HARVARD | BUSINESS | SCHOOL

N9-218-033

DECEMBER 14, 2017

STUART C. GILSON

SARAH L. ABBOTT

Tesla Motors (A): Financing Growth

So, in short, the master plan is: Build sports car. Use that money to build an affordable car. Use that money to build an even more affordable car. While doing above, also provide zero emission electric power generation options. Don't tell anyone.

—Elon Musk, Co-Founder & CEO of Tesla Motors[1]

In May 2016, the management of Tesla Motors, Inc. (Tesla), the U.S.-based electric car company, announced that the company would issue new shares in order to fund an accelerated roll-out schedule for its Model 3 sedan, due out in 2017. Tesla's CEO, Elon Musk, who owned approximately 27% of Tesla's equity, would also be selling up to 2.8 million of his shares to raise funds to pay the tax liability on exercising his stock options.

A key question for investors was whether, at its current price, Tesla represented a good investment. Wall Street analysts were wildly divided on the future prospects for Telsa's stock, with target prices ranging from $160 to $500 a share. These targets were derived using a range of valuation analyses, including discounted cash flow analysis and comparable company analyses.

The Origins of the Electronic Vehicle (EV)

The first electric car was introduced in the Unites States by William Morrison in 1890. His Morrison Electric car sat six people and had a maximum speed of six to 12 miles per hour. It could travel 100 miles before needing to be recharged.[2] In the early 1900s, 28% of U.S. cars were powered by electricity. However, in 1912, the electric automobile starter was invented, making gas-powered cars easier to start. Electric cars had other disadvantages: they could only travel relatively short distances before having to be recharged; they had much lower horsepower than gas-powered cars; and gasoline was abundant and cheap. By the 1920s, electric cars were no longer being produced.[3]

In the 1970s, with oil prices rising, interest in producing electricity-powered cars re-emerged. In 1972, funded by the 1970 Federal Clean Car Incentive Program, Victor Wouk built a full-size hybrid vehicle. However, the EPA terminated this program in 1976.[4] Hybrid-cars, also called

Professor Stuart C. Gilson and Research Associate Sarah L. Abbott prepared this case. This case was developed from published sources. Funding for the development of this case was provided by Harvard Business School and not by the company. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

Electronic copy available at: https://ssrn.com/abstract=3156025

PHEVs (plug-in hybrid electric vehicles), utilized both gasoline-power (with an internal-combustion engine and a fuel tank) and electric-power. This allowed them to utilize less fuel but also to travel farther without recharging.

In the 1990s, several major automobile companies experimented with electric cars. However, none of these initiatives had staying power. For example, in 1996 General Motors, the largest automobile company by revenue, launched the EV1, an electronic subcompact car. By 2003 EV1 cars were being withdrawn from the market.[5] Electric cars (also known as battery-electric vehicles or BEVs) continued to suffer from a number of shortcomings. They were expensive to produce, and they needed to be recharged regularly. This required being able to find a recharging station and having the time to stop and recharge the vehicle.[6]

In 1997, Toyota launched the Prius, the first mass-market hybrid car. In its first year Toyota sold close to 18,000 Priuses.[7] By 2016 there were over 35 hybrid models being sold in the United States. Many of these cost less than $30,000.

In 2008, Tesla introduced the Tesla Roadster, an electric sports car and the first "federally-compliant highway-capable electric vehicle." The car could drive up to 220 miles on a single charge and cost $109,000.[8] Tesla followed that with the Model S and Model X, both electric-powered vehicles. Other automobile manufacturers, including BMW, Mercedes-Benz, Nissan, Chevrolet, Ford and Fiat, also launched electric cars.

In 2015, there were 17.4 million automobiles sold in the United States, of which 427,362 were hybrid automobiles and 71,064 were electric automobiles.[9]

Company Background

Tesla was an integrated automobile company that designed, manufactured, marketed, distributed, and serviced electric automobiles and electric automobile components. Tesla was headquartered in Palo Alto, CA, and was publicly traded (NASDAQ: TSLA). As of May 2016, the company had a market capitalization of $32 billion. In 2015, Tesla generated $4 million in sales and had year-end assets of $8 billion. (See **Exhibit 1** for detailed financial statements for Tesla.)

Tesla was founded in 2003 by Elon Musk, J.B. Straubel, Marc Tarpenning, Martin Eberhard and Ian Wright.[10] Musk joined the company later than the others, joining the board in 2004, but he quickly became the face of Tesla. He had already made a name for himself by co-founding Zip2, an online directory business, and PayPal, the global on-line payment system, as well as by his very public interest in space exploration.

Musk was born in Pretoria, South Africa in 1971. In 2002 he started the Space Exploration Technologies Corporation (SpaceX) with a stated goal of colonizing Mars. Musk had a reputation for innovation and risk-taking. Speaking of SpaceX, he once said:

> The odds of me coming into the rocket business, not knowing anything about rockets, not having ever built anything, I mean, I would have to be insane if I thought the odds were in my favor ... When something is important enough, you do it even if the odds are not in your favor.[11]

SpaceX had experienced some notable failures, including several rocket explosions, but the company had raised over $10 billion from investors and had a sizable contract ($1.6 billion) with NASA.[12]

Electronic copy available at: https://ssrn.com/abstract=3156025

Following the successful launch of the Roadster, in June 2010 Tesla went public, raising $266 million. Shares were priced at $17 each and finished the opening day at $24.64, even though the company had never made any profits.[13] John O'Dell, a senior editor at Edmunds GreenCarAdvisor.com, described the IPO as a "bit of referendum on the future of the electric car."[14]

As of 2016, Tesla manufactured two electric automobiles, the Model S sedan and a sports utility vehicle, the Model X. The Model S began shipping in June 2012 and, as of year-end 2015, Tesla had shipped 107,000 vehicles.[15] The Model X began shipping in the third quarter of 2015. As of March 31, 2016, 2,400 Model X vehicles had been shipped.

