Pitch

A cash flow negative, debt-laden, share-minting business facing severe competition, managed by an erratic lying CEO who misses expectations on just about everything, all the while trading at an unjustifiably high valuation.

Summary

Tesla is a chronically and structurally free cash flow negative company exhibiting a number of alarming aspects all clearly indicating a swift deterioration of its business:

- Negative free cash flow artificially inflated by excessive use of stock-based compensation, increasing payables and accruals, sale of regulatory credits to third parties, and so far incoming customer prepayment deposits;
- Piling up debts issued at increasingly unfavorable terms;
- Dilution of shareholders through constant issue of shares;
- Cutting of vital capital and R&D expenditures, despite the need to support the notion of being a growth company;
- Forced tight control over current business expenses by the CEO himself;
- A too-big-to-count number of missed expectations, misrepresentations, and unfulfilled promises;
- Genuine concerns over quality and safety of its products, backed up by a string of incidents, some resulting in death or serious injury;
- Some of the largest shareholders liquidating their stakes completely, as well as some of the most vocal bulls going silent.

It is our firm belief that the automotive industry is going through a structural shift that only happens once in a lifetime. The best part is that this shift had been anticipated for a long time now, it is not spontaneous, and so all of the major players are prepared for it, spending generously on rolling out whole model lines of hybrid and fully electric vehicles within next 3 – 5 years.

It is therefore safe to assume that the real competition is yet to be seen, and Tesla, to our minds, is in a deadlock – it cannot compete with what's coming without joining the spending spree, which in turn is virtually impossible given the dire state of its financials, dropping customer confidence, and Elon Musk being the CEO. They seem to have fallen a victim of a classic first mover curse.

We will show that even if Tesla manages to maintain our assumed generous cash flow margins above industry averages, cut capex in half in the face of stiffening competition, enjoy a complete tax break for 5 years, decrease its cost of capital with deteriorating quality of the balance sheet, and grow its revenues at 11% p.a. over the next 11 years and then at 2% terminally, it would still be valued 50% below its market price.

We believe that the stock is a good short for a fundamental investor willing to wait for 3 years withstanding possible news-related interim upside volatility. Our safe-bet target price for the short position is circa 107$, a potential 50% profit from the current market price, but we would stay course and wait for the company to completely go out of business, as it increasingly seems that this is a classic case of a death spiral.

Business description

This section of our report is an edited excerpt from the company's annual report for the fiscal year 2018 available here: https://ir.tesla.com/sec-filings.

About the company

Tesla designs, develops, manufactures and sells high-performance fully electric vehicles and energy generation and storage systems. The company has established and continues to grow a global network of stores, galleries, vehicle service centers, Mobile Service technicians, body shops, Supercharger stations and Destination Chargers to accelerate the widespread adoption of its products, and continues to develop self-driving capability in order to improve vehicle safety.

The company currently produces and sells three fully electric vehicles: the Model S sedan, the Model X sport utility vehicle and the Model 3 sedan. The company intends to bring additional all-electric vehicles to market in the future, including Model Y, the Tesla Semi truck, a pickup truck and a new version of the Tesla Roadster.

The company has commenced deliveries of Model S in June 2012 and has continued to improve Model S by introducing performance, all-wheel drive dual motor, and Autopilot options, as well as free over-the-air software updates.

Deliveries of Model X have commenced in September 2015. Model X offers seating for up to seven people, all-wheel drive, and Autopilot functionality.

Deliveries of Model 3, a lower-priced sedan designed for the mass market, have commenced in July 2017, and the company states it has since significantly ramped its production. They are now delivering Model 3 in international markets and are focusing on lowering manufacturing costs while continuing to increase production rate.

Tesla sells vehicles through own sales and service network which is continuing to grow globally. They are also continuing to build a network of Superchargers and Destination Chargers in North America, Europe and Asia to provide alternative convenient options for fast charging.

They manufacture vehicle products primarily at facilities in Fremont, California, Lathrop, California, Tilburg, Netherlands and at Gigafactory 1 near Reno, Nevada. The Fremont facility is the main manufacturing and assembly point as it contains several manufacturing operations, including stamping, machining, casting, plastics, body assembly, paint operations, drive unit production, seat assembly, final vehicle assembly and end-of-line testing. In addition, they manufacture lithium-ion battery packs, electric motors, gearboxes and components for Model S and Model X there.

