

TESLA MOTORS, INC.¹

“Tesla’s mission is to accelerate the world’s transition to sustainable energy”



1. INTRODUCTION

Tesla Motors is an automobile company based in the US, listed in the NASDAQ stock exchange (TSLA). Tesla is not just an average automaker but also a technology and design company strongly focused on energy innovation.

Founded in 2003 by five California-based entrepreneurs, its current CEO is Elon Musk. At that point little did they know of the potential of this firm. In fact, their first car was not announced until 2006 and put out to the market until 2008. The Tesla Roadster was the first mass produced 100% electric vehicle (EV, from now on) legally available for purchase worldwide.

Tesla’s headquarters is located in Palo Alto, California, where much if not all of its technological innovation is being made. As of October 2016 all of their cars are produced and assembled at the Tesla Factory in Fremont, CA, just 20 miles away from Mr. Musk’s office. Also notable is the Tesla Gigafactory, still under construction, a 2 million sq. ft. facility near Reno, NV, a joint-venture facility with Panasonic (a conglomerate company), which outputs most of the lithium-ion battery cells that power the cars. Around 6,000 people and 400 people are employed in both plants, respectively.

Tesla currently offers three different cars (the Model X, the Model S and the Model 3, the latter still not available as of 2016) and a complementary service (Supercharging stations, where Tesla car owners car plug in their vehicle and enjoy a faster recharging time). A shift from luxury sport cars to more affordable vehicles is observed and it is expected to continue along the same lines as EV production is ramped up and competition tightens to attract the masses. The first car (the Roadster, currently discontinued) was a luxury sports car priced at \$110.000 and the newest model, the Tesla Model 3, starts at \$35.000. All in all, each generation of vehicles is sold at a

¹ A work written by Ivan Agudo, Eduard Casanova, Marc Esgleyes, Iñaki Martínez de Morentin and Victor Recacha, under the supervision of Oriol Amat and recommendations from Raffaele Manini

cheaper price than the previous one for the purpose of increasing the customer base and gaining market share.

Tesla's CEO Elon Musk is seen as a driving force not only for his company but also for the automotive and technologic industries. Born in South Africa, his experience in founding and managing industry leading companies (PayPal, SpaceX, SolarCity) clearly helped to the success of Tesla. Having received a BSc both in Physics and Economics, he went on to do a PhD in applied physics, but ditched the program to pursue his business ventures. Many of his enterprises gained from his personal wealth in their early stages, which is a big plus in terms of independence and managerial momentum.

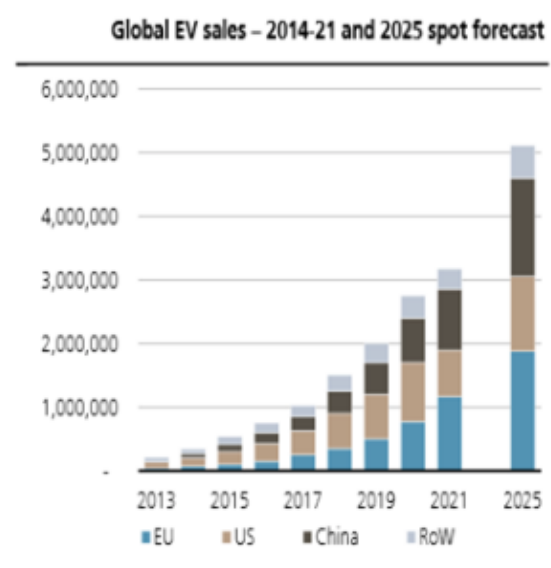
Tesla Motors stands now as a big leading company with good short term prospects, both in the results and market value (mainstream financial outlets consider TSLA a good buy/hold as of October 2016) side of things and in product innovation and managerial strength. However, players in such new and fast changing industries rise and fall with ease, so we must first analyze the situation of the market and main competitors to assess more accurately if the high expectations are likely to be met and how rough the road ahead might be.

2. INDUSTRY OVERVIEW

Situation of the EV industry

Growing fast and with rocketing demand, the EV industry is a very strategic sector. Globally, sales are growing exponentially and are expected to keep following this trend in the future. By 2025, it is estimated that around 5 million EVs will be sold annually, roughly a tenfold increase. Therefore, there seems to be plenty of room to keep growing.

As of 2016, there are 4 main markets for the EV industry. These are China (41% of sales are made there), Europe (32%), the US (20%) and Japan (5%). Theirs represents 97% of the world's EV demand.



Source: Global EV Outlook, UBS estimates

The popularity of EVs remains today relatively low. EVs still represent less than 1% of total car market share in most countries (only in Europe and Japan is this figure improved). Norway is where they are today more widespread, with around ¼ of car sales going to EVs, while hybrids dominate with more than ⅔ of the market (the government gives relatively large subsidies to EVs through a program to incentivize the transition to green mobility). Moreover, a huge expansion for this market is expected in Europe and China.

Key success factors in the EV industry

The automotive industry will be split in two principal agents for our following analysis: EVs and internal combustion engine vehicles (from now on ICEVs). These main groups act as complex complementary goods, when one is increasing its performance the other faces difficulties.

Energy is an agent very important for this analysis. The fact that fossil fuels are running out propose a new scenario, where EVs represent not only an economic alternative to traditional ICEVs but also are considered more ethical and environmental options.

Depletion of fossil fuels implies an increase in gas price and a mobilization of NGOs and governments in favor to more renewable sources of energy, also knowing about the amount of CO2 emissions. The last ones can have the option of investing in EV infrastructure, and the rise in gas price affect negatively ICEV attractiveness and accordingly its demand.

Better conditions for the EV sector are shown up to now. Following that cycle, a jump of EV sales leads to technical and technological improvements in this type of cars and therefore more sales and supposedly reduction in costs.

Strengths

- Strong sales growth has been present during last few years thanks to the diversity of vehicles offered to the customers, going from expensive luxury cars to more affordable ones and adapting to the needs of customers.
- In relative terms, fuel is expensive. Electricity is not. Even more, the new Tesla and SolarCity merger promises integrating super-efficient solar panels into the houses of consumers, which would achieve faster recharging times at an all-time low price.
- EV prices falling as production capacity and technology make progress. EVs are expected to be cheaper than ICEVs by 2022, an ultimate strength against ICEVs

Weaknesses

- Cars are powered by lithium-ion batteries, a common technology but Tesla must deal with the quirks of making these batteries safer and more efficient (i.e. drivers can go longer without recharging). Batteries produced in the Gigafactory are exclusively implemented on Tesla cars so assessing the profitability of said manufacturing plant is even more difficult.
- Tesla has been spending huge amounts of cash due to investments in research and development, as well as for the Gigafactory placed in Nevada in order to provide its cars with latest technology and innovation available.
- The debt the company is using to finance its activity is quite significant and increasing interest payments have a large impact on earnings. A capital increase is most likely a temporary solution to both the lack of liquidity and financing costs. For sure, the growth of the firm will be constrained either by an impossibility to renegotiate debt (cutting financial expenditure) or by the sale of proprietary shares in an attempt to improve liquidity.