Product reviews of Tesla's vehicles were generally quite positive. For example, *The Wall Street Journal* noted: "The Model S is a daring public experiment in automotive vision that has the impudence to make the finest, fastest luxury cars feel like Edwardian antiques. I know a lot of gear heads. The only ones who don't think the Model S is the best in the world haven't driven one."[16] Motor Trend was also effusive in its praise: "Sure, the Tesla's electric powertrain delivers the driving characteristics and packaging solutions that make the Model S stand out against many of its internal combustion engine peers. But it's only a part of the story. At its core, the Tesla Model S is simply a damned good car you happen to plug in to refuel."[17]

The Model 3, a sedan priced for the mass market, was due to ship in 2017. The company began taking orders in March 2016 and received 325,000 reservations in the first week, representing $14 billion in future sales.[18] (See **Exhibit 2** for overviews of the Model S, Model X and Model 3.)

In total Tesla delivered 2,598 automobiles in 2015. Tesla planned to deliver 80,000 to 90,000 new vehicles in 2016, and to increase annual production to 500,000 units by 2018.[19]

Tesla also operated a company-owned sales and service network. Tesla opened its first dealership in Santa Monica, CA in May 2008,[20] and by 2016 the company operated 208 stores, galleries and service locations in North America, Europe and Asia.

Wall Street's View

Tesla was covered by 17 sell side research analysts. A review of 10 analysts who published research on Tesla in early May 2016 showed that six of these analysts rated Tesla stock a "buy," "outperform," or "overweight"; one rated the stock a "hold"; and three rated the stock a "sell" or "underperform." S&P Capital IQ, which aggregated Wall Street estimates, opinions, and price targets, had the stock as a hold. Analysts' target prices on the stock ranged from $160 - $500. (**Exhibit 3** provides more detail on Wall Street estimates of Tesla's stock price and future earnings.) This broad range of estimates was driven by differing opinions on a range of underlying business fundamentals including Tesla's future shipment volumes, gross margins, and cash flows.

Ryan Brinkman, J.P. Morgan's lead auto analyst, had one of the more conservative opinions of Tesla's value. This was reflected in his "underweight" recommendation and price target of $185. In stark contrast, Andrea James of Dougherty & Company was extremely bullish on the stock with an "overweight" recommendation and a price target of $500, representing the highest valuation of any analyst. Adam Jones, Morgan Stanley's lead auto analyst, issued an "overweight" recommendation and also placed a relatively high value on Tesla with a price

target of $333. This was down from his price target issued the previous November of $450, which at the time was the highest valuation placed on Tesla stock.

J.P. Morgan Analysis (Price Target = $185)

In a May 2016 report, J.P. Morgan's auto analyst Ryan Brinkman wrote:

> Our Underweight rating considers notable investment positives, including a highly differentiated business model, appealing product portfolio, and leading-edge technology, though which we believe are more than offset by above-average execution risk and valuation that seems to be pricing in a lot.[21] …
>
> The company is led by visionary leadership, backed by a management team with solid functional strength. Although both technology and execution risk seem substantially less than was once feared, expansion into higher volume segments with lower price points seems fraught with greater risk relative to demand, execution, and competition. Meanwhile, valuation appears to be pricing in upside related to expansion into mass-market segments well beyond our volume forecasts for the Model 3.[22]

J.P. Morgan's price target was based on financial forecasts for Tesla through 2020, and utilized both a discounted cash flow (DCF) analysis and comparable company market multiples analysis. The price target based on comparable company market multiples was an average of the values obtained using three multiples: the ratio of enterprise value (EV) to earnings before interest, tax, depreciation and amortization, and pension expense (EBITDAP); the ratio of stock price to earnings-per-share; and the ratio of stock price to sales-per-share. In estimating Tesla's value, these multiples were applied to Tesla's forecasted 2020 earnings, rather than forecasted 2017 earnings as was done in valuing other companies under coverage, to reflect "the full impact of the profit potential of the Model S, Model X and Model 3 vehicles."

The price targets yielded by the DCF and comparable company market multiples methodologies were weighted 50/50 in order to calculate a final price target. (Details of J.P. Morgan's valuation analysis are shown in **Exhibit 4**.)

