TESLA
EQUITY RESEARCH REPORT

(TSLA)

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Tesla Motors (TSLA) - HOLD

Market Capitalization	$520,698.4 (MM)
Shares O/S	3169.0 (MM)
Price ($)	164.31 (04/28/2023)
52 Wk. Range ($)	$318.50 - $101.81
Fiscal Year End	Dec
Price target ($)	**$145.68 ($274.44)**

Growth over Profitability

Tesla, Inc. designs, develops, manufactures, leases, and sells electric vehicles, and energy generation and storage systems in the United States, China, and internationally. It operates in two segments, Automotive, and Energy Generation and Storage. Tesla's mission is to accelerate the world's transition to sustainable energy, currently focusing on aggressive growth, leaving profitability in the back seat.

STRATEGY

- Tesla is focused on rapidly growing production, investments in autonomy and vehicle software, and remaining on track with its growth investments.
- The company aims to leverage its position as a cost leader, while many carmakers are working through challenges with the unit economics of their EV programs. Does it mean Tesla can achieve its target of grabbing a lion's share in the EV market?
- Growth at what cost? Tesla expects to continue to reduce the cost of its vehicles. The company expects to achieve this through improved production efficiency at its newest factories and lower logistics costs.
- Tesla is also investing heavily in autonomy and other AI-enabled products. The company is developing self-driving technology that it hopes will eventually make its vehicles fully autonomous. Tesla is also working on other AI-enabled products, such as its Full Self-Driving (FSD) Beta software and its Dojo supercomputer.
- Tesla is expected to release several new electric vehicles in 2023 and 2024, including the Cyber truck, Semi, Roadster, Model 2, and next-generation vehicle platform. The company is also expected to continue to improve its existing products and expand its production capacity.

PRICE PERFORMANCE

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THE STORY

- **Market Share:** The global light vehicle market has been growing slowly in the past decade, leaving little room for traditional car makers to expand. However, the electric vehicle (EV) market is soaring, with sales increasing from 477,700 units in 2016 to 5,211,800 units in 2022. This growth provides significant opportunities for companies operating in the EV market. Tesla, the industry leader, and disruptor in the EV market, is well-positioned to capture a large share of this market. But how remains a question which needs further investigation.

- **The Cost Leader:** Tesla is shifting its strategy to become a cost leader by investing in new manufacturing technologies and reducing the average selling prices of its models. This will make its vehicles more affordable for a wider range of consumers, potentially increasing market share. However, it remains to be seen whether this will come at the expense of profitability or the company's ability to sustain and finance further growth.

- **Operational scale:** Tesla's emphasis on "growth" is evident in its future investment plans, which include building and expanding new Mega and Giga factories. These plans include the recent announcement of a new Giga factory in Mexico, as well as further expansions in Shanghai and Nevada. While Tesla is undoubtedly growing in terms of size, it is worth questioning whether this growth is worthwhile, given that some of its existing facilities are not operating at full capacity and incurring idle capacity charges that cost the company millions of dollars.

- **Sustainable Energy & Continued Innovation:** Tesla's energy generation and storage segment is highly profitable, as confirmed by CEO Elon Musk in the Q1 2023 Earnings call. Musk believes that while automotive revenue may be higher, GWh (Gigawatt-hour) will be higher with stationary storage. Tesla is focused on transitioning the world to a sustainable energy economy and recognizes the need for more stationary energy storage than mobile energy storage. Additionally, Tesla is working on a new battery type called the 4680 cells, which is expected to be more energy-dense, cheaper, and easier to produce than current battery technologies. If successful, 4680 cells could significantly lower the cost of electric vehicles and make them more accessible to a wider audience. (What if one of the products/ Services under development turns out to be *THE SURPRISE FACTOR?)*

- **Risks**: Tesla's ambitious growth plans still raise questions about the company's ability to achieve them. The success of this growth trajectory largely depends on the development of new innovative products and software turns out to be. However, Tesla faces operational and financial risks, as well as uncertainties such as regulatory approvals, supply chain disruptions, and public sentiment toward the company's unpredictable CEO. All these factors could pose a significant risk to Tesla's growth, profitability, stability, and ultimately, its valuation.

THE COMPANY:

Tesla is an American automotive and energy company based in Austin, Texas. The company specializes in electric vehicle manufacturing and solar panel sales. Tesla was founded in 2003 by Elon Musk, JB Straubel, and Martin Eberhard. Tesla's business model is based on the direct sales model. This means that Tesla sells its vehicles directly to consumers, rather than through traditional dealerships. This model allows it to provide a better customer experience and to keep costs down. In the past, Tesla has focused on the high-end luxury electric vehicle market. The company's first vehicle, the Roadster, was a sports car that cost over $100,000. Tesla's second vehicle, the Model S, was a luxury sedan that cost around $70,000. In recent years, Tesla has expanded into the mass-market electric vehicle market. The company's third vehicle, the Model 3, starts at around $35,000. The Model 3 has been a huge success for Tesla, and it has helped to make the company a major player in the automotive industry.

Tesla is also a leader in the development of self-driving car technology. The company's Autopilot system allows its vehicles to drive themselves on certain roads. Autopilot has been controversial, but it has also been praised for its potential to make roads safer. In the future, Tesla plans to continue expanding its electric vehicle lineup. The company is also working on developing new technologies, such as solar roofs and battery storage systems. Tesla is a disruptive company, and it is likely to continue to shake up the automotive industry as well as the renewable energy sector in the years to come.

PORTER'S FIVE FORCES:

1. **Threat of new entrants**: The threat of new entrants in the electric vehicle market is moderate. The barrier to entry is relatively high, as it requires significant investment in research and development, manufacturing, and marketing. However, there are several new entrants in the market, such as Rivian, Lucid, and Arrival. These companies are all backed by significant financial resources, and they are all developing competitive electric vehicles.
2. **Bargaining power of suppliers**: There are a limited number of suppliers of key components, such as batteries and electric motors. This gives suppliers some bargaining power. But in Tesla's case as it is a vertically integrated firm it manufactures most of the parts by itself, reducing the supplier's bargaining power in its business.
3. **Bargaining power of buyers**: The bargaining power of buyers in the electric vehicle market is fairly low. Buyers have several choices when it comes to vehicles, not so much in all-electric vehicles though. But this very fact is expected to change in the future as the incumbents step into the segment with a plethora of new models.
4. **Threat of substitute products or services**: The threat of substitute products or services in the electric vehicle market is fairly low. There are several alternative fuel vehicles, such as hybrid vehicles and hydrogen fuel cell vehicles. However, electric vehicles have several advantages over these alternative fuel vehicles, such as lower emissions and lower fuel costs.
5. **Competitive rivalry**: The competitive rivalry in the electric vehicle market is high. There are several established automakers, such as General Motors and Ford, that are entering the electric vehicle market. These automakers have significant resources and experience, and they are all competing for market share. In addition, there are several new entrants in the market, such as Rivian, Lucid, and Arrival. These companies are all backed by significant financial resources, and they are all developing competitive electric vehicles.

TESLA Models S3XY
CYBER TRUCK and SEMI

COMPARABLE FIRM ANALYSIS:

Tesla is a unique company in a unique industry. It is the only major automaker that is solely focused on electric vehicles. It is also a very young company, founded in 2003. As a result, there are no other companies that are truly comparable to Tesla.

Some have tried to compare Tesla to other automakers, such as General Motors and Ford. However, these companies are very different from Tesla. They have a much longer history, and they are not as focused on electric vehicles. As a result, the multiples that these companies trade at are not necessarily relevant to Tesla. Others have tried to compare Tesla to technology companies, such as Apple and Amazon.

However, these companies are also very different from Tesla. They are not in the same industry, and they have different business models. As a result, the multiples that these companies trade at are not necessarily relevant to Tesla. In short, there are no truly comparable companies to Tesla. This makes it difficult to value the company. However, there are a few things that I did to try to get a sense of Tesla's value. I divided Tesla's operations into two segments, automotive and energy generation, and storage. And there is also the Data segment of Tesla. From three sectors, I chose nearly 10 companies based on the following grounds.

CRITERIA:

(Automotive for tier 1, energy generation and storage – especially from solar energy - for tier 2, and Software and data companies – for tier 3) I disregarded the geographic restriction to a certain extent, i.e., I did not set a limitation for the comparable companies to be listed and headquartered in the USA. Rather, I decided to focus on companies that cater to the USA, and China markets – two of Tesla's most prominent markets.

More than comparing Tesla with traditional automakers I also decided to choose two companies that operate in almost pure-play EVs and two traditional automakers which have the highest EVs in their automotive fleet and have a similar price range and price elasticity for demand which are much like Tesla. Furthermore, these companies are also engaging in battery manufacturing and lease their vehicles on a similar basis to Tesla if not the same.

