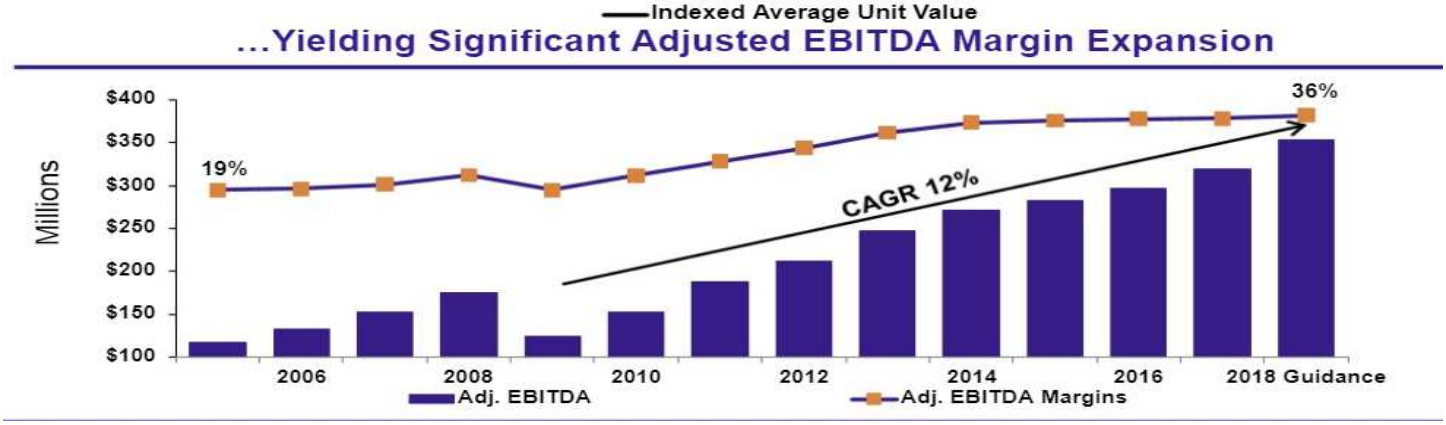




Armstrong Worldwide (AWI) is a $3B maker of ceiling systems trading 13.7X Earnings and 10.3X EBITDA with standout 35.66% EBITDA margins. AWI is also seeing accelerated growth the last three years while EPS seen growing at a 15% clip. It has little residential exposure and mainly targets repair & remodel. It is seeing solid share gains in celling and wall solutions. It also leads peers in FCF margin while trading in-line with peer multiples. In 2019, the company expects to deploy around 20% of cash flow to internal projects, 15% to acquisitions, 30% to share repurchases, 10% to the dividend and 25% to debt service. AWI is a combination of value, growth, and market share gains.



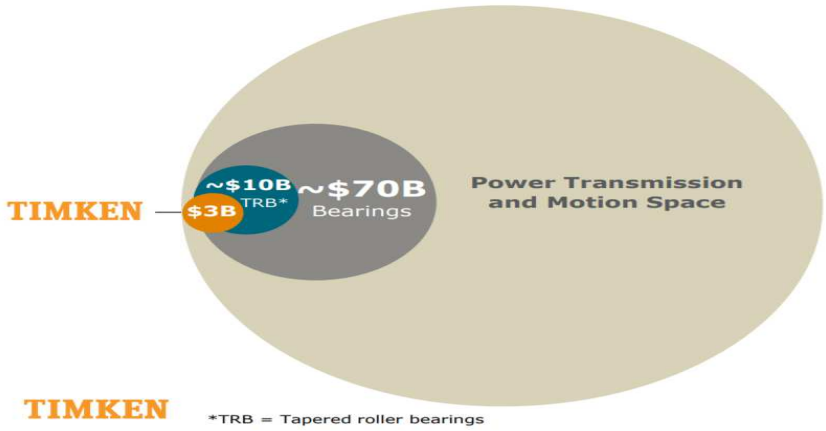




American Woodmark (AMWD) has a $1B market cap as a maker of kitchen, bath and home organization products trading 7.3X Earnings, 9.1X FCF and 7.2X EBITDA with 14.83% EBITDA margins and a strong 3 year average ROIC near 45%. AMWD saw significant revenue growth in 2018 and into 2019 with things expected to slow in Q4 (April), which is why the multiple has been compressed to near a 5 year low. Cabinets is its core business while the acquisition of RSI expanded it into other products. It is facing headwinds such as weaker housing end-market demand and rising costs, though pricing can offset much of the latter. AMWD is more leveraged to new construction and home centers, so fears appear overblown at these levels. The company expects the cabinet remodeling business to improve in 2019 but remain below historical averages but does expect to continue to gain market share. It sees 7-9% new residential construction start growth for 2019 and margins will be challenged from labors costs, raw materials and transportation rates. However, at 7.2X EBITDA it appears to me a lot of negatives are priced into a well-run, high quality company.

The Tools and Components group trades 10.7X EBITDA with 18.5% EBITDA margins.

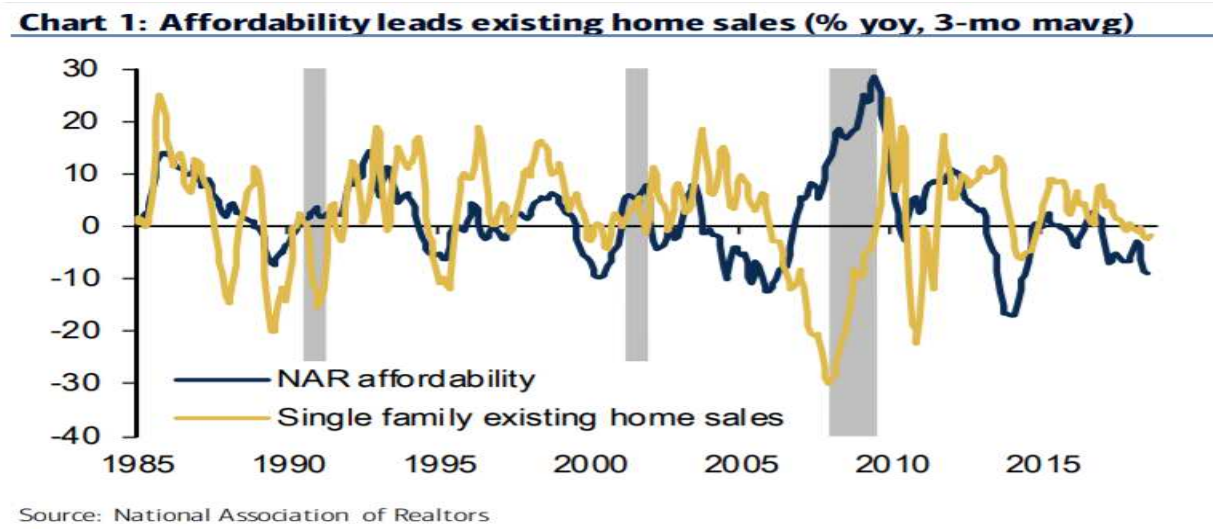
Timken (TKR) is a $2.88B maker of bearings and other industrial components trading 7.6X EBITDA and 29.2X FCF with 17.3% EBITDA margins. TKR is seeing a 2nd year of double digit topline growth in 2018 and 2019 seen strong at +9.5% as well. Shares are down 24% YTD but at an attractive valuation. Shares have been weighed down by rising rates and the China/US trade dispute, but is cheap to peers and margins have been surprising to the upside with steel prices rolling over. It has 16% exposure to Auto where growth will remain muted but it has a diverse set of end-markets including Off-Highway, Rail and Aerospace. Its process industries segment delivers much higher margins. It sees megatrends such as Urbanization, Infrastructure, Population Growth, Energy, and Sustainability as growth drivers. Capital deployment will be important in 2019 and it has shown a strong ability to generate upside on price/cost ratio.



Homebuilders, Waste Mgmt., and Other Home Services:

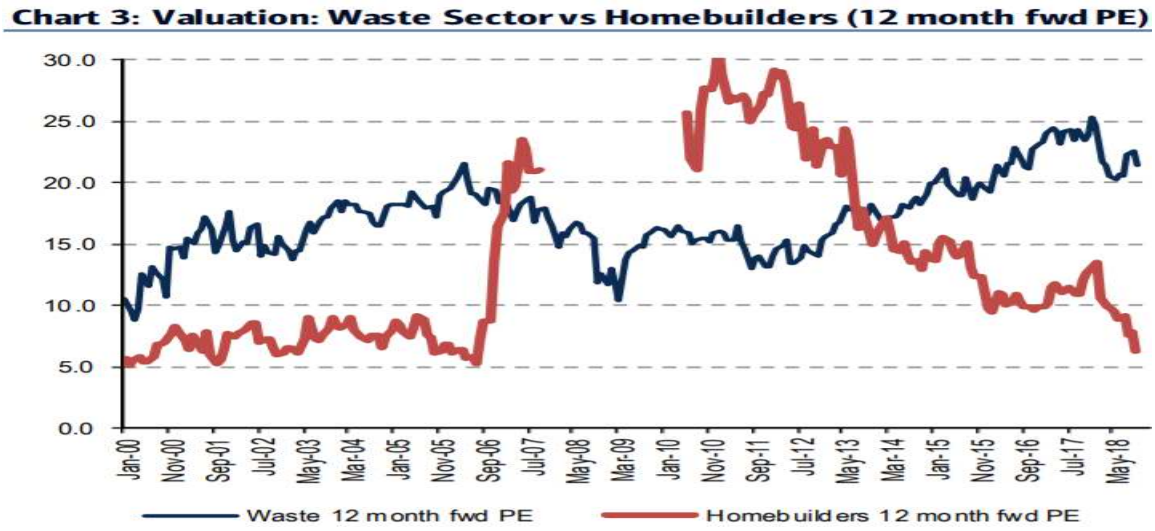
Components: *DHI, LEN, NVR, PHM, TOL, TMHC, KBH, TPH, MDC, MTH, CVCO, MHO, CCS, WM, RSG, WCN, SRCL, DAR, CLH, ADSW, CVA, ECOL, CWST, SITE, FSV, ROL, SERV, FTDR*

After a strong 2017 for housing stocks things worsened in 2018 with slowing housing starts and sales as mortgage rates rose, while the homebuilders also dealt with rising costs. Most of the homebuilders are down 25-40% YTD despite Millennials in prime spending years and overall positive demand/supply situation. A decline in affordability due to rising rates and an overall negative perception shift to homebuyers are causing downward revisions. Existing home sales are seen to have peaked while new home sales have room for further growth in 2019 and remain well below prior cycle highs.



Pulte Homes (PHM) shares are down 23% YTD and the $7.26B homebuilder trades 6.9X Earnings, 6.3X EBITDA and 7.15X FCF with a 1.72% yield, 15.47% EBITDA margins and Debt/EBITDA at 2.9X. PHM has seen revenues jump to $10.1B from $7.67B the last two years and now seeing a slower growth period for the housing recovery. PHM has been effectively reducing SG&A % of revenues the last few years and operating with a 13-16% ROIC. PHM is diversified across the country with strong exposure to Florida/Texas and the West/Southeast. Pulte has more exposure to more affordable and faster selling product than peers. It screens cheap to peers with the most room for improvement if the housing cycle turns.

Waste Management was an area of relative strength with notable outperformances by smaller cap names like ECOL, CWST and DAR, volume and pricing growth across the industry leading to strong results. Headwinds in recycling and rising operating costs are become a negative influence on margins. Many of the names are trading at peak multiples though tend to perform well late-cycle as a defensive group. Waste stocks have previously been immune to weakness in the homebuilders. Housing starts have typically led waste volumes by 1.5 years.



Waste Connections (WCN) is the fast growing $20B waste management Company trading 26.75X Earnings, 15.3X EBITDA and has strong 31.75% EBITDA margins, well above peers. WCN is expecting steady 9% Y/Y growth in revenues each quarter next tear and 12% EPS growth. It is focused on secondary and exclusive markets allowing for the strong EBITDA and FCF margins and is very active in M&A. It also has shown strong pricing to combat rising costs. WCN has room for further margin expansion, additional M&A and a turn in the recycling business.

US Ecology (ECOL) is a $1.4B provider of environmental and industrial services to commercial and government entities trading 24X Earnings, 13X EBITDA and 39.3X FCF with 23.6% EBITDA margins. ECOL is forecasted to hit double digit revenue growth once again in 2019 and 14.4% EPS growth. The Environmental Services industry is a $25B market, $11B hazardous waste and $14B Field & Services. The Environmental Services segment has 40% EBITDA margins while Field & Industrial with 11% EBITDA margins. ECOL has 78% of its business recurring providing nice visibility. ECOL suffered an explosion at its Grand View facility in November that has caused estimates to be lowered for FY18/19 with it closing for an investigation. ECOL has also been active with small acquisitions. It is a quality name though I can see some headwinds from a slowdown in Industrial activity in 2019, and likely shares can be acquired closer to 10X EBITDA.

Rollins (ROL) is a $12B provider of pest and termite control services that trades rich at 31X EBITDA and 44.2X Earnings but carries 20.82% EBITDA margins, a strong 15% ROIC and strong FCF. ROL has seen revenue growth steadily accelerate and expects 12% EPS growth in 2019. ROL has seen operating margins rise from 11.1% in 2009 to 17.6% last year. ROL could be seeing peak margins and organic growth however, so the premium valuation may provide a close ceiling for shares, but it still stands out against peers that are much more exposed to a weaker Macro cycle. The U.S. pest control industry is growing at a mid single-digit rate organically, driven by low penetration rates and increasing pest activity as global temperatures and population density continue to rise. The pest control market is generally considered to be less cyclical and less susceptible to downturns in macroeconomic activity due to the favorable characteristics listed above. The size of the U.S. pest control market is about $8.2 billion today (according to Specialty Consultants), which represents approximately half of the global pest market.

Transports (Airlines, Rail, Trucking, & Shipping):

Components: *DAL, UAL, AAL, SAVE, AZUL, LUV, RYAAY, ALK, JBLU, CPA, SKYW, ALGT, HA, AAWW, JBHT, ODFL, KNX, LSTR, SNDR, WERN, HTLD, SAIA, ARCB, MRTN, UPS, FDX, ATSG, EXPD, CHRW, XPO, FWRD, HUBG, UNP, CSX, CNI, NSC, CP, KSU, WAB, GWR, TRN, GBX, UHAL, R, KEX, GLNG, MATX*

This group is fairly straightforward in breaking down into groups, Airlines, Rails, and Freight/Shipping/Trucking. Clearly the Transports are closely tied to the economy, and one group that has been hit very hard in Q4 down 18%.

The airline group has many of its own metrics that it reports monthly such as Passenger Revenue per Available Seat Mile (PRASM), Revenue Passenger Miles (RPM), Average Seat Mile (ASM), Cost per Available Seat Mile (CASM), and Load Factor. The group has often traded at a steep discount to other Industrials despite much stronger ROE, ROIC, Margins, and FCF/Share while having a strong economic moat protecting it from much new competition. Margins have recovered since the early 2000's as the group as consolidated and added on ancillary fees when traveling, yet sentiment across the group from investors remains fairly negative. Profitability has also been boosted by lower fuel prices. Recent commentary on the outlook for air travel remains favorable for growth moving forward.

Looking at the Airliner group first **Spirit (SAVE)** trading 6.9X EBITDA has the best growth profile as well as 23.75% EBITDA margins and a strong ROIC. **Alaska Air (ALK)** is close behind with impressive 20.6% EBITDA margins, strong FCF and trades 5.8X FY19 EBITDA. **Delta (DAL)** is the strongest large cap name at 5.4X EBITDA and generating strong growth and FCF. United (UAL) was a top performer in 2018 as it is a turnaround story seeing higher profitability and strong cash flows while derisking its balance sheet. AAL and JBLU have been major laggards. Airliners set up nicely into 2019 with fuel prices coming down while bookings/pricing remaining strong. At an industry level, expect a step down in both system and domestic capacity in 2019 to +3.1% and +3.7% from +4.2% and +5.2% in 2018, respectively. DAL and ALK have the strongest RASM growth in the group and both have the highest margin expansion estimates for 2019.

Figure 16: U.S. Airlines 2019 EV/EBITDAR

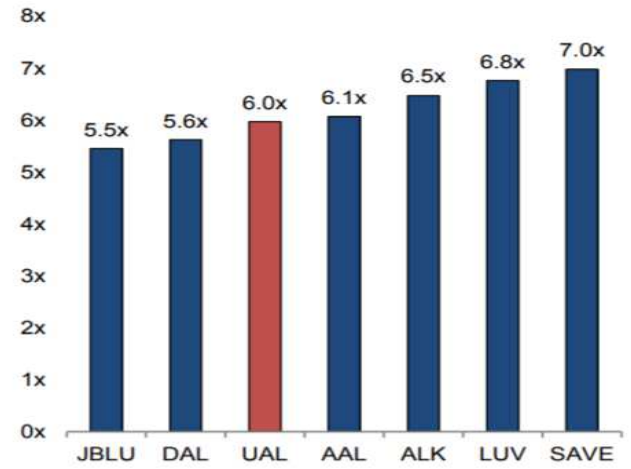


Figure 24: Stage-Length-Adjusted CASM Excluding Fuel—2017

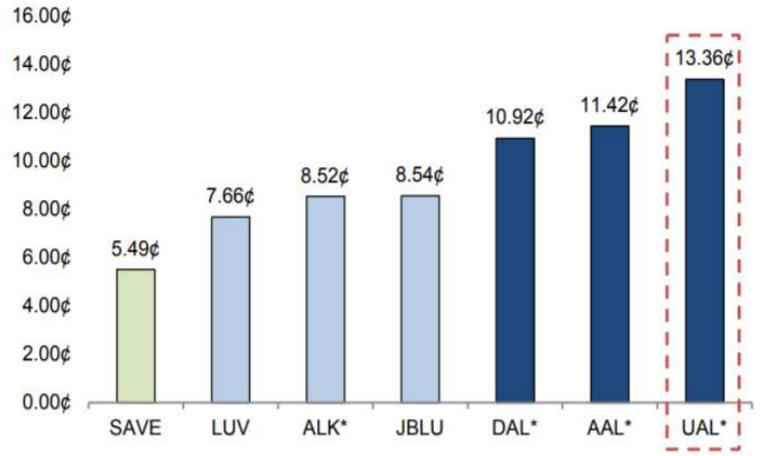
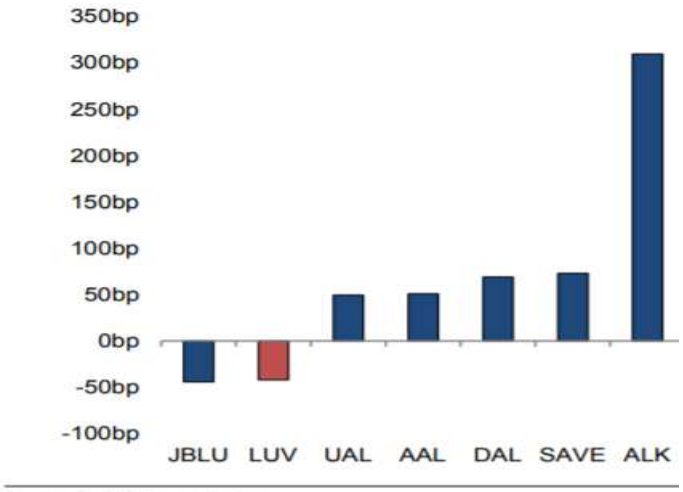
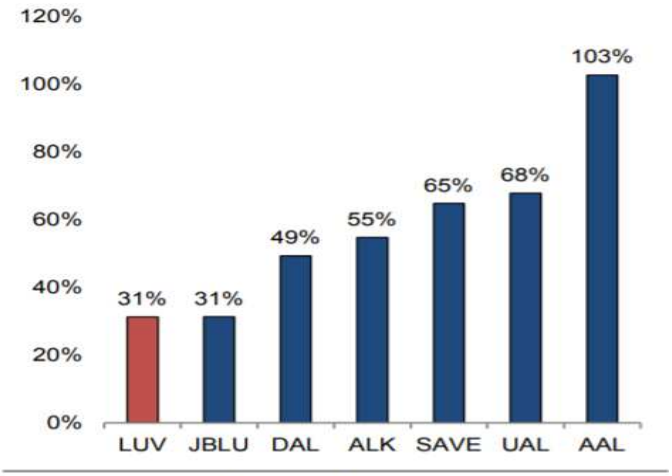


Figure 10: U.S. Airlines 2019 Margin Expansion



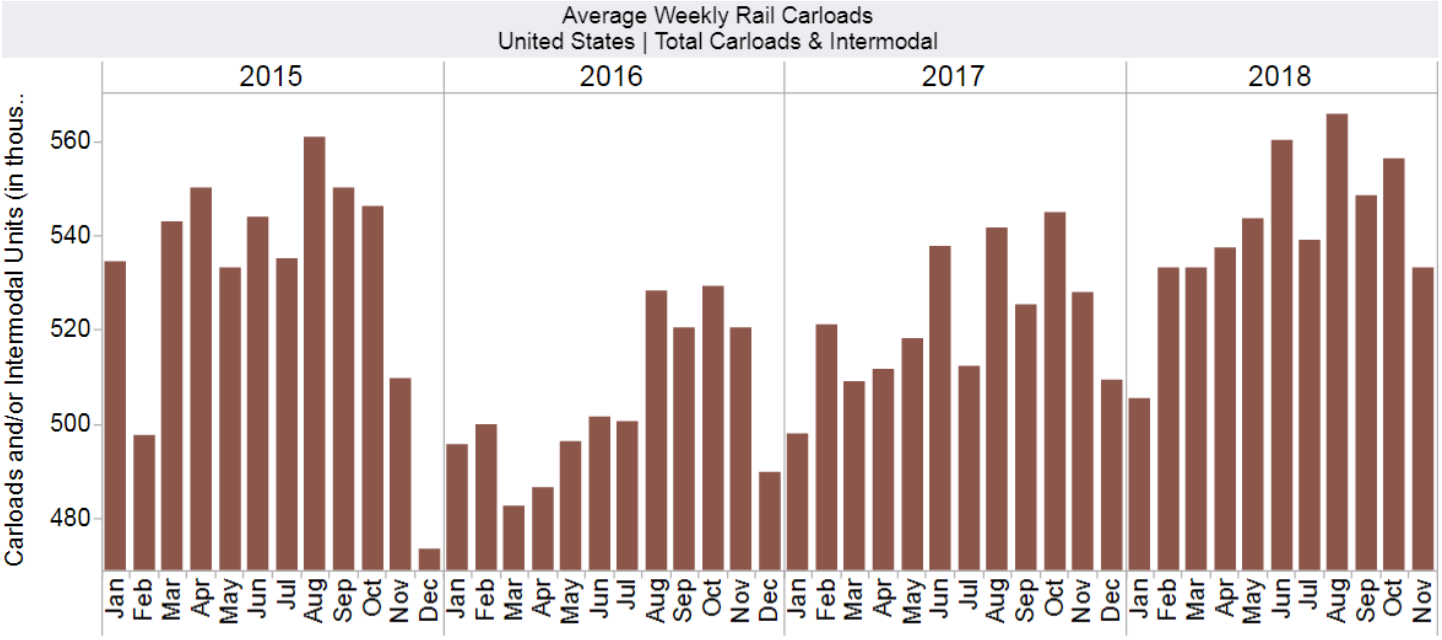
Source: Credit Suisse estimates.

Figure 28: U.S. Airlines Total Adjusted Debt to Cap



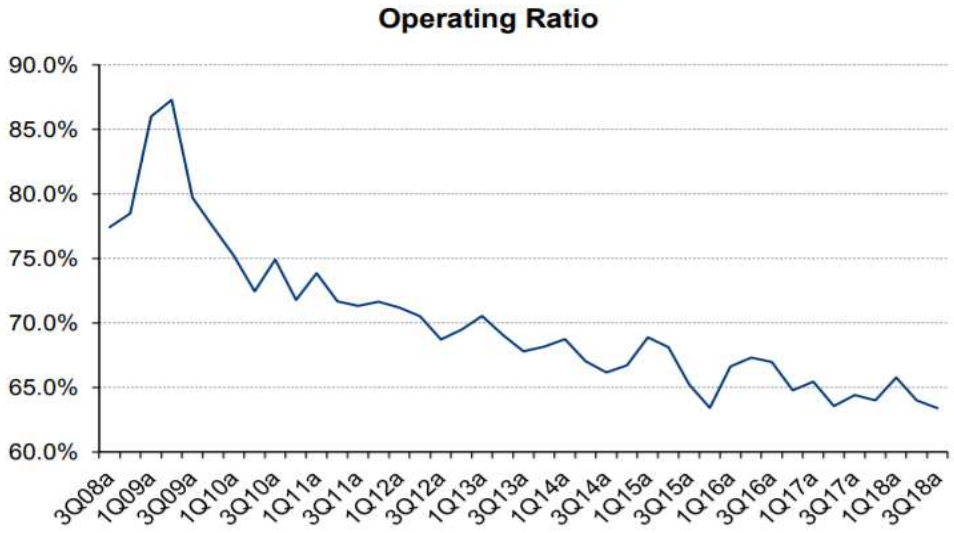
Source: Company data, Credit Suisse research; *As of Q3'18.*

In the Railroad group there is always plenty of data with monthly cargo loads and also evaluate strength of the names with the operating ratio. Weakness in Housing/Auto has weighed on the group while Commodity/Chemical also faces headwinds along with Retail. Most of the names are down 10-20% this quarter on the weaker Macro views, while CSX was a top performer YTD +16% on a major operational overhaul to increase efficiencies.

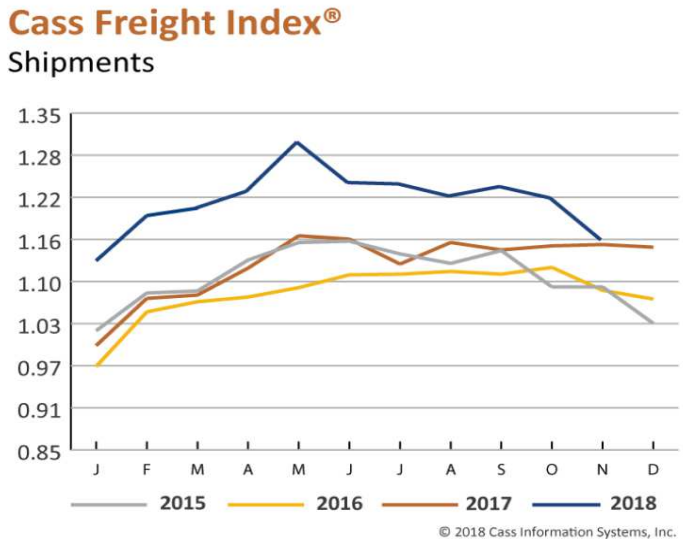


*Canada - Figures for Canada include the U.S. operations of Canadian railroads.
**United States - Figures for the U.S. excludes the U.S. operations for Canadian railroads.

Kansas City Southern (KSU) looks attractive among the names trading 9.8X EBITDA with a strong growth profile and standout 48.3% EBITDA margins. It notes headwinds in Auto, Industrial and Energy which accounts for 30% of its volume, but has favorable outlooks for Chemical/Petro & Intermodal accounting for 60% of volumes. KSU has seen the political issues with NAFTA put behind it now and can focus on operational improvements in 2019 as it invests in new locomotives and capacity expansion with shares near the low end of its 10 year valuation range. It could shift to a PSR operating model like UNP to driver efficiencies and unlock upside value.



In the freight and trucking group only EXPD is positive YTD with the names getting crushed in Q4 on weak Macro concerns and rising costs. Fed-Ex (FDX) reported earnings on 12-18 with a weak 2019 outlook showing global macro concerns. We can see on land and air freight volumes trending lower since peaking earlier this year. The International Air Transport Association (IATA) released data for global air freight markets showing that demand, measured in freight ton kilometers (FTKs), rose 3.1% in October 2018, compared to the same period the year before. This pace of growth was up from a 29-month low of 2.5% in September. Freight capacity, measured in available freight ton kilometers (AFTKs), rose by 5.4% year-on-year in October 2018. This was the eighth month in a row that capacity growth outstripped demand. BofA Merrill Lynch Truckload Diffusion Indicator for shippers' 0- to 3-month freight demand outlook decreased to 53.1 from 58.0 two weeks ago, the lowest level in more than two years.



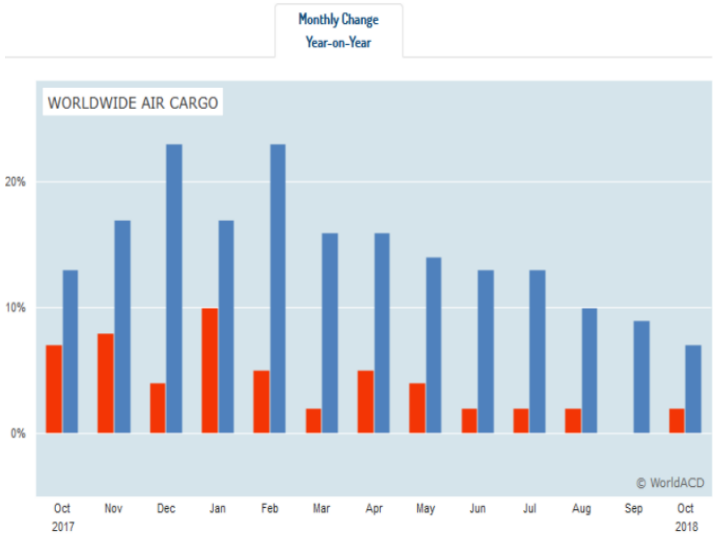


Figure 3: Truckstop.com Monthly Spot Rates (excl. fuel surcharges; CS est.)

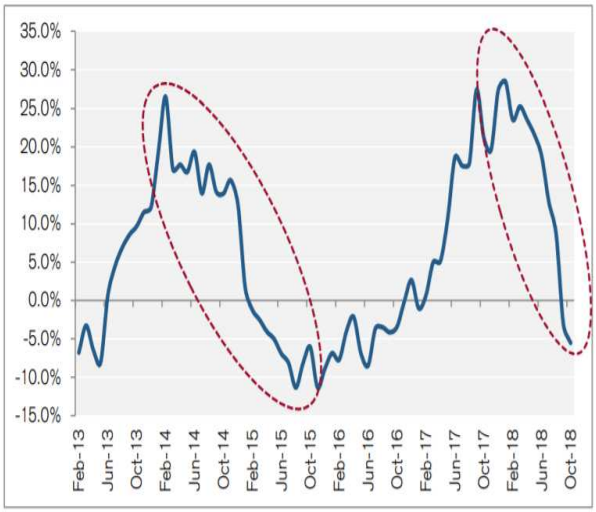
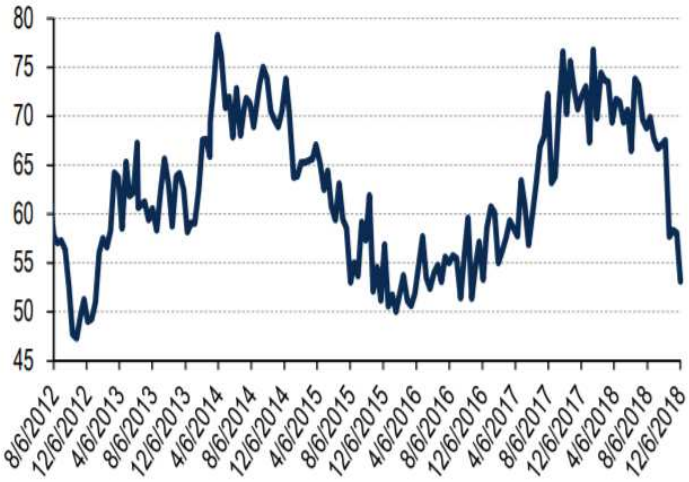
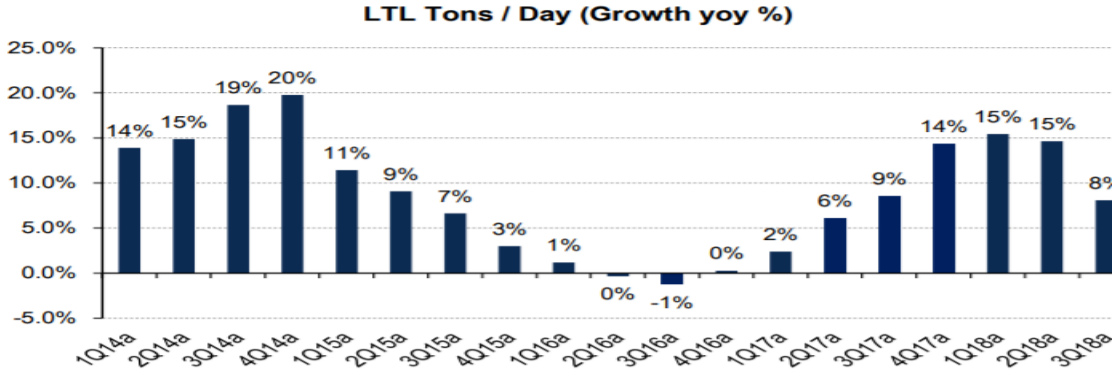


Exhibit 2: BofAML Truckload Diffusion Indicator - 0–3 months demand time series



Old Dominion (ODFL) is the favorite trucking stock trading 9.9X EBIYDA with best-in-class 23% EBITDA margins. ODFL is coming off of 20% and 12% revenue growth and sees another two years of strong growth ahead. ODFL is the best run company in the space and remains upbeat about 2019 as pricing remains strong and expected to carry through 1H19. While the backdrop for trucking stocks has weakened with softening economic and industrial data as well as industry-specific surveys, ODFL is the name to own when looking at the industry.



Forward Air (FWRD) is a notable small cap in the group trading 16X Earnings, 10X EBITDA and with a strong growth outlook to peers as well as superior 14.5% EBITDA margins. FWRD is an asset-light freight and logistics company that has exposure to the better areas of freight. It has posted as 12% revenue CAGR since 2010 and its Intermodal business is growing rapidly. It offers a variety of freight management solutions and is involved with e-commerce, door to door for B2B and B2C and heavy goods white-glove service. It also sees a growth opportunity in refrigerated and temperature-controlled logistic solutions for pharmaceutical and life-science companies. FWRD has a new CEO that can improve operations after lagging some peers as it struggles with driver recruitment.

Business Unit	LTM Revenue	TAM	TAM Comments
Expedited LTL	723	3,500	$1,500 traditional airport-to-airport + $2,000 3PL
Truckload Premium Services	189	3,000	$1,500 expedited + $1,500 medical+refrigerated
Intermodal	191	7,000	Midwest + SE region
Pool Distribution	184	4,000	$1,500 retail + $2,500 other verticals
Intercompany Eliminations	(17)		
Total	1,270	17,500	7% of estimated total addressable market

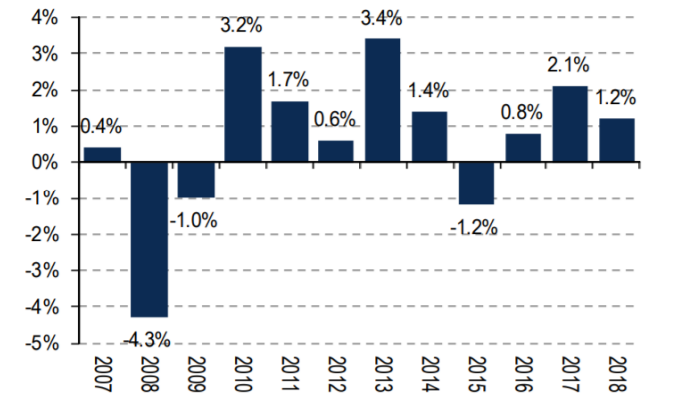
Consumer Discretionary/Services: *In 2018 the Consumer Discretionary (XLY) group is outperforming modestly up 1.85% YTD. Retail (XRT) continues its struggles down 8.7% YTD as brick and mortar stores have been fighting back to become more DTC focused through e-commerce initiatives that require investments. Holiday Spending in 2018 is expected to trach $1.1 Trillion, up 5% from 2017. The trade dispute with China has hit Retail hard with many sourcing from China. Amazon (AMZN) continues to dominate with shares up 30% YTD, though pulling back in Q4. Traditional cable/media has continued to see headwinds from cord-cutting and many, like Disney (DIS), are launching their own streaming businesses. Netflix and Twitter, two new age ways of media consumption, are both +40% YTD and have outperformed. M&A remains a theme in the industry with Disney acquiring 21st Century Fox and the Discovery/Scripps large merger. Restaurants were an impressive group to start the year benefitting from tax reform and have seen a bifurcated group with a few standout performers this year like Wing-Stop (WING), Chipotle (CMG), Domino's (DPZ), and Texas Roadhouse (TXRH). The Lodging group was hit hard with many weak performers in 2018 and Casinos/Resorts were one of the hardest hit groups. The discretionary sector has underperformed in the last three Fed tightening cycles, but with 2019 seeing more talk of less hikes, it could be boosted. Millennials entering peak spending years are driving the key demographic trends of consumption, often opting for experiences over goods. Risks into the year include waning consumer confidence, rising wage costs, and restrictive trade policies. Education & Training was quietly a bright spot in the US with ABCD, CHGG, STRA, LRN and GHC all up more than 15% while the Chinese names pulled in sharply on regulatory concerns. A few standout performers in 2018 were Etsy (ETSY), World Wrestling (WWE), Planet Fitness (PLNT), Chipotle (CMG), Restoration Hardware (RH), Netflix (NFLX), Burlington (BURL), NY Times (NYT), and Live Nation (LYV).*

Retail and Apparel Stores:

Components: *AAP, AZO, ORLY, ROST, GPS, JWN, LB, URBN, AEO, DSW, GES, PLCE, ANF, BKE, GCO, DLTH, BOOT, WSM, RH, BBBY, WMT, TGT, COST, BIG, DG, DLTR, BURL, OLLI, PSMT, HD, LOW, FND, FL, ULTA, TSCO, FIVE, BJ, EYE, MIK, SBH, ODP, PRTY, TJX, KSS, M, DDS, TIF, SIG, DKS, GOLF, BBY, GME, CONN, HOME*

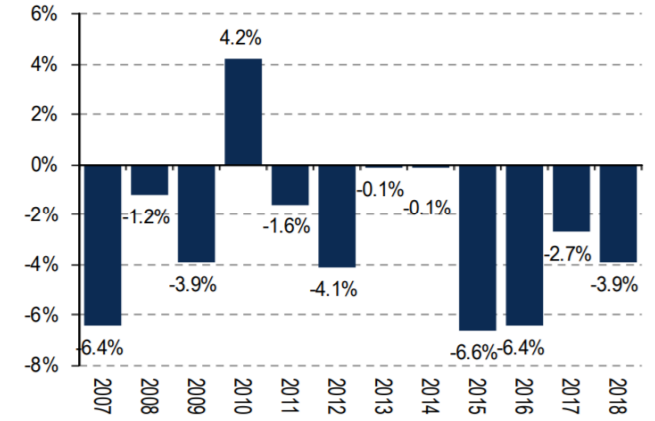
This is a large group that can be broken down into Department/Discount Stores, Apparel, Auto & Home, and Specialty (Electronics, Jewelry, Sporting, and Office). Some industry-specific ratios are often utilized such as same store comparable sales, square footage growth, and looking at revenues/square foot. In 2018 this once again was one of the most bifurcated groups where stock picking is essential, 19 of the 51 names down 20% or more, and 15 of the names up 15% or more. The Auto Parts group was very strong all year as were many of the lower priced Department Stores like KSS, BURL, OLLI, and TJX. Wal-Mart (WMT) and Target (TGT) are large players seeing strong digital sales acceleration taking market share in e-commerce.

Chart 1: Early Holiday BAC Spending Growth, Y/Y (ex-Autos, Gas, Food & Building Materials)



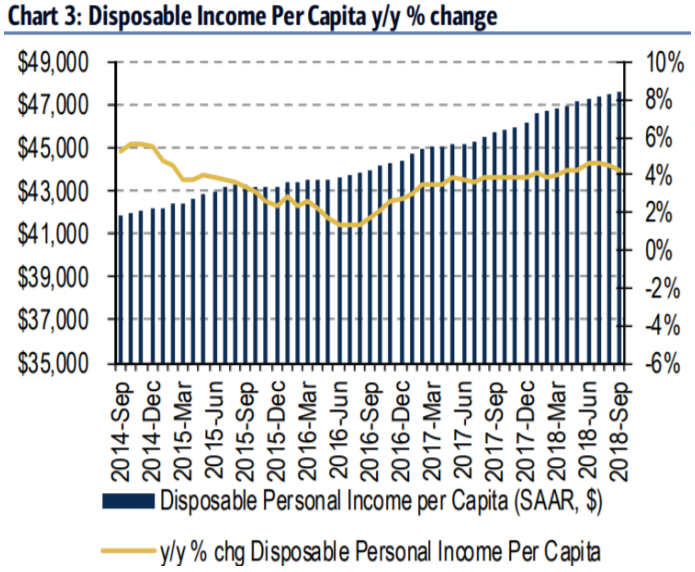
Early Holiday is the 21-day period ending on Black Friday (day after Thanksgiving).
Source: BAC Internal Data

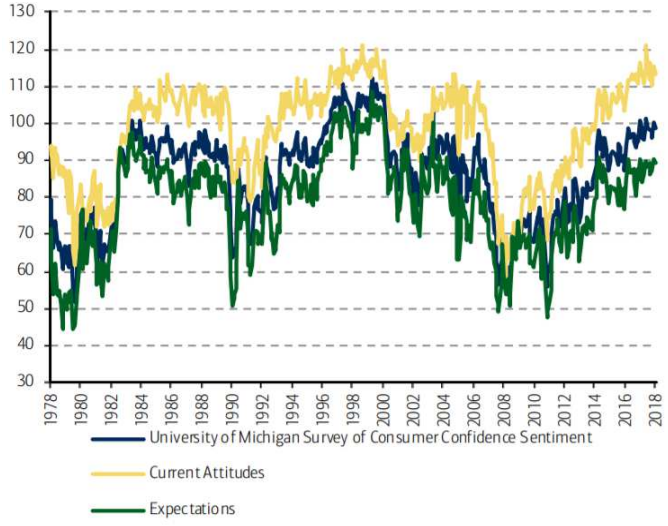
Chart 2: Early Holiday Department Store BAC Spending Growth, Y/Y

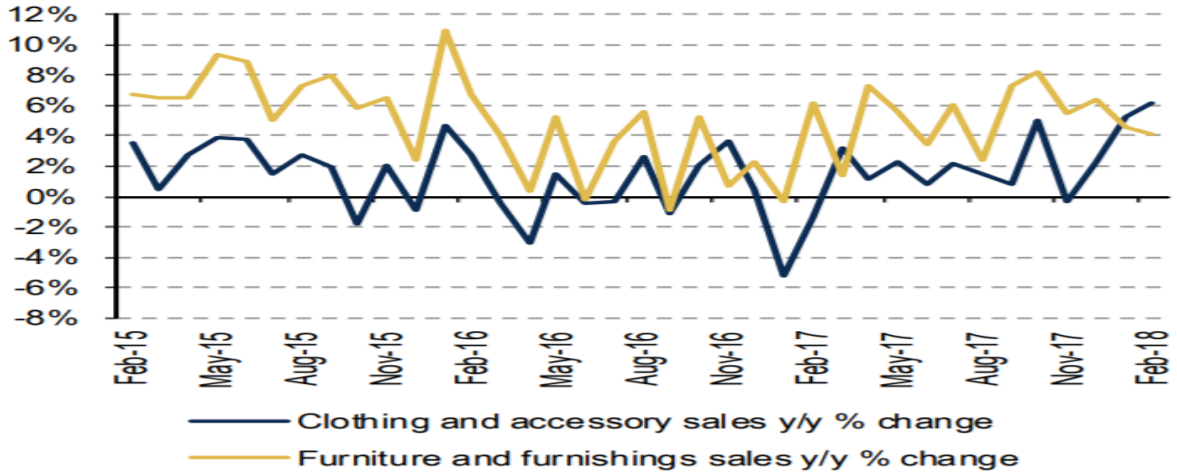


Early Holiday is the 21-day period ending on Black Friday (day after Thanksgiving).
Source: BAC Internal Data

The consumer numbers continue to show strength with confidence at the highest level in 20 years, disposable income tracking at healthy 4% levels, and unemployment at the lowest level in 50 years. According to BAC aggregated credit and debit card data, spending growth for the lowest income consumer continues to hover at +6%, outpacing both the middle and upper income consumers. Trends seem to favor discount store names like WMT, TGT, COST, DG and DLTR. November spending data showed the most strength in home goods and auto parts while weakness in home improvement and electronics.





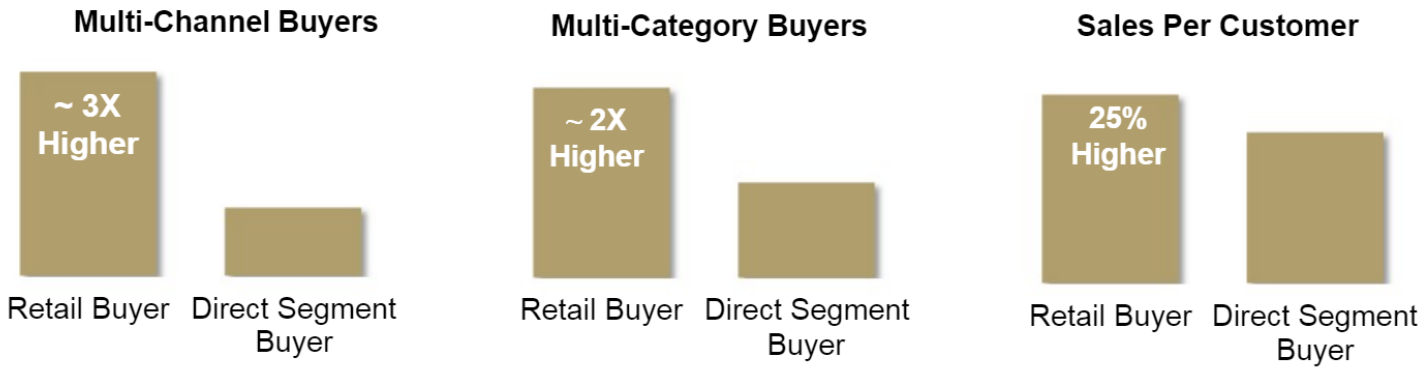


The Department and Discount store group best of breed names are **Burlington (BURL)**, **Dollar General (DG),** and **Ross Stores (ROST). Ollie's (OLLI)** and **Five Below (FIVE)** remain the best growth/expansion stories. Retail tends to go on multi-week periods of strength, so without diving into too much detail these are the names to target when the group starts to show relative strength to the market.

The Apparel stores trade on average 5.9X EBITDA and 0.6X Sales with 39% gross margins.

Urban Outfitters (URBN) is a $3.67B apparel store that has been managing better than peers and trades 11.5X Earnings, 0.94X Sales and 12.55X FCF with a cash-rich balance sheet. URBN has a better growth profile than most of its peers with strength across Urban Outfitters, Free People, and Anthropologies Group as well as seeing positive trends in its digital channel metrics. URBN has a smaller store base with a unique product offering and leads the industry with 40% ecommerce penetration.

Duluth Trading (DLTH) is a small $827M Company that trades rich due to its margin leadership at 2.9X Sales. DLTH has grown sales from $230M in 2015 to $575M expected in 2019. DLTH focused on the workwear market and has outstanding marketing and a growing/loyal customer base. It sees more room for margin expansion and is looking to grow its women's business which has a 40% CAGR since 2013. It has a vision to expand it store presence seeing room for 100 markets with new stores and has seen strong sales growth when it has a retail presence. Direct Sales and Margins are seen hitting an inflection point next year with potential to double earnings from 2018 to 2021.



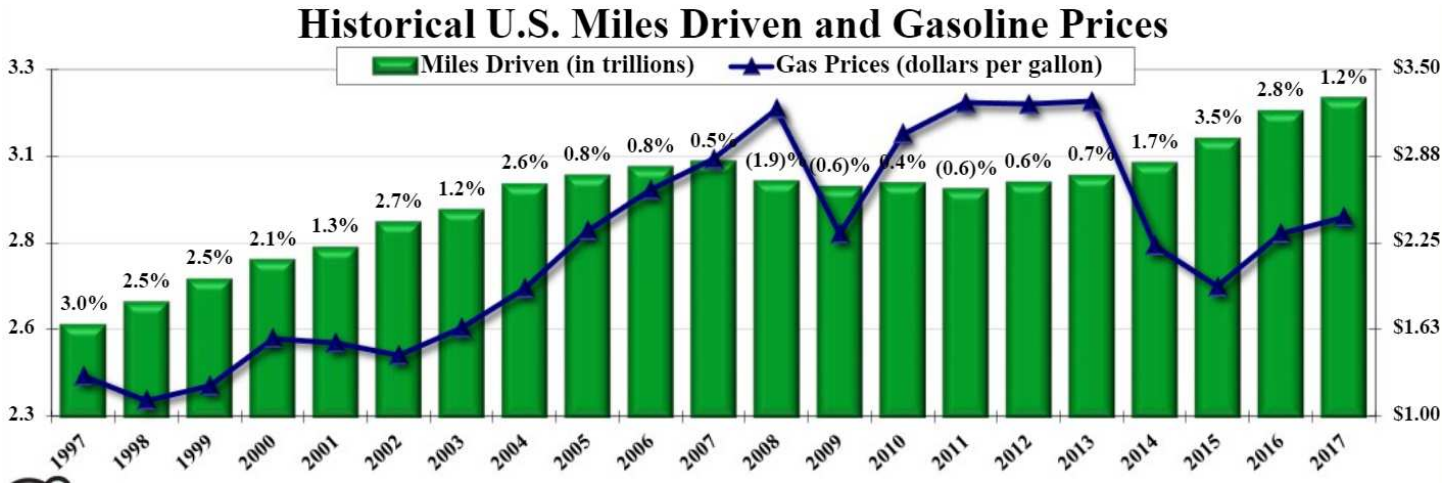
Boot Barn (BOOT) is a small cap I have come to like, trading 0.64X Sales and 11.7X Earnings with a $465M market cap. BOOT has been seeing solid topline growth with double digit growth seen in 2020 and 2021 as well as strong EPS growth. BOOT is a national leader in an attractive niche with a strong omni-channel brand presence. It estimates a $20B opportunity between Western Wear and Work Wear. It does 53% of sales in Footwear, 32% in Apparel, and 15% in Accessories. E-Commerce currently accounts for 17% of sales. BOOT posted Q2 same store sales growth of 11.3%.

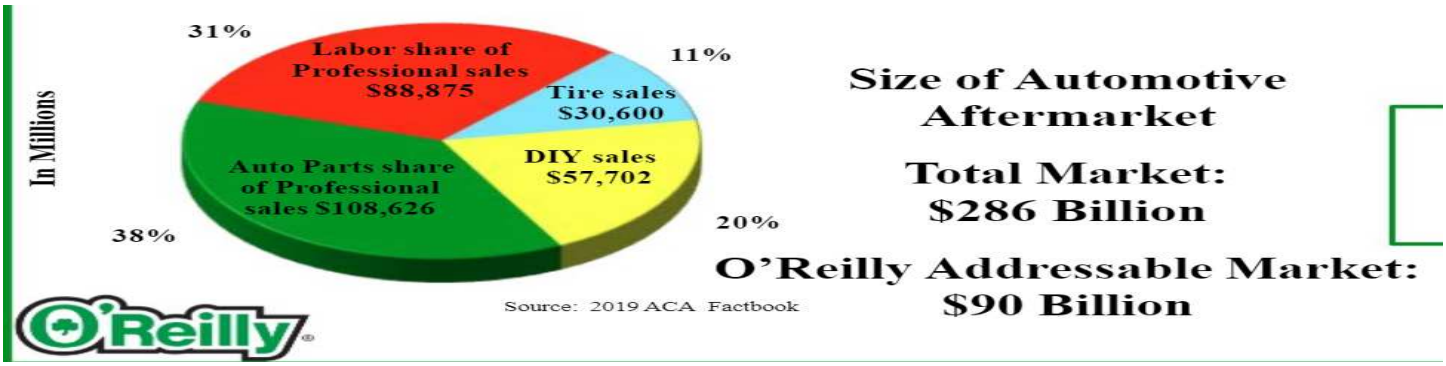
The Home Improvement/Furnishing and Auto Parts group trades on average 10.5X EBITDA with 41% gross margins.

Lowe's (LOW) has a $74.2B market cap and trades 15.2X Earnings, 1.04X Sales and 19X FCF with a 2.1% yield. LOW has always played "second fiddle" to Home Depot (HD) but is closing the gap and becoming a better upside catalyst story as it cuts costs and improves operations. LOW sees double digit EPS growth the next few years and recently announced a new $10B buyback. The new CEO has long term goals of 12% operating margins (from 8.6% in 2018) and a 35% ROIC (from 19% in 2018). LOW is modernizing and adapting to customer needs. LOW is always compared to HD but in reality half of the DIY market is controlled by other retailers in a very fragmented market, leaving room for market share gains. LOW is an early innings transformation story and the backdrop for home improvement remains positive.

Restoration Hardware (RH) has a $2.72B market cap which feels small for its name presence and trades 12.35X Earnings and 1.1X Sales with shares +44% YTD. RH sees strong topline growth for 2019 and 2020 near 8.5% and double digit EPS growth. RH is coming off a solid quarter with strong full price selling, higher outlet margins and cost benefits from its operating platform. RH is an expanding margin story and also a growth acceleration story into 2019. Its membership platform has eliminated frantic buying patterns. It sees the transformation of its real estate allowing for the doubling of revenues and earnings in every market. It has a long term foal of $4-$5B in revenues with industry-leading operating margins and ROIC, believing it can grow revenues 8-12%, earnings 15-20% for the next ten years.

O'Reilly Auto (ORLY) has a $28B market cap and trades at a premium valuation of 15X EBITDA but excels with 21.7% EBITDA margins and the best growth profile of the group. Its business is split into 58% DIY and 42% Professional. Total Miles Driven, which continues to move to new highs, is the #1 driver of the auto parts industry while the continued aging of the Us light vehicle fleet also drivers growth. ORLY has consistently been driving new store growth and sees plenty of untapped markets still available. After comps dipped to 1.3% in 2017, a decade low, they improved to 4% in 2018. ORLY remains the leader of the group with margins/growth and the overall industry picture continues to look bright.





The Specialty Stores group has seen weakness in 2018 with two notable outperformers in TSCO and ULTA. A number of names have large Debt/EBITDA ratios and want to avoid. It leaves us with 3 quality names, TSCO, TIF and ULTA.

Ulta Beauty (ULTA) with a $14.55B market cap trading 18.9X Earnings, 2.23X Sales and 23X FCF with 35.66% gross margins. ULTA has entered a period of slower growth but still at 10-13% CAGR while EPS growth is 15%+. It continues to post same store sales well above other brick and mortar peers and is transitioning to a managed growth and investment story with $15/share in earnings for 2021 plausible. ULTA has a strong loyalty program, new product launches, new store growth and a strong balance sheet. It remains one of the healthiest stories in Retail.

Tiffany's (TIF) shares have turned lower in 2H18 with shares now -23% YTD and the $9.9B Co. now trades 15.35X Earnings, 2.2X Sales and yields a 2.75% dividend. TIF has seen weakness from rising costs and weaker tourism but is taking new marketing initiatives and investing in digital. TIF continues to see opportunity for operating margin expansion over the next few years and a new CEO is taking measures to evolve the brand. At 9.5X EBITDA shares are near a tough valuation level and set up well in 2019. Weaker Chinese tourism could continue to weigh early in 2019 with it accounting for around 25% of sales and estimates may move down, but TIF still offers one of the healthier fundamentals in specialty retail.

Media, Advertising and Entertainment:

Components: *CNK, AMC, DIS, CMCSA, CBS, VIAB, LYV, MSG, WWE, LGF.B, AMCX, MSGN, IMAX, MCS, OUT, CCO, NFLX, CHTR, LBTYA, DISCA, DISH, ROKU, FUN, SIX, QRTEA, FWONA, NWSA, NXST, SBGI, GTN, TGNA, SSP, OMC, IPG, SPOT, SIRI, P, ETM*

The trends from 2017 in Media carried over to 2018 with cord-cutting and consumption trends evolving to streaming media providers like Spotify, Netflix, and Twitter. Consolidation has been a major theme in Cable/Wireless while 5G is an emerging megatrend. Disney will be in focus with its Direct-to-Consumer launch while pricing trends could start to inflect positively in 2019. Sports programming remains the Holy Grail for live TV and could see a much stronger push by media companies with renewals due in 2019. Differentiated services driving top line growth, reliable balance sheets and clear capital deployment strategies are influential in this group. Cable companies are continuing to target the ramp seen in wireless. The industry's digital transition along with M&A is leading to 10-20 entertainment brands over 4-5 core platforms. Apple will be launching a new product in Q3 2019 and likely influence this group more as its TV efforts take a greater focus.

A few names stand out among peers for 2019:

Disney (DIS) with a $165B market cap trading 14.7X Earnings, 19.2X FCF and a 1.61% dividend sets up well into 2019. DIS had issues with its cable business for years that held shares back but that looks to have bottomed and it continues to see strength in Theme Parks and Studio while 2019 will also be the launch of its DTC service and also looking to the "Frozen" sequel as a growth driver. Disney will also start to benefit from its Fox acquisition and is positioning to split up the regional sports networks and sell for capital. It sets up as a 2H19 story with 1H being more of a transitional period, and later in the year will resume buybacks and open Star Wars Land. DIS is a high quality name with low leverage that is underweight with active equity managers and should generate strong performance in 2019.

Comcast (CMCSA) has a $164B market cap and trades 12.77X Earnings, 8.75X FCF and yields a 2.13% dividend. It is the best run cable name in the industry with a strong growth outlook through 2020, relatively low leverage, strong FCF and potential for margin expansion. Its NBC Universal division sets up well with a strong animated film ramp coming, and can see upside from the Wireless segment as well as its strategic acquisition of Sky. Its best in class products, strong pricing and moderating capital intensity position it to outperform as valuation remains attractive.

Discovery (DISCA) with a $14B market cap also screened well in cable trading 7.8X Earnings, 9X EBITDA and 7.15X FCF. DISCA is expecting to see strong synergies from its transformational merger with Scripps and has a strong EPS growth outlook. It is expected to hit its debt leverage target soon and is seeing accelerating growth in the US. It will be in a position for additional content investments and buybacks in 2019. DISCA has struck deals with Hulu and Dish that will boost affiliate growth, is seeing cost synergies from its Scripps deal, will launch a PGA DTC product in early 2019, and may look to sell assets in 2019.

Spotify (SPOT) has a $21.4B market cap and shares are -19% YTD after a strong start to the year, but as a long term growth name it is attractive despite a market moving to a more defensive posture. SPOT trades 3.2X EV/Sales and has a long runway for 20%+ revenue growth while EPS seen reaching profitability in 2021, but likely occurs sooner. SPOT owns a 9% stake in the recent Tencent Music IPO that it may look to monetize and is expected to launch in India within 6 months as well as further expansion into podcasts. SPOT is seeing impressive growth across key metrics like MAUs and premium subscribers while also having notable margin expansion opportunities the next few years. It also has growth opportunities with new product and advertising.

Netflix (NFLX) with a $122B market cap remains the dominant leader in streaming and although valuation has always been a concern it is entering a very strong period of operating leverage. Competition has long been a concern as well, but is overblown as its original content has made the product a must own while also having plenty of pricing power to further expand its margins. NFLX is trading 65X Earnings and 7.8X EV/Sales with forecasts calling for two more years of 20%+ revenue growth while EPS seen reaching near $10/share in 2021 from $1.25/share in 2017. International has been the focus of 2018 as that is where the growth opportunity remains. India is a major untapped market and 5G can also lead to additional upside for shares, a potential path to 360M or more global subscribers longer term. With Millennials in peak spending years and trending towards becoming the largest portion of the population, NFLX will be around a very long time and overall global penetration remains fairly low compared to the opportunity as it continues to disrupt how media is consumed. NFLX is investing an additional $3B into content for 2019 to drive further subscriber growth as the land grab continues. One major concern with NFLX has been the negative FCF which appears to have hit a trough in 2018 and could boost sentiment if it surprises to the upside in 2019.

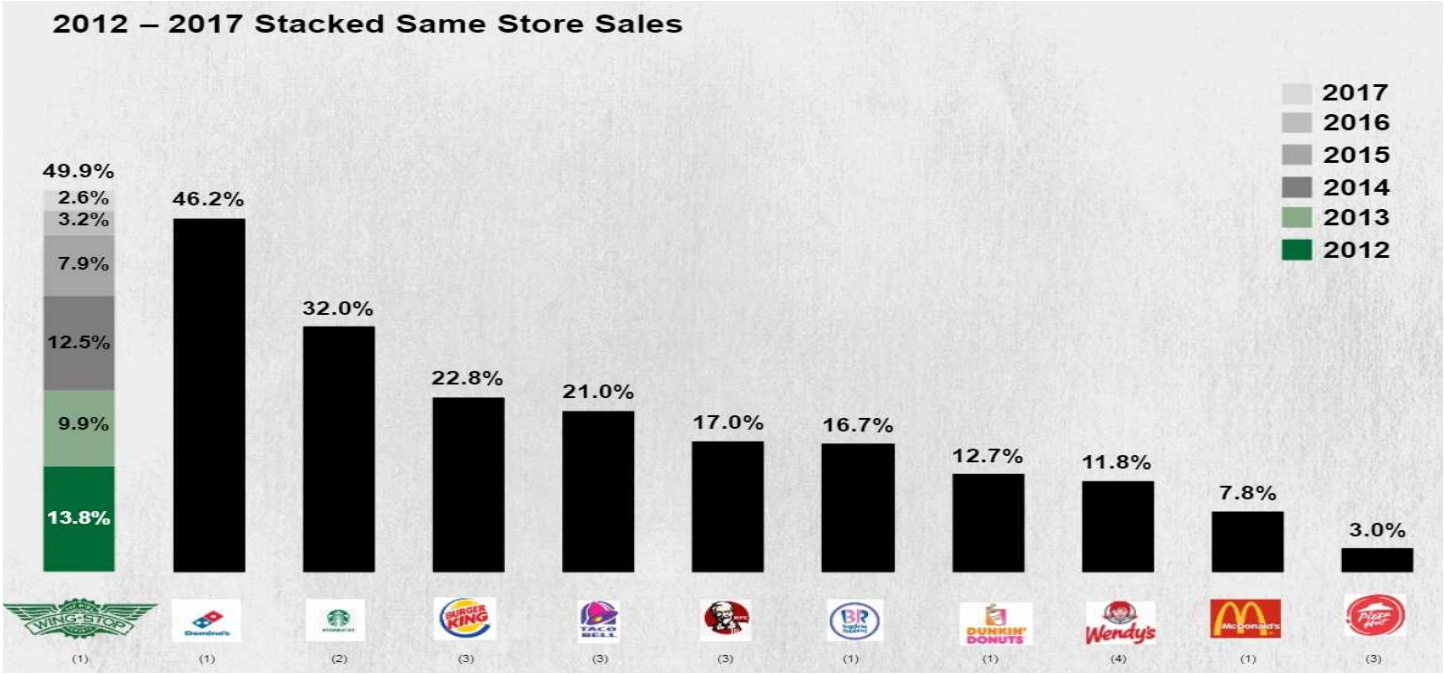
Cinemark (CNK) screened well for the movie theater plays, though not the greatest business in the age of streaming, the $4.6B company trades 16.7X Earnings, 1.45X Sales and yields a 3.26% dividend. CNK has a subscription program called Movie Club that has surpassed 500,000 active members and has grown much faster than expected. US growth looks positive with a healthier Box Office and Latin America is strengthening while the company is also improving amenities and services. CNK offers strong cash flows, solid valuation and a healthy yield with positive long term industry dynamics.

