May 18, 2016

ACTION

Buy

Tesla Motors Inc. (TSLA)

Return Potential: 22%

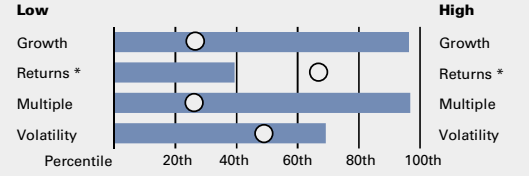
Equity Research

Putting in our reservation for the Model 3; upgrading TSLA to Buy

Source of opportunity

We upgrade shares of Tesla to Buy from Neutral with 22% upside to our 6-month price target of $250. While we believe the volume targets are ambitious, Street and investor expectations seem more grounded and following a 23% decline in the share price post the Model 3 unveil, we do not believe Tesla shares are fully capturing the company's disruptive potential. This combined with a more stable macro backdrop (relative to January/February) and increased confidence in Model 3 demand (from orders and our competitive benchmarking) drives attractive risk/reward. The company has publicly stated it might look to raise capital, and our detailed capex analysis points to capital needs of $1bn.

Investment Profile



* Returns = Return on Capital

For a complete description of the investment profile measures please refer to the disclosure section of this document.

Catalyst

There are admittedly fewer visible catalysts than before, with the next Model 3 update potentially not until next year. We think the introduction of a mobility service is a possibility, though timing is uncertain as management comments on this have been limited. Ultimately we think the biggest fundamental near-term catalyst will be the ramp of the Model X. While progress appears to have been limited since the 1Q16 update (based on the cadence of April/May deliveries), expectations are low in our view with many on the Sell/Buy sides expecting a cut to Tesla's 80-90k delivery target. While we acknowledge this risk we view it as discounted and think any positive news on X production would strongly support the shares.

Valuation

Our unchanged 6-month price target of $250 is derived from five probability weighted automotive scenarios plus stationary storage optionality, all of which embed a 20% cost of capital.

Key risks

Worsening overall investor sentiment lessening the appetite for concept stocks, further delays in the Model X production ramp which could force a guidance reduction as well as exacerbate FCF burn, and higher-than-forecasted operating expenses and/or capex investments.

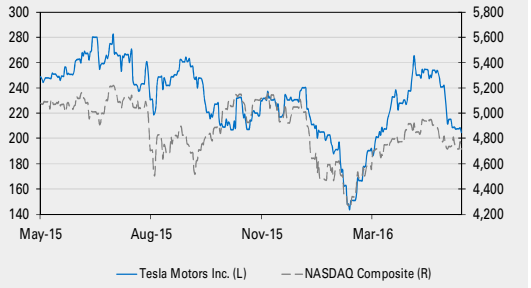
INVESTMENT LIST MEMBERSHIP
Americas Buy List

Key data	Current
Price ($)	204.66
6 month price target ($)	250.00
Market cap ($ mn)	29,214.6

	12/15	12/16E	12/17E	12/18E
Revenue ($ mn) New	**5,291.5**	**9,190.3**	**11,045.1**	**14,982.8**
Revenue ($ mn) Old	5,291.5	9,190.3	11,045.1	14,982.8
EPS ($) New	**(2.30)**	**1.88**	**1.60**	**4.25**
EPS ($) Old	(2.30)	1.88	1.59	4.24
P/E (X)	NM	108.6	127.7	48.1
EV/EBITDA (X)	145.0	26.2	25.3	15.5
ROE (%)	NM	16.4	10.9	25.0

	3/16	6/16E	9/16E	12/16E
EPS ($)	(0.57)	0.04	1.23	1.13

Price performance chart



Share price performance (%)	3 month	6 month	12 month
Absolute	21.3	(4.4)	(17.8)
Rel. to NASDAQ Composite	16.7	1.1	(12.0)

Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 5/17/2016 close.

Coverage View: Neutral

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Tesla Motors Inc.: Summary Financials

Profit model ($ mn)	12/15	12/16E	12/17E	12/18E
Total revenue	5,291.5	9,190.3	11,045.1	14,982.8
Cost of goods sold	(4,039.3)	(6,883.9)	(8,436.7)	(11,242.3)
SG&A	(832.8)	(1,168.0)	(1,275.0)	(1,525.0)
R&D	(628.6)	(663.8)	(929.4)	(1,161.7)
Other operating profit/(expense)	0.0	0.0	0.0	0.0
ESO expense	0.0	0.0	0.0	0.0
EBITDA	**213.5**	**1,136.0**	**1,330.0**	**2,257.6**
Depreciation & amortization	(422.6)	(661.5)	(926.0)	(1,203.9)
EBIT	**(209.1)**	**474.5**	**404.0**	**1,053.8**
Net interest income/(expense)	(117.3)	(77.4)	(57.6)	(76.9)
Income/(loss) from associates	0.0	0.0	0.0	0.0
Others	(41.7)	12.2	12.2	12.2
Pretax profits	**(368.1)**	**409.3**	**358.5**	**989.0**
Provision for taxes	(13.0)	(126.1)	(86.0)	(237.4)
Minority interest	0.0	0.0	0.0	0.0
Net income pre-preferred dividends	**(381.2)**	**283.1**	**272.5**	**751.7**
Preferred dividends	0.0	0.0	0.0	0.0
Net income (pre-exceptionals)	**(381.2)**	**283.1**	**272.5**	**751.7**
Post tax exceptionals	86.2	20.0	0.0	0.0
Net income (post-exceptionals)	**(294.9)**	**303.1**	**272.5**	**751.7**
EPS (basic, pre-except) ($)	**(2.97)**	**2.07**	**1.83**	**4.94**
EPS (diluted, pre-except) ($)	**(2.97)**	**1.76**	**1.60**	**4.25**
EPS (basic, post-except) ($)	**(2.30)**	**2.21**	**1.83**	**4.94**
EPS (diluted, post-except) ($)	**(2.30)**	**1.88**	**1.60**	**4.25**
Common dividends paid	0.0	0.0	0.0	0.0
DPS ($)	0.00	0.00	0.00	0.00
Dividend payout ratio (%)	0.0	0.0	0.0	0.0

Growth & margins (%)	12/15	12/16E	12/17E	12/18E
Sales growth	47.0	73.7	20.2	35.7
EBITDA growth	(24.9)	432.1	17.1	69.7
EBIT growth	(498.8)	326.9	(14.9)	160.8
Net income (pre-except) growth	(594.1)	174.3	(3.8)	175.9
EPS growth	(574.4)	169.6	(11.7)	170.5
Gross margin	23.7	25.1	23.6	25.0
EBITDA margin	4.0	12.4	12.0	15.1
EBIT margin	(4.0)	5.2	3.7	7.0

Cash flow statement ($ mn)	12/15	12/16E	12/17E	12/18E
Net income	(294.9)	303.1	272.5	751.7
D&A add-back (incl. ESO)	422.6	661.5	926.0	1,203.9
Minority interest add-back	0.0	0.0	0.0	0.0
Net (inc)/dec working capital	380.5	422.0	268.8	61.0
Other operating cash flow	(1,032.7)	(675.7)	(376.5)	(509.6)
Cash flow from operations	**(524.5)**	**710.9**	**1,090.9**	**1,506.9**
Capital expenditures	(1,634.9)	(2,266.9)	(2,429.9)	(2,247.4)
Acquisitions	0.0	0.0	0.0	0.0
Divestitures	0.0	0.0	0.0	0.0
Others	(34.0)	(15.6)	0.0	0.0
Cash flow from investing	**(1,668.9)**	**(2,282.5)**	**(2,429.9)**	**(2,247.4)**
Dividends paid (common & pref)	0.0	0.0	0.0	0.0
Inc/(dec) in debt	1,382.6	1,048.9	700.5	658.9
Other financing cash flows	106.6	1,052.8	0.0	0.0
Cash flow from financing	**1,489.2**	**2,101.7**	**700.5**	**658.9**
Total cash flow	**(704.1)**	**530.2**	**(638.5)**	**(81.7)**

Balance sheet ($ mn)	12/15	12/16E	12/17E	12/18E
Cash & equivalents	1,219.5	1,749.7	1,111.2	1,029.5
Accounts receivable	169.0	469.0	548.5	723.6
Inventory	1,277.8	1,603.4	1,912.7	2,499.1
Other current assets	125.2	153.8	153.8	153.8
Total current assets	**2,791.6**	**3,975.9**	**3,726.2**	**4,405.9**
Net PP&E	3,403.3	5,138.0	6,641.9	7,685.5
Net intangibles	0.0	0.0	0.0	0.0
Total investments	0.0	0.0	0.0	0.0
Other long-term assets	1,897.6	2,545.4	2,921.9	3,431.5
Total assets	**8,092.5**	**11,659.2**	**13,289.9**	**15,522.9**
Accounts payable	1,338.9	1,443.7	1,919.8	2,542.6
Short-term debt	633.2	635.3	635.3	635.3
Other current liabilities	844.2	1,815.5	1,997.0	2,196.7
Total current liabilities	**2,816.3**	**3,894.5**	**4,552.2**	**5,374.6**
Long-term debt	2,040.4	2,857.8	3,558.3	4,217.1
Other long-term liabilities	2,146.9	2,549.3	2,549.3	2,549.3
Total long-term liabilities	**4,187.2**	**5,407.1**	**6,107.6**	**6,766.4**
Total liabilities	**7,003.5**	**9,301.6**	**10,659.7**	**12,141.0**
Preferred shares	**0.0**	**0.0**	**0.0**	**0.0**
Total common equity	**1,088.9**	**2,357.7**	**2,630.1**	**3,381.8**
Minority interest	**0.0**	**0.0**	**0.0**	**0.0**
Total liabilities & equity	**8,092.5**	**11,659.2**	**13,289.9**	**15,522.9**