In January 2019, the company began construction of Gigafactory Shanghai in China, where it intends to commence production of certain trims of Model 3 for the local market by the end of 2019. The idea is to significantly increase the affordability of Model 3 for customers in China by reducing manufacturing and transportation costs and eliminating certain tariffs.

The company also offers financing arrangements for their vehicles in North America, Europe, and Asia primarily through various financial institutions, but they do offer Model S and Model X leasing directly through local subsidiaries in the US and Canada, with an intention of broadening these offerings during the next few years.

Historical fundamentals

As it can be seen from the table below, Tesla had been growing revenues aggressively at 61% p.a. over the last 6 years, while managing to stay free cash flow negative since 2013. It is worth noting, however, that due to a significant contraction in capital expenditures as a percentage of revenues, the company managed to almost show a positive number in 2018.

Debt growth has far outpaced that of revenues, averaging at 82% p.a. It is also worth noting that the Current ratio has a clear trend to deterioration, as current liabilities grow faster than current assets.

Stock – based compensation schemes have always been an important factor of artificially boosting cash flows, averaging at 5% of revenues, which is multiple times above industry average. That adjustment accounted for circa 44% of the 2018 CFO, which is a huge number for a bigcap company operating in a supposedly conservative automotive industry.

The company had also been issuing shares aggressively, with additional paid in capital increasing almost 6 times since 2013.

Exhibit 1

BS and IS items	2018	2017	2016	2015	2014	2013	CAGR/ Average
Revenue	21 461.27	11 758.75	7 000.13	4 050.00	3 200.00	2 014.00	60.5%
Revenue growth in %	83%	68%	73%	27%	59%	387%	
Operating profit/loss	-388.07	-1 632.09	-667.34	-716.60	-186.69	-61.28	44.7%
Operating profit margin	-1.8%	-13.9%	-9.5%	-17.7%	-5.8%	-3.0%	-8.6%
Cash flow from Operation (CFO)	2 097.80	-60.65	-123.83	-524.50	-57.34	264.80	
CFO margin in %	10%	-1%	-2%	-13%	-2%	13%	1.0%
Capital expenditures (Capex)	-2 319.51	-4 081.34	-1 440.47	-1 634.85	-969.89	-264.22	
Capex as % of revenue	10.8%	34.7%	20.6%	40.4%	30.3%	13.1%	25.0%
Free cash flow (CFO- Capex)	-221.71	-4 141.99	-1 564.30	-2 159.35	-1 027.23	0.58	
FCF margin in %	-1%	-35%	-22%	-53%	-32%	0%	-24.0%
Stock - based compensation as % of Revenue	3.80%	6.37%	6.67%	4.89%	4.91%	4.02%	5.1%
ROA (Op. Profit/Assets)	-1.3%	-5.7%	-2.9%	-8.9%	-3.2%	-2.5%	
Inventory	3113.45	2263.54	2067.45	1277.83	953.68	340.36	55.7%
Inventory growth in %	38%	9%	62%	34%	180%	27%	
Accounts payable	3404.45	2390.25	1860.34	916.15	777.95	303.97	62.1%
Payables growth in %	42%	28%	103%	18%	156%	0%	
Current ratio (St. Assets/St.Liabilites)	0.83	0.86	1.07	0.99	1.52	1.88	1.19
Total Debt	11971.37	10214.87	6854.50	2649.00	2488.10	606.90	81.6%
Debt growth in %	17%	49%	159%	6%	310%	30%	
Total Assets	29 739.61	28 655.37	22 664.10	8 067.90	5 830.70	2 416.90	65.2%
Assets growth in %	4%	26%	181%	38%	141%	117%	

**All data from company's financial statements and Bloomberg*

Competition

The automotive industry is highly competitive with thin margins, high capital expenditures, heavy investments into innovation and marketing, pronounced cyclicality, and high barriers of entry being its trademarks.

It is all but certain that the industry is going through a period of structural change that happens once in a century. Mass electric transportation is not a novel hyped – up idea anymore, it is fast becoming a reality that directly plays into governmental efforts to significantly reduce carbon emissions by 2050.

Given such governmental initiatives as the EU 2030 Energy Strategy that states an objective of a 40% cut in greenhouse gas, one can reliably estimate that the share of newly registered ICU cars in the developed world would fall steeply over the next 5 to 10 years.

We identify main current competitors of the company to be General Motors, Ford, Fiat Chrysler, Volkswagen, Toyota, Renault, BMW, and Daimler.

