

March 9, 2018

Martin Marietta Materials (MLM)

Analyst: Emilien MARY

Sector: Materials

Industry: Construction Materials

Current Price: \$209.18

Target Price: \$254.14

Company Description: Martin Marietta Materials, Inc. is a leading supplier of construction aggregates and heavy building materials, with more than 400 locations spanning 32 states, Canada and the Caribbean. The company supplies aggregates (59 percent of its revenue), ready mixed concrete (23.6 percent), cements (9.7 percent) and asphalt/paving (7.5 percent) to the United States construction industry. It operates in four main markets: Infrastructure (40percent of the company's aggregates product line shipment), Nonresidential (31 percent), Residential (21 percent), and ChemRock/Rail (8percent).

BUY

Current Price: \$209.18

Target Price: \$254.14

Market Cap: 13.14B

Beta: 1.05

Rev growth 1yr: 3.85%

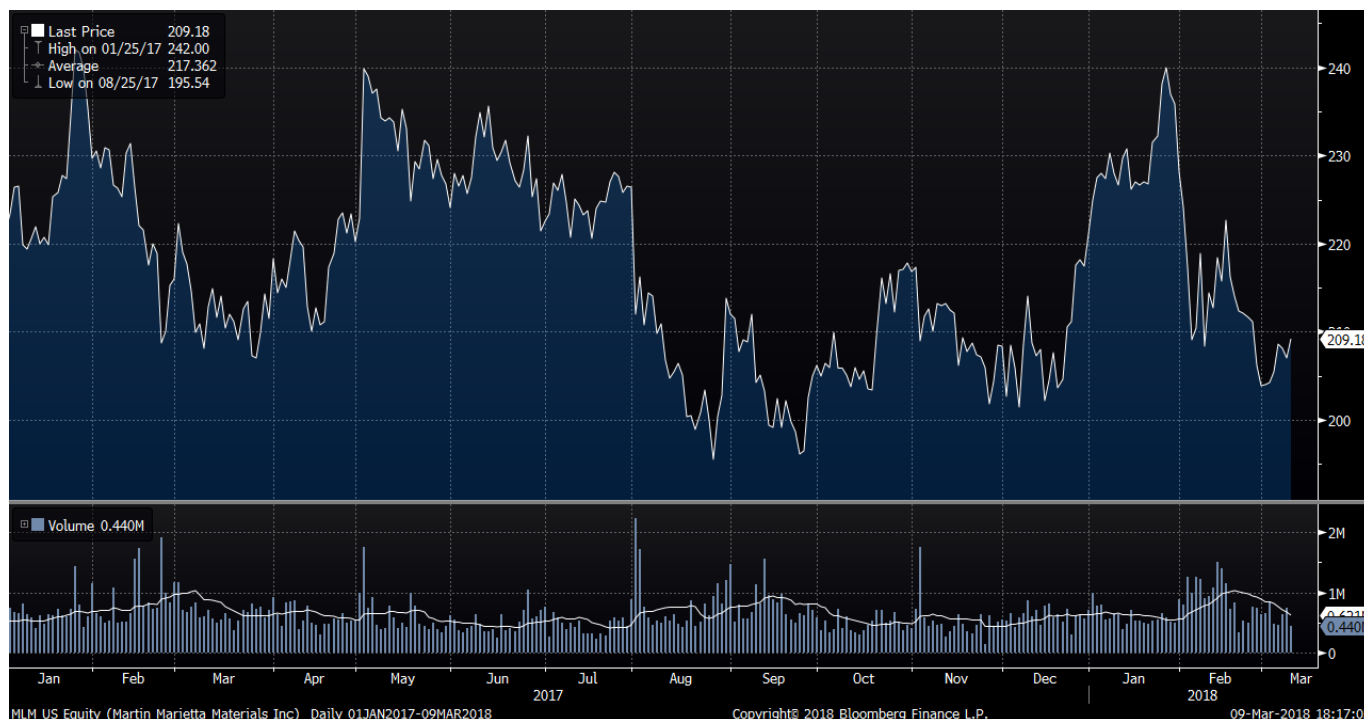
EPS: 6.22%

ROE: 10.12%

NI margin: 12.53%

Catalysts: Forward looking projections that call for positive/negative outlook that will strengthen your thesis. Example:

- Short Term (within the year): Uncertainty of government decision on infrastructure investment.
- Mid Term(1-2 years): Donald Trump's tax windfall: Capex benefits
- Long Term (3+): Ability to sustain the market growth compare to its peers.



Thesis: The diversity of MLM in its four huge potential growing market make MLM an attractive stock. Its ability to control its expenses make MLM one of the most attractive company in the construction materials market. Its huge presence on growing market such as Texas and Florida permit to the company to be well positioned for the forecasting growth. In addition, its low level and cheap debt permit to the company to catch any opportunity of growth through acquisition or above maintenance level of capital spending.

Earnings Performance:

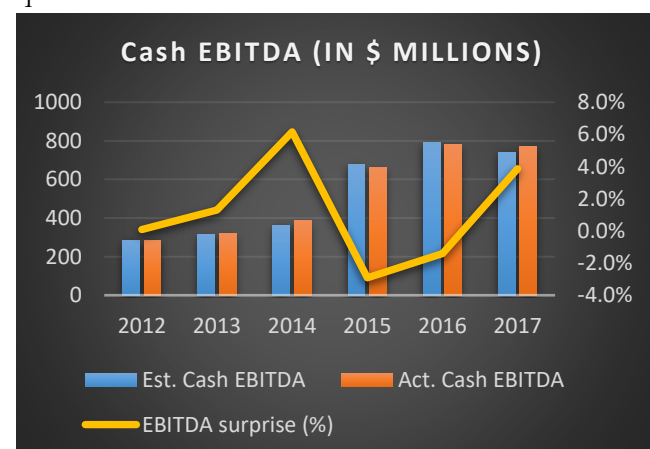
Total revenue has grown by 37.9 percent, 22 percent, 9.04 percent and 4.0 percent from respectively 2014 to 2017. The slowing growth from 2015 to 2017 are mainly explained by the erratic weather and the government uncertainty to invest in infrastructure. The last mentioned point still remain unanswered as of today and the last speech of President Trump does not permit to clarify the decision. The current revenues of the company culminate at 3.721 billion for the year of 2017, an increase of 4 percent or 144.66 million from 2016. This increase in 2017 is explained by the increase in price of the aggregates by 4.5 percent while volume decline by 0.6 percent.

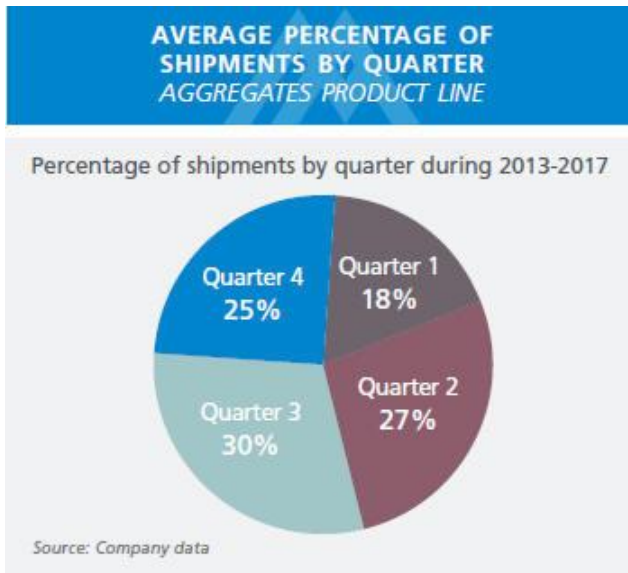
Since 2012, Martin Marietta Materials has always increased its gross profit margin. From a gross profit margin of 17.8 percent in 2012 to a high 26.1 percent in 2017, MLM has significantly increased its profitability even with the erratic weather conditions in the last two years. In addition to the increase in price of the aggregates by 4.5 percent, the company efficiently manages its controllable production costs, as evidenced by a 60 bps improvement in consolidated gross margin to finish at a 26.1 percent of gross margin in 2017.



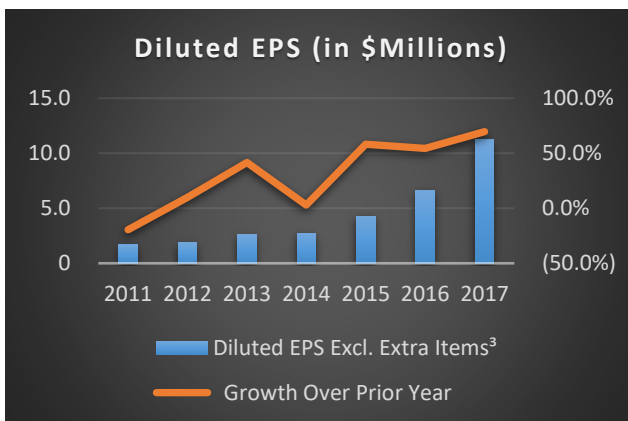
Over the last five year, MLM has beaten analyst Cash EBITDA estimates by 4 times in 2012, 2013, 2014 and 2017. The company missed estimate two years in 2015 and 2016.

This negative Cash Ebitda surprise was mainly explained by wet weather in Texas during the majority of the second quarter 2016 and the El Niño effect, which occurred between the springs 2015 and ended in May 2016. This wet weather condition negatively affects the production schedules, shipments, costs, efficiencies and profitability of the company causing lower volume in shipment as it generally occurs during the first quarter.

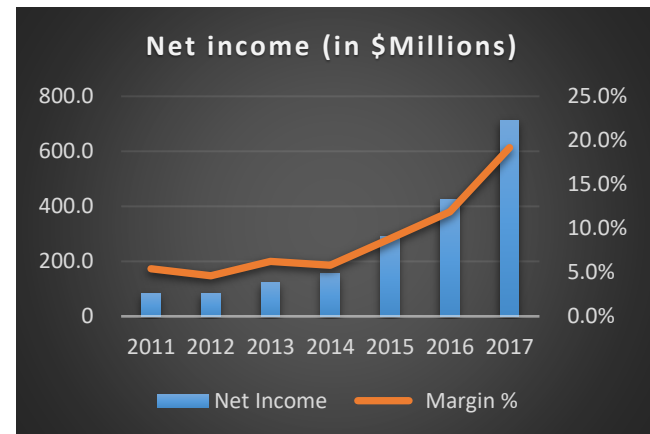




Since 2015, growth over prior year of diluted EPS is above the 50 percent. As a result of the Tax Cuts and Jobs Act of 2017 (2017 Tax Act), Martin Marietta Materials has recorded significant earnings in 2017 with an increase in diluted EPS of 69.7 percent with an increase of \$4.62 compared to 2016. In the 2017 EPS of \$11.25, \$4.07 are attributed to the benefit of the 2017 Tax Act.



As a result, Net income reach a high of \$713.3 million, an increase of 68 percent compare to the \$425.4 million of 2016. Another consequence of the additional \$258.1 million income provide by the tax incentive is the significant increase in net income margin from 11.9 percent in 2016 to 19.2 percent in 2017.



To sum up, the earning performance of the company of 2017 increased due to the tax incentive but the tax incentive will only occur during 2017. The real performances of the company are slightly above the 2016 exercise and we can see the stock climb from \$220 to \$210 for the last year. As a result of uncertainty in government spending in infrastructure market and erratic weather condition, the company earnings of the company have slow during 2017.

Analysis of Stock Past Movement (2016-2018):



05/05/2016 – #1 on Graph - Marietta 1Q EPS Beats highest Est., Raises Yr Ebitda View (Sources: Bloomberg)

MLM hit all the analyst's estimation for the 1st quarter of 2016 with an EPS at \$0.69 instead of est. at \$0.36. resulting in a gain of 10 percent in the stock price over the month of May from \$169.35 on May 2nd to \$188.60 on May 31th. Revenue increased by 16.2 percent with \$102.1 million from \$631.9m in Q1 2015 to \$734.0m in Q1 2016 while estimation was between a range of \$638m and \$670m. This unexpected revenues growth was a result from the starting of several large, and principally state-funded highway projects and increased in residential and non-residential construction activity.

11/08/2016 – #2 on Graph Trump's - Election

The election of Donald Trump as the President of the United States mostly benefited the materials producers as the main President' objective was to plan a construction of a wall along the Mexican

Border. As a result, investor saw this election as an opportunity for natural resource based building material companies which will see the demand for cement and aggregate sharply increase if the wall plan is approved. As a result, MLM stock price rose by 11.6 percent on one day from \$202.01 on 11/08/2016 to \$225.39 on 11/09/2016 after Trump's election.

01/25/2017 – #3 on Graph – Build-material stocks rise on Trump plan for Mexico Wall (Source: Bloomberg)

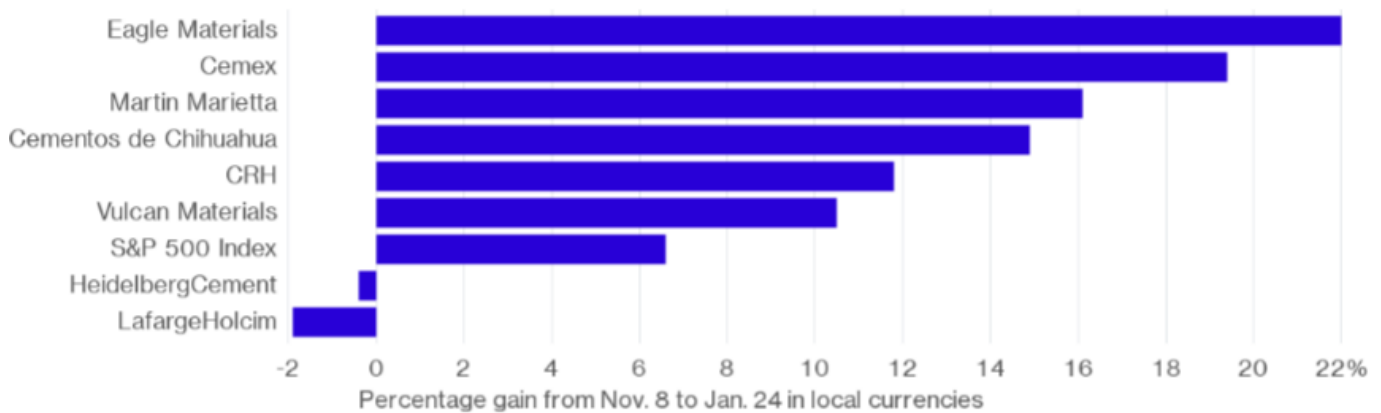
Martin Marietta Materials, Inc. closed at 242.00, and hit an all-time high. Investor highly reacted to the President Donald Trump's favorite way of communication, tweeter, on the building of Mexico border wall. This rose movement in the building-material company industry showed significant potential increase in demand for cement, concrete and crushed stone, raw materials required for the construction of the wall.

(See figure 1)

Figure 1:

Bricks in the Wall

Shares of most building-materials makers have outpaced S&P 500 Index since U.S. election



Bloomberg

05/01/2017 - #4 on Graph - Eagle Materials, Peers Jump as Texas March Cement Shipments Rise (Source: Bloomberg)

Texas demand of cement increased by 17 percent in March 2017 and led to an increase in construction materials based company with a 2.9 percent increase in MLM stock price. Texas is one of the five largest sales generating states of the company with Colorado, North Carolina, Iowa and Georgia. These five states generated 74 percent of the company's net sales in 2017

08/01/2017 - #5 on Graph – Construction Material Stocks fall as Martin Marietta 2Q misses (Source: Bloomberg)

Martin Marietta stock fell by 6.2 percent after the company report below forecasted estimates. MLM missed EPS estimates for Q2 2017. EPS estimates was at a consensus of \$2.36 and MLM reported an EPS of \$2.25. Due to significant precipitation from North Carolina to Florida, aggregates shipments and operating efficiencies decreased. In fact, precipitation and other weather- related conditions, including flooding, hurricanes, snowstorms and droughts, can significantly affect production schedules, shipments, costs, efficiencies and profitability of the construction industry.

08/28/2017 – #6 and #7 on Graph - Texas Weather a Headwind for Building Materials Stocks and Post-Hurricane Harvey Rebuilt (Source: Bloomberg)

August experienced one of its wettest period due to the hurricane Harvey from August 17th to September 3rd. As a result, volume shipment for cement and aggregates was negatively impacted by that weather making analyst to decrease their forecast.

However, the post-Harvey period caused an increased in this industry's stock because of the rebuilding boom. Building material and cement companies seen new demand for their product line due to the destruction caused by hurricanes.

01/31/2018 - #8 on Graph - Cement Stocks Fall After Trump Infrastructure Comments (Source: Bloomberg)

While President Donald Trump gave his State of the Union speech, investor negatively reacted on the subject of the infrastructure plan. President gave few details regarding the infrastructure bill while investor waited for more concrete decision and data. In addition, Trump did not gave any clue on the funding of this huge \$1.7 trillion infrastructure

bill. As a result, construction materials and cement stock fell: EXP -5.5 percent, USCR -3.7 percent, VMC -2.8 percent, MLM -2.8 percent.

To sum up, share of construction material based companies has sharply risen after trump election in

November 2016. However, due to hard weather condition and delay of Trump's infrastructure and Mexican border wall plans, these industry has mainly underperformed the S&P500



Industry Overview and Product Portfolio and Diversification:

Martin Marietta Material operates through four markets: Public infrastructure, Nonresidential, Residential, and ChemRock/Rail.

Public infrastructure corresponds to highways, streets, roads, bridges, and schools. It represent 40 percent of the company's aggregates product line shipments in 2017, consistent with 2016, and below the 5 year average of 43 percent. This below average is due to government uncertainty in the infrastructure bill of \$1.7 billion that could mainly impact this market if the plan is approved by increasing significantly the demand, and so the price, for aggregate product. However, this market is more stable comparing to the three next market because of the predictability of funding from federal, state and local governments has bills for infrastructure are generally for many year or decades. In addition, infrastructure market offer

long-term contracts (more than a year to be completed) and enable long-term planning and stability comparing to the other market where the length is general less than a year.

In December 2015, government has signed the Fixing America's Surface Transportation Act (FAST' Act), the first long-term transportation funding bill for a decades with a funding of \$305 billion over 2016 to 2020. However, the benefit from the FAST act has not been seen and should be experienced during the coming years.

In November 2017, \$3.7 billion of transportation funding initiatives has been approved in Texas, Colorado, Georgia, South Carolina and Kansas. MLM is mainly present in these states and can have great opportunity to increase its growth.

MLM can target a steady growth in the infrastructure segment in the coming years as the industry can see strengthens in state infrastructure spending initiatives.

Nonresidential construction is composed of manufacturing and distribution facilities, industrial complexes, office buildings, large retailers and wholesalers, malls, and energy- related activities. It represent 31 percent of the company's aggregate product line shipment in 2017, consistent with the 31 percent 5 year average.

The Gulf Coast projects should provide the next large wave of energy and the benefits of these projects for MLM should be seen in 2018. The first part of this project is in the Houston area with the construction boon related two 20 significant petro chemical projects that represents \$89 billion plant expansion and approximately 50,000 direct and indirect jobs. In addition, there is the Gulf Coast LNG, liquefied natural gas, facilities expansion. Already 14 new LNG import/export terminals has been approved and 15 others sites are proposed.

This news projects are great opportunities for MLM and the company has great position in these area. The company can target positive growth in its nonresidential revenue for the next five years.

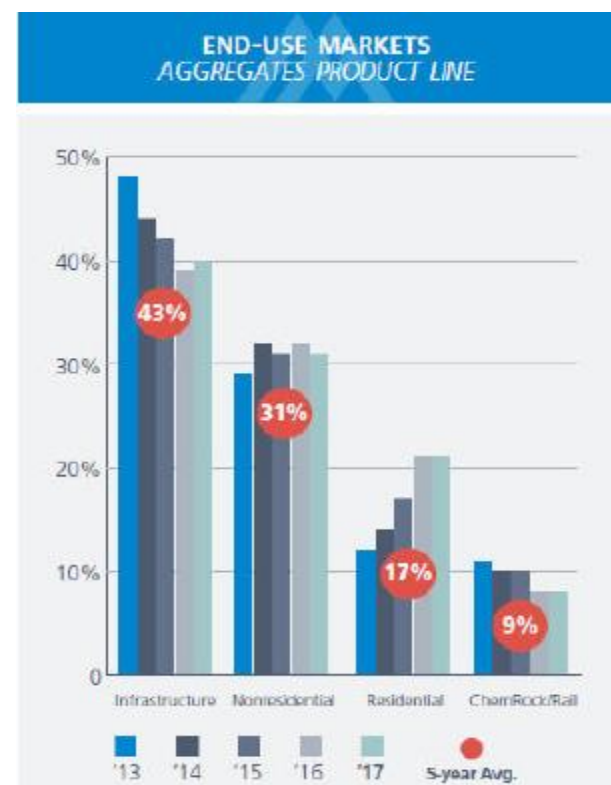
Residential corresponds to subdivision development, and single and multifamily housing. It represents 21 percent of the company's aggregate product line shipment in 2017 far above the 5 years average due to the significant decrease in infrastructure market and to the increase of 12 percent in private residential construction spending in 2017 compared to 2016.

The 2016 single-family housing permits drive the 2017 consumption and 6 of the top 10 gain in family consumption are key states for MLM. This growth will remain as it is supported by employment gains, low mortgage rates and higher lot development. This growth in residential construction will later drive constructions for nonresidential and infrastructure activity.

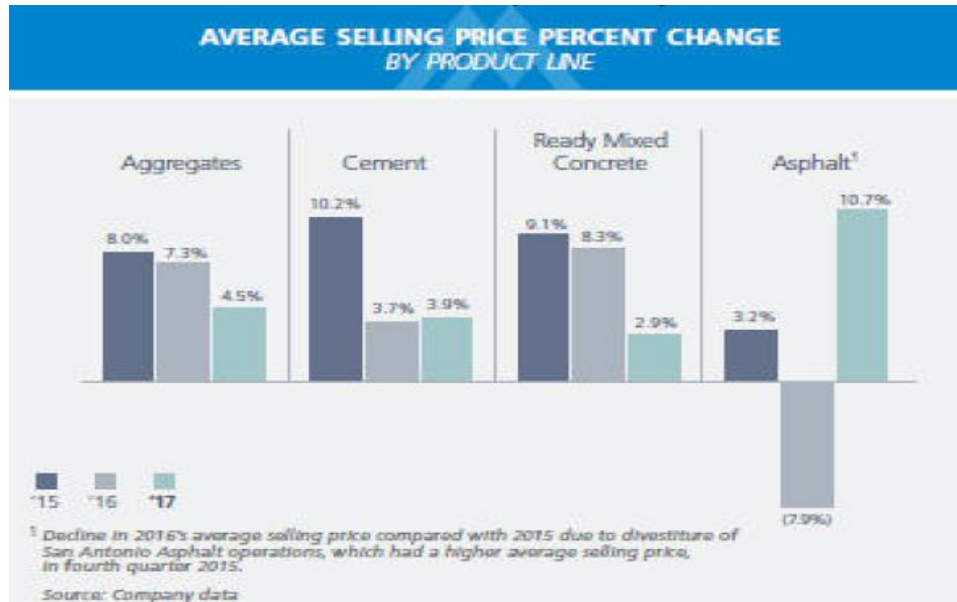
The residential housing units was 1.254 million in 2017, below the 50 year historical annual average of 1.5 million. While the economy is recovering from the 2008 crisis, the forecast for residential growth are optimistic. The prerecession period of 2008 had new privately owned housing units of 1.839 million, far above the current 1.254 million of the 2017 market.

ChemRock/Rail corresponds to the railroad ballast. It represent 8 percent of the company's aggregate product line shipment in 2017, below the 8 percent 5 year average. It declines in 20017 due to the decrease in railroad activity. The growth should remain constant during the next five year.

To sum up, even if MLM is significantly based on infrastructure market and so on government's decision, the 2017 shipments reflect strength in private sector construction which permit to MLM to have more diversified clients (other than federal, states, and local governments), and so less dependent to unexpected decrease on government spending. The opportunity growth in residential and nonresidential market are significant and MLM is ready to catch the most of them.



Pricing Trends:



Aggregates, which account for 59 percent of MLM revenues, has seen its selling price increase by 4.5 percent from \$12.88 to \$12.88 for 2016 and 2017 respectively, a lower rate than previous year but in line with the company management's expectation. The forecast increase for 2018 is at 4.3 percent.

Ready mixed concrete, which account for 23.6 percent of MLM's revenues, has seen its selling price increase by 2.9 percent.

The cement, which represent 9.7 percent of MLM's revenue, has seen its price increased by 2.9 percent between 2016 and 2017.

Finally, Asphalt, which represent 7.5 percent of the company's revenue, has seen its selling price increase by 10.7 percent.

Recent Acquisition:

Martin Marietta Material acquired in June 2017 Bluegrass Materials for \$1.625 billion in cash.

Bluegrass was the largest privately-held, pure-play aggregates company in the United States, with a portfolio of more than 125 years of strategically-located, high-quality reserves. Bluegrass operates 23 active sites across Georgia, South Carolina, Maryland, Kentucky and Tennessee. This acquisition will bring reinforce market share to

MLM existing southeastern footprint and expand their line of products. In addition, MLM gained a strong strategic presence in new market and offer itself great opportunity for the future to reach new market closed to the Bluegrass position.

