

Tesla Motors Inc TSLA (XNAS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★	229.08 USD	259.00 USD	0.88	—	0.00	34.06	Auto Manufacturers	Standard
09 Aug 2016 05:00, UTC	09 Aug 2016	24 Jun 2016 14:38, UTC		09 Aug 2016	09 Aug 2016	09 Aug 2016		

Morningstar Pillars	Analyst	Quantitative
Economic Moat	None	None
Valuation	★★★	Undervalued
Uncertainty	Very High	Medium
Financial Health	—	Moderate

Source: Morningstar Equity Research

Quantitative Valuation



	Current	5-Yr Avg	Sector	Country
Price/Quant Fair Value	0.92	1.12	1.00	1.15
Price/Earnings	—	5.3	18.0	21.6
Forward P/E	-0.3	—	15.3	16.3
Price/Cash Flow	—	144.1	10.2	11.9
Price/Free Cash Flow	—	—	16.8	17.8
Trailing Dividend Yield%	—	—	2.33	2.00

Source: Morningstar

Bulls Say

- ▶ Tesla has the potential to change the world with long-range EV technology and battery technology that can store solar energy.
- ▶ The cost advantage of recharging over gasoline is significant, and gas will probably never be able to catch up. Furthermore, the instant torque of EVs makes them fun to drive, as the vehicle is always at full power.
- ▶ Its unique Supercharger network makes Tesla the only automaker directly trying to alleviate the range anxiety of buying an EV.

Bears Say

- ▶ Investing in Tesla carries tremendous uncertainty. The market has very high expectations for the stock, so a slowdown in growth, execution problems, or lack of capital could lead to a severe decline in the stock price.
- ▶ The success of Tesla's move into energy storage is highly uncertain and a possible SolarCity acquisition adds to that uncertainty.
- ▶ Mass EV adoption by consumers could be many more years away than Tesla expects. If demand does not materialize, the company is likely to struggle to recoup the costs of the gigafactory.

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Tesla Improves Expense Management and Capital Spending in the Second Quarter

Investment Thesis

David Whiston, CFA, CPA, CFE, Strategist, 14 August 2015

Tesla has the momentum and charging infrastructure to be the dominant electric vehicle firm, but we do not see it having mass-market volume for at least another decade. Tesla's product plans for now do not mean an electric vehicle for every consumer who wants one, as the prices are too high. The Model X crossover released in late 2015 starts at about \$74,000, but will average much higher as consumers add options. The Model 3 sedan (a BMW 3-Series and Audi A4 competitor) will start at about \$35,000 and is scheduled for late 2017. This price is before any tax credits, but the \$7,500 U.S. federal tax credit applies only to the first 200,000 vehicles Tesla sells in the United States starting in 2010 and then is phased out. We estimate Tesla's global sales since 2010 at nearly 110,000 units as of year-end 2015, with U.S. sales of about 65,000.

Tesla is building its gigafactory--a lithium-ion battery plant under construction in Nevada--to help it produce 500,000 vehicles in 2018 at its sole assembly plant in Fremont, California. CEO Elon Musk said in May 2016 that his best guess for 2020 output is 1 million vehicles, but we think that will certainly not all be in California. We are skeptical of this number, given where Tesla is in 2016. Even if demand exists for these vehicles, this quantity is small relative to total global auto production, which should reach 100 million units in the next few years. Thus, we think global mass adoption of pure electric vehicles is still a long way off.

In the meantime, Tesla will have growing pains, possibly recessions to fight through before reaching mass-market volume, and may be acquiring SolarCity. Even if industry forecasts of single-digit market share for EVs prove too conservative, it is important to keep the hype about Tesla in perspective relative to the firm's very limited production capacity. Tesla's mission is to make EVs increasingly more affordable, which means more assembly plants must come on line to achieve annual unit delivery volume in the millions. This expansion will cost billions a year in capital spending and research and development and will be necessary even during downturns in the economic cycle.

Analyst Note

David Whiston, CFA, CPA, CFE, Strategist, 03 August 2016

We are not changing our moat or fair value estimate for Tesla after the company's second-quarter adjusted revenue and EPS missed consensus. We continue to see Tesla's stock with option value that is based on what the firm can do many years, if not decades, from now so quarterly results are often overdone in the press. Second-quarter adjusted EPS was a loss of \$1.06 versus a consensus loss of \$0.52. Deliveries of 14,402 vehicles was not very different from the announced number on July 3, with Model S making up 68% of mix. Management stressed on the call that they had gone through production hell until about June this year but now the factory, or machine as they call it, is in good shape and producing nearly 2,000 vehicles a week. Production should be at 2,400 a week by the fourth quarter. Further manufacturing improvements and reductions in Model S and Model X costs are expected to offset the margin headwind of more sales of the recently introduced 60 kWh models. The company still expects to deliver about 50,000 vehicles in the second half of 2016 which would put the full-year total at slightly over 79,000, about in line with our projection.

We were pleasantly surprised to see Tesla's adjusted free cash flow, which we think is the more appropriate way to look at its cash flow due to the add back of proceeds from leasing partners, posting its best level in at least the prior six quarters with a burn of only \$1.6 million. This level is a huge improvement from a cash burn of \$446.1 million in second-quarter 2015. In the first half of 2016 the company has generated negative adjusted free cash flow of \$226.3 million compared with negative \$926 million in the first half of last year. We expect cash burn to worsen in the second half of 2016, however, because full-year capital expenditures will come in around \$2.3 billion, or perhaps a bit less per CFO Jason Wheeler, while first-half 2016 capital spending totaled \$511.6 million. Cash totaled \$3.2 billion at June 30.