Additional financials	12/15	12/16E	12/17E	12/18E
Net debt/equity (%)	133.5	73.9	117.2	113.0
Interest cover (X)	(1.8)	6.0	7.0	13.7
Inventory days	100.8	76.4	76.1	71.6
Receivable days	13.6	12.7	16.8	15.5
BVPS ($)	8.49	14.66	15.47	19.12
ROA (%)	(5.5)	2.9	2.2	5.2
CROCI (%)	(30.0)	7.9	13.5	17.5
Dupont ROE (%)	**(35.0)**	**12.0**	**10.4**	**22.2**
Margin (%)	(7.2)	3.1	2.5	5.0
Turnover (X)	0.7	0.8	0.8	1.0
Leverage (X)	7.4	4.9	5.1	4.6
Free cash flow per share ($)	(16.84)	(11.37)	(8.97)	(4.87)
Free cash flow yield (%)	(7.3)	(5.6)	(4.4)	(2.4)

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

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Risk-reward now favorable in our view, upgrade to Buy

We chose not to upgrade Tesla before the Model 3 announcement at the end of March as we were concerned that (1) the company would have to take down 2016 guidance, and also about (2) the deteriorating US macro environment, which could have a disproportionate impact on the demand for higher risk profile stocks. However, we also underestimated the amount of reservations Tesla would get for the Model 3. Fast forward to today, we still see risk to the company's 2016 guidance as there is limited evidence that the Model X is ramping yet. However, we think diminished concerns about a recession provide a bit more downside protection than in February, as does the near 400k in reservations which validate the long term demand picture in our view. This has underpinned a 24% increase in our price target since April 24, 2016 (mostly driven by increasing the probability of our upside disruptive case). On the flip side, TSLA shares are down 19% over the same period, leaving us with 22% upside to our $250 target. While we acknowledge the company's own expectations for production in 2018 look difficult to achieve, we believe the risk-reward is favorable.

Product demand is there. We always thought the Model 3 had strong potential as it showed a superior positioning vs. other existing and planned EVs in terms of range relative to price (summarized in our competitive benchmarking analysis on pages 15-17). And this has been strongly supported by the significant reservation demand (approx. 400k) for the Model 3. We believe recent news articles pointing to widespread duplication of reservations have been exaggerated because management comments suggest that the elimination of reservations made with duplicate names or credit cards would still yield a reservation tally "approaching 400k". As we detail in pages 13-14, we give the Models S, X, and 3 the same share of segment as the leading products in these categories, corresponding to shares in the high single digits (Models S/X) and high teens (Model 3) on a fully ramped basis. That said, our disruptive cases would correspond to market share in the 30% range for Model 3, as in these scenarios Tesla would go beyond being a solid competitor to a real disruptor.

Tesla has recently said they would contemplate raising capital, we estimate needs at about $1bn. We conduct a deep dive into the physical costs to build out the capacity needed to reach the company's goal of 500k units by 2018. Under these conditions we forecast a $7.5bn cash use, but that only translates into a $1bn capital raise, after $785mn of ABL availability, and $5.7bn of EBITDA minus cash taxes and interest. We also fine tune our own FCF forecasts for these refined capex numbers and reiterate the capital raise requirements that we initially modeled and do not see much incremental dilution (Exhibits **3** through **7**).

Raised expectations? Not in our view. We believe part of the recent decline in the share price post the Model 3 release was driven by management moving its expectation for 500k units of production up to 2018 from 2020, setting expectations at a level that in our view will be very difficult to achieve (which is in fact very close to our disruptive case – not our base case). This view is based on the prior launch and ramp periods for Tesla's programs having been drawn out. While management was not clear why goals were set so aggressively, we view the adjustment as a target aimed at motivating employees and suppliers. We also believe these projections are heavily discounted with Street estimates for 2018 EBITDA and net income (excluding some of the more extreme outliers) coming in 21% and 24% below our base case.

So what's the catalyst? While we readily admit there are a fewer near-term catalysts in 2016, we do see potential for positive announcements going forward. **First**, the company is due for a 'phase 2' update on the Model 3 – alluded to during the March 31 launch event, that we

believe will take place in early 2017; this should have the added benefit of driving incremental awareness and interest in the mass-market product, and has the potential to drive further reservations. **Secondly**, while the timing is highly uncertain, we do expect a shared mobility announcement from Tesla at some point. While the company has not specifically elaborated on this topic when asked if a mobility service would be of interest, it has reiterated that its mission was to accelerate the world's transportation towards a sustainable system and that if the fleet was sitting idle 96% of the time, there was an opportunity to improve utilization. We have seen the more traditional OEMs making movement here – both on the investment and partnership front, but believe Tesla could have an upper-hand when it chooses given its manufacturing capability and data collection from its fleet of existing connected vehicles – which are currently providing data for millions of miles per day. **Finally**, we believe the Model X production ramp is a critical catalyst. Although difficult to assess, we believe that the current production issues stemming from the Model X are largely discounted and priced into shares. As a result, should the company ramp up production later this year (as we expect), we believe shares would react positively.

Valuation looks favorable. As we discussed above, with all the puts and takes of the last three months, we now see 22% upside potential relative to our 6-month, $250 price target (derived from our probability weighted Automotive Scenarios plus our Tesla Energy valuation – summarized below in **Exhibit 1**).

Exhibit 1: We see 22% upside to TSLA shares
TSLA valuation summary

	Disruptive technology	Category	Historical reference period	EV market volume CAGR (2013-2025)	2025 Global EV market (000)[1]	Present value per share[2]	Scenario Likelihood
Elon as Steve Jobs	iPhone	Consumer electronics	2007-2016E	42%	4,357	$414	11.7%
Elon as Henry Ford	Ford Model T	Automobiles	1909-1917	46%	5,974	$485	11.7%
Elon as the Maytag Repairman	Laundry Appliance/ Dishwasher/Refrigerator	Consumer durables	1916-1924/1947-1955/1930-1938	39%	3,317	$343	11.7%
Base case	EV/Model 3	Automobiles	2017-2025E	33%	2,020	$125	45.0%
Downside case	EV/Model 3	Automobiles	2017-2025E	31%	1,633	$61	20.0%
					Automotive valuation	$213	
					Tesla Energy value per share	$37	
					6-month price target	$250	Upside: 22%

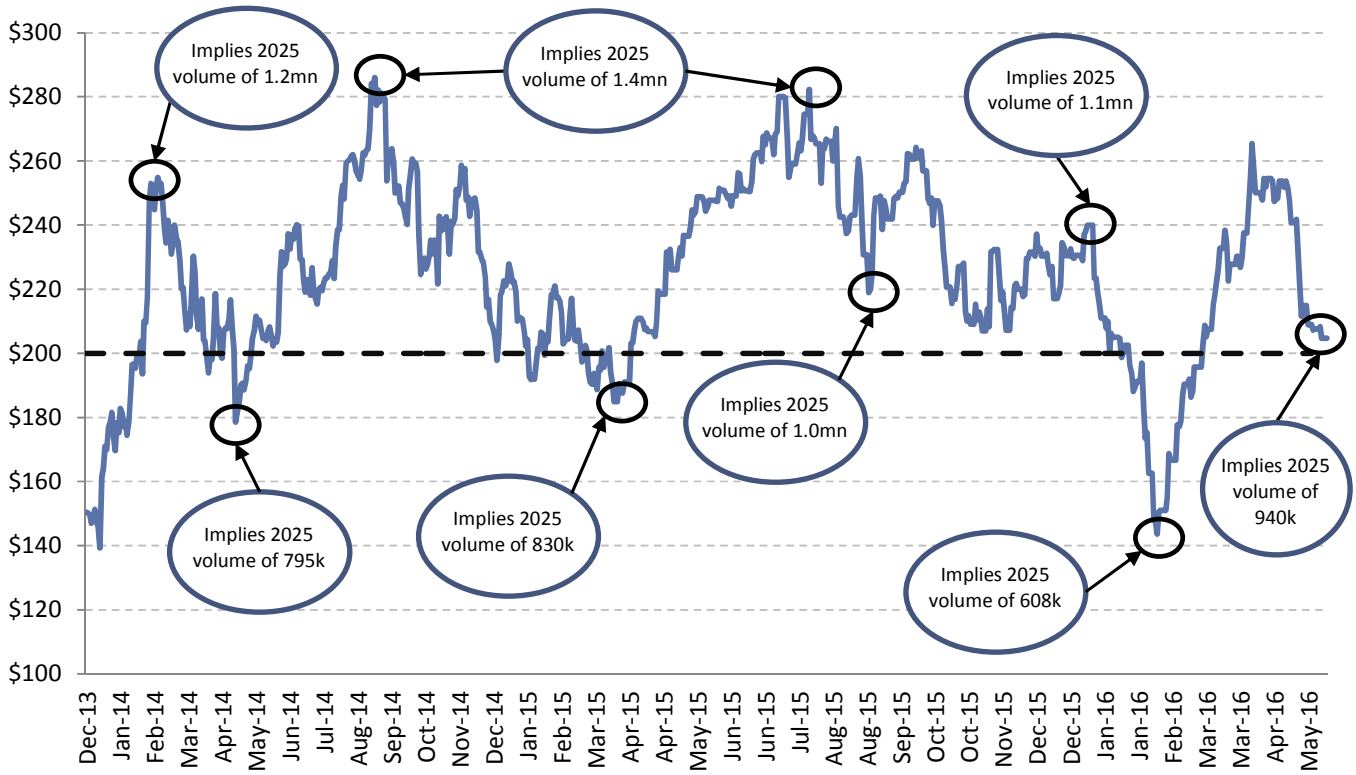
[1] Long range/pure EVs only
[2] Based on average 2019-2025 future values discounted back at 20%/15% cost of equity during high/low growth periods

Note: upside potential is based off 5/17/2016 closing price

Source: Company data, Goldman Sachs Global Investment Research.

