The University of Tampa

Lockheed Martin Corporation

Financial Analysis Report

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1.1 Company Overview

1.1.1. Company History

Lockheed Martin Corporation is a global security company specialized in the research, design, development, manufacturing, and integration to create advanced technology products and services. Lockheed Martin Corp. works as a military contractor serving for civilians, but mostly to government and defense products within the aerospace industry. The company results from a merger in 1995 between the Martin Marietta Co. from Los Angeles, California and Alco Hydro-Airplane Company in San Francisco, California. Both companies came to exist out of the minds of extraordinary men who dreamt of creating aircrafts that could shatter speed records, and innovative designs. Today, Lockheed Martin Corp. is the a leading global military contractor, but their business spans through space, telecommunications, electronics, information and service, aeronautics, energy, and system integration.

Glenn Martin founded Martin Marietta in August 1912 in a rented church. The company created the first US-built bombers as well as military and commercial boats, missiles, electronics, and nuclear systems. In 1961, it merged with American Marietta Company, which specialized in construction materials and chemical products. In December 1912, four hundred miles away from Martin Marietta, the Lockheed brothers started their own company Alco Hydro-Aeroplane Company. In early 1918, the brothers debuted their first successful aircraft, the F-1. Still, by the end of that same year, World War I ended, hence eliminating the potential market for the seaplane. They then went into bankruptcy in 1921, and joined Fred Keeler to form the Lockheed Aircraft Company. By the late 1920's they created their first airplane, the Vega, which became famous after it was flown by famous pilot, Amelia Earhart. Still in the 1930s the company went into

bankruptcy due to the Great Depression's devastation of the airplane industry. In 1995, the Lockheed bought Martin Marietta, which was drowning in debt, due to hostile takeover by Bendix back in 1982.

Today Lockheed Martin Corp.'s headquarters are located in Bethesda, Maryland and operates in a global presence. It provides its products to more than thirty countries across Asia, US, Europe, Africa and the Middle East. International customers take into account 25% of its net sales, and sales to the US government account for 70% of their net sales.

Lockheed Martin Corp has a wide array of products. The company is part of the Aerospace and defense industry, providing commercial aircraft part as well as military aircraft, missiles and space vehicles. As of this years, their electronic space and Defense system products make up 41.97% of their total revenue, which accounts for approximately $22 billions of revenue. In their defense primes division, which is the company's primary industry, their military aircraft products make up 39.47% of their total revenue, bringing approximately $20 billions, and finally their missiles and space vehicle products make up 18.59% of their total revenue, which accounts for approximately $10 billions.

1.1.2. Competitors

As for their major competitor in Lockheed Martin Corp.'s competitors will be divided in competitors from Electronic Aerospace & Defense System industry, and Defense Prime industry. The criteria used to identify the competitors is by looking at companies within the same industry with a similar market capitalization, and then identifying the companies with and industry revenue and percentage to total revenue similar to Lockheed Martin Corp. In the Electronic Aerospace & Defense industry, Lockheed Martin's has a $82.65 billion market capitalization, the largest in the industry, $25 billions above the next in the industry. In this industry, the main competitors are

Raytheon Co. which has a market capitalization of $47.23 billions, a revenue in this industry of $12.23 billions, which make up 45.64% of their total revenue. Another major competitor that can be identified in this industry Northrop Grumman, whose founder was once part of the team that created the Vega. *Northrop Grumman* has a market capitalization of $46.33 billions, an industry revenue of $32.38 billions, above Lockheed Martin, but this industry accounts for 100% of their revenue.

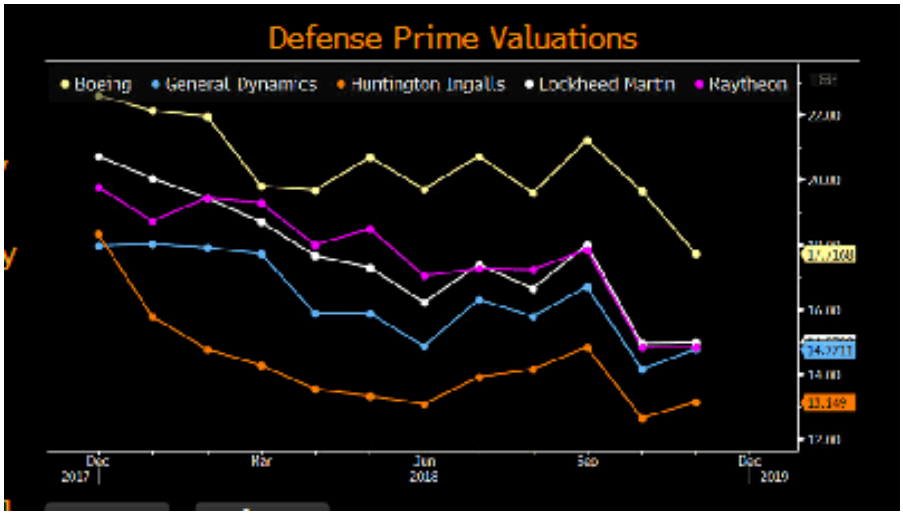
As mentioned above, the defense prime is Lockheed Martin Corp.'s primary industry. In this industry Lockheed Martin Corp. has a market capitalization of $84.78 billions, an industry revenue of $31.05 billion which makes up 57.75% of their total revenue. In this industry it can be found companies whose total revenue comes almost entirely from products in this sector. Hence to be able to compare Lockheed Martin companies specialized in this specific industry were selected to be able to compare them. BAE Systems also has defense prime as its primary industry, it has a comparatively low industrial revenue at $15.80 billion and market capital of $21.42 billion and total revenue of 64.44%. Another comparable company is General Dynamics, whose production in the defense prime industry is 45.05% of its total revenue. General Dynamics has a $50.62 billion market capitalization and an industry revenue of $13.95 billions. It can be then concluded that within its primary industry, Lockheed Martin is a major player, if not the biggest player. At least in the American market of the defense prime industry it seems that Lockheed Martin has the lead.