Economic Moat

David Whiston, CFA, CPA, CFE, Strategist, 03 August 2016

We do not see a moat yet because Tesla is still early in its life cycle and has a high degree of execution risk as it

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Close Competitors	Currency (Mil)	Market Cap	TTM Sales	Operating Margin	TTM/PE
Toyota Motor Corp TM	USD	178,342	256,565	9.78	8.47
Daimler AG DAI	EUR	67,258	151,367	7.65	8.44
Volkswagen AG VOW3	EUR	63,439	211,521	-1.87	0.00
Bayerische Motoren Werke AG BMW	EUR	52,735	93,190	10.44	7.89

adds new models and new capacity. This dynamic creates huge uncertainty as to whether the firm will succeed in continuing to make great product at an affordable price and whether enough consumers will make the switch from internal combustion engine and hybrid vehicles. There is evidence suggesting that Tesla will succeed, but if not, Tesla will remain an automaker for the wealthy. In a January 2014 Automotive News interview, Musk said in regard to Tesla making it, "I think we will, but this is not a bold assertion we unequivocally will. There is a possibility we may not."

Tesla's growth runway looks very lucrative, but this growth also requires constant substantial reinvestment in platforms, the gigafactory--for which Tesla is only spending about 40% of the total cost of about \$5 billion, while suppliers pay the rest--and annual assembly capacity, since the eventual output limit of Fremont is uncertain, as is the cadence of Tesla opening new plants overseas. During this growth phase, there will almost certainly be a recession or two. In times of economic uncertainty, it is difficult to say what Tesla's sales volume will be or what access, if any, the firm will have to capital markets.

For a narrow moat rating, a company must more likely than not have positive excess normalized returns 10 years from today, and there must not be any substantial threat of major value destruction. All three of our valuation scenarios have returns on invested capital eventually good enough for a moat, but we also see risk of major value destruction should EV adoption flop or occur much slower than any of our three 10-year forecast periods assume, or if company cannot meet its volume targets. For that reason, we wait for now to award Tesla a moat, but we see a positive moat trend as a result of the strengthening of the firm's brand and its cost structure.

Although we stress the uncertainty in investing in Tesla today, the company's competitive position is better than some may expect from a tech startup that makes automobiles. Looking at our five moat sources, we see a case for brand (intangibles) and cost advantage as sources

of a moat in the future. Some may argue for efficient scale, claiming that Tesla is the dominant pure EV firm. Although Tesla's long range gives it a huge advantage over pure EVs on the market (294 miles EPA range for the Model S 90D kWh battery, versus an estimated more than 200 miles for the Chevrolet Bolt, 107 miles for the Nissan LEAF, 150 miles for the BMW i3 with range extender, and 100 miles for the Ford Focus), we consider Tesla's competition to be the entire auto industry rather than just EVs. There are far too many automakers all over the world for us to claim that Tesla's market is effectively served by a small number of players.

Musk's own words do not support efficient scale. He wrote in a June 12, 2014, blog post announcing that Tesla would not sue companies that use its patented technology in good faith: "Given that annual new-vehicle production is approaching 100 million per year and the global fleet is approximately 2 billion cars, it is impossible for Tesla to build electric cars fast enough to address the carbon crisis. By the same token, it means the market is enormous. Our true competition is not the small trickle of non-Tesla electric cars being produced, but rather the enormous flood of gasoline cars pouring out of the world's factories every day."

Valuation

David Whiston, CFA, CPA, CFE, Strategist, 03 August 2016

We are maintaining our fair value estimate to \$259 per share. We deduct about \$943 million from our model's equity value for about 10.8 million Tesla shares issued at our standalone fair value estimate of \$269 to possibly acquire SolarCity, netted against our \$2 billion standalone SolarCity valuation. We will not integrate SolarCity into the model's financial statements unless shareholders vote yes on the deal. In light of the May 2016 announcement of 500,000 vehicles by 2018 and 1 million by 2020, we model 6.9 million new vehicle deliveries over 10 years. Our model has energy storage revenue over our 10-year explicit forecast period totaling \$36.6 billion. Our weighted average cost of capital remains 8.9%. The midcycle operating margin is 9% and includes stock option compensation expense.

We model 2016 vehicle deliveries of 79,000, 2017 deliveries of 180,000, and 400,000 in 2018. We model capital expenditures of \$2.3 billion for 2016. When modeling Tesla in our discounted cash flow model, we keep an open mind regarding the disruptive potential of

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Tesla on the auto and utilities industry as well as focusing on what the company can achieve in 10 years. For a young company like Tesla, we think long-term potential is the more important question and the value driver, but tremendous uncertainty surrounds the story.

Management's long-term guidance since its 2010 IPO is for an operating margin in the low-teens to mid-teens. The guidance is also non-GAAP, so it includes the residual value guarantee program revenue recognized immediately and excludes stock option expense, whereas we include stock option expense in EBIT so as to capture the cost of diluting shareholders. Tesla's guidance is also much higher than typical mid-single- to low-double-digit automaker EBIT margins, but the firm has upside margin potential if it can reduce its battery costs and have a high-margin storage business. We model nearly \$510 million of storage revenue in 2016, with that figure growing to about \$6 billion by 2025. This revenue is about 10% of the fair value estimate.

Only Stage I is a detailed explicit forecast period, and we used 10 years instead of the more commonly used five years in our methodology in order to give Tesla time to mature. With our model placing 90% of Tesla's enterprise value in stages II and III of our model, we think investors today are paying almost entirely for potential.