This investment will provide many strategic advantages to Martin Marietta Material. First, Bluegrass has southeast position such as in Georgia, reinforcing the market share of MLM and providing

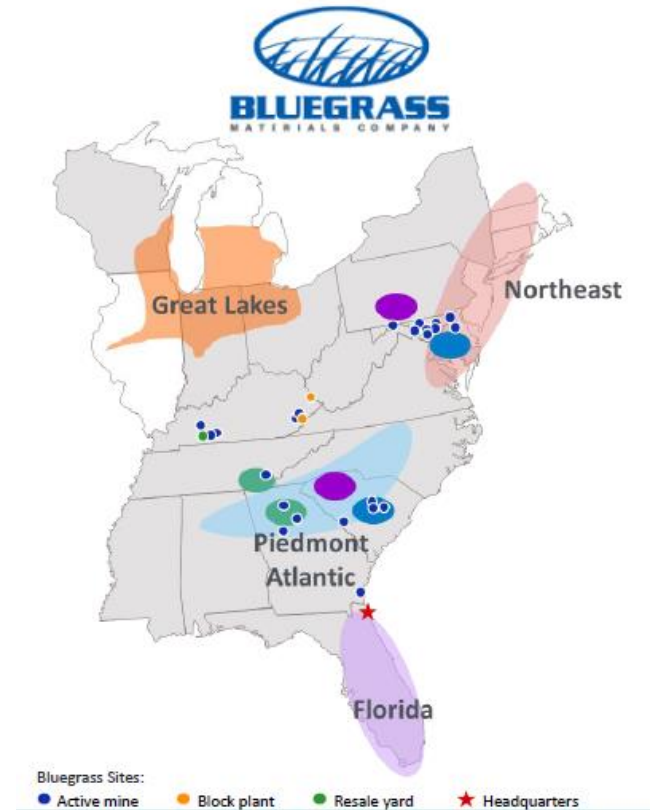
new products to its clients. Second, Bluegrass is the leader in aggregate production in Maryland and this position will provide opportunity to MLM to deserve the southern portion of the Northeast Megaregion including Baltimore, Frederick, Hagerstown and Maryland Eastern Shore metropolitan areas as well as Delaware. All of these markets are going to benefit from the accelerating economic recovery. Finally, bluegrass provide to MLM a leading position in Bowling Green and eastern Kentucky and an attractive position in Tennessee.

In addition to the geographic benefit, this acquisition offers replacements for leased reserves that have an upcoming lease expiration and a cost efficiencies from synergies.

This acquisition will provide a sustainable growth to MLM as a long-term strategic growth plan and will reinforce the presence of MLM in significant growing region less susceptible to hurricanes.

This transaction is anticipated to be accretive to earnings per diluted share and cash flow in first full

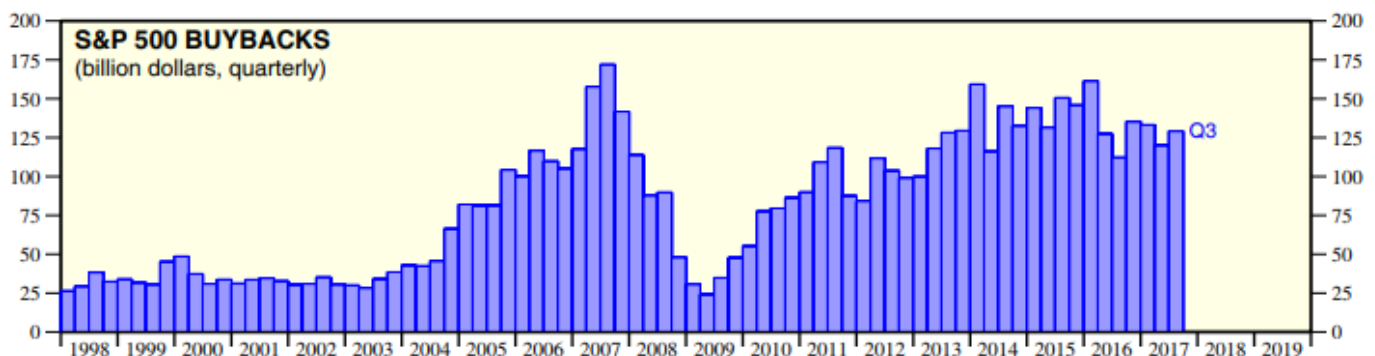
year after closing, which is currently expected to occur during Q4 2017.



Breaking News:

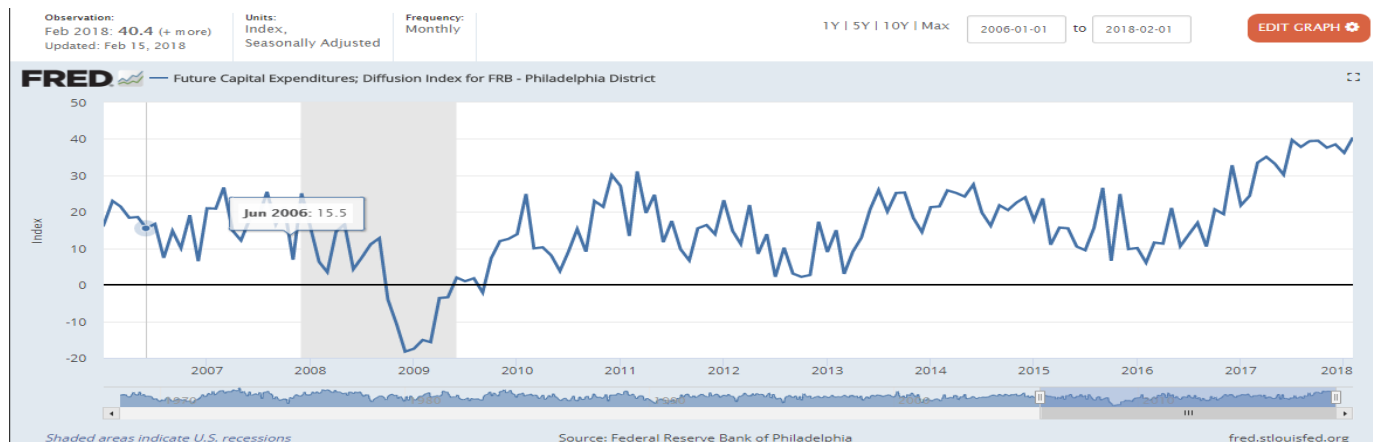
According to Reuters, U.S. corporate share buybacks explode in February 2018 to \$153.7 billion from \$59.9 billion in January 2018, erasing a previous record of \$133 billion in April 2015.

This is a direct consequences of the Tax Cuts and Jobs Act of 2017 (2017 Tax Act) signed in December 2017 which largely benefits corporations. In addition to the company benefits, the tax act indirectly benefits the workers such as raising payrolls.



In addition to the buybacks boom, a part of the tax windfall will go to capital expenditure. According to the federal reserve of Philadelphia's index of capex that forecast the change in capex over the next six month, February hit a new high record to 40.4 since 1984 and it is now above the prerecession period, and by far. As a result, the nation's spending on plant, property and equipment can get a significant boost, same as MLM which is going to increase its revenue by this new source of funding.

The expected capital spending growth for this year is estimated between 14 and 17.5 percent, far above the 9 percent of 2017. The tax incentive has permitted to company to save an estimated of \$1.5 trillion cash. The buybacks are estimated to hit a new record high of \$800 million in 2018. The difference can correspond to a huge opportunity to boost the spending on PPE and grow their businesses organically, resulting in GPD growth.



Competitors Comparison

When compared to competitors, MLM appears to be one of the top performed of its industry. The sales growth Yoy is below the average at 3.85 percent and underperformed with the 7.85 percent median. However, the EBITDA Margin adjusted of 24.88 percent is far above the 20.60 percent median. The operating cash flows of MLM of 657.88 million is better than the median of 370.10 million and any of the company competitors. Moreover, MLM has the best operating margin (18.90 percent) and the best Net margin (12.53 percent) compare to its peers. Vulcan materials, which is the main

comparable company with a market cap of 16.06 billion, has an operating margin of 15.47 percent but a net margin of only 3.28 percent regarding the 2017 data. MLM net profit margin is almost two times higher than the industry.

Metric	MLM	Low	Comp Range	High
Est P/E Current Yr	24.10	13.37	—●—	27.14
EV/Est EBITDA Curr Y	13.09	7.67	—●—	15.56
Sales Growth Yoy (%)	3.85	-1.37	—●—	18.85
EBITDA Margin (%)	24.88	12.65	—●—	24.92
Operating CF	657.88M	94.83M	—●—	657.88M

● MLM US ● Median

Name (BICS Best Fit)	Mkt Cap↓ (USD)	Rev - 1 Yr Gr:Y	EPS - 1 Yr Gr:Y	P/E	ROE	EBITDA Mrgn Adj:Y	OPM LF	NI Mrgn Adj
Median	4.69B	7.95%	-21.23%	26.22	10.12%	21.43%	11.69%	6.51%
MARTIN MARIETTA MATERIA	13.14B	3.85%	6.22%	29.61	10.12%	24.88%	18.90%	12.53%
VULCAN MATERIALS CO	16.06B	8.28%	-22.07%	53.27	6.43%	24.92%	15.47%	3.28%
MDU RESOURCES GROUP IN	5.17B	7.62%	-33.31%	21.19	10.35%	14.32%	10.77%	6.51%
ASH GROVE CEMENT CO	4.22B	-1.37%	-45.97%	--	--	--	--	--
SUMMIT MATERIALS INC -C	3.67B	18.85%	-20.40%	--	-36.97%	21.43%	11.69%	10.26%
US CONCRETE INC	1.13B	14.37%	123.37%	22.84	20.74%	12.65%	-0.10%	4.09%

Finance:

The current cost of debt of MLM is 210 bps below its competitor's average with of K_e of 9.1 percent compare to 11.2 percent for its peers. Its historical K_e is at 10.5 percent.

Ke (Kd+Country Risk)		
	<u>History</u>	<u>LTM</u>
mlm	10.5%	9.1%
Competitors	11.5%	11.2%
Target	9.1%	

In addition to a better cost of equity, MLM has also a better K_d with 4.0 percent compare to the 6.1 percent of the industry.

Kd		
	<u>History</u>	<u>LTM</u>
mlm	5.4%	4.0%
Competitors	6.4%	6.1%
Target	4.04%	

As a result, the company's WACC is more advantageous than its competitors with a WACC of 8.1 percent, 230 bps below the industry average of 10.3 percent.

WACC		
	<u>History</u>	<u>LTM</u>
mlm	9.4%	8.1%
Competitors	10.9%	10.3%
Target	8.1%	

The capitalization of the company is mainly based on equity with a debt to equity ratio of 0.22 compare to the 0.44 of the industry. This means that the company capitalization is mainly based on equity and can have easy access to debt financing with low cost of debt.

Capitalization (Debt/Equity)		
	<u>History</u>	<u>LTM</u>
mlm	0.21	0.22
Competitors	0.53	0.44
Target	0.22	

Another relevant key performance ratio is the ROIC/WACC which measure the performance of the company in generating return on their investment compared to their cost of capitals. Again, MLM is more than two times efficient with its investment than its competitors with a ratio of 0.81 compare to the 0.37 industry benchmark.

ROIC /WACC		
	<u>History</u>	<u>LTM</u>
mlm	0.39	0.81
Competitors	0.49	0.37
Target	0.80	

Conclusion:

To conclude, MLM has significant growth opportunities and the company is well placed to catch them all. Its strong financial performance give them a significant advantage towards its competitors such as Vulcan, MDU resources, or Ash grove. The strong macroeconomic perspective give to the company optimistic future.

Martin Marietta Materials, Inc. (mlm)

CENTER FOR GLOBAL FINANCIAL STUDIES

BULLISH

Analysis by Al Capone

3/10/2018

Current Price:

\$207.01

Divident Yield:

0.8%

Intrinsic Value

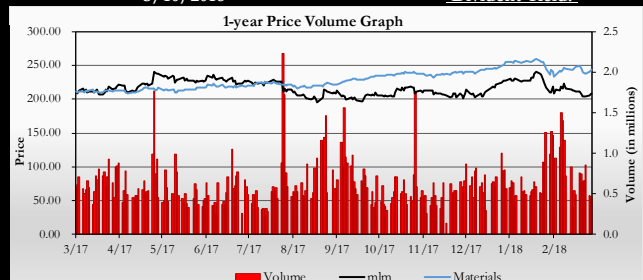
\$229.79

Target Price

\$307.25

Target 1 year Return: 49.27%

Probability of Price Increase: 100%



Description	
Martin Marietta Materials, Inc., a natural-resource-based building materials company, supplies aggregates and heavy building materials to the construction industry in the United States and internationally.	
General Information	
Sector	Materials
Industry	Construction Materials
Last Guidance	February 12, 2018
Next earnings date	May 2, 2018
Market Assumptions	
Estimated Equity Risk Premium	5.09%
Effective Tax rate	21%

Market Data	
Market Capitalization	\$13,000.85
Daily volume (mil)	0.73
Shares outstanding (mil)	62.80
Diluted shares outstanding (mil)	63.22
% shares held by institutions	109%
% shares held by investments Managers	80%
% shares held by hedge funds	15%
% shares held by insiders	0.59%
Short interest	3.62%
Days to cover short interest	3.17
52 week high	\$244.32
52-week low	\$191.09
Volatility	28.24%

Past Earning Surprises	
Quarter ending	Revenue
12/31/2016	0.97%
3/31/2017	8.98%
6/30/2017	-1.86%
9/30/2017	-4.21%
12/31/2017	-2.61%
Mean	0.25%
Standard error	1.0%

EBITDA	
12/31/2016	-3.46%
3/31/2017	23.99%
6/30/2017	-13.09%
9/30/2017	-1.65%
12/31/2017	17.59%
Mean	4.67%
Standard error	5.1%

Market and Credit Scores	
Recommendation (STARS) Value--4	
Recommendation (STARS) Description--Buy	
Quality Ranking Value--A-	
Quality Ranking Description--Above Average	
Short Score--2	
Market Signal Probability of Default % (Non-Ratings)	--
-1.17%	
CreditModel Score (Non-Ratings)--bbb+	

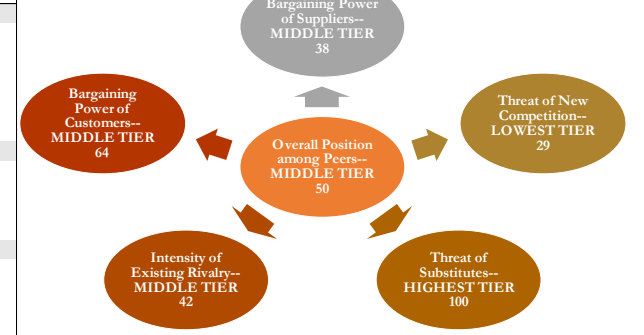
Management	
Nye, C.	Chairman, CEO & President
Bar, Roselyn	Executive VP, General Counsel & Corporate Secre
McCunniff, Donald	Senior Vice President of Human Resources
Grant, Daniel	Senior Vice President of Strategy & Development
Nickolas, James A.	Senior VP & CFO
Moreau, Jay	Vice President of Operations

Total Compensations Growth	
Chairman, CEO & President	24.75% per annum over 5y
Executive VP, General Counsel & Corporate Secre	17.07% per annum over 5y
Senior Vice President of Human Resources	17.5% per annum over 4y
Senior Vice President of Strategy & Development	-19.09% per annum over 2y

Industry and Segment Information	
LTN Revenues by Geographic Segments	LTM Revenues by Business Segments
United States--98%	Building Materials Business - Mid-America Group--26%
Foreign--2%	Building Materials Business - Southeast Group--9%
--	Building Materials Business - West Group (Including Ce
--	Magnesia Specialties--7%
--	--

Profitability	
mlm (LTM)	mlm Historical
Return on Capital (GAAP)	6.5%
Operating Margin	14%
Revenue/Capital (GAAP)	0.48
ROE (GAAP)	16.6%
Net margin	18.4%
Revenue/Book Value (GAAP)	0.90

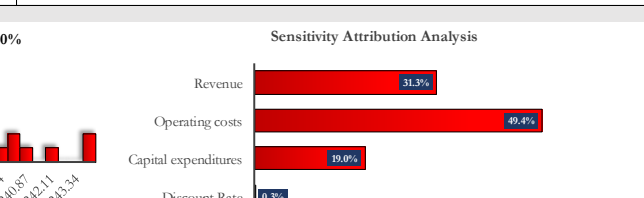
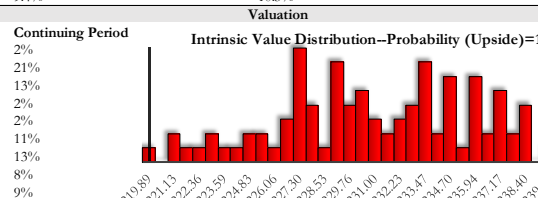
Peers' Median (LTM)	
Bargaining Power of Suppliers--MIDDLE TIER	38
Bargaining Power of Customers--MIDDLE TIER	64
Threat of New Competition--LOWEST TIER	29
Intensity of Existing Rivalry--MIDDLE TIER	42
Threat of Substitutes--HIGHEST TIER	100



Invested Funds	
mlm (LTM)	mlm Historical
Cash/Capital	17.9%
NWC/Capital	9.7%
Operating Assets/Capital	45.7%
Goodwill/Capital	26.7%

Peers' Median (LTM)	
Cash/Capital	6.3%
NWC/Capital	5.3%
Operating Assets/Capital	60.5%
Goodwill/Capital	28.0%

Capital Structure	
mlm (LTM)	mlm Historical
Total Debt/Market Capitalization	0.42
Cost of Debt	4.0%
CGFS Rating (F-score, Z-score, and default Probability)	B
WACC	9.5%



March 2, 2018

Lamb Weston Holdings, INC: (LW)

Jacob Perry

Sector: Consumer Staples

Industry: Beverages

Current Price: \$54.46

Target Price: \$59.49

Company Description:

Lamb Weston Holdings, Inc. produces and markets value-added frozen potato products worldwide. It operates through four segments: Global, Foodservice, Retail, and Other. The company, headquartered in Eagle, Idaho, offers frozen potatoes, sweet potatoes, and appetizers under the Lamb Weston brand name, as well as various customer labels. It serves retail and foodservice customers; grocery, mass, club, and specialty retailers; and businesses, independent restaurants, regional chain restaurants, and convenience stores, as well as educational institutions.

Buy

Current Price: \$54.46

Target Price: \$59.49

LTM EBITDA margin: 21%

ROIC: 19.17%

WACC: 8.6%

Market Cap: 7.963B

52 Week Range: \$39.53-\$60.85

Avg. Volume:

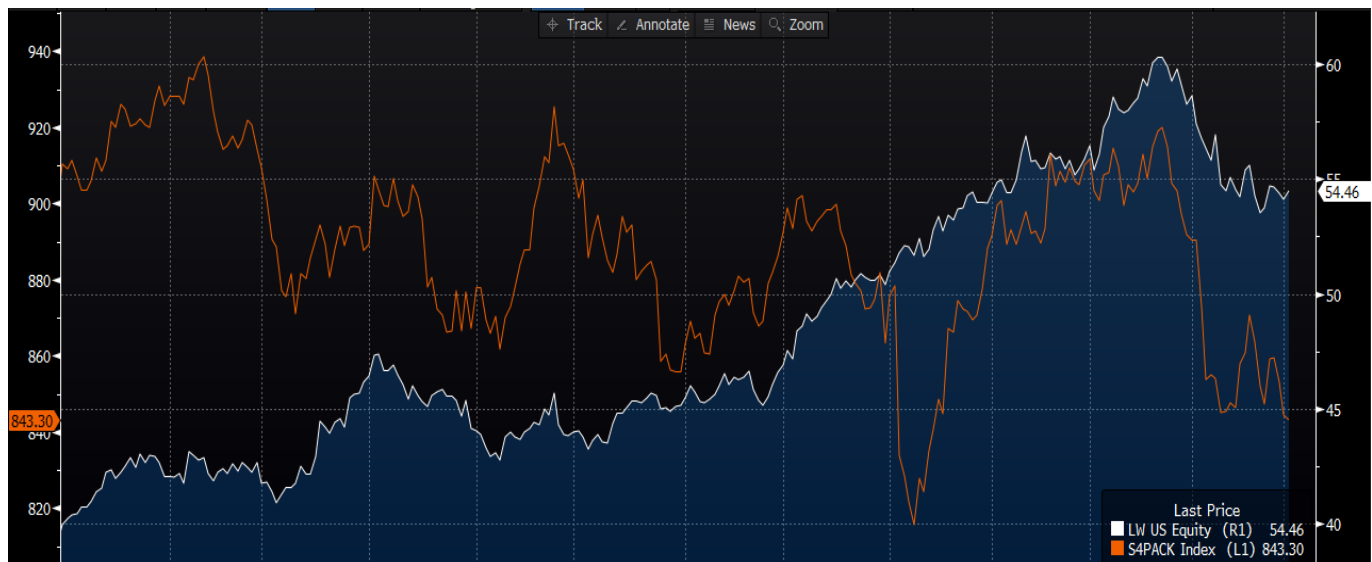
Operating Margin: 12%

Net Margin: 11.1%

Thesis: Lamb Weston shows potential growth prospects among a mid to long term growth time horizon. I think that Lamb Weston has a track record of increasing their value and will continue to do that into the future. Regardless if Lamb Weston is priced fairly or undervalued, I still believe a buy will deliver noticeable returns. At the current projections, Lamb Weston is poised to earn just over nine percent meaning that they are a strong buy especially with the corporation announcing a higher targeted dividend yield per share.

Catalysts:

- Short Term(within the year): Potential acquisitions by Lamb Weston to expand capacities.
- Mid Term(1-2 years): Development of more regional-based farms.
- Long Term(3+): Lamb Weston/Meijer joint venture grows further into Europe.



Company breakdown:

Lamb Weston is a global company with many different segments. In particular, their corporation is comprised of four major components: global, foodservice, retail, and other.

Global: The global segment includes branded and private label frozen potato products sold in North America and international markets. This segment includes the 100 North American based restaurant chains and international customers consisted of global and regional restaurant chains, foodservice distributors, and retailers. The segment also includes non-U.S. and non-Canadian retail and foodservice customers. The product portfolio consists of frozen potatoes, sweet potatoes, and appetizers sold by the Lamb Weston brand, as well as additional various customer labels.

Foodservice: The foodservice segment includes branded and private label frozen potato products sold throughout the United States and Canada. The foodservice segment's primary products are frozen potatoes, sweet potatoes, commercial ingredients, and appetizer items sold underneath the Lamb Weston brand, as well as various customer chains, and non-commercial channels.

Retail: The retail segment includes consumer facing retail branded and private label frozen potato products. The primary products of the retail segment are frozen potatoes and sweet potato products sold under Lamb Weston owned or licensed brands (which include Grown in Idaho, and Alexia), other licensed equities consisted of brand names of major North American restaurant chains, and the retailers' own brands.

Other: The "other" segment primarily includes the company's vegetable and dairy businesses. They are negligible compared to their primary potato businesses.



Joint Venture Relationships:

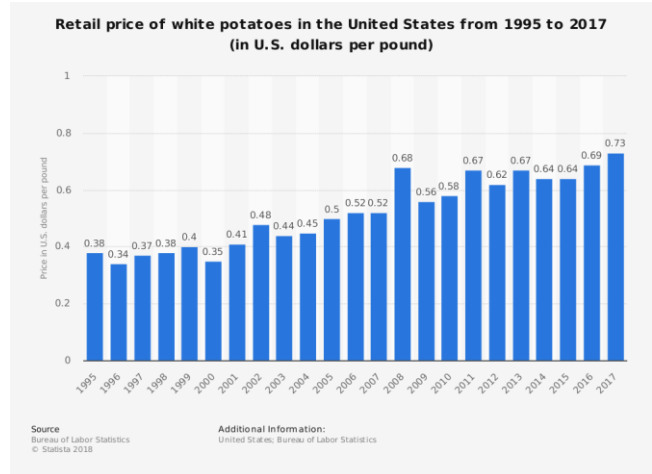
Lamb Weston utilizes partnerships with corporations to further align themselves with their target markets. The company conducts its business through two major unconsolidated joint ventures which produce market value-added frozen potato products for retail and foodservice customers. Lamb Weston holds 50 percent ownership interest in Lamb-Weston/Meijer v.o.f., Meijer Frozen Foods. Headquartered in the Netherlands, Meijer gives Lamb Weston the access to its manufacturing and sales in Europe. The second joint venture Lamb Weston is RDO Frozen Company. In the 50 percent ownership interest in Lamb-Weston/RDO Frozen, RDO provides Lamb Weston with sales and marketing services. In addition to the company's two joint ventures, they also have 49.99 percent interest in Lamb Weston BSW which is a potato processing venture with Ochoa Ag Unlimited Foods. Ochoa Ag also provides sales and marketing services to Lamb Weston BSW.



Three Tier Strategy to Increasing Value:

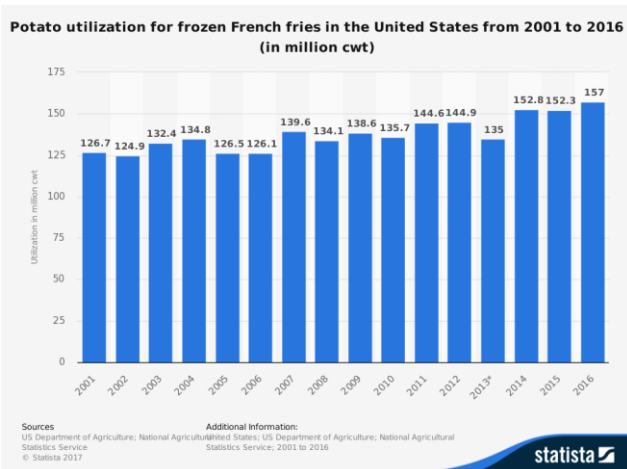
Lamb Weston utilizes a strategic plan which addresses three areas: category and customer growth, global supply chain to drive growth, investment in growth. The category in which Lamb Weston conducts its business is extremely specialized and therefore needs to grow in order for the corporation to grow as well.

As a major producer of potato products, Lamb Weston has an inherent benefit to gain as the category and customers grow in the future. With this being said, Lamb Weston has been turning its focus to a group of different segments in the market. Investments in the traditional restaurant segments and customers such as quick-service and fast casual burger and chicken chains have been a backbone of Lamb Weston's strategy to boost the category in which they maintain a 90 percent market share. In addition to the traditional segments, Lamb Weston also invests in non-traditional frozen potato product outlets like convenience stores and coffee houses. Collectively, the investments are focused to gain more market share in key markets in China and Southeast Asia while maintaining dominant stances in the North American markets. Through developing more targeted products such as premium branded Alexia products and mainstream products like Grown in Idaho, Lamb Weston expands distribution across their markets while retaining or growing current market share. Lastly, Lamb Weston has noticed another potential source for growth in smaller quick-service and fast casual chains in North America which are looking to add more units and expand geographically.