Exhibit 2

2018 or 12 month trailing	EV	Revenue	CFO	CFO margin	Gross margin	EV/S	EV/CFO	EV/EBIT	P/E	P/B	Net Debt/Revenue	Net interest expense/Revenue
TSLA	49 338	22 594	1 857	8.22%	18.40%	2.18	26.57	-	-	7.81	0.46	2.85%
GM	55 618	145 828	14 727	10.10%	18.60%	0.38	3.78	5.93	5.76	1.29	0.58	0.22%
F	30 682	158 721	15 052	9.48%	9.30%	0.19	2.04	6.08	13.89	1.12	0.76	0.75%
FCAU	24 273	124 906	9 610	7.69%	13.70%	0.19	2.53	5.42	5.77	0.78	0.03	0.41%
VW	76 546	275 172	7 091	2.58%	20.10%	0.28	10.79	4.36	6.27	0.69	0.63	0.25%
TM	334 002	272 642	33 976	12.46%	18.00%	1.23	9.83	17.40	10.10	0.95	0.47	0.09%
RNO	14 662	65 763	7 423	11.29%	20.90%	0.22	1.98	1.98	4.13	0.42	0.63	0.55%
BMW	155 735	112 644	6 484	5.76%	18.30%	1.38	24.02	25.63	7.86	0.74	0.92	-
DAI	47 954	193 700	174	0.09%	19.10%	0.25	275.60	6.17	7.87	0.84	0.73	0.36%
Average	92 434	168 672	11 817	7.43%	17.25%	0.52	41.32	9.12	7.71	0.85	0.59	0.38%

**All data from company's financial statements and Bloomberg*

This comparison is not key to our analysis, as we estimate the value of Tesla based on a DCF model with overly optimistic inputs, but a few things can be seen from the table above:

- Tesla is trading at an EV/Sales 4 times above sample average, EV/CFO 4 times above sample median, and P/Book 9 times above sample average;
- Its revenue is 7.5 times smaller than sample average;
- Its net interest expense is already 7.5 times higher than sample average;
- Its CFO margin, adjusted for stock – based compensation, is 4.6%, about half of sample median.

All of the companies mentioned above have either already released fully electric models or are adamant on doing so in the nearest future, as ones that ignore this trend would undoubtedly go out of business within next 10 years. They have vast financial resources, best engineers, designers, marketing and sales, and highly proficient management, not to mention the majority of them have broad product offerings providing them with diversified stable revenue streams.

We believe BMW has the most comprehensive approach as it plans to have an electric version in almost every model lineup by 2021, but others are spending huge amounts of money to keep up, creating a highly competitive environment in which every cent of efficiency, margins, and brand recognition counts.

It would be an understatement to say none of them have a lengthy trail of missed expectations, promises, outrageously aggressive accounting practices full of red flags, and obvious production quality problems Tesla has. It is our firm belief that real competition is yet to be seen, and Tesla is very unlikely to live long enough to take its place amongst the big boys.

Headlines and reports

We have compiled a list of articles in which other researchers have outlined Elon Musk's misrepresentations, PR stunts, and outright lies all geared towards maintaining the desired image of Tesla. We believe this makes for a good read and speaks volumes to the trustworthiness and moral compass of Mr. Musk.

Elon Musk, June 2009: "Tesla will cross over into profitability next month"

Tesla SEC Correspondence Shows A Pattern Of Inaccurate, Incomplete & Misleading Disclosures

Tesla: Check Your Full Self-Driving Snake Oil Expiration Date

As Musk Hyped and Happy-Talked Investors, Tesla Kept Quiet About a Year-Long SEC Probe

The Truth Is Catching Up With Tesla

With Misleading Messages And Customer NDAs, Tesla Performs Stealth Recall

Who You Gonna Believe? Elon Musk's Words Or Your Own Lying Eyes?

How Tesla and Elon Musk Exaggerated Safety Claims About Autopilot and Cars

When Is Enough Enough With Elon Musk?

Musk Talked Merger With SolarCity CEO Before Tesla Stock Sale

Debunking The Tesla Mythology

Tesla Continues To Mislead Consumers

Tesla Misses The Point With Fortune Autopilot Story

Tesla Timeline Shows Musk's Morality Is Highly Convenient

Tesla Scares Customers With Worthless NDAs, The Daily Kanban Talks To Lawyers

Tesla: Contrary To The Official Story, Elon Musk Is Selling To Keep Cash

Tesla: O, What A Tangled Web We Weave When First We Practice To Deceive

I Put 20 Refundable Deposits On The Tesla Model 3

Tesla's Financial Shenanigans

Tesla: A Failure To Communicate

Can You Really Trust Tesla?