Risk

David Whiston, CFA, CPA, CFE, Strategist, 03 August 2016

Investing in Tesla comes with tremendous uncertainties due to the future of electric vehicles and energy storage. If a recession hits, investors may not want to hold the stock of a firm whose story will not play out until next decade, or Tesla could fail to raise capital when it needs it. Until at least when the Model 3 goes on sale in late 2017, there is no way to know for sure if consumers in large volume are willing to switch to an EV and deal with range anxiety and longer charging times compared with using a gas station. Tesla is fighting a state-by-state battle to keep its stores factory-owned rather than franchised, which raises legal risk for Tesla and could one day stall growth. The energy storage market for solar is in its infancy. If the company's growth ever stalls or reverses, we would expect a severe decline in the stock price because current expectations for Tesla are immense, in our opinion. With a young, growing company, there is always more risk of diluting shareholders or taking on too much debt to fund growth. Tesla also has customer

concentration risk, with the U.S., Norway, and China constituting about 65% of 2015 GAAP revenue, down from 74% in 2014.

We see immense key-man risk for the stock, as Tesla's fate is closely linked to Musk's actions. Should he leave the company, we would not be surprised to see the stock fall dramatically. Also, Musk has Tesla shares as collateral for personal debt. Selling this block of shares quickly may cause a rapid fall in Tesla's stock price. Tesla will soon have formidable EV competition from German luxury brands that it does not have today. Management may be distracted from integrating SolarCity if the deal goes through. It's uncertain if Tesla vehicle owners will also want solar panels and batteries in sufficient volume to justify buying SolarCity. Given the many uncertainties regarding investing in Tesla today, our fair value uncertainty rating will remain very high for a long time.

Management

David Whiston, CFA, CPA, CFE, Strategist, 24 June 2016

We award Tesla a Standard stewardship rating, but we will revisit that rating should the all-stock offer to acquire SolarCity go through. We do not like Tesla using what we feel was undervalued stock to make the acquisition. The offer came about one month after Tesla raised equity and at the time there was no talk of an acquisition. Furthermore, the deal to acquire a firm led by two of Elon Musk's cousins after SolarCity's stock has fallen by 75% since early 2014 is not what we like to see. The goal of acquiring SolarCity is to make Tesla a one-stop shop for saving the world with solar panels for power generation, batteries to store the power, and then use that power to recharge an electric vehicle; however, there is no guarantee that potentially millions of Tesla vehicle owners in the future want solar panels when electricity is very cheap in many states and not all of the U.S. has frequent sunshine.

The company is growing, and we think it is right to refrain from paying a dividend or repurchasing stock. Reinvesting in the business is key for Tesla, and we think it is the best path for the company to eventually generate consistent economic profit. ROIC has been negative the past two years, but we model an economic profit starting in 2018.

CEO Elon Musk, 45, is synonymous with Tesla, and the stock could suffer should he resign. We estimate that Musk directly owns about 21% of the stock and also serves

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as chairman. We like that Elon buys more equity when Tesla has secondary offerings as it keeps his economic interests aligned with outside shareholders. His brother, Kimbal Musk, is also on Tesla's board, as is former SolarCity CFO Brad Buss. Elon is chairman of SolarCity and owns about 22% of that firm. Other Tesla officers and directors are also on SolarCity's board and SolarCity's CEO, Lyndon Rive, is Elon's cousin. Musk has an immense amount of responsibility by serving as Tesla's CEO, SolarCity's chairman, and SpaceX's CEO, which raises the risk of being pulled in too many directions at once. Directors and officers own about 22% of Tesla's stock, so Elon's interests are aligned with Tesla's shareholders', but other shareholders are essentially along for the ride. The board is staggered, which is not our preferred practice. Each director serves a three-year term, and there are three classes of directors.

Tesla has various related-party transactions with SolarCity and SpaceX for solar panels on Supercharger stations, aircraft, and real estate use, but we see no alarming transactions in the proxy statement that could hurt shareholders.

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Analyst Notes Archive

Tesla Unveils Model 3, and It Appears That the Firm Will Continue to Not Be Able to Meet Demand

David Whiston, CFA, CPA, CFE, Strategist, 01 April 2016

Tesla unveiled its long-awaited Model 3 sedan late March 31. We are impressed with the car, but we are leaving our fair value estimate in place because we did not hear anything yet to merit a change to our valuation model. Tesla is guiding for Model 3 deliveries to start at the end of 2017, so we continue to not model any meaningful Model 3 revenue until 2018. The vehicle, as announced in 2014, will start at \$35,000 before tax credits, but we expect the average price to be above \$40,000 once customers add in various yet-to-be-announced options. Tesla has said that the base vehicle will come with autopilot standard and be supercharger-enabled. The range is expected at 215 miles, but there will be options to extend it. No battery specifications were released. The vehicle is on a new platform, seats five adults, and at a minimum will do 0-60 mph in less than 6 seconds, faster than a comparably priced BMW 3-Series.

Despite the massive hype and media coverage, it's hard for us to get excited about a vehicle that will not have meaningful volume until 2018. Still, we find the car's exterior to be nearly as appealing as the Model S, and we expect the car to sell very well (reservations are already at 135,000) and its platform to eventually spawn variants such as a crossover. The most interesting thing to us about the car is that CEO Elon Musk said that the March 31 event was part one of the launch and part two will be close to launch and take things to the next level. Given that autopilot comes standard, we suspect he is teasing about some type of autonomous vehicle function. We are also curious about how many people will actually convert their reservation when they realize that with options the vehicle could cost well over \$40,000 and that installing a 240-volt outlet could cost another \$1,200 or more. That voltage is not required but greatly speeds up recharging times at home.

Tesla's First Quarter Brings Massive Acceleration in Company's Growth Plans, We See a Capital Raise

David Whiston, CFA, CPA, CFE, Strategist, 04 May 2016

Tesla Motors first-quarter results are causing us to change our model and we expect to significantly increase our fair value estimate. We want more time to incorporate the

latest comments but we are likely raising our valuation to within the range of \$300-\$330. The company maintained its 2016 delivery guidance of 80,000-90,000 vehicles and we still model 85,000. Adjusted EPS came in at a loss of \$0.57, beating consensus by a penny, while adjusted revenue increased 45% year over year to \$1.6 billion. Revenue declined 8.3% sequentially, likely due to the impact of the strong dollar on overseas sales and less Model X deliveries than originally planned due to supplier issues which are resolved.