In addition, we note that TSLA shares have mostly traded above the $200 range over the past couple years (**Exhibit 2**), and we believe our fundamental valuation work provides a framework that drives per share value of $250 and above (on our upside cases). For illustrative purposes, we lay out the 2025 volume levels that we believe the stock price is discounting on our valuation framework at various inflection points. Interestingly the recently touched 52-week share price low of c. $141 is slightly below our base case (i.e., $162) and discounted a low of 608k units by 2025. At present, Tesla's share price of approx. $205 discounts 2025 volume of 940k; while it may be counterintuitive at first given that volume level is above our base case of 626k, note that our valuation also layers on the value of disruptive cases that we collectively weight at 35%, which drives the upside.

Exhibit 2: Shares have typically seen support sub-$200
TSLA historical share price



Source: FactSet, Goldman Sachs Global Investment Research.

Deep dive on capex reinforces the need to raise additional capital, but only approx. $1 bn

For illustrative purposes, using Tesla's target of 500k vehicle production by 2018 and comparing capital costs to previous OEM investment precedents, we find that Tesla would need to invest approx. $7.5bn to meet these objectives. This in turn requires approx. $1bn in additional capital under the company's volume scenario. This is not very different from the current estimated capital raise requirements that are embedded in our forecasts.

Using Tesla's target for vehicle production of 500k units in 2018, we believe the company would need to invest $7.5bn, requiring $1bn in additional capital. Using publicly available comps from past OEM projects as well as conversations with some leading industry experts in production we break down the company's capital requirements to get to management's delivery goal in **Exhibit 3**. This entails the physical capital expenditures required to get the Model 3 off the ground ($3.2bn), other capex needed to support the ongoing Model S/X programs ($1.8bn), and increased net working capital to support the company's delivery goals of 500k units by 2018 ($2.4bn). On our estimates these components add up to a cash use of $7.5bn, which would be partially offset by the company's ABL program ($785mn in remaining availability as of April 2016), as well as increased cash generation if the company meets its delivery targets ($5.7bn). Netting these together we estimate an incremental capital need of approx. $1bn.

Exhibit 3: We estimate an incremental capital need of $1bn for the Model 3 program
Tesla cash sources and uses for Model 3 launch (in $ mn)

		Comments
Uses of cash		
Paint shop	($50)	$350mn spent, "modest" additional investment for 500k capacity
Stamping facility	($80)	Previously expanded, assume 2 additional lines needed
Body shop	($743)	Based on OEM precedents
Final vehicle assembly	($831)	Based on OEM precedents
Tooling & equipment	($388)	Based on OEM precedents
Gigafactory	($1,141)	70% of total cost allocation for autos based on usage
Total Model 3 capex	**($3,234)**	
Other capex through 2018	($1,834)	Other Gigafactory spend, service center/supercharger expansion, etc.
Change in net working capital	($2,383)	Reflects increased delivery goals of 500k by 2018
Total cash use	**($7,451)**	
Sources of cash		
ABL capacity	$785	$1bn total availability less amount outstanding as of April 2016
EBITDA less cash interest and taxes	$5,735	Reflects increased delivery goals of 500k by 2018
Total cash sources	**$6,520**	
Tesla additional cash need	**($931)**	

Assumptions:	
Model 3 capacity	375,000 Units
% Gigafactory for autos use	70.0%

Source: Company Data, Goldman Sachs Global Investment Research.

We detail the specific cash use components of this exercise below:

Paint shop – Tesla had previously spent approx. $350mn on a new high volume paint shop meant to support the Model S/X and the upcoming Model 3. However, based on management's comments, we believe that the facility will require an additional modest investment in order to support targeted annual production of 500k vehicles. As a result, we factor in an additional $50mn for enhancements to the paint shop.

Stamping facility – The company has also expanded its stamping facility, adding two additional lines for the Model X. While we believe the company currently would have capacity to support all three vehicles, reaching the full 500k unit goal would likely require additional lines to support the incremental volume. Therefore, we model in two additional lines at approx. $40mn a line, for $80mn in additional investment for stamping.

Body shop – We believe that in order to manufacture the Model 3, Tesla will require an additional body shop in the factory. Looking at body shop investments in the past as a gauge, we derive an approximate cost per unit for such an investment. Specifically, we looked at two FCA body shop additions: (1) a $700mn investment announced in 2010 for a new body shop at FCA's Belvidere factory to support the new Dodge Dart, and (2) FCA's $165mn investment announced in 2011 for a new body shop at its Sterling Heights facility. Taken together, we think body shop costs at approx. $2,000 per unit of annual capacity are reasonable (**Exhibit 4**). Assuming additional capacity of 375k is needed for the Model 3, we believe that a new body shop would cost just under $750mn for Tesla.

Exhibit 4: We expect the body shop to cost ~$2,000 per unit of capacity
Previous OEM body shop investments

Year	OEM	Location	Investment	Capacity	$/Unit	Notes
2010	FCA	Illinois	$700mn	265,000	$2,642	New body shop
2011	FCA	Michigan	$165mn	125,000	$1,320	Add body shop
Average					**$1,981**	

Source: Company data, IHS, Goldman Sachs Global Investment Research.

Final vehicle assembly line – In order to support the Model 3, Tesla will also need to add new final vehicle assembly lines. Looking at two previous assembly line additions: (1) Honda's $425mn assembly line at its Alabama facility announced in 2002, and (2) Subaru's announcement in 2013 to spend $160mn to extend its production line and support 100k additional units; we believe that an assembly line would cost approx. $2,200 per unit of annual capacity. This translates to $831mn for new vehicle assembly lines for Tesla with 375k of additional capacity for the Model 3 (**Exhibit 5**). In addition, we note that Tesla has suggested that the Model 3 will be much easier to build and far less complicated than previous models, so we do acknowledge that the final cost could be lower than this although the vehicle's final design has not been revealed.

Exhibit 5: We expect the final assembly line to cost ~$2,200 per unit of capacity
Previous OEM final vehicle assembly line investments

Year	OEM	Location	Investment	Capacity	$/Unit	Notes
2002	Honda	Alabama	$425mn	150,000	$2,833	New 150k unit line
2013	Subaru	Indiana	$160mn	100,000	$1,600	Line extension
Average					**$2,217**	

Source: Company data, IHS, Automotive News, Goldman Sachs Global Investment Research.

Tooling and equipment – Tesla will also clearly need to invest in tooling and equipment for the new Model 3. And by detailing a variety of previous investment announcements from various OEMs relating to tooling and equipment, we can estimate the costs at approx. $1,000 per unit of annual capacity (**Exhibit 6**). As a result, we expect Tesla to spend an additional $388mn on tooling and equipment costs for the Model 3.

Exhibit 6: We expect tooling to cost ~$1,000 per unit of capacity
Previous OEM tooling and equipment investments

Year	OEM	Location	Investment	Capacity	$/Unit	Notes
2006	GM	Michigan	$163mn	250,000	$652	Retooling
2009	Ford	Michigan	$550mn	220,000	$2,500	Retool and re-engineer SUV factory
2009	GM	Ingersoll, Canada	$72mn	200,000	$362	Retooling
2013	GM	Ingersoll, Canada	$200.6mn	300,000	$669	Includes new equipment and tooling
2015	GM	Ingersoll, Canada	$449.3mn	300,000	$1,498	Includes internal equipment and vendor tooling
2015	GM	Michigan	$175mn	100,000	$1,750	Tooling and equipment for new Camaro
2015	Subaru	Indiana	$140.2mn	100,000	$1,402	Machinery to support 100k additional units
2016	GM	Michigan	$520mn	190,000	$2,737	Retooling and new equipment for new products
2016	Honda	Indiana	$40mn	60,000	$667	Adding CR-V to the production
2016	Hyundai	Alabama	$52mn	130,000	$400	Retooling for new Santa Fe Sport production
Average					**$1,264**	
Median					**$1,035**	

Source: Company data, IHS, Automotive News, Road & Track, LA Times, CBC, Goldman Sachs Global Investment Research.

Altogether, we estimate that a new body shop, assembly line, and tooling & equipment totals to approx. $5,200 per unit of annual capacity, which is slightly above the cost for a greenfield facility ($5,000 per unit). To us this makes intuitive sense as the incremental expenses associated with expanding a working factory while keeping production moving are likely to be higher than building a greenfield (**Exhibit 7**).