Restaurants & Grocery:

Components: *SBUX, SYY, ARMK, SHAK, PZZA, USFD, CORE, CHEF, MCD, YUM, YUMC, QDR, DRI, CMG, DPZ, DNKN, TXRH, CBRL, WEN, JACK, CAKE, EAT, WING, PLAY, ARCO, BLMN, DIN, BJRI, DENN, RUTH, RRGB, KR, CASY, SFM, WMK, IMKTA, TACO, CHUY*

In 2018 this group had 13 names up more than 10% YTD and 12 names down 10% or more YTD. We saw a few smaller buyouts in the Restaurant space like Sonic, Bojangles, Zoe's Kitchen, Jamba Juice, and Fogo De Chao that followed the November 2017 deal for Buffalo Wild Wings and April 2017 deal for Panera, so consolidation a theme. Qdoba was acquired by Private Equity and Jack in the Box is exploring strategic alternatives. Wage inflation remains a key headwind though commodity inflation has weakened. Food away from home remains in a positive trend though any waning tailwinds in discretionary income due to a weaker economy could disrupt the trend. Another theme in the group is moving to a more asset-light franchise model.

WingStop (WING) has a $1.83B market cap and trades at a premium valuation of 69X Earnings and 13X Sales but remains one of the greatest growth opportunities in the space. It has a long cycle of expansion through at least 2025 and is posting some of the strongest same store sales in the industry. Its digital rollout is also driving growth and margin expansion opportunity while International is still an untapped market. It recently signed a national delivery partnership with DoorDash and in November declared a $3.05/share special dividend. WING valuation is justified if it continues on this growth path that is showing no sign of stopping, and growth is scarce in this group. Wing pricing is always a factor, it benefitted in 2018 from favorable pricing and needs to be watched when trading the name. WING is set to become a force in digital sales, much like Domino's (DPZ) has done for years.



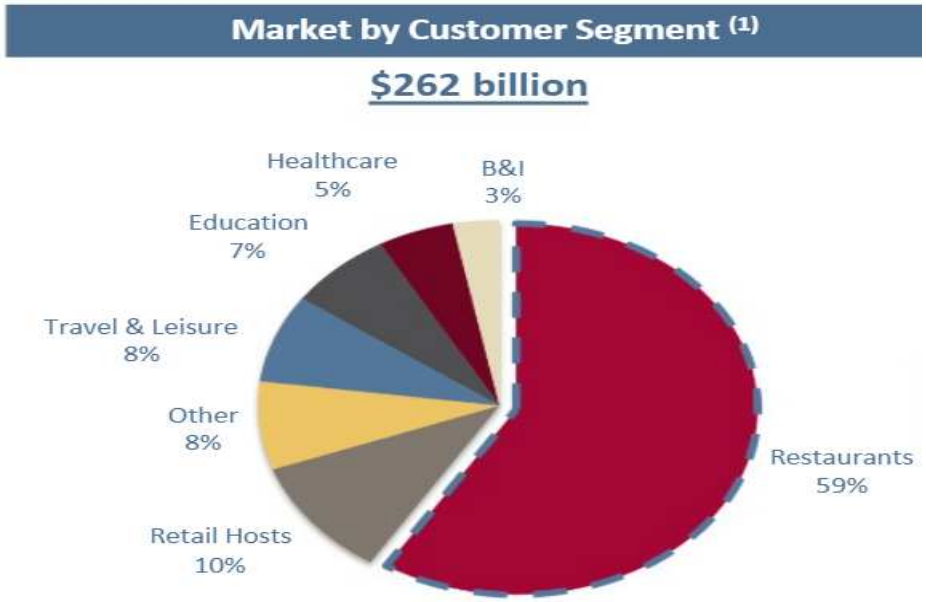
McDonald's (MCD) fits the large, defensive, high quality theme targeting for 2019 and better for later cycle investing. The $141B company trades 21.85X Earnings and 6.65X Sales with a 2.58% dividend yield. MCD is investing for improved sales by modernizing and improving its stores and FCF likely to accelerate in 2020 and 2021 as remodeling costs wind down. Initiatives rolled out in Canada that were effective in improving operations and the US can see a multi-year improvement cycle support shares. MCD trades at rich valuation on the surface but its best in class franchisee cash flows support it with Debt/EBITDA at just 2.8X. A new CEO is helping to turn MCD around and same store sales have turned positive across all segments. If MCD can use Canada as a proxy and see similar results in the US and other International markets, it will be a multi-year success story and a name that tends to be less correlated with weak Macro/Markets.

The grocer landscape really changed in 2017 as Amazon (AMZN) agreed to buy Whole Foods (WFM) for $13.4B. An absence in food inflation the last two years in the US has pressured margins in the food retail landscape. Into the later cycle these names could benefit as more inelastic demand and potential to return to more normalized inflation. One key overhang that remains is the shift for consumers to spend online. Wal-Mart, Costco, and Target are also large players in the grocer space but were included in the Retail group. Dollar stores also play a role in this group. Large players like Kroger are transforming with cost cutting and digital initiatives, the later to enhance the competitive position, and KR made a deal for grocery delivery company Ocado.

Sysco (SYY) has a $33.5B market cap and screens best for the food wholesale names trading 17X Earnings and 25X FCF with a 2.44% yield. SYY is expecting steady 3-5% topline growth and 8-12% EPS growth. SYY has pushed back EBIT growth to 2H19 and FY20 due to expense pressures from a tight labor market and headwinds from transportation/warehouses. SYY benefits from scale in a highly fragmented industry and has ongoing initiatives to improve sales and margins as well as flexibility to deploy capital. It's a quality large cap defensive growth name, which tends to work in late cycle investing.

Casey's General (CASY) is a $4.85B convenience store name trading 24.3X Earnings, 0.52X Sales and with a 0.89% yield. CASY has one of the best growth profiles in the group as trends are showing more strength in the convenience store space. It is executing on its value creation plan with improving comps and higher margins. The industry has been consolidating the last few years and CASY is a likely acquisition target. CASY is in an accelerated growth cycle and much better positioned than the traditional grocers.

Chef's Warehouse (CHEF) is a notable small cap, the $1.05B Co. trading 34.3X Earnings and 35X FCF with revenues growing 10% in 2018 and 8% growth seen in 2019 while EPS that was just $0.44/share in 2017 seen reaching $1.17/share in 2020. CHEF is seeing strong volume gains on top of margin expansion, leveraging its distribution infrastructure in high-end specialty and protein foodservice merchandising. CHEF is a niche play growing nicely in an industry with sizable players and could make a great acquisition target.

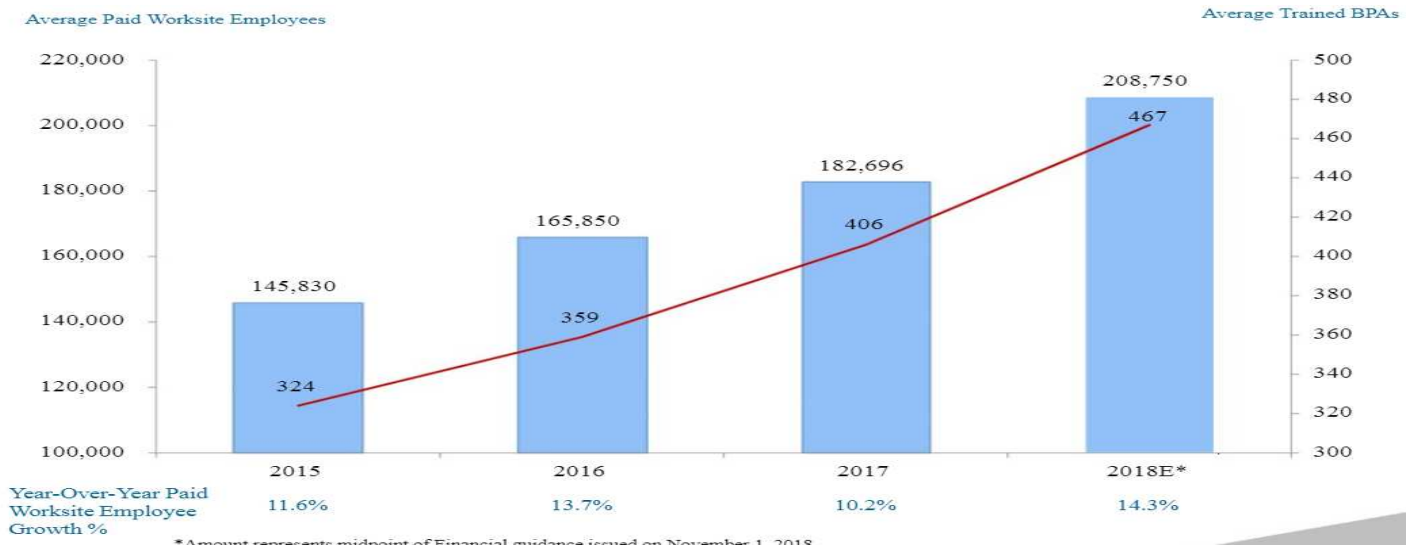


Business Services and Consulting:

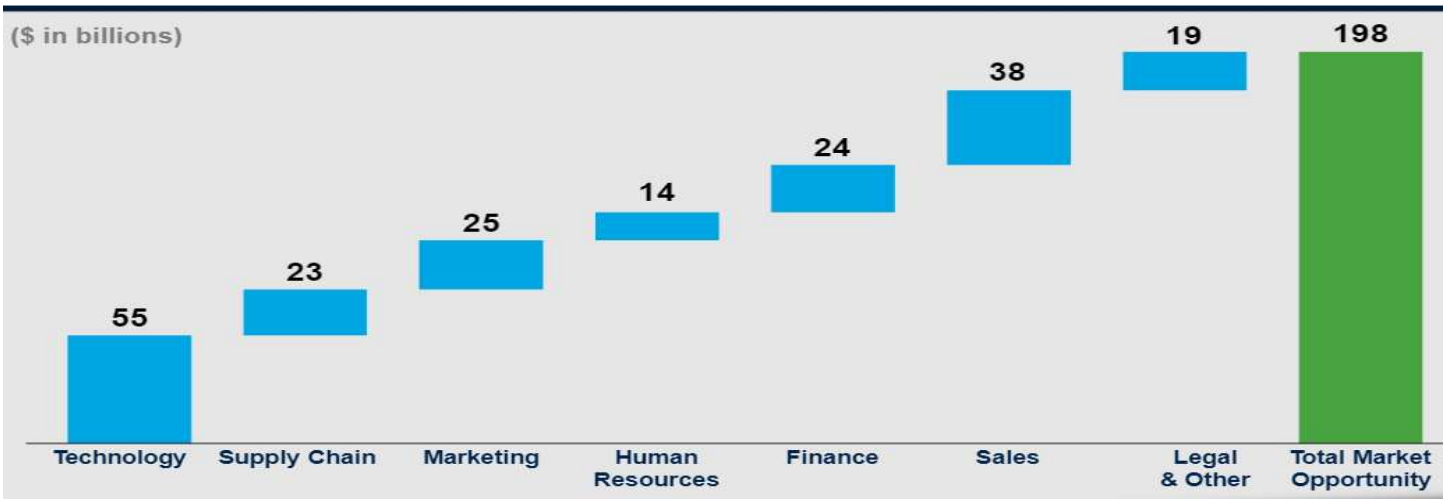
Components: *CTAS, NSP, CMPR, EXLS, ABM, VVI, CBZ, CASS, LABL, QUAD, TTEC, AVYA, DLX, CNDT, XRX, STN, RHI, MAN, ASGN, KFY, TBI, KELYA, KFRC, HSII, BAH, EXPO, FCN, ICFI, HURN, NCI, SP, IT, UNF, PSDO, IRM, HCSG, GIB, BRC*

This group includes a variety of different companies but all involved in servicing businesses in some manner, ranging from Staffing to Uniforms to Consulting to Facility Maintenance. Business optimism continues to climb and tax reform will lead to increased business spending, so overall a positive outlook or many of the companies. Staffing names came under pressure in the second half, one of the least defensive groups in this industry. It's a fairly strong fundamental group that is asset light, high margin and return business models, and strong FCF. There are a number of solid growth stories in this group I can highlight, and mainly smaller cap names. **ExlService (EXLS)**, a $1.84B provider of operations management and analytics, and **ICF International (ICFI)**, a $1.23B provider of consulting services to government and commercial clients screen strong among smaller cap names in this group.

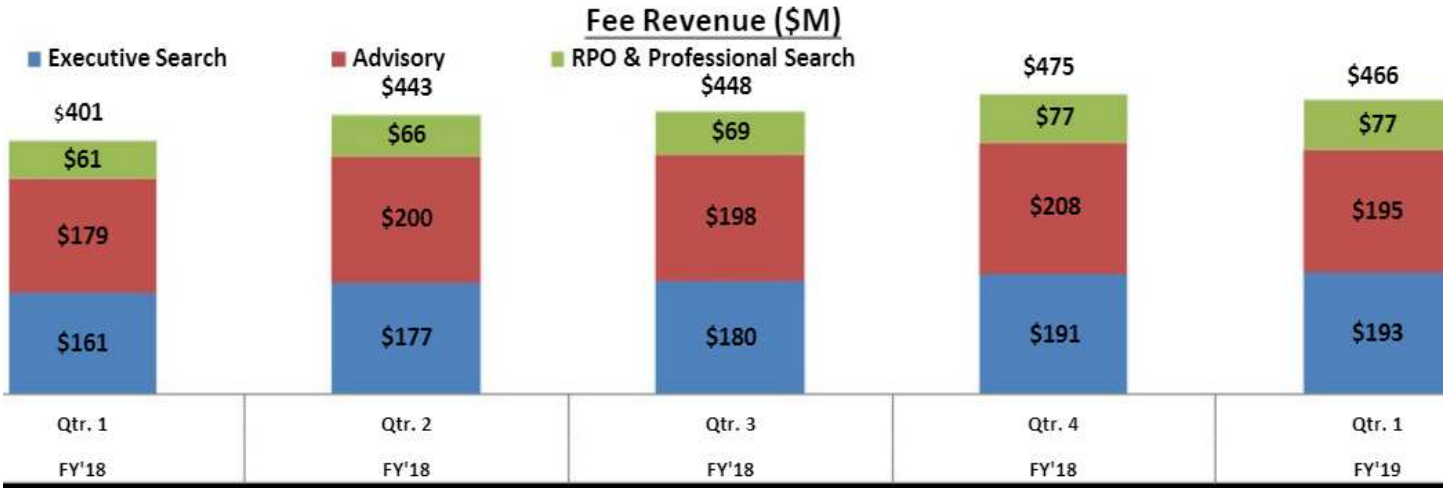
Insperity (NSP) is a $4B company that has seen shares gain 61.5% YTD benefitting from strength in small businesses. NSP provides HR and business solutions trading 21.7X Earnings, 1.08X Sales and yielding a 0.86% dividend. NSP has been posting 10-15% revenue growth since 2015 and sees 123% growth in 2019. NSP solutions help businesses run better, grow faster and make more money. It sees an addressable market of 71M employees where just 5% are currently served through a co-employment model. NSP is a full solutions provider for small to mid-sized businesses and serves a number of diversified industries. NSP has grown EBITDA 28.7%, 31% and 34.9% the last three years. It has a fairly defensive profile as it offers a value-creating solution to businesses and has historically seen very strong retention rates.



Gartner (IT) is a $12.5B leader in research and advisory with very strong fundamentals, trading 31.1X Earnings and 3.2X Sales. IT has a high margin business and ROIC averaging 59% the last three years. IT acquired Corporate Executive Board and a main focus into 2019 is accelerating that segment. Gartner sees a massive available market of its offerings at $198B and forces such as technology pervasiveness, technology industry disruption and macro/political volatility as growth drivers. IT is an essential resource for businesses to compete with a large and increasing addressable market and incremental margins and cash flows. Gartner will need to prove in 2019 that its deal for CEB was a good one.



Korn Ferry (KFY) with a $2.5B market cap came out on top when screening the staffing names, trading 11.95X Earnings and 14.4X FCF with a 0.93% yield and strong balance sheet. At 7.4X EBITDA with 14.9% EBITDA margins, KFY is the best of the group. KFY is showing share gains versus competitors and though multiples are compressing it is seeing firm demand and strong new business in executive search and consulting.

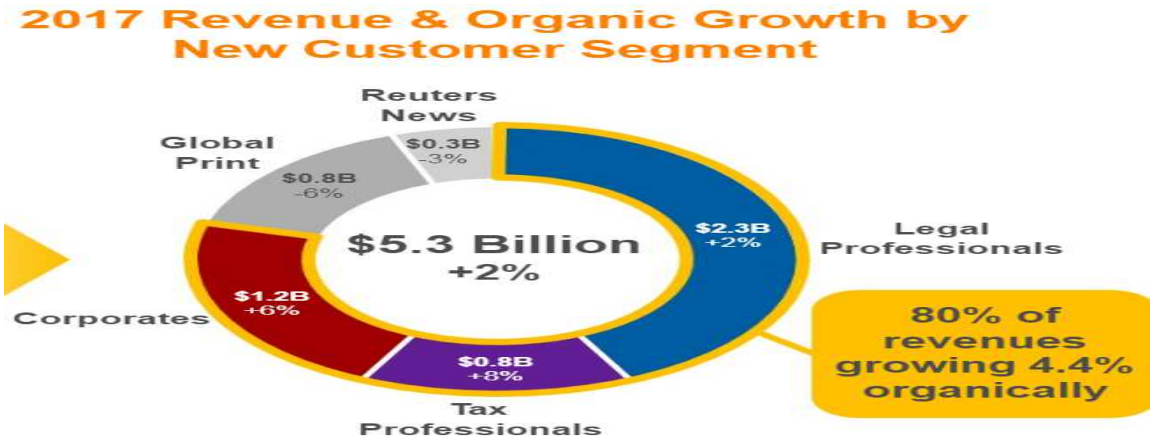


Publishing and Education:

Components: *ONE, EDU, LOPE, GHC, CHGG, LAUR, ATGE, STRA, HLG, BEDU, LRN, HMHC, CECO, ABCD, SCHL, JW.A, PSO, MDP, TRI, NYT, GCI, NEWM*

The group contains a lot of low growth and low margin names but there are a few worth investments. We saw surprisingly strong performances across many names in Education and NY Times was a strong mover most of 2018. I still want to avoid the Chinese names with regulations crimping growth prospects and overall too much uncertainty in China.

Thompson Reuters (TRI) with a $25B market cap trading 38.55X Earnings, 3.6X Sales and 27.7X FCF with a 3.11% yield is a strong name in this group, up 14% YTD. TRI is projecting strong 8-10% Y/Y revenue growth the next three quarters and EPS seen in a strong cycle through 2022. It sold a stake in its Financial and Risk unit to Blackstone. TRI recently held an Investor Day for the remaining part of the company that will have a stronger organic growth profile and better reporting structure. TRI has $17B in cash proceeds it plans to return $9-$10B to shareholders, pay down $3-$4B in debt, and also invest in potential M&A. It's an intriguing accelerating growth story not seeing a lot of attention. The shift from a product-specific sales force to client relationship selling bodes well for cross-selling and the shift to digital can be an upside lever.



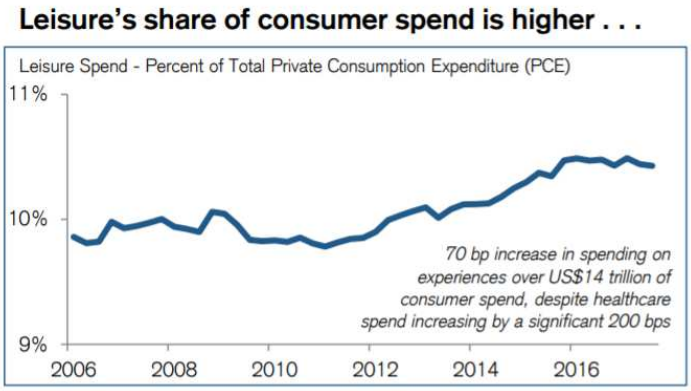
Strategic Education (STRA) has a $2.58B market cap trading 19.75X Earnings, 5.05X Sales and yields a 1.66% dividend. The provider of post-secondary and academic education services has seen shares climb 35% YTD and after 44% revenue growth this year sees 46.5% Y/Y growth next year and 33% EPS growth. It is seeing some of the strongest enrollment growth rates in the industry and also benefits of cost synergies from its merger with Capella. STRA is a multi-year growth story with room for further campus expansion. It makes sense late cycle as an affordability play and saw enrolment strengthen 2008-2010 before peaking.

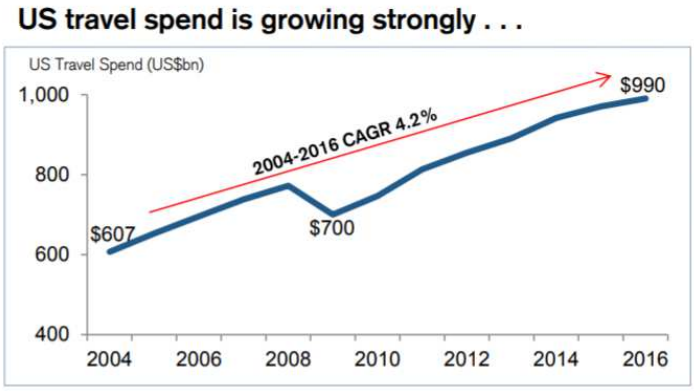
Chegg (CHGG) is a $3.32B operator of direct-to-student learning platforms trading 46.6X Earnings, 11.1X Sales and seeing 24% topline growth in 2018 with two more years of 20%+ growth forecasted. It has been a beat and raise story all year with demand for its connected learning platform. It has an all-digital high margin, high growth model with a competitive moat and large addressable market. It currently has 2.2M subscribers with 45% growth Y/Y. It is rapid growing, fairly immune to Macro cycles, and the tutor market alone is a $5B-$7B opportunity.

Travel, Leisure and Gaming:

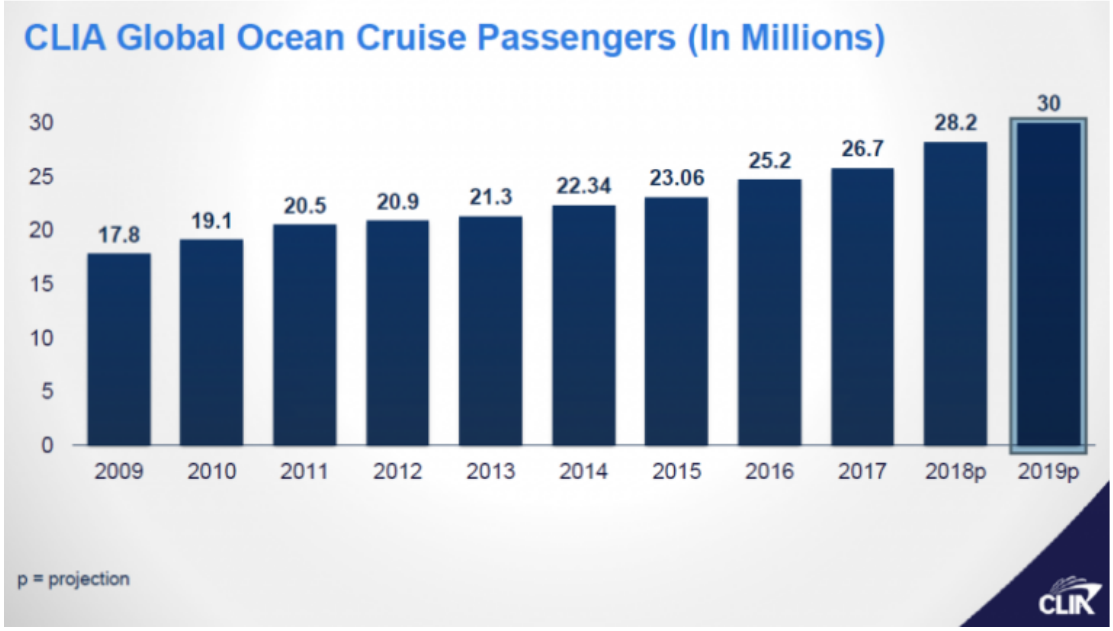
Components: *TRIP, BKNG, EXPE, LVS, WYNN, MGM, MLCO, CCL, RCL, NCLH, MTN, CZR, VAC, ERI, HGV, PENN, BYD, BXG, MSC, PLYA, GDEN, CAR, HTZ, TSG, CHDN, IGT, SGMS, AGS, MAR, HLT, CTRP, IHG, HTHT, H, PK, WH, CHH, WYND, STAY, BEL, GHG, DESP, RRR, MCRI*

This group includes Casinos/Resorts, Lodging and Rental Cars, Online Travel Agencies, and Cruise Ships. The only notable upside performer was Belmond (BEL) which was acquired in a healthy premium by LVMH in December in a $3.2B hotel deal. Trip-Advisor (TRIP) also saw a resurgent year with years climbing 68.25% while gaming, lodging, and cruise names were very weak. The gaming name has a potential massive new market coming online in the US with 8 states now approving sports gambling, a sizable industry.





If we start with the small cruise ship group the names are down 10-15% this year yet data showing robust growth in spending as well as positive management commentary on 2019 bookings and net yield growth. Cuba and China remain potential emerging growth markets for the industry. The CLIA is predicting a 6.4% increase in cruise passengers in 2019. The US is where most passengers come from and Deployment expectations show the Caribbean and Mediterranean as the strongest markets.



Royal Caribbean (RCL) is the preferred name with a $20.9B market cap trading 10.3X Earnings and 2.28X Sales with a 2.75% dividend yield. RCL recently provided upbeat views on 2019 revenues wit strength in booking volume and pricing though rising costs continue to constrict EPS. RCL entered the luxury market this year with a $1B 66.7% stake in Silverseas Cruises. Insiders have been accumulating shares into weakness in Q4. RCL continues to introduce new ships, has a new Miami terminal and is launching a new resort/waterpark CocoCay in May. The company noted on its latest conference call that it is at a stronger booked position for 2019 than it was this time last year. RCL is attractively valued with a number of growth levers and industry tailwinds.

In the Online Travel (OTA) space we only have a few names to choose from but the growth in that industry continues to have positive tailwinds. Expedia margins are expected to benefit from its key transition to the cloud as it shifted from internally run data centers. BAML notes "The online penetration tailwind continues to be the primary positive driver for OTA bookings growth, and this tailwind should continue in 2019-2021, but perhaps with less lift. We expect 5% y/y global travel bookings growth in 2019 (in US$) to reach $1.3tn, driven by 5% growth in the US, 5% growth in Europe, 6% growth in Asia, and 4% growth in Latin America. According to Phocuswright data and our estimates, Global Online bookings in 2019 will grow 9% and reach $605bn, representing 48% penetration of total bookings. Given our expectation that all markets will migrate towards 75% online penetration, we believe the penetration story will continue to drive secular growth above the travel industry, but we do expect slowing growth from here." Capturing share of alternative accommodations can be a big growth driver for this group. In 2018 we saw the group suffer from margin trends under pressure due to declining marketing ROI and less free organic traffic from Google. Marketing spend has been coming down and is optimizing to higher return channels. Competition remains strong in this industry with Hotels taking on more direct booking initiatives as well as competition from Google in the travel booking funnel. In the Car Rental market I continue to feel disruptions make CAR/HTZ bad investments as well as the leverage the companies have on the balance sheets.

Chart 43: US, Europe, APAC & LatAm Online Penetration

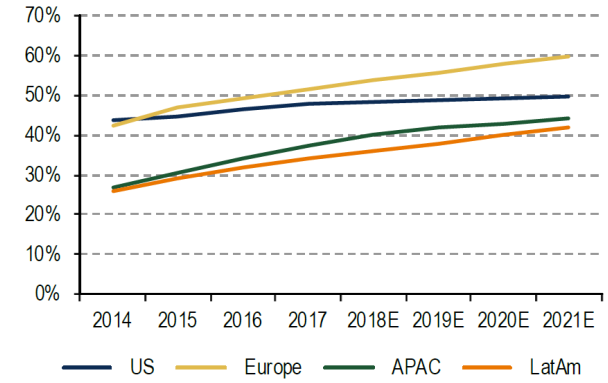


Chart 44: Market Share of Total Accommodation Market

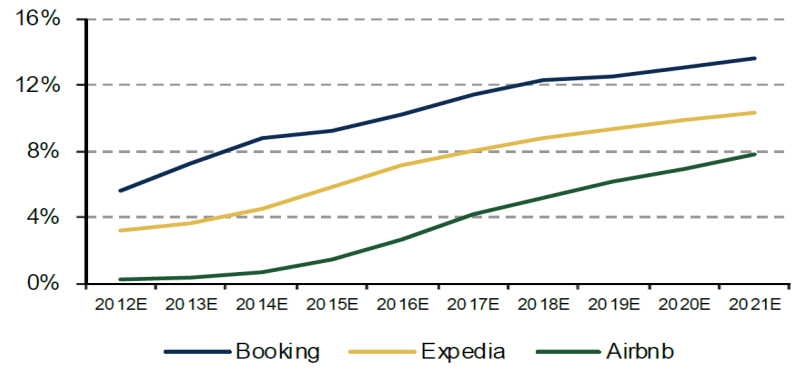


Chart 47: BKNG vs. EXPE organic bookings y/y growth

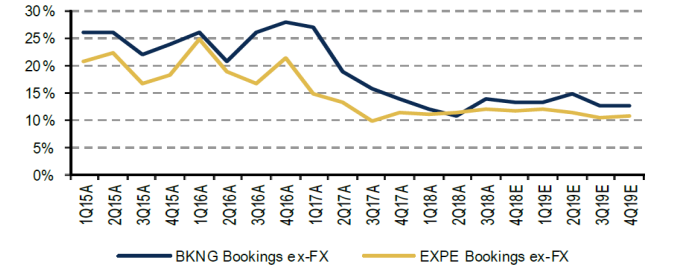
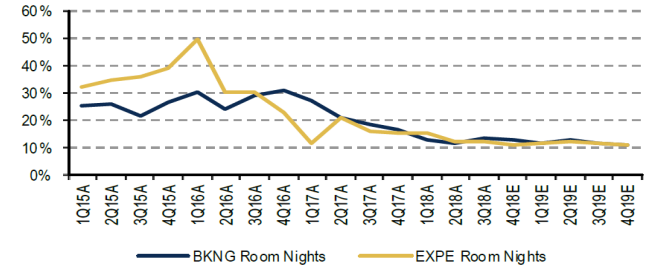
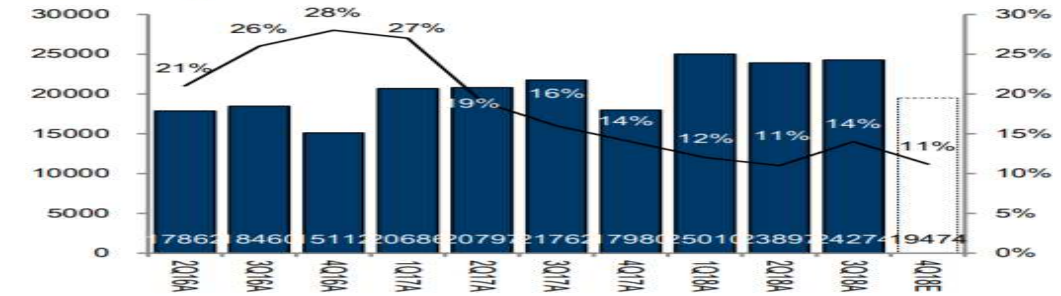


Chart 48: BKNG vs. EXPE reported room nights y/y growth

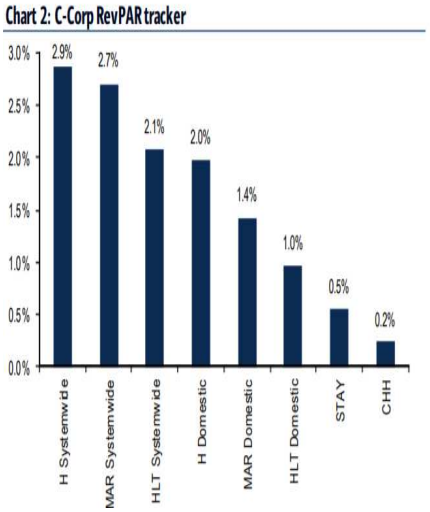


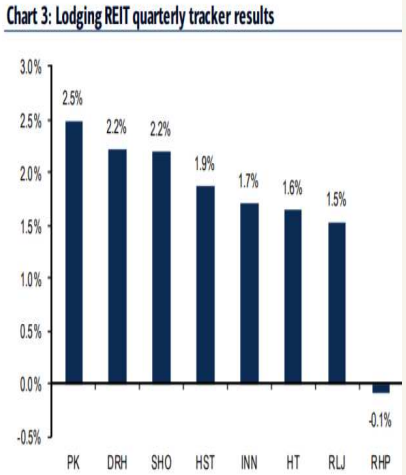
Booking (BKNG) has a market cap of $81.6B and is the best of breed name with bookings growth and alternative accommodations tracking higher than Expedia. BKNG does trade 17X Earnings, 14.4X EBITDA and 16.1X FCF but sees consistent top and bottom-line growth in the double digits. Its recent shift to a merchant model bookings could provide stronger FCF moving forward. BKNG management has shifted away from the historical combination of higher growth in tandem with marketing deleverage to a more moderated volume growth plus greater operating leverage. BKNG remains a small % of the overall travel market and wants to offer more travel services (flights, activities). BKNG is seeing strong metrics on customer growth from direct traffic, which is important with the Google issues. Valuation multiples are near the low-end of a six year range.

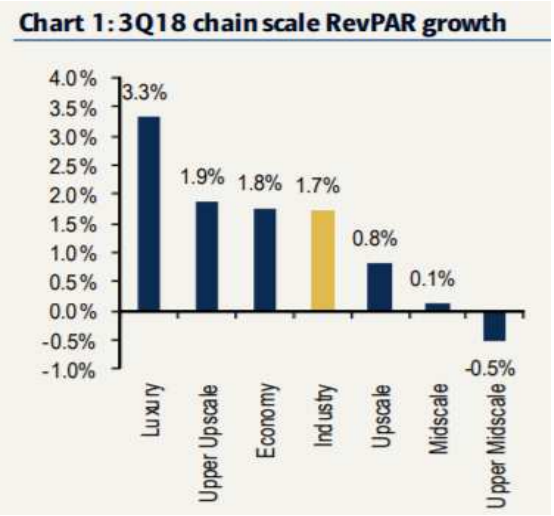
Figure 1: The Booking Holdings Inc. – Quarterly Gross Travel Bookings and FX-Neutral Year Over Year Growth
US $ in millions



In Lodging weakening trends are hitting the names with US RevPAR seeing its first negative monthly growth number in September since early 2010 and will continue to face difficult comps in Q4 and Q1. Luxury has been outperforming the lower end names. MAR and H have better exposure to high-end, corporate, and group, though the former is dealing with a massive security breach. The Vacation-Rental names like WYND, HGV and VAC are not a great area to be invested, just too much disruption, although CSFB likes the group on robust sales growth, low expectations, and company-specific catalysts. Estimates for 2019 are calling for 6% global hotel booking growth, 5% vacation rental growth, and 27% growth in primary residence bookings.





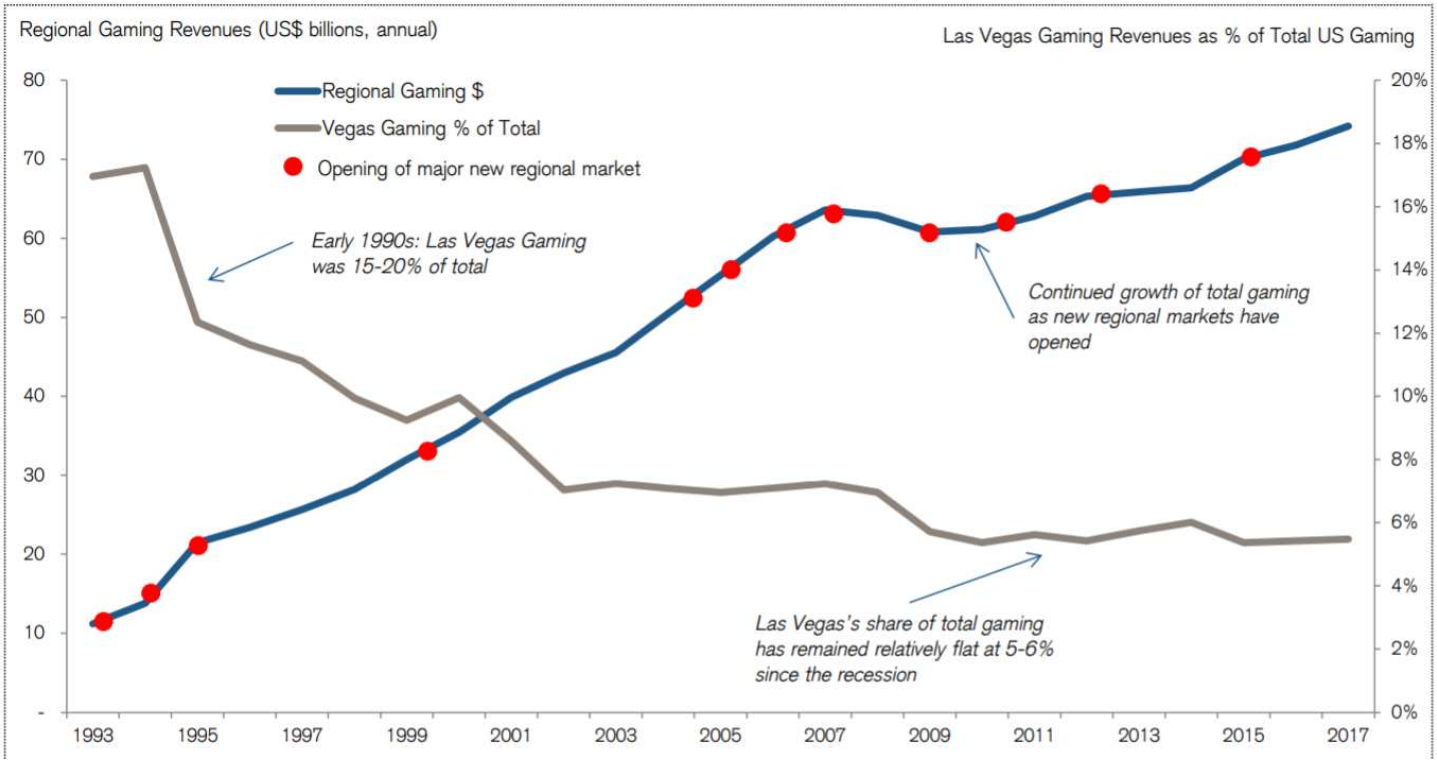


Wyndham Destinations (WYND) would be the name to target in the Timeshare group. It trades at a much cheaper multiple and looks to be entering a favorable growth window while also having the best margins and FCF, though is the most levered name as well. Upper-end timeshare companies are still growing sales at 8-12% y/y, with many CEOs noting business remains robust and customers healthy, with a significant difference between Main Street and Wall Street. Importantly, the securitization market is a key leading indicator, and issues continue to price at record low spreads and favorable terms. While Timeshare is a big-ticket consumer durable, sales have been fairly resilient in prior traditional recessions.

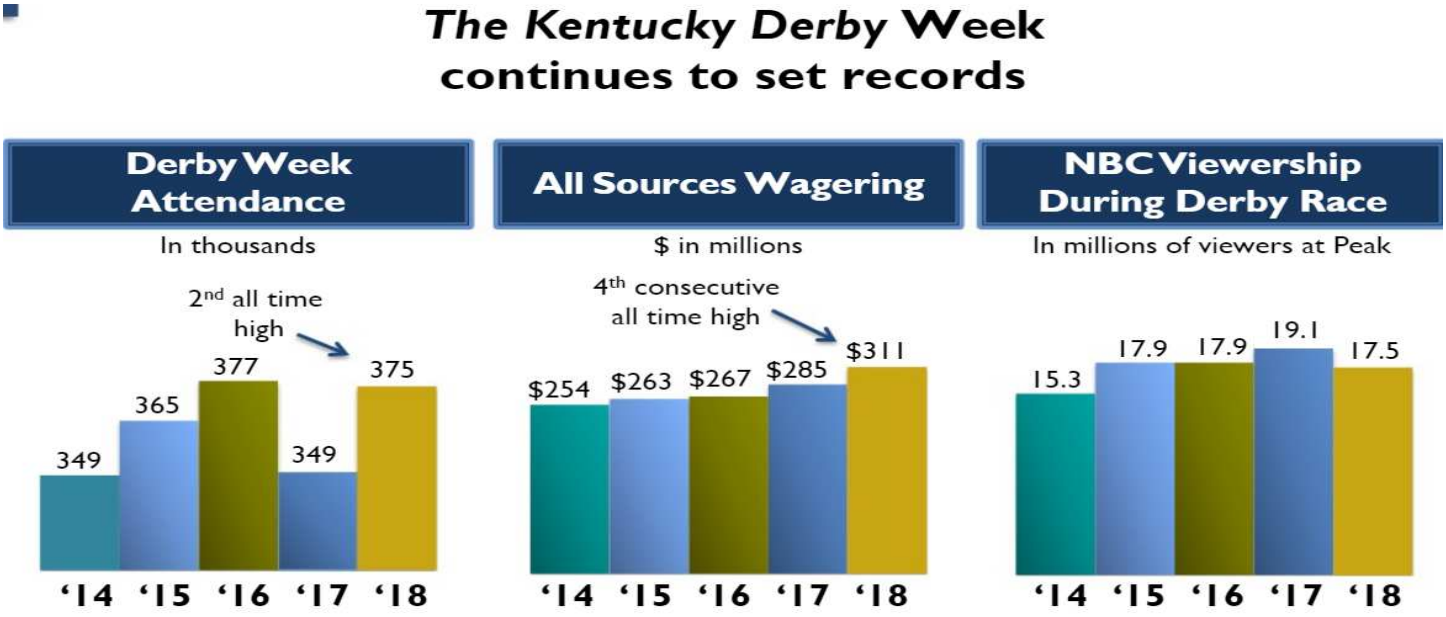
Choice Hotels (CHH) has a $3.97B market cap and trades 16.7X Earnings and 40X FCF with a 1.22% yield. It screened well versus peers for margins, ROIC and its balance sheet. It expects 7.2% revenue growth in 2019 which is an acceleration from 2018. CHH has a 9.7% US share in branded hotels and has been growing its share while operating with a capital light model and mainly targeting Midscale and Upper Midscale markets. Its relaunch of the loyalty program in 2016 has resulted in revenue contribution from direct to hit 60%, up from 30% and core unit growth is accelerating. It recently enabled a Book on Google ability and is moving to a cloud based revenue management system. CHH should see more consistent and accelerated RevPAR growth in 2019 that will enable shares to outperform peers.

Gaming & Resorts saw significant multiple compression in 2019 despite a solid consumer backdrop with a lot of concerns with slowing China growth. Domestic gaming sets up fairly positive with low expectations, continued M&A theme, and more defensive in nature. China names remain a wait and see due to macro, policy, licensing and political risks. Caesar's (CZR) in a gaming name expected to be acquired in 2019.

Macau	Overcast, With Rain Possible	Neutral	▪ Significant long term secular growth story, but with cyclicality – 5-10% LT growth possible, but volatility around that trend line ▪ Our forward macro indicators suggest risk of China macro slowdown leading deceleration in Macau; also increased political risk
Las Vegas	Overshadowed by Shadow Supply	Neutral	▪ All our forward, aggregate demand indicators look positive[1] However, two issues weighing on the market: – "Shadow supply": newly renovated room product impacting mid-market pricing – Demand weakness post October 1, 2017
Regionals	Steady as she Goes	Positive	▪ GDP-minus same-store growth, with some risk of supply growth ▪ Very low volatility through the cycle – counter to popular perception ▪ True same store revenues dropped 4% from peak to trough, and are now 6% above trough
REITs	Pitch Books and Tombstones	Positive	▪ High leverage to Gaming M&A, which is extremely active right now – Significant pickup after reduction of federal tax rate – Still plenty of private assets ▪ Prefer undervalued and misunderstood names
Gaming Technology	Sources + Uses	Neutral	▪ Debate over cash generation and 'right' valuation multiple of larger names ▪ Prefer smaller, market share growers ▪ Gaming technology sales are growing, and lottery revenues are very defensive long-term growers



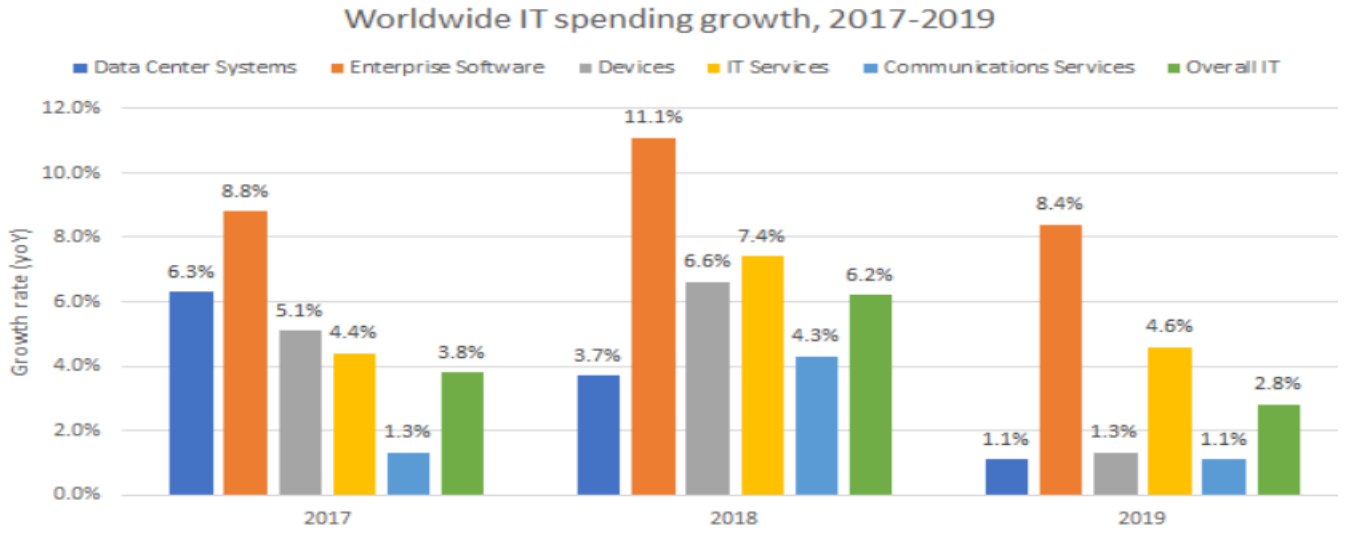
Churchill Downs (CHDN) has a $3.45B market cap and has been a favorite for a few years, now trading 18.7X Earnings, 3.55X Sales and yields a 0.66% dividend. CHDN is positioning itself in the sports betting market and saw several large insider buys earlier this year. It operates facilities in California, New York and the Kentucky Derby is its major claim to fame. It sold its investment in Big Fish Games earlier this year for $990M. It owns TwinSpires.com, the largest, legal online wagering platform in the US. It also has a diverse regional portfolio in six states with its casino properties. It sees ongoing expansion and M&A while its low leverage gives it a lot of flexibility and it generates strong FCF. Investing in CHDN gives you exposure to an iconic asset, regional gaming growth trends, and the surge of growth in iGaming and Sports Betting.



Vail Resorts (MTN) is another favored investment in the Leisure space due to its uniqueness and scarcity value. The $9B Co. trades 25.25X Earnings, 4.5X Sales and 44.9X FCF with a 2.64% yield. MTN has been growing organically and through acquisitions. It owns 6 of the top 10 visited resorts in North America and has utilized data-driven marketing. Its Season Pass program has a 13% CAGR since 2012 and has been expanding EBITDA margins for many years. It is a way to have exposure to strong strategic assets as well as a best-in-business marketing program. It has been diversifying globally and also improving its FCF. EBITDA is seen growing at an 11% CAGR through 2021. Investors have long been concerned about snowfall and competition, but MTN has a dominant position. It will continue to utilize bolt-on deals and see a rise in recurring revenues.

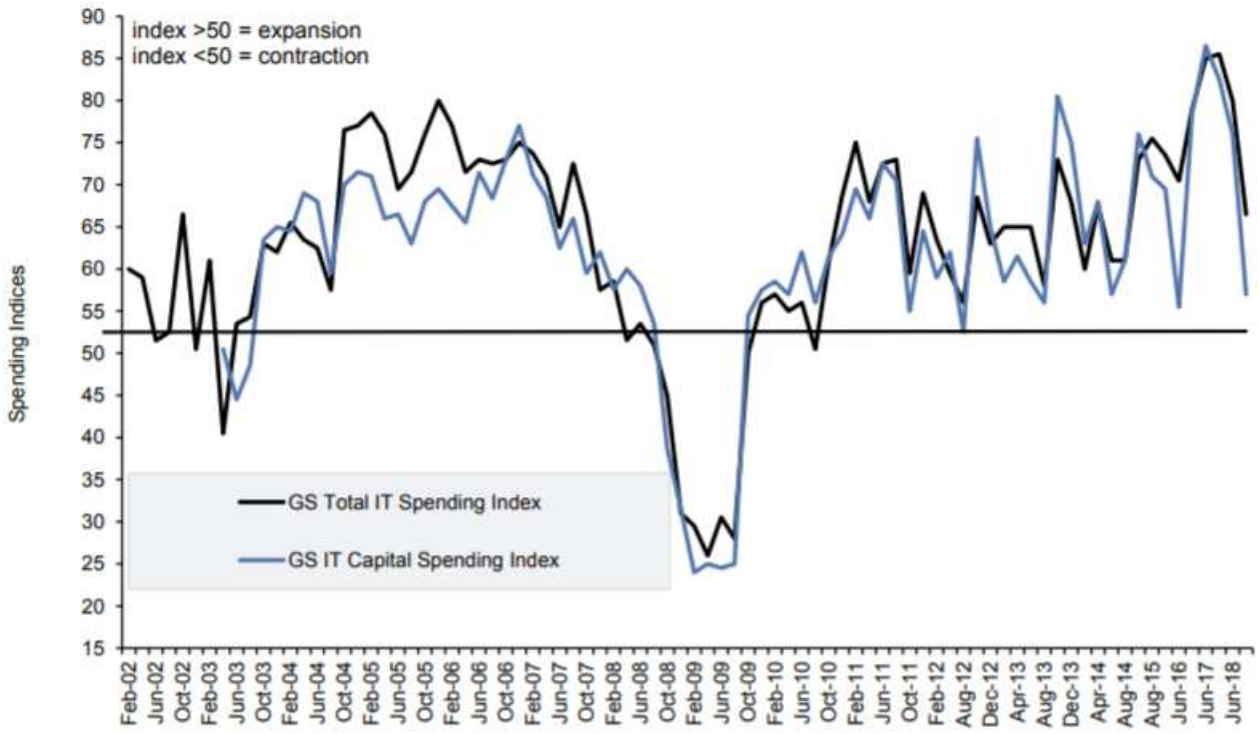
El Dorado Resorts (ERI) is a regional play with a $2.79B market cap trading 10.5X Earnings and 13.8X FCF. ERI is seeing rapid revenue and EPS growth and screened well versus peers. It recently entered into an online betting agreement with the Stars Group. ERI is Midwest focused and has seen insider buying this year and a JV with William Hill should benefit shares while it also integrates its deal for Tropicana. It has the ability to take on another large deal in the next year or two. Its EBITDA margins are trailing its closest peers but I like its diversified markets and strategic assets giving a better growth profile than its peers. It should see upside to margins from the Tropicana Enterprises and Elgin Grand Victoria deals. I think we start to see some of the ERI positives play out in 2019 and be a leader in the gaming space, preferring it to those focused on Las Vegas and Macau.

Technology: *The tech sector was leading markets until October when we saw a liquidation from funds with a lot of valuations getting stretched. The NASDAQ has lost 15% in Q4 and turned negative for the year. Software has maintained some relative strength with IGV +12% YTD though down 13.6% in Q4. Semiconductors (SMH) are down 11% YTD which started mid-year as the cycle appears to have peaked. Internet (FDN) leaders are down 17% in Q4 but still +6.3% YTD. There are a number of strong themes that remain growth areas in Tech including AI, digitalization, Mobility, IoT, Cyber Security, 5G, and SaaS. The AI market is expected to grow at a 46% CAGR through 2021 to $52B. The Global Internet Security Market expects a 10% CAGR through 2021 reaching $120.7B. Global Ad spending continues to see a secular shift to digital, mobile and video. IDC sees 60% of global GDP digitized by 2022 with $7 Trillion in IT-related spending in 2019-2022. Gartner sees 2019 global IT spending rising 3.2% in 2019 with enterprises continuing a digital transformation. Goldman Sachs recent survey of 100 corporate technology buyers indicated spending plans are at the worst levels in four years. Goldman Sachs believes the end result is from ongoing macro issues, trade disputes and fluctuations in commodity prices. Even Brexit has been thrown into the mix. Security continued to top the list of IT spending priorities for the year ahead, the report said, followed by software-as-a-service, business intelligence and analytics tools, and private and public cloud adoption. Weak spending is seen in legacy hardware and networking/storage equipment. Tech did see a mega-deal to end the year with IBM purchasing Red Hat for $34B. Tech has the highest overall foreign sales exposure near 60% and large cap active managers have been reducing positioning since 2017 and are relatively underweight. Tech is still the healthiest of sectors with the best beat/raise ratio, growth, and only sector with more cash than debt on balance sheets.*



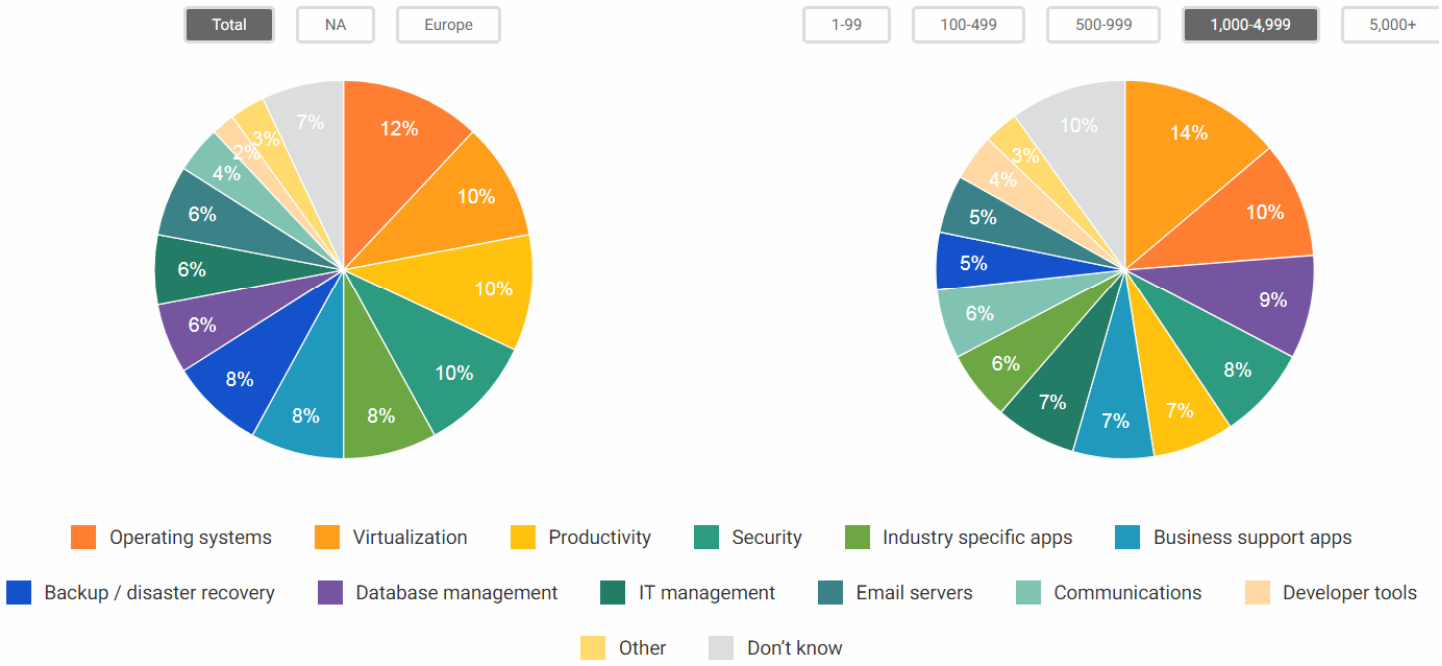
Goldman Sachs IT Spending Survey

Exhibit 2: Overall IT Spending and Capital Spending Indices both pulled back significantly



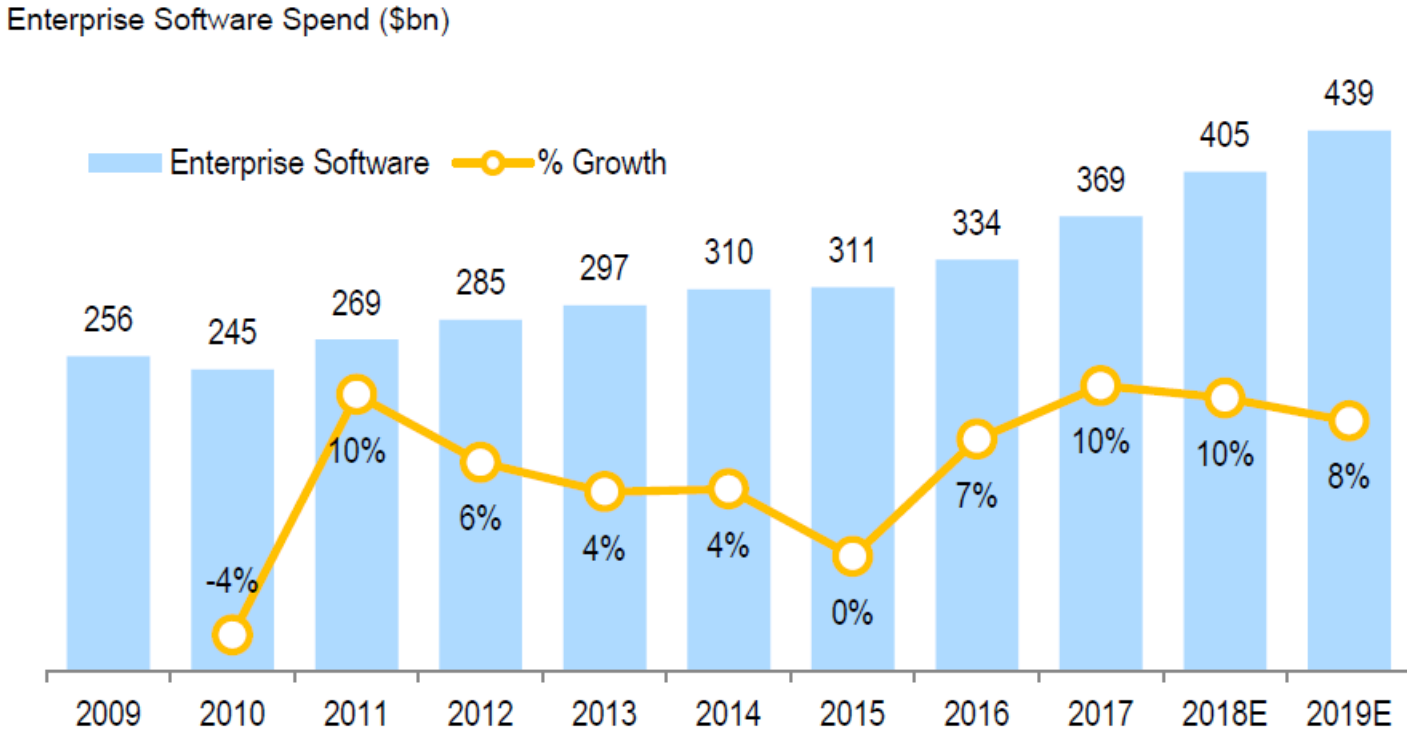
SOFTWARE BUDGET BREAKOUT FOR 2019

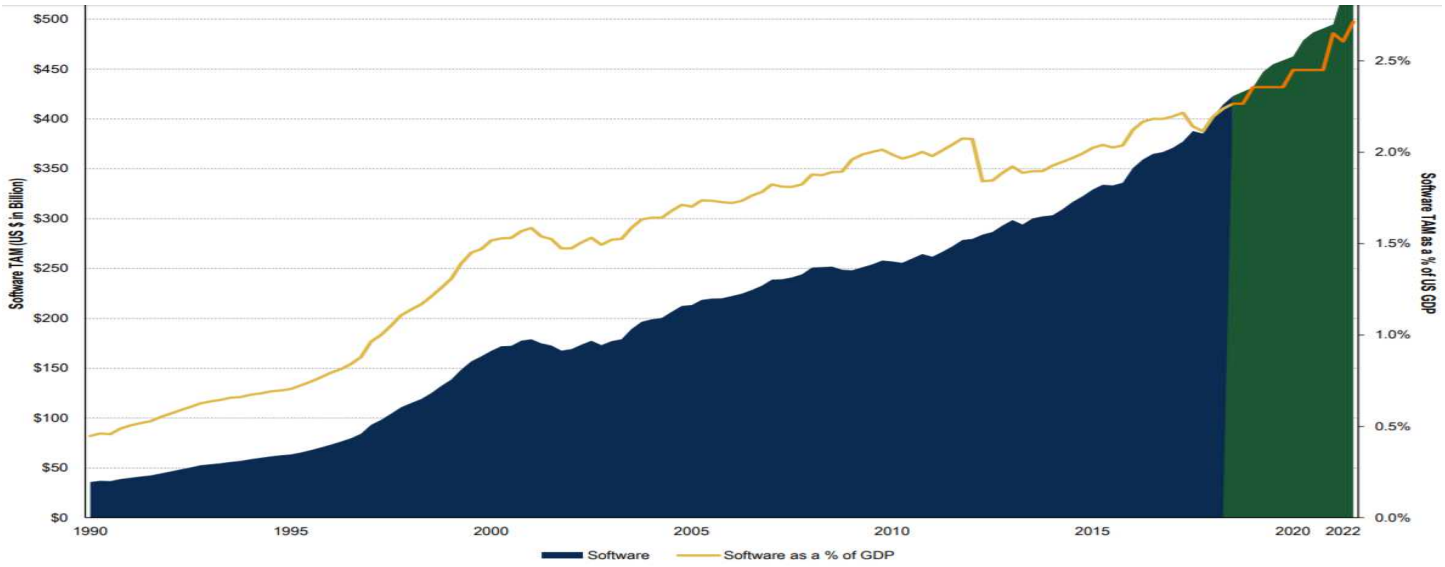
TOTAL, REGIONAL, AND BY COMPANY SIZE



Software - Cloud, Security and SaaS:

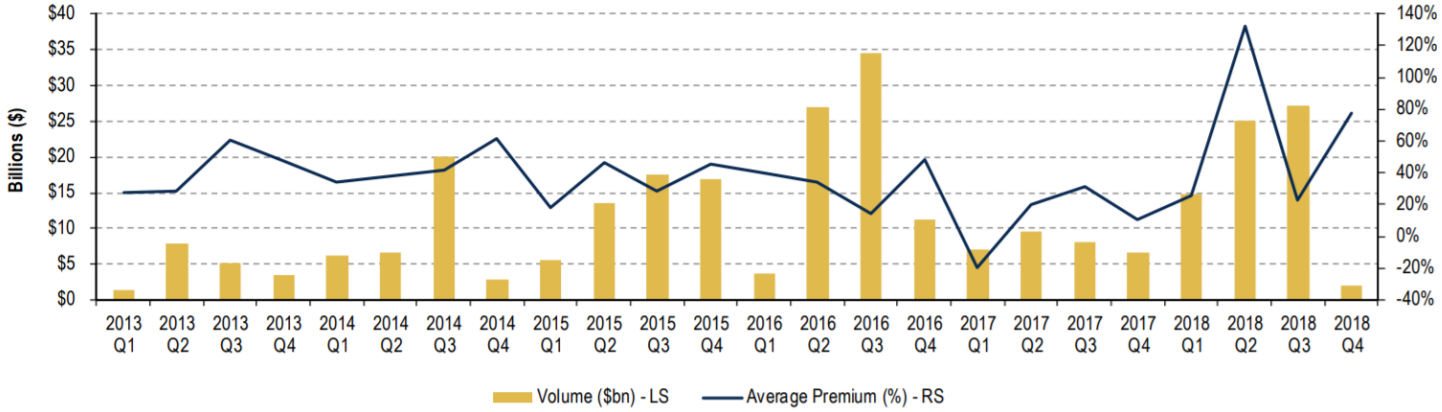
Components: *ORCL, ADBE, SAP, CRM, INTU, WDAY, SHOP, SPLK, FTNT, DATA, OTEX, DBX, TWLO, TTD, HUBS, PFPT, MDB, SWI, LOGM, PVTL, AYX, FEYE, CSOD, PS, QLYS, FIVN, BOX, MIME, APPF, APPN, IMPV, ZUO, CLDR, EVBG, WK, BNFT, PRGS, RPD, MSTR, INST, SCWX, FSCT, CBLK, MFGP, STNE, ESTC, PRO, TLND, VMW, ADSK, PTC, NTNX, OKTA, VRNS, ATTU, MSFT, CTXS, ZPN, NEWR, PEGA, CYBR, DSGX, TENB, LPSN, CARB, PLAN, VRNT, NTCT, BAND, RDWR, EGHT, NOW, TEAM, EPAM, AKAM, ULTI, COUP, YEXT, PANW, CHKP, SYMC, ZS*





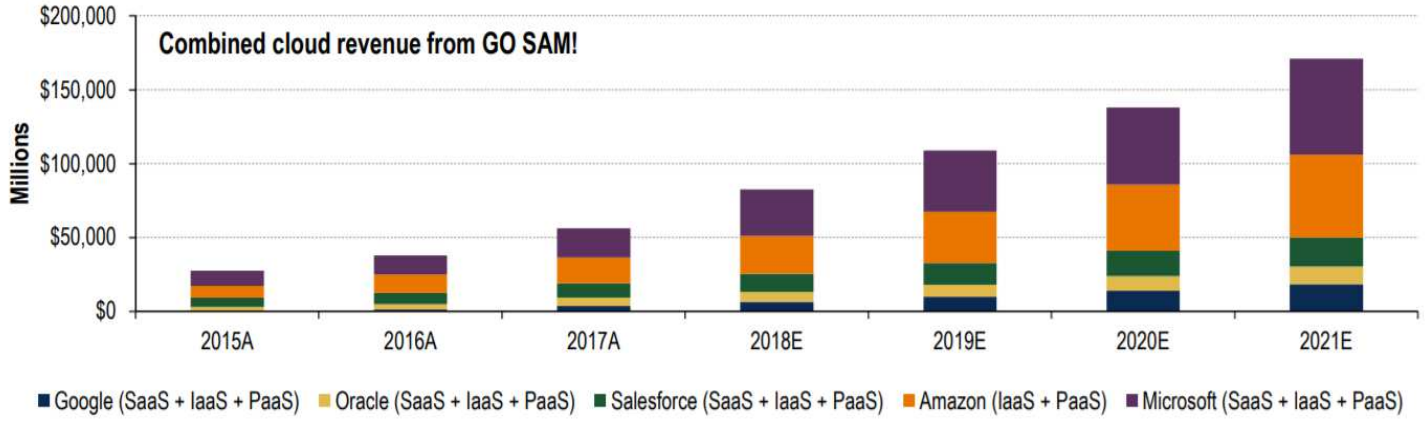
This is a large group to tackle consisting of 83 stocks and contains many of the top growth names in Tech. Software showed relative strength even during the market's risk-off move and continues to be a focus of CIO budgets, though valuations are the largest concern. SAP AG (SAP) did a late year deal for Qualtrics at $8B, more than 20X EV/Sales which made valuations of many names appear fairly cheap if consolidation continues, the large players having ample cash to make deals. The trough EV/Sales multiple over the past three corrections for the large cap names was 6.1X EV/Sales. In 2019 the sector is losing 2018 tailwinds like tax reform, cash repatriation and a pull forward of IT spending.