Global supply chain growth is crucial to help strengthen the competitive advantage as a low-cost producer for Lamb Weston. The culture at Lamb Weston seeks to drive productivity and cost savings by leveraging improvement in their processes. They have consistently expanded capacity limits in order to support volume growth, improve raw recovery rates, and manage manufacturing costs to expand gross margins. The continuation of their improvement of their end-to-end global supply chain will further enhance production efficiencies and cost savings across North America and with their joint venture partners. The focus is to create a raw potato sourcing model in emerging growing regions that is similar to the one they built in the Pacific Northwest. The model will enable Lamb Weston to have an ongoing supply of cost-advantage raw products that would meet the needs of our customers over the long-term.

Lamb Weston has consistently committed capital to increase capacity and furthermore increase the overall growth of their company. In the past five years, and including their recent announcement to expand their



Hermiston facility, they will have invested more than \$800 million to expand capacity. Lamb Weston continues their base capital program by reducing cost, stretching capacity, and keeping factories well maintained so they operate at high utilization rates while maintaining high standards for quality. In their Q2 earnings call, Lamb Weston announced intentions to invest another \$250 million into their Hermiston facility to support an increase of 300 million pounds, or 150,000 tons, of French fry production capacity. In perspective, McDonald's Corporation (Lamb Weston's biggest client) sold four trillion french fries in the last year. They comprise 11 percent of net sales for Lamb Weston.

Management:

Lamb Weston is led by a group of executives who have a combined 107 years' worth of experience at Lamb Weston or aligned companies. They have brought a notion to the company of sustained long-term growth and secure investments that will promote value creation and solid returns. On an annual basis, they earn just over \$11 million in compensation comprised of salary and stock options. This seems like a fair reward for the sustained growth and improved prospects this company faces for the future based on current and past results.

Compensation Analysis			2017
Name	Title		Total Compensation
1) Thomas Werner	President/CEO		4,616,955 (USD)
2) Eryk Spytek	Sr VP/General Counsel/...		1,575,987 (USD)
3) Timothy McLevish	Chairman		1,512,507 (USD)
4) Micheline Carter	Senior VP/Chief Human...		1,251,908 (USD)
5) John Gehring	Sr VP/Interim CFO		1,155,537 (USD)
6) Robert McNutt	Senior VP/CFO		1,058,023 (USD)

Ownership:

54) Ownership Type	02/25/18	Curr	Change
41) Investment Advisor	79.04	79.07	+0.03
42) Hedge Fund Manager	14.40	14.38	-0.02
43) Pension Fund	2.64	2.65	+0.01
44) Bank	1.02	1.02	0.00
45) Sovereign Wealth Fund	0.99	0.99	0.00
46) Insurance Company	0.83	0.83	0.00
47) Individual	0.41	0.41	0.00
48) Brokerage	0.22	0.21	-0.01
49) Government	0.20	0.20	0.00

The ownership of Lamb Weston is significant in an investor's case due to the overwhelming amount of hedge fund ownership in the company. A majority of the ownership is held by investment advisors but collectively, investment advisors and hedge funds hold just under 93.5 percent of Lamb Weston's equity. With that being said, Lamb Weston who is historically seen as a longer buy and hold

strategy for returns is now transitioning to a short to mid-term investment. This is a reach of an assumption given no other observations of the transactions. Although, it can be said with certainty that Lamb Weston is seen as a strong candidate for increased returns.

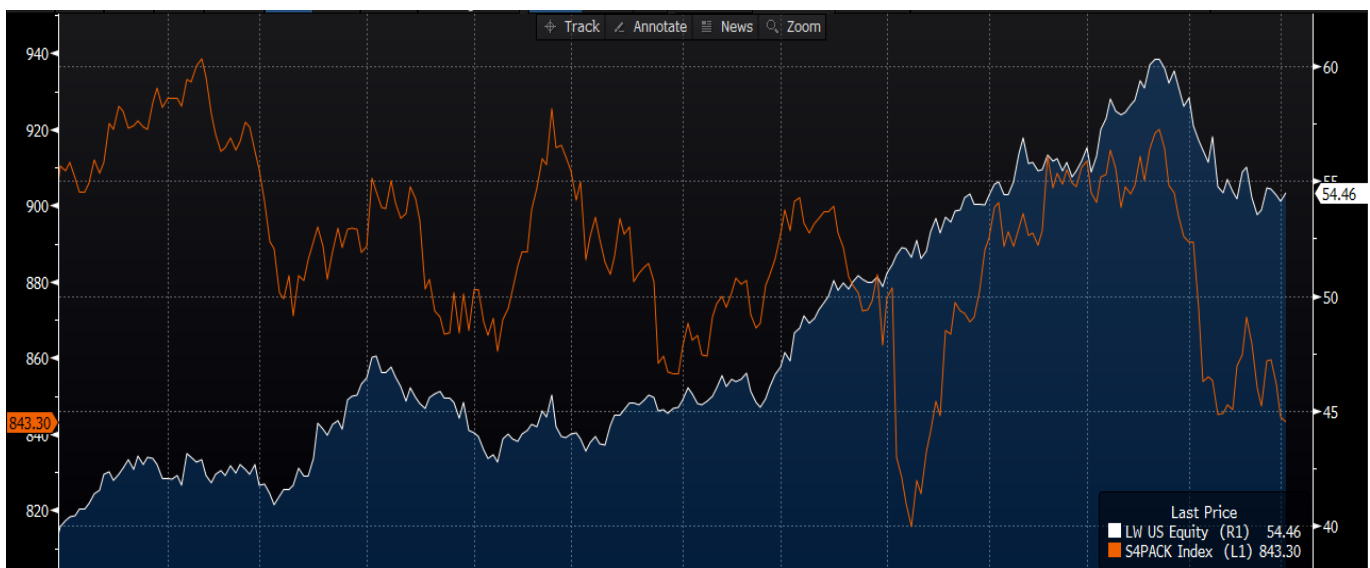
Short Interest:

In addition to the ownership of the company, Lamb Weston has a historically lower short interest than the segment and industry average. According to Bloomberg, Lamb Weston carries a 1.07 percent short interest of float. When considering the 14 percent ownership by hedge funds, adding knowledge of the short interest can help determine what their positions in the stock are. Given a very low short interest, it can be assumed that a vast majority of the ownership of Lamb Weston by hedge funds are long positions. Also, given the nature of hedge funds' time horizon to invest, it can be assumed that there is a strong possibility that there will be increases of short-term returns.

Mkt Cap (USD)	8,171.0M
Shrs Out/Float	146.2M/145.6M
SI/% of Float	1.6M/1.07%
Days to Cover	0.8

Conclusion:

Given all information available, I believe that Lamb Weston is a strong buy for any time horizon of investment. Short, mid, and long-term catalysts all point to value creation approach to business by senior executives who have track records of obtaining sustainable, growing returns. The global increase of potato prices, decreasing production and sourcing costs are giving Lamb Weston larger operating margins than they have had previously, and larger margins than that of competitors in the same segment. These margins are being withheld by Lamb Weston due to their increasing investments in capacity utilization and development of more complete supply-chain relationships. Market segments globally are providing favorable environments for Lamb Weston's products which are going to be reflected by higher net sales and transfer to higher profits given the decrease in production costs.



Lamb Weston® 

SEEING POSSIBILITIES IN POTATOES

Lamb Weston Holdings, Inc.

(lv)

CENTER FOR GLOBAL FINANCIAL STUDIES

NEUTRAL

Analysis by Jacob Perry

3/5/2018

Current Price:

\$54.34

Intrinsic Value

\$54.25

Target 1 year Return: 10.72%

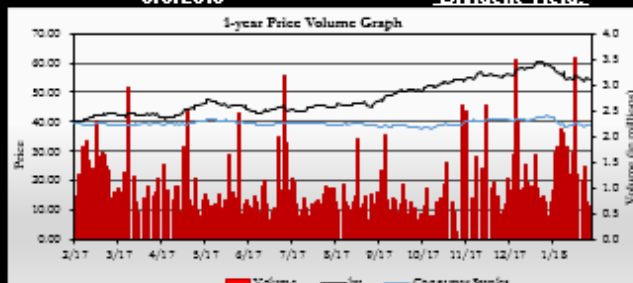
Dividend Yield:

1.4%

Target Price

\$59.40

Probability of Price Increase: 55%



Description	
Lamb Weston Holdings, Inc. producer and marketer value-added frozen potato products worldwide.	
General Information	
Sector	Consumer Staples
Industry	Food Products
Last Guidance	February 12, 2018
Next earnings date	April 4, 2018
Market Assumptions	
Estimated Equity Risk Premium	6.36%
Effective Tax rate	22%

Market Data	
Market Capitalization	\$7,953.13
Daily volume (mil)	0.73
Shares outstanding (mil)	146.22
Diluted shares outstanding (mil)	146.85
% shares held by institutions	109%
% shares held by investment managers	63%
% shares held by hedge funds	14%
% shares held by insiders	0.23%
Short interest	1.07%
Days to cover short interest	1.26
52-week high	\$60.85
52-week low	\$39.07
Volatility	0.00%

Quarter ending	
11/27/2016	Revenue
2/26/2017	Revenue
5/26/2017	Revenue
8/27/2017	Revenue
11/26/2017	Revenue
Mean	Revenue
Standard error	Revenue

Part Earning Surprises	
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue
EBITDA	Revenue

Market and Credit Scores	
Recommendation (STARS) Value--0	Recommendation (STARS) Description--0
Quality Ranking Value--0	Quality Ranking Description--0
Short Score--0	Market Signal Probability of Default--(Non-Rating)--0.09%
Market Signal Probability of Default--(Non-Rating)--0.09%	Credit Model Score (Non-Rating)--bbb-

Management	
Warner, Thomas	President, CEO & Director
McNutt, Robert	Senior VP & CFO
Spytek, Erik	Senior VP, General Counsel & Corporate Seco
Carter, Michelle	Senior VP & Chief Human Resources Officer
Heppner, Rodney	Senior VP and GM of Foodservice & Retail Buir
Martin, Richard	Senior VP & Chief Supply Chain Officer

Total Compensation Grant	
14.02% per annum over 3y	Stock Price Growth During Tenure

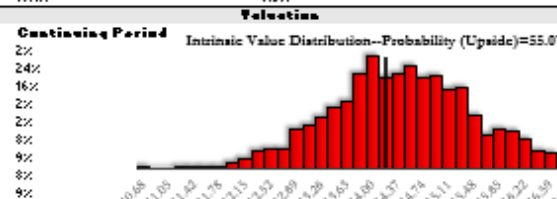
Industry and Segment Information	
LTM Revenue by Geographic Segment	LTM Revenue by Business Segment
outside of The United States and Canada--21%	Global--51%
United States--79%	Foodservice--33%
--	Retail--12%
--	Other--4%

Profitability	
Return on Capital (GAAP)	19.7%
Operating Margin	12%
Revenue/Capital (GAAP)	1.66
ROE (GAAP)	-1211.9%
Net margin	11.1%
Revenue/Book Value (GAAP)	-108.90
Invested Funds	
CapEx/Capital	2.7%
HW/Capital	18.2%
Operating Assets/Capital	71.6%
Goodwill/Capital	7.5%
Capital Structure	
Total Debt/Market Capitalization	1.54
Cost of Debt	4.2%
CGFS Rating (F--score, Z--score, and default Probability: 000	
WACC	8.6%

In Historical	
33.53%	Peer's Median (LTM)
10.91%	10.28%
3.07	0.77
49.8%	15.4%
11.5%	6.7%
4.34	2.31
In Historical	
2.7%	4.4%
37.0%	8.7%
50.5%	46.4%
9.8%	40.5%
In Historical	
0.74	0.52
5.0%	4.1%
10.1%	8.5%



Forecast Assumptions	
Revenue Growth CAGR	3%
Average Operating Margin	22%
Average Net Margin	15%
Growth in Capital CAGR	10%
Growth in Claims CAGR	-1%
Average Return on Capital	13%
Average Return on Equity	66%
Average Cost of Capital	8%
Average Cost of Equity Ke	9%



Sensitivity Attribution Analysis	
Revenue	69.3%
Operating costs	30.3%
Capital expenditures	1.5%
Discount Rate	8.6%

March 9, 2018

ARRIS International PLC: ARRS

Matt Lucarelli

Sector: Telecommunications

Industry: Communications Equipment's

Current Price: \$27.05

Target Price: \$34.66

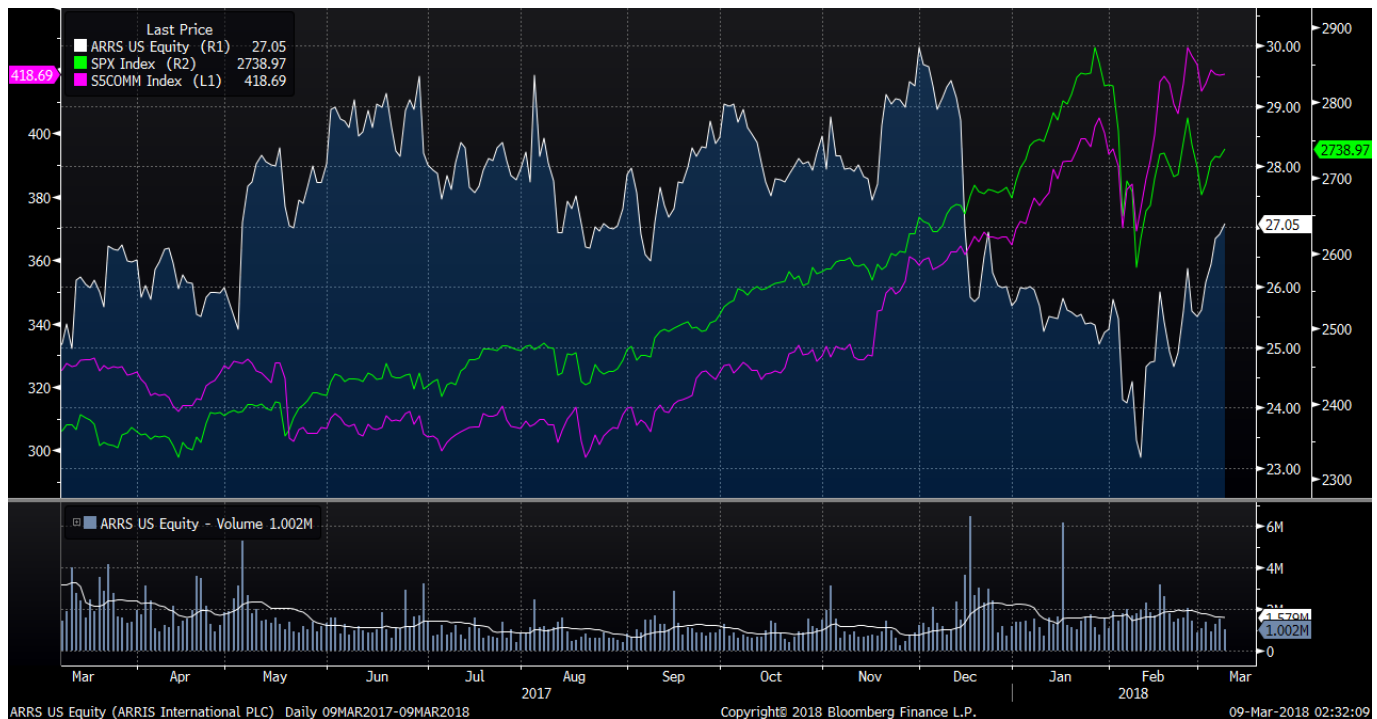
Company Description: ARRIS International PLC is headquartered in Suwanee, Georgia. They are a global leader in communications, entertainment, and networking technology. Their products and services are used by global leading service providers, commercial enterprises, and millions of people. The company operates in three business segments, customer premises equipment, network and cloud, and enterprise networks.

BUY

Current Price: \$27.79
 Target Price: \$34.66
 Market Cap: \$5.13 billion
 52 Week Range: \$22.60 - \$30.38
 Beta: 1.268
 WACC: 7.80%
 ROIC: 7.70%
 EBITDA Margin: 8.70%
 Credit Rating: BB

Catalysts:

- **Short Term (within the year):** Recent acquisition of Ruckus Wireless. Earnings announcement 05/02/18.
- **Mid Term (1-2 years):** Continued competitive business drives demand and the expansion of wireless services. Movement towards small cell technology.
- **Long Term (3+):** Further advances of technology, expanding domestically and internationally.

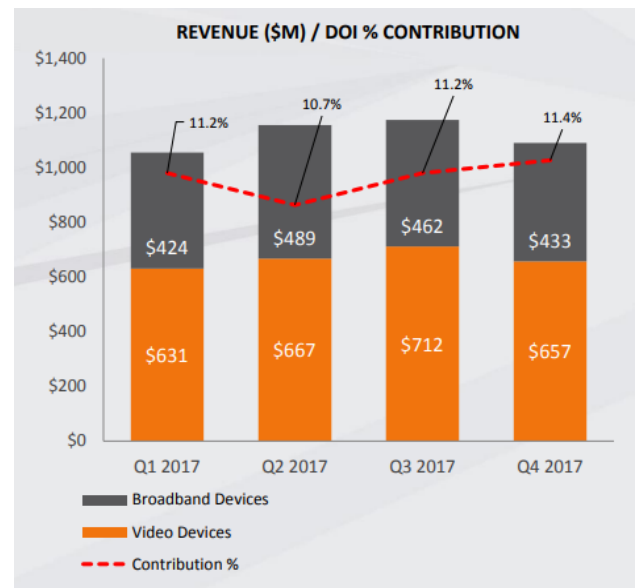


Thesis: ARRIS International PLC is at a new era of wired and wireless entertainment, communications, and networking technology. Their vision is to evolve the needs to transform the way hundreds of millions of people around the world connect to the internet and watch video content. With the increasing demand of faster and faster internet speeds, ARRIS is determined to invest in DOCSIS, DSL, and Next Generation PON (FTTH) to guarantee that their products will deliver the highest amount of bandwidth to their subscribers. Due to the increasing complex landscape faced by service providers, channel sellers, and enterprises, the combined ARRIS and recently acquired Ruckus Networks products will create a diverse and reliable portfolio of technologies. In addition, ARRIS is transforming Wi-Fi networks to access the highest Internet speeds with the best content that does not slow down as more devices are added to it. They are also seeking to capitalize the growth of video, broadband, and enterprise services in global markets.

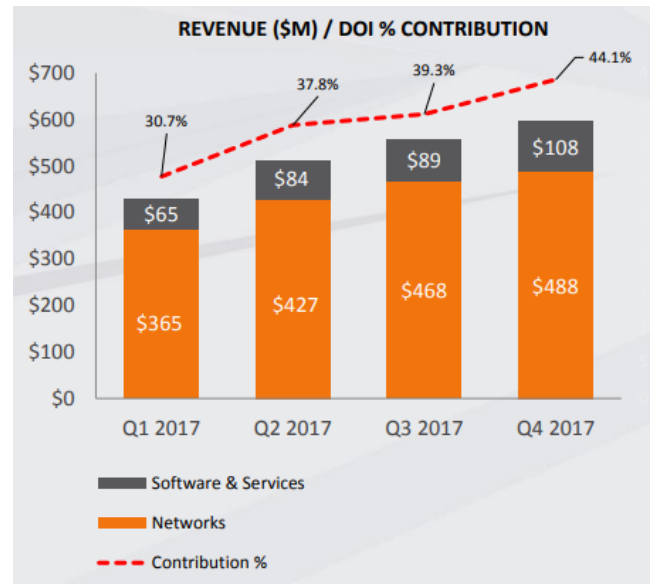
Segment Analysis:

ARRIS International PLC is comprised of three segments such as, customer premises equipment, network and cloud, and enterprise networks.

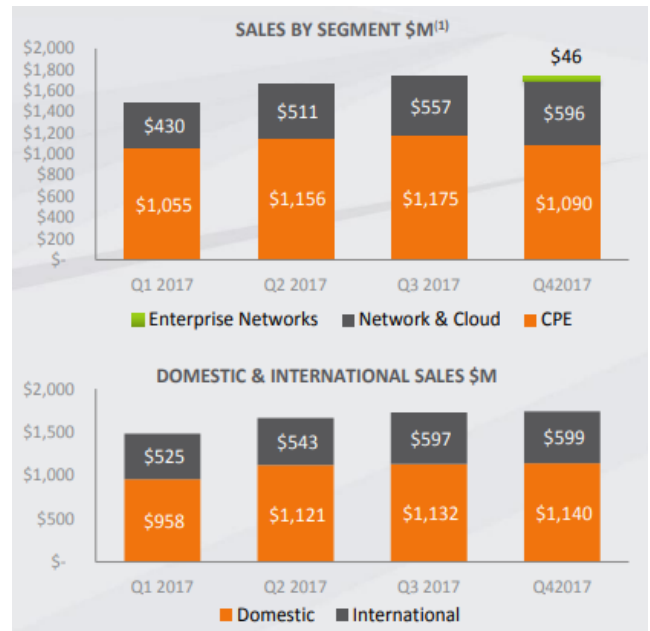
Customer premises equipment primarily consists of both broadband devices and video devices. For their 2017 results, broadband momentum increased 7% year over year, displaying strength in their DOCSIS portfolio. The DOCSIS portfolio is comprised of telephony gateway, data gateway, telephony modem, and a cable modem. These models in their DOCSIS portfolio offer gigabit speeds and pose some challenges for service providers. The service providers must have the ability to handle a new application landscape, handle massive video, gaming and IoT traffic to overcome the security and management concerns that can significantly impact the service experience within the home-and the costs of providing it. However, with this, ARRIS offers the highest quality and immersive video experiences. As for 2017 video sales, they declined 13% year over year due to lower volumes and a mix towards lighter-weight devices. For the 2018 outlook, the company strives to focus more on CPE economics. They are motivated to do three things, drive operational efficiencies including factory divestiture, implement market price adjustments, and optimize product portfolio. Furthermore, they anticipate a strong demand for gigabit devices with enhanced home Wi-Fi. In addition, they expect further international business expansion.







Their network and cloud segment is made up of software & services and networks. Their 2017 results display a steady growth in the network business as well as a growing software and services business. The year over year profitability improved by 18% in 2017. Their software and services consists of software products that enable providers to securely deliver content and advertising services across multiscreen devices on and off their networks, network management products, and customer experience management solutions. Global services offers professional services, focused around major practices in Wi-Fi, IP Video, service experience, network transformation, software engineering and hosting to support and assist operators plans for new gigabit high speed data services. For the 2018 projections, the company looks to expand and upgrade their market-leading E6000 footprint, expand DOCSIS 3.1, and growing fiber deep programs.



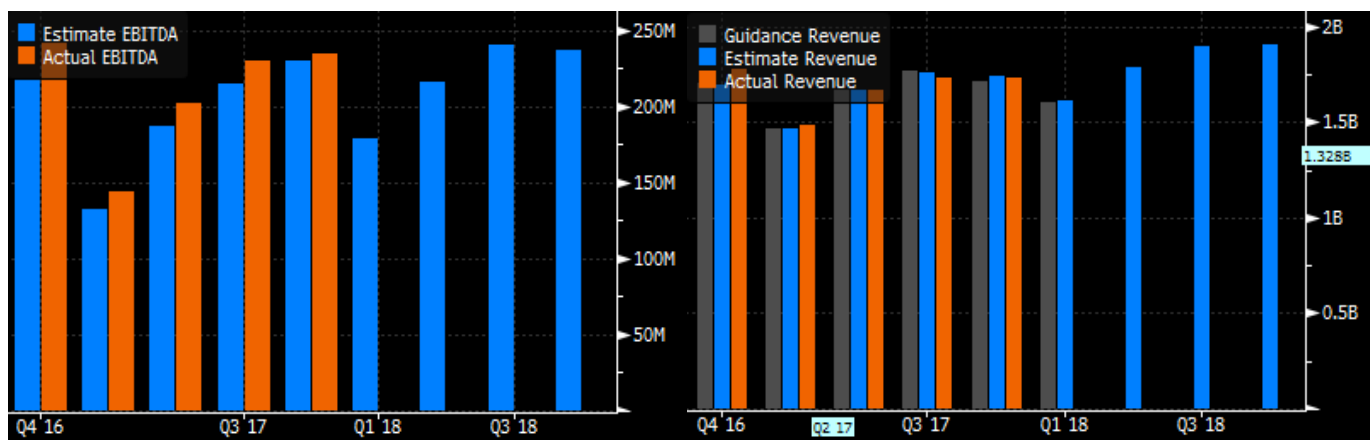
The third segment owned by ARRIS, is their enterprise networks. Ruckus, was recently acquired by ARRIS on December 1st, 2017. It contributed to about \$46 million in sales in one month, which is a great start. Partners and customers are enthusiastic about the ARRIS/Ruckus acquisition. For the 2018 outlook, Ruckus has much to offer. We can expect cross-selling of wireless and switching portfolio across all ARRIS verticals, Ruckus cloud capability and geographical expansion, development of IoT, advanced analytics, and machine learning capabilities. To the right, the graph illustrates the sales by segment. As we can see, because of a decline in video sales by 13%, which was caused by a mix shift towards lighter-weight devices, this had a negative impact on the total revenue growth for the year. In addition, analyzing the domestic & international sales, we can recognize an increase in both domestic and international sales each quarter. Below, displays the graph displays the percentage of revenue for each segment, year over year. With the acquisition of Ruckus, this gives ARRIS will become more diversified and present new opportunities for future growth.