Opportunities

- When launched, Model 3 may be an industry game changer. Tesla offers its usual quality and innovative features (including the new self-driving mode) at a competitive price, starting at \$35,000, representing a potential reason to believe in the increase of sales and thus, becoming the world leader in EVs.
- The industry has a high average in costs of manufacturing electric vehicles. A great opportunity would be to bring costs down. Tesla is actually carrying out that exact strategy with the setting-up of the Gigafactory, decreasing the costs.
- The incoming market transition to renewable sources, and cleaner cars. Depletion of fossil fuels puts a long-run deadline to the sector that pushes firms to innovate.

Threats

- EVs may become a much more competitive market. An EV motor is already cheaper to manufacture than an internal-combustion engine. EVs may become cheaper to develop than normal cars (today combustion engines take much of automakers' investment, while electric motors and batteries are already cheaply produced for many purposes), so many new companies would be able to afford produce cars, not needing to be a giant, as now, in order to produce in a less capital intensive industry.

- If R&D of hydrogen fuel cells pans out, this technology may become a better clean alternative than EVs, posing a major threat for this sector.

3. COMPETITION

Tesla Motors faces harsh competition from both world automakers and smaller national producers (the latter mainly in China). As a pioneer, it dominated the EV market after launching its first model in 2008, but it could not keep up with automotive industry giants when they joined the market in 2010. Since then, Nissan has been the world EV leader, and the Nissan-Renault Alliance has more than doubled the number of EVs produced by Tesla Motors.

This is exactly the framework in Europe, where the Nissan-Renault Alliance still leads by far. There have been remarkable breakthroughs by Tesla, though, being able to place its Tesla Model S as the 3rd best selling car in Europe in 2015.

In China, Tesla's sales are strong (China is one of Tesla's main markets, along with the US and the Single Market) cheap domestically produced cars dominate the market. BYD has the lead, followed by 7 Chinese brands, after which comes Tesla, so Tesla is also coming along slowly and with difficulty there.

However, the US, Tesla Motors' home market, presents a different picture. It has faced hardships, rivaled by the Nissan LEAF (best selling EV of all times). Even so, Tesla Motors has been able to achieve a rocketing increase in sales, due to the industry expansion and the fact that, despite the challenges, it took the lead for US EV sales and as of October 2016, Tesla's share of the US EV market for that year has climbed to 31%, with only Nissan's LEAF and plug-in hybrids (mainly by General Motors and Ford) being remarkable competitors. This is significant because the US remains by far the main market for Tesla.

Tesla is expected to continue this trend and register its best ever results for the US in December 2016, After that, it is widely expected to face more pressure, due to new moves by competitors in 2017, especially the launch of the Chevrolet Bolt EV and the Toyota Prius Prime, and the upgrade of the Nissan LEAF.

4. PRODUCT LINE AND SERVICES OFFERED

Tesla's product line consists, for now, of three electric vehicles available for purchase to end consumers and a line based on electric technology, engineering and storage, still in its development phase, branded Tesla Energy.

We will now focus on the cars and their main success factors:

Model S

“A four-door sedan that brought Tesla to the masses”. Its first mass produced vehicle, capable of accelerating from 0 to 60 mph in 2.8 seconds and 288 miles per charge, auto-pilot ready, it is still the main choice for consumers due to the expected upgradability (the car depends highly on software features, which are updated frequently) and high safety standards.

Model X

“High-performance, sport utility vehicle”. This newer model is aimed to more demanding customers, with a capacity of up to seven adults and a falcon wing door system.

Model 3

“Affordable, self driving luxury sedan”. The last addition to the product line, with deliveries planned for the end of 2017. The newer models promise higher efficiency and range, paired up with what Tesla believes will be the ultimate autopilot mode, capable of dealing with even the most complicated road situations. Some concerns have been raised about the fact that about 373.000 reservations have been made for this car: many believe that a lot of the reservations are duplicated, and many others that Tesla cannot sustain the production of that many cars or meet the delivery dates.

All Tesla orders are placed through their website or sold in physical stores, located in malls and shopping centers and also serve as small expositions of the cars and technology. Tesla has more than 190 retail stores and plans to grow international. Tesla follows the example set by consolidated tech companies like Apple in regards to their retail plans: their stores serve more as an exposition center rather than a proper selling point to the end consumer. For instance, the stores usually display a car and a Tesla powertrain (the mechanical part that goes under the main body of the car).

As for the customers, an interesting shift should not go unnoticed: From its conception, Tesla business plans tend to focus even more on the regular consumer looking for a car. Their cars go from being super-luxury and expensive (the Roadster) to affordable sedans (Model 3) capable to compete on the open market. This shift to affordability calls for an important increase in efficiency and manufacturing scale. Concerns are raised when delivery dates are put on the table: Tesla promises to begin Model 3 deliveries at the end of 2017 but most investors and analysts say this is an overestimation and owners will not be able to enjoy their new cars until 2019.

As Tesla Energy is more of an internal, long-term project we can not account for specific products or dates apart from the vague and probably inflated estimates disclosed on the 10-K report (legal document submitted to the regulation institution, the SEC). As it will become clearer when analyzing the Balance Sheet, Tesla's IP and other properties represent a good share of assets, which will help the reader understand the short-term financial problems faced by the firm.

5. FOCUSING ON THE TESLA MARKET

Tesla's aim is to lead a disruptive innovation process in the automotive sector in order to advance towards the development and consolidation of a more sustainable mobility model. Disruptive innovation implies that the introduction of the new technology or product (in this case, EVs), replaces the established market (the car market) with a new one. This kind of revolution is unlikely to be promoted by a major established firm, as developing all-new technology tends to be way costlier, riskier and also takes more time than just upgrading or improving the existing one. Moreover, the resources it takes are much-needed to keep up with competitors who are just upgrading (and not developing all-new) technology. That is why this kind of sharp advances usually (of course, there are exceptions) come from agents external to major established producers. Tesla intends to be this outsider to the market that introduces the breakthrough and pushes for its diffusion.

