LOCKHEED MARTIN

Corporate Finance

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Summary

LOCKHEED MARTIN

Firm description:

Business

Lockheed Martin Corporation is an American global aerospace, defense, security and advanced technologies company organized around four core business areas; Aeronautics, Missiles and fire control, Rotary and mission systems, Space. Also known as the U.S. government's largest contractor, this company provides weapons systems, aircraft, and logistical support to Defence Department. Born in 1995 from the merger of Lockheed Corporation with Martin Marietta, the company reached its all time high LMT stock closing price: 397.04 $ on September 18, 2019.

Products

Lockheed Martin finds solutions to problems by creating innovative technologies and provides the market with a wide range of products. Most of which are sold to the US government. The Pentagon and NASA representing 70% of sales, international customers representing 28% of sales and finally US commercials and other representing 2% of sales.

Geographical location

Lockheed Martin Corporation is headquartered in Bethesda, Maryland, USA. The company sells products and technology to more than 70 nations and employs approximatively 100'000 people in 52 countries, mainly in the United States[1]. The International organization has its headquarters in London, England, and Washington, D.C., USA. The company has corporate or regional offices in most of the world's major arm purchasing countries capital, such as Riyadh, Abu Dhabi, Singapore, Tel Aviv, New Delhi, Tokyo, Seoul, Ottawa or Canberra[2].

Brief history

The story begins with the foundation of Lockheed in 1926 which was first an aerospatiale company for civil use and then became the biggest provider of military airplanes to the US government during the Second World War. Martin Marietta, formed in 1961 was also an aeroespacial company, developing the production of missiles at a later stage. The two companies merged in March 1995 to become Lockheed Martin, the largest military contractor, ruling a market of about 400 billion $. In 2009, the firm sold for about 45 billion $ of armament and made here of the top market capitalized companies in the US, reaching practically 30 billion $ and ranking 54 on the Fortune 500 ranking. Since 1995, Lockheed Martin operated in Four main business areas:

I/Aeronautics:

Starting in 1992 with the Joint Strike Fighter program (a program intending to replace a wide range of existing fighter, strike, and ground attack aircraft for the United States and some of its NATO allies), the Lockheed Martin F-35 Lightning II development program detains the world record of the most expensive military program ever created, totaling costs of 1.55 trillion $ (the equivalent cost of the war in Iraq). However, if we take the operating margins at the end of 2017 for the specific aeronautic segment, we find an operating margin of 11.7%. Furthermore, Lockheed Martin estimated to deliver 3000 aircrafts in the next few years at an average cost of 93 million $ each, which would bring a bit more than 27 billion $ in operating profit. In 2017, selling aircrafts represented the first core of business for the company with 39%[3] of total sales and 25 000 employees[4].

II/ Missile and fire control:

Lockheed Martin is very present in this area with multiple achievements like with the PAC-3 anti-ballistic missile which is one of the most performant defense missile with a success rate of 12/13 tried during a US military test. Since 1995, the PAC-3 missile is mostly used by the US army and other NATO members[5]. In October 2001, the segment reported that it has won contracts for about 1.5 billion $ in accordance with the Joint Strike Fighter program issued by the American government[6] on multiple projects like laser engagement systems, arrowhead helicopter sensors and automated support systems. In 2018, the company won a PAC-3 supply contract with the US army of about 3.4 billion $[7].

III/ Rotary and Mission Systems:

This division is more focused on military materials for applications in the air, surface or sea. It employs 34 000 people in the company (an order of 34%) and represented the second core of business for the company in 2017 with 28% of total sales[8]. One of its biggest inventions was the Aegis defense system which was initially created in 1960 and has always been improved until now. It's an anti-aircraft missile defense system used by 6 countries including the United States, Norway, South Korea, Japan, Australia and Spain[9]. In 2019, the division just received more than 300 million $ by the US department of defense[10] to upgrade the Aegis defense system.