In Millions of USD except Per Share	2014 Y	2015 Y	2016 Y	2017 Y
12 Months Ending	12/31/2014	12/31/2015	12/31/2016	12/31/2017
 Revenue	5,322.9 100.0%	4,798.3 100.0%	6,829.1 100.0%	6,614.4 100.0%
 CPE	3,690.5 69.3%	3,136.6 65.4%	4,747.4 69.2%	4,475.7 68.1%
 N&C	1,637.5 30.7%	1,661.6 34.6%	2,111.7 30.8%	2,094.1 31.9%
 Other	-5.1	0.2	-30.0	44.6

Earnings Performance:

For the forecasted EBITDA and revenue growth, the company has been relatively accurate to what has been estimated. In the 1st quarter of 2017, the reason for lower EBITDA and revenue was due to set top volume which resulted in 16% lower segment sales. In addition, sales were also down by 3% year over year in the 1st quarter of 2017. Also, for customer premises equipment, 1st quarter volumes were lower due to the timing year-end 2016 shipments. For this reason, revenues in this segment were 27% lower sequentially and 2% year over year. However, regardless of some problems, ARRIS still maintained to reach a higher actual EBITDA in relation to the estimated EBITDA. In the projections for ARRIS, they forecast a total of 9% revenue growth. Their enterprises segment to grow from \$650M to \$700M. Additionally, they expect an increase in their network and cloud segment to be from 2% to 5%. While both these segments are predicted to grow, their customer premises equipment segment is forecasted to grow flat to negative 4%. This is due to the mix shift toward broadband devices. As for their potential costs, price adjustments are reflecting higher prices and memory costs are to increase about 10%. While some prices and costs will increase, ARRIS can expect video customer premises equipment cost improvement from the sale of a Taiwan factory to Pentagon, a stronger mix of network and cloud hardware, which provides a base for future capacity licensing sales, and enterprise margins being consistent with their historical levels. These initiatives should mitigate the cost increases. As seen in the charts below, do to initial cost increases, there are lower forecasted EBITDA and revenue projections. However, as the quarters in 2018 progress, ARRIS will begin to expect the synergies that will increase their EBITDA and revenue. In addition, around December 13th, 2017 the stock price dropped significantly, this was due to the uncertainty of anticipated benefits from the acquisition of Ruckus. They believe they may encounter significant integration costs and unknown liabilities, connected to the acquisition. Since then, the stock price has begun to recover, as some uncertainties have been brushed aside.



Industry Outlook:

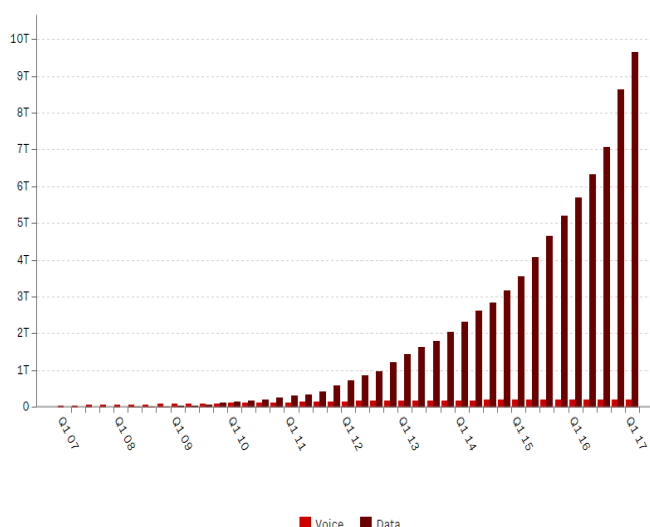
The communication equipment industry has the potential to grow around 4% to about 6% based off historical and projected analysis. The chart below describes the correlation of the communication equipment index (Purple line) relative to the telecommunication index (In blue) and the S&P 500 index (In green). As illustrated in the graph, the communication equipment index is correlated with the market and the telecommunications index. However, in the past month, communications equipment have been moving opposite that of the telecommunication index. The top three prominent customers of

ARRIS are Comcast, Charter communications, and AT&T, contributing to about 50% of ARRIS's total revenue. The industry for wireless demand is rapidly increasing. Many customers are having issues with internet speeds since so many people are using the same internet connections at once. ARRIS has the solution, which is small cells, also known as 5G. With increasing demand, technological innovation is vital to the success of companies in the telecommunications industry and communications industry. Because of increasing demand, many telecommunication companies are attempting to switch from 4G to 5G. In addition, with the acquisition of Ruckus, ARRIS has the ability to now use 3.5 GHz CBRS. This is important because their main customers are beginning to test CBRS. The purpose of the CBRS is to deploy private LTE networks to deliver high quality service, while also being cost effective.

While customer demand is increasing, rising interest rate might adversely affect telecommunication companies. Since this industry uses a decent amount of debt, it will become more costly to borrow money, directly affecting the performance of their company.



Voice versus data traffic in monthly bytes



The chart to the left depicts the volume of wireless data. As we can see, the volume of wireless data is rapidly increasing, pressuring telecommunication companies to develop more cell towers or innovate their network and upgrade to 5G. The switch to 5G would provide a faster wireless connection for users, regardless the amount of users who are using the same connection. The monthly data used in the 1st quarter of 2017 was around 10 trillion bytes of data. It is expected to continue to increase over the years.

Management/Ownership

In the past year, the main percentage change of ownership type has shifted from hedge fund managers to corporations. Investment advisors also took more ownership in ARRIS, with their ownership increasing 2.03%. Because of the decrease in ownership of hedge fund managers, this implies that they are becoming less interested in the stock, while investment advisors and corporations are becoming more interested. In addition, there are currently 118.37% of the shares freely floated.

54) Ownership Type	03/05/17	Curr	Change
41) Investment Advisor	72.65	74.68	+2.03
42) Hedge Fund Manager	17.68	12.26	-5.42
43) Pension Fund	3.05	4.53	+1.48
44) Corporation	0.03	4.47	+4.44
45) Insurance Company	0.98	1.21	+0.23
46) Bank	1.40	0.79	-0.61
47) Individual	1.89	0.75	-1.14
48) Sovereign Wealth Fund	1.03	0.65	-0.38
49) Government	0.54	0.50	-0.04



The short interest ratio chart shows a decreasing short interest ratio and a decreasing price over time. Over the past year, short interest ratio was highest at 6.57, while it just recently hit a low of 1.33. An increasing short interest ratio should imply that the investors believe the stock price is going to decrease. However, this chart displays how the short interest ratio has been moving relatively close with the stock price. The decreasing short interest could imply a potential bullish trend underway for ARRIS.

As for the company management, their chairman and president, Robert J. Stanzione, has been with the company for over 15 years. In the past 4 years his annual CAGR compensation growth was around 15.30%, while the stock price CAGR was around 26%. This goes to show how executive management in the company has not taken advantage of their compensation benefits because a lower CAGR compensation growth to price growth. The executives are very dedicated to the company.

Capital Allocation:

For the telecommunications equipment industry, the average equity used in the capital structure is around 82%, while the amount of debt being used is about 18%. For ARRIS, they are using less equity at almost 70% and more debt at about 30%. In addition, the average credit rating sits around BB, which is what ARRIS's credit

rating is. Even though they share a similar average credit rating, they use more debt than their competitors, which limits their flexibility to pursue any strategic opportunities in relation to their competitors. The average WACC in this industry is around 9.6% with the ROIC averaging around 5.2%. In relation to ARRIS, their WACC is lower than the industry 7.8% and their ROIC is at 7.7%. Relative to the industry, ARRIS is creating more value than their competitors. The company recently acquired Ruckus, a small cell leadership company, which grew ARRIS's enterprise value by 20%. They purchased the company for \$822 million, using primarily cash. In 2016, ARRIS acquired the company, Pace, using mostly cash and a fixed exchange rate of .1455 new ARRIS shares for each Pace share. The acquisition of Pace gave the ARRIS the opportunity to expand into both the satellite segment and to expand globally.

Capital Structure (Millions of USD)



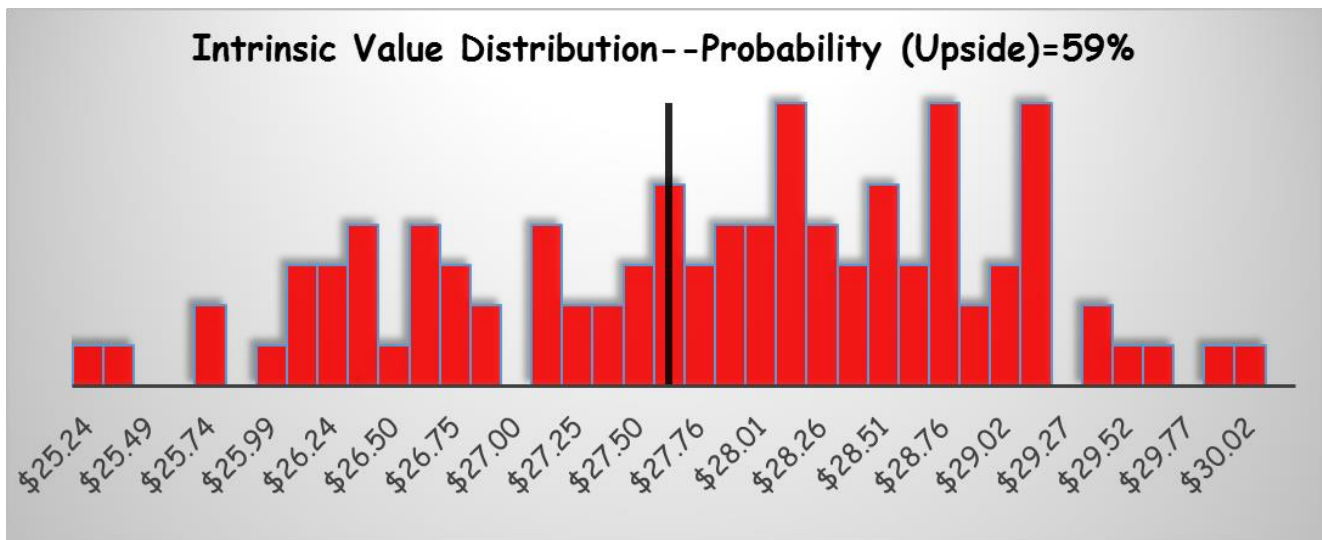
Profitability Comparison:

ARRIS competes with larger corporations such as Cisco, Hewlett Packard Enterprises, a subsidiary of Oracle (TOA Technologies), and many more. Their primary competitors are Technicolor S.A., Sagemcom, Humax, and Huawei. They compete in video set-tops/gateways, DOCSIS, DSL, and FTTH solutions. Their multi-screen content management and protection products compete with many vendors offering on-demand video and digital advertising insertion hardware and software, including Adobe, Cisco, Concurrent, and others. Their operations management systems compete with vendors offering network management, mobile workforce management, network configuration management, and network capacity management systems such as Oracle (formerly TOA Technologies), Click Software, Guavus and others, some of which may currently have greater sales in these areas than ARRIS. The chart below depicts ARRIS's EBITDA margin at 8.70% compared to some of their competitors EBITDA margin at 8.10% in the past 12 months. In the past 6 years their competitors have had a higher EBITDA, however, ARRIS has outperformed their competitors in the past 12 months. With new acquisitions, and expansion into new markets, they have grown their company and will continue to grow in 2018.

	6-year Historical Median		Last 12 Months	
	arrs	Competitors	arrs	Competitors
COR/Rev	68.6%	55.1%	74.5%	55.2%
(SGA+Other)/Rev	18.0%	34.1%	15.5%	36.7%
DPR/Rev	4.1%		1.3%	0.0%
EBITA Margin	9.2%	10.9%	8.7%	8.1%

Sensitivity Forecast:

The telecommunications sector and communications equipment industry can be very volatile. ARRIS is sensitive to customer demand, but with it increasing, this is a positive sign for the company. I forecasted the revenue growth to be about 5.50%. I calculated this by averaging the industry average growth, the company's forecasted sales growth, analysts' projections, and from the current revenue growth on Capital IQ. The industry was growing at an average of 4.24% year over year in the communications equipment sector. With the company's catalysts, they predicted a base case of 9% revenue growth. The analysts projected a combined average of 2.95% revenue growth. As for the Capital IQ, I took the current growth of the industry at 5.8% in 2018 and averaged it in with the other three projections. This gave me my base revenue growth of 5.5%. I also added 1% for operating expenses in the case there were unexpected costs with the new acquisition of Ruckus. I calculated their operating expenses to revenue to be their historical average at 89.10%. Using a Monte Carlo simulation, the base case presents an upside of 59%. This gave me a target price of \$34.66 with a one year return of 23.99%. In a bullish scenario where the company's estimate of 9% revenue growth would happen and operating costs would remain constant, the target price is at \$37.94. In a bearish case, where revenue would grow below the industry growth rate at 3% and with unexpected operating costs at 3% from Ruckus, the target price will be at \$31.36.



Summary:

In conclusion, ARRIS International PLC is a buy at its current price. This is due to increasing customer demand and the need for telecommunication services to upgrade their products. With the recent acquisition of Ruckus, ARRIS has the ability to reach into the small cell market which is responsible for 5G networks. Furthermore, with the proposed synergies for ARRIS's three segments, the company has the potential to increase their sales volume and further expand their company into international markets. The company's one year target price of \$34.66 with a 23.99% return is reachable based on the analysis. Due to the increasing demand for higher quality data services, ARRIS International is well positioned to exceed their 52-week high and continue to benefit their shareholders. Based on my analysis, I am confident that ARRIS will outperform the market over the next year.

ARRIS International plc (arrr)

CENTER FOR GLOBAL FINANCIAL STUDIES

BULLISH

Analysis by Matt Lucarelli

3/9/2018

Current Price:

\$27.71

Dividend Yield:

0.0%

Intrinsic Value

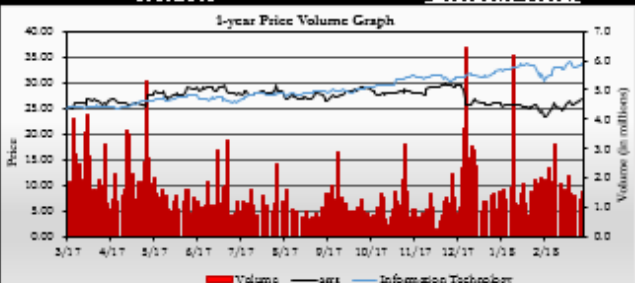
\$27.51

Target Price

\$34.36

Target 1 year Return: 23.99%

Probability of Price Increase: 56%



Description	
ARRIS International plc, together with its subsidiaries, provides entertainment, communications, and networking technology and solutions worldwide.	
General Information	
Sector	Information Technology
Industry	Communications Equipment
Last Guidance	February 12, 2018
Next earnings date	May 4, 2018
Market Assumptions	
Estimated Equity Risk Premium	6.30%
Effective Tax rate	22%

Market Data	
Market Capitalization	\$5,132.96
Daily volume (mil)	1.40
Shares outstanding (mil)	185.24
Diluted shares outstanding (mil)	189.62
% shares held by institutions	109%
% shares held by investment managers	71%
% shares held by hedge funds	14%
% shares held by insiders	0.88%
Short interest	1.41%
Days to cover short interest	1.47
52-week high	\$30.38
52-week low	\$22.60
Volatility	31.84%

Quarter ending	
12/31/2016	3.48%
3/31/2017	1.24%
6/30/2017	0.06%
9/30/2017	-2.12%
12/31/2017	-0.37%
Mean	0.46%
Standard error	1.0%

Part Earning Surprises	
Revenue	EBITDA
12/31/2016	-3.57%
3/31/2017	-15.20%
6/30/2017	-4.60%
9/30/2017	-2.51%
12/31/2017	3.91%
Mean	-3.39%
Standard error	4.7%

Market and Credit Scores	
Recommendation (STARS) Value--4	
Recommendation (STARS) Description--Buy	
Quality Ranking Value--B-	
Quality Ranking Description--Lower	
Short Score--0	
Market Signal Probability of Default % (Non-Rating)--0.371%	
Credit Model Score (Non-Rating)--bb	

Management	
Stanziano, Robert	Executive Chairman
McClelland, Bruce	CEO & Director
Patt, David	Executive VP, CFO & Chief Accounting Officer
Rabinran, Laurence	President of Customer Premier Equipment
O'Laughlin, Timothy	President of North American Sales
Baldeck, Philip	Senior VP & Chief Information Officer

Partitions	
Executive Chairman	26.19% per annum over 5y
CEO & Director	28.33% per annum over 5y
Executive VP, CFO & Chief Accounting Officer	14.71% per annum over 5y
President of Customer Premier Equipment	-0.27% per annum over 2y
President of North American Sales	
Senior VP & Chief Information Officer	

Industry and Segment Information	
LTM Revenue by Geographic Segment	LTM Revenue by Business Segments
U.S.--66%	Customer Premier Equipment (CPE)--68%
America, Excluding U.S.--16%	Network & Cloud (N&C)--32%
Asia Pacific--6%	Enterprise Network (Enterprise)--1%
EMEA--12%	Other--0%
--	--

Profitability	
Return on Capital (GAAP)	7.6%
Operating Margin	8%
Revenue/Capital (GAAP)	0.89
ROE (GAAP)	2.5%
Net margin	1.6%
Revenue/Book Value (GAAP)	1.49

Peer's Historical	
Peer's Median (LTM)	18.12%
Peer's Median (LTM)	17.36%
Peer's Median (LTM)	1.04
Peer's Median (LTM)	15.2%
Peer's Median (LTM)	13.5%
Peer's Median (LTM)	1.13

Peer's	
Materials Solutions, Inc.	Arista Networks, Inc.
Ciena Corporation	Finisar Corporation
Juniper Networks, Inc.	Lumentum Holding Inc.
CommScope Holding Company, Inc.	F5 Networks, Inc.
Harmonic Inc.	ADTRAN, Inc.

Invested Funds	
CapEx/Capital	8.9%
OpEx/Capital	7.9%
Operating Assets/Capital	49.3%
Goodwill/Capital	33.8%

Peer's Historical	
Peer's Median (LTM)	28.0%
Peer's Median (LTM)	3.5%
Peer's Median (LTM)	51.5%
Peer's Median (LTM)	17.1%

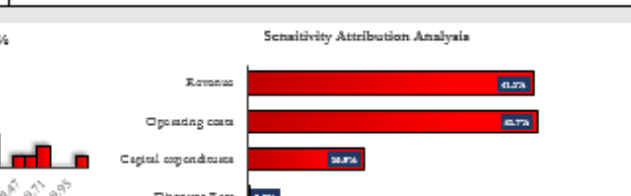
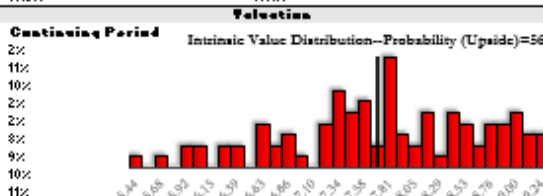
Peer's	
Materials Solutions, Inc.	Arista Networks, Inc.
Ciena Corporation	Finisar Corporation
Juniper Networks, Inc.	Lumentum Holding Inc.
CommScope Holding Company, Inc.	F5 Networks, Inc.
Harmonic Inc.	ADTRAN, Inc.

Capital Structure	
Total Debt/Market Capitalization	0.34
Cost of Debt	3.9%
CGFS Rating (F=care, Z=care, and default Probability: B	
WACC	8.6%

Peer's Historical	
Peer's Median (LTM)	0.31
Peer's Median (LTM)	5.1%
Peer's Median (LTM)	10.1%

Peer's	
Materials Solutions, Inc.	Arista Networks, Inc.
Ciena Corporation	Finisar Corporation
Juniper Networks, Inc.	Lumentum Holding Inc.
CommScope Holding Company, Inc.	F5 Networks, Inc.
Harmonic Inc.	ADTRAN, Inc.

Forecast Assumptions	
Revenue Growth CAGR	8%
Average Operating Margin	11%
Average Net Margin	9%
Growth in Capital CAGR	8%
Growth in Claims CAGR	2%
Average Return on Capital	8%
Average Return on Equity	9%
Average Cost of Capital	9%
Average Cost of Equity	11%



American Woodmark Corp: (AMWD)

George Brockmann

Sector: Consumer Discretionary

Industry: Home Furnishings

Current Price: 123.35

Target Price: 141.75

Company Description: American Woodmark Corporation (“American Woodmark” or the “Company”) manufactures and distributes kitchen cabinets and vanities for the remodeling and new home construction markets. American Woodmark was incorporated in 1980 by the four principal managers of the Boise Cascade Cabinet Division through a leveraged buyout of that division. American Woodmark was operated privately until 1986 when it became a public company through a registered public offering of its common stock.

BUY/HOLD/SELL

Current Price: \$123.35

Target Price: \$141.75

Market Cap: 2.159B

Beta: 1.45

Avg. Volume: 115,835

S&P Debt Rating: bbb-

Adj. ROE: 20.68%

Adj. ROIC: 19.73%

WACC Ke: 10.55%

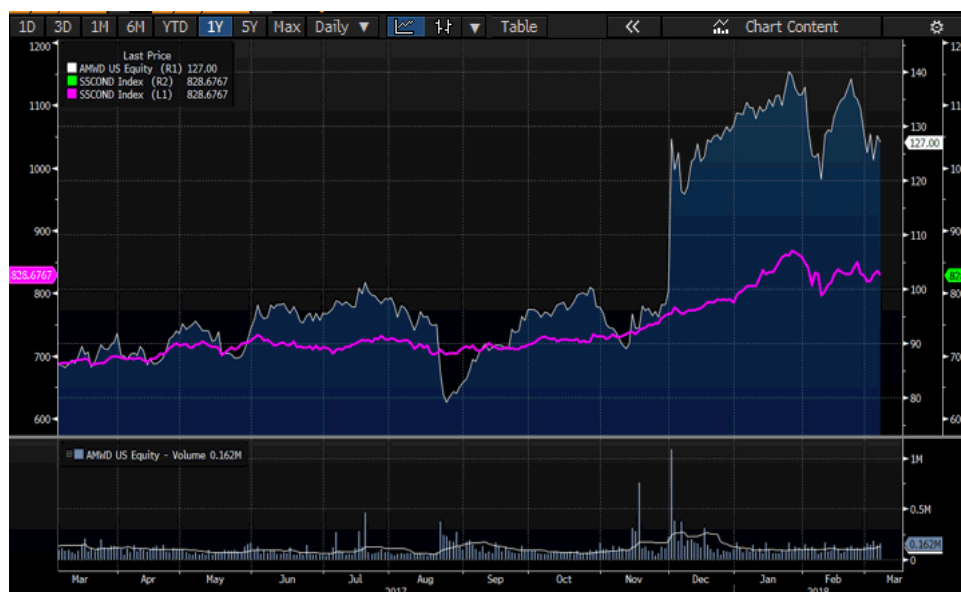
WACC: 10.45%

EBIT Margin: 10.51%

EBITDA Margin: 12.32%

Equity Multiplier: 1.42

Cash/Total Assets: 35.31



Thesis: AMWD is one of the largest cabinet manufacturers in the Home Furnishings Industry, and has seen consistent growth over the past number of years in revenue, profit, and size. AMWD is extremely diversified inside their only product segment of Kitchen Cabinet Manufacturing with a wide variety of products to cater many different consumers, and with growing demand they will be able to attract more customers, especially with recent acquisition of RSI, who was a close competing cabinet manufacturer. Their opportunity for growth comes from the improved recovery of the housing market and the improved health of the consumer which will generate much higher demand for their services. The Monte Carlo simulation has shown that they have a much higher upside than a downside due to the projected increase in demand for their products. Based on the analysis AMWD appears to be in a position to increase their growth over last year.

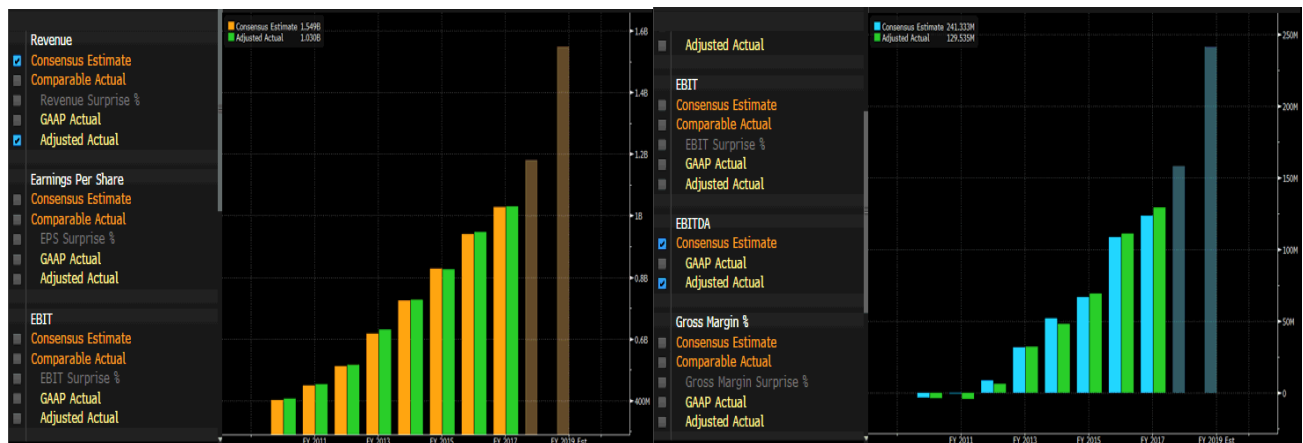
Catalysts:

- **Short Term:** Earnings Announcement on 3/9/17, and Cary Dunston became the Chairman of the board in August
- **Mid Term:** Further increase in revenue from integration of AMWD’s RSI acquisition, and growing health of consumer driving demand in the industry.
- **Long Term:** Further growth of the industry as a whole through continued recovery of the housing market from the 2008 market crisis.