At first, EVs were not exactly disruptive because of its high cost and relative disadvantages (small charging infrastructure, autonomy, etc.). Indeed, even in 2016 conventional vehicles still dominate the car market in most parts of the world. However, many major automakers noticed the possible threat EVs posed, so they started developing EVs or other greener, more efficient alternatives. This has already changed the industry, and eventually the disruption is likely to take place.

The only question mark is whether Tesla, with its rocketing amount of debt and its uncertain financial situation, will finally be able to lead the revolution in the automotive sector. For now, it is clearly betting everything on its future prospects.

Tesla entered the market not only as an EV producer but also as an expensive brand, trying to consolidate its position in the luxury car market. Its strategy was to keep growing and expanding its production capacity and, while doing so, reducing prices thanks to lower average production costs.

Tesla's cars becoming more and more affordable has meant that the profile of its consumers has also evolved and we can say Tesla's reshaping of the market consists of a model of *disruption from the top*. At first, it focused on high income consumers, looking for different cars in the luxury market. As prices are lowered, the target consumer base expands to incorporate less wealthy consumers, eventually reaching middle class households. This will especially be the case when it launches its Model 3 at \$35,000. About Tesla cars consumers, we can also say they expect a high-quality vehicle. They probably tend to expect less autonomy and more refueling problems when compared to conventional car buyers, but a Tesla buyer does not necessarily represent the average EV buyer, because Tesla's charging infrastructure is more developed than that of its competitors, whose cars just have access to standard power chargers (this consideration is just the case for territories where the Supercharger is widely available).

In conclusion, Tesla's innovation capacity has allowed it to introduce the EV in the car industry as a potential market disruptor while simultaneously expanding its target market, starting with top income consumers and gradually broadening its reach. It seems fair to say that this revolutionizing process is opening the doors to a massive change in the automotive industry and the way we conceive mobility towards a more sustainable model.

6. QUESTIONS

1. *Identify the main financial strengths and weaknesses of Tesla.*
2. *The technological and IP potential seems extraordinarily high, but is that enough to overcome the financial problems Tesla is dealing with in the present?*
3. *May Tesla be involved in some kind of accounts manipulation?*
4. *Would you, as a bank analyst, recommend giving a loan to Tesla today?*
5. *What recommendations would you give to Tesla's direction in order to improve its financial situation?*

Appendix

Annual report 10-K presented on February 26, 2016. Last data about December 31, 2015.

BALANCE SHEET (in thousands of \$)

	Dec. 31,		Dec. 31,		Dec. 31,		Dec. 31,	
	2015		2014		2013		2012	
Assets								
Cash and cash equivalents	1.196.908	15%	1.905.713	33%	845.889	35%	201.890	18%
Restricted cash and marketable securities	22.628	0,28%	17.947	0%	3.012	0%	19.094	2%
Accounts receivable	168.965	2,09%	226.604	4%	49.109	2%	26.842	2%
Inventory	1.277.838	15,79%	953.675	16%	340.355	14%	268.504	24%
Prepaid expenses and other current assets	125.229	1,55%	76.134	1%	27.574	1%	8.438	1%
Total current assets	2.791.568	34,50%	3.180.073	55%	1.265.939	52%	524.768	47%
Operating lease vehicles, net	1.791.403	22,14%	766.744	13%	382.425	16%	10.071	1%
Property, plant and equipment, net	3.403.334	42,06%	1.829.267	31%	738.494	31%	552.229	50%
Restricted cash	31.522	0,39%	11.374	0%	6.435	0%	5.159	0%
Other assets	74.633	0,92%	43.209	1%	23.637	1%	21.963	2%
Total Non-current assets	5.300.892	65,50%	2.650.594	45%	1.150.991	48%	589.422	53%
Total assets	8.092.460	100,00%	5.830.667	100%	2.416.930	100%	1.114.190	100%
Liabilities and Equity								
Accounts payable	916.148	11,32%	777.946	13,34%	303.969	12,58%	303.382	27,23%
Accrued liabilities	422.798	5,22%	268.883	4,61%	108.252	4,48%	39.798	3,57%
Deferred revenue	423.961	5,24%	191.651	3,29%	91.882	3,80%	1.905	0,17%
Resale value guarantees	136.831	1,69%	-	-	7.722	0,32%	4.365	0,39%
Customer deposits	283.370	3,50%	257.587	4,42%	163.153	6,75%	138.817	12,46%
Long-term debt and capital leases	633.166	7,82%	611.099	10,48%	182	0,01%	-	-
Total current liabilities	2.816.274	34,80%	2.107.166	36,14%	675.160	27,93%	539.108	48,39%
Deferred revenue	446.105	5,51%	292.271	5,01%	12.855	0,53%	9.965	0,89%
Long-term debt and capital leases	2.040.375	25,21%	1.818.785	31,19%	181.180	7,50%	3.060	0,27%
Resale value guarantee	1.293.741	15,99%	487.879	8,37%	586.119	24,25%	-	-
Other long-term liabilities	364.976	4,51%	154.660	2,65%	236.299	9,78%	-	-
Total non-current liabilities	4.145.197	51,22%						
Total liabilities	6.961.471	86,02%	4.860.761	83,37%	1.749.810	72,40%	989.490	88,81%
Additional paid-in capital	3.414.692	42,20%	2.345.266	40,22%	-	-	-	-
Accumulated other comprehensive loss	-3.556	-0,04%	-22	0,00%	-	-	-	-
Accumulated deficit	-2.322.323	-28,70%	-1.433.660	-24,59%				
Convertible senior notes	42.045	0,52%	58.196	1,00%				
Total stockholders' equity	1.088.944	13,46%	911.710	15,64%	667.120	27,60%	124.700	11,19%
TOTAL EQUITY*	1.130.989	13,98%	969.906	16,63%	667.120		124.700	
Total liabilities and stockholders' equity	8.092.460	100%	5.830.667	100%	2.416.930	100%	1.114.190	100%

* Total Equity = (stockholders' equity + convertible senior notes)

INCOME STATEMENT (in thousands of \$)