The quarterly results are not important to us relative to the long-term growth plan of the company, which is the real value creation story. Due to initial orders for the Model 3 sedan of more than 400,000 units far exceeding even Elon Musk's expectations, the company announced a dramatic acceleration to its production plans, driving our fair value increase. For years Tesla has said once the gigafactory in Nevada is operational, the company can make 500,000 vehicles a year in 2020. That timeline is now moved up to 2018 and Elon Musk went further during the call to say one million vehicles in 2020 is his best guess. Musk said this one million could be feasible with just the California plant and the gigafactory but he rightfully feels making all vehicles in one place to serve a global market does not make sense. Therefore, there is much uncertainty as to how much capital will be needed to meet these new hyper-ambitious targets. Management said additional capital raises are likely and it will come from both equity and debt. In light of the capital markets being readily available to Tesla, we plan to model \$1.5 billion of equity issuance in 2016 as well as \$1 billion of new debt. Capital spending guidance is now at least \$2.3 billion this year from \$1.5 billion.

Tesla to Issue More Stock; We Welcome Further Dilution

David Whiston, CFA, CPA, CFE, Strategist, 18 May 2016

Tesla followed up on its May 4 earnings call, when it said capital raises would be likely to meet its large production ramp to 500,000 vehicles by 2018, by announcing an equity offering on May 18. The initial prospectus filing calls for the company to sell between 6.8 million shares and more than 8.2 million shares, about a 6% dilution, assuming full oversubscription. At our assumed offering price of \$208.50 that would mean proceeds between \$1.4 billion and \$1.7 billion. After the first-quarter results, we changed our model to assume a \$1.5 billion equity offering so the additional capital beyond \$1.5 billion does not merit a fair

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value estimate change. These amounts could change after Tesla management completes any meetings with potential investors.

The company needs this money to fund its accelerated construction of the gigafactory and accelerated rollout of the Model 3 sedan due out in late 2017. It also in our view needs to calm investor fears of the company continuing to burn cash while making large investments for growth. With the stock still a high-profile one, we welcome further dilution beyond this offering in order to raise a cash hoard to remove any doubts of the company being able to handle an inevitable recession at some point and to fund growth.

CEO Elon Musk will also be exercising options to purchase an additional over 5.5 million shares. Musk will then sell about 2.78 million of those shares to pay taxes on the option exercise and give 1.2 million Tesla shares to charity. The company will not receive any proceeds from Musk's sale of the 2.78 million shares. Musk is paying for his option exercise via a \$36.5 million loan from Morgan Stanley, and he will now owe that firm \$299 million. This loan and another \$187 million loan from an unnamed institution in the prospectus are full recourse to Elon Musk, and Tesla is not a party to the loan; but there is risk of a margin call to Musk should Tesla stock fall significantly.

Tesla's Offer to Acquire SolarCity Means Investors Must Make a Leap of Faith in Solar and EVs

David Whiston, CFA, CPA, CFE, Strategist, 21 June 2016

Tesla announced an all-stock offer after the market closed on June 21 to acquire SolarCity. SolarCity's CEO, Lyndon Rive, is Tesla CEO Elon Musk's cousin and Musk is chairman of SolarCity. Tesla is proposing an exchange ratio of 0.122-0.131 Tesla shares for every SolarCity share, which we calculate at Tesla's June 21 closing price of \$219.61 and assuming 0.131 shares issued equates to over \$2.8 billion in consideration. We plan to reduce our Tesla fair value estimate to about \$259. This reflects our math of Tesla issuing nearly 12.9 million shares of stock (about 8.8% dilution) at our preannouncement fair value estimate of \$269 partially offset by Tesla acquiring SolarCity, which had a stand-alone fair value estimate of \$20. We think Musk would not have moved forward with this deal if he thought his shareholder base would reject it so we expect the deal to go through; but it is important to note that Musk and Rive are recusing themselves from voting on the deal so as to let "disinterested" shareholders

decide. We do not like seeing Tesla issue undervalued stock to acquire a company.

We are skeptical of the strategic benefit as well. Management talked of the deal allowing Tesla customers to now pursue power generation from solar panels, storage in batteries, and sustainable transport from vehicles. As Tesla says in its 8-K, "We would be the world's only vertically integrated energy company offering end-to-end clean energy products to our customers." Making the company a one-stop shop for sustainability makes sense from an environmental agenda perspective but its success depends on how much demand there is for Tesla vehicle owners to also want to buy solar panels and Tesla batteries. SolarCity products are likely to be heavily marketed in Tesla stores if the deal closes but solar's mass-market adoption is not a sure thing, especially outside Sunbelt states.

Part Two of Elon Musk's Master Plan Shows a Multidecade Growth Runway for Tesla That Needs Money

David Whiston, CFA, CPA, CFE, Strategist, 21 July 2016

We are not changing our fair value estimate for Tesla after CEO Elon Musk posted Part Two of his master plan. We have long seen Tesla as an electric vehicle company with an energy storage business, and Part Two takes this to the next level. We continue to think of investing in Tesla as similar to a very long-dated call option with an investor that must believe in Musk's long-term ability and vision. Plans outlined in the blog post are long-term in nature, and we will wait for more clarity around the likely massive spending required before changing our model. We also think many more capital raises are likely over the next few years, so Tesla's growth will stutter if the company cannot access funds in a recession.