IV/ Space:

In 1995, Boeing and Lockheed Martin created a joint venture which is United Space Alliance. The company operated spaceflight operations under the NASA agreeing[11]. The company was created to design and plan, flight operations, astronaut and flight controller training, vehicle and infrastructure upgrades, and flight hardware design engineering. In 2006, the company signed

a 10 years contract with the NASA for 782 million $[12]. The company was operating in the major spatial center like ISS, Johnson Space Center and Kennedy Space Center. As of September 2014, the company was dissolved and replaced by another joint venture in the same segment which has the name of United Launch Alliance and is a launch service provider[13]. It's known for providing important launching vehicle systems like Delta IV and Vulcan. On September 30th 2019, the company won a 1.2 billion dollars with the Pentagone contract for satellite launch service[14].

Management

Marillyn A. Hewson is Chairman, President and CEO of Lockheed Martin Corporation since 2013[15]. At 79.21% of the outstanding shares, institutional investors hold a majority ownership of LMT. This percentage is higher than almost any other company in the defence industry. The main shareholders of Lockheed Martin Corp are SSgA Funds Management, Inc. (15.43%),The Vanguard Group, Inc. (7.69%), Capital Research & Management Companies (5.98%), BlackRock Fund Advisors (4.65%) and Wellington Management Co. LLP (4.14%)[16].

Overview of news

Recently on October 2019, Lockheed Martin finished its third quarter with an impressive note[17]. It has beaten analysis in both revenues and expected earnings per share. Analysis expected an EPS (earnings per share) of 5.03$ against an actual 5.66$, a beat of 12.5%. The revenues have also beaten on expectations in a softer way with an earnings surprise of 1.25% toppling the 14.87 billion $ expected by 300 million $. The company has beaten 100% of its expectations[18] since the beginning of the year showing a strong performance. Compared to the last quarter, the company increased its sales by approximatively 1 billion $. Going from 136.7 billion $ at the end of Q2 to 137.4 billion $ at the end of Q3. The solid growth of the company should be keeping up as Lockheed Martin just won important contracts in the past 4 months totalizing more than 40 billion $ deals. For instance, a 1.48 billion $ missile contract awarded by Saudi Arabia[19] or a 2.4 billion $ contract signed with the US government to supply spares parts for the F-35 supersonic jets[20].

Assumption and methodology:

Assumptions	2019	2020	2021	2022	2023
Risk Free Rate	2.30%	2.14%	2.02%	1.95%	1.89%
Market Risk Premium	7.72%	7.88%	8.00%	8.07%	8.13%
Unlevered cost of capital	7.22%	7.16%	7.12%	7.09%	7.07%

Tax rate	Nominal flat corporate taxe rate in United States for 2018
Beta	We used this formula to compute Beta: β= Cov(Ri, Rm) / Var(Rm). The beta is computed with the daily risk-free rate, Rf, given by the yield on 8 Years Treasury Bonds and the daily market premium on the S&P500 based on 8 years as well as the return of the S&P500 stock.
Market Premium	To compute the Market Premium we considered this formula: Market Premium= Rm-Rf
Unlevered cost of capital	The unlevered cost of capital was derived from the CAPM model calculated in the assumptions table which is in the "APV Calculation" sheet. Unlevered cost of capital = Rf + ($\beta_{unlevered}$* Market premium risk)
Recovery rate in case of default	The recovery rate in case of default of 41% is an estimate by Moody's.
Perpetual Growth Rate	Perpetual growth = Real Inflation rate in United States for 2018+ Real GDP growth rate in 2018
Market capitalization	We assume that the Market capitalization stays constant over time.
Comparable companies	We chose to include the main competitors of Lockheed Martin Corporation; Northrop Grumman Corporation, L3 Technologies , General Dynamics, United Technology and Raytheon Company

Assumptions	
Tax rate	21%
Levered Beta	0.72
Debt to equity ratio	16.03%
Unlevered Beta	0.64
Return of the market	10.02%
Bakruptcy cost as % of firm value	48.90%
Estimation of future unlevered cost of capital after the next 5 years	7.07%
Recovery in case of default	41%

To forecast risk free rates and several other metrics we used a triple exponential smoothing given by the four formulas presented and explained below:

$$S_t = \alpha \times (X_t - C_{t-L}) + (1 - \alpha) \times (S_{t-1} + B_{t-1})$$
$$B_t = \beta \times (S_t - S_{t-1}) + (1 - \beta) \times B_{t-1}$$
$$C_t = \gamma \times (X_t - S_t) + (1 - \gamma) \times C_{t-L}$$
$$F_{t+m} = S_t + m \times B_t + C_{([t-L+1+((m-1)] \text{ modulo } L)}$$