Earnings Performance:

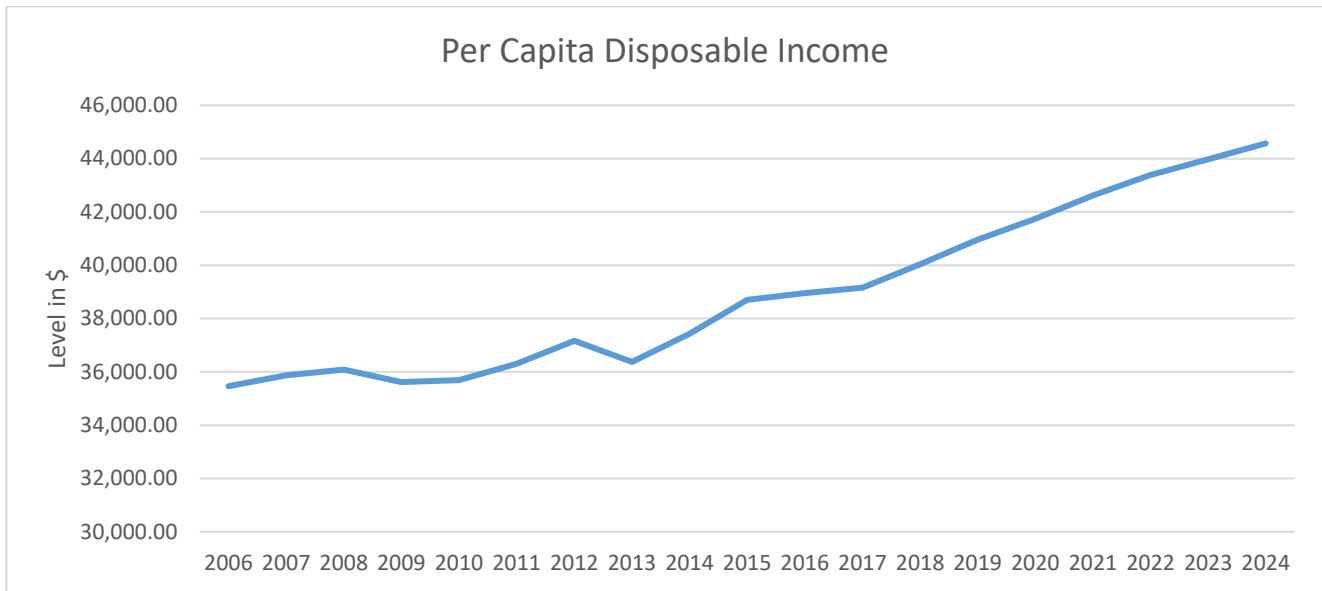
AMWD began fiscal 2018 with an all-time high in net sales, revenue, net income, EBITDA adj, and EPS. Revenue has grown by 8% since last year, gross profit by 21.2%, EBITDA by 12.5%, and EPS by 16.1%. Cash from operations also increased from 74.6-77.1 and free cash flow along with it from 45.9-55.3. AMWD's capital expenditures decreased from -28.7 to -21.8, however since the start of fiscal year 2018 it has increased to -32.1, meaning that while their revenues are increasing they are further putting that money back into the company. Their amount of short term debt has remained relatively the same, moving from 1.6 in 2016 to a current 1.7, however they have been paying off their long term debt and it has decreased from 22.1 in 2016 to 16.1 currently, which is likely a driving factor in the decrease in cash they have seen from 2016 to current day, respectively 174.5 to 139.6. AMWD has also beaten their competitors in their revenue growth rate reporting 8.8% growth compared to the competitor median 4.69%

AMWD has beaten EBITDA estimates since 2015, and has consistently grown since then as well, and it is estimated to continue to grow from the all-time high it is currently at. The stock price has also significantly increased in the last year, from a price of roughly \$87 to a high of \$140 and then eventually down to its current price of \$127, likely due to macro conditions in the consumer discretionary sector, however it has been increasing again recently. Free cash flow to firm and equity have also both increased since 2016.

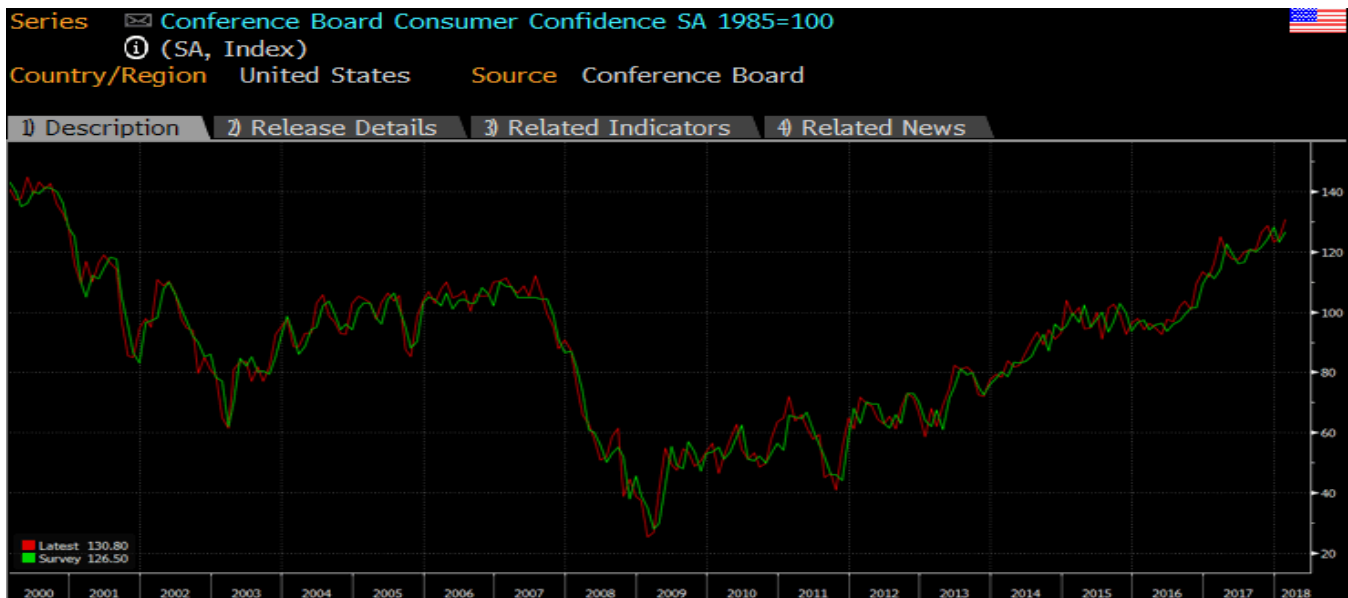


Industry Outlook:

AMWD is a part of Home Furnishings Stores industry, and this industry is directly tied in with the health of the average consumer and of the housing market. In the industry itself revenue has consistently grown each year since 2008 as has private spending on home improvements, both of which are estimated to continue their growth into 2018 and continue from there. The health of the consumer is also set to improve as consumer confidence has been increasing and is estimated to continue to increase and this also proves true for Per Capita Disposable Income which has increased since 2013 and is projected to continue.

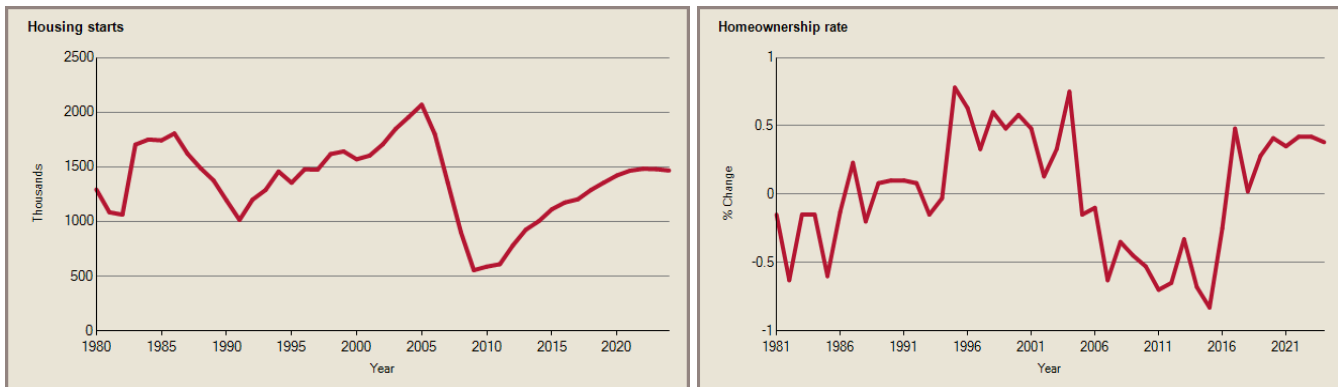


Source: IBIS World



Source: Bloomberg

The housing market itself has also been improving and looks to continue its growth, the home ownership rate has declined every year since the market crisis and in 2016 it declined at its lowest rate since and is projected to begin to increase. Housing Starts have also been increasing in the previous years and the growth is projected to continue. These factors driving industry growth all imply a coming increase in demand for the products of AMWD.











Source: IBIS World

Business Model:

AMWD has one reportable segment, it is labeled as Kitchen Cabinet Manufacturing. They offer 85 door designs with a targeted range of painted and stained finishes on maple, cherry and oak as well as engineered fronts under the Duraform™ mark. Their products are sold under the brand names of American Woodmark®, Simply Woodmark, Timberlake, Shenandoah Cabinetry, Shenandoah Value Series, and Waypoint Living Spaces. These products are sold on a national basis across the United States to the remodeling and new home construction markets. AMWD services these markets through three primary channels: home centers, builders, and independent dealers and distributors. They provide complete turnkey installation services to its direct builder customers via its network of seven service centers that are strategically located throughout the United States. AMWD distributes its products to each market channel directly from four assembly plants through a third party logistics network. The primary raw materials used include hard maple, soft maple, oak, and cherry lumber and plywood. Additional raw materials include paint, particleboard, medium density fiberboard, high density fiberboard, manufactured components and hardware. AMWD currently purchases paint from one supplier; however, other sources are available. Other raw materials are purchased from more than one source and are readily available. AMWD's main means for competition is its breadth and variety of product offerings, expanded service capabilities, geographic reach and affordable quality. AMWD's business has historically been subject to seasonal influences, with higher sales typically realized in the second and fourth fiscal quarters. General economic forces and changes in the customer mix have reduced seasonal fluctuations in revenue over the past few years. In recognition of the cyclicity of the housing industry, AMWD has a policy to operate with a minimal amount of financial leverage. They regularly maintain a debt to capital ratio of well below 20%, and working capital net of cash of less than 6% of net sales. At April 30, 2017, debt to capital was 4.2%, and working capital net of cash was 5.9% of net sales. During the fiscal year ended April 30, 2017, AMWD had two primary customers, The Home Depot and Lowe's Companies, Inc., which together accounted for approximately 37% of the Company's sales. AMWD also does not pay out dividends.

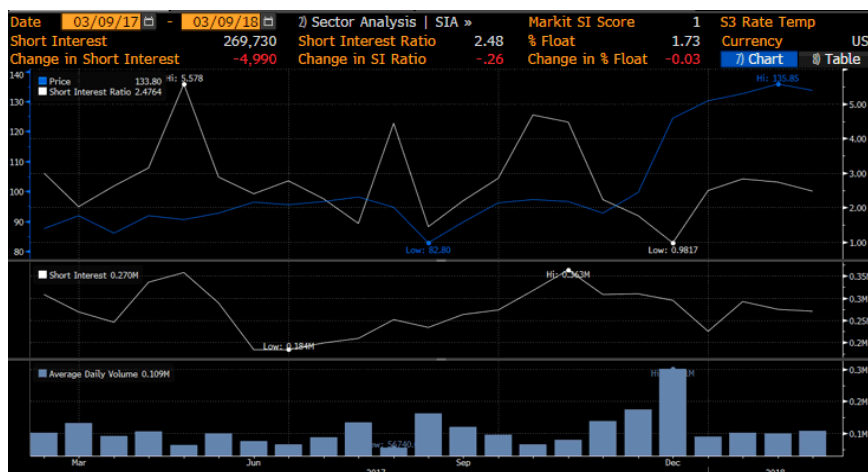
Segment Analysis:

AWMD only has one reportable segment labeled Kitchen Cabinet Manufacturing, however within this one segment they offer a large amount of product diversity by selling under different brands, styles, and product lines. AWMD currently offers framed stock cabinets in 514 different cabinet lines, ranging in price from relatively inexpensive to medium- priced styles. Their cabinets are offered in a broad range of sizes, construction and decorative options to achieve a broad range of design layouts. So as is to be expected Kitchen Cabinet Manufacturing segment makes up 100% of the revenue and sales for AWMD, and all of these measures have been increasing. Revenue, gross profit, EBITDA, operating income, and net income have all substantially increased in the segment in the past 3 years. The gross margin has also increased from 21.09-21.23.

11) By Measure		12) By Geography		13) By Segment	
In Millions of USD except Per Share					
12 Months Ending		2014 Y	2015 Y	2016 Y	2017 Y
		04/30/2014	04/30/2015	04/30/2016	04/30/2017
	Revenue	726.5 100.0%	825.5 100.0%	947.0 100.0%	1,030.2 100.0%
	Kitchen Cabinet Mfg	726.5 100.0%	825.5 100.0%	947.0 100.0%	1,030.2 100.0%
	Gross Profit	124.2 100.0%	152.5 100.0%	199.7 100.0%	224.6 100.0%
	Kitchen Cabinet Mfg	124.2 100.0%	152.5 100.0%	199.7 100.0%	224.6 100.0%
	EBITDA	48.6 100.0%	69.2 100.0%	109.6 100.0%	126.9 100.0%
	Kitchen Cabinet Mfg	48.6 100.0%	69.2 100.0%	109.6 100.0%	126.9 100.0%
	Operating Income	34.1 100.0%	54.7 100.0%	93.2 100.0%	108.2 100.0%
	Kitchen Cabinet Mfg	34.1 100.0%	54.7 100.0%	93.2 100.0%	108.2 100.0%

Management/Ownership:

AMWD is primarily owned by investment advisors with 77.51% of shares currently belonging to them, a decrease of 0.37% from last year. Individual owners hold 9.99% which is a .05% decrease, Hedge Fund Managers hold 6.62% with that also being a decrease of .04%. The majority holders of AMWD are BlackRock Investing with 11.1%, William F. Brandt Jr, former Chairmen, CEO, and Director, holds 9.94%, and Broad Run Investments with 8.28%. The short interest days to cover for THOR is currently decreasing after approaching roughly 2.9 and is now at 2.4. It had hit a high of 5.578 in May 2017 and then proceeded to its low of 0.9817 in December. Since this low both short interest and the price of the stock have increased until recently where the stock price began to decrease to its current price along with short interest. The volume of short interest has been decreasing since January.



Top Ownership Type (%)			
54) Ownership Type	03/05/17	Curr	Change
41) Investment Advisor	76.51	77.51	+1.00
42) Individual	12.06	9.99	-2.07
43) Hedge Fund Manager	5.93	6.62	+0.69
44) Pension Fund	2.26	1.53	-0.73
45) Sovereign Wealth Fund	0.86	1.29	+0.43
46) Holding Company	0.69	1.00	+0.31
47) Insurance Company	0.64	0.96	+0.32
48) Bank	0.37	0.54	+0.17
49) Brokerage	0.34	0.26	-0.08

CEO Cary Dunston joined AMWD in October 2006 as senior vice president of manufacturing and supply chain services, he was made president in 2014, was promoted to CEO in 2015, and in 2017 was named chairman of the board. He was also previously the vice president of global operations in company Diamond Innovations, and vice president of operations for BBA Fiberweb. Total average executive compensation has increased every year for the past six years.

Management	Position	Total Compensations Growth	Stock Price Growth During Tenure
Dunston, S.	Chairman, CEO & President	16.31% per annum over 6y	11.26% per annum over 6y
Culbreth, M.	CFO, Principal Accounting Officer, Senior VP &	89.69% per annum over 4y	18.89% per annum over 4y
Campbell, Roger	Senior Vice President of Sales & Marketing	7.39% per annum over 4y	18.89% per annum over 4y
Adams, Robert	Senior Vice President of Value Stream Operation	-1.77% per annum over 2y	15.16% per annum over 2y
Eanes, Glenn	Vice President and Treasurer		
Dunnigan, Kevin	Assistant Treasurer		

Capital Allocation Comparison:

AMWD has a Total Debt to Total Asset ratio of 3.37%, which is extremely low compared to the competitor median of 29.15% and AMWD runs with very low levels of debt in general and Carey Dunston, CEO, stated that “In recognition of the cyclicity of the housing industry, the Company’s policy is to operate with a minimum amount of financial leverage.”, and they have also decreased their debt by 28.85% in the last year compared to a industry average decrease of 4.12%. AMWD carries a Cash and Cash Equivalent amount that is equal to the median of the competitors with 176.98 million and their Operating Margin is 10.76% compared to the competitor median 9.36%. AMWD has a WACC that of 13.31% that is higher than the competitors average of 10.66%, however they also have a ROIC/WACC of 1.27 which is higher than the competitor median of 1.16. So although their WACC is higher than average, the ROIC they are seeing is also above average so the WACC does not have any negative implications.

Name	Ticker	Mkt Cap	Debt/Assets:Y	CR&CE:Y	OPM:Y	PM:Y	WACC	ROIC/WACC Ratio	WACC Cost of Debt (After Tax)
Median		1.95B	29.15%	176.82M	9.36%	6.10%	10.66%	1.16	2.87%
100) AMERICAN WOODMARK C	AMWD US	2.11B	3.37%	176.98M	10.76%	7.08%	13.31%	1.27	2.93%
101) MASCO CORP	MAS US	12.99B	56.21%	1.19B	15.37%	8.02%	9.97%	2.05	2.66%
102) FORTUNE BRANDS HOME	FBHS US	9.42B	27.35%	323.00M	13.86%	9.07%	10.67%	1.05	2.81%
103) MASONITE INTERNATIONAL	DOOR US	1.80B	37.24%	176.67M	7.97%	5.01%	10.29%	1.05	3.57%
104) QUANEX BUILDING PRO	NX US	605.06M	30.94%	17.45M	4.77%	2.68%	10.66%	0.55	3.77%
105) KIMBALL INTERNATIONAL	KBAL US	654.86M	0.07%	62.88M	7.71%	5.13%	10.89%	1.58	2.62%

Profitability Comparison:

Over the past 5 years AMWD has seen consistent growth in revenue, gross profit, EBITDA, Net Income, and EPS. Although the revenue growth rate has decreased since 14.7% in 2015-2016, the

2016-2017 growth rate was 8.8% and this was solely because net sales did not increase as much as previously however with their recent acquisition of RSI, sales will likely increase past this 8.8%.

11) Adj Highlights	12) GAAP Highlights	13) Earnings	14) Enterprise Value	15) Multiples	16) Per Share	17) Stock Value	
In Millions of USD	2014 Y	2015 Y	2016 Y	2017 Y	Current/LTM	2018 Y Est	2019 Y Est
12 Months Ending	04/30/2014	04/30/2015	04/30/2016	04/30/2017	10/31/2017	04/30/2018	04/30/2019
Market Capitalization	464.4	815.2	1,183.2	1,491.8	2,222.9		
- Cash & Equivalents	135.7	185.0	200.2	228.7	220.0		
+ Preferred & Other	0.0	0.0	0.0	0.0	0.0		
+ Total Debt	21.6	23.0	23.7	16.9	17.8		
Enterprise Value	350.3	653.2	1,006.7	1,279.9	2,020.7		
Revenue, Adj	726.5	825.5	947.0	1,030.2	1,059.6	1,181.3	1,549.0
Growth %, YoY	15.2	13.6	14.7	8.8	7.9	14.7	31.1
Gross Profit, Adj	124.2	152.5	199.7	224.6	225.0	260.5	373.3
Margin %	17.1	18.5	21.1	21.8	21.2	22.0	24.1
EBITDA, Adj	48.3	69.1	111.2	129.5	132.6	158.3	241.3
Margin %	6.6	8.4	11.7	12.6	12.5	13.4	15.6
Net Income, Adj	20.2	35.4	59.5	72.9	75.4	84.6	118.8
Margin %	2.8	4.3	6.3	7.1	7.1	7.2	7.7
EPS, Adj	1.30	2.21	3.62	4.44	4.61	5.09	6.83
Growth %, YoY	90.3	70.2	64.0	22.8	16.1	14.6	34.0
Cash from Operations	40.5	58.7	74.6	77.1	78.8		
Capital Expenditures	-7.9	-20.0	-28.7	-21.8	-32.1	-25.0	-30.0
Free Cash Flow	32.6	38.7	45.9	55.3	46.7	72.3	105.0

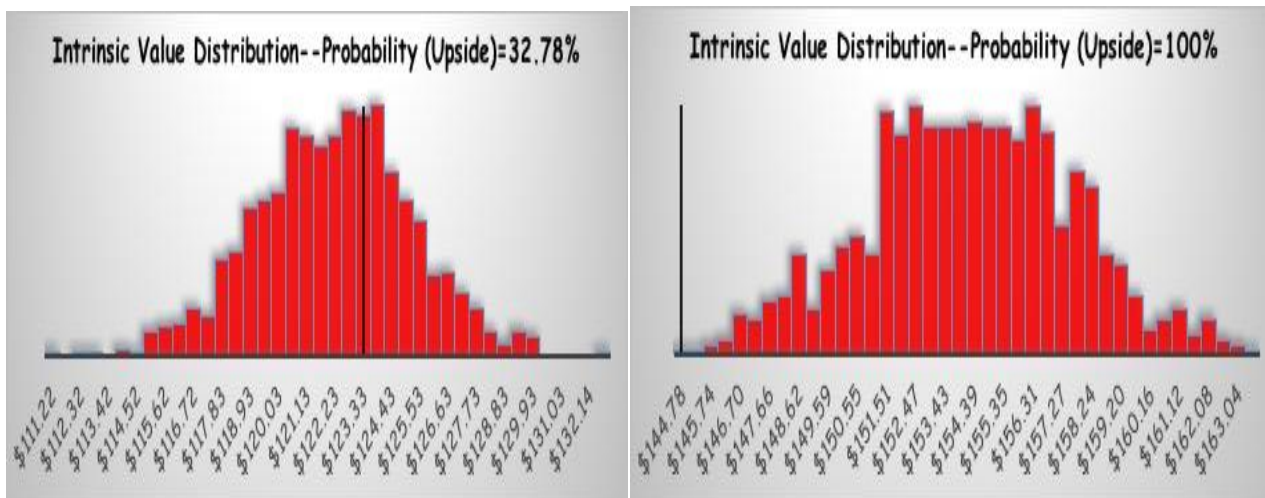
AMWD's adjusted revenue growth rate is 8.79% and net income growth rate is 21.25%, the adj. revenue growth rate is notably higher than the median of the competitors and the NI growth is aligned with the median. AMWD's ROE is also higher than the median with a respective 23.03% to 19.31%. This is also true for their ROA, ROIC, and Adj. EBITA Margin which are all higher than the competitor median. This all implies that AMWD is seeing higher levels of returns on their operations then their competitors. A supporting factor of their strong performance is that AMWD's Asset Turnover Ratio and Inventory Turnover are both double or greater than the competitor median. This is alongside the fact that their Cash Conversion Cycle is half that of the median, these figures support the strong performance and growth AMWD is showing in the aforementioned figures.

Name	Ticker	Rev Gr Adj YoY:Y	NI / Profit - 1 Yr Gr:Y	ROE:Y	ROA:Y	ROIC:Y	Asst TO:Y	EBITDA Mrgn Adj:Y	Inv turnover:Y	Cash conversion Cycle:Y
Median		4.69%	21.25%	19.31%	10.27%	16.21%	1.36	10.18%	7.45	48.82
100) AMERICAN WOODMARK CORP	AMWD US	8.79%	21.25%	23.03%	15.07%	21.34%	2.13	11.19%	19.61	22.47
101) FORTUNE BRANDS HOME & SEC	FBHS US	5.99%	14.38%	19.31%	9.01%	12.40%	0.99	14.46%	6.03	54.62
102) MASCO CORP	MAS US	3.90%	8.55%	--	11.54%	28.61%	1.44	15.52%	6.68	43.03
103) MASONITE INTERNATIONAL CO	DOOR US	2.99%	53.86%	14.86%	6.45%	10.08%	1.29	9.17%	7.07	76.04
104) QUANEX BUILDING PRODUCTS	NX US	-6.64%	--	5.99%	2.99%	4.14%	1.12	6.89%	7.82	56.16
105) KIMBALL INTERNATIONAL-B	KBAL US	5.48%	77.28%	21.06%	11.69%	20.02%	2.28	7.84%	11.31	25.46

Sensitivity Forecast:

AMWD's stock price value is very sensitive to revenue and operating cost, it is also sensitive to capital expenditures but to a lesser extent. From 2016 to the end of 2017 AMWD experienced a revenue growth of 8.8%. AMWD has a operating expense to net sales of 11.3%, compared to a competitor median of 18.67%. The bear and bull case valuation are evaluated using a Monte Carlo simulation with different assumptions.

The base case, or the most probable scenario, had a target price of \$141.75 with a target 1 year return of 14.5% and has a intrinsic value probability upside of 100%. Under the bear case, there is a 32.78% intrinsic value probability upside which created a target price of 130.02. This is the result of making the assumption that revenue and sales was going to decrease despite estimates that it would increase. I also made the assumption that operating expenses would increase due to complications with implementing their acquisition of RSI Home Products. In this scenario AMWD could still be considered a buy as the target price is still marginally higher then the current stock price however, the expected return would be low and the money would be better invested elsewhere. The bull case displayed an intrinsic value distribution probability of 100% and created a target price of \$163.41. This was a result of making the assumption that revenues would increase more then was estimated and operating expense did not change and a 1 year return of 31.7% would be generated. Based on current industry trends, the probability of this scenario occurring is much higher as demand in the industry is set to increase along with revenue and sales for AMWD. This is reasonable because marginal increase in revenues year over year have resulted in large growth in the stock price. From 2015 to 2016 revenue grew 14.7% and the price of the stock increased by 68.94%, and from 2016 to present day revenue has grown by 2.7% and the price of the stock has increased by 39.4%. Since AMWD is highly sensitive to revenue and the industry they are in is set to grow, it shows that bull case is much more likely then the bear case.



Summary:

In conclusion, AMWD is a buy at its current price. This is due to the fact that they are one of the top companies in an industry that is currently seeing a high percentage of growth. AMWD's product diversity and recent acquisition of close competing cabinet manufacturer RSI give them the ability to meet the demands of more consumers once the industry growth continues. The upside is much greater than the downside, and the downside would not necessarily result in negative returns, just a return that could have been greater if the money was invested elsewhere. The company's 1 year target price is \$141.75 with a 1 year target return of 14.5% based on analysis and current price. AMWD appears to be well positioned to approach or break its 52-week high.