Some elements of the post were unsurprising, such as stressing the purpose of the company is to bring sustainable energy and transport to save the planet from the use and eventual depletion of fossil fuels, hence the need to buy SolarCity. Also unsurprising is Musk's statement that in a fully autonomous vehicle world, Tesla owners could earn income when not using their vehicle by lending it to the Tesla fleet to be used by others. In cities, Tesla will operate its own ride-hailing fleet, allowing people to summon a Tesla ride on their phones, competing with Uber, Lyft, and we think eventually many automakers such as GM's Maven brand. Musk envisions

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an owner's income from vehicle-sharing significantly lowering the cost of Tesla ownership. This lower cost means he sees no need to make a vehicle cheaper than the Model 3 sedan, due out late next year.

Future consumer vehicles will be a compact crossover and a "new kind of pickup truck" with no timeline given. Pickup customers are very loyal to Detroit Three brands; if Tesla can meaningfully penetrate this segment, something even Toyota has struggled to do, we will be impressed. Next year, Tesla plans to unveil a semi-truck and a new form of bus, or what Musk called high-passenger-density urban transport.

Tesla Reaches Agreement to Buy SolarCity to Vertically Integrate Into a Sustainable Energy Company

David Whiston, CFA, CPA, CFE, Strategist, 01 August 2016

We are not changing our fair value estimate for Tesla after it announced a formal agreement on Aug. 1 to buy SolarCity, with terms that are not dramatically different from Tesla's proposed offer made public on June 21, which we discussed in a note at that time. Tesla shareholders are getting SolarCity for less consideration than announced in June, with the proposed all-stock deal now 0.11 Tesla shares per SolarCity share (7.4% dilution) compared with a range in June of 0.122-0.131 shares. This new deal equates to about \$2.6 billion in consideration, or \$25.37 per share.

Management expects the deal to close in the fourth quarter, but it is still subject to shareholder and regulatory approval. A majority of shareholders, excluding CEO Elon Musk and other certain directors, must approve the transaction. We believe the deal will comfortably win approval because we feel that the vast majority of Tesla shareholders believe in the very long-term vision of Tesla and are willing to trust Musk that, despite dilution in 2016, buying SolarCity is the right move.

Tesla's conservative estimate of cost synergies is \$150 million in the first full year after closing. Management did not want to get very specific on sources of these synergies beyond saying common part usage such as inverters, reducing overhead, and more efficient sales and marketing from using Tesla's existing retail store base of 190 locations that currently have foot traffic of about three million people. We continue to view the deal as a leap of faith in the appeal of solar energy and the ability to store

some of it versus relying exclusively on the grid for what is often very cheap electricity. The new company would be the largest sustainable energy firm so it has option value should solar penetration dramatically rise. Current solar penetration in the U.S. is less than 2% of all households and SolarCity is the market leader with 35% share.

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David Whiston, CFA, CPA, CFE, Strategist, 03 August 2016

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Last Close

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Fair Value^Q

09 Aug 2016 02:00 UTC

244.58

Market Cap

09 Aug 2016

33,628.3 Mil

Sector

Consumer Cyclical

Industry

Auto Manufacturers

Country of Domicile

USA United States

There is no one analyst in which a Quantitative Fair Value Estimate and Quantitative Star Rating are attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative fair value. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s Code of Ethics and Personal Securities Trading Policy in carrying out his responsibilities. For information regarding Conflicts of Interests, visit <http://global.morningstar.com/equitydisclosures>

Company Profile

Tesla Motors Inc designs, develops, manufactures and sells high-performance fully electric vehicles and electric vehicle powertrain components.

Quantitative Scores

		Scores		
		All	Rel Sector	Rel Country
Quantitative Moat	None	13	13	13
Valuation	Undervalued	86	74	93
Quantitative Uncertainty	Medium	96	96	92
Financial Health	Moderate	63	55	63



Source: Morningstar Equity Research

Valuation

	Current	5-Yr Avg	Sector Median	Country Median
Price/Quant Fair Value	0.92	1.12	1.00	1.15
Price/Earnings	—	5.3	18.0	21.6
Forward P/E	-0.3	—	15.3	16.3
Price/Cash Flow	—	144.1	10.2	11.9
Price/Free Cash Flow	—	—	16.8	17.8
Trailing Dividend Yield %	—	—	2.33	2.00
Price/Book	13.3	30.8	1.7	2.4
Price/Sales	6.6	12.8	0.9	1.9

Profitability

	Current	5-Yr Avg	Sector Median	Country Median
Return on Equity %	-69.6	-98.0	11.7	11.9
Return on Assets %	-12.3	-22.7	5.2	4.7
Revenue/Employee (K)	349.8	223.3	482.0	302.7