Where:

α	Data constant smoothing factor. The range is $0 < \alpha < 1$.
β	Trend constant smoothing factor. The range is $0 < \beta < 1$.
γ	Seasonal constant smoothing factor. The range is $0 < \gamma < 1$.
X_t	Actual observation.
S_t	Smoothed value as a simple weighted average of the current observations X
B_t	Actual trend factor. Calculated on the basis of the growth changes during the seasonal cycle L.
C_t	Current Seasonal index
F_{t+m}	The forecast of the value at m periods ahead of the actual time t.
L	Seasonal cycle. Average time taken for a cycle of growth/decrease to be broken.
t	The index that denotes a time period

Metrics:

Cost of Goods Sold estimation:

We noticed during the last 7 last periods basis that the cost of goods sold was in average equal to about 89% of the total revenues of the firm. For that reason, we have chosen to select this percentage to compute the next 5 years Free Cash Flow in our analysis.

Why did we select only the last 7 periods?

In the last 7 periods, from 2012 to 2018 the cost of goods sold percentage was continuously decreasing passing from 91% to 86% in 7 years. Before that date (2012) the Cost of Goods sold was steady and in average higher than 91.5% of the total revenues.

Revenues estimation:

We used the triple exponential smoothing function to estimate our revenues. We compared the forecast technic with the average growth per year technic and found that taking a conservative rather than an aggressive is better for valuation. The forecasts have a coefficient of determination that equals 95% with the real values and they are significant in our OLS regression test (at 95%). We used 19 periods to forecast our revenues, from 2000 to 2018.

NWC estimation:

For the NWC calculation we tried to use the best estimators of each account to forecast the net working capital with a maximum of precision.We forecasted the Account receivable and the accrued expenses using their growth during 19 periods from 2000 to 2018. **Why did we choose the mean of the growth rate to forecast the Account receivable and the Accrued expense account?** We noticed that both were constantly growing since 2000, for that reason it seemed better to compute the next Account receivable amounts with using that technics.

For the other Accounts which are Other receivable, Prepaid Taxes, Short term Borrowing and Current Taxable income we preferred to use their historical revenue percentage during the 19 periods from 2000 to 2018. **Why did we choose this method?**

We noticed that these accounts haven't a significant growth trend during the time but rather a fluctuation that depends on the revenue growth.

For the last accounts which are inventory, Cash and equivalent, current unearned revenues, Account payable and other current liabilities we noticed several seasonality (cyclical growth/decrease trend) that's why we have chosen to use the triple exponential smoothing method to forecast them. It gave us a significant result (at 95%) when we tested the forecasts in an OLS regression with an average coefficient of determination for all the forecasts are superior to 90%.

Research and development estimation:

Research and development account was estimated according to the fluctuation of the revenue. Indeed, we observed that the R&D account changes in function of the revenues and for that reason, we used the average of the R&D amount in % of the revenue from 2000 to 2018 to predict the R&D amounts for the next 5 years.

Selling General and Admin Exp estimation:

To predict the selling general and Admin expenses we use their average in % of the revenues for the 7 last periods. We have taken the 7 last periods because between 2006 and 2016 the amount Lockheed Martin dedicated to this account was 0. Moreover, to be uniform with the COGS estimation we have chosen to take 7 periods as a basis for the calculation.

Depreciation & Amort estimation:

The depreciation & Amort. account was estimated in % of revenues as we noticed that the amount was evolving a steady rate in function of the revenues (Approximately the D&A account was always equal to 2% of the total revenues).

CAPEX estimation:

In this part we noticed that the Gross Property, Plant & Equipment was constantly evolving with a steady rate. Then to forecast it we have chosen to compute the value for the 5 next year (2019 to 2023) using an average of the growth rate. From that and our D&A approximation we could compute our estimated CAPEX accurately.

Risk Free rates estimation:

The risk-free rates estimations from the year 2019 to 2023 were estimated according the triple exponential smoothing formula on the basis of 168 monthly observations representing 3-months US treasury bill rates. Our forecast was tested and showed significantly that the coefficient of determination between the real rates and the forecasted one are more than 98% explained by the forecast model.