Exhibit 7: Tesla costs expected to be slightly higher than a brand new facility
Previous OEM greenfield plant investments

Year	OEM	Location	Investment	Capacity	$/Unit	Notes
2006	Kia	Georgia	$1.0bn	300,000	$3,333	Opened in 2009
2008	Volkswagen	Tennessee	$1.0bn	150,000	$6,667	Opened in 2011
2012	Nissan	Aguascalientes, Mexico	$2.0bn	175,000	$11,429	Opened in 2013
2012	Volkswagen/Audi	San Jose Chiapa, Mexico	$1.3bn	150,000	$8,667	To open in 2016
2014	BMW	San Luis Potosi, Mexico	$1.0bn	150,000	$6,667	To open in 2019
2014	Honda	Celaya, Mexico	$800mn	200,000	$4,000	Opened in 2014
2014	Kia	Nuevo Leon, Mexico	$1.0bn	300,000	$3,333	To open in 2016
2015	Toyota	Guanajuato, Mexico	$1.0bn	200,000	$5,000	To open in 2019
2015	Renault-Nissan/Mercedes	Aguascalientes, Mexico	$1.36bn	300,000	$4,533	To open in 2017
2015	Volvo	South Carolina	$500mn	100,000	$5,000	To open in 2018
Average					**$5,863**	
Median					**$5,000**	

Source: Company data, IHS, Automotive News, Bloomberg, Wards, Autoblog, Goldman Sachs Global Investment Research.

Gigafactory – In this exercise, we allocate 70% of total Gigafactory costs to the auto business and the remaining 30% to Tesla Energy which we base off the 35 gigawatt usage for auto and 15 gigawatt usage for battery packs. According to the most recent 10Q, Tesla has already spent approx. $370mn of the $2.0bn total the company expects to spend for the facility and we model Gigafactory costs to support the Model 3 at just over $1.1bn.

Other capex – In addition to costs related to the Model 3 we expect Tesla to spend an additional $1.8bn through 2018 including non-auto related Gigafactory costs, as well as capex for the expansion of the company's service centers, retail stores, and supercharger network. However, we do note that this specific exercise does not include costs for a new

factory which we believe would be required to achieve management's growth goals of 1mn units of vehicle production by 2020 and for which capital spend would likely begin in late 2018/early 2019.

Net working capital – We include an elevated level of net working capital based on our modeling assumptions applied to management's goal of 500k vehicles by 2018. As a result, under these conditions we would expect net working capital to be a use of cash to the tune of $2.4bn through 2018 as the company ramps up production and deliveries (**Exhibit 3**).

As suggested in **Exhibit 3**, we expect these costs to be partially offset by both the company's ABL facility and cash generation which we detail below:

ABL – The company has $1.0bn asset-based credit facility, of which $565mn is outstanding including $30mn on a swing-line loan sub-facility. However, the company has paid back $350mn as of April, leaving $785mn of capacity for additional borrowing.

EBITDA less cash interest and taxes – Under this scenario, we would expect the company to generate $5.7bn in cash from EBITDA less cash interest and taxes through 2018 using management's goals of reaching 500k units by 2018.

In comparison with our hypothetical Model 3 capex exercise discussed above, our actual estimates contemplate a similarly sized $1bn capital raise, but there are a few major differences. There is limited difference in the Model 3 capex assumptions as these costs will need to be taken before the program launches next year, but in 2018 we continue to include construction costs for a new manufacturing facility as the company looks to expand production beyond Fremont. In addition, our EBITDA estimates are lower in our model compared to the Model 3 exercise as we model in fewer vehicle deliveries compared to management goals. However, this is offset by lower net working capital in our model as a result of the lower shipment volumes. Lastly, our model factors in the ability to upsize the company's existing asset-backed facility given increased shipments which also provides an important liquidity offset. Taken together, we arrive at a similar $1bn level of cash need for the company.

Model X has shown improvement, but delivery ramp still a question mark

Reviewing multiple Tesla forums, we have seen a marked decline in Model X complaints, and many of those that remain are for more minute details. As a result, we believe that Tesla has worked through a large number of initial quality issues and are now able to produce vehicles with greater initial quality and potentially less rework. We believe this quality improvement is indicative of increased manufacturing performance and should allow Model X production to ramp going forward. That said, there has been a recent dip in production as indicated by vehicle delivery cadence – though this follows typical Model S monthly seasonality.

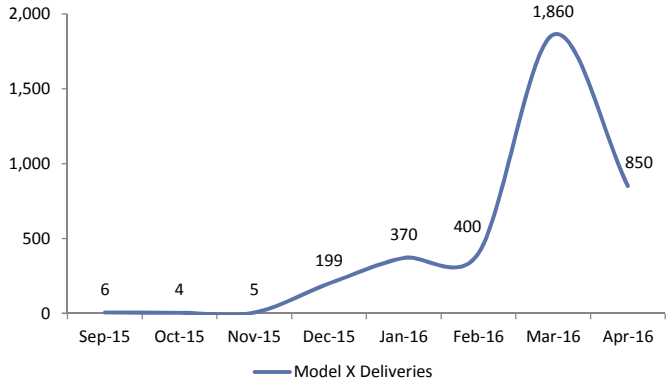
Initial production issues fading, but customers still experiencing some smaller bugs/design issues

Roughly eight months into the Model X launch, the delivery ramp continues to be weak as Tesla works through the initial quality issues. However, after perusing online forums, we believe that anecdotally customers are now reporting much better initial quality in their new deliveries. In particular, we note that there are fewer complaints on fit and finish issues such as those surrounding panel gaps and interior blemishes. We have also seen fewer complaints with regards to the operation of the Falcon Wing doors and other software-related issues. Instead, the majority of complaints on the forums deal with the prolonged delays with deliveries and in some instances, the customer service received while waiting for the order as well as Tesla's attempts to upsell certain options or packages that would lead to an earlier production date. That said, we believe that some product issues likely remain as we have encountered posts regarding the latching mechanism on the front doors as well as some who have reported having numerous squeaks and rattles, which we believe is likely accentuated by the quiet operation of the drivetrain. Additionally, we note that while forum members have been reporting the panoramic windshield "ghosting" issue which has been well-documented by the press, we believe that the issue is due, in large part, to the physics of using laminated glass, which is angled as well as curved at the top – also as detailed in press reports. Furthermore, the windshield "ghosting" effect is not exclusive to Tesla (press reports have indicated other vehicles like the Toyota Prius, Dodge Durango, and Chevrolet Camaro have experienced similar issues) but we think the windshield design (the curve towards the top as it meets the roof)could exaggerate the effect.

While initial quality is improving, it appears Model X production has recently taken a step-back; however, this follows a similar Model S monthly pattern

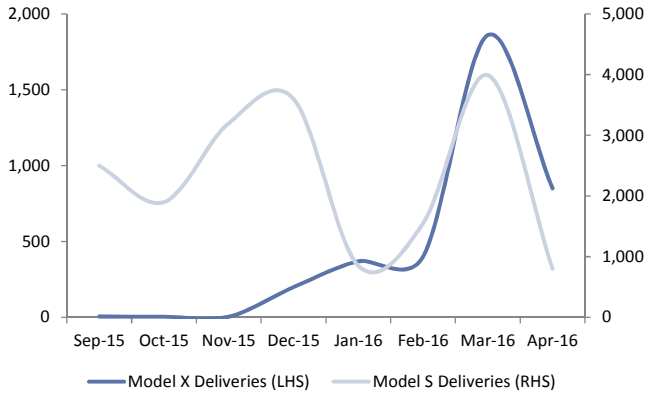
We believe that Tesla has worked through a large number of initial quality issues through either software fixes or enhanced quality control measures and are now able to produce vehicles with greater initial quality and potentially less rework. That said, the delivery ramp decreased considerably following the company's announcement that it had hit a 750 vehicle build rate by the end of March. We do not see this decline as alarming as: (1) the third row seat recall likely negatively impacted production, (2) the company narrative continues to point to material progress in manufacturing quality, and (3) Model X volumes have followed the typical intra-quarter seasonality as the well-established Model S (**Exhibit 8** and **9**). While it is difficult to make a call on Model X production based on the evidence we have, as mentioned earlier, we believe any throughput improvement documented by the company or through monthly deliveries would have a positive impact on the stock given low investor expectations.

Exhibit 8: We believe Model X production has taken a step back following 1Q16's finish...
US Model X deliveries



Source: InsideEVs, Goldman Sachs Global investment Research.

Exhibit 9: ...but this is similar to the typical monthly pattern of the Model S
US Model S/X deliveries