American Woodmark Corporation (AMWD)

CENTER FOR GLOBAL FINANCIAL STUDIES

NEUTRAL

Analysis by Al Capone

Current Price:

\$123.80

Intrinsic Value

\$153.66

3/9/2018

Dividend Yield:

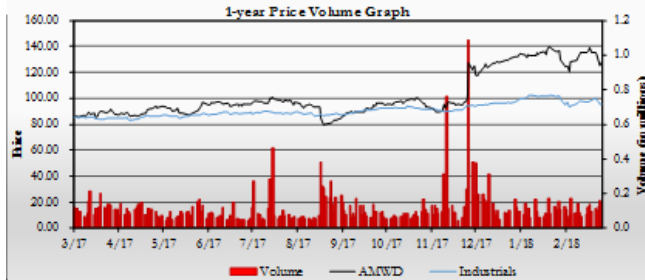
0.0%

Target Price

\$141.75

Target 1 year Return: 14.5%

Probability of Price Increase: 100%



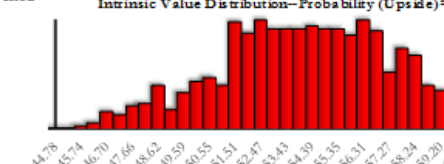
Description	
American Woodmark Corporation manufactures and distributes kitchen cabinets and vanities for the remodeling and home construction markets in the United States.	
General Information	
Sector	Industrials
Industry	Building Products
Last Guidance	February 12, 2018
Next earnings date	March 9, 2018
Market Assumptions	
Estimated Equity Risk Premium	2.19%
Effective Tax rate	27%

Market Data	
Market Capitalization	\$21,6691
Daily volume (mil)	0.19
Shares outstanding (mil)	17.50
Diluted shares outstanding (mil)	16.35
% shares held by institutions	109%
% shares held by investments Managers	62%
% shares held by hedge funds	8%
% shares held by insiders	1092%
Short interest	1.54%
Days to cover short interest	2.27
52 week high	\$145.44
52-week low	\$78.75
Volatility	37.90%

Past Earning Surprises		
Quarter ending	Revenue	EBITDA
10/31/2016	-3.45%	-2.11%
1/31/2017	7.15%	-515.73%
4/30/2017	-2.10%	-6.89%
7/31/2017	-0.71%	-6.40%
10/31/2017	-2.08%	7.41%
Mean	-0.24%	-104.74%
Standard error	1.0%	1.8%

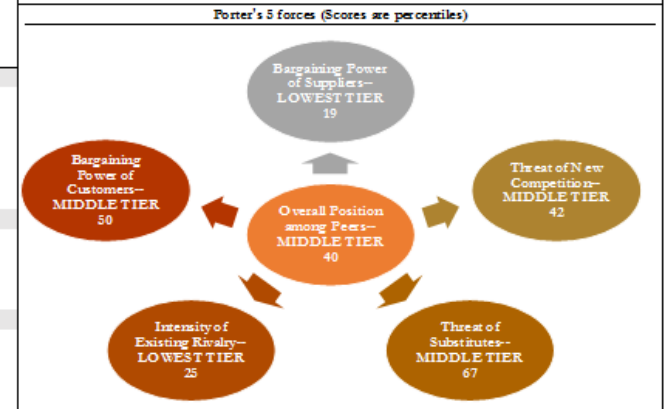
Management		Market and Credit Scores	
Position	Total Compensation Growth	Recommendation (STARS) Value--0	Recommendation (STARS) Description--0
Dunston, S.	Chairman, CEO & President	16.31% per annum over 6y	11.26% per annum over 6y
Culbreth, M.	CFO, Principal Accounting Officer, Senior VP &	89.69% per annum over 4y	18.89% per annum over 4y
Campbell, Roger	Senior Vice President of Sales & Marketing	7.39% per annum over 4y	18.89% per annum over 4y
Adams, Robert	Senior Vice President of Value Stream Operation	-1.77% per annum over 2y	15.16% per annum over 2y
Emes, Glenn	Vice President and Treasurer		
Dunigan, Kevin	Assistant Treasurer		

Profitability		Peers' Median (LTM)	
AMWD (LTM)	AMWD Historical	Peers' Median (LTM)	Peers' Median (LTM)
Return on Capital (GAAP)	30.6%	49.88%	18.18%
Operating Margin	6%	4.28%	10.82%
Revenue / Capital (GAAP)	4.90	11.63	1.68
ROE (GAAP)	24.4%	18.2%	-36.9%
Net margin	7.4%	4.3%	6.3%
Revenue / Book Value (GAAP)	3.31	4.25	-5.88
Invested Funds		Peers' Median (LTM)	
AMWD (LTM)	AMWD Historical	Peers' Median (LTM)	Peers' Median (LTM)
Cash / Capital	54.3%	68.6%	20.7%
NWC / Capital	3.0%	0.3%	9.0%
Operating Assets / Capital	42.7%	31.1%	44.2%
Goodwill / Capital	0.0%	0.0%	26.1%
Capital Structure		Peers' Median (LTM)	
AMWD (LTM)	AMWD Historical	Peers' Median (LTM)	Peers' Median (LTM)
Total Debt / Market Capitalization	0.15	0.23	0.47
Cost of Debt	3.1%	2.7%	11.2%
CGFS Rating (F-score, Z-score, and default Probability)	AAA		
WACC	3.5%	4.8%	22.2%

Forecast Assumptions		Valuation	
Explicit Period (6 years)	Continuing Period	Intrinsic Value Distribution--Probability (Upside)=10.0%	
Revenue Growth CAGR	6%		
Average Operating Margin	5%		
Average Net Margin	3%		
Growth in Capital CAGR	7%		
Growth in Claims CAGR	-3%		
Average Return on Capital	9%		
Average Return on Equity	10%		
Average Cost of Capital	4%		
Average Cost of Equity/Kc	5%		

Industry and Segment Information	
LTM Revenues by Geographic Segments	LTM Revenues by Business Segments
United States--100%	Manufactures and Distributes Kitchen Cabinets and Vanities

Peers	
Kimball International, Inc.	--
Masco Corporation	--
Fortune Brands Home & Security, Inc.	--
Quanex Building Products Corporation	--



Sensitivity Attribution Analysis	
Revenue	37.9%
Operating costs	46.3%
Capital expenditures	15.4%
Discount Rate	8.4%

Company Description: Nutanix, Inc. provides an enterprise cloud operating system that converges traditional silos of server, virtualization, storage, and networking into one single integrated solution. This system unifies private and public cloud together into a single software fabric. Systems are offered in North America, Europe, the Asia-Pacific, the Middle East, Latin America, and Africa. The company's software products include: Acropolis and Prism. Nutanix's solutions address enterprise applications, databases, virtual desktop infrastructure, unified communications, and big data analytics- serving customers across a wide range of industries. Nutanix was founded in 2009 and is headquartered in San Jose, California.

BUY

Current Price:	\$44.31
Target Price:	\$54.14
Market Cap:	6.74B
Beta:	2.32
WACC:	8.2%
ROC GAAP:	210.2%
Revenue Growth:	11%
52wk High/Low:	\$42.45/\$14.38
Daily volume:	5.78M
Float:	94%
EBITDA Margin:	-35%
D/E:	8.5%

NTNX: 1M

Comps: S&P, IT Index



Thesis: Nutanix will continue to execute and beat earnings guidance with strong revenue growth and an accelerating pace of billings growth. Software and services should grow at a 40%+ clip, in their shift away from hardware. The growth in the Hyper-Converged Infrastructure industry remains favorable. Nutanix remains a unique asset that has the ability to sustain growth as a cloud operating system provider.

Catalysts:

- **Short Term(within the year):** Optimism around new software offerings, and the shift away from hardware
- **Mid Term(1-2 years):** Acquisition of Minjar- maker of Botmetric
- **Long Term(3+):** Increasing demand/shift for HCI, replacing traditional storage solutions

Earnings Performance:

Q2 2018 (Q4 2017--Nutanix's fiscal year is off by 1Q due to going public in November) marked a very strong quarter for Nutanix with billings, revenue, gross margin, and EPS performance. These were all better than expected on guidance and consensus estimates. Q2 also recorded a record number of new customers, totaling 8,870. Last quarter, the company remained optimistic regarding new software offerings, which would

serve as additional levers of growth. The software-centric strategy hoped to provide customers with the same simple purchasing process and high quality customer service, but with strong go-to-market instincts and a differentiated hybrid cloud. This software only form factor was expected to give Nutanix ubiquity in the market. Not only did they not disappoint, but they were the leader in Hyper-converged Infrastructure according to Gartner (an IT research and advisory firm). In Q2 revenues were up 44% y/y due to outperforming sales leadership- this is even with the elimination of \$14 million in pass-through hardware revenues. Nutanix now has a meaningful competitive advantage by being the most portable operating system built for the enterprise cloud. Nutanix's software and support business is growing quickly, reaching \$1 billion in annualized run rate for billings. The software-defined business has helped to accelerate large deal momentums. In Q2 alone, Nutanix secured 57 deals worth more than \$1 million, up 104% y/y. Nutanix now has 57 customers with more than \$5 million in lifetime bookings, 18 customers with over \$10 million, and 10 customers with over \$15 million.

Figure 1:

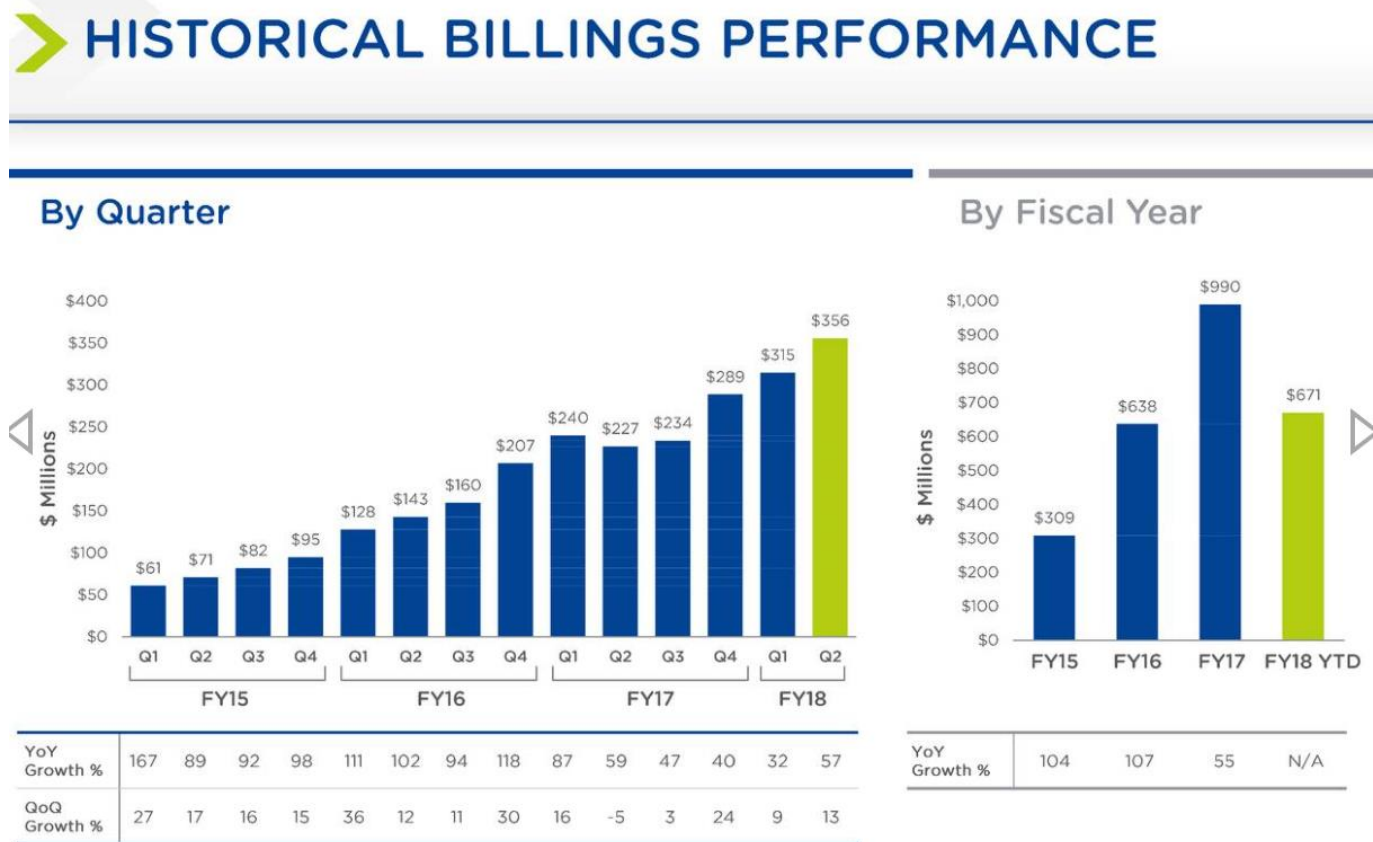


Figure 1: Nutanix billed \$356 million in the quarter, which is a 57% increase y/y and 13% increase from last quarter. The product mix of billing was 77% software & support and 23% pass-through hardware. This is even with higher revenue deferrals (as seen in **Figure 2** below).

Figure 2:

DEFERRED REVENUE

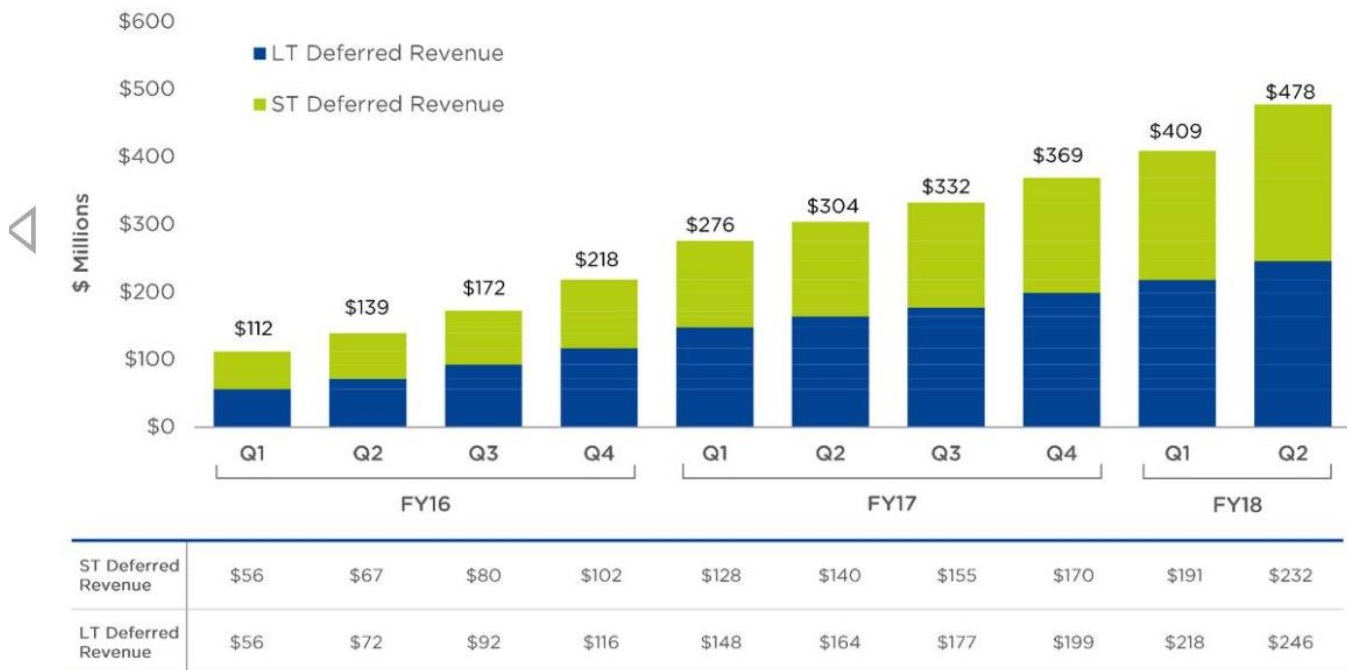


Figure 2: The increase in deferred revenue, lowers the current quarter's revenue. However, this adds some predictability to future revenues. Deferred revenue in Q2 increased by \$69 million, growing 57% y/y and 17% from last quarter.

Gross profit in Q2 was \$182 million, up 45% y/y and 7% from the previous quarter. Gross margins were 63.5%, even with eliminating \$14 million of pass-through hardware, which is \$2 million more than the target. Operating expenses were \$202 million, below guidance by \$8 million, and non-GAAP net losses were \$23 million.

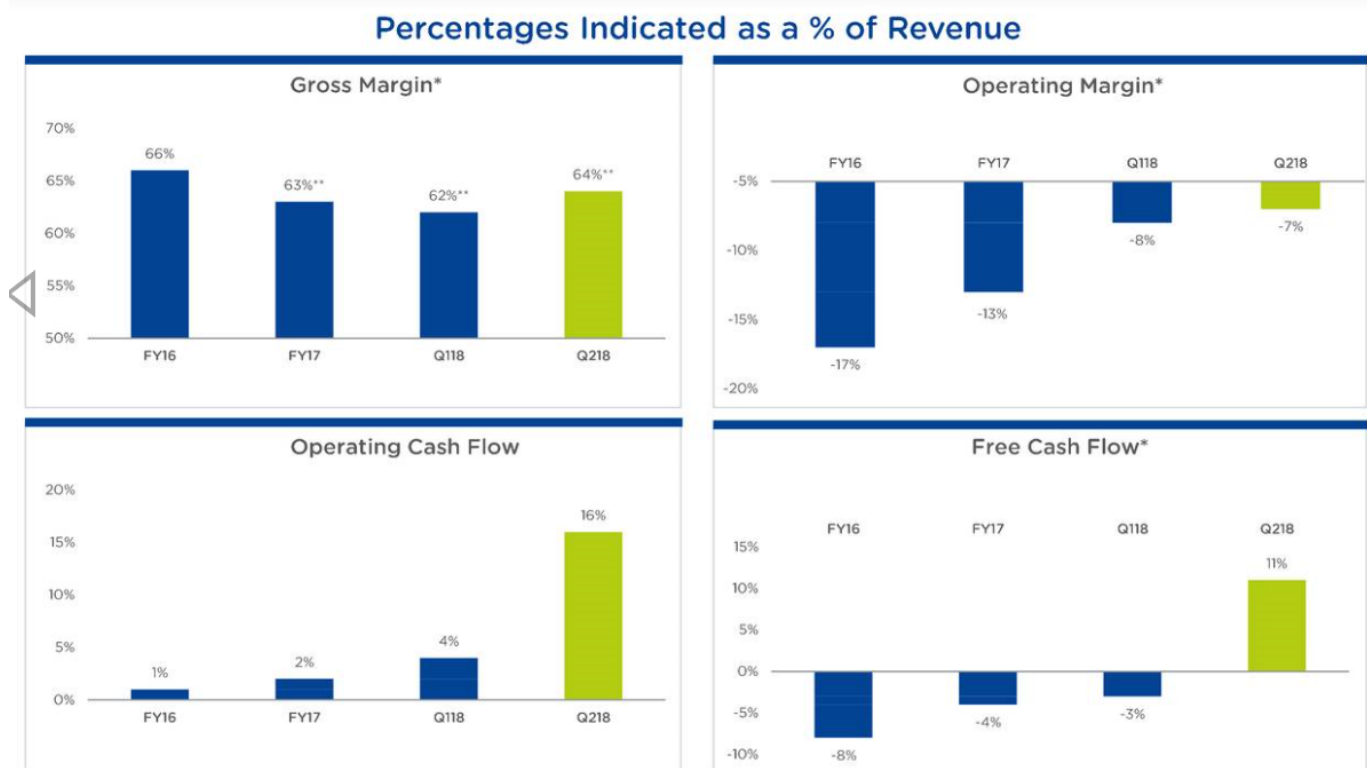
Below are the earnings overview. The last 3Q Nutanix has not beat their estimates. However, they are trending in the right direction. All metrics are up significantly over the last 4 weeks, and YoY growth is strong against Comps.

4) Consensus Overview EEO »		2) Current Period Overview (Q3/18)		2) Prior Period Analysis (Q2/18)	
Measure	Q3/18 Est	4wk Chg	YoY Gr	Growth vs Comps	Past Surprise
11) EPS, Adj+	-0.195	14.24%	53.6%	Stronger	Beat 3 of 6
12) EPS, GAAP	-0.444	0.53%	43.0%	Stronger	Beat 4 of 6
13) Revenue	278.368M	3.44%	45.2%	Stronger	Beat 6 of 6
14) Net Income, Adj+	-34.806M	2.95%	42.8%	Stronger	Beat 3 of 6
15) Operating Profit	-30.857M	12.78%	--	--	--
16) EBITDA	-16.175M	-9.11%	67.2%	Stronger	Beat 6 of 6

Outlined below in **Figure 3** is the operating leverage as a % of revenue. The most important thing to note here is that free cash flow grew >4x despite GAAP losses this past quarter. Gross margins are staying relatively even, while operating margins have been reduced to -7%.

Figure 3:

> OPERATING LEVERAGE



Customers are now purchasing anywhere from \$1 million to \$10 million services. Two quarters ago, the top 3 deals were all in the federal arena and amounted to more than \$15 million in billings. One of these customers is the largest revenue generating civilian agency in the federal government and chose Nutanix due to their security and rapid time-to-value platform. The second customer was within the United States Armed Forces and will use the platform to support civilian facilities for soldier's families. Healthcare was broken into with 7 different deals. One deal was with Global 2000 customers who operates the largest clinical laboratory network in the world, using Nutanix's platform to run host service in workloads. Global 2000 continues to expand their use of Nutanix's platform. The largest deal in the quarter was over \$10 million with G2K, which is a major integrated beverages company. All of this bodes well for Nutanix- as the brand is growing, so is the confidence for first time customers to do large deals with them.

Citations:

<https://seekingalpha.com/article/4128869-nutanixs-ntnx-ceo-dheeraj-pandey-q1-2018-results-earnings-call-transcript?part=single>

<https://seekingalpha.com/article/4152652-nutanixs-ntnx-ceo-dheeraj-pandey-q2-2018-results-earnings-call-transcript?part=single>

Evolving Industry:

The biggest developments for Nutanix are their development into a strong enterprise cloud operating systems company. Investors were wary of the direction of the company in either software or storage and appliance. Over the next few years, Nutanix will migrate away from pass-through hardware related revenue. This began two quarters ago and will continue for the next year. Hardware amounts to 23% of today's business- but this business will be maintained through allowing appliance manufacturers to sell Nutanix hardware to distributors directly, and also focusing more on software transactions. Going along with the last paragraph in the earnings performance, there is very strong customer growth metrics. These are outlined below in **Figure 4**. This customer growth is coupled with repurchasing. This expansion strategy is shown in **Figure 5**, and details the number of repeat purchases over the lifetime of the existing customer base.

Figure 4:

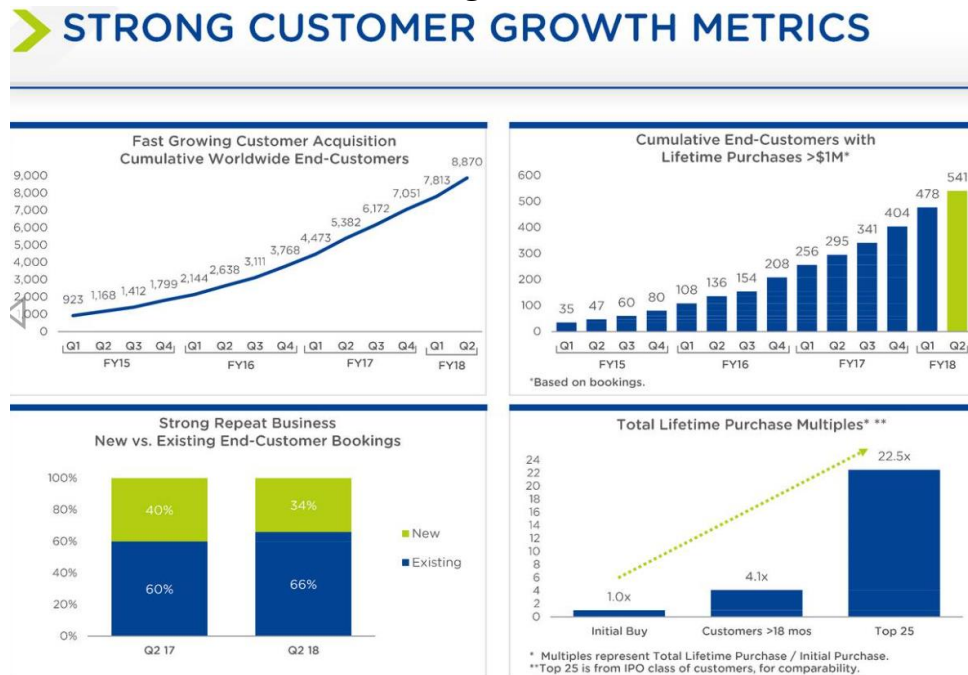
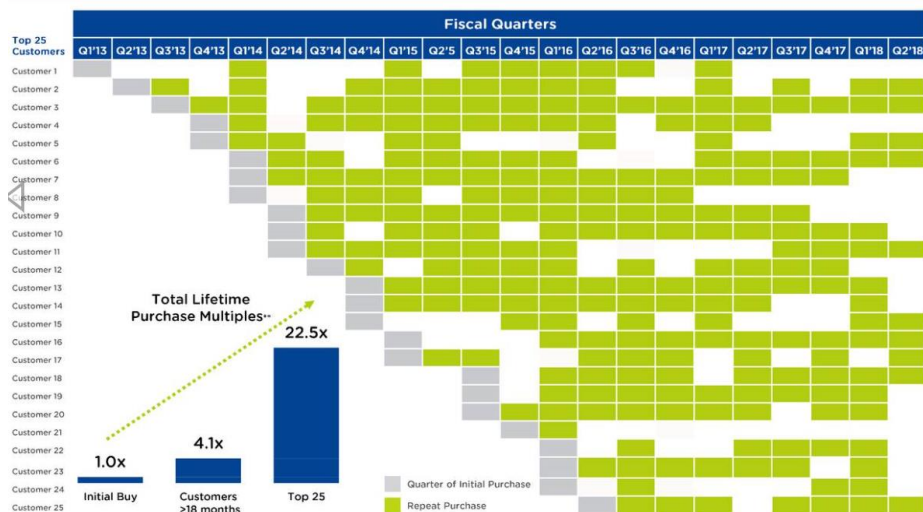


Figure 5:

LAND AND EXPAND STRATEGY AT WORK



The guidance for next quarters is non-GAAP with revenues between \$275 million and \$280 million. Gross margins will remain between 67-68%, and operating expenses will be about \$220 million. Most importantly as the business continues to evolve, the gross profit guidance yields a 50% growth rate from a year ago and will continue to increase. Management believes the best way to value the business in their transition to a software centric model is through gross profit dollars and growth in gross profit, not revenue or gross margins. Nutanix has adjusted Gross Profits of 178.22M last quarter, and Gross Profit Growth of 60.33% over the last year. The last goal for next quarter is to eliminate up to \$45 million of pass-through hardware, but the company is forecasting that its adjusted revenue growth this current quarter will be near 70%.