Comparisons with other companies:

We based our analysis on a strictly selective way. We have chosen strong data related news issued by secured information's sources such as Capital IQ, Datastream, the Wall Street Journals, the Financial Times, Bloomberg, Thompson Reuters, Yahoo Finance and Governmental organizations such as the NASA and the American Defense minister's website.

We Compared Lockheed Martin to 5 other competitors, all in the same sector which is the aerospatiale and defense sector. We have selected them on the basis that they are international companies that deals with governments and private organizations in every continent. To compare them we have chosen other factors such as revenues, they are all making more than 10 billion revenues and are all large market capitalizations with more than 10 billion $ for each company. These companies are employing from 38 000 people for L3 Technologies to 250 000 people for United Technologies. Moreover, they are all part of the S&P 500 index, making them very large US companies.

We have selected these companies also on the growth rate comparing to 2017 in addition to the profitability and ratios factors. It seems all concurrent companies have a growth rate in their revenues comparing to last year between 6.9% and 16.9% with an average of 11.5%, Lockheed Martin has a growth of 7.6% during this same period. For the Profitability factor the best ratio we decided to use to compare Lockheed Martin to its concurrent was the return on assets as we are in the aeronautic and defense sector characterized with heavy investments in assets. Among all the concurrent companies the return on assets vary from 4.8% to 7.2 % with an average of 6.2% and Lockheed Martin has a return on assets of about 9.9%.

We also used the ratios of $\frac{EV}{Revenues}$(with EV as Enterprise Value) and $\frac{P}{E}$ (with P as Price/share and E as earnings) to choose which competitors to include in the comparison. For the first ratio we observed many similarities, the ratio only moves from 1.7 to 2.2 for the 6 companies including Lockheed Martin and their ratios range from 14.5 to 19.5. According to that we concluded that Lockheed Martin is comparable in terms of capital structure and sectors with: **L3Harris Technologies Inc (LLL)**, **United Technologies Corp (UTX)**, **Northrop Grumman Corp(NOC)**, **General Dynamics Corp(GD)** and **Raytheon Co(RTN).**

As the 2019 isn't completed we have chosen to use the data of the 31 December 2018 in our project as it's the last completed fiscal year.

Analysis of the company:

Net leverage, debt and equity value of Lockheed Martin:

On the excel sheet we calculated the average net leverage ratio of the competitors of Lockheed Martin and we found it equal to 0,160. In addition, we computed Lockheed's Martin leverage and it was equal to 0,135. Hence, according to the financial restructuring Lockheed Martin should double its net leverage to reach 0.270 this year. Then the formula below should give us how much debts Lockheed Martin is going to subscribe.

*In millions of dollars

$$\Delta D_{t+1} = \frac{(New\ Net\ Levrage_{t+1} * (Marketcap_{t+1} + Total\ Debt_t) - Total\ Debt_t + Cash\ and\ short\ term\ investment_{\ t})}{(1 - New\ Net\ Leverage_{t+1})}$$

With:

New Net Leverage$_1$	0.270
MarketCap$_0$	84,722
Total Debt$_0$	14 104
Cash and short term investment$_0$	772

*Marketcap is constant in our computation then $Marketcap_{t+1} = MarketCap_0$

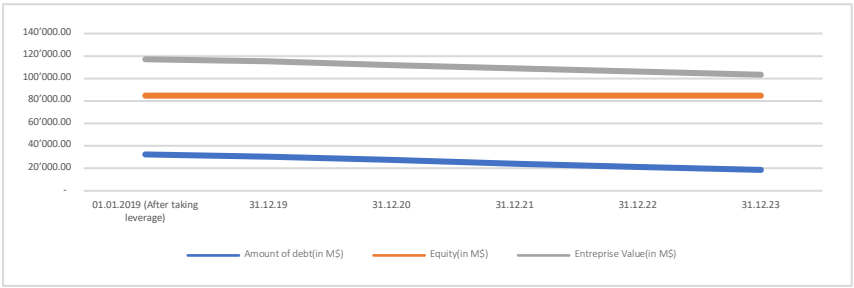
Then, the total debt of the company increased by:

$$\Delta D_{t+1} + Total\ Debt_t = Total\ Debt_{t+1}$$

We then need to increase our total debt of 18'258.23 million dollars immediately. The company's total debt then becomes equal to 32'362.23 million dollars, bringing the liabilities of the company from 44 876[5] to 63 134.23 million dollars.