Year Ended December 31,

	2015		2014		2013		2012	
Revenues								
Automotive	3.740.973	92,46%	3.007.012	94,02%	1.921.877	95,45%	385.699	93,33%
Services and other	305.052	7,54%	191.344	5,98%	91.619	4,55%	27.557	6,67%
Total revenues (SALES)	4.046.025	100,00%	3.198.356	100,00%	2.013.496	100,00%	413.256	100,00%
Cost of revenues								
Automotive	-2.823.302	-69,78%	-2.145.749	-67,09%	-1.483.321	-73,67%		
Services and other	-299.220	-7,40%	-170.936	-5,34%	-73.913	-3,67%		
Total cost of revenues	-3.122.522	-77,18%	-2.316.685	-72,43%	-1.557.234	-77,34%	-383.189	-92,72%
Gross profit	923.503	22,82%	881.671	27,57%	456.262	22,66%	30.067	7,28%
Operating expenses								
Research and development	-717.900	-22,45%	-464.700	-14,53%	-231.976	-11,52%	-273.978	-66,30%
Selling, general and administrative	-922.232	-28,83%	-603.660	-18,87%	-285.569	-14,18%	-150.372	-36,39%
Total operating expenses	-1.640.132	-51,28%	-1.068.360	-33,40%	-517.545	-25,70%	-424.35	-102,68%
Loss from operations (EBIT)	-716.629	-22,41%	-186.689	-5,84%	-61.283	-3,04%	-394.283	-95,41%
Interest income	1.508	0,05%	1.126	0,04%	189	0,01%	288	0,07%
Interest expense	-118.851	-3,72%	-100.886	-3,15%	-32.934	-1,64%	-254	-0,06%
Other income (expense), net	-41.652	-1,30%	1.813	0,06%	22.602	1,12%	-1.828	-0,44%
Loss before income taxes (EBT)	-875.624	-27,38%	-284.636	-8,90%	-71.426	-3,55%	-396.077	-95,84%
Provision for income taxes	13.039	0,41%	9.404	0,29%	2.588	0,13%	136	0,03%
Net Profit (Loss)	(888.663)	-27,78%	(294.040)	-9,19%	(74.014)	-3,68%	(396.213)	-95,88%

CASH FLOW STATEMENT (in thousands of \$)

Year Ended December 31,

	2015	2014	2013
Cash Flows from Operating Activities			
Net loss	\$ (888.663)	\$ (294.040)	\$ (74.014)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	422.590	231.931	106.083
Stock-based compensation	197.999	156.496	80.737
Amortization of discount on convertible debt	72.063	69.734	9.143
Inventory write-downs	44.940	15.609	8.918
Amortization of Department of Energy (DOE) loan origination costs	-	-	5.558
Change in fair value of DOE warrant liability	-	-	(10.692)
Fixed asset disposal	37.723	14.178	1.796
Other non-cash operating activities	26.373	7.471	1.815
Foreign currency transaction (gain) loss	55.765	(1.891)	(13.498)
Changes in operating assets and liabilities			
Accounts receivable	46.267	(183.658)	(21.705)
Inventories and operating lease vehicles	(1,573.860)	(1,050.264)	(460.561)
Prepaid expenses and other current assets	(29.595)	(60.637)	(17.533)
Other assets	(24.362)	(4.493)	(434)
Accounts payable and accrued liabilities	263.345	414.856	87.413
Deferred revenue	322.203	209.681	268.098
Customer deposits	36.721	106.230	24.354
Resale value guarantee	442.295	249.492	236.299
Other long-term liabilities	23.697	61.968	33.027
Net cash provided by (used in) operating activities	(524.499)	(57.337)	264.804
Cash Flows From Investing Activities			
Purchases of property and equipment excluding capital leases	(1,634.850)	(969.885)	(264.224)
Withdrawals out of our dedicated DOE account, net	-	-	14.752
(Increase) decrease in other restricted cash	(26.441)	(3.849)	55
Purchases of short-term marketable securities	-	(205.841)	-
Maturities of short-term marketable securities	-	189.131	-
Business acquisition	(12.260)	-	-
Net cash used in investing activities	(1,673.551)	(990.444)	(249.417)
Cash Flows From Financing Activities			
Proceeds from issuance of convertible and other debt	318.972	2,300.000	660.000
Proceeds from issuance of common stock in public offering	730.000	-	360.000
Proceeds from issuance of warrants	-	389.160	120.318
Proceeds from exercise of stock options and other stock issuances	106.611	100.455	95.307
Proceeds from issuance of common stock in private placement	20.000	-	55.000
Principal payments on DOE loans	-	-	(452.337)
Purchase of convertible note hedges	-	(603.428)	(177.540)
Common stock and convertible debt issuance costs	(17.025)	(35.149)	(16.901)
Principal payments on capital leases and other debt	(203.780)	(11.179)	(8.425)
Collateralized lease borrowing	568.745	3.271	-
Net cash provided by financing activities	1,523.523	2,143.130	635.422
Effect of exchange rate changes on cash and cash equivalents	(34.278)	(35.525)	(6.810)
Net increase (decrease) in cash and cash equivalents	(708.805)	1,059.824	643.999
Cash and cash equivalents at beginning of period	1,905.713	845.889	201.890
Cash and cash equivalents at end of period	1,196.908	1,905.713	845.889

Tesla Motors, Inc. Proposed Answers

ANALYSIS OF FINANCIAL STATEMENTS

1. *"Identify the main financial strengths and weaknesses of Tesla."*

The question is answered with the extensive analysis of the annual accounts and various financial indicators below. Some questions depend on specific figures of this analysis, so their respective answers will be clearly stated when needed.

A. The framework: our aim and limitations

- We are willing to simplify the complexity of the financial situation of the firm, doing some analysis in the financial statements **in order to answer the proposed questions.**
- Tesla is the young one of the class, it is the unique major manufacturer in the US born in the 2000's. It is difficult to compare it with well-established firms like GM, born in 1908, or Nissan, born in 1933.
- Because of its being an American firm, we have had some difficulties to get the information. In most cases payment was required to get benchmarks' info.
- Ongoing developments may cause uncertainty in such a volatile market.

B. Analysis of the Balance Sheet

First of all, there are some accounts that are worth commenting:

Convertible Senior Notes:

This account is means a source of financing, so it is in the equity/liability side. They are debt securities issued by the firm that have preference to be paid before other debts, in addition it helps to decrease the interest payments.

Accumulated Deficit:

The accumulated deficit reduces stockholders' equity on the balance sheet. It accumulates all the losses.

As Tesla does not have any reserves, the capital of shareholders is being reduced each year.

Most academic literature points out that it does not necessarily mean a company is in financial trouble, but a needed step to become stronger in the future.