Citation:

<https://seekingalpha.com/article/4152652-nutanix-ntnx-ceo-dheeraj-pandey-q2-2018-results-earnings-call-transcript?part=single>

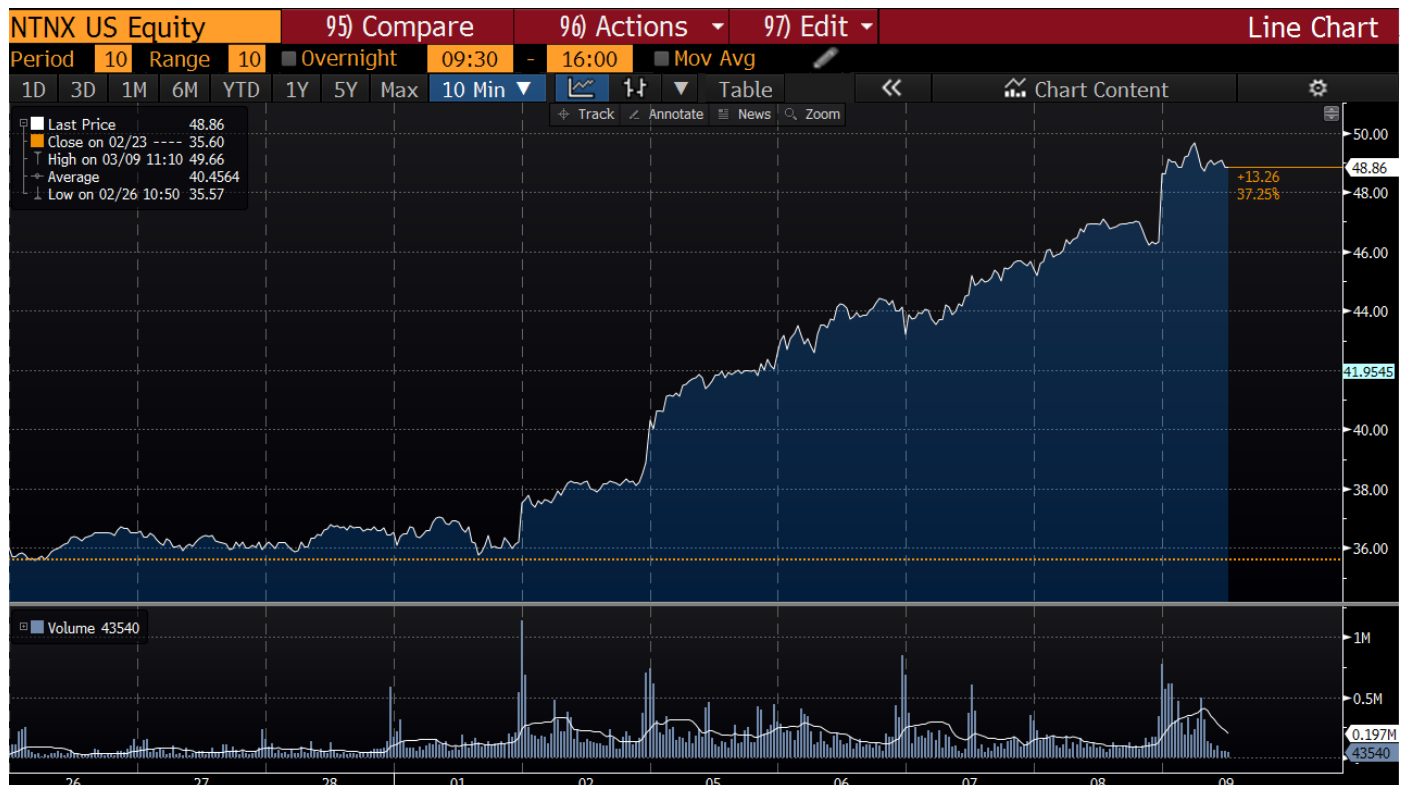
Acquisition of Minjar:

Nutanix has made some strategic acquisitions in their short life as a public company. The notable two were Calm and PernixData. Calm.io is a platform for automating software delivery and infrastructure changes, comprised of containers, clouds, and micro-service applications. Calm.io helped customers choose the correct Nutanix cloud product for their specific application. PernixData is a software that utilizes easy to use flash resources, PernixData is not effected by power loss situations- and will never lose your data. PernixData and Nutanix share a design philosophy for next generation technology for fast, seamless and effective infrastructure scaling. Their most recent acquisition was of Minjar. Minjar has a Botmetric service for optimizing performance of multi-cloud environments. Botmetric is an intelligent cloud management platform completely driven by machine intelligence. It utilizes 3 intelligent products for optimal speed and security.

From top down approach, this most recent acquisition of Minjar enhances the company's main theme of a hybrid cloud- and the two other acquisitions before only add to this. These acquisitions seem purely strategic, not designed for financial accretion, but this helps to drive home that Nutanix is the very best service/product on the market in the cloud management software segment. "Data from 451 Research shows that the future of IT is multi-cloud and hybrid, with 69 percent of respondents planning to have some type of multi-cloud environment by 2019. Yet the growth in multi- and hybrid cloud will make optimizing and analyzing cloud expenditure increasingly difficult. As companies continue to leverage multiple cloud platforms within their broader infrastructure deployments, managing these deployments to avoid waste is critical, and spend management and cost containment are top priorities. Unused public cloud instances or workloads running in the public cloud that are better suited for the private cloud could cause large, unnecessary costs for organizations spending millions of dollars on the cloud. This could be better spent on business-driving activities," said a Blog from StreetInsider. Through the Minjar acquisition, the Nutanix Enterprise Cloud OS will offer customers new capabilities to better manage their multi-cloud deployments, and continue to lead the developing market.

Below is a line chart showing the stock price over the last 10 days. March 1, 2018 is when the acquisition of Minjar was announced and the market has reacted very favorably. The large amount of cash generated in the last few quarters had led to this excess of cash that led to the acquisition. Last quarter they

generated over \$46M in Net Operating Cash Flow- with strong cash flow they could be leaning toward another acquisition. Duston Williams outlined this in the last earnings call. He said that they didn't expect any large deals in the near future, but definitely expectations for more smaller deals. He explained they wanted to be able to take advantage of situations with cash on hand.



<https://www.streetinsider.com/Corporate+News/Nutanix+%28NTNX%29+to+Acquire+Minjar/13890553.html>

Competitor Analysis:

Nutanix raised about \$238 million in their initial public offering in December of 2016, priced at \$16 a share- they were above estimates of \$13-\$15. That day the stock reached \$30.60, up approximately 91%. Nutanix had Silicon Valley on edge- their rapid growth model of raising money, burning cash quickly, and repeating has been the typical life cycle of emerging software start-ups. Nutanix was founded in 2009, and has since been growing against some of the biggest names in the data center such as VMware, EMC, Cisco, and Hewlett Packard.

Nutanix has a strong competitive advantage against these competitors. Customers typically want computing speed and efficiency offered by big cloud vendors like Amazon Web Services and Microsoft Azure. These large enterprises aren't practical to be used to push all the data and computing from companies onto a public cloud. Nutanix enables them to run private clouds and outsource public clouds in order to keep most of their data in-house. This also satisfies many company's fears as well as customers, in terms of privacy and hacking. Hacking has become an influential factor in terms of privacy of client's information, and to keep

data in-house on private clouds provides a higher sense of security. Twilio is about the only real competitor in the software industry, but unlike Nutanix they are purely software and operate at breakeven.

Nutanix is the market leader in the HCI (Hyper-converged infrastructure) appliances and software defined storage solutions. The products they offer bundle all data management into a single solution. Nutanix believes that by bundling all these offerings together, they will gradually make the data center infrastructure “invisible”. This is cost effective for both young, and mature companies that want to be flexible regarding storage with “hybrid” clouds.

Name (BICS Best Fit)	Mkt Cap (USD)	Ticker	↑	Rev Gr Adj YoY:Y	EPS - 1 Yr Gr:Q	Total Return:Y-1	Total Return:M-1	EBITDA Mrgn Adj:Y	FCF/Sh Gr:Q
Median	6.21B			27.36%	65.02%	30.58	19.16	10.87%	39.30%
100) NUTANIX INC - A	7.87B	NTNX		72.36%	41.33%	118.49	48.27	-50.33%	51.93%
101) CRAY INC	898.56M	CRAY		-37.68%	--	10.46	-0.92	-11.29%	--
102) HEWLETT PACKARD ENTE...	29.98B	HPE		-4.65%	520.00%	46.61	26.00	17.08%	76.84%
103) MERCURY SYSTEMS INC	2.39B	MRCY		51.24%	53.85%	30.85	16.93	19.04%	-38.30%
104) PURE STORAGE INC - CL...	4.54B	PSTG		40.53%	76.19%	100.78	8.46	-12.06%	39.30%
105) SUPER MICRO COMPUTER...	953.17M	SMCI		14.19%	150.00%	-21.50	4.03	4.66%	-928.90%
106) SEAGATE TECHNOLOGY	17.04B	STX		-3.49%	-45.00%	30.31	24.11	19.12%	42.49%
107) WESTERN DIGITAL CORP	29.64B	WDC		46.94%	--	30.18	21.39	24.03%	-1.58%

Above are some relative valuation metrics of Nutanix to some competitors mentioned before, and some other competitors in the industry. Nutanix is showing strong revenue growth, well over the average comps. The number that really sticks out is their Total return over the last year at 118.49%, this has been driven by their efficiencies in R&D and overhead spending while revenues and billings were increasing rapidly. Given the company’s strong booking performance and strong growth, Nutanix generated significant levels of operating and free cash flow. They recently sold \$575 million zero coupon convertible notes and increased their cash balance to \$920 million. This cash was used to acquire Minjar. The next section gives some color to who else is noticing this positive trend.

Citations:

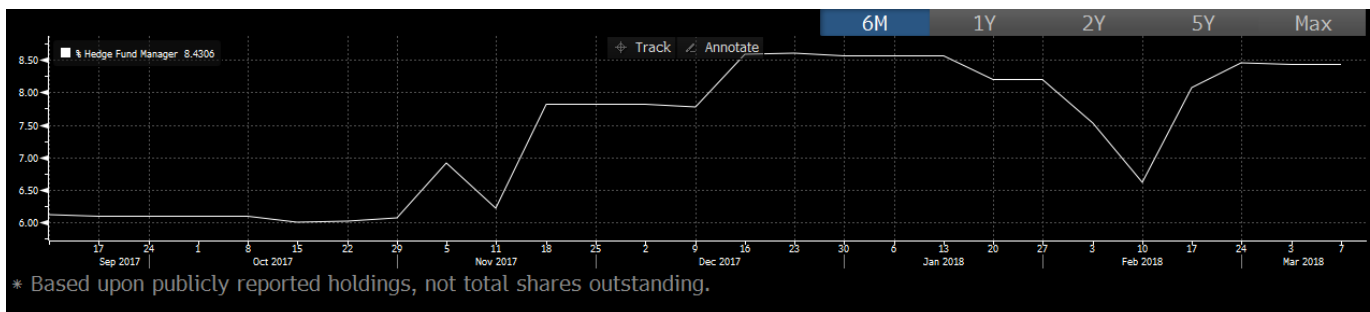
<https://www.cnbc.com/2016/09/30/nutanix-aims-to-crack-open-the-tech-ipo-window.html>

<https://www.fool.com/investing/2017/05/09/better-buy-twilio-inc-vs-nutanix-inc.aspx>

Ownership:

To the right is the most recent ownership summary for Nutanix. Investment Advisors make up the majority of ownership at 67.58%, Vanguard and Blackrock have the largest positions and make up 12% of the shares outstanding. The second are Hedge Fund Managers holding 8.20%. Hedge Fund Manager Ownership has increased by 0.23% in the last few weeks as their stock price continues to drive up. Investment Advisors have also taken notice and have a change of 9.66%. Nutanix is holding an analyst day on March 12th, which is expected to be a positive and timely event, which should serve to reduce the dispersion of Wall Street estimates. Below is Hedge Fund Manager Ownership over the last 6M. Ownership has drastically increased since February 12 when the stock was trading a little over \$30.

Compare Current Stats Against		01/28/18	
Top Ownership Type (%)			
51) Ownership Type	01/28/18	Curr	Change
11) Investment Advisor	67.58	77.24	+9.66
12) Hedge Fund Manager	8.20	8.43	+0.23
13) Pension Fund	6.18	5.30	-0.88
14) Individual	4.50	3.34	-1.16
15) Venture Capital	10.36	3.03	-7.33
16) Bank	1.03	1.04	+0.01
17) Other	0.68	0.50	-0.18
18) Brokerage	0.79	0.45	-0.34
19) Insurance Company	0.31	0.24	-0.07



Conclusion:

Nutanix's software business will continue to grow at a rapid rate. Their software is increasingly becoming ubiquitous in the market of hardware platforms and software. Their strategy is to expand the enterprise hybrid cloud framework, with new customers as well as new geographic and channel expansions. Their goal is to provide exceptional customer experience through software-defined infrastructure as true software running on commodity servers. This has what has driven Nutanix from their beginnings and will continue to grow the company into a void in the current/ developing market of HCI.

Duston Williams outlined at the end of the most recent earnings call that anyone that casts a negative opinion on a company that is slowly growing revenues during a period of transition, is not noticing their

strong gross profits. Nutanix has positioned themselves well within an accelerating market. I believe that they will surpass analyst expectations that have only continued to rise after each earnings call / announcement.

Nutanix, Inc. (NTNX)

CENTER FOR GLOBAL FINANCIAL STUDIES

BULLISH

Analysis by Al Capone
3/9/2018

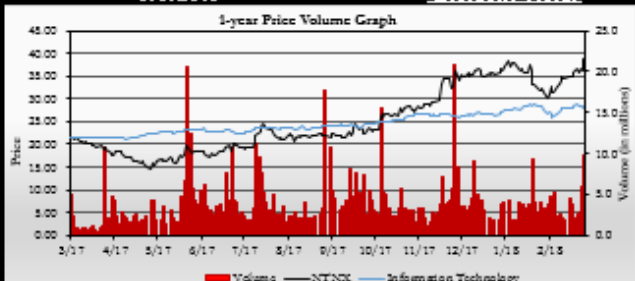
Current Price:
Dividend Yield:

\$44.31
0.0%

Intrinsic Value
Target Price

\$51.02
\$54.16

Target 1 year Return: 22.22%
Probability of Price Increase: 100%



Description	
Nutanix, Inc., together with its subsidiaries, provides an enterprise cloud operating system in North America, Europe, the Asia-Pacific, the Middle East, Latin America, and Africa.	
General Information	
Sector	Information Technology
Industry	Internet Software and Services
Last Guidance	February 12, 2018
Next earnings date	May 25, 2018
Market Assumptions	
Estimated Equity Risk Premium	6.12%
Effective Tax Rate	23%

Market Data	
Market Capitalization	\$6,742.67
Daily volume (mil)	5.78
Shares outstanding (mil)	160.43
Diluted shares outstanding (mil)	152.83
% shares held by institutions	109%
% shares held by investment managers	39%
% shares held by hedge funds	4%
% shares held by insiders	16.87%
Short interest	4.91%
Days to cover short interest	2.16
52 week high	\$42.45
52 week low	\$14.38
Volatility	0.00%

Quarter Ending	
1/31/2017	2.18%
4/30/2017	3.04%
7/31/2017	3.95%
10/31/2017	3.40%
1/31/2018	1.38%
Mean	2.79%
Standard error	1.0%

Part Earning Surprises	
Revenue	EBITDA
2.18%	-292.64%
3.04%	1044.72%
3.95%	294.84%
3.40%	-237.54%
1.38%	-150.27%
2.79%	131.82%
1.0%	8.3%

Market and Credit Scores	
Recommendation (STARS) Value--3	Recommendation (STARS) Description--Hold
Quality Ranking Value--NR	Quality Ranking Description--Not Ranked
Short Score--1	Market Signal Probability of Default % (Non-Rating)--0.135%
Market Signal Probability of Default % (Non-Rating)--0.135%	Credit Model Score (Non-Rating)--ccct

Management	
Pandey, Dhoreaj	Co-Founder, Chairman of the Board & CEO
Williams, Durtan	Chief Financial Officer
Sanghera, David	Executive Vice President of Operations
Vadakkedath, Sudheesh	President
Singh, Ajay	Co-Founder & Advisor
Lang, Kenneth	Chief Accounting Officer, VP & Corporate Cont

Parities	
Revenue	EBITDA
2.18%	-292.64%
3.04%	1044.72%
3.95%	294.84%
3.40%	-237.54%
1.38%	-150.27%
2.79%	131.82%
1.0%	8.3%

Industry and Segment Information	
LTM Revenue by Geographic Segment	LTM Revenue by Business Segments
U.S.--60%	Internet Software & Services--100%
Europe, The Middle East and Africa--18%	--
Asia-Pacific--17%	--
Other Americas--4%	--

Profitability	
Return on Capital (GAAP)	210.2%
Operating Margin	-12%
Revenue/Capital (GAAP)	-16.97
ROE (GAAP)	-16.97
Net margin	-16.97
Revenue/Book Value (GAAP)	VALUE!

NTNX (LTM)	
Return on Capital (GAAP)	210.2%
Operating Margin	-12%
Revenue/Capital (GAAP)	-16.97
ROE (GAAP)	-16.97
Net margin	-16.97
Revenue/Book Value (GAAP)	VALUE!

Peers	
LogMeIn, Inc.	Tableau Software, Inc.
Pure Storage, Inc.	Shopify Inc.
Super Micro Computer, Inc.	MuleSoft, Inc.
Bax, Inc.	Sage Technology plc
NovaLogic, Inc.	Cray Inc.

Inverted Funds	
Cash/Capital	88.5%
NWC/Capital	-31.8%
Operating Assets/Capital	41.3%
Goodwill/Capital	2.1%

NTNX (LTM)	
Cash/Capital	88.5%
NWC/Capital	-31.8%
Operating Assets/Capital	41.3%
Goodwill/Capital	2.1%

Peers' Median (LTM)	
Cash/Capital	41.7%
NWC/Capital	-11.6%
Operating Assets/Capital	32.4%
Goodwill/Capital	37.5%

Capital Structure	
Total Debt/Market Capitalization	0.58
Cost of Debt	4.9%
CGFS Rating (F-rare, Z-rare, and default Probability: B	8.2%
WACC	8.2%

NTNX Historical	
Total Debt/Market Capitalization	0.12
Cost of Debt	4.9%
CGFS Rating (F-rare, Z-rare, and default Probability: B	11.0%
WACC	11.0%

Peers' Median (LTM)	
Total Debt/Market Capitalization	0.19
Cost of Debt	4.2%
CGFS Rating (F-rare, Z-rare, and default Probability: B	10.2%
WACC	10.2%

Forecast Assumptions	
Revenue Growth CAGR	11%
Average Operating Margin	29%
Average Net Margin	31%
Growth in Capital CAGR	15%
Growth in Claims CAGR	4%
Average Return on Capital	18%
Average Return on Equity	20%
Average Cost of Capital	8%
Average Cost of Equity	9%



Carrizo Oil & Gas explores and produces natural gas and crude oil. The company headquarters is located in Houston, Texas.

BUY

Current Price:	\$14.57
Target Price:	\$16.48
Market Cap:	1.1B
Beta:	1.243
EBITDA	507.8M
EBITDA Margin	67.38%
ROIC	13.15%
WACC	8.5%
EPS	\$1.59



Thesis:

This report will explain why we should buy the stock of CRZO because after analysis of the company, the stock CRZO is undervalued. To support this position, the report will discuss how companies in the energy sector are affected by the prices of oil and gas, especially the company Carrizo. This report will describe how the prices of oil and gas are linked to the profitability of Carrizo Gas & Oil, as well as how the forecast of the production of the company will impact the revenue in the future along with the future of oil prices.

Catalysts:

- Short Term (within the year): The company just released the annual report of 2017.
- Mid Term (1-2 years): Oil price is going to increase. Thus, the growth profit is going to increase dramatically.
- Long Term: The company will expand its operation.

Business Description

Carrizo Oil and Gas was founded in 1993. It is an energy company based in Texas. The company is engaged in the exploration, development and production of oil and gas from resources in the United States. Its operations are located in the Eagle Ford Shale in South Texas, in the Delaware Basin in West Texas, the Utica Shale in Ohio, the Niobrara Formation in Colorado, and the Marcellus Shale in Pennsylvania. As of December 2017, the company's oil and gas reserves were 261.7 million barrels of oil, and it operated in 564 net productive oil and gas wells.

Development in 2017

During the third quarter of 2017, the company closed on an acquisition of 16,508 net acres located in the Delaware Basin (TEXAS) from ExL Petroleum management, LLC and ExL petroleum operating Inc. for an aggregate net consideration of 679.8 Million. Furthermore, the company agreed to a payment of 50.0 million per year if the price of the crude oil exceeded specified thresholds for the years 2018 until 2021 with a cap of 125 million. We'll call these operations the ExL operation.

The company closed on divestitures which was a big part of their assets in the Utica and Marcellus shales for 137.0 million. Moreover, the company could receive from the two divestitures up to 8.0 million per year with a cap of 22.5 million if crude oil and natural gas prices exceed specified thresholds for each year from 2018 until 2022. Furthermore, during the same quarter, the company received 382.8 million thanks to the sale of a big part of their assets in the Niobrara Formation and another part of their assets in the Eagle Ford. Carrizo Oil and Gas could receive 5.0 million per year if the crude oil prices exceed specified thresholds for each year from 2018 to 2020 as a part of the Niobrara Formation divestiture.






Industry Outlook

As shown by the chart below, the oil price at the beginning of 2015 was \$53.45 and it collapsed to \$34.73 at the end of the year. The drop off for the oil price during this period was a result of several factors. The price of the oil is determined by the supply and demand. Moreover, the demand is closely linked to the economic activity. Therefore, during this period the supply was much higher than the demand. The demand was low due to slowing global growth. Also, the American production increased thanks to unconventional hydrocarbon. Concerning the natural gas price in 2015 it followed the oil price for many reasons. First, the natural gas price is indexed by the oil price. This means if the oil price goes down the natural gas will go down and if the oil price goes up, the price of the natural gas will go up. However, oil price is not the only cause for the decrease of the natural gas. The natural gas price is linked by five other factors. First, the natural gas is driven by the outside temperature. Secondly, it is linked by electricity consumption. Thirdly, the price of natural gas is impacted by the supply. Fourthly, the natural gas follows the currency exchange rate of two currencies. Finally, the natural gas is driven by the global macro environment. As we can see from the chart, the natural gas went down in the

same way as the oil price for the reasons listed below. So, in the past two years, the company saw a drop in its revenue especially due to the drops in the oil and natural gas prices. So, energy producers are confined to two risks. The first risk is the price risk, and second risk is the volume of production. Thus, energy producers have to focus on these two risks when they have to choose a coverage strategy. The price risk can be covered by the derivative assets, while the volume risk can be covered by the weather derivatives.



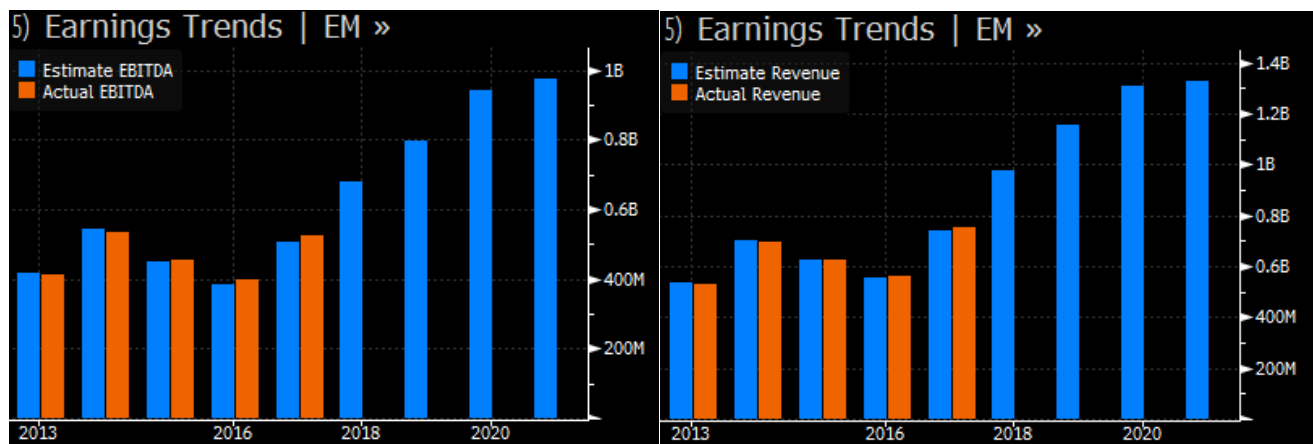
Segment

In Millions of USD except Per Share	2014 Y		2015 Y		2016 Y		2017 Y	
12 Months Ending	12/31/2014		12/31/2015		12/31/2016		12/31/2017	
 Revenue	696.7	100.0%	623.5	100.0%	563.0	100.0%	753.7	100.0%
 Crude Oil Production	610.5	87.6%	376.1	60.3%	378.1	67.2%	633.2	84.0%
 Natural Gas Production	74.7	10.7%	37.5	6.0%	43.1	7.7%	65.3	8.7%
 NGLs	25.1	3.6%	15.6	2.5%	22.4	4.0%	47.4	6.3%
 Realized G/L Derivatives	-13.5	-1.9%	194.3	31.2%	119.4	21.2%	7.8	1.0%

The main activity for the company CRZO is from the Crude Oil Production. This represents more than 80% of their revenue each year except in 2015 and 2016 because of the collapsed of the oil and gas prices. Furthermore, the Natural Gas production represents approximately 9% of the company revenue. This paper will focus especially on the oil and gas (prices, production) due to the weight that it represents in the revenue of Carrizo Oil and Gas.