Dougherty & Company Analysis (Price Target = $500)

In April 2016, following Tesla's presentation on its new Model 3 car, analyst Andrea James of Dougherty & Company commented:

> Tesla unveiled its Model 3 mass-affluent electric vehicle on Thursday evening. At the end of his presentation, CEO Elon Musk did not drop the mic and walk away. But he could have. Because Tesla has changed the game again. ... Over six years, we have extensively researched the entire Tesla ecosystem. We've spoken with vehicle electrification experts and representatives from Daimler, Nissan, Toyota, Honda and BMW. We've met with Tesla's management, robotics suppliers, customers, sales reps, cell competitors to Panasonic, third-party suppliers with access to the factory floor, and even local bartenders who serve drinks to the workers at shift change. Our research supports this conclusion: Tesla is solving a different set of equations than the rest of the auto industry. The disruption story builds. We are raising our target to $500 following Tesla's mic-drop moment.[23]

Morgan Stanley Analysis (Price Target = $333)

Morgan Stanley's Adam Jones's more bullish view on Tesla was driven, at least in part, by his belief that Tesla would do more in the future than just produce electric vehicles. As he had written back in November:

> Our $450 price target is predicated on our expectations of Tesla as a successful niche manufacturer of high-performance [electric vehicles] (near term) and an attachment to a far larger market for mobility services which we believe all auto manufacturers must address over time to remain successful and independent.[24]

By May 2015, however, he had somewhat tempered these expectations, noting that the $333 price target "incorporates our view that while a mobility app is likely to be announced within 12-18 months, there is a degree of uncertainty as to if, when and how this product unfolds and how much the market will pay for it."[25]

Musk himself had made statements about bigger projects on which Tesla was focusing. In one interview he commented:

> There's a new type of car or vehicle that I think would be really great (to solve vehicle density in cities problem) and actually take people to their final destination and not just to the bus stop.[26]

Morgan Stanley's price target was based on a discounted cash flow based analysis. However, Morgan Stanley developed three separate business cases (a bull case, a base case, and a bear case) and performed a DCF analysis for each case. The final price target represented the midpoint of the bull and base case targets. (Details of Morgan Stanley's valuation analysis are shown in **Exhibit 5.)**

Proposed Equity Financing

As of early May 2016, Elon Musk was Tesla's largest shareholder, with 26.5% of the company's common stock. Other 5% shareholders included Fidelity Management with 10%, Baillie Gifford & Co with 8%, and T. Rowe Price Associates with 6% of Tesla's outstanding equity.[27] Institutional shareholders in total owned 57% of the company's equity.[28]

On May 19, Tesla announced that it planned to sell 6.8 billion shares of common stock in a public offering at a price of $215 per share. The offering would be underwritten by a syndicate of investment banks that included Morgan Stanley, Goldman Sachs Group, Deutsche Bank, Citigroup

and BofA Merrill Lynch. After deducting the underwriting discount, the company would receive $213.22 per share, generating total net proceeds of approximately $1.4 billion.[29] If the underwriters exercised their "overallotment option," they could purchase an additional 1.44 million shares from the company, bringing the total proceeds up to $1.7 billion.

The new funds would primarily be used to finance an accelerated roll-out of the Model 3 and to reach annual production volume of 500,000 units by 2018, two years sooner than originally planned. In addition to the sale of new shares by the company, the offering would also include approximately 2.8 million shares from Musk's personal holdings, which he was selling to pay taxes that he would owe as a result of exercising 5.5 million of his Tesla stock options. (He also planned to donate 1.2 million of his Tesla shares to charity.)

On the previous day, Tesla's shares had closed at $211.17. In Tesla's most recent prior public stock offering, in August 2015, the offer price had been $242.[30] (Tesla's historical share price performance is shown in **Exhibit 6**.) Whether the offering would be a success would critically depend on how closely the offer price reflected investors' views about Tesla's true underlying value.

Exhibit 1 Tesla Financial Statements: Balance Sheet

	2015	2014	2013
Assets			
Current assets			
Cash and cash equivalents	$1,196,908	$1,905,713	$845,889
Restricted cash and marketable securities	22,628	17,947	3,012
Accounts receivable	168,965	226,604	49,109
Inventory	1,277,838	953,675	340,355
Prepaid expenses and other current assets	125,229	94,718	27,574
Total current assets	$2,791,568	$3,198,657	$1,265,939
Operating lease vehicles, net	1,791,403	766,744	382,425
Property, plant and equipment, net	3,403,334	1,829,267	738,494
Restricted cash	31,522	11,374	6,435
Other assets	74,633	43,209	23,637
Total assets	$8,092,460	$5,849,251	$2,416,930
Liabilities and Stockholders' Equity			
Current liabilities			
Accounts payable	$916,148	$777,946	$303,969
Accrued liabilities	422,798	268,884	108,252
Deferred revenue	423,961	191,651	91,882
Capital lease obligations, current portion	136,831	9,532	7,722
Customer deposits	283,370	257,587	163,153
Convertible senior notes	633,166	601,566	182
Total current liabilities	$2,816,274	$2,107,166	$675,160
Capital lease obligations, less current portion		12,267	12,855
Deferred revenue, less current portion	446,105	292,271	181,180
Convertible senior notes, less current portion	2,040,375	1,806,518	586,119
Resale value guarantee	1,293,741	487,879	236,299
Other long-term liabilities	364,976	173,244	58,197
Total liabilities	$6,961,471	$4,879,345	$1,749,810
Convertible senior notes (Notes 6)	42,045	58,196	0
Total stockholders' equity	1,088,944	911,710	667,120
Total liabilities and stockholders' equity	$8,092,460	$5,849,251	$2,416,930