Of the 83 names only 20 are down 5% or more YTD, and mostly the slower growth names. There are 32 names up 25% or more YTD including large leaders like ADBE, VMW, SHOP, CRM, NOW, WDAY, FTNT, DATA as well as up and comers like TWLO, MDB, OKTA, TTD, AYX, COUP, and FIVN. We saw a number of M&A deals with MuleSoft acquired by Salesforce, Magento acquired by Adobe, Adaptive Insights acquired by WorkDay, CA Tech acquired by Broadcom, Red Hat acquired by IBM, Send-Grid acquired by Twilio, and the Cloudera/Hortonworks merger. Deals are coming at healthy premiums as shown below and at an average 8.9X EV/Sales, 10.4X EV/Subscription Revenue, and 115X EV/FCF since 2011. Private Equity in this industry has done deals at 5.3X EV/Revenues, 8.3X EV/Recurring Revenues and 32.7X EV/FCF.



The same top themes continue into 2019 with Artificial Intelligence (MSFT, CRM, ADBE, SPLK, HUBS, ZEN), Business Intelligence (DATA, SPLK), Digital Transformation of Enterprise (SAP, ORCL, CRM, ADBE), Line of Business IT (CRM, HUBS, ZEN, BOX), Bi-modal IT (MSFT, ORCL, INTU), Cloud transitions (ADBE, ADSK, SPLK, DATA), public cloud deflationary pressure, software defined data center, next-gen applications, and IoT (MSFT, CRM, SPLK, ALRM, TWLO, PTC). Communications Platform as a Service (CPaaS) is an emerging growth theme. Cyber Security budgets remain strong and a focal point, many of the names performing well in 2018.

BAML calls its top five themes for 2019 as Digital transformation of the enterprise inflecting (CRM, ADBE), Hybrid cloud (SPLK, VMW), public cloud as a secular growth product (GOOG, ORCL, AMZN, CRM, MSFT), enabling revenue growth and cost savings for customers (INTU, MSFT, CRM, RNG, TWLO), and active IPOs and M&A. Q1 earnings reports in April/May will be vital for the 2019 outlook and performance of the group this coming year.

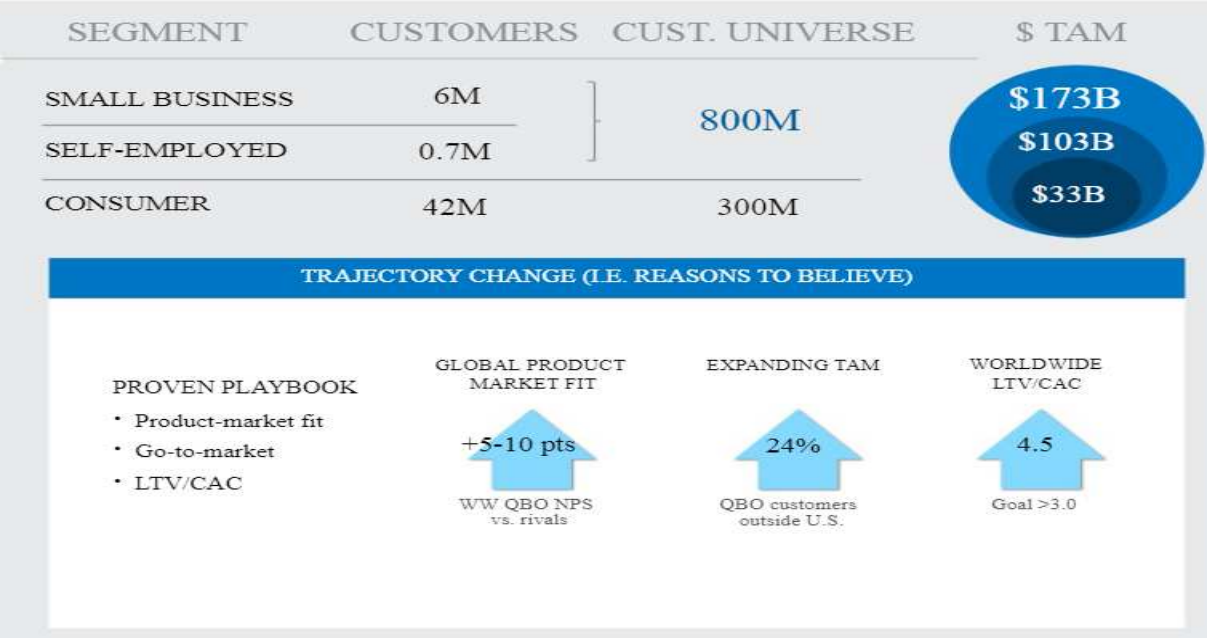


		11/6/2018	Market	Enterprise	Rev Y/Y Growth				EV/Revenue				EV/FCF				Recurring revs y/y				EV/ Recurring Revenue			
SaaS Group	**Ticker**	**Price**	**Cap ($MN)**	**Value ($MN)**	**CY17A**	**CY18E**	**CY19E**	**CY20E**	**CY17A**	**CY18E**	**CY19E**	**CY20E**	**CY17A**	**CY18E**	**CY19E**	**CY20E**	**CY17A**	**CY18E**	**CY19E**	**CY20E**	**CY17A**	**CY18E**	**CY19E**	**CY20E**
Horizontal SaaS																								
Adobe*	ADBE	240.56	119,169	116,099	25%	23%	22%	18%	15.9x	12.9x	10.6x	8.9x	42.5x	29.6x	24.4x	20.0x	39%	29%	23%	21%	18.9x	14.7x	12.0x	9.9x
Salesforce.com, Inc.*	CRM	133.95	105,151	105,400	26%	25%	19%	17%	10.0x	8.0x	6.8x	5.8x	47.8x	41.4x	34.8x	28.8x	25%	21%	15%	16%	11.5x	9.5x	8.3x	7.2x
ServiceNow, Inc. *	NOW	177.37	33,786	32,356	38%	37%	32%	29%	16.9x	12.3x	9.3x	7.2x	65.7x	48.3x	31.7x	23.5x	42%	41%	33%	31%	18.6x	13.2x	9.9x	7.6x
Workday, Inc. *	WDAY	134.98	32,285	30,250	36%	30%	27%	25%	14.1x	10.9x	8.6x	6.9x	93.3x	87.6x	41.7x	26.2x	39%	32%	29%	27%	16.9x	12.9x	9.9x	7.8x
Atlassian *	TEAM	72.09	17,986	16,191	40%	37%	30%	26%	21.7x	15.8x	12.1x	9.6x	66.2x	51.5x	41.3x	31.7x	42%	56%	30%	26%	26.5x	17.0x	13.0x	10.3x
Shopify, Inc.*	SHOP	140.93	16,232	14,762	73%	56%	35%	31%	21.9x	14.1x	10.4x	7.9x	NM	NM	NM	NM	64%	49%	32%	30%	47.6x	32.0x	24.2x	18.6x
Ultimate Software *	ULTI	254.81	8,137	8,011	20%	21%	19%	18%	8.5x	7.0x	5.9x	5.0x	58.3x	45.0x	37.1x	30.6x	23%	24%	21%	19%	10.0x	8.1x	6.7x	5.6x
DocuSign *	DOCU	42.55	7,241	6,413	36%	32%	20%	20%	12.4x	9.3x	7.8x	6.5x	NM	NM	83.5x	72.6x	39%	34%	21%	21%	13.2x	9.9x	8.2x	6.8x
Proofpoint, Inc.	PFPT	91.19	5,433	5,242	37%	38%	23%		10.2x	7.4x	6.0x	N/A	49.1x	34.9x	26.3x	N/A	37%	38%	23%		10.3x	7.5x	6.1x	N/A
RingCentral*	RNG	75.84	6,573	6,366	33%	30%	23%	20%	12.6x	9.7x	8.0x	6.6x	NM	NM	NM	NM	31%	28%	23%	20%	13.7x	10.7x	8.7x	7.2x
Zendesk*	ZEN	53.01	6,299	5,940	38%	38%	30%	25%	13.8x	10.0x	7.7x	6.2x	NM	NM	56.1x	33.8x	38%	38%	30%	25%	13.8x	10.0x	7.7x	6.2x
Paycom *	PAYC	123.16	7,197	7,146	32%	30%	28%	27%	16.5x	12.7x	9.9x	7.8x	NM	51.4x	39.3x	29.1x	31%	30%	28%	27%	16.8x	12.9x	10.1x	7.9x
Twilio, Inc.*	TWLO	71.02	8,121	7,326	44%	47%	27%	23%	18.4x	12.5x	9.9x	8.0x	NM	NM	NM	NM	44%	37%	28%	24%	18.4x	13.4x	10.4x	8.4x
New Relic, Inc.	NEWR	86.07	5,259	4,929	70%	34%	25%		11.9x	8.9x	7.1x	N/A	NM	77.3x	47.0x	N/A	70%	34%	25%		11.9x	8.9x	7.1x	N/A
Okta inc	OKTA	56.10	7,087	6,814	62%	44%	33%		26.2x	18.2x	13.7x	N/A	NM	NM	NM	N/A	62%	44%	33%		28.2x	19.6x	14.7x	N/A
Wix.com, Ltd. *	WIX	99.55	5,562	5,212	47%	41%	27%		12.2x	8.7x	6.9x	N/A	73.0x	51.2x	34.4x	N/A	47%	41%	27%		13.2x	9.4x	7.4x	N/A
HubSpot*	HUBS	134.98	5,892	5,325	39%	33%	26%	25%	14.2x	10.7x	8.5x	6.8x	NM	NM	46.4x	28.8x	40%	33%	26%	25%	14.9x	11.2x	8.9x	7.1x
Box	BOX	18.56	3,045	2,934	27%	20%	21%		5.8x	4.8x	4.0x	N/A	58.7x	83.9x	36.7x	N/A	27%	20%	21%		6.1x	5.1x	4.2x	N/A
Xero Ltd.	XRO	30.04	4,221	4,163	76%	34%	26%		11.5x	8.6x	6.8x	N/A	NM	NM	76.7x	N/A	76%	34%	26%		11.8x	8.7x	6.9x	N/A
Paylocity*	PCTY	61.80	3,518	3,454	26%	25%	22%	23%	10.3x	8.3x	6.8x	5.5x	58.9x	38.7x	28.7x	22.1x	26%	24%	23%	23%	10.9x	8.8x	7.2x	5.8x
Cornerstone*	CSOD	49.25	3,155	3,051	14%	9%	7%	15%	6.3x	5.8x	5.4x	4.7x	50.5x	41.3x	24.9x	18.2x	17%	17%	14%	15%	7.7x	6.6x	5.8x	5.0x
Coupa	COUP	61.48	3,570	3,295	40%	31%	24%		17.6x	13.5x	10.8x	N/A	NM	NM	NM	N/A	40%	31%	24%		19.6x	15.0x	12.1x	N/A
Elastic	ESTC	67.05	5,793	5,742	N/A	61%	34%	32%	41.7x	25.9x	19.4x	14.7x	NM	NM	NM	NM	N/A	59%	34%	32%	44.8x	28.2x	21.1x	15.9x
Qualys	QLYS	72.61	2,859	2,471	17%	21%	19%		10.7x	8.9x	7.5x	N/A	35.4x	25.0x	21.4x	N/A	17%	21%	19%		10.7x	8.9x	7.5x	N/A
Cloudera*	CLDR	14.00	2,600	2,160	41%	21%	17%	17%	5.9x	4.9x	4.2x	3.5x	NM	NM	NM	NM	50%	25%	20%	20%	7.2x	5.8x	4.8x	4.0x
Blackline	BL	41.15	2,462	2,337	44%	28%	24%		13.2x	10.3x	8.3x	N/A	NM	NM	NM	N/A	44%	28%	24%		13.8x	10.8x	8.7x	N/A
Mindbody, Inc.	MB	32.63	1,748	1,668	31%	36%	25%		9.1x	6.7x	5.4x	N/A	NM	NM	NM	N/A	31%	36%	25%		14.6x	10.8x	8.6x	N/A
8x8*	EGHT	18.13	1,701	1,572	16%	18%	18%	18%	5.5x	4.7x	4.0x	3.4x	80.1x	NM	NM	NM	19%	19%	19%	20%	5.9x	4.9x	4.1x	3.4x
Alteryx Inc *	AYX	53.16	3,550	3,144	53%	46%	35%	32%	23.9x	16.4x	12.2x	9.2x	NM	NM	70.4x	34.8x	53%	46%	35%	32%	25.1x	17.2x	12.8x	9.7x
Five9, Inc. *	FIVN	38.37	2,454	2,386	24%	23%	17%	16%	11.9x	9.7x	8.3x	7.1x	NM	NM	NM	80.5x	24%	33%	17%	16%	20.9x	15.7x	13.3x	11.5x
Zuora Inc	ZUO	20.80	2,586	2,423	49%	36%	26%		14.4x	10.6x	8.4x	N/A	NM	NM	NM	N/A	49%	36%	26%		20.1x	14.7x	11.7x	N/A
Survey Monkey *	SVMK	11.25	1,163	1,404	N/A	13%	12%	17%	6.4x	5.7x	5.0x	4.3x	NM	50.7x	40.6x	28.7x	6%	13%	12%	17%	6.4x	5.7x	5.0x	4.3x
Pluralsight *	PS	20.45	3,100	2,899	27%	38%	33%	31%	17.4x	12.6x	9.4x	7.2x	NM	NM	NM	35.7x	27%	38%	33%	31%	17.6x	12.7x	9.5x	7.3x
Avalara*	AVLR	31.96	2,241	2,097	N/A	22%	18%	19%	9.8x	8.1x	6.8x	5.7x	NM	NM	NM	64.0x	29%	22%	18%	19%	10.5x	8.6x	7.3x	6.1x
Appian corporation	APPN	26.56	1,812	1,705	33%	21%	19%		9.6x	7.9x	6.7x	N/A	NM	NM	NM	N/A	33%	21%	19%		17.5x	14.4x	12.1x	N/A
Apptio*	APTI	24.92	1,394	1,315	17%	24%	17%	21%	7.0x	5.6x	4.8x	4.0x	NM	92.7x	38.1x	27.1x	19%	25%	20%	24%	8.5x	6.7x	5.6x	4.5x
Everbridge*	EVBG	51.95	1,861	1,839	36%	37%	28%	27%	17.6x	12.8x	10.0x	7.9x	NM	NM	NM	74.9x	36%	37%	28%	27%	18.2x	13.2x	10.3x	8.1x
Average (all)					**37%**	**31%**	**24%**	**23%**	**13.9x**	**10.3x**	**8.2x**	**6.8x**	**60.0x**	**53.2x**	**42.0x**	**37.4x**	**37%**	**32%**	**24%**	**24%**	**16.3x**	**12.0x**	**9.5x**	**7.9x**
Median (all)					**36%**	**31%**	**24%**	**23%**	**12.4x**	**9.7x**	**7.8x**	**6.8x**	**58.7x**	**49.5x**	**38.1x**	**29.1x**	**38%**	**33%**	**24%**	**24%**	**13.8x**	**10.8x**	**8.7x**	**7.2x**

RAW DATA		ACTUALS										
		Long-term Attributes				Short-term Attributes						
Company	Ticker	Disruptive Technology	Non-US Exposure %	Recurring Rev as % of Sales	Pro-forma Op Margin (%)	Revenue Growth Y/Y (%)	Free Cash Flow Growth Y/Y (%)	Incremental revenue/Sales and Marketing cost	Incremental Op Inc / Incremental Revs (%)	Stock-based Comp / Operating Income (%)	Earnings Revision (Actual Proforma EPS vs. Cons)	Revenue Revision (Actual vs. Cons)
Adobe Systems	ADBE		43%	88%	41%	24%	36%	.7x	55%	16%	2%	1.7%
Autodesk	ADSK		66%	96%	11.5%	14%	NM	.2x	82%	649%	20%	1.9%
Alarm.com	ALRM		2%	68%	19.5%	26%	26%	1.7x	29%	15%	28%	10.4%
Apptio	APTI		32%	83%	1.9%	22%	NM	.4x	35%	NM	NM	6.2%
Avalara	AVLR		6%	94%	(16.5%)	26%	NM	.3x	NM	NM	NM	-0.1%
Alteryx	AYX		28%	95%	(7.1%)	53%	NM	.7x	22%	NM	NM	6.8%
Aspen Tech	AZPN		10%	94%	48.8%	3%	15%	.2x	7%	10%	6%	0.2%
Blackbaud	BLKB		15%	90%	19.4%	10%	18%	.4x	29%	60%	3%	-0.5%
Cloudera	CLDR		36%	84%	(17.1%)	33%	NM	.4x	48%	NM	NM	2.4%
Salesforce.com, inc.	CRM		29%	93%	16.9%	26%	38%	.5x	32%	57%	50%	1.6%
Cornerstone OnDemand, Inc	CSOD		36%	87%	9.2%	17%	119%	.3x	43%	145%	0%	3.2%
Citrix Systems	CTXS		42%	74%	31.1%	-6%	13%	NM	-18%	19%	6%	3.6%
Tableau	DATA		30%	51%	(4.3%)	7%	-37%	.1x	NM	NM	NM	3.1%
DocuSign	DOCU		17%	95%	(0.4%)	36%	NM	.4x	32%	3910%	329%	5.2%
8x8	EGHT		10%	94%	(4.9%)	18%	-54%	.3x	NM	NM	NM	2.7%
Ellie Mae	ELLI		0%	100%	16.1%	18%	22%	.9x	NM	79%	29%	0.9%
Everbridge	EVBG		19%	97%	(7.5%)	38%	NM	.6x	NM	NM	NM	4.8%
Five9, Inc.	FIVN		7%	62%	10.8%	25%	614%	.7x	39%	149%	197%	8.3%
Guidewire Software	GWRE		27%	69%	15.0%	29%	0%	1.2x	NM	82%	7%	4.0%
HubSpot	HUBS		29%	95%	5.1%	39%	110%	.5x	15%	360%	16%	4.0%
Intuit	INTU		5%	75%	33.2%	15%	45%	.5x	31%	19%	40%	3.7%
Microsoft Corporation	MSFT		49%	89%	32.6%	12%	18%	.7x	37%	12%	5%	3.0%
ServiceNow, Inc.	NOW		35%	93%	20.1%	40%	26%	.6x	27%	108%	15%	2.1%
Ooma Inc	OOMA		0%	90%	(3.8%)	9%	NM	.3x	NM	NM	NM	2.5%
Oracle Corporation	ORCL		44%	81%	42.6%	3%	10%	.1x	71%	10%	4%	-0.6%
Paycom	PAYC		0%	98%	36.7%	30%	82%	.8x	70%	26%	22%	1.6%
Paylocity Holding Corporation	PCTY		0%	98%	20.4%	26%	102%	.8x	22%	80%	-9%	3.5%
PluralSight	PS		37%	99%	(29.7%)	35%	NM	.4x	NM	NM	NM	5.4%
PTC inc	PTC		58%	79%	18.4%	8%	123%	.2x	56%	34%	12%	0.6%
Pivotal	PVTL		22%	59%	(13.0%)	24%	NM	.4x	55%	NM	NM	2.9%
Red Hat Software	RHT		37%	88%	23.9%	19%	23%	.4x	21%	27%	4%	-0.7%
RingCentral	RNG		10%	91%	8.4%	34%	14%	.5x	15%	107%	30%	3.3%
Shopify, Inc.	SHOP		29%	45%	0.3%	68%	NM	1.2x	6%	831%	NM	4.3%
Splunk	SPLK		31%	52%	11.6%	42%	67%	.5x	29%	216%	54%	8.3%
Symantec	SYMC		57%	100%	29.9%	9%	38%	.3x	89%	35%	3%	1.4%
Atlassian	TEAM		50%	83%	20.1%	41%	53%	1.4x	25%	94%	7%	4.5%
Twilio	TWLO		25%	91%	0.0%	46%	NM	1.3x	NM	NM	NM	13.4%
Ultimate	ULTI		0%	88%	20.9%	20%	61%	.6x	30%	63%	3%	1.0%
Veeva	VEEV		44%	81%	33.6%	24%	26%	1.1x	33%	27%	16%	3.0%
Vmware	VMW		51%	51%	33.8%	15%	48%	.4x	22%	25%	3%	1.3%
Workday	WDAY		23%	84%	9.1%	31%	37%	.8x	20%	208%	21%	1.3%
Zendesk	ZEN		49%	100%	0.5%	38%	232%	.6x	6%	NM	NM	3.2%

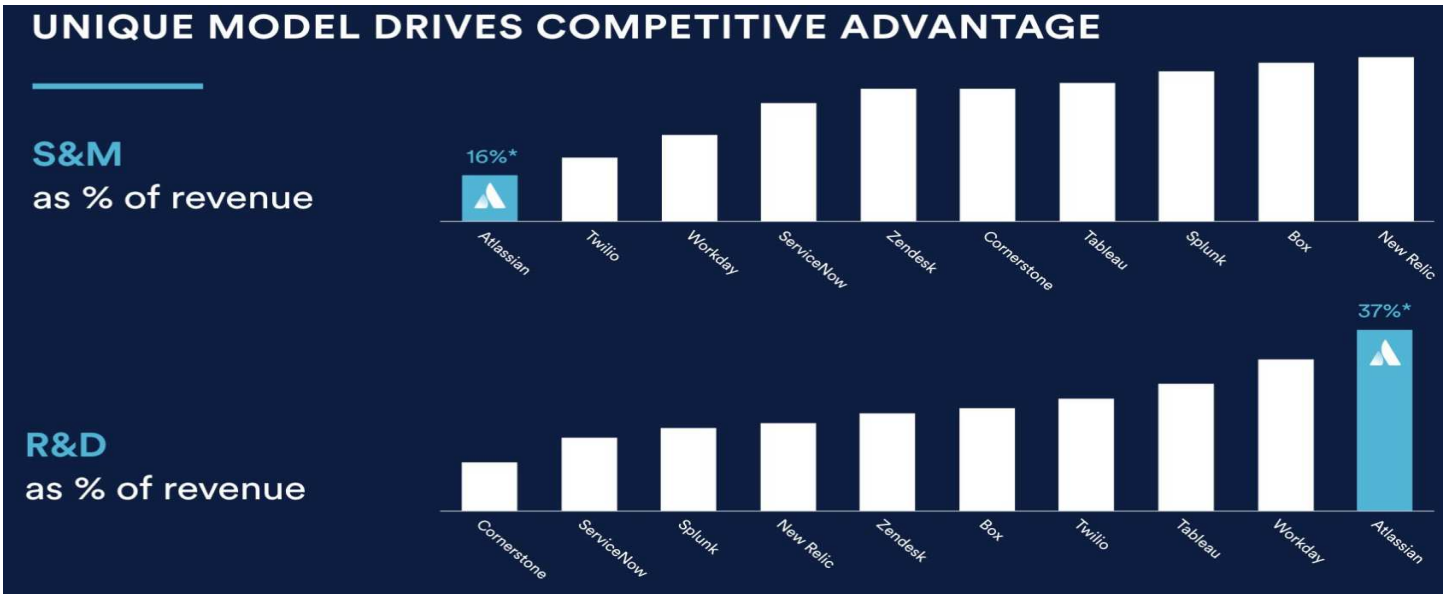
An interesting method towards analyzing software companies is "Rule of 40", a number derived by adding a company's rate of revenue growth and its FCF margin. Into 2019 we want to focus on quality names with large growth potential but also fairly defensive considering a slowing macro and IT spend environment. We also want names with a high percentage of recurring revenue, higher US exposure, strong operating margins, FCF growth, and high incremental revenue per S&M dollar spent. There are a number of rapid growth names with high valuations, and if we return to a risk-on environment the stories remain strong at NOW, OKTA, MDB, ESTC, EPAM, QLYS, PLAN and some others, but looking for high quality and more defensive, a few names that stood out included:

Intuit (INTU) is the first name I see as more defensive and hits on the major theme of an entrepreneurial economy. The $48.2B software provider trades 7.1X EV/Revenues with double digit top and bottom-line growth, impressive growth margins and trades 24X EV/FCF. INTU is seeing strong growth in its consumer and small business segments with improving ARPU metrics. INTU provides a value add service for businesses and consumers saving them money and time and has ample opportunities for expansion into new markets and geographies. Its transition to the cloud also allows for further operating leverage.

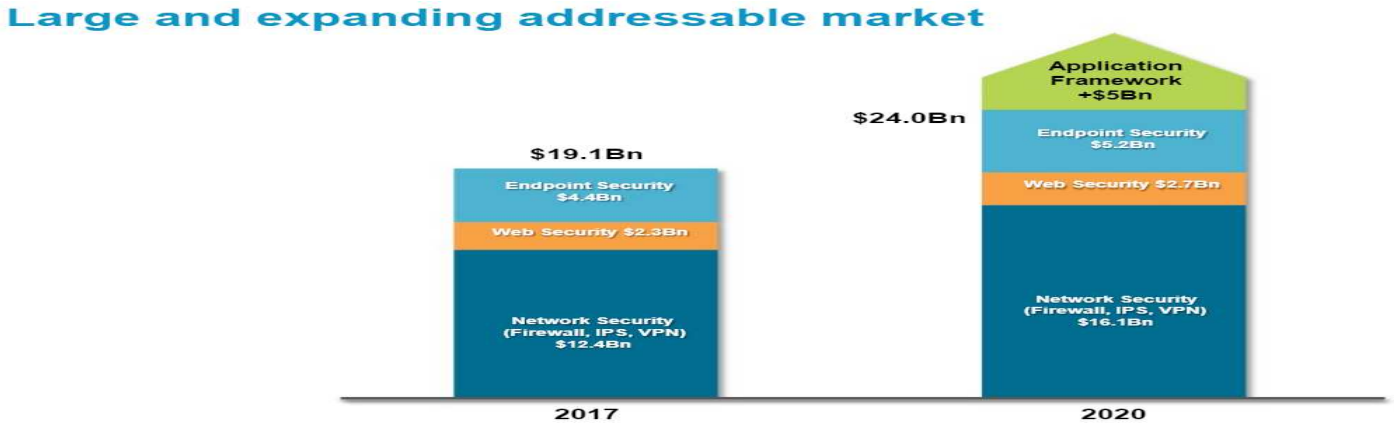


Adobe (ADBE) remains a top name for the digitalization trend in Tech, the $100B software company trading 9.2X EV/Sales with 20% EPS and revenue growth and strong margins, ROICX and FCF. ADBE continues to increase its available market with strategic acquisitions like Marketo and Magento. ADBE is supremely positioned in a World of content creation and collaboration and has been delivering upside to estimates in 2018. Subscription growth should continue to trend higher boosted by International growth and ARPU is seeing a rise from strong pricing. ADBE is seeing strong growth in Document Cloud and has significant opportunities to expand long term operating margins. It sees a $36.7B market opportunity for 2021 in the fast growing Digital Media segment, and a $71.2B addressable market for Experience Cloud.

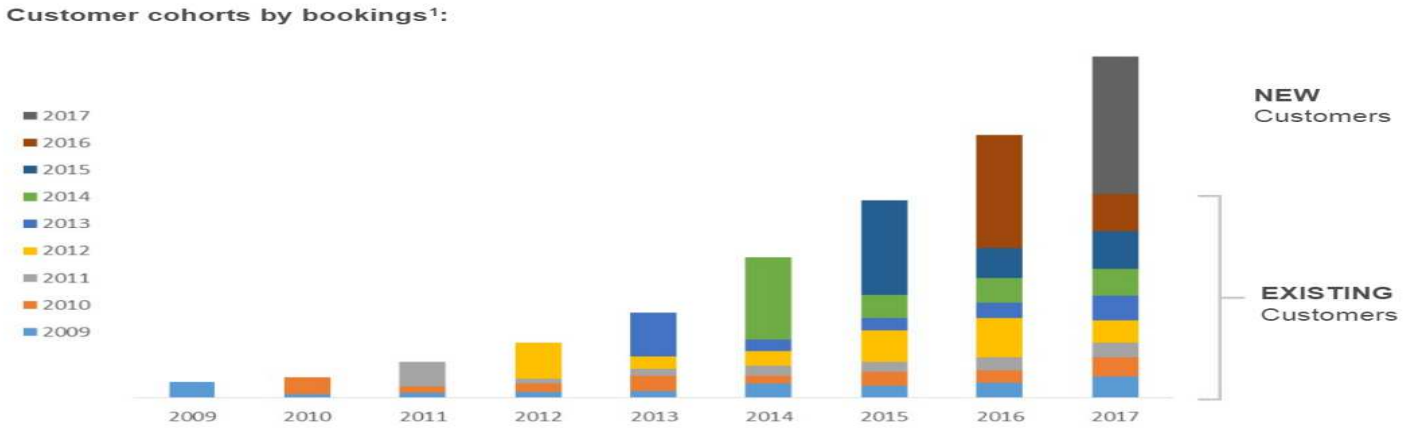
Atlassian (TEAM) with a $19.5B market cap is an emerging software leader with shares +78% YTD and trading 15.8X EV/Sales and 62.6X EV/FCF with strong margins and rapid revenue growth. TEAM is actively investing in R&D and utilizing a go-to-market approach adding large volumes of new customers. Its main sites are bitbucket.com, atlassian.com and trello.com. TEAM's recurring revenue model allows for predictability and it should reach $1B in sales by 2020 and also benefit by subscription revenues outpacing growth of perpetual licenses. TEAM's self-service model is clearly working as the company continues to exceed estimates on a quarterly basis. In July the company announced a partnership with Slack and in September announced a $295M deal for OpsGenie. The strong demand for TEAM's products is also driving upside to pricing. It's land & expand model is allowing for efficiencies at scale and is seeing a rise in large deals with strong retention rates. It is a top beneficiary of the DevOps culture and adoption of hybrid/multi-cloud architectures with a unique model that gives it a strong competitive advantage. Valuation is the only real concern, fairly rich to peers, but also deserves to trade at a premium.



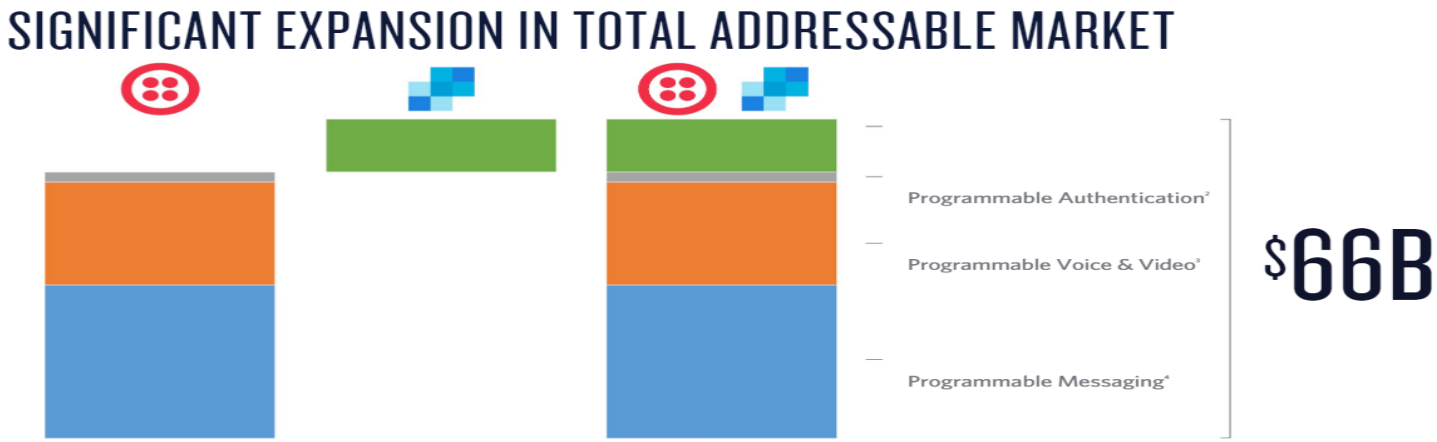
Palo Alto Networks (PANW) with a $16.8B market cap remains a favorite in network security, a key focal point of IT spending. PANW trades 28X Earnings, 5.3X EV/Sales and 16.2X EV/FCF and could reach $4B in revenues for 2021, up from $2.27B in 2018 while EPS slates to growth at a 20% CAGR. PANW is seeing strong customer acquisition and billings growth. The CEO intends to expand the business from security to the intersection of security and AI. PANW is a top play on cloud security and continues to execute well while trading at a very reasonable valuation.



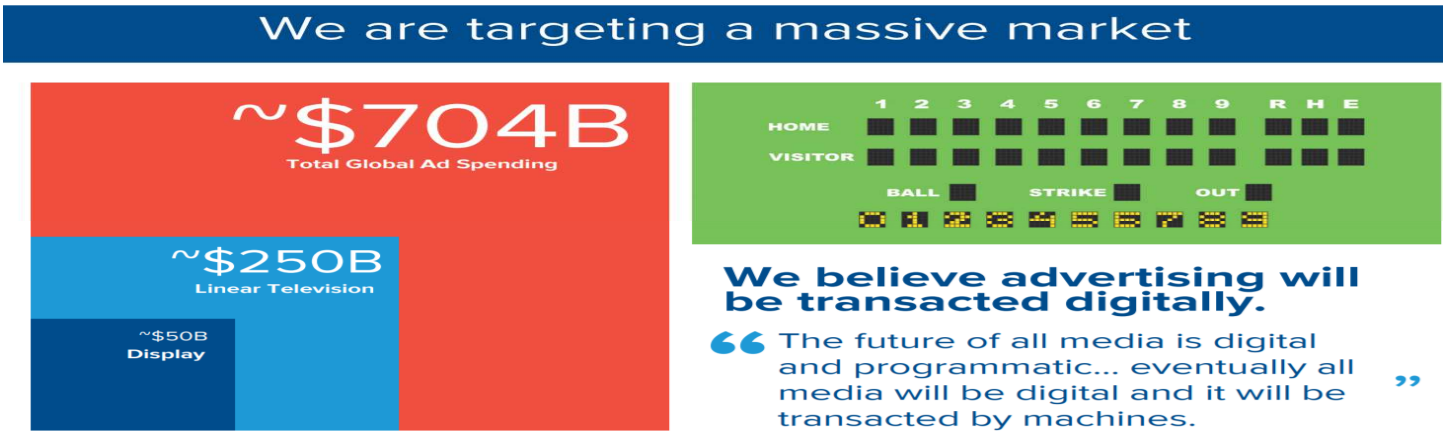
Cyber-Ark (CYBR) is a $2.53B software security name trading 34.8X Earnings, 6.1X EV/Sales and 17.6X EV/FCF with strong margins and declining costs. CYBR is forecasting a 20% revenue CAGR over the next three years and sees EPS accelerating growth. CYBR is seeing record demand for Privileged Account Management (PAM) with secular trends in enterprise such as digital transformation, cloud migration, and a complicated regulatory environment. New customer additions have accelerated YTD up 37% versus up 10% over the first nine months of 2017. CyberArk's top three verticals remain Banking, Global Government, and Manufacturing, but management also noted strong adoption across many of its newer verticals. In particular, Manufacturing, Retail, Insurance, Telecom, and Professional Services all grew 50%+ YoY. CYBR is executing very well into 2019 while taking market share.



Twilio (TWLO) is a $7.9B leader in the hot growth segment of cloud communications platform, trading 11.4X EV/Sales with rapid revenue growth seen reaching $1.05B in 2020 from $399M in 2017, though does screen weak on FCF and Margins. TWLO enables businesses to communicate with end customers real-time and in a more efficient way. As a result, businesses are able to save costs. TWLO announced a large deal in 2018 to acquire Send-Grid for $2B in a stock deal giving it a leadership position in email communications expanding its TAM by $11B. TWLO and SEND are seeing accelerating growth and the combination will allow for a major leadership position in a $66B addressable market that is growing. IT is diversifying its customer base with less reliance on top 10 customers and has a clear path to $1B in revenues.



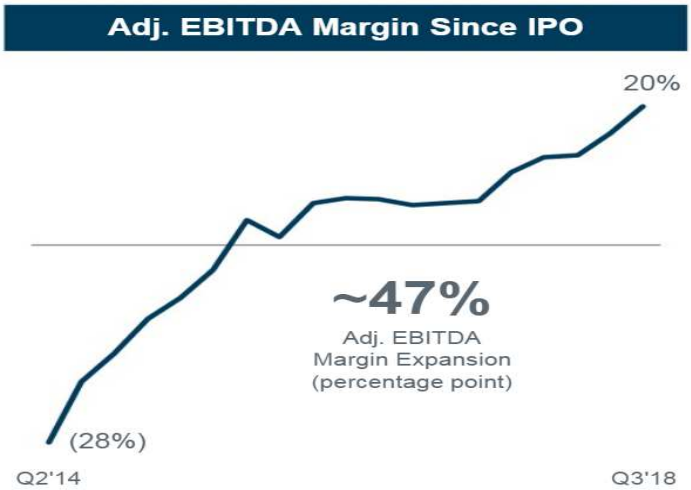
Trade Desk (TTD) is a $4.7B provider of a self-service Omni-channel software platform for data-driven digital-advertising campaigns, a disruptor capitalizing on key Tech trends. TTD trades 38.3X Earnings, 9.5X EV/Sales and 95X EV/FCF. TTD has seen rapid topline growth the last few years and sees a 30% CAGR the next two years, forecasts for near $1B in revenues for 2021, a rise from $203M in 2016. The global advertising industry has $700B in revenues with digital 50% and likely to be 100% eventually, Magna Global seeing programmatic solutions growing 21% per year and TTD is growing faster. Advertisers are taking a more data-driven approach to spending as marketers realize traditional advertising methods do not deliver the best ROI. TTD is also benefitting as the best way to target audiences across a fragmenting distribution channel for TV. TTD is certainly one of the strongest long term growth names to own.



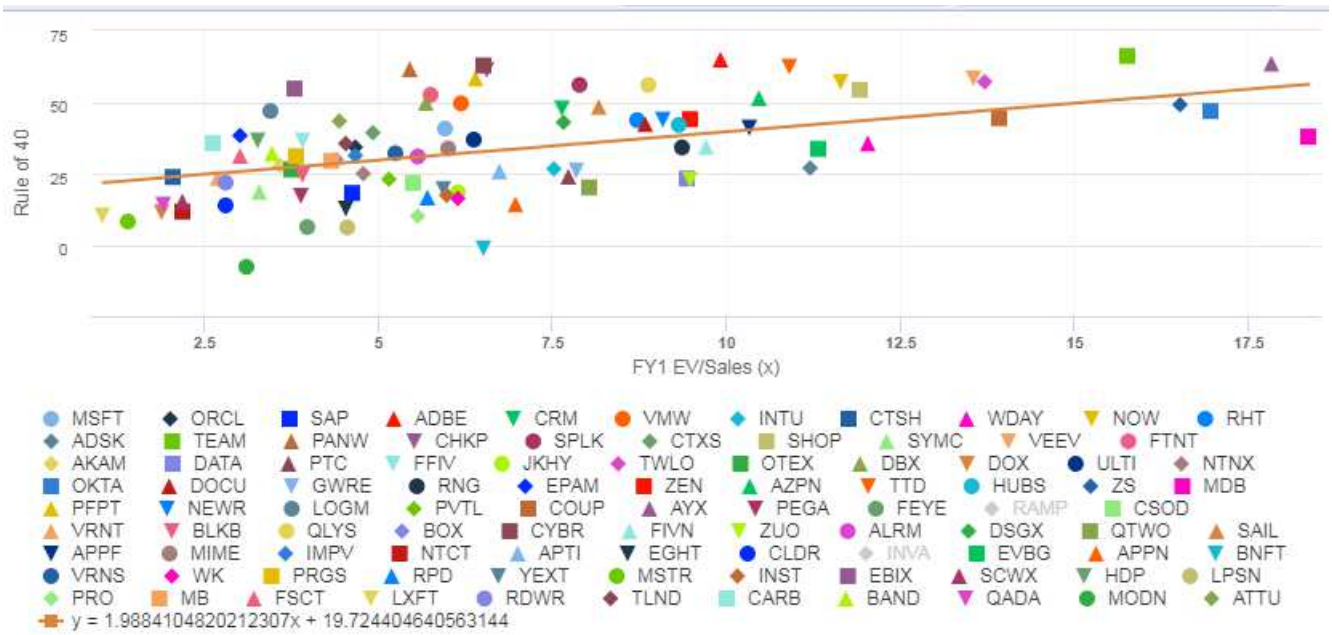
New Relic (NEWR) is a $4.25B software company focused on the strong trends in data & analytics trading 8.3X EV/Sales and 77.5X EV/FCF. NEWR has grown revenues rapidly and sees a path to $1B in 4-5 years growing 25%+ per year while EPS nearing a strong leverage cycle. It has a recurring revenue model with best in class margins targeting a multi-billion dollar industry. It has very strong net dollar retention rate, a key metric, and its land and expand model is working well with its sights set on international expansion. It sees 10-14% operating margins and 15-20% FCF margins for FY22 while keeping R&D investments elevated. Spending on NEWR solutions is likely to remain strong even in weakened Macro environments due to strong secular trends. It has a long runway for growth and sees a multi-year cycle of improving margins while keeping revenue growth robust.

	2Q17	3Q17	4Q17	1Q1	2Q1	3Q1	4Q1	1Q19	2Q19
Annualized Dollar-Based Net Expansion Rate	116%	125%	133%	113%	123%	125%	141%	118%	124%
% ARR from Enterprise Paid Business Accounts	43%	44%	46%	49%*	51%	52%	54%	55%	56%
Paid Business Accounts >$100K	427	478	517	555	586	629	703	748	786
Annualized Revenue / Avg. Paid Business Account	>$17,500	>$18,000	>$19,000	>$20,500	>$21,500	>$22,500	>$23,000	>$25,000	>$26,500

Five-9 (FIVN) is a $2.42B provider of cloud software for contact centers trading 8.9X EV/Sales and 106.8X EV/FCF. FIVN is seeing growth taper off in 2019 but remains above 17% and does trade at a slight premium valuation, but also a consolidating industry and makes sense as the next acquisition target. FIVN is targeting a $25B market that is just 10% penetrated and winning large deals over competitors. FIVN is a disruptor in a large, growing, and underpenetrated industry and seeing robust margin expansion and FCF growth. It has low customer concentration and high retention. I prefer it in this niche space to RNG and EGHT.



EV/Sales vs. Rule of 40

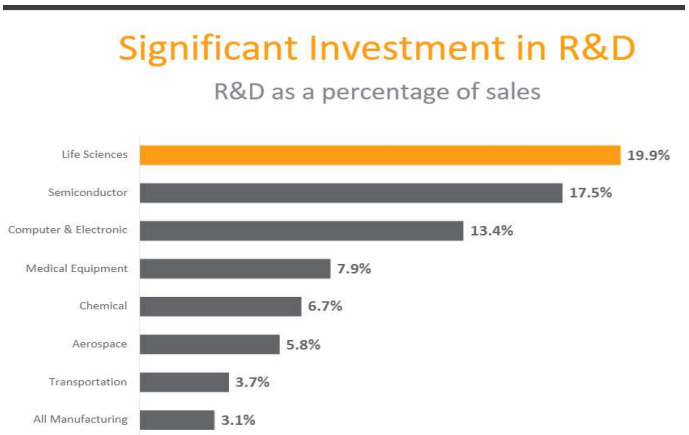


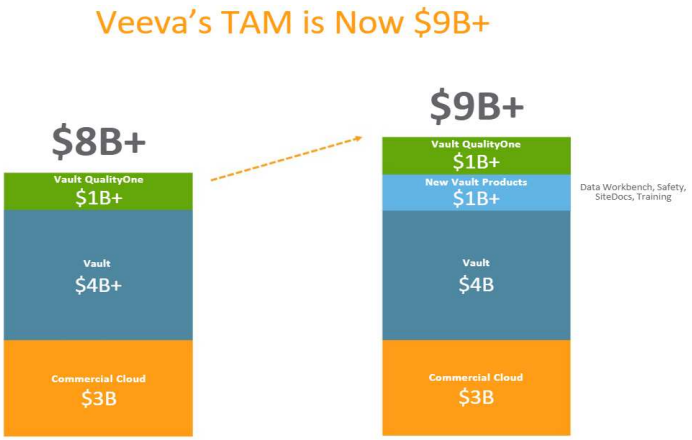
Software – Specific Verticals:

Components: *ANSS, CDNS, CDAY, PAYC, CDK, RP, PCTY, NUAN, TWOU, MANH, ALRM, ELLI, BL, MDRX, CISN, SPSC, SVMK, MB, EB, AVLR, TYL, MIXT, NATI, ACIW, SSNC, DOX, DOCU, GWRE, BLKB, SMAR, EVOP, EBIX, CSGS, IIIV, CASA, NICE, CERN, VEEV, MDSO, PINC, HQY, TDOC, OMCL, INOV, EVH, TRHC, HSTM, RCM, NXGN, WIX, EA, ATVI, TTWO, ZNGA, GLUU, ARLO, APPF, STNE*

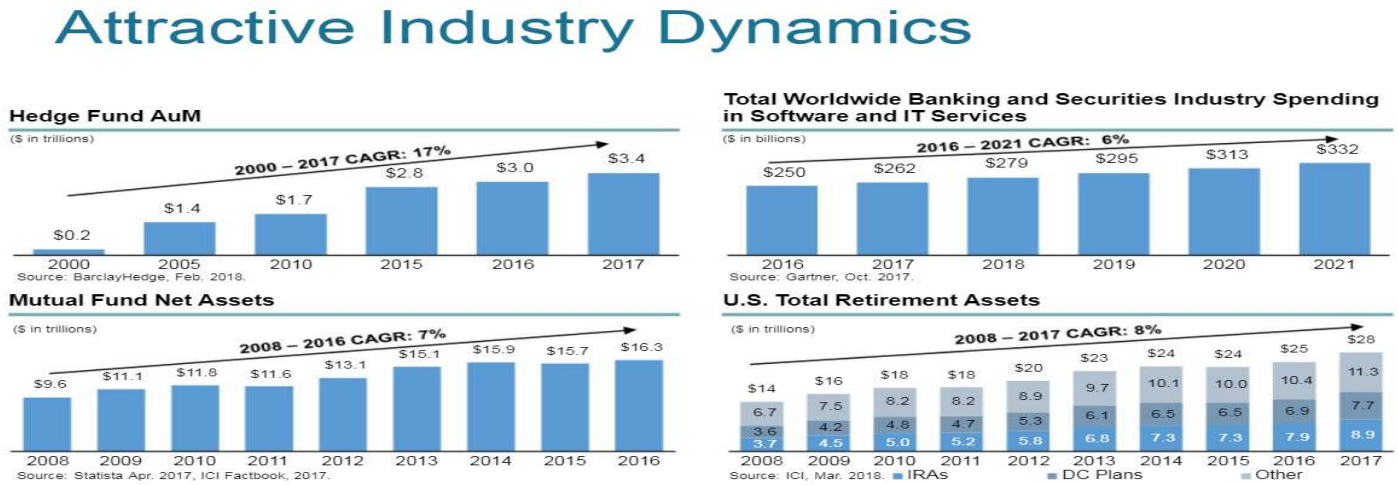
The same evaluation technique is used with these names as the prior software group but wanted to break up the niche names, while all of the same IT spending trends also apply. We saw a $1.95B deal for **Mind-Body (MB)** in late December at a 68% premium, 6.55X EV/Sales.

Veeva (VEEV) is an $11.85B leader of cloud solutions in the life-sciences industry trading 45.7X Earnings, 39X EV/FCF and 12.5X EV/Revenues, a premium valuation. VEEV has seen strong topline growth though seen dipping to 18.9% for FY20, down from 25% in FY19 which could pressure its multiple, though remains a unique asset. VEEV has a strong presence with its installed base in life sciences and sees opportunity for its Vault offering in new verticals moving forward that can significantly expand its TAM. VEEV is also one of the most profitable SaaS names with 35% margins and has sustainable revenue/FCF growth. The life sciences industry leads all in R&D as a percentage of sales which benefits demand for VEEV offerings. It is seeing accelerating adoption from existing customers through cross-selling. VEEV, despites its premium valuation, is a fantastic company with increasing growth prospects in one of the best niche industries for a software revolution.





SS&C Tech (SSNC) is a $10.3B provider of software products to financial service providers, an end-market coming under pressure and worth monitoring, but screens attractive. SSNC trades 11.9X Earnings, 35.5X EV/Revenues, and 4.7X EV/Revenues. SSNC is expecting to hit near $5B in revenues for 2020, up from $1.68B in 2017, boosted by acquisitions for DST Systems and Intralinks, so also a concern with its balance sheet after those deals. Both deals are expected to deliver strong accretion to earnings and continue a path of gaining market share while broadening its offerings to the product set. SSNC has historically been able to quickly de-lever after making deals. It offers an industry leading margin profile and a 95% long-term retention rate with customers, so although there are some concerns with its key end-market for spending in a tougher time, the fears are likely overblown as the trend of Software spending and IT in Banking/Wealth Mgmt. remain positive, and shares have simply become too cheap to ignore.

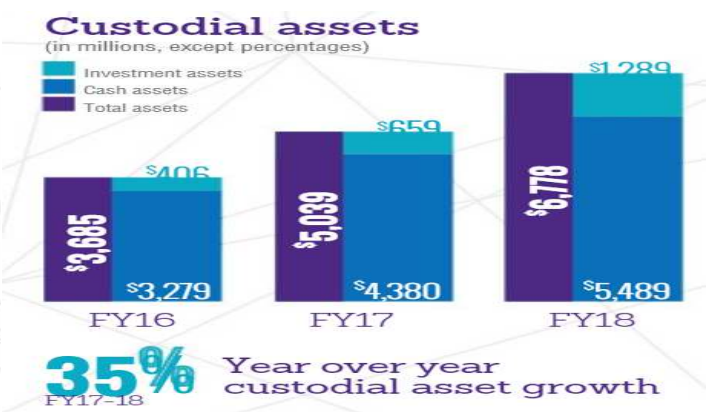


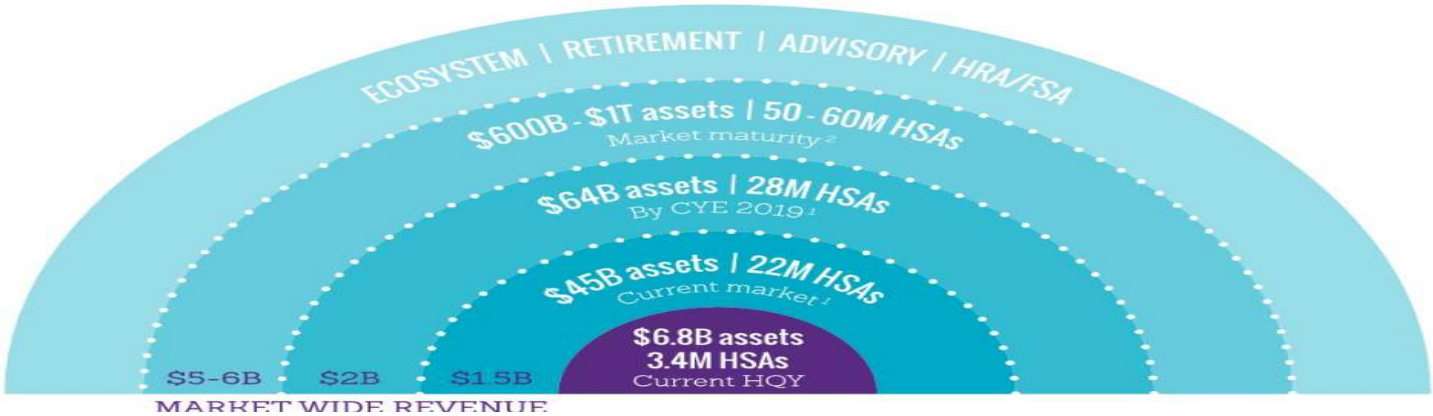
NICE Systems (NICE) is a $6.6B provider of software solutions in customer engagement and financial crime/compliance trading 20.6X Earnings, 20.9X EV/FCF and 4.6X EV/Revenues. NICE is entering a period of 8-10% topline growth and 10-12% EPS growth. NICE has exposure to cloud, analytics, and AI offering full solutions to its niche markets while also targeting Robotics/Automation with new offerings. Recurring revenues have moved to 72% of the total and cloud is gaining share at 34% with further room to grow. The further shift to cloud also makes NICE a margin expansion story. Shares are an attractive value for a name in the early innings of transitioning into an analytics & cloud player which demands a higher multiple.

Paycom (PAYC) has a $6.9B market cap and is the preferred HCM software name trading 35.85X Earnings, 12X EV/Sales and 54X EV/FCF. PAYC ranks at the tops for key fundamental metrics like incremental operating income/revenues, high % of recurring revenues, high US exposure, and strong operating margins. PAYC offers robust products that have customers moving from legacy providers of payroll/HCM and can triple revenues over the next five years while also growing margins. PAYC expanded its opportunity from mid-market (up to 2,000 employees) to up to 5,000 employees. PAYC has been beating high expectations all year and is positioned to continue to be a market share gainer.

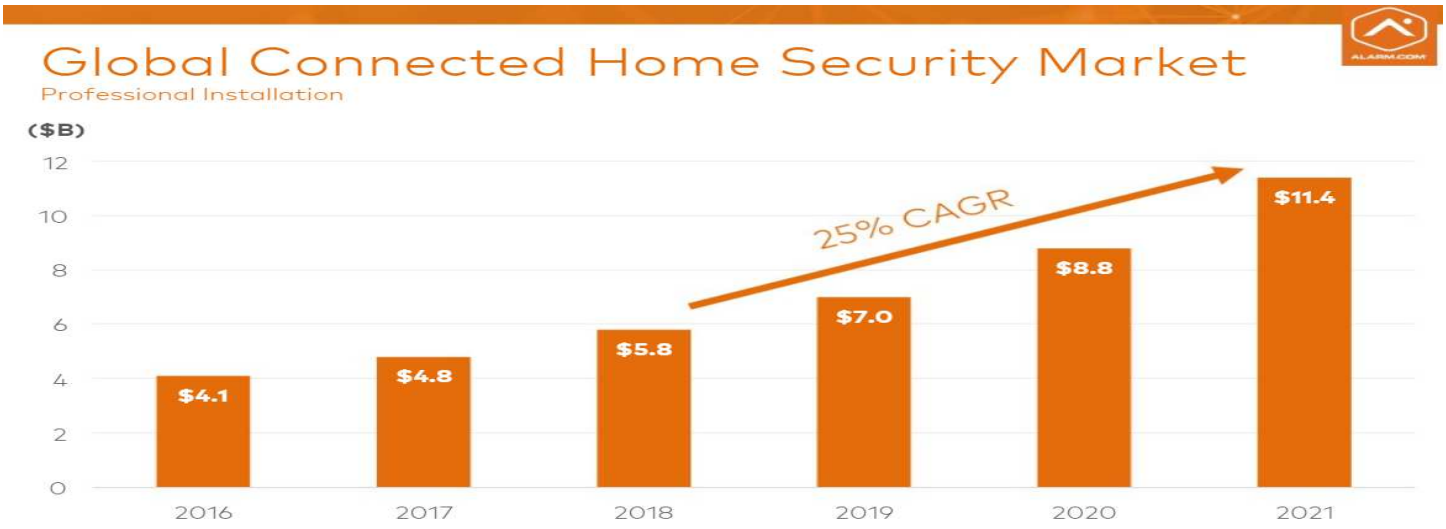
Stone-Co (STNE) has a $5B market cap as a recent IPO focused on the Brazil market with financing technology solutions. STNE grew revenues 107% in 2017 and sees 262% and 77% growth the next two years while also being profitable and growing EPS rapidly. It has major growth prospects and Berkshire Hathaway took an 11.3% stake. STNE helps merchants process cards and conduct e-commerce in Brazil. Despite Brazil's large size, its online payments market remains less penetrated and has greater growth upside than more mature economies. Electronic payments represented only 28.4% of total household consumption in Brazil in 2016. This is much lower than 46.0% and 68.6%, respectively in the US and the UK. Brazil is a large and fast-growing market for financial technology. Retail e-commerce sales in Brazil are expected to grow from R$61.8B in 2017 to R$104.8B by 2022. Brazil is the fourth largest market in the world for non-cash transaction volumes. STNE is a rapid growth play that comes with the uncertainty that is Brazil exposure, but much like MELI and PAGS it offers a rapid growth story over the long term capitalizing on major market shifts.

Health-Equity (HQY) is a $3.65B provider of solutions for managed health care accounts trading 40.85X Earnings, 37X EV/FCF and 11X EV/Revenues. HQY sees a long runway for 20-25% annual topline growth and has strong operating margins. It is a key beneficiary from the trends of increased HSA accounts and assets held in those accounts as trends in plans head toward high deductibles. HSA still has just 6% penetration and HQY currently has a 15% market share. Recent partnerships with Vanguard and Nationwide support further market share gains. HQY could face some headwinds from peak employment though the larger trend of moving to these accounts remains in the early innings.