On the Energy Generation and storage front, I found two publicly traded independent companies and one operating subsidiary of a large-scale conglomerate listed separately. These three companies have very similar product lines and cater to very similar markets to Tesla.

Tesla is also a data and software company that is successful in collecting driving patterns and other customer-related data and employing them in process improvements and most importantly FSD. I choose some of the disruptors in the software industry. Furthermore, I have restricted the comparable companies to only those who engage in research and development of Full self-Driving in one way or another directly competing with Tesla in this aspect.

Tier 1 (Automotive) *"Almost pure-play EVs"*

BYD Company Limited, together with its subsidiaries, engages in the research, development, manufacture, and sale of automobiles and related products in the People's Republic of China and internationally. The company operates through three segments: Secondary Rechargeable Batteries and Photovoltaic; Mobile Phone Components, Assembly, and Other Products; and Automobiles, Automobile-Related Products, and Other Products.

Contemporary Amperex Technology Co., Limited engages in the manufacture and sale of electric vehicles and energy storage battery systems worldwide. The company is headquartered in Ningde, China, and it has manufacturing facilities in China, Germany, and the United States. CATL is the world's largest battery manufacturer by production capacity. CATL and Tesla are both major players in the electric vehicle market. CATL is a supplier of batteries to Tesla, and the two companies have a strategic partnership. However, CATL is also a supplier to other automakers, such as Volkswagen and BMW. This means that CATL is not as dependent on Tesla as Tesla is on CATL.

"Traditional automakers with more focus on EVs"

General Motors Company is a global automotive manufacturer that designs, builds, and sells a range of vehicles and automobile parts. The company has announced plans to invest $35 billion in electric and autonomous vehicles, aiming to launch 30 new electric vehicles by 2025 and build a new battery plant in Michigan. GM's EV strategy is focused on the mass market, while Tesla's recent shift in strategy is also focused on the mass market, despite similarities in their EV strategies, GM is a larger and more established company with a longer history in the automotive industry compared to Tesla, which is solely focused on electric vehicles.

Volkswagen is a top automaker and is competing with Tesla in the electric vehicle market. Although Tesla has a wider range of more technologically advanced EVs, Volkswagen has a larger manufacturing capacity and is investing heavily in EV development. Despite Tesla's lead in EV sales, Volkswagen plans to significantly increase its EV sales with a $150 billion investment in EVs by 2026, aiming to sell 2 million EVs per year by that time.

Tier 2 (Energy Generation and storage):

Enphase Energy Inc. is a company that designs and manufactures microinverters for solar photovoltaic (PV) systems. Microinverters are devices that convert direct current (DC) electricity from solar panels into alternating current (AC) electricity that can be used in homes and businesses. Enphase Energy's microinverters are installed on each individual solar panel, which allows them to operate independently of each other.

SolarEdge Technologies Inc. is a company that designs and manufactures inverters, power optimizers, and energy storage systems for solar PV systems. Inverters are devices that convert DC electricity from solar panels into AC electricity that can be used in homes and businesses. Power optimizers are devices that optimize the performance of solar panels by managing the voltage and current that flows through them. Energy storage systems are devices that store energy from solar panels for use at night or during periods of low sunlight.

LG Energy Solution Ltd., a subsidiary of LG Chem, is a manufacturer of batteries for various applications, including electric vehicles, energy storage systems, and consumer electronics. The company was established in 2020 through the merger of LG Chem's and LG Electronics' battery businesses. With over 20,000 employees and operations in more than 10 countries, LG Energy Solution Ltd. supplies batteries to various customers such as Tesla, General Motors, and Ford. Additionally, the company's batteries are used in energy storage systems for utility applications, including the storage of solar and wind energy.

Tier 3 (Software and data companies)

Nvidia is a leading provider of graphics processing units (GPUs). GPUs are used in a variety of applications, including self-driving cars. Nvidia has developed several software tools that can be used to develop self-driving car systems. Nvidia's self-driving car

technology is based on its Drive PX platform. The Drive PX platform is a suite of hardware and software components that can be used to build self-driving cars. The Drive PX platform includes a GPU, a variety of sensors, and a software stack that can be used to process sensor data and make decisions about how to drive the car. Nvidia has partnered with several automakers, including Audi, BMW, and Jaguar Land Rover, to develop self-driving cars.

Microsoft is a leading provider of cloud computing services. Cloud computing services can be used to store and process data, which is essential for self-driving cars. Microsoft has developed several software tools that can be used to develop self-driving car systems. Microsoft's self-driving car technology is based on its Azure platform. The Azure platform is a suite of cloud computing services that can be used to build self-driving cars. The Azure platform includes a variety of services, such as storage, computing, and networking, that can be used to store and process data, train machine learning models, and run self-driving car simulations. Microsoft has partnered with several automakers, including Volvo and Renault, to develop self-driving cars.

Alphabet is the parent company of Google. Google is a leading provider of search engines, online advertising, and cloud computing services. Google has also been developing its own self-driving car technology for several years. Alphabet's self-driving car technology is based on its Waymo platform. The Waymo platform is a suite of hardware and software components that can be used to build self-driving cars. The Waymo platform includes a variety of sensors, such as cameras, radar, and lidar, and a software stack that can be used to process sensor data and make decisions about how to drive the car. Waymo has been testing self-driving cars on public roads for several years. The company has also launched a self-driving car service in Phoenix, Arizona.

COMPARABLE COMPANIES' FINANCIAL POSITION COMPARED WITH TESLA:

I chose these companies based on the criteria that they have similar financial performance, especially in terms of ratios. All these companies have similar margins (Gross profit, EBITDA, and EBIT) although these are slightly lower than Tesla. Furthermore, the two pure-play EV comparable firms have ROIC which is very close to Tesla, other than that ROE and ROA are also in line with Tesla although these are much lower numbers. If we look at Tesla's margins and ratios and compare them with the individual ratios of each firm, it makes these comps more in alignment with Tesla in terms of operations, financials, and strategy.

MULTIPLES:

I have computed four multiples for the company in hand, they are EV/Revenue, EV/EBITDA, PE, and PEG multiple, and for the range of multiples, I have used the median as the lower bound and the mean as the upper bound for these multiples, to remove the outliers. All these multiples are very essential in terms of valuing tesla each rendering a different perspective.

When it comes to EV/Revenue, EV/EBITDA, and PE the growth rate among these companies must be taken into consideration. As all these companies operate in different segments – although their goal is very interlinked – the growth rate will vary widely. To eliminate such discrepancies, I used the reference periods where the growth rate in these metrics start to converge. The convergence, unfortunately, happens very slowly in terms of **Revenue, thus I used 2024E** as the reference period for that. For **EBITDA**, the convergence is expected to happen in 2023 towards the end, hence the reference period for that is **2023E.** For **Net Income, I have chosen to stick with the LTM** figures. (Reason follows)

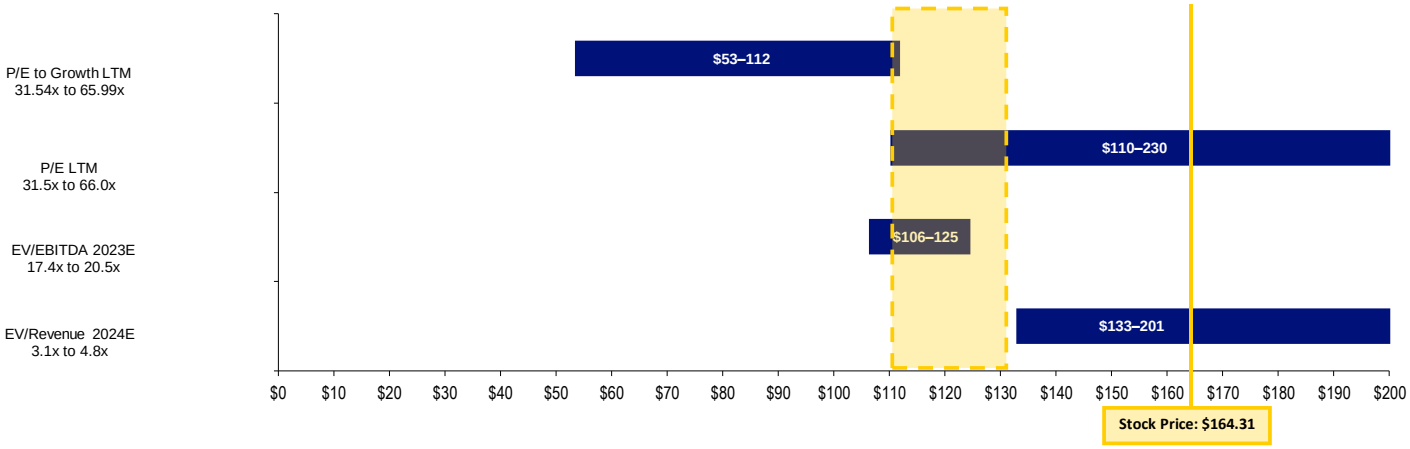
Apart from these three multiples one of the key drivers in terms of valuing Tesla must be the PE-G (PE – to Growth ratio) The price-to-earnings-to-growth (PEG) ratio is a valuation metric that considers the company's expected growth rate. The PEG ratio is calculated by dividing the PE ratio by the company's expected earnings growth rate.