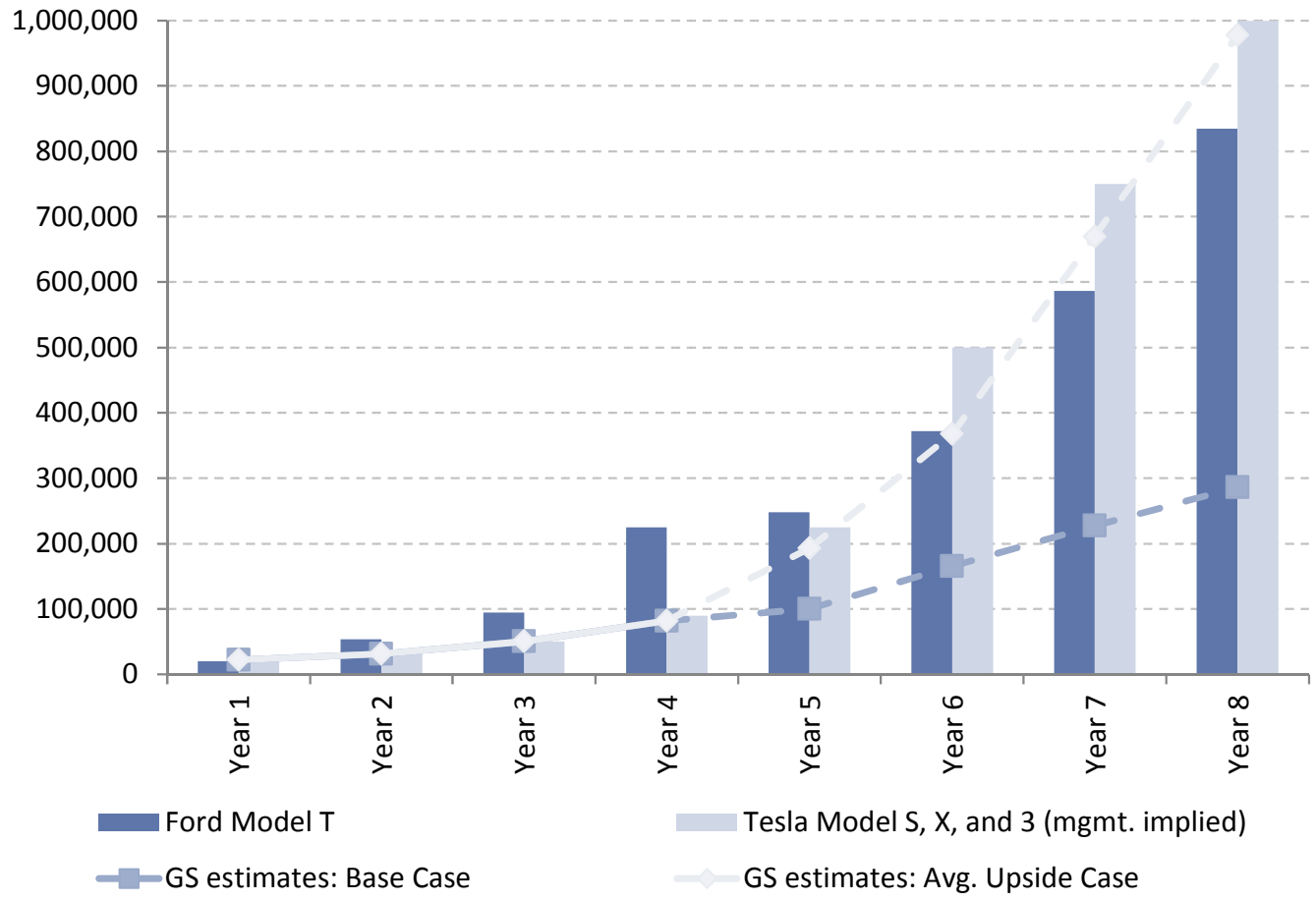


Source: InsideEVs, Goldman Sachs Global Investment Research.

Can history repeat itself? Tesla timeline aggressive, but it has been done before

During the company's 1Q16 earnings report, management outlined what we consider to be an aggressive production growth cadence – hitting 500k vehicle production in 2018 and approximately 1mn vehicles in 2020. Of course, this begs the question, has it been done before? Looking back over 100 years ago, production of the Model T also had a similar growth path as the market for automobiles experienced rapid growth. In fact, the ramp curve implied by Tesla management is very similar to that of the Model T. As we detail in **Exhibit 10**, using approx. 20,000 vehicle production as a starting point (Year 1: 1910 for Ford and 2013 for Tesla), we see a very similar ramp cadence. Notably, the average units implied by our upside cases (which we weight at 35% in our valuation) is very similar to the implied production curve that we believe would be needed to hit the company's ambitious targets. We still believe production will take on a slower pace at Tesla and model a much more modest production growth cadence, but it's interesting to see that it was done before.

Exhibit 10: Tesla's estimated production ramp is very similar to that of Ford's Model T 100 years ago
Tesla vehicle deliveries vs. Ford's Model T



*Model T Year 1 is 1910; Tesla Year 1 is 2013.

Source: Company data, Goldman Sachs Global Investment Research.

We see Model 3 as a potential market share leader, and Model S/X as competitive segment entries

Looking at our analysis of the end markets, we believe that Model S and Model X can gain top five market share in their respective luxury vehicle segments. However, we believe that the Model 3 could be a potential category leader given its price point, cachet of the brand, and initial demand levels – as implied by reservations to date.

As previously presented in our recent note, *Taking a deeper look into TSLA value following Model 3 order strength,* published on April 25, 2016, our deep dive competitive benchmarking analysis for Tesla's current product offerings is outlined below in **Exhibit 12**. Effectively, we see the Model S and Model X products gaining enough global shares against their respective competition to attain top five positions. On the other hand, Tesla's Model 3 could grow to top market share within the segment by 2025, in our view. We believe that it's price point relative to competition, the cachet of the Tesla brand (a technology company vs. a traditional OEM), the vehicle's base level of features (e.g. semi-autonomous driving and over-the-air updateability), and the strong response from reservation demand to date position the product well versus peers.

As a result, our base case sees Tesla's Model S and X products gaining an average 8% market share by 2025 and for the Model 3 to be a category leader in entry-level luxury, taking 17% market share. Our approach to valuing Tesla also includes an upside case, where Tesla not only becomes an able competitor but effectively disrupts the industry; for this, the implied market share is in the 20% range for Models S and X and 30% for the Model 3 (**Exhibit 11**). Similarly, we also present the implied share from our downside case where the roll out of the Model 3 takes a slower path.

Exhibit 11: We estimate Tesla to reach ~300k sales by 2020 and over 625k by 2025 in our base case
Tesla unit sales scenario analysis

		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Model S/X												
	Base Case	50,557	81,810	98,172	112,898	124,188	134,148	160,977	177,075	193,012	206,522	217,881
	Downside Case	50,557	81,810	98,172	112,898	124,188	134,148	140,855	143,672	143,672	139,362	132,394
	Average Transformative Case	50,557	81,810	189,065	250,972	337,885	369,567	406,678	422,506	463,877	494,979	503,508
Market Share of Model S/X Landscape												
	Base Case	*2.1%*	*3.4%*	*4.0%*	*4.5%*	*5.0%*	*5.5%*	*6.5%*	*7.3%*	*8.0%*	*8.3%*	*8.5%*
	Downside Case	*2.1%*	*3.4%*	*4.0%*	*4.5%*	*5.0%*	*5.5%*	*5.7%*	*5.9%*	*5.9%*	*5.6%*	*5.2%*
	Average Transformative Case	*2.1%*	*3.4%*	*7.7%*	*10.0%*	*13.7%*	*15.1%*	*16.5%*	*17.4%*	*19.2%*	*20.0%*	*19.6%*
Model 3												
	Base Case	0	0	2,000	52,500	103,250	152,075	205,301	272,024	353,631	388,995	408,444
	Downside Case	0	0	2,000	52,500	103,250	152,075	179,449	208,160	239,384	265,717	292,288
	Average Transformative Case	0	0	3,852	116,707	331,801	468,770	549,541	574,772	648,309	705,763	661,482
Market Share of Model 3 Landscape												
	Base Case	*0.0%*	*0.0%*	*0.1%*	*2.4%*	*4.7%*	*6.8%*	*9.0%*	*11.7%*	*15.0%*	*16.5%*	*17.4%*
	Downside Case	*0.0%*	*0.0%*	*0.1%*	*2.4%*	*4.7%*	*6.8%*	*7.8%*	*9.0%*	*10.1%*	*11.3%*	*12.4%*
	Average Transformative Case	*0.0%*	*0.0%*	*0.2%*	*5.3%*	*15.0%*	*20.9%*	*24.0%*	*24.8%*	*27.5%*	*30.0%*	*28.1%*
Gen IV												
	Base Case	0	0	0	0	0	0	0	0	0	0	0
	Downside Case	0	0	0	0	0	0	0	0	0	0	0
	Average Transformative Case	0	0	0	0	0	139,111	604,313	665,631	840,503	1,189,302	1,528,576
Total Tesla												
	Base Case	50,557	81,810	100,172	165,398	227,438	286,223	366,278	449,099	546,643	595,517	626,325
	Downside Case	50,557	81,810	100,172	165,398	227,438	286,223	320,303	351,832	383,056	405,078	424,682
	Average Transformative Case	50,557	81,810	192,917	367,679	669,686	977,448	1,560,532	1,662,908	1,952,688	2,390,045	2,693,566

Source: Goldman Sachs Global Investment Research.