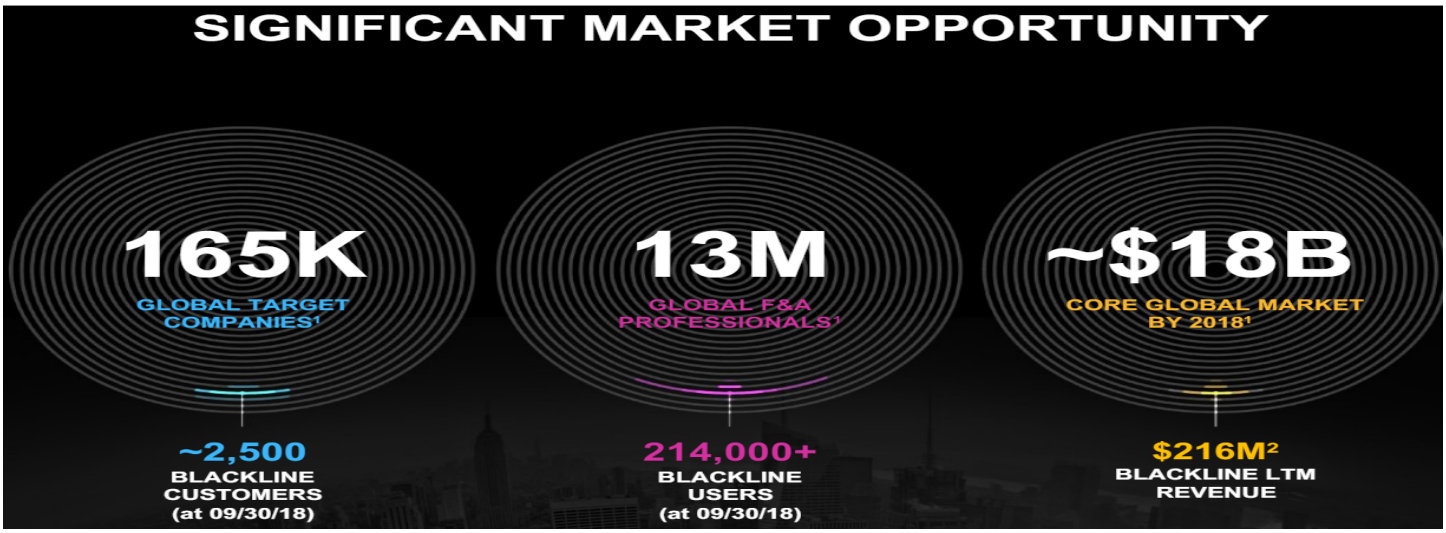




Alarm.com (ALRM) is a $2.13B cloud provider of solutions to smart residential and commercial properties trading 32.25X Earnings, 49.7X EV/FCF, and 5.1X EV/Sales. ALRM is set to grow revenues 20% in 2018 and taper growth to just 7.3% in 2019, a notable issue, though screens well fundamentally for incremental revenue to S&M dollar spend, high US exposure, and revenue upside. ALRM offers a highly scalable platform in an expanding TAM with a highly recurring model as well as strong cash flow, profitability, and operating leverage. ALRM has room to further expand dealer penetration and grow subscription revenues 20% for several years as well as new initiatives such as International expansion, commercial, vacation rentals, and energy management. Competition from the AMZN/ADT partnership has weighed on shares but professionally installed and DIY are distinct segments, and ALRM is the gold standard in smart home security.

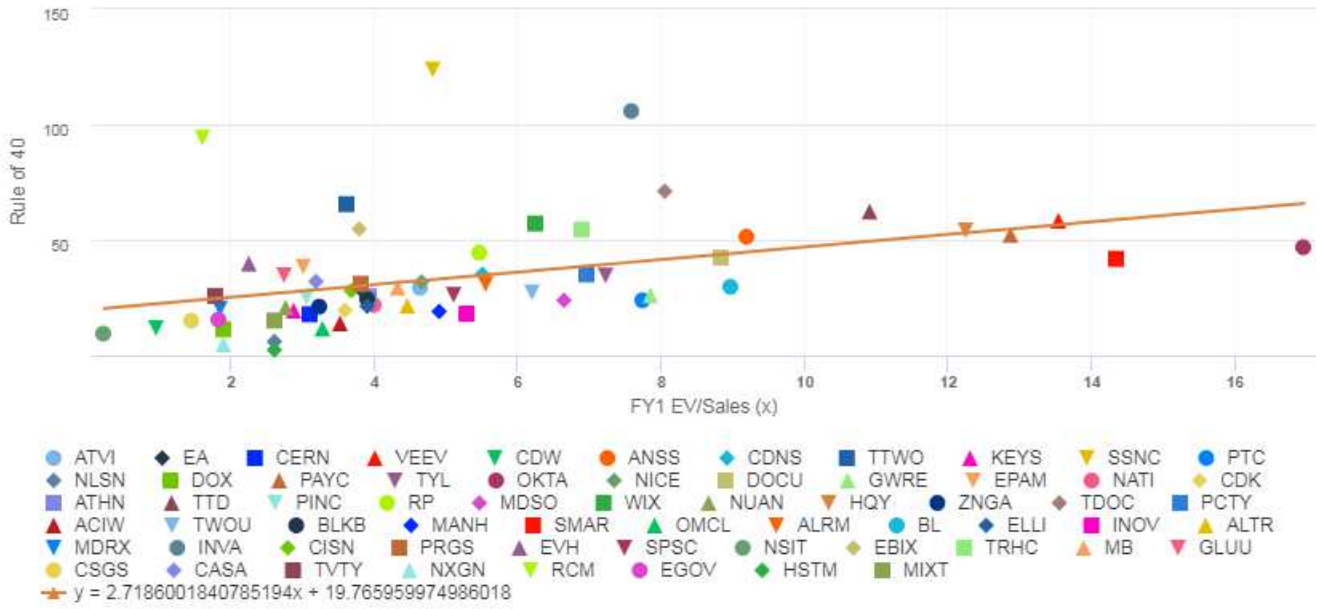


Blackline (BL) is a $2.1B provider of software solutions to the financial accounting niche trading 8.7X EV/Sales and 600X FCF, a robust growth name. BL has grown revenues to $227M in 2018 from $83.6M in 2015 and sees $500M by 2021. BL posted 109% dollar-based retention rate and sees an $18B addressable market. Trends such as increased regulatory scrutiny, rising business complexity, the need for accurate and real time data, and growing data volume position BL for a long period of growth. Customer growth has been at a 25% CAGR over the last 3 years and there are ample cross-sell opportunities while BL is also decreasing S&M expense. Operating and FCF margins are just starting to turn positive for the start of a better operating leverage story with a long-term model calling for 20% operating margins.



Appfolio (APPF) is a $1.93B niche software provider to the property management and legal industries trading 57X Earnings, 10X EV/Sales and 99.8X EV/FCF. APPF has grown revenues from $75M in 2015 to $190M in 2018 and sees 20-25% forward CAGR. It's a strong growth story and share gainer in its verticals. APPF ended the third quarter with 12,640 property manager customers, managing an aggregate 3.7 million units in their portfolios compared to approximately 11,250 customers and 3.08 million units under management reported 1 year ago. APPF is seeing costs rise, one thing to monitor, but it would make a nice tuck-in acquisition for a larger cloud player looking to get into this vertical and could be further optimized and scaled.

EV/Sales vs. Rule of 40



PC, IT, and Towers/Data Centers/Telecom:

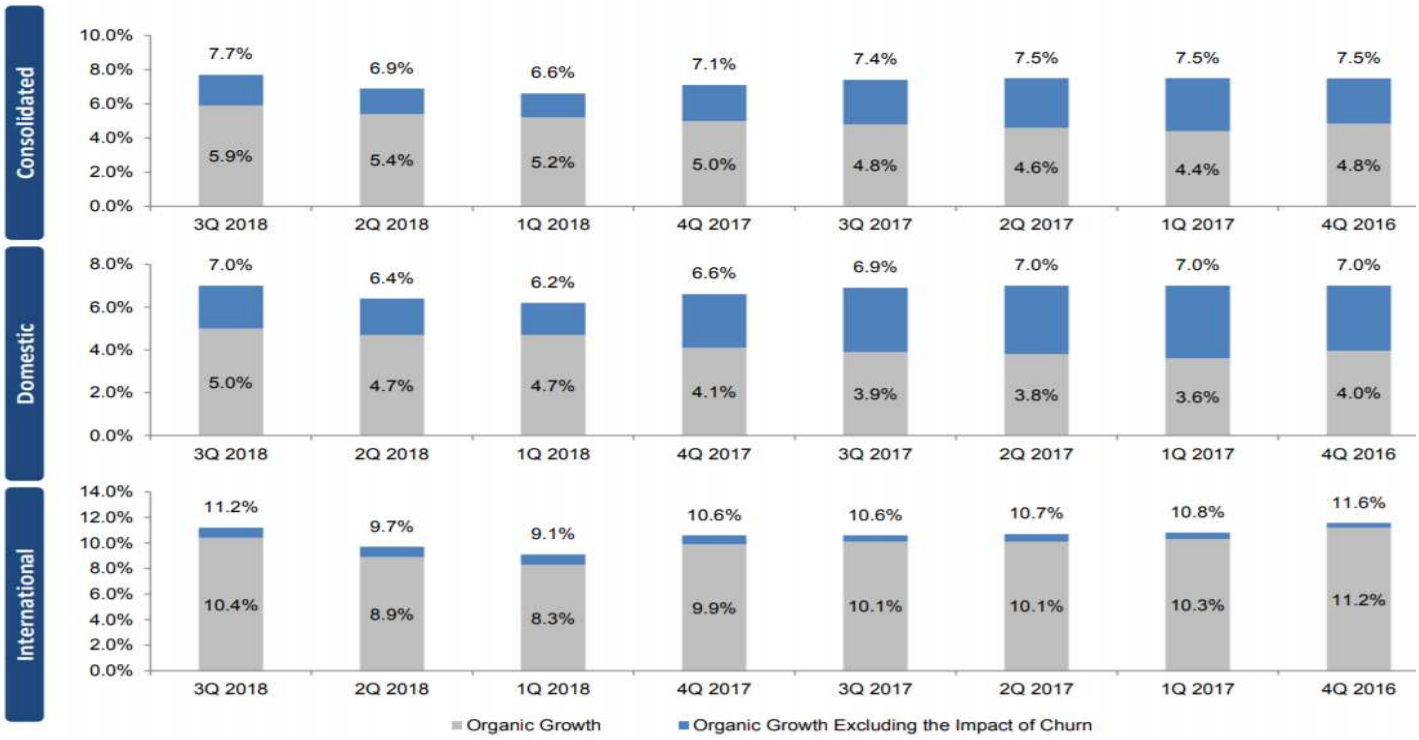
Components: *CTSH, G, ACN, WIT, RAMP, PLUS, LOGI, DDD, SSYS, EFII, HPQ, CRAY, IBM, PRSP, GLOB, VRTU, NSIT, EQIX, INXN, CCI, SBAC, AMT, COR, CONE, DLR, VZ, T, TMUS, ATUS, CHTR, FN, CTL, SHEN, ATNI, AAPL, QTS*

This group features more of the hardware related names including giants like Apple and IBM, and also the 3D Printing, Navigation, and Telecom/Towers/Data Centers. Hardware has taken a backseat to Software in terms of spending and can see this group has a lot less growth. Tower stocks have long been a strong investment with the continuous growth of data demand for networks. Data Centers have long been a strong investment group but in the face of rising interest rates are unlikely to provide similar returns.

Cognizant Tech (CTSH) screens best among the large global IT players with a $35.5B market cap trading 12X Earnings, 18.4X FCF and offering a 1.33% dividend yield. CTSH is generating consistent 8-10% revenue growth and double digit EPS growth. It has focused on investing into a digital strategy as it transitions the business to keep up with secular shifts in Tech IT. CTSH provided a deep dive into its six key Digital capabilities of Interactive, AI & Analytics, Intelligent Process Automation, Platform Business Solutions, Core Modernization and Digital Engineering. CTSH believes each of these capabilities could represent $1B+ revs businesses over the mid-term, as CTSH has more deeply linked its Consulting division (6,000 employees) to its Digital offerings. Financial Services and Healthcare are its largest markets. It has been expanding operating margins from 19.5% in 2016 to estimated 22% in 2019. As a strong FCF story capital deployment also in focus with potential for M&A while has a $5.5B repurchase through 2020. CTSH is cheap and as it pivots its strategy can see multiple expansion if revenue growth picks up as projected.

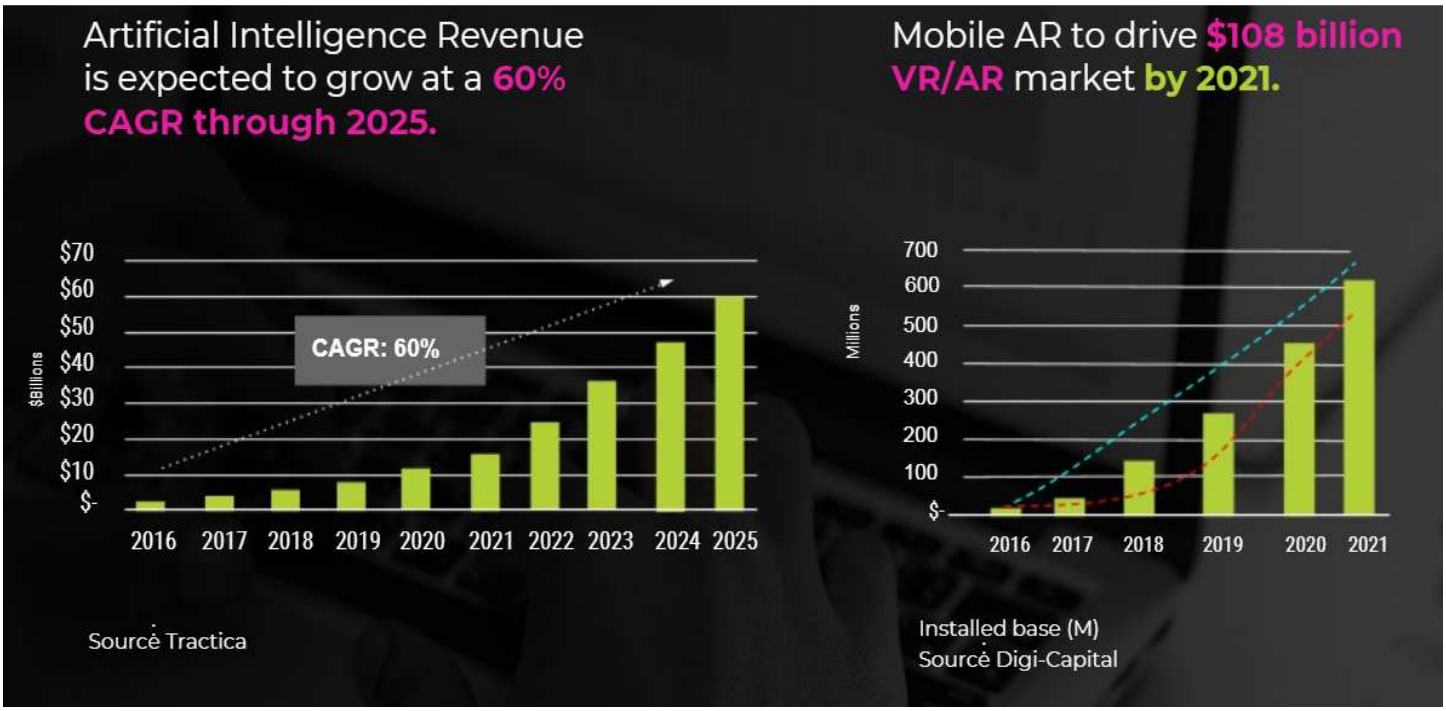
Logitech (LOGI) is a $5.1B maker of various Hardware products but transitioning into a provider of cloud-based products with 60% of sales now tied to cloud platforms in security, telecom and B2B. Video and Gaming have been growth drivers in recent years, and the company was recently in talks for a potential acquisition of Plantronics (PLT) but did not move forward. LOGI trades 14.7X Earnings, 2X Sales and yields 2.3%. After a 15% topline growth year in 2018 it sees 7-10% the next three years. LOGI has a nice balance of growing mature products as well as new products in faster growth areas. It trades at an attractive valuation and provides a solid dividend.

SBA Communications (SBAC) with an $18.3B market cap screened best among the tower stocks into 2019 trading 21.5X FFO with 8-12% FFO growth seen ahead. SBAC does have a relative high leverage structure with 25% with floating rates, something to be aware. Deal activity looks strong and it is seeing an improving growth profile. It is positioned well for domestic strength and has attractive valuation with strategic optionality. Spending trends by the carriers appear to be strong to support tower stocks in the US and Latin America. Its impressive same tower Y/Y organic leasing revenue growth rates and cheap valuation make it an attractive name in a resilient industry.



Verizon (VZ) is the favored telecom, the $227B leader having a volatile year but is most leveraged to the growing services business in Telecom. VZ trades 11.65X Earnings, 1.74X Sales and yields 4.4%. By no means is VZ a growth story with modest revenue/EPS growth seen in the years ahead and it has made some poor capital allocation decisions, though not nearly as bad as peers TMUS/T. It is also best positioned in the 5G growth trend. Consumer value added services, such as Hum or Verizon cloud, have grown 50% y/y as engagement has increased. Bringing together a premium network, unlimited service and value-added platform is having a positive effect on churn. VZ has consistently been the best executor in the group, though have to watch its spending which is expected to pick up in 2019.

Globant (GLOB) is a $2B provider of technological services trading 25.65X Earnings and 3.6X EV/Sales. GLOB screened strong on EBIT growth, margins, and ROIC. It has been consistent with 25%+ revenue growth and seeing 20-30% EPS growth for the next three years. It is targeting the digital services market, one expected to be $138B by 2021 growing 21.5% per year. It is a pure play disruptor of the professional services arena with 78% of revenues in North America. GLOB is positioned in one of the strongest spots for IT spending growth and pricing power.

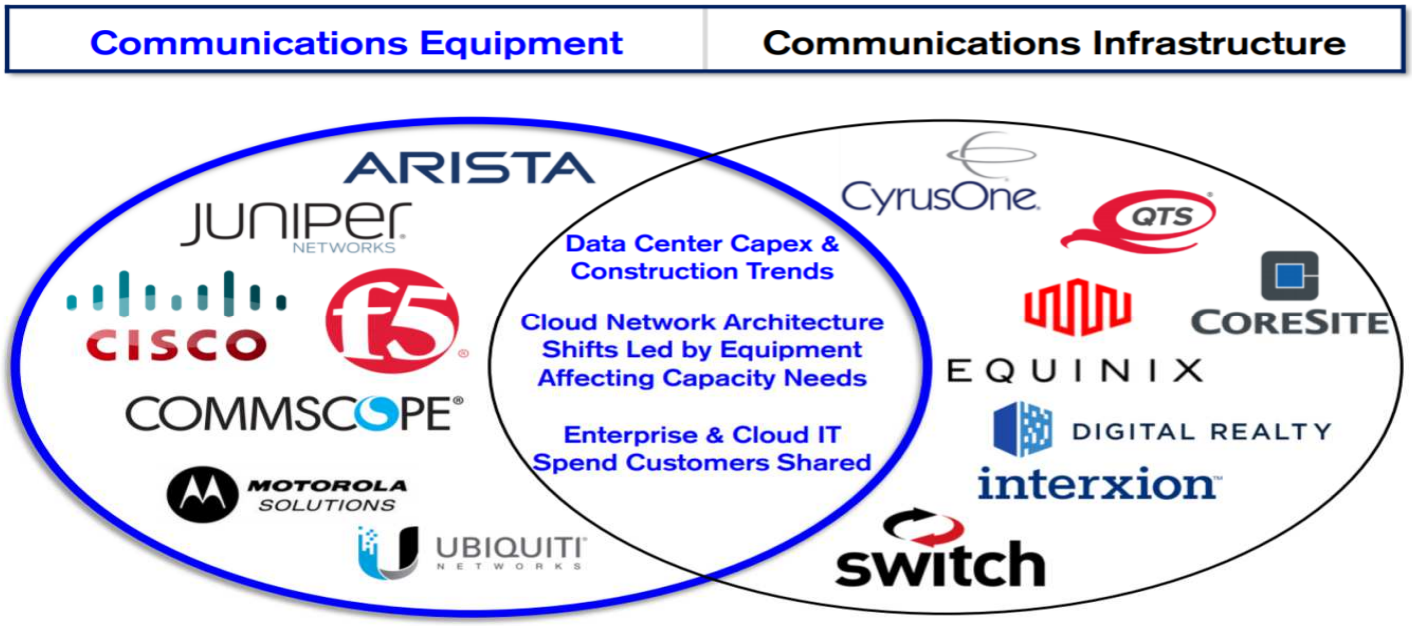


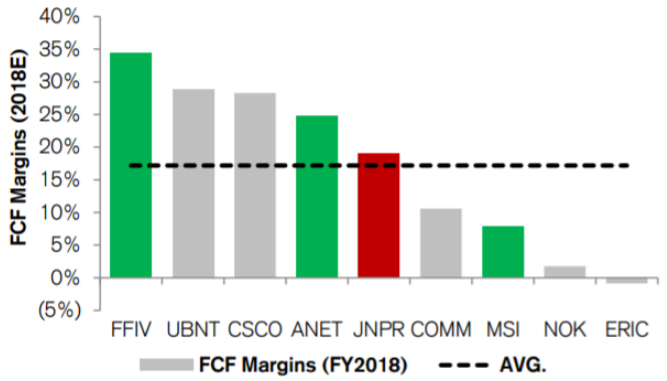
Networking, Communications and Storage:

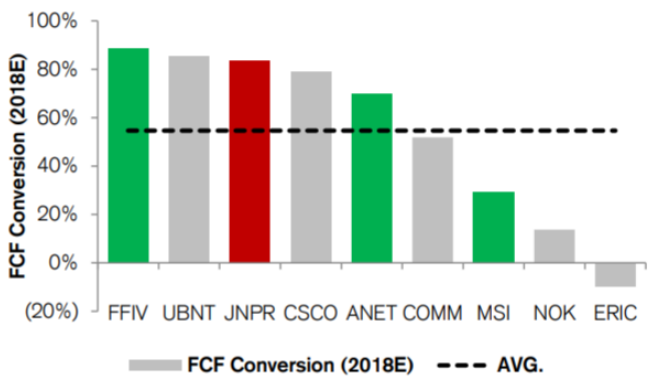
Components: *CVLT, CSCO, NOK, ERIC, MSI, HPE, JNPR, UBNT, ZAYO, ARRS, CIEN, BB, VSAT, SATS, COMM, LITE, FNSR, VIAV, ACIA, NTGR, PLT, VCRA, ITRN, NTAP, WDC, STX, TDC, PSTG, GDS, I, IRDM, CCOI, WIFI, GTT, ANET, SGH, FFIV, FN*

This group saw a good mix of good and bad performances in 2018 with FFIV, CIEN, IRDM, MSI and UBNT relatively strong names while ANET, LITE, ZAYO, GTT, and COMM came under pressure. Storage names WDC/STX also were weak as the cycle turned. Tariffs have also had a substantial impact to the group that sources a lot of equipment from China. The main divisions in the industry are Wireless, Wireline, Routing/Switching, Optical, and Voice/IMS. Fiber and 5G are expected to be strong growth themes moving forward. In storage we are seeing HDDS in a secular decline with a move in favor of Flash. We had a large deal in the group with CommScope (COMM) spending $7.4B to acquire Arris (ARRS). AT&T recently lowered its capex guidance for 2019 despite an aggressive investment in 5G. Over 1 million 5G handsets are expected to be sold in 2019, and that number should expand to 15 to 20 million units by 2020.

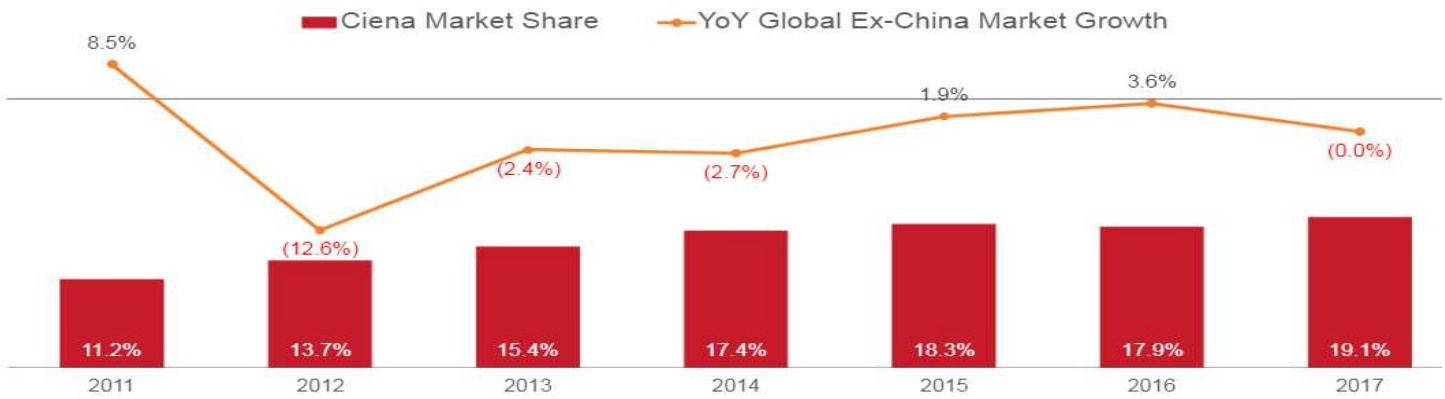
The communications/networking equipment market is growing, led by its main markets: the data center equipment market, the switching market, and the routing market, all forecast to grow low- to mid-single digits from 2017 into 2021. Part of this growth can be attributed to the cloud service provider market, which growing much faster (at a ~20% CAGR in the coming four years), from a base of $166bn in 2017 to $342bn in 2021. Cloud capex spends were $67bn in 2017 and are expected to grow ~13% compounded annually into 2021 to a base of $107bn. However the cloud wave is not entirely beneficial for the networking equipment market, given the increasing uses of white boxes, proprietary technologies, and ultimately the ability to take workloads away from traditional architectures and load them onto highly virtualized architectures, putting pressure on the networking equipment market. Cisco has more than a 50% share of the Switching segment but Arista (ANET) has doubled its market share from 2014 to 2017. Cisco also has 47% shares of the Carrier Switching market versus International peers like ZTE and Huawei. Cisco has been losing share in WLAN and Routing markets to UBNT and HPE (Aruba).





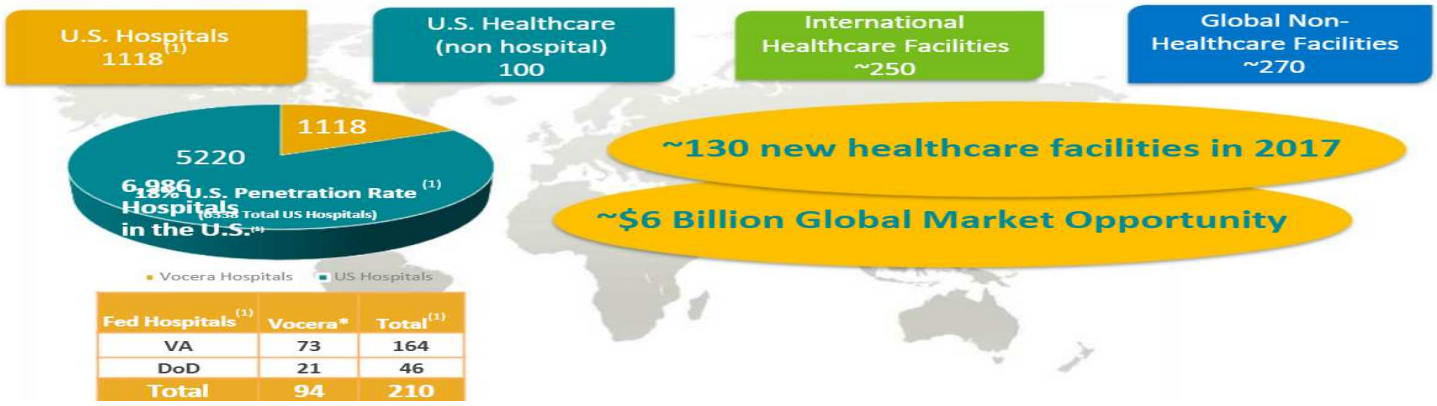


Ciena (CIEN) is a $4.57B leader in networking equipment trades 14.25X Earnings, 1.48X Sales and 23.3X FCF with margins always the focal point. After posting 10% revenue growth in 2018 CIEN sees 6-7% the next two years with 25% EPS growth. CIEN is positioned for further market share gains seeing record orders and backlog and boosted by negative perception of competitors like ZTE, Infinera, and Huawei. Ciena is benefiting from strong demand across all regions, with N. America, EMEA, APAC, and CALA up 26%, 11%, 22%, and 12% YoY, respectively. This reflects balanced share gains at traditional Service Providers, Cable multiple system operators (MSOs), as well as enterprise and government customers. Specifically, in Webscale, Ciena is now market leader with 40%+ share, and Waveserver sales grew 232% YoY in FY18 to $362mn. Management also called out strength in submarine markets, up 25% YoY. AT&T has indicated increased spending in 2019 and management at CIEN indicated a major deal with CTL. CIEN has done a solid job of diversifying away from traditional telco and improving its growth profile. It's the name to own in a consolidated industry with mega trends like Cloud, 5G, IoT, and Data Center driving an increased need for greater bandwidth and adaptive automation.



F-5 (FFIV) is a $9.6B network/cloud leader trading 13.45X Earnings, 3.7X EV/Sales and 12.6X FCF. FFIV is no longer the robust growth story it was in 2014/2015 but sees solid topline and bottom-line growth ahead with a more defensive valuation. It is also transitioning to more software-centric, accounting for 17% of product revenues last quarter and growing 19% Y/Y. New product launches should be a major catalyst in 2019, with two products launching in 1H19 unlocking greenfield opportunities with existing and net-new customers. Cloud-Native Application Services will provide traffic management across hybrid environments and should expand F5's addressable market within the public cloud. F5-as-a-Service, a micro-instance of BIG-IP Virtual Edition, should address application development for cloud deployments, a segment where F5 struggled in the past. Lastly, management noted a service provider win around 5G network function virtualization (NFV) and 5G buildouts ramping in 2019 could provider further upside. FFIV sets up for a margin expansion, accelerating growth and improved mix story in 2019 into a product cycle, allowing for multiple expansion.

Vocera (VCRA) is a small cap discovery from a few years ago now with a $1.16B market cap and trading 57X Earnings and 60X EV/FCF. VCRA has grown revenues at double digit rate and expecting a very strong EPS growth outlook. Its niche market is communications in the Healthcare industry. It sees a $6B global market opportunity with current 18% US penetration of the 6,986 hospitals. It has more than 50% of revenues recurring with devices still accounting for 37% of revenues, but Software/Services an increasing contributor. It is seeing larger deals with a higher software mix and driving greater operating leverage. VCRA has been conservative and beating estimates with plenty of deal wins and seeing high win rates with pricing power for its differentiated products. Cross-selling opportunities and new client additions should drive mid-teens organic revenue growth and a near doubling of EBITDA margin over the next three-plus years.



Fed Hospitals(1)	Vocera*	Total(1)
VA	73	164
DoD	21	46
Total	94	210

Internet Information:

Components: *STMP, GOOGL, FB, BIDU, JD, TWTR, VRSN, IAC, WB, IQ, MTCH, YNDX, WUBA, GRUB, ZG, BILI, YY, YELP, UXIN, GRPN, RDFN, UPWK, CRTO, TCX, NTES, GDDY, ANGI, MOMO, SNAP, QNST, JCOM, SE, AMZN, BABA, EBAY, ETSY, MELI, W, BZUN*

The Internet industry contains some of the major market leaders like Amazon, Google, and Facebook. Digital ad spending has now surpassed TV ad spending and it continues to take market share. Mobile and Social remain the main avenues of growth in digital ad spending with a focus on video. The ecommerce trend remains a major growth market with sales expected to reach near $500B in 2018 from just $300B in 2014. The users of artificial intelligence to drive user engagement and targeting can drive upside to estimates, though many names in the group also face margin pressures from growing investments in technology. The better ad targeting will drive higher ROI and enable better pricing which can lead to upside to earnings. The elimination of Net Neutrality in 2018 raises operational costs resulting in lower margins with NFLX, FB, GOOG, TWTR, and AMZN most at risk. The Chinese Internet stocks came under heavy selling pressure in 2018 and we also saw Facebook underperform losing 30% in market value as metrics slowed and concerns arose across the industry regarding privacy. Yelp and eBay also sold off hard this year as growth underwhelmed. Into year-end we saw a bevy of disappointments including a reduced growth outlook from Amazon, core margin headwinds at Google, customer/regulatory risk at Facebook, and capital needs at Netflix.

Chart 37: Global eCommerce estimates ($bn)

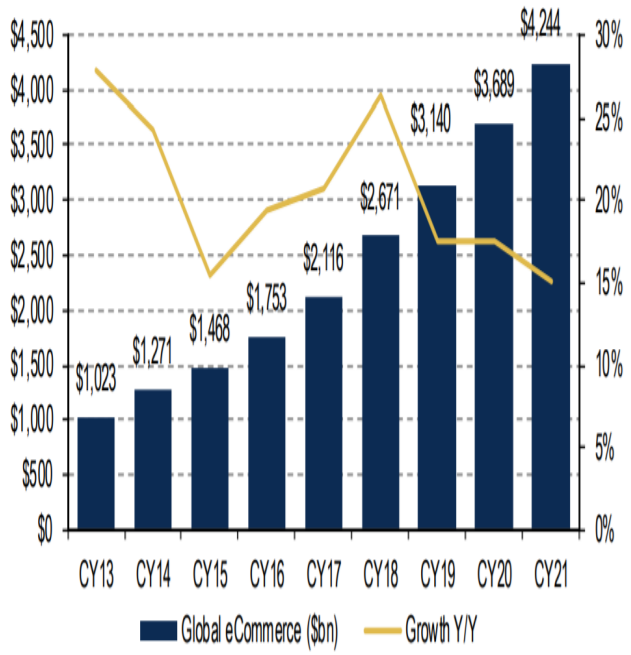
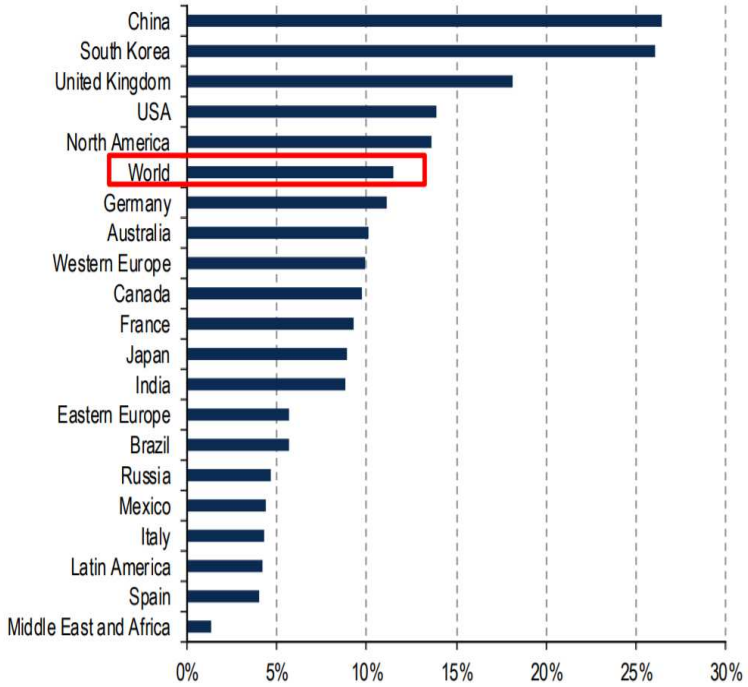


Chart 38: eCommerce penetration by country (as percentage of total B2C retail sales) in 2019



The main themes into 2019 for this group include a video shift online, cloud momentum, growing millennial purchasing power, and 5G. We expect big IPOs in 2018 from Uber, Lyft and Pinterest. Street estimates for FANG imply deceleration from 32% y/y revenue growth in '18 to 23% in '19 on higher penetration levels, competition, lapping of acquisitions (Whole Foods), FX headwinds, and a slowing economy. Although slowing, it is still far outpacing the 6% growth seen for the S&P 500. Over the last 10 years there has been a meaningful correlation between quarterly US GDP growth and both Internet media and ecommerce. The impact of regulation brings financial risk with revenue pressures, increased costs, and financial penalties. On a market share perspective, survey data from eMarketer suggests that, for TV viewers age 18+, video viewing time spent share on traditional TV has decreased from 78% of total time to 59% since 2013. During the same period, streaming has more than doubled as a percentage of time spent and is now at 36%. Per eMarketer, digital video ad spend is expected to increase almost $18bn over the next three years and reach $45bn by 2021, which compares to the total TV advertising market at $74bn. US Internet ad spending growth will decelerate to 15% in 2019 as very strong ad growth at Facebook and Amazon decelerates. Total Internet ad dollars will grow faster than the ad industry at around 3%, and at $121bn in 2019, will represent about 42% of total US advertising industry spend. The major trends reshaping the US ecommerce industry include grocery finally moving online and expanding the TAM, offline retailers emerging as a force online, and a large advertising opportunity on ecommerce platforms.

Chart 35: US Internet Advertising

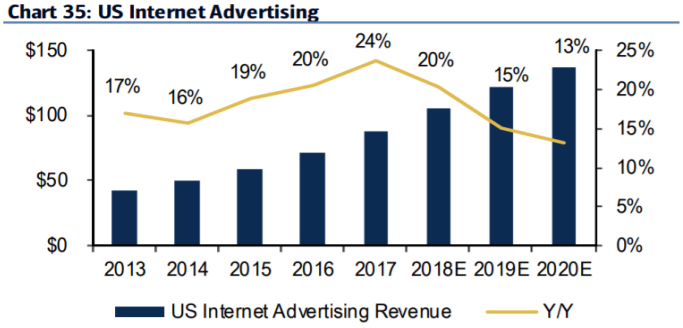


Chart 36: Internet Penetration (as a % of total ad industry)

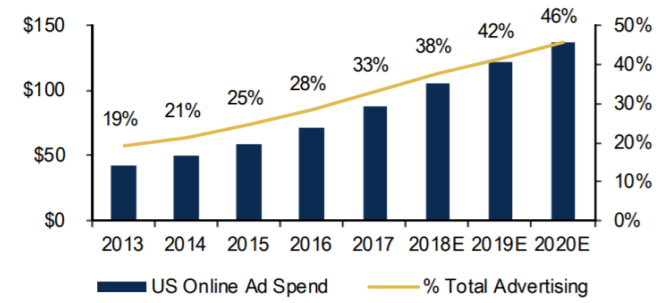
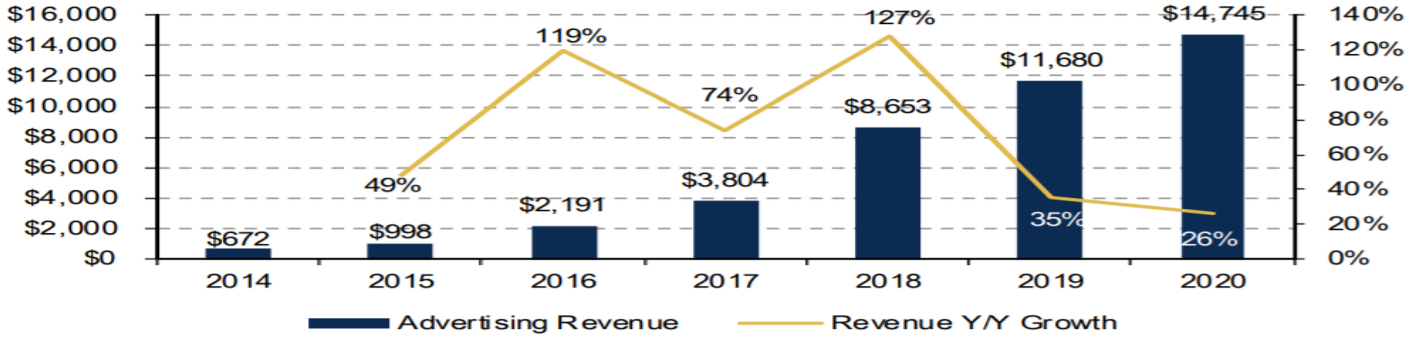


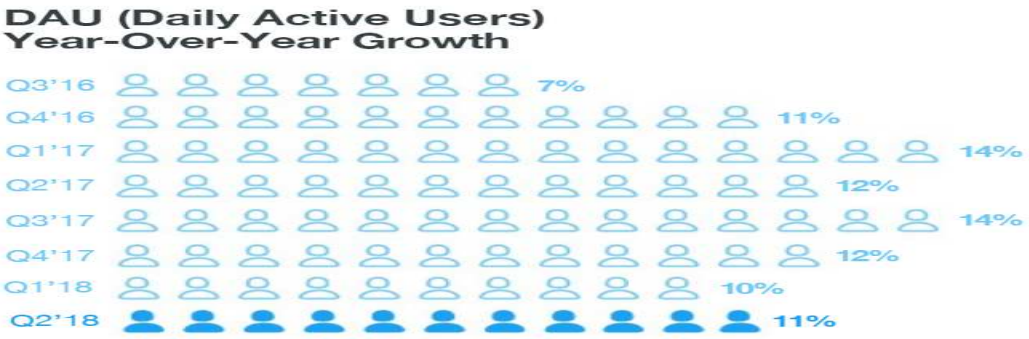
Chart 41: Estimated AMZN marketing revenue ($mn) and Y/Y% Growth



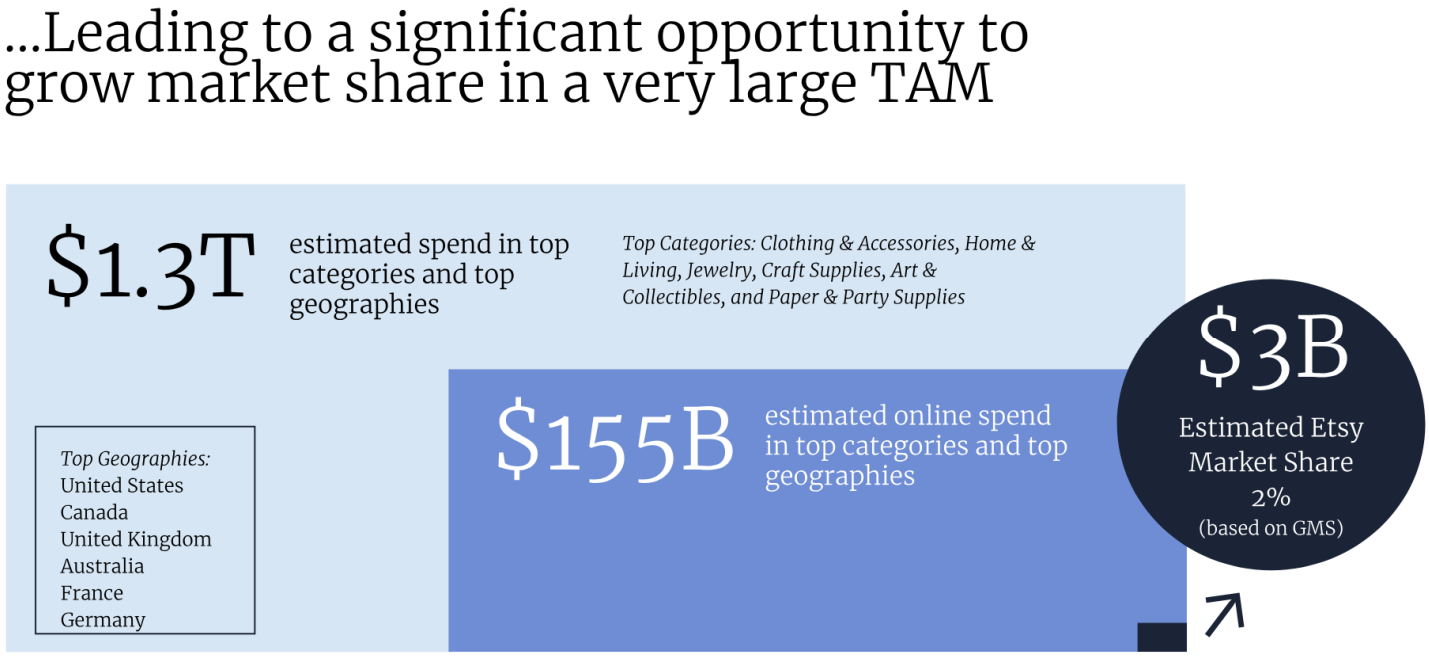
Google (GOOGL) is the FANG name of choice in 2019 with a $700B market cap and having more defensive characteristics while seeing less potential headwinds, also a ton of upside optionality. Shares trade 21X Earnings, 5.4X Sales and 30.6X FCF with over $100B in cash. GOOGL is set for 23% topline growth in 2018, best since 2011 and set to slow modestly the next few years with current estimates. It remains a dominating force in search with little real competition and continues to position itself in other growth areas of Tech. It is targeting new initiatives in online travel and Waymo valuation should become clearer with Uber/Lyft IPOs in 2019. Regulatory threats remain the main headwind. Google should also take share in ecommerce with Google Shopping tying into its launch of Home with Google Express. YouTube remains a force in media as well with strong growth potential. Google looks best positioned to hit a number of key growth tailwinds while also lapping a key Q417 expense step up.

eBay (EBAY) with a $25.7B market cap is more of a valuation call at these levels, trading 10.25X Earnings, 15.1X FCF and 2.8X EV/Sales. EBAY topline growth is set to slow in 2019 but EPS remains as 12-15% growth cycle. Ongoing product enhancement can increase take rates and it is a strong cash flow generator while recent partnerships with service providers give additional options for shoppers. EBAY could be an activist target to break-up in 2019 and unlock value with shares -30% YTD. Although it faces increased competition from ecommerce trend shifts, it still is a leading player and trades very cheap on a sum of the parts basis.

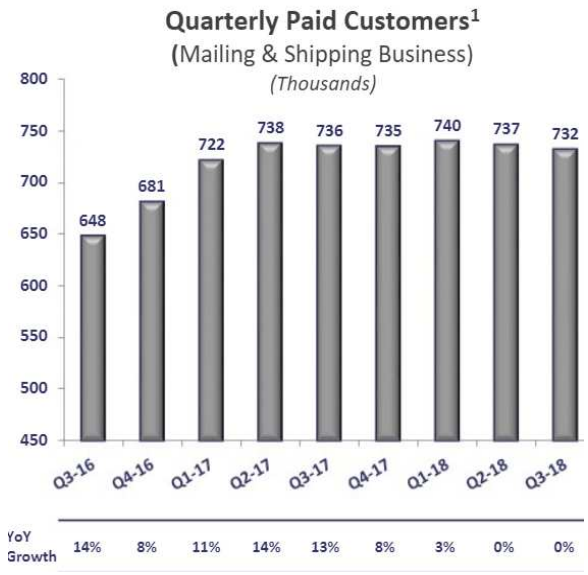
Twitter (TWTR) with a $20.8B market cap trades 30.6X Earnings and 27.65X FCF. TWTR has been cleaning up its platform which has constricted MAU growth but making key product enhancements to improve engagements and make it more of a force in advertising. It expects 12-14% revenue growth the next few years and a shift to video advertising benefits its platform. Video is also driving a major ramp in monetization that showed up in recent quarter revenue/EBITDA numbers. TWTR should continue to benefit from the global ad shift trends, better monetization, and product improvements while having a major strategic value. As the platform is improved it will see healthier engagement and usage trends making the ROI more attractive to advertisers. TWTR also has some upside optionality through partnerships and potential to continue to grow streaming media of live events.

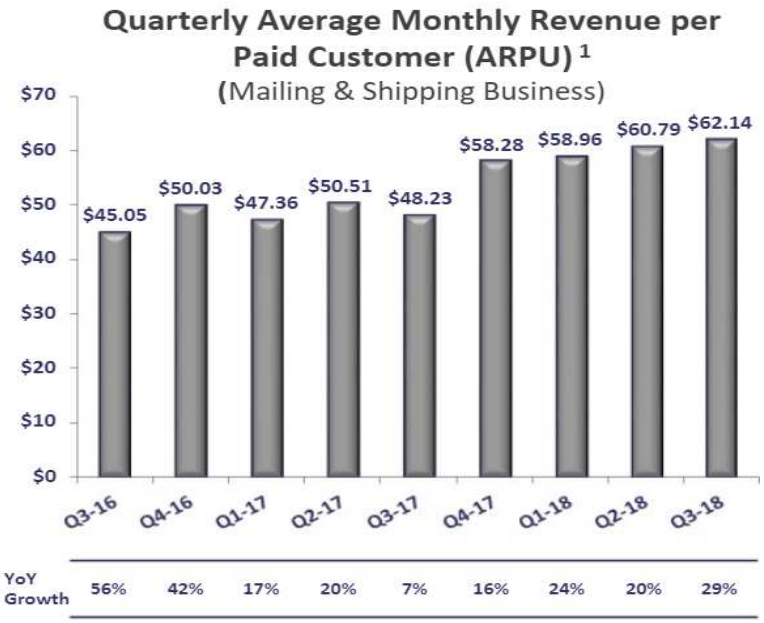


Etsy (ETSY) now has a $5.3B market cap with shares rising 113% this year and trading at a premium valuation of 61X Earnings, 61X EV/FCF and 8.3X EV/Sales. ETSY is seeing plenty of growth with 35.7% topline in 2018 and 29% seen in 2019, and is a major thematic play on the large shift to an entrepreneurial economy. The platform has 2M active sellers and 36M active buyers and it is shifting to a subscription model. The company continues to improve the buyer experience and spend on marketing to drive higher buyer frequency. ETSY also has a great opportunity in promoted listings and in international markets. ETSY will hold an Investor Day on March 9th as a likely positive catalyst. It operates a high margin business at scale with a capital light model. It is a unique growth story in ecommerce that is fairly Amazon-Proof.



Stamps.com (STMP) shares have pulled back 22% this year and the $2.62B company now trades 13.4X Earnings, 12.7X FCF and 4.6X EV/Sales. STMP growth has come down modestly but still expects 19.5% and 15.7% topline growth the next two years. The provider of online mailing and shipping solutions has been acquiring a number of businesses to position as a leader in its niche. With an increasing percentage of home and small businesses, STMP's main markets, there are a ton of potential new customers. One major concern is that quarterly paid customer trends have stalled without growth the last two quarters, a metric to eye, though ARPU has steadily grown. It is seeing great growth in cash flows and EBITDA. A recently released report from a task force the President made look into the USPS removed a key overhang for STMP. STMP has turned into a value name that still has a lot of growth potential and closely tied to names in ecommerce like ETSY and SHOP.





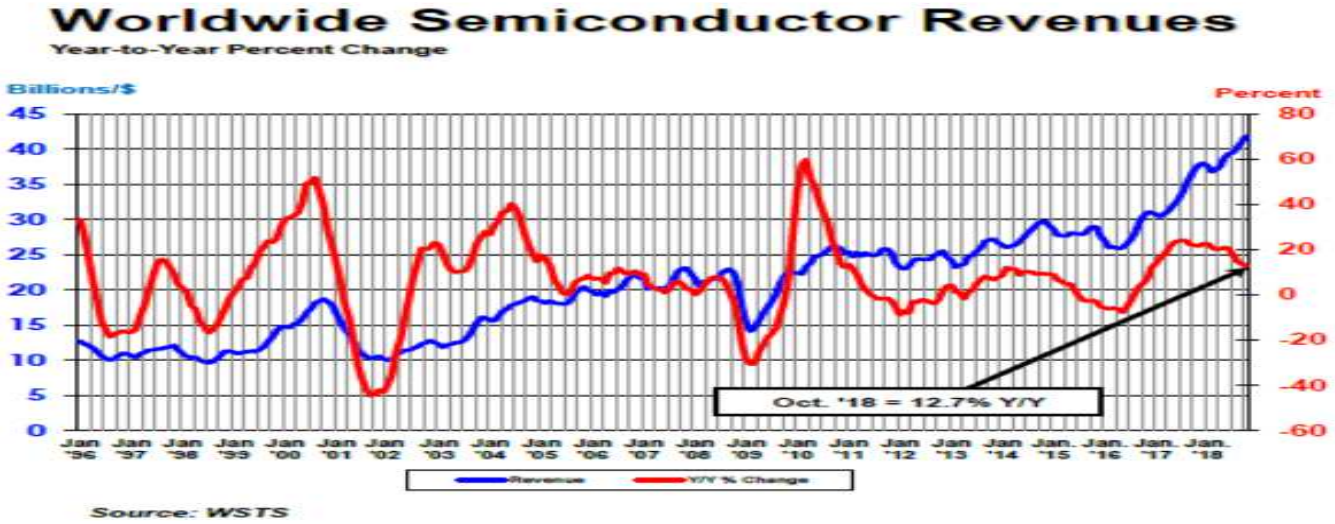
J2 Global (JCOM) with a $3.32B market cap provides cloud and digital media services worldwide. It screens cheap at 9.85X Earnings, 2.82X Sales and 10.46X FCF with a 2.62% yield. JCOM does have some leverage as it uses acquisitions in a roll-up strategy, something that may be frowned upon in a rising rate market, though the multiple already appears to reflect it. FCF is growing at a 15% CAGR and subscription revenues grew 14% Y/Y in Q3 driven by 94% growth in digital media revenues. The strong FCF and dividend make it fairly defensive and has opportunities to grow organically on top of its acquisition-driven growth. Glasshouse Research did release a scathing report on potential accounting red flags, something to monitor.

Semiconductors:

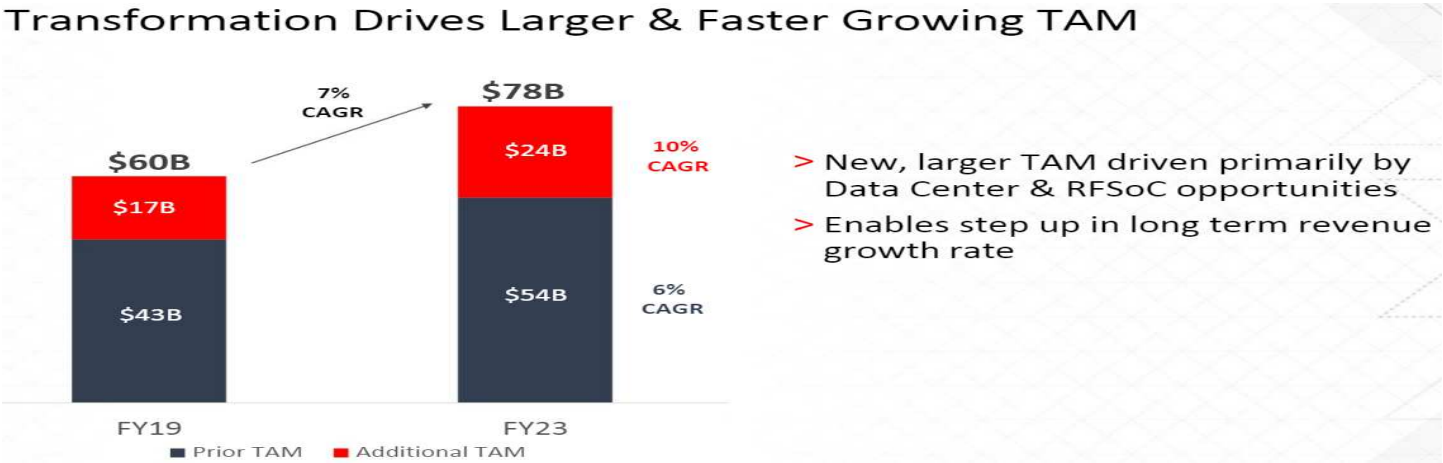
Components: *QCOM, QTNA, AEIS, VICR, SIMO, MKSI, ORBK, NOVT, IIVI, NVDA, MPWR, CRUS, LSCC, CEVA, MU, RMBS, TSI, ADI, XLNX, SWKS, MRVL, SMI, SLAB, SMTC, CCMP, POWI, DIOD, AMKR, TSEM, MXL, ESIO, ASML, AMAT, LRCX, KLAC, SNPS, IPGP, TER, UMC, ENTG, BRKS, KLIC, AMBA, XPER, NANO, NVMI, AVGO, INTC, TXN, NXPI, AMD, MCHP, ASX, MXIM, STM, QRVO, ON, IDTI, MLNX, CY, AUO, VSH, IPHI, FORM, MTSI, NPTN*

The health of the overall Semiconductor Cycle will continue to be in focus as we enter into 2019, with three key issues driving sector views: (1) the overall health of the macro economy, (2) continued headwinds from US/China trade tensions and (3) technology specific issues especially as it pertains to handset unit demand and hyperscale CapEx growth deceleration. It was a tough year for most of the group as the cycle peaked, only 10 of the 62 stocks are 10% or higher YTD while 40 are 10% or lower. A few big names like AMAT, NXPI, NVDA, LRCX and SWKS are down 30%+ YTD. Key end-markets like Gaming, Automotive, IoT, Industrial and Data Center are expecting growth to decelerate. Consolidation has been a major theme for years in this group and a few more deals in 2018 with MKS Instruments acquiring Electro Scientific, Renesas acquiring Integrated Devices, Cabot Micro acquiring KMG Chemical, and Microchip acquiring MicroSemi. The consolidation has allowed for stronger FCF and margins as well as pricing power. Mellanox (MLNX) is also reportedly near a deal with a number of potential buyers.

The memory market has quickly deteriorated in 2018, a very cyclical group, and DRAM and NAND orders being pushed out while pricing seen weakening another 30% in 2019. On the positive side, foundry vendors continue to ramp up their 7nm processes, propelling equipment orders in the logic space. The outlook is good at the other end of the spectrum, as well, where the industry continues to see demand for mature 200mm equipment. In total, the worldwide semiconductor equipment industry is expected to grow by 13.7% in 2018, but the business is projected to slow and decline by 8.6% in 2019, according to VLSI Research. Memory sales are expected to fall another 10% in 2019 while logic will likely continue growth around 4%. WFE is expected to reach $50.6B in 2019, down 5% from 2018, and capital spending at $87.2B, also down 5%. In 2019, silicon wafer shipments will reach 13,090 million square inches, up 5.2% over 2018, according to SEMI. In 2018, silicon wafer shipments grew 7.1%. Then, the photomask market is forecast to exceed $4 billion in 2019, up 4% over 2018, according to SEMI. EUV lithography—a next-generation technology that patterns tiny features on a chip—is moving into high-volume production in 2019 after years of delays. In an EUV scanner, a power source converts plasma into light at 13.5nm wavelengths, enabling the system to print fine features. Meanwhile, the foundry business, which is a big equipment market, is a mixed bag. Capital spending in the foundry sector will reach $25.1 billion in 2019, up 14% over 2018, according to KeyBanc. The SIA reported on 12/3 that October Us semi sales reached $41.8B, rising 12.7% Y/Y and 1% M/M. UBS sees semiconductor industry revenue dropping 4.3% in 2019, driven by a downturn in memory chip sales. Memory chips account for 34% of total industry revenue. It's clear that into 2019 we want to avoid names with high Memory exposure and target those with better growth prospects as well as valuation and balance sheets to sustain during an industry downturn in the cycle. There remains a massive and growing market where Semiconductors are positioned for the long term, specifically in the growth of data.

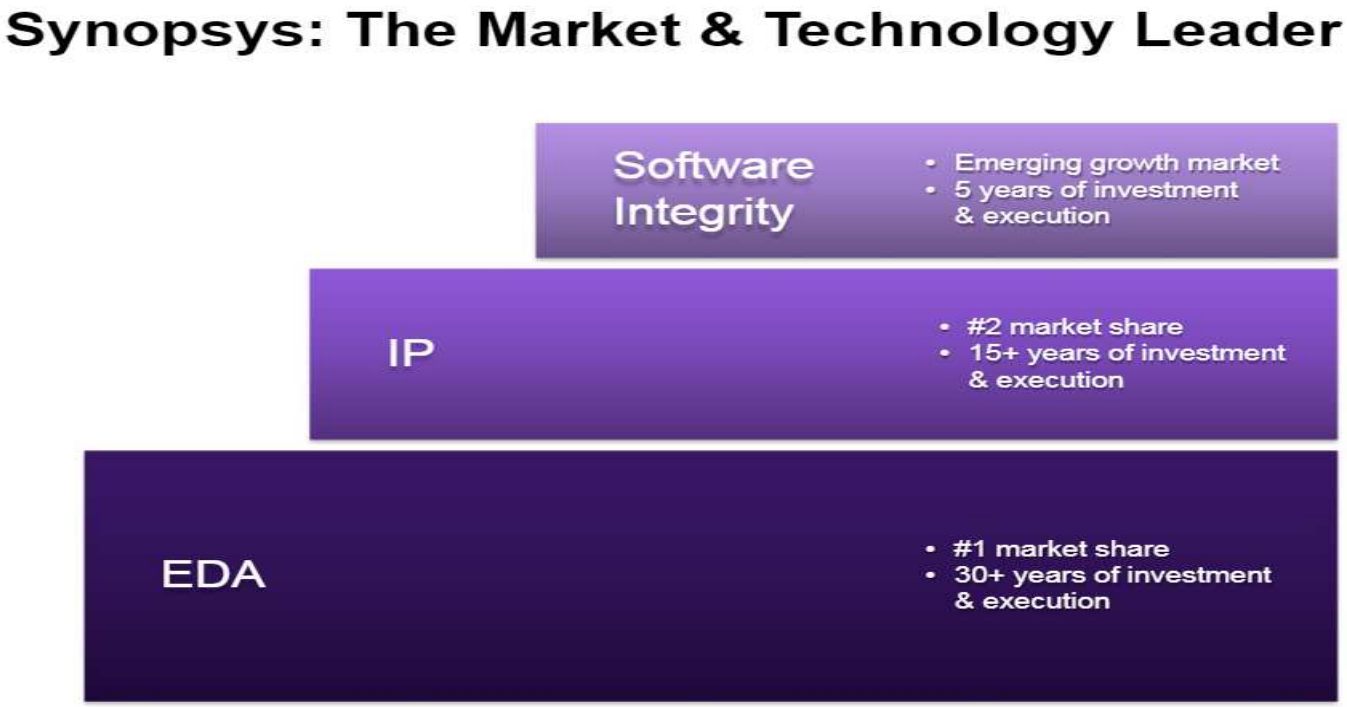


Xilinx (XLNX) is a $20.7B Semi that has outperformed in 2018 gaining 20% YTD and now trades 23.15X Earnings, 7.6X Sales and 42.45X FCF with a 1.77% yield, a premium valuation. XLNX remains a margin leader in the space and is positioned in the best growth areas of Semi's while having limited exposure to slowing areas. XLNX growth has accelerated in 2019 and has another three quarters of impressive Y/Y growth. XLNX is positioned well for the 5G buildout as well as exposure to datacenter upgrades. XLNX has a growing TAM in AI and Data Analytics. New products have been driving strong growth an Alveo is expected to ramp and be a meaningful contributor. XLNX has been winning big deals including potential for a deal with Google on data center chips. It is deserving of its premium valuation as the best positioned chip name to emerging Tecg mega-trends with strong profitability.

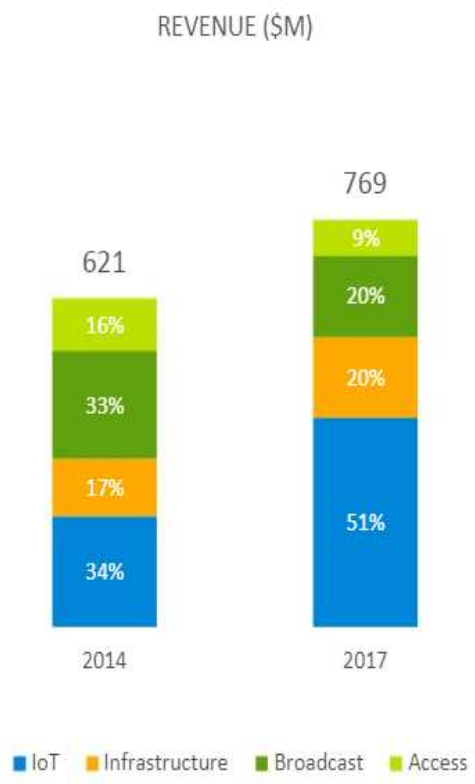


Broadcom (AVGO) with a $102.6B market cap has been resilient and trades 9.3X Earnings, 23.77X FCF and 4.92X Sales with a 4.33% dividend yield. AVGO has long been a top capital deployment story and recently did a large deal for CA making a move into software. It is regaining share in RF while also being an attractive value play for 5G and a strong dividend & cash flow story. AVGO now derives 50% of its revenues from cloud and is a leader in many end-markets, able to withstand some broader weakness in consumer electronics. AVGO seemed confident they will recover lost Apple share in the next generation iPhone which could allow for a reacceleration of wireless growth in 2H19. AVGO is one of the best operators in the industry and its large yield, strong cash flows, and cheap valuation make it plenty defensive.