The PEG ratio is important in valuing Tesla because it helps to put the company's valuation in context. Tesla is a growth company, and it has a high PE ratio. Which can ultimately skew the valuation if not seen in contrast with the PE-G ratio. Therefore, **I have used the LTM figures for both PE and PE-G ratios**. The growth rate with which I divided the PE of the comps is Tesla's expected long-term EPS growth rate among my comparable firm's list which is **20.6%** - *Source Capital IQ*

PRICE:

Seeing all this combined gives a **relative price range for Tesla at $105.7 - $135.1**. while the company **currently trades at $164.31** on Friday 28th April 2023.

	EV/Revenue (2024E)	EV/EBITDA (2023E)	P/E (LTM)	P/E - G (LTM)
Multiples	4.77	20.53	30.28	31.99
Implied Enterprise value	$410,661.5	$324,492.9	-	-
Net Debt	($16,828.0)	($16,828.0)	-	-
Implied Market Value	**$427,489.5**	**$341,320.9**	**$334,588.3**	**$353,428.9**
Shares outstanding	$3,164.1	$3,164.1	$3,164.1	$3,164.1
Implied Share price	**$135.1**	**$107.9**	**$105.7**	**$111.7**
Implied Share price Range			**$105.7**	**$135.1**



There are several reasons why Tesla's stock price may be higher than its relative valuation would suggest.

- Tesla is growing rapidly, and investors are willing to pay a premium for growth stocks.
- Tesla has a strong brand, and its cars are popular with consumers. This gives Tesla a competitive advantage over other automakers.
- Tesla is the leading manufacturer of electric vehicles, and it has a significant market share. This gives Tesla a first-mover advantage in the electric vehicle market.
- Tesla is not just a car company. It is also a technology company, and it has the potential to disrupt the automotive industry with its self-driving car technology.

This further reiterates the investor belief that Tesla would ultimately be better than most companies and is worth trading at a premium. This very fact can also answer the question, "Whether Tesla can still achieve the "BIG" player status in the EV segment amidst the growing competition?" The answer lies within the very fact that despite all the price cuts, and all the rough patches, this company is still trading at a premium than it should be.

Investment (Valuation) Thesis:

Tesla is a growth company, which means that its cash flows are expected to grow rapidly in the future. This makes DCF valuation a particularly useful tool for valuing Tesla. DCF valuation can help investors to determine whether Tesla is currently undervalued or overvalued. Most Importantly DCF valuation is not affected by the market mood and the investor sentiments. It truly captures the essence of the company under valuation if the underlying assumptions are close to reality. To value Tesla, I have made the following assumptions which are reasonable and align with Tesla's "Growth" story.

In order to be precise, instead of just forecasting the total sales revenues, I have based and created an operating model, which starts from the unit deliveries by Tesla, the growth in the volume of deliveries is considered after carefully reviewing what Tesla has done in the past, what the already existing traditional automakers have done/ are doing, as well as the growth rate of the overall automotive industry and the growth in unit deliveries in the EV space. Furthermore, paying heed to CEO Elon Musk's ambitious goal of reaching 10 million units delivered by 2030 – although this is next to impossible, a reasonable goal could be reaching 6 – 7 million units delivered by 2030, could be achievable. Even so, Tesla would have to go through a significant hit on its gross and operating margins, especially in the first 2 years of the projection period. (Refer to the table below)

Tesla deliveries (volume)	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Model S			27,323.00	22,941.00	43,500.00	47,850.00	50,242.50	51,498.56	52,013.55	52,528.53
% Growth				*-16%*	*90%*	*10%*	*5%*	*2%*	*1%*	*1%*
Model X			29,762.00	2,010.00	23,205.00	44,400.00	48,840.00	51,282.00	52,564.05	53,846.10
% Growth				*-93%*	*1054%*	*91%*	*10%*	*5%*	*2%*	*2%*
Model S/X	99,394.00	66,771.00	57,085.00	24,951.00	66,705.00	92,250.00	99,082.50	102,780.56	104,577.60	106,374.63
% Growth	*-2%*	*-33%*	*-15%*	*-56%*	*167%*	*38%*	*7%*	*4%*	*2%*	*2%*
Model 3	145,846.00	300,885.00	364,421.00	500,134.00	473,266.00	559,000.00	644,734.00	730,468.00	816,202.00	901,936.00
% Growth	*93%*	*106%*	*21%*	*37%*	*-5%*	*18%*	*15%*	*13%*	*12%*	*11%*
Model Y			78,141.00	410,915.00	773,880.00	1,136,845.00	1,499,810.00	1,862,775.00	2,225,740.00	2,588,705.00
% Growth				*426%*	*88%*	*47%*	*32%*	*24%*	*19%*	*16%*
Model 3/Y	145,846.00	300,885.00	442,562.00	911,049.00	1,247,146.00	1,695,845.00	2,144,544.00	2,593,243.00	3,041,942.00	3,490,641.00
% Growth	*9309%*	*106%*	*47%*	*106%*	*37%*	*36%*	*26%*	*21%*	*17%*	*15%*
Cybertruck						20,000.00	60,000.00	133,500.00	207,000.00	280,500.00
% Growth							*200%*	*123%*	*86%*	*63%*
Tesla Semi						3,000.00	30,000.00	50,000.00	70,000.00	90,000.00
% Growth							*900%*	*67%*	*67%*	*67%*
Roadster						250.00	625.00	1,250.00	1,875.00	2,500.00
% Growth							*150%*	*100%*	*100%*	*100%*
Model 2							100,000.00	300,000.00	600,000.00	900,000.00
% Growth								*200%*	*100%*	*50%*
Total deliveries	**245,240.00**	**367,656.00**	**499,647.00**	**936,000.00**	**1,313,851.00**	**1,811,345.00**	**2,434,251.50**	**3,180,773.56**	**4,025,394.60**	**4,870,015.63**
% Growth	*138%*	*50%*	*36%*	*87%*	*40%*	*38%*	*34%*	*31%*	*27%*	*21%*
Tesla EV market share	**18%**	**23%**	**23%**	**20%**	**25%**	**28%**	**31%**	**34%**	**36%**	**37%**

1 Deliveries forecast.

Price cut schedule	2023E	2024E	2025E	2026E	2027E
Model S	*10%*	*5%*	*2%*	*-2%*	*-2%*
Model X	*9%*	*5%*	*2%*	*-2%*	*-2%*
Model 3	*6%*	*3%*	*2%*	*-2%*	*-2%*
Model Y	*20%*	*10%*	*5%*	*-5%*	*-5%*
Average price cuts on existing models	***13%***	***7%***	***3%***	***-3%***	***-3%***

2 Negative price cut percent means a price hike.

As per the above table (Deliveries forecast), I have considered Tesla's historical demand for each product, how the market responds to changes in prices to come up with the forecast of unit deliveries for each of Tesla's make. Starting with ***Model S & X, these two fall into the "Old Luxury" cars*** from Tesla's staple, and the demand to date is kept in check purely by price cuts. Thus, moving forward, ***the demand for these two models would become stagnant if not falling***. Next up ***Model 3 and Y*** *are not as old as the former and these cater to the more mass-market audience, which is the prime focus for Tesla as of now,* ***the demand for these models is expected to fall but not as hard as S & X.*** The upcoming ***Cyber truck has such a huge hype built around it***, and ***the Semi being one of the most sort-after truck in logistics segments of big-time consumer discretionary companies*** such as Walmart and Pepsi, ***the demand for these two would soar in the initial years which is the status quo of ever Tesla model that has come out historically***. Finally ***Model 2 – the cheapest Tesla would be the most demanded vehicle as it is cheaper and more tech-savvy than its competitors (virtually non-existent).***

I started the projection period with similar growth in volume like 2022 at 39% and reduced it to 21% towards the end *– in 2027 achieving an ambitious but achievable 5 million units delivered* ***keeping the market share at 37%*** *which is pretty reasonable amid the growing competition.*

As mentioned above, for Tesla to achieve such a high volume of deliveries, it must go through significant price reductions. Fortunately, or unfortunately, Tesla is not shy of doing so. If we look at the company's price cuts within the first 4 months of 2023, Tesla is focusing on growth over profitability*.*

Model Y with the most price cuts, is 20% cheaper than what it used to be at the start of 2023, followed by Model 3 which is 10% cheaper, then Model X which is 9% cheaper, and finally, Model 3 which is cheaper by 6% (All of these changes in the average selling price, not the actual selling price – percentage drop in the later will be higher and not relevant for this analysis*)*

In the following years (Refer to the Price cut schedule above), ***I assume there will be cut down prices again, more frequently but less dramatically, therefore, I assume that the price cuts on average will be half of what the case in 2023. Post 2024, Tesla will try to hike prices very slowly*** *as their investments in FSD, as well as the cost-effectiveness-related measures, start to pay off (4680 Battery cell – which reduces the cost of manufacturing as well as could potentially lower the vehicle's average selling price) So it is safe to assume that these price hike would approximately 3% on average.* The resulting Gross margins will also be affected by the same number of drops and hikes in the average selling price. Although Elon Musk aims to increase the gross margin to 50%, it is not a possibility.