Looking at the Balance sheet we can observe the following:

Starting with cash, the most liquid asset, we see an important decrease in cash from 2014 to 2015 (shown in % as well), which is a weakness for Tesla. Following with the current assets, receivables has been increasing in value, but not in percentage which remains too low, signaling a lack of liquidity reflected in the Working Capital in 2015. It is lower than zero, meaning the firm is in danger of not meeting its short-term debt. Moreover, looking at the overall CA, they just represent a 34,5% in 2015 which is a low percentage compared to past years. As observed in NCA, we see an account called Operating lease vehicles. It is a contract that allows Tesla for the usage of this asset, but it does not provide rights of ownership. This account, together with plant, equipment and property has suffered an increase in the last few years, impacting on total fixed assets, with a percentage of 65,5%, which has been raising recently.

Regarding SE and Liabilities, one important point is to state that despite increasing in value, accounts payable has been decreasing in percentage, and so have CL, which is good for Tesla. However, rather than CL, long-term debt has increased over the last years, with a 51,52% in 2015, impacting negatively in total liabilities, with 86,02% in 2015 which is really high. Therefore, the fact that debt increases implies a reduction in the firm's equity. During first years it was around 50%, but as we see in the balance sheet, from 2012 to 2015, it has experienced a decline in percentage, so Tesla is facing a tough situation.

Quality of debt:

With respect to debt quality, the benchmark in the industry was a ratio of 0,46 in 2013. Back then, Tesla's was better (at 0,39). It has deteriorated a bit recently, reaching 0,40, but this is just a slight change. Overall, this suggests that, although Tesla has become highly indebted because of its need to finance the huge investments that developing its breaking technology requires, it has managed to maintain a relatively wise organization of financing, being able to keep most of debt long term. Therefore, current liabilities are well below concerning levels, not posing a remarkable threat at least in the short term. Moreover, this seems to be a stable situation, as Tesla has managed to prevent debt quality to deteriorate badly over time, which can happen as the due date of long term

debts approaches. While Tesla's debt is high, it has remained permanently high quality (mostly long term debt) so far.

That being said, this might be a misleading information. Notice that a company that is always becoming more and more indebted, although not necessarily in a good financial position, would always keep a healthy debt quality ratio if the new debt is mostly long maturity debt. In other words, debt quality remaining stable would mean nothing else than the issue of a big amount of new long term debt being able to compensate for the older debt becoming short term. Therefore, we can not take conclusions looking at the debt quality ratio alone, and we think this is especially the case because Tesla is a company with a high and mounting accumulation of debt.

This is why, apart from considering current liabilities in relative terms (i.e. the debt quality ratio), we recommend taking into account current liabilities in absolute terms, which have been rocketing over time.

C. Analysis of the Profit and Loss Account

A worrying trend will monopolize the analysis of the P&L: **Tesla has never reported annual profits in all its lifetime.** In fact, through the years the amount of losses follows an increasing pattern:



The trend is repeated in the EBIT values but not on the

gross profit: Tesla increases its gross profits but these results are vastly outweighed by the Operating expenses, which include R&D and "selling, general and administrative expenses". Not including what these expenses really are may be a red signal of questionable cost allocation methods but also supports our argument about the huge importance of Tesla's IP and technological potential (the firm incurs in losses but keeps increasing the cost of long-term, **yet** non-marketable projects).

With respect to the question:

2. *"The technological and IP potential seems extraordinarily high, but is that enough to overcome the financial problems Tesla is dealing with in the present?"*

Notice the value of R&D costs in 2012 with respect to sales (66,30%) and the steady increase since 2013 (11,52%, 14,53% and 22,45%). The behavior is one characteristic of new tech firms. It is also important the increase of interest expenses, due to the accumulation of debt: it reaches 3.72% of sales in 2015, which can be considered a harmless value, but is dangerous considering Tesla has been reporting net losses every year.

The increase in upfront costs to maintain the level of investigation and development of new technologies and processes is a risk Tesla proudly decides to take on: It is unlikely that these costs will be cut in the future. In fact, we would expect such costs to have a multiplying effect in the near future, with the increased scale of production and, therefore, sales. As long as the firm allocates the investors' capital in such a confident way and the latter keep agreeing on this allocation, knowing the adverse results shown on the accounts, we would not make no further recommendation to Mr. Musk and his team.

D. Analysis of the Cash Flow Statement

Of all the years under consideration, 2013 represents the one where results were more positive. It was the year where the Model S started being delivered and Tesla owes much of its financial stability to this specific product.

Operating Activities

Net Cash provided by Operating Activities in 2015 is negative $(-524.499)^2$, which is understandable considering the value of net losses for the same year (-888.663) . It is different from the results of 2013, where **adjustments made to reconcile net loss to net cash** offset the **net losses** and resulted in a positive cash flow (although the accounts by which the cash flow benefits were **Deferred revenue** and **Resale Value Guarantee**; not especially objective accounts).

Investing Activities

The goal of increasing production scale (by improving factories and equipment) explains the \$1.6 Bn. negative flow in this section. It would not be of much concern if operations were able to

² Unless stated, all values are shown in thousands of \$

sustain the drain of cash into such investments, but as we have seen above this is not the case: we will return to this point at the time of making recommendations to improve the current situation.

Financing Activities

It is Tesla's main source of cash: the **issuing of common stock** on the market, added to the low cost of such issuing, relative low **payments on capital leases and other debt** (i.e. low exposure to external lessors and creditors) and not paying **dividends** contributes to the positive result of roughly \$1.5 Bn. It is a signal that the TSLA ticker is still attractive to investors, an assumption favorable for the future of the company but insufficient for its present.

E. Dividends policy and stock situation

Tesla Motors has not paid dividends so far and is not likely to do so as long as it does not report annual profits. However, it is unknown when that will be or if it is willing to revise its dividend policy at any time soon even if it does manage to make profits. Tesla's stock follows the pattern of a high growth company. It is a young firm that invests a lot on its future and its stock follows periods of rocketing increases following very large drops. When investors take an interest in a company like Tesla, they usually expect to take advantage of this high volatility, rather than dividends.

Relevant info:

Market Cap: \$32.61 Bn.

Enterprise Value: \$28.47 Bn.

P/E: -29.95

Stock price (Dec, 1): \$189.40

Tesla's situation in the stock market is a tricky one: until 2013 the stock never surpassed the \$50 mark, but after that went on a roll during 2014 and 2015, achieving its all-time high (\$280) on July 2, 2015. What does this mean? Probably nothing. In fact, Tesla strongly remarks that they don't and will never comment on the stock price, which is a wise decision considering the volatility and psychological traits the ticker has (people like to make assumptions on the price based on the oil price, government grants to EVs and so on).