1.1.3. Industry Overview

The key indicators in the Defense Prime Industry are the American, Chinese, and Russian military expenditures. The industry is in a stand still at the moment, due to the most recent election outcomes in the US. A divided congress is not willing to increase defense budgets, that have come

to be at the highest levels recorded in history. Democratic candidates ran on platforms that include more access to other social programs, this changed the defense budget outlooks until next year's presidential elections. The industry has decreased in performance and therefore in valuation as well, which has caused stocks to sink. In the graph bellow it can be observed the decrease in valuation of the industry.

Figure 1.



As for oversees outlooks, sales have increased at a 7% rate since 2017. The modernization efforts of emerging markets such as Sweden, Romania and Saudi Arabia, in addition to persistent geopolitical unrest caused the industry to exponentially grow last year according to a Bloomberg article by Douglas Rothacker. The following graph shows an increase in Oversees defense

Revenue as a percentage of total GDP. The graph bellow shows that there has been a constant increase in defense revenue throughout the years.

Figure 2.

1.2 Market Data and Ownership Structure

According to the December 2018 Yahoo Finance data Lockheed Martin has 1,761 institutions holding shares, mostly financial institutions. 0.10% of shares are held by all insiders and 79. 86% of shares are held by institutions. In the image bellow shows the top ten stockholders of the company.

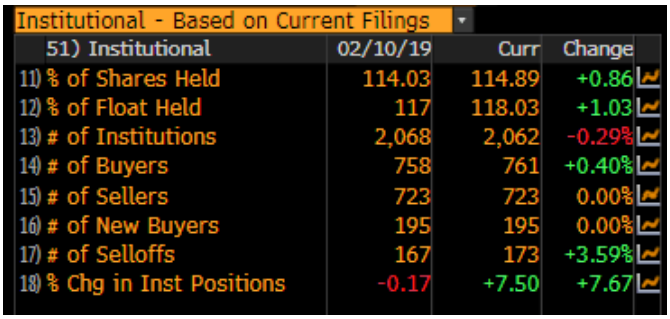
Figure 3.

	Holder Name	Portfolio Name	Source	Opt	Position	% Out	Latest Chg	File Dt
			All	All				
1.	State Street Corp		13G		47,059,612	16.65	-110,336	12/31/17
2.	Capital Group Cos...	Multiple Portfol...	13F		27,148,644	9.61	-371,675	09/30/18
3.	Vanguard Group I...		ULT-AGG		21,665,266	7.67	398,923	12/31/18
4.	BlackRock Inc		13G		18,811,944	6.66	0	12/31/18
5.	Wellington Manag...	Wellington Man...	13F		11,477,125	4.06	2,356,017	09/30/18
6.	Bank of America ...	Bank of Americ...	13F	Y	8,653,380	3.06	-934,876	09/30/18
7.	Morgan Stanley		ULT-AGG		3,587,085	1.27	105,749	09/30/18
8.	Wells Fargo & Co		ULT-AGG		3,329,032	1.18	391,812	12/31/18
9.	Northern Trust C...	Northern Trust ...	13F		3,174,059	1.12	-100,120	09/30/18
10.	UBS AG		ULT-AGG		2,843,699	1.01	66,074	12/31/18

According to an article from former stock broker, Eric Whiteside, the company is currently in the New York Stock Exchange (NYSE). The company is also a member of the S&P, hence they are required to be held by many passively managed index mutual funds or exchange traded funds (ETF).

As mentioned before, the majority of the shares are held by institutional stockholders. It can be observed from the figure 4 retrieved from Bloomberg in February 2019, below that there has been an increase in the shares bought by the same stockholders that already own part of Lockheed Martin, but there has been a decrease on institutions holding shares of the company.

Figure 4.