Exhibit 12: Tesla's product offerings generally compete in luxury markets against well-known market leaders
Market landscape for Model S, Model X, and Model 3 vs. top luxury models

Tesla Model S Market Landscape												
Model	**Average MSRP**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
BMW 5 Series	$64,180	363,382	345,406	380,090	408,822	392,104	387,915	380,807	376,284	363,445	396,190	419,151
Audi A6	$57,945	292,779	275,583	240,640	237,702	274,412	271,333	264,307	261,004	260,632	243,370	272,633
Mercedes E Class	$70,145	277,167	320,150	349,744	352,650	333,157	326,176	319,125	313,545	325,509	374,002	376,922
Mercedes S Class	$120,149	102,599	100,498	96,684	88,944	82,875	80,986	105,759	100,886	95,640	93,926	89,123
BMW 7 Series	$105,715	39,796	61,775	63,204	58,831	54,215	53,200	48,184	49,911	63,078	64,069	60,763
Total Model S Market		**1,353,398**	**1,402,958**	**1,440,276**	**1,497,435**	**1,486,347**	**1,467,942**	**1,452,971**	**1,433,026**	**1,437,469**	**1,500,732**	**1,591,694**
Tesla Model S Base Case	$100,000	50,343	49,415	59,298	68,193	75,012	82,513	107,050	120,411	133,178	142,500	148,503
Market Share of Landscape												
BMW 5 Series		*26.8%*	*24.6%*	*26.4%*	*27.3%*	*26.4%*	*26.4%*	*26.2%*	*26.3%*	*25.3%*	*26.4%*	*26.3%*
Audi A6		*21.6%*	*19.6%*	*16.7%*	*15.9%*	*18.5%*	*18.5%*	*18.2%*	*18.2%*	*18.1%*	*16.2%*	*17.1%*
Mercedes E Class		*20.5%*	*22.8%*	*24.3%*	*23.6%*	*22.4%*	*22.2%*	*22.0%*	*21.9%*	*22.6%*	*24.9%*	*23.7%*
Mercedes S Class		*7.6%*	*7.2%*	*6.7%*	*5.9%*	*5.6%*	*5.5%*	*7.3%*	*7.0%*	*6.7%*	*6.3%*	*5.6%*
BMW 7 Series		*2.9%*	*4.4%*	*4.4%*	*3.9%*	*3.6%*	*3.6%*	*3.3%*	*3.5%*	*4.4%*	*4.3%*	*3.8%*
Tesla Model S Base Case		3.7%	3.5%	4.1%	4.6%	5.0%	5.6%	7.4%	8.4%	9.3%	9.5%	9.3%

Tesla Model X Market Landscape												
Model	**Average MSRP**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
BMW X5	$70,295	169,750	162,332	156,745	155,172	151,349	149,134	149,911	150,537	146,468	143,313	134,062
Toyota Land Cruiser	$84,820	163,814	152,195	153,839	154,721	153,702	150,500	167,124	175,609	175,230	172,152	171,003
Mercedes ML/GLE-Class	$71,193	136,978	168,119	170,337	167,311	165,830	170,649	168,523	166,516	162,140	159,334	154,683
Land Rover Range Rover Sport	$81,719	88,885	82,752	78,789	75,076	67,499	69,632	78,083	77,017	73,589	71,510	69,681
Porsche Cayenne	$78,378	76,673	69,960	67,739	73,267	72,342	66,069	66,062	65,699	64,823	62,191	70,961
Total Model X Market		**1,035,847**	**1,024,875**	**1,016,360**	**1,017,284**	**977,137**	**973,857**	**1,005,983**	**1,000,773**	**984,238**	**974,099**	**974,131**
Tesla Model X Base Case	$120,000	214	32,395	38,874	44,705	49,176	51,634	53,927	56,664	59,834	64,022	69,378
Market Share of Landscape												
BMW X5		*16.4%*	*15.8%*	*15.4%*	*15.3%*	*15.5%*	*15.3%*	*14.9%*	*15.0%*	*14.9%*	*14.7%*	*13.8%*
Toyota Land Cruiser		*15.8%*	*14.9%*	*15.1%*	*15.2%*	*15.7%*	*15.5%*	*16.6%*	*17.5%*	*17.8%*	*17.7%*	*17.6%*
Mercedes ML/GLE-Class		*13.2%*	*16.4%*	*16.8%*	*16.4%*	*17.0%*	*17.5%*	*16.8%*	*16.6%*	*16.5%*	*16.4%*	*15.9%*
Land Rover Range Rover Sport		*8.6%*	*8.1%*	*7.8%*	*7.4%*	*6.9%*	*7.2%*	*7.8%*	*7.7%*	*7.5%*	*7.3%*	*7.2%*
Porsche Cayenne		*7.4%*	*6.8%*	*6.7%*	*7.2%*	*7.4%*	*6.8%*	*6.6%*	*6.6%*	*6.6%*	*6.4%*	*7.3%*
Tesla Model X Base Case		0.0%	3.2%	3.8%	4.4%	5.0%	5.3%	5.4%	5.7%	6.1%	6.6%	7.1%

Tesla Model 3 Market Landscape												
Model	**Average MSRP**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Mercedes C Class	$51,470	454,006	414,223	396,123	383,405	351,503	326,120	359,409	419,529	412,860	400,040	395,308
BMW 3 Series	$51,419	438,694	419,909	404,759	376,802	418,429	435,934	410,670	384,153	374,994	363,717	344,109
Audi A3	$39,580	369,057	355,434	350,615	343,982	308,427	346,713	386,514	383,009	377,160	370,965	355,241
Audi A4	$45,281	314,616	366,935	377,725	368,835	341,046	326,307	319,634	305,256	374,040	388,652	382,007
Mercedes CLA	$43,458	138,349	132,466	128,202	116,577	126,982	129,369	124,264	127,276	126,490	124,528	123,277
Total Model 3 Market		**2,307,363**	**2,297,731**	**2,263,300**	**2,209,631**	**2,209,888**	**2,246,768**	**2,288,971**	**2,316,670**	**2,358,874**	**2,353,435**	**2,350,773**
Tesla Model 3 Base Case	$45,000	0	0	2,000	52,500	103,250	152,075	205,301	272,024	353,631	388,995	408,444
Market Share of Landscape												
Mercedes C Class		*19.7%*	*18.0%*	*17.5%*	*17.4%*	*15.9%*	*14.5%*	*15.7%*	*18.1%*	*17.5%*	*17.0%*	*16.8%*
BMW 3 Series		*19.0%*	*18.3%*	*17.9%*	*17.1%*	*18.9%*	*19.4%*	*17.9%*	*16.6%*	*15.9%*	*15.5%*	*14.6%*
Audi A3		*16.0%*	*15.5%*	*15.5%*	*15.6%*	*14.0%*	*15.4%*	*16.9%*	*16.5%*	*16.0%*	*15.8%*	*15.1%*
Audi A4		*13.6%*	*16.0%*	*16.7%*	*16.7%*	*15.4%*	*14.5%*	*14.0%*	*13.2%*	*15.9%*	*16.5%*	*16.3%*
Mercedes CLA		*6.0%*	*5.8%*	*5.7%*	*5.3%*	*5.7%*	*5.8%*	*5.4%*	*5.5%*	*5.4%*	*5.3%*	*5.2%*
Tesla Model 3 Base Case		*0.0%*	*0.0%*	*0.1%*	*2.4%*	*4.7%*	*6.8%*	*9.0%*	*11.7%*	*15.0%*	*16.5%*	*17.4%*

Source: IHS, Goldman Sachs Global Investment Research.

TSLA maintains relevance despite increased competition

So what makes us confident that these aforementioned market share gains can be achieved? While we see incremental credible competition coming down the road for Tesla, comparing offerings based on price per mile of range indicates that Tesla's portfolio of products should continue to stack up well against pure EV competition.

As also discussed in our April 25, 2016 note, numerous OEMs have made announcements on the EV front (e.g. Chevy Bolt, Audi Q6 e-tron, and Hyundai Ioniq) in recent months which have added to the growing EV market. In particular, we note that the Bolt has received considerable attention given its low price point and solid range, which were confirmed during GM's reveal at CES. In addition, the Bolt has received some positive early reviews and would have at least a year's head start on the Model 3, as the Bolt is expected to go into production at the end of 2016 and assuming Tesla's production schedule for the Model 3 holds.

But we believe that the Bolt and Model 3 are not likely to be pure competitors. First, Tesla has a fairly unique position as an innovative Silicon Valley based brand. Some investors have argued that its popularity may in fact have little to do with the fact that it's an EV, and more to do with the scarcity of the product and the fact that people want to identify with an innovative company that's looking to enact a broader industry transformation. Secondly, the performance will be different with base acceleration of the Model 3 offering a 0-60 time of less than six seconds vs. less than seven seconds for the Bolt, we expect that the production Model 3 will likely offer a slightly more sports-oriented driving experience compared to the Bolt. Finally, we believe the technological content is also likely to be quite different, with the Model 3 offering Autopilot and firmware updates among other technological features that are important competitive differentiators.

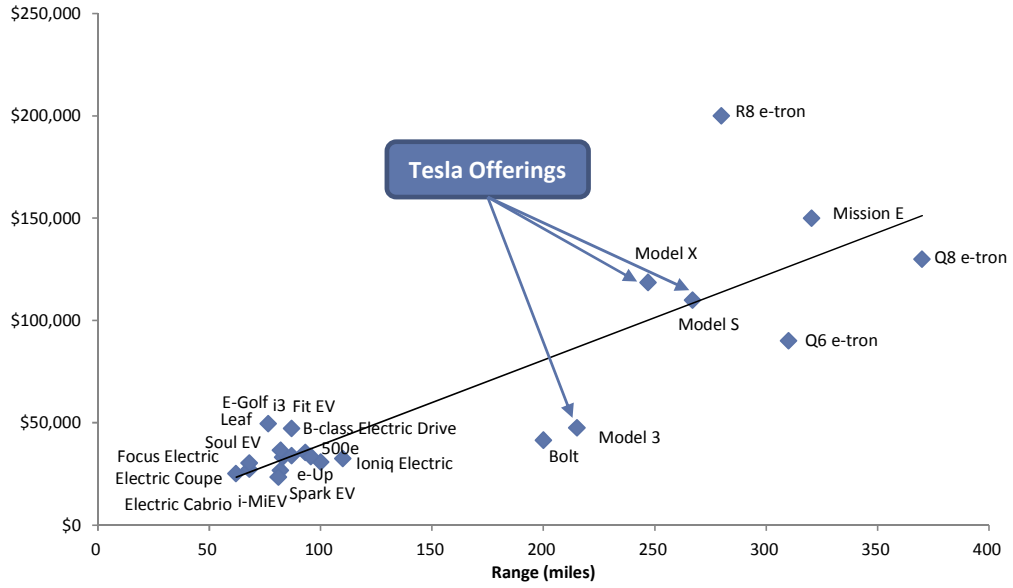
Exhibit 13: OEMs have continued to announce new EVs, with some improving substantially to challenge Tesla
Battery electric vehicle competitive landscape