As this is merely a financial situation analysis and not an investor report, we shall not go into more detail as it would derail the focus on the main topics.

In the chart below, the reader can observe the historic evolution of Tesla's stock.



F. Analysis of the financial ratios

Liquidity ratios

Current Ratio (CA / CL)

2015	2014	2013	2012	2011	2010	2009
0,99	1,51	1,88	0,97	1,95	2,76	1,75

Ideal value: 1,5 - 2

It indicates whether a business is safe from liquidity problems or not and if a default of its payment will occur. In general, if a company has enough current assets to satisfy the short-term debt or current liabilities. If the ratio is higher than 1, it means debt in the short run can be paid, but it is recommended a value around 1,5.

In this case, as it will be seen also analyzing other ratios, during its first years Tesla managed to be in a good position in terms of liquidity but in 2012 lost this great track. In 2013 and 2014, Tesla seemed to recover from its previous liquidity problems but in 2015 the company fell again. In 2015 we clearly see a lack of liquidity, since the company cannot meet all its short term debt with all its current assets.

Quick ratio (Debtors + Cash / CL)

2015	2014	2013	2012	2011	2010	2009
0,48	1,01	1,33	0,42	1,38	1,24	1,27

Ideal value: 1

In this case, the ratio is similar to the last one, since the only thing that changes is that inventories are not taken into account when computing the calculation, giving a much clearer idea of the short term solvency of the company.

Optimal value of this ratio is approximately 1 (or higher) but in our case it is much below than the ideal one. As we have seen before, Tesla presents great values in all the years except for 2012 and

2015. With these values we can state that nowadays the liquid assets owned by the company are not enough to satisfy the current liabilities.

Cash ratio (Cash / CL)

2015	2014	2013	2012	2011	2010	2009
0,42	0,90	1,25	0,37	1,33	1,16	1,21

Ideal value: 0,3

This ratio is useful to see what is the relation between the cash and the short term debt and check if liquidity problems are likely to appear. The ideal value in this case is around 0,3, since it is good for a company to be able to meet 30% of its current liabilities with immediate cash.

Rather than in the other two liquidity ratios, now the value of the ratio is above its optimal value, so it seems Tesla has no problems with the most liquid cash. However, to check it in a deeper way, it is necessary to complement this value with an analysis of the cash flow statement.

The reason Tesla has a quite high level of cash is that they produce a lot in some specific periods, when they launch a car model; and then they have low level of production. Nevertheless, we will analyze also this point in the cash flow statement.

Working capital over short term liabilities (WC / CL)

2015	2014	2013	2012	2011	2010	2009
-0,01	0,51	0,88	-0,03	0,95	1,76	0,75

Ideal value: 0,5 - 1

It measures the capacity of a company to meet its short term liabilities with the working capital. In general, the ideal value is between 0,5 and 1, and in case of being negative, the firm is likely to face problems to meet payments in the short run.

As it happens before, the ratio is lower than 0 in 2012 and 2015 although the good values achieved in the other years, we see as before that Tesla is not in a optimal liquidity position, since the payment of its debt is uncertain.

“Detecting manipulators”

Let's go back to the proposed question referring to the manipulation of the accounts:

3. "May Tesla be involved in some kind of accounts manipulation?"

We will try to answer the question using a quantitative method of analyzing certain accounts, called **Z score**

		2014-2015	2013-2014	
MANIPULATORS Z-score		-0,13	0,28	
R1	(Receivables/Sales)	0,04	0,07	0,589423
R1 Growth		0,58	0,12	
R2	(Inventories/COGS)	0,40	0,41	0,994116
R2 Growth		0,99	0,41	score (Loan)
R3	(Depreciat./PPE)	0,12	0,12	0,143648
R3 Growth		0,97	0,88	
R4	(Liab./Assets)	0,86	0,83	0,72
R4 Growth		1,03	1,15	

Referring the to the previous table, we have computed the Z-score to detect manipulators on the period 2013-2014 and 2014-2015: we can see that in the last years all is in order overall, except for the growth of the Depreciation over PPE ratio. It could inform about some issues on the depreciation accounting. This likeliness of being a manipulator offsets the high ratios of growth on Receivables/Sales and Inventories over cost of goods.

Then, about the period 2013-2014, the analysis highlights some irregularities in the depreciation ratio growth and the debt ratio growth. As in the period explained above the other ratios offset the effect on the Z result.

Therefore, the Z-score above computed yields a low probability of accounts manipulation, but we should further complement this analysis with extensive qualitative analysis.

As a side note, we also computed the Z-score for manipulators of the last published accounts which relate to the quarterly **unaudited** results (as of September 2016). The fact that these accounts were not audited and that Tesla reported profits for the first time raised our suspicions, so here are the results:

Z-Score = -0,614.

Tesla's Z-score for manipulators is negative, suggesting that it is not likely that Tesla manipulated the mentioned accounts. Our initial skepticism met with the hard truth and we can be optimistic about the results, although we shall not make any assessment until the accounts are audited.

Debt ratios

Debt analysis helps understand and answer the question:

4. "Would you, as a bank analyst, give a loan to Tesla today?"

Conclusions will be drawn taking into consideration the following ratios

Debt ratio (L / (E + L))

2015	2014	2013	2012	2011	2010	2009
0,86	0,83	0,72	0,89	0,69	0,46	0,50

Ideal value = 0,4 - 0,6

Instead of liquidity, we now focus on gearing ratios. In this one, we analyze which percentage represents the debt over total asset. It is estimated that the optimal value is between 0,4 and 0,6 since if it is higher than the 60% the volume of leverage is too high and capital structure may be too risky, and if it is below the firm may have too much equity it should invest.

Historically, we can see that the amount of total assets that are financed through debt is very high, meaning that the capital structure of the firm is highly leveraged and therefore, too risky. Equity represents a very weak proportion.

Quality of debt (CL/L)

2015	2014	2013	2012	2011	2010	2009
0,40	0,43	0,39	0,54	0,39	0,48	0,89

Ideal value: Low

It shows the percentage of current liabilities over the total amount of debt. Non-current liabilities are the ones which the company is interested in having because it is the good quality debt, since it makes reference to the payments that needs to be satisfied in the long-run. Therefore, the lower the current liabilities, the higher the quality of debt.

Regarding the value of the ratio we can state that 40% of the total amount of debt has to be satisfied in the short term, while the remaining 60% correspond to long term liabilities. The quality of debt is not bad at all, but could improve, since the lower the value, the better.