Exhibit 1 (Continued) Tesla Financial Statements: Income Statement

	2015	2014	2013	2012
Revenues				
Automotive sales	3,740,973	3,007,012	1,921,877	385,699
Development services	305,052	191,344	91,619	27,557
Total revenues	4,046,025	3,198,356	2,013,496	413,256
Cost of revenues				
Automotive sales	2,823,302	2,145,749	1,483,321	371,658
Development services	299,220	170,936	73,913	11,531
Total cost of revenues	3,122,522	2,316,685	1,557,234	383,189
Gross profit	923,503	881,671	456,262	30,067
Operating expenses				
Research and development	717,900	464,700	231,976	273,978
Selling, general and administrative	922,232	603,660	285,569	150,372
Total operating expenses	1,640,132	1,068,360	517,545	424,350
Loss from operations	(716,629)	(186,689)	(61,283)	(394,283)
Interest income	1,508	1,126	189	288
Interest expense	(118,851)	(100,886)	(32,934)	(254)
Other income (expense), net	(41,652)	1,813	22,602	(1,828)
Loss before income taxes	(875,624)	(284,636)	(71,426)	(396,077)
Provision for income taxes	13,039	9,404	2,588	136
Net loss	(888,663)	(294,040)	(74,014)	(396,213)
Net loss per share of common stock, basic and diluted	(6.93)	(2.36)	(0.62)	(3.69)
Weighted average shares used in computing net loss per share of common stock, basic and diluted	128,202	124,539	119,421	107,349

Source: Tesla Motors, Inc., Financial Statements, http://ir.tesla.com/secfiling.cfm?filingID=1564590-16-13195&CIK=1318605, accessed June 2016.

Exhibit 1 (Continued) Tesla Financial Statements: Statement of Cash Flows

	2015	2014	2013	2012
Net loss	($888,663)	($294,040)	($74,014)	($396,213)
Depreciation and amortization	$422,590	$231,931	$106,083	$28,825
Stock-based compensation	197,999	156,496	80,737	50,145
Inventory write-downs	44,940	15,609	8,918	4,929
Amortization of Department of Energy (DOE) loan origination costs	0	0	5,558	0
Change in fair value of DOE warrant liability	0	0	(10,692)	1,854
Fixed asset disposal	37,723	14,178	1,796	154
Changes in operating assets and liabilities:				
Accounts receivable	46,267	(183,658)	(21,705)	(17,303)
Inventories and operating lease vehicles	(1,573,860)	(1,050,264)	(460,561)	(194,726)
Prepaid expenses and other current assets	(29,595)	(60,637)	(17,533)	1,121
Other assets	(24,362)	(4,493)	(434)	(482)
Accounts payable	263,345	252,781	20,995	189,944
Accrued liabilities	0	162,075	66,418	9,603
Deferred revenue	322,203	209,681	268,098	(526)
Customer deposits	36,721	106,230	24,354	47,056
Resale value guarantee	442,295	249,492	236,299	0
Other long-term liabilities	23,697	61,968	33,027	10,255
Other	154,201	75,314	-2,540	1,549
Net cash provided by (used in) operating activities	**($524,499)**	**($57,337)**	**$264,804**	**($263,815)**
Purchases of property and equipment excluding capital leases	($1,634,850)	($969,885)	($264,224)	($239,228)
Withdrawals out of our dedicated DOE account, net	0	0	14,752	8,620
(Increase) decrease in other restricted cash	(26,441)	(3,849)	55	(1,330)
Purchases of short-term marketable securities	0	(205,841)	0	(14,992)
Maturities of short-term marketable securities	(12,260)	189,131	0	40,000
Net cash used in investing activities	**($1,673,551)**	**($990,444)**	**($249,417**	**($206,930**
Proceeds from issuance of convertible debt	$318,972	$2,300,000	$660,000	$0
Proceeds from issuance of common stock in public offering	730000	0	360,000	221,496
Proceeds from issuance of warrants	0	389,160	120,318	0
Proceeds from exercise of stock options and other stock issuances	106,611	100,455	95,307	24,885
Proceeds from issuance of common stock in private placement	20000	0	55,000	0
Principal payments on DOE loans	0	0	(452,337)	(12,710)
Purchase of convertible note hedges	0	(603,428)	(177,540)	0
Common stock and convertible debt issuance costs	(17,025)	(35,149)	(16,901)	0
Principal payments on capital leases and other debt	(203,780)	(11,179)	(8,425)	(2,832)
Collateralized lease borrowing	568,745	3,271	0	0
Proceeds from DOE loans	0	0	0	188,796
Net cash provided by financing activities	**$1,523,523**	**$2,143,130**	**$635,422**	**$419,635**
Effect of exchange rate changes on cash and cash equivalents	(34,278)	(35,525)	(6,810)	(2,266)
Net increase (decrease) in cash and cash equivalents	(708,805)	1,059,824	643,999	(53,376)
Cash and cash equivalents at beginning of period	1,905,713	845,889	201,890	255,266
Cash and cash equivalents at end of period	**$1,196,908**	**$1,905,713**	**$845,889**	**$201,890**

Source: Tesla Motors, Inc., Financial Statements, http://ir.tesla.com/secfiling.cfm?filingID=1564590-16-13195&CIK=1318605, accessed June 2016.