As time goes by and as competition intensifies, **Tesla's regulatory credits** will come to a dead drop. Keeping that in mind, I have **declined the revenue from this source from -7% to -17% towards the end of the projection period**.

As for the automotive leasing revenue, there is a high chance that the number of vehicles in the operating fleet of Tesla would inevitably go up as the unit deliveries keep soaring. As a result, ***the total revenue from leasing will increase from a growth of 1% to 18% at the end of the projection period***. *A part of the reason for such an increase lies in Tesla's R&D expenses – FSD. Tesla plans to collect a special fee from customers who might be leasing their own personal Teslas as "Robo-taxis" once full automation is achieved, which Tesla promises to deliver by the end of 2023 or at least by the end of 2024*. The services and other revenues are also expected to grow at a higher phase because of the unit

volume growth and the fact that Tesla provides frequently paid upgrades to its customers.

Research and development costs historically have been around 5 – 4%, I have kept it the same way since Growth needs to be fueled. *As for the Selling general and Administration expenses, Tesla almost never advertises heavily nor does it incur significant expenses on administration, I have gradually decreased them from a level of 4.78% of revenue in 2022 to a level of 3% in 2027.* This makes sure that the projections align with the historical spending pattern of the company**, R&D being a major operating expense, or is that an expense?**

If we think about it closely, the benefits that one could get out of R&D costs could potentially last for years. So is the case with Tesla. Unfortunately, US GAAP Does not allow capitalizing R&D and asks to expense these. Tesla is a company that is heavily invested in R&D. ***The company spends billions of dollars each year on research and development, and these costs are expensed as incurred. This means that Tesla's reported profits are lower than they would be if R&D costs were capitalized. Capitalizing on R&D costs would have several benefits***. First, it would provide a more accurate picture of a company's true value. Second, it would make it easier to compare companies that are at different stages of development. Third, it would make it easier to assess the risks and rewards of investing in a company that is heavily invested in R&D. ***For these reasons, I have capitalized R&D expenses over a period of 7 years (7 years, because it is the average useful life of asset base of Tesla, any number above or below would hamper the valuation) and amortized accordingly. The capital expenditures are assumed to be around 6 – 8%. This is in line with Tesla's plan of investing around $7 - $9 Million dollars each year for the upcoming 3 years – source Tesla Motors 10K.***

To facilitate such a massive growth Tesla would eventually have to invest and open new Giga-Mega-Factories whenever feasible. I have increased the production capacity when it is required in line with the latest updates from Tesla through their investor relations. *As per recent news, Tesla is planning to open a new plant in Mexico and continue to expand existing capabilities in Giga Factory Nevada and Shanghai*. ***I followed a similar pattern throughout the rest of the projection periods, while also considering Tesla always engages in incremental production capacity increments as well as maintaining the capacity around 70 – 80%. Doing so would not require significant capital expenditure at any specific point and can be spread out throughout the projection period.***

As far as other things, I have kept the tax rate at 12% constant, Minority interest, Restricted cash, Goodwill, Other intangible assets, tax-related assets, liabilities, leases, common stock, APIC, and Accumulated other comprehensive income constant.

All that being said, the unlevered free cash flow to the firm starts at **$5,629.9 MM in the year 2023** and grows up to **$18,490.1 MM in 2027.** This in turn implicitly says that after all, if things go well, Tesla should be able to see the benefits of chasing the market share leaving profitability in the back seat – although it will be taken care of once the volume hits the desired level.

To fuel such high growth, something else is also required in addition to the increase in the firm free cashflows. It is the firm's investment within its non-cash-net working capital. ***It would be imprudent to assume that this growth can be achieved with the existing investments in NWC. Therefore, these items need to grow too.*** Following the volume expansion by Tesla a few things are obvious. Firstly, as volume goes up, Tesla

would ultimately have to come to the acceptance that its Days Sales Outstanding as well as Days Inventory Held will automatically increase, ***Hence I have increased the DSO from 14.5 in 2022 up to a level of 16.4 in 2027.*** When it comes to Days ***Inventory Held, it gradually increased from 72.5 days in 2022 to a level of 81.6 days which is reasonable. As volume grows higher and higher, Tesla will have to let go of their DIH cap of almost 52 days in 2021 as the focus here is on volume expansion, which means a higher volume of goods produced.*** As Tesla continuously reduces the prices of its models there is a high chance that customers will be incentivized to postpone their purchase, which would in turn increase the DIH.

As for Days Payable Outstanding, this figure is expected to grow from 92.8 days to 96.3 days, which is reasonable, fueling the growth of the overall company. Apart from these, ***Unearned revenues, accrued liabilities, other current liabilities as well as assets are all expected to grow marginally by almost 0.5 % YoY to help Tesla sustain its growth***. The primary reason behind the gradual increase is that Tesla is still a growth company, not a mature one and the end figures of each of these items are on par or lower than the industry average.

DCF

All of this is in estimating the cashflows, what about the discount rate? Since we are valuing the company, it is the cost of capital (WACC) that's fit to be the discount rate. When it comes to WACC computation, ***I used the existing debt to total capitalization ratio of Tesla which is 11.1%*** - *source Bloomberg.* Such a capital structure makes sense as Tesla has almost never raised funds through debt – with the Tesla Energy business as an exception. I believe with the amount of free cashflows and the incremental investments in NWC all would aid Tesla in sustaining growth and the possibility of it raising funds through debt lies narrow. ***The cost of debt used for WACC computation is 12.2% which is the current market YTM of Tesla energy bonds –*** *Source Bloomberg*. Furthermore, ***the Risk-free rate on April 28th, 2023, is 3.42% - 10 years US treasury bond yield,*** and **the market equity risk premium for the month of May 2023 is at 4.77%** - source NYU Professor Aswath Damodaran's ERP article.

For the Beta, I used a bottom-up approach starting with a list of companies which has similar capital structure and betas like Tesla from the list of comparable items used in the relative valuation. The market value of equity is computed with the share prices as of April 28th, 2023 – the cutoff date for this valuation and the market value of debt is figured out using the formula,

C[(1 – (1/((1 + Kd)^t)))/Kd] + [FV/((1 + Kd)^t)]

Where C is the interest expense (in dollars)

Kd is the current cost of Debt (in percentages)

T is the weighted average maturity (in years)

FV represents the total debt.

WACC Calculation	
Target Capital Structure	
Debt-to-Total Capitalization	11.1%
Equity-to-Total Capitalization	88.9%
Cost of Debt	
Cost-of-Debt	12.2%
Tax Rate	12.0%
After-tax Cost of Debt	**10.8%**
Cost of Equity	
Risk-free Rate	3.4%
Market Risk Premium	4.8%
Levered Beta	1.40
Cost of Equity	**10.1%**
WACC	**10.2%**

After un-levering and re-levering, the beta, ***the final Beta used for WACC computation is 1.40*** – The rationale behind this approach is the standard error in a bottom-up beta will be significantly lower than the standard error in a single regression beta. Furthermore, the bottom-up beta can be adjusted to reflect changes in the firm's business mix and financial leverage.

All of this put together gives a weighted average cost of capital ***(WACC) of 10.2%*** which will be used as the discount rate for the DCF analysis.

Another important criterion to focus on is what will be the exit multiple in the terminal year. To arrive at this figure, I made sure whatever this multiple is going to be, it ultimately cannot propel Tesla to grow beyond or below the nominal GDP growth rate of the world.

The reason for using the nominal GDP growth rate of the world is that the cashflows are nominal and Tesla is a global company, meaning poor economic performance around anywhere in the world will have an impact on Tela's business. ***As per Bloomberg the global economy GPD growth rate for Q1 2023 stands at 7.0%***. An ***exit EBITDA multiple of 18.7x*** makes sure that this growth cap is obeyed.