Elon Musk Appears To Have Misled Investors On Tesla's Most Recent Conference Call

Understanding Tesla's Potemkin Swap Station

Tesla's Amazing Powerwall Reservations

There had also been a number of reports that discovered inconsistencies and fraudulent behavior of the company, such as this one by Reuters, in which the agency states that "*The great majority of solar cells being produced at Tesla Inc's factory in upstate New York are being sold overseas instead of being used in the company's trademark "Solar Roof" as originally intended*".

According to the original deal with the state, the company was given $750 million in subsidies to build the plant in New York with a promise to employ 1 460 people and spend $500 million per year over 10 years, none of which will ever materialize.

Bernstein research estimates that less than 30% of current Tesla owners exercised their previous Model 3 reservations.

Valuation

We honestly believe the only question a reasonable investor would ask is not whether Tesla will ever live up to its valuation or not, but rather how soon would it go bankrupt.

However, to be prudent, we need to first prove that the current market valuation of the company implies an unreasonably optimistic scenario of eternal expansion and vast profitability, and then estimate our own target price for a short position, based on a set of overly optimistic assumptions.

Valuation model

We believe a simple two – stage DCF based on assuming the revenue growth, CFO margin, terminal growth rate, and cost of capital would be sufficient to accurately demonstrate the market implied scenario and then provide us with a conservative target price.

We will first do a reverse valuation to see what kind of assumptions are implied by the market, do a sanity check on those, and then do an estimation of the company's value based on our own set of assumptions. That, to our mind, is an easier and more effective way of getting the whole picture right and spot obvious market overestimations, this being a case for a short position.

We are keen on reducing the amount of assumptions in the valuation model and the complexity of the analysis to a bare minimum, since our goal is to clearly see whether there is an obvious misvaluation here that warrants no need to overly fine tune things.

Market implied assumptions and valuation

In order to arrive at a valuation of the company at approx. 215$/share, which represents an insignificant deviation from the current market price, we had to assume the following on the revenue side over the next 11 years:

Exhibit 3

Item	Terminal volume	11 year CAGR
Total vehicles sold	1 147 786	16.97%
Average price per car, $	56 393	-2.63%
Automotive revenue, $ 000	64 727	13.89%
Total Revenue, $ 000	77 305	13.67%

**All applicable data from company's financial statements and Bloomberg*

The total number of vehicles sold should grow at 17% p.a. and arrive at 1 148 million, increasing 5 times. The average price per car would drop at 2.6% p.a., the largest contributor being Model 3, which we assumed should be priced at 42 000 $ by year 11 from its current average price of 58 400 $.

We had to assume the leasing, energy, and service & other revenue would grow at an average pace of 13% p.a., while the resulting total revenue would grow at 14% p.a. to increase 4 times.

The full market implied revenue valuation is displayed below:

Exhibit 4

TSLA	*Base year (2018A)*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Terminal year*	CAGR
Average price per Model S&X, $	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	
Average price per Model 3, $	58 439	56 795	55 151	53 507	51 863	50 219	48 575	46 932	45 288	43 644	42 000	42 000	
Average price per Other models, $				85 000	83 571	82 143	80 714	79 286	77 857	76 429	75 000	75 000	
Average price per car, $	**73 626**	**67 452**	**65 228**	**64 975**	**63 326**	**61 825**	**61 624**	**60 437**	**59 254**	**57 896**	**56 538**	**56 393**	*-2.6%*
Model S&X vehicles sold	99 475	104 449	109 671	115 155	120 912	126 958	133 306	139 971	146 970	154 318	162 034	170 136	
Model 3 vehicles sold	140 000	270 000	324 000	388 800	466 560	559 872	587 866	617 259	648 122	680 528	714 554	750 282	
Other models' vehicles sold	-	-	-	50 000	75 000	112 500	168 750	185 625	204 188	214 397	225 117	227 368	
Total vehicles sold	**239 475**	**374 449**	**433 671**	**553 955**	**662 472**	**799 330**	**889 922**	**942 855**	**999 279**	**1 049 243**	**1 101 705**	**1 147 786**	*17.0%*
Total vehicles sold growth rate		*56.4%*	*15.8%*	*27.7%*	*19.6%*	*20.7%*	*11.3%*	*5.9%*	*6.0%*	*5.0%*	*5.0%*	*4.2%*	
Automotive revenue, $ 000	**17 632**	**25 257**	**28 288**	**35 993**	**41 952**	**49 418**	**54 840**	**56 984**	**59 212**	**60 747**	**62 288**	**64 727**	*13.9%*
Automotive revenue growth rate		*43.3%*	*12.0%*	*27.2%*	*16.6%*	*17.8%*	*11.0%*	*3.9%*	*3.9%*	*2.6%*	*2.5%*	*3.9%*	
Leasing revenue, $ 000	883	1 263	1 414	1 800	2 098	2 471	2 742	2 849	2 961	3 037	3 114	3 236	
Energy revenue, $ 000	1 555	2 060	2 587	3 072	3 436	3 608	3 774	3 933	4 082	4 221	4 348	4 478	
Services and other revenue, $ 000	1 391	1 898	2 125	2 704	3 152	3 713	4 120	4 281	4 449	4 564	4 680	4 863	
Total Revenue, $ 000	**21 461**	**30 478**	**34 415**	**43 569**	**50 638**	**59 211**	**65 477**	**68 047**	**70 703**	**72 570**	**74 430**	**77 305**	*13.7%*
Leasing revenue growth rate	*-20.2%*	*42.9%*	*12.0%*	*27.2%*	*16.6%*	*17.8%*	*11.0%*	*3.9%*	*3.9%*	*2.6%*	*2.5%*	*3.9%*	
Energy revenue growth rate	*39.3%*	*32.5%*	*25.6%*	*18.7%*	*11.9%*	*5.0%*	*4.6%*	*4.2%*	*3.8%*	*3.4%*	*3.0%*	*3.0%*	
Services and other revenue growth rate	*38.9%*	*36.4%*	*12.0%*	*27.2%*	*16.6%*	*17.8%*	*11.0%*	*3.9%*	*3.9%*	*2.6%*	*2.5%*	*3.9%*	

**All applicable data from company's financial statements and Bloomberg*

On the margins, cash flow, and growth rate side we had to assume the following by year 11:

Exhibit 5

Item	Value
CFO margin	10.00%
FCFF margin	5.38%
Capex as % of revenue	5.00%
Cost of capital	8.10%
Tax rate	25.00%
Terminal growth rate	3.90%
Terminal cost of capital	8.07%

**All applicable data from company's financial statements and Bloomberg*

The CFO margin starts at an actual artificial level of 10% and stays there, with real cash flows from operations replacing current inflators, such as stock-based compensation and sale of regulatory credits. The FCFF margin starts at an actual level of 0.7% and eventually flattens at 5.4% by year 10. We believe these cash flow margins to be overly generous, as they are above industry averages.

CAPEX starts at an actual level of 11% of revenues and eventually flattens at 5% by year 10. The annual terminal growth rate had to be assumed at 3.9%.

The cost of capital starts at an actual level of 8.9% and flattens at 8.1%. The tax rate starts at 0% and eventually flattens at an average corporate level of 25%.

The full market implied revenue, cash flow, and margin valuation is displayed below:

Exhibit 6

TSLA	*Base year (2018A)*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*Terminal year*
Revenues, 000 $	**21 461**	**30 478**	**34 415**	**43 569**	**50 638**	**59 211**	**65 477**	**68 047**	**70 703**	**72 570**	**74 430**	**77 305**
Revenue growth rate		*42.0%*	*12.9%*	*26.6%*	*16.2%*	*16.9%*	*10.6%*	*3.9%*	*3.9%*	*2.6%*	*2.6%*	*3.9%*
CFO margin	*9.8%*	*-2.0%*	*5.00%*	*6.7%*	*8.33%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*	*10.0%*
CFO, 000 $	**2 098**	**-610**	**1 721**	**2 905**	**4 220**	**5 921**	**6 548**	**6 805**	**7 070**	**7 257**	**7 443**	**7 730**
Tax rate	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*5%*	*10%*	*15%*	*20%*	*25%*	*25%*
Interest paid, 000 $	381	381	381	381	381	381	362	343	324	305	286	286
Capex, 000 $	2 320	2 438	2 422	2 648	2 590	3 553	3 798	3 811	3 818	3 774	3 722	3 865
Capex as % of revenue	*10.8%*	*8.0%*	*7.0%*	*6.1%*	*5.1%*	*6.0%*	*5.8%*	*5.6%*	*5.4%*	*5.2%*	*5.0%*	*5.0%*
FCFF margin	*0.7%*	-	-	*1.5%*	*4.0%*	*4.6%*	*4.8%*	*4.9%*	*5.1%*	*5.2%*	*5.4%*	*5.4%*
FCFF, 000 $	**159**	**-2 667**	**-321**	**638**	**2 010**	**2 749**	**3 112**	**3 337**	**3 576**	**3 788**	**4 007**	**4 151**
Cost of capital		*8.9%*	*8.9%*	*8.9%*	*8.9%*	*8.9%*	*8.9%*	*8.9%*	*8.9%*	*8.9%*	*8.9%*	*8.1%*
Cumulated discount factor		0.92	0.84	0.77	0.71	0.65	0.60	0.55	0.50	0.46	0.42	
PV(FCFF), 000 $		**-2 448**	**-270**	**493**	**1 427**	**1 791**	**1 861**	**1 832**	**1 802**	**1 752**	**1 702**	
Invested capital	13 901	16 339	18 762	21 409	23 999	27 552	31 350	35 160	38 978	42 752	46 474	
ROIC	*15.1%*	*-3.7%*	*9.2%*	*13.6%*	*17.6%*	*21.5%*	*20.9%*	*19.4%*	*18.1%*	*17.0%*	*16.0%*	