Manufacturer	Product name	Category	Type	Launch	Range (miles)			Battery	Assumed Average Price
				U.S	*Bottom*	*Top*	*Average*	*kWh*	USD
Tesla	Model S	Luxury Sedan	BEV	2012	240	294	267	70-90	$109,950.0
Tesla	Model X	Luxury Crossover	BEV	2015	237	257	247	75-90	$118,575.0
Tesla	Model 3	Small Sedan	BEV	2017	215	NA	215	60-85	$47,500.0
Audi	Q6 e-tron	Luxury Crossover	BEV	2018	310	310	310	95	$90,000.0
Audi	Q8 e-tron	Luxury Crossover	BEV	2019	370	370	370	102	$130,000.0
Audi	R8 e-tron	Luxury Sport	BEV	2016	280	280	280	92	$200,000.0
BMW	i3	Small Hatchback	BEV	2014	72	81	76.5	22	$49,620.0
Porsche	Mission E	Luxury Sedan	BEV	2020	310	331	320.5	NA	$150,000.0
Mercedes	B-class Electric Drive	Small Hatchback	BEV	2014	87	87	87	28	$47,155.0
Chevrolet	Bolt	Small Hatchback	BEV	2016	200	200	200	60	$41,500.0
Chevrolet	Spark EV	Small Hatchback	BEV	2014	82	82	82	21	$26,677.5
VW	E-Golf	Small Hatchback	BEV	2014	83	83	83	24	$33,115.0
VW	e-Up	Small Hatchback	BEV	2013	81	81	81	19	$23,500.0
Ford	Focus Electric	Small Hatchback	BEV	2012	100	100	100	23	$30,840.0
Mitsubishi	i-MiEV	Compact Hatchback	BEV	2011	62	62	62	16	$25,050.0
Kia	Soul EV	Small Crossover	BEV	2014	93	93	93	27	$35,500.0
Fiat	500e	Compact Hatchback	BEV	2013	87	87	87	24	$33,877.5
Smart	Electric Coupe	Mini Hatchback	BEV	2011	68	68	68	18	$27,269.5
Smart	Electric Cabrio	Mini Convertible	BEV	2011	68	68	68	18	$30,269.5
Nissan	Leaf	Small Hatchback	BEV	2011	84	107	95.5	24-30	$33,437.5
Honda	Fit EV	Small car	BEV	2013	82	82	82	20	$36,625.0
Hyundai	Ioniq Electric	Small car	BEV	2017	110	110	110	28	$32,500.0

Source: Company data, InsideEVs.com, plugincars.com, Goldman Sachs Global Investment Research.

As battery electric vehicle announcements and offerings have continued to proliferate, we clearly see two groups of vehicles on offer. As shown in **Exhibit 14**, the first revolves around smaller vehicles, typically in hatchback form, with smaller batteries and low mileage ranges around the $25k-$45k price point such as the BMW i3, Nissan Leaf, and VW e-Golf. For the most part, these vehicles can be purchased today. The second appears to be a group offering significantly higher range but also at a much higher price. These vehicles also offer additional body styles including coupes, SUVs, and sedans. Aside from the Tesla Model S and Model X, we note that future Audi/Porsche vehicles are the main competitors, most notably, the Audi Q6 e-tron which is expected to offer range of 310 miles and was confirmed for 2018. Interestingly, the Chevrolet Bolt and Model 3 are expected to compete separately from both groups, offering significantly more range than comparably priced EVs.

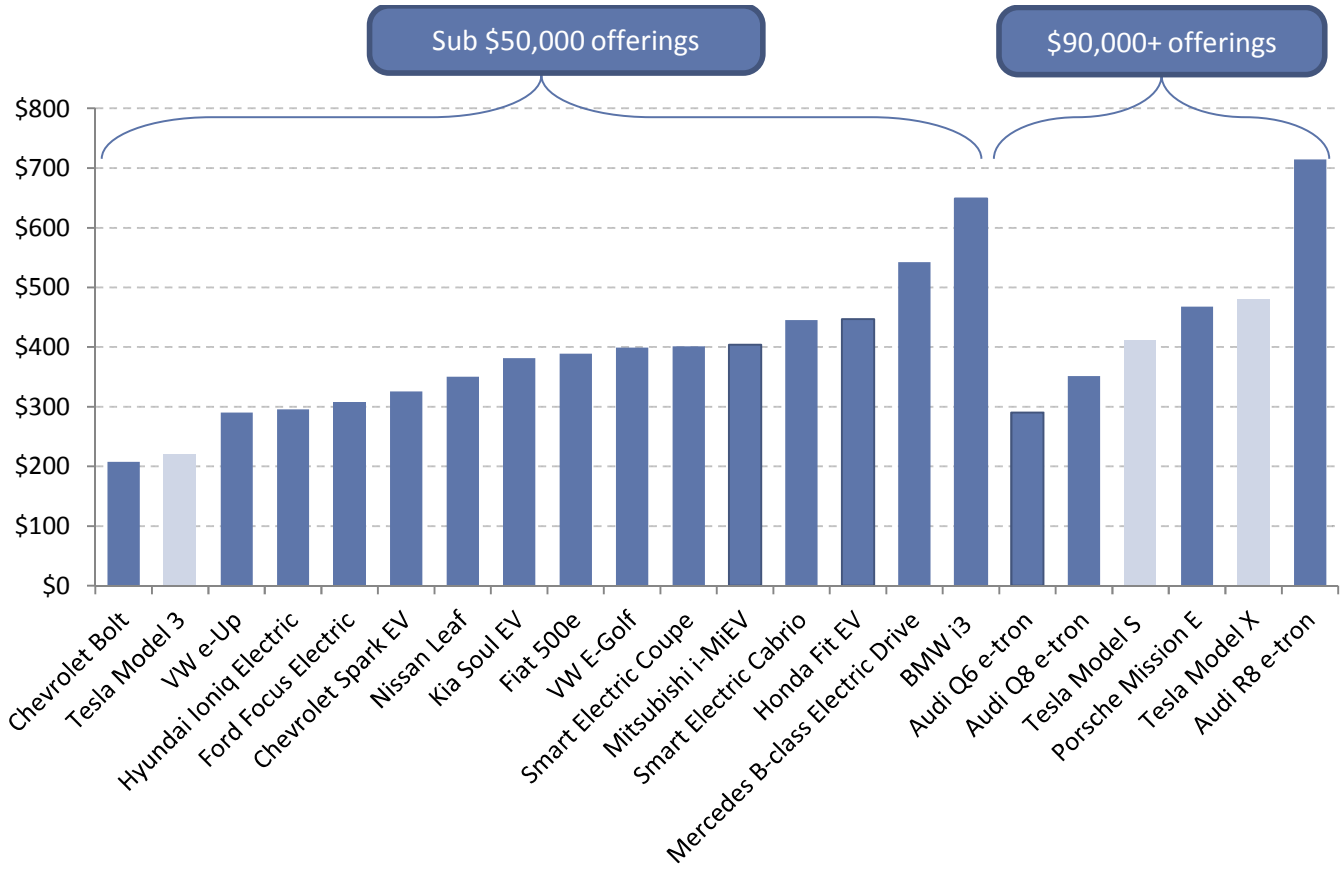
Exhibit 14: TSLA's products currently lead, but Audi/Porsche keep things interesting
Battery electric vehicle landscape



Source: Company data, InsideEVs.com, plugincars.com, Goldman Sachs Global Investment Research.

When we break down the dollar cost per mile of range, TSLA remains towards the middle of the high end product group, but at the forefront of the lower cost group. Specifically when compared to the over $90k product group, Tesla's Model S and Model X costs per mile of range are $411 and $481, respectively, which are well below that of the Audi R8 e-tron at $714. However, the Audi Q6 e-tron and Q8 e-tron could potentially undercut the Tesla Model S and Model X if our price estimates of $90,000 and $130,000, respectively hold true. When looking at the sub $50k product category, the Model 3 price/range ratio of ~$209 compares well with the Chevrolet Bolt.

Exhibit 15: Tesla looks to lead with the Model 3, but high end offerings from Audi pose a threat to Model S/X
Cost per mile of range



Source: Company data, InsideEVs.com, plugincars.com, Goldman Sachs Global Investment Research.

Part of what drives this less crowded field in our view is Tesla's advantage in battery cost. As we have highlighted in the past, Tesla has been very successful in taking cost out of its battery packs over time, bringing the cost down from $550/kWh for the original Roadster to about $250/kWh at the start of production for the Model S. We estimate cost has further declined to approx. ~$180/kWh based on new chemistries, several manufacturing redesigns, and scale benefits. Tesla expects costs of roughly $150/kWh once the Gigafactory ramps with the company on its way to achieving its target of below $100/kWh by 2020. By contrast, industry projections place Li-ion cost at $250/kWh in 2020 for the larger form factor batteries used by most of Tesla's competitors.

We see 22% upside to shares from our valuation work

We value Tesla in **Exhibit 16** by modeling three "disruptive" automotive upside cases, in addition to our automotive base and downside cases, through 2025 and by incorporating the per share value from the Tesla Energy business (**Appendix 1**). Our base case forecast calls for 286k units by 2020 with volumes growing to 626k by 2025. Our downside case builds off our 2020 assumption and ultimately contemplates the company reaching only 425k by 2025.