Synopsys (SNPS) with a $12.23B market cap trades 16.75X Earnings, 3.92X Sales and 26.25X FCF. SNPS has seen growth accelerate the last three years but 2019 faces tougher comps, but will accelerate each quarter for Y/Y growth numbers. SNPS is seeing growth in EDA, IP Licensing and Software Integrity. Management has also guides for 400bps of margin improvement between FY18 and FY21. It also sees a clear path to $4B in revenues. SNPS is a technological leader in chip design capitalizing on all the growing needs for chips in Tech growth markets. Management has historically been conservative and last quarter showed record business activity with the EDA market a strongly positioned spot for the increasing complexity of chips.



Silicon Labs (SLAB) with a $3.3B market cap has seen shares move 20% lower in Q4 but the name is fairly immune from the broader Semi concerns. Shares trade 19.2X Earnings, 3.86X Sales and 19X FCF. SLAB has delivered double digit revenue growth the last five quarters and seen slowing a bit in 2019 to the 5-9% range. SLAB has made key acquisitions of Sigma Designs and Z-Wave positioning itself as a leader in IoT. IoT had an installed base of 26B in 2017 seen growing to 81B in 2025. SLAB is a leader in R&D and targets 58-60% gross margins. SLAB is a company specific growth story insulated from many of the Macro concerns and should continue to justify a premium valuation to peers.



- IoT
  - Execute platform strategy
- Infrastructure
  - Extend leadership in high-performance timing, grow isolation
- Broadcast
  - Maintain TV tuner share (>70%), grow automotive
- Access
  - Maintain share in legacy markets

Diodes (DIOD) is a $1.55B company trading 12X Earnings, 1.33X Sales and 16X FCF, cheap due to its 35.7% margins. DIOD has seen revenues accelerate the last three years to 15% growth in 2018 and will start to lap tough comps in 2019 as a meaningful headwind. DIOD remains an interesting play as a maker of application-specific products and has visions for margins reaching 40% in 2025 and sales hitting $2.5B. Home Automation, Connected Driving, IoT, Smart Phone charging, and cloud computing & data centers are all positive tailwinds. Automotive revenues have grown at a 27% CAGR since 2013 with higher content per vehicle. It also has a balance sheet flexible enough to pursue M&A, a strategy it has effectively used in the past.

Market Segment ~ 20% each

- **Automotive**
  - Connected driving, Comfort/style/safety, Electrification/Powertrain
- **Industrial**
  - Embedded systems and precision controls
- **Consumer**
  - IoT: Wearables, home automation, and smart infrastructure
- **Communication**
  - Smart phones: advanced protocols and charging
- **Computing**
  - Cloud computing: server, storage and data centers

Electronics and Technical Instruments:

Components: *IRBT, REZI, VRRM, KN, GLW, TEL, ST, DLB, APH, LPL, HUBB, AVX, SANM, CTRL, KEM, CTS, NVT, FLEX, JBL, PLXS, CLS, TTMI, BHE, GRMN, KEYS, TRMB, CGNX, COHR, FIT, FARO, RTEC, IDCC, OLED, LASR*

This is basically a group of misfits that did not fall into other groupings, a collection of some display Tech names, provider of electronic components, automation, and etc. Most of the group has seen a very sharp sell-off in 2H18 on fears of slowing growth, exposure to Auto and the ongoing issues with China.

Figure 4: Quantifying relative outperformance/ underperformance in each macroeconomic backdrop

GDP + , $ + environment	2001	2009	2013
Outperformers			
AAPL	59%	121%	-24%
DDD	29%	16%	129%
HPQ	-22%	17%	69%
IBM	55%	32%	-32%
SSYS	164%	34%	36%
STX		287%	58%
WDC	169%	259%	68%
APH*	34%	67%	7%
ARW*	16%	31%	10%
AVT*	32%	39%	13%
GLW	-71%	79%	13%
JBL	1%	140%	-40%
TECD	72%	135%	-19%
TEL		30%	19%
VSH	41%	118%	-8%
Underperformers			
FLEX	-4%	159%	-7%

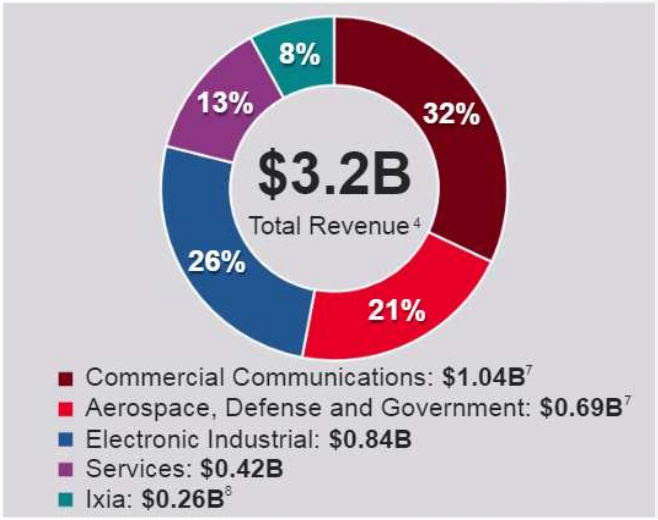
GDP + , $ - environment	2002	2003	2005	2006	2017
Outperformers					
AAPL	-13%	21%	118%	2%	27%
HPQ	8%	6%	33%	29%	24%
SSYS	66%	297%	10%	10%	-1%
STX		50%	13%	19%	-5%
WDC	24%	56%	67%	-6%	-2%
APH	1%	40%	16%	25%	10%
Underperformers					
DDD	-24%	2%	-14%	-27%	-57%
IBM	-14%	-8%	-21%	4%	-26%
FLEX	-44%	53%	-17%	-6%	3%
TECD	-16%	19%	-18%	-20%	-6%
VSH	-21%		-13%	-17%	8%
JBL	0%	30%	40%	-49%	-10%

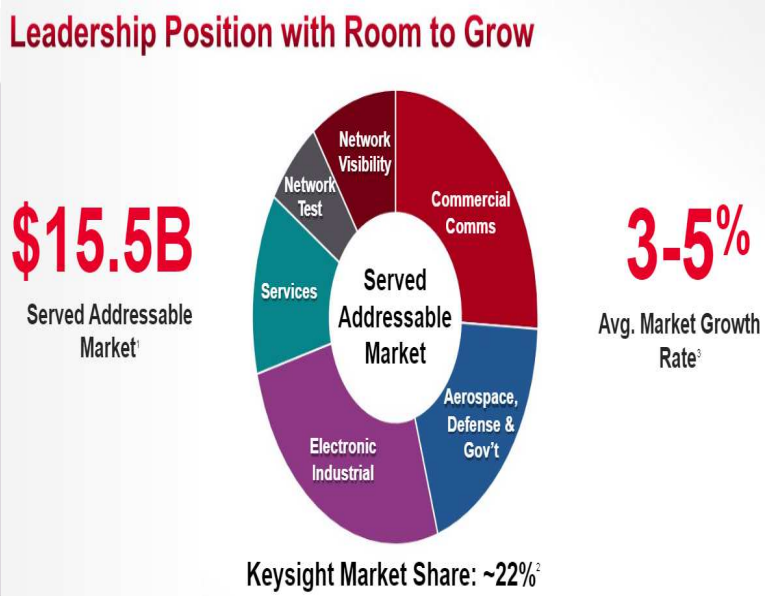
GDP - , $ + environment	2000	2010	2012	2014	2015	2016
Outperformers						
AAPL	-61%	38%	17%	27%	-4%	0%
DDD	52%	38%	17%	27%	-4%	41%
APH	27%	-1%	28%	8%	-3%	18%
TECD	9%	-21%	-24%	9%	4%	16%
TEL		32%	7%	19%	3%	-2%
Underperformers						
HPQ	-19%	-33%	-59%	33%	-34%	18%
IBM	-11%	-1%	-10%	-26%	-13%	13%
SSYS	-54%	74%	148%	-52%	-73%	-42%
WDC	-32%	-38%	23%	21%	-46%	5%
ARW	23%	1%	-14%	-7%	-8%	20%
AVT	-18%	-6%	-18%	-15%	0%	1%
FLEX	34%	-8%	-6%	30%	-1%	16%
GLW	33%	-14%	-16%	18%	-20%	24%
VSH	-19%	80%	2%	-5%	-14%	25%
JBL	-21%	3%	-16%	14%	7%	-9%

GDP - , $ - environment	2004	2007	2008	2011
Outperformers				
AAPL	191%	128%	-20%	24%
IBM	-4%	8%	16%	26%
Underperformers				
DDD	85%	-8%	-12%	-10%
STX	-18%	-7%	-45%	-32%
WDC	-19%	43%	-25%	-11%
AVT	-26%	32%	-11%	-8%
FLEX	-17%	0%	-42%	-30%
JBL	-20%	-42%	-18%	-3%
VSH	-45%	-21%	33%	-41%

Source: Bloomberg, BofA Merrill Lynch Global Research

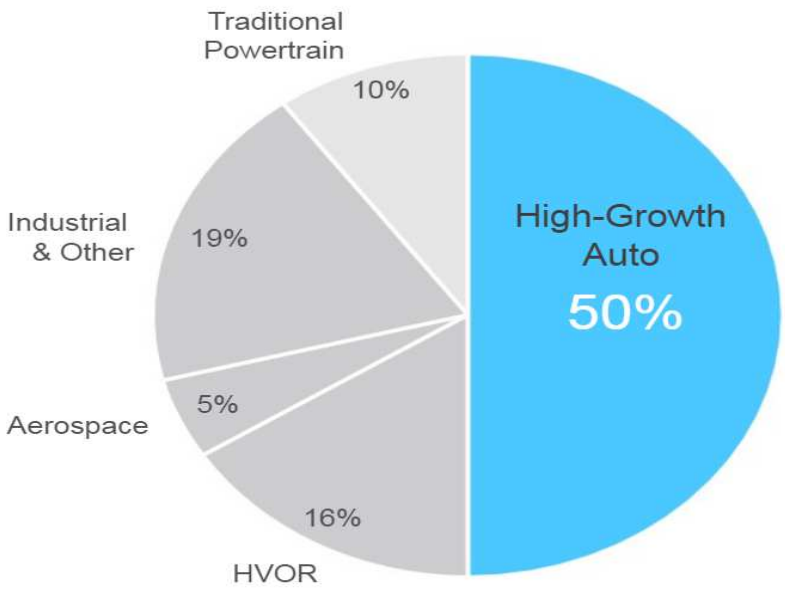
Keysight (KEYS) is a $10.75B provider of electronic design and test solutions trading 13.45X Earnings, 2.77X Sales and 32.15X FCF. KEYS is expecting 8.9% and 7.2% revenue growth as well through FY20. The company reported 9% order growth in October with strong margin growth in Commercial Communications driven by 5G R&D demand and next-gen data center build outs. They also continue to see strong demand for their ESI solutions with Automotive and Energy driving double-digit growth. KEYS has nice end-market exposure and also a play on 5G growth trends. It is a more defensive name, but top operator.





Corning (GLW) is a $23.4B diverse Tech/Industrial trading 13.8X Earnings and 15X FCF with a 2.5% dividend yield. GLW has seen ups and downs this year and 12% topline growth in 2018 its best since 2011. GLW has seen strong growth in its optical business all year while it could dace some pressures in Display from a slowing smartphone market. GLW is a capital deployment story looking to deploy $26-$30B through 2019 targeting 2X Debt/EBITDA. It sees $12.5B in dividends and repurchases, $6-$7B in capex, and $1-$3B in M&A. It is coming off a strong quarter with significant margin improvement. Expect margin expansion to remain a key theme in 2019 while better display pricing and optical demand can strengthen its growth.

Sensata (ST) with a $7.13B market cap screened best of the component names that have come under pressure, trading just 10.4X Earnings and 15.7X FCF. ST faces tough comps the next few quarters but can emerge as a 2H19 story. Its 59% exposure to Auto & China has been a concern but the electrification trend is seen as a key driver the next few years. It bought GIGAVAC to enter the profitable and fast growing high-voltage contactors segment. ST remains positioned for growth despite some near-term and transitory challenges. Content gains are also mitigating the risks with volume stagnation in Auto/Trucks, so much of the bear thesis seems misplaced as seen with last quarter's results. ST is a cheap value allowing for exposure into the growing sensors market.



% of Sensata Revenue

Sensor-Rich Solutions for Efficient, Connected Subsystems

- HVAC
- Regenerative Braking
- Vehicle Health Monitoring

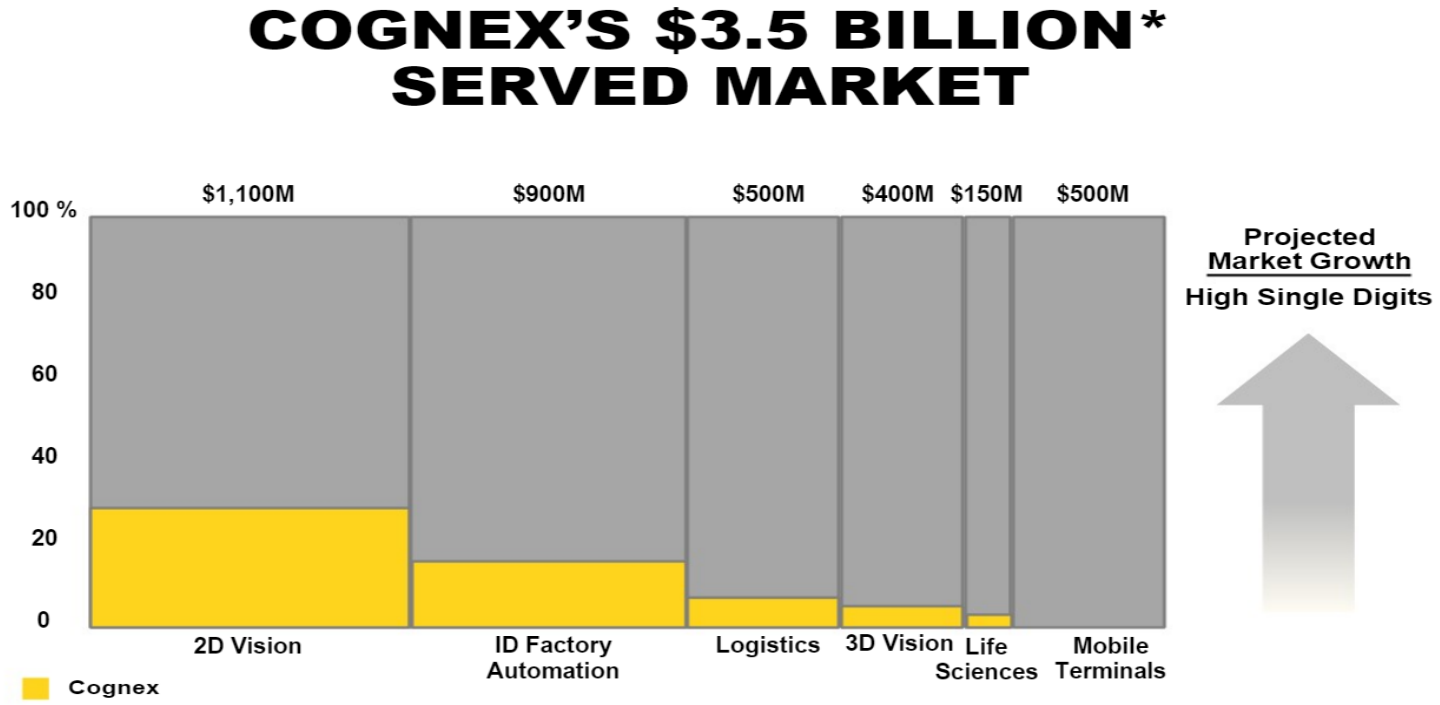
Sensors for Clean Electrified Engines

- Gas Direct Injection
- Gas Particulate Filters
- Cylinder Deactivation

Solutions for New Energy Vehicles

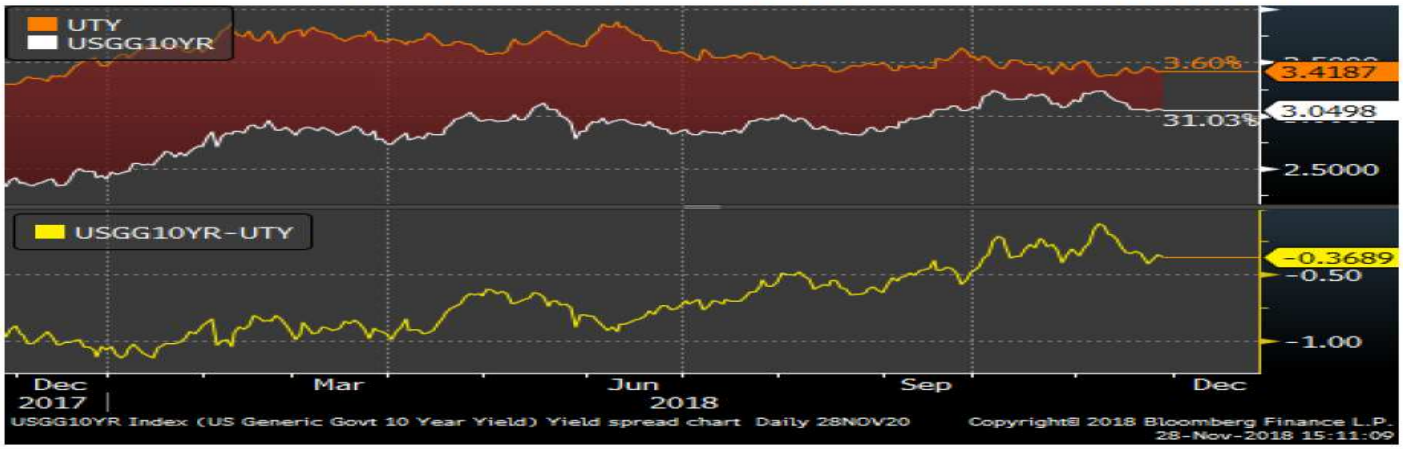
- High-Voltage Contactors
- Embedded Motor Position
- Wireless Battery Management

Cognex (CGNX) is a $6.2B leader in machine vision as a play on industrial automation, though shares resetting this year down more than 40% on an overall slowdown in Industrial growth fear. It now trades attractive at 26.4X Earnings and 31.25X FCF as it is still set to deliver accelerating double digit topline and bottom line growth as the secular trends outweigh the broader macro trend. It has 75% gross margins and 14% R&D/Sales. CGNX has seen headwinds from the consumer electronics vertical but has robust growth in logistics and its emerging 3D machine vision and deep learning technologies. A steady demand for factory automation and a recovery in consumer electronics can put this name back in investor good graces in 2019. The secular demand remains strong in a large addressable market and it remains a great margin and cash flow story. It also has a debt free balance sheet but will face tougher comps the next few quarters, a name to watch as a 2H19 rebound story.



Utilities: *The Utility group is outperforming broader markets up 2% YTD and 6% in the second half on a global flight to safety/yield. It tends to correlate closely with bond yields which have pulled back sharply the last few months after a strong rise to start 2018. It's is not an overly exciting group for stock selection. It is a group where we pay more attention to the balance sheet as they often carry a lot of debt for the significant infrastructure requirements. Location is also important due to the regulatory environment for allowing customer rates to be raised, notably Florida, Texas and California are utility-friendly states. Expectations for lower growth is likely to lead to outperformance for the group as a bond proxy, a sector with a negative correlation to rates. It is a large group with 92 names over $1B market caps. Utilities enter the year trading rich on a PE basis, a 21% premium to the S&P.*

Figure 5: Spread Between Utility Dividend Yields and 10-Year Treasury Yields



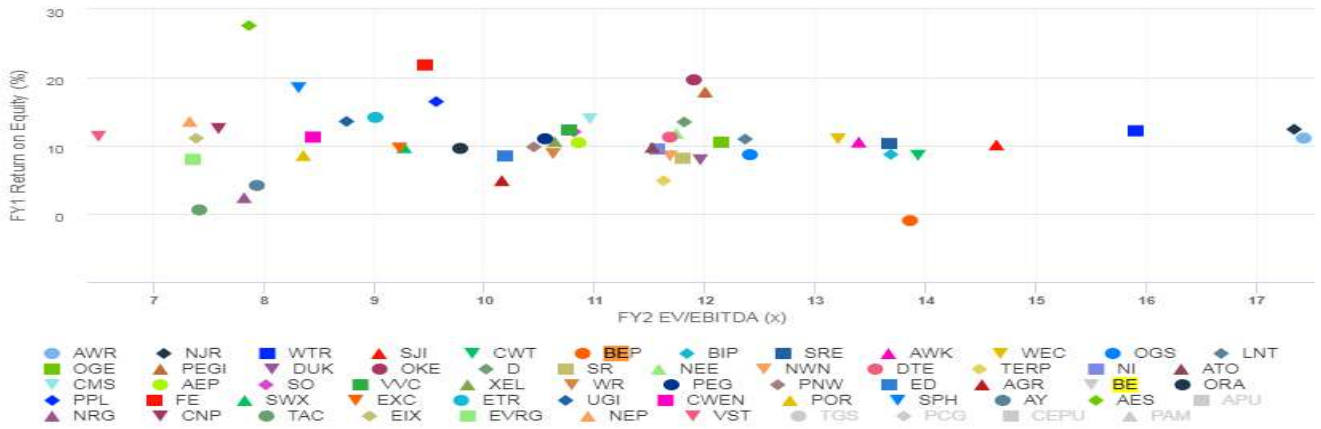
The stable Utility stocks still offering 4%+ dividend yields are DUK, D, SO, OKE, PPL, FE, EIX, ETR, CNP, and FTS. A few notable outperformers in 2018 included NRG as a turnaround story, NEE as an alternative energy play, and AWR in the water utility space.

FERC is conducting paper hearings in New England and MISO to improve ROE methodology for electric transmission which is expected to benefit ES, WEC, DUK, AEP, FE, and AEE. The integrated utilities with non-regulated businesses have outperformed like NEE and CNP. Transmission growth is expected to be a key theme in 2019 as investment plans are updated followed several years of uncertainty. NI, NEE, PNW, ES, HE, AEP, D, DUK, CMS, DTE, and ED have all indicated an increasingly aggressive stance on renewables from their regulated utilities in the coming years. Legislation is critical heading into '19, with XEL (CO/TX) PNM (NM), EXC (IL), AEP (TX), EE (TX), and D (CT) poised to benefit more from potential legislation than others which are more peripherally exposed.

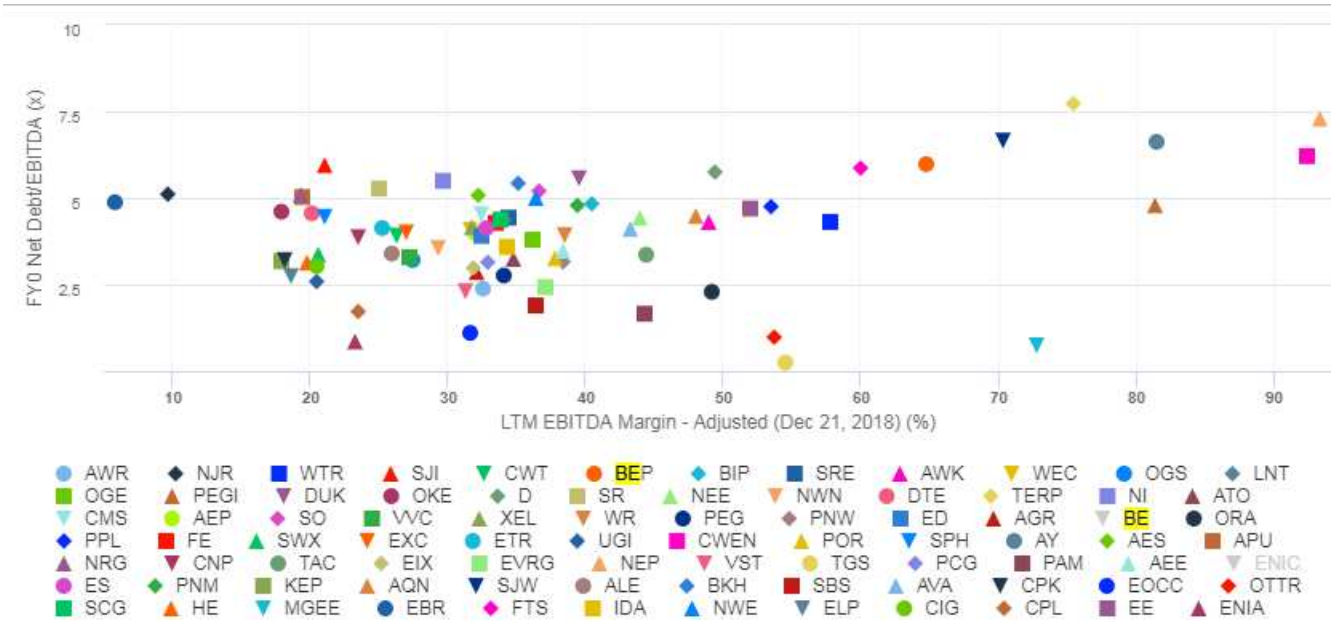
Without going into too much detail in this rather boring group, after running screens for various metrics and focusing on less debt levered names, the top quality names for Utility exposure are

Next-Era Energy (NEE) for renewable exposure, **Aqua America (WTR)** in water, **AES Corp (AES)** for its strong ROE/growth profile, **Atmos (ATO)** as a growth play in Natural Gas, **Public Service (PEG)** on valuation/yield/ROE, **Pinnacle West (PNW)** on Margins/Growth/Yield/Balance Sheet, **Vistra (VST)** on strong expectations for the ERCOT' 19 summer and a strong pricing/cost relationship, **CMS Energy (CMS)** on Growth/ROE/Yield, and **Otter Tail (OTTR)** as an impressive small cap name in the group.

ROE vs. EV/EBITDA



EBITDA Margin vs. Net Debt / EBITDA

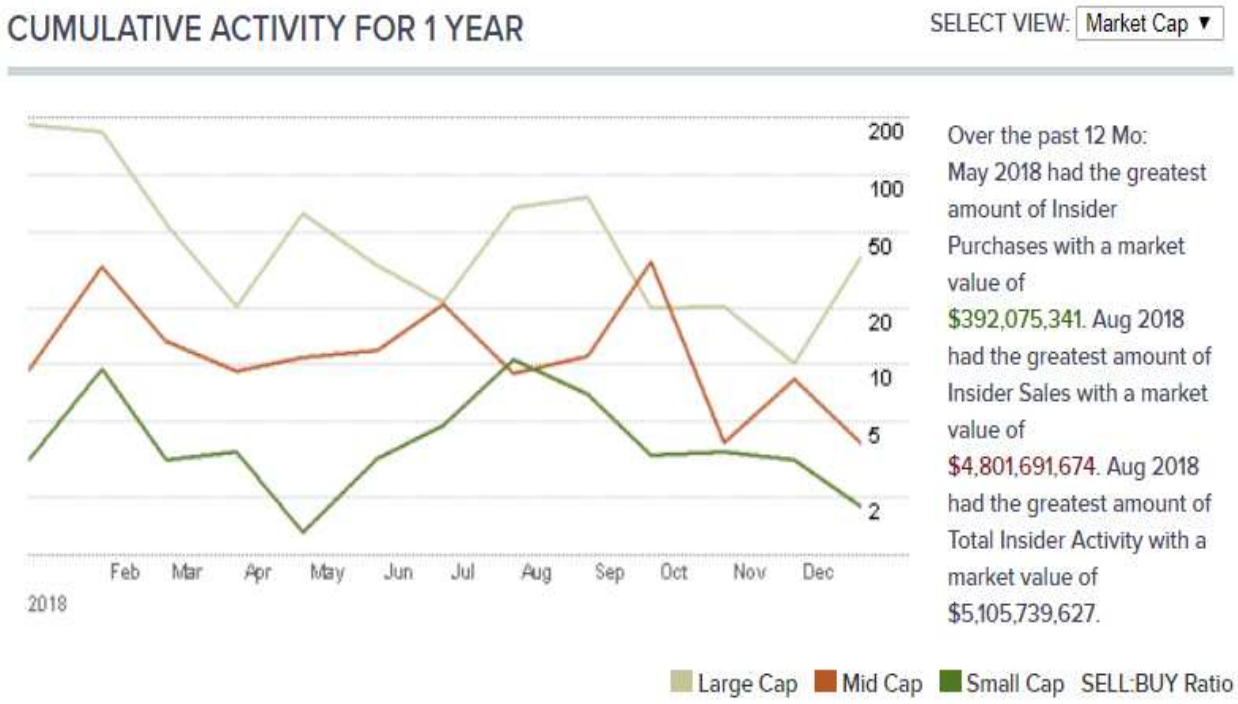


Insider Trading

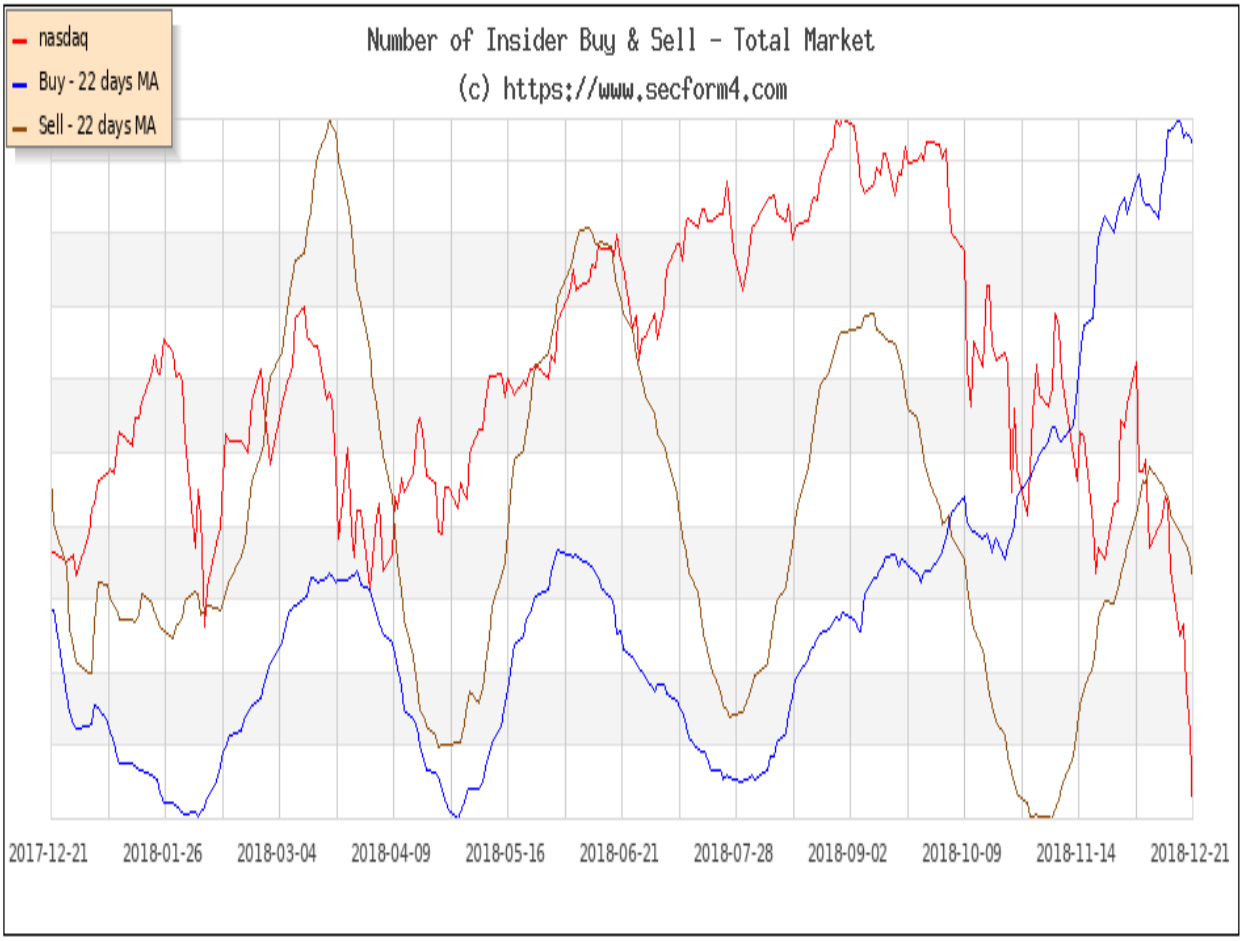
Insider Buying

Insider buying can be an incredibly useful tool in the trading playbook whether its identifying inflection points in longer-term turnarounds or simply when a stock gets punished following a seemingly one-time earnings event. Hundreds of Form-4 filings come in every day but looking at very specific subset we can see where smart executives, directors, and others with knowledge of the company are putting their money. Insiders most often have a better understanding of the company's production processes, their underlying markets and trends, and more recent information than any analyst or earnings call can give so when they begin putting up sizable amounts of their own money into a stock, you should take notice.

In 2018, the sell:buy ratio for stocks rose in the Summer before buyers started adding into the Fall. The largest month of buying was May while the largest month for selling was August. Insider selling picked up in December as well in large-cap names. Via CNBC:



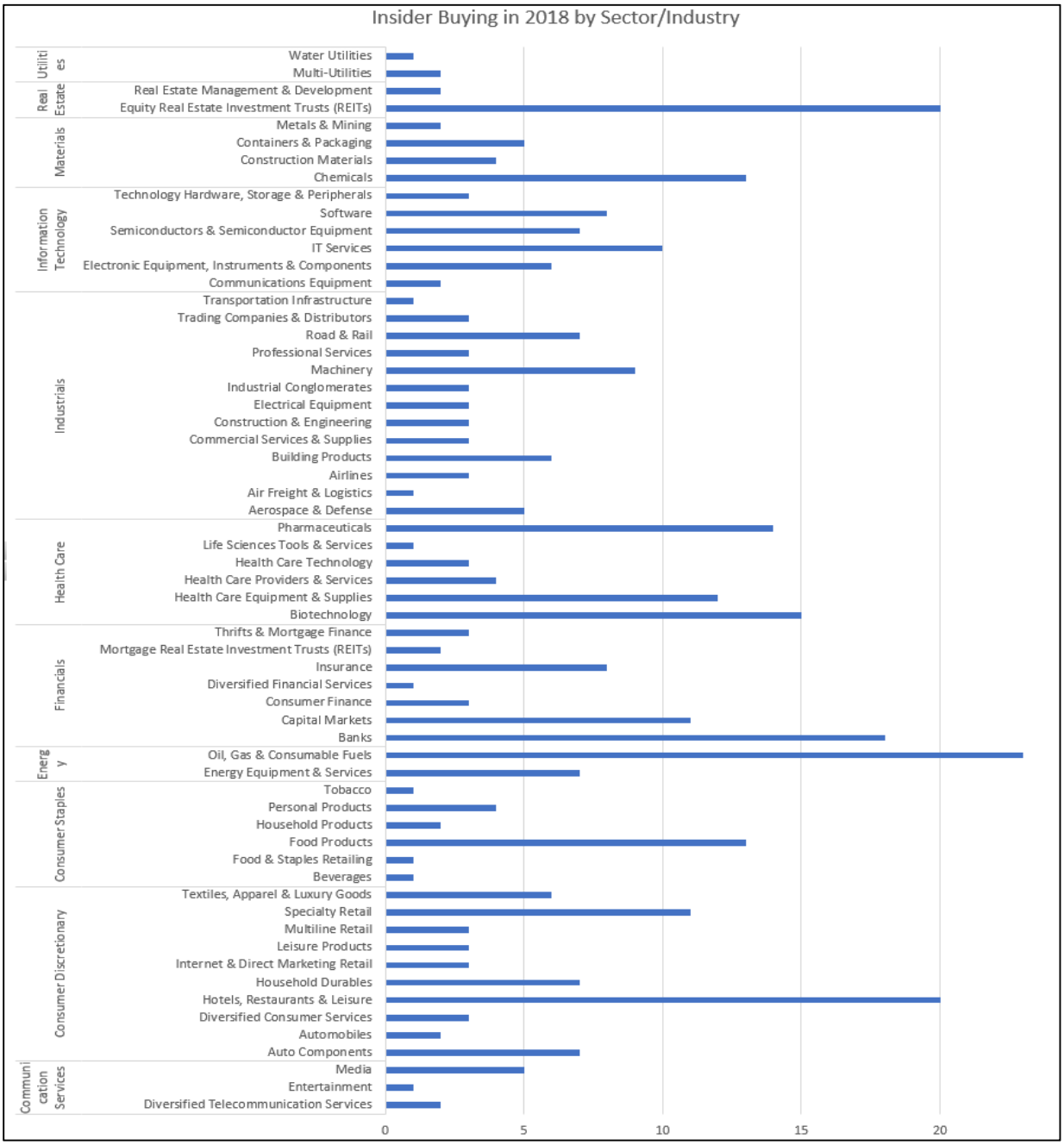
The largest areas of insider buying were REITs, biotech, and then energy. Medical supplies, financials, and communications also saw positive net flows. The sector which saw the biggest net selling in 2018 was software/services, food retailers, semiconductors, and home building. Industrial also saw net sales. Here's another look at the 22-MA of buying and selling over the last year. Again, a very pronounced move in buying activity from August through year-end after earnings. Selling fell through early November.



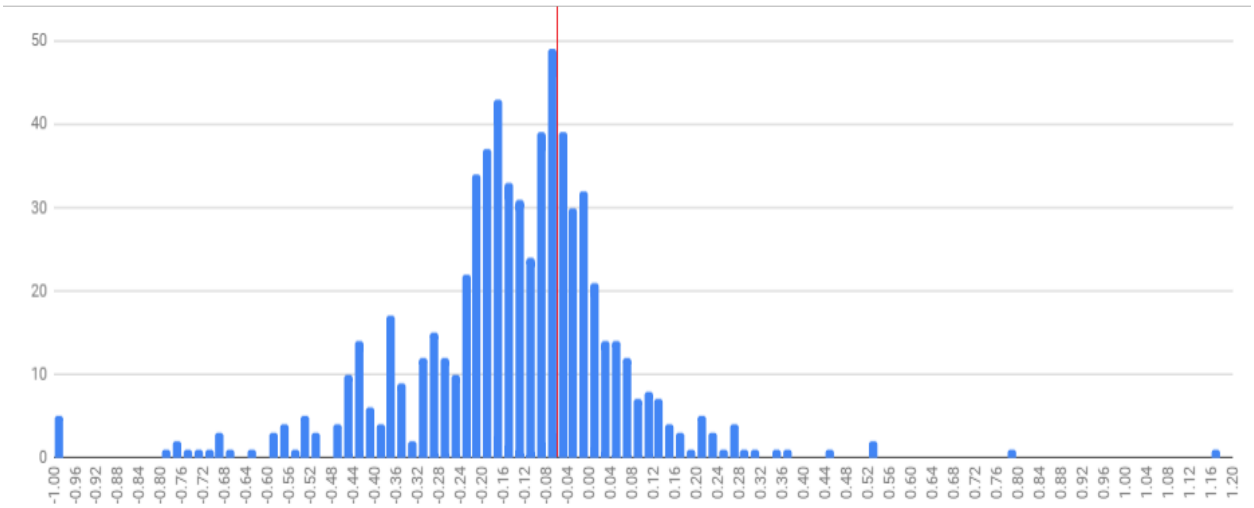
So, how did insiders do in 2018? Let's look at a quick scan of every insider buy in 2018 but filtered to only look at purchases above $500,000 in liquid names. We end up with 954 trades.

- 17.28% were profitable
- 37.9% beat the S&P
- 4 were involved in takeovers
- The most active sector was consumer discretionary; the least active was utilities
- The average return was -14.35%
- The biggest win was REGI (117%), FN (78%), and ICPT (52%)
- The biggest loss was DOVA (-75%) and DBD (-77.5%)

Here's a breakdown of where they were buying, broken down to sub-sector:



And a histogram of returns (red line is the S&P 500).



Here's a list of Buys which are within 5% of the insider level (as of 12-20)

Date	Stock	Purchaser	Title	Price	$ Value
11/21/2018	Z	Hoag Jay C	Dir	$29.18	$24,801,270
5/7/2018	TSLA	Musk Elon	CEO, 10%	$298.50	$9,850,509
11/21/2018	AMH	Hughes B Wayne Et Al	Dir	$19.78	$7,505,480
11/16/2018	NXRT	Dondero James D	Pres, 10%	$33.00	$6,863,076
12/12/2018	MHK	Balcaen Filip	Dir	$118.86	$6,245,362
12/10/2018	MHK	Balcaen Filip	Dir	$119.39	$5,181,670
11/8/2018	GHL	Bok Scott L	CEO	$22.60	$4,986,334
11/12/2018	APD	Ghasemi Seifi	Pres, CEO	$160.11	$3,202,200
12/14/2018	MHK	Balcaen Filip	Dir	$117.66	$2,933,963
11/19/2018	AMH	Gustavson Tamara Hughes	Dir	$19.71	$2,841,468
2/12/2018	GLPI	Carlino Peter M, COB/CEO	CEO	$33.33	$2,805,000
12/6/2018	MHK	Balcaen Filip	Dir	$119.48	$2,736,113
8/9/2018	NWL	Icahn Brett	Dir	$21.00	$2,310,000
8/14/2018	CORT	Baker G Leonard Jr	Dir	$12.48	$2,241,967
11/30/2018	SFM	Boney Shon A.	Dir	$22.83	$2,020,154
12/14/2018	HDS	Deangelo Joseph J	Pres, CEO	$36.99	$1,849,580
12/11/2018	VLO	Weisenburger Randall J	Dir	$72.73	$1,818,375
11/21/2018	W	Kumin Michael Andrew	Dir	$89.25	$1,651,125
7/30/2018	FII	Farrell Michael J	Dir	$24.12	$1,567,950
12/13/2018	GMS	Ross Ronald R	Dir	$15.66	$1,565,520
12/11/2018	GMS	Ross Ronald R	Dir	$15.63	$1,562,610
10/31/2018	ALGT	Redmond John	Pres	$115.42	$1,384,986
6/12/2018	CLI	Demarco Michael J.	CEO	$20.12	$1,373,963
12/14/2018	USCR	Rossi Theodore P	Dir	$33.40	$1,335,943
11/13/2018	AAT	Rady Ernest S	CEO, Pres	$38.95	$1,322,992
8/16/2018	CORT	Baker G Leonard Jr	Dir	$12.50	$1,322,877
12/7/2018	UAL	Shapiro Edward	Dir	$88.08	$1,321,250

11/21/2018	CORT	Baker G Leonard Jr	Dir	$12.73	$1,272,550
12/19/2018	CNX	Lanigan Bernard Jr	Dir	$11.95	$1,195,000
5/29/2018	COG	Kelley Robert	Dir	$22.25	$1,112,500
8/7/2018	CCI	Martin J Landis	Dir	$110.14	$1,090,410
12/18/2018	SJM	Smucker Timothy P	Dir	$98.26	$1,080,843
11/5/2018	AXL	Dauch David C	COB, CEO	$11.47	$1,010,507
10/25/2018	TXN	Craighead Martin S	Dir	$91.70	$999,496
5/30/2018	CBOE	Concannon Christopher R	Pres, COO	$99.44	$994,400
12/7/2018	EMN	Raisbeck David W	Dir	$73.21	$988,335
12/17/2018	LCII	Gero James	Dir	$63.24	$948,600
5/2/2018	INCY	Hoppenot Herve	COB , CEO	$60.94	$914,100
11/14/2018	LNG	Fusco Jack A	Pres, CEO	$59.20	$888,000
2/14/2018	GLW	Canning John A Jr, Dir.		$29.60	$887,931
11/23/2018	LOW	Rogers Brian C	Dir	$88.02	$880,200
10/29/2018	AAL	Cahill John T	Dir	$33.47	$836,763
11/14/2018	WTR	Franklin Chris	CEO	$32.86	$835,342
5/30/2018	CRM	Wojcicki Susan	Dir	$132.00	$791,981
3/13/2018	CRM	Wojcicki Susan	Dir	$127.82	$766,939
12/19/2018	PWR	Austin Earl C. Jr.	Pres, CEO	$29.40	$749,700
4/18/2018	CRM	Wojcicki Susan	Dir	$123.81	$742,854
8/28/2018	D	Harris John W	Dir	$71.15	$711,500
3/29/2018	EPD	Teague Aj	CEO	$24.54	$605,208
10/23/2018	CCI	Melone Anthony J.	Dir	$105.99	$580,610
5/8/2018	AYI	Dillard George Douglas Jr	Dir	$112.76	$563,800
11/13/2018	USAC	Long Eric D	See Remarks	$13.89	$555,500
6/5/2018	MSFT	Peterson Sandra E	Dir	$101.96	$550,606
12/17/2018	MDCO	Denner Alexander J	Dir	$18.00	$540,000
12/10/2018	WMGI	Wallman Richard F	Dir	$26.83	$536,600
5/3/2018	OFIX	Matricaria Ronald A	Dir	$51.97	$519,724
2/9/2018	DAL	George Mattson	Dir	$51.89	$518,900

11/29/2018	CRTO	Rudelle Jean-Baptiste	CEO	$23.42	$515,240
7/23/2018	RPM	Ballbach John M	Dir	$62.12	$503,163
7/31/2018	CI	Palmer Eric P	EVP, CFO	$177.61	$502,281
3/28/2018	CHDN	Duchossois Richard L	Dir	$244.40	$501,009
3/23/2018	CHDN	Duchossois Richard L	Dir	$252.90	$500,743
4/3/2018	CHDN	Duchossois Richard L	Dir	$240.65	$500,542
11/19/2018	TWOU	Peters Gregory K	Dir	$51.22	$499,958
3/26/2018	CHDN	Duchossois Richard L	Dir	$248.08	$499,875
5/22/2018	MELI	Malka Meyer	Dir	$292.65	$499,846
12/17/2018	MDCO	Timney Mark	CEO	$18.60	$499,652
6/12/2018	IFF	Morrison Dale F	Dir	$124.60	$499,646
11/21/2018	BECN	Novich Neil S	Dir	$29.46	$497,828
3/7/2018	EPD	Teague Aj	CEO	$24.86	$497,198
10/31/2018	IBM	Taurel Sidney	Dir	$115.02	$495,846
6/14/2018	CLI	Gantcher Nathan	Dir	$19.72	$493,000
1/25/2018	INFO	Director Robert Kelly	Dir	$48.69	$486,900
11/5/2018	GLPI	Urdang E Scott	Dir	$33.72	$472,080
8/20/2018	CORT	Baker G Leonard Jr	Dir	$12.92	$461,095
12/6/2018	ENR	Hoskins Alan R.	Pres, CEO	$46.00	$460,000
1/23/2018	NINE	Director Gary Thomas	Dir	$23.00	$460,000
12/3/2018	ENR	Gorman Timothy W	EVP, CFO	$45.64	$456,400
1/9/2018	PLAY	Director Kevin Sheehan	Dir	$45.58	$455,800
12/10/2018	KDP	Loucks Brian Andrew	VP, Pres	$26.00	$454,986
11/20/2018	SSNC	Michael Jonathan E	Dir	$44.58	$445,793
11/20/2018	SSNC	Michael Jonathan E	Dir	$44.58	$445,793
5/31/2018	CCK	Donahue Timothy J	Pres, CEO	$43.25	$432,500
11/6/2018	MTH	Bradford Dana	Dir	$37.90	$379,040
11/5/2018	CIO	Shraiberg Stephen B	Dir	$10.79	$377,500
12/17/2018	USCR	Rossi Theodore P	Dir	$34.85	$348,500
5/2/2018	KMPR	Storch David P	Dir	$68.69	$343,473

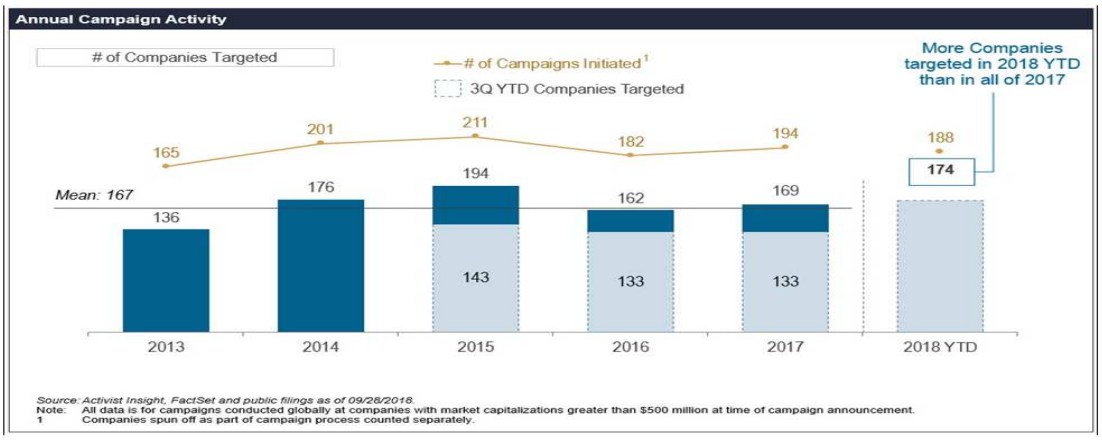
11/21/2018	BECN	Frost Richard W	Dir	$31.61	$337,429
10/29/2018	MHK	Carson Brian	Pres-Flooring	$116.34	$313,877
12/14/2018	PATK	Welch M Scott	Dir	$30.35	$303,500
3/6/2018	NUVA	Lucier Gregory T	COB, CEO	$50.30	$301,800
12/19/2018	D	Chapman James R.	SVP, CFO	$74.02	$299,998
5/2/2018	CSX	Foote James M	Pres, CEO	$59.91	$299,550
2/21/2018	GOOD	Gladstone David	CEO	$17.50	$297,427
12/19/2018	FUN	Zimmerman Richard	Pres, CEO	$48.92	$293,520
3/1/2018	NUVA	Lucier Gregory T	COB, CEO	$48.57	$291,420
4/12/2018	M	Gennette Jeffrey	COB, CEO	$29.10	$290,998
12/6/2018	HUN	Huntsman Peter R	Pres, CEO	$18.61	$279,195
12/14/2018	JNJ	Prince Charles	Dir	$134.37	$268,731
10/25/2018	GPK	Venturelli Larry M	Dir	$10.59	$264,693
5/11/2018	UAA	Frisk Patrik	Pres, COO	$18.50	$258,934
11/16/2018	W	Gamgort Robert James	Dir	$89.51	$255,104
12/17/2018	SEE	Doheny Edward L II	Pres, CEO	$33.75	$253,125
10/29/2018	SHW	Stropki John M	Dir	$375.00	$253,125
7/30/2018	INTC	Swan Robert Holmes	Interim CEO	$47.69	$250,039
12/12/2018	MDRX	Black Paul	CEO	$10.10	$250,027
2/13/2018	HOLX	Nawana Namal, Director	Dir	$37.88	$250,023
12/19/2018	EPD	Barth Carin Marcy	Dir	$25.00	$250,000

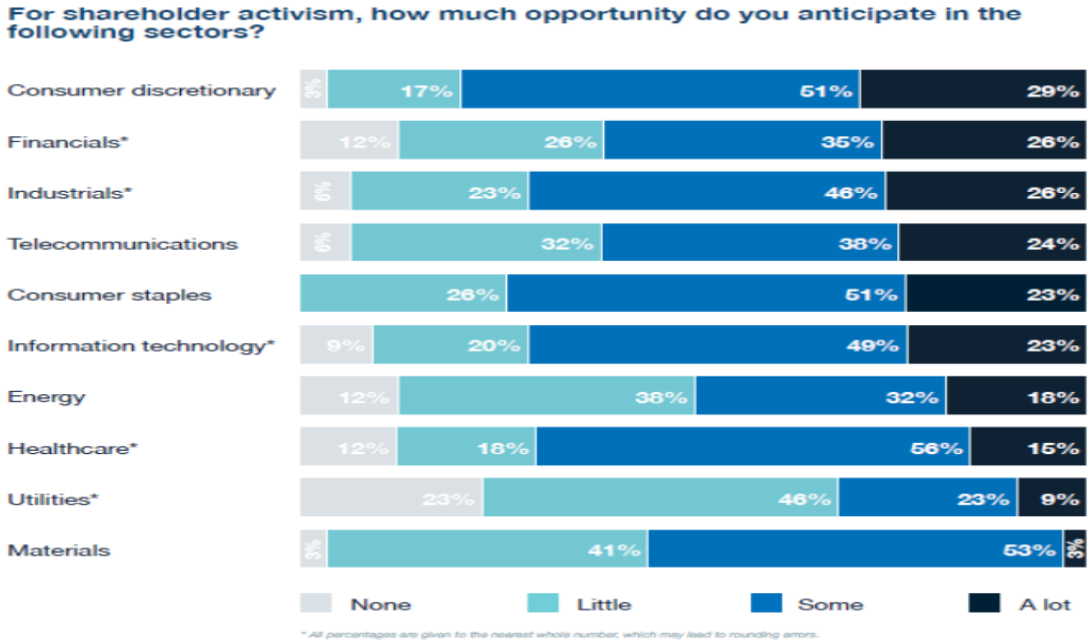
Zillow (Z) saw some sizable insider buying in late November from Jay Hoag, a Founding general partner of Technology Crossover Ventures. These were the first open market buys in Zillow in over two years and Hoag bought over $80M in stock for TCV between $27 to $35. CEO Spencer Rascoff bought stock around $21.60 in 2016, over $250K, while TCV last bought stock on the open market in 2016 at $20 which marked a significant short-term bottom. The $5.9B company is trading 70.5X earnings, 4X EV/sales, and 48X FCF. Zillow continues to post strong growth with EPS expected higher by 21% in FY19 and 117% in FY20. Sales growth is expected to be 44.5% and 51.3% as they move towards $3B annually. In 2019, Zillow will continue integrating their deal for Mortgage Lenders of America which will deepen their exposure to the mortgage business. The company sees the deal as allowing them to streamline the home buying process for customers.

Sprouts (SFM) saw a run of insider buying in late November as more than $2.5M in stock bought by five different individuals. The largest buy was from a Director at $22.83, more than $2M, while the rest were done between $23 and $24. Interim CEO Bradley Lukow bought over $230K in stock as well, his first open market purchases since 2016 when he bought over $500K between $19-20. The $2.96B company trades 17.2X earnings, 0.58X sales, and 30.3X FCF. SFM expects 5.8% EPS growth next year and 13.6% in 2020 with sales growing 11% each year towards $6.5B. SFM continues to remodel stores and expand into new markets as they execute on a multi-year growth plan. SFM is seeing strong

growth in private-label SKUs, up 25% and now 13% of their overall mix, which is helping margins across a number of sections within the store during a period of weakness across the industry. They are also expanding reach with home delivery which is improving customer retention and traffic. SFM continues to struggle with short-term growth in store expenses, largely due to wage pressures and increased healthcare costs. The company announced in November that its CEO was exiting to pursue other interests and they will now engage with a firm to find a replacement, likely an early 2019 event. SFM has long been considered an appealing M&A target with Albertson's and Kroger most often mentioned as they hold a strong foothold in the organic/naturals space which is appealing. The search for a new CEO could be seen as an opportune time for either one of those companies to make an approach.

Activists targeted 174 companies in the first three quarters of 2018, surpassing 169 companies targeted in all of 2017, according to Lazard. Board change and M&A initiatives were each requested in one third of all new campaigns YTD. 42% of campaigns YTD targeted non-US companies, including 21% launched at European companies, 10% at Asian companies, 6% at Canadian companies, and 3% at Latin American companies. In 2019, activist shareholders are likely to see more opportunity to disrupt the consumer discretionary sector, which includes retailers, than in any other industry, according to the study from corporate law firm Schulte Roth & Zabel, Activist Insight and Okapi Partners. (CNBC).





In 2018, activist campaigns mostly targeted board change (37%) while M&A was the next most requested (34%). Change of business strategy (25%), Capital allocation (23%), governance (22%), and operations change (12%) were the next most common strategies. Management change was sought in just 6% of cases, down from 11% in 2017. High profile withhold campaigns were prevalent in 2018. Elaine Wynn sought to replace the entire board at Wynn Resorts (WYNN) and urged shareholders to withhold votes for certain directors. L&B did a similar tactic with QTS. We also saw high-profile campaigns challenge board advancements at both Xerox (XRX) and Home Street Bank.

The most active funds by dollar-value were TCI, Elliott, and Value Act. TCI had just two campaigns, Altaba and Fox, but put forth almost $12B. Elliott took on an unprecedented amount of campaigns in 2018 from Sky to Whitbread and LogMeIn. ValueAct deployed more than $2.4B in new cash into activist campaigns between Olympus, AES, and Citi. Other

notable campaigns include VMWare (Icahn), Newell (Icahn), Bemis (Starboard), Web.com (Starboard), Stewart (Starboard), United Tech (Third Point), Casey's General (JANA), Jack in the Box (JANA), Pinnacle Foods (JANA), Autoliv (Cevian), OpenText (Blue Harbour), and Rayonier (Marcato).

M&A from activist campaigns was used to both start a search or break-up an existing deal. The former was seen in Athenahealth (Elliott), Pinnacle Foods (JANA), and Fox (TCI). The latter was seen in Hyundai (Elliott), Thyssenkrupp (Elliott), Xerox (Icahn), and AmTrust (Icahn). A number of break-up plans were sought including Carrizo (Kimmeridge), Sempra Energy (Bluescope), TIM (Elliott), and Whitbread (Sachem Head).

Notable Activist Funds (Top Positions)

Icahn Capital: CVI, HLF, LNG, DVMT, ARII, NWL, EGN, FCX, NAV, XRX

Pershing Square (Bill Ackman): QSR, LOW, CMG, UTX, ADP, PAH, HHC

Third Point (Dan Loeb): BAX, UTX, CPB, PYPL, DWDP, BABA, AXP, STZ, MSFT, NFLX

Starboard Value: PRGO, MRVL, AAP, SYMC, MLNX, CARS, AABA, WEB, BMS, RPM

Jana Partners: ZBH, HDS, CAG, TIF, JACK, EXAS, EA, ANTM, BSX, KDP, FDC

Elliot Management: AABA, HES, SRE, ARNC, BTU, DVMT, FE, NXPI, CTXS, ORIG

Clinton Group: JPM, PYPL, JNJ, BAX, FTV, NEE, MSFT, MO, SPGI, DRI

Engaged Capital: HAIN, RCII, APOG, BHE, STKL, TIVO, NCR, PETX, ANIK, CLS

Soroban Capital: UNP, SAP, GOOG, NXPI, PX, NSC, BKNG, UTX, BABA, MHK

Southeastern Management: CTL, CNX, FDX, MAT, PK, CMCSA, GE, GOOG, AGN, GHC

Trian Fund: PG, SYY, BK, MDLZ, GE, WEN, NVT, PPG, PNR

Value Act Capital: C, ADS, KKR, STX, MS, CBRE, TRN, BHC, SLM, AWI

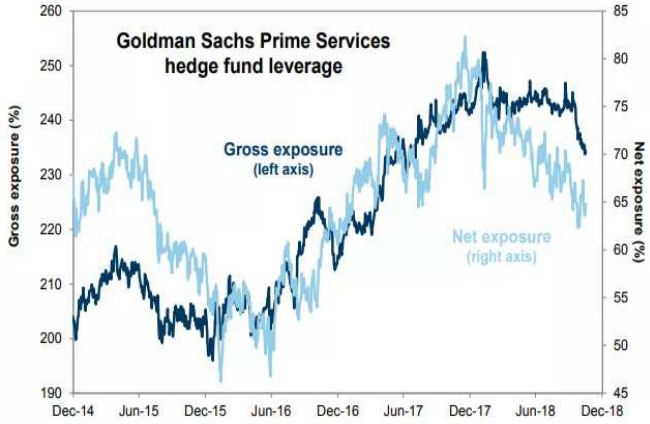
Taconic Capital: FB, GOOG, NXPI, AMZN, AGO, TSG, NFLX, BRK/B, ARNC, CVS

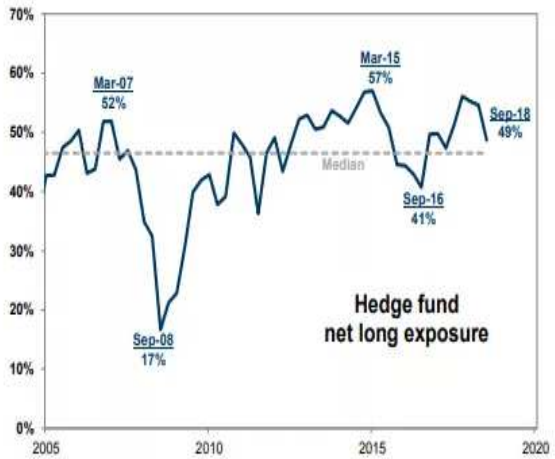
Sandell Asset Mgmt.: AET, FOXA, KS, DNB, ORBK, ESRX, TMUS

Marcato Capital: IAC, TEX, ESL, UNVR, DXC, STAY, NCLH, BLDR, FBHS

Notable Hedge Funds, Positioning & Top Holdings

According to the most recent 13-F filings, net long exposure fell to 49% in Q3, continuing a move lower from the beginning of 2018 when it was closer to 59%. This is near the 2017 lows. October, November, and December were three of the weakest months in some time for funds. The HFRI Fund Weighted Composite suffered its worst month since 2011 in October. A report from Goldman Sachs in November showed funds reducing gross leverage sharply since late September. This appears to be a continuation from the peak in December 2017 but accelerated in recent months. They also note that net long exposure is back near the median-line dating back to 2005 and off of recent highs around 57% in March 2015. As of late November, equity funds were down 4%.





Stock Positioning in Q3

The 50 most important long positions for funds as of Q3 were (alphabetically): ADBE, BABA, AGN, ALLY, GOOGL, AMZN, ANTM, AAPL, T, ADSK, AVYA, BAC, BRK/B, BA, BKNG, CZR, CHTR, LNG, C, CMCSA, CVS, DVMT, DAL, DWDP, ESRX, FB, GM, HLT, IQV, JPM, LBRDK, LKQ, MA, MSFT, NFLX, NXST, NXPI, PYPL, PCG, CRM, NOW, TMUS, TTWO, TDG, FOXA, UNH, V, VST, WFC, WP

This is primarily weighted towards tech (27%) with communications (22.7%), consumer discretionary (13.8%), financials (11.6%), and healthcare (10.6%) rounding out the rest of the most concentrated. This basket of stocks was down 8% in December and 5% over the trailing three-month period. Hedge funds were primarily invested in growth and momentum stocks. The next most favorite stocks were considered 'strong balance sheet' names. The least exposure was to dividend yield and valuation.