Exhibit 2 Tesla Vehicle Models

Model S (Base model: 70D, Upgraded models: 90D, P90D)

MSRP: Starts at $76,500
4 door, 5 passenger, premium sedan
All-wheel drive
Range of up to 294 miles per charge
Top Speed: 140-155 MPH
Zero to 60 MPH in 2.8-5.2 seconds
Miles per Gasoline Equivalent (MPGe): 89/90
70 kWh battery (can be upgraded to 74kWh)
Launched: June 2012

Model X (Base model: 75D, Upgraded models: 90D, P90D)

MSRP: Starts at $83,000
Luxury Sports Utility Vehicle
All-wheel drive
Range of 237-257 miles per charge
Top Speed: 130-155 MPH
Zero to 60 MPH in 3.2 – 6.0 seconds
Miles per Gasoline Equivalent (MPGe): 89/90
90 kWh battery
Launched: September 29, 2015

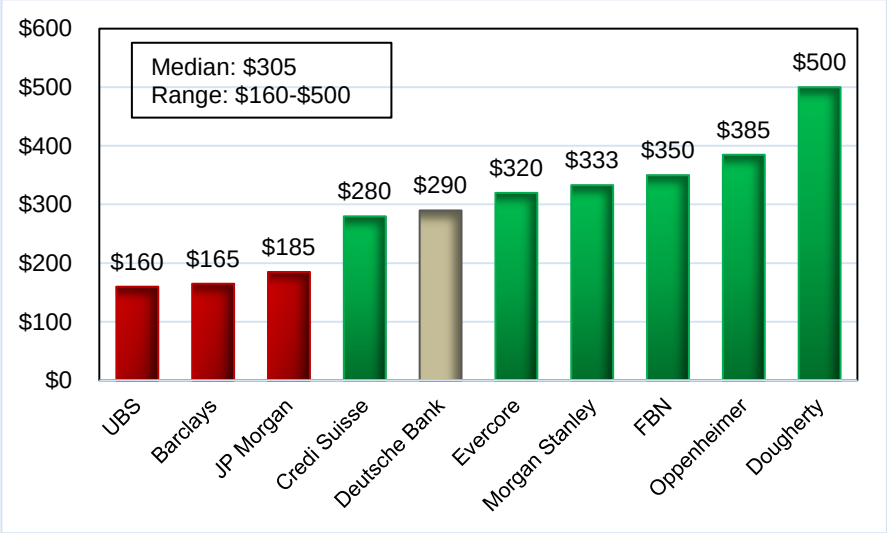
Model 3

MSRP: Starts at $35,000
Premium sedan
Range of 215 miles per charge
Launch scheduled for late 2017
Zero to 60 MPH in under 6.0 seconds
Designed to achieve 5-star safety rating

Source: Car and Driver, April 2016, http://www.caranddriver.com/tesla/model-s, accessed May 2016, and company website, https://www.teslamotors.com/models, accessed May 2016 (Model S); Car and Driver, June 2016, http://www.caranddriver.com/tesla/model-x, accessed May 2016, and company website, https://www.teslamotors.com/modelx, accessed May 2016 (Model X); and Auto Express, http://www.autoexpress.co.uk/89037/tesla-model-3-picture-gallery#0, accessed May 2016, and company website, https://www.teslamotors.com/model3, accessed May 2016 (Model 3).

Exhibit 3 Tesla: Analyst Target Prices, Stock Recommendations, and Financial Forecasts as of early May 2016

A. Target Prices and Stock Recommendations (Green=Buy, Beige=Hold, Red=Sell)



B. Earnings Forecasts

	Price Target	Rating	EPS 2016E	EPS 2017E	EPS 2018E
UBS	$160.00	Sell	$0.10	$0.40	($0.80)
Barclays	$165.00	Underweight	($0.09)	($0.82)	($0.48)
JP Morgan	$185.00	Underweight	$1.75	$5.11	$10.10
Credit Suisse	$280.00	Outperform	$2.00	$4.00	N/A
Deutsche Bank	$290.00	Hold	$0.06	$4.81	$13.01
Evercore	$320.00	Buy	$1.47	$4.13	$12.72
FBN	$350.00	Outperform	$1.32	$3.51	$13.72
Oppenheimer	$385.00	Outperform	$0.80	$2.11	$11.45
Morgan Stanley	$450.00	Overweight	$0.43	$1.06	N/A
Dougherty	$500.00	Buy	$0.21	NA	NA

C. Long-term Growth Forecasts

	Price Target	Long-term Growth Rate
Mean	$301.52	56%
Median	$290.00	50%
High	$500.00	96%
Low	$160.00	30%
Total No.	11	5

Source: Research reports from Thomson One, S&P Capital IQ, accessed September 2017. All reports dated May 2016 with the exception of Credit Suisse (April 2016) and Morgan Stanley (November 2015). S&P Capital IQ data is as of March 2016.

Exhibit 4 J.P. Morgan Price Target Analysis, May 5, 2016 ($millions except per share amounts)

A: Summary of Price Target Methodology

	Weight	Price Target
DCF	50%	$199
2020 Multiples-based Analysis	50%	$171
	100%	$185
Current Share Price	$222.56	
Upside vs Current	-16.9%	

B: Summary of Comparable Company Market Multiples Methodology

Multiple	Weighting	Share Price	WACC	Share Price Discounted to Dec 2016
EV/EBITDAP	33%	$197	13%	$138
Price-to-Earnings	33%	$224	13%	$157
Price-to-Sales	33%	$311	13%	$218
2020 Multiples-based Analysis	100%	$244	13%	$171
Current Share Price		$222.56		$222.56
Upside vs. Current		9.6%		-23.2%