Institutional - Based on Current Filings

51) Institutional	02/10/19	Curr	Change
11) % of Shares Held	114.03	114.89	+0.86
12) % of Float Held	117	118.03	+1.03
13) # of Institutions	2,068	2,062	-0.29%
14) # of Buyers	758	761	+0.40%
15) # of Sellers	723	723	0.00%
16) # of New Buyers	195	195	0.00%
17) # of Selloffs	167	173	+3.59%
18) % Chg in Inst Positions	-0.17	+7.50	+7.67

According to Bloomberg data from February 2019, 0.12 shares are held by executives. The figure 5, shown below, demonstrates that there has not been any change in the insider holding in the last month.

Figure 5.

52) Insider	02/10/19	Curr	Change
21) % of Shares Held	0.12	0.12	0.00
22) % Chg Insider Positions	+16.59	+16.59	0.00
23) # of Insiders	17	17	0.00%
24) # of Buyers Opn Mkt	0	0	
25) # of Sellers Opn Mkt	3	3	0.00%
26) # of Shrs Bought Opn Mkt	0	0	
27) # of Shrs Sold Opn Mkt	25,540	25,540	0.00%
28) Avg Opn Mkt Buy Price	0	0	0.00
29) Avg Opn Mkt Sell Price	303.7	303.7	0.00

1.3 CEO and the Board of Directors

As of 2019, The CEO of Lockheed Martin is Marillyn A. Hewson. Hewson has been the CEO of the company for 6 years. 35 years ago, Hewson started to work in Lockheed Martin as an industrial engineer. Today Hewson is the CEO, President and Chairman of Lockheed Martin Corporation. According to her profile on the company's website, during her career in Lockheed Martin, Hewson held many operational as well as executive leadership roles in the company. She is has also carried out several leadership roles in many of the industry's associations and advisor

groups, such as Aerospace Industries Association, National Space Council, as well as some universities in the Middle-East. Before she became CEO, the company's stock prices were steady between $69.91 and $93.38 (Data from Q12010 – Q42012). Since appointment of Hewson as CEO, the stock has had an increasing trend, with a peak in the second quarter of 2018 of $295.43.

As for the major board committees in the company, Lockheed Martin appears to have more directors than the industry average, and the member of the committees are in their majority, old and have a lot of experience and years in the company. Some of the major committees are Audit, Business & Security, Ethics & Sustainability, Executive, Management Development & Compensation, and Nominating & Corporate Governance. Something that distinguishes Lockheed Martin is how they do not have directors working in several committees. The industry average has 9 directors in 2+ boards, and 7 directors in 3+ boards, while Lockheed Martin has 0.

In the board of directors there is a diversity of career paths, and industries among its members. Two fifths of them are currently CEO of other companies. These members are; David Burrid CEO of U.S. Steel, Tomas J Falk CEO of Kimberly Clarke, Ilene Gordon is the CEO of Ingredion, and James Taiclet Jr is the CEO of American Tower Corp. Two other members, including the lead director, are former CEO; Daniel Akerson is the former CEO of General Motors and Nolan Archibald is the former CEO of Black & Decker. The other members of the board are military experts, or former military.

1.4 Code of Ethics and Corporation Social Responsibility

Lockheed Martin Provides their Code of Ethics in many languages and in many forms. The interactive Code of Ethics starts with a video of the company CEO, Marillyn Hewson, reminding the employees that Lockheed Martin's core values are to "Do What's Right," "Respect Others," and "Perform with Excellence"". At a first glance the code of ethics is focused on issues such as

corruption, diversity and government influence which can be related to the company status of an international pool of customer, who are generally part of the government. As for corruption, Lockheed Martin is a seller of military aircraft, hence they need their employees to understand that what they do complies with the law. Another major theme of the Code of ethics is the importance given to the work environment for their employees, they have zero tolerance for abuse, bulling, and they promote a lot of safety for their employees, including security and a safe office space.

Lockheed Martin also engages in many Corporate Social Responsibility related activities manly focused on educating the next generation, and women about the opportunities that can be found in the engineering, science and technology fields. They hold competitions, seminars, and invest in non-profit organizations committed to this issues, as well as organizations focused on the well-being of veterans.

In the last decade the company faced two major scandals. The company CEO to-be, Christopher Kubasik, was fired a few months before his appointment due to an affair with a subordinate. The company handled the scandal impeccably, they assigned a well experienced employee, they had in case of emergency under their wings (Wakeman, 2012). With this, they proved that they are capable of preparing all of their employees to hold leadership roles in case of any emergency.

In 2015, the company was also accused of paying lobbyist so they could block other companies from competing for a $2.4 billions contract a year to manage Sandia National Laboratories (Malone, 2015). Lockheed Martin already owns a big part of the defense budget of the United States, hence they do not have a lot of competition, and from this scandal it can be assumed that they used to aim to become a great monopoly. But it can be assumed that after these

scandals the company adjusted their code of ethics to distance themselves from this scandals and influence their employees not to engage with this types of activities.