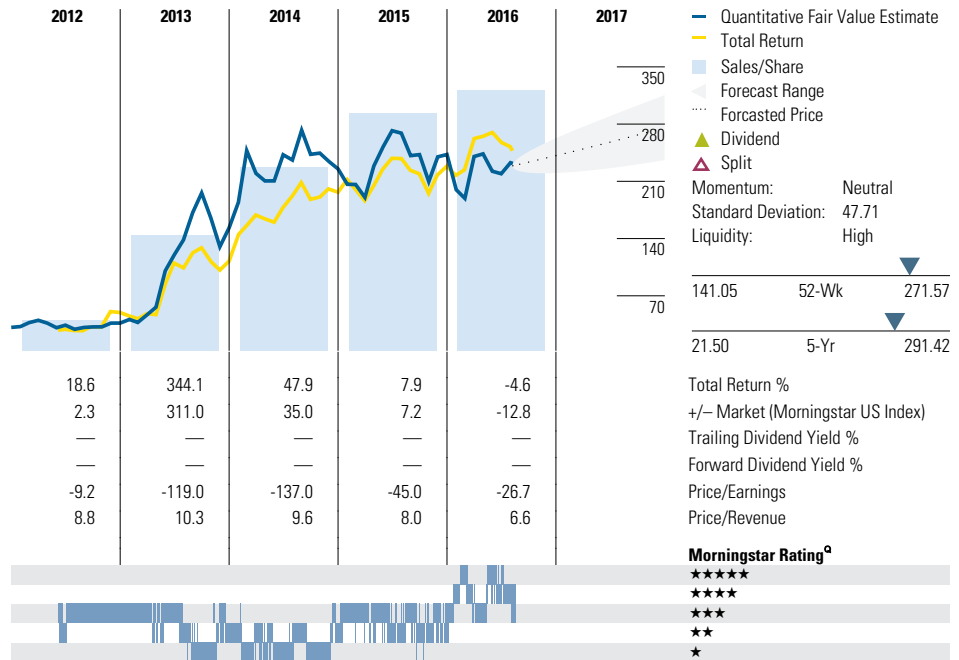
Financial Health

	Current	5-Yr Avg	Sector Median	Country Median
Distance to Default	0.6	0.6	0.6	0.5
Solvency Score	889.8	—	496.3	583.5
Assets/Equity	7.4	5.9	1.8	1.7
Long-Term Debt/Equity	0.0	1.5	0.2	0.3

Growth Per Share

	1-Year	3-Year	5-Year	10-Year
Revenue %	26.5	113.9	103.2	—
Operating Income %	—	—	—	—
Earnings %	—	—	—	—
Dividends %	—	—	—	—
Book Value %	14.2	96.5	30.6	—
Stock Total Return %	-5.5	14.4	55.7	—

Price vs. Quantitative Fair Value

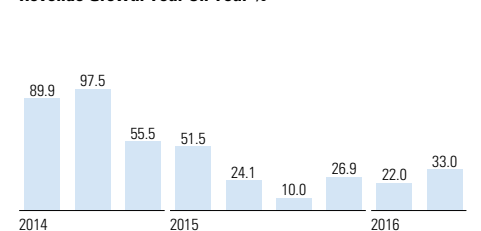


	2011	2012	2013	2014	2015	TTM	Financials (Fiscal Year in Mil)
Revenue	204	413	2,013	3,198	4,046	4,568	Revenue
% Change	74.9	102.3	387.2	58.8	26.5	12.9	% Change
Operating Income	-251	-394	-61	-187	-717	-930	Operating Income
% Change	—	—	—	—	—	—	% Change
Net Income	-254	-396	-74	-294	-889	-1,126	Net Income
Operating Cash Flow	-114	-266	258	-57	-524	-332	Operating Cash Flow
Capital Spending	-198	-239	-264	-970	-1,635	-1,315	Capital Spending
Free Cash Flow	-312	-505	-6	-1,027	-2,159	-1,648	Free Cash Flow
% Sales	-152.9	-122.3	-0.3	-32.1	-53.4	-36.1	% Sales
EPS	-2.53	-3.69	-0.62	-2.36	-6.93	-8.47	EPS
% Change	—	—	—	—	—	—	% Change
Free Cash Flow/Share	-2.88	-4.71	-1.26	-4.31	-17.14	-15.92	Free Cash Flow/Share
Dividends/Share	—	—	—	—	—	—	Dividends/Share
Book Value/Share	2.81	1.09	4.58	7.62	10.00	7.24	Book Value/Share
Shares Outstanding (K)	114,214	123,091	125,688	131,425	148,693	148,693	Shares Outstanding (K)
Profitability	-118.0	-227.2	-18.7	-37.3	-88.8	-69.6	Profitability
Return on Equity %	-46.3	-43.4	-4.2	-7.1	-12.8	-12.3	Return on Equity %
Return on Assets %	-124.6	-95.9	-3.7	-9.2	-22.0	-24.6	Return on Assets %
Net Margin %	0.37	0.45	1.14	0.77	0.58	0.50	Net Margin %
Asset Turnover	3.2	8.9	3.6	6.4	7.4	4.7	Asset Turnover
Financial Leverage	30.2	7.3	22.7	27.6	22.8	21.4	Financial Leverage
Gross Margin %	-123.1	-95.4	-3.0	-5.8	-17.7	-20.4	Gross Margin %
Operating Margin %	268	401	586	1,865	42	37	Operating Margin %
Long-Term Debt	224	125	667	912	1,089	2,520	Long-Term Debt
Total Equity	0.9	0.9	2.4	1.7	1.0	0.9	Total Equity
Fixed Asset Turns	—	—	—	—	—	—	Fixed Asset Turns

Quarterly Revenue & EPS

	Mar	Jun	Sep	Dec	Total
Revenue (Mil)					
2016	1,147.0	1,270.0	—	—	—
2015	939.9	955.0	936.8	1,214.4	4,046.0
2014	620.5	769.3	851.8	956.7	3,198.4
2013	561.8	405.1	431.3	615.2	2,013.5
Earnings Per Share (I)					
2016	-2.13	-2.09	—	—	—
2015	-1.22	-1.45	-1.78	-2.46	-6.93
2014	-0.40	-0.50	-0.60	-0.86	-2.36
2013	0.09	-0.26	-0.32	-0.13	-0.62

Revenue Growth Year On Year %



Research Methodology for Valuing Companies

Qualitative Equity Research Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, in-depth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss short-term market-price movements), but we believe these negatives are mitigated by deep analysis and our long-term approach.

Morningstar, Inc. and its affiliates ("Morningstar", "we", "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk-adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate

and (4) the current market price. This process ultimately culminates in our single-point star rating.

1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define economic profits as returns on invested capital (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality, no-moat companies will see their normalized returns gravitate toward the firm's cost of capital more quickly than companies with moats.

To assess the sustainability of excess profits, analysts perform ongoing assessments of the moat trend. A firm's moat trend is positive in cases where we think its sources of competitive advantage are growing stronger; stable where we don't anticipate changes to competitive advantages over the next several years; or negative when we see signs of deterioration.

2. Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of

capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in working-capital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBI) and the net new investment (NNI) to derive our annual free cash flow forecast.

Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

Stage III: Perpetuity

Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total pres-

Morningstar Research Methodology for Valuing Companies



Research Methodology for Valuing Companies

ent value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market-value weights.

3. Uncertainty around that fair value estimate

Morningstar's Uncertainty Rating captures a range of likely potential intrinsic values for a company and uses it to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating represents the analysts' ability to bound the estimated value of the shares in a company around the Fair Value Estimate, based on the characteristics of the business underlying the stock, including operating and financial leverage, sales sensitivity to the overall economy, product concentration, pricing power, and other company-specific factors.

Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case, and a 25% probability that the company will perform worse than the bear case. The distance between the bull and bear cases is an important indicator of the uncertainty underlying the fair value estimate.

Our recommended margin of safety widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the estimated value of the equity, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the uncertainty rating provides guidance in portfolio construction based on risk tolerance.

Our uncertainty ratings for our qualitative analysis are low, medium, high, very high, and extreme.

► **Low:** margin of safety for 5-star rating is a 20% discount and for 1-star rating is 25% premium.

► **Medium:** margin of safety for 5-star rating is a 30% discount and for 1-star rating is 35% premium.

► **High:** margin of safety for 5-star rating is a 40% discount and for 1-star rating is 55% premium.

► **Very High:** margin of safety for 5-star rating is a 50% discount and for 1-star rating is 75% premium.

► **Extreme:** Stock's uncertainty exceeds the parameters we have set for assigning the appropriate margin of safety.

4. Market Price

The market prices used in this analysis and noted in the report come from exchange on which the stock is listed which we believe is a reliable source.

For more detail information about our methodology, please go to <http://global.morningstar.com/equitydisclosures>

Morningstar Star Rating for Stocks

Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open. Our analysts keep close tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market's valuation. When there are many 5-star stocks, the stock market as

a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true the market price will converge on our fair value estimate over time, generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

Five Stars ★★★★★

We believe appreciation beyond a fair risk-adjusted return is highly likely over a multiyear time frame. Scenario analysis developed by our analysts indicates that the current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

Four Stars ★★★★

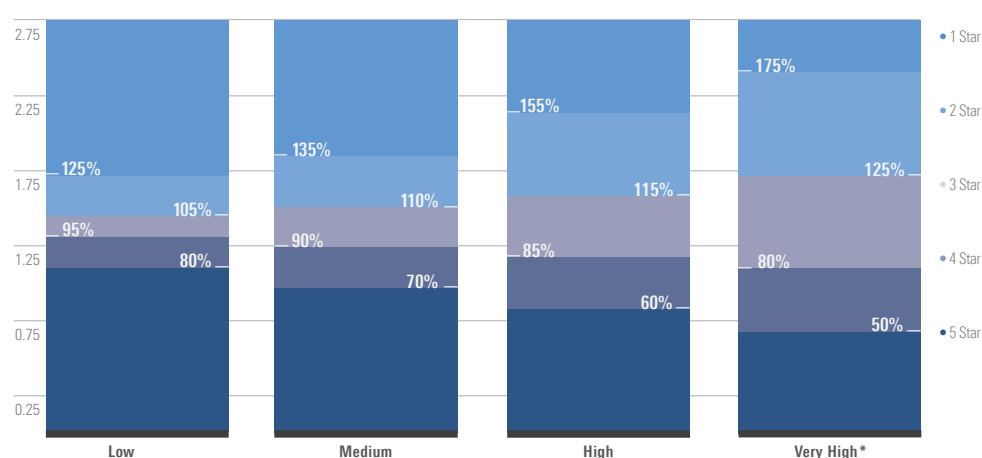
We believe appreciation beyond a fair risk-adjusted return is likely.

Three Stars ★★★

Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

Morningstar Research Methodology for Valuing Companies

Price/Fair Value



* Occasionally a stock's uncertainty will be too high for us to estimate, in which case we label it Extreme.

Research Methodology for Valuing Companies

Two Stars ★★

We believe investors are likely to receive a less than fair risk-adjusted return.

One Star ★

Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. Scenario analysis by our analysts indicates that the market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

Other Definitions:

Last Price: Price of the stock as of the close of the market of the last trading day before date of the report.

Stewardship Rating: Represents our assessment of management's stewardship of shareholder capital, with particular emphasis on capital allocation decisions. Analysts consider companies' investment strategy and valuation, financial leverage, dividend and share buyback policies, execution, compensation, related party transactions, and accounting practices. Corporate governance practices are only considered if they've had a demonstrated impact on shareholder value. Analysts assign one of three ratings: "Exemplary," "Standard," and "Poor." Analysts judge stewardship from an equity holder's perspective. Ratings are determined on an absolute basis. Most companies will receive a Standard rating, and this is the default rating in the absence of evidence that managers have made exceptionally strong or poor capital allocation decisions.

Quantitative Valuation: Using the below terms, intended to denote the relationship between the security's Last Price and Morningstar's quantitative fair value estimate for that security.

- **Undervalued:** Last Price is below Morningstar's quantitative fair value estimate.
- **Fairly Valued:** Last Price is in line with Morningstar's quantitative fair value estimate.
- **Overvalued:** Last Price is above Morningstar's quantitative fair value estimate.

Risk Warning

Please note that investments in securities are subject to market and other risks and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in future and is no indication of future performance. A security investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report. Morningstar's Uncertainty Rating serves as a useful data point with respect to sensitivity analysis of the assumptions used in our determining a fair value price.

Quantitative Equity Reports Overview

The quantitative report on equities consists of data, statistics and quantitative equity ratings on equity securities. Morningstar, Inc.'s quantitative equity ratings are forward looking and are generated by a statistical model that is based on Morningstar Inc.'s analyst-driven equity ratings and quantitative statistics. Given the nature of the quantitative report and the quantitative ratings, there is no one analyst in which a given report is attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative equity ratings used in this report. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s Code of Ethics and Personal Securities Trading Policy in carrying out his responsibilities.