For our three "disruptive" cases, we draw on the experience of past technologies like the iPhone, the Ford Model-T, and selected consumer durables like refrigerators/laundry appliances/dishwashers – all of which were widely adopted new technologies that revolutionized consumption patterns – in order to generate potential volume paths out to 2025 which show significant upside to our base and downside cases. Coincidentally, the average of these scenarios' volume paths chart a course similar to what Tesla management recently laid out – with total deliveries hitting 500k in 2018. We weigh our upside/base/ downside cases 35%/45%/20% – which we recently raised from 25%/50%/25% given our increased comfort in Model 3 demand coming to fruition. However, our high annual discount rate of 20% remains given our concerns on execution. See our note, *Taking a deeper look into TSLA value following Model 3 order strength,* published on April 25, 2016 for more detail.

For our valuation, our implied present value for Tesla's automotive business is $213 per share. We then layer on our Tesla Energy "stationary storage" valuation of $37 per share. As a result, the total implied value from our combined methodologies comes to $250, implying 20% upside to shares on a 6-month time horizon. For more detail on our disruptive scenarios and price target methodology, see our March 18, 2014 report, *Quantifying Disruption – TSLA's impact on Auto and grid storage seems to be discounted.*

Exhibit 16: Our 6-month price target for TSLA is $250
Valuation summary of upside/downside scenarios for automotive business plus the Tesla Energy business

	Elon as Steve Jobs	Elon as Henry Ford	Elon as the Maytag Repairman	Base case	Downside case	Probability Weighted
Disruptive technology	iPhone	Ford Model T	Laundry Appliance/ Dishwasher/Refrigerator	EV/Model 3	EV/Model 3	
Category	Consumer electronics	Automobiles	Consumer durables	Automobiles	Automobiles	
Historical reference period	2007-2016E	1909-1917	1916-1924/1947-1955/ 1930-1938	2017-2025E	2017-2025E	
2025 Global EV market (000)[1]	4,357	5,974	3,317	2,020	1,633	
2025 EV market share of global LV sales[1]	**4.2%**	**5.7%**	**3.2%**	**1.9%**	**1.6%**	
2025 Tesla units (000)[1]	2,759	3,422	1,900	626	425	
2025 Tesla EV market share[2]	63%	57%	57%	31%	26%	
2025 Revenue $mn	$140,254	$176,693	$102,543	$40,159	$26,676	
2025 Margin	12.6%	12.7%	12.8%	11.8%	11.0%	
2025 EPS	$53.36	$68.68	$39.55	$15.28	$9.41	
P/E Multiple[3]	26.6x	39.9x	25.8x	25.6x	14.6x	**Automotive valuation**
Future value per share[4]	$949	$1,307	$769	$281	$124	
Present value per share[5]	**$414**	**$485**	**$343**	**$125**	**$61**	**$213**
Plus: Tesla Energy value per share	$37	$37	$37	$37	$37	**Tesla Energy** **$37**
Scenario value per share	**$451**	**$522**	**$380**	**$162**	**$98**	
Potential Upside	120%	155%	86%	-21%	-52%	**6-month price target**
Scenario Likelihood	11.7%	11.7%	11.7%	45.0%	20.0%	**$250**

[1] Long range/pure EVs only
[2] Consumer durables share based on Ford Model T
[3] Based on average multiples applied in 2019 - 2025
[4] Based on average of 2019 - 2025 values
[5] Based on average 2019-2025 future values discounted back at 20%/15% cost of equity during high/low growth periods

Note: upside potential is based off 5/17/2016 closing price

Upside: 22%

Source: Company data, Goldman Sachs Global Investment Research.

Price target risks: Where could we be wrong?

TSLA shares fundamentally remain a concept stock and broader investor sentiment continues to play a large role. Should global growth/US recession trepidation be dialed up again, investors' appetite for TSLA shares may be lower.

The company has struggled with the launch of its Model X SUV so far. We ultimately believe they will be able to ramp production into the 1,000 per week range – given the eventual success with the Model S production ramp. But should the production curve be pushed out further Tesla may not be able to offset the delay with sales of the Model S, which is an aging product. For this reason we model at the bottom end of the company's 2016 delivery guidance range of 80k-90k vehicles.

Tesla is a growth company that continues to spend significantly in the form of incremental R&D, SG&A and Capex. Should the company continue to vertically integrate its business model, we could see upside to these expenditures.

Appendix 1: Our Tesla Energy valuation points to $37 per share

We continue to see stationary storage – through its Tesla Energy business, as a very meaningful opportunity for Tesla, with a potentially significant Total Addressable Market (TAM) and with the company's Gigafactory launch expected to bring much needed scale to the industry. Our Tesla Energy P&L and valuation, outlined below in **Exhibit 17**, points to $37 of present value per Tesla share driven by our assumption of 30GWh devoted to storage by 2020.

We note that only the stationary storage piece of the Gigafactory is accretive to our auto projections, as the dedicated capacity to EV packs and cells will largely be used by Tesla and is embedded in the cost of goods sold in our automotive forecasts. As shown in detail below, we assume TSLA goes well above the 15GWh pack capacity that will be dedicated to stationary storage (we use 30GWh), as we project some slack on the automotive side (from production, not demand) given our volume forecast that we assume can be redeployed. We project a cost of $100/kWh (by 2020) at ~14% margins – slightly higher than corporate average once fully ramped. On our estimates, this would yield $3.2bn in revenue by 2020E and $410mn in EBT; factoring in $34mn in capital cost on $675mn of investment (30% of the $2.25bn Tesla plans to spend for its part in the whole factory) we get to $1.63 in EPS accretion in 2020E. Again, given the substantial growth opportunity that lies ahead, we would be comfortable using a 1.0-1.5x PEG implying a 40x P/E in 2020E. The net of this would be $65 of value in 2020; discounted at an appropriately high 20% cost of equity, this would yield $37 in value today.

Exhibit 17: Tesla Energy business opportunity adds $37 to our valuation on a present value basis
Stationary storage potential P&L and valuation from 2016E to 2020E

Tesla Energy business	2015E	2016E	2017E	2018E	2019E	2020E	Comment
EV units	51	82	100	165	227	286	GS base case for Tesla vehicle volumes
GWh	4	7	8	12	16	20	All of this is used in the production process and is not a separate P&L opportunity
Cell capacity (GWh)		8	15	25	35	50	
Tesla Energy pack capacity (GWh)		1	7	13	19	30	**Tesla Energy is a separate P&L opportunity**
Avg. pack (kWh)		50	50	50	50	50	Assumption
Implied number of packs		27,059	138,071	253,541	374,295	599,520	
Cost per (kWh) Auto		$ 175	$ 160	$ 145	$ 125	$ 110	Tesla implied
Cost per (kWh) Tesla Energy		$ 149	$ 136	$ 123	$ 106	$ 94	Use 15% lower cost for stationary storage due to lower duty cycle
Total cost ($mn)		$ 201	$ 939	$ 1,562	$ 1,988	$ 2,803	
Operating margin		0.2%	6.1%	9.4%	13.1%	13.7%	Margins below auto during ramp, then above with scale
Implied revenue		**$ 202**	**$ 1,000**	**$ 1,724**	**$ 2,288**	**$ 3,247**	Guide of $400mn to $500mn in 2016; then 5x that level in 2017 --we assume slower ramp
yoy % change			*396%*	*73%*	*33%*	*42%*	
EBIT contribution		$ 0	$ 61	$ 162	$ 299	$ 445	The P&L impact will be 100% TSLA, partner not taking an equity stake
Capital cost		$ (34)	$ (34)	$ (34)	$ (34)	$ (34)	On 30% of assumed $2.25bn Tesla investment @ 5% debt cost
EBT impact		$ (33)	$ 27	$ 128	$ 266	$ 411	
Tax rate		30.8%	24.0%	24.0%	24.0%	24.0%	Corp tax rate
Shares outstanding		161	170	177	184	191	Base case share count
EPS impact		**$ (0.14)**	**$ 0.12**	**$ 0.55**	**$ 1.10**	**$ 1.63**	
yoy % change			*-184%*	*357%*	*99%*	*49%*	
Multiple			**80.0x**	**60.0x**	**50.0x**	**40.0x**	
Future value			$ 10	$ 33	$ 55	$ 65	
PEG			1.7	1.6	1.2		Given significant growth opportunity, we feel 1.0 - 1.5 earnings PEG is appropriate

Future value	$ 65	Using 2020 future value after business has ramped
Discount rate	20.0%	
Present value	**$ 37**	

Source: Company data, Goldman Sachs Global Investment Research.

Disclosure Appendix

Reg AC

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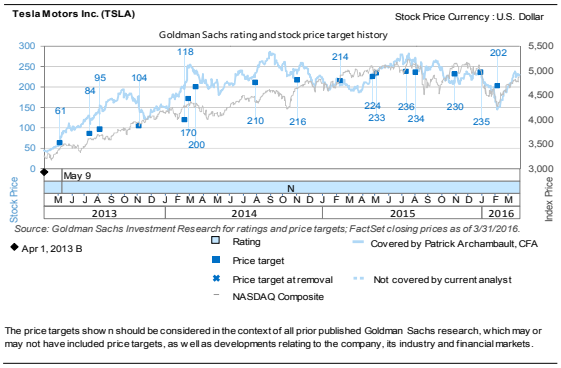

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