C: Multiples Valuation Using EV/EBITDAP Multiple

	Earnings Ramp		
	2016E	2017E	2018E
Sales	$9,118	$12,415	$25,298
EBITDA	$501	$1,019	$3,273
(+) Pension Expense	$0	$0	$0
EBITDAP	$501	$1,019	$3,273
JPM EV/EBITDAP Multiple	8.0X	8.0X	8.0X
Enterprise Value	$4,010	$8,151	$26,184
(-) Total Debt	($2,641)	($2,780)	($474)
(+) Cash & Investments	$1,220	$1,366	$2,332
Implied Equity Value	$2,589	$6,737	$28,042
Diluted Share Count	142	142	142
Implied Share Price	$18	$47	$197
Current Share Price	$222.60	$222.60	$222.60
Upside vs Current	-92%	-79%	-11%

Exhibit 4 (Continued) J.P. Morgan Price Target Analysis, May 5, 2016 ($millions except per share amounts)

D: Multiples Valuation Using Price-to-Earnings Multiple

	Earnings Ramp		
	2016E	**2017E**	**2018E**
Sales	$9,118	$12,415	$25,298
Net Income	$249	$726	$2,451
P/E Multiple	13.0x	13.0x	13.0x
Implied Equity Value	$3,237	$9,438	$31,863
Diluted Share Count	142	142	142
Implied Share Price	$23	$66	$224
Current Share Price	$222.60	$222.60	$222.60
Upside vs Current	-90%	-70%	1%

E: Multiples Valuation Using Price-to-Sales Multiple

	Earnings Ramp		
	2016E	**2017E**	**2018E**
Sales	$9,118	$12,415	$25,298
Price / Sales Multiple	1.75x	1.75x	1.75x
Implied Equity Value	$15,956	$21,726	$44,272
Diluted Share Count	142	142	142
Implied Share Price	$112	$153	$311
Current Share Price	$222.60	$222.60	$222.60
Upside vs Current	-50%	-31%	40%

Exhibit 4 (Continued) J.P. Morgan Price Target Analysis, May 5, 2016 ($millions except per share amounts)

F: Comparable Companies Used in Market Multiples Valuations

		Price	Market	Enterprise	Price/Sales		EV/EBITDA			P/E		
Investment Comparable	**Ticker**	**(Local FX)**	**Cap**	**Value (mn)**	**2014**	**2015**	**2014**	**2015**	**2016**	**2014**	**2015**	**2016**
Disruptive Technology												
Apple	AAPL	$94.19	$515,919.00	$362,863.00	2.9x	2.2x	6.1x	4.5x	5.1x	14.9x	10.3x	11.2x
Google	GOOG	$695.70	$482,626	$406,993	9.2x	8.0x	15.5x	13.7x	11.7x	27.1x	24.0x	20.8x
Average					***6.0x***	***5.1x***	***10.8x***	***9.1x***	***8.4x***	***21.0x***	***17.2x***	***16.0x***
Clean Technology												
ENOC	ENOC	$6.90	$211	$185	0.5x	0.5x	2.5x	NM	NM	5.2x	NM	NM
FSLR	FSLR	$51.78	$5,294	$3,713	1.5x	1.5x	6.6x	5.3x	6.2x	19.8x	12.0x	12.0x
SPWR	SPWR	$17.90	$2,448	$3,233	1.0x	1.0x	11.1x	6.6x	6.9x	13.6x	9.1x	12.3x
Average					***1.0x***	***1.0x***	***6.7x***	***5.9x***	***6.6x***	***12.9x***	***10.6x***	***12.1x***
Auto Tech / Innovation												
Borgwarner	BWA	$34.38	$7,482	$9,756	0.9x	1.0x	6.9x	7.2x	6.5x	10.6x	11.5x	10.5x
Gentex	GNTX	$16.07	$4,645	$4,228	3.3x	3.0x	8.6x	7.8x	7.1x	16.1x	15.3x	13.6x
Harman	HAR	$73.28	$5,170	$6,102	1.0x	0.9x	10.9x	8.9x	7.4x	16.7x	13.0x	11.7x
Average					1.7x	1.6x	8.8x	8.0x	7.0x	14.5x	13.3x	11.9x
Luxury Automakers												
BMW	BMW	€ 76.45	€ 49,635	€ 90,968	0.6x	0.5x	7.3x	6.4x	6.4x	8.5x	8.1x	7.9x
Daimler	DAI	€ 58.68	€ 62,778	€ 42,239	0.5x	0.4x	2.8x	2.2x	2.2x	9.7x	7.0x	7.1x
Average					***0.6x***	***0.5x***	***5.0x***	***4.3x***	***4.3x***	***9.1x***	***7.5x***	***7.5x***
High Growth Automakers												
BYD	1211	43.85	157,173	188,138	2.9x	2.2x	31.5x	21.5x	16.2x	201.1x	77.2x	31.7x
Great Wall	2333	5.76	81,734	70,704	1.3x	1.1x	6.4x	6.0x	5.9x	6.4x	6.6x	6.5x
SAIC	600104	20.21	222,827	276,209	0.4x	0.3x	10.3x	12.5x	10.4x	8.0x	7.7x	7.1x
Average					***1.5x***	***1.2x***	***16.1x***	***13.4x***	***10.8x***	***71.8x***	***30.5x***	***15.1x***
All Company Average					**2.0x**	**1.7x**	**7.9x**	**7.4x**	**7.7x**	**13.1x**	**11.3x**	**12.7x**

Exhibit 4 (Continued) J.P. Morgan Price Target Analysis, May 5, 2016 ($millions except per share amounts)