Financial expenses (Fin. Exp./Sales)

2015	2014	2013	2012	2011	2010	2009
0,03	0,03	0,02	0	0	0,01	0,02

Ideal value: <0,02

This ratio is computed by dividing the financial expenses over the sales in order to find out which is the impact of this expenses. The optimal value is lower than 0,02.

The value shows that financial expenses has too much impact on sales, representing a 3% in the two last years, while the optimal value is 2%. Therefore, the ratio is not a good indicator for Tesla.

Return Capacity (Net Profit+Depr. / Loans)

Ideal value: High

It helps to explain to which extent the company can pay back its loans.

2015
-0,17

The result in this ratio is a bit confusing, because a firm could repay its debt if it had profits, therefore the result would be positive. In our case the result is negative, so we omit it and state that if they do not change its actual situation they will not be able to repay its debt (with the economic cash flow).

Financial Leverage ([Assets / Equity] x [EBT / EBIT])

2015	2014	2013	2012	2011	2010	2009
8,74	9,17	4,22	8,98	3,22	1,96	2,13

Ideal value: >1

It measures as well profitability, but in this case of the debt, taking into account the impact of interest cost. If the ratio is <1, increasing the debt does not improve profitability while in case >1, it is good since debt increases profitability.

Unlike the last two profitability ratios, this one reflects a positive result since in this case if Tesla increases debt, so does profitability. However, to recommend debt, all ratios need to be balanced and it does not happen. For example, the repayment capacity is quite void, the liquidity ratio does not give us much confidence and finally the quality is not the most desirable,

Leverage should be higher than 1 and ROE > ROI, however, $-0,09 > -0,79$.

Definitely, debt increases profitability, but increasing increasing it is neither recommended nor convenient.

As bank analysts, **we would not risk giving Tesla a loan, either long or short term.** Both the quantity and quality of current debt may prove unsustainable in the medium and short run.

Furthermore, return capacity being negative is already a worrying signal, even if leverage is acceptable and, in theory, debt increases profitability.

Asset turnover ratios

NCA Turnover = (Sales / NCA)

2015	2014	2013	2012	2011	2010	2009
0,76	1,21	1,75	0,70	0,60	0,78	3,75

CA Turnover = (Sales / CA)

2015	2014	2013	2012	2011	2010	2009
1,45	1,01	1,59	0,79	0,55	0,49	1,11

Ideal value: High

Within assets management, fixed assets and current assets turnover is relevant. The higher the ratio the better, since for the firm is important to make as much sales as possible with the CA and NCA available. That is a question of efficiency.

We see that the efficiency of the current assets has been improving over the years while the fixed assets are quite well-managed, but fixed turnover could improve since the value is smaller than 1.

Sales over Assets (Sales / Assets)

2015	2014	2013	2012	2011	2010	2009
0,50	0,55	0,83	0,37	0,29	0,30	0,86

Ideal Value: High

This ratio is the same as the last ones, but taking into account both current and noncurrent assets. It has decreased since 2009 due to the fixed assets management, which is quite low compared with the other ones.

Days Receivable

2015	2014	2013	2012	2011	2010	2009
115	109	62	237	90	141	76

Days Payable

2015	2014	2013	2012	2011	2010	2009
204	266	214	261	65	60	90

In general: Payables(high) > Receivables(low)

It makes reference to the amount of time it has to satisfy its debts with the its creditors and suppliers and the days it takes to the company to collect the money from its customers or debtors, respectively.

Tesla first collects the money from the customers and then it has almost 90 days to pay the accounts still due, which is a good point, a strength.

Inventory Turnover (Sales / Inventory)

2015	2014	2013	2012	2011	2010	2009
3,17	3,35	5,92	1,54	4,08	2,58	4,82

Ideal Value: High

Stock turnover measures the amount of sales generated by Tesla with the use of its inventories, so the higher the value, the greater the sales. During the last years, we can generally see a decreasing trend, except in 2011 and 2013, indicating that inventory management has worsened.

Profitability, self-financing and growth

ROE (Net Profit/Equity)

2015	2014	2013	2012	2011	2010	2009
-0,79	-0,30	-0,11	-3,18	-1,14	-0,75	-0,85

Ideal value: High (>0)

Return on equity measures the relation between the net profit generated by the firm respect all the investment made by the owners, the shareholders' equity. Therefore, optimal value is positive high, since the greater will be the profitability of the company regarding resources invested.

Looking at the ratio, we see the value shows a really negative profitability of the funds provided by the owners because the value is amazingly low and below zero. Investors could think that they will not have a return of its investment in the firm.

ROI (EBIT/Assets)

2015	2014	2013	2012	2011	2010	2009
-0,09	-0,03	-0,03	-0,35	-0,35	-0,38	-0,40

Ideal value: High (>0)

It measures the profitability of a company, the earnings generated with the assets without taking into account how it is financed. It is mainly important this ratio for the company to be high, since the greater will be the profitability. Therefore, the ideal value is positive and as high as possible.

In this case, the value of the ratio is negative, showing that Tesla is not profitable.

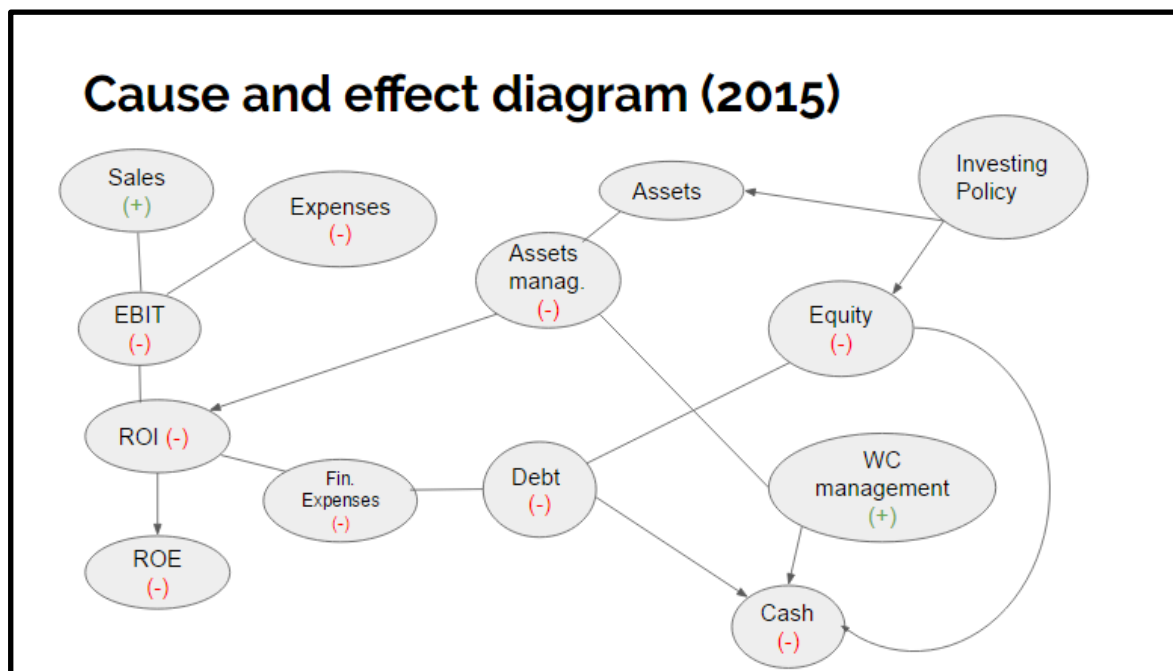
Sales growth (Sales_t / Sales_{t-1})