Date	31.12.18	01.01.2019 (Adjusted)	31.12.19	31.12.20	31.12.21	31.12.22	31.12.23
Leverage	13.49%	26.98%	24.79%	22.60%	20.41%	18.22%	16.03%

The net leverage ratio of 2019 is doubled to obtain the adjusted net leverage ratio in 2018. Then, over the period over which we calculated our projections, the ratio will decrease to 16.03% which is the average net leverage ratio of the industry.
We can see on this graph that the debt decreases over the projection period. This is due to the net leverage ratio's decrease over that period of time as Lockheed Martin is converging back to the industry's net leverage ratio. We can also see that as a result the value of the firm decreases over this period of time while the equity remains constant.



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WACC and APV methods:

WACC method:

For the WACC method, we need to calculate the weight ratios of equity and debt which are respectively $\frac{E}{E+D}$ and $\frac{D}{E+D}$ We then had to find the cost of equity ($Re = \bar{R} + \beta_{levered}(R_{market} - \bar{R})$,With $\bar{R}$ the average forecasted risk free year in the next 5 years and R_{market} the historical market return of the S&P 500 for the last 8 years) as well as the cost of debt (Rd which is an actual weighted average of the different bonds' coupons) in order to obtain the weighted average cost of capital (WACC).

$\boldsymbol{WACC = E * Re + D * Rd * (1 - \tau)}$ with $\boldsymbol{\tau}$ being the flat corporate tax in the United States for 2018

Now that we have the WACC we can calculate the Terminal value using the WACC and the assumed perpetual growth rate $g_{Perpetual}$:

$$Terminal\ Value = \frac{FCF_{2023}(1 + g_{Perpetual})}{(WACC - g_{Perpetual})}$$

We are now able to get the value of the company by summing the NPV of the free cash flows and the NPV of the terminal value using the WACC as the discount rate.

$$\boldsymbol{VL = \sum_{1}^{5} \frac{FCFt}{(1 + WACC)^T} + \frac{Terminal\ Value}{(1 + WACC)^T}}$$

As the WACC is a good estimator of discount rate when the ratios debt/equity or the capital structure stays constant. Then **in consequence, we have chosen to calculate the WACC discount rate of Lockheed Martin with using an average of the debt weight before and after the restructuration at the 01/01/2019.**

APV method:

To calculate the APV method we take the present value of the FCF and the PV of tax shields. The APV method allows us to distinguish the core value of the company as well as the tax shields' effects. In order to calculate the APV method we must go through three steps.

The first step consists of computing the unlevered cost of capital using the following formula:

$$\boldsymbol{Unlevered\ Cost\ of\ Capital}_t = \boldsymbol{Risk\ Free\ Rate}_t + \beta_{unlevered} * (\boldsymbol{Expected\ Market\ Return}_{historical} - \boldsymbol{Risk\ Free\ Rate}_t)$$

The second step consists of calculating the initial PV by using the unlevered costs of capital for each year in order to discount the expected free cash flows and the terminal value. Then, we use the yearly forecasted cost of debts to calculate the PV of the expected tax shields.

The third and last step consists of adding the discounted tax shields to the discounted free cash flows to obtain the value of the firm. The levered firm value is equal to the sum of the unlevered firm values plus the sum of PV of tax shields. The formula can be written is as follow:

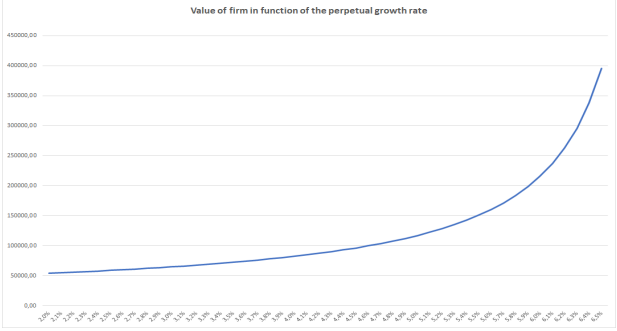
$$\boldsymbol{V_L = V_U + T = \sum_{1}^{5} \frac{FCF_t}{(1 + r_{U,t})^T} + \sum_{1}^{5} \frac{TS_t}{(1 + r_{T,t})^T}}$$