G: Discounted Cash Flow (DCF) Analysis

	2017E	2018E	2019E	2020E
Operating Cash Flow	$2,378	$3,010	$3,298	$4,007
Less: Capex	($2,250)	($2,000)	($1,750)	($1,500)
Add: Cash Interest	$161	$160	$65	$65
Unlevered Free Cash Flow (FCF)	$289	$1,170	$1,613	$2,572
Terminal Value				$30,450
PV of FCFs	$4,146			
PV of Terminal Value	$20,086			
Enterprise Value	$24,232			
Less: Net Debt	($1,688)			
Equity Value	$25,920			
Implied Share Price	$199			

WACC	
Risk-Free Rate	2.5%
Beta	1.5
Equity Risk Premium	7.5%
Cost of Equity	**13.9%**
Cost of Debt	1.5%
Tax Rate	24.0%
After-Tax Cost of Debt	**1.1%**
Equity	90.0%
Debt	10.0%
Calculated WACC	**12.6%**
Memo: Capital Structure	
Debt	$3,130
Equity (Market Cap)	$29,800
Total Capitalization	$32,930

Source: J.P. Morgan North America Equity Research, "Tesla Motors," May 5, 2016, via Thomson One, accessed May 2016.

Exhibit 5 Morgan Stanley Price Target Analysis, May 9, 2016 ($millions except per share amounts)

Our price target of $333 represents the midpoint of our base and bull case valuation ($252 and $413, respectively) and incorporates our view that while a mobility app is likely to be announced within 12-18 months, there is a degree of uncertainty as to if, when and how this product unfolds and how much the market will pay for it.

Bull Case - $413

Base case valuation of $233 for core business and $130 for Tesla Mobility. We value Tesla Mobility using a 15-year DCF assuming a 30% tax rate, 13% discount rate, and terminal cash flow perpetual growth rate of 3% (implying an exit NOPAT multiple of 10.3x). To derive our bull case valuation for Tesla, we add to our $233 valuation for Tesla Motors: (1) $130 for Tesla Mobility, which assumes 1% of global miles traveled and 7.5% pretax margins by 2030; and (2) $50 for Tesla Energy, which assumes that 30% of Gigafactory output is sold to the power sector at a 20% margin.

Base Case - $252

We believe Tesla Motors cannot be valued on near-term metrics on multiples like traditional auto companies. We have thus chosen a 15-year time horizon for our DCF which captures the full maturation of the Model S, Model X (and top hat derivatives), and also the ramp-up of its mass market electric vehicle (the Gen 3). We have applied an 11% WACC with a range of 9% to 13%. The terminal value, calculated on a midpoint of 10x EV/EBITDA, accounts for roughly 50% of the total DCF value across the range of methodologies we have applied to arrive at our valuation of $233 for the core business. Our base case assumes the successful commercialization of Model S, X and Gen 3 with combined sales volumes of ~750k units by 2030 (excluding Mobility fleet) with operating profit margins normalizing at ~12%. Separately, we value Tesla Energy at $19/share. We assume that 15% of Gigafactory output is sold to the power sector at a 15% margin. Our base case valuation for Tesla thus incorporates $233 for the core Tesla Motors business and $19 for Tesla Energy. No value ascribed to Tesla Mobility.

Bear Case - $50

Tesla is limited to niche premium brand status. A thriving, but small company with OP margins normalizing at <10%. Launch of Model X faced with significant execution issues. Model S and X combined volume of no more than 70k units by 2020. Gen 3 volume reaching 60k units by 2020 and 175k by 2030. Valuation excludes any further benefits from the sale of ZEV credits. No value ascribed to Tesla Energy or Tesla Mobility.

Key Risks

- Tesla may never make the leap to a shared mobility model, limiting itself to a niche premium brand with low volumes.
- Investors should allow a reasonable level of execution risk on the many unprecedented innovations brought to market on the Model X including never-been-done-before attributes like the double-ringed doors.
- Volatility in commodity prices such as oil materially changes the economic benefits of electric vehicles, particularly when commercialized at lower price points (Model 3) and higher volumes.
- Expansion into non-auto business like grid/solar energy storage exposes Tesla's operations to untested cost, competitive and regulatory forces.
- US dealer franchise laws that may prevent TSLA from operating its own stores.

Source: Morgan Stanley Research, "Tesla Motors Inc." November 4, 2015, via Thomson One, accessed May 2016.

Exhibit 6 Tesla Share Price Performance Since IPO

Source: Case writer from Historical Equity Pricing Data supplied by Interactive Data Pricing and Reference Data LLC, S&P Capital IQ, accessed September 2017.

Endnotes

[1] Elon Musk, "The Secret Tesla Motors Master Plan (just between you and me)," TESLA blog, August 2, 2006, https://www.teslamotors.com/blog/secret-tesla-motors-master-plan-just-between-you-and-me, accessed May 2016.

[2] American Automobiles, "The Morrison Electric Automobile & The William Morrison Co.,"http://www.american-automobiles.com/Electric-Cars/Morrison-Electric.html, accessed June 2016.

[3] PBS, "Timeline: History of the Electronic Car," October 30, 2009, http://www.pbs.org/now/shows/223/electric-car-timeline.html, accessed June 2016.