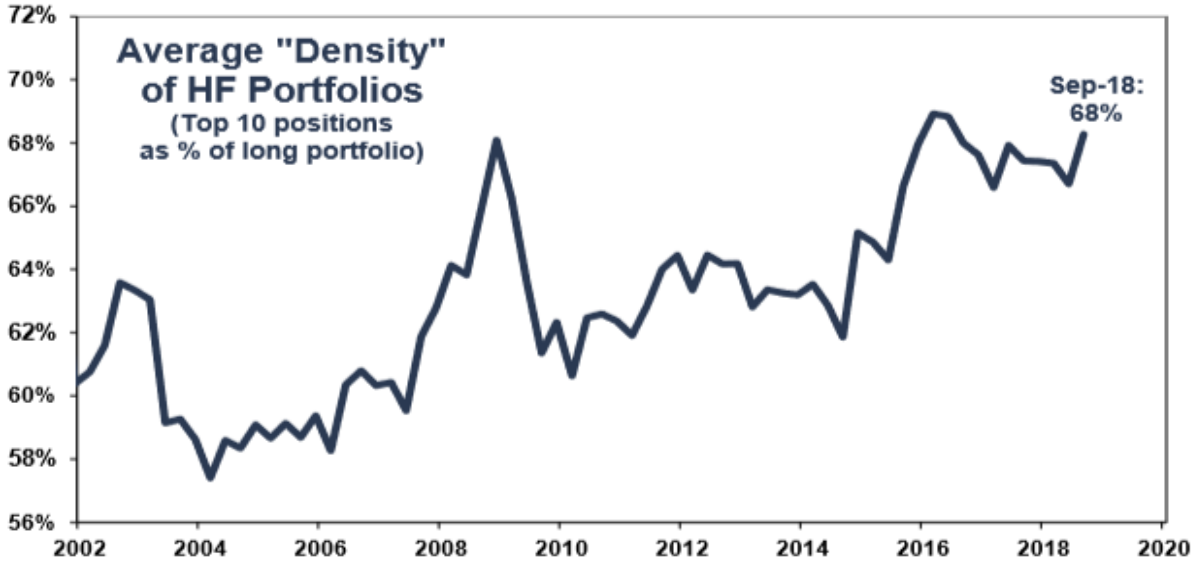
The top Russell 2k names with a boost in hedge fund ownership in Q3 were: NOW, CNP, MNST, TOL, UTX, SYY, NOV, NFLX, FND, TXN, ADBE, PANW, SO, AOS, MDT, ESRX, WBS, DLR, LEA, GWRE.

Those which fell out of favor within the Russell 2K were: T, FB, OXY, MAR, AON, MU, SWK, NOC, WDC, PFG, NXPI, HAL, USFD, SRPT, ULTA, DUK, HLT, DVMT, KNX, SCI

Looking at individual sector weights, funds shifted more into health care and away from tech. Hedge funds had a 17.9% net exposure to HC, the most overweight of any group second only to Communications. The most underweight groups are information tech, consumer discretionary, consumer staples, and real estate. Utilities became overweight for the first time since 2008 in Q3 with Vistra (VST) and PG&E (PCG) the two biggest adds.

The ETFs which are most heavily invested long as of Q3 were (from most to least): SPY, IWM, QQQ, HYG, EEM, XLU, XOP, GLD, XBI, XLI, TLT, IYR, XLF, JNK, EFA, KRE, DIA, XLE, SMH, XLP

Also notable is that concentration remained a theme among funds. The average fund now has nearly 70% of their portfolio in their top ten positions.



The most concentrated long holdings in the S&P 500, by weight, are: INCY, TDG, NRG, FE, IQV, COL, ARNC, AET, STZ, UAL, XRX, FOXA, CMG, KORS, TTWO, DISH, QRVO, AAP, ADS, WYNN

The least concentrated long holdings in the S&P 500, by weight, are: MMM, XOM, CINF, MMC, HRL, BBT, SBUX, LEG, VZ, ECL, CB, MKC, AIG, USB, APH, TROW, MET, APA, ABT, PM

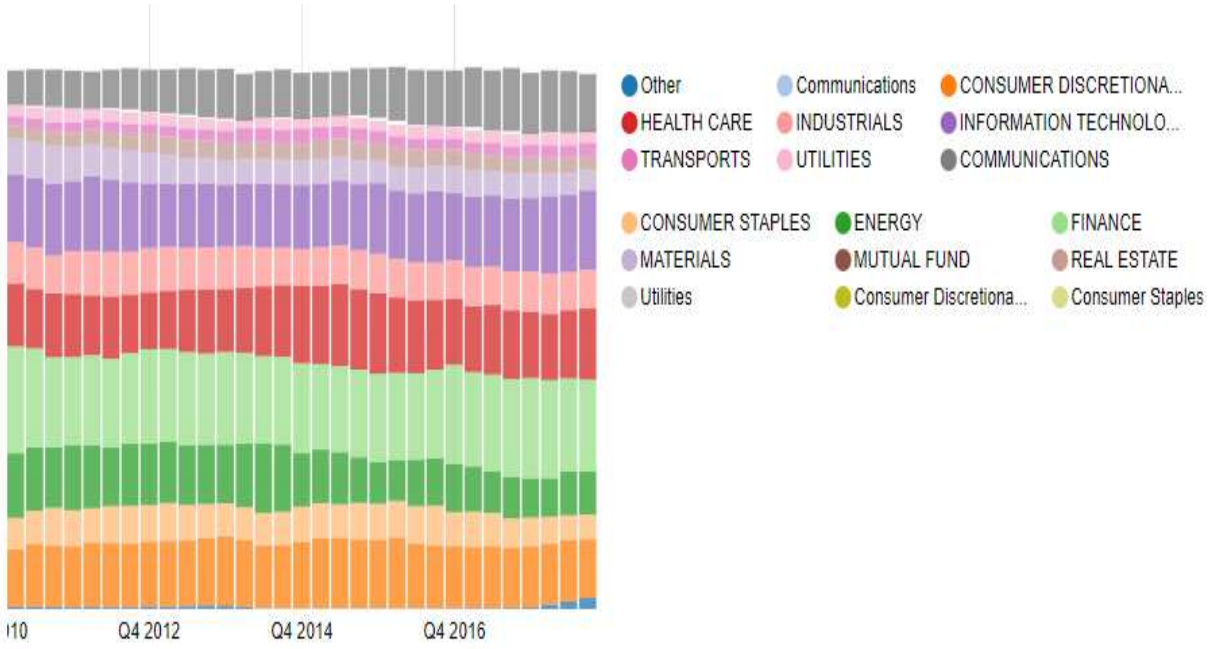
The 50 most important short positions, by weight, are: QCOM, MRK, SBUX, CVS, LIN, DIS, CI, NVDA, INTC, SRE, XOM, WMT, TGT, VZ, AVGO, MU, JNJ, PFE, ABBV, CVX, SPG, PG, ORCL, UTX, UNP, AMGN, WBA, IBM, TWTR, CTL, TXN, CSCO, CAT, MO, HD, PSA, D, CME, DLR, ATVI, PPL, BBY, DUK, MMM, NOC, UAL, KHC, MCD, CLX, KO

The most concentrated short positions: MTCH, DDS, CVNA, RH, LGND, TXMD, ANF, BGS, TLRD, MB, GME, SEDG, IRBT, EAT, RLGY, RIG, TSRO, GTT, MDCO, TDOC, MYGN, PTLA, ANGI, BIG, BKE, Z, NTRI, RDFN, AMBA, PLCE, BBBY, OLED, DKS, MDB, ESV, SKT, WSM, AKS, CARS, SFIX, HCSG, EBIX, ESPR, SYNA, MNK, DISCA, SAM, CRC, BZUN, W

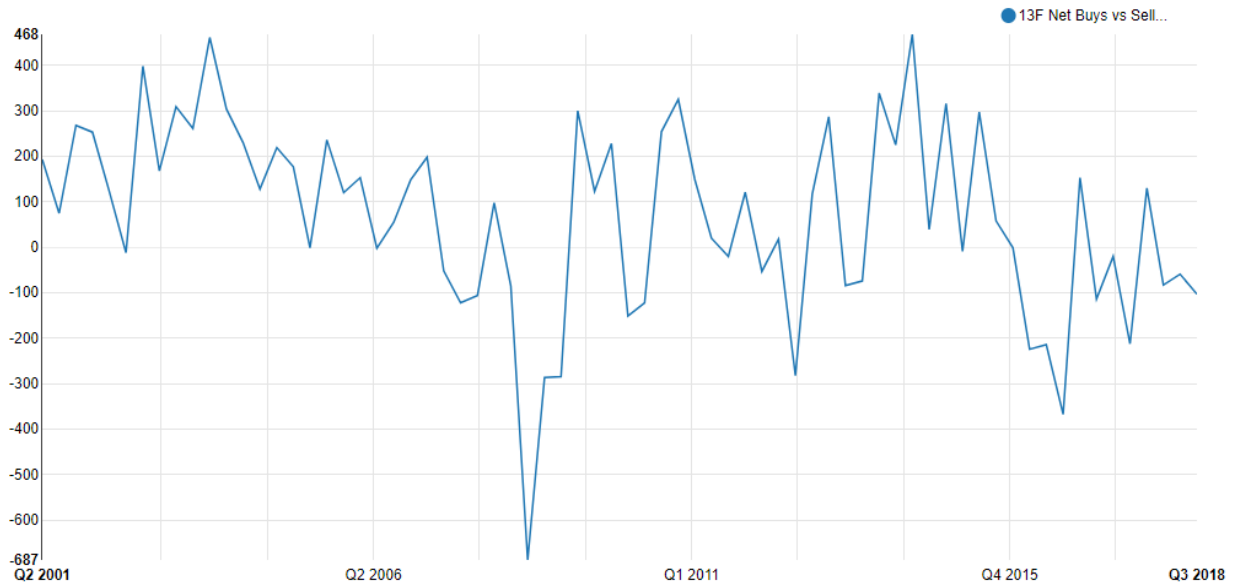
The largest % of new funds adding (most popular in Q3): CA, CNP, MNST, TOL, INFN, UTX, CLDR, NFLX, SYY, IDTI, NOV, FND, PETQ, AJRD, ADBE, PANW, TXN, SODA, PLT

The largest % of funds decreasing (least popular in Q3): T, FB, OXY, AEO, MAR, AON, MU, NXPI, BIDU, WDC, NOC, SWK, PFG, HAL, USFD, DVMT, HLT, ULTA, SRPT, JD

Sector Allocation Since 2010 for Hedge Funds



Net Buyers vs Sellers Since 2001 (2018 with three straight negative quarters)



The Big Ones (Top Adds in Q3, Sorted by Size of Buy)

Berkshire (Warren Buffett): BAC, ORCL, JPM, USB, STNE, BK, PNC, GS, TRV, DAL, GM, AAPL

Soros Fund Management (George Soros): TRCO, COTY, ADM, I, KHC, MDLZ, GSKY, ELAN

BP Capital (T Boone Pickens): WMB, AR, KNX, CNXM, ET, AM, EPD, KMI, SUM, MRO, PAA, SOI, PTEN

Renaissance Technology (Jim Simons): S, CHK, FOXA, PBR, VOD, SIRI, KO, AGNC, SO, CHS, MBT, ORCL, MOMO, AMAT, ATUS, BP, P, ETE, ASNA, KDP, CLNE

Omega Advisors (Leon Cooperman): NLSN, FRAC, SBGI, NBR, CI, BC, TCRD

Paulson & Co (John Paulson): NLSN, DISCK, DVMT, BSIG, NXPI, DNB, YUMC, AET, ESRX, SHPG, CME

Appaloosa Management (David Tepper): WMIH, PCG, STT, WMB, SUM, VST, AAPL, NRG, BYD

Tudor Investment Corp (Paul Tudor Jones): HNGR, VOD, ATUS, T, SNAP, COTY, NXPI, AYX, DBX, ADT, FTCH, TPR, XRT, MPC

Duquesne Capital (Stanley Druckenmiller): IBB, ABT, PYPL, C, MSFT, ZEN, MDT, TMUS, PTLA, QCOM, GILD, NOW, ALXN, ADBE, BURL, GWPH, KSU, HLT, EA

Tiger Management (Julian Robertson): FCAU, SVMK, EB, JD, SE, ZEN, BABA, TAL, SWCH, PDD, TWLO, AAPL, RUN, MDB, FTCH, ADBE, EDU

Bridgewater Associates (Ray Dalio): GE, PHM, X, GPS, INTC, BBBY, WU, IVZ, TOL, URBN, ABX, M, COG, DVA, NFX, CNX, MOS, LBTYA, NRG, DHI

Fisher Asset Management (Ken Fisher): FCX, VALE, TOT, CLF, PBR, BP, RIO, SCCO, GGB, CSCO, RDS/A, TEX, SAN, UBS, OII, MRVL, EUFN, PFE, EC

Millennium Management (Israel Englander): FTV, SWN, HK, CNP, PBR, C, ORCL, S, TRQ, LPI, RIGL, AR, RAD, CTL, PUMP

Oaktree Capital (Howard Marks): EGLE, BBD, CX, WMIH, HK, SMCI, VALE, IBN, BRFS, PCG, YUMC, TSM, WB, TGS, PAM, BCEI, NXPI, AZUL

Baupost Group (Seth Klarman): PCG, LBTYK, YPF, FOX, TRCO, AABA, UNVR, ABC, MCK, SBGI

D.E. Shaw: T, GE, QCOM, CLF, BAC, INTC, MNK, ARNC, EBAY, AMAT, WFC, P, JD, ORCL, FLEX

Farallon Capital (Thomas Steyer): ESRX, TLRY, AABA, GRFS, EXEL, PGNX, RETA, IDTI, AET, EQIX

Maverick Capital (Lee Ainslie): PRSP, DXC, COMM, CBS, LRCX, AMAT, ANTM, INTC, BAX, ALNY, BIDU, SCHW, AAL, CROX, SBH, LUV, STZ, KEY, BIG, YUM, LB, KKR, JBLU

Viking Global (Andreas Halvorsen): GE, BABA, MPC, PCG, DIS, MYL, WPX, BSX, ECA, OLN, BERY, IQ, RACE, PDD, WYNN, EXAS, PGR, ADI, CRM, BMRN, ELAN, LNG, PLCE

Adage Capital (Phil Gross and Robert Atchinson): ABX, FCX, AA, CNP, VVV, AAL, CCJ, OLN, JBLU, HBAN, GTNX, MRVL, TXT, ITT, FOXA, ETR, WMT, SUM

Lone Pine Capital (Stephen Mandel): FDC, NIO, BABA, UNP, WYNN, ATVI, EA, MSFT, CP, ADBE, FB, STZ, GOOG, NOW, NVDA, TDG

Two Sigma Advisors (John Overdeck and David Siegel): NLY, SYMC, HPE, KEY, INTC, PBR, KDP, EXC, CNP, CCL, FOXA, DNR, ORCL, MGM, SEAS, LUV, AXTA, LVS, CAH

Highfields Capital (Jonathon Jacobson): PBR, MGM, EQT, SUM, SHPG, BP, MHK, LLY, SNE, FB,

AQR Capital (Cliff Asness): MU, KR, PFE, GPS, AEO, M, TGT, INTC, APC, TJX, INFY, COP, CSCO, URBN, MSFT, VZ, FL, NKE, MDR, HFC, HPQ, WMT

Discovery Capital (Rob Citrone - Tiger Cub): ECA, IBN, ATVI, EAF, BJ, DK, CXO, FANG, ARCE, FB, PBF, PSX, VLO, SPOT, STZ, TTWO, ELAN, HFC

Coatue Mgmt. (Philippe Laffont - Tiger Cub): QCOM, ROKU, DATA, NKE, MSI, AAPL, WDC, NOW, V, BABA, CMG, JCP, ASNA, CRM, JILL, TUES, KIRK, VMW, BKS, FLWS, FRAN, CROX

Hoplite Capital (John Lykouretzos - Tiger Cub): TPX, CVNA, I, HSIC, TDOC, DLTR, RCL, DIS, AMZN, PEP

Point72 (Steven Cohen): ECA, XOG, WFT, QCOM, FEYE, CMCSA, IMGN, BTE, CZR, AR, AMRN, BHGE, PACB, MAT, APC, AOS, WFC

Hawk's Smart Funds (Top Adds in Q3)

Abrams Capital: CWH, SHPG, BEN, AKBA, LAD, ESRX, ABG, SPH

Akre Capital: FOCS, DLTR

Alkeon Capital: TSM, FTCH, TENB, ZEN, QLYS, DCPH, RP, PVTL, KLAC, ARRY, XLRN, RARE

Altimeter Capital: TRVG, PDD, FB, DBX, MESA, NTNX, MSFT, BABA, CRM, NCLH, EXPE (CALLS)

Alyeska Investment Group: ZNGA, MRVL, NOK, NIO, CA, CDEV, KMI, EA, CAG, LB, NOV, LOGM, RDC, JNPR, BHC, G, BR, MFA, DOCU, RDS/A, ARCC, NVS, BJ, JEC

Anchor Bolt Capital: GPK, VALE, AKS, DAN, CCK, NIO, RRC, DAN (CALLS), RIG (CALLS), BERY, LUV, CF, ABX, CHRW, MOS, ATI, TSN, PCAR, CAT

Ariel Investments: SLCA, SRCL, SLB, NLSN, VIAB, DOX, GRBK, OAK, LAKE, CNTY, AMG, RNWK, PM, ASPN, MAT, QCOM, JCAP

Aristotle Capital: TWTR, PH, ELS, SUI, AAIGF, WSM, ACHC, JCI, PYPL, ANSS, BOKF, BBVA, COF, JPM, AMP, CB, DWDP, SPY, ECL, SBUX

Artal Group SA: RUBY, GM (CALLS), NIO, FOLD, GS (CALLS), WFC (CALLS), FOLD (CALLS), CNAT, FATE, YI, REPL, MU (CALLS), AAL (CALLS), C (CALLS)

Bloom Tree: IBN, PAGS, ENPH, DKS (CALLS), IBM (CALLS), VICR, TLND, SPR, C, WIX, CI, FIZZ, LKQ, TMUS, CTSH, BABA, ACAD, LNC, WLTW, ADBE

Brave Warrior: LEN, RJF, C, DHI, AR, MCO, JPM, ADS, GOOG, SCHW

Cantillon Capital: INTC, EFX, TMO, IBKR

Canyon Capital: GE, EEM, DVMT, MGM, ALLY, RDC, ARNC, EQT, BRFS, BERY, WMB, AGN, AET

Criterion Capital: BABA, IQV, FLT, CCI, SPLK, RP, GWRE, IAC, NOW, GOOGL

Diamond Hill: CVS, HBI, RRR, ST, HIG, OZK, BWA, CADE, TXN, MS, FWONK, COTY, STZ, ALK, BHF, CRI, AET, MET, SANM, GSK, FB, DVN, XEC

Edgepoint: SOGO, CCK, ICE, MAT, FIS, OR, RLGY, WFC, MFC, BAM, WPM, TEL, WBC, AMG, GIL, MIDD, FNV, PSMT, BRK/B, SATS, SRG

Findlay Park: FOXA, LYV, CMCSA, AEM, A, WFC, SLB, SCHW, COO, PB, ICE, HLT, FIS, MLM, NDAQ, SHW, DE, GOOGL, AON, BDX, FISV, KO, CDK, WCN

Gardner Russo: WFC, BRK/B, JPM, ORCL, COP, OUT, BAC, HRL, AAPL, GOOG, XOM, VMC, Y

Gilder Gagnon and Howe: NVTA, AEO, FTCH, GPRO, JD, AMRS, MESA, MTCH, STKL, TMUS, ROKU, NYT, EHTH, ENPH, GS, DOMO, WSC, ALDX, ARCE

Hitchwood Capital: YEXT, WDAY, YELP, NOW, CARG, AMD, TNDM, PLNT, CGC, EXAS, XPO, SFIX, ULTA, ROKU, EPAM, XOP, SNPS, DXCM, ADSK, DPZ, CVNA

Hound Partners: PCG, CARG, FOXA, RPM, CHRS, YNDX, HLT, JELD, NXST, FOMX, ETTX, ROSE

Kensico Capital: EQT, ZAYO, PCG, EBAY, CI, ARNC

Lakewood Capital: CWK, YNDX, MDXG, WUBA, UTX, BLDR, WRK, ASND, LAD, CMCSA, CDK, YY, BIDU, CI

Lateef Mgmt.: NYT, ARNC, SBUX, CBS, FB, APC, DHR

Locust Wood: PAH, LILAK, AABA, CMCSA, LBRDK, CRI, MLM, CRM, ANTM, BABA, MSFT, GOOG, KO

Lyrical Asset Mgmt.: FLEX, QRTEA, WU, GT, JCI, COMM, GLW, SU, ADNT, AFL, WDC, LNC, AER, HTZ, WHR, AMP, NOV, CE, OI, EOG, HCA, ARRS, NCR, ACM, CAR

Melvin Capital: GPRO (PUTS), EA (CALLS), FDC, EA, WYNN, BBY (PUTS), MSFT, SPOT, STZ, RACE, RCL, PLAY, PAGS, WP, NFLX, IQV, TOL (PUTS), GIS (PUTS), KR (PUTS), PLNT

New South Capital: NLSN, HBI, KMPR, VAC, QRTEA, AQUA, IWM

Oak Ridge: EVH, ARWR, NOMD, CBM, ACHC, PODD, MTDR, MRVL, TTWO, DXCM, WM, PTC, PX, BDX, KMI, BX, JPM, CSCO, VZ, QCOM, NVS, ADI, XOM

Passport Capital: HEWJ, ARKG, NVT, UNH, NFLX

Polen Capital: SBUX, NVDA, MDSO, MSFT, ZTS, RELX, FB, DG, CAN, BABA, UL, ICLR, MDT, NKE, BIDU, CHKP, SAP, GOOG, V, IT, REGN, BKNG

Sachem Head: USFD, BABA, CP, YNDX, NXPI

Sailingstone Capital: TRQ, CVIA, HBM, EQT, AR, RRC, EOG

Samlyn Capital: FLMN, FOX, SC, MGY, IGT (CALLS), KEY, FOCS, IGT, TRI, EQT, AMNL, C, BSX, ELAN, USFD, SIX, SEE, PHG, TJX, W, TSS, ETFC, BURL, GSKY

Southern Sun: TVPT, DY, KOP, SAFM, CR, BDC

Stockbridge Partners: GWRE, BKNG

Sustainable Growth Advisors: ABT, SLB, EL, BABA, CTRP, YUM, EDU, PX, RHT, MDLZ, MSFT, HDB, ECL, INFO, FLT, BKNG, GOOG, NSRGY

Three Bays Capital: XRX, MGM, SUM (CALLS), MOMO, GTN, MDCO, WYNN, TSG, SUM, BCO

Tourbillion Capital: GDS, GLUU (CALLS), MS (CALLS), GILD, COUP, SPB, ETFC, CZR, CLX (PUTS), WTW, NFLX

Turtle Creek: MGA, BERY, KNX, KMX, WBC, BWA, GIL, SSNC, AOS, SCI, PII, HDS, CCOI

Valinor Mgmt.: GOGO, CRM, BYD, SSNC, NSC, NFLX, NEXT, BABA, AVGO

Vontobel Mgmt.: ITUB, ABEV, CIB, YUMC, NTES, KO, CMCSA, CME, WFC, JNJ, BUD, FB, PEP, MLM, MDLZ, MTB, AL, PNC, DIS, HDB, APTV, MSFT, VIPS, APH, BKNG

Wasatch Advisors: INO, LLNW, KNX, SHAK, FIVN, B KAI, TNAV, SGMO, CWH, LONE, VRNS, CHUY, SNHY, HCSG, MGY, PFPT, MXL, TRNS

Wedgewood Partners: CHRW, ODFL, ULTA, T, BP, VZ, TD, MN, JNJ

Notable New Positions for Funds in Q3

Farfetch Limited (FTCH) is a $6.69B company which saw notable buys in Q3 from Alkeon Capital and Gilder Gagnon and Howe. Dragoneer Investment, Light Street Capital, Winslow, and Whale Rock Capital were also notable buyers in the new issue. FTCH is an online platform for luxury fashion retailers which features over 700 boutiques and brands from around the world like Tiffany. Shares trade at 12.7X sales and 6.4X cash with a path to profitability over the next five years. The company has a big opportunity as the $300B luxury goods industry has minimal representation online and e-commerce sales are only 9% of sales according to CSFB. FTCH is already established as a leading platform for curated/aggregated inventory and JPM sees 30%+ platform GMV growth over the next three years.

Berry Global (BERY) is a $6.62B packaging company which saw notable buys in Q3 from Canyon Capital, Turtle Creek, and Anchor Bolt Capital. Luminum Management, Viking Global, Blue Harbour, Eminence Capital, and Fiera Capital are other notable holders. BERY makes specialty packaging for consumer products in health/hygiene as well as engineered materials like trash-can liners, foil, laminating materials, flame-retardants, and specialty tapes. They also make plastics for items like plastic drink cups. Shares trade 12.2X earnings, 0.84X sales, and 9.9X FCF. They carry a lot of debt after a series of acquisitions and 2019/2020 will focus on deleveraging and cost-driven synergies as they integrate operations. Jefferies has a $67 PT for shares expecting strong cash flow, capital return and deleveraging to help drive multiple expansion. BERY faces a number of inflationary headwinds but passing through price hikes while maintaining their position as a low-cost supplier.

New York Times (NYT) is a $4.44B newspaper publisher which saw notable buys from Gilder Gagnon and Howe and Lateef Investment last quarter. Other notable holders include Darsana Capital, Jackson Square, OZ Management, Fairpointe Capital, Slate Path, and Soma Equity Funds. NYT has developed from a leading provider of newsprint services into a multi-faceted media company with online, video, and book development. Shares trade at 28.24X earnings, 257X sales, and 8X cash with a small yield and mid-double digit EPS growth. The company has seen significant online subscriber growth over the last two years, buoyed in part by a heavily-contentious new cycle and focus on US politics which should build into the 2020 Presidential election. As of last quarter, they now have 3.1M digital subscribers. They've focused a lot on discounting and marketing spend to build a larger following which is paying off in higher ad-spend.

Biotech Preview 2019

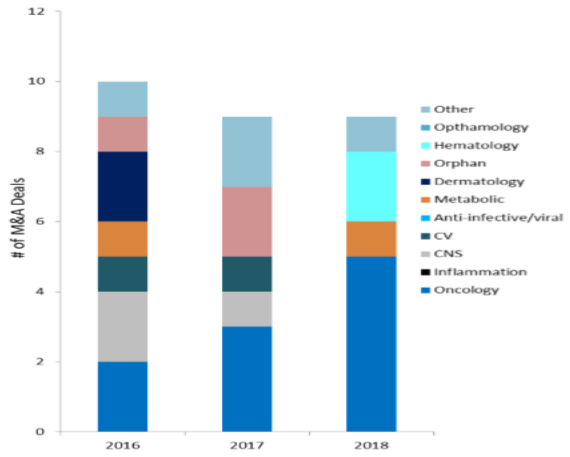
It was a rocky year for biotech stocks with the XBI down 19% and the IBB down 11.4%, both underperforming the S&P. The overall environment remained noisy with Washington pressures, few major drug approvals, and a lack of major M&A deals (Takeda's big deal for Shire distorting some of the numbers). The best large-cap performers for the year were Vertex (VRTX) and Amgen (AMGN), both up 6-7%. The worst large-cap performers were Celgene (CELG) and Incyte (INCY) both down over 30%. Mid-cap bio was led by Amarin (AMRN), Sarepta (SRPT), and Intercept (ICPT). The weakest names were Acadia (ACAD) and Sage Therapeutics (SAGE). A potential rebound in large-cap value would be a positive next year as the group executed poorly in 2018. They could also be seen as a more defensive sector and face very low expectations. Risks include drug pricing, failure in some key data sets like NASH, and less large-scale M&A. ***The first big event of the year will be the SF Healthcare conference on 1/7.***

M&A Recap

2018 was an in-line year for deals in the biotech industry, continuing the recent trend and dashing some hopes as the tax reform picture became clearer and repatriated cash was expected to go to work. This year's deal making was roughly in line with the last two years in terms of number of deals while dollar-value rose but not near 2014 or 2015 levels. In 2016 there were 59 M&A deals worth $105B and in 2017 there were 54 deals for $52B. There were 55 deals in 2018 at $149B including the massive $64B offer from Takeda. There was some concern among large-cap bios as more money went into share buybacks. The year's biggest deals were:

- **Takeda** acquiring **Shire (SHPG)** for $64B
- **Sanofi (SNY)** acquiring **Bioverativ (BIVV)** for $11.6B
- **Celgene (CELG)** acquiring **Juno Therapeutics (JUNO)** for $9B
- **Novartis (NVS)** acquiring **Avexis (AVXS)** for $8.7B
- **GlaxoSmithKline (GSK)** acquiring **Tesaro (TSRO)** for $5.1B
- **Sanofi (SNY)** acquiring **Ablynx** for $4.8B
- **Boston Scientific (BSX)** acquiring **BTG** for $4.2B
- **CVC Fund** acquiring **Recordati** for $3.5B
- **Celgene (CELG)** acquiring **Impact Bio** for $2.4B
- **Les Laboratoires** acquiring **Shire's (SHPG)** oncology business for $2.4B
- **Novartis (NVS)** acquiring **Endocyte (ECYT)** for $2.1B
- **Eli Lilly (LLY)** acquiring **Armo Bio (ARMO)** for $1.6B
- **Kolmar** acquiring **CJ Healthcare** for $1.2B
- **Illumina (ILMN)** acquiring **Pacific Bio (PACB)** for $1.2B
- **Alexion (ALXN)** acquiring **Syntimmune** for $1.2B
- **Lundbeck** acquiring **Prexton Therapeutics** for $1.1B
- **Aurobindo Pharma** buying Sandoz's Dermatology Business for $1B

Biotech premiums remain high (~60% vs 30-40% for other sectors) according to BAML and venture capital continues to pour money into the sector which supports loftier valuations. Deals in 2019 are expected to focus on emerging areas like oncology/hematology, CNS, and orphan diseases. According to Forbes, VC spent $26B on health startups in 2018. Another trend which picked up in 2018 and likely continues next year is selling non-core assets. Many large pharma companies have shuffling portfolios to sharpen their focus on other areas and bolt-on deals likely continue. JPM noted recently that they expect M&A to continue in 2019 due to growing cash balances and concerns about long-term growth (patent cliffs, etc). Large Caps AMGN, BIIB, CELG, and GILD ended 3Q18 with $30B, $6B, $4B and $31B in cash, respectively.



Consensus buy-side M&A candidates: **SRPT, NBIX, SAGE, CLVS, AMRN, ARGX, ZGNX, MDGL, DVAX, EXEL, MDCO, INCY, IOVA**

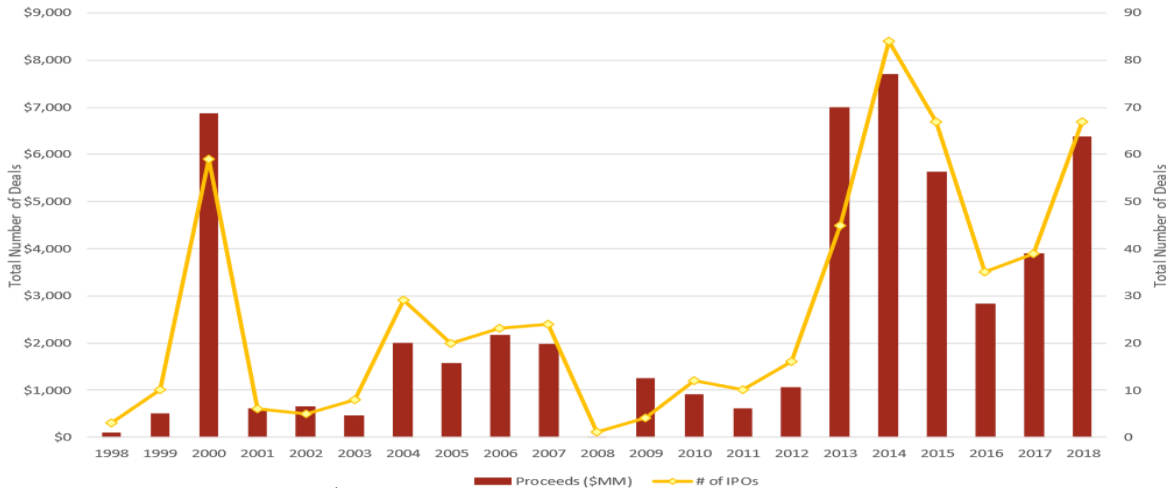
China

In 2018, China emerged as a major player in the biotech sector after regulatory changes drew an outpouring of investor money into one of the world's largest markets. The country's FDA (CFDA) completely rewrote the standards for drug development and approval which has led to a spike in product approvals and launches with a 90% reduction in review time. The Chinese government has identified pharma as a key area of future growth as they move away from manufacturing. In all, the sector has raised almost $30B this year according to McKinsey. China's drive into the industry is being fueled by not just explosive growth in their population but also from growing need for treatments to issues like influenza, diabetes, and cancer. In 2015, the Chinese Journal of Cancer reported that 36% of the world's lung cancer diagnoses came from China yet the survival rate was below average. One of the key US-listed names in the China market is **Beigene (BGNE)** (see below for more).

The big growth in the market this year isn't without issues. Personal privacy has been an issue with trials, an area where there are fewer regulations than the US. There was also a major scandal this year involving faulty vaccines with more than 900,000 injections in total found to have been substandard. Finally, in December there was general uproar from the biotech community after a Chinese doctor disclosed that he had successfully used CRISPR gene editing on two babies. The procedure is illegal in many countries including the US.

IPO Market

The IPO market was very strong for biotech in 2018 including the largest offering ever in December when Moderna (MRNA) debuted with a $6B market cap. For the year, there were more than 64 new issues with 51 over $50M and more than $7B raised (ex-MRNA). More than 35% of deals priced at the high-end or above the range, in line with last year. The average 1-month performance for new issues was 23%, in line with last year. Overall, 2018 IPOs underperformed other recent issues down 13% by year-end. Jefferies noted in December that more early-stage companies are moving to the public markets as well. In total, 21 companies with trials pre-Phase 2 went public this year vs 9 last year. Some of the year's top performers were **ARMO, Allogene (ALLO), Solid Bio (SLDB),** and **Allakos (ALLK).** The losers were **Menlo (MNLO), Sol-Gel (SLGL),** and **MeiraGTX (MGTX).**



Pricing Pressure

In January, the drug pricing bill will be debated in the house. Concerns over drug prices remained a hot button issue with the President using the talking point throughout the year, although relatively few concrete steps taken. In May, the American Patients First initiative was introduced which focuses on reducing prices for the elderly, getting foreign governments to pay more, and changing how prescription drugs are marketed to public. The initial reaction was largely un-impressive as policymakers, drug companies, and other advocacy groups saw it as lacking details and too many regulatory hurdles to be jumped. HHS estimates that the initiative could reduce Medicare payments for physician-administered drugs by 30% but drug companies warned that the move would ultimately hurt US patients. In October, Trump outlined more details for the plan that would allow Medicare to start negotiating drug prices to bring costs in line for its Part B coverage with other countries. HHS estimates $17B in program savings over five years.

Notable Biotech Focuses for 2019

Tocagen (TOCA) will have Phase 3 data for TOCA 511 & TOCA FC in recurrent high-grade glioma due in 2019 with 2nd interim analysis in the 1H of the year and final analysis by year-end. The drug candidate is a two-part cancer

immunotherapy which uses a gene therapy agent and prodrug to treat brain cancers. The company believes a successful outcome in 2nd interim data may trigger a rolling BLA filing. The company sees a significant revenue opportunity with over 8,000 eligible patients with a high unmet need and few treatment options. They also expect the platform to show safety across a number of indications from brain, colorectal, pancreatic, breast, bladder, and prostate cancer. The $254M company trades 14.1X sales and 3.18% cash with their burn-rate expected to leave them with around $70M by year-end. Short interest is 7.5%. Shares traded higher by nearly 30% in 2018. TOCA sees limited coverage with HC Wainwright with a Buy and $15 PT in November. B Riley with a Buy and $22 PT. Citi has a $27 PT for shares noting that TOCA has an innovative treatment for high grade glioma with potential for 600% share upside and downside risk of 56% into data.

Fibrogen (FGEN) will report pooled MAC CV safety data for Roxadustat in March/April 2019 after releasing positive Phase 3 data in late 2018. The company is also initiating Phase 3 studies in idiopathic pulmonary fibrosis, and in unresectable locally advanced pancreatic cancer in the first quarter of 2019. Roxadustat is an HIF inhibitor which helps increase red blood cell production in patients with anemia and tested against Epogen from competitor Amgen. The market for EPO drugs is estimated to hit $11.9B by 2020 driven by rising incidences of cancer, renal disease and HIV. The $3.39B company trades 23X sales and 5.19X cash with short interest around 3.77%, rather low for a SMID-cap bio. Analysts have an average target for shares of $76. Jefferies out positive in late 2018 noting that positive data has upside to $75 in the near-term with longer-term upside to $150 depending on how good the MACE analysis is vs EPO. If there are major safety concerns that jeopardizes approvability, they see $10-$20 value. Physicians and KOLs have said non-inferiority MACD in non-dialysis is positive and would be FDA approved with potential for multi-billion in sales. Management also thinks key secondary indications could be very underappreciated. Roxa could also be much safer for the CMS population. Institutional ownership fell 12.5% last quarter. Astellas Pharma is a top holder with $229M in stock.

Ascendis Pharma (ASND) will report Phase 3 data for TransCon hGH in Q1 2019 for the treatment of growth hormone deficiency in children. The heiGHt trial will look at once-weekly dosage vs a daily hormone therapy in treatment-naïve patients. The company believes TransCon has potential to be the best-in-class long-acting human hGH therapy. ASND sees a big market for their product as they expand indications with a greater than $3B market opportunity. The market currently is fragmented among a number of competing treatments with GHD ~50% of cases, Turner Syndrome, Idiopathic Short Stature, Prader-Willi, and SGA making up the majority of others. Analysts have an average target for shares of $78.25 with 8 buy ratings and 1 hold rating. CSFB started coverage at Buy with an $80 PT on 11/9. They sees TransCon as a unique, leverageable platform which allows the development of clinical candidates with established clinical proof-of-concept, delivered with an optimized pharmacokinetic profile. They have an 85% PoS for Q1 data in GH with $10-$15 upside. It would also increase potential for M&A. They expect the majority of patients currently on daily therapy to convert to long-acting growth hormone products, and model TransCon hGH capturing 30-35% of the market or $1.0 to $1.2B in sales. Institutional ownership fell 4.75% last quarter. Lakewood Capital a top buyer of shares while RA Capital holds a $300M position. The $2.68B company trades 6.6X cash with 11% short interest.

Alexion (ALXN) has a busy 2019 ahead with Phase 3 data due in atypical Hemolytic Uremic Syndrome (aHUS) in Q1 as well as oral proceedings for a new composition of matter patent for Soliris in the EU. The patent hearings in early February could reduce biosimilar risk until 2027 while non-issuance could lead to a 2022 launch. The move would also give them more time to convert users of Soliris to Ultimiris. ALXN also has a PDUFA for ALXN1210 in PNH on February 18th. The company is pushing for ALXN1210 to become the new standard of care for PNH which has a high fatality rate. According to the company, "ALXN1210 would be the first and only long-acting complement inhibitor for patients with PNH, providing immediate and complete inhibition of the C5 complement protein that is sustained over an eight-week dosing interval." The $26.8B company trades 13.2X earnings, 6.8X sales, and 17.5X cash. Shares are basically flat for the year. Analysts have an average target for shares of $165 with 16 buy ratings and 2 hold ratings. Citi was positive in November on the ALXN1210 launch despite competition. ALXN management is aware of competition and pricing pressure and is armed with a multi-pronged strategy to tackle both. Institutional ownership fell 16.8% last quarter. Baker Bros. are a top holder with 8.55M shares, their fourth largest, while Sands Capital also owns 2.96M shares. In May, a Director bought $1.2M shares at $120.80.

PTC Therapeutics (PTCT) will have two key phase 3 readouts in 2019 for risdiplam, their oral treatment for spinal muscular atrophy. The company expects FIREFISH data in type 1 patients potentially in the 1H of the year while SUNFISH data in type 2/3 patients will be in Q4. Risdiplam is being developed with Roche and is an oral medicine that is systemically distributed and designed to increase SMN protein levels in the body. It seeks to replace a piece of RNA that is missing in patients with SMA. In early studies, 90% of treated patients achieved milestone development within 6 months. Its main competition is Spinraza from Biogen (BIIB) and Ionis (IONS) which is delivered via injection. A launch could come by 2020 and would set up a big growth driver for years to come for PTCT. Analysts have an average target for shares of $48. CSFB is positive on the two trials noting that its oral administration and potential for differentiated efficacy

could largely supplant Spinraza's current market leadership and position it as the best option for patients unable to receive gene therapy. The firm models peak sales of ~$3b with PTC receiving single digit to mid-teens royalties.

Anaptys Bio (ANAB) will have key Phase 2b data for etokimab in atopic dermatitis sometime in the 2H of 2019. Eto inhibits activity of IL-33 which is the 'gatekeeper' of allergic response of atopic diseases like dermatitis, food allergies, and asthma. The treatment has shown safety and efficacy in early trials where a single dosage suppressed IL-33 function for nearly three month. Phase 2a data in atopic dermatitis showed improvement in all twelve patients enrolled including better eczema relative to a common baseline. The Phase 2B trial, also known as ATLAS, will enroll 300 patients with moderate-to-severe adult atopic dermatitis. They will also initiate a Phase 2 trial evaluating eto in eosinophilic asthma sometime in early 2019. Analysts have an average target for shares of $132.50 with 9 buy ratings and 1 hold rating. JP Morgan positive in late November and CSFB has a $147 PT. They think the positive Q3 '18 readout from the Ph2a eosinophilic asthma study de-risked the asset and has increased investors' confidence in the potential for a broad utilization of the product across several atopic indications. They think the two Ph2 readouts will establish etokimab as a best-in-class IL-33 with a profile that is potentially more attractive than market leader Dupixent.

Array Biopharma (ARRY) will report Phase 3 data for the BEACON trial in the 1H of 2019 for the treatment of BRAF-mutant colorectal cancer. In August, the FDA granted Breakthrough Therapy Designation to BRAFTOVI, in combination with MEKTOVI and cetuximab. BRAFV600E-mutant mCRC patients have a mortality risk more than double that of mCRC patients without the mutation, and currently there are no therapies specifically approved for this high unmet need population. The safety lead-in study of the triple therapy showed safety in the 30 patient group as well as significant progression-free survival and ORR (27 of 28 showed tumor regression). The risk of colorectal cancer is significant and the BEACON CRC population is ~10-15% of the overall market. Recent reports indicate that the TAM for branded therapies in the space will be $11B by 2025. Analysts have an average target for shares of $23.50 with the majority at a Buy equivalent. Stifel has a $23 PT for shares and is positive on ARRY's ability to garner meaningful market share from incumbent Novartis on the basis of a marketing message of improved safety/tolerability and improved efficacy. Firm believes the longer-term pathway to a front-line BRAF-mutant mCRC label remains underappreciated.

Deciphera (DCPH) has key Phase 3 data due mid-year for DCC-2618 in gastrointestinal stromal tumors (GIST). The INVICTUS trial will set up a NDA for full approval in fourth-line GIST patients for which there are currently no treatments approved. DCC-2618 is an investigational kinase switch control inhibitor which blocks KIT mutations across exons 9, 11, 13, 14, and 17. The company is evaluating it in systemic mastocytosis and other solid tumors which are in early stage trials. The company sees a significant market opportunity in the US, EU and Japan. They see more than 6,200 patients in 4th line GIST with 7,600 in 2nd line. Other indications could expand the market by another 12,000-13,000 patients in GBM and Glioma and mastocytosis. Analysts have an average target of shares of $45.75 with 8 buy ratings, 1 hold rating, and 1 sell rating. Piper positive in November after BPMC data noting that Deciphera's DCC-2618 has a far better safety profile. As such, the firm continues to see the company as well positioned in gastrointestinal tumors. They noted that with the backdrop of some investor concern that the initial durability compares well as the ~9.7 month progression free survival in second-line GIST and appears "decisively ahead" of Sutent's 6.1 months, derisking the Phase 3 head-to-head trial. Guggenheim named DCPH a Top Pick in September with a $71 PT. The firm believes the GIST market opportunity for selective KIT inhibitors is significant -- $1.7B in the US. In addition, KIT inhibitors also have utility in systemic mastocytosis, representing another $1.4B.

ImmunoGen (IMGN) has a major binary event in the 1H of 2019 with their Phase 3 trial FORWARD-1 which examines Mirvetuximab for the treatment of platinum-resistant ovarian cancer. IMGN is focused on antibody-drug conjugates (ADCs) which are a more highly targeted therapy for the treatment of cancer. ADCs will only target cancer cells so healthy cells are not impacted as much as traditional chemotherapy drugs. The market opportunity for mirvetuximab is around $1.3B in the US under the assumption that the drug would get approval not just as a standalone but also in combo trials. The company is currently evaluating mirvetuximab with Keytruda, Avastin, and carboplatin. Success in those combo trials would greatly expand their TAM in ovarian cancer as well as open up for other indications. Guggenheim was out positive in September with a $19 PT. They think IMGN is one of the best risk/rewards in their coverage. They believe the magnitude of market opportunity for mirvetuximab in prOC and label extension opportunities are being underestimated by the Street. They also see other pipeline positives. IMGN-779 and '632 could have a differentiated profile from existing agents that have validated these respective targets (CD33 and CD123) in hematological cancers while the collaboration with Jazz Pharma (JAZZ) maximizes their potential.

Beigene (BGNE) has a number of key catalysts in 2019 to watch including potential approval for zanubrutinib in both the US and China. The drug is a BTK inhibitor which stops development of cell survival in certain B cell malignancies. The drug is being tested in Waldenstrom macroglobulinemia (WM) which is a type of non-Hodgkin's lymphoma. WM cells grow within the bone marrow which can lead to anemia and other infections as it makes it hard for the body to fight infection.

The company expects Phase 3 data from a trial comparing zanu to Imbruvica in the 2H of 2019 which will be key. Zanubritinib is being tested in chronic lymphocytic leukemia and mantle cell lymphoma. BGNE believes it can become a leading BTK inhibitor vs peers like Imbruvica and Calquence and penetrate the $15B global market in hematological cancers. BGNE estimates that they will be able to capture a significant market in China as well as reimbursement expands in oncology. The latest NRDL includes premium, innovative drugs and BGNE thinks they can expand their commercial opportunity and build scale with positive results in 2019. The drug has fast-track status from the FDA and they are planning to file an NDA early in the year. Analysts have an average target for shares of $178 with 10 buy ratings and 1 hold. Guggenheim has a Buy rating and $214 PT. They think zanu will capture a fraction – if not the majority of the global BTK inhibitor market in hematological cancers. Tislelizumab is positioned well in China to capture a share of the emerging anti-PD1 market there. They also believe the Chinese oncology market is poised to experience significant growth as a result of recent regulatory and reimbursement reforms as well as the country's growing middle class and level of disposable income.

Mirati Therapeutics (MRTX) will report key Phase 1 data in MRTX-849 in KRAS G12C mutations sometime in the 2H of 2019. They also expect to initiate Phase 3 trials in sitravatinib in NSCLC in the 1H of the year. KRAS mutations are drivers of multiple forms of tumors across a number of indications. KRAS mutations are prevalent in the three major types of cancer with mortality: Pancreas, colorectal, and NSCLC. The history of drug development to halt KRAS mutations has been largely unsuccessful so far and MRTX themselves calls KRAS the 'holy grail' of mutated oncogene targets. MRTX is exploring an orally available small molecule inhibitor which has already demonstrated regression of tumors in a small subset of patients. They expect to initiate enrollment in January before proof of concept data later in the year. The market potential for a treatment in KRAS mutations is significant with 23,000 patients in the US. MRTK believes the commercial opportunity is $3B to $4B. Analysts have an average target for shares of $55 with 8 buy ratings and 1 hold rating. Guggenheim initiating coverage in September with a $54 PT. They are cautious in the results given that it is difficult to value preclinical MRTX-849 given the collective industry's inability to target KRAS to date. They also note MRTX has had a mixed history and not yet sure that the company will be able to present meaningful clinical data by year-end. B Riley started coverage at Buy on 12/3 with a $60 PT. They see potential opportunity for lead candidate sitravatinib to transform the second-line treatment of NSCLC. In particular, firm believes the initiation of a pivotal Phase III trial investigating the combination of sitravatinib plus a PD-(L)1 inhibitor versus docetaxel, guided to initiate in 1H19, could potentially serve as a catalyst for MRTX shares.

Biogen (BIIB)'s work on Alzheimer's therapy aducanumab is one of the most watched stories in biotech and will continue to be in 2019. In a BAML buy-side survey, a potential interim update on Phase 3 clinical data was the most anticipated event of the year. Full Phase 3 data is not expected until 2020. Aducanumab was originally developed by Neurimmune in 2007 and since 2017 Biogen has been collaborating with Eisai on later trials. The drug is focused on reducing the number of amyloid plaques in the brain which may slow neurodegeneration and disease progression. The company did Phase 1 trials with over 190 patients and saw time- and dose-dependendent reduction in plaque levels. The Phase 3 trials, EMERGE and ENGAGE, will look at more than 1,600 patients using 1-month doses in both low and high IV infusions. Alzheimer's has been a huge potential target for many of the largest pharmaceuticals in recent year but many failures and discontinued trials. Other amyloid-targeted immunotherapies in trials right now include Roche, Genentech, and Eli Lilly. The market for Alzheimer's is massive with an estimated 6M Americans suffering from a form of the disease. The Alzheimer's Association expects cost of caring to rise to $1T by 2050 as more cases develop and older generations expand. Analysts have an average target for shares of $382 with 21 buy ratings and 7 hold ratings. Oppenheimer was a $380 PT and on 10/29 defended the stock after weak BAN2401 data. The firm remains confident the top dose of aducanumab is efficacious based on increasing separation from placebo over time and they disagree with the conclusion that ApoE 4 status does not impact aducanumab treatment benefit based on small patient numbers in PRIME. Piper also positive on the differentiation noting that on the surface, the data supports the notion that Eisai's reported statistical significant decline in progression was not driven by the APOE4 carrier imbalance in the 10 mg/kg bi-weekly dosing cohort. However nuances in the data, coupled with a "rather convoluted presentation," are likely to provide ample ammunition for A-beta bears at least until the 2020 full Phase 3 readout for aducanumab. The firm still believes in aducanumab.

Sage Therapeutics (SAGE) will report key data for SAGE-217 in postpartum depression sometime in January which will give more details on both the safety and efficacy of the treatment. They also expect early clinical data for SAGE-217 in bipolar depression in 2019. The company's trial was given breakthrough designation by the FDA and is hoping to reduce depressive symptoms in patients within two weeks vs the longer-term treatment with antibiotics.. SAGE-217 is an allosteric modulator which targets specific synaptic receptors in the brain. The company believes 217 will differentiate itself to physicians as an oral compound will be more preferable to an IV administration. The system can significantly regulate CNS function which makes the treatment attractive as it could cover multiple mood and movement disorders which is driving higher estimates for the potential market for SAGE-217. MSCO modeled more than $2.5B peak sales

while Cowen sees $3B+ in MDD and PPD alone. Analysts have an average target for shares of $200 with 12 buy ratings and 1 sell rating. JP Morgan was positive on the trial recently. They noted that if positive, the substantial scarcity value of a wholly owned, potentially paradigm shifting asset with the possibility of broad applications across an array of depressive disorders has the potential to drive substantial upside throughout the year. if positive, the data will set off a domino effect ahead of Phase 2 bipolar data in 1H19 and much more so ahead of Phase 3 MDD data that we anticipate later in 2019.

Intercept (ICPT) will have key Phase 3 data for Ocaliva in adult non-alcoholic steatohepatitis (NASH) patients due in the 1H of 2019. The drug was approved in 2016 for the treatment of PBC in combination with ursodeoxycholic acid but the move into NASH would be a major step as it has no approved treatments. NASH is a progressive liver disease which causes excessive fat buildup and chronic inflammation. The lack of treatments for the disease has driven up the number of transplants in recent years and on pace to pass hepatitis C as the leading cause of transplant. ICPT is considered a significant player in the indication with peers like Madrigal and Gilead also on track for 2019 data, although the latter will file an NDA earlier. Ocaliva works to reduce toxic bile buildup in a person's liver and showed promising early data in NASH. It is the only NASH therapy to receive breakthrough designation from the FDA. The company is also exploring other indications for Ocaliva including PSC and biliary atresia. The market for Ocaliva is significant with peak sales estimates in NASH around $8B. The low-end of estimates is closer to $2B. In 2017, there were some concerns over the safety of Ocaliva after 19 patients died taking the drug. Seven patients were taking more than the recommended dosage. Dosing issues will be a key issue to watch in NASH data. Analysts have an average target for shares of $150 with 14 buy ratings and 5 hold ratings. Goldman upgraded shares to Buy from Sell in July with a $157 PT. The firm sees 60% upside from positive data and expects Ocaliva to achieve at least one of two primary endpoints considering positive read-through from the Phase 2 trial; a diminished standard for clinical efficacy; and the support of key opinion leaders for Ocaliva's NASH profile. The firm thinks Ocaliva's differentiated mechanism and first-mover advantage can drive peak sales estimates of around $3.7B following a 2020 launch.

Other Key Early Year Clinical Data

Timing	Company	Event
1H 2019	ALKS	Head to Head Data for Arisada vs Invega
Early 2019	ALNY	Topline Phase 3 data for Givosiran
Q1 2019	ASND	Disclosure of New Therapy Vertical
1H 2019	ATRA	Phase 3 Tab-Cel Data in EBV+
Q2 2019	BCRX	Topline Data from APEX-2 Trial in HAE
1H 2019	BMRN	Phase 1/2 Data for Val Rox in Hem A
Q1 2019	BOLD	Phase 1/2 AT132 Data
Q1 2019	CELG	Submission of NDA for Ozanimod
1H 2019	CELG	Pivotal Data for Liso-Cel in R/R DLBCL
February	FOLD	Potential Update on ATB200 at Pompe Symposium
Early 2019	GBT	Phase 3 Data for Voxelotor in Adult SCD
Q1 2019	GILD	Phase 3 Data for Filgotinib in RA
Q1 2019	GILD	Phase 3 Data for Selonsertib in NASH
1H 2019	GTHX	Trilaciclib Regulatory Update
Mid-Year	IRWD	Phase 3b Linzess data in abdominal symptom expansion cohort
Q2 2019	ITCI	Results from Lumateperone Trials
Q2 2019	JAZZ	JZP-258 Results
Q1 2019	LXRX	AdCom for Sotaglilozin in T1D
Q2 2019	MYOV	Phase 3 relugolix in UF (LIBERTY 1) topline data
Q1 2019	NVAX	Phase 3 ResVax RSV Vaccine (PREPARE) pivotal data and Phase 2 NanoFlu topline data
Mid-Year	ONCE	Phase 1/2 Data for SPK-8011
Early 2019	RARE	Phase 1/2 Data for DTX401 in GSD1a
Mid-Year	RARE	Phase 1/2 Data for DTX301
Jan. 2019	SAGE	Phase 3 Data for SAGE 217 in PPD

Q1 2019	SGEN	Phase 2 Data for Enfortumab
Early 2019	SRPT	Phase 1/2 MYO-101 Data
Q1 2019	STML	Potential Approval of Elzonris
1H 2019	UTHR	Topline Data from BEAT Study
Q1 2019	VRTX	Phase 3 data for VX-445 Triple Combo
1H 2019	XLRN	NDA / MAA submissions for luspatercept in MDS and Beta-Thal

Product Launches to Watch in 2019

- Regeneron (REGN)'s dupixent launch in asthma
- Alexion's (ALXN)'s 1210 Soliris follow-on launch
- GW Pharma's (GWPH) cannabinoid for LGS and Dravet's
- Alnylam's (ALNY) Onpattro for TTR amyloidosis
- Portola (PTLA)'s Andexxa Factor Xa
- Immunomedic's (IMMU) 132 launch in TNBC
- Novartis (NVS) and AveXis (AVXS)'s launch in gene therapy

PDUFA Calendar for 1H19

Date	Company	Drug Under Review
1/5/2019	Acorda Therapeutics (ACOR)	INBRIJA (CVT-301)
1/14/2019	Exelixis (EXEL)	Cabozantinib (CELESTIAL)
1/16/2019	ImmunoMedics (IMMU)	SACTUZUMAB GOVITECAN
1/16/2019	Amgen (AMGN)	EVENITY (Romosozumab)
1/17/2019	Lexicon (LXRX)	Sotagliflozin
1/18/2019	Merck (MRK)	KEYNOTE-042
1/31/2019	Alkermes (ALKS)	ALKS-5461
2/15/2019	Bausch Health (BHC)	DUROBRII
2/16/2019	Merck (MRK)	Keytruda KEYNOTE-054
2/18/2019	Alexion (ALXN)	ALXN1210
2/21/2019	Stemline Therapeutics (STML)	SL-401
2/24/2019	Incyte (INCY), Novartis (NVS)	Ruxolitinib
3/11/2019	AstraZeneca (AZN), Merck (MRK)	Lynparza SOLO 1
3/11/2019	Regeneron (REGN), Sanofi (SNY)	Dupixent
3/14/2019	Aerie Pharma (AERI)	Roclatan
3/15/2019	Novartis (NVS)	BAF312
3/18/2019	Roche (RHHBY)	Tecentriq + Etoposide
3/19/2019	Sage Therpauetics (SAGE)	Brexanolone
3/22/2019	Lexicon (LXRX), Sanofi (SNY)	Sotagliflozin
3/23/2019	Amag Pharma (AMAG)	Rekynda
3/24/2019	Recro Pharma (REPH)	IV Meloxicam
3/31/2019	Pfizer (PFE)	PF-05280014
3/31/2019	Abbvie (ABBV)	Imbruvica and Gazyva
4/1/2019	Evoke Pharma (EVOK)	Gimoti (EVK-001)
4/2/2019	ADMA Biologics (ADMA)	RI-002
4/6/2019	Karyopharm (KPTI)	Selinexor
4/28/2019	Regeneron (REGN), Sanofi (SNY)	Praluent ODYSSEY Outcomes
5/1/2019	Sanofi (SNY)	Dengvaxia
5/13/2019	Regeneron (REGN)	EYLEA Panorama
5/17/2019	Novartis (NVS)	AVXS-101

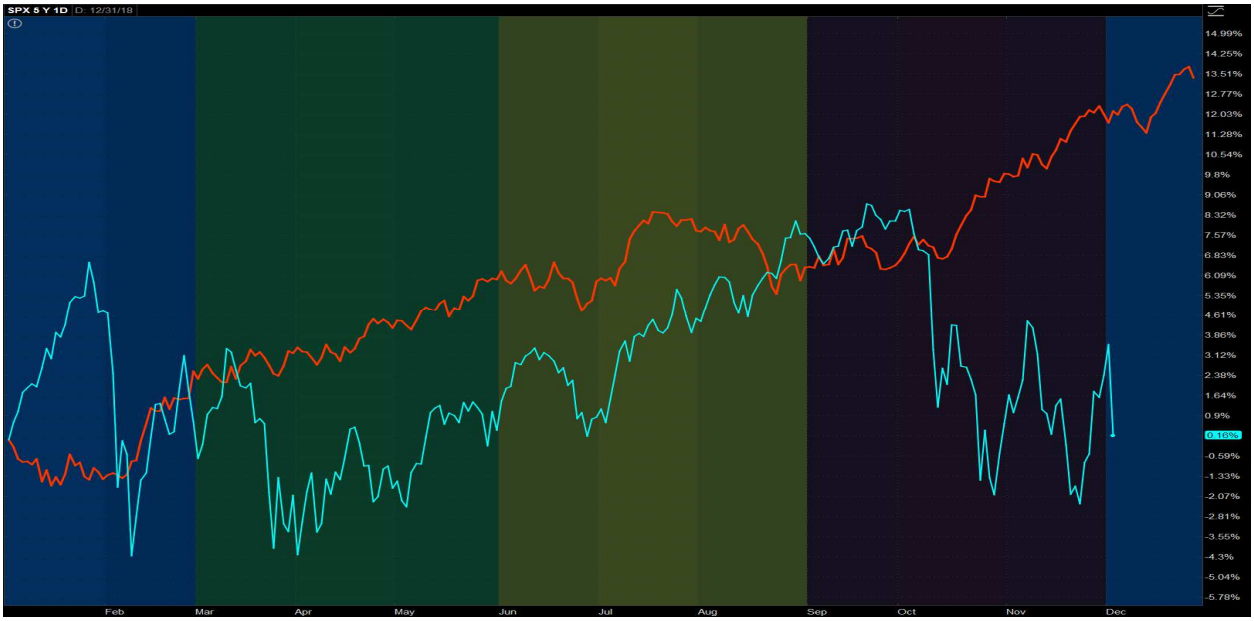
5/20/2019	Bristol Myers (BMY)	CM-227 Opdivo+Yervoy
5/28/2019	Nektar (NKTR)	NKTR-181
6/10/2019	Xeris Pharma (XERS)	Glucagon Rescue Pen
6/30/2019	Pfizer (PFE)	PF-06439535
6/30/2019	Retrophin (RTRX)	Thiola
6/30/2019	Dova Pharma (DOVA)	Avatrombopag

Seasonality

Typically, in this space, I'll highlight 10-15 names which have seasonal strength over a stretch of months each year. The overall indices, as well as individual stocks, have long had seasonal cycles throughout the year where certain groups outperform and others lag. They do not work every year as macro events can cause volatility, as 2018 proved, but longer-term certain themes have emerged and some of the more commonly held effects like "Sell in May and Go Away" and the "Santa Claus Rally" have legs. In 2019, we'll also deal with the seasonal effects of the Presidential Cycle as we enter a two-year run into the next election. This section will give you an outline of where historically stocks, indices, and sectors have been strongest.

The S&P 500

Here's what a five-year average of the group looked like vs 2018 (red vs blue)



On a month-to-month basis, the SPX has performed best in December and April with the weakest months being in August and September. The average monthly return during the 'Summer months' from May through September has a tendency to lag the 'Winter months' from October through April.

If we look at a distribution of **monthly returns** for the S&P going back to January 1993 (25+ years of data), we see the average monthly return is 0.85%, the max gain is 10.92%, and the minimum is -16.51%. We've had 26 months with a loss of 5% or more. Five of those months have been in August, five in September, and three in June. We've had 40 months with a 5% gain or more in that period. Six of those were in October, five of those were in November, and four of those were in March, December, July and April.