1.5 *Working Capital and Performance Analysis*

The working capital of a company is the difference between a company's assets and current liabilities. It is an important measurement of the short term business assets available to cover the short term obligations, and a source to be able to invest on income producing activities.

$$Working\ Capital\ 2018 = Current\ Assest\ and\ Current\ Liablities.$$

$$Working\ Capital\ 2018 = 16{,}103{,}000{,}000 - 14{,}398{,}000{,}000$$

$$\boldsymbol{Working\ Capital\ 2018} = 1{,}705{,}000{,}000$$

$$Working\ Capital\ Rate = Working\ Capital\ /\ Current\ Assets$$

$$\boldsymbol{Working\ Capital\ Rate\ (2018) = 10.59\%}$$

Last year, Lockheed Martin had a Net Working Capital of $1,705,000,000, which means that 10.59% of its assets may be spared, and act as a safety net for the company. For the following 5 years the Net Working Capital for Lockheed Martin is as follows.

Figure 6.

	2017	2016	2015	2014	2013
Net Working Capital	$4,592,000,000.00	$2,566,000,000.00	$655,000,000.00	$25,961,000,000.00	$25,068,000,000.00
Net Working Capital as a % of Assets.	26.23%	16.98%	4.49%	70.03%	69.27%

It can be observed that Lockheed Martin has decreased its amount of Net Working Capital in the last few years, in fact, in the most recent year the decreased double of the amount they used to have next year.

Figure 7.

	Net Working Capital 2018	Net Working Capital as % of Assets 2018
Raytheon	$3,848,000,000.00	31.71%
Northrop	$1,406,000,000.00	14.52%
General Dynamics	$3,450,000,000.00	18.97%
Lockheed Martin	$1,705,000,000.00	10.59%

Compared to other companies in the same industry, it can be observed in the table above that compared to Lockheed Martin has a significantly low net working capital to use as a safety net. This could be observed as a risky move from Lockheed Martin since they do not have as much to reinvest, or to use as a safety net in case of times of crisis for the company or industry.

1.5.1. DuPont Analysis

For the DuPont analysis, by determining the return on equity it can be estimated how much a company has to increase profits to be able to match one of a better off company. It can be also used to determine how much does a company have to make in profits in order to match previous years returns on equity. To be able to determine the return on equity, three components of the return on equity. The first component, the equity multiplier, is the assets per dollar of equity; the second component, the asset turnover, represents sales per dollar of assets; and the last component, profit margin, represents net income per dollar of sales. In the following chart, figure 8., it can be observed the results calculated to compare the return on assets of Lockheed Martin with its competitors.

Figure 8.

	Lockheed Martin	Raytheon	Northrop	General Dynamics
Equity Multiplier	30.97	2.78	4.59	3.87
Asset Turnover	1.20	0.85	0.79	0.79
Net Profit Margin	0.09	0.11	0.11	0.09
Return on Equity	3.48	0.25	0.39	0.29

It can be observed from the results shown in the table above that Lockheed Martin seems to have a higher return to equity than competitors in its industry. On average the competitors should increase their profits 1.6% to be able to match Lockheed Martin's return to equity, which can be related to an industry advantage.

Figure 9.

	2018	2017	2016	2015	2014	2013
Equity Multiplier	30.97	-60.08	29.77	15.92	10.90	7.36
Asset Turnover	1.20	1.07	0.99	0.82	1.23	1.25
Net Profit Margin	0.09	0.04	0.11	0.09	0.08	0.07
ROE	3.48	-2.53	3.30	1.16	1.06	0.61

It seems, that Lockheed Martin throughout the years has been able to increase its return to equity throughout time, with the exception of the year 2017.

2. Company Expenses

2.1 Cost of Debt

To be able to analyze a trustworthy cost of debt, the variable was obtained using two different methods. The first method used was to estimate the yield of the long-term bond outstanding as the pretax cost of debt. After limiting the bonds to LMT fixed bonds with a maturity greater than 10 years, and excluding both puttable and callable bonds, Bloomberg came up with eight different results given in the following cart from most relevant to least relevant. They are all rated as BBB+ according to the Bloomberg Composite Rating. The average yield on long term bonds outstanding is of **4.04%,** which in turn is **3.49%** after taxes.

Figure 10.