[4] PBS, "Timeline: History of the Electronic Car," October 30, 2009, http://www.pbs.org/now/shows/223/electric-car-timeline.html, accessed June 2016

[5] Tad Friend, "Plugged In," *The New Yorker*, August 24, 2009, http://www.newyorker.com/magazine/2009/08/24/plugged-in, accessed May 2016.

[6] Anton Wahlman, "The Great Debate -- All-Electric Cars vs. Plug-In Hybrids," *TheStreet.com*, April 25, 2014, https://www.thestreet.com/story/12682853/1/the-great-debate--all-electric-cars-vs-plug-in-hybrids.html, accessed June 2016.

[7] PBS, "Timeline: History of the Electronic Car," October 30, 2009, http://www.pbs.org/now/shows/223/electric-car-timeline.html, accessed June 2016.

[8] Martin LaMonica, "Tesla Motors opens doors to the rich and famous," cnet.com, May 5, 2008, http://www.cnet.com/news/tesla-motors-opens-doors-to-the-rich-and-famous/, accessed May 2016.

[9] James F. Peltz, "Despite Tesla frenzy, electric car sales are far from robust," Los Angeles Times, April 11, 2016, http://www.latimes.com/business/autos/la-fi-agenda-electric-cars-20160411-snap-htmlstory.html, accessed June 2016.

[10] Fred Lambert, "Tesla's original team, where are they now?" May 16, 2015, http://electrek.co/2015/05/16/teslas-original-team-where-are-they-now/, accessed May 2016.

[11] Scott Pelley, ",U.S., China, Russia, Elon Musk: Entrepreneur's "insane" vision becomes reality," *CBS News*, May 22, 2012, http://www.cbsnews.com/news/us-china-russia-elon-musk-entrepreneurs-insane-vision-becomes-reality/, accessed June 2016.

[12] "Elon Musk," Forbes, http://www.forbes.com/profile/elon-musk/, accessed June 2016.

[13] David Goldman, "Welcome TSLA: Tesla Motors raises $266 million in IPO," June 29, 2010, CNN Money, http://money.cnn.com/2010/06/29/technology/tesla_ipo/, accessed June 2016.

[14] Chuck Squatriglia, "Tesla IPO Raises $226.1M, Stock Surges 41 Percent," Wired, June 29, 2010, http://www.wired.com/2010/06/tesla-ipo-raises-226-1-million/, accessed June 2016.

[15] Tesla Motors, Inc., December 31, 2015 10K. Palo Alto: Tesla Motors, Inc., 2016. http://ir.tesla.com/secfiling.cfm?filingID=1564590-16-13195&CIK=1318605, accessed June 2016.

[16] Dan Neil, "Tesla Model S: The Future Is Here," *Wall Street Journal*, April 3, 2015, http://www.wsj.com/articles/tesla-model-s-the-future-is-here-1428086202, accessed May 2016.

[17] *Motor Trend*, 2013 Motor Trend Car of the Year.

[18] Dana Hull, "Tesla Says It Received More Than 325,000 Model 3 Reservations," Bloomberg, April 7, 2016, http://www.bloomberg.com/news/articles/2016-04-07/tesla-says-model-3-pre-orders-surge-to-325-000-in-first-week, accessed May 2016.

[19] Tesla press release, "Tesla First Quarter 2016 Update," May 4, 2016, http://files.shareholder.com/downloads/ABEA-4CW8X0/2111023058x0x889927/27EE2FDA-9C77-4D6A-8CEE-E8DFE45227BA/Q1_2016_Tesla_Shareholder_Letter.pdf, accessed May 2016.

[20] Martin LaMonica, "Tesla Motors opens doors to the rich and famous," cnet.com, May 5, 2008, http://www.cnet.com/news/tesla-motors-opens-doors-to-the-rich-and-famous/, accessed May 2016.

[21] J.P. Morgan North America Equity Research, "Tesla Motors," May 5, 2016, via Thomson One, accessed May 2016.

[22] J.P. Morgan North America Equity Research, "Tesla Motors," May 5, 2016, via Thomson One, accessed May 2016.

[23] Andrea James, "Tesla Motors," Dougherty & Company LLC, April 1, 2016, via Thomson One, accessed December 2017.

[24] Morgan Stanley Research, "Tesla Motors," November 4, 2015, via Thomson One, accessed December 2016.

[25] Morgan Stanley Research, "Tesla Motors," May 9, 2016, via Thomson One, accessed December 2017.

[26] Fred Lambert, "Elon Musk teases a new autonomous "Tesla Mobility" service," April 21, 2016, http://electrek.co/2016/04/21/elon-musk-tesla-mobility-service/, accessed June 2016.

[27] Tesla Motors Inc., "Schedule 14-A," May 31, 2016, https://www.sec.gov/Archives/edgar/data/1318605/000119312516543341/d133980ddef14a.htm#toc133980_41, accessed September 2017.

[28] S&P Capital IQ, accessed September 2017.

[29] Tesla Motors, Inc. , "Prospectus Supplement to Prospectus dated May 18, 2016," (Palo Alto: Telsa Motors), May 19, 2016, https://www.sec.gov/Archives/edgar/data/1318605/000119312516596657/d185970d424b5.htm, accessed September 2017.

[30] "Tesla raises $1.46 billion in stock sale: IFR," May 19, 2016, http://www.reuters.com/article/us-tesla-offering/tesla-raises-1-46-billion-in-stock-sale-ifr-idUSKCN0YB08W, accessed September 2017.