01.01.19	Firm value ($M)	Discount rate
WACC	98'798.63	6.70%
APV	85'622.87	7.07%

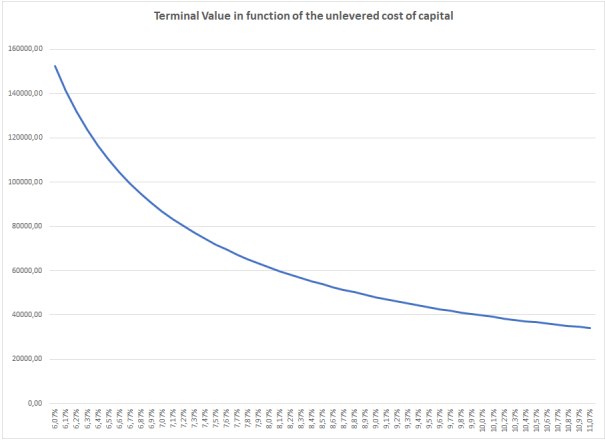
We notice here that the value of the firm is higher with the WACC method than with the APV. This can be explained by the fact that the WACC rate is lower than the unlevered cost of capital.

Sensitivity Analysis:

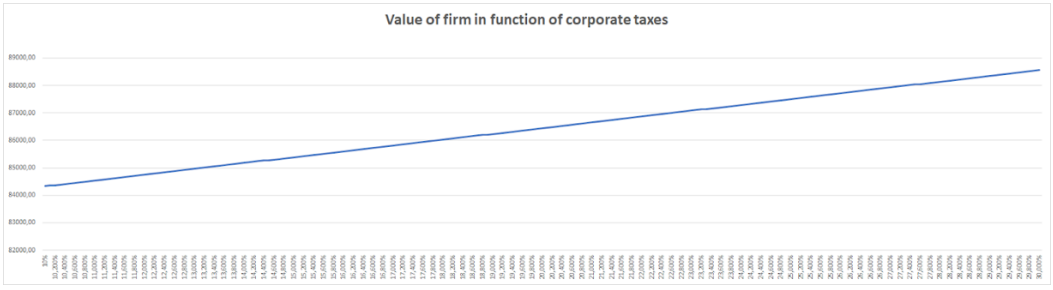
The first sensitivity analysis concerns the value of the firm in function of the perpetual growth rate. We assumed a growth rate of 4,8%. The graph below shows that the value of the firm increases with the growth rate. The increase is exponential, especially from 5.4%, meaning a higher growth rate results in a greater firm value. Assuming increasing future growth rates, the value of Lockheed Martin would increase by higher amounts in the future, implying higher future cash flows which should satisfy investors.



The second sensitivity analysis concerns the terminal value of the firm in function of the unlevered cost of capital. The graph below clearly shows that an increase of the unlevered cost of capital results in a diminution of the firm's terminal value. For instance, a decrease of the unlevered cost of capital from 6.4% to 8.07% would result in a very significant diminishing of the firm's terminal value, reducing it by almost half. Based on our assumptions, the unlevered cost of capital of Lockheed Martin is approximately 7.22% for 2019 and is expected to decrease progressively to reach 7.07% in 2023, which would increase the terminal value of the firm by approximately 6700, which is a relatively small increase, showing the trust investors have in the LMT stock.



The third sensitivity analysis concerns the value of the firm in function of corporate taxes. The graph below shows a positive relation between these two variables. This could be explained by benefits coming from the tax shield when corporate taxes increase. Indeed, increasing the leverage is profitable as the PV of the tax shield is high and incorporated in the levered value of the firm. However, an increase of corporate taxes only imply a moderate increase of the value of the firm as increasing the tax shield also results in a decrease of cash flows.



Finally, the table below shows how the terminal value evolves when the perpetuity growth and the unlevered cost of capital change simultaneously. With a perpetuity growth of 4,8% and an unlevered cost of capital of 7,07%, the terminal value of Lockheed martin is 104 327,23 $.