Coupon	Maturity	Yield.
4.07	12/15/2042	3.944%
8.50	12/01/2029	3.92%
5.72	06/01/2040	4.103%
6.15	09/01/2036	4.005%
4.85	09/01/2041	4.18%
5.50	11/15/2019	4.24%
4.07	12/15/2042	3.95%
4.07	12/15/2042	3.95%

The second method used to estimate the cost of debt was by estimating the cost of equity from financials. To estimate the cost of debt you would use the following equation.

$$Cost\ of\ Debt = \frac{Gross\ Interest\ Expense}{Long\ term\ debt + short\ term\ debt}$$

From the income statement, we can observe that the gross interest expense of Lockheed Martin last year was $668,000,000. From the Balance Sheet it can be observed that long term debt outstanding was a total of $12,604,000,000 and short term debt $2,402,000,000. Therefore the Cost of debt using this method can be estimated to be:

$$Cost\ of\ Debt = \frac{\$668{,}000{,}000}{\$12{,}604{,}000{,}000 + 2{,}402{,}000{,}000}$$

$$Cost\ of\ Debt = 0.04451553 \approx \mathbf{4.45\%}$$

$$Cost\ of\ Debt\ after\ tax = 0.04451553*(1-.1357) \approx \mathbf{3.85\%}$$

2.2 *Cost of Equity*

To estimate the cost of equity it was calculating by using the capital asset pricing model. Cost of equity is calculated using the formula shown below.

$$r_e = r_f + \beta(r_m - r_f)$$

Where r_f is the risk free rate, $(r_m - r_f)$ is the equity risk premium and β is the stock beta. Therefore, it is required to estimate the risk free rate, the market equity premium and the stock beta. The following calculations are estimated in the sections below.

2.2.1 Risk Free Rate

To effectively analyze the WACC, the risk free rate chosen was the Ten Year US T-bond rate, which is at 2.502% on April 9th 2019, according to the information retrieved from CNBC. This risk free Rate was chosen because the time frame of cash flows being analyzed is of 10 years, and because with a zero coupon you know the expected return with certainty.

2.2.2 Market Equity Premium

The market equity premium can be estimates using two different methods. With the first method, we calculate the historical premium by using the average market premium for the last 10 years. The results can be observed in the table, figure 11., below. We can then conclude that the market Equity premium, if calculated using arithmetic method is of 9.55% and using the geometric method it would be equal to 8.85%. By subtracting the Risk free Rate we would get a Risk Premium of 7.05 for the arithmetic method and 6.35% for the geometric method.

Figure 11.

Date	S&P Index Level	10 Year Treasury (at end of the year)	Market Premium Per year	Arithmetic Market Premium	Geometric Market Premium
1/1/09	825.880005			9.55%	8.85%
12/1/09	1115.099976	3.84%	31.18%		
1/1/10	1073.869995				
12/1/10	1257.640015	3.29%	13.82%		
1/1/11	1286.119995				
12/1/11	1257.599976	1.87%	-4.09%		
1/1/12	1312.410034				
12/1/12	1426.189941	1.76%	6.91%		
1/1/13	1498.109985				
12/1/13	1848.359985	3.01%	20.37%		
1/1/14	1782.589966				
12/1/14	2058.899902	2.40%	13.10%		
1/1/15	1994.98999				
12/1/15	2043.939941	2.28%	0.18%		
1/1/16	1940.23999				
12/1/16	2238.830078	2.45%	12.94%		
1/1/17	2278.870117				
12/1/17	2673.610107	2.41%	14.92%		
1/1/18	2823.810059				
12/1/18	2506.850098	2.66%	-13.88%		

The second approach estimates market equity premium through the implied equity premium approach. The implied market equity is calculated using the formula shown below, the sources from where the data was gathered is listed in figure 12 with the calculations.

Figure 12.

Implied Risk Premium			Source		
Level of the **S&P index** =		2510.03	**Yahoo Finance**		
Current dividend and buyback yield on **S&P Index** =	-	4.75%	S&P Indices		
Expected growth rate in earnings for next 5 years for **S&P Index** =		10.00%	**Yahoo Finance**		
Current long term treasury bond rate =		2.55%	**CNBC**		
Return on market (R_m) =		9.22%			
Expected growth rate in the long term (R_f)=		2.55%			
Implied Risk Premium		**6.67%**			
Intrinsic Value Estimate					
	1	2	3	4	5
Expected Dividends =	$ 131.15	$ 144.26	$ 158.69	$ 174.56	$ 192.02
Expected Terminal Value =					$ 2,954.31
Present Value =	$ 120.08	$ 120.94	$ 121.80	$ 122.68	$ 2,024.53
Level of the S&P Index =	$ 2,510.03				

2.2.3 Stock Beta

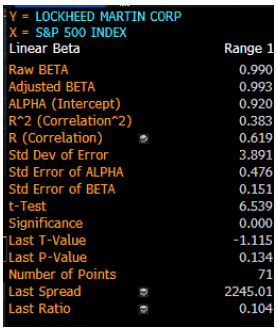
For the purpose of this project the stock beta was estimated using two measurements. For the first measurement the Beta is calculated by running a regression with the prices from S&P 500 and Lockheed Martin and obtaining the returns from the last 5 years, that is from 2013 to 2018, according to data retrieved from Yahoo Finance. The results are as given in the following chart, figure 13. From the regression we can observe that the value of the Beta, which is highlighted, is of 0.96

Figure 13.