Enterprise Value	
Cumulative Present Value of FCF	**$42,012.2**
Terminal Value	
Terminal Year EBITDA (2027E)	$35,072.6
Exit Multiple	**18.7x**
Terminal Value	**$655,857.4**
Discount Factor	0.62
Present Value of Terminal Value	**$404,014.0**
% of Enterprise Value	*90.6%*
Enterprise Value	**$446,026.2**

Implied Perpetuity Growth Rate	
Terminal Year Free Cash Flow (2027E)	$18,490.1
WACC	10.2%
Terminal Value	$655,857.4
Implied Perpetuity Growth Rate	**7.0%**

Implied EV/EBITDA	
Enterprise Value	$446,026.2
LTM 03/31/2023 EBITDA	15,804.0
Implied EV/EBITDA	**28.2x**

All of this put together results in an Enterprise value of ***$446,026.2 Million***, as ***the number of shares outstanding on the balance sheet date Q1 2023 is 3169.5 million***, and **the implied share price of Tesla is $145.68.**

Implied Equity Value and Share Price	
Enterprise Value	$446,026.2
Less: Total Debt	(5,574.0)
Less: Preferred Stock	-
Less: Noncontrolling Interest	(1,181.0)
Plus: Cash and Cash Equivalents	22,402.0
Implied Equity Value	**$461,673.2**
Fully Diluted Shares Outstanding	3,169.0
Implied Share Price	**$145.68**

The Surprise Factor:

Much of Tesla's valuation lies in its **"What if" story.** What if it manages to capture a significant portion of the market share within the EV compartment of the wider automotive industry, and what happens if it becomes inevitable (Which it already is), undisputed EV maker? If we think a little deeper inside this big picture "what if scenario", it is possible for Tesla to achieve this. This is coupled with governments across the world trying to emphasize and incentivize people to purchase and use EVs, not just people like you and me, even they are incentivizing the big giant companies to use EVs in their supply chain fleet. For example, Walmart, and PepsiCo's recent massive deals with Tesla and other EV players to get trucks powered by clean energy. This is not a possibility but a certainty in today's economic conditions.

Along similar lines, there is something similar cooking in Tesla's factories. It is the **"Full-Self-Driving" (FSD)** capability that Tesla has been emphasizing for ages. *What impact will this have on Tesla's margins, and strategy, and to be much clearer, its valuations? Even if it goes through seamlessly, what is the probability it might be the reality? How much has Tesla invested in this technology? How much more will it have to invest? What could be the payoff and how much uncertainty lies within this payoff? Can Tesla postpone this investment? If so for how long? What about the competition?* **To answer all these questions and to put a number to them, let's put this to the test and see whether there lies any "option" for Tesla to exercise**.

In this case, ***there clearly lies an underlying asset, "FSD" in and of itself.*** *The payoff of this asset is contingent upon several factors. Some of them are, Regulatory approval, The probability of Tesla's FSD being successful in the mainstream market, and whether Tesla is the leader in this too.* Furthermore, **the nature of this payoff is much closer to the one-of-a-stock option**. *If all things go well and Tesla can successfully commercialize FSD in the mainstream market**, the payoff could be very high if not infinite**. On the contrary, if the whole thing turns into an absolute disaster (which is not possible)* ***the maximum money that Tesla could lose is its investments in R&D in FSD***. *Moreover, Tesla will have the option to call off this whole FSD utopia if things go south of the border.* All these reasons compel Tesla's investments in FSD to be valued as a real option.

That being said. It is of utmost importance to consider the steep competition that Tesla will face in terms of hitting the ground running with FSD, this very fact could make the value of this option insignificant. Instead of talking about this, let's see for ourselves what is the value of this real option.

To value this option, I am using ***the Black Sholes option pricing model***. The Black–Scholes model is a valuable tool for valuing options, but it is important to remember that it is based on several assumptions. To be grounded with the reality I have made a few assumptions in addition to the implied assumptions on the BSM model in and of itself that are prudent in valuing FSD.

- **The strike price of the option (X):** The amount of capital expenditure this project will require in the future (and the ones that have already been incurred) Looking back in history Tesla started its research and development in FSD back in 2016. Although the exact dollar amount of investment is not publicly available, I have taken the following assumptions. Since Tesla is known for its intent to always engage in incremental improvements in increasing production capacity and has never invested in bulk, *I have started with a generous 10% of the existing capex in 2016 to be devoted to FSD.* As time goes by, and there were clear signs of Tesla continuously being involved with FSD, it implicitly emphasizes that there are significant improvements and favorable outcomes, *I have raised this 10% cap to 25% by the end of 2022. In the projection period, this number must rigorously increase to 40% by the year 2025 – enabling Tesla to keep up with the competition, as well as this assumption loosely sticks with Elon Musk's promise that FSD will be available by the end of 2023.* The reason for such a "loose" attachment to the promise is that the payoff will be significant and matters only if FSD is commercialized in the mainstream market rather than within the streets of Silicon Valley. *After 2026 and when the whole thing is set up, the percentage of capex spent on FSD can gradually go down to the initial year levels of 10% after which the capex for FSD in terms of any developments and maintenance stays at 5% constant*. Doing so ends up with the investments into the project in present value terms at **$61,974.58 MM**.

- **The underlying asset price (S)**: To project the expected cashflows of this project, I have based my assumption on the existing cashflows generated by the existing business operations. Since the automotive segment contributes to roughly 80% of Tesla's total revenue (excluding regulatory credits*) I started the cash inflows commencing from 2023 which is a bare minimum of 5% of the total existing cashflows. I grew this number step by step to 50% by the end of 2032* (since the payoff and the investments must span for several years to effectively capture the payoff, I projected till 2032 – 10 years of cashflows where the sales figure grows 22% above 2027 levels, which is reasonable) *Post 2032 the cashflows attributable to FSD will grow at a constant 3*% which is very conservative. This set of assumptions lends us a dollar amount of **$465,830.11 MM** in present value.

- **The risk-free interest rate**: For this, I have used the **3.42%** which is the yield of a 10-year treasury security.

- **The volatility of the underlying asset**: To capture the uncertainty that lies within this cash flow, there is no better substitute than the standard deviation of Tesla's share price, which is a roller coaster in and of itself. This number comes up to **52.12%**, which is quite a good estimation.

- **The time to maturity of the option**: As mentioned earlier, Tesla is facing steep competition in terms of coming up with full autonomy. Therefore, for this investment to pay

off and to sustain the growth story Tesla cannot wait more than **2 years** in terms of mainstreaming FSD (by mainstreaming, I mean at least Tesla should have more cars with FSD than the rivals – with Tesla's "software on wheels" type of cars, it is quite achievable with a software update or some sort of similar stuff)

Inputs for Option Pricing Model		
S	*$*	*465,830.11*
X	*$*	*61,974.58*
t (Years)		*2*
Rf		*3.42%*
SD		*52.10*
Option Value	***$***	***408,031.28***
Enterprise Value	*$*	*446,026.16*
Total Value	***$***	***854,057.43***
Less: Total Debt	*$*	*(5,574.00)*
Less: Preferred Securities	*$*	*-*
Less: Noncontrolling Interest	*$*	*(1,181.00)*
Plus: Cash and Cash Equivalents	*$*	*22,402.00*
Enterprise Value	*$*	*869,704.43*
Number of shares outstanding		*3169*
Implied share price	**$**	**274.44**

All of this put together, gives an option value of **$408,031.28 MM** on top of the DCF value of ***$446,026.16* MM**. In terms of the per-share value of this option, it adds **$128.76** per share on top of the plain DCF share price of $145.68. **Overall, Tesla's implied share price with this option would be $274.44 if FSD comes true.**

EXHIBIT:

1.1 Income Statement

Income Statement - Year	2,018	2,019	2,020	2,021	2,022	2023E	2024E	2025E	2026E	2027E
Revenues										
Automotive Sales	**$17,631.5**	**$19,952.0**	**$24,604.0**	**$44,125.0**	**$67,210.0**	**$80,838.0**	**$106,021.2**	**$132,716.4**	**$170,865.5**	**$211,246.7**
Automotive Regulatory credits	418.6	594.0	1,580.0	1,465.0	1,776.0	1,635.6	1,484.9	1,427.5	1,252.2	1,062.6
Automotive Leasing	883.5	869.0	1,052.0	1,642.0	2,476.0	2,476.0	2,500.6	2,655.2	3,174.4	3,856.0
Total Automotive revenue	18,933.6	21,415.0	27,236.0	47,232.0	71,462.0	84,949.7	110,006.8	136,799.2	175,292.1	216,165.3
Evergy generation and storage	1,555.2	1,531.0	1,994.0	2,789.0	3,909.0	4,894.3	6,446.2	7,741.4	9,361.8	11,093.0
Services and other	1,391.0	2,226.0	2,306.0	3,802.0	6,091.0	6,091.0	8,826.8	12,254.6	16,297.9	21,010.1
Total Revenues	**21,879.9**	**25,172.0**	**31,536.0**	**53,823.0**	**81,462.0**	**95,935.0**	**125,279.7**	**156,795.2**	**200,951.7**	**248,268.4**
Growth		*15%*	*25%*	*71%*	*51%*	*18%*	*31%*	*25%*	*28%*	*24%*
Cost of Revenues	17,837.9	21,103.0	24,906.0	40,217.0	60,609.0	79,075.5	105,384.2	131,618.0	167,660.1	206,012.7
% of sales	*82%*	*84%*	*79%*	*75%*	*74%*	*82%*	*84%*	*84%*	*83%*	*83%*
Gross Profit	**4,042.0**	**4,069.0**	**6,630.0**	**13,606.0**	**20,853.0**	**16,859.5**	**19,895.5**	**25,177.3**	**33,291.6**	**42,255.7**
Margin	*18%*	*16%*	*21%*	*25%*	*26%*	*18%*	*16%*	*16%*	*17%*	*17%*
Operating Expenses										
Research and Development (Amortization)	(1,460.0)	(1,343.0)	(1,491.0)	(2,593.0)	(1,026.4)	(1,559.4)	(2,251.3)	(3,117.8)	(4,224.0)	(5,585.7)
Selling, general and administrative expenses	(2,835.0)	(2,646.0)	(3,188.0)	(4,517.0)	(3,946.0)	(4,511.1)	(5,206.3)	(5,704.2)	(6,762.5)	(7,684.1)
% of sales	13%	11%	10%	8%	5%	5%	4%	4%	3%	3%
Restructuring and other	-	-	-	27.0	(140.0)	-	-	-	-	-
Total Operating Expenses	(4,294.9)	(3,988.9)	(4,678.9)	(7,082.9)	(5,112.4)	(6,070.5)	(7,457.6)	(8,822.0)	(10,986.5)	(13,269.8)
Growth	*20%*	*16%*	*15%*	*13%*	*6%*	*6%*	*6%*	*6%*	*5%*	*5%*
Income from Operations (EBIT)	**(252.9)**	**80.1**	**1,951.1**	**6,523.1**	**15,740.6**	**10,789.0**	**12,437.8**	**16,355.3**	**22,305.1**	**28,986.0**
Margin	*-1%*	*0%*	*6%*	*12%*	*19%*	*11%*	*10%*	*10%*	*11%*	*12%*
Non-Operating expenses										
Interest Expense (see Schedule)	(653.0)	(725.0)	(748.0)	(371.0)	(191.0)	(75.3)	(45.5)	(35.7)	(25.9)	(16.1)
Interest Income	24.0	44.0	30.0	56.0	297.0	162.8	227.6	287.0	403.1	545.9
Other income/expense, net	(123.0)	(64.0)	(79.0)	135.0	(79.0)	175.2	133.7	121.0	85.5	251.3
Total Non-Operating Expenses	(752.0)	(745.0)	(797.0)	(180.0)	27.0	262.6	315.7	372.3	462.6	781.1
Pre-Tax Income	**(1,004.9)**	**(664.9)**	**1,154.1**	**6,343.1**	**15,767.6**	**11,051.6**	**12,753.5**	**16,727.5**	**22,767.8**	**29,767.0**
Income Tax Expense	(58.0)	(110.0)	(292.0)	(699.0)	(1,132.0)	(1,326.2)	(1,530.4)	(2,007.3)	(2,732.1)	(3,572.0)
Rate	*NM*	*NM*	*NM*	*NM*	*NM*	*12%*	*12%*	*12%*	*12%*	*12%*
Net income to Company	(1,062.9)	(774.9)	862.1	5,644.1	14,635.6	9,725.4	11,223.1	14,720.2	20,035.6	26,195.0
Minority Interest	87.0	(87.0)	(141.0)	(125.0)	(31.0)	(31.0)	(31.0)	(31.0)	(31.0)	(31.0)
Net Income	**(975.9)**	**(861.9)**	**721.1**	**5,519.1**	**14,604.6**	**9,694.4**	**11,192.1**	**14,689.2**	**20,004.6**	**26,164.0**
Margin	*-4%*	*-3%*	*2%*	*10%*	*18%*	*10%*	*9%*	*9%*	*10%*	*11%*
Dividend	0	0	0	0	0	0	0	0	0	0
Payout Ratio	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Earnings Per Share	**$ (0.38)**	**$ (0.32)**	**$ 0.26**	**$ 1.87**	**$ 4.67**	**$ 3.06**	**$ 3.53**	**$ 4.64**	**$ 6.31**	**$ 8.26**
Number of Basic Share Outstanding	2,559.0	2,661.0	2,798.0	2,959.0	3,130.0	3,169.0	3,169.0	3,169.0	3,169.0	3,169.0
Income from Operations (EBIT)	**(252.9)**	**80.1**	**1,951.1**	**6,523.1**	**15,740.6**	**10,789.0**	**12,437.8**	**16,355.3**	**22,305.1**	**28,986.0**
Depreciation	1,888.0	2,092.0	2,322.0	2,911.0	3,747.0	5,769.5	6,796.7	8,427.0	11,199.9	13,468.6
% of sales	*9%*	*8%*	*7%*	*5%*	*5%*	*6%*	*5%*	*5%*	*6%*	*5%*
Amortization of R&D					1,026.4	1,559.4	2,251.3	3,117.8	4,224.0	5,585.7
% of sales						*2%*	*2%*	*2%*	*2%*	*2%*
Depreciation and Amortization as a % of sales					*6%*	*8%*	*7%*	*7%*	*8%*	*8%*
EBITDA	**1,635.1**	**2,172.1**	**4,273.1**	**9,434.1**	**19,487.6**	**18,117.9**	**21,485.8**	**27,900.0**	**37,729.0**	**48,040.2**
Margin	7%	9%	14%	18%	24%	19%	17%	18%	19%	19%