2015	2014	2013	2012	2011	2010	2009
1,27	1,59	4,87	2,02	1,75	1,04	7,59

Ideal value: High

The growth in sales is explained by the expansion of Tesla's operations. The positive trend is also necessary as it is one of the few strong points Tesla relies on: if, aside from the current financial problems, Tesla suffered from commercial growth ones, we would expect the firm to disappear sooner than later.

G. Cause and effect diagram



Looking at the cause and effect diagram, what is explained is a brief summary of what is happening within Tesla, its strengths, weaknesses and what is the impact of different aspects to others.

Firstly, sales have been increasing, but the COGS (Cost of Goods Sold) or expenses have exceeded this amount, that is why we have a negative earnings before interests and taxes (EBIT).

On the other hand, regarding investing policy, we have seen that equity has been decreasing in percentage during last years, and assets management (specially NCA) is really low. It means capital structure is financed with too much debt, financial expenses are really high and have a large impact on sales. Therefore, Return on Investment (ROI) is negatively affected by this investment policy and is lower than zero, and so is Return on Equity (ROE), signaling debt is not profitable for Tesla.

WC management is a strength since payment period exceed the receivable, so cash cycle, which is the time in which a company finances itself, will be short.

Finally, one important problem the company needs to solve as soon as possible is the liquidity. Its lack of cash and the Working Capital is negative.

H. Main problems and our recommendations

Firstly, we need to identify which aspects of the company are both problematic and relatively straightforward to change in some way in order to answer to the question:

5. “What recommendations would you give to Tesla’s direction in order to improve its financial situation?”

In accordance to that, we have identified these issues:

- High debt, high financial expenses
- High costs
- Difficulty making a net profit (mounting losses)
- Huge investments in new factories, equipment and in increasing production scale affect negatively Cash Flow

Ideas and solutions

As we have seen it will not be easy to solve the complex Tesla’s situation, however we could propose some solutions.

- Applying a new marketing plan to boost sales.
- Doing an expenses reduction plan. We think that Tesla can enter a stage focused on production and commercialization in the sense that it can move on from a period of almost exclusively focusing on R&D.

- Improve the assets management of the company's fixed assets so as to increase the efficiency.
- Transform part of the short-term debt to the long-term by renegotiating with suppliers, satisfying as soon as possible the remaining one in the short run.
- Increasing equity through capital contribution, adopting a stronger position.
- As part of non-current assets is not efficient, Tesla could sell some of it in order to get cash or more liquid assets.

Demonstration

Demonstration of measures from a new expenses and marketing plans

	2015	2016	% Increase
Revenues			
Automotive	3740973	4350000	16%
Services and other	305052	330650	8%
Total revenues (SALES)	4046025	4680650	16%
Cost of revenues			
Automotive	2823302	2823302	0%
Services and other	299220	299220	0%
Total cost of revenues	3122522	3122522	0%
Gross profit	923.503	1558128	69%
Operating expenses			
Research and development	717900	464.700	-35%
Selling, general and administrative	922232	922232	0%
Total operating expenses	1640132	1386932	-15%
Loss from operations (EBIT)	-716629	171196	-124%
Interest income	1508	1508	0%
Interest expense	-118851	-118.000	-1%
Other income (expense). net	-41652	-41652	0%
Loss before income taxes (EBT)	-875624	13052	-101%
Provision for income taxes	13039	13039	0%
Net profit	-888663	13	-100%

Proposed Income Statement for year 2016, achieving positive earnings

We propose an increase in total revenues of 16%, while reducing variable costs of automotive and services (the increase and sales and production would already help in that respect, as costs per unit would go down), in such a way that total variable costs is kept as in 2015. This measure increases the gross profit in 69%. Then reducing the research and development expenses in 35% we get an EBIT of 171196 thousands of dollars, 124% more than in 2015. If the balance sheet and all other variables stayed the same (ceteris paribus), the value of ROI would be in 2016 around the 2%. Assuming interest expense is reduced in a 1%, due to repayment of some debt, the EBIT is in 2016 increased in a 101%. Finally, Tesla would achieve a positive net profit of 13 thousands of dollars, making a return on equity a little bit above 0 (around 0.001%)

Conclusion

The threats and challenges Tesla now faces are not to be ignored. Tesla is not a profitable company yet, but rather one with losses mounting and concerning balance sheet and profit and loss figures as well as the financial ratios we have analyzed. With a massive accumulation of debt and net borrowing rocketing, it is struggling to keep on financing its major investments. Although alternatives to debt (like partnering with bigger companies with more capital to launch large projects) have helped in this respect, we cannot say Tesla's financial health is not somewhat worrying and that its ability to meet its goals are to be taken for granted.

However, Tesla was never meant to be an instant success. We cannot stress enough that what the direction mostly focuses on is not its present, but the future (a relatively near one, on the other hand). If Tesla's prospects of increasing production and sales are met (and they are not unlikely to be if we are to judge for new Model 3 reservation figures), then gloomy as its financial situation may be, just being able to survive now and making it to the very next years would probably allow it to easily overcome its problems.

Such an increase in the scale of production (bringing it to several hundreds of thousands of units per year) would be a huge boost to sales, which would be increased manifold. This bigger scale is also likely to bring down costs per unit. If Tesla is able to reduce them sufficiently, it follows that not only would it start generating profits but it would also probably become the biggest player in the industry, and dominating the EV market means leading a strategic and very rapidly growing sector. The question therefore is, "will Tesla join that group of very successful companies that nevertheless started posting losses for several years in order to finance their visionary investments?"

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