Regression Statistics								
Multiple R	0.600							
R Square	0.360							
Adjusted R Square	0.351							
Standard Error	0.040							
Observations	71							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	0.06	0.06	38.86	0.00			
Residual	69	0.11	0.00					
Total	70	0.17						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.01	0.00	2.51	0.01	0.00	0.02	0.00	0.02
X Variable 1	**0.96**	0.15	6.23	0.00	0.65	1.27	0.65	1.27

For the other measurement data from Bloomberg regarding the Beta of the company. According to the Bloomberg search observed in the table below, the beta for Lockheed Martin is of 0.99, which is close to the result estimated in the previous regression. The output given in Bloomberg can be observed in Figure 14, shown below.

Figure 14.



Y = LOCKHEED MARTIN CORP X = S&P 500 INDEX	
Linear Beta	Range 1
Raw BETA	0.990
Adjusted BETA	0.993
ALPHA (Intercept)	0.920
R^2 (Correlation^2)	0.383
R (Correlation)	0.619
Std Dev of Error	3.891
Std Error of ALPHA	0.476
Std Error of BETA	0.151
t-Test	6.539
Significance	0.000
Last T-Value	-1.115
Last P-Value	0.134
Number of Points	71
Last Spread	2245.01
Last Ratio	0.104

In the table shown below, figure 15, it can there be observed the six possible cost of equity outcomes using the three market risk premium results and the two stock beta results. Case 1 uses Stock beta calculated from the regression and the arithmetic market risk premium calculated using the historical approach. Case 2 uses Stock beta calculated from the regression and the geometric market risk premium calculated using the historical approach. Case 3 uses Stock beta calculated from the regression and the market risk premium calculated using the implied risk premium approach. Case 4 uses Stock beta obtained through Bloomberg and the arithmetic market risk premium calculated using the historical approach. Case 5 uses Stock beta obtained through Bloomberg and the geometric market risk premium calculated using the historical approach. Finally, Case 6 uses Stock beta obtained through Bloomberg and the market risk premium calculated using the implied risk premium approach.

Figure 15.

	Rf	Beta	Rm-Rf	Re = Rf + B(Rm - Rf)
Case 1	2.50	0.96	7.05	9.268
Case 2	2.50	0.96	6.35	8.596
Case 3	2.50	0.96	6.67	8.9032
Case 4	2.50	0.99	7.05	9.4795
Case 5	2.50	0.99	6.35	8.7865
Case 6	2.50	0.99	6.67	9.1033

2.3 Weighted Average Cost of Capital (WACC)

The calculations for the different possible outcomes for WACC, given the different results estimated using different methods for cost of debt, market premium rate, and stock beta, are shown in the table 16, shown below. From data retrieved in April 2019, Bloomberg shows that the weight for debt in Lockheed Martin is of 16.1%, which means that the weight of equity is of 86.9%. In the previous section, six different outcomes show the different results that will be used as cost of equity in the WACC. In section 2.1, it was estimated two possible costs of debt.

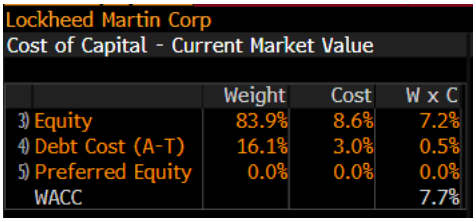
Figure 16.

	We	Re	Wd	Rd	WACC = RdxWd + ReWe
Case 1	83.90%	9.268	16.10%	3.49	8.34
Case 2	83.90%	8.596	16.10%	3.49	**7.77**
Case 3	83.90%	8.9032	16.10%	3.49	8.03
Case 4	83.90%	9.4795	16.10%	3.49	8.52
Case 5	83.90%	8.7865	16.10%	3.49	7.93
Case 6	83.90%	9.1033	16.10%	3.49	8.20
Case 7	83.90%	9.268	16.10%	3.85	8.40
Case 8	83.90%	8.596	16.10%	3.85	**7.83**
Case 9	83.90%	8.9032	16.10%	3.85	8.09
Case 10	83.90%	9.4795	16.10%	3.85	8.57
Case 11	83.90%	8.7865	16.10%	3.85	7.99
Case 12	83.90%	9.1033	16.10%	3.85	8.26

Cases 1 – 6 use the cost of debt estimated from the yield from long term bond outstanding, and Cases 7 – 12 uses the cost of debt estimated from the financials. Case 1 and 7 uses Stock beta calculated from the regression and the arithmetic market risk premium calculated using the historical approach. Case 2 and 8 uses Stock beta calculated from the regression and the geometric market risk premium calculated using the historical approach. Case 3 and 9 uses Stock beta calculated from the regression and the market risk premium calculated using the implied risk premium approach. Case 4 and 10 uses Stock beta obtained through Bloomberg and the arithmetic market risk premium calculated using the historical approach. Case 5 and 11 uses Stock beta obtained through Bloomberg and the geometric market risk premium calculated using the historical approach. Finally, Case 6 and 12 uses Stock beta obtained through Bloomberg and the market risk premium calculated using the implied risk premium approach.