1.2 Balance Sheet

Balance Sheet - Year-End	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Assets										
Cash (see Schedule)	3,686.0	6,268.0	19,384.0	17,576.0	16,253.0	20,817.4	26,263.5	35,234.8	48,370.9	65,933.2
Restricted Cash	193.0	246.0	238.0	345.0	294.0	294.0	294.0	294.0	294.0	294.0
Short Term Investments	-	-	-	131.0	5,932.0	6,155.2	6,495.1	6,796.6	7,142.1	7,489.4
Accounts Receivable (A/R)	949.0	1,324.0	1,903.0	1,986.0	3,116.0	3,799.3	5,130.9	6,633.6	8,773.5	11,175.1
Inventory	3,113.0	3,552.0	4,101.0	5,757.0	12,839.0	15,700.3	21,579.5	27,770.2	36,417.7	46,030.0
Prepaid expenses	366.0	713.0	1,091.0	1,305.0	2,483.0	4,172.3	5,898.6	7,945.7	10,905.3	14,364.9
Total Current Assets	**8,307.0**	**12,103.0**	**26,717.0**	**27,100.0**	**40,917.0**	**50,938.6**	**65,661.6**	**84,675.0**	**111,903.6**	**145,286.6**
Research and Development					**6,158.6**	8,329.8	10,922.2	13,869.6	17,389.0	21,335.3
Net Fixed Assets (see Schedule)	19,691.0	20,199.0	23,375.0	31,176.0	36,635.0	38,885.2	41,199.6	42,551.3	43,836.0	45,735.5
Goodwill	68.0	198.0	207.0	200.0	194.0	194.0	194.0	194.0	194.0	194.0
Other Intangible Assets	282.0	339.0	313.0	257.0	215.0	215.0	215.0	215.0	215.0	215.0
Net Intangible Assets (see Schedule)	350.0	537.0	520.0	457.0	409.0	409.0	409.0	409.0	409.0	409.0
Other non-current asstes	1,392.0	1,470.0	1,536.0	3,398.0	4,377.0	4,848.56	6,328.85	7,917.45	10,142.67	12,525.37
Total Assets	**29,740.0**	**34,309.0**	**52,148.0**	**62,131.0**	**82,338.0**	**103,411.2**	**124,521.3**	**149,422.3**	**183,680.2**	**225,291.7**
Liabilities										
Accounts Payable (A/P)	3,405.0	3,771.0	6,051.0	10,025.0	15,255.0	20,094.5	27,035.3	34,084.2	43,824.0	54,347.9
Accrued Liabilities	921.0	1,190.0	1,632.0	2,951.0	3,773.0	4,377.5	5,948.4	7,586.2	9,882.8	12,416.4
Current portion of debt	2,284.0	1,399.0	1,758.0	1,088.0	1,016.0	200.0	200.0	200.0	200.0	200.0
Current portion of finance leases	428.0	614.0	660.0	869.0	971.0	971.0	971.0	971.0	971.0	971.0
Deferred taxes payable	348.0	611.0	777.0	1,122.0	1,235.0	1,235.0	1,235.0	1,235.0	1,235.0	1,235.0
Unearned revenue & Other Current Liabilities	2,607.0	3,082.0	3,370.0	3,650.0	4,459.0	5,251.2	6,857.5	8,582.5	10,999.5	13,589.5
Line of Credit (see Schedule)	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	**9,993.0**	**10,667.0**	**14,248.0**	**19,705.0**	**26,709.0**	**32,129.3**	**42,247.2**	**52,659.0**	**67,112.3**	**82,759.8**
Long-Term Debt (see Schedule)	8,461.0	10,375.0	8,571.0	4,285.0	1,029.0	829.0	629.0	429.0	229.0	29.0
Long-Term Leases (see Schedule)	2,655.0	2,188.0	2,348.0	2,662.0	2,732.0	2,732.0	2,732.0	2,732.0	2,732.0	2,732.0
Deferred revenue, net of current portions	991.0	1,207.0	1,284.0	2,052.0	2,804.0	2,804.0	2,804.0	2,804.0	2,804.0	2,804.0
Deferred tax liabilities, net of current portions	-	66.0	151.0	24.0	82.0	82.0	82.0	82.0	82.0	82.0
Other Long-term liabilities	1,327.0	1,696.0	1,867.0	1,820.0	3,084.0	3,084.0	3,084.0	3,084.0	3,084.0	3,084.0
Total Liabilities	**23,427.0**	**26,199.0**	**28,469.0**	**30,548.0**	**36,440.0**	**41,660.3**	**51,578.2**	**61,790.0**	**76,043.3**	**91,490.8**
Equity										
Common stock	-	1.0	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Additional paid-In Capital	10,249.0	12,736.0	27,260.0	29,803.0	32,177.0	32,177.0	32,177.0	32,177.0	32,177.0	32,177.0
Accumulated other Comprehensive Income	(8.0)	(36.0)	363.0	54.0	(361.0)	(361.0)	(361.0)	(361.0)	(361.0)	(361.0)
Retained Earnings	(5,318.0)	(6,083.0)	(5,399.0)	329.0	12,885.0	28,738.0	39,930.1	54,619.3	74,623.9	100,787.9
Minority interest	1,390.0	1,492.0	1,454.0	1,394.0	1,194.0	1,194.0	1,194.0	1,194.0	1,194.0	1,194.0
Total Equity	**6,313.0**	**8,110.0**	**23,679.0**	**31,583.0**	**45,898.0**	**61,751.0**	**72,943.1**	**87,632.3**	**107,636.9**	**133,800.9**
Total Liabilities & Equity	**29,740.0**	**34,309.0**	**52,148.0**	**62,131.0**	**82,338.0**	**103,411.2**	**124,521.3**	**149,422.3**	**183,680.2**	**225,291.7**

Balance sheet assumptions										
Accounts Receivable (A/R) (Days Sales)	*15.8*	*19.2*	*22.0*	*13.5*	*14.0*	*14.5*	*14.9*	*15.4*	*15.9*	*16.4*
Inventory (Days COGS)	*63.7*	*61.4*	*60.1*	*52.2*	*77.3*	*72.5*	*74.7*	*77.0*	*79.3*	*81.6*
Accounts Payable (A/P) (Days COGS)	*69.7*	*65.2*	*88.7*	*91.0*	*91.9*	*92.8*	*93.6*	*94.5*	*95.4*	*96.3*
Prepaid expenses (as a % of COGS)	*2%*	*3%*	*4%*	*3%*	*4%*	*4.3%*	*4.7%*	*5.1%*	*5.4%*	*5.8%*
Short Term Investments (as a % of sales)	*0.0%*	*0.0%*	*0.0%*	*0.2%*	*7.3%*	*3.8%*	*5.5%*	*4.6%*	*5.1%*	*4.9%*
Other non-current assets (as a % of sales)	*6.4%*	*4.3%*	*2.9%*	*5.5%*	*5.3%*	*5.1%*	*5.1%*	*5.0%*	*5.0%*	*5.0%*
Accrued Liabilities (as a % of Sales)	*4.2%*	*4.7%*	*5.2%*	*5.5%*	*4.6%*	*5.1%*	*5.3%*	*5.4%*	*5.5%*	*5.7%*
Deferred Revenue and other current liabilities (as a	*11.9%*	*12.2%*	*10.7%*	*6.8%*	*5.5%*	*5.5%*	*5.5%*	*5.5%*	*5.5%*	*5.5%*

1.3 Cashflow Statement

Cash Flow Statement - Year	2023E	2024E	2025E	2026E	2027E
Operating Activities					
Net income	9,694.4	11,192.1	14,689.2	20,004.6	26,164.0
Depreciation	5,769.5	6,796.7	8,427.0	11,199.9	13,468.6
Amortization of R&D	1,559.4	2,251.3	3,117.8	4,224.0	5,585.7
(Increase) / Decrease in A/R	(683.3)	(1,331.6)	(1,502.8)	(2,139.9)	(2,401.6)
(Increase) / Decrease in Inventory	(2,861.3)	(5,879.1)	(6,190.7)	(8,647.6)	(9,612.2)
(Increase) / Decrease in Short-term Investments	(223.2)	(339.9)	(301.5)	(345.4)	(347.3)
(Increase) / Decrease in Prepaid expenses and other CA	(1,689.3)	(1,726.3)	(2,047.1)	(2,959.6)	(3,459.7)
Increase / (Decrease) in A/P	4,839.5	6,940.8	7,048.9	9,739.8	10,523.9
Increase / (Decrease) in Accrued Liabilities	604.5	1,570.9	1,637.8	2,296.6	2,533.7
Increase / (Decrease) in Current portion of debt	(816.0)	-	-	-	-
Increase / (Decrease) in Unearned Revenue and other current liabilities	792.2	1,606.2	1,725.1	2,417.0	2,590.0
Cash Flow from Operating Activities	**16,986.4**	**21,081.2**	**26,603.6**	**35,789.4**	**45,045.1**
Investing Activities					
(Capital expenditures) / Proceeds from Asset Sales	(8,019.8)	(9,111.0)	(9,778.7)	(12,484.6)	(15,368.2)
Capital Expenditures - R&D	(3,730.6)	(4,843.7)	(6,065.1)	(7,743.4)	(9,531.9)
Other Investing Activities	(471.56)	(1,480.3)	(1,588.6)	(2,225.2)	(2,382.7)
Cash Flow from Investing Activities	**(12,222.0)**	**(15,435.0)**	**(17,432.4)**	**(22,453.3)**	**(27,282.8)**
Financing Activities					
(Dividend Paid)	-	-	-	-	-
Net Issue / (Repurchase) of Share Capital	-	-	-	-	-
Net Increase / (Decrease) in Long-Term Debt	(200.0)	(200.0)	(200.0)	(200.0)	(200.0)
Net Increase / (Decrease) in Line of Credit	-	-	-	-	-
Cash Flow from Financing Activities	**(200.0)**	**(200.0)**	**(200.0)**	**(200.0)**	**(200.0)**
Net Cash Flow	**4,564.4**	**5,446.2**	**8,971.2**	**13,136.2**	**17,562.3**
Cash at Beginning of Year	16,253.0	20,817.4	26,263.5	35,234.8	48,370.9
Cash at Year-End	**20,817.4**	**26,263.5**	**35,234.8**	**48,370.9**	**65,933.2**

1.4 R&D Capitalization Schedule

R&D Amortization schedule - Year end			2022	2023E	2024E	2025E	2026E	2027E
Year/Period			Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Category - R&D								
Beginning Balance			4,110.0	6,158.6	8,329.8	10,922.2	13,869.6	17,389.0
Plus: Capital Expenditures (Continuing R&D)			3,075.0	3,730.6	4,843.7	6,065.1	7,743.4	9,531.9
Less: Amortization	Useful Life	Asset Base						
	7	4110.0	587.1	587.1	587.1	587.1	587.1	587.1
		CapEx						
Year 0	7	3075.0	439.3	439.3	439.3	439.3	439.3	439.3
Year 1	7	3730.6		532.9	532.9	532.9	532.9	532.9
Year 2	7	4843.7			692.0	692.0	692.0	692.0
Year 3	7	6065.1				866.4	866.4	866.4
Year 4	7	7743.4					1,106.2	1,106.2
Year 5	7	9531.9						1,361.7
Total Amortization			1,026.4	1,559.4	2,251.3	3,117.8	4,224.0	5,585.7
Ending Balance			**6,158.6**	**8,329.8**	**10,922.2**	**13,869.6**	**17,389.0**	**21,335.3**