Terminal value		Perpetuity Growth						
		3.3%	3.8%	4.3%	4.8%	5.3%	5.8%	6.3%
Unlevered Cost of Capital	6.77%	67'173.84	78'899.03	95'389.68	120'291.96	162'245.25	247'879.08	519'488.42
	6.87%	65'287.17	76'321.02	91'664.19	114'453.84	151'847.97	224'504.35	426'798.36
	6.97%	63'503.59	73'906.14	88'218.76	109'156.17	142'703.02	205'158.16	362'176.74
	7.07%	61'814.87	71'639.40	85'022.95	104'327.23	134'597.00	188'881.67	314'550.57
	7.17%	60'213.64	69'507.57	82'050.60	99'907.44	127'362.38	174'997.98	277'994.37
	7.27%	58'693.27	67'498.94	79'279.05	95'846.92	120'865.82	163'015.58	249'050.42
	7.37%	57'247.79	65'603.15	76'688.62	92'103.57	114'999.85	152'568.92	225'565.23

Unlevered cost of capital	7,07% **± 0,1%**
Perpetuity Growth	4,8% **± 0,5%**

Outlook for the future

Since Lockheed Martin has beaten 7 out of 8 of the last Wall Street consensus on revenues with a positive earnings surprise of 9% in average[21], moreover, the last contracts and overview news are indicating a future positive trend for the growing revenues. According to that, we wanted to have a vigilant outlook for the future, and we computed the perpetual growth by taking the average growth between the average FCF between 2010 and 2019 (post subprime crisis) on the basis of the average FCF between 2001 to 2009.

Threats of competitors:

New entrant threats:

As Lockheed Martin is outperforming the sector of the defense and Aerospatiale industry. The threat of new entrants may not affect its main business as the regulation to obtain the right to elaborate and sell weapons, military equipment and military vehicles in United States and the World is very strict. Moreover, this type of industry needs a very high amount of investments in all fields and especially in the space defense and the aviation defense (Lockheed Martin spent more than 1.3 billion $ in research and development for the year of 2018). For these reasons, we can conclude that the threat new entrant is low.

Industrially threats:

Lockheed Martin is outsourcing many pieces in the field of aerospace industry with its main competitors. For example, The F-35 Lightening Jet II was elaborated with many of its competitors like Northrop Grumman and Pratt and Whitney(which is a subsidiary of United Technology) or United Launch Alliance which is a joint venture between Boeing and Lockheed Martin .Moreover, on the field of ballistic missiles the Javelin Joint Venture is a joint venture between Raytheon, one of its major competitor in United States and Lockheed Martin were awarded for the production of 2100 FGM-148G Model missiles[22].All of that are relating a positive and a negative sign for Lockheed Martin: The positive one for Lockheed Martin is the existence of a symbiosis with its main competitors, However, the negative sign is that Lockheed Martin is becoming more and more dependent of its competitors and that can be seen as a real threat for the future of the company.

Bargaining power:

Lockheed Martin is one of the pillar components of the join-strike-fighter alliance program since its creation by the department of defense of the United States. This alliance intends to provide more sophisticated attack aircrafts in order to replace the old military aircrafts for the NATO members. At its beginning in 1996 Lockheed Martin and Boeing provided one concept each one of a future attack aircraft (The X-35 concept of Lockheed Martin and the Boeing X-32 concept). The 16 November 1996, the X-35 was selected, **which opened a door of more than 1.5 trillion $ deal for Lockheed Martin[23]** and its F-35 Lightening Jet II that began to be sold in 2006 with scheduled deliveries up to the year of 2042.However,as important part of this program is financed by the department of defense of the United States which is its principal customer, the bargaining power of Lockheed Martin is per consequent very low over it's buyers.

Conclusion:

Lockheed Martin Corporation is an American aerospace, security, defense and advanced technologies company operating across the world. this firm retains its net leverage around 13,5% which is relatively low according to its main competitors (Industry average = 16%). The goal of this paper is to see first-hand the impact of doubling the net leverage and how it would affect the company's value. To do so, we have calculated both the unlevered and levered value of Lockheed Martin Corporation. Concerning the value of the levered firm, we used two methods; Adjusted Present Value Method and Weighted Average Cost of Capital.