The results given by Bloomberg can be observed in Figure 17, shown below. It can be observed that the results gathered from Bloomberg show different outcomes from the one calculated above. First of all, it looks like the cost of equity using the geometric historical method is the closest from the results given from Bloomberg Data. Another factor that could be influencing the differences in the results could also come from changes in the weights of equity and debt.

Figure 17.


Lockheed Martin Corp
Cost of Capital - Current Market Value

	Weight	Cost	W x C
3) Equity	83.9%	8.6%	7.2%
4) Debt Cost (A-T)	16.1%	3.0%	0.5%
5) Preferred Equity	0.0%	0.0%	0.0%
WACC			7.7%

3. Dividend Policy

This section examines the dividend policy of Lockheed Martin, and analyze it in order to determine the firm's performance in the last few years and additionally come up with best dividend

policies to maximize the firm's profit. All in all, Lockheed Martin has steadily increased their dividend price per share from $4.15 in 2014 to $8.0 in 2018. Lockheed Martin pays dividends quarterly, which is why they have several ex-dividend dates per year. In the first quarter Lockheed Martin usually schedules the ex-dividend day at the end of the month in February, which means that they usually ay the dividends one month later at the end of March. The second quarter is declared at the end of the month in May and payed at the end of the month in June. The third quarter's ex-dividend day falls at the end of August and payed a month later in September. Finally the last quarter's ex-dividend day is scheduled at the end of November to be paid at the end of the years. In order to do that we will first estimate how much cash can be returned to the shareholders for the last five years. In order to do that we will use the following formula:

$$Return\ to\ shareholders = Dividends + Buybacks$$

The Dividends and Buybacks of the last five years were gathered from the annual reports of the last five years. The results can be observed in the following table, figure 18.

Figure 18.

Year	Dividends	Buybacks	Cash returned to shareholders
2014	$ 1,760.00	$ 1,900.00	$ 3,660.00
2015	$ 1,932.00	$ 3,071.00	$ 5,003.00
2016	$ 2,048.00	$ 2,096.00	$ 4,144.00
2017	$ 2,163.00	$ 2,001.00	$ 4,164.00
2018	$ 2,347.00	$ 1,492.00	$ 3,839.00

It can be observe that in the last five years Lockheed Martin has increase the dividends payed to stockholders. Still it can also be recognized that the repurchases of common stock, or buybacks have declined in the recent years. This can then mean that in the last fiscal year Lockheed Martin has chosen not to increase the amount of cash returned to shareholders, but even decrease them. To be able to determine if the company's dividend policy is maximizing it's value, we

compare the return to shareholders estimated in the table above with a proxy. The proxy chosen compare the dividends that are currently returned to shareholders is the FCFE. In the following table it can be observed the estimated FCFE for Lockheed Martin for the last five years, compared with the estimated Cash Returned to Shareholders from figure 18. Figure 19 also shows the FCFE from competing companies previously mentioned in the first part of this report; as well as the FCFE estimated for the main segment which is Aerospace & Defense. The data is for the last 5 years and was retrieved from Yahoo Finance.

Figure 19.

	Cash Returned to Shareholders	LMT FCFE	FCFE - Boeing Co.	FCFE - General Dynamics Corp.	FCFE - Northrop Grumman Corp.	FCFE - Raytheon Co.	FCFE - United Technologies Corp.	FCFE - Aerospace & Defense
2014	$3,660.00	$ 3,021.00	$ 17.89	$ 14.16	$ 15.54	$ 14.41	$ 21.48	$ 17.91
2015	$5,003.00	$ 13,263.00	$ 9.86	$ 28.78	$ 14.90	$ 19.43	$ 12.16	$ 10.05
2016	$4,144.00	$ 3,174.00	$ 12.75	$ 24.11	$ 16.31	$ 19.68	$ 10.56	$ 15.27
2017	$4,164.00	$ 5,299.00	$ 15.94	$ 17.60	$ 5.94	$ 33.10	$ 14.93	$ 14.56
2018	$3,839.00	$ 1,710.00	$ 15.23	$ 4.64	$ 259.84	$ 19.57	$ 6.94	$ 12.50

From Figure 19 we can observe that since the FCFE is on average greater than the cash returned to shareholders, it could be said that the company is overvalued. It can also be observed from the table shown above that the company is much more valuable on average than its competitors and even in the industry. It can be observed that the FCFE increased significantly in 2015, but it has declined over the years.

Additionally, to further explain the profitability of Lockheed Martin's performance in the last few years the return on equity is compared with the cost of equity of the last five years. For the purpose of this comparison the data for the annual cost of equity, shown in figure 20, is gathered from Bloomberg for the last five years and the ROE or Return on Equity is calculated using the

annual reports in figure 21. The return on equity measures how effective is the company using stockholders' equity.