1.5 Debt Schedule

Debt Schedule - Year	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E
Cash at Beginning of Year						16,253.0	20,817.4	26,263.5	35,234.8	48,370.9
Cash Flow from Operating Acitivities						16,986.4	21,081.2	26,603.6	35,789.4	45,045.1
Cash Flow from Investing Activities						(12,222.0)	(15,435.0)	(17,432.4)	(22,453.3)	(27,282.8)
Cash Flow from Financing Acitivites (BEFORE Line of Credit)						(200.0)	-200	(200.0)	(200.0)	(200.0)
Less: Minimum Cash Balance	193.0	246.0	238.0	345.0	294.0	294.0	294.0	294.0	294.0	294.0
% of cash balance	*5%*	*4%*	*1%*	*2%*	*2%*	*3%*	*3%*	*3%*	*3%*	*3%*
Surplus Cash / (Necessary to Finance)						20523.4	25969.5	34940.8	48076.9	65639.2
Line of Credit at Year-End	-	-	-	-	-	-	-	-	-	-
Debt										
Long Term Debt, Net of Current Maturities	8,461.0	10,375.0	8,571.0	4,285.0	1,029.0	829.0	629.0	429.0	229.0	29.0
Current Portion of Long Term Debt	2,284.0	1,399.0	1,758.0	1,088.0	1,016.0	200.0	200.0	200.0	200.0	200.0
Total Debt	**10,745.0**	**11,774.0**	**10,329.0**	**5,373.0**	**2,045.0**	**1,029.0**	**829.0**	**629.0**	**429.0**	**229.0**
Multiple of EBITDA	*6.6*	*5.4*	*2.4*	*0.6*	*0.1*	*0.1*	*0.0*	*0.0*	*0.0*	*0.0*
Interest Expense										
Line of Credit										
Interest Rate, %										
Long-Term Debt						75.3	45.5	35.7	25.9	16.1
Interest Rate, %						*5%*	*5%*	*5%*	*5%*	*5%*
Total Interest Expense						**75.3**	**45.5**	**35.7**	**25.9**	**16.1**

1.6 TESLA'S OPTION VALUE

Expected Cash Inflows *(S)*

Cash Inflows due to FSD - Year	2016	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
								1E	2E	3E	4E	5E	6E	7E	8E	9E	10E
Sales				25,172.00	31,536.00	53,823.00	81,462.00	97,152.50	129,597.07	163,682.65	208,464.11	256,494.27	247,296.00	274,935.00	302,574.00	330,213.00	357,852.00
Cost of Goods Sold				21,103.00	24,906.00	40,217.00	60,609.00	80,037.63	108,876.25	137,362.83	174,238.06	213,497.55	197,836.80	211,699.95	226,930.50	241,055.49	250,496.40
Gross Profit				**4,069.00**	**6,630.00**	**13,606.00**	**20,853.00**	**17,114.87**	**20,720.82**	**26,319.81**	**34,226.06**	**42,996.72**	**49,459.20**	**63,235.05**	**75,643.50**	**89,157.51**	**107,355.60**
% margin				*16%*	*21%*	*25%*	*26%*	*18%*	*16%*	*16%*	*16%*	*17%*	*20%*	*23%*	*25%*	*27%*	*30%*
SG&A				1,897	2,357	4,172	1,365	4,567	5,381	5,948	7,005	7,924	7,640	8,494	9,348	10,202	11,055
% of sales				*8%*	*7%*	*8%*	*2%*	*5%*	*4%*	*4%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*	*3%*
EBITDA				**2,172.11**	**4,273.10**	**9,434.08**	**19,487.57**	**12,548.10**	**15,339.38**	**20,371.99**	**27,220.85**	**35,072.59**	**41,819.24**	**54,741.21**	**66,295.78**	**78,955.91**	**96,300.12**
Depreciation & Amortization				2092	2092	2092	4773	7407	9306	11971	15932	19624	18,920.38	21,035.02	23,149.65	25,264.28	27,378.92
% of sales				*8%*	*7%*	*4%*	*6%*	*8%*	*7%*	*7%*	*8%*	*8%*	*8%*	*8%*	*8%*	*8%*	*8%*
EBIT				**80.11**	**2,181.10**	**7,342.08**	**14,714.14**	**5,141.45**	**6,032.89**	**8,400.51**	**11,288.39**	**15,448.46**	**22,898.86**	**33,706.19**	**43,146.13**	**53,691.63**	**68,921.20**
% margin				0%	7%	14%	18%	5%	5%	5%	5%	6%	9%	12%	14%	16%	19%
Taxes	*Tax Rate*	*15%*		12.02	327.17	1,101.31	2,207.12	771.22	904.93	1,260.08	1,693.26	2,317.27	3,434.83	5,055.93	6,471.92	8,053.74	10,338.18
EBIAT				68.09	1,853.94	6,240.77	12,507.02	4,370.23	5,127.96	7,140.44	9,595.13	13,131.19	19,464.03	28,650.26	36,674.21	45,637.88	58,583.02
Plus: Depreciation & Amortization				2092	2092	2092	4773.42857	7406.65	9306.49	11971.48	15932.46	19624.13	18920.38	21035.02	23149.65	25264.28	27378.92
Less: Capital Expenditures				1,432.0	3,232.0	6,514.0	7,163.0	8118.70	9417.52	10196.26	12932.68	15848.27	17329.72	19292.27	21254.82	23217.38	25179.93
Less: (Inc.)/Dec. in Net Working Capital								1470.99	1483.90	1047.35	1106.18	660.98	700.63	276.91	309.54	-114.18	-81.55
Unlevered Free Cash Flow Attributable to Tesla								**2,187.19**	**3,533.04**	**7,868.31**	**11,488.73**	**16,246.07**	**20,354.07**	**30,116.10**	**38,259.50**	**47,798.97**	**60,863.56**
% of Unlevered Free Cash Flow Attributable to Tesla due to FSD								*5%*	*10%*	*15%*	*20%*	*25%*	*30%*	*35%*	*40%*	*45%*	*50%*
Unlevered Free Cash Flow Attributable to Tesla due to FSD								**109.36**	**353.30**	**1,180.25**	**2,297.75**	**4,061.52**	**6,106.22**	**10,540.64**	**15,303.80**	**21,509.54**	**30,431.78**
Present Value of Free Cash Flow								99.26	291.06	882.52	1,559.45	2,501.93	3,414.10	5,349.20	7,049.18	8,992.65	11,547.85
Terminal Value														*Terminal Growth rate*		*3%*	**$ 424,142.92**

Sum of estimates Cash Inflow Due to FSD **$465,830.11**

Expected Capital Expenditures *(X)*

R&D for FSD - Year	2016	2017	2018	2019	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Capital Expenditure	1,440.5	4,081.0	2,319.0	1,432.0	3,232.0	6,514.0	7,163.0	8,118.7	9,417.5	10,196.3	12,932.7	15,848.3	17,329.7	19,292.3	21,254.8	23,217.4	25,179.9
% Expended on FSD	*10%*	*15%*	*20%*	*25%*	*25%*	*25%*	*25%*	*30%*	*35%*	*40%*	*40%*	*20%*	*20%*	*10%*	*10%*	*10%*	*10%*
Capital Expenditure on FSD	144.1	612.2	463.8	358.0	808.0	1,628.5	1,790.8	2,435.6	3,296.1	4,078.5	5,173.1	3,169.7	3,465.9	1,929.2	2,125.5	2,321.7	2,518.0
PV of all the Capital Expenses	130.75	504.30	346.80	242.97	497.74	910.53	908.78	1,121.88	1,378.04	1,547.66	1,781.72	990.88	983.44	496.85	496.84	492.60	484.90
Terminal Value														*Terminal Growth Rate*		*5%*	**$ 48,657.92**

Total Expected Cash to be invested in developing, upgrading and maintaining FSD in perpetuity **$ 61,974.58**

Inputs for Option Pricing Model	
S	*$ 465,830.11*
X	*$ 61,974.58*
t (Years)	*2*
Rf	*3.42%*
SD	*52.10*
Option Value	***$ 408,031.28***
Enterprise Value	*$ 446,026.16*
Total Value	***$ 854,057.43***
Less: Total Debt	*$ (5,574.00)*
Less: Preferred Securities	*$ -*
Less: Noncontrolling Interest	*$ (1,181.00)*
Plus: Cash and Cash Equivalents	*$ 22,402.00*
Enterprise Value	*$ 869,704.43*
Number of shares outstanding	*3169*
Implied share price	**$ 274.44**