**All applicable data from company's financial statements and Bloomberg*

The final valuation looks as follows, with estimated value per share approximately equal to the current market price:

Exhibit 7

Terminal cash flow, 000 $	4 150.87
Terminal growth rate	3.90%
Terminal cost of capital	8.07%
Terminal value, 000 $	99 654.54
PV(Terminal value), 000 $	42 322.50
PV (CF over next 10 years), 000 $	9 942.01
Sum of PV, 000 $	52 264.51
Value of operating assets, 000 $	52 264.51
- Debt, 000 $	11 493.66
- Minority interests, 000 $	1 432.31
+ Cash, 000 $	2 198.17
+ Non-operating assets, 000 $	
Value of equity, 000 $	41 536.71
Number of shares	191.26
Estimated value /share, $	217.17
Current market price, $	210.00
Downside/Upside	3.42%

**All applicable data from company's financial statements and Bloomberg*

Our own assumptions and valuation

While we believe the company is most likely going bankrupt within next 5 years, give or take, we have to give it a chance to prove us wrong by plugging in a set of assumptions that would seem to us as being unattainable, and then see whether the valuation we arrive at would still justify opening a short position.

Exhibit 8

Item	Terminal volume	11 year CAGR
Total vehicles sold	894 751	14.09%
Average price per car, $	56 517	-2.61%
Automotive revenue, $ 000	50 569	11.11%
Total Revenue, $ 000	61 375	11.08%

**All applicable data from company's financial statements and Bloomberg*

The total number of vehicles sold would grow at 14% p.a. and arrive at 895 million, increasing 4 times. The average price per car would drop at 2.6% p.a., the largest contributor being Model 3, which we assumed should be priced at 42 000 $ by year 11 from its current average price of 58 400 $.

We have assumed the leasing, energy, and service & other revenue would grow at an average pace of 11% p.a., while the resulting total revenue would grow at 11% p.a. to increase 3 times.

The full revenue valuation is displayed below:

Exhibit 9

TSLA	Base year (2018A)	1	2	3	4	5	6	7	8	9	10	Terminal year	CAGR
Average price per Model S&X, $	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	95 000	
Average price per Model 3, $	58 439	56 795	55 151	53 507	51 863	50 219	48 575	46 932	45 288	43 644	42 000	42 000	
Average price per Other models, $				85 000	83 571	82 143	80 714	79 286	77 857	76 429	75 000	75 000	
Average price per car, $	**73 626**	**67 081**	**64 893**	**64 883**	**63 424**	**62 173**	**62 058**	**60 830**	**59 608**	**58 177**	**56 742**	**56 517**	*-2.6%*
Model S&X vehicles sold	99 475	99 475	100 470	101 474	102 489	103 514	103 514	103 514	103 514	103 514	103 514	103 514	
Model 3 vehicles sold	140 000	270 000	310 500	357 075	410 636	472 232	486 399	500 991	516 020	531 501	547 446	563 869	
Other models' vehicles sold	-	-	-	50 000	75 000	112 500	168 750	185 625	204 188	214 397	225 117	227 368	
Total vehicles sold	**239 475**	**369 475**	**410 970**	**508 549**	**588 125**	**688 246**	**758 663**	**790 130**	**823 722**	**849 412**	**876 077**	**894 751**	***14.1%***
Total vehicles sold growth rate		*54.3%*	*11.2%*	*23.7%*	*15.6%*	*17.0%*	*10.2%*	*4.1%*	*4.3%*	*3.1%*	*3.1%*	*2.1%*	
Automotive revenue, $ 000	**17 632**	**24 785**	**26 669**	**32 996**	**37 301**	**42 790**	**47 081**	**48 064**	**49 101**	**49 417**	**49 710**	**50 569**	***11.1%***
Automotive revenue growth rate		*40.6%*	*7.6%*	*23.7%*	*13.0%*	*14.7%*	*10.0%*	*2.1%*	*2.2%*	*0.6%*	*0.6%*	*1.7%*	
Leasing revenue, $ 000	883	1 239	1 333	1 650	1 865	2 140	2 354	2 403	2 455	2 471	2 486	2 528	
Energy revenue, $ 000	1 555	2 060	2 587	3 072	3 436	3 608	3 774	3 933	4 082	4 221	4 348	4 478	
Services and other revenue, $ 000	1 391	1 862	2 004	2 479	2 802	3 215	3 537	3 611	3 689	3 713	3 735	3 799	
Total Revenue, $ 000	**21 461**	**29 947**	**32 594**	**40 197**	**45 405**	**51 753**	**56 747**	**58 011**	**59 327**	**59 821**	**60 278**	**61 375**	***11.1%***
Leasing revenue growth rate	*-20.2%*	*40.3%*	*7.6%*	*23.7%*	*13.0%*	*14.7%*	*10.0%*	*2.1%*	*2.2%*	*0.6%*	*0.6%*	*1.7%*	
Energy revenue growth rate	*39.3%*	*32.5%*	*25.6%*	*18.7%*	*11.9%*	*5.0%*	*4.6%*	*4.2%*	*3.8%*	*3.4%*	*3.0%*	*3.0%*	
Services and other revenue growth rate	*38.9%*	*33.9%*	*7.6%*	*23.7%*	*13.0%*	*14.7%*	*10.0%*	*2.1%*	*2.2%*	*0.6%*	*0.6%*	*1.7%*	

**All applicable data from company's financial statements and Bloomberg*

On the margins, cash flow, and growth rate side we have assumed the following by year 11:

Exhibit 10

Item	Value
CFO margin	10.00%
FCFF margin	5.47%
Capex as % of revenue	5.00%
Cost of capital	8.10%
Tax rate	25.00%
Terminal growth rate	1.82%
Terminal cost of capital	8.07%

**All applicable data from company's financial statements and Bloomberg*

The CFO margin starts at an actual artificial level of 10% and stays there, the FCFF margin starts at an actual level of 0.7% and eventually flattens at 5.5% by year 10.

CAPEX starts at an actual level of 11% of revenues and eventually flattens at 5% by year 10. The annual terminal growth rate is assumed at 1.8%.

The cost of capital starts at an actual level of 8.9% and flattens at 8.1%. The tax rate starts at 0% and eventually flattens at an average corporate level of 25%.

The full revenue, cash flow, and margin valuation is displayed below:

Exhibit 11

TSLA	Base year (2018A)	1	2	3	4	5	6	7	8	9	10	Terminal year
Revenues, 000 $	21 461	29 947	32 594	40 197	45 405	51 753	56 747	58 011	59 327	59 821	60 278	61 375
Revenue growth rate		39.5%	8.8%	23.3%	13.0%	14.0%	9.7%	2.2%	2.3%	0.8%	0.8%	1.8%
CFO margin	9.8%	-2.0%	5.00%	6.7%	8.33%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
CFO, 000 $	2 098	-599	1 630	2 680	3 784	5 175	5 675	5 801	5 933	5 982	6 028	6 137
Tax rate	0%	0%	0%	0%	0%	0%	5%	10%	15%	20%	25%	25%
Interest paid, 000 $	381	381	381	381	381	381	362	343	324	305	286	286
Capex, 000 $	2 320	2 396	2 294	2 443	2 323	3 105	3 291	3 249	3 204	3 111	3 014	3 069
Capex as % of revenue	10.8%	8.0%	7.0%	6.1%	5.1%	6.0%	5.8%	5.6%	5.4%	5.2%	5.0%	5.0%
FCFF margin	0.7%	-	-	1.5%	4.1%	4.7%	4.8%	5.0%	5.1%	5.3%	5.5%	5.5%
FCFF, 000 $	159	-2 614	-284	618	1 842	2 451	2 745	2 895	3 053	3 176	3 300	3 354
Cost of capital		8.9%	8.9%	8.9%	8.9%	8.9%	8.9%	8.9%	8.9%	8.9%	8.9%	8.1%
Cumulated discount factor		0.92	0.84	0.77	0.71	0.65	0.60	0.55	0.50	0.46	0.42	
PV(FCFF)		-2 399	-239	478	1 307	1 597	1 642	1 589	1 538	1 469	1 401	
Invested capital	13 901	16 297	18 591	21 034	23 356	26 461	29 753	33 001	36 205	39 316	42 330	
ROIC	15.1%	-3.7%	8.8%	12.7%	16.2%	19.6%	19.1%	17.6%	16.4%	15.2%	14.2%	