And here's a mosaic of monthly returns for the S&P since 1993:

	Jan	Feb	March	April	May	June	July	Aug	Sept.	Oct.	Nov.	Dec.
1993	-0.07	1.07	2.23	-2.57	2.71	0.36	-0.5	3.82	-0.72	1.97	-1.05	1.24
1994	3.49	-2.92	-4.19	1.13	1.6	-2.3	3.23	3.81	-2.52	2.86	-3.99	0.71
1995	3.35	4.09	2.8	2.96	3.98	2.03	3.22	0.43	4.24	-0.28	4.44	1.57
1996	3.55	0.33	1.72	1.09	2.27	0.87	-4.49	1.93	5.59	3.24	7.31	-2.38
1997	6.18	0.96	-4.42	6.26	6.31	4.11	7.93	-5.18	4.81	-2.44	3.87	1.91
1998	1.29	6.93	4.88	1.28	-2.08	4.25	-1.35	-14.11	6.36	8.11	5.57	6.54
1999	3.53	-3.2	4.16	3.8	-2.29	5.54	-3.1	-0.52	-2.24	6.41	1.66	5.71
2000	-4.98	-1.53	9.69	-3.51	-1.57	1.97	-1.58	6.54	-5.48	-0.47	-7.46	-0.51
2001	4.44	-9.54	-5.6	8.55	-0.56	-2.38	-1.01	-5.94	-8.16	1.31	7.8	0.56
2002	-0.98	-1.79	3.32	-5.82	-0.59	-7.38	-7.88	0.68	-10.48	8.23	6.17	-5.66
2003	-2.46	-1.35	0.21	8.46	5.49	1.07	1.8	2.06	-1.1	5.35	1.09	5.03
2004	1.98	1.36	-1.32	-1.89	1.71	1.85	-3.23	0.24	1	1.28	4.45	3.01
2005	-2.25	2.09	-1.82	-1.87	3.22	0.15	3.83	-0.94	0.8	-2.37	4.4	-0.19
2006	2.4	0.57	1.65	1.26	-3.01	0.26	0.44	2.18	2.7	3.15	1.99	1.34
2007	1.51	-1.96	1.16	4.43	3.39	-1.46	-3.13	1.28	3.87	1.36	-3.87	-1.13
2008	-6.05	-2.58	-0.91	4.76	1.51	-8.35	-0.9	1.55	-9.44	-16.51	-6.96	0.98
2009	-8.22	-10.75	8.35	9.94	5.84	-0.07	7.46	3.69	3.55	-1.92	6.16	1.91
2010	-3.64	3.12	6.09	1.54	-7.94	-5.18	6.83	-4.5	8.95	3.82	0	6.68
2011	2.33	3.47	0.01	2.9	-1.13	-1.69	-2	-5.5	-6.95	10.92	-0.4	1.04
2012	4.63	4.34	3.22	-0.67	-6.01	4.05	1.18	2.5	2.54	-1.82	0.57	0.9
2013	5.12	1.28	3.8	1.92	2.36	-1.34	5.17	-3	3.17	4.63	2.96	2.59
2014	-3.53	4.55	0.83	0.7	2.32	2.07	-1.35	3.94	-1.38	2.36	2.75	-0.26
2015	-2.97	5.62	-1.57	0.98	1.29	-2.03	2.26	-6.1	-2.54	8.51	0.37	-1.72
2016	-4.98	-0.08	6.73	0.39	1.7	0.35	3.65	0.12	0.01	-1.73	3.69	2.03
2017	1.79	3.93	0.13	0.99	1.41	0.64	2.06	0.29	2.01	2.35	3.06	1.21
2018	5.64	-3.64	-2.74	0.52	2.43	0.57	3.71	3.19	0.6	-6.91		

The **Nasdaq (QQQ)** and **Dow Jones (DIA)** follow a similar seasonal pattern as the S&P. On a month-to-month basis, the best performing times of year are October, November, and April. The worst months are September, February, and June. Over the last 20 years, the Nasdaq has averaged 0.85% return per month. The Dow averages 0.77% per month.

The QQQ tends to be more volatile than either the S&P or the Dow. The best month for the Nasdaq over the last 20-years was a 23.5% return in December 1999. The worst month was February 2001 when the group fell 26.2%. The average max gain is 14.4% while the average max loss is a 15.5% decline.

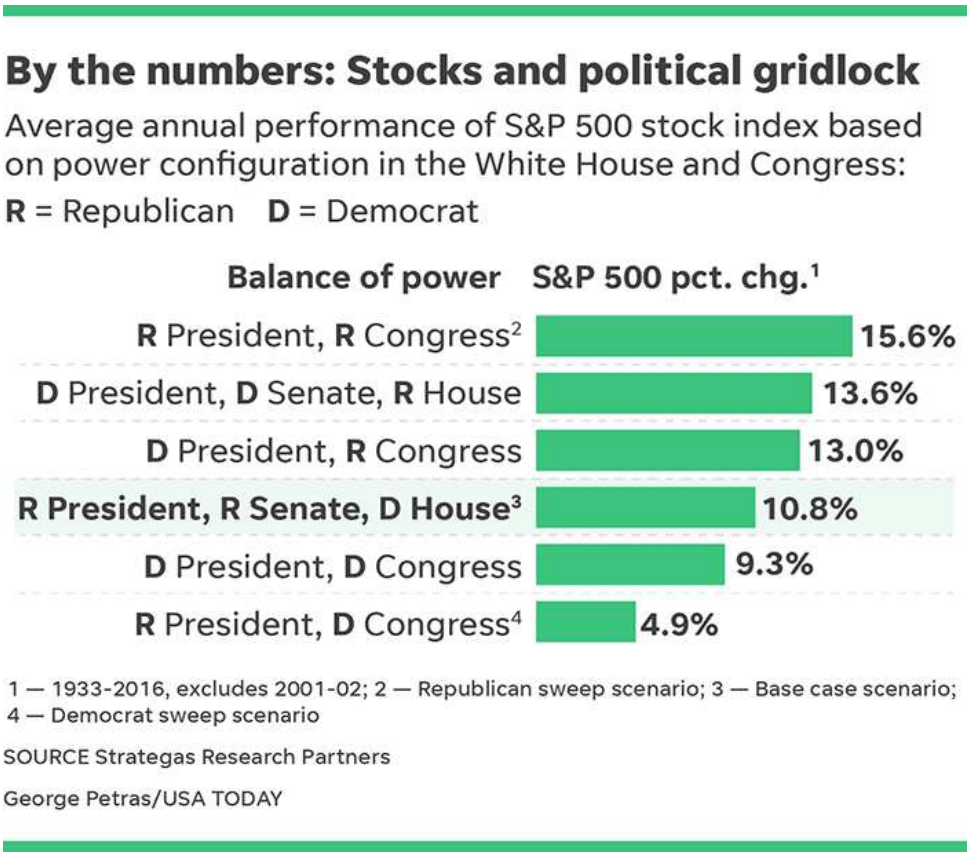
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max%	10.13	19.01	10.32	17.88	8.87	11.90	8.45	14.05	13.17	18.49	16.95	23.51
Min%	-11.89	-26.20	-17.50	-13.47	-11.87	-13.13	-8.64	-13.38	-19.88	-15.48	-22.91	-12.07

The Dow is far less volatile with the best month since 1993 returning 10.34% while the worst month was a 15.23% decline. The average max gain was 7.55% while the average max loss was an 8.62% decline.

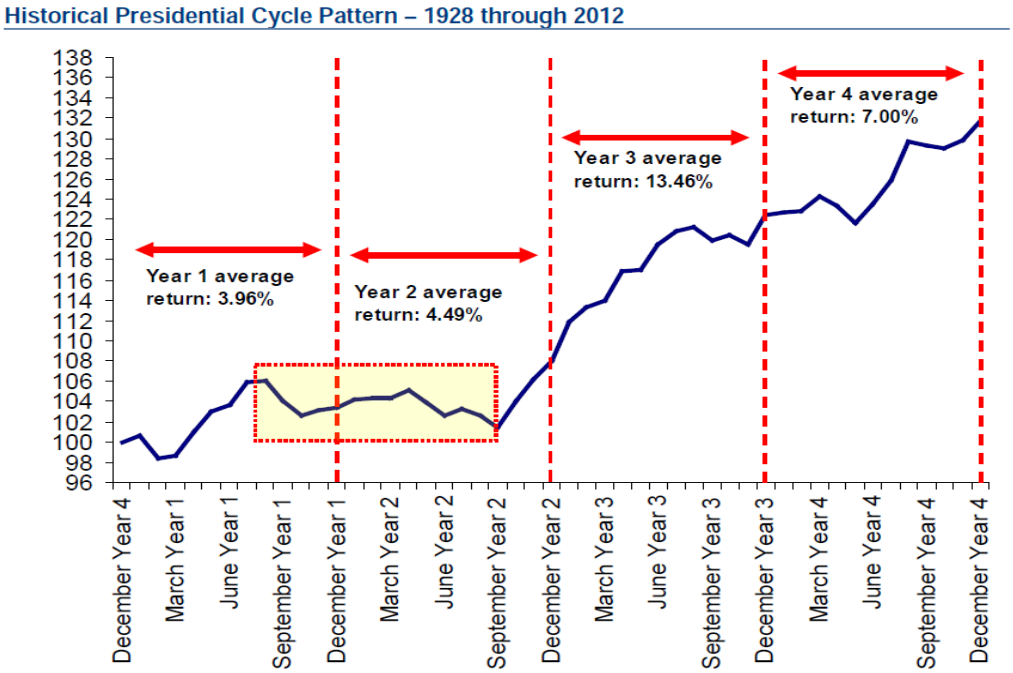
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max%	6.11	8.02	7.84	10.09	4.86	4.21	8.43	7.26	7.89	10.34	8.87	6.77
Min%	-8.34	-11.20	-5.43	-3.98	-7.49	-9.88	-5.65	-15.23	-12.04	-13.40	-5.05	-5.84

Presidential Year Seasonality

In 2019, we'll be in the third year of President Trump's term in office. It will also see a new congress with the Democrats controlling the House and the Republicans controlling the Senate. In October, Strategas Partners looked at the average returns during different balance of power situations in Washington. The split-congress scenario we've got has a 10.8% historical annual return.

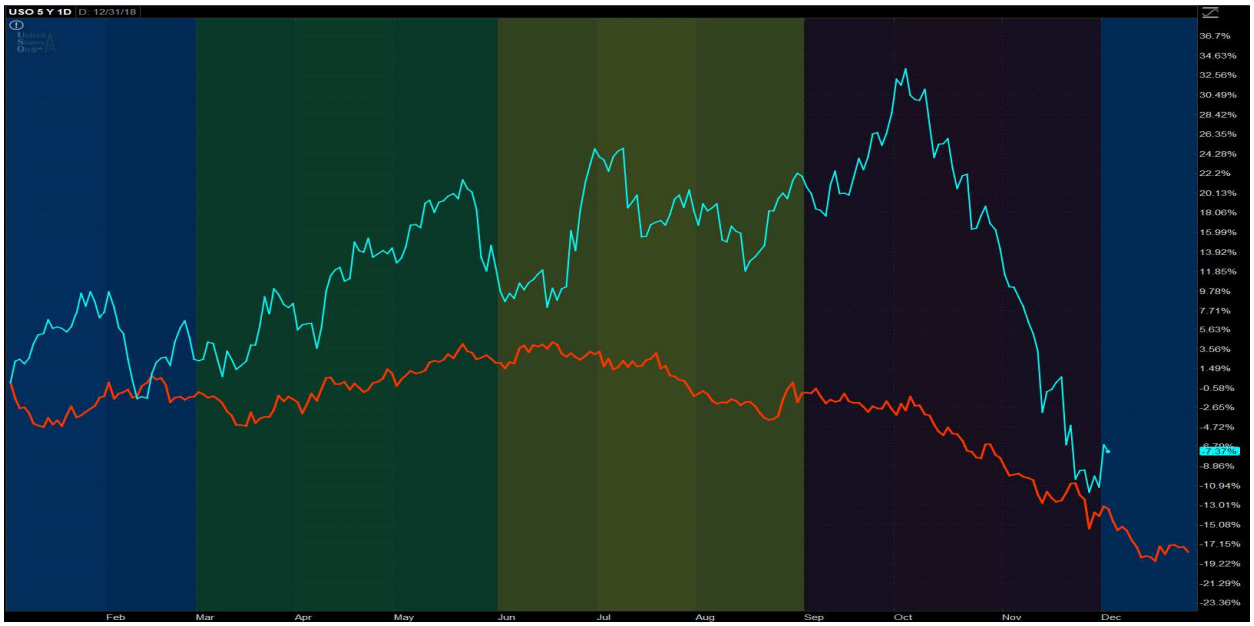


BAML has also looked at how each year of the Presidential Cycle has performed on average. Year 3 is historically the strongest of the four-year stretch with an average return of 13.46%.



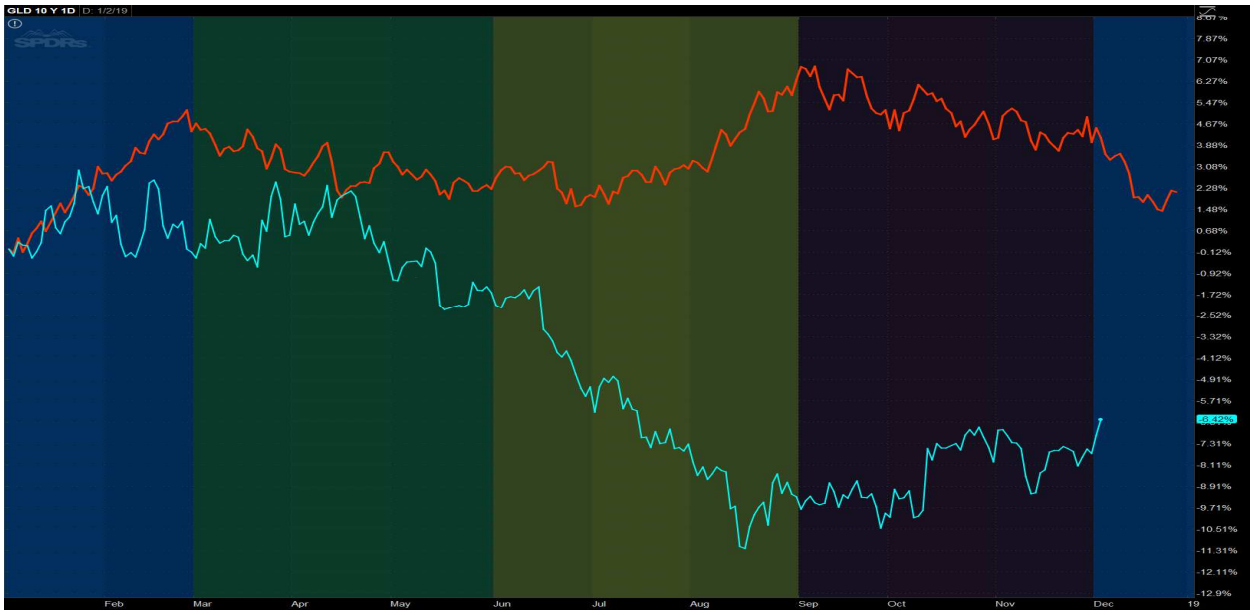
Other Notables

Crude Oil



Crude oil is uniquely impacted by seasonality due to the Summer driving season in the US and rise in gasoline demand. It is also impacted by Hurricane season. The commodity shows strong seasonal uptrend from February through late Summer and weakness into year-end. Prices tend to peak in September and October. The best months for crude are April, March, and June. The worst performing months are January, November, December, and July. This is the month-by-month breakdown by percentage:

Gold



Gold is also seasonal. The best months for exposure are January, February, and August. The worst months are May, March, and December. The average monthly return throughout the year is 0.68%. Here's a look at the average percentage return by month:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
3.91	1.77	-0.91	1.51	-1.26	-0.27	0.6	1.63	0.42	-0.23	1.47	-0.42

Sector Analysis

Let's look at some **individual sectors** now and how they've fared against the S&P.

Consumer Discretionary (XLY) – Historically, the strongest months for the XLY are March and April with October, November, and December the strongest three-month grouping. The weakest months are August and September. Over the last five years, the XLY has outperformed the SPX most often in February, March, July, and November. This is the XLY vs SPY.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLY	0.01	0.22	2.5	2.43	0.23	-1.02	0.7	-0.33	-0.66	2.38	2.07	2.01
Diff	-0.42	0.05	1.02	0.6	-0.71	-0.94	-0.16	-0.04	-0.63	0.5	0.29	0.69

Staples (XLP) - The strongest months for the XLP are October, November, and March. The weakest month is June. Over the last five years, the XLP has outperformed the SPX most often in August and May although a very mixed bag with no single month beating the S&P in more than 3 of the last 5 years. This is the XLP vs the SPY.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLP	-1.1	0.12	1.2	0.78	1.09	-0.49	0.75	0.21	-0.11	1.82	1.35	1
Diff	-1.53	-0.05	-0.28	-1.05	0.15	-0.41	-0.11	0.5	-0.08	-0.06	-0.43	-0.32

Energy (XLE) - The strongest months for the XLE are February, March, and April with Spring the strongest three-month grouping. The weakest months are January and July. Over the last five years, the XLE has outperformed the SPX most often in March and April.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLE	-0.49	0.93	2.84	3.72	0.73	-0.2	-0.29	-0.25	-0.46	0.81	0.8	1.91
Diff	-0.92	0.76	1.36	1.89	-0.21	-0.12	-1.15	0.04	-0.43	-1.07	-0.98	0.59

Healthcare (XLV) - The strongest months for the XLV are March and April. The weakest month is September. Over the last five years, the XLV has outperformed the SPX most often in December, January, and June. It was weakest in September and October.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLE	1.1	-0.02	1.21	1.65	0.77	0.28	0.9	-0.19	-0.98	0.82	1.35	2.21
Diff	0.67	-0.19	-0.27	-0.18	-0.17	0.36	0.04	0.1	-0.95	-1.06	-0.43	0.89

Materials (XLB) - The strongest months for the XLB are April and March with February through May the strongest multi-month grouping. The weakest months are January and September. Over the last five years, the XLB has outperformed the SPX most often in April and December.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLB	-1.69	1.36	1.86	3.19	0.08	-1.16	0.93	-0.5	-2.53	2.54	2.79	2.63
Diff	-2.12	1.19	0.38	1.36	-0.86	-1.08	0.07	-0.21	-2.5	0.66	1.01	1.31

Industrials (XLI) - The strongest months for the XLI are November and April with October through December the strongest multi-month grouping. The weakest months are June and January. Over the last five years, the XLI has outperformed the SPX most often in April and December.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLI	-1.41	0.01	2.13	3.13	0.59	-1.39	0.92	0.09	-0.74	1.35	2.59	2.37
Diff	-1.84	-0.16	0.65	1.3	-0.35	-1.31	0.06	0.38	-0.71	-0.53	0.81	1.05

Financials (XLF) - The strongest months for the XLF are March, April, and October with the Spring period the strongest three-month grouping. The weakest months are January, February, and August. Over the last five years, the XLF has outperformed the SPX most often in March and April. The XLF tends to be the one group which goes on multi-month runs beating the S&P. Since 2013, it has had three different three-month stretches, one four month stretch, and two different five month stretches.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLF	-1.19	-1.39	2.67	2.83	0.17	-1.44	1.34	-0.08	-0.99	2.08	0.35	1.62
Diff	-1.62	-1.56	1.19	1	-0.77	-1.36	0.48	0.21	-0.96	0.2	-1.43	0.3

Biotech (XBI) – The strongest months for the XBI are July, November, and January. The strongest stretch of months is mid-year from April through July. The weakest months are August and October. Over the last five years, the XBI has outperformed the SPX most in July, January, and June.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XBI	2.94	0.78	1.44	0.72	2.49	2.27	4.69	-0.62	0.5	-1.27	3.12	0.8
Diff	2.51	0.61	-0.04	-1.11	1.55	2.35	3.83	-0.33	0.53	-3.15	1.34	-0.52

Utilities (XLU) – The strongest months for the XLU are April, December, and October. The group performs best from March through May. The worst month for shares is February. The worst stretch is early in the year in January and February. The best performance against the SPX is April, March, and August. The worst month relative to the SPX is November.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
S&P	0.43	0.17	1.48	1.83	0.94	-0.08	0.86	-0.29	-0.03	1.88	1.78	1.32
XLU	-0.56	-1.06	2.1	2.68	0.68	0.53	-0.12	0.28	0.31	0.93	0.11	1.41
Diff	-0.99	-1.23	0.62	0.85	-0.26	0.61	-0.98	0.57	0.34	-0.95	-1.67	0.09

Now, a look at individual names sorted by their strongest and weakest month. The names listed below are within their best or worst performing month of the year.

January	
Strongest	**Weakest**
SPH, DOX, GOGL, HDSN, SNH, ILMN, ALKS, DIS, NFLX, MSTR, LNG, COHR, RMD, BREW, BMRN, SGMO, MRVL, JEC, HRS, HAS, CRNT, XLNX, UNH, TSEM, SGEN, RGR, O, MXIM, LOGI, FIS, DEPO, CRUS, BMO, ULTI, PAAS, SNBR, PAA	NVDA, HA, STRL, WAB, AVB, HLX, GIS, CHDN, KO, CVX, ALL, MOV, INFI, RDC, NTRI, KFY, HSII, BANC, MANT, AKRX, GME, KIRK, PSMT, GRMN, PGR, BBOX, OSTK, EVC

February	
Strongest	**Weakest**
DKS, HSY, BKNG, CNX, ETN, ATR, LLL, RBA, LII, SIVB, IR, CAT, CFR, CHD, DEO, IEX, BIG, EAT, AVP, AON, EMN, TEX, RRGB, RS, GIL, CPRT, WCN, AMED, CME, MCO, PAA, CMA, SKX, MDRX, RE, AZO, DRI, RDWR, EL, HIG, ANSS, CIG, CY, ADSK, HP, VFC, BC, TTC	REGN, BCO, CCI, EGHT, RYAAY, HDSN, KNX, SGEN, LPSN, EQIX, EXAS, BBOX, GERN, MYGN, EGAN, CEVA, SPRT, SWIR, AMRN

March	
Strongest	**Weakest**
WCN, FLWS, CRL, SNY, RCII, BABY, AME, SRE, QCOM, LPNT, MAS, ENTG, ANTM, ADS, AAP, YUM, SBUX, PX, NFLX, KIRK, INGR, BBBY, PLT, FMX, TIF, SIG, PII, PEP, NTRI, MCO, HSII, EOG, ECL, COO, BIG, AZZ, JACK, EL, DRI, CNQ	OPK, AUTO, SPNG, LCII, THO, KTOS, EGO, AXTI

April	
Strongest	**Weakest**
EPD, PUK, HSBC, TRI, DEO, CCI, PAA, ALB, WFT, SWN, WAB, AXP, OKE, MDLZ, XRAY, NR, ENLK, IDXX, YUM, RSG, SU, GIL, MYE, AVP, HAL, ITW, CP, CAJ, EQT, BMO, MTOR, ABB, MMP, E, SPH	EXTR, QCOM, DEPO, MLHR, RECN, NDAQ

May	
Strongest	**Weakest**

SNY, XRAY, FIS, DGX, BK, MDT, NI, EFF, LNDC, RAVN, UNH, JCI, CPRT, CTAS, GIS, AVB, PPL, IEX, NOC, POWI, SUI, FE, GD, ACN, USNA, MCK, DLTR, ULTI, RSG, MATW, IGV, MCO, FFIV, GRC, EW, PEGA, TTWO, ESRX, EFII, NTES, DDS, CAL, SAFM, S, PGR, KO, PKI, CAG, K	TCX, EPD, HZO, GGB, CM, ETP, MMP, DKS, BAK, GTN, CIG

June	
Strongest	**Weakest**
AMX, KTOS, SAM, ADC, IMMR, JCOM, MOV, ORCL, NHC, PLT, ILMN, AWR, LCII, SR, AVB, CNC, OSTK, JBLU, SLG, MMSI, INFY, WAT, EPD	EXTR, ODFL, CCJ, BCOR, SMG, USAT, TSEM, DOX, ORAN, STM, VECO, HDSN, IDCC, ABB, PDCE, BK, AVT, BGG, TEX, AEIS, SLAB, MBT, ON, WYNN, PBI, PNC, LTM, WDC, CENX, MERC, WETF, EMAN, CYTX

July	
Strongest	**Weakest**
SPH, AMGN, BSRR, NNN, CTSH, GLNG, HON, ESRX, PBR, STLD, ARE, CWST, AEO, AVB, ESS, WCN, USB, CLX, ISRG, PUK, PKG, SNH, SAP, CNI, CERN, HOG, CELG, HDB, FISV, MOS, PEP, WTFC, SHPG, VALE, PRU, BMO, ITUB, CHL, TRI, ALXN, BIIB, HSBC, KIM, RY, GS	NLS, AMOT, CLB, ADMP, WCC, TUP, VRNT, CRZO, ICON, EXAS, AMRN, CALL, EL, LNDC, GG, DNBR, KIRK, SYNA, CMD, ETM, RDNT

August	
Strongest	**Weakest**
NVDA, ATO, TLT, AEE, SRE, NTGR, ADSK, XLNX, WTR, EGN, FIS, HUM, O, STMP, NTAP, SMG, STE, BCOR	TXMD, TMUS, SPWR, UNG, MDCA, DHT, FRO, CIEN, JBHT, RSG, MT, STLD, CLDX, F, PIR, SBAC, TTMI, URI, ACAS, FL, DLTR, ASNA, LUV, NAT, DB, CBG, SVU, DIS, NUE, BHI, HPQ, YHOO, XPO, CAA, CMC, PCAR, PDCO, STJ, AOS, CSX, TXT, WDR, WFM, STT, EXPD, ORCL, T

September	
Strongest	**Weakest**

NVS, PAYX, PDCO, PZZA, TD, INTU, CPE, SGEN, T, GD, ADP, ACN, LMT, ZBH, DUK, RNR, ATGE, SONC, MCO, ACGL, NFLX, STE, ROP, OHI, CHKP, RY, BNS, DVN, DEO	LNG, SKX, VG, ON, KKD, AGEN, BLDR, GTE, OI, CY, NUAN, CPN, HTZ, AXL, TER, CPG, GPS, X, BEAV, CX, AXLL, LSCC, GGB, TRMB, ARRS, EXEL, GPK, NRG, ABB, CMI, MRVL, CNX, AVP, FIS, LPX, AER, VZZ, MHR, ANF, AA, MOS, ALK, AMAT, BBG, GES, ING, HON, LRCX, FLR, FLS, AAPL, CE, ROST, TSM, CBI, CLF

October	
Strongest	**Weakest**
GS, CHKP, RCI, ADP, SYY, PFG, TSM, CTSH, MS, RCL, STMP, HSBC, ADBE, AAPL, PII, RJF, TRV, RY, VMI, DCI, L, GPN, LCI, INTU, MSFT, VOD, SCHW, IEX, WBA, PFE, HRL, BBT, RSG, MKSI, BLK, LKQ, SLAB, TPR, IBN, SMG, DEO, ORAN, CB, BWA, UNFI, ING, LRCX, PDFS, ALK, GPS, PGR, ADM, MAN, ACN, NUE, ORCL, LUV, MMP, AEG, SEE, DIS, SNA, TXT, AMX, C, UTX, UNH, KO	CYH, HL, EXAS, CDE, KGC, IPXL, ELGX, AEM, ENDP, KND, DAR, THC, PPC, AU, RCII, NEM, PAAS, GPOR, MDR, GFI, ACHC, ABEV, XRX, WEN, ABX, ARIA, EW, CVA, HES, CI, MNST, MCK, ABC, RRC, CAR, ESRX, MRO, NLY, RTN, BAX, LEN, MSI, LMT, NVO, NOC

November	
Strongest	**Weakest**
UPS, MCD, NDAQ, VMC, MMM, IEX, LII, ATR, TPR, RBC, WWD, AAP, PH, FUL, FUN, RTN, RMBS, BGFV, SYNA, TRMB, AYI, DGX, NVDA, RHT, GPS, ROK, ASTE, A, CI, FFIV, TOL, EXTR, EMR, UNH, TTC, HRL, PNC, DIS, FISV, CINF, RMD, MD	NBG, KEG, ESV, OPK, ATW, LYG, NE, WFT, APA, PBR, TDW, NBL, HCN, DDR, PTEN, SNH, KIM, CBL, OII, NFX, STO, SLB, EA, EOG, SU

December	
Strongest	**Weakest**
UL, TCO, GNTX, NCI, UN, MKSI, CPT, MSM, MAC, PLT, PKG, CNMD, BCO, SYK, BG, AET, UTX, ZBH, SO, D, AMG, DEPO, ESRX, VTR, ARE, CACC, PLD, WEN, BSX, NLY, OFC, ETP, CM, CBL, LSTR, LHO, CB, EPAY, TREX, MOS, CTB, WTS, GGB, IPG, CLF, UNH, SNN, FHN, NVO, OMC, HRB, MGA	AEO, SWHC, CRUS, BBY, SRPT, FINL, MBT, NUAN, PTN, SINA, DLTR, KERX, HAL, ERF, FCX, NPBC, FLO, CHS, TTWO, CNI, TSCO, LRCX, EBAY, CERN

Relative Technical Strength into 2019

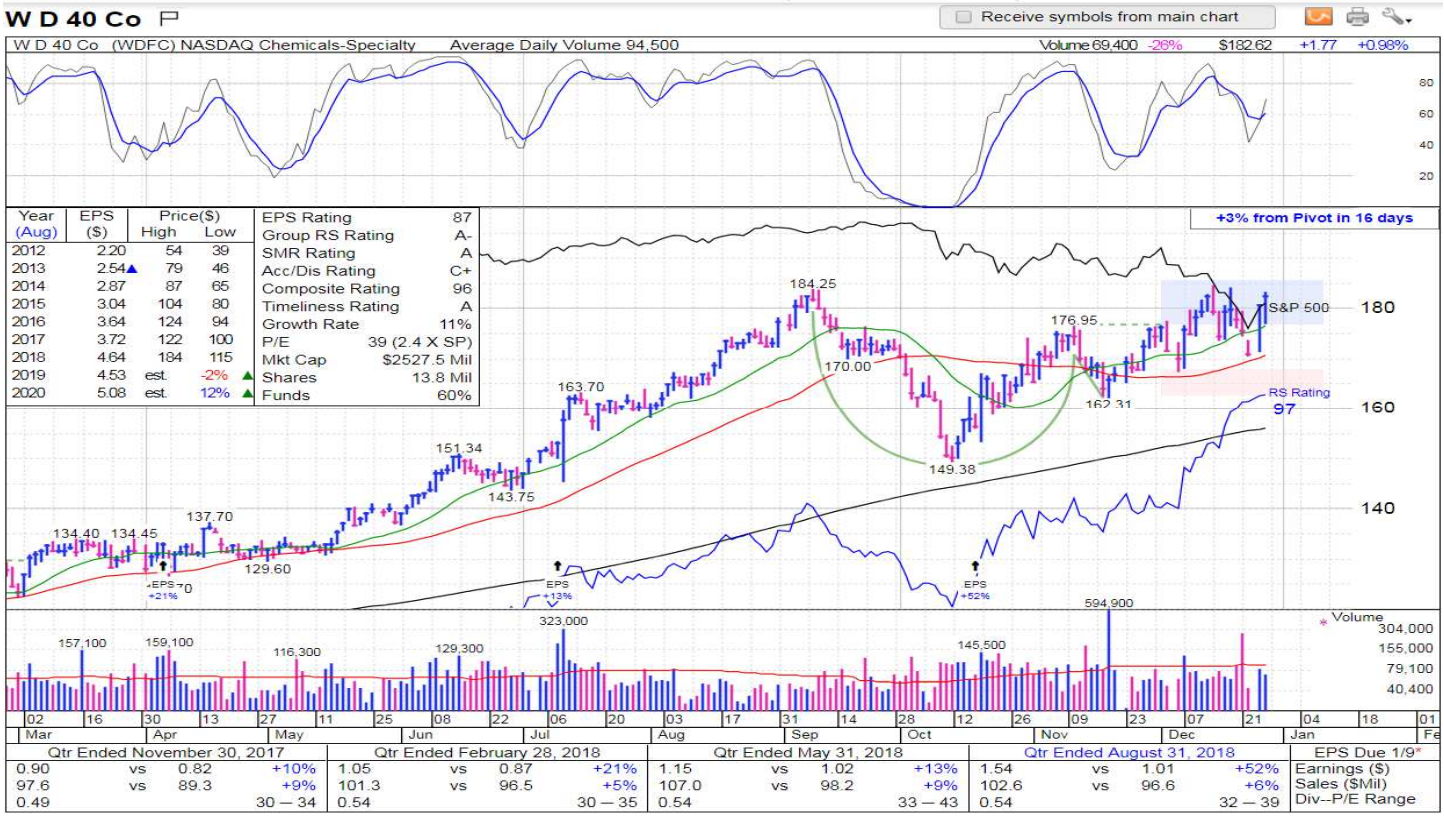
With the sharp correction in Q4 this section is a bit unusual this year as there are virtually zero names with upward momentum and breakout patterns. As of 12/27 only 12.8% of stocks are above the 200MA and 13% above the 50MA. Relative strength names now should lead during an upward move.

Notable names by sector trading above 50 and 200 day MA's:

Basic Materials: BHP, ABX, FNV, AEM, WPM, GOLD, UGP, TGE, RGLD, KL, AU, NEU, BVN, WDFC – **Gold Miner Strength**

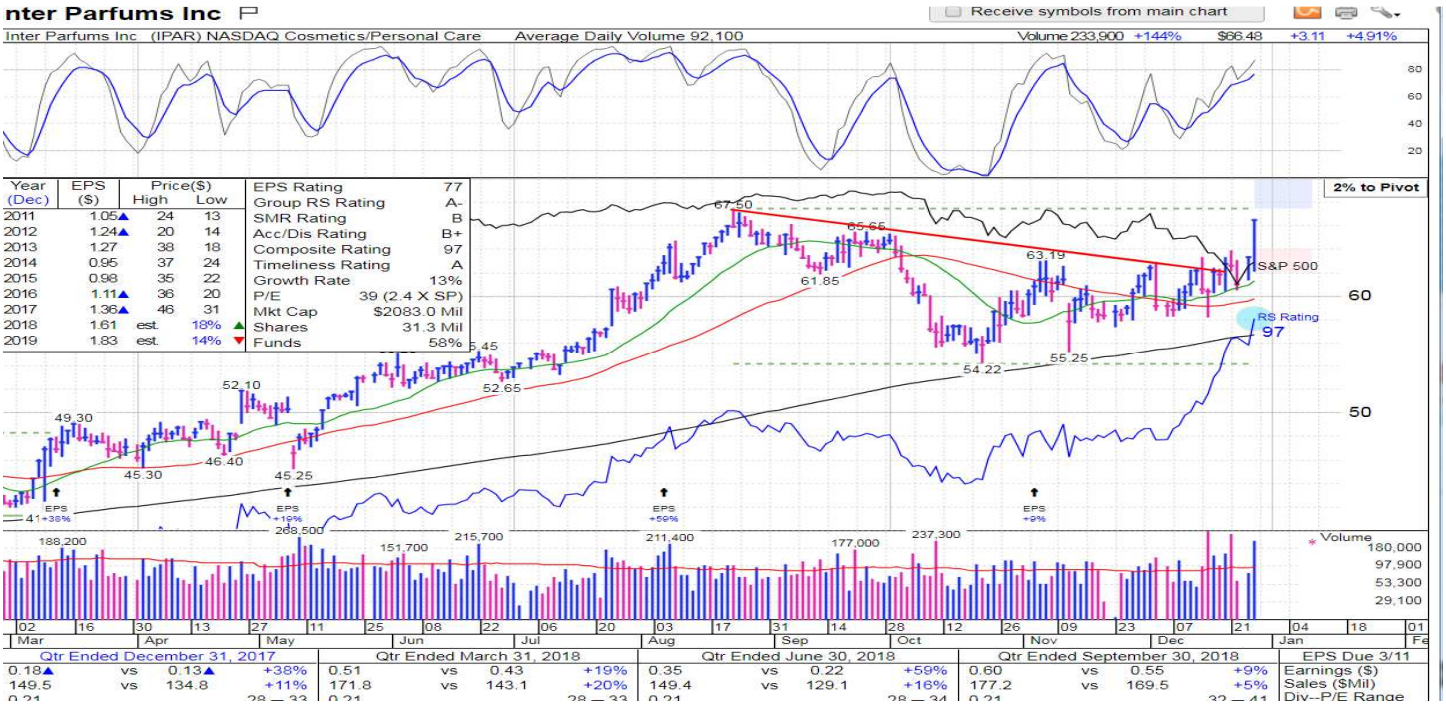
Tallgrass Energy (TGE) with a RS rating of 91 clearing out of a downward channel:

WD-40 (WDFC) up near a new high and RS rating of 97 looking to clear a large cup and handle pattern:

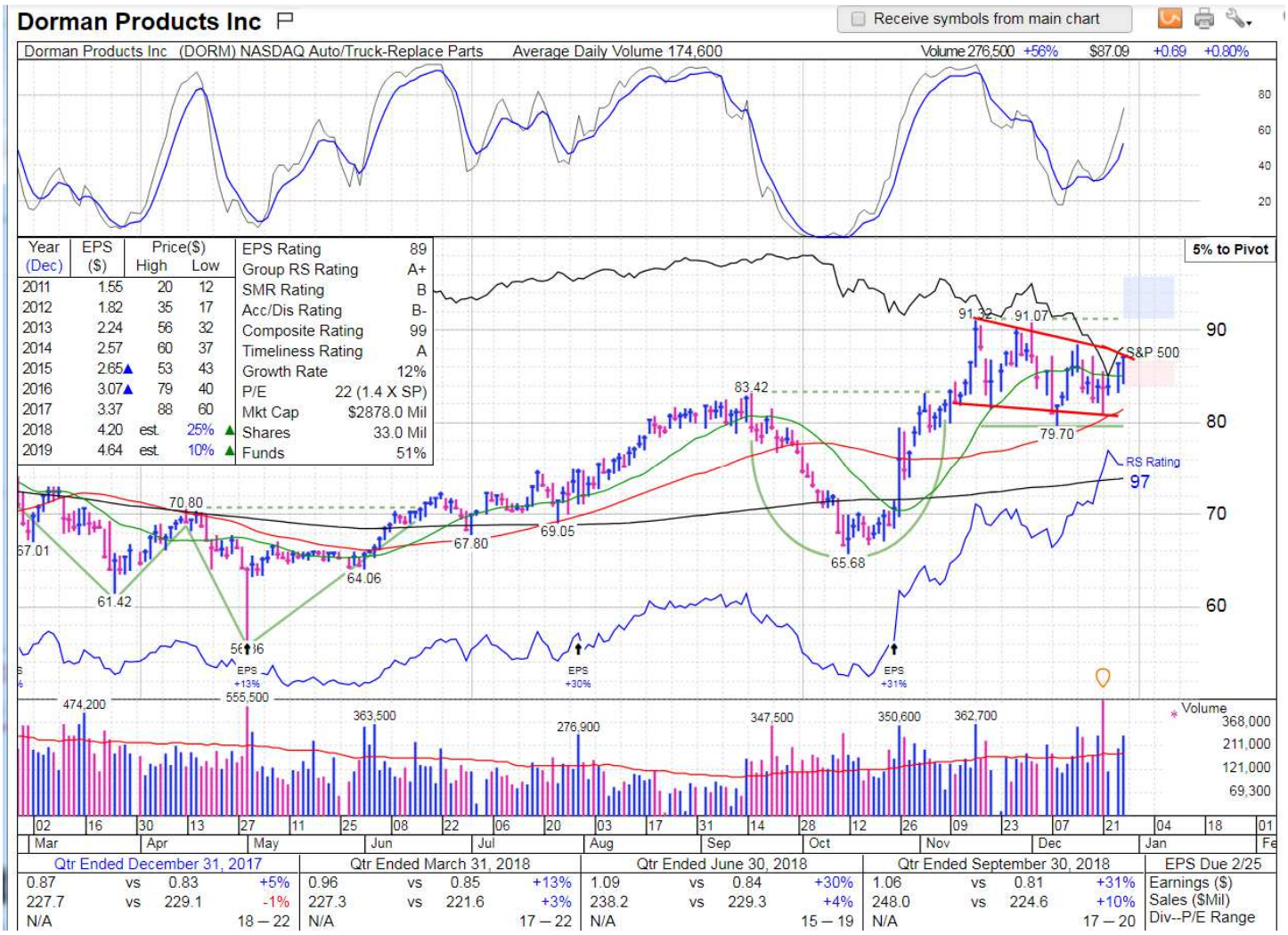


Consumer Goods: PG, KMB, CHD, HLF, FL, LANC, DECK, THS, DORM, TR, IPAR, BGS – **Consumer Goods (Safety) Strength**

Inter Parfums (IPAR) a favorite fundamental name with an impressive move out of a pullback trend, RS rating 97:

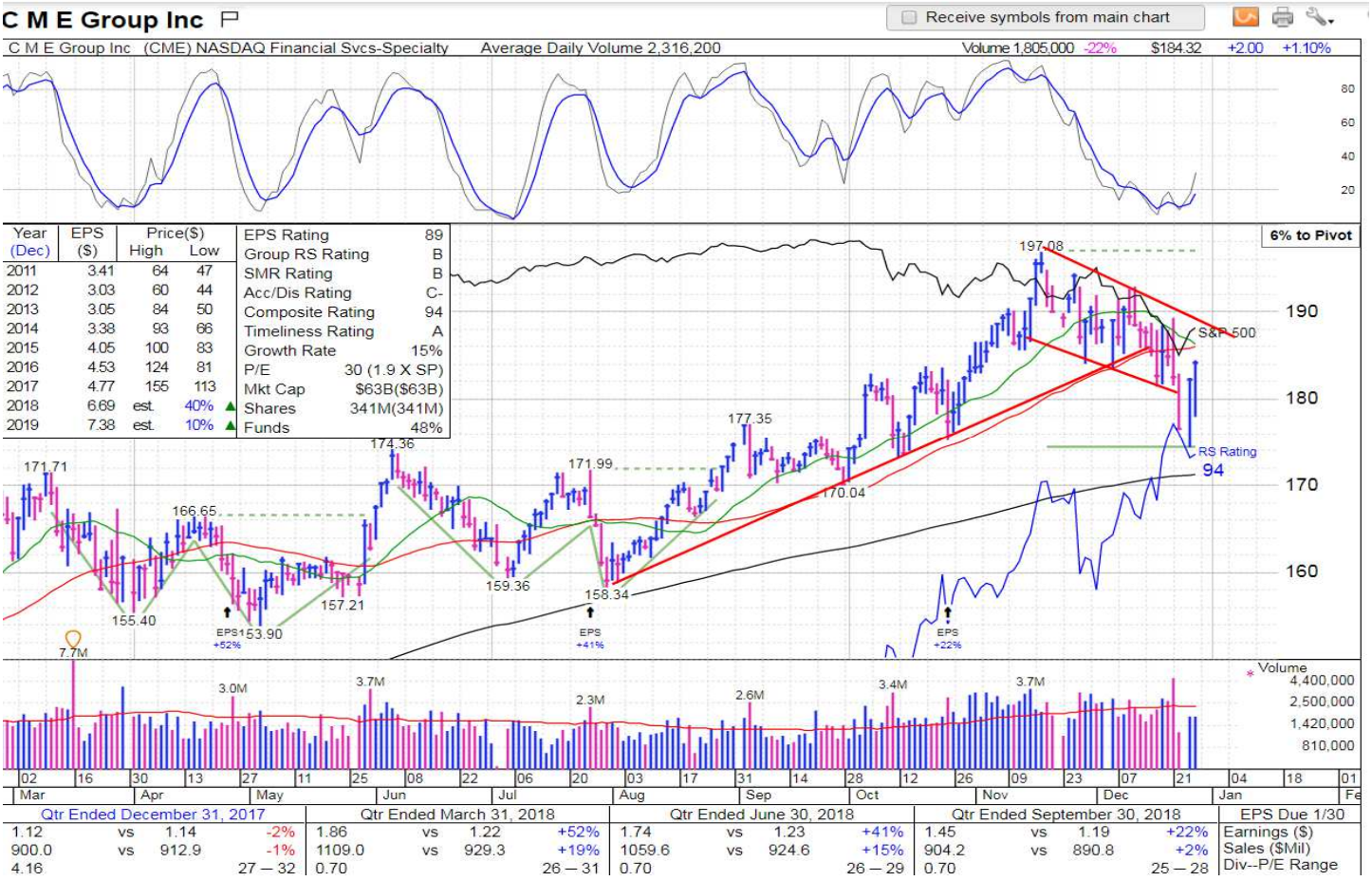


Dorman Products (DORM) bull wedge formed with a RS rating of 97 looking to break to new highs:

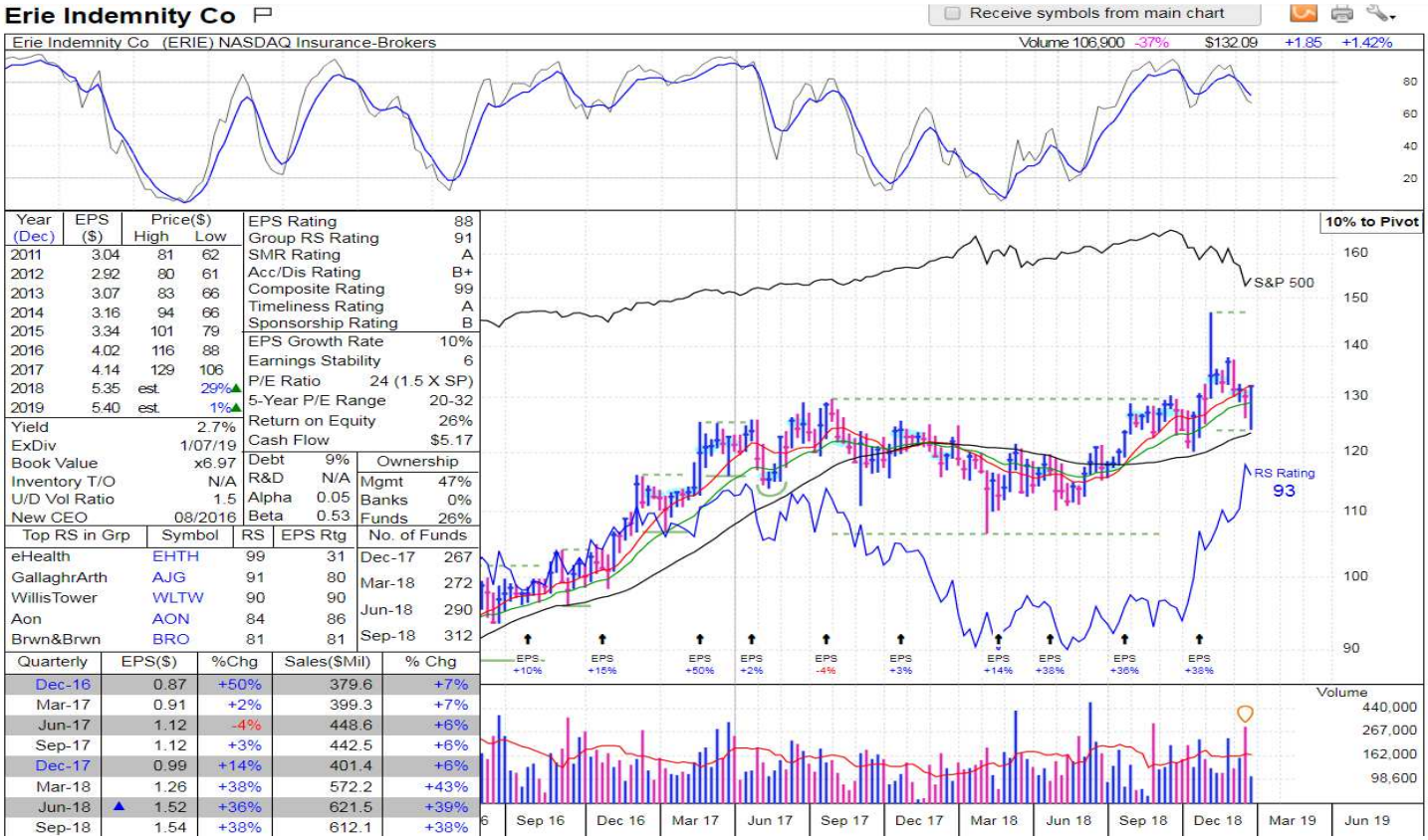


Financials: PYPL, HDB, CME, IBN, WELL, O, WF, OHI, ERIE, NHI, FII, ARGO, ADC

CME Group (CME) with a RS rating of 94 forming a pullback channel, stochastics crossing, see if can clear trend line



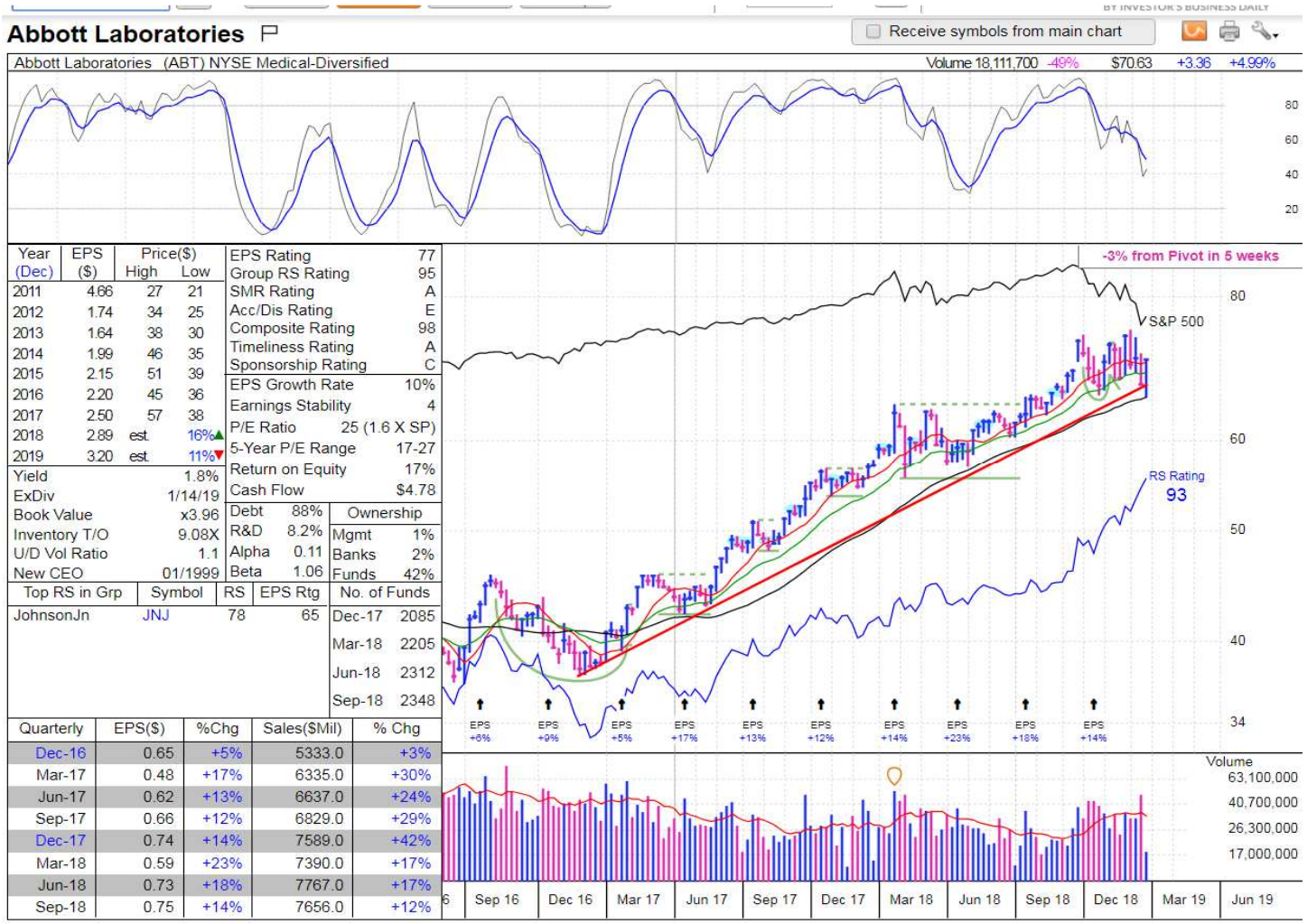
Erie Indemnity (ERIE) retesting a former breakout spot of a cup and handle that targeted $150, RS rating 93



Healthcare: MRK, ABT, LLY, REGN, RMD, RDY, IONS, WMGI, ARGX, AKCA, TNDM

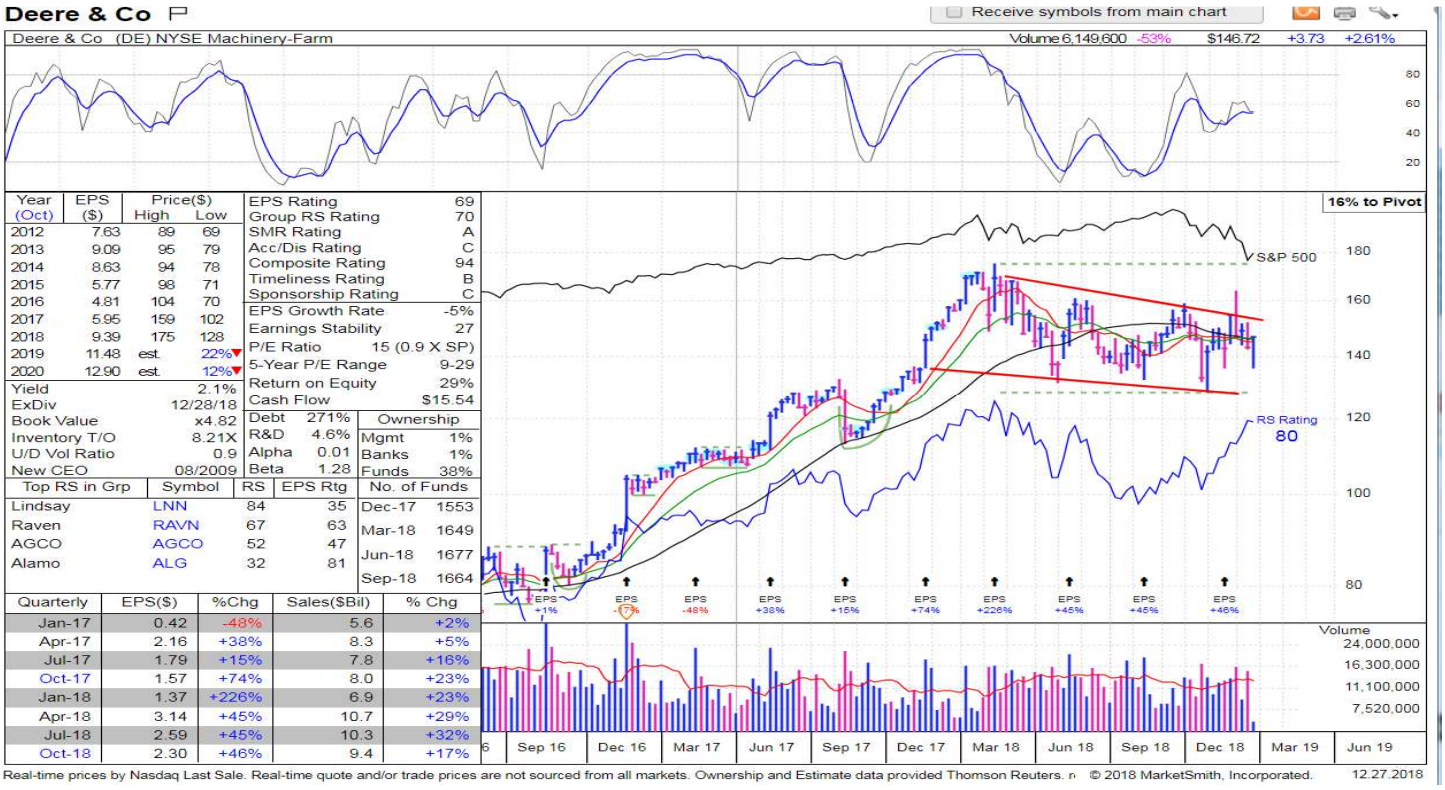
Tandem Diabetes (TNDM) large bull wedge forming with a RS rating of 99 looking for a breakout

Abbott Labs (ABT) strong uptrend held support of trend line and prior price support



Industrials: DE, LII, AJRD

Deere (DE) RS rating of 80 forming a large weekly base above price support



Year (Oct)	EPS ($)	Price($) High	Low
2012	7.63	89	69
2013	9.09	95	79
2014	8.63	94	78
2015	5.77	98	71
2016	4.81	104	70
2017	5.95	159	102
2018	9.39	175	128
2019	11.48	est.	22%▼
2020	12.90	est.	12%▼

Yield	2.1%
ExDiv	12/28/18
Book Value	x4.82
Inventory T/O	8.21X
U/D Vol Ratio	0.9
New CEO	08/2009

EPS Rating	69
Group RS Rating	70
SMR Rating	A
Acc/Dis Rating	C
Composite Rating	94
Timeliness Rating	B
Sponsorship Rating	C
EPS Growth Rate	-5%
Earnings Stability	27
P/E Ratio	15 (0.9 X SP)
5-Year P/E Range	9-29
Return on Equity	29%
Cash Flow	$15.54
Debt	271%
R&D	4.6%
Alpha	0.01
Beta	1.28

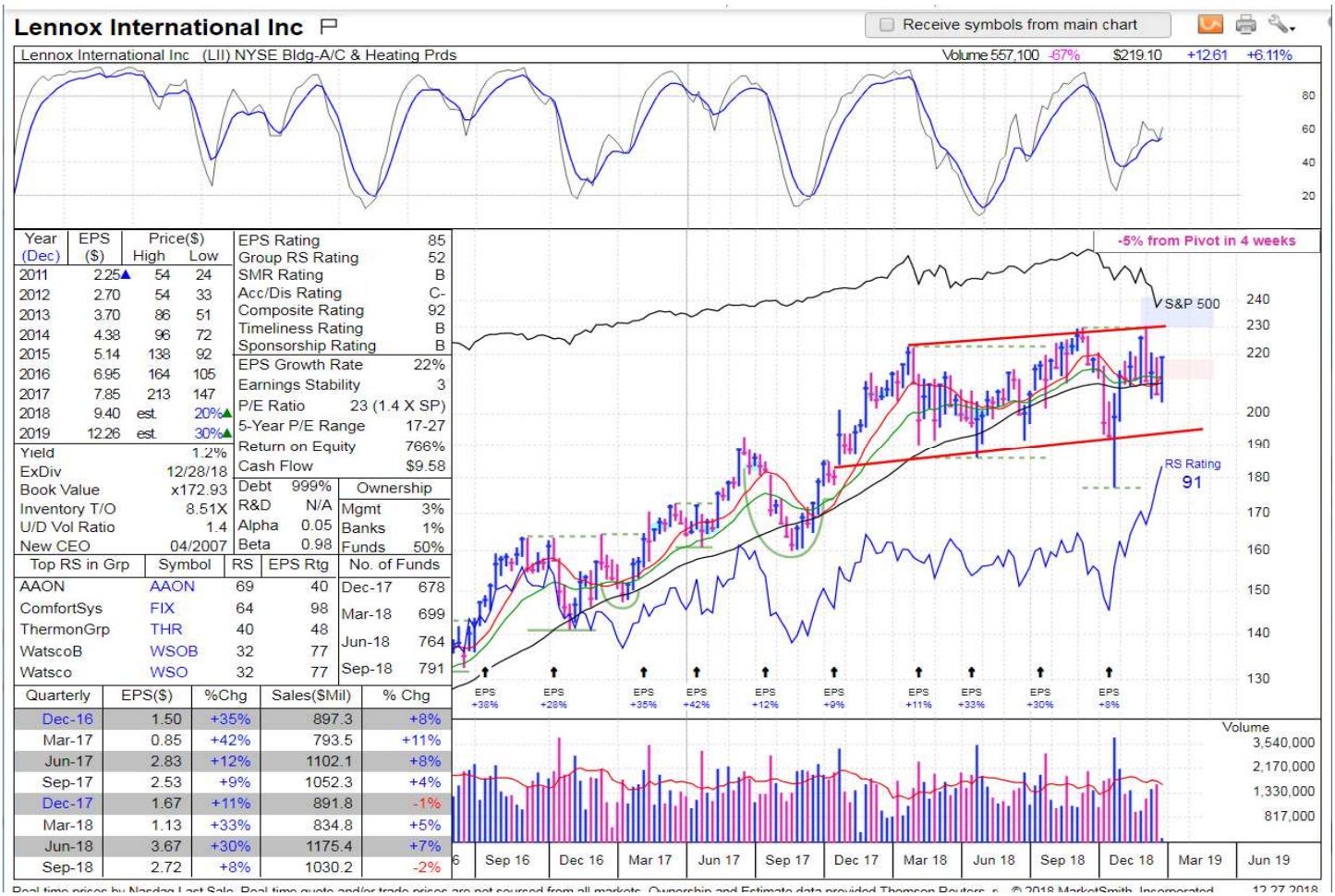
Ownership	
Mgmt	1%
Banks	1%
Funds	38%

Top RS in Grp	Symbol	RS	EPS Rtg
Lindsay	LNN	84	35
Raven	RAVN	67	63
AGCO	AGCO	52	47
Alamo	ALG	32	81

No. of Funds	
Dec-17	1553
Mar-18	1649
Jun-18	1677
Sep-18	1664

Quarterly	EPS($)	%Chg	Sales($Bil)	% Chg
Jan-17	0.42	-48%	5.6	+2%
Apr-17	2.16	+38%	8.3	+5%
Jul-17	1.79	+15%	7.8	+16%
Oct-17	1.57	+74%	8.0	+23%
Jan-18	1.37	+226%	6.9	+23%
Apr-18	3.14	+45%	10.7	+29%
Jul-18	2.59	+45%	10.3	+32%
Oct-18	2.30	+46%	9.4	+17%

Lennox (LII) one of the few relative strength industrials with a RS rating of 91 in a rising channel



Year (Dec)	EPS ($)	Price($) High	Low
2011	2.25▲	54	24
2012	2.70	54	33
2013	3.70	86	51
2014	4.38	96	72
2015	5.14	138	92
2016	6.95	164	105
2017	7.85	213	147
2018	9.40	est.	20%▲
2019	12.26	est.	30%▲

Yield	1.2%
ExDiv	12/28/18
Book Value	x172.93
Inventory T/O	8.51X
U/D Vol Ratio	1.4
New CEO	04/2007

EPS Rating	85
Group RS Rating	52
SMR Rating	B
Acc/Dis Rating	C-
Composite Rating	92
Timeliness Rating	B
Sponsorship Rating	B
EPS Growth Rate	22%
Earnings Stability	3
P/E Ratio	23 (1.4 X SP)
5-Year P/E Range	17-27
Return on Equity	766%
Cash Flow	$9.58
Debt	999%
R&D	N/A
Alpha	0.05
Beta	0.98