Quantitative Equity Ratings

Morningstar's quantitative equity ratings consist of: (i) Quantitative Fair Value Estimate, (ii) Quantitative Star Rating, (iii) Quantitative Uncertainty, (iv) Quantitative Economic Moat, and (v) Quantitative Financial Health (collectively the "Quantitative Ratings").

The Quantitative Ratings are calculated daily and derived from the analyst-driven ratings of a company's peers as determined by statistical algorithms. Morningstar, Inc. ("Morningstar", "we", "our") calculates Quantitative Ratings for companies whether or not it already provides analyst ratings and qualitative coverage. In some cases, the Quantitative Ratings may differ from the analyst ratings because a company's analyst-driven ratings can significantly differ from other companies in its peer group.

Quantitative Fair Value Estimate: Intended to represent Morningstar's estimate of the per share dollar amount that a company's equity is worth today. Morningstar calculates the Quantitative Fair Value Estimate using a statistical model derived from the Fair Value Estimate Morningstar's equity analysts assign to companies. Please go to <http://global.morningstar.com/equitydisclosures> for information about Fair Value Estimate Morningstar's equity analysts assign to companies.

Quantitative Economic Moat: Intended to describe the strength of a firm's competitive position. It is calculated using an algorithm designed to predict the Economic Moat rating a Morningstar analyst would assign to the stock. The rating is expressed as Narrow, Wide, or None.

- **Narrow:** assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 70% but less than 99%.
- **Wide:** assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 99%.
- **None:** assigned when the probability of an analyst receiving a "Wide Moat" rating by an analyst is less than 70%.

Quantitative Star Rating: Intended to be the summary rating based on the combination of our Quantitative Fair Value Estimate, current market price, and the Quantitative Uncertainty Rating. The rating is expressed as One-Star, Two-Star, Three-Star, Four-Star, and Five-Star.

- **One-Star:** the stock is overvalued with a reasonable margin of safety.
 $\text{Log}(\text{Quant FVE/Price}) < -1 * \text{Quantitative Uncertainty}$
- **Two-Star:** the stock is somewhat overvalued.
 $\text{Log}(\text{Quant FVE/Price}) \text{ between } (-1 * \text{Quantitative Uncertainty}, -0.5 * \text{Quantitative Uncertainty})$
- **Three-Star:** the stock is approximately fairly valued.
 $\text{Log}(\text{Quant FVE/Price}) \text{ between } (-0.5 * \text{Quantitative Uncertainty}, 0.5 * \text{Quantitative Uncertainty})$
- **Four-Star:** the stock is somewhat undervalued.
 $\text{Log}(\text{Quant FVE/Price}) \text{ between } (0.5 * \text{Quantitative Uncertainty}, 1 * \text{Quantitative Uncertainty})$
- **Five-Star:** the stock is undervalued with a reasonable margin of safety.
 $\text{Log}(\text{Quant FVE/Price}) > 1 * \text{Quantitative Uncertainty}$

Quantitative Uncertainty: Intended to represent Morningstar's level of uncertainty about the accuracy of the Quantitative Fair Value Estimate. Generally, the lower the Quantitative Uncertainty, the narrower the potential range of outcomes for that particular company. The rat-

Research Methodology for Valuing Companies

ing is expressed as Low, Medium, High, Very High, and Extreme.

- **Low:** the interquartile range for possible fair values is less than 10%.
- **Medium:** the interquartile range for possible fair values is less than 15% but greater than 10%.
- **High:** the interquartile range for possible fair values is less than 35% but greater than 15%.
- **Very High:** the interquartile range for possible fair values is less than 80% but greater than 35%.
- **Extreme:** the interquartile range for possible fair values is greater than 80%.

Quantitative Financial Health: Intended to reflect the probability that a firm will face financial distress in the near future. The calculation uses a predictive model designed to anticipate when a company may default on its financial obligations. The rating is expressed as Weak, Moderate, and Strong.

- **Weak:** assigned when Quantitative Financial Health < 0.2
- **Moderate:** assigned when Quantitative Financial Health is between 0.2 and 0.7
- **Strong:** assigned when Quantitative Financial Health > 0.7

Other Definitions:

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- **Overvalued:** Last Price is above Morningstar's quantitative fair value estimate.

This Report has not been made available to the issuer of the security prior to publication.

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The quantitative equity ratings are not statements of fact. Morningstar does not guarantee the completeness or accuracy of the assumptions or models used in determining the quantitative equity ratings. In addition, there is the risk that the price target will not be met due to such things as unforeseen changes in demand for the company's products, changes in management, technology, economic development, interest rate development, operating and/or material costs, competitive pressure, supervisory law, exchange rate, and tax rate. For investments in foreign markets there are further risks, generally based on exchange rate changes or changes in political and social conditions. A change in the fundamental factors underlying the quantitative equity ratings can mean that the valuation is subsequently no longer accurate.

For more information about Morningstar's quantitative methodology, please visit www.corporate.morningstar.com.

Tesla Motors Inc TSLA (XNAS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★	229.08 USD	259.00 USD	0.88	—	0.00	34.06	Auto Manufacturers	Standard
09 Aug 2016 05:00, UTC	09 Aug 2016	24 Jun 2016 14:38, UTC		09 Aug 2016	09 Aug 2016	09 Aug 2016		

professional.

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- Analysts' compensation is derived from Morningstar's overall earnings and consists of salary, bonus and in some cases restricted stock.
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Tesla Motors Inc TSLA (XNAS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★	229.08 USD	259.00 USD	0.88	—	0.00	34.06	Auto Manufacturers	Standard
09 Aug 2016 05:00, UTC	09 Aug 2016	24 Jun 2016 14:38, UTC		09 Aug 2016	09 Aug 2016	09 Aug 2016		

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