**All applicable data from company's financial statements and Bloomberg*

The resulting valuation looks as follows, with an estimated target price of circa 107$, 49% below current market price:

Exhibit 12

Terminal cash flow, 000 $	**3 354.37**
Terminal growth rate	**1.82%**
Terminal cost of capital	**8.07%**
Terminal value, 000 $	**53 702.55**
PV(Terminal value), 000 $	**22 807.05**
PV (CF over next 10 years), 000 $	**8 383.87**
Sum of PV, 000 $	**31 190.92**
Value of operating assets, 000 $	**31 190.92**
- Debt, 000 $	**11 493.66**
- Minority interests, 000 $	**1 432.31**
+ Cash, 000 $	**2 198.17**
+ Non-operating assets, 000 $	
Value of equity, 000 $	**20 463.12**
Number of shares	**191.26**
Estimated value /share, $	**106.99**
Current market price, $	**210.00**
Downside/Upside	**-49.05%**

**All applicable data from company's financial statements and Bloomberg*

Conclusion

As of now, the market clearly overestimates the potential of the company to grow revenues and stay operational, to the point of ignoring the obvious alarming signals on the state of the business and emerging competition from a number of strong and capable companies, each of which is multiple times better off financially and in terms of brand image.

All we really had to do to arrive at our target of 50% below current market price is plug in unattainably generous assumptions on double-digit annual revenue growth, high cash flow margins, low capex, 5-year tax break, relatively low cost of capital, and inflation – like terminal growth rate.

We do not see a way for Tesla to become cash flow positive over any meaningful period of time, something that is necessary in order for the company to evade bankruptcy. Financial engineering has its limits, and we believe they are very close to reaching those.

Meanwhile, increasing debt 20 times over the last 5 years to a current level of 2 book values, almost doubling the number of shares outstanding since 2010, and being cash flow from operations negative up until recently despite all the adjustments, is no easy place to be in the face of the world's largest automakers releasing their directly competing products within next 3 years, all the while own vehicles have a tendency for spontaneous combustion.

It is our firm belief that the company is steamrolling towards bankruptcy and is a good short. Even if it manages to evade such a fate in the next couple of years by relying on dedicated capital sources that would prolong its agony, or selling the business piece by piece, there will most definitely come a time when the market will re-evaluate its expectations and that is a moment when the stock price will crater.

We believe our target price of 109$ is a safe bet on that "reality check" moment by the market, and we advise anyone holding a short position use a sliding stop loss once the stock starts to go down significantly, approaching the target price. Once there, it would not be wise to completely close the position, a much better tactic would be to tighten the stop loss and wait for the price to drop much lower, with the company eventually going into bankruptcy proceedings.

Potential risks to the position

The main fundamental risk we see is Tesla managing to outlive the first wave of competition hitting the market within next 3 years, retaining a meaningful market share.

The stock might shoot up once sales and market share figures on new launches by competitors hit the news, as a few of them will most certainly miss expectations in the short term.

Finally, Mr. Musk could pull another rabbit out of a hat by managing to attract fresh capital from investors in the form of debt or equity, giving the company some more money to burn through.

About us

We are a small team with a deep fundamental long/short equity approach and combined investment experience of more than 20 years, one of us holds CFA and CAIA.

Our first public product, a professional investor open – end fund, was launched a year ago, but we have 2+ years of auditable track record prior to the launch. As we are actively looking to grow our assets under management, we are flexible on the structure of the partnership with potential investors (SMA/separate vehicle/ other), fees, and are open to running customized mandates.

We believe our investment process is sound, our positions have merit, and we fully disclose everything we do to all of our stakeholders.

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Sincerely,

Pinnacle Global Alpha team.

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