Earning Performance

After 6 years of net income growth, Carrizo Oil and Gas had a negative net income in 2015 and 2016. These negative net incomes were due to an increase of write downs of their assets. A write down is a reduction of the book value of an asset due to an overvaluation compared to the market. The write down in 2015 was 1,224.4 million and in 2016, it was 576.5 million. These write-downs in 2015 and 2016 affected the total cost and expenses. Furthermore, revenue decreased a little in 2015 and 2016 and were lower relative to other years. The company saw in 2015 a decrease of 10.5% for their revenue. According to the 10-K, the decrease of the revenue for 2015 is due to the decrease in crude oil and natural gas prices. Furthermore, the production for 2015 increased by 12% to 36,719 barrels of oil equivalent per day (Boe/d) compared to 32,816 Boe/d. Thus, even if the production has increased, the revenue was low because of the drop off for the oil and natural gas prices. The company has seen dark years compared to 2014. In 2016, the company's revenue decreased by 9.7% due to the decreased of the oil and natural gas prices. However, the net income for this year increased compared to 2015. In 2017, the company increased its revenue by 33.9% to reach 753.7 million. During this year, no write-downs were registered. Thus, the net income increased to reach 33.5 million while the net income for the previous year was -275.5 Million. This increase during 2017 was due to the rise of the oil and the natural gas and the production rise from 42,276 Boe/d in 2016 to 53,805 Boe/d. Concerning the EBITDA of the company, in 2015 and 2016 it saw a decrease because of the drop off of the oil and gas prices. The EBITDA forecast for the next three years for CRZO should increase to reach approximately 1 billion in 2021. Furthermore, each year the estimate and actual EBITDA are closely the same. The difference between estimate and actual EBITDA can be attributed to the prices of the oil and gas. Because of the importance of the oil and gas prices this paper will focus and the oil price and indirectly to the gas price.



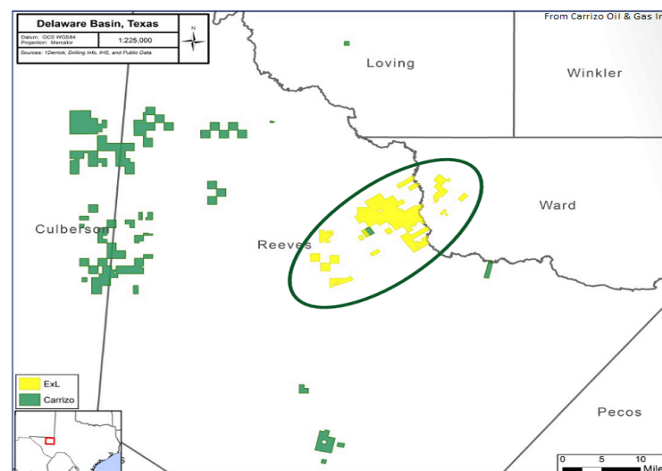
Potential Business Growth

According to the 10-K, the business strategy for Carrizo Oil & Gas is to increase value focused on growth thanks to the drill bit and with the acquisition of oil and gas properties while keeping a sound financial position. The company has competitive strengths which will help their efforts to succeed in their business strategy for the future. The company has several strengths. First, it is pursuing development of high quality resources. Furthermore, the company pursues a growth strategy in crude oil due to the attractive economics. Their drilling wells plan for 2018 and their infrastructure capital expenditure plan are currently being predominantly prospective for crude oil. Moreover, thanks to their advanced technology, which can detect microseisms, the

company could better define the geologic area risk and improve their drilling efforts. Because of their drilling program, the company has reduced their acreage positions in key resource plays. The company continues to focus their capital program in lower risk areas, such as the Delaware Basin and the Eagle Ford, both highest return areas in North America. Secondly, it focuses efficiencies to decrease their costs to find, develop, and produce oil and natural gas reserves. It means that the company has to be focused on their core areas, which allow them to optimize drilling and completion techniques as well as benefit from the economies of scale. The company has allocated a larger part of their capital expenditure plan for 2018 compared to the capital expenditure plan in 2017 located in the Delaware Basin due to the Exl acquisition while continuing their development in the Eagle Ford. Thirdly, the company is trying to limit their exposure to volatility in commodity prices by hedging a part of their forecast crude oil, natural gas and NGL (Natural gas liquid). Thus, their long-term strategy is to manage the exposure to the commodity volatility to reach to a predictable cash flow to support their current and future capital expenditure project. Fourthly, because of their experience, the company has developed a technical advantage. The company has already drilled 1,000 horizontal wells in various resources areas. It allowed their operations team to get significant experience in resources and create highly efficient drilling and completion operations. They look to allocate all their capital expenditure in the Eagle Ford and the Delaware Basin.

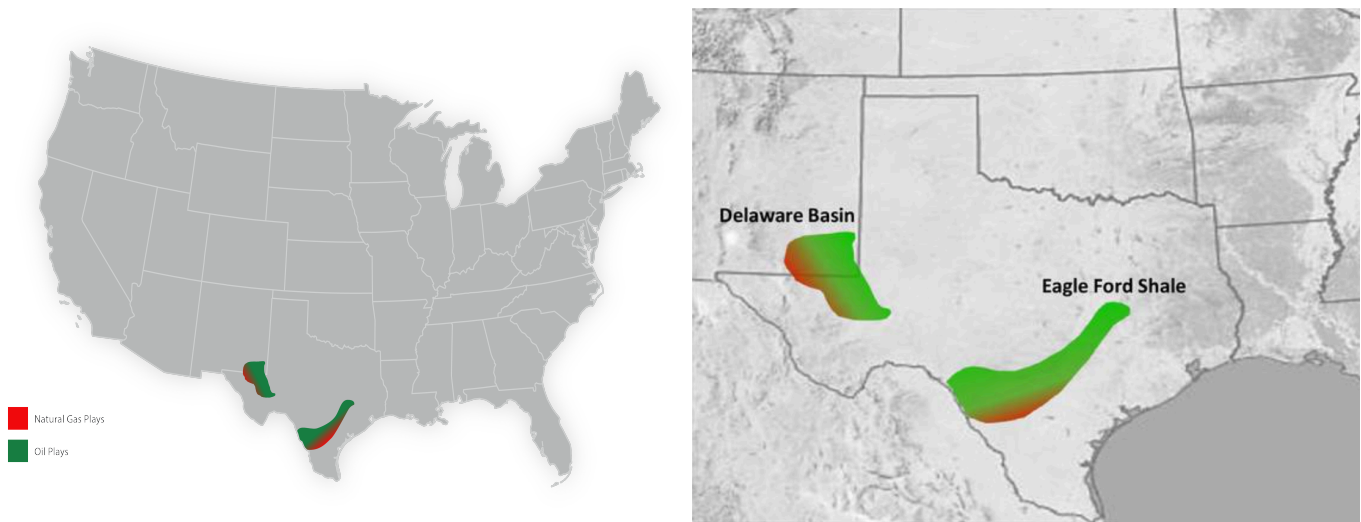
Delaware Basin:

According to the company, they began to build an acreage in the Delaware Basin in 2014 in Culberson and Reeves counties. In December, 31st, 2017, CRZO held interest of 42,117 Net acres in this area. For 2018, Carrizo Oil and Gas plans to get 43% of their drilling, completion, and infrastructure capital expenditure plan from the Delaware Basin.



Eagle Ford:

According to the 10-K, the Eagle Ford is the most significant operational area for the company. Their property is based in LaSalle County. In the end of 2017, CRZO held interest in approximately 127,123 gross acres (103,116 net) and after the divestiture 79,612 net acres. The company plans for 2018, 57% of drilling, completion and infrastructure capital expenditure in the Eagle Ford area. In 2018, the company entered a purchase and sale agreement with EP Energy E&P Company to sell a part of their assets in this area. The agreement of this deal was 245,0 million. Thus, December 11st, CRZO received 24,5 million and the January 31st, CRZO received 211,7 Million. Furthermore, at the beginning of 2018, the company received 10,0 Million.



Profitability

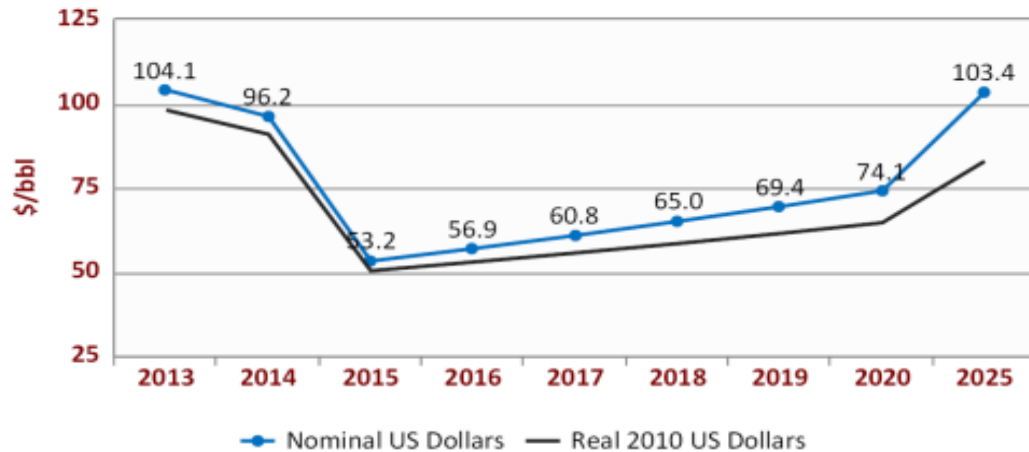
To compute a forecast of the revenue of Carrizo oil and Gas, the forecast oil price has to be taken into consideration. According to the 10-K and my own calculations:

Total volume production in M	2017	2018	2019	2020	2021
Crude oil	12,567	13,195.25	13,855.01	14,547.76	15,275.15
NGLs	2,327	2,327	2,327	2,327	2,327
Natural Gas	28,472	28,472	28,472	28,472	28,472
	2017	2018	2019	2020	2021
Crude oil Price	50.39	65	69.4	74	103
NGLs	20.37	20.37	20.37	20.37	20.37
Natural Gas	2.29	2.45	2.62	2.80	2.99
Total revenues in M	745,848	974,791	1,083,447	1,203,584	1,705,885

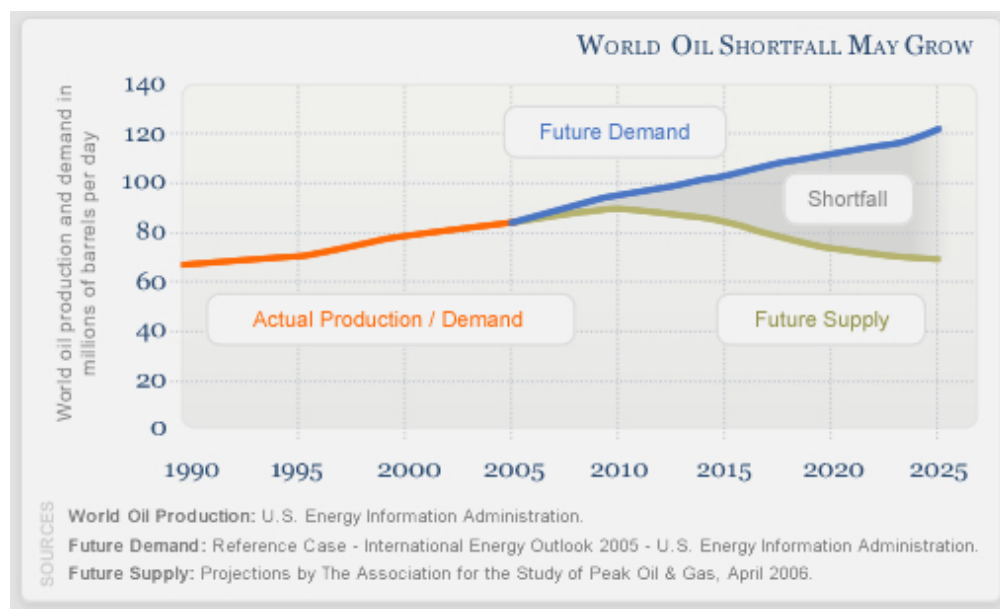
This chart from the World Bank provides the forecast for the oil price for the next three years, and we will assume that the production for the next three years will increase by 5%. I only changed the production of the oil because it is the main activity of the company. Thus, the table shows that the revenue of the company is

dependent on the oil price. Furthermore, the forecast for the natural gas was computed as follows: $\ln(2.85/2.66)$ with 2.85 for the price of the natural gas in March 1st, 2018 and 2.66 the natural gas price for December 29th, 2017.

World Bank: Crude oil, \$/barrel
avg. spot price (Brent, Dubai, WTI)



Source: [World Bank Commodity Forecast Price data, January 2015](#)

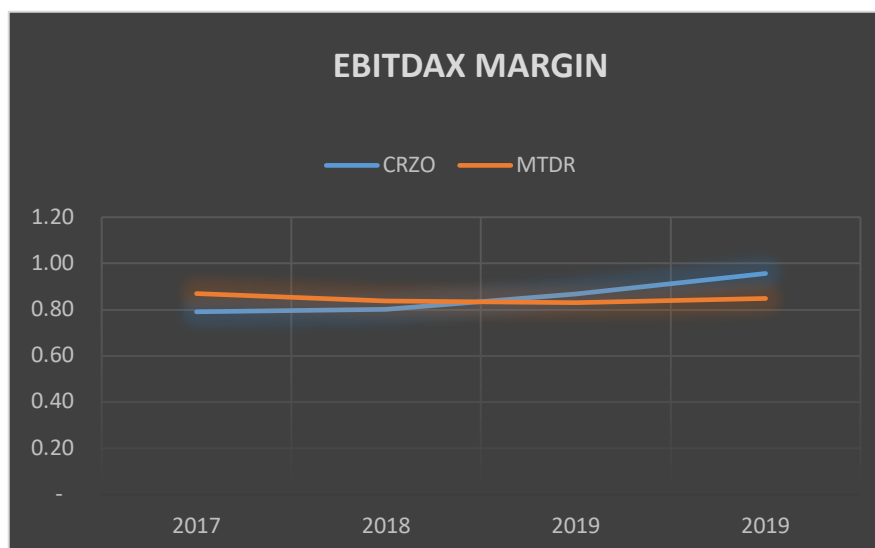


According to the chart, the demand of the oil will increase faster than the supply, so logically, the price of the oil will increase. It is going to be beneficial for CRZO. Furthermore, CRZO has to be compared to a competitor which is Matador Energy Company:

CRZO	2017	2018	2019	2020
EBITDAX MARGIN	0.79	0.80	0.87	0.96
Return on Invested capital	8.00%	11.00%	10.00%	10.00%
WACC	9.62%	8.79%	8.92%	9.00%
Return on equity	29.90%	35.80%	25.90%	21.90%
Capex	1275.50	728.10	770.50	901.00
Revenue	745,848	974,791	1,083,447	1,203,584
Revenue/Capex	584.75	1,338.81	1,406.16	1,335.83

MTDR	2017	2018	2019	2020
EBITDAX MARGIN	0.87	0.84	0.83	0.85
Return on Invested capital	8.00%	8.00%	9.00%	6.00%
WACC	11.03%	11.01%	11.04%	11.06%
Return on equity	13.90%	10.00%	10.80%	6.50%
Capex	820.30	583.40	634.30	757.80
Revenue	534,600.00	706,300.00	842,800.00	1,023,000.00
Revenue/Capex	651.71	1210.66	1328.71	1349.96

Taking into account my forecast concerning the revenue of CRZO and the forecast from Bloomberg for the others value, the table proves that CRZO is going to grow faster than Matador Resource. According to the table, CRZO is going to create value from 2018 to 2020 (Forecast from CAPITAL IQ and my own calculation). CRZO will be more profitable in 2018 than Matador Resource.



Debt

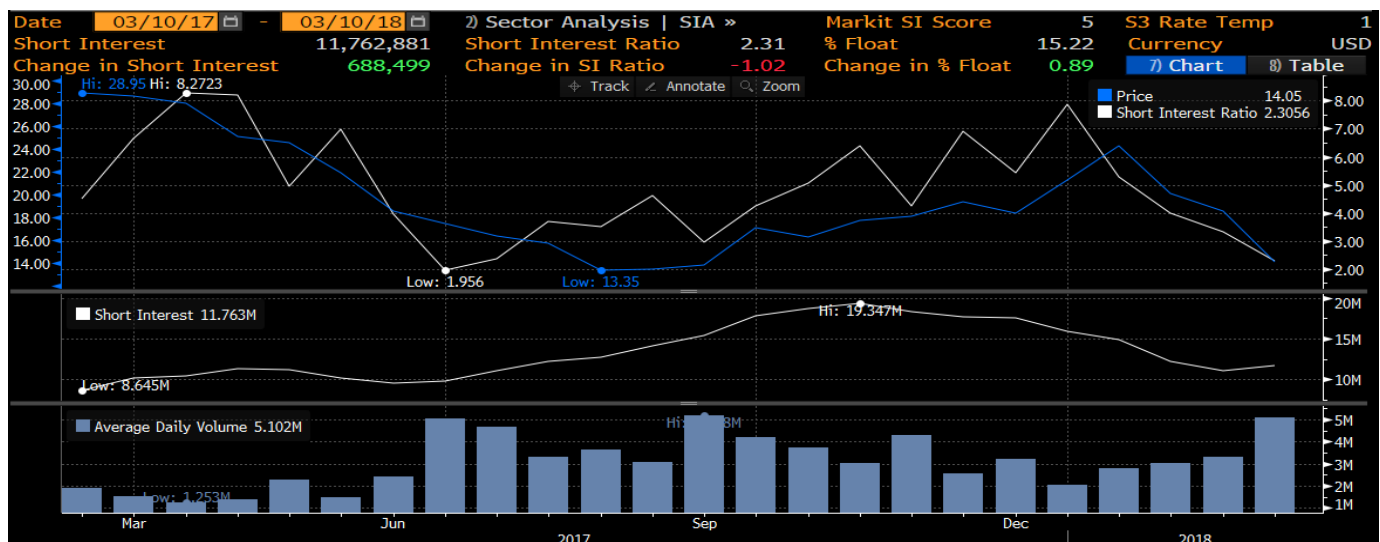
In the oil and gas industry, the financial analysis is mainly focused on the debt level. Companies in the energy sector have a high capital level and a high level of debt. High level of debt is bad for a company because it can affect the credit rating of the company. Thus, if a company has a low credit rating, it will be hard for it to finance

other capital projects. Concerning Carrizo Oil and Gas, the debt of the company for 2017 amounts to 1,629 million. The debt of the company is only Long-term debts (greater than or equal to 7 years). The amount of the debt for this company is particularly high because it needs money to invest and as it said earlier in this report, in 2017, it had invested a lot especially in the Eagle Ford area and in the Delaware Basin. Indeed, they invested in 2017 were mostly the acquisition of ExL and the acquisition of oil and gas properties in the Eagle Ford Shale from Sanchez Energy Corporation and SN Cotulla Asset, LLC. The PPE of the companies in 2017 was 2,635.8 Million. To know what amount of their debt is allocated to the capex we will use CAPEX/Net Debt. The Capex in 2017 for CRZO was of 1275.5. Thus, $1275.5/1,629 = 78.30\%$ that it means, 78.30% of their Net Debt in 2017 was allocated for the Capex. The Capital expenditure in 2017 allowed the company to do the acquisition of the ExL.

Ownerships:

Ownership Type	03/26/17	Curr↓	Change	
11) Investment Advisor	78.87	72.51	-6.36	☑
12) Hedge Fund Manager	10.87	13.31	+2.44	☐
13) Individual	4.70	3.26	-1.44	☐
14) Corporation		3.18		☐
15) Private Equity	0.03	3.13	+3.10	☐
16) Pension Fund	2.14	1.55	-0.59	☐
17) Insurance Company	0.91	1.39	+0.48	☐
18) Bank	1.82	0.81	-1.01	☐
19) Government	0.24	0.23	-0.01	☐
20) Endowment	0.05	0.23	+0.18	☐
21) Sovereign Wealth Fund	0.26	0.20	-0.06	☐

As the chart shows us, 72.51% is owned by Investment Advisor and 13.31% by Hedge Fund Manager. In less than one year, the percentage owned by Hedge Fund increased by 2.44%. It means that Hedge Fund Manager has an interest in buying the stock because they trust in this stock and in the company growth. Furthermore, the short interest ratio (SIR) of CRZO is 14.33, which shows that investors are bullish concerning this stock.



Conclusion:

Carrizo Oil and Gas is a company in the energy company specialized in the oil and gas production. As the paper demonstrated, the company is very sensitive to the price of the oil and gas. In 2015 and 2016, the revenue and the EBITDAX of the company decreased because of the drop off of the oil and gas prices. However, the forecasts of the production for the company and the forecast of the oil and gas prices should increase the revenue of CRZO and the EBITDA should increase too in a mid-term range. As the write-up showed the stock of CRZO will increase thanks to the rise of the oil and gas prices in few years.

Carrizo Oil & Gas, Inc. (crzo)

CENTER FOR GLOBAL FINANCIAL STUDIES

NEUTRAL

Analysis by Al Capone

3/11/2018

Current Price:

\$14.57

Dividend Yield:

0.0%

Intrinsic Value

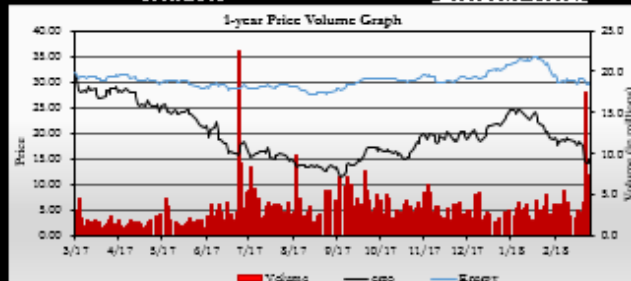
\$14.27

Target Price

\$16.48

Target 1 year Return: 13.08%

Probability of Price Increase: 59%



Description
Carrizo Oil & Gas, Inc., together with its subsidiaries, engages in the exploration, development, and production of crude oil, natural gas liquids, and gas from resource plays primarily in the United States.

General Information
Sector: Energy
Industry: Oil, Gas and Consumable Fuels
Last Guidance: February 12, 2018
Next earnings date: May 4, 2018

Market Assumptions
Estimated Equity Risk Premium: 5.00%
Effective Tax Rate: 21%

Market Data	
Market Capitalization	\$1,187.01
Daily volume (mil)	3.77
Shares outstanding (mil)	81.47
Diluted shares outstanding (mil)	73.99
% shares held by institutions	109%
% shares held by investment managers	93%
% shares held by hedge funds	9%
% shares held by insiders	5.13%
Short interest	13.59%
Days to cover short interest	3.37
52-week high	\$32.00
52-week low	\$11.10
Volatility	50.89%

Quarter ending	
12/31/2016	-10.57%
3/31/2017	-0.45%
6/30/2017	-2.54%
9/30/2017	-2.67%
12/31/2017	-1.59%
Mean	-3.56%
Standard error	3.1%

Part Earning Surprises	
Revenue	EBITDA
12/31/2016	-25.20%
3/31/2017	54.74%
6/30/2017	44.77%
9/30/2017	-16.54%
12/31/2017	-33.73%
Mean	4.41%
Standard error	9.8%

Industry and Segment Information	
LTM Revenue by Geographic Segment	LTM Revenue by Business Segment
United States--100%	Oil & Gas - Exploration & Production--100%
Other--0%	Other--0%
Other--0%	Other--0%
Other--0%	Other--0%
Other--0%	Other--0%

Management	
Jahrom, Sylvester	Chief Executive Officer, President and Director
Pitts, David	Chief Financial Officer and Vice President
Fisher, J.	Chief Operating Officer and Vice President
Martan, Gerald	Vice President of Business Development and General Counsel
Smith, Richard	Vice President of Land
Canausa, Gregory	Chief Accounting Officer and Vice President

Total Compensation Growth	
Chief Executive Officer	7.08% per annum over 5y
Chief Financial Officer	8.36% per annum over 5y
Chief Operating Officer	7.55% per annum over 5y
Vice President of Business Development and General Counsel	13.58% per annum over 1y
Vice President of Land	7.14% per annum over 4y

Peers	
RSP Permian, Inc.	Metadax Resource Company
Sanchez Energy Corporation	Diamondback Energy, Inc.
PDC Energy, Inc.	Oasis Petroleum Inc.
Parley Energy, Inc.	Callan Petroleum Company
Energion Corporation	Whiting Petroleum Corporation

Profitability	
Return on Capital (GAAP)	10.8%
Operating Margin	26%
Revenue/Capital (GAAP)	0.42
ROE (GAAP)	293.4%
Net margin	9.6%
Revenue/Book Value (GAAP)	30.41

crzo Historical	
Return on Capital (GAAP)	6.25%
Operating Margin	27.45%
Revenue/Capital (GAAP)	0.23
ROE (GAAP)	11.4%
Net margin	15.2%
Revenue/Book Value (GAAP)	0.75



Invested Funds	
Cash/Capital	0.4%
NWC/Capital	-5.5%
Operating Assets/Capital	105.1%
Goodwill/Capital	0.0%

crzo Historical	
Cash/Capital	3.0%
NWC/Capital	-11.4%
Operating Assets/Capital	105.5%
Goodwill/Capital	0.0%

Peers' Median (LTM)	
Return on Capital (GAAP)	4.24%
Operating Margin	49.18%
Revenue/Capital (GAAP)	0.09
ROE (GAAP)	5.4%
Net margin	14.5%
Revenue/Book Value (GAAP)	0.37

Capital Structure	
Total Debt/Market Capitalization	0.74
Cost of Debt	7.4%
CGFS Rating (F=zero, Z=zero, and default Probability: B	
WACC	9.6%

crzo Historical	
Total Debt/Market Capitalization	0.67
Cost of Debt	8.2%
CGFS Rating (F=zero, Z=zero, and default Probability: B	
WACC	10.4%

Peers' Median (LTM)	
Total Debt/Market Capitalization	0.48
Cost of Debt	6.5%
CGFS Rating (F=zero, Z=zero, and default Probability: B	
WACC	9.5%

Forecast Assumptions	
Revenue Growth CAGR	9%
Average Operating Margin	55%
Average Net Margin	13%
Growth in Capital CAGR	6%
Growth in Claims CAGR	1%
Average Return on Capital	9%
Average Return on Equity	14%
Average Cost of Capital	9%
Average Cost of Equity	12%