In the first method (APV) we used the unlevered cost of capital to discount the total free cash flow. Meanwhile, in the second method (WACC) we discounted the total free cash flow by the weighted cost of capital

We also considered the present value of tax shields and bankruptcy costs. These two methods led to a different enterprise value for Lockheed Martin and this difference is due to the fact that the WACC (6.70%) is lower than the discount rate used in the APV method (7.07%). The firm value calculated with the WACC ($96'427.95) is therefore higher than the one calculated with the APV method ($83'697.35).

Through the sensitivity analysis we can conclude that the levered firm value is more sensible to the perpetual growth rate (positively) and the unlevered cost of capital (negatively) than to the corporate taxes which evolves linearly. This means that the firm has to take into account that too much leverage can become dangerous to the terminal value as a small increase in leverage can result in a large drop in the terminal value.

As a conclusion, we can say that in our case the leverage increases the firm's value due to the fact that LMT can benefit from tax shields generated by a higher amount of debt. However, the more debt we have the lower the stock price will drop as it becomes riskier.

Sources:

[1]https://www.lockheedmartin.com/content/dam/lockheed-martin/eo/documents/2018-lockheed-martin-fact-sheet.pdf
[2]https://www.lockheedmartin.com/en-us/who-we-are/international.html
[3]https://www.lockheedmartin.com/content/dam/lockheed-martin/mfc/documents/business-area-landing/MFC-By-the-Numbers-7-18b.pdf
[4]https://www.lockheedmartin.com/en-us/who-we-are/business-areas/aeronautics.html
[5]https://news.lockheedmartin.com/2001-10-19-Lockheed-Martins-PAC-3-Missile-Intercepts-Advanced-Cruise-Missile-Target , Paragraph 9
[6]https://news.lockheedmartin.com/2001-10-29-Lockheed-Martins-Central-Florida-Companies-Have-Major-Role-In-Multi-Billion-Dollar-Joint-Strike-Fighter-Win , Paragraph 8
[7]https://www.nasdaq.com/articles/lockheed-martin-wins-34b-deal-pac-3-missile-systems-2018-12-24
[8]https://www.lockheedmartin.com/content/dam/lockheed-martin/mfc/documents/business-area-landing/MFC-By-the-Numbers-7-18b.pdf
[9]https://www.lockheedmartin.com/en-us/products/aegis-combat-system/global-aegis-fleet.html
[10]https://news.yahoo.com/aegis-combat-system-navys-destroyers-010000329.html
[11]https://oig.nasa.gov/audits/reports/FY00/pdfs/ig-00-015.pdf#page=3
[12]https://www.nasa.gov/centers/johnson/news/contracts/NNJ06VA01C/NNJ06VA01C.html.18_Funding.doc
[13]http://www.unitedspacealliance.com/
[14]https://www.reuters.com/article/united-launch-alliance-pentagon-idUSW1N25N00Y
[15]https://www.lockheedmartin.com/en-us/who-we-are/leadership-governance/marillyn-hewson.html
[16]https://money.cnn.com/quote/shareholders/shareholders.html?symb=LMT&subView=institutional
[17]https://finance.yahoo.com/quote/LMT/financials?p=LMT
[18]https://www.marketwatch.com/story/lockheed-martin-beats-on-earnings-and-boosts-guidance-dividend-stock-slips-2019-10-22
[19]https://www.reuters.com/article/us-lockheed-martin-defense-saudi/lockheed-awarded-1-48-billion-saudi-missile-defense-contract-pentagon-idUSKCN1UE2JQ
[20]https://finance.yahoo.com/quote/LMT/financials?p=LMT
[21]https://uk.finance.yahoo.com/quote/LMT/analysis?p=LMT
[22] https://news.lockheedmartin.com/2019-01-30-Raytheon-Lockheed-Martin-Javelin-Joint-Venture-Awarded-Contract-for-2-100-F-Model-Missiles-Marking-Initial-Full-Rate-Production
[23] https://www.reuters.com/article/us-lockheed-fighter/exclusive-u-s-sees-lifetime-cost-of-f-35-fighter-at-1-45-trillion-idUSBRE82S03L20120329