Ownership	
Mgmt	3%
Banks	1%
Funds	50%

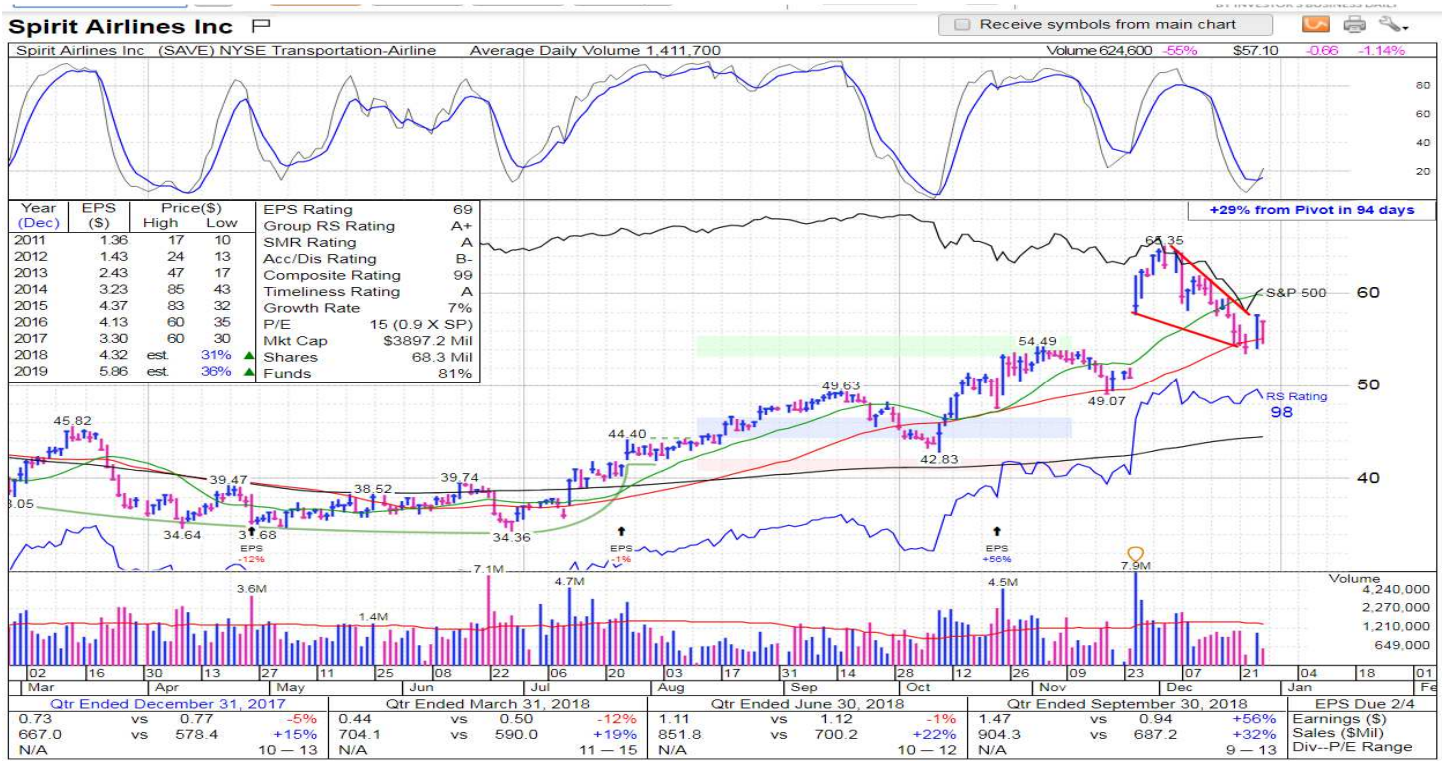
Top RS in Grp	Symbol	RS	EPS Rtg
AAON	AAON	69	40
ComfortSys	FIX	64	98
ThermonGrp	THR	40	48
WatscoB	WSOB	32	77
Watsco	WSO	32	77

No. of Funds	
Dec-17	678
Mar-18	699
Jun-18	764
Sep-18	791

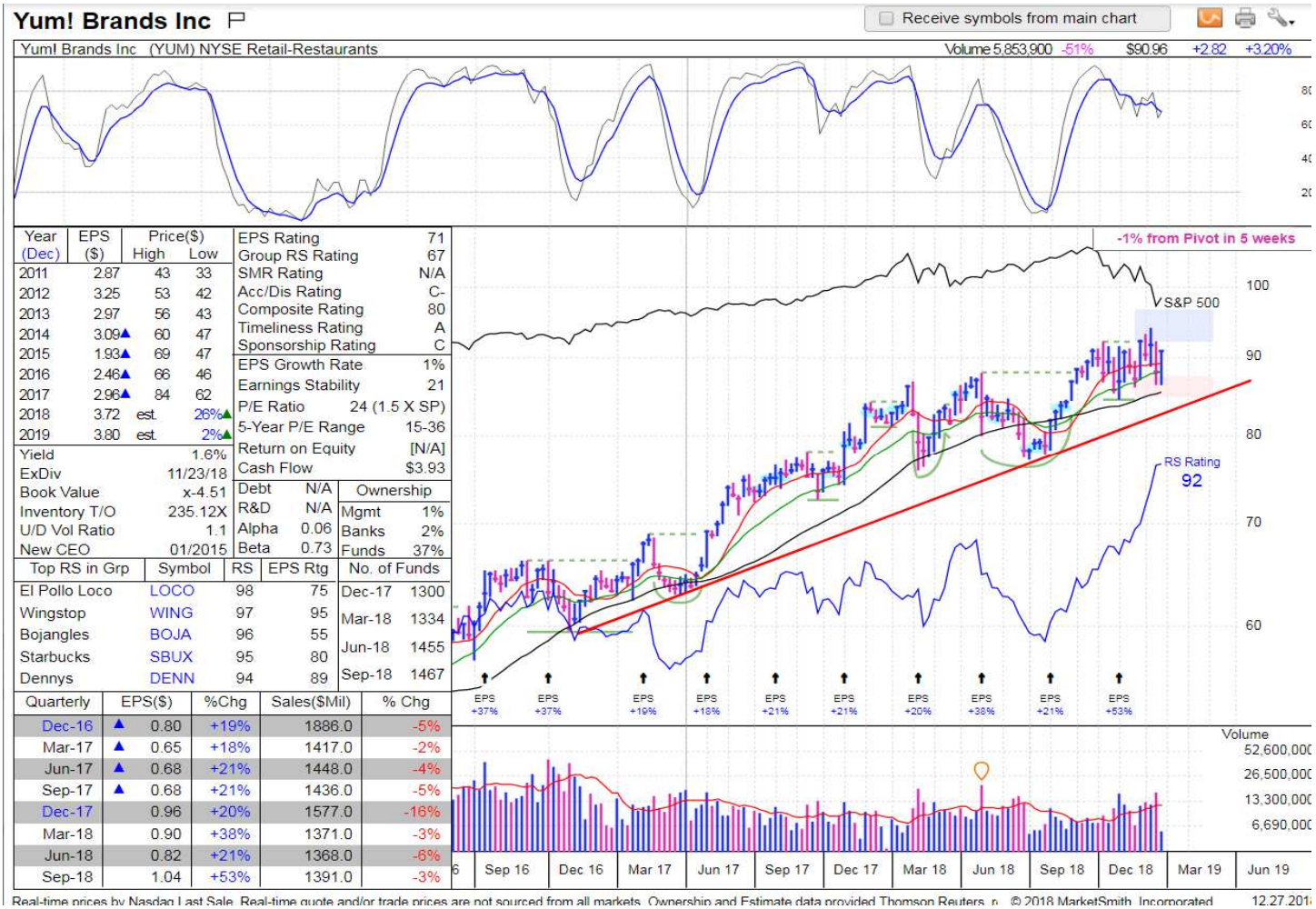
Quarterly	EPS($)	%Chg	Sales($Mil)	% Chg
Dec-16	1.50	+35%	897.3	+8%
Mar-17	0.85	+42%	793.5	+11%
Jun-17	2.83	+12%	1102.1	+8%
Sep-17	2.53	+9%	1052.3	+4%
Dec-17	1.67	+11%	891.8	-1%
Mar-18	1.13	+33%	834.8	+5%
Jun-18	3.67	+30%	1175.4	+7%
Sep-18	2.72	+8%	1030.2	-2%

Services: FOXA, YUM, ORLY, AZO, WWE, PLNT, SAVE, GHC, CHGG, AZUL

Spirit Air (SAVE) pulled back and nearly filled gap before finding rising MA support

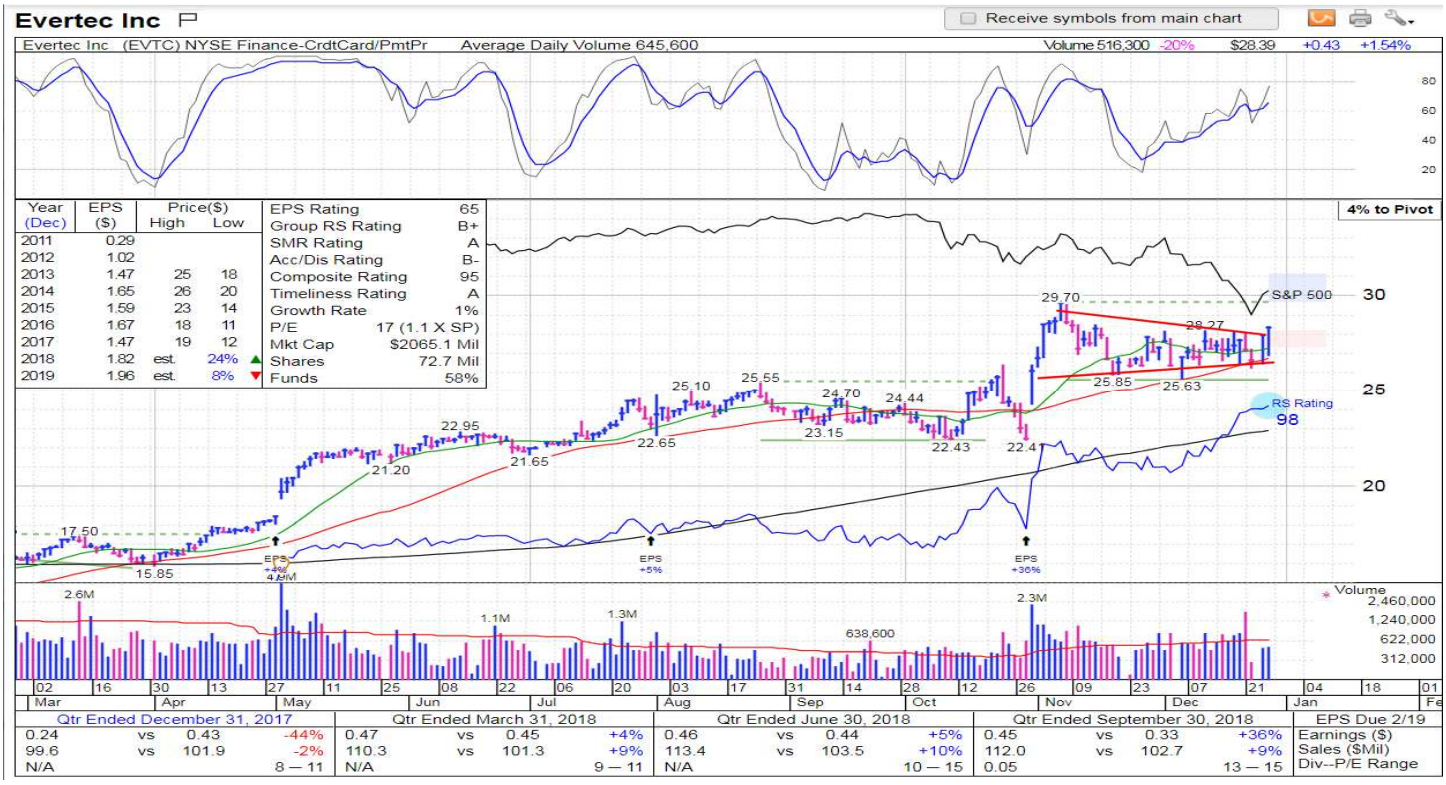


YUM Brands (YUM) strong trend consolidating in range above prior key breakout

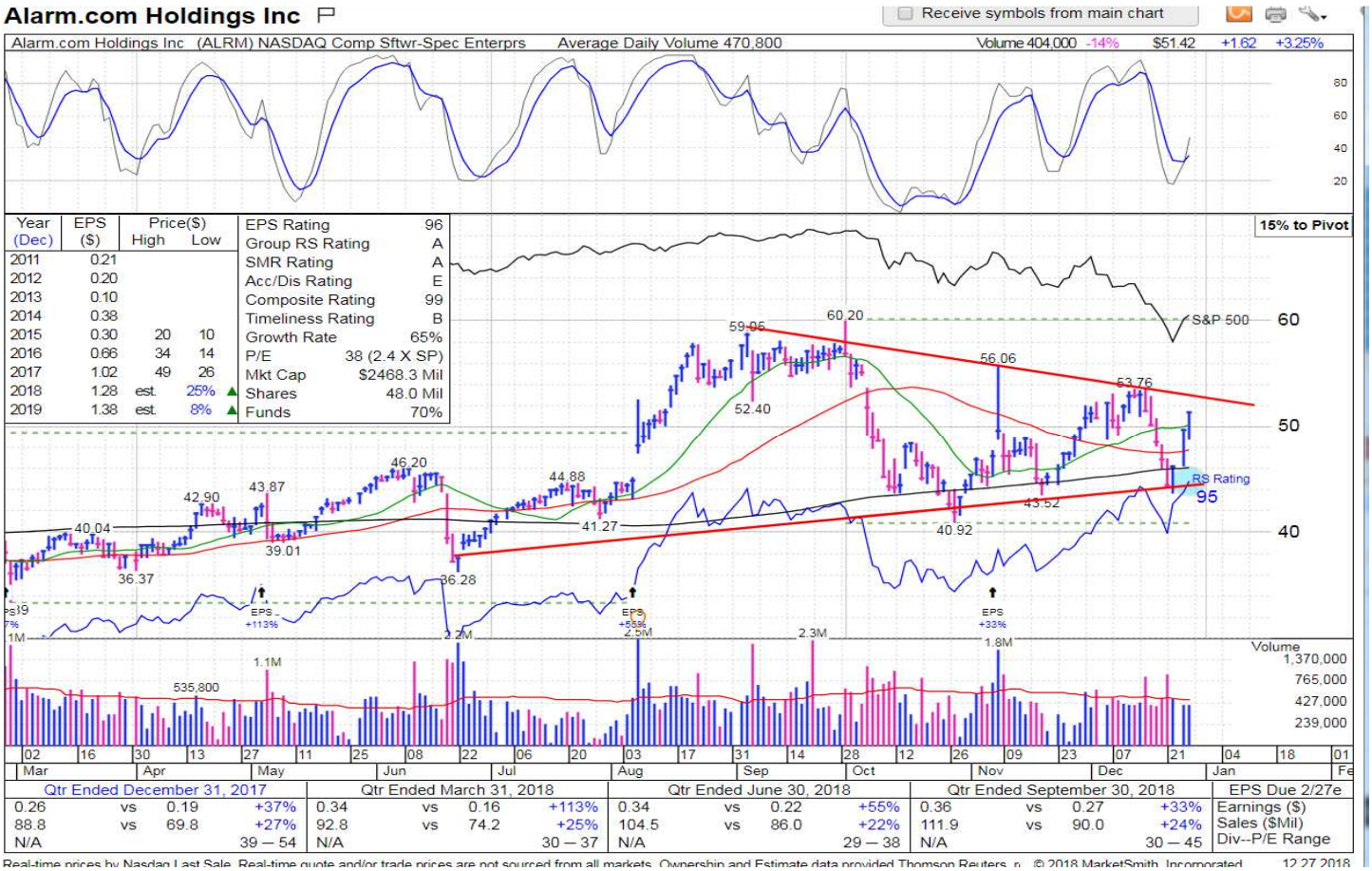


Tech: AVGO, VMW, WDAY, NTES, TEAM, KEYS, DATA, TWLO, OKTA, RNG, CIEN, MLNX, MDB, ZS, COUP, AYX, CYBR, FIVN, BRC, ALRM, INOV, GLOB, EVTC

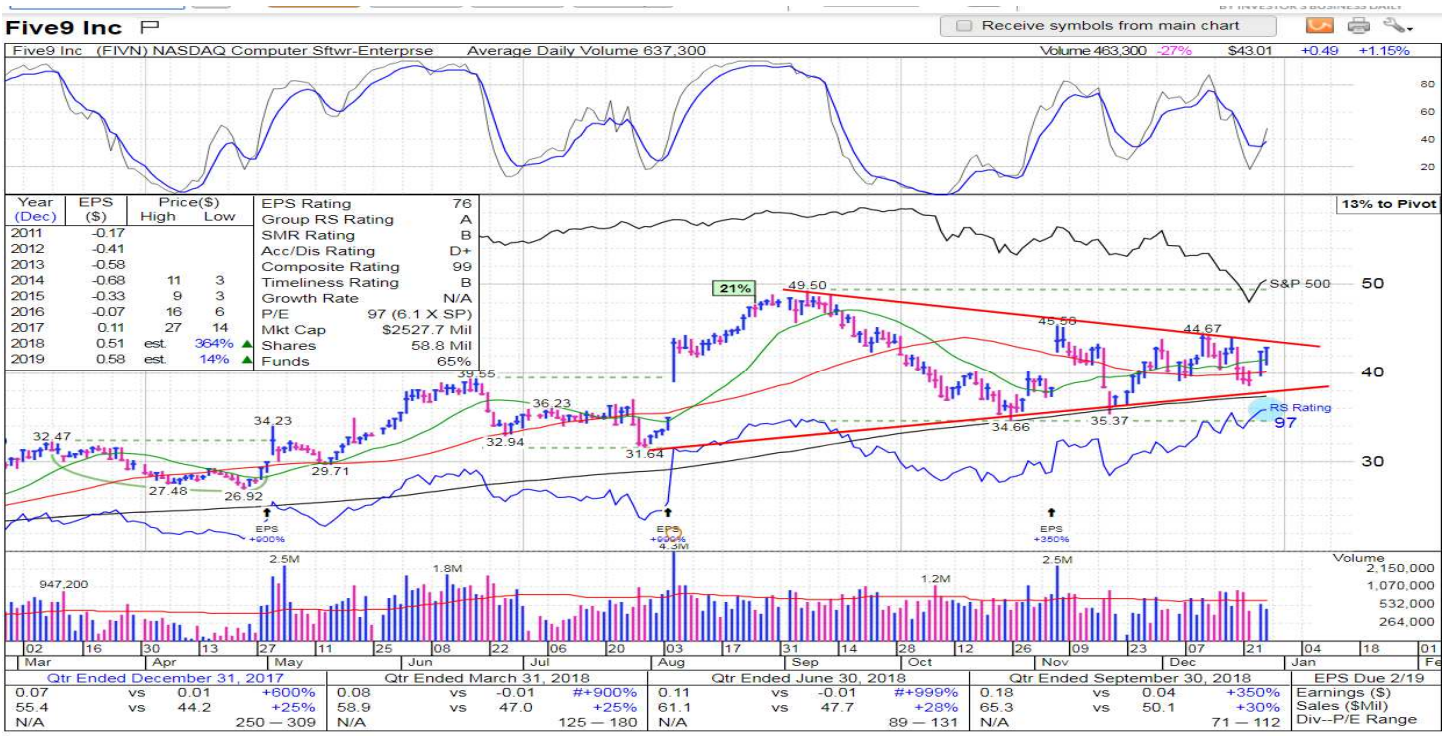
Evertec (EVTC) breaking out of consolidation with a 98 RS rating



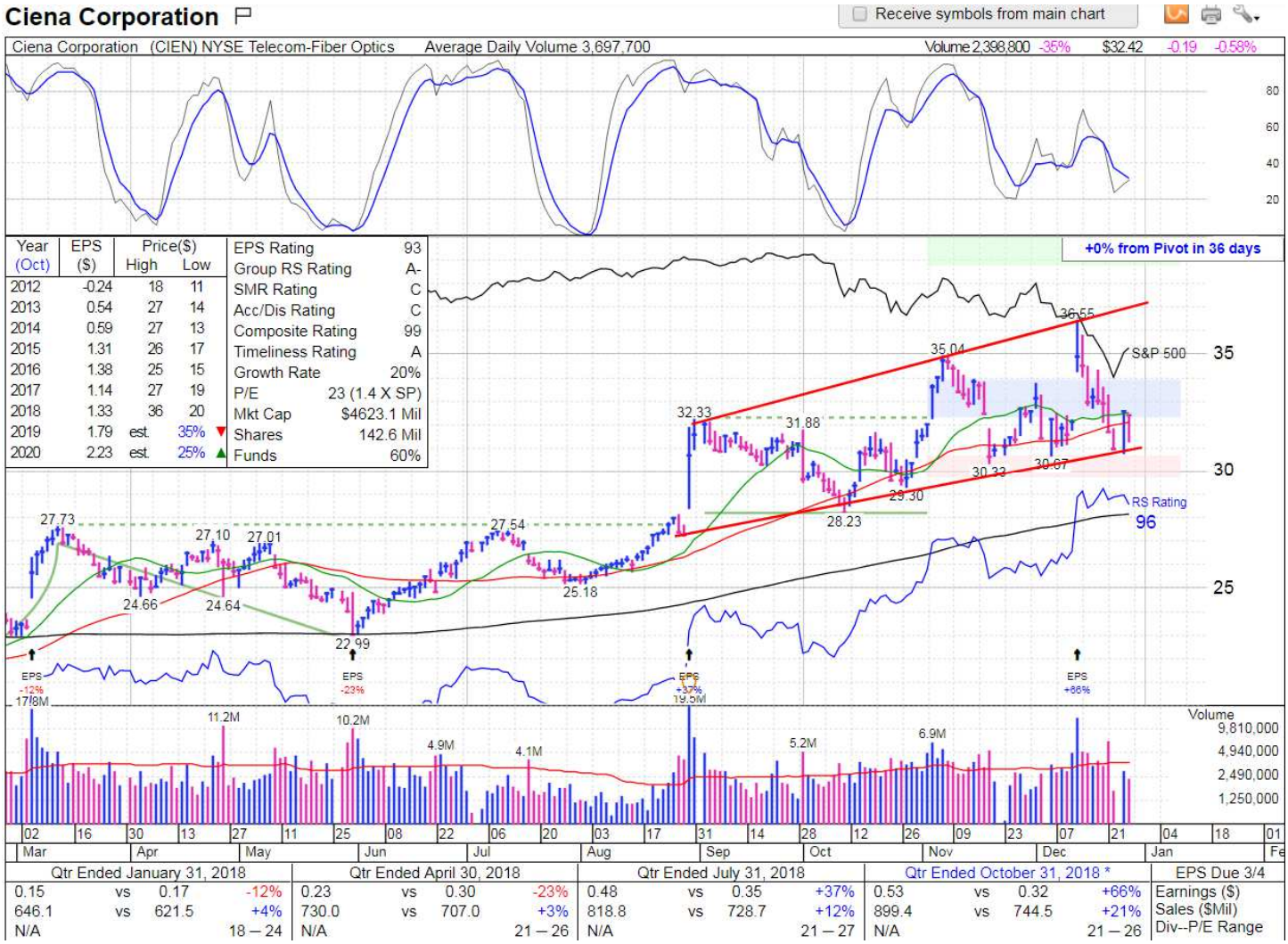
Alarm.com (ALRM) with a 95 RS rating forming large triangle and above the recent 53.75 highs can make a run



Five-9 (FIVN) with a RS rating of 97 forming large triangle and consolidating in narrow range during volatile tape



Ciena (CIEN) pattern of higher highs and higher lows with a RS rating of 96



Large 2019 Options Open Interest Positions of Note (February 2019-Jan. 2020 Expirations)

FEBRUARY 2019

Date	Description	Volume	Price	Delta	Premium Paid
12/20/2018	AMZN 100 15 FEB 19 1600 CALL	2,541	$59.95	0.37	$15,716,085
11/28/2018	AAPL 100 15 FEB 19 180 PUT	12,225	$10.85	-0.47	$13,325,250
11/2/2018	AAPL 100 15 FEB 19 200 PUT	11,465	$9.40	-0.38	$11,178,375
12/6/2018	NFLX 100 15 FEB 19 280 CALL	2,887	$28.00	0.57	$8,170,210
10/31/2018	KO 100 15 FEB 19 48 CALL	33,038	$1.54	0.5	$5,220,004
12/7/2018	FB 100 15 FEB 19 145 CALL	7,463	$6.48	0.433	$4,836,024
12/3/2018	INTC 100 15 FEB 19 50 CALL	17,963	$2.65	0.53	$4,760,195
11/21/2018	CRM 100 15 FEB 19 120 PUT	5,047	$8.90	-0.4	$4,491,830
12/20/2018	PYPL 100 15 FEB 19 70 CALL	3,000	$14.46	0.83	$4,440,000
7/18/2018	CSX 100 15 FEB 19 50 CALL	2,310	$18.50	0.91	$4,273,500
10/10/2018	TSLA 100 15 FEB 19 310 CALL	2,047	$20.70	0.38	$4,237,290
9/7/2018	RH 100 15 FEB 19 120 PUT	3,002	$13.00	-0.367	$3,902,600
12/21/2018	GOOG 100 15 FEB 19 1000 CALL	645	$56.31	0.5	$3,612,000
8/15/2018	LEAF 100 15 FEB 19 6 CALL	7,117	$4.90	1	$3,487,330
12/20/2018	GILD 100 15 FEB 19 65 CALL	8,494	$4.00	0.51	$3,397,600
12/6/2018	LGND 100 15 FEB 19 150 PUT	2,001	$15.50	-0.41	$3,181,590
12/18/2018	ROKU 100 15 FEB 19 37 PUT	4,000	$6.54	-0.68	$2,920,000
12/18/2018	IRBT 100 15 FEB 19 82.5 PUT	2,451	$10.30	-0.44	$2,524,530
11/14/2018	WSM 100 15 FEB 19 62.5 PUT	4,699	$5.20	-0.483	$2,443,480
10/15/2018	UNFI 100 15 FEB 19 30 PUT	4,708	$4.90	-0.64	$2,354,000
12/20/2018	STX 100 15 FEB 19 37.5 PUT	7,000	$3.31	-0.5	$2,345,000
11/5/2018	SRPT 100 15 FEB 19 100 CALL	501	$46.30	0.88	$2,319,630
12/6/2018	LEN 100 15 FEB 19 40 CALL	5,163	$4.25	0.64	$2,297,535
12/21/2018	T 100 15 FEB 19 25 PUT	55,535	$0.40	-0.17	$2,276,935
12/20/2018	GS 100 15 FEB 19 185 PUT	1,210	$18.63	-0.74	$2,254,230
12/6/2018	DBX 100 15 FEB 19 26 PUT	5,027	$4.39	-0.71	$2,206,853
12/18/2018	ADP 100 15 FEB 19 130 CALL	2,505	$7.40	0.53	$1,853,700
12/20/2018	PSEC 100 15 FEB 19 6 PUT	27,473	$0.60	-0.57	$1,785,745
7/31/2018	DOMO 100 15 FEB 19 15 CALL	3,475	$3.60	0	$1,494,250
12/20/2018	CRC 100 15 FEB 19 19 CALL	10,023	$1.45	0.39	$1,453,335
11/26/2018	DIS 100 15 FEB 19 115 CALL	4,262	$3.35	0.426	$1,427,770
11/27/2018	X 100 15 FEB 19 27 PUT	2,950	$4.73	-0.73	$1,416,000
12/12/2018	PG 100 15 FEB 19 97.5 CALL	10,213	$1.24	0.29	$1,327,690
12/14/2018	SPOT 100 15 FEB 19 125 CALL	1,000	$12.50	0.57	$1,250,000
11/15/2018	PLNT 100 15 FEB 19 50 PUT	5,052	$2.40	-0.33	$1,237,740
10/10/2018	RDFN 100 15 FEB 19 17 PUT	4,031	$3.00	-0.53	$1,209,300
10/30/2018	EXEL 100 15 FEB 19 16 CALL	10,002	$1.10	0.4	$1,200,240
12/17/2018	LVS 100 15 FEB 19 55 CALL	3,207	$3.61	0.49	$1,170,555
12/18/2018	HES 100 15 FEB 19 50 PUT	2,311	$4.94	-0.58	$1,167,055
11/15/2018	ETH 100 15 FEB 19 21 PUT	3,689	$3.20	-0.69	$1,143,590
10/26/2018	CL 100 15 FEB 19 65 CALL	10,083	$1.06	0.269	$1,068,798

MARCH 2019

Date	Description	Volume	Price	Delta	Premium Paid
11/29/2018	MELI 100 15 MAR 19 290 CALL	5,014	$72.30	0.81	$41,265,220
8/28/2018	WDAY 100 15 MAR 19 140 CALL	12,500	$23.18	0.68	$28,975,000
12/20/2018	WYNN 100 15 MAR 19 105 CALL	11,059	$8.70	0.47	$9,787,215
12/18/2018	FDC 100 15 MAR 19 17 CALL	39,865	$1.55	0.52	$6,378,400
12/3/2018	AAPL 100 15 MAR 19 175 PUT	7,061	$8.05	-0.36	$5,613,495
10/29/2018	GOOGL 100 15 MAR 19 980 PUT	1,002	$51.40	-1	$5,150,280
12/10/2018	CVRR 100 15 MAR 19 30 PUT	2,500	$17.00	-1	$4,850,000
11/20/2018	BERY 100 15 MAR 19 47.5 CALL	8,454	$5.50	0.63	$4,649,700
7/19/2018	CMCSA 100 15 MAR 19 35 CALL	14,500	$3.05	0.54	$4,640,000
12/21/2018	BIDU 100 15 MAR 19 170 PUT	2,500	$18.30	-0.54	$4,275,000
12/19/2018	AGN 100 15 MAR 19 150 CALL	11,072	$3.80	0.294	$4,207,360
12/3/2018	BBY 100 15 MAR 19 70 PUT	5,677	$7.20	-0.54	$4,087,440
10/24/2018	ERI 100 15 MAR 19 45 CALL	15,000	$2.50	0.36	$3,825,000
12/14/2018	PSA 100 15 MAR 19 210 PUT	2,716	$14.00	-0.63	$3,802,400
11/8/2018	LVS 100 15 MAR 19 55 CALL	10,549	$3.30	0.47	$3,639,405
10/26/2018	RCL 100 15 MAR 19 105 CALL	4,271	$8.30	0.527	$3,544,930
12/13/2018	AAOI 100 15 MAR 19 30 PUT	2,946	$10.92	-0.8	$3,217,032
10/30/2018	EBIX 100 15 MAR 19 45 PUT	9,000	$3.30	-0.22	$2,970,000
10/4/2018	STX 100 15 MAR 19 45 PUT	6,328	$4.00	-0.4	$2,531,200
12/6/2018	TGT 100 15 MAR 19 75 CALL	12,071	$1.95	0.29	$2,402,129
12/20/2018	TPX 100 15 MAR 19 45 CALL	5,300	$4.30	0.51	$2,332,000
11/12/2018	AMRN 100 15 MAR 19 20 CALL	5,040	$4.20	0.59	$2,268,000
11/27/2018	AKS 100 15 MAR 19 4 PUT	20,594	$1.09	-0.7	$2,242,021
12/13/2018	LRCX 100 15 MAR 19 135 CALL	1,550	$13.88	0	$2,151,400
7/23/2018	CYH 100 15 MAR 19 3 PUT	20,000	$1.05	-0.35	$2,100,000
12/21/2018	TRIP 100 15 MAR 19 52.5 PUT	4,018	$5.17	-0.43	$2,077,306
12/3/2018	FOSL 100 15 MAR 19 23 PUT	4,091	$5.00	-0.495	$2,045,500
8/8/2018	EXTR 100 15 MAR 19 2.5 CALL	5,000	$3.90	0.95	$1,950,000
12/7/2018	DE 100 15 MAR 19 155 CALL	2,720	$7.13	0.426	$1,939,360
10/31/2018	XLNX 100 15 MAR 19 85 CALL	2,548	$7.55	0.55	$1,923,740
12/14/2018	EPD 100 15 MAR 19 28 PUT	6,193	$2.90	-0.73	$1,826,935
12/13/2018	TTWO 100 15 MAR 19 105 CALL	1,868	$9.76	0.545	$1,823,168
11/15/2018	PCG 100 15 MAR 19 25 CALL	5,777	$3.03	0.44	$1,787,150
10/18/2018	BMY 100 15 MAR 19 50 CALL	2,100	$7.95	74.00%	$1,669,500
8/8/2018	PEGI 100 15 MAR 19 20 PUT	5,020	$3.30	-1	$1,656,600
11/9/2018	DECK 100 15 MAR 19 140 PUT	1,070	$15.00	-0.517	$1,605,000
9/12/2018	HCA 100 15 MAR 19 115 PUT	5,000	$3.20	-0.216	$1,600,000
11/21/2018	MPC 100 15 MAR 19 62.5 CALL	2,452	$6.40	0.58	$1,581,540

10/26/2018	SNBR 100 15 MAR 19 40 PUT	2,263	$6.90	-1	$1,561,470
12/21/2018	BAH 100 15 MAR 19 45 PUT	6,001	$2.60	-0.45	$1,560,260
12/6/2018	AMG 100 15 MAR 19 105 PUT	1,793	$8.70	-1	$1,559,910
11/16/2018	URI 100 15 MAR 19 115 CALL	1,062	$14.30	0.59	$1,529,280
8/3/2018	CATM 100 15 MAR 19 35 PUT	2,000	$7.50	-0.56	$1,500,000
8/31/2018	CROX 100 15 MAR 19 22 PUT	4,001	$3.50	-0.5	$1,400,350
10/31/2018	WWW 100 15 MAR 19 40 PUT	2,114	$6.60	-0.67	$1,395,240
7/24/2018	NVCR 100 15 MAR 19 32.5 CALL	1,500	$8.80	0.73	$1,320,000
12/3/2018	PVG 100 15 MAR 19 7 PUT	15,377	$0.86	-1	$1,307,045
12/21/2018	BRK/B 100 15 MAR 19 210 CALL	3,048	$3.90	0.29	$1,280,160
8/1/2018	SKT 100 15 MAR 19 25 PUT	4,335	$2.95	-0.57	$1,278,825
11/21/2018	ZAYO 100 15 MAR 19 27.5 CALL	4,251	$2.70	0.52	$1,275,300
9/24/2018	I 100 15 MAR 19 26 CALL	3,000	$4.10	0.53	$1,230,000
9/13/2018	KEM 100 15 MAR 19 16 CALL	2,000	$6.00	0.78	$1,200,000
7/31/2018	GDS 100 15 MAR 19 25 CALL	2,057	$5.50	0.58	$1,131,350
12/11/2018	FTNT 100 15 MAR 19 75 PUT	1,600	$6.50	-0.46	$1,088,000
10/29/2018	FSLR 100 15 MAR 19 45 CALL	5,010	$2.14	0.33	$1,072,140
11/28/2018	CNQ 100 15 MAR 19 22 PUT	10,202	$1.05	-0.29	$1,071,210
8/8/2018	INGN 100 15 MAR 19 230 PUT	400	$25.80	-0.4	$1,032,000
11/20/2018	DISH 100 15 MAR 19 30 PUT	3,031	$3.26	-0.43	$1,030,540
12/13/2018	OLED 100 15 MAR 19 100 CALL	984	$10.10	0.519	$993,840
12/4/2018	MGA 100 15 MAR 19 50 CALL	4,002	$2.45	0.43	$980,490

MAY 2019

Date	Description	Volume	Price	Delta	Premium Paid
10/30/2018	S 100 17 MAY 19 7 PUT	25,000	$1.63	-0.78	$6,250,000
11/1/2018	SIVB 100 17 MAY 19 220 PUT	2,000	$18.20	-0.32	$3,660,000
11/6/2018	THS 100 17 MAY 19 50 PUT	4,220	$8.00	-0.5	$3,333,800
11/26/2018	THS 100 17 MAY 19 55 PUT	4,245	$7.58	-1	$3,217,710
12/18/2018	BHF 100 17 MAY 19 35 PUT	5,000	$4.80	-0.5	$2,400,000
11/8/2018	HLF 100 17 MAY 19 45 PUT	15,000	$1.46	-0.17	$2,190,000
12/19/2018	TIF 100 17 MAY 19 90 CALL	6,514	$3.35	0.307	$2,182,190
12/11/2018	YELP 100 17 MAY 19 35 PUT	4,000	$5.10	-0.42	$2,100,000
12/10/2018	RH 100 17 MAY 19 115 CALL	602	$34.00	0.76	$2,046,800
11/30/2018	SIVB 100 17 MAY 19 195 PUT	2,150	$8.49	-0.17	$1,956,500
12/12/2018	AMBA 100 17 MAY 19 40 CALL	3,000	$5.65	0.57	$1,710,000
12/14/2018	BAC 100 17 MAY 19 24 CALL	7,044	$2.38	0.57	$1,676,472
10/17/2018	LEN 100 17 MAY 19 45 CALL	4,036	$3.60	0.49	$1,452,960
11/12/2018	DDS 100 17 MAY 19 65 PUT	2,446	$5.80	-0.25	$1,443,140
10/4/2018	FCX 100 17 MAY 19 13 PUT	10,038	$1.23	-0.38	$1,415,358
11/21/2018	YELP 100 17 MAY 19 33 CALL	3,164	$4.15	0.53	$1,328,880
11/2/2018	APTV 100 17 MAY 19 70 PUT	3,000	$4.40	-0.999	$1,320,000
12/7/2018	MCO 100 17 MAY 19 140 PUT	2,001	$6.00	-0.33	$1,290,645
11/12/2018	NEO 100 17 MAY 19 15 CALL	3,077	$3.30	0.69	$1,138,490
11/28/2018	KO 100 17 MAY 19 49 CALL	4,779	$2.33	56.00%	$1,113,507
10/24/2018	FIT 100 17 MAY 19 4 PUT	20,033	$0.52	-28.00%	$1,041,716
12/14/2018	LM 100 17 MAY 19 27 PUT	3,521	$2.60	-0.56	$1,021,090
11/29/2018	YELP 100 17 MAY 19 30 PUT	3,500	$2.88	-0.29	$1,008,000
11/26/2018	TPR 100 17 MAY 19 30 CALL	1,050	$9.20	0.831	$966,000
11/5/2018	QIWI 100 17 MAY 19 15 PUT	3,300	$2.59	-1	$940,500
12/12/2018	ATH 100 17 MAY 19 40 PUT	2,634	$3.30	-1	$869,220
10/17/2018	BZH 100 17 MAY 19 11 CALL	7,500	$1.10	0.46	$862,500
12/20/2018	HIIQ 100 17 MAY 19 31 CALL	2,767	$3.10	0.44	$857,770
11/30/2018	NLSN 100 17 MAY 19 25 PUT	4,500	$1.60	-0.33	$810,000
12/21/2018	XLRN 100 17 MAY 19 50 CALL	2,007	$3.30	0.38	$762,660
12/21/2018	VOYA 100 17 MAY 19 40 CALL	2,559	$2.85	0.46	$729,315
10/25/2018	AGIO 100 17 MAY 19 75 CALL	2,000	$3.20	0.29	$640,000
11/26/2018	REZI 100 17 MAY 19 17.5 CALL	1,410	$4.52	0.001	$637,320

JUNE 2019

Date	Description	Volume	Price	Delta	Premium Paid
3/1/2018	AMZN 100 21 JUN 19 1500 CALL	1,868	$244.80	0.59	$47,950,000
7/27/2018	NFLX 100 21 JUN 19 250 CALL	2,290	$120.50	0.87	$27,972,350
11/26/2018	AVGO 100 21 JUN 19 250 CALL	7,500	$17.50	0.446	$13,125,000
12/6/2018	QCOM 100 21 JUN 19 57.5 CALL	11,882	$4.45	0.48	$5,287,490
12/6/2018	DE 100 21 JUN 19 150 PUT	4,019	$12.55	-0.42	$5,144,320
12/20/2018	MO 100 21 JUN 19 50 PUT	8,579	$4.75	-0.47	$4,075,025
9/13/2018	MA 100 21 JUN 19 240 CALL	4,056	$9.90	0.37	$4,015,440
9/28/2018	EXPE 100 21 JUN 19 125 PUT	4,031	$9.30	-0.37	$3,748,830
12/13/2018	XOM 100 21 JUN 19 85 PUT	3,550	$10.50	-0.736	$3,727,500
11/16/2018	ITUB 100 21 JUN 19 17 PUT	10,180	$3.52	-0.67	$3,583,360
9/28/2018	FB 100 21 JUN 19 155 PUT	3,207	$10.92	-0.346	$3,502,044
10/12/2018	INTC 100 21 JUN 19 47 CALL	11,083	$3.00	43.80%	$3,324,900
11/13/2018	VIAB 100 21 JUN 19 30 PUT	15,000	$2.20	-0.33	$3,300,000
8/23/2018	UTX 100 21 JUN 19 145 CALL	5,000	$4.93	0.33	$2,700,000
11/20/2018	FGEN 100 21 JUN 19 55 CALL	5,002	$4.60	0.4	$2,601,040
11/30/2018	PXD 100 21 JUN 19 150 CALL	1,500	$16.30	0.55	$2,445,000
7/31/2018	NSC 100 21 JUN 19 170 CALL	1,500	$15.56	0.55	$2,385,000
12/21/2018	TXN 100 21 JUN 19 100 CALL	5,000	$4.75	0.37	$2,375,000
9/28/2018	EXPE 100 21 JUN 19 135 CALL	2,014	$11.48	0.505	$2,312,072
12/12/2018	NTES 100 21 JUN 19 250 PUT	700	$30.60	-0.44	$2,142,000
10/29/2018	DISH 100 21 JUN 19 27.5 PUT	5,103	$3.99	-0.388	$2,036,097
10/29/2018	FGEN 100 21 JUN 19 55 CALL	3,527	$5.50	0.434	$1,939,850
11/23/2018	SLB 100 21 JUN 19 45 CALL	4,004	$4.46	0.569	$1,785,784
12/12/2018	SPLK 100 21 JUN 19 110 CALL	1,024	$17.10	0.59	$1,751,040
4/18/2018	VZ 100 21 JUN 19 45 CALL	3,001	$5.80	0.63	$1,725,575
11/30/2018	ARRY 100 21 JUN 19 16 CALL	5,000	$3.20	0.59	$1,600,000
12/17/2018	UNP 100 21 JUN 19 135 CALL	1,000	$14.50	0.61	$1,465,000
12/12/2018	FEYE 100 21 JUN 19 20 CALL	4,552	$2.67	0.56	$1,251,800
12/17/2018	BAC 100 21 JUN 19 28 CALL	13,260	$0.93	0.31	$1,233,180
12/20/2018	LULU 100 21 JUN 19 120 CALL	892	$12.74	0.51	$1,172,980
12/19/2018	SEM 100 21 JUN 19 17 CALL	5,675	$2.00	0.001	$1,135,000
11/28/2018	KO 100 21 JUN 19 49 CALL	4,132	$2.50	0.54	$1,033,000
12/10/2018	ADS 100 21 JUN 19 200 CALL	915	$11.20	0.39	$1,024,800
12/20/2018	MS 100 21 JUN 19 36 CALL	1,800	$5.45	0.66	$981,000
12/3/2018	COUP 100 21 JUN 19 50 CALL	450	$21.25	0.8	$956,250
12/12/2018	LOW 100 21 JUN 19 80 PUT	2,817	$3.43	-0.24	$966,231
11/21/2018	UTX 100 21 JUN 19 140 CALL	2,001	$4.60	0.32	$930,465

JULY 2019

Date	Description	Volume	Price	Delta	Premium Paid
12/17/2018	SNAP 100 19 JUL 19 8 PUT	25,294	$2.75	-0.67	$7,107,614
12/4/2018	SNAP 100 19 JUL 19 10 PUT	17,575	$3.84	-0.73	$6,854,250
11/20/2018	SHOP 100 19 JUL 19 130 PUT	2,076	$21.58	-0.39	$4,480,008
12/21/2018	X 100 19 JUL 19 27 PUT	5,000	$8.86	-0.79	$4,430,000
12/12/2018	WB 100 19 JUL 19 65 PUT	4,000	$10.10	-0.41	$4,120,000
12/11/2018	ROKU 100 19 JUL 19 37 PUT	3,000	$8.70	-0.43	$2,670,000
11/20/2018	SHOP 100 19 JUL 19 170 CALL	2,075	$12.23	0.37	$2,537,725
12/14/2018	PYPL 100 19 JUL 19 95 CALL	4,000	$5.85	0.42	$2,380,000
12/12/2018	BZUN 100 19 JUL 19 35 PUT	3,810	$5.90	-0.35	$2,286,000
12/11/2018	TWLO 100 19 JUL 19 90 PUT	1,250	$16.45	-0.37	$2,037,500
12/17/2018	BHGE 100 19 JUL 19 22 PUT	6,815	$2.69	-0.44	$1,833,235
12/20/2018	WFC 100 19 JUL 19 47.5 CALL	5,005	$3.63	0.47	$1,816,815
12/12/2018	MOMO 100 19 JUL 19 25 PUT	4,102	$4.10	-0.36	$1,681,820
12/14/2018	TWLO 100 19 JUL 19 125 CALL	2,000	$8.15	0.35	$1,630,000
12/21/2018	DB 100 19 JUL 19 7 PUT	21,000	$0.78	-0.29	$1,617,000
12/6/2018	MSFT 100 19 JUL 19 97.5 PUT	3,000	$4.90	-0.28	$1,485,000
12/13/2018	EXAS 100 19 JUL 19 70 PUT	1,200	$11.70	-0.999	$1,404,000
11/26/2018	DUK 100 19 JUL 19 85 CALL	2,010	$5.71	0.553	$1,147,710
12/11/2018	NTNX 100 19 JUL 19 45 CALL	1,102	$8.70	0.61	$969,760
12/13/2018	AMD 100 19 JUL 19 23 CALL	3,017	$3.20	0.502	$965,440
12/13/2018	HAS 100 19 JUL 19 95 CALL	2,400	$4.00	0.336	$960,000
12/12/2018	WDC 100 19 JUL 19 47.5 CALL	2,533	$3.55	0.4	$899,215
11/27/2018	UPS 100 19 JUL 19 110 PUT	1,000	$8.05	-0.45	$805,000
11/27/2018	FE 100 19 JUL 19 37 PUT	3,500	$2.05	-0.43	$717,500

DECEMBER 2019

Date	Description	Volume	Price	Delta	Premium Paid
11/2/2018	MHK 100 20 DEC 19 120 CALL	2,150	$28.00	0.69	$6,020,000
3/23/2018	FB 100 20 DEC 19 180 CALL	2,399	$24.25	0.52	$5,817,575
9/11/2018	XEC 100 20 DEC 19 115 CALL	8,803	$5.00	0.29	$4,401,500
7/19/2018	EQIX 100 20 DEC 19 440 CALL	400	$48.18	0.54	$1,927,200
8/31/2018	TDG 100 20 DEC 19 310 CALL	254	$67.80	0.74	$1,722,120
12/10/2018	EQIX 100 20 DEC 19 350 CALL	200	$62.18	0.67	$1,243,600
7/26/2018	BDX 100 20 DEC 19 270 CALL	753	$15.90	0.43	$1,197,270
12/13/2018	NBIX 100 20 DEC 19 80 PUT	500	$17.10	-0.47	$855,000
10/26/2018	LOGM 100 20 DEC 19 75 CALL	456	$18.56	0.69	$846,336
10/1/2018	SGEN 100 20 DEC 19 80 PUT	831	$10.10	-0.4	$839,310

JANUARY 2020

Date	Description	Volume	Price	Delta	Premium Paid
11/13/2017	SEAS 100 17 JAN 20 20 PUT	78,993	$8.50	-1	$67,144,050
5/3/2018	TSLA 100 17 JAN 20 200 CALL	2,669	$118.00	0.82	$31,761,100
10/30/2018	FB 100 17 JAN 20 160 CALL	14,730	$16.80	0.49	$25,261,950
12/17/2018	TSLA 100 17 JAN 20 280 CALL	1,486	$123.20	0.77	$18,307,520
10/10/2018	BABA 100 17 JAN 20 135 PUT	10,356	$16.55	-0.37	$17,656,980
10/10/2018	BABA 100 17 JAN 20 160 CALL	10,046	$16.50	0.48	$17,329,350
12/10/2018	GE 100 17 JAN 20 3 CALL	37,324	$4.35	0.91	$16,422,560
10/24/2018	GILD 100 17 JAN 20 70 CALL	15,397	$9.50	54.00%	$14,627,150
6/20/2018	BRK/B 100 17 JAN 20 170 CALL	3,521	$36.45	0.72	$13,027,700
12/13/2018	WFC 100 17 JAN 20 50 CALL	26,228	$4.40	0.461	$11,540,320
11/2/2018	NXPI 100 17 JAN 20 85 CALL	7,500	$14.00	0.58	$10,500,000
6/14/2018	EOG 100 17 JAN 20 135 CALL	7,500	$10.30	0.43	$8,700,000
5/10/2018	VLO 100 17 JAN 20 75 CALL	2,000	$41.35	0.86	$8,510,000
10/10/2018	GDS 100 17 JAN 20 35 CALL	20,000	$4.17	0.41	$8,340,000
1/30/2018	AIG 100 17 JAN 20 45 CALL	4,004	$19.25	0.87	$7,727,720
8/6/2018	CHK 100 17 JAN 20 7 CALL	103,276	$0.67	0.42	$7,435,872
12/20/2018	OPK 100 17 JAN 20 5 PUT	30,000	$2.45	-0.64	$7,350,000
9/25/2017	UPS 100 17 JAN 20 140 CALL	20,001	$3.07	0.21	$7,000,350
6/14/2018	EOG 100 17 JAN 20 105 PUT	7,500	$8.70	-0.29	$6,675,000
12/13/2018	THC 100 17 JAN 20 25 CALL	10,825	$5.70	0.602	$6,170,250
4/20/2018	KKR 100 17 JAN 20 25 CALL	25,081	$2.25	0.4	$6,144,845
1/3/2018	BRK/B 100 17 JAN 20 220 CALL	3,439	$17.50	0.46	$6,069,835
1/2/2018	BRK/B 100 17 JAN 20 210 CALL	2,941	$20.20	0.51	$5,999,640
4/20/2018	BX 100 17 JAN 20 40 CALL	39,565	$1.20	0.23	$5,934,750
11/28/2018	YELP 100 17 JAN 20 30 PUT	10,187	$5.00	-0.35	$5,281,640
10/11/2018	ALLY 100 17 JAN 20 25 CALL	10,709	$4.50	0.62	$4,819,050
4/27/2018	CHTR 100 17 JAN 20 290 CALL	1,252	$38.20	0.512	$4,782,640
7/6/2018	KR 100 17 JAN 20 30 CALL	13,088	$3.62	0.523	$4,737,856
12/4/2018	ATVI 100 17 JAN 20 60 CALL	10,002	$4.15	0.38	$4,400,880
6/18/2018	PXD 100 17 JAN 20 220 CALL	2,000	$22.31	0.44	$4,360,000
5/21/2018	EMR 100 17 JAN 20 80 CALL	7,686	5.3	0.42	$4,073,580
5/17/2018	CMCSA 100 17 JAN 20 30 CALL	6,430	6.25	0.64	$4,050,900
11/28/2018	AVGO 100 17 JAN 20 270 CALL	2,032	$18.50	0.39	$3,942,080
11/2/2018	SYF 100 17 JAN 20 28 CALL	10,000	$3.60	0.5	$3,500,000
9/28/2018	CREE 100 17 JAN 20 28 CALL	2,534	$13.71	0.802	$3,474,114
12/10/2018	SWKS 100 17 JAN 20 87.5 PUT	1,496	$23.00	-0.72	$3,470,720
12/11/2018	KO 100 17 JAN 20 40 PUT	35,335	$0.97	-0.15	$3,462,830
11/29/2018	TWTR 100 17 JAN 20 70 CALL	60,134	$0.55	0.09	$3,307,370

12/20/2018	PAGS 100 17 JAN 20 17.5 CALL	5,000	$5.70	0.68	$2,950,000
12/10/2018	AFL 100 17 JAN 20 32.5 CALL	2,500	$11.50	0.79	$2,875,000
12/17/2018	SIG 100 17 JAN 20 50 CALL	10,102	$2.80	0.3	$2,828,560
9/6/2018	MRVL 100 17 JAN 20 15 PUT	21,557	$0.79	-0.19	$2,802,410
12/12/2018	YPF 100 17 JAN 20 13 PUT	13,326	$2.05	-0.3	$2,798,460
10/16/2018	CXO 100 17 JAN 20 165 CALL	1,500	$16.54	51.00%	$2,655,000
12/11/2018	Z 100 17 JAN 20 45 CALL	4,308	$5.30	0.47	$2,369,400
10/25/2018	FCX 100 17 JAN 20 12 CALL	14,276	$1.65	0.51	$2,355,540
10/30/2018	EBAY 100 17 JAN 20 20 CALL	2,500	$9.30	0.83	$2,350,000
12/15/2017	IBM 100 17 JAN 20 180 CALL	3,004	$7.00	0.27	$2,162,880
11/14/2018	MLCO 100 17 JAN 20 18 CALL	8,000	$2.50	0.498	$2,000,000
12/10/2018	PRU 100 17 JAN 20 80 PUT	2,000	$9.10	-0.41	$1,970,000
10/19/2018	AA 100 17 JAN 20 50 CALL	5,000	$3.39	0.37	$1,800,000
11/20/2018	RDS/A 100 17 JAN 20 55 CALL	2,061	$8.10	0.63	$1,690,020
12/20/2018	AMT 100 17 JAN 20 180 CALL	2,088	$7.50	0.35	$1,607,760

Notable Short Puts in OI within 10% of Current Price

Description	Volume	Price	Cost Paid	Distance from Price
T 100 15 JAN 21 25 PUT	6,715	$2.15	$1,443,725	9.44%
CHTR 100 17 JAN 20 250 PUT	1,251	$30.00	$3,753,000	9.41%
I 100 21 JUN 19 17.5 PUT	3,840	$2.80	$1,305,600	8.51%
GM 100 15 JAN 21 30 PUT	5,009	$4.75	$2,454,410	7.90%
FOXA 100 18 APR 19 43 PUT	6,150	$2.40	$1,476,000	7.79%
YELP 100 17 MAY 19 30 PUT	3,500	$2.88	$1,008,000	7.47%
YELP 100 17 JAN 20 30 PUT	10,187	$5.00	$5,281,640	7.47%
BMRN 100 18 JAN 19 75 PUT	4,520	$2.20	$1,039,600	6.85%
EA 100 15 JAN 21 70 PUT	1,500	$7.05	$1,275,000	6.74%
INCY 100 18 JAN 19 55 PUT	2,503	$4.30	$1,626,950	6.36%
PYPL 100 21 JUN 19 72.5 PUT	2,000	$5.05	$1,010,000	6.29%
AMT 100 18 JAN 19 145 PUT	7,053	$2.05	$1,622,190	5.92%
VALE 100 15 JAN 21 12 PUT	6,000	$2.37	$1,422,000	5.00%
DVN 100 18 JAN 19 20 PUT	20,000	$1.27	$2,540,000	4.90%
ALGN 100 18 APR 19 185 PUT	1,005	$17.45	$1,753,725	4.71%
AGN 100 18 JAN 19 125 PUT	2,501	$7.50	$1,875,750	3.86%
AMZN 100 21 JUN 19 1300 PUT	1,860	$114.20	$22,633,500	3.38%
BAC 100 18 JAN 19 22 PUT	10,006	$2.66	$2,901,740	3.32%
BIIB 100 18 JAN 19 270 PUT	250	$40.00	$1,000,000	3.15%
TAL 100 17 JAN 20 25 PUT	7,500	$3.30	$2,475,000	3.12%
TECK 100 15 JAN 21 20 PUT	5,000	$3.90	$1,950,000	2.65%
FEYE 100 18 JAN 19 15 PUT	4,500	$3.11	$1,462,500	2.60%
BA 100 15 FEB 19 290 PUT	4,273	$5.07	$2,264,690	1.43%
VIAB 100 21 JUN 19 25 PUT	15,000	$0.70	$1,050,000	1.40%
INTC 100 18 APR 19 43 PUT	5,056	$2.02	$1,021,312	1.37%
GILD 100 17 JAN 20 60 PUT	2,264	$5.30	$1,199,920	0.90%
IQ 100 15 JAN 21 15 PUT	3,899	$3.70	$1,520,610	0.67%
REGN 100 18 JAN 19 340 PUT	1,072	$19.03	$2,040,016	0.19%
PANW 100 18 JAN 19 170 PUT	1,129	$10.55	$1,191,095	-0.03%
IBN 100 18 JAN 19 10 PUT	9,000	$1.09	$1,080,000	-0.20%
JPM 100 18 JAN 19 92.5 PUT	3,000	$10.20	$3,165,000	-0.39%
AXP 100 17 JAN 20 90 PUT	2,625	$6.60	$1,732,500	-0.56%
TMO 100 18 JAN 19 210 PUT	500	$24.20	$1,210,000	-0.73%
SHOP 100 18 JAN 19 120 PUT	2,000	8.8	$1,760,000	-0.75%
MSFT 100 15 FEB 19 95 PUT	5,090	$2.35	$1,201,240	-0.92%
UAL 100 17 JAN 20 80 PUT	1,753	$6.95	$1,218,335	-1.10%
MPC 100 18 JAN 19 55 PUT	1,416	$6.95	$1,033,680	-1.24%
GPS 100 17 JAN 20 25 PUT	6,000	$2.15	$1,560,000	-1.28%
GPS 100 15 JAN 21 25 PUT	3,800	$4.15	$1,577,000	-1.28%
JWN 100 17 JAN 20 45 PUT	3,500	$4.35	$1,960,000	-1.80%
DWDP 100 17 JAN 20 50 PUT	3,255	$2.84	$1,009,050	-1.82%
PLNT 100 15 FEB 19 50 PUT	5,052	$2.40	$1,237,740	-1.90%
AMD 100 18 JAN 19 17 PUT	5,593	$5.79	$3,327,835	-2.06%
BABA 100 17 JAN 20 135 PUT	10,356	$16.55	$17,656,980	-2.30%
QCOM 100 21 JUN 19 55 PUT	3,265	$3.70	$1,208,050	-2.45%
QCOM 100 17 JAN 20 55 PUT	2,011	$5.45	$1,116,105	-2.45%
BMY 100 18 JAN 19 50 PUT	2,253	$4.40	$1,025,115	-2.48%
AVGO 100 18 JAN 19 240 PUT	747	$20.26	$1,513,422	-2.58%

A	B	C	D	H
Description	Volume	Price	Cost Paid	Distance from Price
TEVA 100 17 JAN 20 15 PUT	5,005	$2.50	$1,251,250	-2.73%
CRM 100 15 FEB 19 125 PUT	1,345	$10.35	$1,324,825	-2.94%
LVS 100 21 JUN 19 50 PUT	3,000	$4.80	$1,440,000	-3.12%
CMG 100 17 JAN 20 400 PUT	500	$45.50	$2,275,000	-3.54%
SYF 100 18 JAN 19 23 PUT	4,000	$2.51	$1,080,000	-3.61%
NOW 100 18 JAN 19 165 PUT	1,260	$11.40	$1,436,400	-3.68%
MRVL 100 17 JAN 20 15 PUT	21,557	$0.79	$2,802,410	-3.93%
PRU 100 17 JAN 20 80 PUT	2,000	$9.10	$1,970,000	-3.96%
UAA 100 18 JAN 19 17.5 PUT	4,707	$2.70	$1,341,495	-4.29%
AMZN 100 15 FEB 19 1410 PUT	687	$41.95	$2,871,660	-4.68%
MRK 100 17 JAN 20 75 PUT	1,500	$7.65	$1,147,500	-5.13%
TMO 100 18 JAN 19 220 PUT	500	$21.50	$1,075,000	-5.24%
RIO 100 17 JAN 20 50 PUT	2,500	$5.49	$1,400,000	-5.26%
FCAU 100 18 JAN 19 15 PUT	20,010	$1.55	$3,201,600	-5.27%
CLF 100 18 APR 19 8 PUT	10,001	$1.08	$1,040,104	-5.38%
KHC 100 15 JAN 21 45 PUT	2,586	$4.40	$1,137,840	-5.47%
CMCSA 100 18 JAN 19 35 PUT	10,002	$2.02	$2,100,420	-5.51%
RH 100 17 MAY 19 115 PUT	681	$18.70	$1,273,470	-5.69%
MDLZ 100 17 JAN 20 42 PUT	3,000	$3.60	$1,080,000	-6.00%
ILMN 100 18 JAN 19 290 PUT	1,222	$11.85	$1,539,720	-6.05%
MCHP 100 18 APR 19 70 PUT	5,000	$3.70	$2,250,000	-6.10%
SLB 100 18 JAN 19 37.5 PUT	20,316	$0.93	$1,909,704	-6.16%
TMUS 100 17 JAN 20 65 PUT	2,500	$7.45	$2,050,000	-6.46%
AVGO 100 18 JAN 19 250 PUT	500	$35.10	$1,765,000	-6.48%
CL 100 18 JAN 19 62.5 PUT	11,332	$1.93	$2,187,076	-7.14%
BIDU 100 17 JAN 20 170 PUT	1,565	$15.80	$2,590,075	-7.58%
GGB 100 15 MAR 19 4 PUT	74,616	$0.40	$2,984,640	-7.75%
MLCO 100 18 JAN 19 18.68 PUT	6,300	$2.15	$1,480,500	-7.82%
YELP 100 17 MAY 19 35 PUT	4,000	$5.10	$2,100,000	-7.89%
KSS 100 17 JAN 20 65 PUT	2,300	$7.10	$1,771,000	-8.02%
MA 100 18 JAN 19 190 PUT	4,240	$8.55	$3,625,200	-8.08%
DE 100 21 JUN 19 150 PUT	4,019	$12.55	$5,144,320	-8.41%
DAL 100 18 JAN 19 52.5 PUT	2,510	$5.06	$1,342,850	-8.65%
URI 100 17 JAN 20 105 PUT	601	$17.37	$1,043,937	-8.67%
EXPE 100 21 JUN 19 120 PUT	1,657	$11.10	$1,839,270	-9.08%
KMX 100 18 JAN 19 65 PUT	1,000	$11.40	$1,140,000	-9.15%
INTC 100 18 APR 19 48 PUT	4,050	$3.30	$1,356,750	-9.19%
LOW 100 18 JAN 19 95 PUT	1,200	$8.45	$1,014,000	-9.52%
CTXS 100 17 JAN 20 110 PUT	1,669	$10.20	$1,752,450	-9.57%
GOOG 100 18 JAN 19 1080 PUT	1,643	$36.90	$6,062,670	-9.61%
RH 100 15 FEB 19 120 PUT	3,002	$13.00	$3,902,600	-9.62%
PFE 100 17 JAN 20 45 PUT	3,652	$4.75	$1,734,700	-9.89%
KORS 100 15 JAN 21 40 PUT	2,300	$5.75	$1,426,000	-9.93%
AAL 100 18 JAN 19 33 PUT	8,250	$4.15	$3,423,750	-9.94%
INCY 100 17 JAN 20 65 PUT	1,234	$7.20	$1,122,940	-10.00%

DISCLAIMER:

Data Accuracy: This report was prepared from 12-01-18 to 12-31-18 so some of the figures may not be exact as of the end of 2018, but due to the time-intensive nature of the project it was required. The data provided is deemed to be reliable and was collected from multiple sources. Charts are provided courtesy of Finviz.com, Tradingview.com, and MarketSmith.

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