Figure 20.

Year	Cost of Equity
2014	9.07
2015	8.76
2016	7.6
2017	7.1
2018	9.67

Figure 21.

Year	Net Income	Equity	ROE
2014	$ 3,614.00	$ 3,400.00	1.06
2015	$ 3,605.00	$ 3,097.00	1.16
2016	$ 5,173.00	$ 1,606.00	3.22
2017	$ 1,963.00	$ (776.00)	-2.53
2018	$ 5,046.00	$ 1,449.00	3.48

It can be observed that for the year 2018 the cost of equity of Lockheed Martin was of 8.6% while the ROE of the same year was estimated to be of 3.48%. It looks like the company is not using stockholder's equity as efficiently as it should be. This same patter can be observed throughout the last five years, therefore it is safe to say that they have not considered changing this policy which could be a source of great change or a negative effect. Since the ROE is lower than the cost of equity it seems that Lockheed Martin is not generating more value from the money invested by stockholders.

Given the estimates calculated throughout the report its seems like Lockheed Martin is not being as profitable as it should be because the market is not at its prime. Due to the political uncertainty clouding the whole world and a period without significant political events that can affect the market puts the military industry at a slowdown. This can be observed from the slow

growth of the company as well as the inefficient way the company is investing the capital given by the stockholders. From the analysis of Lockheed Martin I would recommend the company to not only expand from an industry in which they are leaders, but also to stop decreasing the amount of dividends they are giving to their stockholders. The data retrieved for the FCFE as well as the calculations for returns for stockholders show that the company is overvalued, and it it not efficiently distributing dividends, as it should be. Lockheed Martin, as a market leader has the capacity of growing beyond the segment they specialize in, from their FCFE comparison we can even observe that Lockheed Martin is valued significantly higher that it competitors and the averge in the industry.

4. Bibliography

Whiteside, E. (2018) Top 5 Shareholders of Lockheed Martin (LMT). *Investopedia*. Retrieved from: https://www.investopedia.com/articles/personal-finance/081416/top-5-shareholders-lockheed-martin-lmt.asp

Yahoo Finance (2019). Lockheed Martin Corporation (LMT). *Yahoo Finance* Retrieved from: https://finance.yahoo.com/quote/LMT/holders?p=LMT

Lockheed Martin (2019). Marillyn A Hewson. *Lockheed Martin: Chairman, President & Chief Excecutive Officer* Retrieved from: https://www.lockheedmartin.com/en-us/who-we-are/leadership-governance/marillyn-hewson.html

Wakeman, N. (2012) Lockheed fires CEO to be over affair. *Washington Technology* Retrieved from: https://washingtontechnology.com/articles/2012/11/09/lockheed-kubasik-fired-affair.aspx

Malone, P. (2015) Lockheed Martin Nuclear Subsidiary Fined for Paying Lobbyists with Federak Funds. *TIME*. Retrieved from: http://time.com/4007950/nuclear-weapon-sandia-lockheed/

Wakeman N. (2012). Lockheed's scandal: A lesson for the rest of us. *Washington Technology*. Retrieved from: https://washingtontechnology.com/blogs/editors-notebook/2012/11/kubasik-hewson-lockheed-succession.aspx

Lockheed Martin (2019) Lockheed Martin Annual Reports. *Annual Reports and Proxy Statement. Lockheed Martin*. Retrieved from: https://www.lockheedmartin.com/en-us/news/annual-reports.html

SEC (2019) Raytheon Company Form 10-K. *SEC Archives.* Retrieved from: https://www.sec.gov/ix?doc=/Archives/edgar/data/1047122/000104712219000007/rtn-12312018x10k.htm

SEC (2019) Lockheed Martin Corporation Form 10-K. *SEC Archives.* Retrieved from: https://www.sec.gov/Archives/edgar/data/936468/000119312515038681/d808572d10k.htm

SEC (2019) General Dynamics Form 10-K. *SEC Archives.* Retrieved from: https://www.sec.gov/Archives/edgar/data/40533/000004053319000010/gd-2018123110k.htm

SEC (2019) Northrop Grumman Corporation Form 10-K. *SEC Archives.* Retrieved from: https://www.sec.gov/Archives/edgar/data/1133421/000113342119000007/noc-12312018x10k.htm

CNBC (2019) U.S. Ten Year Treasury. *CNBC.* Retrieved from: https://www.cnbc.com/quotes/?symbol=US10Y

Stock Analysis on Net (2019) Lockheed Martin Corp. (LMT) Stock Analysis on Net Retrieved from https://www.stock-analysis-on.net/NYSE/Company/Lockheed-Martin-Corp/Valuation/Price-to-FCFE

Bloomberg Terminal (2019) Lockheed Martin. *Bloomberg*